

MEETING: REGULAR MEETING OF THE VILLAGE BOARD
DATE & TIME: Monday, January 6, 2025 at 7:00 PM
LOCATION: Germantown Village Hall Board Room
N112 W17001 Mequon Road

Any member of the body and/or citizen may attend the meeting virtually through the WebEx platform, Meeting #:2551 455 8667 Password: ywM4qU5krp2 which can be accessed by phone at 408-418-9388 or by clicking the link below: <https://villageofgermantown.my.webex.com/villageofgermantown.my/j.php?MTID=m49bcd70fc98c6f1696315d2744b3586a>

Citizens not wishing to attend the meeting personally or virtually may submit any public comments by sending an email to comments@germantownwi.gov by 4 p.m. on the day of the meeting so that it can be provided to the members of the body for their consideration. Previously recorded VillageBoard Meeting Videos can be viewed at https://www.youtube.com/channel/UCOYp0EgELzTCa9X_iCohyhQ

AGENDA

- I. **CALL TO ORDER:** *This meeting has been given public notice in accordance with Section 19.83 and 19.84, Wis. Stats, in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.*
- II. **ROLL CALL:**
- III. **PLEDGE OF ALLEGIANCE:**
- IV. **PRESIDENT'S REPORT:**
- V. **ANNOUNCEMENTS OF FORTHCOMING EVENTS OF PUBLIC INTEREST**
- VI. **COMMITTEE AND DEPARTMENT REPORTS:**
- VI. **CITIZEN INPUT:** *(Please be advised per 19.84(2) that information and comment will be received from the public. It is the policy of this municipality that public input be limited to a three (3) minute period per person with a time extension granted at the discretion of the Chairperson. Be advised that there may be limited discussion of the information received but no action will be taken under public comments.)*
- VII. **CONSENT AGENDA:**
 - A. MINUTES: December 16, 2024
- VIII. **UNFINISHED BUSINESS**
 - A. Jeff Osgood, Agent for Kwik Trip, Inc., and Ben Venue Properties, Property Owner, N112W18741 Mequon Road (former PNC Bank). Kwik Trip Convenience Store Relocation from W188N10963 Maple Road. Rezoning from B-3 to B-5 and Conditional Use Permit (CUP) applications.
- IX. **PUBLIC HEARINGS:**
- X. **NEW BUSINESS:**
 - A. An Ordinance Amending Section 9.07 of the Germantown Municipal Code Related to Noise Disturbances Within the Village and Creating Section 12.03 of the Germantown Municipal Code Related to Permitting Outdoor Entertainment Within the Village
 - B. Revised Purchasing Policies and Ordinance to Amend Municipal Code to Reflect Revised Policies
 - C. Contracts for General Legal Services and Municipal Court Legal Services

D. Temporary Pay Adjustment for Interim Police Chief

XI. ADJOURNMENT:

UPON REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service, please contact the Village Clerk at (262)250-4745 at least 2 days prior to the meeting.

Notice is given that a majority of the Economic Development Committee, Utility Advisory Committee, Tourism Commission, and/or Senior Advisory Committee may attend this meeting to gather information about an item over which they have decision-making responsibility. This may constitute a meeting of these bodies per State ex rel. Badke v Greendale Village Board, even though these bodies will not take formal action at this meeting.

MEETING:	REGULAR MEETING OF THE VILLAGE BOARD
DATE AND TIME:	Monday, December 16, 2024 7:00 PM
LOCATION:	Germantown Village Hall Board Room N112 W17001 Mequon Road

MINUTES

- I. **CALL TO ORDER:** *This meeting has been given public notice in accordance with Section 19.83 and 19.84, Wis. Stats, in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.*

Village President Dean Wolter called the Village Board meeting to order at 7:14 PM.

II. **ROLL CALL:**

Present: Trustee David Baum, Trustee Terri Kaminski, Trustee Rick Miller, Trustee Robert Warren, Trustee Jolene Pieper, Trustee Jan Miller, President Dean Wolter, Trustee Meg Cutts

Excused: Trustee Phil Hudson

Also Present: Village Attorney Brian Sajdak, Village Administrator Steve Kreklow, Village Clerk Donna Ott, Public Works Director Matthew Mortwedt, Community Development Director Jeff Retzlaff, Associate Planner Jordan Yanke, Park & Recreation Director Gil Standridge

III. **PLEDGE OF ALLEGIANCE:**

IV. **PRESIDENT'S REPORT:**

President Wolter spoke about tax bills and upcoming holidays, and asked for a moment of silence regarding the school shooting in Madison, WI.

V. **ANNOUNCEMENTS OF FORTHCOMING EVENTS OF PUBLIC INTEREST
COMMITTEE AND DEPARTMENT REPORTS:**

Trustees provided dates and times of upcoming meetings.

Trustee Jan Miller thanked those that came out to support the Windsong subdivision's Luminary Night.

- VI. **CITIZEN INPUT:** *(Please be advised per 19.84(2) that information and comment will be received from the public. It is the policy of this municipality that public input be limited to a three (3) minute period per person with a time extension granted at the*

discretion of the Chairperson. Be advised that there may be limited discussion of the information received but no action will be taken under public comments.)

Melanie Smythe (N140W17938 Cedar Ln) spoke regarding contracts/RFPs, shortening Village Board meetings, the process of making motions in committee meetings, the vacant trustee position, and New Business Item F (OneEnergy Development, LLC, Certified Survey Map).

Sarah Larson (W159N9737 Butternut Rd) spoke regarding the Public Hearing, New Business Item F (OneEnergy Development, LLC, Certified Survey Map), the vacant trustee position, closed session items, and New Business Item L (Administrator 2024 Performance Review).

Scott Hefle (W159N10514 Old Farm Rd) spoke regarding New Business Item B (2025-2025 SAFEbuilt Inspection Services contract), Kwik Trip relocation, New Business Item F (OneEnergy Development, LLC, Certified Survey Map), New Business Item H (2025 4th of July Activities, and Chief Snow's retirement.

VII. CONSENT AGENDA:

Motion: Approve Items A-I as presented

Motioned By: Trustee Baum

Seconded By: Trustee Warren

Request: Pull Item G for Discussion

Requested By: Trustee Jan Miller

Amended Motion: Approve Items A-F, I

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried by Roll Call Vote (Yes 8, No 0, Abstained 0)

Motion: Approve Item G

Motioned By: Trustee Jan Miller

Seconded By: Trustee Rick Miller

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried by Roll Call Vote (Yes 8, No 0, Abstained 0)

A. Minutes: December 2, 2024

- B. Award of a professional services agreement with Foth for an amount not to exceed \$72,000 for construction administration and inspection services related to generator replacements at Wells 2 and 7.
- C. Approval of a change order to JH Hassinger for an amount not to exceed \$30,000 for cold weather work conditions on Well 12 construction.
- D. Approval for a blanket PO not to exceed \$100,000.00 with Merton-Franier for the purchase of water meters.
- E. Award of a professional services agreement with Wachtel Tree Science for an amount not to exceed \$20,000 for Village Forester and tree consulting services.
- F. Approval to purchase two fabricated fall protection ladders from RARE Specialties at Wells 3 and 11 for an amount not to exceed \$15,840.00.
- G. Approval of the 2025 Village of Germantown Labor and Equipment Rates.
- H. Dispatch Bonuses
- I. Purchase of Squad

VIII. UNFINISHED BUSINESS

IX. PUBLIC HEARINGS:

- A. Public Facilities Needs Assessment for parks, library and water impact fees and the amendment to the Village's existing ordinance imposing public facilities impact fees under Section 66.0617 of the Wisconsin Statutes.

Village Administrator Kreklow led discussion on this item. Jon Cameron of Ehlers presented the Public Facilities Needs Assessment and was available to answer questions.

President Wolter opened the Public Hearing at 7:51PM.

Melanie Smythe (N140W17938 Cedar Ln) spoke in opposition to the proposed increase in public facilities impact fees.

President Wolter closed the Public Hearing at 7:53PM.

X. NEW BUSINESS:

A. Resolution Honoring Police Chief Mike Snow Upon His Retirement From Village Service

Village President Wolter read aloud the Proclamation honoring Police Chief Mike Snow upon his retirement.

Chief Snow thanked his team and his colleagues at the department, the Village Board, Administrator Kreklow, the community and his wife.

Motion: Approve Resolution as presented

Motioned By: Trustee Pieper

Seconded By: Trustee Kaminski

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried by Voice Vote (Yes 8, No 0, Abstained 0)

B. Revisions to 2025-2026 Contract for SAFEbuilt Inspection Services

Motion: Approve as presented

Motioned By: Trustee Baum

Seconded By: Trustee Kaminski

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, President Wolter, Trustee Cutts

No: Trustee Jan Miller

Abstain: None

Motion Carried by Roll Call Vote (Yes 7, No 1, Abstained 0)

C. 2025 Permit Fee Schedule-Inspection Services

Motion: Approve as presented

Motioned By: Trustee Baum

Seconded By: Trustee Pieper

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried by Roll Call Vote (Yes 8, No 0, Abstained 0)

D. Filling Vacancy in the Office of District 4 Trustee

Motion: Leave the office vacant until it can be filled through a special election

Motioned By: Trustee Jan Miller

Seconded By: Trustee Baum

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: Trustee Warren

Abstain: None

Motion Carried by Voice Vote (Yes 7, No 1, Abstained 0)

- E. Jeff Osgood, Agent for Kwik Trip, Inc., and Ben Venue Properties, Property Owner, N112W18741 Mequon Road (former PNC Bank). Kwik Trip Convenience Store Relocation from W188N10963 Maple Road. Rezoning from B-3 to B-5 and Conditional Use Permit (CUP) applications.

Motion 1: Approve Kwik Trip relocation as presented

Motioned By: Trustee Pieper

Seconded By: Trustee Baum

Motion 2: Amend Motion 1 to direct Village staff and applicant to determine which party will pay for improvements to the Klienmann Dr/Maple Rd and Maple Rd/Lannon Rd intersections before final acceptance of the project, if necessary

Motioned By: Trustee Baum

Seconded By: Trustee Warren

Yes: Trustee Baum, Trustee Warren, Trustee Cutts

No: Trustee Kaminski, Trustee Rick Miller, Trustee Pieper, Trustee Jan Miller, President Wolter

Abstain: None

Motion 2 Failed by Voice Vote (Yes 3, No 5, Abstained 0)

Motion 3: Postpone for further discussion

Motioned By: Trustee Baum

Seconded By: Trustee Warren

Yes: Trustee Baum, Trustee Rick Miller, Trustee Warren, Trustee Jan Miller, President Wolter, Trustee Cutts

No: Trustee Kaminski, Trustee Pieper

Abstain: None

Motion 3 Carried by Voice Vote (Yes 6, No 2, Abstained 0)

- F. OneEnergy Development, LLC, Agent for Wayne Lutynski, Property Owner. Certified Survey Map (CSM) to combine existing parcels into one (1) lot. Property located at approximately N132W18100 Rockfield Road.

Motion: Approve the Certified Survey Map, subject to two conditions: 1) All technical issues and corrections identified by the Village Surveyor (see September 14, 2024, memo from Bob Beilfuss, PLS) shall be addressed and reflected in a revised CSM reviewed and approved by Village staff prior to recording; and 2) The CSM be revised to denote a front setback of 60' in accordance with the A-1 District. Any pre-existing structures found to be within this setback shall be noted as "nonconforming" on the CSM.

Motioned By: Trustee Jan Miller

Seconded By: Trustee Baum

Yes: Trustee Baum, Trustee Rick Miller, President Wolter

No: Trustee Kaminski, Trustee Warren, Trustee Pieper, Trustee Jan Miller, Trustee Cutts

Abstain: None

Motion Failed by Roll Call Vote (Yes 3, No 5, Abstained 0)

G. An Ordinance Repealing and Recreating Section 3.14 of the Municipal Code of Germantown Relating to the Imposition of Impact Fees

Motion: Approve as presented

Motioned By: Trustee Baum

Seconded By: Trustee Rick Miller

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Not Present for Vote: Trustee Pieper

Motion Carried by Roll Call Vote (Yes 7, No 0, Abstained 0)

H. 2025 4th of July Activities

Motion: Table this item until the January 20, 2025, Village Board meeting

Motioned By: Trustee Pieper

Seconded By: Trustee Rick Miller

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: Trustee Warren

Abstain: None

Motion Carried by Voice Vote (Yes 7, No 1, Abstained 0)

I. Renewal of Vermont Systems Contract

Motion: Approve as presented

Motioned By: Trustee Baum

Seconded By: Trustee Kaminski

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried by Roll Call Vote (Yes 8, No 0, Abstained 0)

J. Transplant Contract Renewal with Optum RX

Motion: Approve as presented

Motioned By: Trustee Kaminski

Seconded By: Trustee Baum

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried by Roll Call Vote (Yes 8, No 0, Abstained 0)

K. Tyler Munis Contract Renewal

Motion: Approve as presented

Motioned By: Trustee Baum

Seconded By: Trustee Jan Miller

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Jan Miller, President Wolter, Trustee Cutts

No: Trustee Pieper

Abstain: None

Motion Carried by Roll Call Vote (Yes 7, No 1, Abstained 0)

L. Administrator 2024 Performance Review. The Village Board May Enter into Closed Session per Wis Stat § 19.85(1)(c) Considering employment, promotion, compensation or performance evaluation data of any public employee over which the governmental body has jurisdiction or exercises responsibility, and then may reconvene into open session to take such action as it deems appropriate.

Motion: Enter into Closed Session with the Village Administrator in attendance

Motioned By: Trustee Baum

Seconded By: Trustee Rick Miller

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried by Roll Call Vote (Yes 8, No 0, Abstained 0)

The Village Board entered into Closed Session at 9:46PM.

Motion: Return to Open Session (10:07 PM)

Motioned By: Trustee Pieper

Seconded By: Trustee Kaminski

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, Trustee Jan Miller, President Wolter, Trustee Cutts

No: None

Abstain: None

Motion Carried (Yes 8, No 0, Abstained 0)

Motion: Increase the salary of the Village Administrator by 3% based on his 2024 performance and achievement of the performance objectives set by the Village Board

Motioned By: Trustee Pieper

Seconded By: Trustee Baum

Yes: Trustee Baum, Trustee Kaminski, Trustee Rick Miller, Trustee Warren, Trustee Pieper, President Wolter, Trustee Cutts

No: Trustee Jan Miller

Abstain: None

Motion Carried (Yes 7, No 1, Abstained 0)

XI. ADJOURNMENT:

Village President Wolter adjourned the Village Board meeting at 10:11 PM.

BUSINESS OF THE VILLAGE BOARD

MEETING DATE: January 6, 2025

PLACEMENT: Action Item

ITEM TITLE: Jeff Osgood, Agent for Kwik Trip, Inc., and Ben Venue Properties, Property Owner, N112W18741 Mequon Road (former PNC Bank). Kwik Trip Convenience Store Relocation from W188N10963 Maple Road. Rezoning from B-3 to B-5 and Conditional Use Permit (CUP) applications.

SUBMITTED BY: Jordan Yanke, Associate Planner

SUMMARY EXPLANATION:

Jeff Osgood, Agent for Kwik Trip, Inc., and Ben Venue Properties, Property Owner, is seeking approval of a Rezoning and Conditional Use Permit (CUP) applications to allow for a *Convenience Food Store and Motor Vehicle Filling/Petroleum Service Station with Self-Service Carwash*. The site is located at N112 W18741 Mequon Road in the Lannon-Mequon Road Corridor and is located within a Groundwater Protection Overlay District.

This agenda item appeared in front of the Village Board on December 16, 2024. The case was postponed/continued by the Village Board based on concerns related to traffic impacts associated with the site after it becomes operational. The Village Board directed staff to work with the applicant to develop a solution/agreement that would address potential traffic impacts in the form of road alterations/improvements and detail what Kwik Trip's financial responsibility will be at the time such improvements are made (if needed).

On December 19, 2024, Village staff met with the applicant, its traffic consultant/engineer (TADI), and Trustee Bob Warren. After meeting discussion, the parties decided that a Condition of Approval be added to the CUP applications requiring Kwik Trip to enter into an agreement with the Village in the form of a Memorandum of Understanding (MOU) stipulating future financial contributions/proportionate costs they would be required to make towards road alterations/improvements necessitated by traffic impacts associated with the site. The MOU shall address potential road alterations/improvements at the Maple Road site entrance across from Kleinmann Drive and the intersection of Maple Road/Mequon Road. For specific language and the added condition, please refer to the CUP ordinances in the meeting packet that are under consideration by the Village Board.

ATTACHMENT:

1. STAFF REPORT_KWIK TRIP
2. APPLICATION
3. PROJECT SUMMARY
4. SITE PLAN
5. SITE DEVELOPMENT PLAN

6. ARCHITECTURAL RENDERINGS
7. SIGN PLAN
8. TRAFFIC IMPACT ANALYSIS
9. STORMWATER MANAGEMENT PLAN
10. WELLHEAD PROTECTION SUBMITTAL ITEMS
11. SPILL RESPONSE PLAN
12. STAFF REVIEW MEMO
13. GTRC MINUTES DRAFT_11.25.24
14. REZONING ORDINANCE_KWIK TRIP_01.06.25
15. CUP ORDINANCE_KWIK TRIP_B-5_01.06.25
16. CUP ORDINANCE_KWIK TRIP_GROUNDWATER_01.06.25

STAFF RECOMMENDATION:

APPROVE the Rezoning of one (1) parcel comprised of 4.37 acres from B-3: General Business District to B-5: Highway Business District, as proposed.

APPROVE the Conditional Use Permit (CUP) for a *Self-Service Carwash* for Kwik Trip, Inc. for property located at N112 W18741 Mequon Road, subject to (9) conditions as listed in the draft CUP ordinance.

ACTION BY Committee:

Plan Commission recommended to **APPROVE** the Rezoning, as proposed.

Plan Commission recommended to **APPROVE** the Conditional Use Permit (CUP) for a *Self-Service Carwash*, subject to (9) conditions as listed in the draft CUP ordinance.

Plan Commission recommended to **APPROVE** the Conditional Use Permit (CUP) for a *Motor Vehicle Filling Station*, subject to (9) conditions as listed in the draft CUP ordinance.

REZONING, CONDITIONAL USE PERMIT (CUP), SITE PLAN, & SIGN PERMIT APPLICATIONS

01/06/25 Village Board Meeting

Jeff Osgood / Kwik Trip, Inc. / Ben Venue Properties

Village Staff Report & Recommendation

Germantown, Wisconsin

SUMMARY

Jeff Osgood, Agent for Kwik Trip, Inc., and Ben Venue Properties, Property Owner, is seeking approval of a Rezone, Conditional Use Permit (CUP), and site development/building/sign plans to allow for a *Convenience Food Store and Motor Vehicle Filling/Petroleum Service Station with Self-Service Carwash*. The site is located at N112 W18741 Mequon Road in the Lannon-Mequon Road Corridor and is located within a Groundwater Protection Overlay District.

Location: N112 W18741 Mequon Road

Applicant/

Property Owner: Kwik Trip, Inc.
1626 Oak St
La Crosse, WI 54602

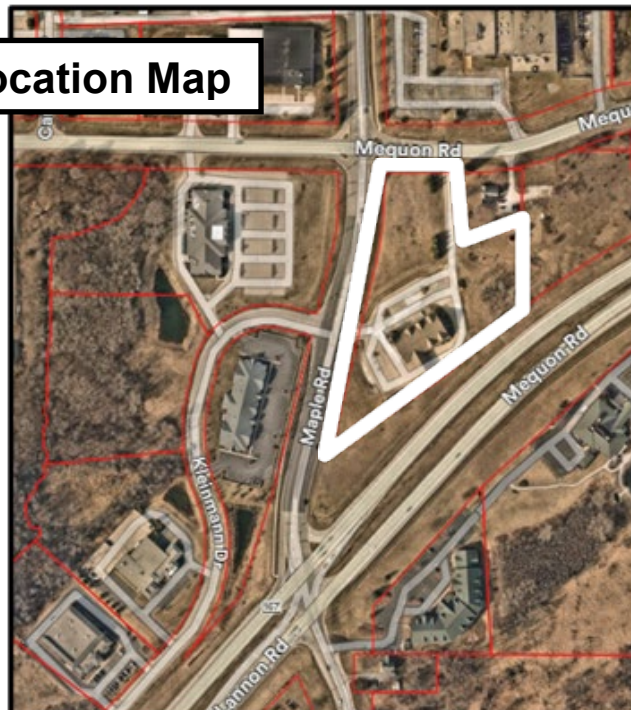
Ben Venue Properties
W240N777 Deerfield Ct
Sussex, WI 53089

Current Zoning: B-3: General Business District

Proposed Zoning: B-5: Highway Business District

Adjacent Land Uses		Zoning
North	Industrial	M-1
South	Highway Business	B-5
East	General Business	B-3
West	Highway Business	B-5

Location Map



Background/Proposal

Jeff Osgood, Agent for Kwik Trip, Inc., and Ben Venue Properties, Property Owner, is seeking approval of a Rezone, Conditional Use Permit (CUP), and site development/building/sign plans to allow for a *Convenience Food Store and Motor Vehicle Filling/Petroleum Service Station with Self-Service Carwash*. The site is located at N112 W18741 Mequon Road in the Lannon-Mequon Road Corridor and is located within a Groundwater Protection Overlay District.

Kwik Trip is proposing to relocate its existing convenience store and fueling station to the former PNC Bank property across Lannon Road. The new site at (4.37 acres) is larger than the existing site at W188 N10963 Maple Road (2.5 acres) and provides an opportunity to develop a new state-of-the-art facility approximately 12,000 square feet in area with improved/enlarged restrooms, increased store space with higher ceilings, more gasoline fueling positions, a 2-bay drive-through carwash, a separate diesel fueling area and canopy, and additional parking.

The existing office building at the prospective site would be removed and replaced with the subject development proposal. Access to the site would remain the same with driveway access to/from both Maple Road on the west and Mequon Road on the north side of the property. If approved, the existing Kwik Trip store would be decommissioned and put up for sale (subject to a deed restriction that prohibits future use as a convenience store and fueling station).

Rezone

The property is in the “Lannon-Mequon Road Corridor” under the Village’s 2050 Comprehensive Plan and the current zoning is B-3: General Business. The applicant has filed a Rezone requesting the parcel be zoned into the B-5: Highway Business District. The B-5 District permits convenience food stores and petroleum service stations, while also allowing a self-service carwash as a conditional use.

Conditional Use Permits (CUPs)

This project includes two (2) Conditional Use Permit (CUP) applications. Each application is described in greater detail on the following pages, please refer to the below that lists each CUP for this case individually:

- Conditional Use in B-5 District
 - Self-Service Carwash
- Conditional Use in Groundwater Protection District (Relocation Clause)
 - Motor Vehicle Filling Station

Site Plan

As indicated in the applications and site/engineering plans, the proposed development includes a newly constructed building with 2-bay attached carwash, gas and diesel fueling positions and canopies, parking lot improvements, dumpster enclosure, stormwater pond, landscaping, and signage. More specifically the new Kwik Trip site will include the following features:

- Building Plans
 - 12,167 sq ft convenience store with attached 2-bay carwash
 - Brick façade with asphalt shingled roof
 - Gasoline and diesel fuel canopies

- Building and canopy fascia to tie in with franchise colors
 - 20.0' building height and 19.5' canopy height
- Parking Lot Improvements
 - 42 parking spaces
 - Two (2) ADA space
 - Designated truck parking area (no overnight parking)
 - Picnic tables
 - Carwash vacuum pad
- Landscape Plan
 - New perimeter lot landscaping with trees, shrubs, and perennials
 - Interior lot landscaping including parking lot and island landscaping
- Sign Plan
 - Two (2) freestanding monument signs
 - Building and canopy signs
 - Directional/wayfinding signs
 - Parking signs
- Storm Water Management
 - New on-site stormwater pond in southern portion of property

Parking, Access, and Traffic Circulation

As stated in the application, the new Kwik Trip facility is proposed to be constructed on the subject 4.37-acre site. The existing/vacant building will be removed and replaced with a convenience food store, twenty (20) regular fueling positions, diesel fueling positions, and a 2-bay car wash. Access to the site will remain at one location to Maple Road, directly across from Kleinmann Drive and one location to Mequon Road, just east of the Maple Road intersection. Both access driveways are unrestricted with full access turning movements to and from the mainline roadways. For reference, a site circulation plan was included in the site development plan and a Traffic Impact Analysis supplementing the application was also submitted and is attached.

Storm Water Management

The proposal is a redevelopment project including a new Kwik Trip convenience food store, gas and diesel fueling, self-service carwash, parking and driving surfaces, and other amenities. Hydrology as proposed will be similar to the existing condition. The total impervious surface area for the site is roughly 60%, and runoff from the majority of the proposed development will be conveyed to a wet detention pond in the southwest corner of the property, which will provide stormwater management for the site. Stormwater management requirements will be achieved utilizing overland flow coupled with a storm sewer conveyance system that routes stormwater runoff to a proposed wet detention pond. The wet detention pond will treat and detain the stormwater runoff prior to discharging it the public storm sewer system in Maple Road.

Utilities

Sanitary and water utilities serve the existing site. While no major changes or upgrades are anticipated by staff as part of this project, there are conditions of approval included requiring the applicant to address recommendations by the Superintendent of Water Utility and Superintendent of Wastewater Utility.

Landscaping and Buffering

New perimeter lot landscaping with trees, shrubs, and perennials is proposed per the landscape plan submitted. The bulk of the proposed landscaping is located in a narrow landscape strip along Lannon Road and in another strip along Maple Road. Interior lot landscaping is also proposed around perimeter parking lot areas and parking islands.

Lighting

A photometric lighting plan was submitted and is included with the site development plan. The site will include the following key lighting components:

- (19) Light poles at a height of sixteen (16) feet providing LED lighting throughout the vehicular circulation areas and exterior parking lot areas
- (44) Recessed LED downlight fixtures around building
- (28) LED mounted fixtures under gas and diesel canopies

Sign Plan

The applicant has proposed a total of (31) signs for the site. A sign plan was submitted illustrating the proposed signage. Please refer to the following list that provides a summary of the signs included in the submittal:

- (2) 24" LED Kwik Trip building sign
- (1) Carwash building directional sign
- (1) 18" LED Kwik Trip and 24" carwash building sign
- (1) Carwash enter sign
- (1) Carwash exit sign
- (2) Carwash informational signs
- (2) 24" LED Kwik Trip canopy signs
- (1) 18" LED diesel enter canopy sign
- (1) 18" LED diesel exit canopy sign
- (2) Driveway directional signs
- (6) 2-Hour parking signs
- (2) Employee parking signs
- (7) No parking signs
- (2) Freestanding monument signs

Staff Comments

Community Development: Planning and Zoning

The project site is in the "Lannon-Mequon Road Corridor" under the Village's 2050 Comprehensive Plan and is currently zoned B-3 General Business District. The applicant requested a rezone of the property to B-5 Highway Business District, as the B-5 District "is intended to provide for the orderly and attractive grouping at appropriate locations along principal highway routes of those businesses and customer service establishments which are logically related to and dependent upon highway traffic or which are specifically designed to serve the needs of such traffic."

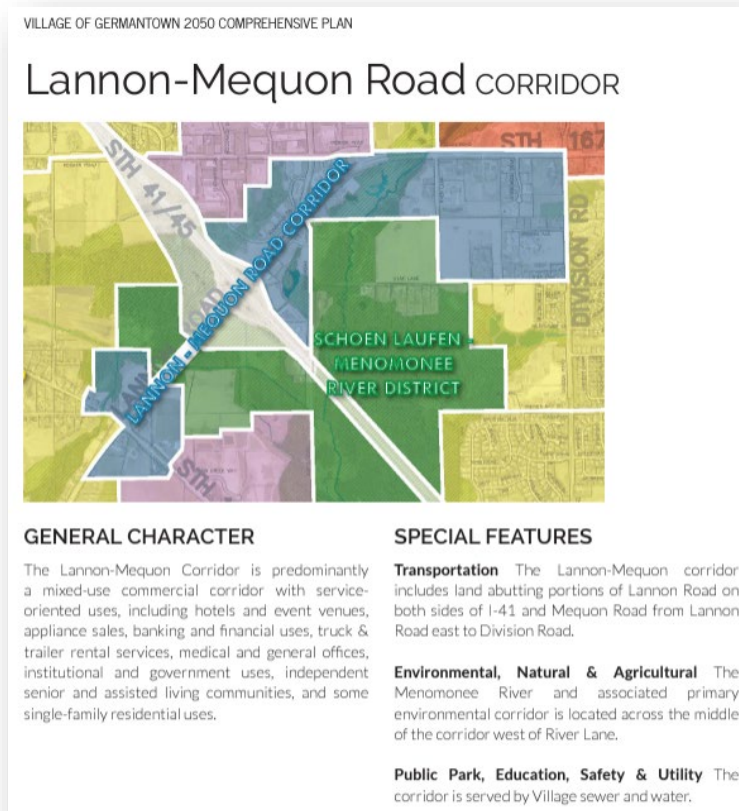
The proposed Kwik Trip facility meets the intent of the requested zone (B-5), and its land use elements are more permissible in the district in comparison to the current zoning designation (B-3). A self-service carwash is a conditional use in both zoning districts, but the B-5 District allows petroleum service stations by right rather than requiring a conditional use permit. Additionally, the intent of the B-3 District is clearly

geared towards revitalizing an established area such as Main Street. According to the zoning code, the B-3 District “is intended to provide for the orderly continuation and revitalization of the older established Main Street (central business district) area of the Village where uses are not exclusively of one type but, rather, mixed and include retail sales shops, wholesale and warehousing outlets, and institutional, recreational, and residential uses.”

The proposed Kwik Trip facility and requested zoning district are in line with the 2050 Comp. Plan designation for the site, which is the “Lannon-Mequon Road Corridor”. As stated above, the current zoning district is intended to support uses and business within a more traditional neighborhood or central business district, such as the Village Center District, whereas the proposed use and zoning designation is best served to be within a highway corridor and off a major thoroughfare that is near an interchange with Interstate 41.

In July 2024, the applicant brought forward the subject development to the Plan Commission for a consultation. The primary points of discussion included site design, traffic circulation, and architectural details of the Kwik Trip building and canopies. One of the points made to the applicant was to amend the standard Kwik Trip architectural appearance of the building and canopies and create a proposal upholding the Village’s “Germanic Theme” through the Mequon Road corridor. The before and after renderings are provided on the following page to show the changes made.

Staff recommends that the brick work on the gas and diesel canopy support poles extend to the base of each canopy roof to provide enhanced aesthetic detail. While this has been added as a condition of approval by staff, the Plan Commission shall decide and recommend on the final architectural details that should be incorporated into the building and canopy structures.





Building Rendering (Before Plan Commission Consultation)



Building Rendering (After Plan Commission Consultation)



Canopy Rendering (Before Plan Commission Consultation)



Canopy Rendering (After Plan Commission Consultation)

Given the nature of this proposal, site circulation and traffic impacts were discussed by the Plan Commission during the consultation. The applicant has since provided a detailed site circulation plan, which is included in the overall site development plan. A Traffic Impact Analysis was also submitted to supplement the application. These documents illustrate truck traffic movement as proposed throughout the site and also show that the driveway entrances will be improved and widened where allowed. The code permits a maximum of 40 feet in width for driveways at the right-of-way line and a maximum of 45 feet in width where they meet the adjoining roadway. The applicant will widen each driveway where permitted, which will improve the turning allowance and spacing for cars/trucks entering/exiting the site.

The Village Engineer reviewed the traffic study and concurred with the recommendation of adding a northbound right turn lane at the site entrance on Maple Road. This will eliminate the potential for stacking or sudden movements by vehicles trying to go around larger trucks that are making a right turn into the facility while going northbound on Maple Road.

As shown on the submitted site plan, a retaining wall is proposed along Lannon Road and is setback from the property line a distance that appears to be equal to or less than the height of the wall (at certain points along the wall where the height is 7 feet to 8 feet). Village code requires retaining walls to be setback a minimum distance equal to the height of the retaining wall from the base of the wall to the property line. Staff has a concern with the proximity of the retaining wall to the property line and has added a condition that the applicant clarify the setback and confirm compliance with code. This code requirement is a minimum standard, so discussion is warranted on if the distance of the wall to the property line should be increased. Staff also recommends that a fence or other barrier structure be added on top of the wall to prevent drivers from inadvertently driving over the edge of the wall.

The landscape screening along Lannon Road should be increased in height in order to buffer the height of the retaining wall. Currently the tree plantings in front of the wall are listed as six (6) foot plantings per plan, whereas the height of the wall is 8 feet in certain points.

On August 19, 2024, the Village Board passed a series of zoning code amendments to the Wellhead Protection ordinance under Section 17.40 of the zoning code. Included with the amendments is a provision allowing the relocation of pre-existing uses or facilities that are prohibited by the Wellhead Protection regulations. The relocation of such uses can be allowed through a Conditional Use Permit (CUP). The prohibited "motor vehicle filling station" is proposed in accordance with the relocation clause, thus requiring a CUP. Note that the owner of the property from which the pre-existing use or facility is relocating from (i.e. existing Kwik Trip property) shall record a deed restriction against the property that prohibits future uses and/or facilities that require a conditional use permit or are listed as a prohibited use per Wellhead Protection requirements.

Community Development: Inspection Services

State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services. The Village of Germantown is an authorized delegated agent of DSPS to provide all commercial plan review and inspection services through SAFEBuilt of Wisconsin and the Village of Germantown.

Public Works/Village Engineer

The Village Engineer has identified several technical issues and plan revisions that need to be resolved or otherwise addressed by the applicant prior to commencing construction activities. Staff is recommending conditional approval of the submitted applications subject to all outstanding items and issues identified in the following review memo being resolved and reflected in additional information and/or revised plan submitted to staff for further review, comment, and approval prior to commencing any site construction:

- November 26, 2024 – Review Memo from Village Engineer

Village Forester

The Village Forester has reviewed the submitted landscape plan and provided the comments below. A condition of approval has been included requiring the applicant to address the review comments and make the landscape plan contingent upon final approval/acceptance from the Village Forester. Review comments are as follows:

- *Identify if the trees off the southeast edge of the storm pond will be removed. If not, the grade changes to accommodate the pond, and planting a new border of trees under the canopy of the existing trees will negatively impact the health of the existing trees.*
- *Tree species diversity – The Village is trying to limit the planting of maple trees due to the high prevalence of this tree species in urban areas. This plan includes (29) maple trees. Additionally, the evergreen choices of white spruce and black hill spruce are both highly susceptible to needlecast diseases that impact the future health and aesthetics of these trees. Consider the following alternatives for maple trees, white spruce, and black hills spruce.*
 - *Deciduous trees (maple alternatives)*
 - *Kentucky Coffeetree (Gymnocladus dioicus)*
 - *London planetree (Platanus x acerifolia)*
 - *Tuliptree (Liriodendron tulipifera)*
 - *Evergreen Trees (spruce alternatives)*
 - *Norway spruce (Picea abies)*
 - *Serbian spruce (Picea omorika)*
 - *Concolor fir (Abies concolor)*
- *The location/spacing of newly planted trees along Maple Road, on private property, are acceptable in lieu of new development R-O-W street tree planting requirements.*

Fire and Police Departments

No Comments.

Groundwater Technical Review Committee

As previously mentioned, on August 19, 2024, the Village Board passed a series of code amendments to the Wellhead Protection provisions under Section 17.40 of the zoning code. Included with the amendments is a provision allowing the relocation of a pre-existing use or facility prohibited within a Groundwater Protection Overlay District. The relocation of such uses within a Groundwater Protection Overlay District can be allowed through a Conditional Use Permit.

In this instance, Kwik Trip, Inc. has requested a Conditional Use Permit to relocate their existing facility, which is classified as a “motor vehicle filling station” and prohibited under the Village’s Wellhead Protection regulations. The current Kwik Trip facility is located at W188 N10963 Maple Road while the proposed relocation property is located roughly 650 feet north at the subject development site addressed N112 W18741 Mequon Road (former PNC Bank). Both properties are within the same Groundwater Protection Overlay District.

Per Code Section 17.40, the applicant submitted the required documents for review by the Groundwater Technical Review Committee at its meeting on November 25, 2024. Those documents are attached to this memo and the Committee’s recommendation on the case is detailed at the end of this document. For reference, the Groundwater Technical Review Committee’s purpose and responsibilities are to:

- Provide objective and scientific technical review of request for conditional use permits and make recommendations to the Plan Commission and ultimately to the Village Board to grant or deny conditional use permits based upon the facts discovered in that review.
- To make recommendations on any and all conditions placed on a conditional use permit.
- To interpret the provisions of Code Section 17.40 (Wellhead Protection) and to provide guidance to the Village Planner/Zoning Administrator regarding potential amendments to and the administration and enforcement of the provisions under Section 17.40.
- To give advice on matters concerning the protection of Germantown’s groundwater resources.

VILLAGE STAFF RECOMMENDATIONS

APPROVE the Rezone of one (1) parcel comprised of 4.37 acres from B-3: General Business District to B-5: Highway Business District, as proposed.

APPROVE the Conditional Use Permit (CUP) for a *Self-Service Carwash* for Kwik Trip, Inc. for property located at N112 W18741 Mequon Road, subject to the following conditions:

1. The uses and activities allowed on the property shall be limited to those uses and activities specified in the Conditional Use Permit (CUP) application and project narrative dated October 14, 2024, and October 17, 2024, and supporting site plan documents revised dated September 5, 2024. Days and hours of operation shall be in accordance with those specified in the CUP supporting documents submitted to the Village.
2. The Owner/Operator is responsible for reporting any significant changes in the type, intensity, amount, or location of the land use and activities, days and hours of operation, size or location or other operational characteristics of said uses and activities authorized under this CUP to the Village Zoning Administrator.
3. If the use, activities and/or operation subject of this permit falls out of conformity with the conditions herein, or, where there is a change in the nature, character, intensity or extent of the activities or uses which causes problems or harmful effects that were not anticipated at the time of approval of this CUP, the Conditional Use Permit (CUP) may be modified or terminated by the Village Board by the amendment to or addition of conditions after public hearing thereon.
4. All temporary and permanent exterior signs require a permit and shall comply with all current sign regulations. Off-premises advertising and directional signage is regulated by the Village and requires a permit if/when allowed.
5. All future site improvements, including all building, parking area, landscaping, storm water management facilities, signage, exterior lighting, and any other improvements made to or on the property that are necessary for the land use and activities authorized under this CUP shall be submitted for review and approval by the Village through the Zoning Permit or Site Plan application process as determined by the Village Zoning Administrator. If required, Site Plan review and approval will include Plan Commission review and approval.
6. Building permits and commercial building code plan approval are required for the planned building and canopy construction. Contact SAFEbuilt staff in Inspection Services at Village Hall prior to any work for more information.
7. No overnight parking of semi-trailer trucks shall be permitted on site.
8. Pursuant to Section 17.47 of the Zoning Code, if the Village observes and/or receives complaints regarding negative impacts associated with and/or created by business-related activities conducted on the property, including but not limited to noise, dust or other airborne materials, the Property Owner/Operator shall work with the Village to identify the source of such impact(s), evaluate

- alternative mitigation measures, and implement a mutually-agreeable solution to mitigating the impact(s).
9. Applicant/owner/operator shall enter into an agreement with the Village in the form of a Memorandum of Understanding (MOU) that stipulates future financial contributions/proportionate costs the applicant/owner/operator would be required to make towards road alterations/improvements necessitated by traffic impacts associated with the site. The MOU shall address potential road alterations/improvements at the Maple Road site entrance across from Kleinmann Drive and the intersection of Maple Road/Mequon Road. The MOU shall be reviewed and approved by the Village Engineer and Village Attorney, prior to issuance of a building permit and commencement of construction activities for the new Kwik Trip facility. **(ADDED BY STAFF PER 12/16/24 VILLAGE BOARD MEETING)**

APPROVE the site development and building plans submitted by Kwik Trip, Inc. for a 12,167 square foot convenience food store with 2-bay attached carwash, gas and diesel fuel canopies, parking lot and driveway improvements, and landscaping installation for property is located at N112 W18741 Mequon Road, subject to the following conditions:

1. This approval is for the various plan sheets that comprise the site development plan set as noted below and is subject to compliance with all the conditions and requirements set forth herein and subsequently adopted and/or revised by the Plan Commission. Approval is granted for the following unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:
 - a. *Civil engineering plans dated October 9, 2024.*
 - b. *Landscaping plans dated October 9, 2024.*
 - c. *Photometric lighting plan dated October 9, 2024.*
 - d. *Architectural rendering set received October 21, 2024 (3 pages).*

If revised plan sheets are necessary, each revised sheet shall contain the date of said revision clearly stamped in the lower right corner.
2. Additional and/or altered landscaping shall be shown in a revised landscape plan review and approved by the Village Forester, including:
 - a. Taller landscape plantings (i.e. trees) shall be installed in front of the retaining wall along Lannon Road to better screen/buffer the view of the wall from drivers on Lannon Road.
 - b. Identify if the trees off the southeast edge of the storm pond will be removed. If not, the grade changes to accommodate the pond, and planting a new border of trees under the canopy of the existing trees will negatively impact the health of the existing trees.
 - c. Consider the following alternatives for maple trees, white spruce, and black hills spruce.
 - i. Deciduous trees (maple alternatives)
 - Kentucky Coffeetree (*Gymnocladus dioica*)
 - London planetree (*Platanus x acerifolia*)
 - Tuliptree (*Liriodendron tulipifera*)
 - ii. Evergreen Trees (spruce alternatives)
 - Norway spruce (*Picea abies*)
 - Serbian spruce (*Picea omorika*)
 - Concolor fir (*Abies concolor*)
3. The technical issues and plan revisions identified in the November 26, 2024,

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- memo from the Village Engineer shall be addressed in revised plan sheets and/or supplemental documents as necessary prior to commencing construction activities (excluding site demolition, early start site preparation, and footing & foundation installation).
4. State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services. The Village of Germantown is an authorized delegated agent of DSPS and may be used as an alternative to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown.
 5. Site plan shall be revised (or clarified) to denote a 40-foot maximum width for the driveway openings at the right-of-way line pursuant to Code Section 17.45(4)(c). This applies to the driveway entrances to and from the site at Maple Road and Mequon Road.
 6. The Village reserves the right to make future public road alterations and/or improvements in the form of traffic signals, allowed turning movements, and traffic flow patterns as it pertains to the driveway entrances to/from the site and the surrounding roadways of Maple Road and Mequon Road in general. Any proposed alterations/improvements shall be based off the Manual on Uniform Traffic Control Devices (MUTCD) standards and be reviewed and approved by the Village Engineer, Public Works and Highways Committee, and Village Board. **(ADDED BY PLAN COMMISSION)**
 7. Site plan shall be revised (or clarified) to verify the proposed retaining wall meets minimum setback requirements from the base of the wall to the property line at all points. A fence shall be added to the top of the retaining wall to prevent drivers from inadvertently driving over the wall. Final construction plans for the retaining wall, its material, and associated fence shall be stamped by a Professional Engineer (PE) and reviewed/approved by the Village Engineer. **(MODIFIED BY THE PLAN COMMISSION)**
 8. Per the Village's Superintendent of Wastewater Utility, the existing sample manhole shall be reconstructed to current Village requirements and detail.
 9. The canopy structures shall be modified by removing their proposed asphalt shingle roof above the traditional horizontal canopy roofline. **(MODIFIED BY PLAN COMMISSION)**
 10. Applicant/owner/operator shall construct a right turn northbound lane at the driveway entrance approach off Maple Road. An agreement for work within the Village right-of-way shall be signed and executed between the applicant/owner/operator and Village prior to work commencing, subject to Village Attorney review and approval.

APPROVE the Sign Plan for Kwik Trip, Inc. for property located at N112 W18741 Mequon Road, subject to the following conditions:

1. Applicant/owner shall obtain electrical/building permits from Building Inspection Services for sign installation.
2. Prior to permit issuance and sign installation, applicant/owner shall submit a revised sign plan illustrating that the wayfinding/directional signs comply with code and are no higher than four (4) feet from grade (as applicable to each sign).
3. Prior to permit issuance and sign installation, applicant/owner shall submit a revised sign plan modifying the two (2) freestanding ground signs to include the street address coordinates for the property, mounted on the base of each sign (min. 5-inch numbering). **(ADDED BY PLAN COMMISSION)**

GROUNDWATER TECHNICAL REVIEW COMMITTEE RECOMMENDATION

Based discussion and testimony at its November 25, 2024, meeting, the Groundwater Technical Review Committee recommended to **APPROVE** the Conditional Use Permit (CUP) to allow a *Motor Vehicle Filling Station* within a Groundwater Protection Overlay District, subject to the following conditions:

1. Applicant/owner shall provide current copies of all federal, state, and local facility operation approval or certificates and on-going environmental monitoring results to the Village.
2. Applicant/owner shall establish environmental or safety structures/monitoring to include an operation safety plan, material processes and containment, operations monitoring, best management practices, stormwater runoff management, and groundwater monitoring.
3. Replace equipment or expand in a manner that improves the environmental and safety technologies in existence.
4. Prepare, file, and maintain a current contingency plan which details the response to any emergency which occurs at the facility, including notifying municipal, county, and state officials. Provide a current copy to the Village.
5. To the extent feasible, based upon scientific, engineering and economic factors, all site, building and other improvements shall be repaired, rebuilt, expanded, relocated, or substituted using best management practices, designs and technologies which are state of the art, such that they diminish the potential for wellhead contamination.
6. To the extent feasible, based upon scientific, engineering, and economic factors, the replacement, substitution, or augmentation of equipment and machinery and the installation thereof shall utilize state of the art equipment and machinery which diminishes potential for wellhead contamination.
7. The relocation of pre-existing uses or facilities is allowed provided all the following are met:
 - a. The pre-existing use or facility is relocated within the same Groundwater Protection Overlay District.
 - b. The new location meets all applicable separation distance

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- requirements set forth under subsection 17.40.09.
- c. The use or facility can obtain all applicable Federal, State and Local approvals and permits.
 - d. The owner of the property or current site from which the pre-existing use or facility is relocating from records a deed restriction against the property that prohibits future uses and/or facilities that require a conditional use permit under subsection 17.40.11 or are listed as a prohibited use in subsection 17.40.11. A copy of the recorded deed restriction shall be submitted to the Village.
 - e. The owner of the property or operator of the pre-existing use or facility being relocated causes the property and all structures, equipment, and systems located thereon to be altered and/or restored to a physical condition that can be reasonably expect to not cause groundwater contamination, including but not limited to the removal of storage tanks, pipes, and systems that previously contained or utilized hazardous, flammable, or other liquids or materials that had the potential to contaminate the Village's groundwater resources. Such alteration and restoration shall meet all applicable Federal, State, and Local agency requirements (e.g. Wisconsin's Cleanup Rules and Laws). Documentation providing proof of meeting this condition shall be submitted to the Village.
8. Applicant/company shall add the Village as an insured party on their Pollution Liability Insurance Policy. Proof of compliance with this condition shall be submitted to and accepted by the Village. **(ADDED BY PLAN COMMISSION)**
9. Applicant/owner/operator shall enter into an agreement with the Village in the form of a Memorandum of Understanding (MOU) that stipulates future financial contributions/proportionate costs the applicant/owner/operator would be required to make towards road alterations/improvements necessitated by traffic impacts associated with the site. The MOU shall address potential road alterations/improvements at the Maple Road site entrance across from Kleinmann Drive and the intersection of Maple Road/Mequon Road. The MOU shall be reviewed and approved by the Village Engineer and Village Attorney, prior to issuance of a building permit and commencement of construction activities for the new Kwik Trip facility. **(ADDED BY STAFF PER 12/16/24 VILLAGE BOARD MEETING)**

**FEES MUST BE PAID AT TIME OF APPLICATION**

\$200 Plan Commission Consultation

\$1,085 Rezoning

\$1,240 PDD < 5 acres

\$2,095 PDD 5-20 acre site

\$3,460 PDD > 20 acre site

Date Paid: 11/13/24 Received by: DR

CHK# 2002347

REZONING & PDD APPLICATION

Pursuant to Section 17.51 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.**

1	APPLICANT OR AGENT	PROPERTY OWNER
	<u>KWIK TRIP, INC - JEFF OSBORN</u>	<u>STEVEN A. SCHELLIN</u>
	<u>1626 NIK ST</u>	<u>BEN HENRIE PROPERTIES - GERMANTOWN</u>
	<u>LA CROSSE, WI 54602</u>	
	<u>Phone (608) 793-5547</u>	<u>Phone (262) 391-8490</u>
	<u>E-Mail</u>	<u>E-Mail saschellin@gmail.com</u>

2	PROPERTY ADDRESS OR GENERAL LOCATION	TAX KEY NUMBER
	<u>N112W10741 MEQUAN RD</u>	<u>#4TNU282990</u>

3	REZONING REQUEST		
	<table border="1"><tr><td>FROM <u>B-3</u></td><td>TO <u>B-5</u></td></tr></table>	FROM <u>B-3</u>	TO <u>B-5</u>
FROM <u>B-3</u>	TO <u>B-5</u>		

4	METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY – REQUIRED
	Attach pages as necessary <u>SEE ATTACHED SURVEY</u>

5

PURPOSE OF REZONING REQUEST

Briefly describe why the applicant is rezoning the property. Include a description of the proposed use, including any new construction and number of employees, if applicable.

WE ARE PROPOSING TO REZONE FROM B-3 GENERAL BUSINESS TO B-5 HIGHWAY BUSINESS DISTRICT. REZONING IS REQUIRED TO ALLOW FOR PROPOSED CONVENIENCE STORE, GASOLINE + DIESEL FUELING STATION, AND CAR WASH USES.

6

SUPPORTING DOCUMENTATION:

- ☒ Plat of Survey (1:100)
- ☒ Site Plan and elevations for new construction (can be conceptual)

7

READ AND INITIAL THE FOLLOWING:

90 I understand that the Village is under no obligation to rezone property and that density and lot coverages provided in the Zoning Code are maximums. Actual build out will depend on myriad factors including topography and other natural conditions, surrounding neighborhood context and the detailed design of a project.

90 I understand that Village Staff, Plan Commission and/or Village Board may request additional information to properly evaluate this request and failure to provide such information may in itself be sufficient cause to deny the petition.

90 I am aware that this rezoning shall go into effect immediately upon the final approval of the Village Board and its execution of the rezoning ordinance

90 I understand that Village Staff is required to post one or more signs along the street frontage of and/or on the property subject of this application that indicate to nearby property owners and the general public that a public hearing of my application will be held before the Village Plan Commission and/or Village Board prior to action taken on this application; I hereby grant Village Staff permission to enter onto the property for the expressed purpose of installing said sign(s) provided Village Staff is responsible for installing, maintaining and removing said signs in a reasonable manner and time frame.

8

SIGNATURES – ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Matthew Bergard 11/13/2024
Applicant Date

Steven A. Schellin 10/20/2024
Owner Date

SCANNED



Village of



Germantown

Willkommen

Fee must accompany application

☒ \$1460

Paid

Date

10/21/24
chk # 2000216

CONDITIONAL USE PERMIT APPLICATION

Pursuant to Section 17.42 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

Kwik Trip, Inc - JEFF OSGOOD

1626 DAK ST

LACROSSE, WI 54602

Phone (608) 793-5547

Fax ()

E-Mail josgood@kwiktrip.com

PROPERTY OWNER

STEVEN A. SCHULLIN

BEN VENUE PROJECTS - GERMANTOWN

Phone (262) 391-8490

ssaschullin@gmail.com

2 TO WHOM SHOULD THE PERMIT BE ISSUED?

APPLICANT

3 PROPERTY ADDRESS

TAX KEY NUMBER

SE CORNER OF STH 167 AND MAPLE RD - N. 112W18741 Mequon Rd #GTNU 282990

4 DESCRIPTION OF EXISTING OPERATION

Briefly describe the use as it exists today, including use, size, number of employees, hours of operation, etc. If this permit involves new construction, describe the current status of the property, e.g. "vacant." Use additional pages as necessary.

CURRENTLY VACANT OFFICE BUILDING

5 DESCRIPTION OF PROPOSED OPERATION

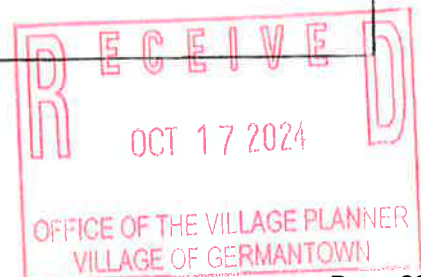
Write the name of the proposed conditional use exactly as it appears in the Municipal Code

WE ARE REQUESTING A CONDITIONAL USE FOR OUR CRAWFISH AND FOR WELLHEAD PROTECTION TEXT AMENDMENTS

Describe the proposed use, including size, number of employees, hours of operation and extent of any new construction/alterations.

PLEASE ATTACHED COVER LETTER CONTAINING THE ADDITIONAL REQUESTED INFO.

WE ARE PROPOSING A NEW RETAIL CONVENIENCE STORE W/ ATTACHED 2-BAY CRAWFISH.



METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY – REQUIRED

Attach pages as necessary

PLEASE SEE ATTACHED ALTA SURVEY

7 SUPPORTING DOCUMENTATION:

- ☒ Site Plan and elevations for new construction (can be conceptual)
- ☒ Photos of existing use and/or proposed use operating elsewhere
- ☐ _____
- ☐ _____

8 READ AND INITIAL THE FOLLOWING:

96 I understand that the Village is under no obligation to issue a Conditional Use Permit and will do so only if the applicant successfully demonstrates that the proposed use is harmonious with the neighborhood and the long range goals of the Village.

96 I will notify the Village if any aspects of the conditional use changes. I understand that failure to do so may result in the revocation of the CUP.

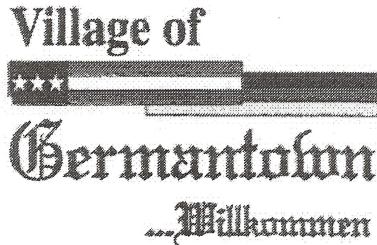
90 I understand that a Conditional Use Permit is valid only if the conditions and restrictions of the permit are met. I understand that failure to comply with any aspect of the permit may result in revocation.

90 I understand that Village Staff is required to post one or more signs along the street frontage of and/or on the property subject of this application that indicate to nearby property owners and the general public that a public hearing of my application will be held before the Village Plan Commission and/or Village Board prior to action being taken on this application; I hereby grant Village Staff permission to enter onto the property for the expressed purpose of installing said sign(s) provided Village Staff is responsible for installing, maintaining and removing said signs in a reasonable manner and timeframe.

9 SIGNATURES – ALL APPLICATIONS MUST BE SIGNED BY OWNER!

[Signature] 10/14/2024
Applicant Date

Steven S. Schellin 10/20/2024
Owner Date



Fee must accompany application

- ☐ \$700 Minor Addition
- ☐ \$1,240 Construction <10,000 SF
- ☐ \$2,095 Construction 10,000 SF to 50,000
- ☐ \$3,460 Industrial Construction >50,000 SF
- ☒ \$3,460 Commercial Construction >50,000
- ☐ \$200 Plan Commission Consultation
- ☐ \$125 Fire Department Plan Review

PAID DR DATE 10/21/2024

CHK# 2000215

SITE PLAN REVIEW APPLICATION

Pursuant to Section 17.43 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

Jeff Osgood

Kwik Trip, Inc.

Phone (608) 793-5547

E-Mail josgood@kwiktrip.com

PROPERTY OWNER

Steven Schellin

Ben Venue Properties - Germantown

Phone (262) 391-8490

E-Mail saschellin@gmail.com

2 PROPERTY ADDRESS

Southeast corner of Maple Road and Mequon Road

N112W18741 Mequon Road
Germantown, WI 53022

3 NEIGHBORING USES - Specify name and type of use, e.g. Enviro Tech - Industrial, Smith - Residential, etc.

North GKN Sinter Metals - Industrial Fire station	South STH 167	East B-3 Zoned	West GSC, Valley Cabinet, Northwestern Mutual, Milwaukee Laser & Body, Mequon Vein - Business
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4 READ AND INITIAL THE FOLLOWING:

X I am aware of the Village of Germantown ordinance requiring fire sprinklers in most new construction.

X I understand that all new development is subject to Impact and/or Connection Fees that must be paid before building permits will be issued.

X I understand that an incomplete application will be withdrawn from the Plan Commission agenda and that all resubmissions to the Plan Commission are subject to a new application fee.

5 SIGNATURES - ALL APPLICATION MUST BE SIGNED BY OWNER!

Jeff W. Osgood

07/02/2024

Applicant

Date

Steven A. Schellin July 2, 2024

Owner

Date



Store Engineering

FAX 608-793-6237

1626 Oak St., P.O. Box 2107
La Crosse, WI 54602

www.kwiktrip.com

Village of Germantown
Jeff Retzlaff
N112W17001 Mequon Rd
Germantown, WI 53022

October 14th, 2024

CUP Submittal

Mr. Retzlaff,

This letter is intended to accompany our submittal for our application to the Village of Germantown for the requested Conditional Use Permit applications for our proposed project located at the SE Corner of STH 167 and Maple Rd.

Kwik Trip, Inc. is proposing the construction of a 12,167 S.F. convenience store w/ attached 2-Bay attached Carwash and a detached dumpster enclosure and both gas and diesel Fueling Canopies. I have submitted this in digital format as well as one paper copy as requested. I have included a check for \$1460.00 per CUP application fee. If there is anything additional needed, please don't hesitate to reach out to me any time.

The proposed method of operation for this development will be consistent with that for our existing convenience stores within the area. The requested hours of operation will be 24 hours for all uses. The type of products that will be sold will be similar to that of our existing stores: gasoline, in line diesel, E-85, Unleaded 88, groceries, bakery and dairy, hot and cold food and beverages, tobacco products, off-sale alcohol products, lotto, convenience store merchandise, ice, and propane. The outside merchandising of products is being requested next to the store (ice and propane) and miscellaneous merchandising under the gas canopy. The proposed store is projected to have between 28-35 full and part time employees, with 2-8 on staff at any given time.

The proposed architectural plan will consist of a brick facade with asphalt shingled roof. The building and canopy fascia will tie in with franchise colors. We have also adjusted our normal architectural renderings to incorporate the requested German themed buildings. The prototype building is larger than previous years building. We have expanded the retail floor area as well as kitchen and mechanical space all on the main level with no basement. The total estimated project costs are \$2,500,000.

Kwik Trip would be happy to provide any additional information or answer any questions or concerns you may have with our submission. Please feel free to call me with any questions.

Sincerely,

Jeff Osgood – Sr. Development Manager - Store Engineering - Kwik Trip, Inc.
608-793-5547 - jsosgood@kwiktrip.com 1626 Oak St | P.O. Box 2107 | La Crosse, WI 54602

OUR MISSION

To serve our customers and community more effectively than anyone else by treating our customers, co-workers and suppliers as we, personally, would like to be treated, and to make a difference in someone's life.



KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

Site Data		Lat:	Long:
Description	Sq. Feet	Acres	
Lot Area	191,424	4.39	
Parking Data		Spaces	
Vehicular Parking	42		
Truck Parking	3		
Setbacks	B-3: General Business		
Front	20'		
Side	5'		
Rear	25'		
Green Space	Sq. Feet	Acres	
Area	75,883	1.74	
Percentage	40%		

SITE PLAN

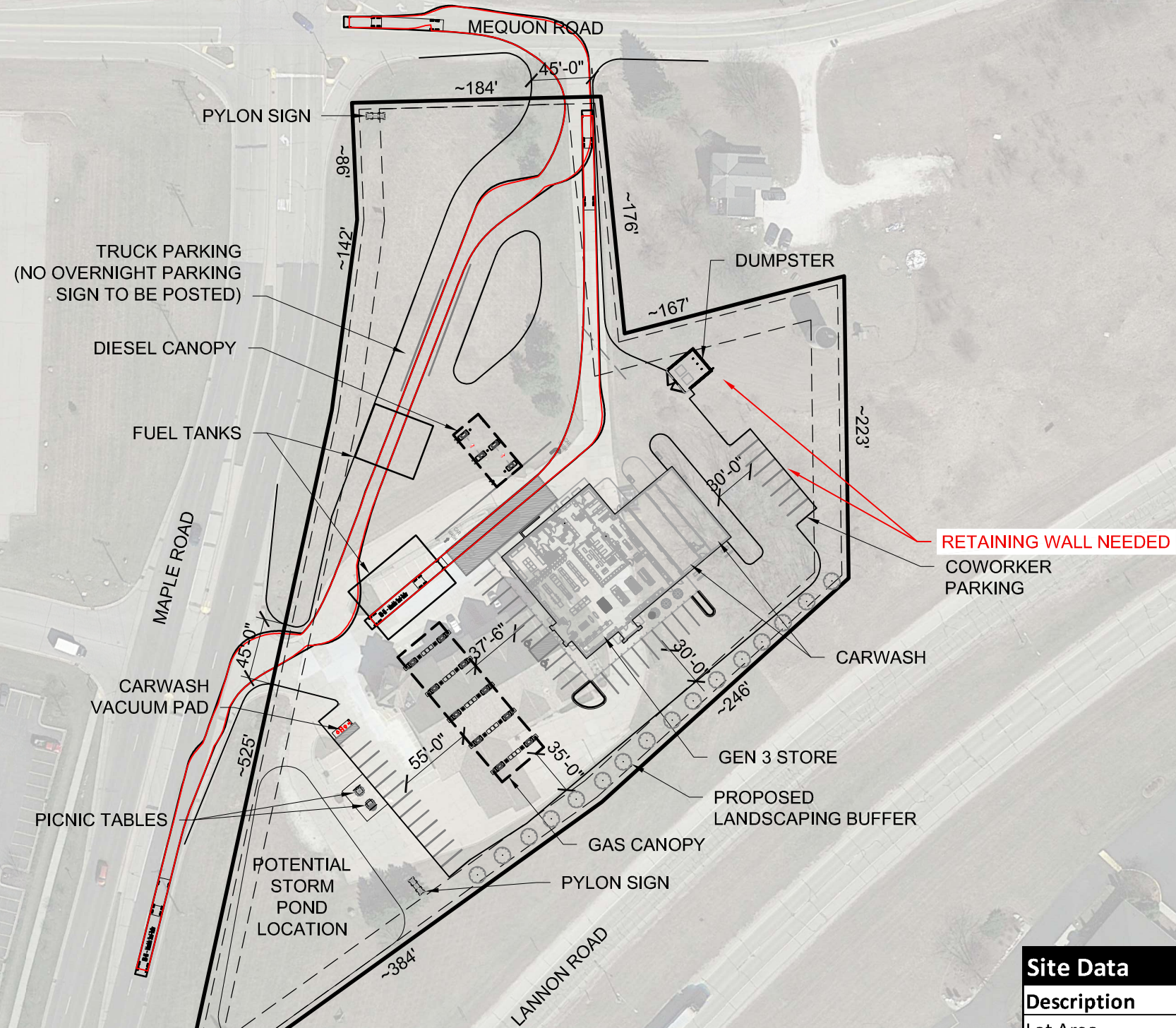
CONVENIENCE STORE #XXX
WITH 2 BAY CARWASH AND
2 LANE SIDE DIESEL
MAPLE ROAD
GEMANTOWN, WI

[illegible]

SP9



KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960



Site Data		Lat:	Long:
Description	Sq. Feet	Acres	
Lot Area	191,424	4.39	
Parking Data		Spaces	
Vehicular Parking	42		
Truck Parking	3		
Setbacks		B-3: General Business	
Front	20'		
Side	5'		
Rear	25'		
Green Space		Sq. Feet	Acres
Area	75,883	1.74	
Percentage	40%		



SITE PLAN

CONVENIENCE STORE #XXX
WITH 2 BAY CARWASH AND
2 LANE SIDE DIESEL
MAPLE ROAD
GEMANTOWN, WI

[illegible]

DRAWN BY	ERR
SCALE	1" = 100'-0"
PROJ. NO.	0001
DATE	2024-8-23
SHEET	SP9 (TM)

SP9 (TM)

REVIEW PLANS FOR:
KWIK TRIP #631
VILLAGE OF GERMANTOWN,
WASHINGTON COUNTY, WISCONSIN

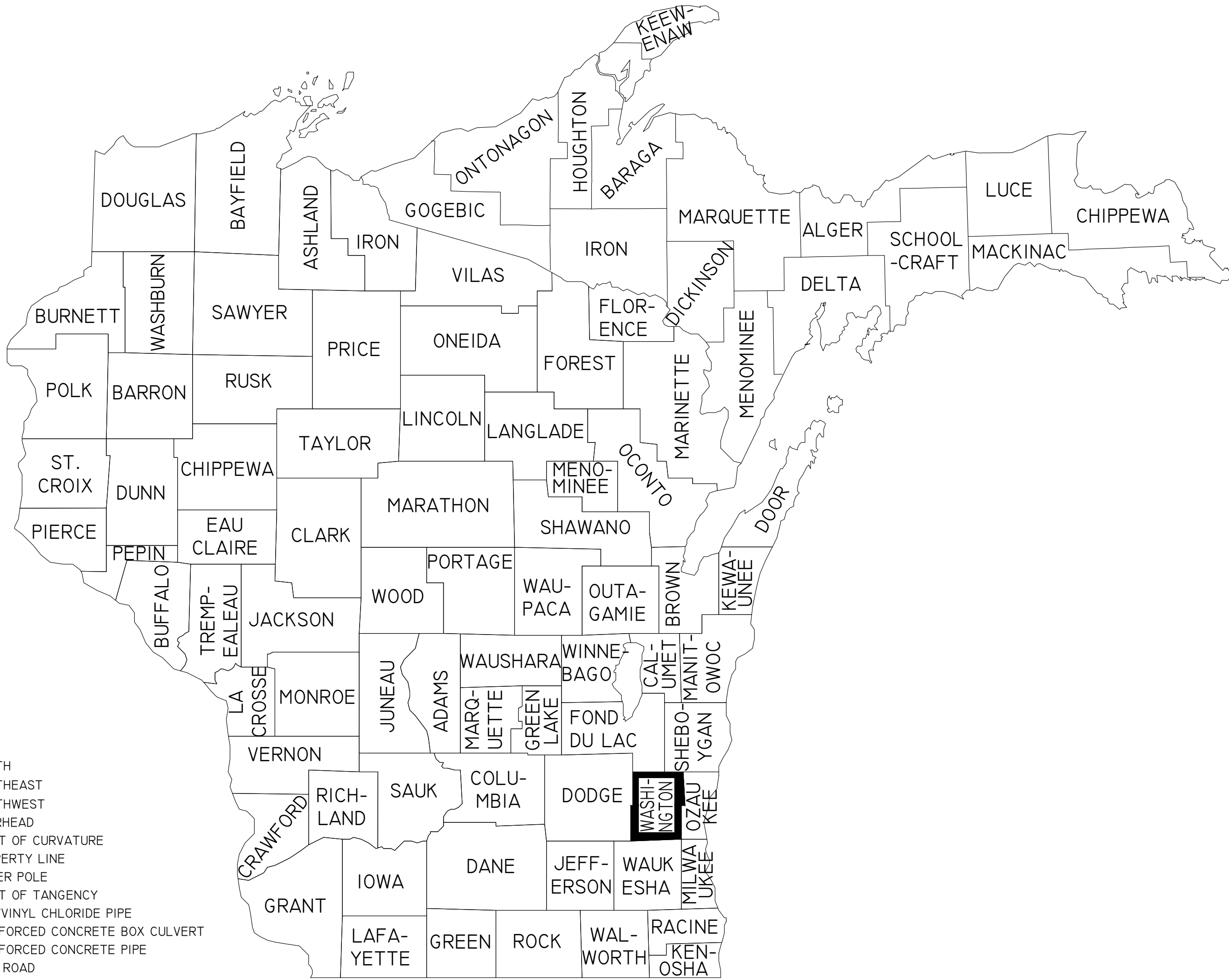
INDEX OF SHEETS

C001	TITLE SHEET
C010	ALTA
C020	DEMO PLAN
C100	SITE KEYNOTE PLAN
C180	SITE CIRCULATION PLAN
C181	SITE DIMENSION PLAN
C200	GRADING PLAN
C201	GRADING PLAN DETAIL - SOUTH
C202.1	GRADING PLAN DETAIL - NORTH
C202	GRADING PLAN SPOT DETAIL - SOUTH
C202.1	GRADING PLAN SPOT DETAIL - NORTH
C203	CANOPY AND TANK GRADING DETAILS
C204	ACCESSIBILITY PLAN
C300	STORM SEWER PLAN
C400	UTILITY PLAN
C401	UTILITY NOTES
C500	SITE PLAN DETAILS
C501	SITE PLAN DETAILS
C502	SITE PLAN DETAILS
C600	EROSION CONTROL PLAN
C601	EROSION CONTROL NOTES
C602	EROSION CONTROL DETAILS
C603	EROSION CONTROL DETAILS
C700	LANDSCAPE PLAN
C701	LANDSCAPE PLAN
C702	LANDSCAPE PLAN
C703	LANDSCAPE DETAILS
C800	PHOTOMETRIC LIGHTING PLAN

TOTAL SHEETS = 28

LIST OF STANDARD ABBREVIATIONS

B	AND	(N)	NORTH
AB	AUGER BORING	(NE)	NORTHEAST
ADT	AVERAGE DAILY TRAFFIC	(NW)	NORTHWEST
BC	BOTTOM OF CURB	OH	OVERHEAD
BM	BENCHMARK	PC	POINT OF CURVATURE
BOC	BACK OF CURB	P/L	PROPERTY LINE
BR	BOTTOM OF RAMP	PP	POWER POLE
BS	BOTTOM OF STEPS	PT	POINT OF TANGENCY
BW	BOTTOM OF WALL	PVC	POLYVINYL CHLORIDE PIPE
CB	CATCH BASIN	RCB	REINFORCED CONCRETE BOX CULVERT
CMAC	CORRUGATED METAL ARCH CULVERT	RCP	REINFORCED CONCRETE PIPE
CMBC	CORRUGATED METAL BOX CULVERT	RR	RAIL ROAD
CMP	CORRUGATED METAL PIPE	R/W	RIGHT OF WAY
CO	CLEANOUT	(S)	SOUTH
CONC.	CONCRETE	SAN	SANITARY SEWER
CPP	CORRUGATED PLASTIC PIPE	SB	SOIL BORING
DGB	DENSE GRADED BASE	SS	STORM SEWER
DIP	DUCTILE IRON PIPE	STM	STORM
D/S	DOWNSTREAM	(SW)	SOUTHWEST
(E)	EAST	TC	TOP OF CURB
ELEV.	ELEVATION	TBR	TO BE REMOVED
EOG	EDGE OF GRAVEL	TLE	TEMPORARY LIMITED EASEMENT
FFE	FINISHED FLOOR ELEVATION	TNH	TOP NUT FIRE HYDRANT
FG	FINISH GRADE	TP	TEST PIT
F.O.	FIBER OPTIC	TR	TOP OF RAMP
INL	INLET	TYP.	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE PIPE	TS	TOP OF STEPS
HMA	HOT MIX ASPHALT	TW	TOP OF WALL
HP	HIGH POINT	U/S	UPSTREAM
IE	INVERT ELEVATION	VAR.	VARIES
LF	LINEAL FEET	(W)	WEST
LP	LOW POINT		
MEG	MATCH EXISTING GRADE		
MH	MANHOLE		



LEGEND

	BENCHMARK
	1" IRON BAR
	EXISTING MANHOLE
	EXISTING TELEPHONE MANHOLE
	EXISTING STORM SEWER MANHOLE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER VALVE
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING WATER SHUTOFF
	EXISTING DECIDUOUS TREE
	EXISTING CONIFEROUS TREE
	EXISTING GAS VALVE
	EXISTING CURB INLET
	EXISTING WELL
	TEST PIT LOCATION
	SOIL BORING
	EXISTING AIR CONDITIONING UNIT
	EXISTING GAS METER
	EXISTING ELECTRIC METER
	EXISTING UTILITY PEDESTAL
	EXISTING RAILROAD TRACKS
	EXISTING TREE LINE
	EXISTING GUY POLE
	EXISTING CABLE TV
	EXISTING FIBER OPTIC CABLE
	EXISTING UNDERGROUND GAS
	EXISTING UNDERGROUND ELECTRIC
	EXISTING UNDERGROUND TELEPHONE
	EXISTING OVERHEAD UTILITIES
	EXISTING WATER MAIN
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING PROPERTY LINE
	PROPOSED HANDICAP PARKING
	PROPOSED CURB STOP
	PROPOSED HYDRANT
	PROPOSED WATER VALVE
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	PROPOSED FORCE MAIN
	PROPOSED SANITARY SEWER LATERAL
	PROPOSED WATER LATERAL
	PROPOSED WATER MAIN
	PROPOSED PUMP STATION
	PROPOSED SANITARY MANHOLE
	PROPOSED STORM MANHOLE
	PROPOSED CURB INLET
	PROPOSED CATCH BASIN
	PROPOSED CLEANOUT
	PROPOSED DRAINAGE FLOW
	PROPOSED SLOPE
	PROPOSED CURB & GUTTER
	PROPOSED REJECT CURB & GUTTER
	PROPOSED MOUNTABLE CURB & GUTTER
	EXISTING GROUND CONTOUR (INTERVAL-1 FT.)
	PROPOSED GROUND CONTOUR (INTERVAL-1 FT.)
	PROPOSED SPOT ELEVATION (TOP OF CURB)
	PROPOSED SPOT ELEVATION (BOTTOM OF CURB)
	PROPOSED SILT FENCE
	PROPOSED INLET PROTECTION
	PROPOSED RIPRAP
	PROPOSED EROSION MAT
	PROPOSED SAWCUT
	PROPOSED DRAINAGE SWALE



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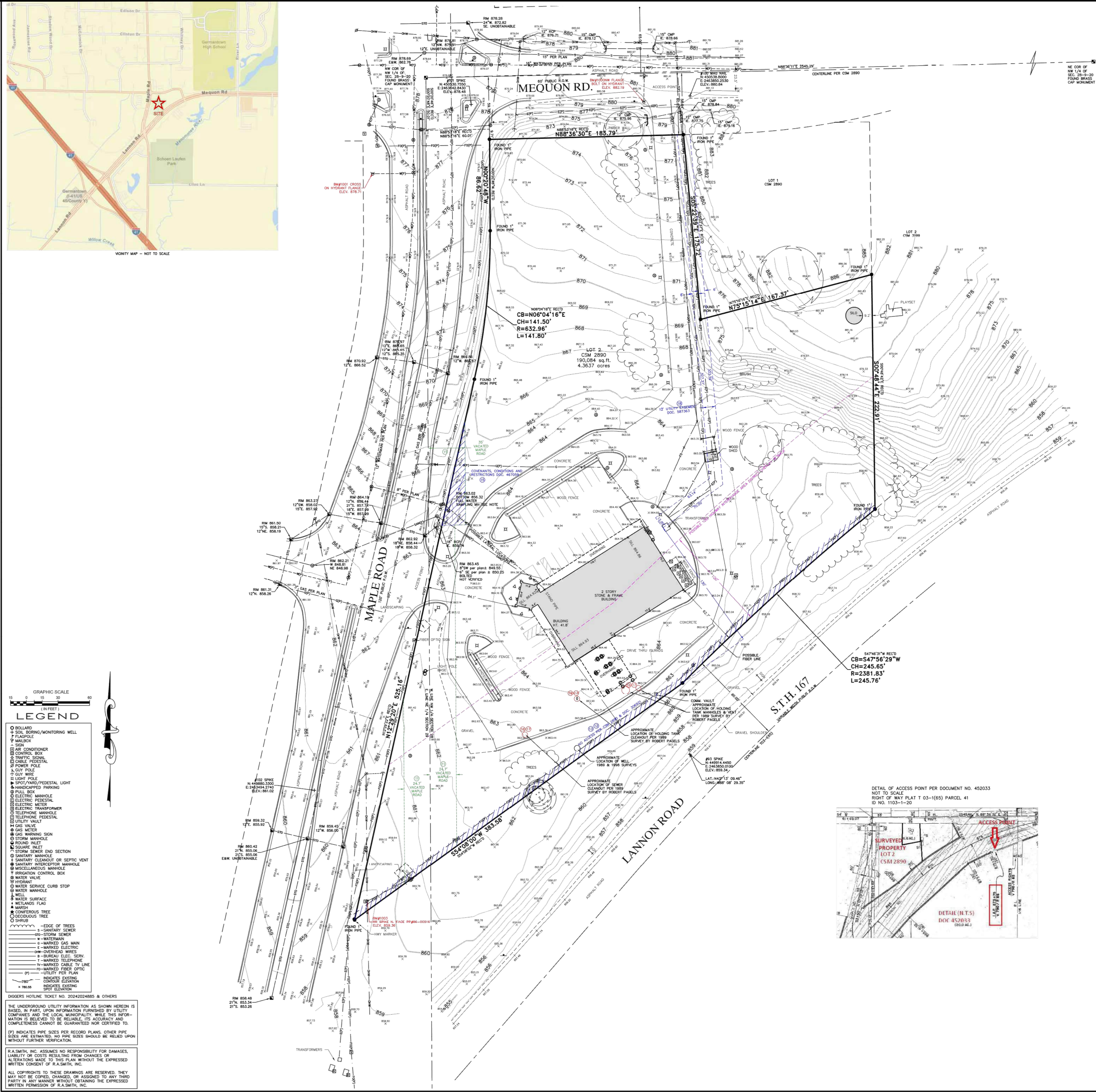
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STAR TM

STORES

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LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960



TITLE SHEET	CONVENIENCE STORE #631			STH 167 & MAPLE ROAD GERMANTOWN, WI
#	DATE	DESCRIPTION		
				
DRAWN BY	NAP			
SCALE	GRAPHIC			
PROJ. NO.	11757			
DATE	10/09/24 - REVIEW DOCUMENTS			
SHEET	C001			



ALTA/NSPS LAND TITLE SURVEY STORE 631 - GERMANTOWN

Known as N112 W18741 Mequon Road and W188N1116, W188N1175S & W188 N11762 Maple Road, in the Village of Germantown, Washington County, Wisconsin.

Lot Two (2) of CERTIFIED SURVEY MAP No. 2890 recorded in the Office of the Register of Deeds for Washington County, Wisconsin on April 29, 1986, in Volume 16, Pages 129-132, as Document No. 490681, said certified survey map being a part of the Northwest 1/4 of the Section 28 and Northeast 1/4 of the Northwest 1/4 of the Section 29, Township 9 North, Range 20 East, in the Village of Germantown, Washington County, Wisconsin.

Prepared for: Kwik Trip, Inc.
Survey No. 157610-RMK

A. Basis of Bearings

Bearings are based on the North line of the Northwest 1/4 of Section 28.9.20, which bears North 69°36'57" East, Wisconsin State Plane Coordinate System, South Zone (NAD83/2011).

B. Title Commitment

This survey was prepared based on First American Title Insurance Company National Commercial Services title commitment number NCS-1212460-MAD, commitment date March 15, 2024, which lists the following easements and/or restrictions from schedule B-ii:

1-3, 5, 10. Visible evidence shown, if any.

4, 6-9, 19. Not surveyed related.

11. Rights for entrance to, maintenance, construction, or repair of any utility structures, improvements or services which may be under the surface of the portion of the insured premises lying within vacated Maple Road, pursuant to Section 66.1005(2) of Wisconsin Statutes.

Resolution No. 13-86, resolution regarding discontinued portion of Maple Road as set forth in Quit Claim Deed recorded May 09, 1996 in Volume 889 of Records, Page 589 as Document No. 461363. Lies within or crosses the surveyed property - its location is shown.

12. Easements, dedications, reservations, provisions, relinquishments, reverts, certificates, and any other matters as provided for or delineated on Certified Survey Map No. 2890 recorded April 29, 1986, in Volume 16, Pages 129-132, as Document No. 490681 referenced in the legal description contained herein. Reference is hereby made to said plat for particulars. Lies within or crosses the surveyed property - its location is shown.

13. Covenants, Conditions and Restrictions as set forth in document recorded on April 07, 1969 in Volume 463, Page 617 as Document No. 306921. Lies within or crosses the surveyed property - its location is shown.

14. Covenants, Conditions and Restrictions as set forth in Quit Claim Deed recorded on May 07, 1963 in Volume 790 of Records, Page 86 as Document No. 452033. Does not lie within or cross the surveyed property - its location is shown-see detail. Access point is on the South side of Lannon Road, East of Surveyed property.

15. Covenants, Conditions and Restrictions as set forth in deed recorded on May 14, 1984 in Volume 827, Page 126 as Document No. 467059. Lies within or crosses the surveyed property - its location is shown.

16. Holding Tank Agreement

Dated: September 13, 1986
Parties: Village of Germantown, Washington County, State of Wisconsin and Ron Robbins a/k/a Ronald W. Robbins
Recorded: September 23, 1986 in Volume 910 of Records, Page 119
Instrument No. 498849. Lies within or crosses the surveyed property - it is a blanket easement - location of tank, vent and cleanout shown per 1989 survey by Robert Pagels.

17. Holding Tank Agreement

Dated: September 13, 1991
Parties: Village of Germantown, Washington County, State of Wisconsin and Kilbourn State Bank
Recorded: September 30, 1991 in Volume 1144, Page 152
Instrument No. 565808. Lies within or crosses the surveyed property - it is a blanket easement - location of tank, vent and cleanout shown per 1989 survey by Robert Pagels.

18. Utility Easement to Wisconsin Electric Power Company and Wisconsin Bell, Inc., dated October 07, 1991, recorded/filled October 25, 1991 in Volume 1149, Page 649 as Document No. 587363. Lies within or crosses the surveyed property - its location is shown.

C. Flood Note

According to Flood Insurance rate map of the Village of Germantown, community panel number 55131C23577, effective date of 11/20/2013, this site falls in zone X (areas determined to be outside the 0.2% annual chance floodplain).

D. Parking Spaces

There are 33 total parking spaces consisting of 31 regular and 2 handicapped parking spaces marked on this site.

E. Elevations

Elevations refer to NAVD83 Datum. Starting benchmark - Northwest 1/4 corner Section 28.9.20. Brass cap monument elevation 877.87'

F. Municipal Zoning

The zoning information listed below is taken from a Zoning Report prepared by The Village of Germantown, dated May 30, 2024.

Zoning Classification: B-3 General Business; Highway Interchange Over Lay District (HIA)

Setback Requirements, not specified in letter. Listed setbacks per Zoning code provided with Letter as follows:

Frontage structures

Lot Frontage at Setback

Front yard

Side yards

Rear yards

Number of stories

Accessory Building

Front yard

Side yards

Rear yard

Building Height

Principal building

Accessory building

HIA - Highway Interchange Area District (Overlay District)

Setback

Setback from intersecting highway shall be 160' from Centerline or 100' from the right of way line (SHOWN), whichever is greater, or 50 feet from the right-of-way of a frontage road

Parking Requirements 1 space for each 200 square feet of floor area, plus 1 space for each 2 employees.

The subject parcel is located within a wetland protection area, which may impact sign design and placement.

G. Notes

As to Table A Item 11

Surveyor's responsibility to coordinate markings shall be limited to one marking request to 811 (national "call before you dig" number) based on the property address, as provided by the client.

Note to the client, insurer, and lender - With regard to Table A, Item 11, information from the sources checked within will be combined with observed evidence of utilities pursuant to Section 5.6 iv. To develop a view of the underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response.

As of the field date indicated below in certificate (most recent site visit/inspection), it appears some underground utilities were not marked. This affected the surveyor's assessment of the location of the utilities resulting in partial illustration and/or mapping per plan. Where additional or more detailed information is required, the client is advised that excavation may be necessary.

There are proposed changes in street right of way lines. Document 467059 (Exception 15 - blue hatch) indicates area subject to dedication upon request.

There is no visible evidence of recent street or sidewalk construction or repairs observed in the process of conducting the fieldwork.

The area computed land area of Lot 2 does not match CSM 2890, and is less than the platted Lot by 1,956 s.f. or 0.045 ac.

Sanitary manhole note - from Timothy Zimmerman at Village (tzimmerman@germantownwi.gov)
- Misc Manhole near entrance to Maple Road is a Sanitary manhole. We find the manhole full of water.

To: Kwik Trip, Inc., a Wisconsin corporation
First American Title Insurance Company National Commercial Services

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS and includes items 1.2, 2.4, 3.4, 5.6(a), 6(b), 7(a), 7(c), 8, 9, 11(a), 11(b), 14, 17, 18, 20(a) and 20(b) of Table A thereof. The fieldwork was completed on May 23, 2024.

Date of Plat or Map: June 12, 2024

I CERTIFY, that this survey was prepared under my supervision and is correct to the best of my professional knowledge and belief and complies with Chapter A-E 7 of the Wisconsin Administrative Code.

John P. Casucci
Professional Land Surveyor
Registration Number S-2055
john.casucci@ra-smith.com

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rsmith@ra-smith.com

SHEET 1 OF 1

Kwik TRIP

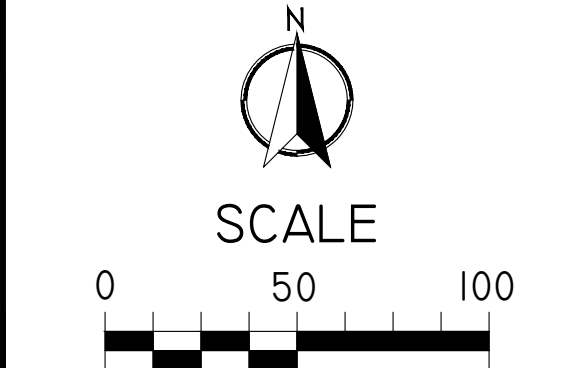
STORES

Kwik STAR

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KWIK TRIP, Inc.
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FAX (608) 781-8960

REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
REI Engineering, INC.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9786 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



ALTA
CONVENIENCE STORE #631
STH 167 & MAPLE ROAD
GERMANTOWN, WI

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DRAWN BY: NAP
SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: C010

1. SAWCUT AND REMOVE ASPHALT.
2. REMOVE MECHANICAL (TYP.)
3. REMOVE CURB / CURB & GUTTER.
4. REMOVE CONCRETE PAVEMENT.
5. REMOVE SIGNAGE.
6. REMOVE AND RELOCATE HYDRANT.
7. REMOVE LIGHT POLE.
8. REMOVE BUILDING.
9. REMOVE RETAINING WALL.
10. REMOVE UTILITIES AND APPURTENANCES.
11. REMOVE FENCING.
12. REMOVE PULL BOX.
13. REMOVE GRAVEL.
14. REMOVE TREES/LANDSCAPING.
15. REMOVE SILO.
16. REMOVE CULVERT.



STORES

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CONVENIENCE STORE #631

SIH 167 & MAPLE ROAD
GERMANTOWN, WI

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DRAWN BY NAP

SCALE GRAPHIC

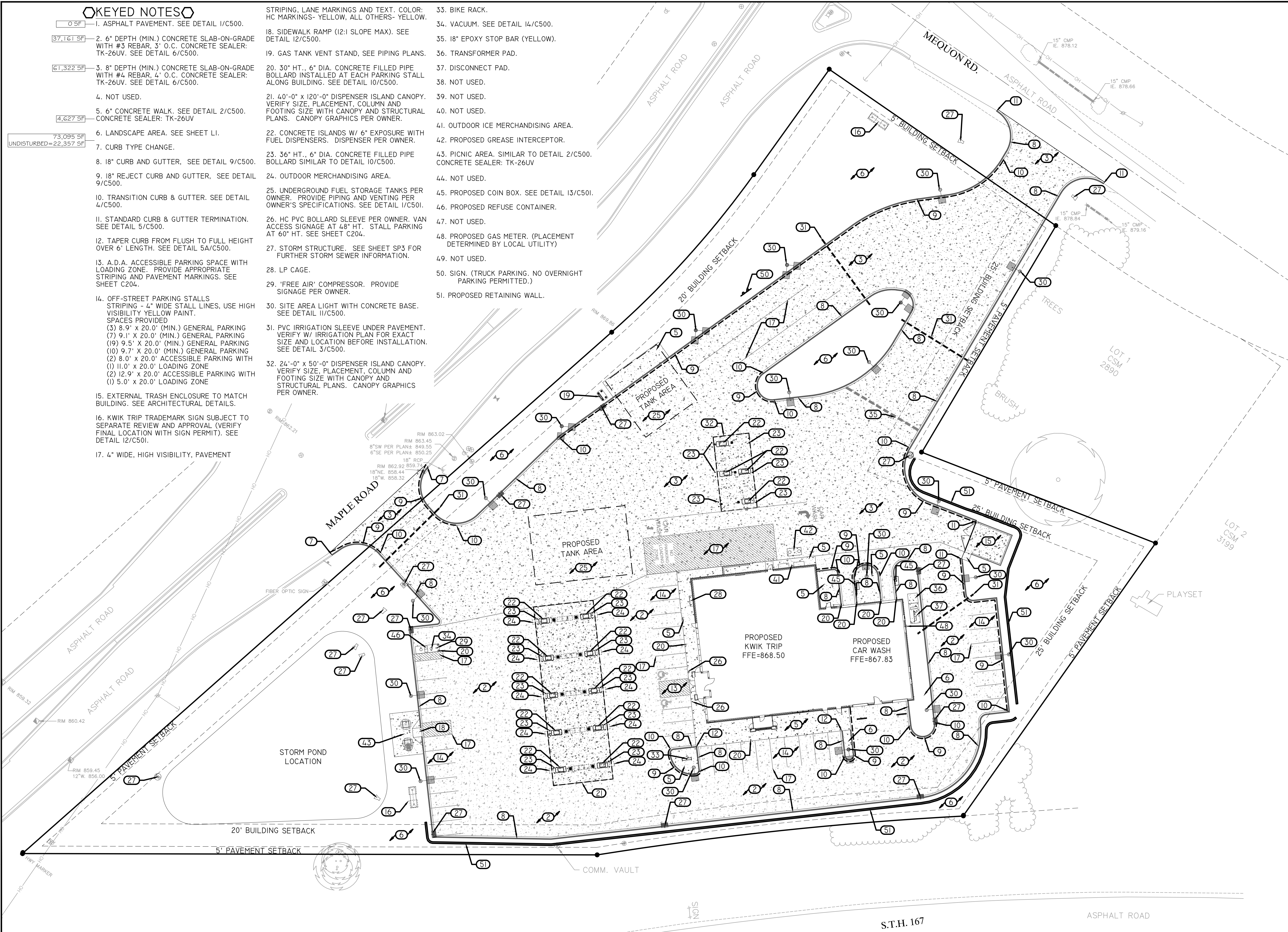
PROJ. NO. 11757

DATE 10/09/24 - REVIEW DOCUMENTS

SHEET

C030

DRAWING FILE: Q:\11700-11799\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C100-SITE KEYNOTE PLAN.DWG LAYOUT: C100
PLOTTED: OCT 08, 2024 - 3:30PM PLOTTED BY: TODDW



KEYED NOTES

- 0.5' 1. ASPHALT PAVEMENT. SEE DETAIL 1/C500.
- 37,161 5' 2. 6" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #3 REBAR, 3" O.C. CONCRETE SEALER: TK-26UV. SEE DETAIL 6/C500.
- 61,322 5' 3. 8" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #4 REBAR, 4" O.C. CONCRETE SEALER: TK-26UV. SEE DETAIL 6/C500.
4. NOT USED.
- 4,627 5' 5. 6" CONCRETE WALK. SEE DETAIL 2/C500. CONCRETE SEALER: TK-26UV
- 73,095 5' 6. LANDSCAPE AREA. SEE SHEET LI.
- UNDISTURBED=22,357 5' 7. CURB TYPE CHANGE.
8. 18" CURB AND GUTTER. SEE DETAIL 9/C500.
9. 18" REJECT CURB AND GUTTER. SEE DETAIL 9/C500.
10. TRANSITION CURB & GUTTER. SEE DETAIL 4/C500.
11. STANDARD CURB & GUTTER TERMINATION. SEE DETAIL 5/C500.
12. TAPER CURB FROM FLUSH TO FULL HEIGHT OVER 6' LENGTH. SEE DETAIL 5A/C500.
13. A.D.A. ACCESSIBLE PARKING SPACE WITH LOADING ZONE. PROVIDE APPROPRIATE STRIPING AND PAVEMENT MARKINGS. SEE SHEET C204.
14. OFF-STREET PARKING STALLS. STRIPING - 4" WIDE STALL LINES, USE HIGH VISIBILITY YELLOW PAINT. SPACES PROVIDED
(3) 8.9' x 20.0' (MIN.) GENERAL PARKING
(7) 9.1' x 20.0' (MIN.) GENERAL PARKING
(9) 9.5' x 20.0' (MIN.) GENERAL PARKING
(10) 9.7' x 20.0' (MIN.) GENERAL PARKING
(2) 8.0' x 20.0' ACCESSIBLE PARKING WITH
(1) 11.0' x 20.0' LOADING ZONE
(2) 12.9' x 20.0' ACCESSIBLE PARKING WITH
(1) 5.0' x 20.0' LOADING ZONE
15. EXTERNAL TRASH ENCLOSURE TO MATCH BUILDING. SEE ARCHITECTURAL DETAILS.
16. KWIK TRIP TRADEMARK SIGN SUBJECT TO SEPARATE REVIEW AND APPROVAL (VERIFY FINAL LOCATION WITH SIGN PERMIT). SEE DETAIL 12/C501.
17. 4" WIDE, HIGH VISIBILITY, PAVEMENT STRIPING, LANE MARKINGS AND TEXT. COLOR: HC MARKINGS- YELLOW, ALL OTHERS- YELLOW.
18. SIDEWALK RAMP (12:1 SLOPE MAX). SEE DETAIL 12/C500.
19. GAS TANK VENT STAND. SEE PIPING PLANS.
20. 30" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD INSTALLED AT EACH PARKING STALL ALONG BUILDING. SEE DETAIL 10/C500.
21. 40'-0" x 120'-0" DISPENSER ISLAND CANOPY. VERIFY SIZE, PLACEMENT, COLUMN AND FOOTING SIZE WITH CANOPY AND STRUCTURAL PLANS. CANOPY GRAPHICS PER OWNER.
22. CONCRETE ISLANDS W/ 6" EXPOSURE WITH FUEL DISPENSERS. DISPENSER PER OWNER.
23. 36" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD SIMILAR TO DETAIL 10/C500.
24. OUTDOOR MERCHANDISING AREA.
25. UNDERGROUND FUEL STORAGE TANKS PER OWNER. PROVIDE PIPING AND VENTING PER OWNER'S SPECIFICATIONS. SEE DETAIL 1/C501.
26. HC PVC BOLLARD SLEEVE PER OWNER. VAN ACCESS SIGNAGE AT 48" HT. STALL PARKING AT 60" HT. SEE SHEET C204.
27. STORM STRUCTURE. SEE SHEET SP3 FOR FURTHER STORM SEWER INFORMATION.
28. LP CAGE.
29. 'FREE AIR' COMPRESSOR. PROVIDE SIGNAGE PER OWNER.
30. SITE AREA LIGHT WITH CONCRETE BASE. SEE DETAIL 11/C500.
31. PVC IRRIGATION SLEEVE UNDER PAVEMENT. VERIFY W/ IRRIGATION PLAN FOR EXACT SIZE AND LOCATION BEFORE INSTALLATION. SEE DETAIL 3/C500.
32. 24'-0" x 50'-0" DISPENSER ISLAND CANOPY. VERIFY SIZE, PLACEMENT, COLUMN AND FOOTING SIZE WITH CANOPY AND STRUCTURAL PLANS. CANOPY GRAPHICS PER OWNER.
33. BIKE RACK.
34. VACUUM. SEE DETAIL 14/C500.
35. 18" EPOXY STOP BAR (YELLOW).
36. TRANSFORMER PAD.
37. DISCONNECT PAD.
38. NOT USED.
39. NOT USED.
40. NOT USED.
41. OUTDOOR ICE MERCHANDISING AREA.
42. PROPOSED GREASE INTERCEPTOR.
43. PICNIC AREA. SIMILAR TO DETAIL 2/C500. CONCRETE SEALER: TK-26UV
44. NOT USED.
45. PROPOSED COIN BOX. SEE DETAIL 13/C501.
46. PROPOSED REFUSE CONTAINER.
47. NOT USED.
48. PROPOSED GAS METER. (PLACEMENT DETERMINED BY LOCAL UTILITY)
49. NOT USED.
50. SIGN. (TRUCK PARKING. NO OVERNIGHT PARKING PERMITTED.)
51. PROPOSED RETAINING WALL.

Kwik
TRIP
TM

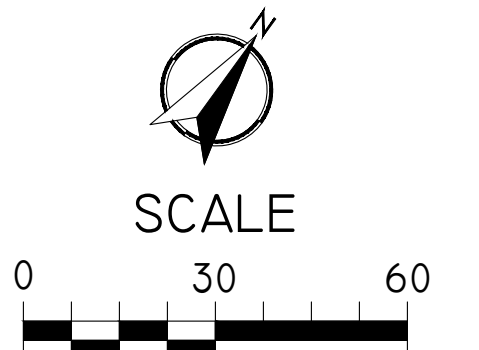
STORES

Kwik
STAR
TM

STORES

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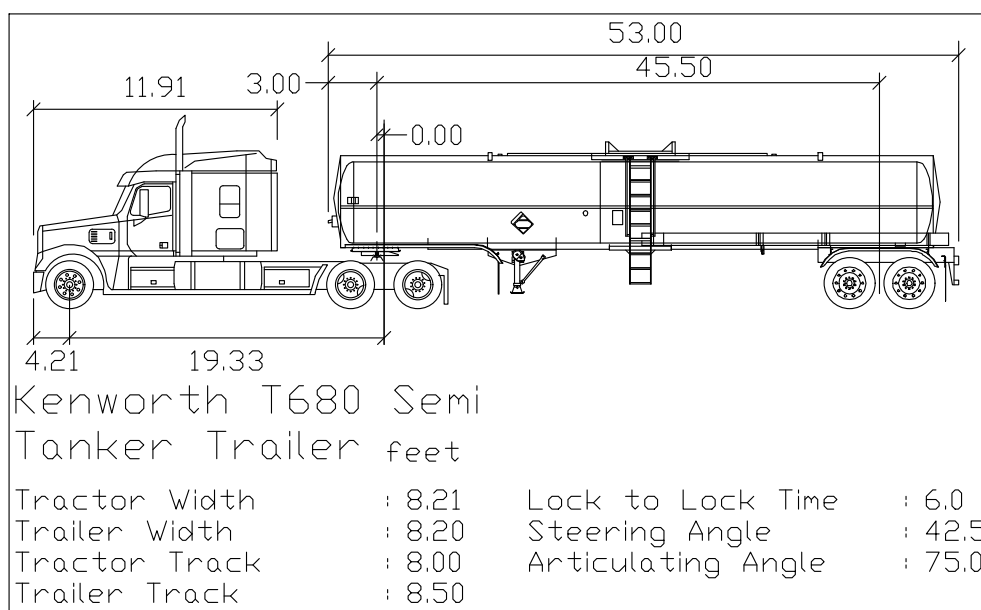
SITE KEYNOTE PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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PROJ. NO.	11757
DATE	10/09/24 - REVIEW DOCUMENTS
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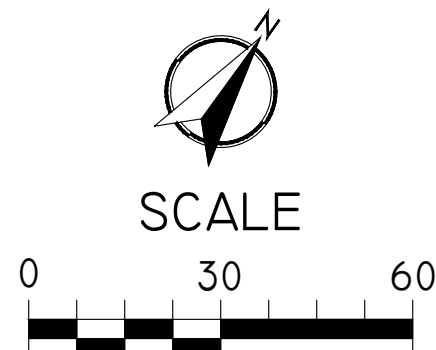


STORES



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1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960



SITE CIRCULATION PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
①		
DRAWN BY	NAP	
SCALE	GRAPHIC	
PROJ. NO.	11757	
DATE	10/09/24 - REVIEW DOCUMENTS	
SHEET		C180

C180

LAYOUT NOTES:

- PLAN PREPARED FROM AN ALTA/ACSM LAND TITLE SURVEY BY:
R.A. SMITH, INC.
262-781-1000
- CURBS ARE DIMENSIONED TO BACK OF CURB.
- CONVENIENCE STORE, AND ISLAND COMPLEXES ARE LOCATED FROM THE NORTHEASTERN MOST PROPERTY CORNER AND ALIGNED PARALLEL/PERPENDICULAR TO THE REFERENCE LINE LABELED N47°37'24"E, UNLESS OTHERWISE INDICATED ON THIS PLAN.
- UNLESS SHOWN OTHERWISE ON THIS DRAWING, CONTRACTOR SHALL PROVIDE CONTROL JOINTS, CONSTRUCTION JOINTS, AND EXPANSION JOINTS IN SLAB ON GRADE, SIDEWALKS AND DRIVES.
CONTROL JOINT MAXIMUM DISTANCE: WALKS- 8' O.C., ALL OTHERS- 15' O.C. SAW CUT CONTROL JOINTS MINIMUM ONE-QUARTER CONCRETE THICKNESS.
EXPANSION JOINT MAXIMUM DISTANCE: WALKS- 24' O.C., ALL OTHERS- 40' O.C. DOWEL ALL EXPANSION JOINTS- MAXIMUM 24" O.C.
- CONCRETE IN ISLAND COMPLEX SHALL BE SMOOTH FINISHED.
- EXTERIOR CONCRETE SURFACES TO BE SEALED.
CONCRETE SEALER:
APR 15- OCT 31 USE: TK-26UV
NOV 1- DEC 31 USE: TK-290
- EXPANSION JOINTS SHALL BE DECK-O-FOAMED AND CAULKED WITH SLI.
- DIAGONAL STRIPING LINES (HATCHING) IN THE " NO PARKING LOADING ZONE" AREA AND ANY OTHER AREA THAT IS HATCHED SHALL BE SPACED 5' ON CENTER.
- LETTERING FOR ALL WORDING SUCH AS " NO PARKING LOADING ZONE" AND CARWASH SHOULD BE 12" TALL.
- ALL DIAGONAL STRIPING SHALL BE ANGLED AS CLOSE TO DIMENSIONED ANGLE AS POSSIBLE.
- CURBS AROUND THE RAISED FILLS SHALL BE PAINTED YELLOW.

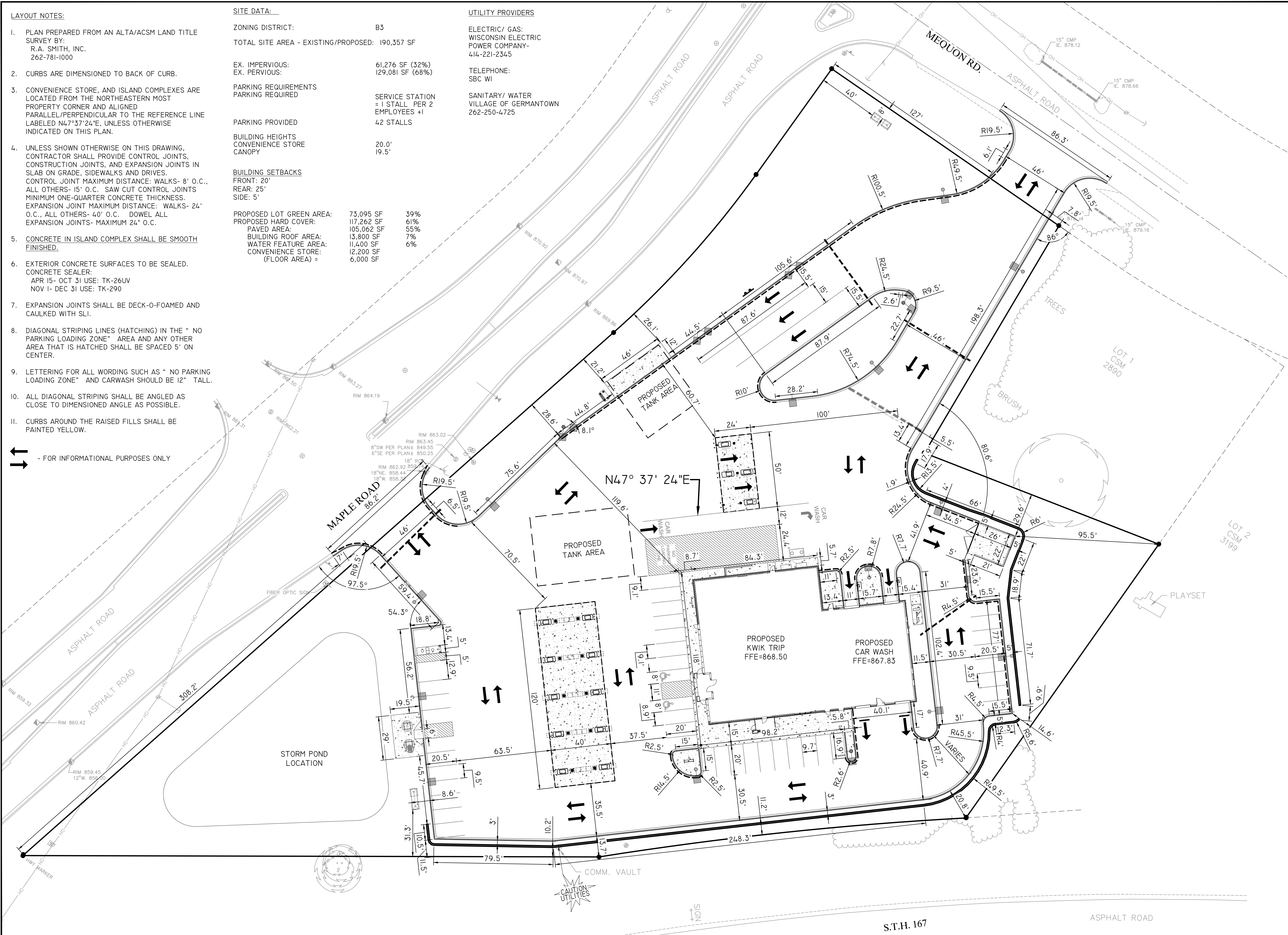
↑↑ - FOR INFORMATIONAL PURPOSES ONLY

SITE DATA:

ZONING DISTRICT: B3
TOTAL SITE AREA - EXISTING/PROPOSED: 190,357 SF
EX. IMPERVIOUS: 61,276 SF (32%)
EX. PERVIOUS: 129,081 SF (68%)
PARKING REQUIREMENTS
PARKING REQUIRED
SERVICE STATION
= 1 STALL PER 2
EMPLOYEES +1
42 STALLS
PARKING PROVIDED
BUILDING HEIGHTS
CONVENIENCE STORE
CANOPY
20.0'
19.5'
BUILDING SETBACKS
FRONT: 20'
REAR: 25'
SIDE: 5'
PROPOSED LOT GREEN AREA: 73,095 SF 39%
PROPOSED HARD COVER: 117,262 SF 61%
PAVED AREA: 105,062 SF 55%
BUILDING ROOF AREA: 13,800 SF 7%
WATER FEATURE AREA: 11,400 SF 6%
CONVENIENCE STORE: 12,200 SF
(FLOOR AREA) = 6,000 SF

UTILITY PROVIDERS

ELECTRIC/ GAS:
WISCONSIN ELECTRIC
POWER COMPANY-
414-221-2345
TELEPHONE:
SBC WI
SANITARY/ WATER
VILLAGE OF GERMANTOWN
262-250-4725



Kwik
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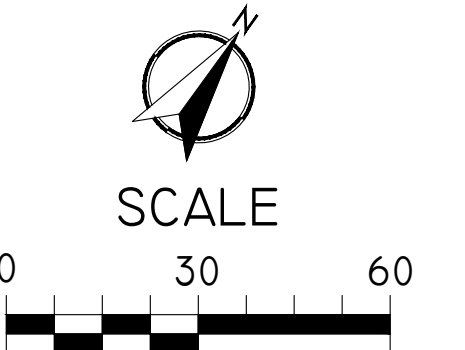
STORES

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4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9784 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



SITE DIMENSION PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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NOTE: CONTRACTOR TO OBTAIN RIGHT-OF-WAY EXCAVATION PERMIT PRIOR TO BEGINNING SITE WORK.

CALL DIGGERS HOTLINE @ 1-800-242-8511 AT LEAST 3 WORKING DAYS PRIOR TO EXCAVATING.

CONSTRUCTION NOTE:

COORDINATE WITH OWNER FOR POSSIBLE CONSTRUCTION FENCING AND GATE LOCATIONS AND APPROPRIATE SIGNAGE INSTALLATION.

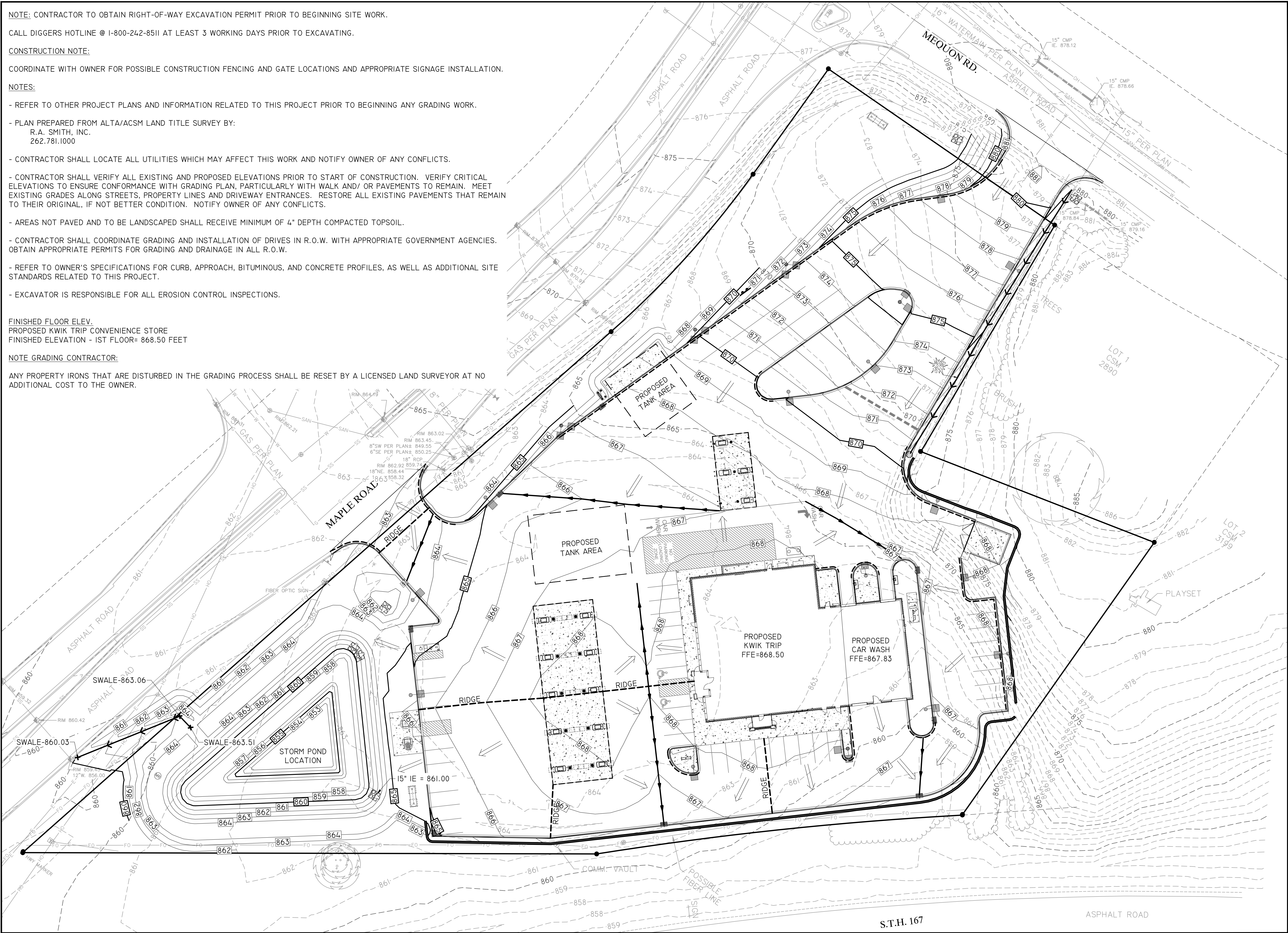
NOTES:

- REFER TO OTHER PROJECT PLANS AND INFORMATION RELATED TO THIS PROJECT PRIOR TO BEGINNING ANY GRADING WORK.
- PLAN PREPARED FROM ALTA/ACSM LAND TITLE SURVEY BY:
R.A. SMITH, INC.
262.781.1000
- CONTRACTOR SHALL LOCATE ALL UTILITIES WHICH MAY AFFECT THIS WORK AND NOTIFY OWNER OF ANY CONFLICTS.
- CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED ELEVATIONS PRIOR TO START OF CONSTRUCTION. VERIFY CRITICAL ELEVATIONS TO ENSURE CONFORMANCE WITH GRADING PLAN, PARTICULARLY WITH WALK AND/ OR PAVEMENTS TO REMAIN. MEET EXISTING GRADES ALONG STREETS, PROPERTY LINES AND DRIVEWAY ENTRANCES. RESTORE ALL EXISTING PAVEMENTS THAT REMAIN TO THEIR ORIGINAL, IF NOT BETTER CONDITION. NOTIFY OWNER OF ANY CONFLICTS.
- AREAS NOT PAVED AND TO BE LANDSCAPED SHALL RECEIVE MINIMUM OF 4" DEPTH COMPACTED TOPSOIL.
- CONTRACTOR SHALL COORDINATE GRADING AND INSTALLATION OF DRIVES IN R.O.W. WITH APPROPRIATE GOVERNMENT AGENCIES. OBTAIN APPROPRIATE PERMITS FOR GRADING AND DRAINAGE IN ALL R.O.W.
- REFER TO OWNER'S SPECIFICATIONS FOR CURB, APPROACH, BITUMINOUS, AND CONCRETE PROFILES, AS WELL AS ADDITIONAL SITE STANDARDS RELATED TO THIS PROJECT.
- EXCAVATOR IS RESPONSIBLE FOR ALL EROSION CONTROL INSPECTIONS.

FINISHED FLOOR ELEV.
PROPOSED KWIK TRIP CONVENIENCE STORE
FINISHED ELEVATION - 1ST FLOOR= 868.50 FEET

NOTE GRADING CONTRACTOR:

ANY PROPERTY IRONS THAT ARE DISTURBED IN THE GRADING PROCESS SHALL BE RESET BY A LICENSED LAND SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.

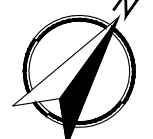


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FAX (608) 781-8960



SCALE



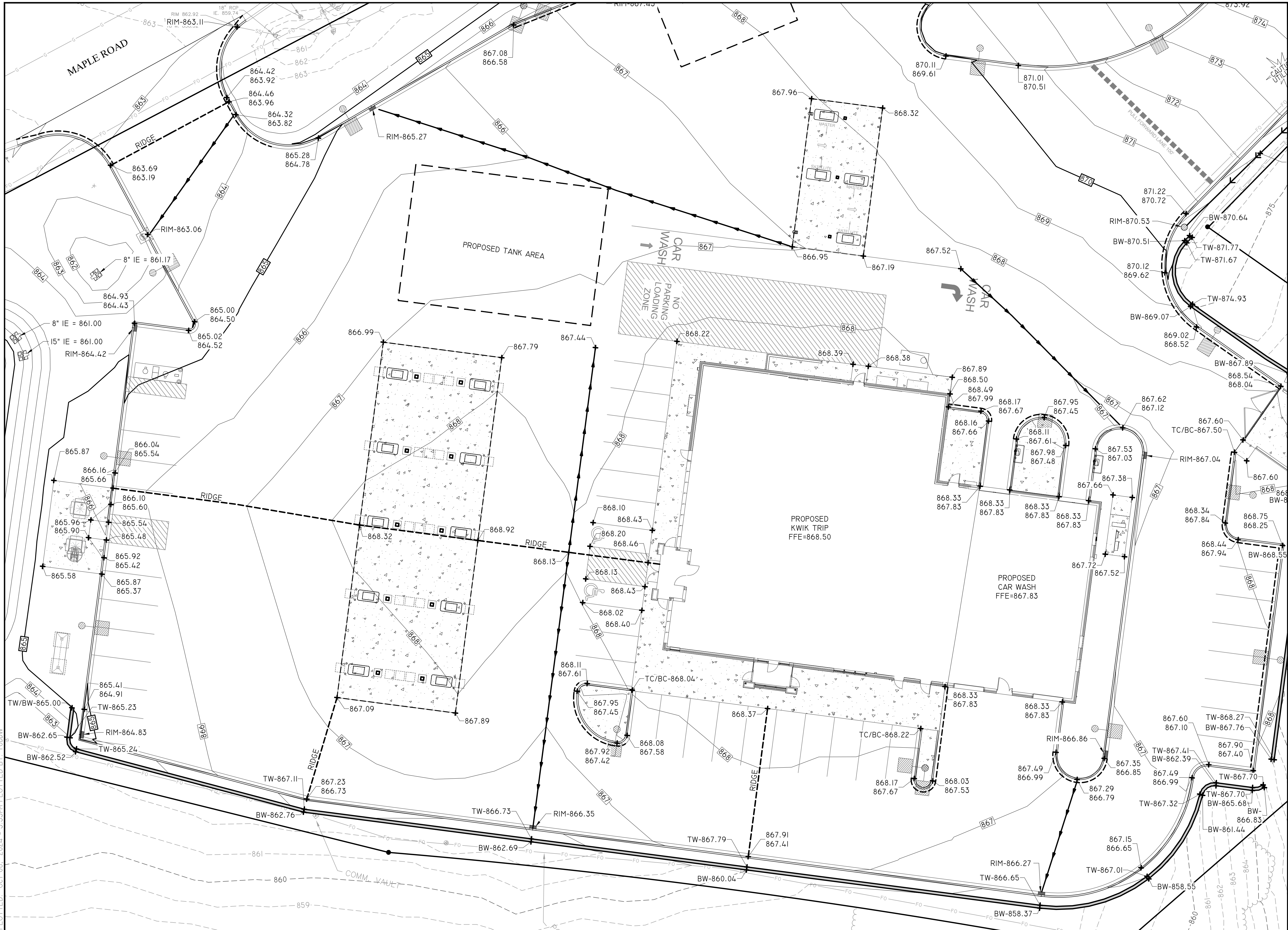
GRADING PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
		

DRAWING FILE: Q:\1700-1799\1757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\1757-C200-GRADING PLANS.DWG LAYOUT: C201
PLOTTED: OCT 08, 2024 - 3:33PM PLOTTED BY: TODDW



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EMAIL: MAIL@REIENGINEERING.COM



SCALE



GRADING PLAN DETAIL

- SOUTH

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: C201

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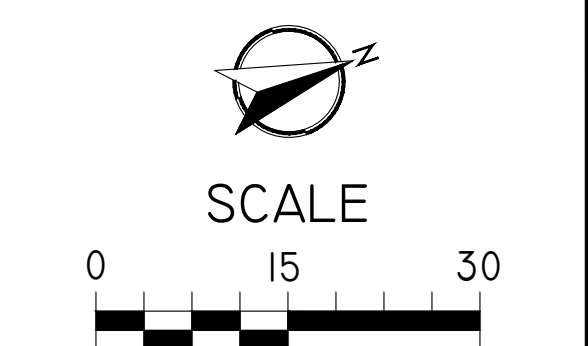


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EMAIL: MAIL@REIENGINEERING.COM



GRADING PLAN DETAIL		
- NORTH		
CONVENIENCE STORE #631		STH 167 & MAPLE ROAD GERMANTOWN, WI
#	DATE	DESCRIPTION
		
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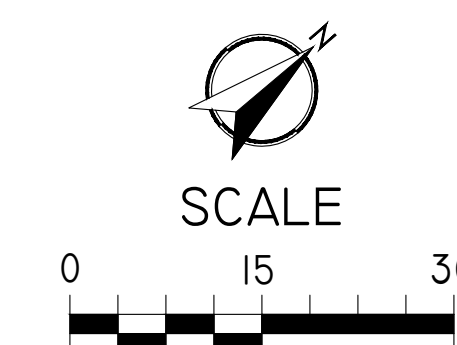
KWIK TRIP

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GRADING PLAN SPOT
DETAIL - SOUTH

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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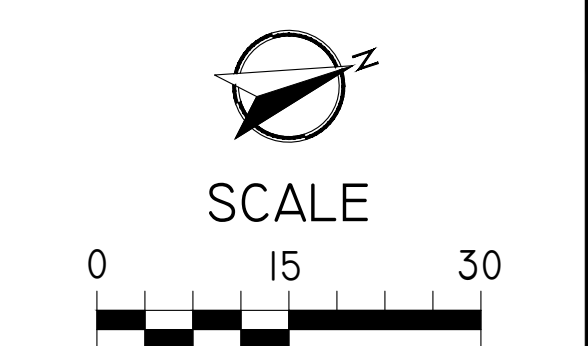


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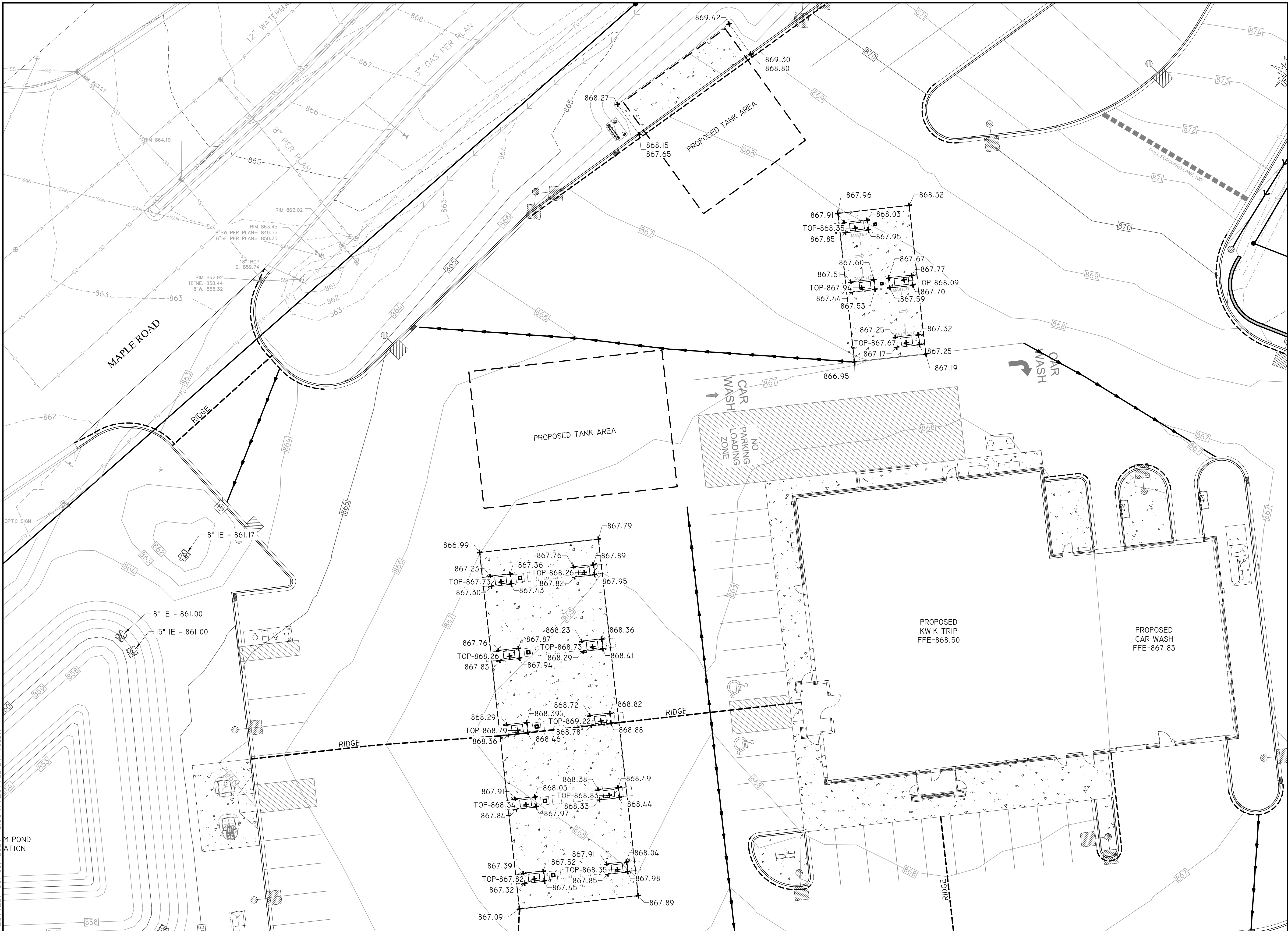
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GRADING PLAN SPOT DETAIL - NORTH	CONVENIENCE STORE #631	
	STH 167 & MAPLE ROAD GERMANTOWN, WI	
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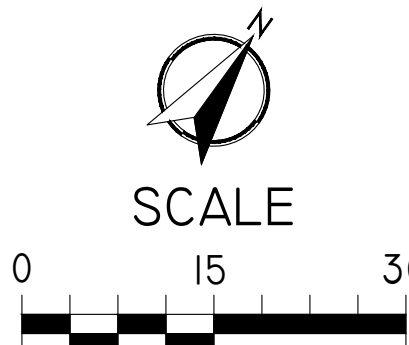
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EMAIL: MAIL@REIENGINEERING.COM



CANOPY AND TANK
GRADING DETAILS

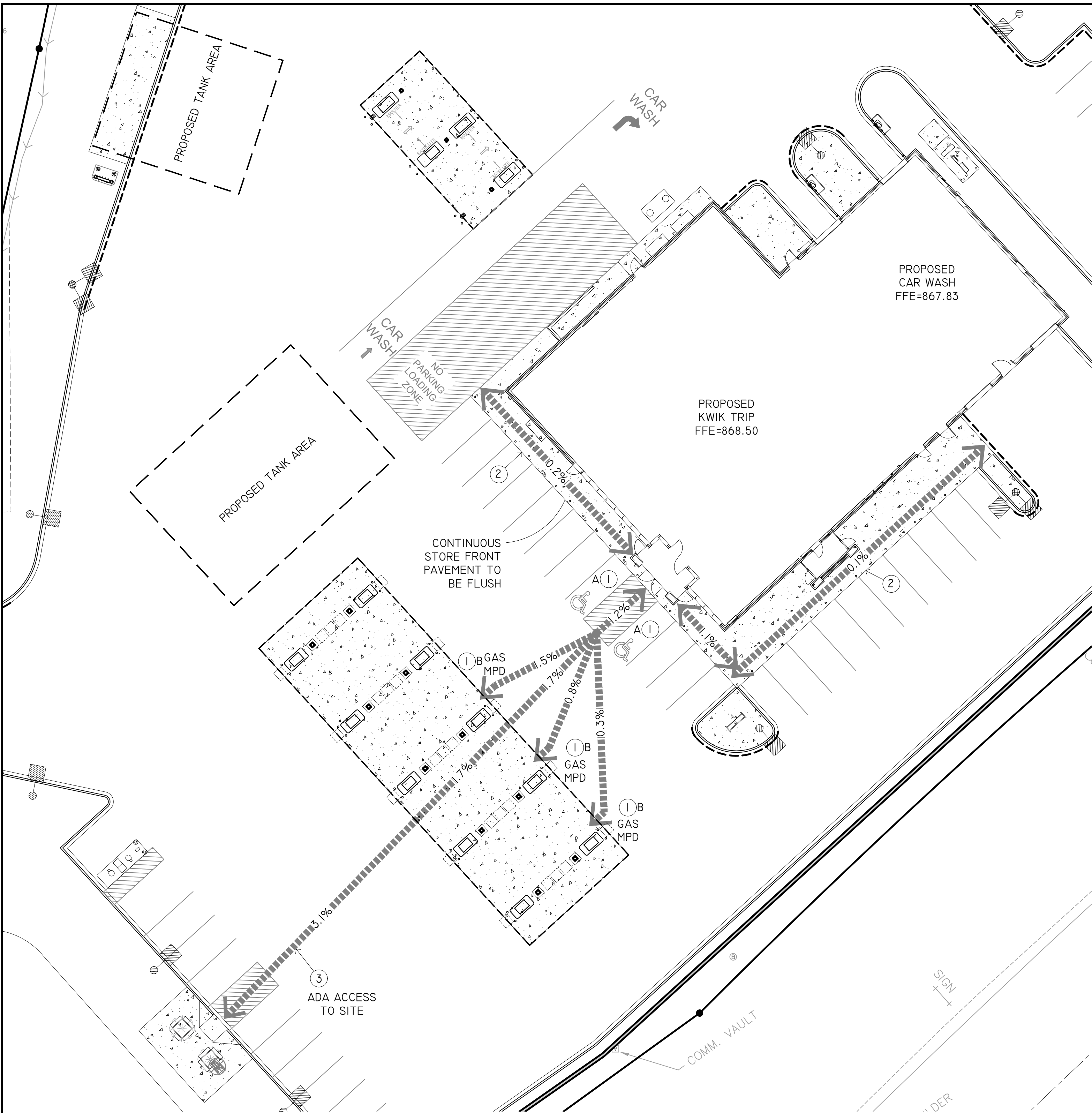
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
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SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: C203

DRAWING FILE: Q:\11700-11799\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C204-ACCESSIBILITY PLAN.DWG LAYOUT: C204
PLOTTED: OCT 08, 2024 - 3:37PM PLOTTED BY: TODDW



PLAN KEYNOTES

- ACCESSIBLE STALLS
A. STRIPING - 4" WIDE STALL LINES, USE HIGH VISIBILITY BLUE PAINT.

SPACES PROVIDED
(2) 8'-0"X 20'-0" ACCESSIBLE PARKING WITH
(1) 11'-0"X 20'-0" LOADING ZONE

B. ACCESSIBLE FUELING POINT AND DISPENSER AND VALET. VALET AND KEY PAD ON PUMP SHALL CONFORM TO ADA REACH DIMENSIONS AS SHOWN IN DETAIL. SEE NOTES FOR CONVENIENCE STORE ACCESSIBILITY.
- PAVEMENTS FLUSH FOR ACCESSIBILITY.
- ACCESSIBLE ROUTE TO STORE.



Know what's below.
Call before you dig.

NOTES FOR CONVENIENCE STORE ACCESSIBILITY

AT LEAST 1 MPD (MULTI PRODUCT DISPENSER) COVERING ALL GRADES OF FUEL MUST BE ACCESSIBLE IN A 30'X48" CLEAR LEVEL FLOOR AREA (CLF).

ALL PUMP CONTROLS SHALL BE < 48" (2010 STANDARD). WINDOW WASHER, PAPER TOWEL DISPENSER, LITERATURE, FIRE EXTINGUISHER, EMERGENCY FUEL STOPS, ETC. BE ACCESSIBLE 30'X48" CLF SPACE AND WITHIN A FORWARD OR SIDE APPROACH REACH RANGE.

PROVIDE ISA (INDUSTRY STANDARD ARCHITECTURE) AT EACH ACCESSIBLE FUEL POSITION ON FACE OF PUMP.

PROVIDE ISA AT EACH ACCESSIBLE FUELING POSITION VISIBLE TO APPROACHING VEHICLES.

PROVIDE A SIGN AT EACH ACCESSIBLE FUELING POSITION WITH STORE TELEPHONE NUMBER, ADVISING AVAILABLE FUELING ASSISTANCE.

ANY PAY FUNCTION- I.E. AIR/VACUUM ETC. ARE REQUIRED TO HAVE AN ACCESSIBLE ROUTE TO STORE ENTRANCE. CONTROLS SHALL BE ACCESSIBLE 30'X48" CLF SPACE AND WITHIN A FORWARD OR SIDE APPROACH REACH RANGE.

NOTES:

-REFER TO THE DOCUMENT FROM THE DEPARTMENT OF JUSTICE ON "2010 ADA STANDARDS FOR ACCESSIBLE DESIGN". CONTRACTOR SHALL REFERENCE CURRENT A.D.A. GUIDELINES AND LOCAL REGULATIONS FOR SITE ACCESSIBILITY. IN ALL CASES THE MINIMUM REQUIREMENTS SHALL BE PROVIDED ON SITE TO ENSURE COMPLIANCE TO ALL REGULATIONS.

- KWIK TRIP STANDARD ENTRANCE DOOR IS AUTOMATIC SLIDING DOOR SYSTEM DESIGNED TO COMPLY WITH ALL ACCESS CODES AND LAWS. ENTRANCE DOORS FOR ACCESSIBLE ROUTES WILL HAVE A MINIMUM CLEAR OPENING OF 32"

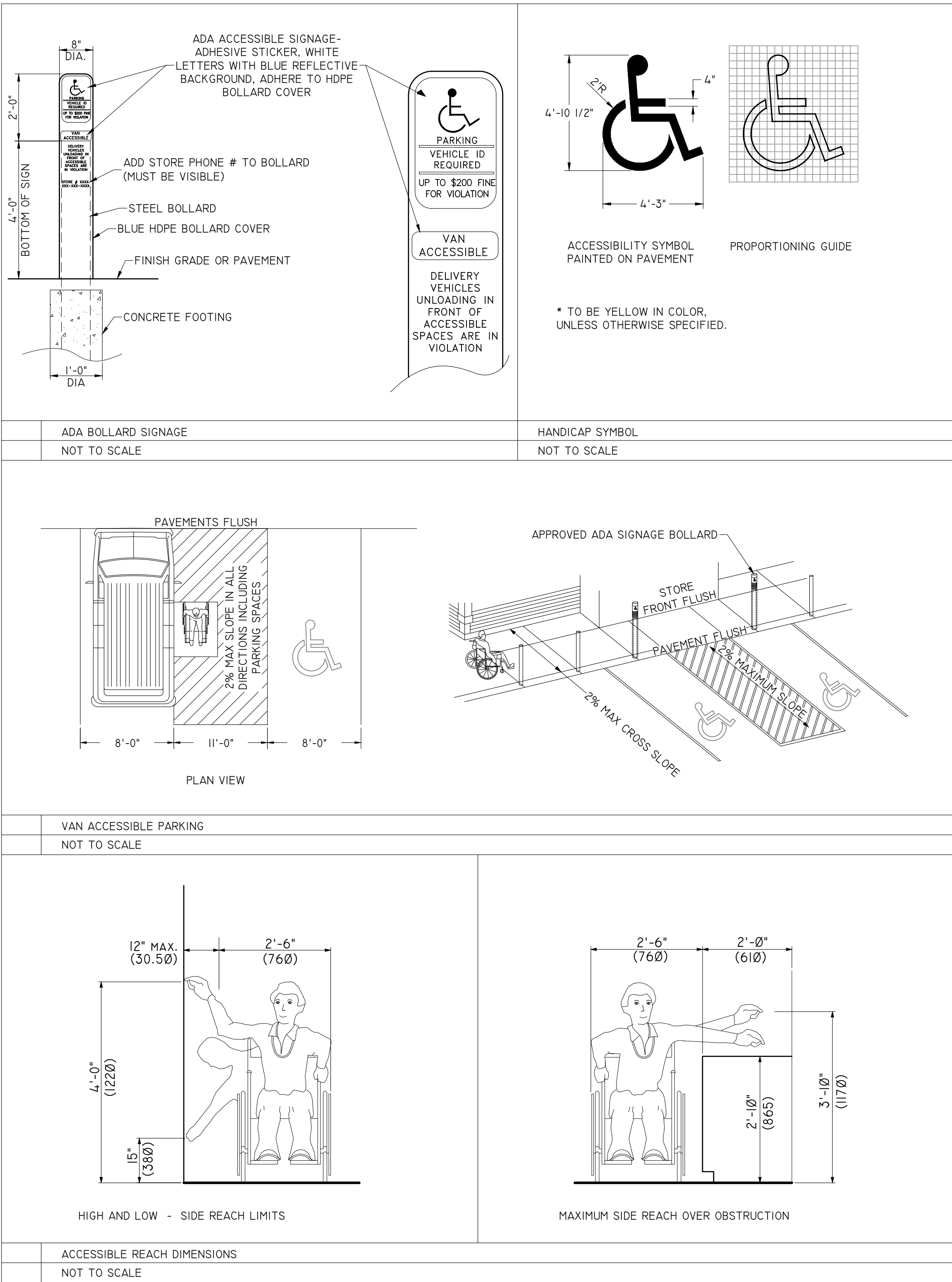
-STORE FRONTS WILL PROVIDE FLUSH PAVEMENTS ALONG ACCESSIBLE ROUTES WITH PROTECTIVE SECURITY BOLLARDS INDICATED AND SPACED BETWEEN PARKING SURFACES AND BUILDING WALK PER PLAN.

-NO OBJECTS OR DISPLAYS SHOULD PROTRUDE INTO THE MINIMUM CLEAR SPACE OF THE ACCESSIBLE ROUTES TO THE STORE ENTRANCE. THIS WILL INCLUDE SEASONAL DISPLAY VENDING AREAS AS WELL AS OTHER OUTDOOR STORAGE UNITS FOR PROPANE AND ICE, ETC.

-PER A.D.A GUIDELINES- CLEAR WIDTH OF ACCESSIBLE ROUTES SHALL BE 36" AND PERMITTED TO BE REDUCED TO 32" FOR A LENGTH OF 24".

- ACCESS ISLES SERVING WHEEL CHAIR LIFTS OR CHAIR ACCESS FROM VEHICLES ARE REQUIRED TO BE NEARLY LEVEL IN ALL DIRECTIONS TO PROVIDE SAFE TRANSFER OF WHEELCHAIRS TO AND FROM VEHICLES. THE EXCEPTION WOULD BE FOR DRAINAGE. MAXIMUM SLOPE FOR THE ACCESS ISLE IS 1:48. NO CURB RAMPS SHALL BE A PART OF THE ACCESS ISLE.

-IDENTIFICATION SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY WITH THE DESIGNATION OF 'VAN ACCESSIBLE' IN EVERY 8 ACCESSIBLE SPACES ON SITE.



**Kwik
TRIP**

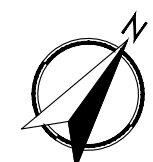
STORES

**Kwik
STAR**

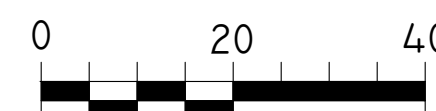
STORES

KWIK TRIP, Inc.
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SCALE



ACCESSIBILITY PLAN

CONVENIENCE STORE #631

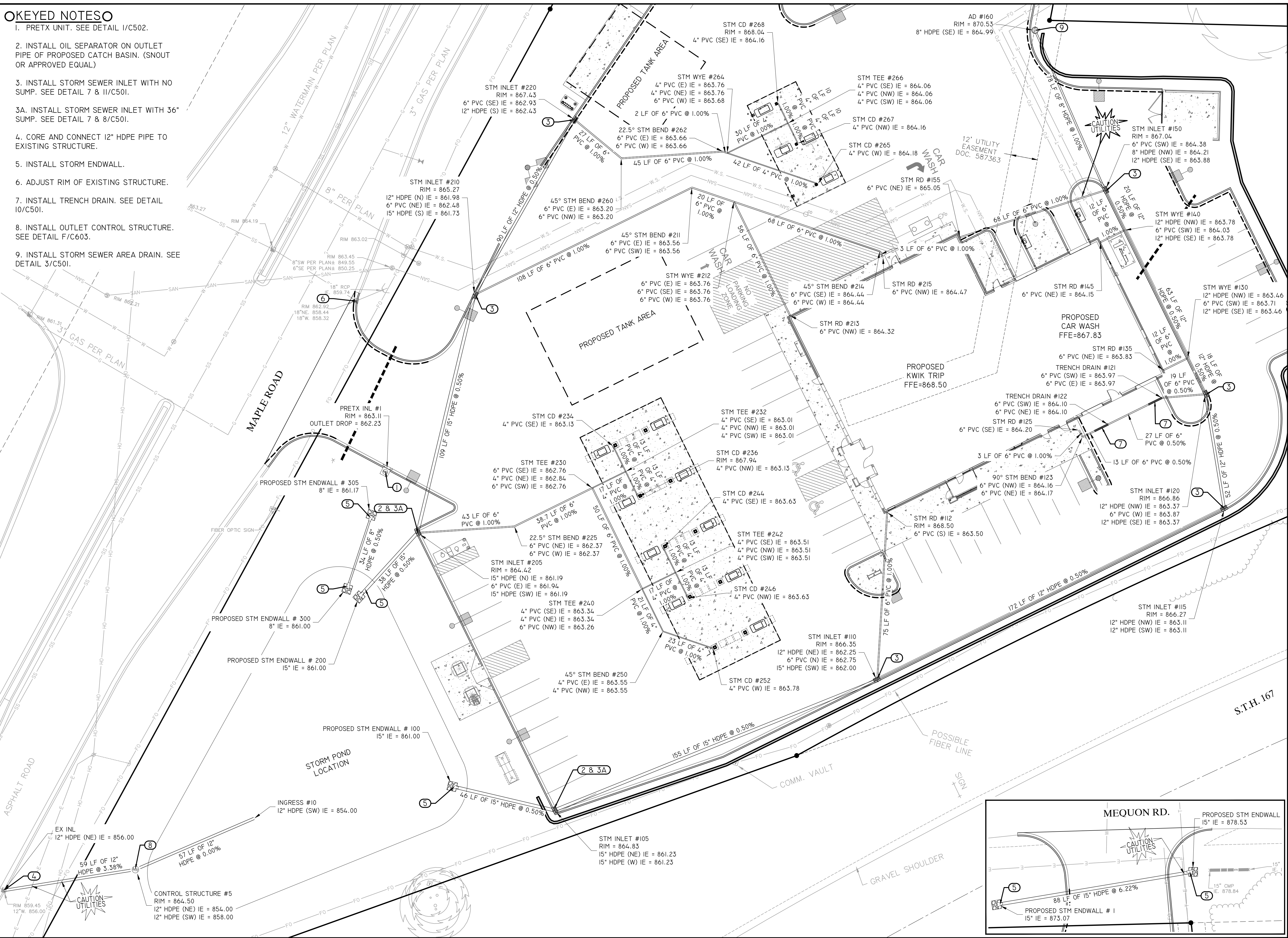
STH 167 & MAPLE ROAD
GERMANTOWN, WI

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DATE: 10/09/24 - REVIEW DOCUMENTS
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OKEYED NOTES

1. PRETX UNIT. SEE DETAIL 1/C502.
2. INSTALL OIL SEPARATOR ON OUTLET PIPE OF PROPOSED CATCH BASIN. (SNOUT OR APPROVED EQUAL)
3. INSTALL STORM SEWER INLET WITH NO SUMP. SEE DETAIL 7 & 11/C501.
- 3A. INSTALL STORM SEWER INLET WITH 36" SUMP. SEE DETAIL 7 & 8/C501.
4. CORE AND CONNECT 12" HDPE PIPE TO EXISTING STRUCTURE.
5. INSTALL STORM ENDWALL.
6. ADJUST RIM OF EXISTING STRUCTURE.
7. INSTALL TRENCH DRAIN. SEE DETAIL 10/C501.
8. INSTALL OUTLET CONTROL STRUCTURE. SEE DETAIL F/C603.
9. INSTALL STORM SEWER AREA DRAIN. SEE DETAIL 3/C501.



Kwik Trip

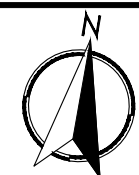
STORES

Kwik Star

STORES

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SCALE



STORM SEWER PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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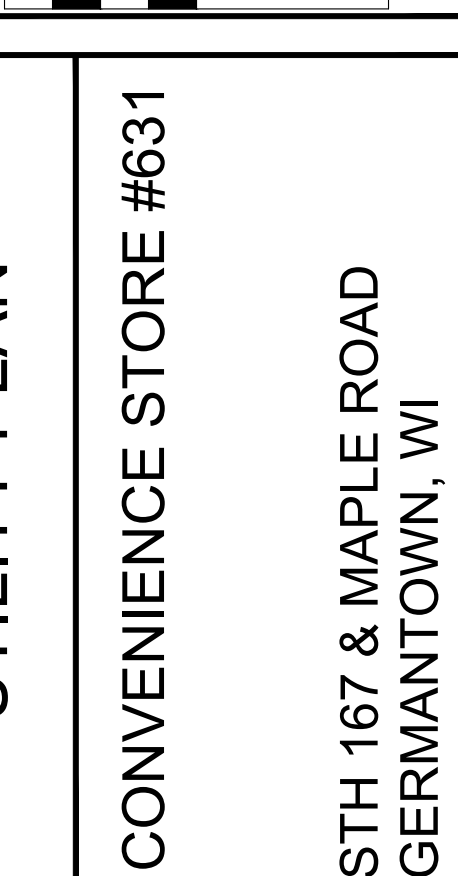
1. DRY UTILITY ROUTING SHOWN IS APPROXIMATE. COORDINATE WITH LOCAL UTILITY.
2. INSTALL INSULATION OVER WATER PIPE AT CROSSING. SEE DETAIL 2/C501.
3. INSTALL 6" SANITARY SERVICE LATERAL @ 1.00% MINIMUM.
- 3A. INSTALL 4" SANITARY SERVICE LATERAL @ 1.00% MINIMUM.
4. INSTALL 4" WATER SERVICE LATERAL.
5. SANITARY SEWER & WATER SERVICE TRENCH. SEE A/C401 FOR SEPARATION REQUIREMENTS.
6. INSTALL SANITARY CLEANOUT. SEE DETAIL 4/C501.
7. CONNECT TO EXISTING UTILITY. FIELD VERIFY LOCATION AND DEPTH.



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C400

DRAWING FILE: Q:\1700-1179\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C300-C400-UTILITY PLANS.DWG LAYOUT: C401
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GENERAL :

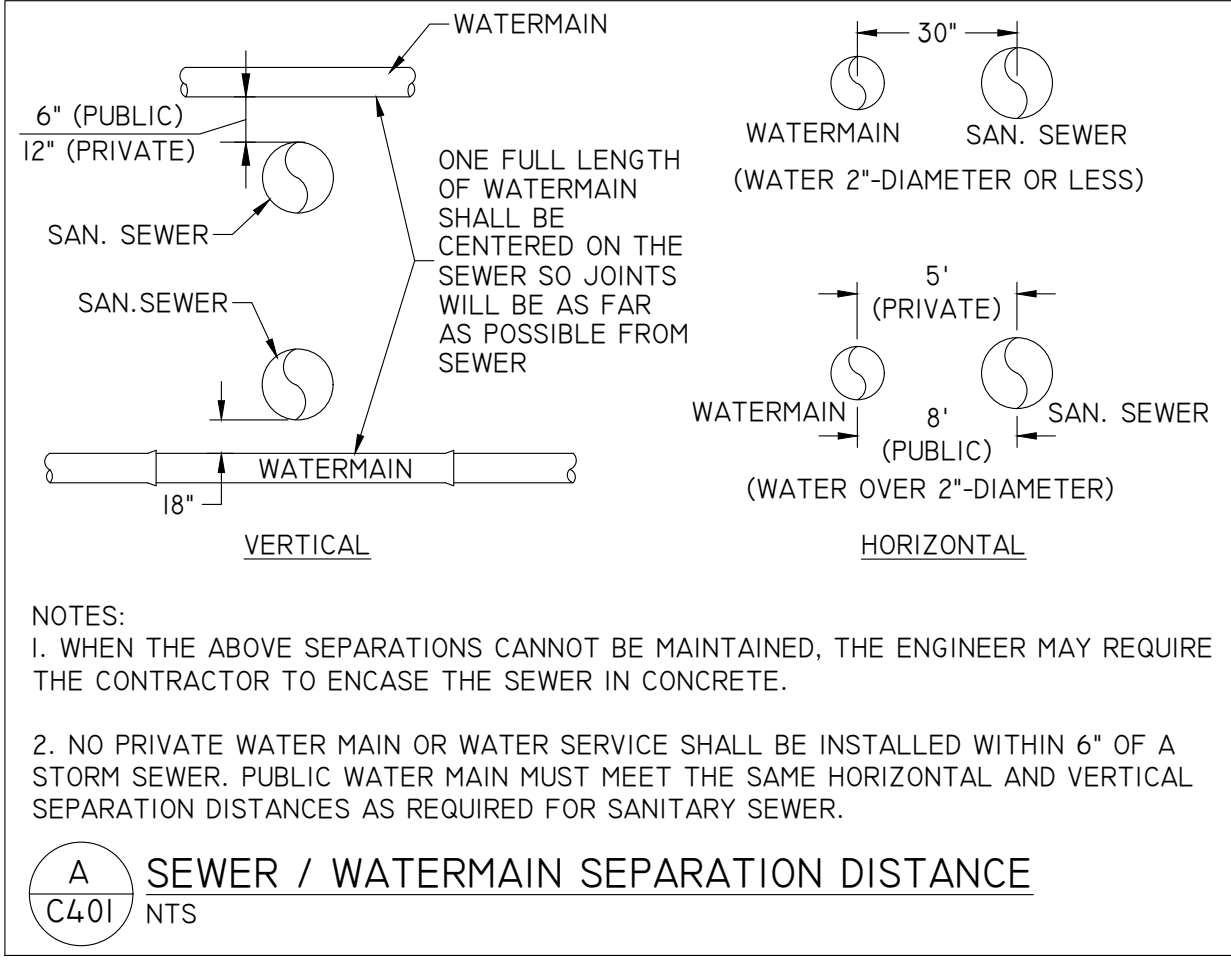
- COMPLY WITH THE WORK SAFETY PRACTICES SPECIFIED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS. OSHA PROHIBITS ENTRY INTO "CONFINED SPACES," SUCH AS MANHOLES AND INLETS (SEE 29 CFR SECTION 1910.146), WITHOUT UNDERTAKING CERTAIN SPECIFIC PRACTICES AND PROCEDURES. CONSTRUCTION SAFETY IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR, WHO IS ALSO SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCING OF THE CONSTRUCTION OPERATIONS.
- EXISTING BOUNDARY, LOCATION, TOPOGRAPHIC, AND UTILITY INFORMATION SHOWN ON THIS PLAN IS FROM A FIELD SURVEY BY R.A. SMITH, INC. DATED JUNE 12, 2024.
- PERFORM ALL UTILITY WORK IN ACCORDANCE WITH STATE AND CITY REQUIREMENTS.
- CONNECT TO EXISTING SANITARY SEWER MH'S BY CORE DRILLING. CONNECT TO EXISTING STORM SEWER MH'S BY EITHER SAWCUTTING OR CORE DRILLING. USE SAWS OR DRILLS THAT PROVIDE WATER TO THE BLADE. MEET ALL CITY STANDARDS AND SPECIFICATIONS FOR THE THE CONNECTION. RECONSTRUCT INVERTS AFTER INSTALLATION. USE WATER STOP GASKETS IN ORDER TO PROVIDE WATERTIGHT SEALS WHEN PENETRATING A STRUCTURE WALL WITH A PIPE. TAKE MEASUREMENTS BEFORE BEGINNING CONSTRUCTION TO ENSURE THAT SERVICE CONNECTIONS DO NOT CUT INTO MAINTENANCE ACCESS STRUCTURE JOINTS OR PIPE BARREL JOINTS.
- PERFORM TRENCH EXCAVATIONS FOR ALL UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF O.S.H.A. 29 CFR, PART 1926, SUBPART P, "EXCAVATIONS AND TRENCHES." (WWW.OSHA.GOV)
- COORDINATE BUILDING UTILITY CONNECTION LOCATIONS AT 5 FT. OUT FROM THE PROPOSED BUILDING WITH THE WITH THE INTERIOR PLUMBING CONTRACTOR PRIOR TO CONSTRUCTION. VERIFY WATER AND SEWER SERVICE LOCATIONS AND ELEVATIONS WITH THE MECHANICAL ENGINEER PRIOR TO CONSTRUCTION.
- THE SUBSURFACE UTILITY INFORMATION SHOWN ON THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C1/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
- THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN ARE FROM RECORD INFORMATION. THE ENGINEER DOES NOT GUARANTEE THAT ALL EXISTING UTILITIES ARE SHOWN OR, IF SHOWN, EXIST IN THE LOCATIONS INDICATED ON THE PLAN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE FINAL VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES (INCLUDING WATER AND SEWER LINES AND APPURTENANCES). NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- CONTACT UTILITY COMPANIES FOR LOCATIONS OF ALL PUBLIC AND PRIVATE UTILITIES WITHIN THE WORK AREA PRIOR TO BEGINNING CONSTRUCTION. CONTACT DIGGER'S HOTLINE AT (414) 259-1181 IN THE MILWAUKEE METRO AREA, OR 1-800-242-8511 ELSEWHERE IN WISCONSIN FOR EXACT LOCATIONS OF EXISTING UTILITIES AT LEAST 72 HOURS (NOT INCLUDING WEEKENDS AND HOLIDAYS) BEFORE BEGINNING ANY CONSTRUCTION. OBTAIN TICKET NUMBER AND MEET WITH REPRESENTATIVES OF THE VARIOUS UTILITIES AT THE SITE. PROVIDE THE OWNER WITH THE TICKET NUMBER INFORMATION. DIGGER'S HOTLINE IS A FREE SERVICE THAT LOCATES MUNICIPAL AND UTILITY COMPANY LINES, BUT DOES NOT LOCATE PRIVATE UTILITY LINES. USE AN INDEPENDENT LOCATOR SERVICE OR OTHER MEANS IN ORDER TO OBTAIN LOCATIONS OF PRIVATE UTILITY LINES INCLUDING, BUT NOT LIMITED TO, UNDERGROUND ELECTRIC CABLES, TELEPHONE, TV, AND LAWN SPRINKLER LINES.
- POTHOLE TO VERIFY THE POSITIONS OF EXISTING UNDERGROUND FACILITIES AT A SUFFICIENT NUMBER OF LOCATIONS IN ORDER TO ASSURE THAT NO CONFLICT WITH THE PROPOSED WORK EXISTS AND THAT SUFFICIENT CLEARANCE IS AVAILABLE.
- WHERE EXISTING GAS, ELECTRIC, CABLE, OR TELEPHONE UTILITIES CONFLICT WITH THE WORK, COORDINATE THE ABANDONMENT, RELOCATION, OFFSET, OR SUPPORT OF THE EXISTING UTILITIES WITH THE APPROPRIATE LOCAL UTILITY COMPANIES. COORDINATE NEW GAS METER AND GAS LINE INSTALLATION, ELECTRIC METER AND ELECTRIC SERVICE INSTALLATION, CABLE SERVICE, AND TELEPHONE SERVICE INSTALLATION WITH THE LOCAL UTILITY COMPANIES.
- ARRANGE FOR AND SECURE SUITABLE DISPOSAL AREAS OFF-SITE. DISPOSE OF ALL EXCESS SOIL, WASTE MATERIAL, DEBRIS, AND ALL MATERIALS NOT DESIGNATED FOR SALVAGE. WASTE MATERIAL AND DEBRIS INCLUDES TREES, STUMPS, PIPE, CONCRETE, ASPHALTIC CONCRETE, CANS, OR OTHER WASTE MATERIAL FROM THE CONSTRUCTION OPERATIONS. OBTAIN THE RIGHTS TO ANY WASTE AREA FOR DISPOSAL OF UNSUITABLE OR SURPLUS MATERIAL EITHER SHOWN OR NOT SHOWN ON THE PLANS. ALL WORK IN DISPOSING OF SUCH MATERIAL SHALL BE CONSIDERED INCIDENTAL TO THE WORK. ALL DISPOSAL MUST CONFORM TO APPLICABLE SOLID WASTE DISPOSAL PERMIT REGULATIONS. OBTAIN ALL NECESSARY PERMITS AT NO COST TO THE OWNER.
- STRAIGHT LINE SAW-CUT EXISTING BITUMINOUS OR CONCRETE SURFACING AT THE PERIMETER OF PAVEMENT REMOVAL AREAS. USE SAWS THAT PROVIDE WATER TO THE BLADE. TACK, AND MATCH ALL CONNECTIONS TO EXISTING BITUMINOUS PAVEMENT.
- RELOCATE OVERHEAD POWER, TELEPHONE, AND CABLE LINES AS REQUIRED.
- ALL MATERIALS REQUIRED FOR THIS WORK SHALL BE NEW MATERIAL CONFORMING TO THE REQUIREMENTS FOR CLASS, KIND, GRADE, SIZE, QUALITY, AND OTHER DETAILS SPECIFIED HEREIN OR AS SHOWN ON THE PLANS. DO NOT USE RECYCLED OR SALVAGED AGGREGATE, ASPHALTIC PAVEMENT, CRUSHED CONCRETE, OR SCRAP SHINGLES. UNLESS OTHERWISE INDICATED, THE CONTRACTOR SHALL FURNISH ALL REQUIRED MATERIALS.
- RESTORE THE PUBLIC RIGHT-OF-WAY. REPLACE ANY CONCRETE CURB AND GUTTER, BITUMINOUS PAVEMENT, SIDEWALK, OR VEGETATIVE COVER DAMAGED BY THE CONSTRUCTION ACTIVITY. RESTORE DAMAGED TURF WITH SOD WITHIN THE PUBLIC RIGHT-OF-WAY. THE WORK AREA SHOWN IS GENERAL AND MAY NEED TO BE ADJUSTED IN THE FIELD.
- WHEN SAWING OR DRILLING CONCRETE OR MASONRY, USE SAWS THAT PROVIDE WATER TO THE BLADE. DO NOT ALLOW THE SLURRY PRODUCED BY THIS PROCESS TO BE TRACKED OUTSIDE OF THE IMMEDIATE WORK AREA OR DISCHARGED INTO THE SEWER SYSTEM.
- ADJUST ALL CURB STOPS, VALVE BOXES, MAINTENANCE HOLE CASTINGS, CATCH BASIN CASTINGS, CLEANOUT COVERS, AND SIMILAR ITEMS TO FINISHED GRADE.
- INSTALL ALL PIPE WITH THE ASTM IDENTIFICATION NUMBERS ON THE TOP FOR INSPECTION. COMMENCE PIPE LAYING AT THE LOWEST POINT IN THE PROPOSED SEWER LINE. LAY THE PIPE WITH THE BELL END OR RECEIVING GROOVE END OF THE PIPE POINTING UPGRADE. WHEN CONNECTING TO AN EXISTING PIPE, UNCOVER THE EXISTING PIPE IN ORDER TO ALLOW ANY ADJUSTMENTS IN THE PROPOSED LINE AND GRADE BEFORE LAYING ANY PIPE.
- OBTAIN AND PAY FOR ALL PERMITS, TESTS, INSPECTIONS, ETC. REQUIRED BY AGENCIES THAT HAVE JURISDICTION OVER THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR ALL BONDS, LETTERS OF CREDIT, OR CASH SURETIES RELATED TO THE WORK. EXECUTE AND INSPECT WORK IN ACCORDANCE WITH ALL LOCAL AND STATE CODES, RULES, ORDINANCES, OR REGULATIONS PERTAINING TO THE PARTICULAR TYPE OF WORK INVOLVED.
- OBTAIN PERMITS FROM THE CITY FOR WORK IN THE PUBLIC RIGHT-OF-WAY.
- CONSTRUCT SANITARY SEWER, WATERMAIN, AND STORM SEWER UTILITIES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, SIXTH EDITION, OR THE LATEST REVISED EDITION.
- TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THESE CODE SECTIONS AS PER 182.0715(2R) OF THE STATUTES.
- INSTALL ALL PIPE WITH THE ASTM IDENTIFICATION NUMBERS ON THE TOP FOR INSPECTION. COMMENCE PIPE LAYING AT THE LOWEST POINT IN THE PROPOSED SEWER LINE. LAY THE PIPE WITH THE BELL END OR RECEIVING GROOVE END OF THE PIPE POINTING UPGRADE. WHEN CONNECTING TO AN EXISTING PIPE, UNCOVER THE EXISTING PIPE IN ORDER TO ALLOW ANY ADJUSTMENTS IN THE PROPOSED LINE AND GRADE BEFORE LAYING ANY PIPE. DO NOT LAY PIPES IN WATER OR WHEN THE TRENCH CONDITIONS ARE UNSUITABLE FOR SUCH WORK.

WATER DISTRIBUTION SYSTEM :

- BRING ALL SITE UTILITIES TO 5' OUTSIDE OF THE BUILDING LINE WITH THE EXCEPTION OF THE WATER SERVICE. EXTEND WATER SERVICE INTO THE BUILDING AND UP TO THE FLANGE FOR THE WATER METER.
- SEPARATION OF WATER AND SEWER: PROVIDE HORIZONTAL AND VERTICAL SEPARATIONS AS REQUIRED BY CODE. SEE DETAIL A/C401.
- WATERMAIN DEPTH: MAINTAIN 7.5 FEET OF COVER OVER THE TOP OF THE WATER LINES TO THE FINISHED GRADE. VERIFY ELEVATION OF PROPOSED AND EXISTING WATER LINES AT ALL UTILITY CROSSINGS. INSTALL THE WATER LINES AT GREATER DEPTHS IN ORDER TO CLEAR STORM SEWERS, SANITARY SEWERS, OR OTHER UTILITIES AS REQUIRED. INCLUDE COSTS TO LOWER WATER LINES IN THE BASE BID.
- DISINFECTION: DISINFECT ALL COMPLETED WATERMAINS IN ACCORDANCE WITH AWWA STANDARD C651. IF THE TABLET OR CONTINUOUS FEED METHODS ARE USED, DISINFECT USING WITH WATER THAT CONTAINS AT LEAST 50 PPM OF AVAILABLE CHLORINE. DO NOT USE THE TABLET METHOD ON SOLVENT-WELDED PLASTIC OR ON SCREWED-JOINT STEEL PIPE BECAUSE OF THE DANGER OF FIRE OR EXPLOSION FROM THE REACTION OF THE JOINT COMPOUNDS WITH THE CALCIUM HYPOCHLORITE. RETAIN THE TREATED WATER IN THE PIPELINE FOR AT LEAST 24 HOURS. MEASURE THE CHLORINE RESIDUAL AT THE END OF THE 24 HOUR PERIOD. THE FREE CHLORINE RESIDUAL MUST BE AT LEAST 10 MG/L MEASURED AT ANY POINT IN THE LINE. MEASUREMENT OF THE CHLORINE CONCENTRATION AT REGULAR INTERVALS SHALL BE IN ACCORDANCE WITH STANDARD METHODS, AWWA M-12, OR USING APPROPRIATE CHLORINE TEST KITS.
- TESTING: PRESSURE TEST AND PERFORM BACTERIOLOGICAL TESTS ON ALL WATER LINES UNDER THE SUPERVISION OF THE CITY PUBLIC WORKS DEPARTMENT. NOTIFY THE CITY AT LEAST 24 WORKING HOURS PRIOR TO ANY TESTING. PRESSURIZE THE WATERLINE TO 1034-KPA (150-PSI) GAUGE PRESSURE (MEASURED AT THE POINT OF LOWEST ELEVATION) BY MEANS OF A PUMP CONNECTED TO THE PIPE IN A SATISFACTORY MANNER. MAINTAIN THE TEST PRESSURE FOR A MINIMUM OF 2 HOURS. DO NOT ADD WATER TO THE WATERMAIN IN ORDER TO MAINTAIN THE REQUIRED PRESSURE DURING THE WATER MAIN PRESSURE TESTING. THE TEST SECTION OF PIPE IS ACCEPTABLE WITH A PRESSURE DROP OF 14 KPA (2 PSI) OR LESS.
- USE MUELLER H 10300 OR FORD EM 2 7057, OR APPROVED EQUAL, AT ALL CURB STOP LOCATIONS. STATIONARY ROD IS REQUIRED ON ALL CURB STOPS.
- BUILDING WATER SERVICES: WATER SERVICE PIPE SHALL MEET THE FOLLOWING SPECIFICATIONS AND BE APPROVED BY THE LOCAL GOVERNING AGENCY. 2.5 INCH OR LESS: HDPE PER ASTM D2737 SDR 9 OR TYPE K COPPER PER ASTM B - 88, 4 INCH OR GREATER: DIP PER AWWA C151 OR PVC PER AWWA C-900.
- TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THE WISCONSIN STATUTES 182.0175(2R) AND THE WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES SPS 382.30(11)(H).

STORM DRAINAGE :

- UNLESS OTHERWISE INDICATED, USE REINFORCED, PRECAST, CONCRETE MAINTENANCE HOLES AND CATCH BASINS CONFORMING TO ASTM C478, FURNISHED WITH WATER STOP RUBBER GASKETS AND PRECAST BASES. JOINTS FOR ALL PRECAST MAINTENANCE HOLE SECTIONS SHALL HAVE CONFINED, RUBBER "O"-RING GASKETS IN ACCORDANCE WITH ASTM C923. THE INSIDE BARREL DIAMETER SHALL NOT BE LESS THAN 48 INCHES.
- ALL JOINTS AND CONNECTIONS TO CATCH BASINS OR MANHOLES SHALL BE WATERTIGHT OR APPROVED CONNECTION. USE RESILIENT RUBBER SEALS, WATERSTOP GASKETS, OR APPROVED EQUAL. CEMENT MORTAR JOINTS ARE NOT ALLOWED UNLESS OTHERWISE PERMITTED BY LOCAL MUNICIPALITY.
- INSTALL CATCH BASIN CASTINGS WITH SPECIFIED TOP ELEVATION AT THE FLOWLINE OF RIM.
- PVC PIPE: USE SOLID-CORE, SDR-35, ASTM D3034 POLYVINYL CHLORIDE (PVC) PIPE FOR DESIGNATED PVC STORM SEWER SERVICES 4 TO 15-INCHES IN DIAMETER. USE SOLID-CORE, SDR-35, ASTM F679 POLYVINYL CHLORIDE (PVC) PIPE FOR DESIGNATED PVC STORM SEWER SERVICES 18 TO 27-INCHES IN DIAMETER. JOINTS FOR ALL STORM SEWER SHALL HAVE PUSH-ON JOINTS WITH ELASTOMERIC GASKETS. USE OF SOLVENT CEMENT JOINTS IS ALLOWED FOR BUILDING SERVICES. SOLVENT CEMENT JOINTS IN PVC PIPE MUST INCLUDE USE OF A PRIMER WHICH IS OF CONTRASTING COLOR TO THE PIPE AND CEMENT. PIPE WITH SOLVENT CEMENT JOINTS SHALL BE JOINED WITH PVC CEMENT CONFORMING TO ASTM D2564. LAY ALL PVC PIPE ON A CONTINUOUS GRANULAR BED. INSTALLATION MUST COMPLY WITH ASTM D2321.
- TESTING: TEST ALL PORTIONS OF STORM SEWER THAT ARE WITHIN 10 FEET OF BUILDINGS, WITHIN 10 FEET OF BURIED WATER LINES, WITHIN 50 FEET OF WATER WELLS, OR THAT PASS THROUGH SOIL OR WATER IDENTIFIED AS BEING CONTAMINATED. TEST ALL FLEXIBLE STORM SEWER LINES FOR DEFLECTION AFTER THE SEWER LINE HAS BEEN INSTALLED AND BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF THE TEST FAILS, MAKE NECESSARY REPAIRS AND RETEST.
- USE NEENAH R-1550A FRAME WITH 2050D GRATE ON ALL PROPOSED CATCH BASINS.
- INSTALL DETECTABLE UNDERGROUND MARKING TAPE DIRECTLY ABOVE ALL PVC, POLYETHYLENE, AND OTHER NONCONDUCTIVE UNDERGROUND UTILITIES AT A DEPTH OF 457 MM (18 INCHES) BELOW FINISHED GRADE, UNLESS OTHERWISE INDICATED. BRING THE TAPE TO THE SURFACE AT VARIOUS LOCATIONS IN ORDER TO PROVIDE CONNECTION POINTS FOR LOCATING UNDERGROUND UTILITIES. INSTALL BLUE RHINO TRIVIEW FLEX TEST STATIONS, OR APPROVED EQUAL, WITH BLACK CAPS AT EACH SURFACE LOCATION.
- TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THESE CODE SECTIONS AS PER 182.0715(2R) OF THE STATUTES.
- THE MINIMUM DEPTH OF COVER FOR BUILDING AND CANOPY ROOF DRAIN LEADERS WITHOUT INSULATION IS 5 FEET. INSULATE ROOF DRAIN LEADERS AT LOCATIONS WHERE THE DEPTH OF COVER IS LESS THAN 5 FEET. PROVIDE A MINIMUM INSULATION THICKNESS OF 2 INCHES. THE INSULATION MUST BE AT LEAST 4 FEET WIDE AND CENTERED ON THE PIPE. INSTALL THE INSULATION BOARDS 6 INCHES ABOVE THE TOPS OF THE PIPES ON MECHANICALLY COMPACTED AND LEVELED PIPE BEDDING MATERIAL. USE HIGH DENSITY, CLOSED CELL, RIGID BOARD MATERIAL EQUIVALENT TO DOW STYROFOAM HI-40 PLASTIC FOAM INSULATION.
- CLEANOUTS: INSTALL CLEANOUTS ON ALL ROOF DRAINS IN ACCORDANCE WITH S.P.S 382.35 (3)(C)(1.). THE DISTANCE BETWEEN CLEANOUTS IN HORIZONTAL PIPING SHALL NOT EXCEED 100 FEET FOR PIPES 10-INCHES AND UNDER IN SIZE. CLEANOUTS SHALL BE OF THE SAME NOMINAL SIZE AS THE PIPES THEY SERVE OR 6-INCH DIAMETER MINIMUM FOR PIPES 6 INCHES IN DIAMETER OR GREATER. INSTALL A METER BOX FRAME AND SOLID LID (NEENAH R-1914-A, OR APPROVED EQUAL) OVER ALL CLEANOUTS.
- INSTALL ALL PIPE WITH THE ASTM IDENTIFICATION NUMBERS ON THE TOP FOR INSPECTION. COMMENCE PIPE LAYING AT THE LOWEST POINT IN THE PROPOSED SEWER LINE. LAY THE PIPE WITH THE BELL END OR RECEIVING GROOVE END OF THE PIPE POINTING UPGRADE. WHEN CONNECTING TO AN EXISTING PIPE, UNCOVER THE EXISTING PIPE IN ORDER TO ALLOW ANY ADJUSTMENTS IN THE PROPOSED LINE AND GRADE BEFORE LAYING ANY PIPE. DO NOT LAY PIPES IN WATER OR WHEN THE TRENCH CONDITIONS ARE UNSUITABLE FOR SUCH WORK.
- INSTALL STORM SEWER IN ACCORDANCE WITH SECTION 608 OF THE WISDOT STANDARD SPECIFICATIONS.
- INSTALL CATCH BASINS, MANHOLES, AND INLETS IN ACCORDANCE WITH SECTION 611 OF THE WISDOT STANDARD SPECIFICATIONS.



SANITARY SEWER :

- PIPE: USE SOLID-CORE, SDR-35, ASTM D3034 (OR APPROVED EQUAL) POLYVINYL CHLORIDE (PVC) PLASTIC PIPE FOR ALL DESIGNATED PVC SANITARY SEWER SERVICES. JOINTS FOR ALL SANITARY SEWER SHALL HAVE PUSH-ON JOINTS WITH ELASTOMERIC GASKETS. USE OF SOLVENT CEMENT JOINTS IS ALLOWED FOR BUILDING SERVICES. SOLVENT CEMENT JOINTS IN PVC PIPE MUST INCLUDE USE OF A PRIMER WHICH IS OF CONTRASTING COLOR TO THE PIPE AND CEMENT. PIPE WITH SOLVENT CEMENT JOINTS SHALL BE JOINED WITH PVC CEMENT CONFORMING TO ASTM D2564. LAY ALL PVC PIPE ON A CONTINUOUS GRANULAR BED. INSTALLATION MUST COMPLY WITH ASTM D2321.
- CLEANOUTS: INSTALL CLEANOUTS ON ALL SANITARY SEWER SERVICES. THE DISTANCE BETWEEN CLEANOUTS IN HORIZONTAL PIPING SHALL NOT EXCEED 100 FEET FOR PIPES 4-INCH AND OVER IN SIZE. CLEANOUTS SHALL BE OF THE SAME NOMINAL SIZE AS THE PIPES THEY SERVE OR 6-INCH DIAMETER MINIMUM FOR PIPES 6 INCHES IN DIAMETER OR GREATER. INCLUDE FROST SLEEVES AND CONCRETE FRAME AND PIPE SUPPORT. INSTALL A METER BOX FRAME AND SOLID LID (NEENAH R-1914-A, OR APPROVED EQUAL) OVER ALL CLEANOUTS.
- TESTING: PRESSURE TEST ALL SANITARY SEWER LINES. TEST ALL FLEXIBLE SANITARY SEWER LINES FOR DEFLECTION AFTER THE SEWER LINE HAS BEEN INSTALLED AND BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF THE TEST FAILS, MAKE NECESSARY REPAIRS AND RETEST.
- UNLESS OTHERWISE INDICATED, USE REINFORCED, PRECAST, CONCRETE MAINTENANCE HOLES CONFORMING TO ASTM C478, FURNISHED WITH PRECAST BASES. SANITARY SEWER MAINTENANCE HOLES SHALL BE SUPPLIED WITH PRE-FORMED INVERTS AND FLEXIBLE NEOPRENE SLEEVE CONNECTIONS FOR ALL LATERAL LINES 375 MM (15 INCHES) IN DIAMETER OR LESS, UNLESS OTHERWISE INDICATED. JOINTS FOR ALL PRECAST MAINTENANCE HOLE SECTIONS SHALL HAVE CONFINED, RUBBER "O"-RING GASKETS IN ACCORDANCE WITH ASTM C923. THE INSIDE BARREL DIAMETER SHALL NOT BE LESS THAN 48 INCHES.
- INSTALL FLEXIBLE WATERTIGHT OR APPROVED CONNECTION FRAME/CHIMNEY SEALS ON ALL SANITARY SEWER MAINTENANCE HOLES. USE EITHER MANUFACTURED MAINTENANCE HOLE FRAME/CHIMNEY SEALS OR ELASTOMERIC WATERPROOFING FRAME/CHIMNEY SEALS.
- USE NEENAH FOUNDRY CO. R-1642 CASTING WITH SELF-SEALING, SOLID, TYPE B LID, OR APPROVED EQUAL, ON ALL SANITARY SEWER MAINTENANCE HOLES. COVERS SHALL BEAR THE "SANITARY SEWER" LABEL.
- THE MINIMUM DEPTH OF COVER FOR SANITARY SEWER WITHOUT INSULATION IS 5 FEET. INSULATE SANITARY SEWER SERVICES AT LOCATIONS WHERE THE DEPTH OF COVER IS LESS THAN 5 FEET. PROVIDE A MINIMUM INSULATION THICKNESS OF 2 INCHES. THE INSULATION MUST BE AT LEAST 4 FEET WIDE AND CENTERED ON THE PIPE. INSTALL THE INSULATION BOARDS 6 INCHES ABOVE THE TOPS OF THE PIPES ON MECHANICALLY COMPACTED AND LEVELED PIPE BEDDING MATERIAL. USE HIGH DENSITY, CLOSED CELL, RIGID BOARD MATERIAL EQUIVALENT TO DOW STYROFOAM HI-40 PLASTIC FOAM INSULATION.
- TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THE WISCONSIN STATUTES 182.0175(2R) AND THE WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES SPS 82.30(11)(H).

HDPE REQUIREMENTS :

- INSTALL DUAL-WALL, SMOOTH INTERIOR, CORRUGATED HIGH-DENSITY POLYETHYLENE (HDPE) PIPE AT LOCATIONS INDICATED ON THE PLAN.
- DUAL-WALL, SMOOTH INTERIOR, CORRUGATED HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M252 FOR PIPE SIZES 4-INCH TO 10-INCH DIAMETER.
- DUAL-WALL, SMOOTH INTERIOR, CORRUGATED HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2306 FOR PIPE SIZES 12-INCH TO 60-INCH DIAMETER.
- ALL FITTINGS MUST COMPLY WITH ASTM STANDARD D3212.
- WATER-TIGHT JOINTS MUST BE USED AT ALL CONNECTIONS INCLUDING STRUCTURES.
- LAY ALL HDPE PIPE ON A CONTINUOUS GRANULAR BED. INSTALLATION MUST COMPLY WITH ASTM D2321. ALL SECTIONS OF THE CORRUGATED HDPE PIPE SHALL BE COUPLED IN ORDER TO PROVIDE WATER TIGHT JOINTS.
- PERFORM DEFLECTION TESTS ON ALL HDPE PIPE AFTER THE SEWER LINES HAVE BEEN INSTALLED AND BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF THE TEST FAILS, MAKE NECESSARY REPAIRS AND PERFORM THE TEST AGAIN UNTIL ACCEPTABLE. SUPPLY THE MANDREL FOR DEFLECTION TESTING. IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID BALL OR MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE BALL OR MANDREL SHALL BE CLEARLY STAMPED WITH THE DIAMETER. PERFORM THE TESTS WITHOUT MECHANICAL PULLING DEVICES.

Kwik Trip
STORES

Kwik Star
STORES

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NO SCALE

UTILITY NOTES

CONVENIENCE STORE #631

**STH 167 & MAPLE ROAD
GERMANTOWN, WI**

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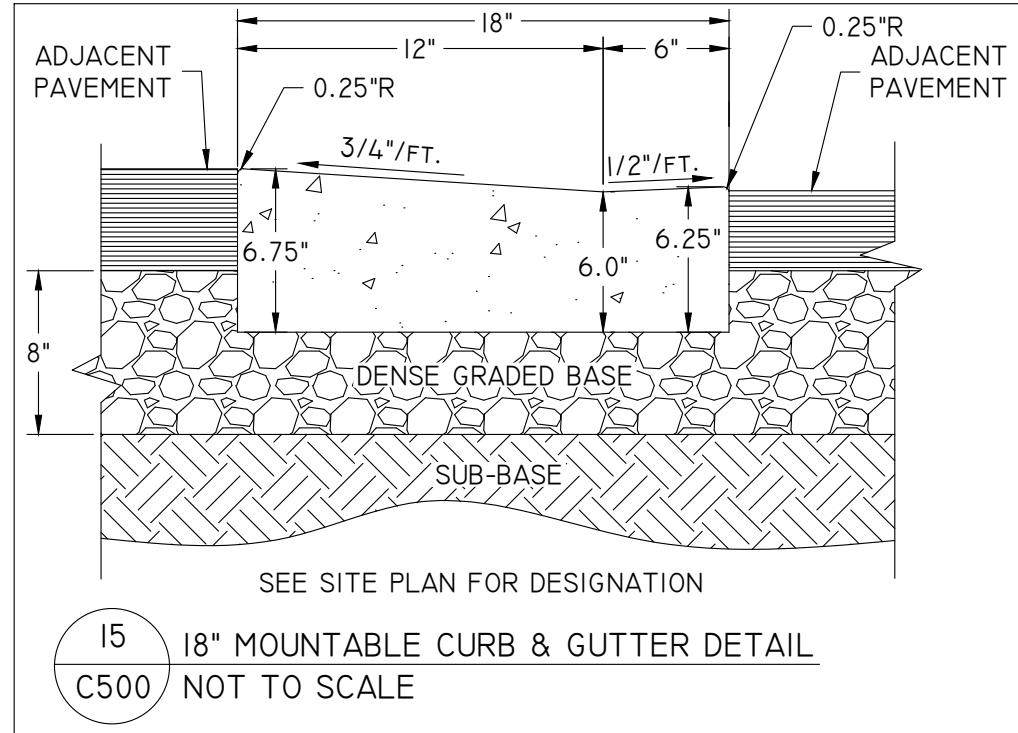
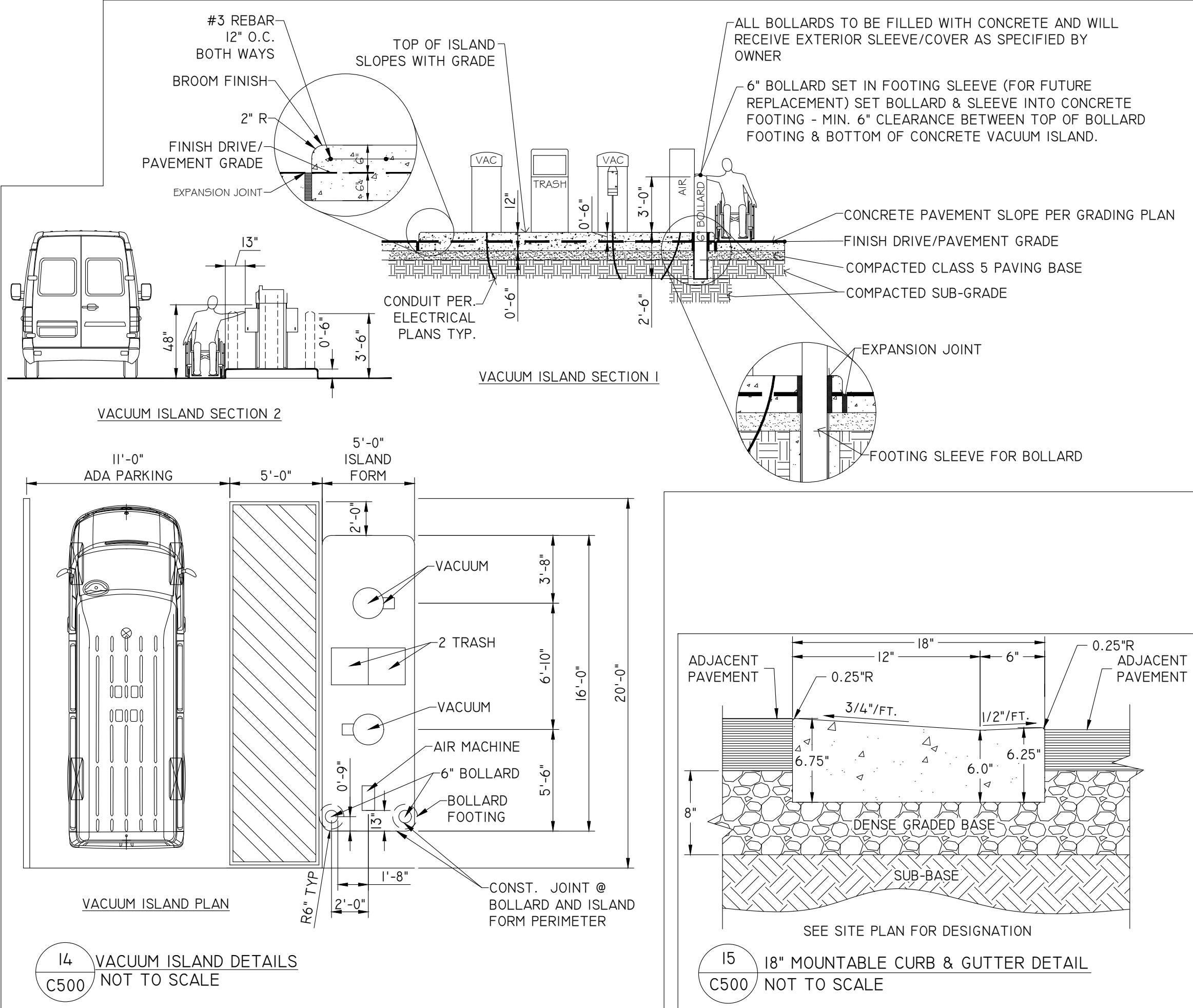
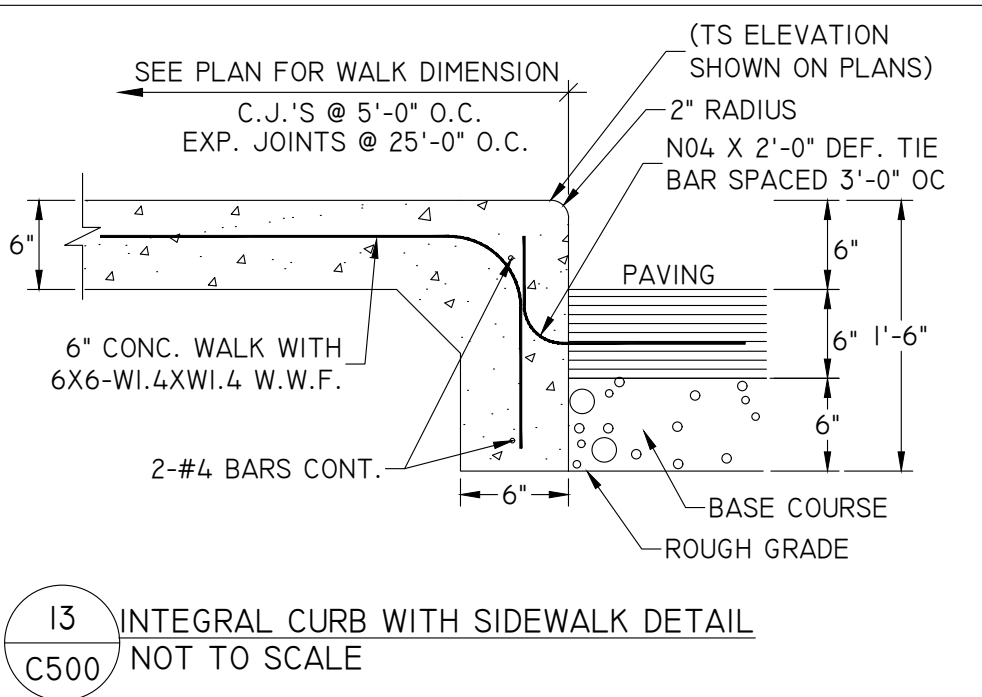
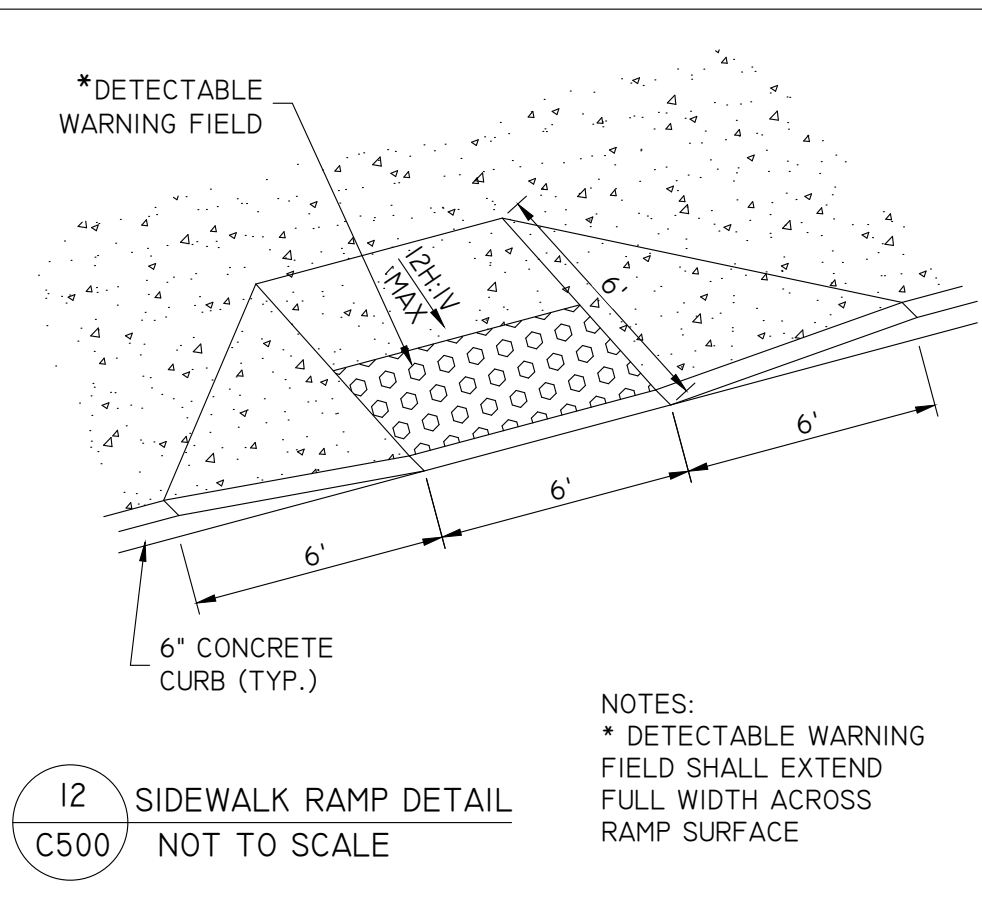
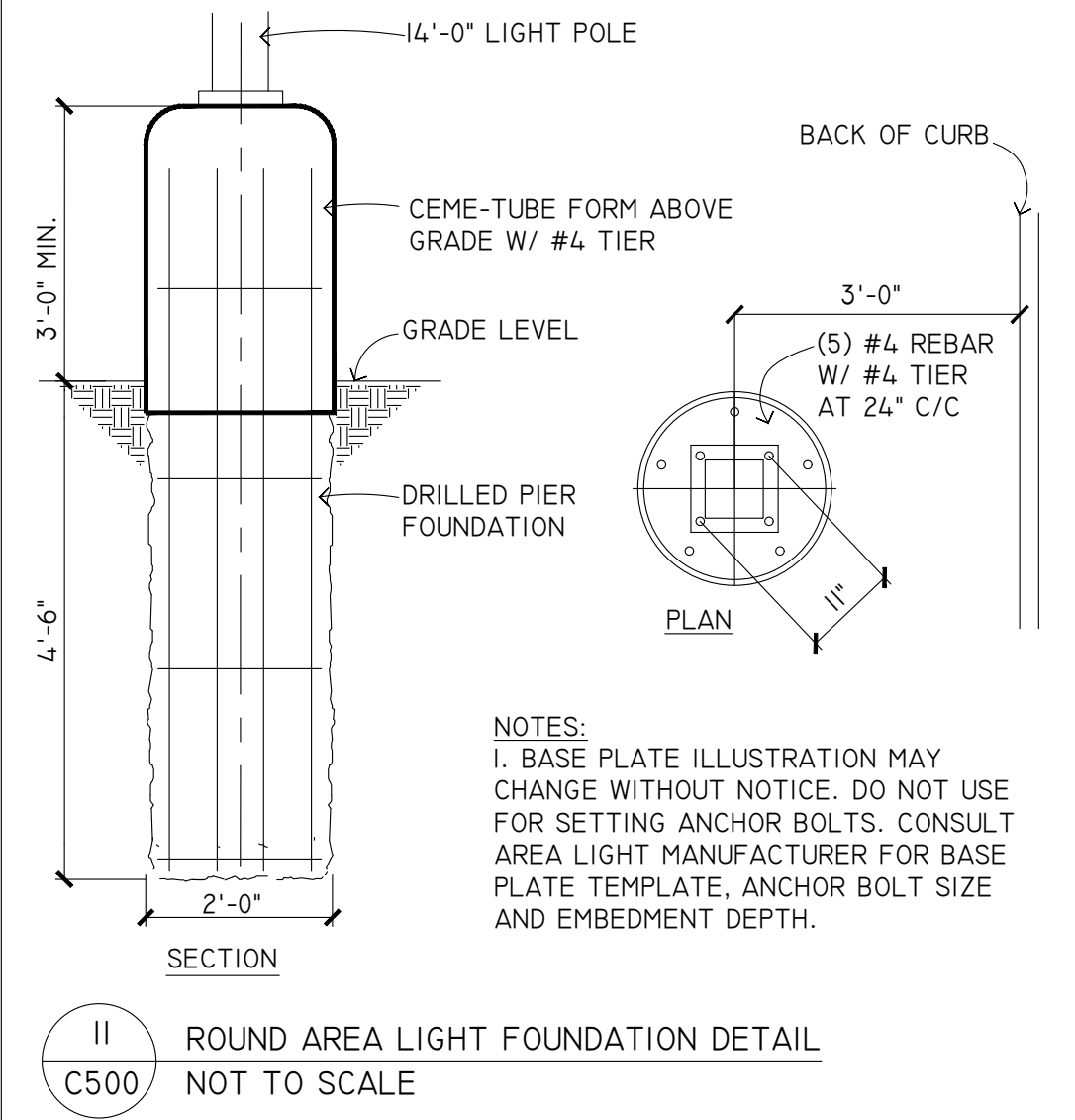
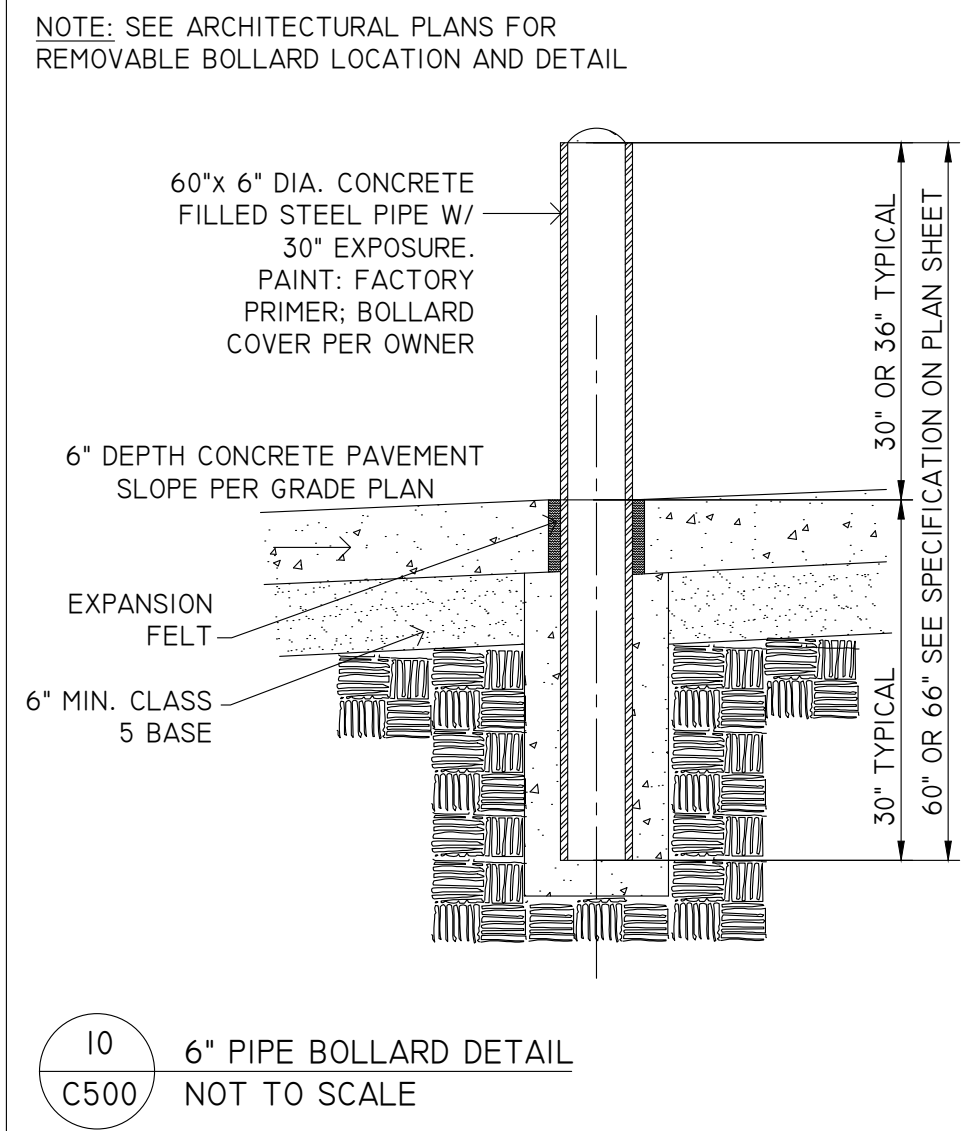
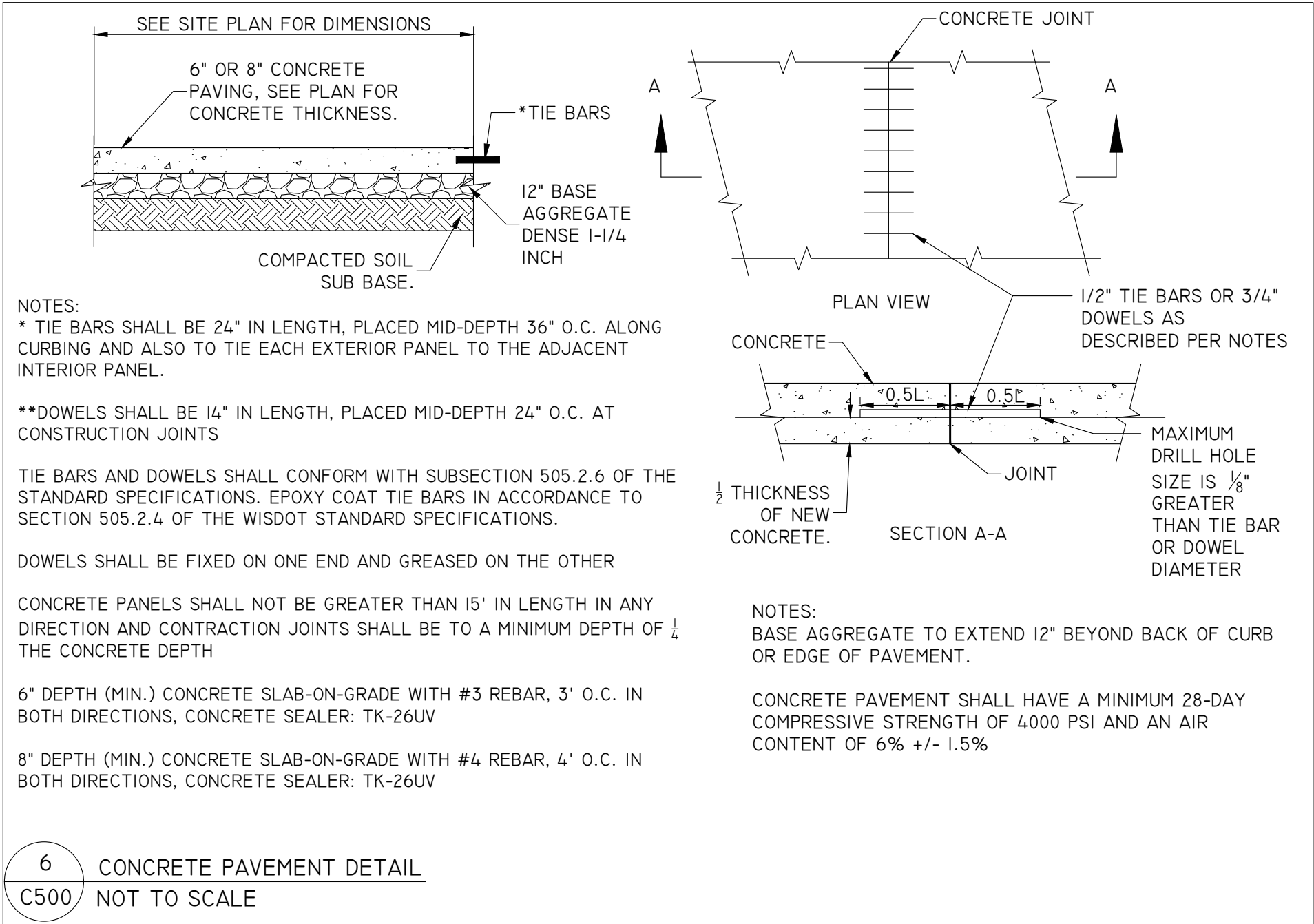
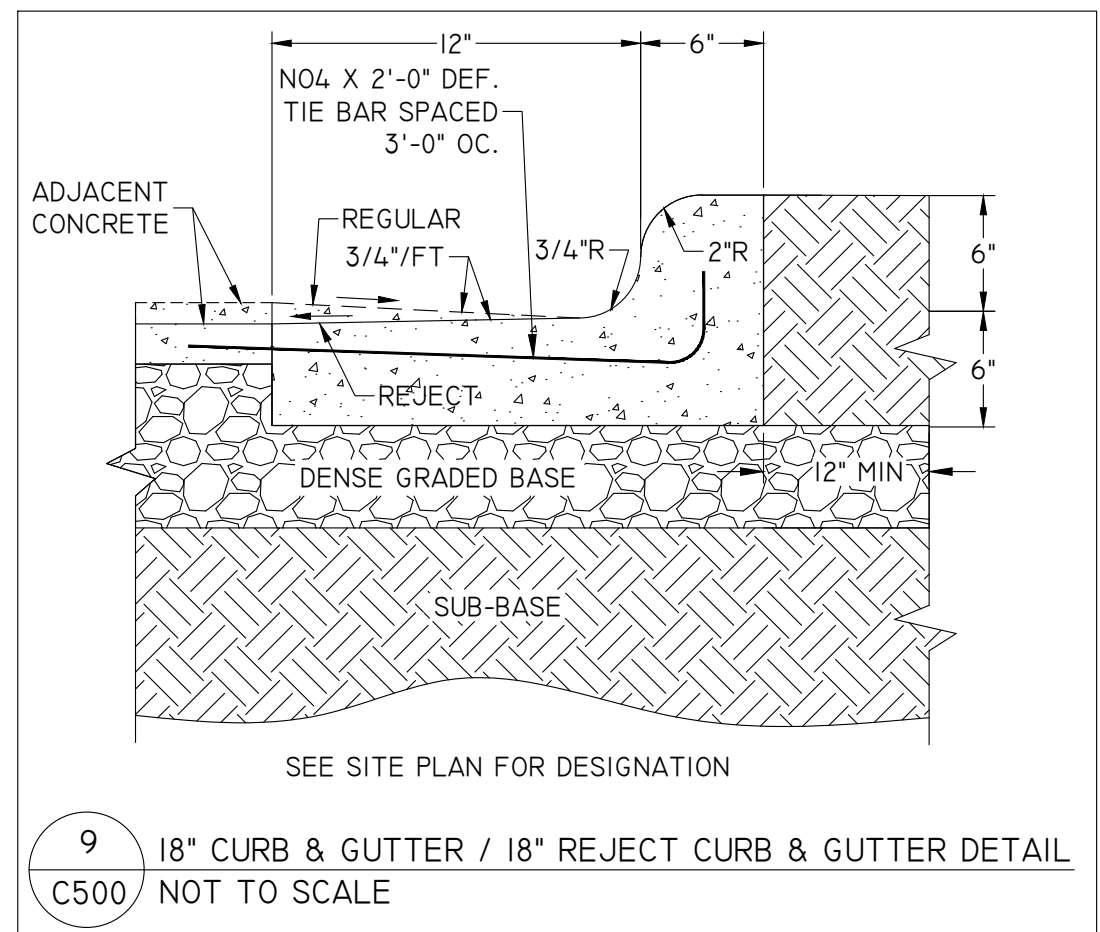
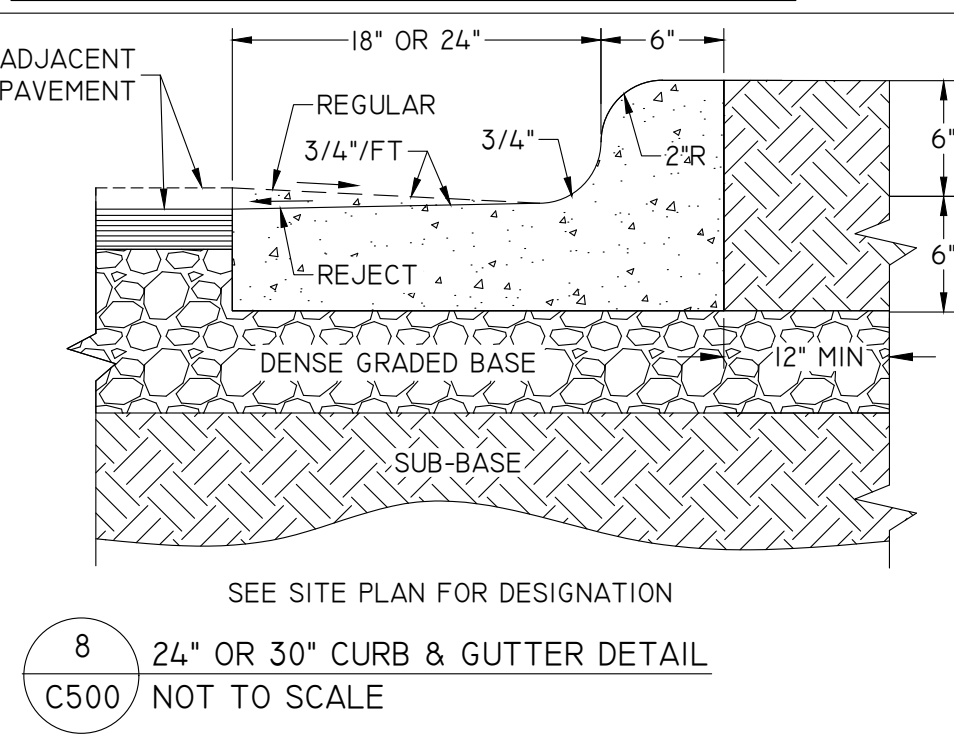
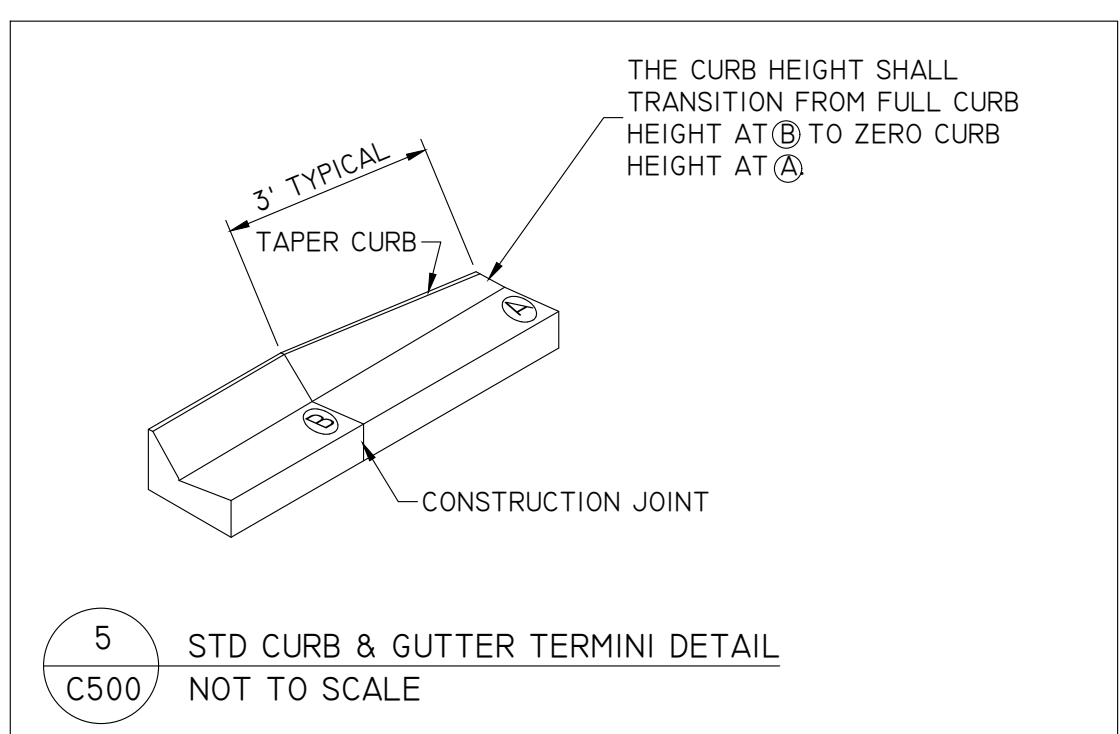
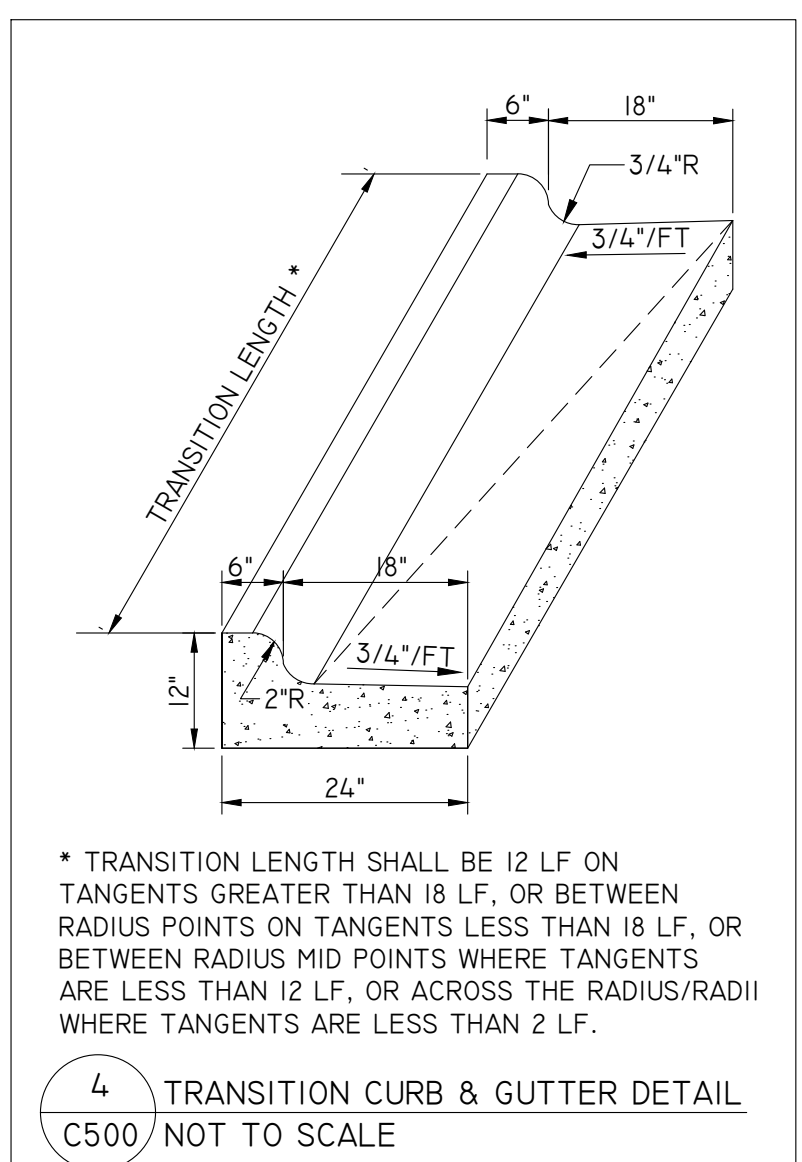
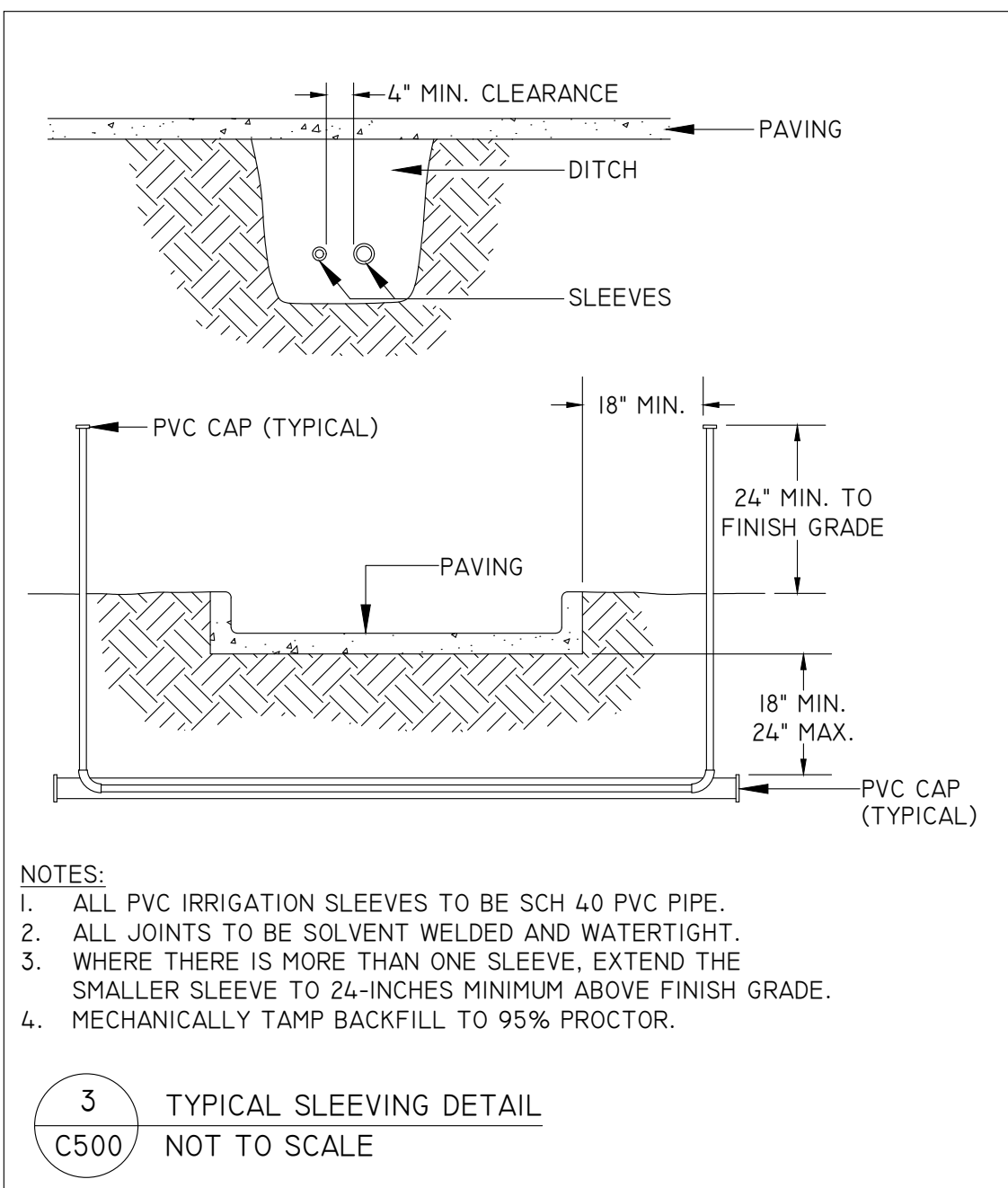
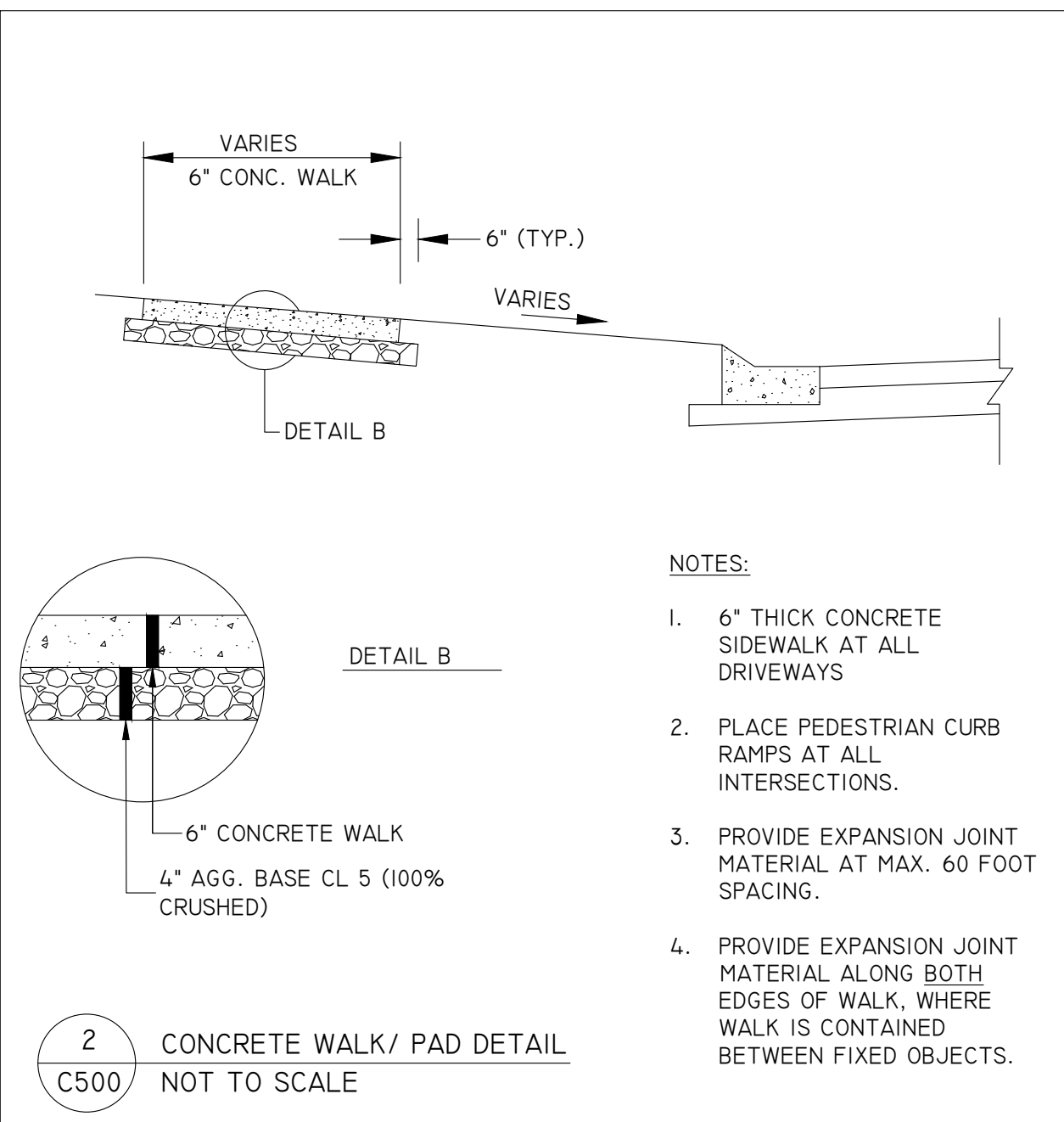
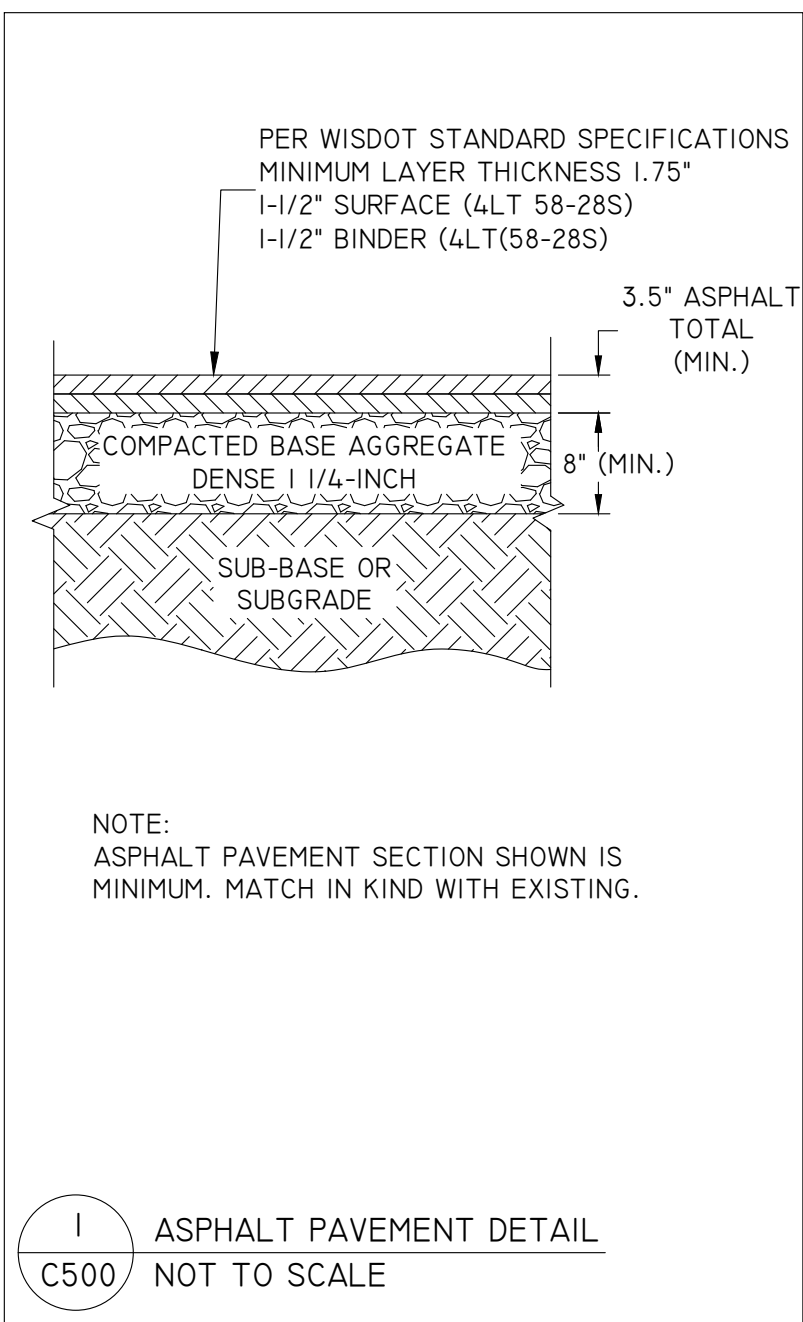
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DATE 10/09/24 - REVIEW DOCUMENTS

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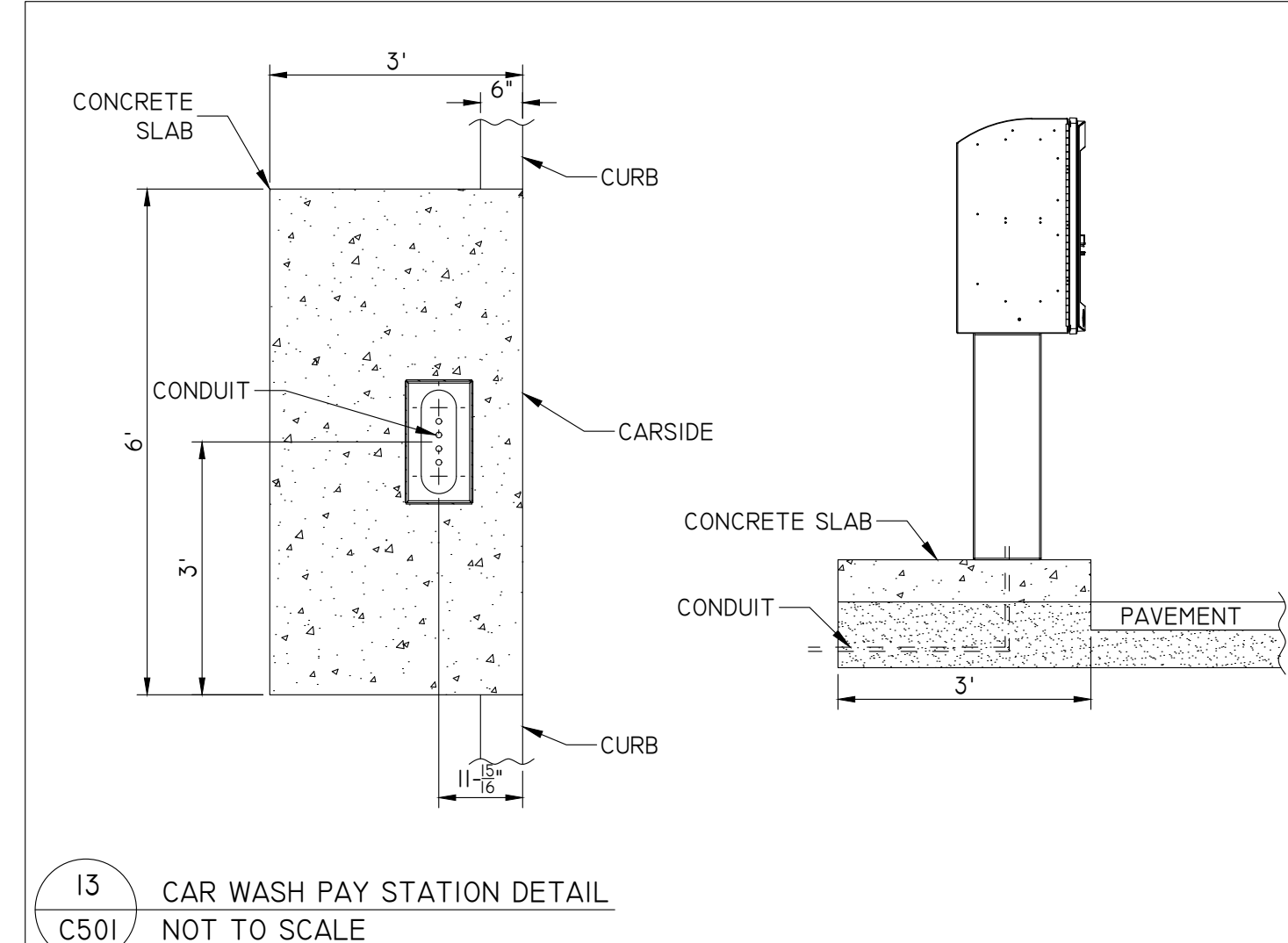
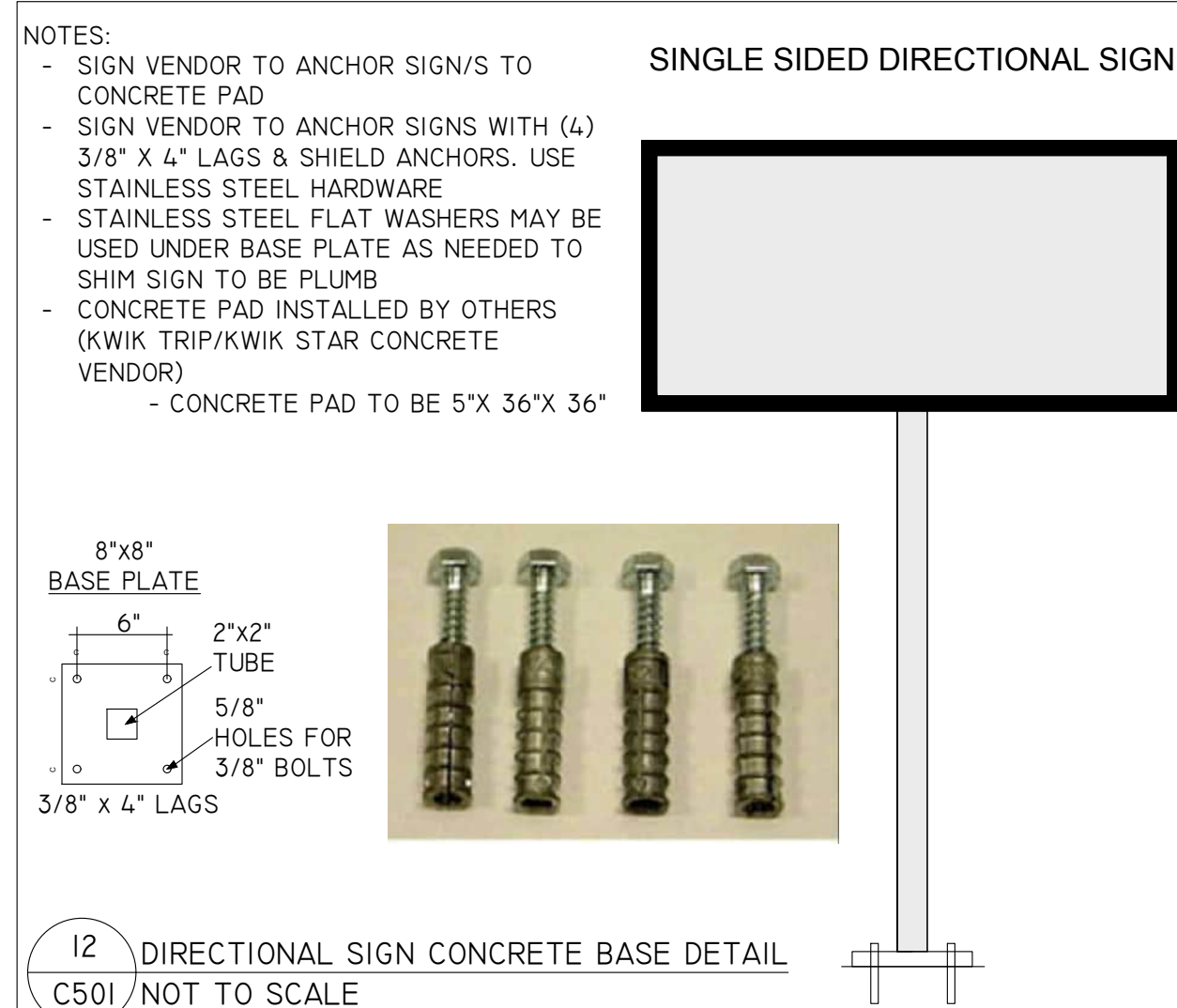
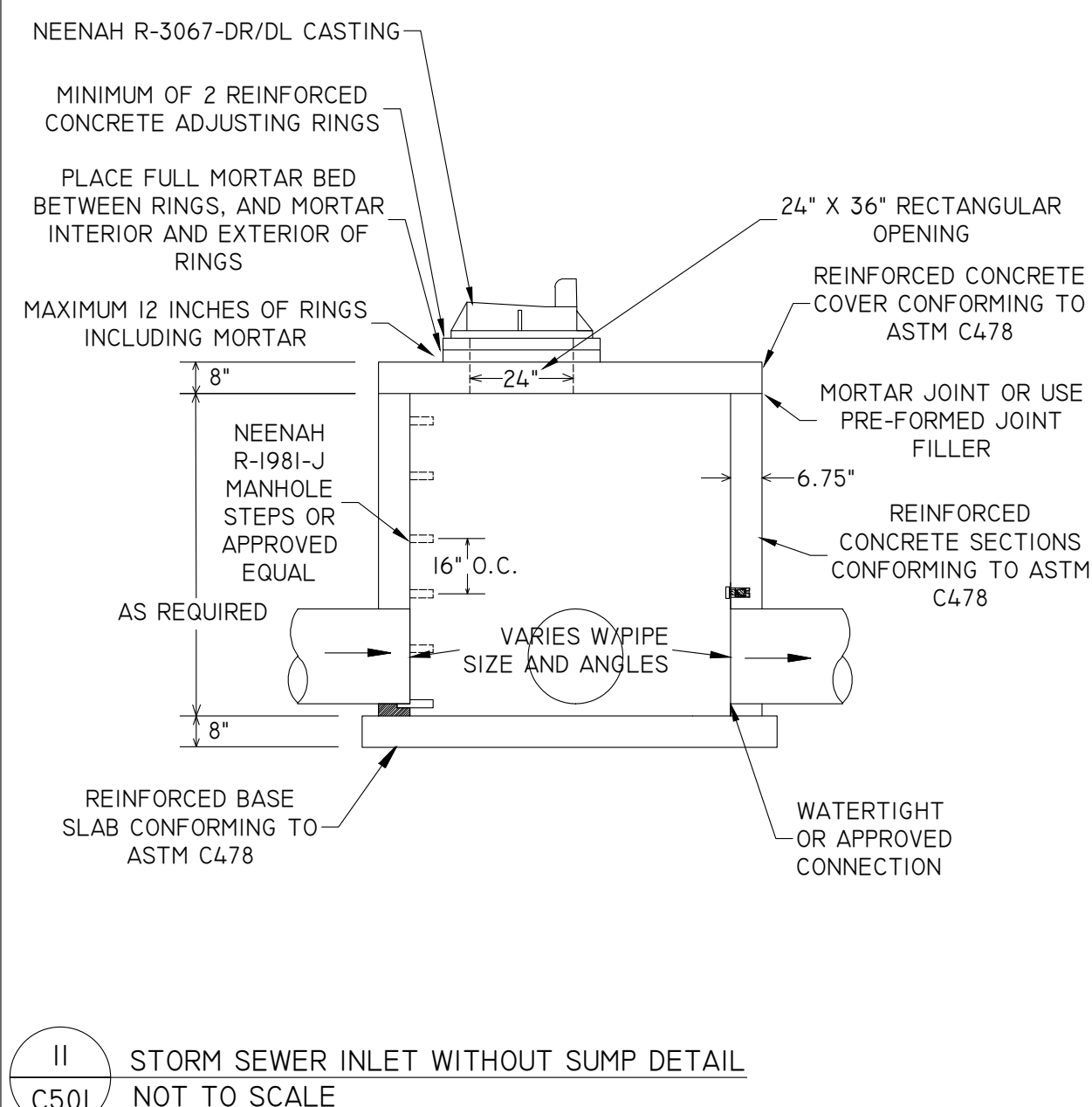
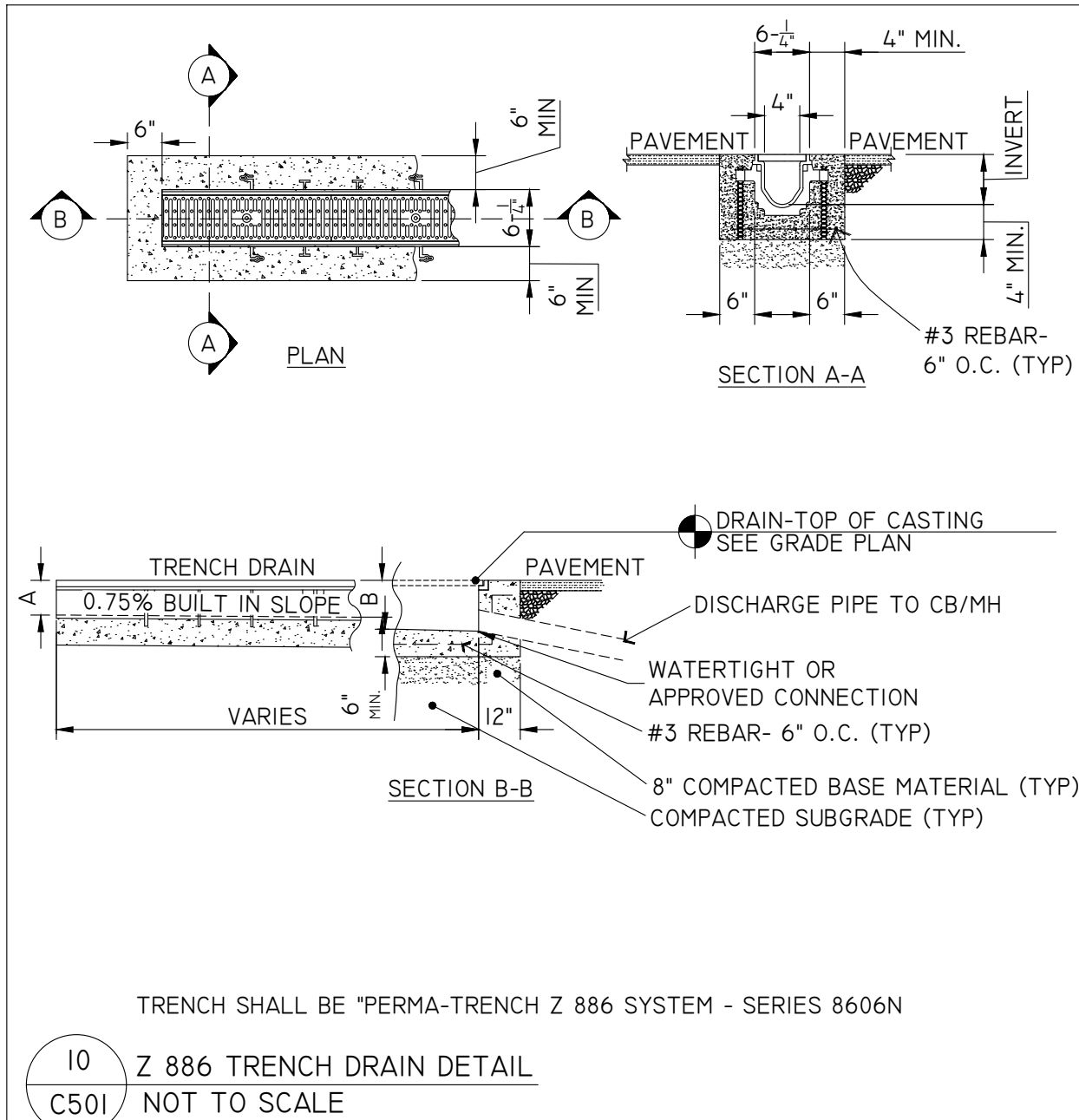
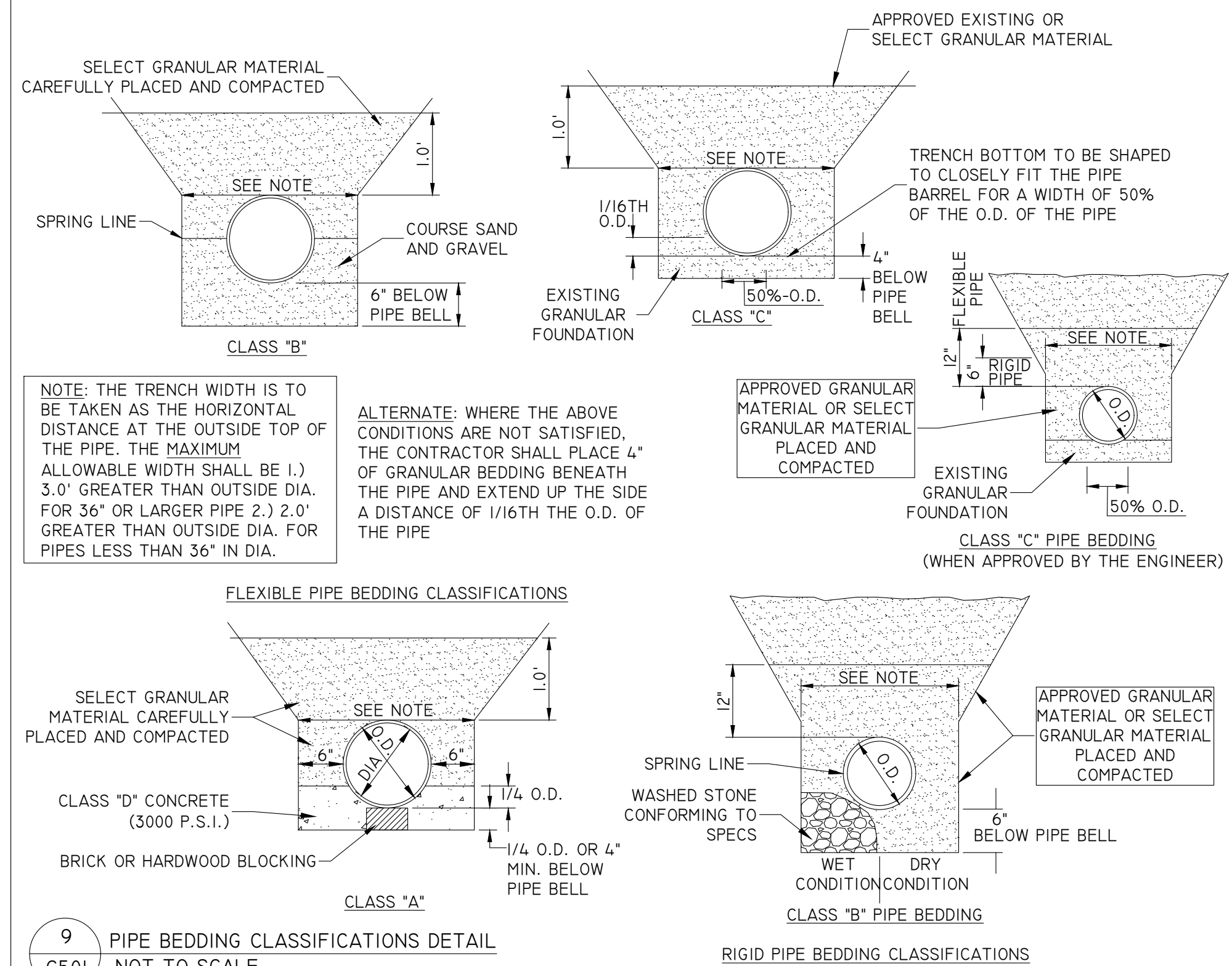
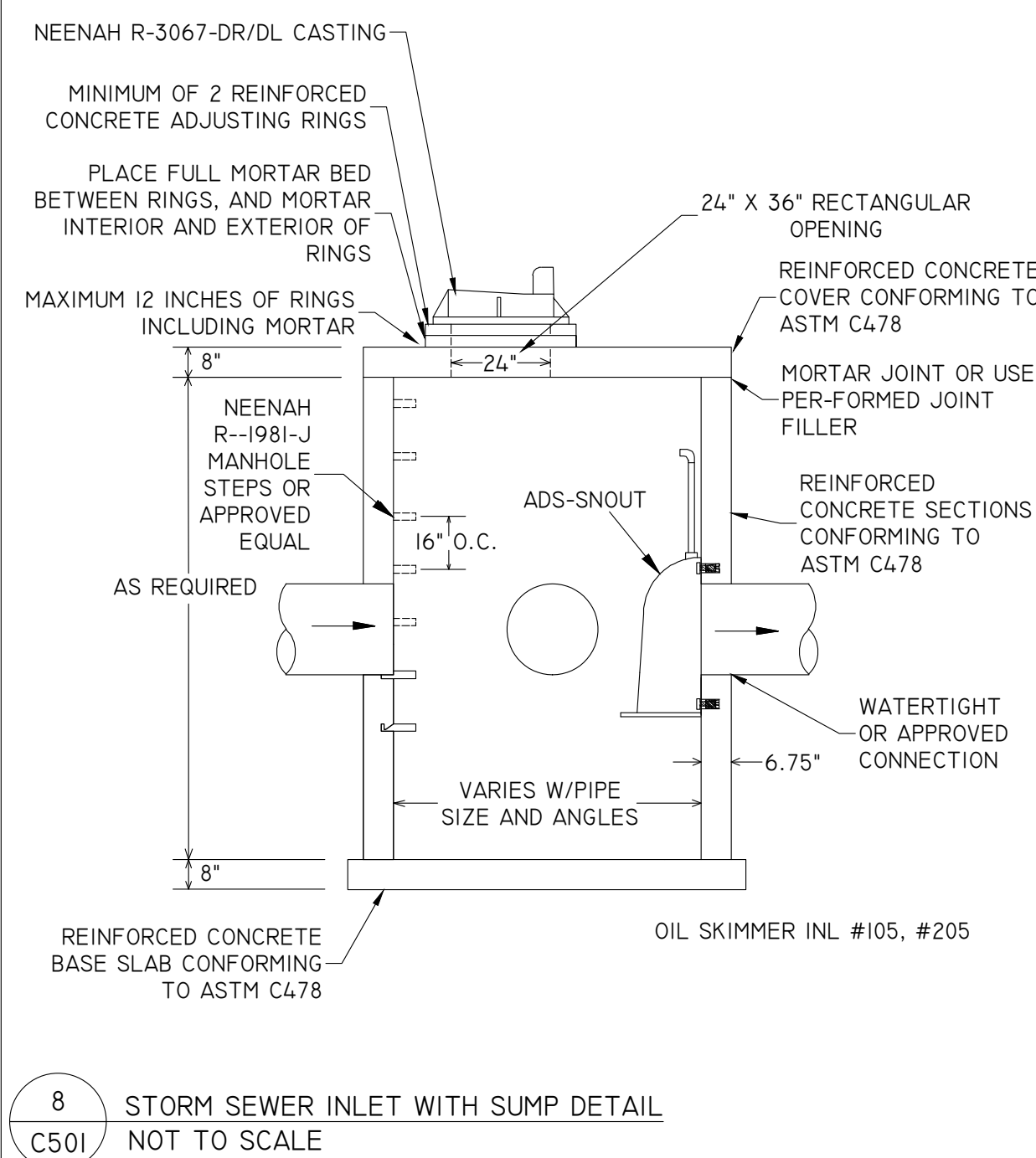
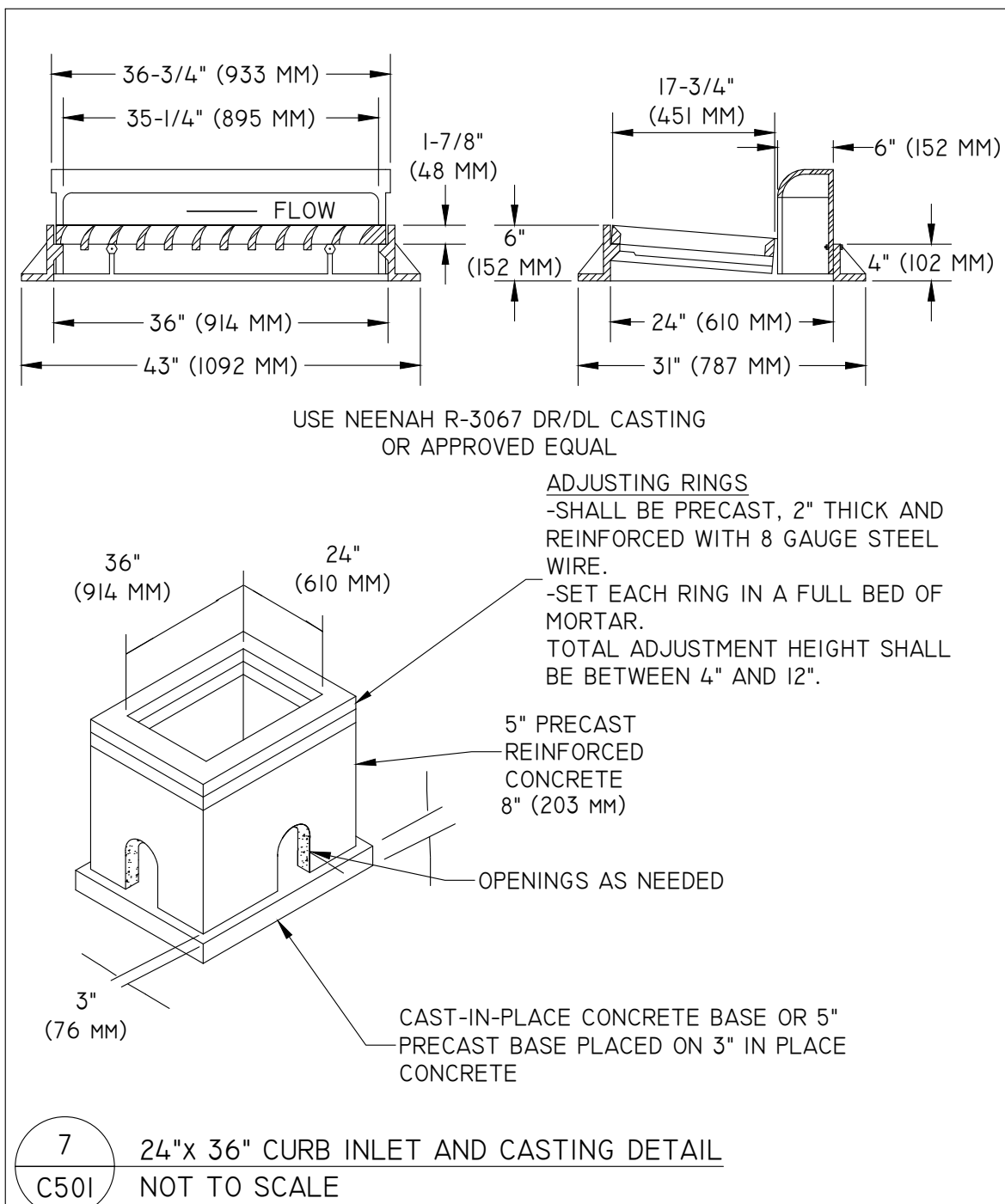
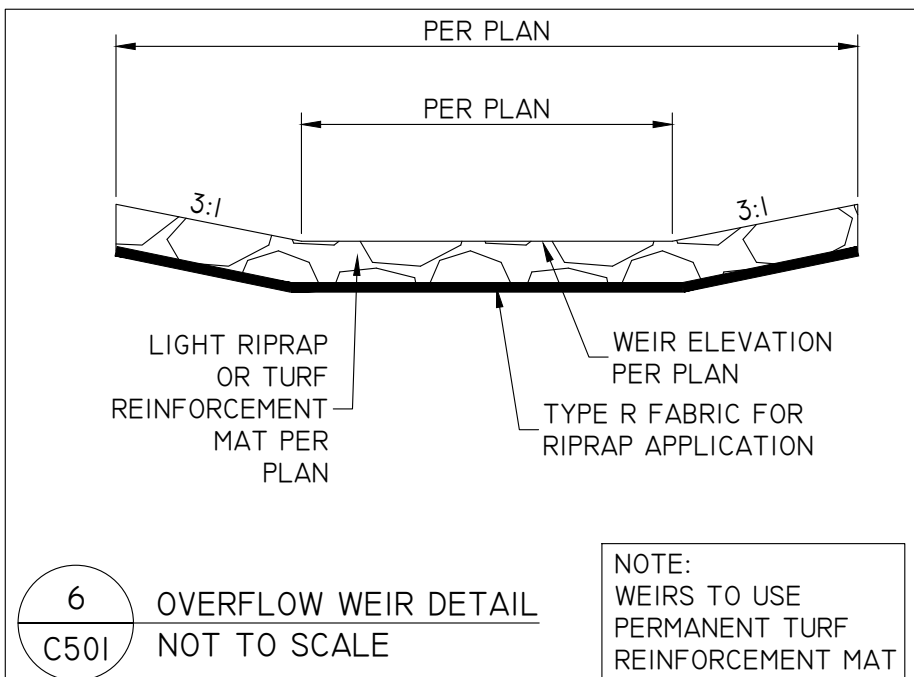
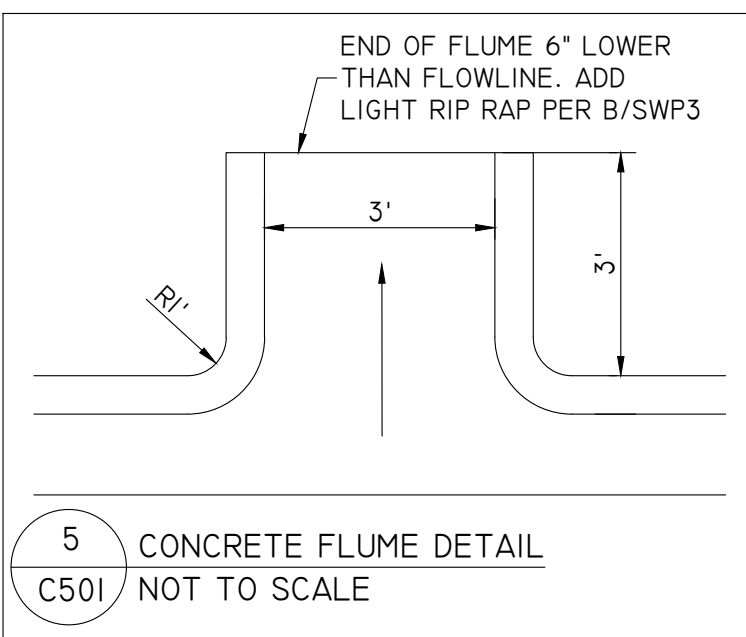
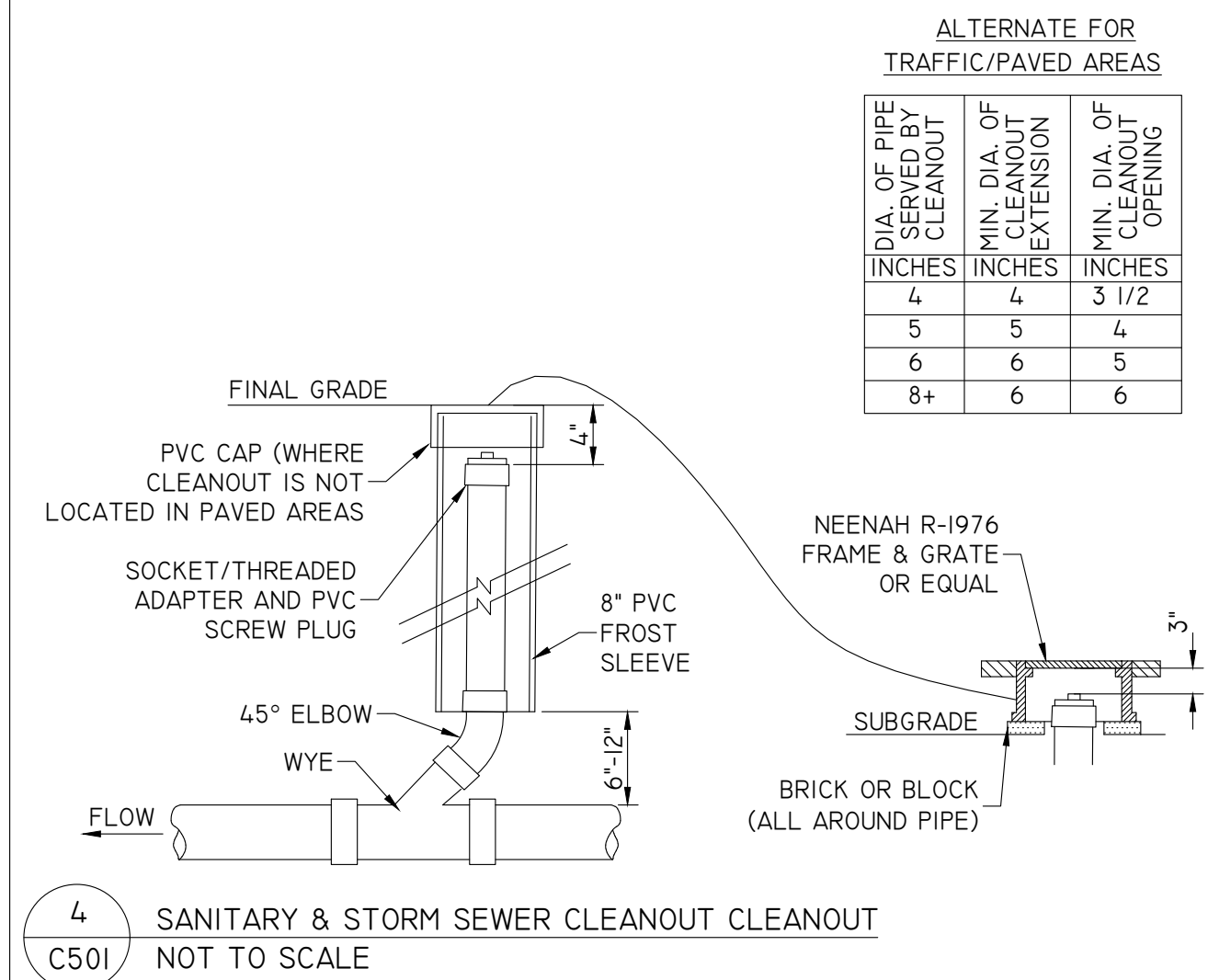
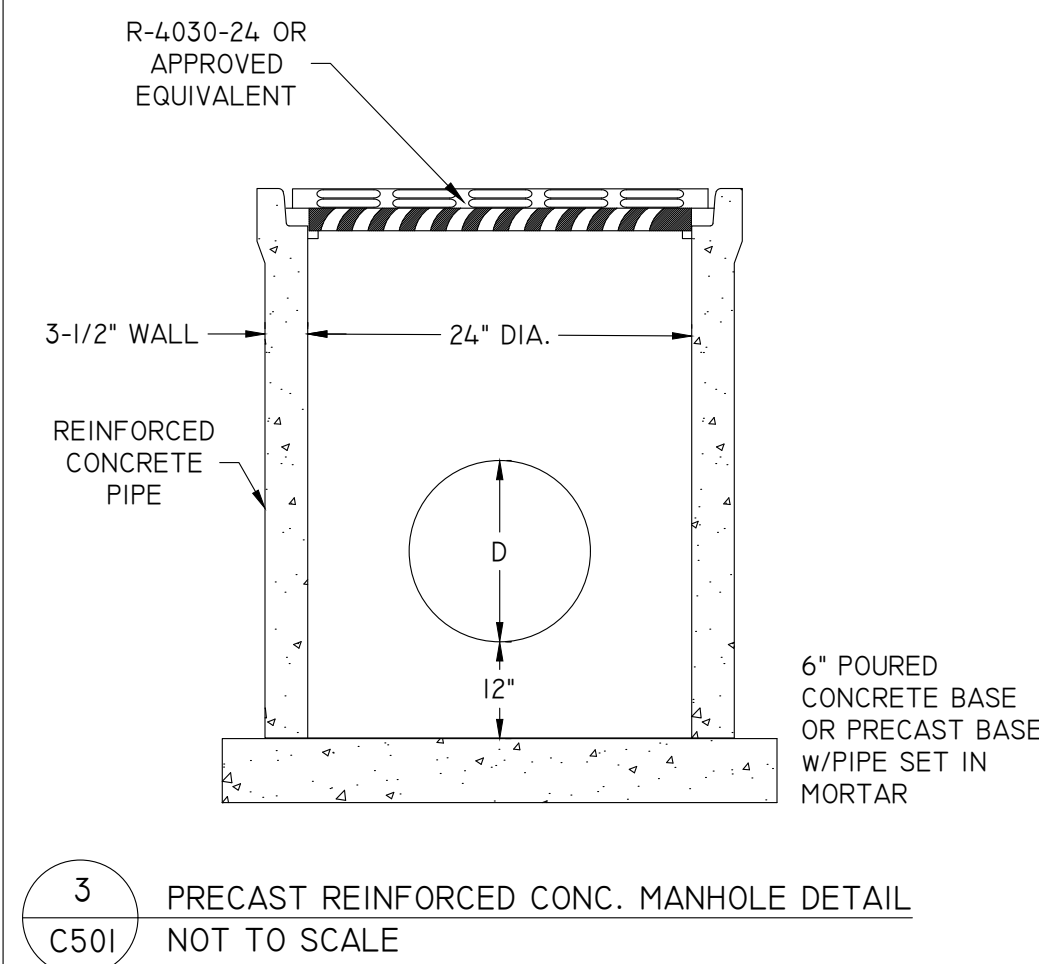
KWIK TRIP, Inc.
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NO SCALE

SITE PLAN DETAILS		
CONVENIENCE STORE #631		
STH 167 & MAPLE ROAD GERMANTOWN, WI		
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1 STORAGE TANKS COMPLEX DETAIL
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STORES



REI
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 ENGINEERING, SURVEYING**
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 4080 N. 20TH AVENUE
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 EMAIL: MAIL@REIENGINEERING.COM

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SITE PLAN DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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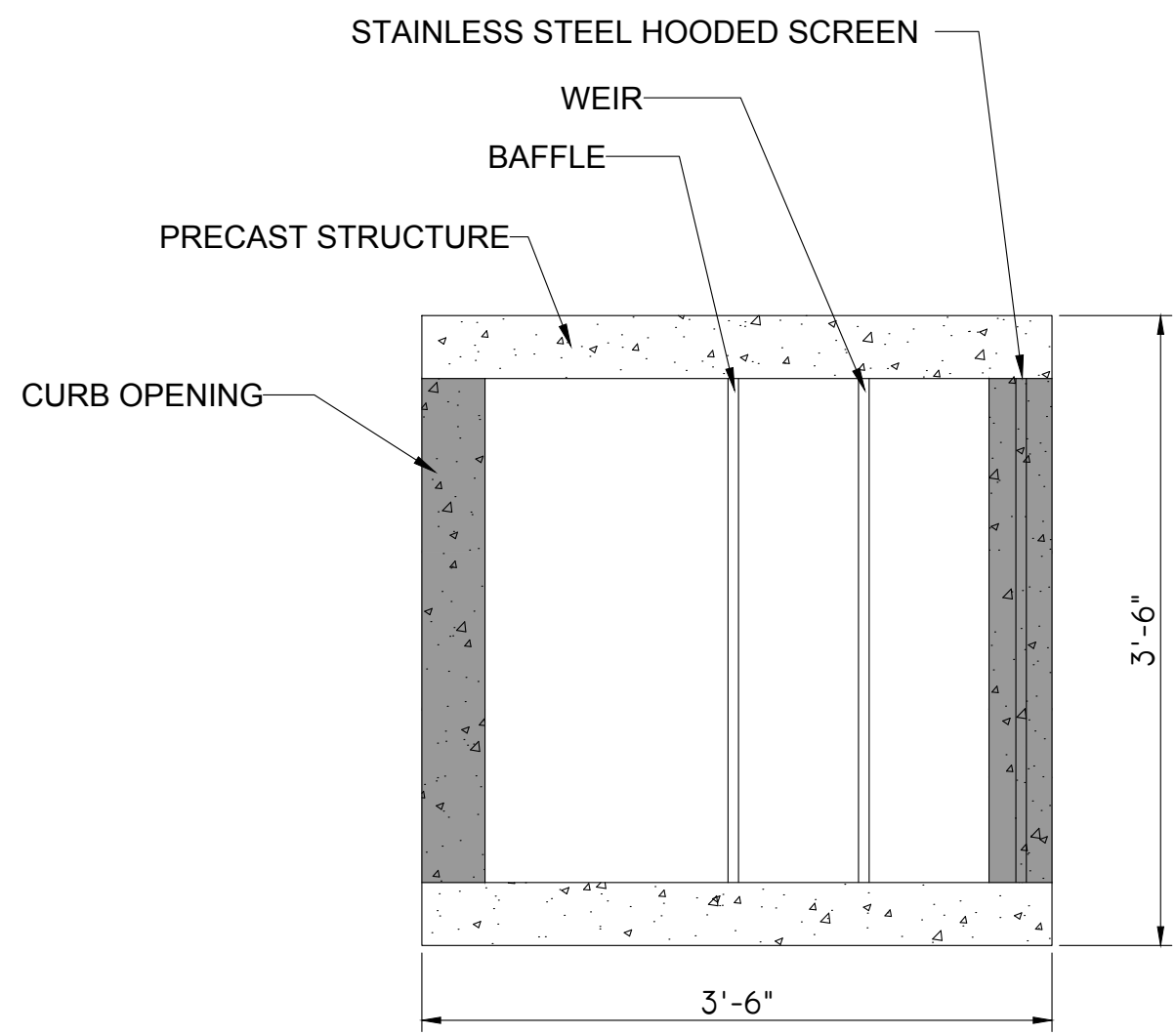
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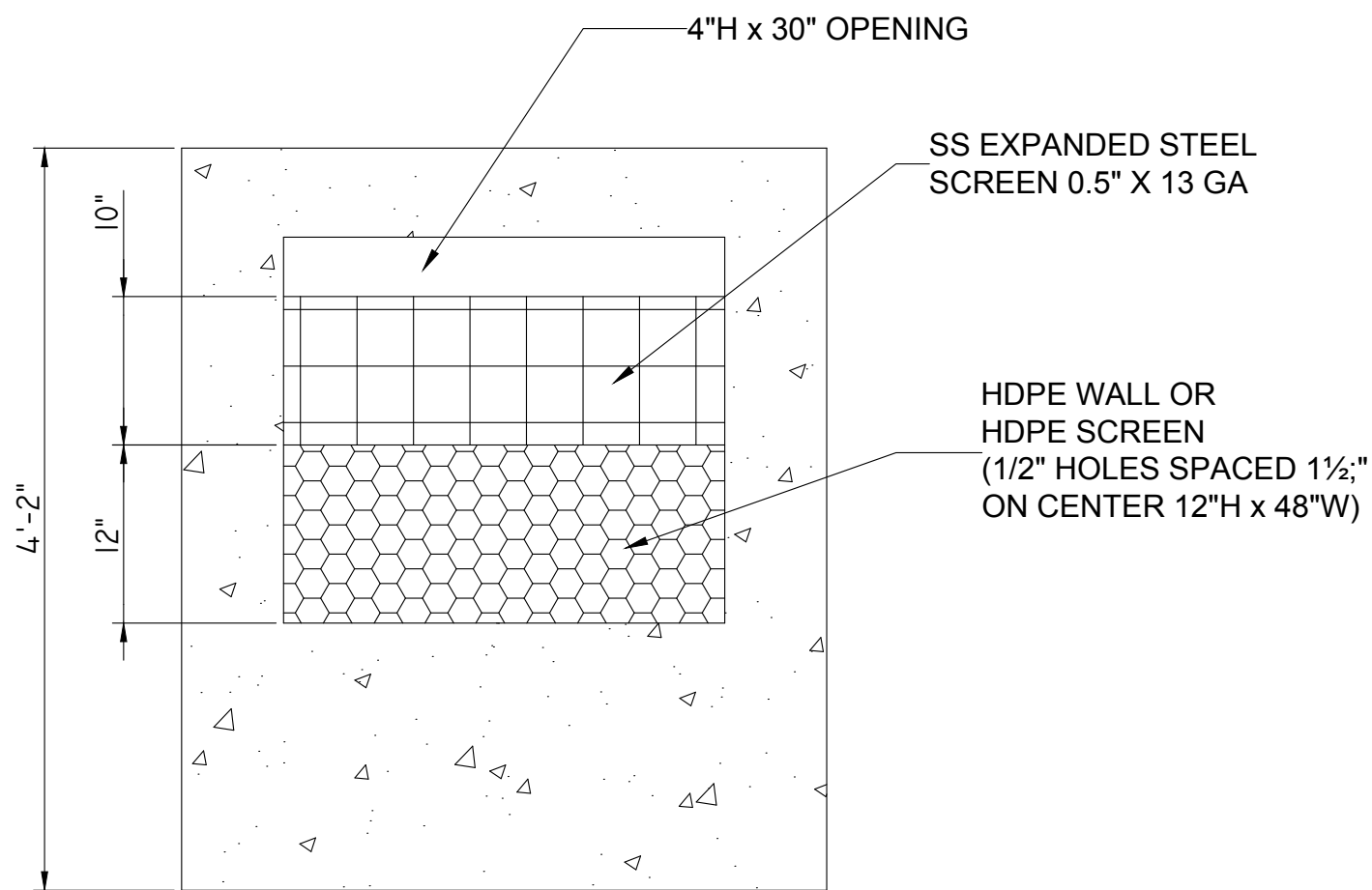
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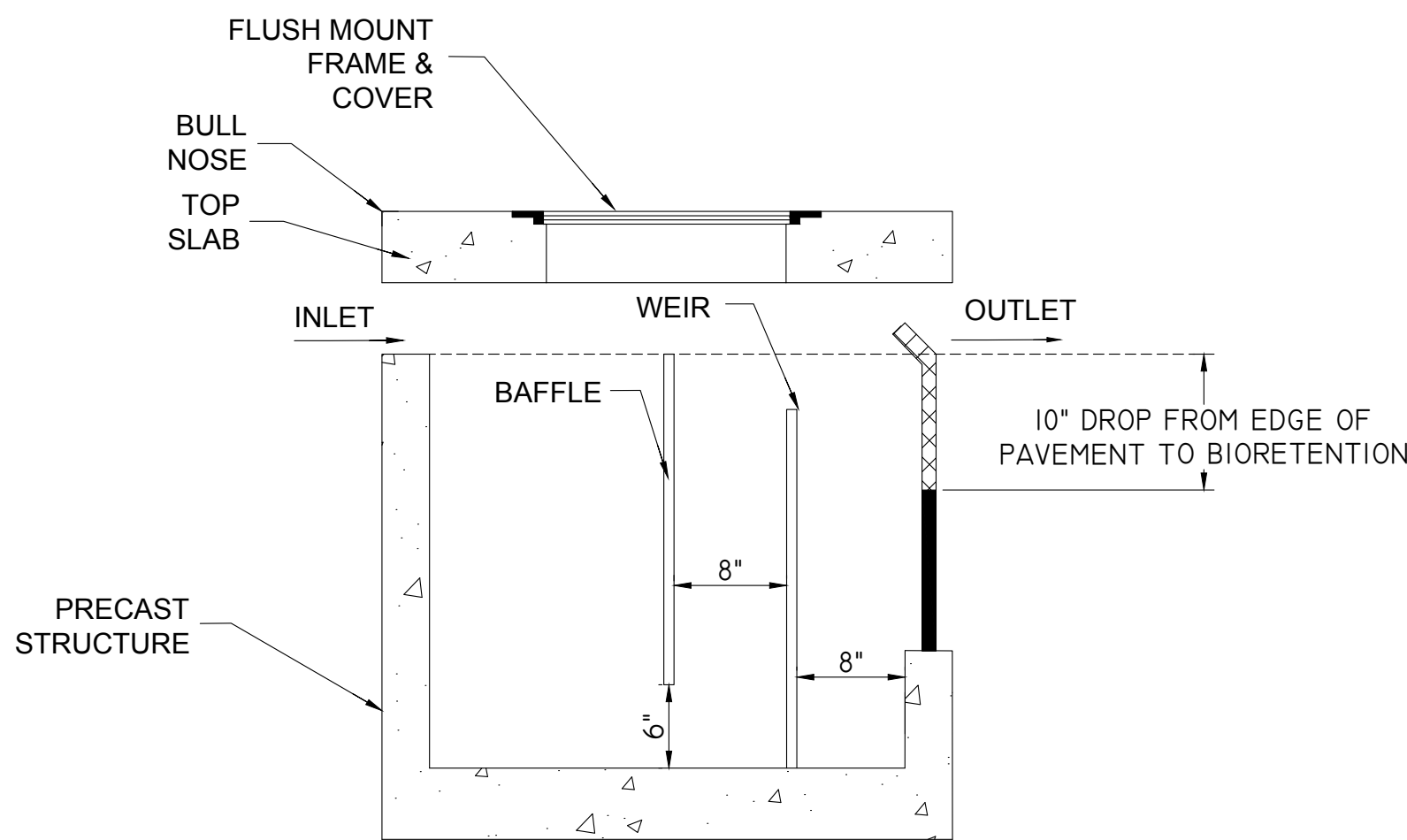
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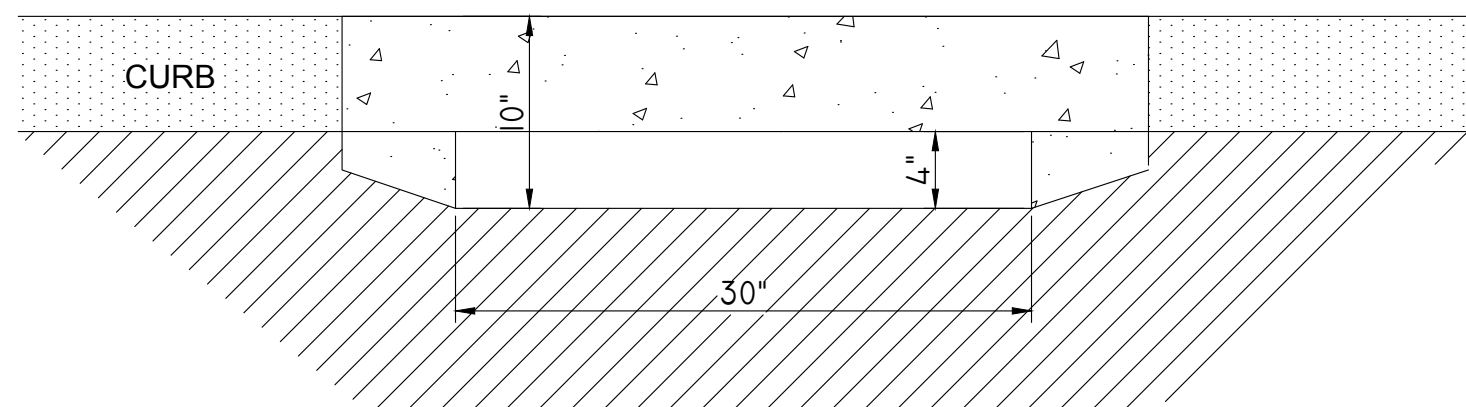


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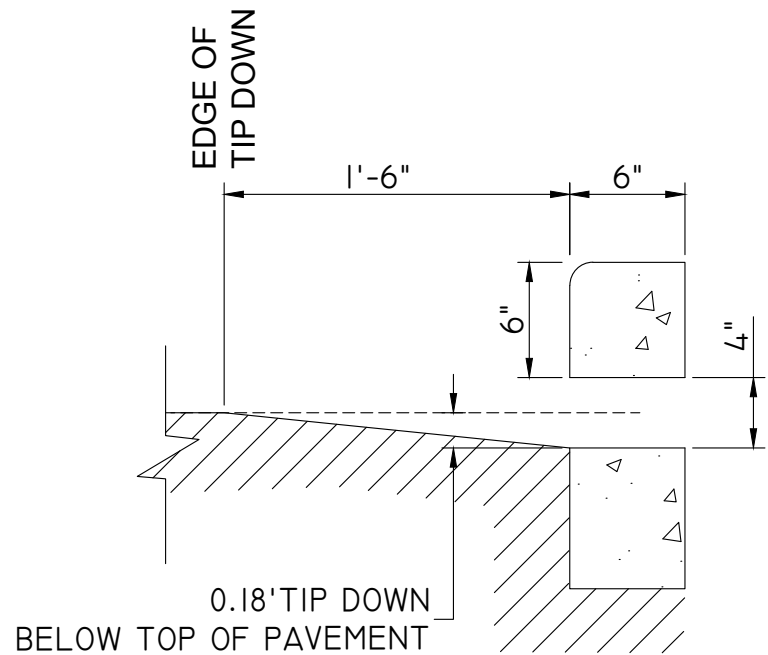


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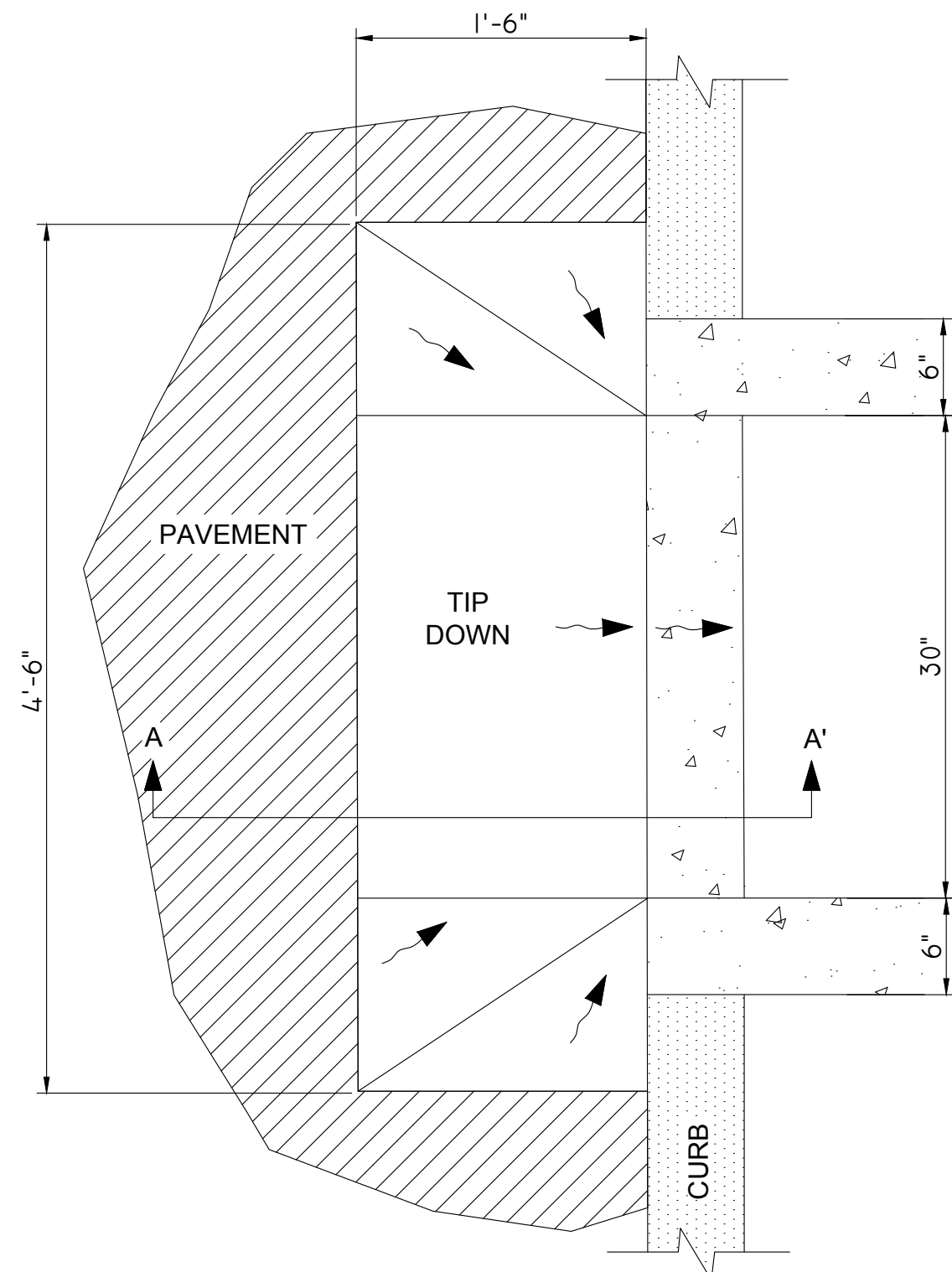
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CURB FACE



SECTION A-A



PLAN

PRETX - 8" CURB REVEAL DETAIL
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PRETX SPECIFICATIONS

A. GENERAL

- PRETX SYSTEMS ARE A PRE-FILTER AND CRITICAL MAINTENANCE DEVICE THAT EXTENDS THE OPERATING LIFE AND REDUCES THE MAINTENANCE BURDEN OF BIORETENTION SYSTEMS, RAIN GARDENS, BIOSWALES AND OTHER TYPES OF SURFACE BEST MANAGEMENT PRACTICES BY FILTERING OUT SEDIMENT, TRASH AND DEBRIS AT THE INLET.

B. PRODUCTS

- ACCEPTABLE SYSTEM SUPPLIER:
CONVERGENT WATER TECHNOLOGIES, INC. OR ITS
AUTHORIZED VALUE-ADDED RESELLER
P: (800) 711-5428; W: WWW.CONVERGENTWATER.COM

C. CONSTRUCTION AND SEQUENCING

- EXCAVATION AND INSTALLATION
 - ROUGH GRADE THE PRE-TX SYSTEM AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE PRE-TX SYSTEM FACILITIES TO WITHIN 1 FOOT OF STRUCTURE BOTTOM.
 - PLACE 1 FOOT BED OF COARSE STONE TO ELEVATION OF BASE OF STRUCTURE.
 - ESTABLISH ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT AND TIP DOWN, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS.
- INSTALLATION
 - PLACE THE PRECAST SYSTEM TO NECESSARY ELEVATION.
 - FOR PRETX-SURFACE:
 - VERIFY ELEVATIONS FOR ADJACENT CURBS.
 - VERIFY EDGE OF PAVEMENT TIP DOWN PAVEMENT GRADING FOR INLET GRATE.
 - VERIFY CURB ELEVATION IN RELATION TO PAVEMENT AND TIP DOWN.
 - VERIFY OUTLET INVERT FOR KNEE WALL IN RELATION TO FILTER MEDIA.
 - INSTALL BAFFLES, WEIR, AND SCREENS AS INDICATED ON DRAWINGS.
 - VERIFY MAINTENANCE ACCESS THROUGH GRATE OR COVER AND CLEARANCE FOR VACTOR.
 - INSTALL TOP OF STRUCTURE LEVEL WITH ADJACENT CURB OR SIDEWALK AS PER MANUFACTURERS SPECIFICATIONS. ENGINEER FIELD VISIT REQUIRED PRIOR TO BACKFILLING.
- BACKFILLING
 - BACKFILL WITH APPROVED SOIL AND STONE TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
 - BACKFILL WITH 12" OF NO. 57 STONE AROUND REAR, LEFT, AND RIGHT SIDES TO LEVEL WITH TOP OF HDPE SCREEN.
 - BACKFILL WITH BIORETENTION SOIL MIX BEYOND STONE BACKFILL TO EQUAL ELEVATION OF THE TOP OF HDPE SCREEN.
 - DO NOT BACKFILL SOIL OR STONE AGAINST STAINLESS SCREEN.
 - DO NOT COMPACT ADJACENT FILTRATION SYSTEM SOIL WITH MECHANICAL EQUIPMENT.
 - STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/ OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
- CLEAN UP
 - AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIALS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTLY ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

Kwik
TRIP

STORES

Kwik
STAR

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EMAIL: MAIL@REIENGINEERING.COM

NO SCALE

SITE PLAN DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: C502

SOIL DATA	
SURFACE SOIL	PAVED
SUB-SURFACE SOIL	SILT
DEPTH OF GROUND WATER	±8 FT
DOWN-STREAM TRIBUTARY	MENOMINEE RIVER

(C) DEWATERING BAGS SHALL BE READILY AVAILABLE AND SHALL BE USED AT ALL TIMES IN THE PROCESS OF DEWATERING.

	INSTALL WISDOT URBAN TYPE B EROSION SLOPES OF 4:1 OR GREATER. SEE DETAIL
ESTIMATED PRELIMINARY EROSION CONTROL QUANTITIES (ACTUAL QUANTITIES SUBJECT TO CHANGE)	
ITEM	QUANTITY
ROCK CONSTRUCTION ENTRANCE	400 SQ. YD.
INLET PROTECTION	12
EROSION CONTROL BLANKET	2,000 SQ.YD.
RIP RAP	30 CU. YD.
SILT FENCE	870 L.F.
CULVERT PROTECTION	0
DITCH CHECK	AS NEEDED
BIO ROLL/EROSION LOG	AS NEEDED

NOTE: FOR MAINTENANCE PURPOSES CONTRACTOR SHALL PROVIDE ALL SUFFICIENT QUANTITIES FOR REPAIR AND REPLACEMENT OF EROSION CONTROL DEVICES THROUGHOUT ALL PHASES OF THE PROJECTS CONSTRUCTION.

-SITE EROSION CONTROL MEASURES MUST BE IN PLACE AT ALL TIMES. SHOULD DEVICES BE REMOVED FOR WORK ACCESS, THEY SHALL BE REINSTALLED AT THE END OF EACH WORK DAY UNTIL PAVEMENTS HAVE BEEN INSTALLED AND ALL LANDSCAPE AREAS HAVE BEEN MULCHED AND SODDED. SEEDING AREAS MUST EXHIBIT MINIMUM OF 70% SOIL COVERAGE.

-REFER TO THE SWP PLAN NOTES
AND DETAIL SHEETS SWP2-4 FOR
MORE INFORMATION.

7. INSTALL DITCH CHECKS @ MAX. OF 200-FT INTERVALS OR EVERY 2-FT OF DROP. SEE DETAIL D/C603.

SUGGESTED CONSTRUCTION SEQUENCE

04/01/25- PROVIDE CONSTRUCTION ACCESS

- INSTALL PERIMETER CONSTRUCTION ACCESS FENCING
- INSTALL SILT FENCE
- INSTALL INLET PROTECTION ON EXISTING STORM STRUCTURES
- PRE-CONSTRUCTION MEETING
- DEMO AND REMOVE EXISTING BUILDINGS
- SAWCUT AND REMOVE PAVEMENT, STRIP TOPSOIL, REMOVALS

04/08/25- ROUGH GRADING

- INSTALL DIVERSIONS AND SEDIMENT TRAP

04/22/25- CONSTRUCT BUILDING

- SITE UTILITY INSTALLATION

05/08/25- INSTALL INLET PROTECTION ON NEW STORM STRUCTURES

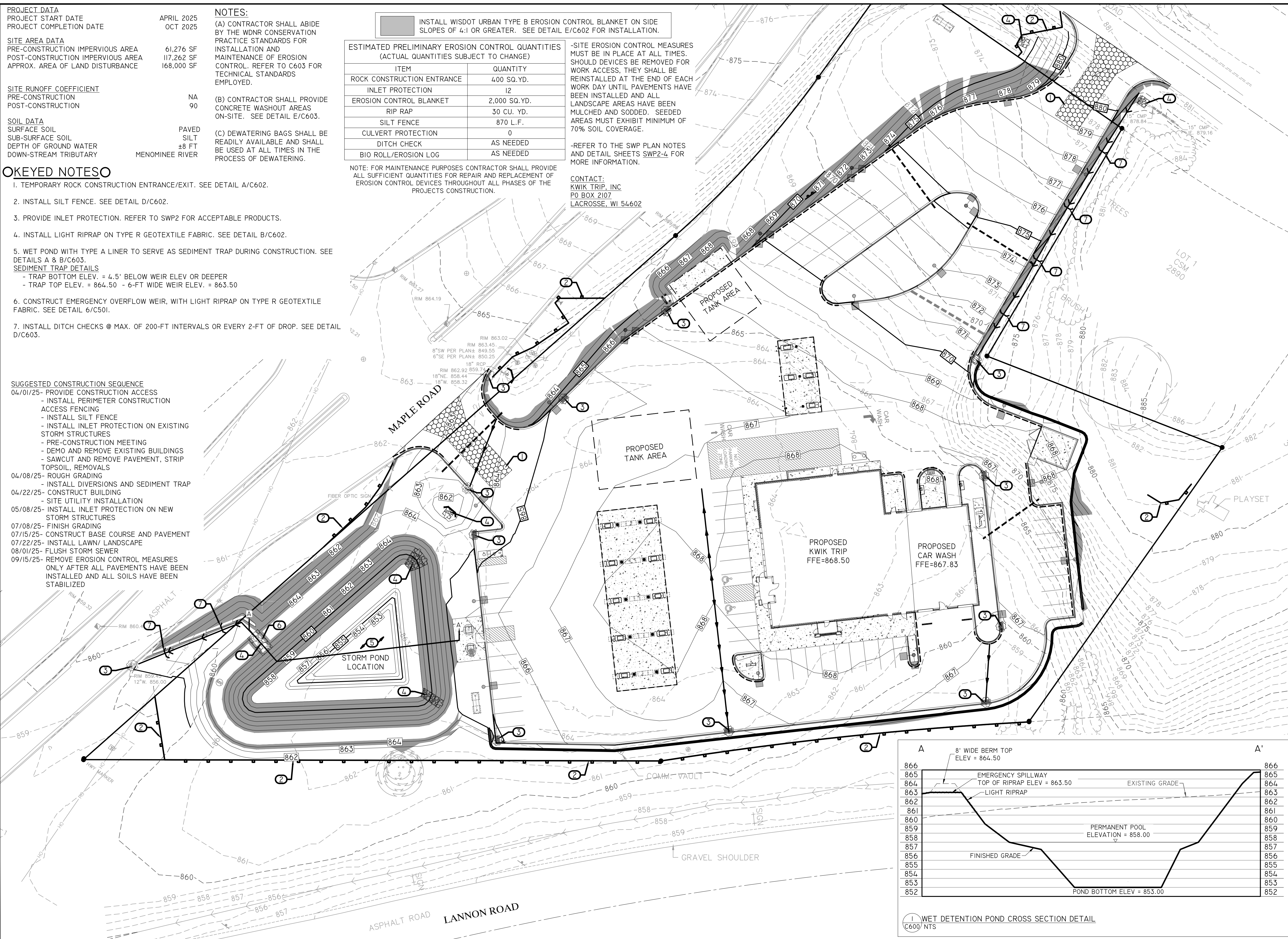
07/08/25- FINISH GRADING

07/15/25- CONSTRUCT BASE COURSE AND PAVEMENT

07/22/25- INSTALL LAWN/ LANDSCAPE

08/01/25- FLUSH STORM SEWER

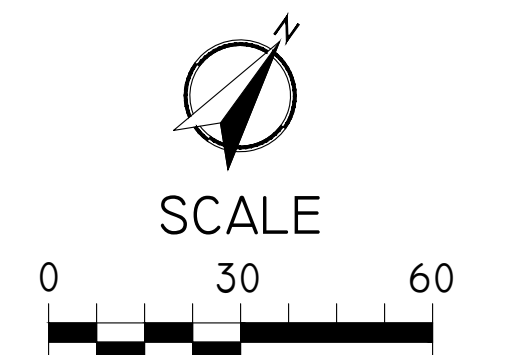
09/15/25- REMOVE EROSION CONTROL MEASURES ONLY AFTER ALL PAVEMENTS HAVE BEEN INSTALLED AND ALL SOILS HAVE BEEN STABILIZED



STORES



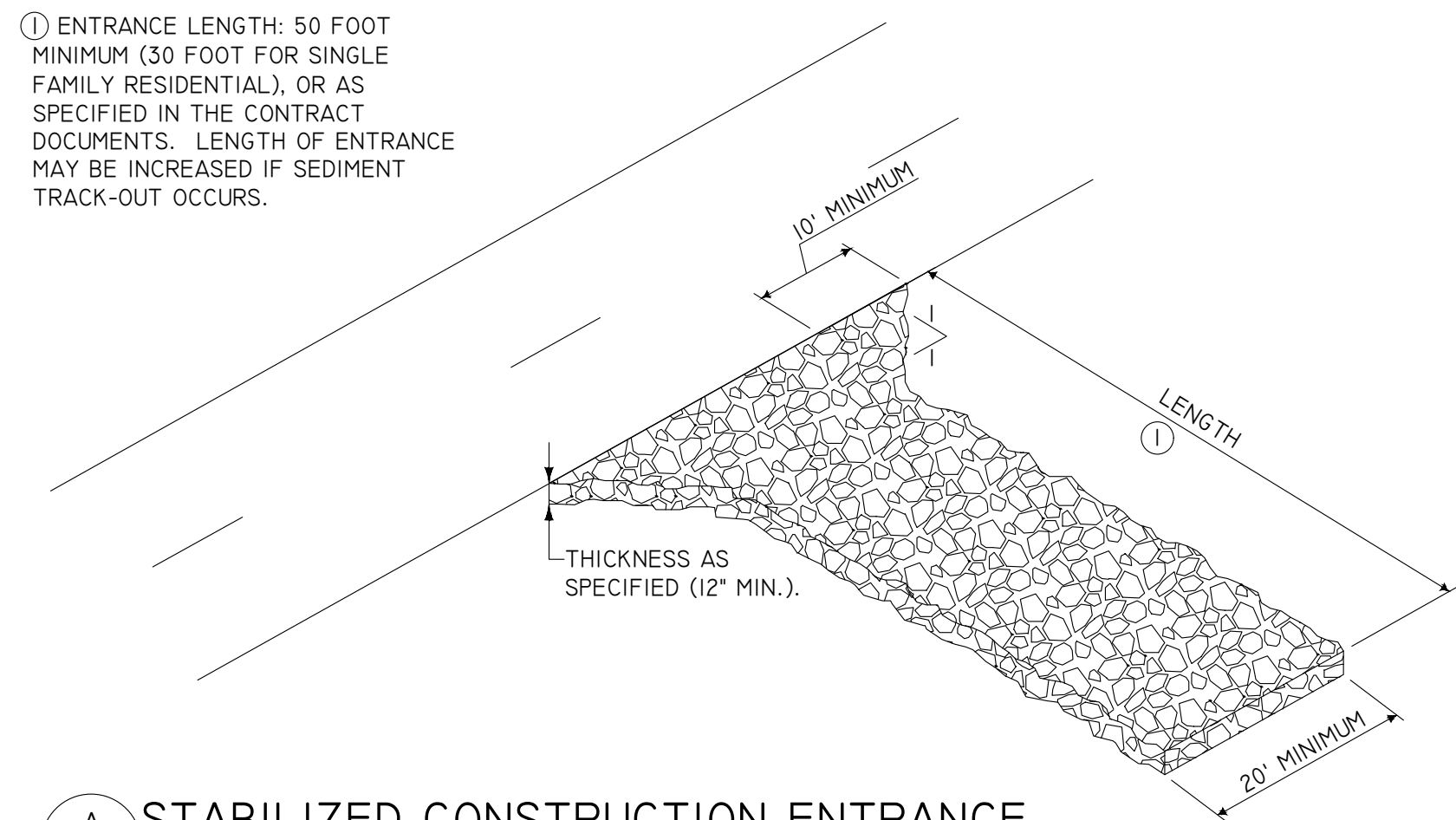
REI
**CIVIL & ENVIRONMENTAL
 ENGINEERING, SURVEYING**
REI Engineering, INC.
 4080 N. 20TH AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: 715.675.9784 FAX: 715.675.4060
 EMAIL: MAIL@REIENGINEERING.COM



STH 167 & MAPLE ROAD
GERMANTOWN, WI

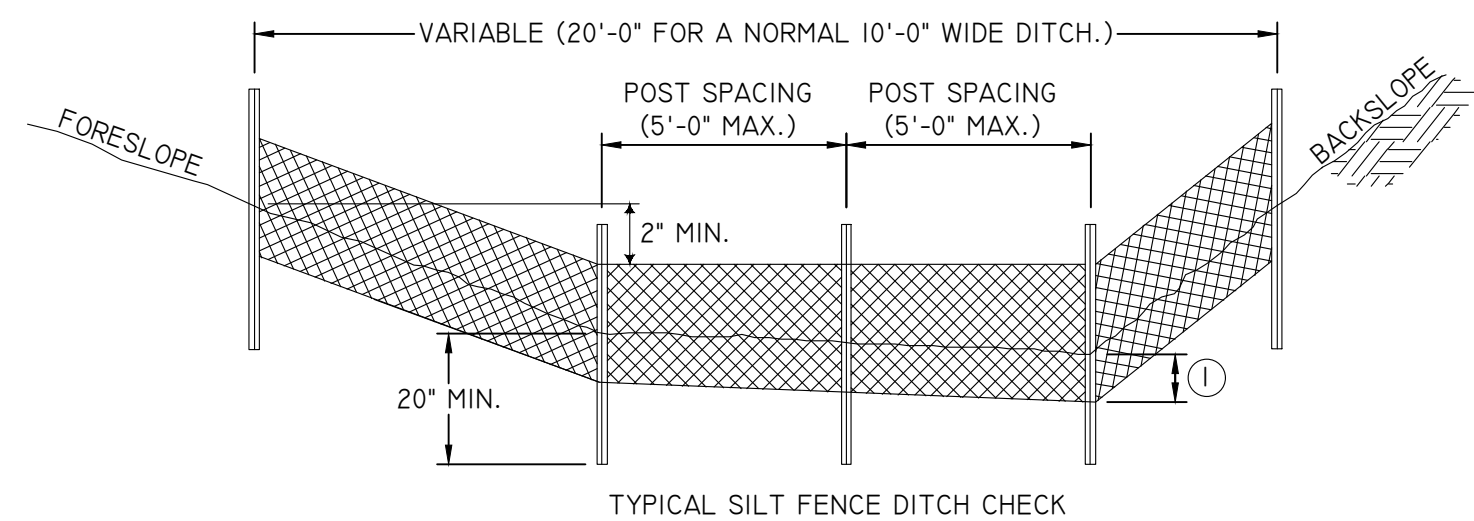
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DRAWING FILE: Q:\1700-1799\1757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\1757-C600-EROSION CONTROL PLAN.DWG LAYOUT: C602
PLOTTED: OCT 08, 2024 - 3:43PM PLOTTED BY: TODDW

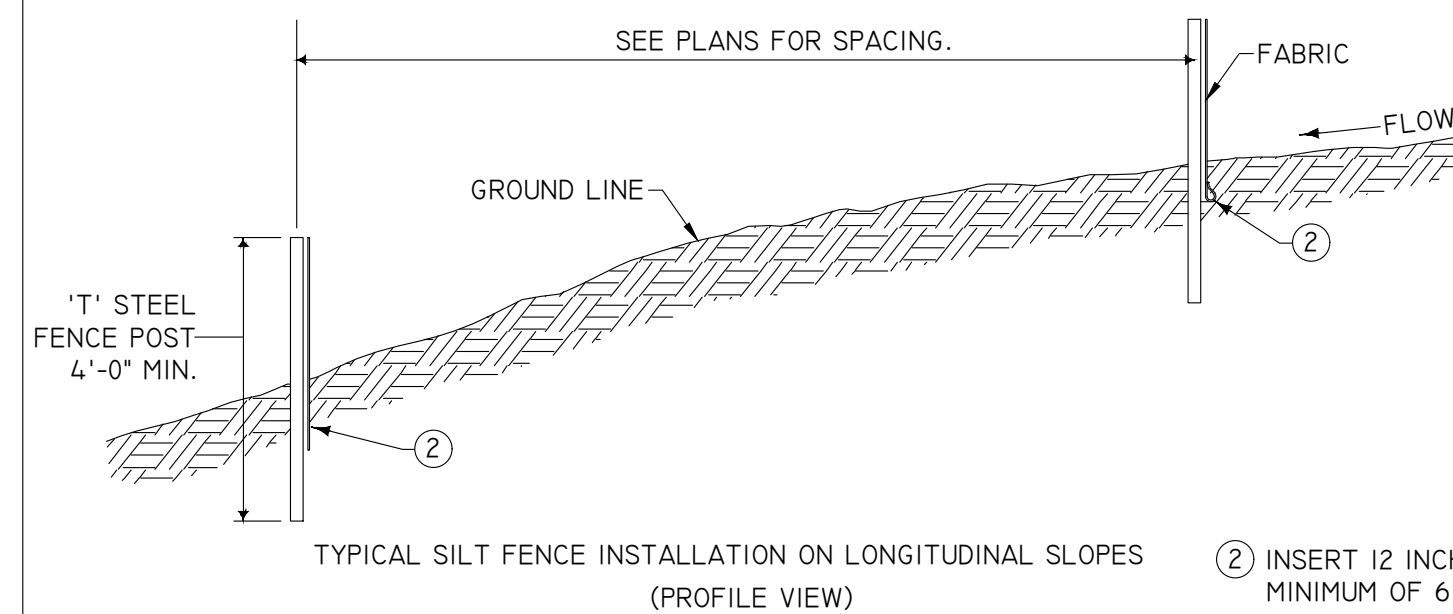
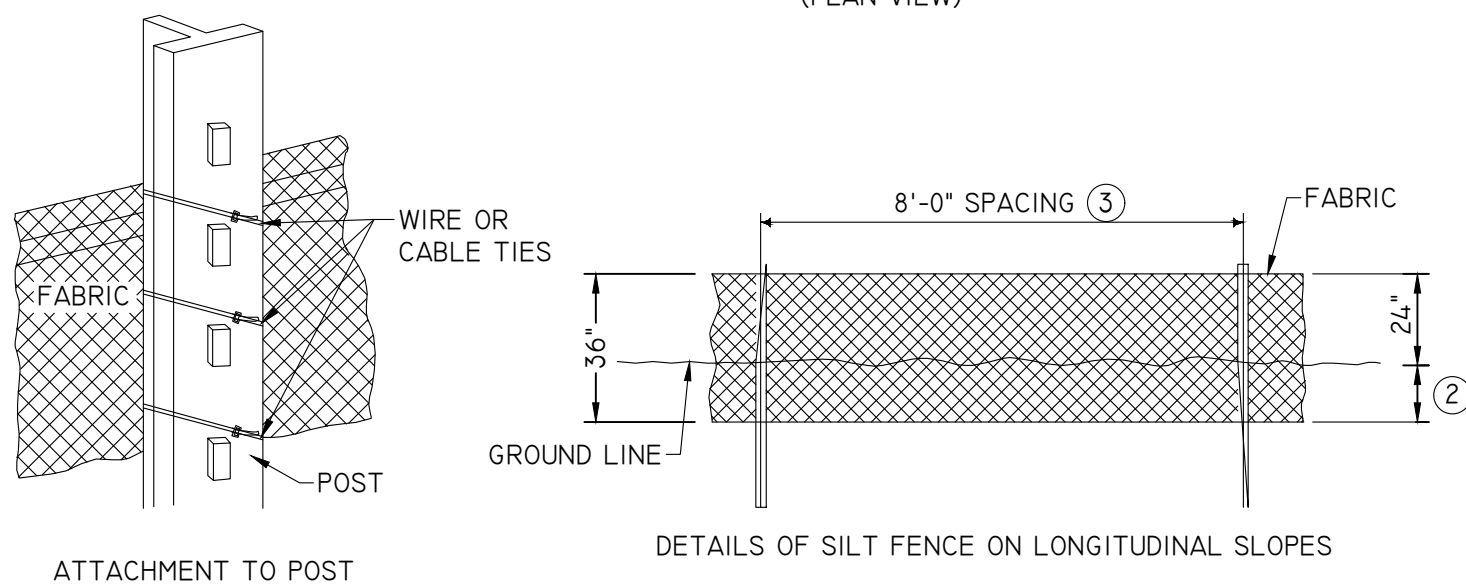
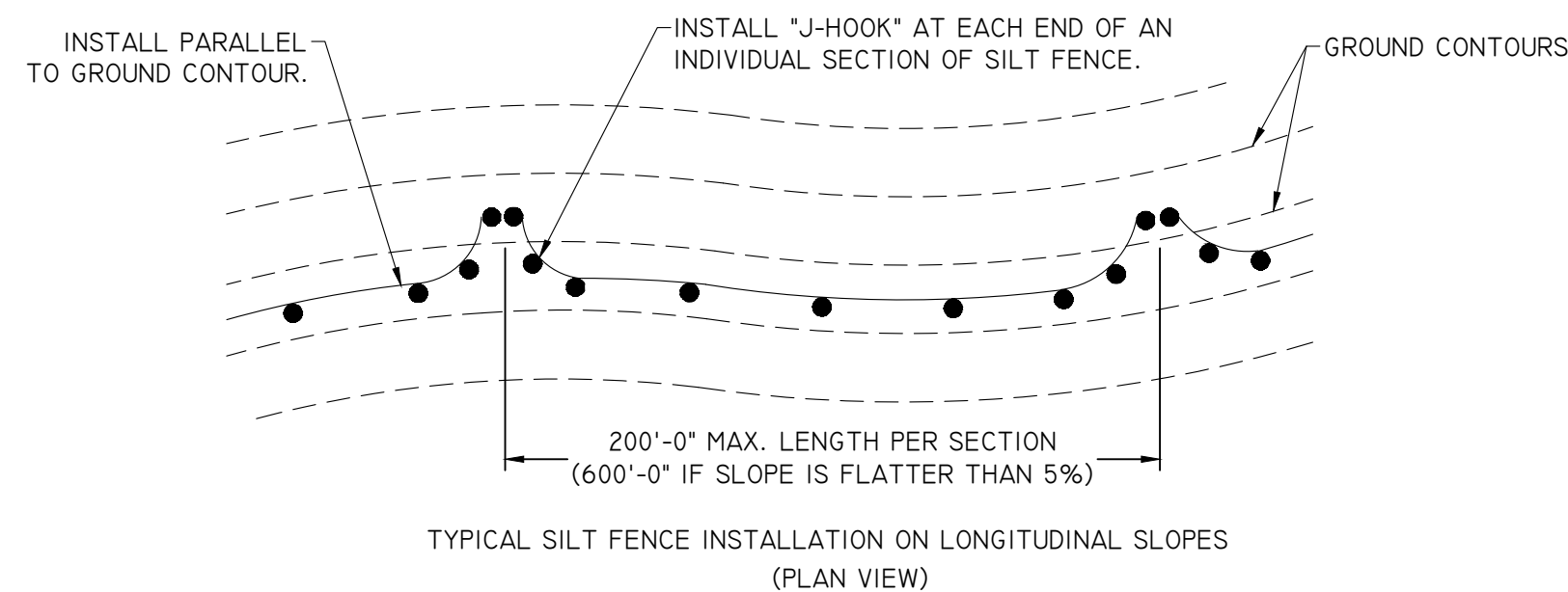


A STABILIZED CONSTRUCTION ENTRANCE
C602 FOR CONSTRUCTION EGRESS POINTS
NTS

① INSERT 12 INCHES OF FABRIC A MINIMUM OF 6 INCHES DEEP (FABRIC MAY BE FOLDED BELOW THE GROUND LINE).



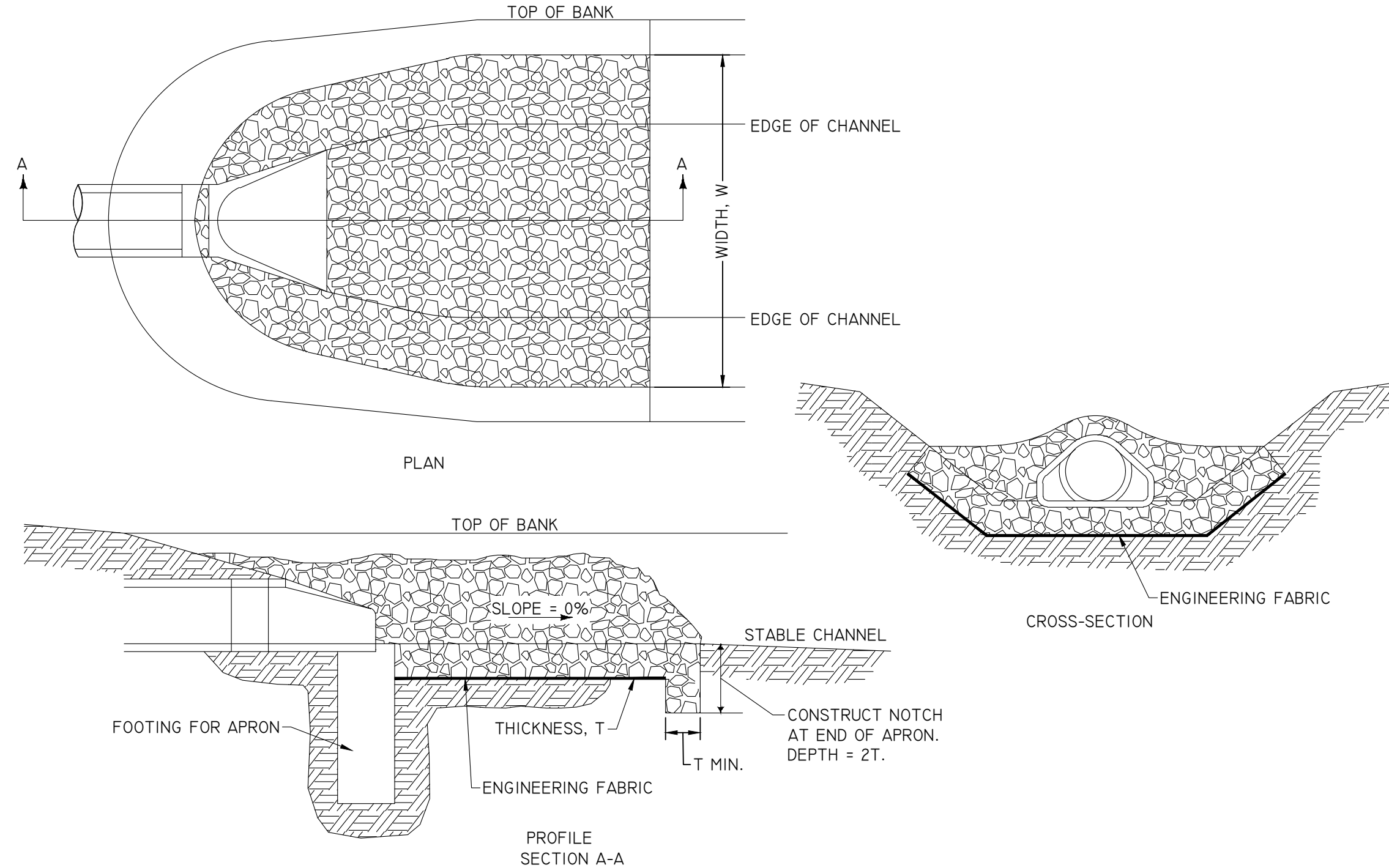
B RIP RAP APRON FOR PIPE OUTLET INTO CHANNEL
C602 NTS



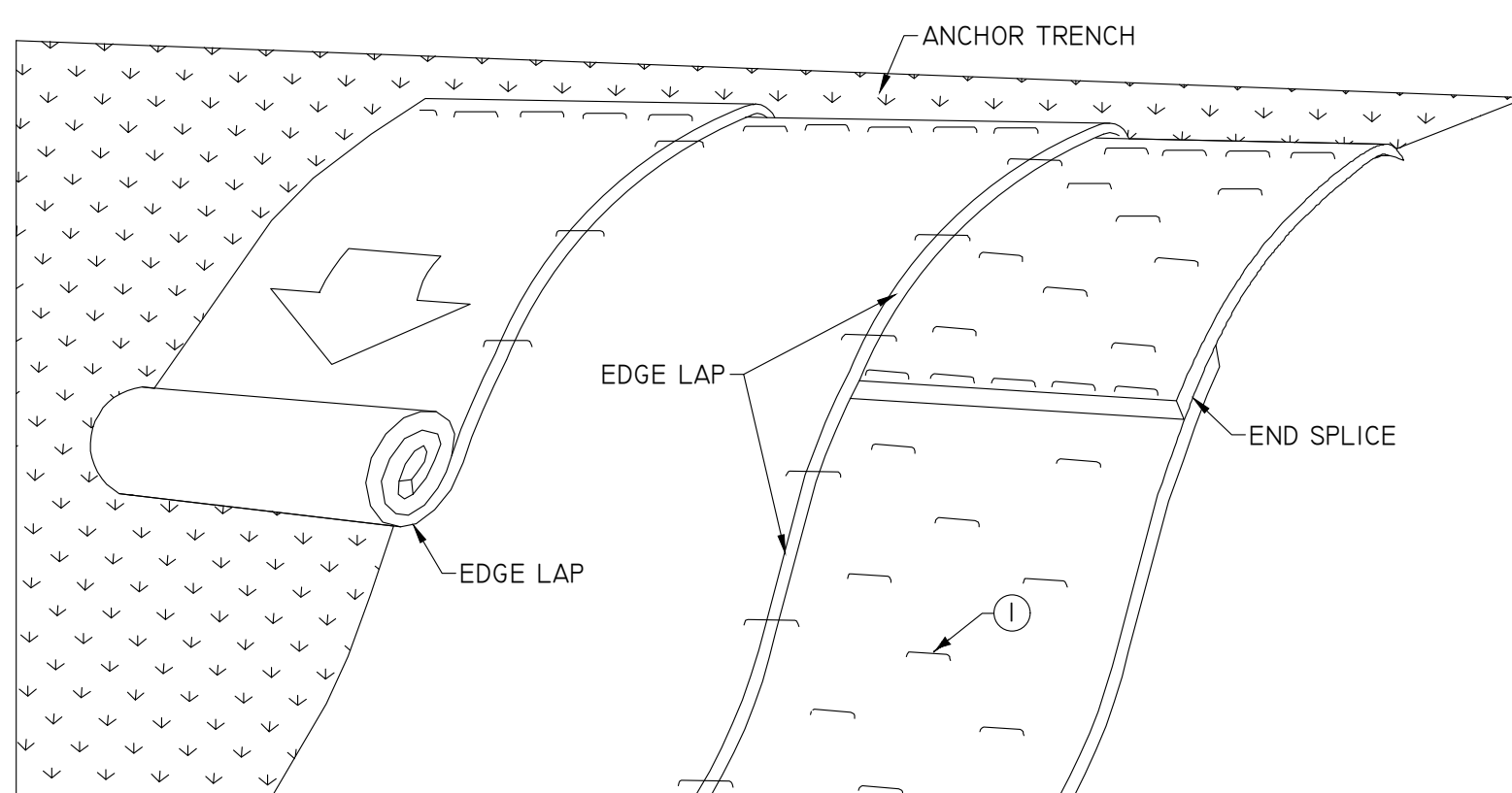
D SILT FENCE
C602 NTS

② INSERT 12 INCHES OF FABRIC A MINIMUM OF 6 INCHES DEEP (FABRIC MAY BE FOLDED BELOW THE GROUND LINE).

③ REDUCE POST SPACING TO 5'-0" AT WATER CONCENTRATION AREAS, OR AS REQUIRED TO ADEQUATELY SUPPORT FENCE.



B RIP RAP APRON FOR PIPE OUTLET INTO CHANNEL
C602 NTS



① SECURE BLANKET TO GROUND ACCORDING TO MANUFACTURER'S RECOMMENDED ANCHORING PATTERN AND MINIMUM SHOWN IN TABLE I.

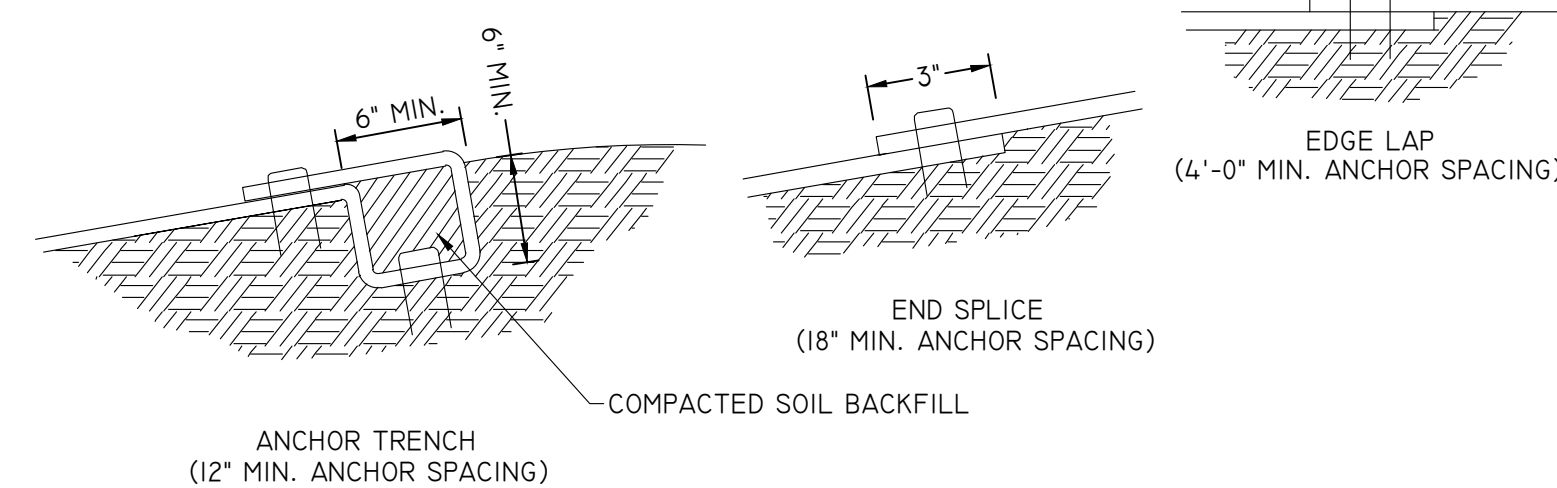
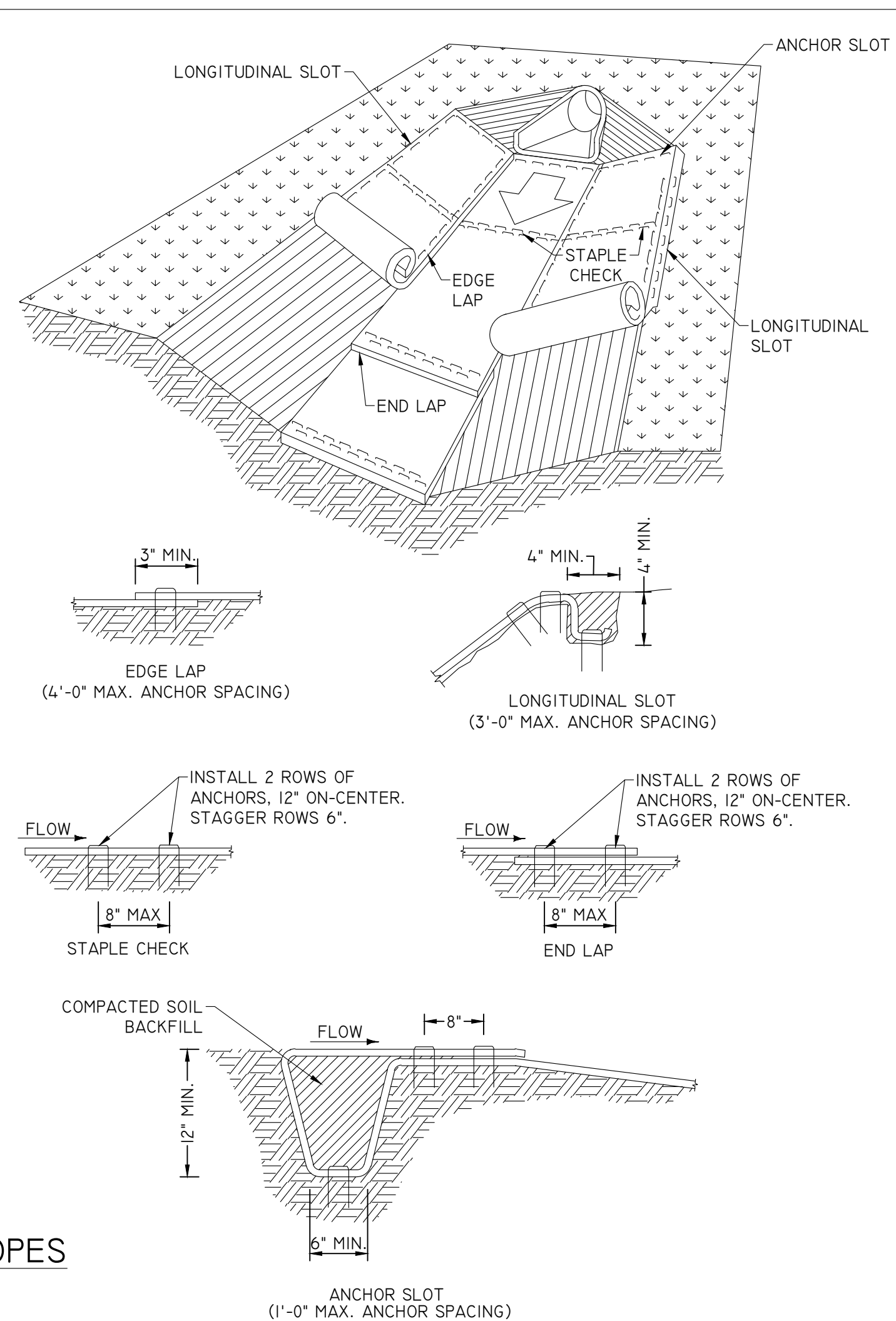


TABLE I		
MAX. SLOPE	MIN. ANCHORS	
3:1	1.5/YD ²	
2:1	2/YD ²	
1:1	2.5/YD ²	

E ROLLED EROSION CONTROL (RECP) INSTALLATION ON SLOPES
C602 NTS



ALL EROSION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED PER WDNR STANDARDS
HTTP://DNR.WI.GOV/ORG/WATER/WM/NPS/STORMWATER/TECHSTD5.DTM

Kwik Trip

STORES

Kwik Star

STORES

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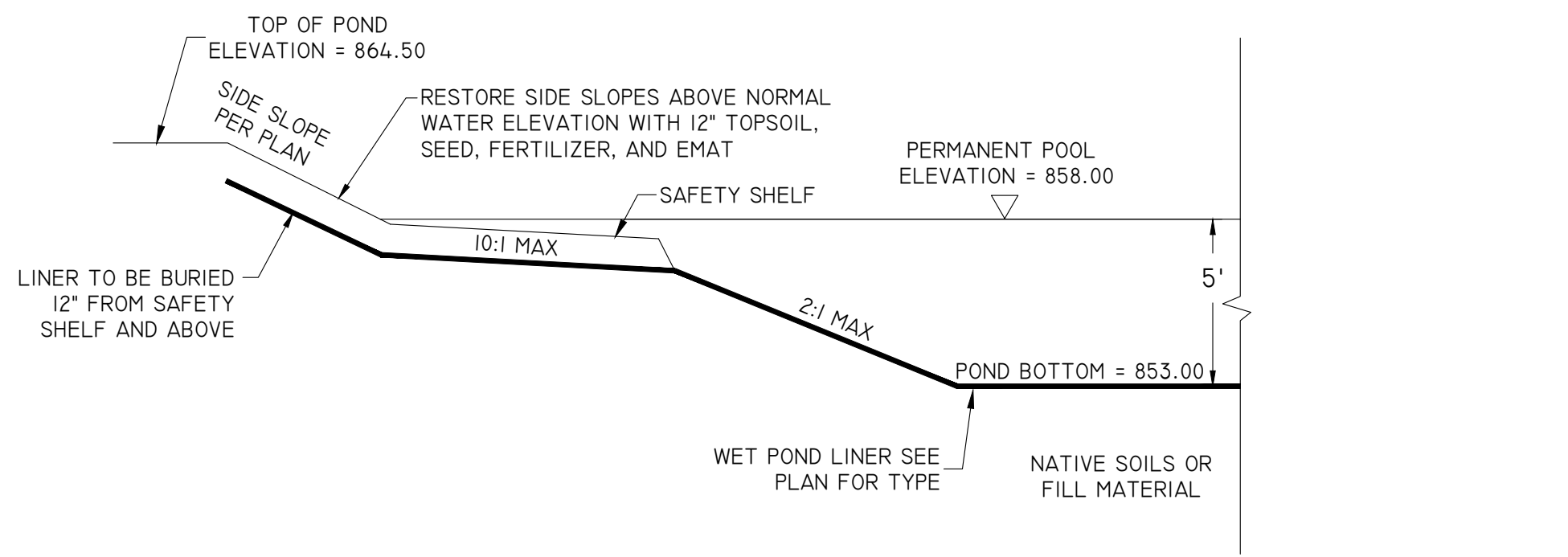
EROSION CONTROL
DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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PLOTTED: OCT 08, 2024 - 3:44PM PLOTTED BY: TODDW



GENERAL POND LINER SPECIFICATIONS (REFER TO APPENDIX D OF WDN TECHNICAL STANDARD 1001 FOR DETAILED SPECIFICATIONS)

- * I. TYPE A LINER (ANY OF THE FOLLOWING)
- CLAY LINER: MINIMUM THICKNESS OF 2 FEET WITH AN IN-PLACE HYDRAULIC CONDUCTIVITY OF 1×10^{-7} CM/SEC OR LESS.
 - HDPE: MINIMUM THICKNESS OF 60 MIL.
 - GCL: GEOSYNTHETIC CLAY LINER PER NRCS SPECIFICATIONS OUTLINED IN APPENDIX D.

- TYPE B LINER (ANY OF THE FOLLOWING)
- CLAY LINER: MINIMUM THICKNESS OF 2 FEET WITH AN IN-PLACE HYDRAULIC CONDUCTIVITY OF 1×10^{-6} CM/SEC OR LESS.
 - HDPE: MINIMUM THICKNESS OF 40 MIL.
 - PPL: MINIMUM THICKNESS OF 30 MIL.

- TYPE C LINER (ANY OF THE FOLLOWING)
- SILT/CLAY LINER: MINIMUM THICKNESS OF 2 FEET
 - HDPE: ANY THICKNESS
 - PPL: MINIMUM THICKNESS OF 20 MIL
 - PVC: MINIMUM THICKNESS OF 30 MIL
 - EPDM: MINIMUM THICKNESS OF 45 MIL

NOTE:
1. SHOULD THE CONTRACTOR ENCOUNTER SEASONAL OR PERCHED GROUNDWATER DURING CONSTRUCTION OF THE POND AND IT'S LINER, CONTACT ENGINEER FOR UNDERDRAIN RECOMMENDATIONS.

2. MANUFACTURED LINERS SHALL BE PROVIDED WITH AIR-RELEASE VENTS TO PREVENT FLOATING.

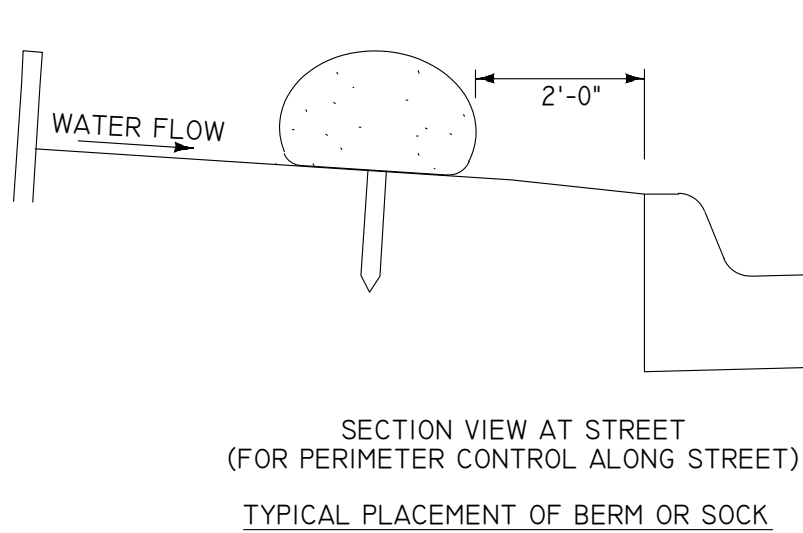
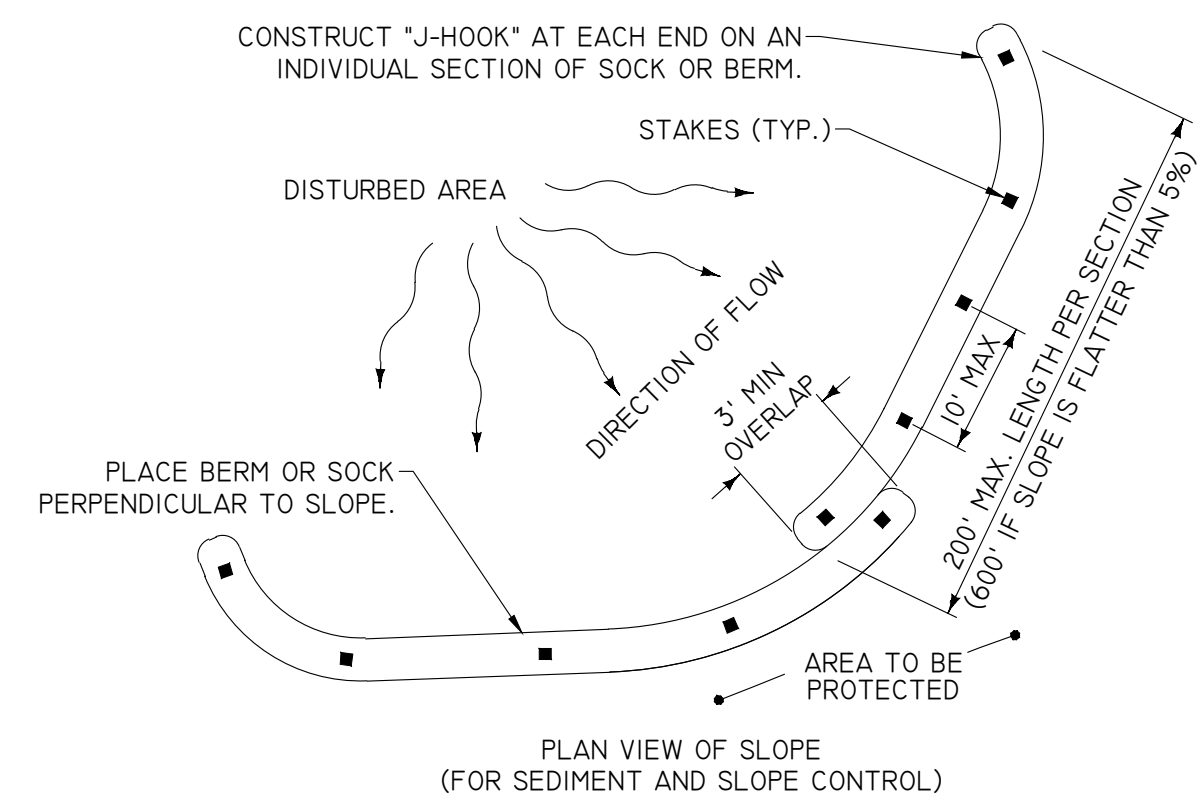
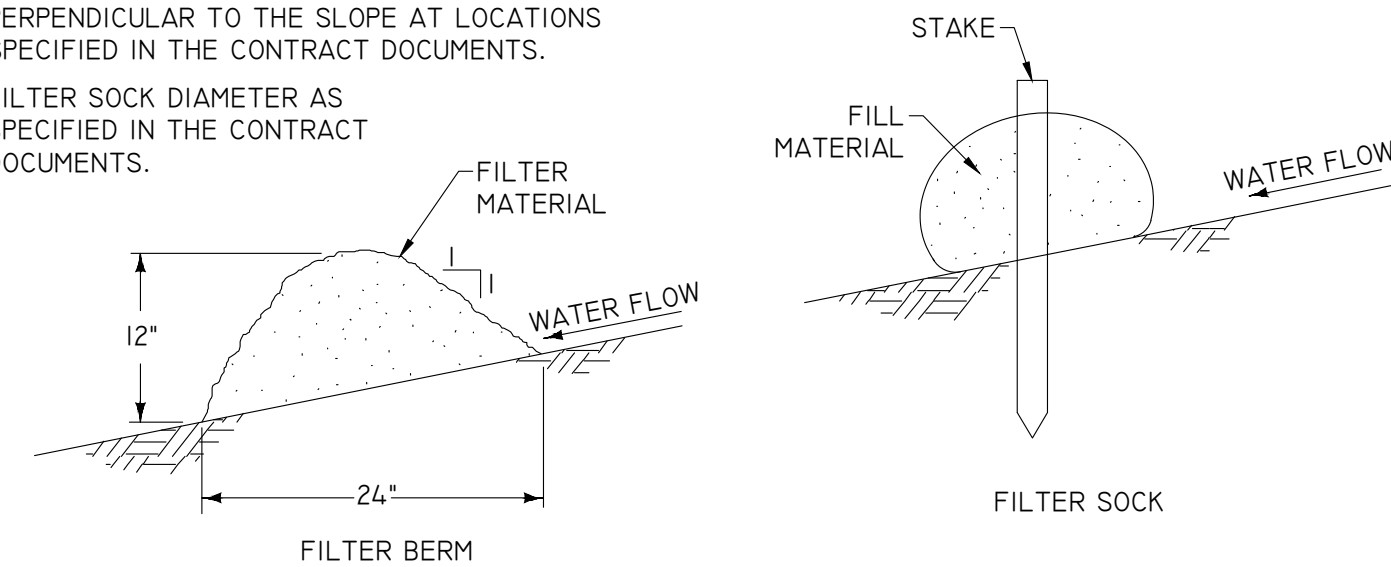
3. CONTRACTOR TO PROVIDE POND LINER DOCUMENTATION TO OWNER PRIOR TO FINAL ACCEPTANCE.

A WET POND LINER C603 NTS

BERM SHOWN IS TYPICAL FOR SLOPES FLATTER THAN 3:1. FOR STEEPER SLOPES, INCREASE BERM SIZE AS DIRECTED BY THE ENGINEER.

PLACE BERM IN UNCOMPACTED WINDROW PERPENDICULAR TO THE SLOPE AT LOCATIONS SPECIFIED IN THE CONTRACT DOCUMENTS.

FILTER SOCK DIAMETER AS SPECIFIED IN THE CONTRACT DOCUMENTS.



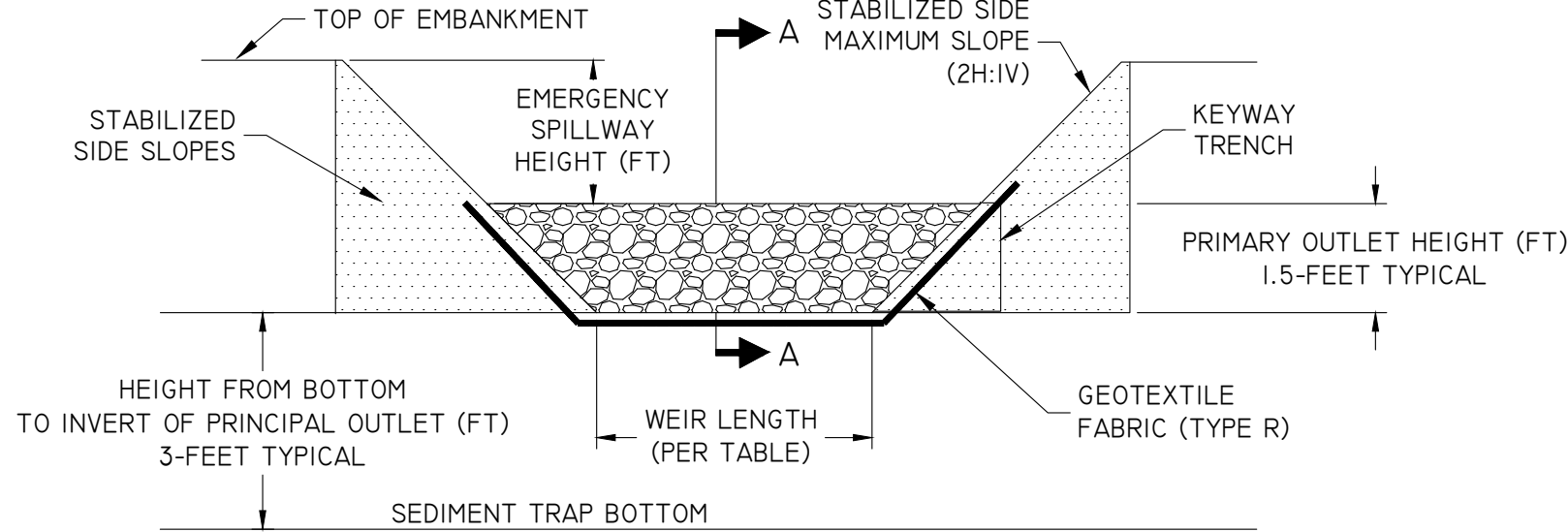
C FILTER BERM AND FILTER SOCK C603 NTS

- NOTES:
1. SIDE SLOPES AND FACES OF EARTHEN EMBANKMENT AROUND OUTLET SHALL BE ARMORED WITH RIPRAP OR STABILIZED WITH EROSION MAT SUFFICIENT TO HANDLE FLOWS FROM THE 10-YEAR STORM.
 2. STONE (SHORT DURATION): 3'-6" WELL GRADED ANGULAR CLEAR STONE.
 3. STONE (6+ MONTHS): COMBINATION OF LIGHT RIPRAP WITH 12"-THICK LAYER OF 1" ANGULAR CLEAR STONE.
 4. REFER TO WDNR TECH STD 1063 FOR ADDITIONAL INFORMATION.

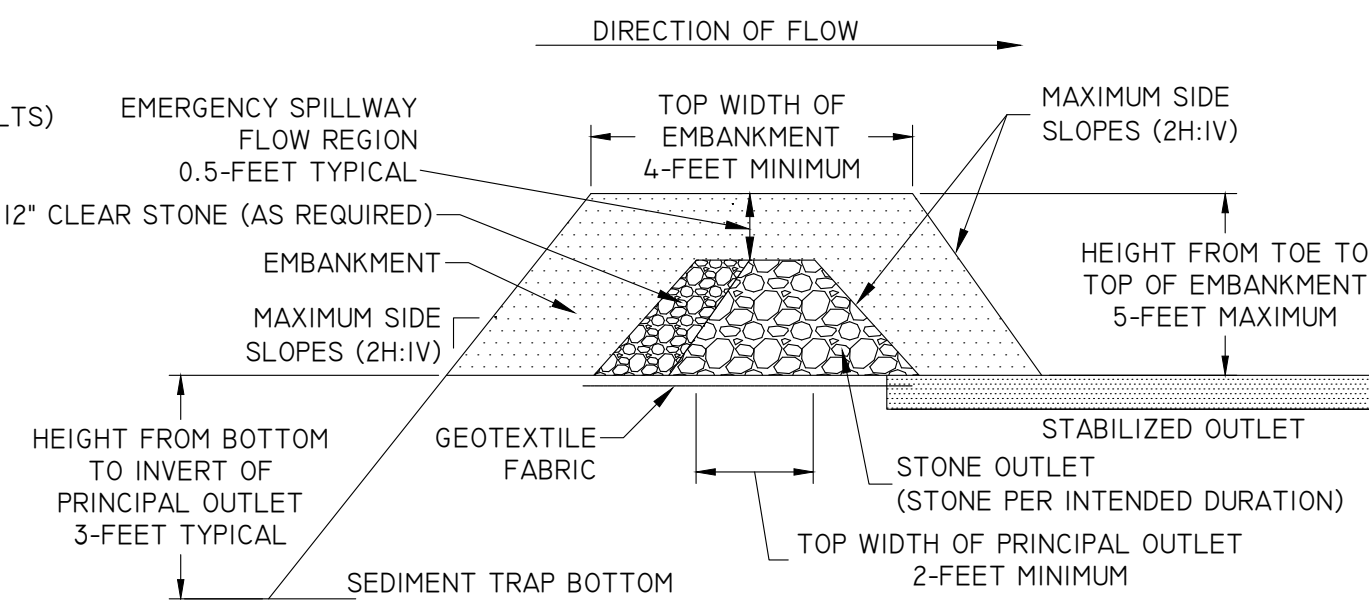
- * AS = 625 X ADR (COARSE GRAINED SOILS + SANDS)
AS = 1560 X ADR (MEDIUM GRAINED SOILS + LOAMS, SILTS)
AS = 5300 X ADR (FINE GRAINED SOILS + CLAYS)

ADR (OC)	WEIR LENGTH (FT)
1	4
2	6
3	8
4	10
5	12

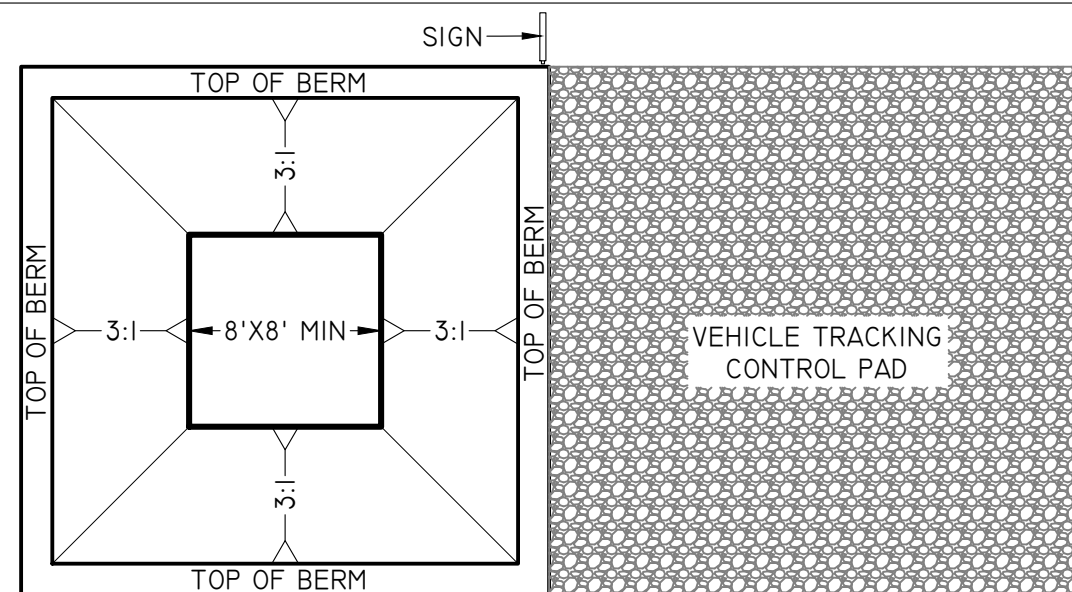
B SEDIMENT TRAP DETAIL C603 NTS



CROSS-SECTION VIEW OF PRINCIPAL OUTLET



VIEW A-A OF PRINCIPAL OUTLET



E CONCRETE WASHOUT AREA C603 NTS

- CONCRETE WASHOUT AREA INSTALLATION NOTES
1. SEE EROSION CONTROL PLAN FOR LOCATIONS OF CONCRETE WASHOUT AREA(S). TO BE PLACED A MIN. OF 50' FROM DRAINAGEWAYS, BODIES OF WATER, AND INLETS.)
 2. THE CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
 3. VEHICLE TRACKING CONTROL PAD IS REQ'D AT THE ACCESS POINT(S).
 4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA(S), AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREAS TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
 5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

6. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE
7. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
8. WHEN CONCRETE WASHOUT AREA(S) IS REMOVED, THE DISTURBED AREA SHALL BE STABILIZED PER SITE EROSION CONTROL MEASURES.
9. INSPECT WEEKLY AND DURING AND AFTER ALL STORM EVENTS. CLEAN-OUT OR COVER WASHOUT AREA PRIOR TO PREDICTED STORM EVENTS TO PREVENT OVER-FLOW.

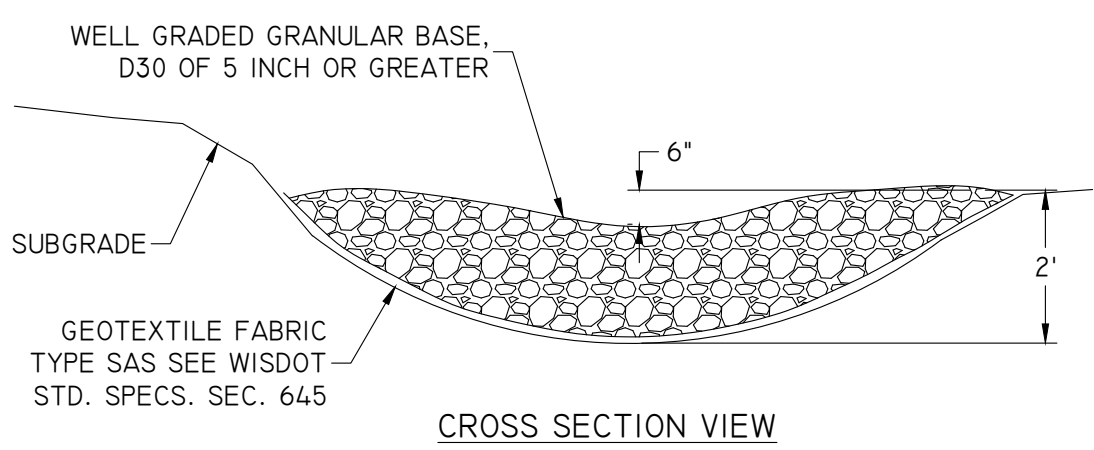
INSTALL & MAINTAIN IN ACCORDANCE WITH DNR TECHNICAL STANDARD 1062.

DITCH CHECKS TO BE REMOVED AFTER THE DITCH IS VEGETATED AND STABILIZED.

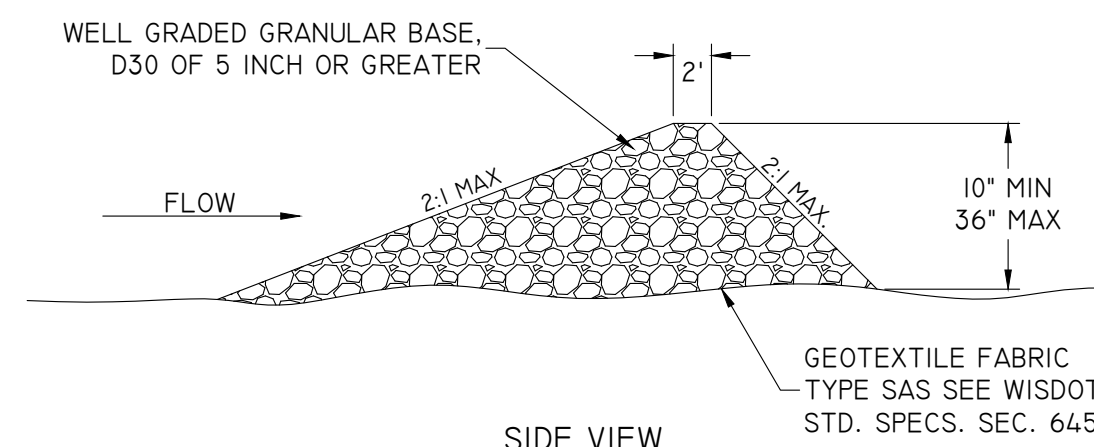
AREA UNDER THE DITCH CHECK TO BE SEEDED AFTER THE DITCH CHECK IS REMOVED.

PLACE EROSION MAT OVER THESE SEEDED AREAS.

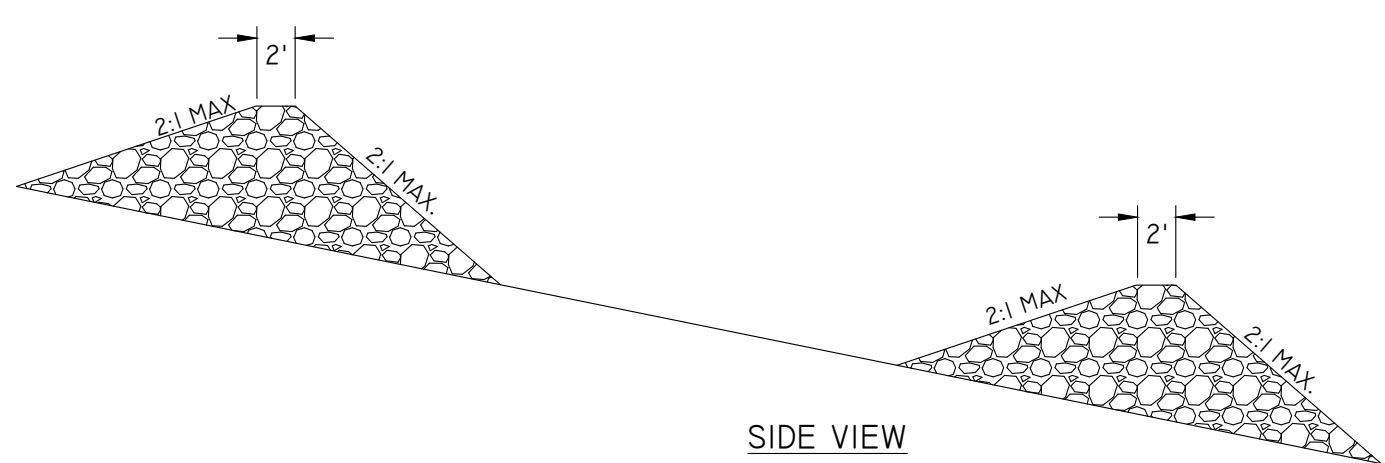
NOTE:
CONTRACTOR MAY REFER TO THE WISDOT PAL FOR OTHER APPROVED DITCH CHECKS AND THEIR INSTALLATION



CROSS SECTION VIEW

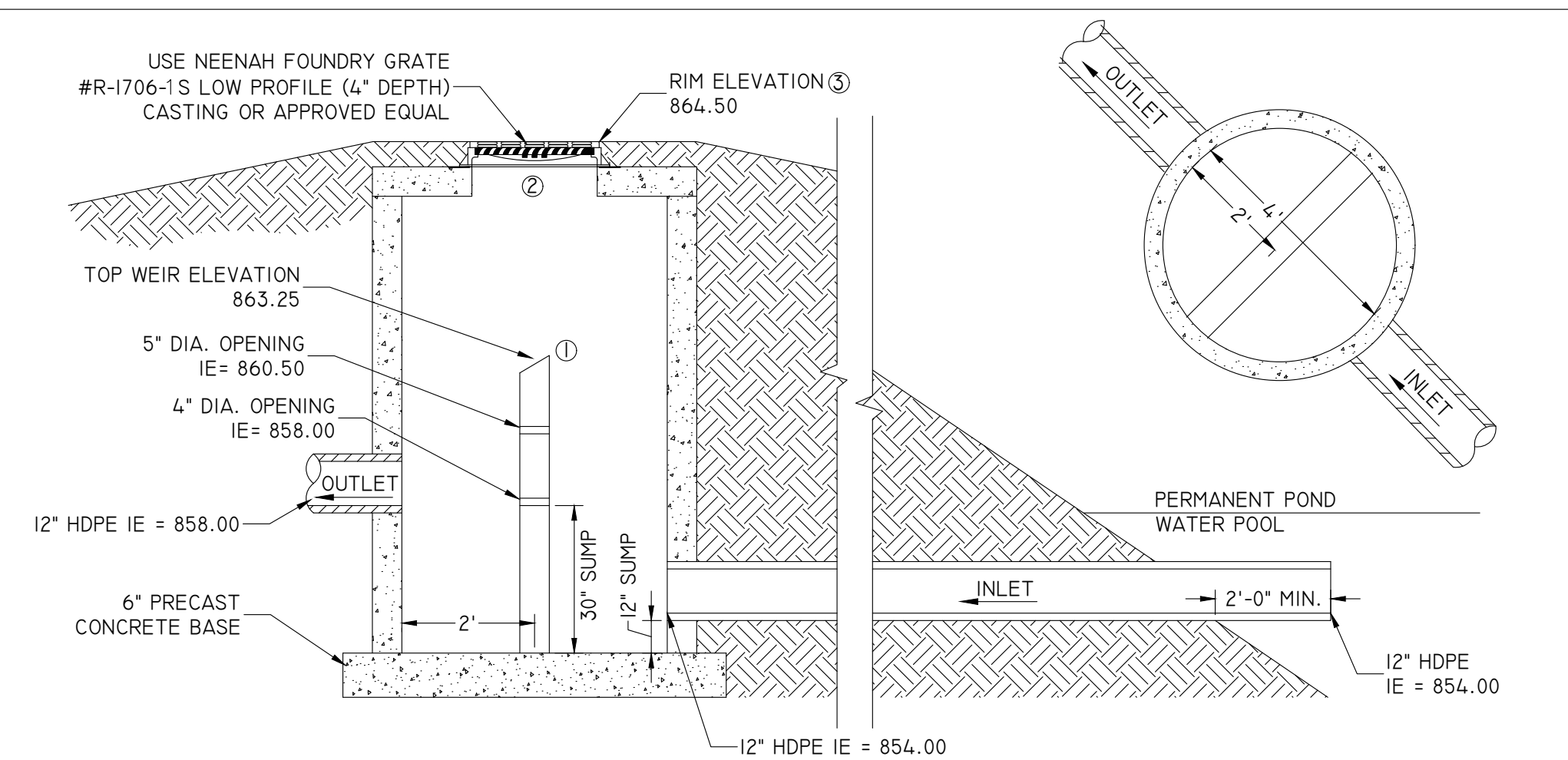


SIDE VIEW



SIDE VIEW

D STONE DITCH CHECKS C603 NTS



F OUTLET CONTROL STRUCTURE C603 NTS

- ① 4" THICK MASONRY WALL OR 1/2" STEEL PLATE. GROUT OR SEAL ALONG SIDES OF MANHOLE
- ② FORM OPENING IN TOP SLAB TO FIT CASTING
- ③ ADJUST GRADING AT THE OUTLET STRUCTURE TO COVER CASTING TO THE PROPOSED RIM ELEVATION

Kwik Trip

STORES

Kwik Star

STORES

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EMAIL: MAIL@REIENGINEERING.COM

EROSION CONTROL
DETAILS

CONVENIENCE STORE #631

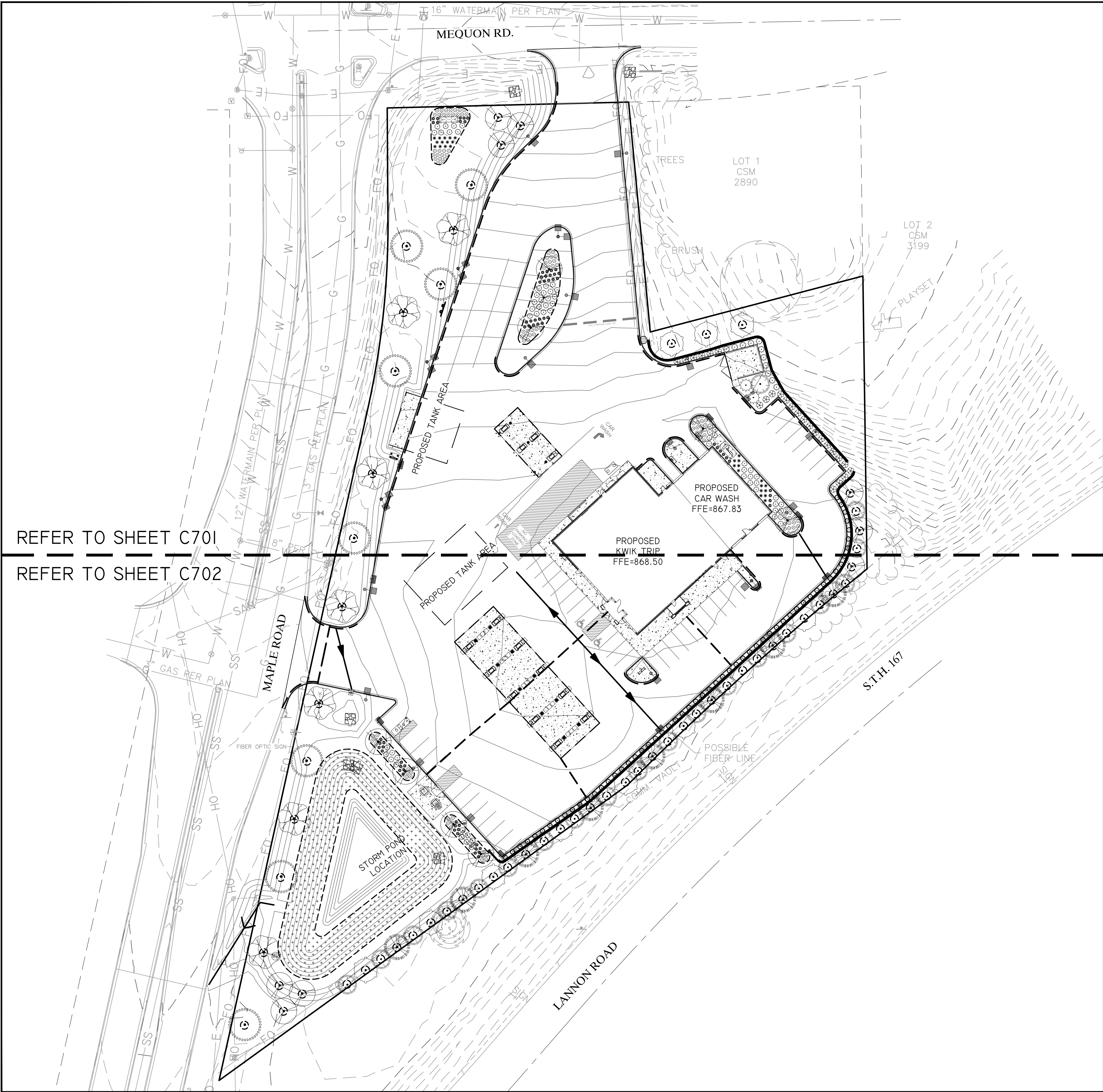
STH 167 & MAPLE ROAD
GERMANTOWN, WI

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SHEET

C603

DRAWING FILE: Q:\1700-1799\1757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\1757-C700-LANDSCAPE PLAN.DWG LAYOUT: C700
PLOTTED: OCT 08, 2024 - 3:45PM PLOTTED BY: TODDW



REFER TO SHEET C701

REFER TO SHEET C702

GENERAL NOTES:

- (A) LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR LOCATING & VERIFYING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION, AND IS RESPONSIBLE FOR ANY DAMAGE TO THEM DURING CONSTRUCTION.
- (B) CALL DIGGERS HOTLINE @ 811 OR 1-800-242-8511 AT LEAST 5 WORKING DAYS PRIOR TO DEMOLITION, EXCAVATION OR ANY CONSTRUCTION ACTIVITY.
- (C) ALL PLANT MATERIAL SHALL BE GUARANTEED ONE (1) FULL YEAR UPON TOTAL COMPLETION OF PROJECT AND ACCEPTANCE BY OWNER, WITH A ONE TIME REPLACEMENT WARRANTY UPON REQUEST BY OWNER. WARRANTY EXPIRES AFTER FIRST FULL YEAR FOLLOWING PROJECT COMPLETION.
- (D) LANDSCAPE CONTRACTOR SHALL VERIFY MINIMUM 6" TOPSOIL DEPTH FOR ALL AREAS TO BE SEEDED/SODDED THROUGHOUT PROJECT SITE. CONTRACTOR IS REQUIRED TO CORRECT ANY DEFICIENCIES PRIOR TO SEED/SOD. TOPSOIL SHALL BE CLEAN AND FREE OF STONES, WEEDS AND OTHER UNDESIRABLE DEBRIS.
- (E) LANDSCAPE CONTRACTOR SHALL VERIFY MINIMUM 12" PLANTING SOIL DEPTH FOR ALL PROPOSED PLANTING BED AREAS THROUGHOUT THE PROJECT SITE. CONTRACTOR IS REQUIRED TO CORRECT ANY DEFICIENCIES PRIOR TO PLANT INSTALLATION. PLANTING SOIL & AREA SHALL BE CLEAN AND FREE OF STONES, WEEDS, CONCRETE WASTE AND OTHER UNDESIRABLE DEBRIS.
- (F) LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REPAIRING TOPSOIL AND SODDING ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITY, INCLUDING ALL R.O.W. AND ADJACENT PROPERTIES.
- (G) CONTRACTOR SHALL CLEAN ALL PAVEMENT AREAS AFTER LANDSCAPE CONSTRUCTION ACTIVITIES ARE COMPLETE AND APPROVED BY OWNER. *THIS TO BE DONE DAILY AS DEEMED NECESSARY BY MUNICIPALITY.

PLANT SCHEDULE

SYMBOL	COMMON NAME	BOTANICAL NAME	SIZE	CONT.	QTY
DECIDUOUS TREES					
	Autumn Blaze® Freeman Maple	Acer x freemanii 'Jeffersred'	2.5' Cal.	B&B	11
	Fall Fiesta® Sugar Maple	Acer saccharum 'Baileta'	2' Cal.	B&B	18
	Red Oak	Quercus rubra	3' Cal.	B&B	8
	Swamp White Oak	Quercus bicolor	3' Cal.	B&B	7
EVERGREEN TREES					
	Black Hills White Spruce	Picea glauca 'Densata'	6' Ht.	B&B	2
	White Pine	Pinus alba	6' Ht.	B&B	8
	White Spruce	Picea glauca	6' Ht.	B&B	20
DECIDUOUS SHRUBS					
	Tiny Wine® Ninebark	Physocarpus opulifolius 'SMPOTW'	3 gal.	Pot	62
EVERGREEN SHRUBS					
	Dark Green Anglo-Japanese Yew	Taxus x media 'Dark Green'	5 gal.	Pot	11
	Kallay Compact Pfitzer Juniper	Juniperus chinensis 'Kallays Compact'	3 gal.	Pot	25
	Mini Arcade Juniper	Juniperus sabinia 'Mini Arcade'	3 gal.	Pot	58
PERENNIALS					
	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	1 gal.	Pot	27
	Prairie Dropseed	Sporobolus heterolepis	1 gal.	Pot	104
	Shenandoah Switch Grass	Panicum virgatum 'Shenandoah'	1 gal.	Pot	68

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SCALE

0 40 80

LANDSCAPE PLAN

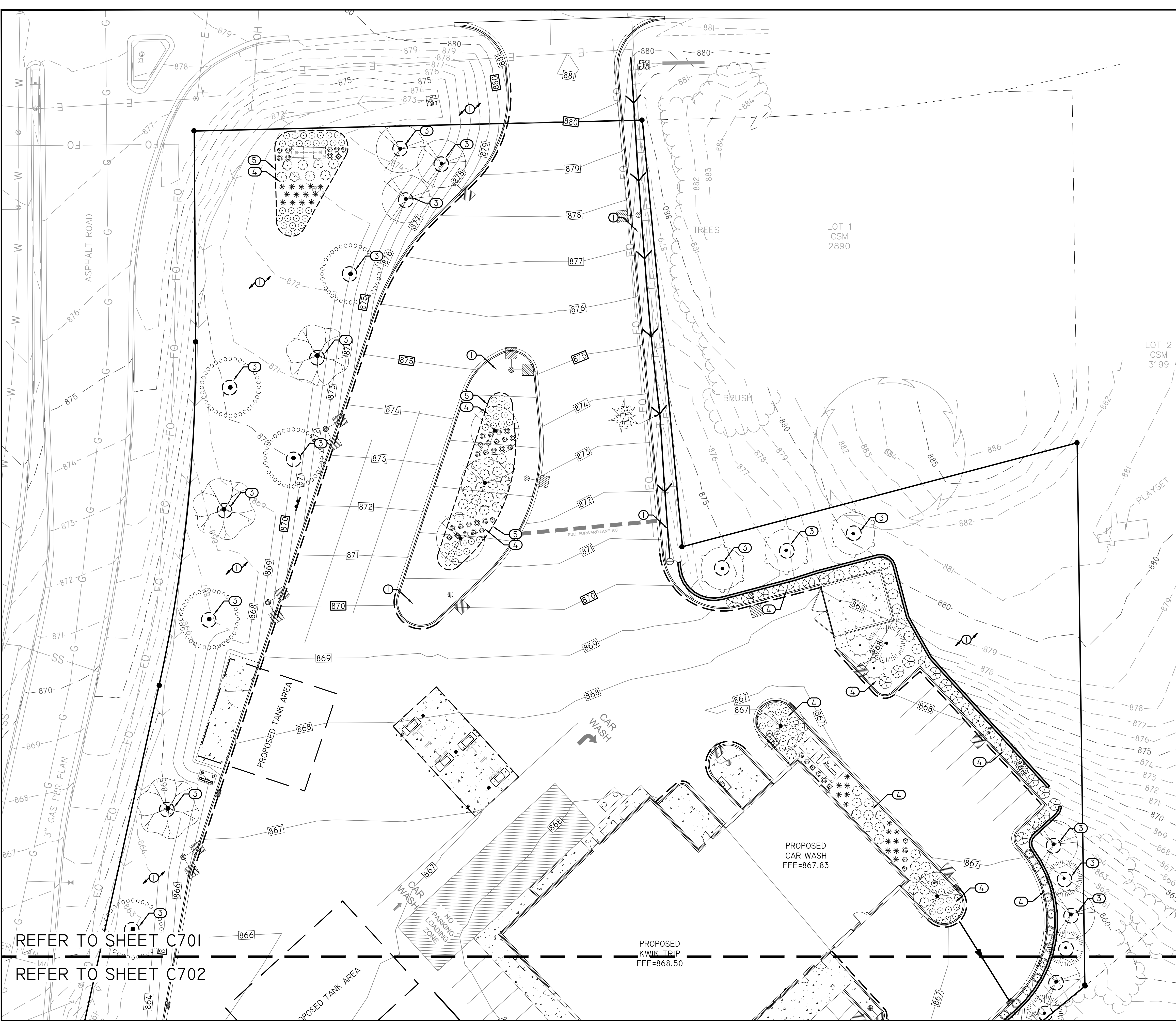
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION

DRAWN BY: NAP
SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: C700

DRAWING FILE: Q:\1700-1799\1757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\1757-C700-LANDSCAPE PLAN.DWG LAYOUT: C701
PLOTTED: OCT 08, 2024 3:46PM PLOTTED BY: TODDW



REFER TO SHEET C701

REFER TO SHEET C702

KEYED NOTES

1. SOD, *ALL AREAS NOTED ON PLAN & ALL DISTURBED AREAS DUE TO CONSTRUCTION ACTIVITY.
2. (9,900 SF TOTAL) AGRECOL, SHORTGRASS PRAIRIE FOR DRY SOILS, APPLY GLYPHOSATE HERBICIDE TO AREA WHEN MAJORITY OF WEEDS ARE 2"-3" TALL, WAIT 10 DAYS THEN FINELY TILL THE SOIL ONLY 1"-2" DOWN AND PLANT IMMEDIATELY BY HAND BROADCASTING AT A RATE OF 11 LBS/ACRE. RAKE OR DRAG AREA LIGHTLY, COVERING THE SEED WITH ABOUT 1/4" TO 1/2" OF SOIL. ROLL AREA FIRMLY AFTER RAKING. MULCH PRAIRIE SEEDING AREAS LESS THAN 4:1 SLOPE WITH 1" OF WEED FREE STRAW MULCH. APPLY WISDOT NET-FREE CLASS I, URBAN TYPE B EROSION MAT ON SLOPING AREAS STEEPER THAN 4:1. *REFER TO AGRECOL'S 'NATIVE SEEDING INSTRUCTIONS' ON THEIR WEBSITE FOR DETAILED INSTRUCTIONS/GUIDELINES FOR SUCCESSFUL SEED ESTABLISHMENT AND MANAGEMENT. (LINK BELOW)

[HTTPS://WWW.AGRECOL.COM/NATIVE-SEEDING-INSTRUCTIONS_EP_44.HTML](https://www.agrecol.com/native-seeding-instructions_ep_44.html)
3. 6' DIAMETER WOOD MULCH TREE RING, 3"-4" DEPTH, DARK BROWN COLOR, *ALL TREES PLANTED WITHIN SOD AREAS.
4. SHREDDED HARDWOOD MULCH, 3"-4" DEPTH, DARK BROWN COLOR.
5. SHOVEL CUT EDGE, 4"-6" DEPTH CLEAN CUT EDGE AROUND PLANTING BEDS & PRAIRIE SEEDING WITHIN SOD AREAS.

PLANT SCHEDULE

SYMBOL	BOTANICAL NAME
DECIDUOUS TREES	
	Acer saccharum 'Baillista'
	Acer x freemanii 'Jeffersred'
	Quercus bicolor
	Quercus rubra
EVERGREEN TREES	
	Picea glauca
	Picea glauca 'Densata'
	Pinus alba
DECIDUOUS SHRUBS	
	Physocarpus opulifolius 'SMPOTW'
EVERGREEN SHRUBS	
	Juniperus chinensis 'Kallays Compact'
	Juniperus sabina 'Mini Arcade'
	Taxus x media 'Dark Green'
PERENNIALS	
	Calamagrostis x acutiflora 'Karl Foerster'
	Panicum virgatum 'Shenandoah'
	Sporobolus heterolepis

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SCALE



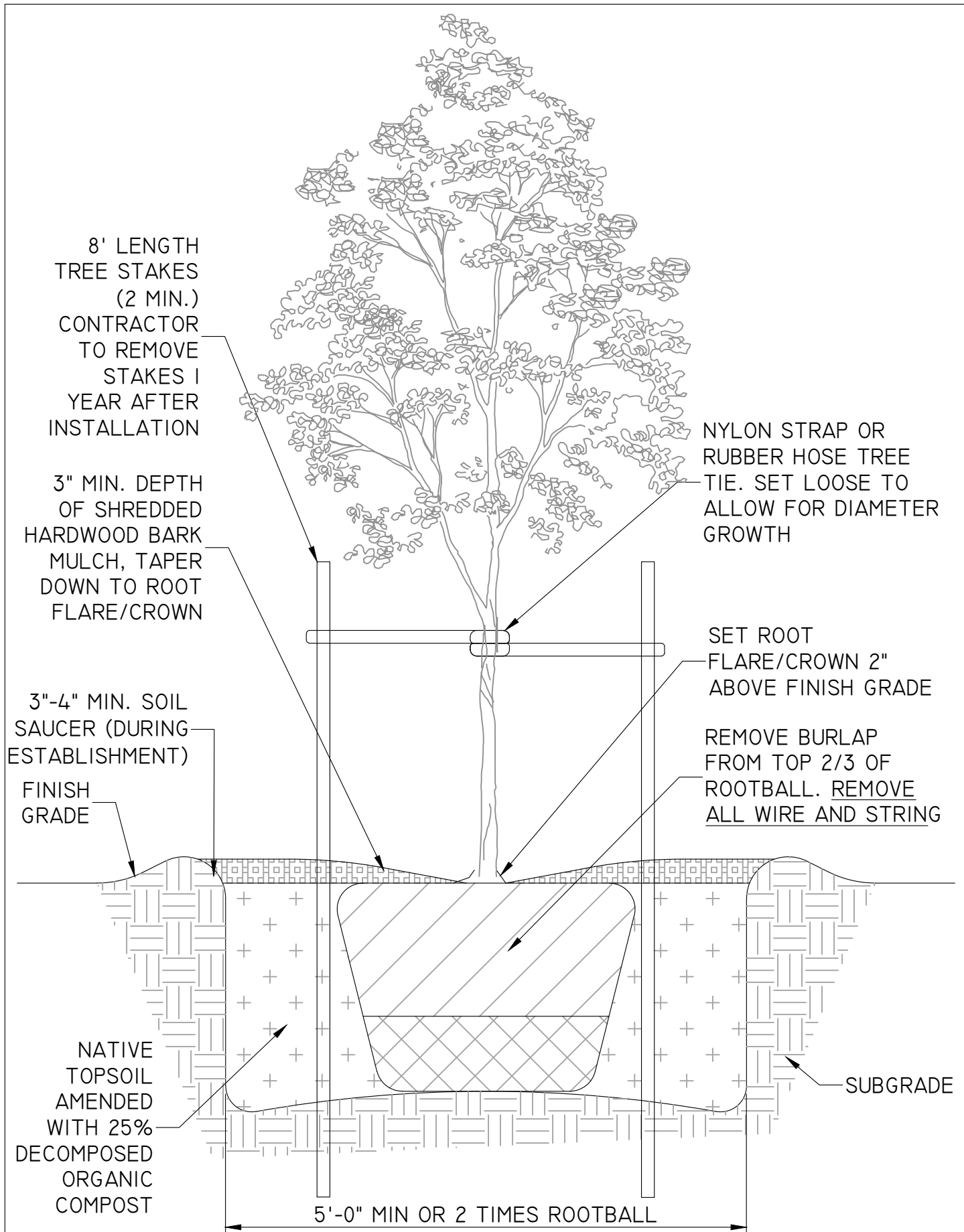
LANDSCAPE PLAN

CONVENIENCE STORE #631

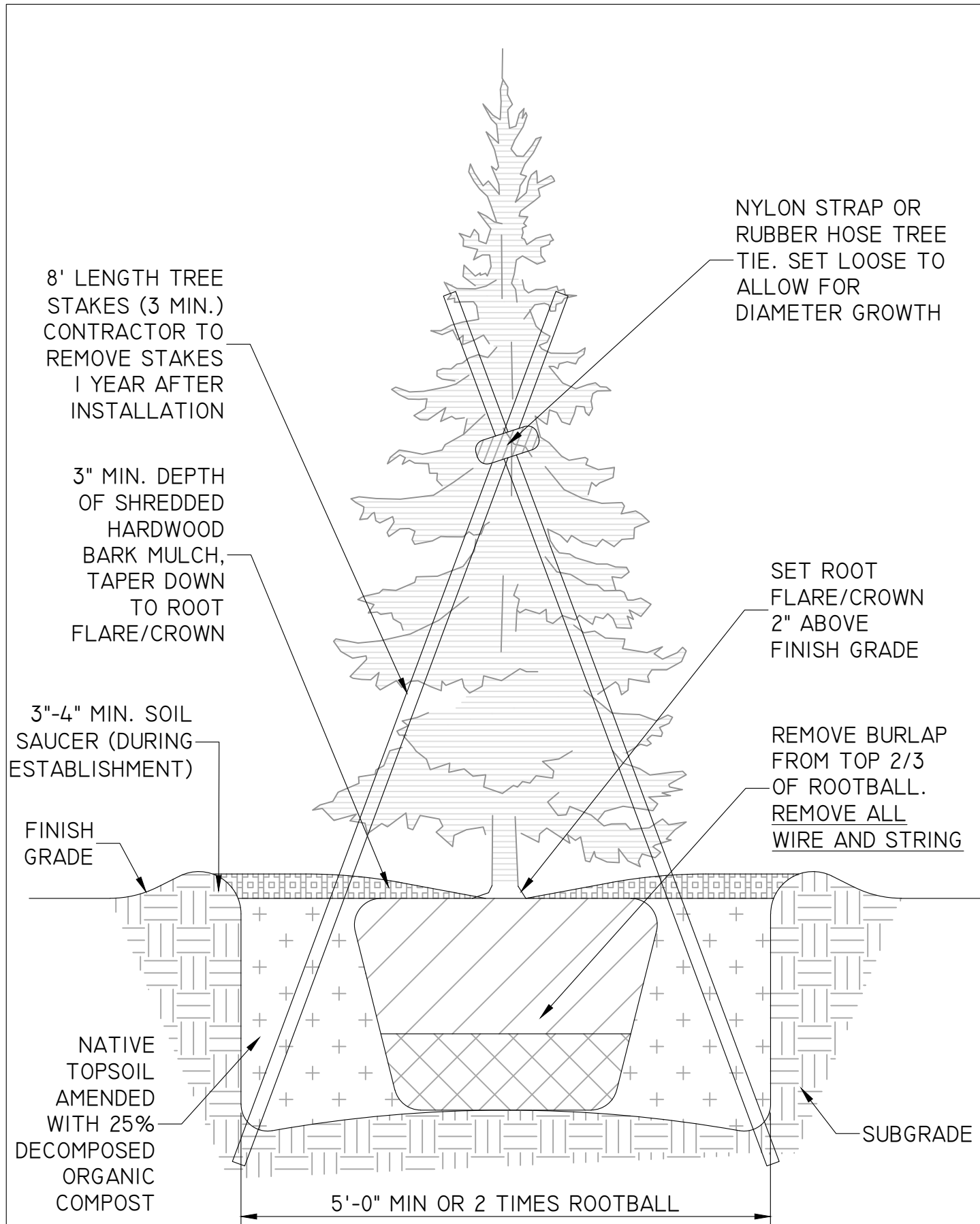
STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
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SCALE		GRAPHIC
PROJ. NO.		11757
DATE		10/09/24 - REVIEW DOCUMENTS
SHEET		C701

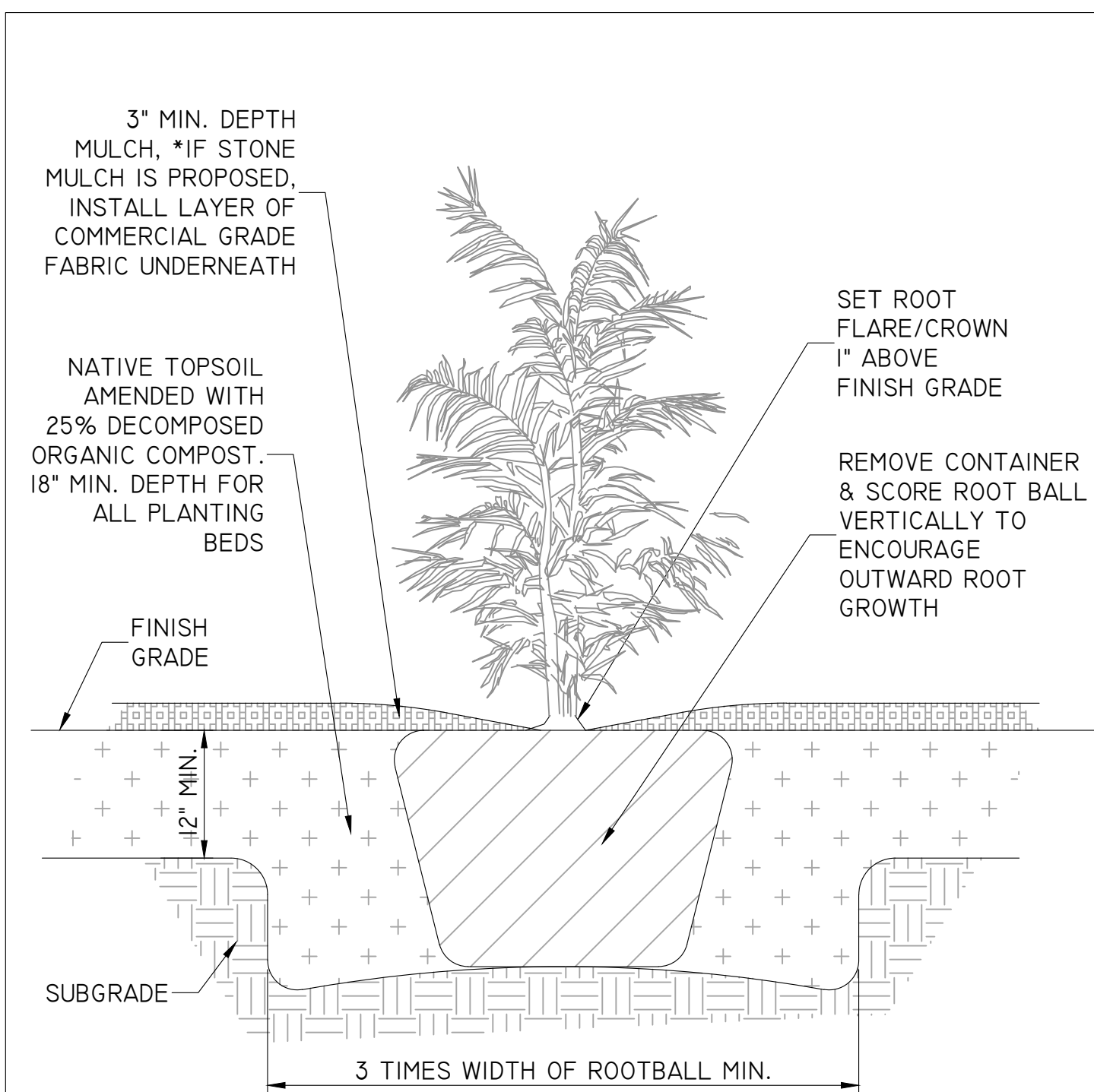
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PLOTTED: OCT 08, 2024 - 3:47PM PLOTTED BY: TODDW



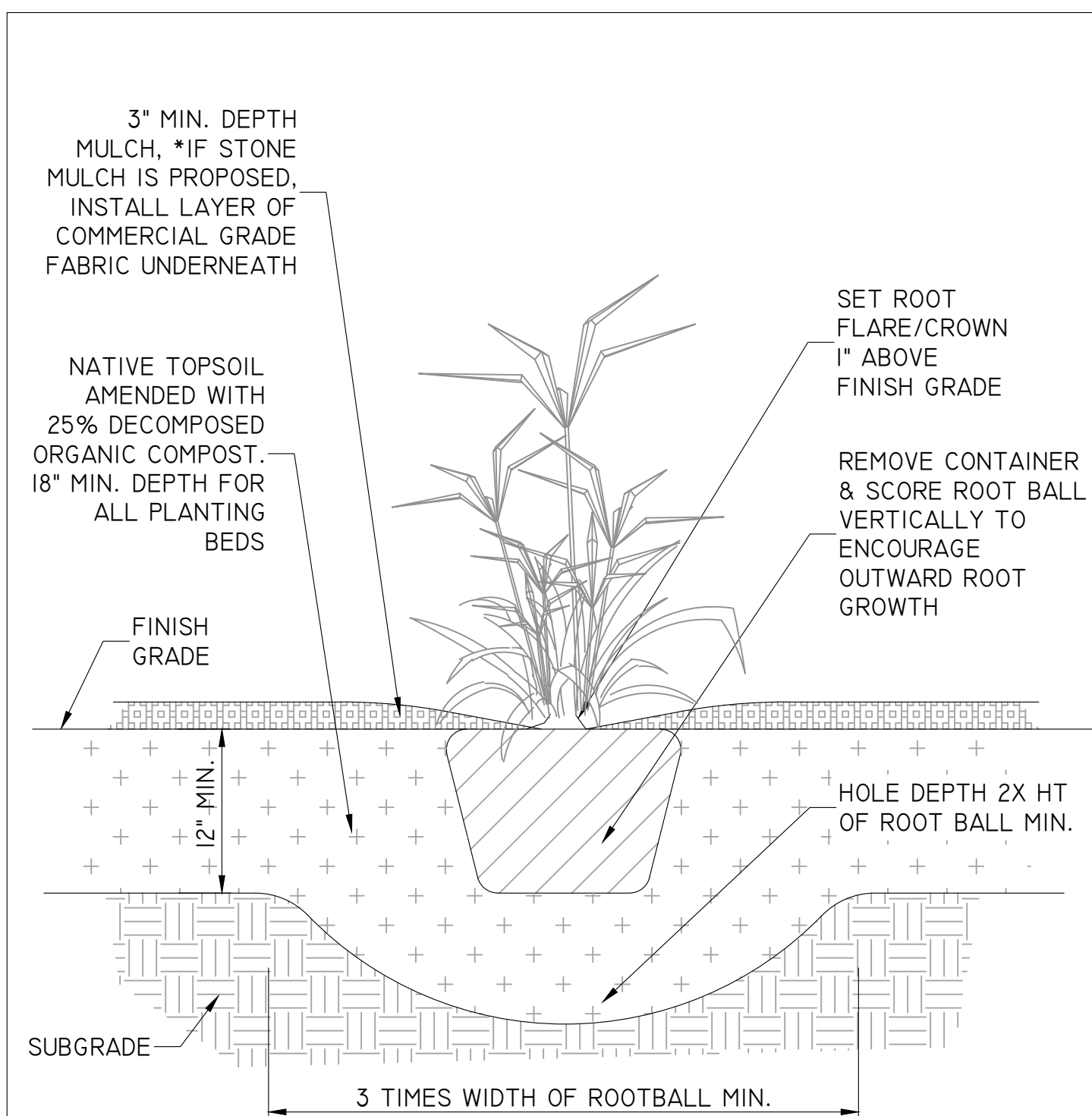
DECIDUOUS TREE - PLANTING DETAIL



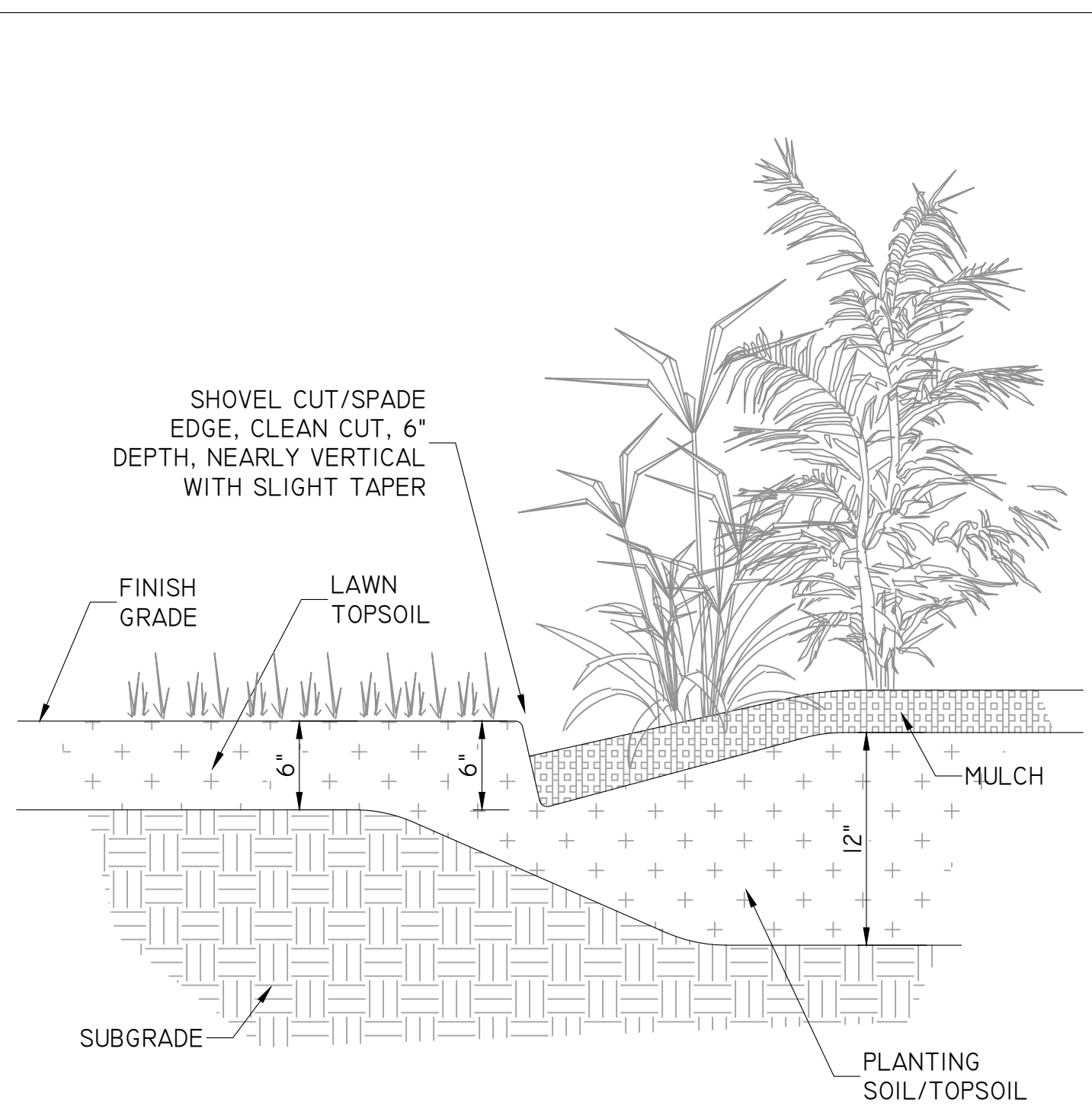
EVERGREEN TREE - PLANTING DETAIL



SHRUB - PLANTING DETAIL



PERENNIAL - PLANTING DETAIL



SHOVEL CUT EDGE - DETAIL

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LANDSCAPE DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
1		
2		
3		
4		

DRAWN BY: NAP
SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: C703



OVERALL SITE:
AVERAGE: 3.2
MAXIMUM: 78.7
MINIMUM: 0.0

FIXTURE QUANTITIES

D20	-44
S7E	-6
CF	-20
CFBK	-8
P13	-5
P13L	-1
P1F	-14
P1FL	-4

PROVIDE (19) 16' POLES.

GENERAL NOTES:

1. FOOTCANDLE LEVELS SHOWN ON THIS PLAN ARE CALCULATED AT GRADE LEVEL.
2. ALL POLES SHALL BE INSTALLED A MINIMUM OF 3'-0" FROM BACK OF CURB TO EDGE OF POLE BASE UNLESS NOTED.
3. POLE THAT ARE LOCATED AT CORNER OF ISLAND SHALL BE A MINIMUM OF 6'-0" FROM BACK OF CURB TO EDGE OF POLE BASE. POLES THAT MUST BE INSTALLED LESS THAN 6'-0" FROM BACK OF CURB TO EDGE OF POLE BASE SHALL HAVE PROTECTIVE BOLLARDS INSTALLED AROUND THE POLE BASE. COORDINATE WITH KWIK TRIP PRIOR TO INSTALLATION.

KEYED NOTES:

- 1 COORDINATE LOCATION AND MOUNTING HEIGHT OF SECURITY CAMERA WITH OWNER
- 2 CONTRACTOR SHALL POLE MOUNT FIXTURE 8'-0" FROM BACK OF CURB TO EDGE OF POLE BASE.
- 3 CONTRACTOR SHALL POLE MOUNT FIXTURE 2'-0" FROM BACK OF CURB TO EDGE OF POLE BASE TO AVOID UNDERGROUND UTILITIES.
- 4 CONTRACTOR SHALL POLE MOUNT FIXTURE 3'-0" FROM BACK OF CURB TO EDGE OF POLE BASE NEAR RETAINING WALL.
- 5 CONTRACTOR SHALL POLE MOUNT FIXTURE 5'-0" FROM BACK OF CURB TO EDGE OF POLE BASE TO AVOID UNDERGROUND UTILITIES.

FIXTURE TYPES:

D20 - GOTHAM LED DOWNLIGHT
GOTHAM EVO-35/30-8AR-WD-120-TRW

S7E - LED STRIP LIGHT MOUNTED IN GABLE LITHONIA
TZL-IN-L96-1000ML-FST-MVOLT

CF - LSI LIGHTING: SCV-L2D-32CT-SCFT-UNV-DIM-S0-WHT MOUNTED
UNDER GAS CANOPY MOUNT FIXTURES WITH FORWARD
THROW OPTIC AIMING IN DIRECTION OF ARROW.

CFBK - LSI LIGHTING: SCV-L2D-32CT-SCFT-UNV-DIM-S0-BLK MOUNTED
UNDER DIESEL CANOPY MOUNT FIXTURES WITH
FORWARD THROW OPTIC AIMING IN DIRECTION OF ARROW.

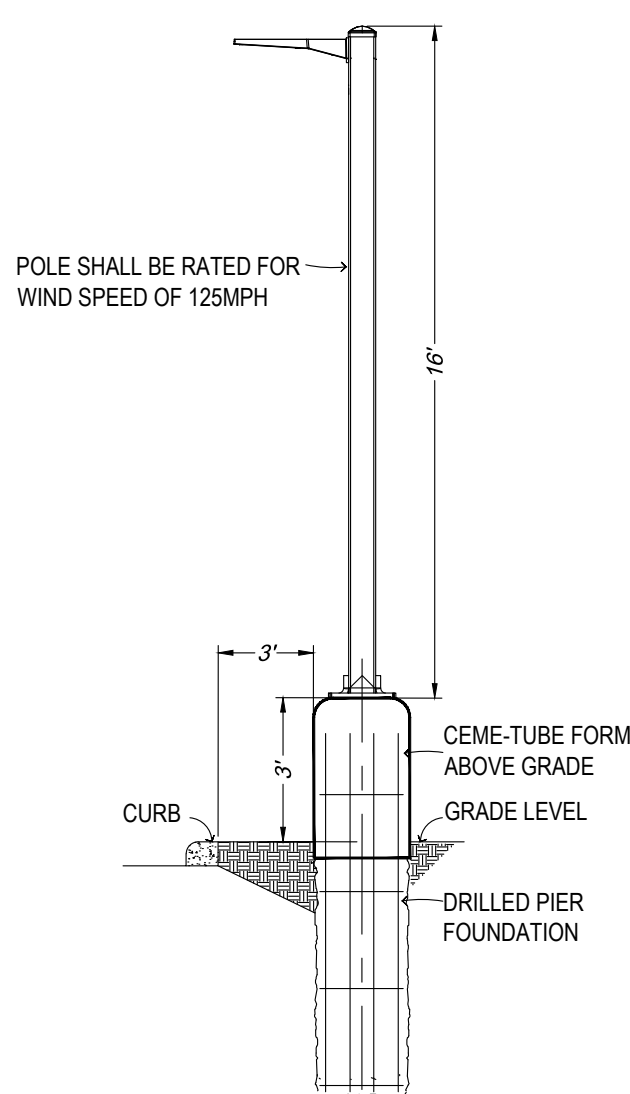
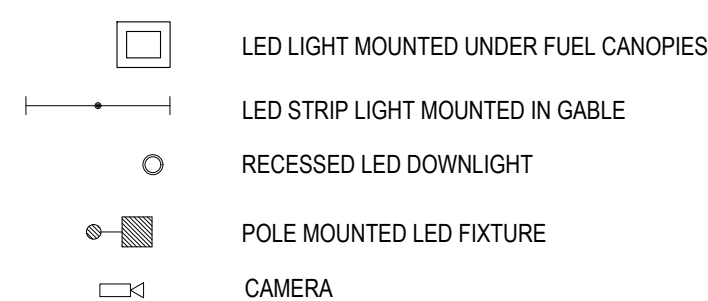
P13- LSI LIGHTING: MRS-LED-18L-SIL-3-UNV-S0-70CRI-WHT

P18- LSI LIGHTING: MRS-LED-18L-SIL-3-UNV-S0-70CRI-WHT-IL

P13F- LSI LIGHTING: MRS-LED-18L-SIL-FT-UNV-S0-70CRI-WHT

P18F- LSI LIGHTING: MRS-LED-18L-SIL-FT-UNV-S0-70CRI-WHT-IL

FIXTURE SYMBOLS:



LOT LIGHT ELEVATION DETAIL

NOT TO SCALE

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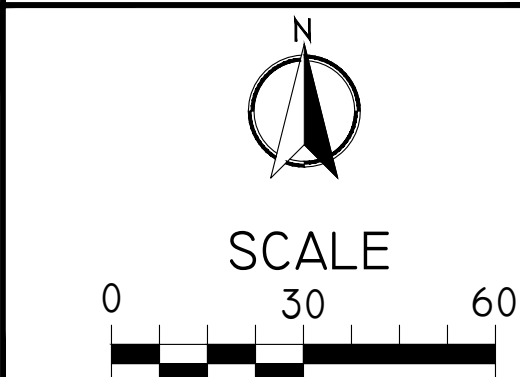
STORES

The Kwik Star logo, featuring the word "Kwik" in a bold, italicized sans-serif font above the word "Star" in a similar font, with a five-pointed star replacing the letter "a".

STORES

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PHOTOMETRIC LIGHTING PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
1		

DRAWN BY	XXX
SCALE	GRAPHIC
PROJ. NO.	11757
DATE	10/09/24 - REVIEW DOCUMENTS
SHEET	C80

C800





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10 MPD



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DIESEL

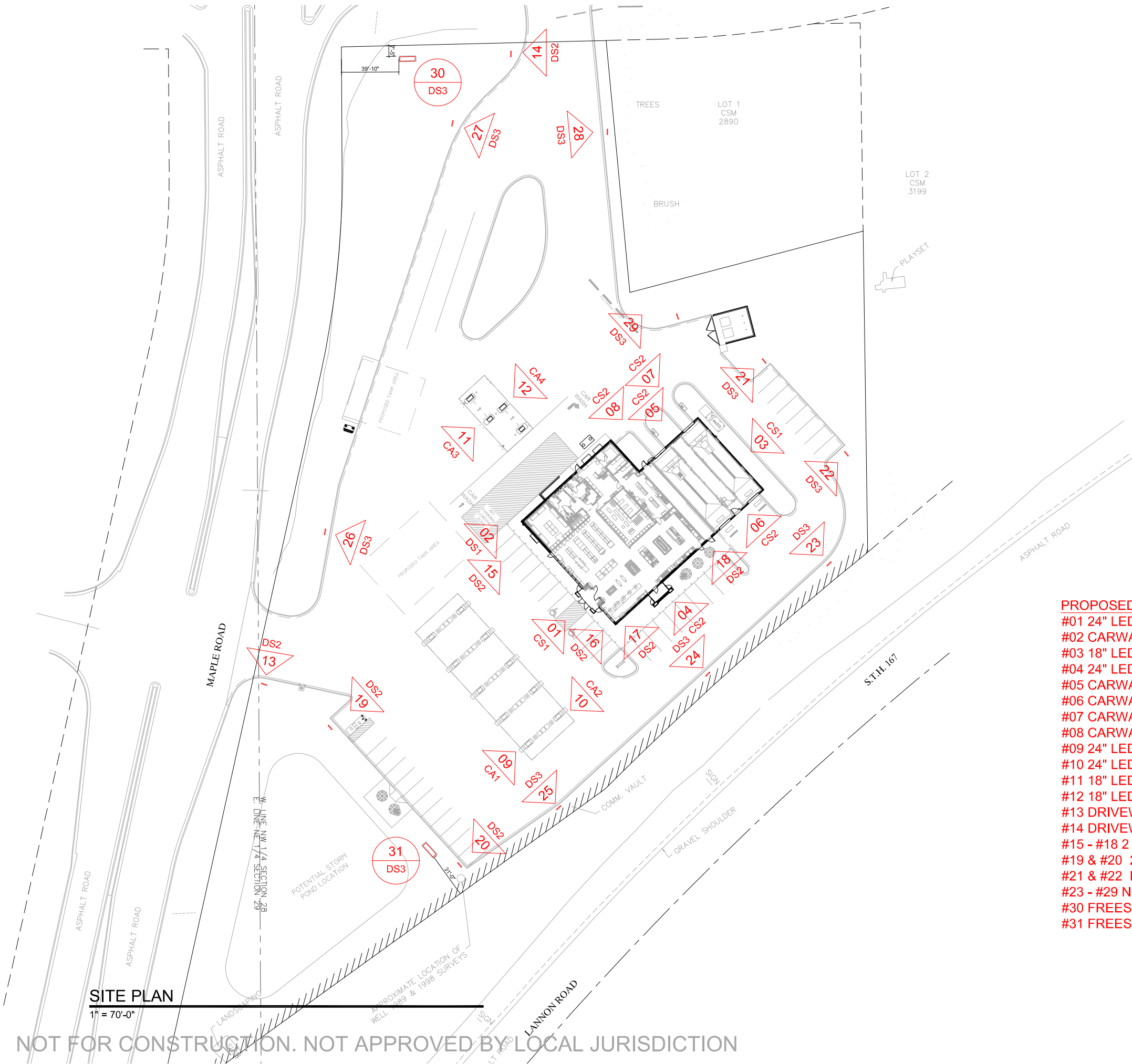


Mequon Rd & Maple Rd
Germantown, WI

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SP1

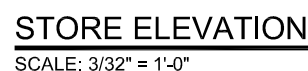
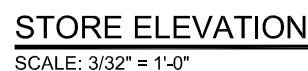
Page 66 of 479

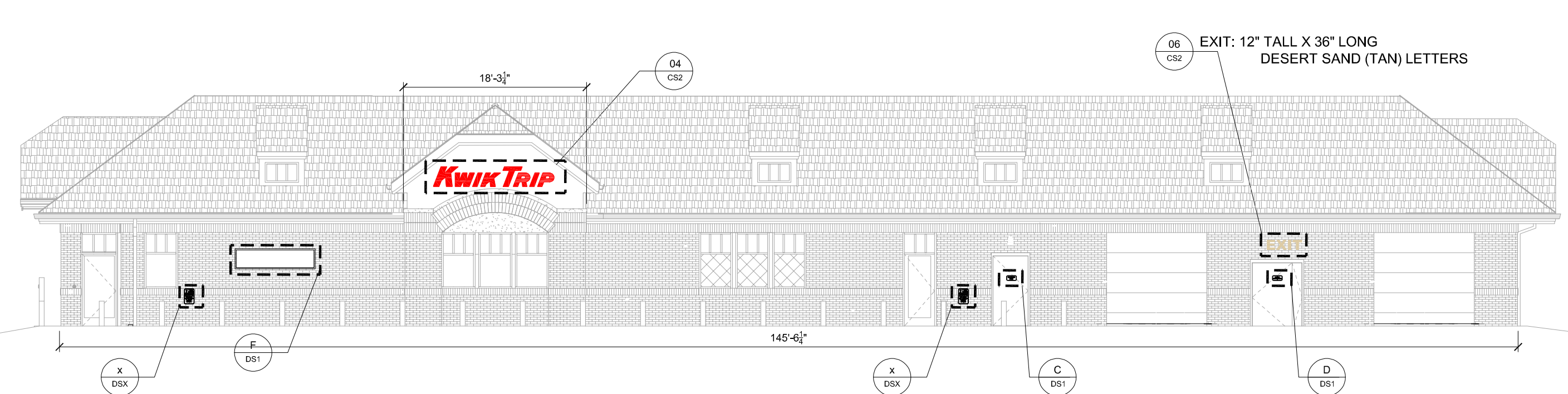


PROPOSED SIGNS:
#01 24" LED KWIK TRIP BUILDING LETTERS
#02 CARWASH BUILDING DIRECTIONAL SIGN
#03 18" LED KWIK TRIP & 24" CARWASH BUILDING LETTERS
#04 24" LED KWIK TRIP BUILDING LETTERS
#05 CARWASH ENTER
#06 CARWASH EXIT
#07 CARWASH INFORMATIONAL SIGN
#08 CARWASH INFORMATIONAL SIGN
#09 24" LED KWIK TRIP CANOPY LETTERS
#10 24" LED KWIK TRIP CANOPY LETTERS
#11 18" LED DIESEL ENTER CANOPY SIGN
#12 18" LED DIESEL EXIT CANOPY SIGN
#13 DRIVEWAY DIRECTIONAL
#14 DRIVEWAY DIRECTIONAL
#15 - #18 2 HOUR PARKING SIGNS
#19 & #20 2 HOUR PARKING SIGNS
#21 & #22 EMPLOYEE PARKING SIGNS
#23 - #29 NO PARKING SIGNS
#30 FREESTANDING MONUMENT SIGN
#31 FREESTANDING MONUMENT SIGN

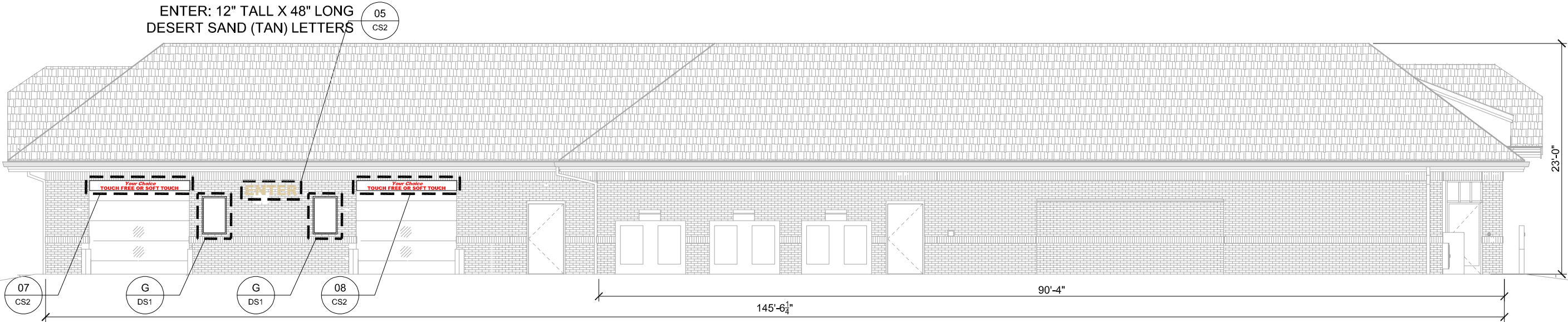


NOT FOR CONSTRUCTION. NOT APPROVED BY LOCAL JURISDICTION

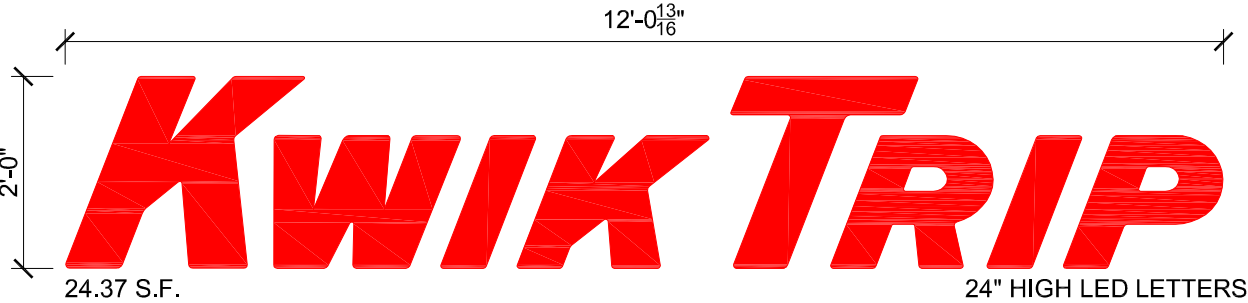
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STORE ELEVATION
SCALE: 3/32" = 1'-0"



STORE ELEVATION
SCALE: 3/32" = 1'-0"



LOGO DETAIL - SIGN #04
SCALE: 1/2" = 1'-0"

Your Choice
TOUCH FREE OR SOFT TOUCH

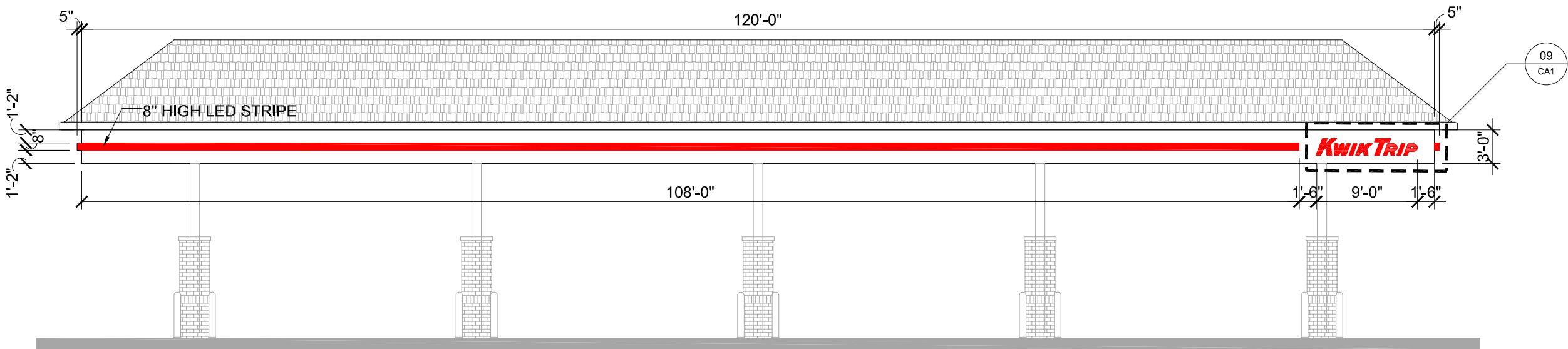
NON-LIT INFORMATIONAL SIGN
RED VINYL ON WHITE ALUMINUM
1'-0"H X 10'-0"W = 10.0 SQ FT

INFORMATIONAL SIGNS #07 & #08
SCALE: 1/2" = 1'-0"



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CONVENIENCE STORE SIGNAGE		CONVENIENCE STORE #631 W. 2BAY CW & SIDE DIESEL		Mequon Rd & Maple Rd Germantown, WI	
#	DATE	DESCRIPTION			
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—	—	—			
—	—	—			
—	—	—			
—	—	—			
DRAWN BY		X.XXXXX			
SCALE		MULTIPLE			
PROJ. NO.		0001			
DATE		2024 10-11			
SHEET		CS2			



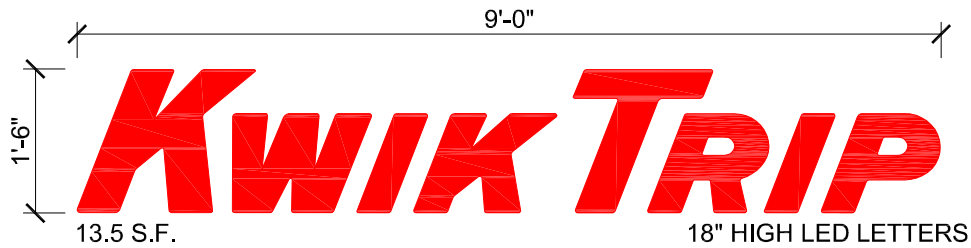
CANOPY ELEVATION

SCALE: 3/32" = 1'-0"



CANOPY ELEVATION

SCALE: 3/32" = 1'-0"



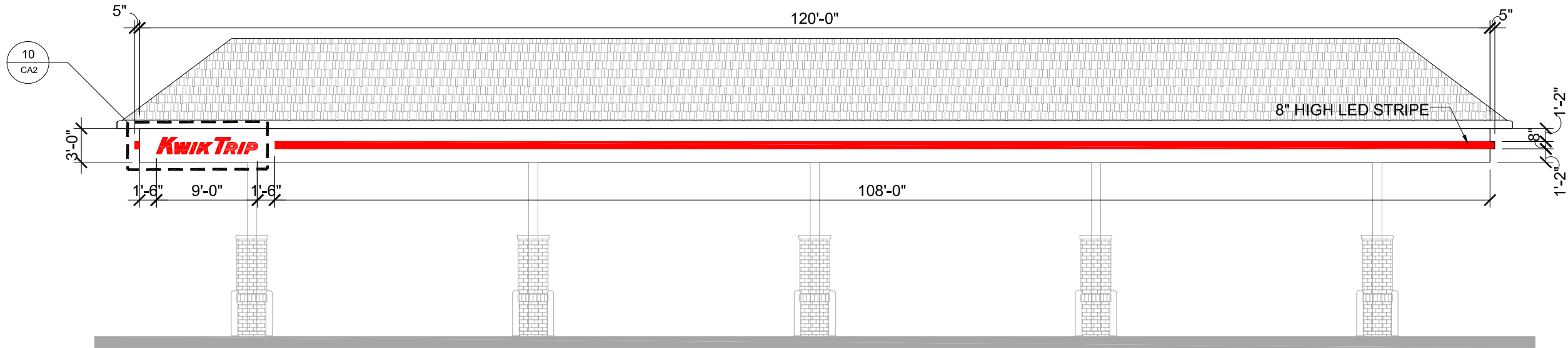
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SCALE: 1/2" = 1'-0"



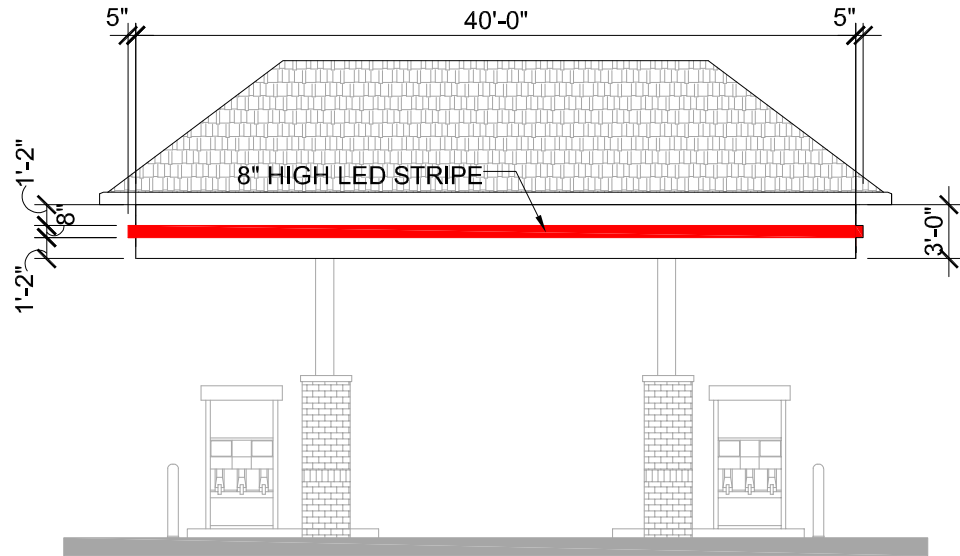
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CANOPY SIGNAGE	CONVENIENCE STORE #631	
	W. 2BAY CW & SIDE DIESEL	
	Mequon Rd & Maple Rd	
	Germantown, WI	
#	DATE	DESCRIPTION
—	—	—
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—	—	—
—	—	—
DRAWN BY		X.XXXXX
SCALE		MULTIPLE
PROJ. NO.		0001
DATE		2024 10-11
SHEET		CA1



CANOPY ELEVATION

SCALE: 3/32" = 1'-0"



CANOPY ELEVATION

SCALE: 3/32" = 1'-0"



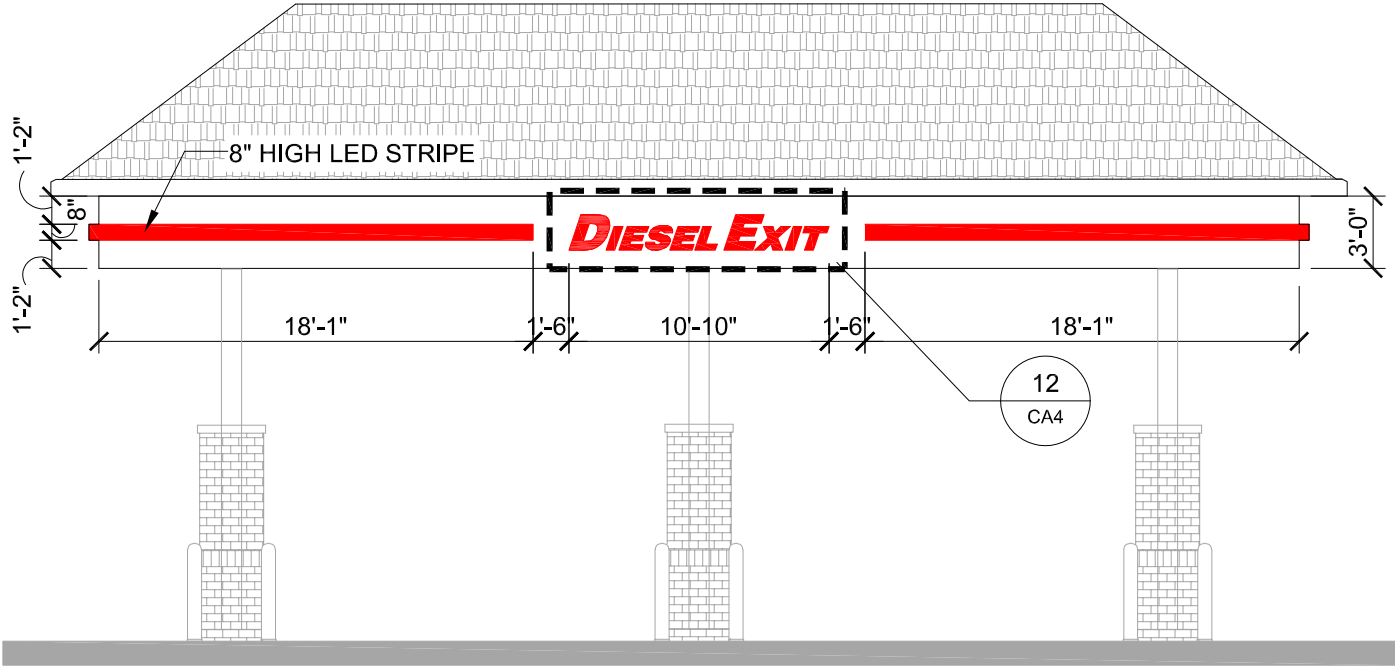
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SCALE: 1/2" = 1'-0"



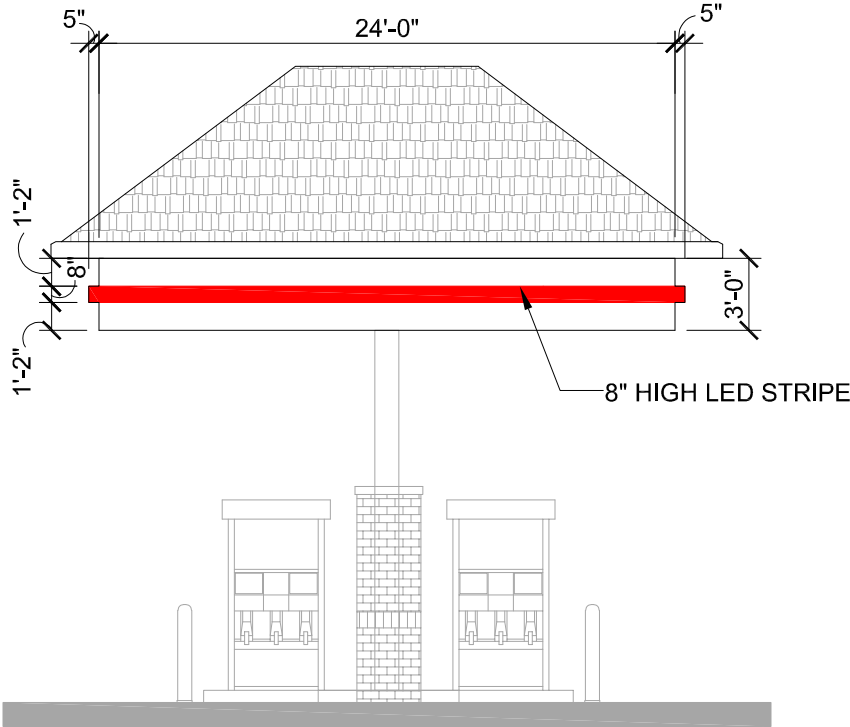
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FAX (608) 781-8960

CANOPY SIGNAGE	CONVENIENCE STORE #631	
	W. 2BAY CW & SIDE DIESEL	
	Mequon Rd & Maple Rd	
	Germantown, WI	
#	DATE	DESCRIPTION
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SCALE		MULTIPLE
PROJ. NO.		0001
DATE		2024 10-11
SHEET		CA2



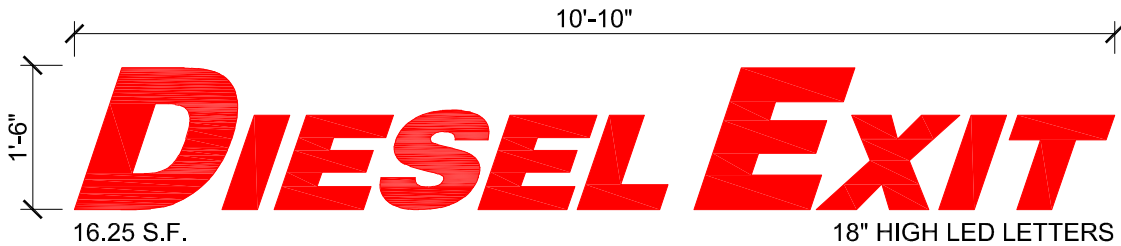
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SCALE: 1/8" = 1'-0"



CANOPY ELEVATION

SCALE: 1/8" = 1'-0"



LOGO DETAIL - SIGN #11

SCALE: 1/2" = 1'-0"

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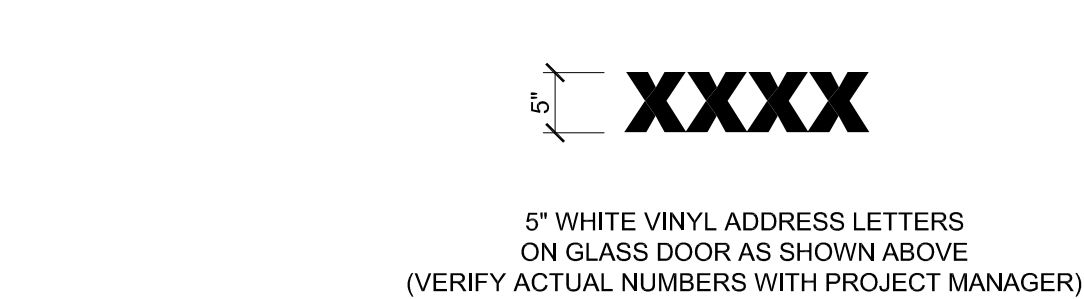
CANOPY SIGNAGE

CONVENIENCE STORE #631
W. 2BAY CW & SIDE DIESEL

Mequon Rd & Maple Rd
Germantown, WI

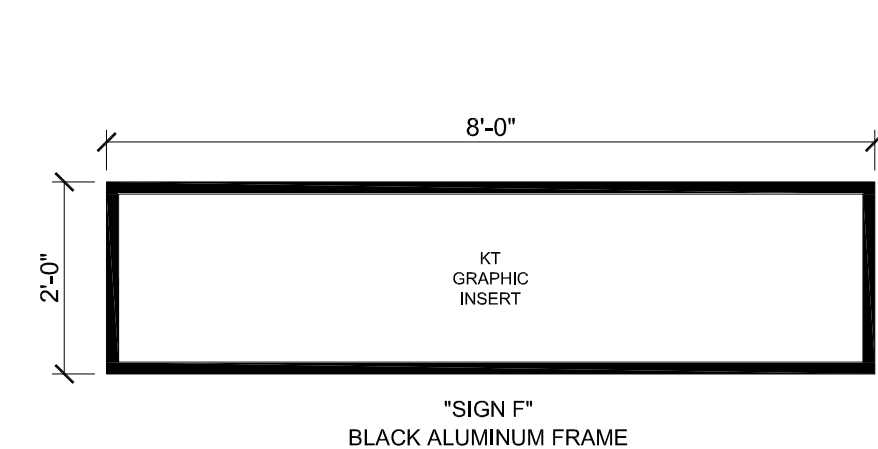
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PROJ. NO.	0001
DATE	2024 10-11
SHEET	CA4



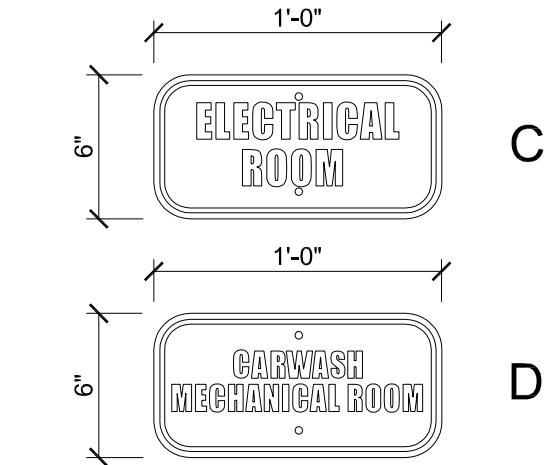
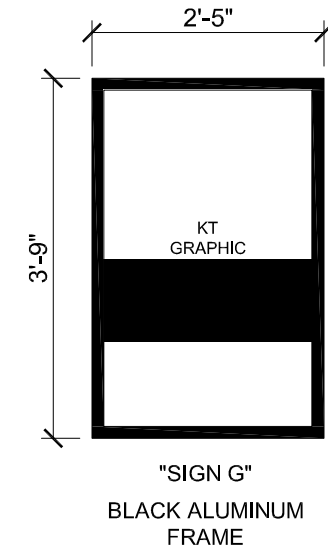
ADDRESS SIGN A

SCALE: 3/4" = 1'-0"



INFORMATIONAL SIGNS F & G

SCALE: 1/2" = 1'-0"



INFORMATIONAL SIGNS C & D

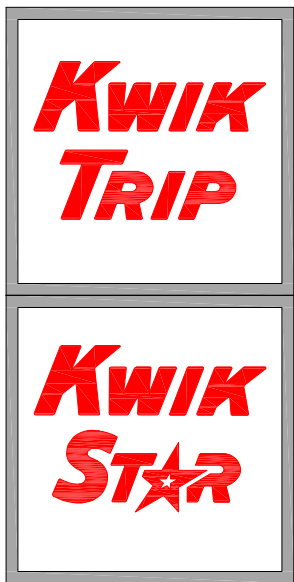
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DIRECTIONAL SIGN #02

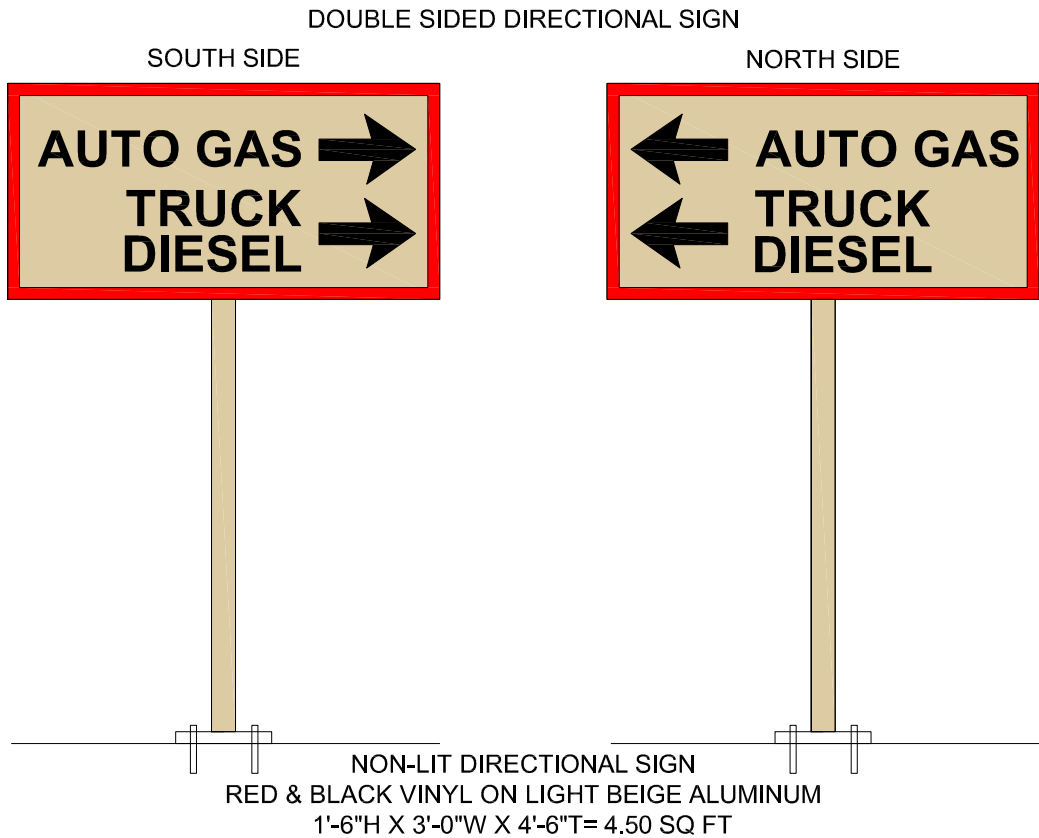
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GENERAL SPECIFICATIONS
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<i>Install along with various signs for same site, crew to give to KT trim guys to install.</i>



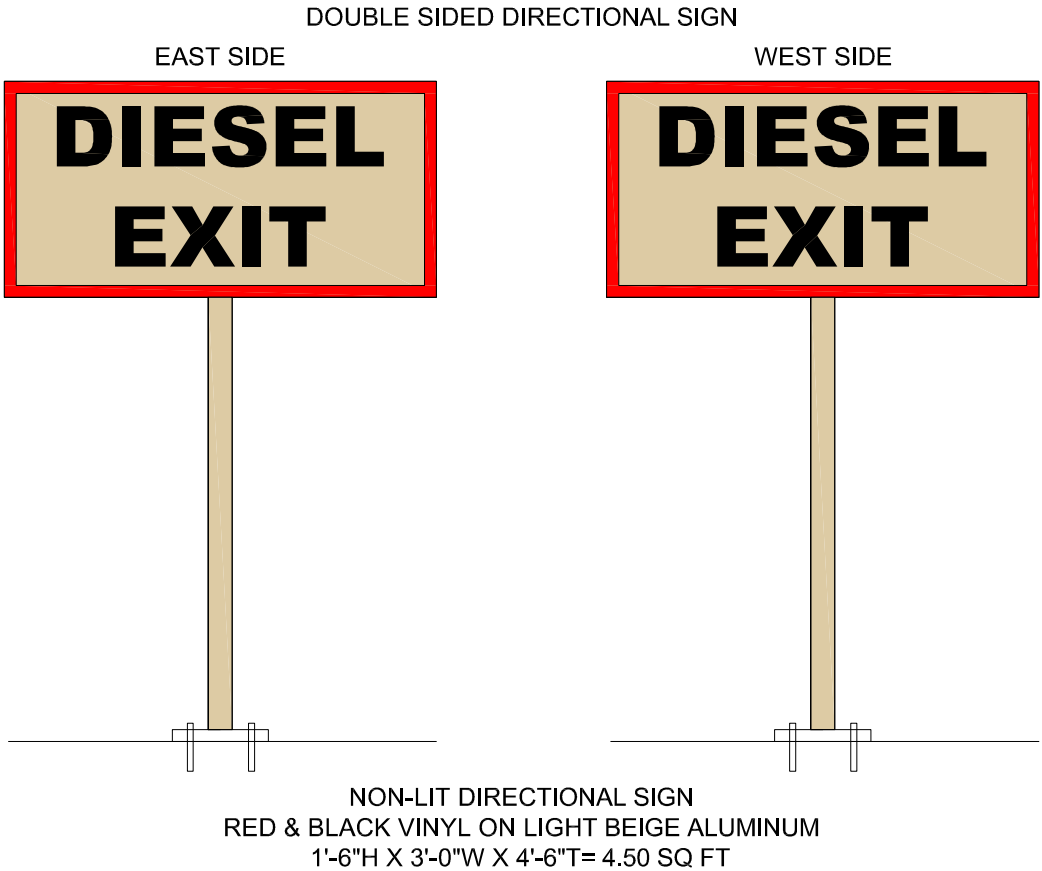
KWIK TRIP, Inc. P.O. BOX 2107 1626 OAK STREET LA CROSSE, WI 54602-2107 PH. (608) 781-8988 FAX (608) 781-8960

DIRECTIONAL SIGNAGE		CONVENIENCE STORE #631 W. 2BAY CW & SIDE DIESEL Mequon Rd & Maple Rd Germantown, WI	
#	DATE	DESCRIPTION	
DRAWN BY		X.XXXXX	
SCALE		MULTIPLE	
PROJ. NO.		0001	
DATE		2024 10-11	
SHEET		DS1	



DIRECTIONAL SIGN #13

SCALE: 3/4" = 1'-0"



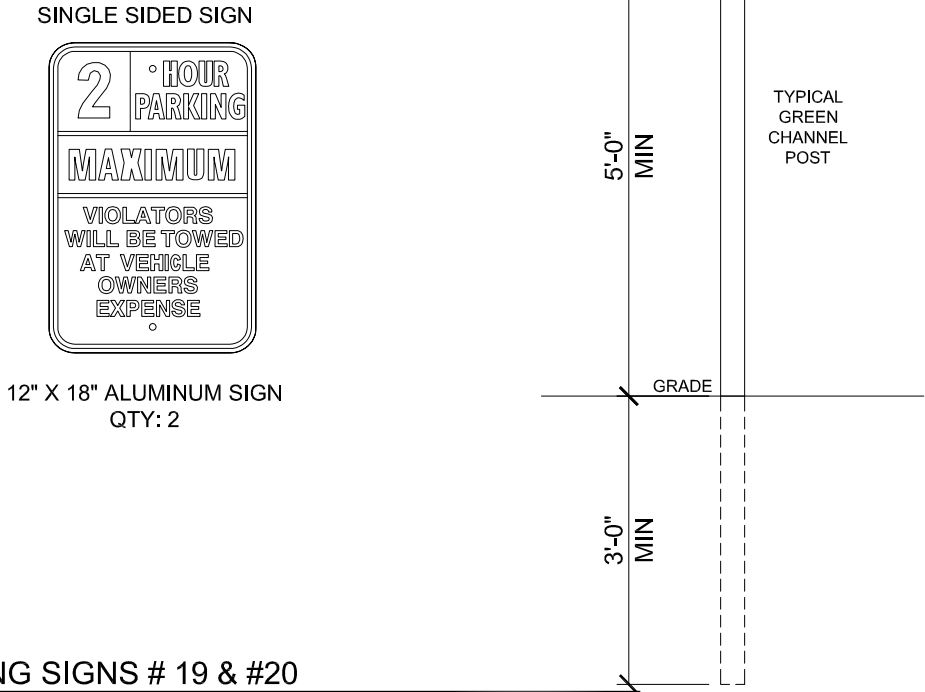
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SCALE: 3/4" = 1'-0"



PARKING SIGN #15 - #18

SCALE: 1/2" = 1'-0"



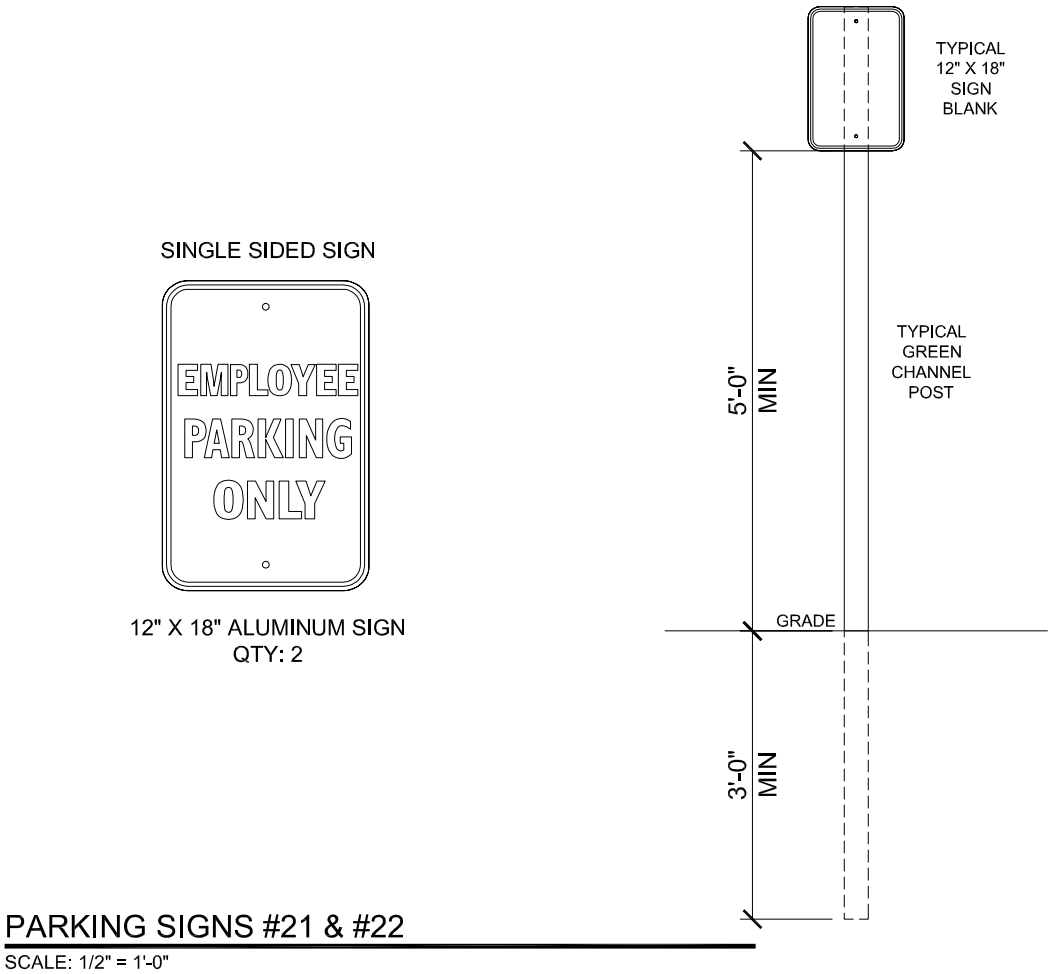
PARKING SIGNS # 19 & #20

SCALE: 1/2" = 1'-0"



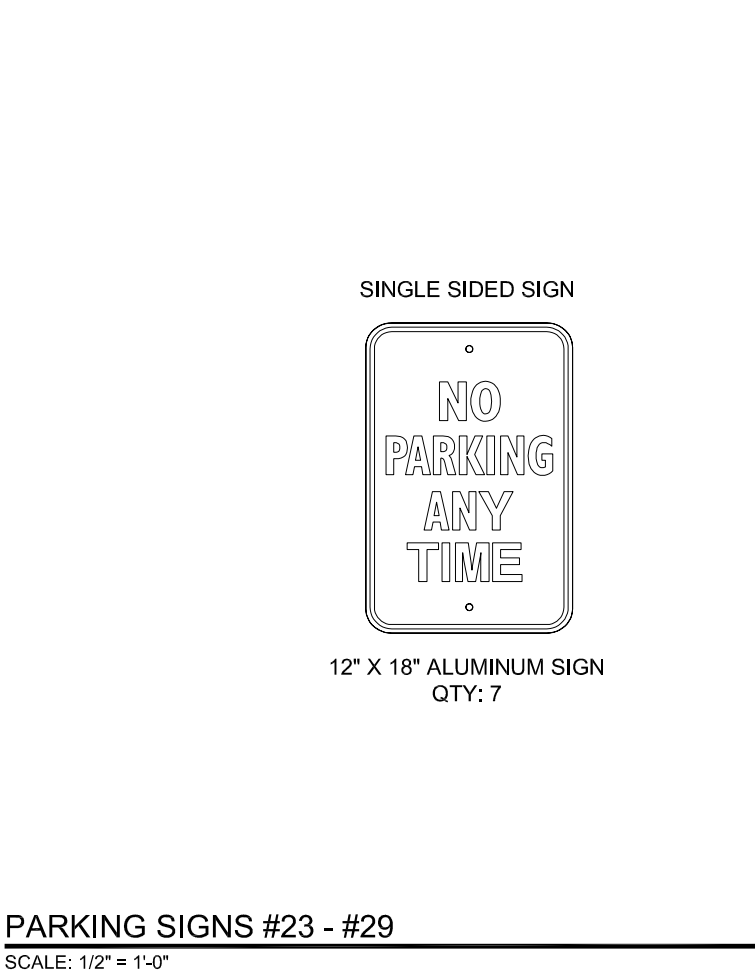
KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

DIRECTIONAL SIGNAGE		CONVENIENCE STORE #631 W. 2BAY CW & SIDE DIESEL		Mequon Rd & Maple Rd Germantown, WI	
#	DATE	DESCRIPTION			
—	—	—			
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—	—	—			
—	—	—			
—	—	—			
DRAWN BY		X.XXXXX			
SCALE		MULTIPLE			
PROJ. NO.		0001			
DATE		2024 10-11			
SHEET		DS2			



#30 KWIK TRIP FREESTANDING MONUMENT SIGN

SEE ATTACHED ARTWORK



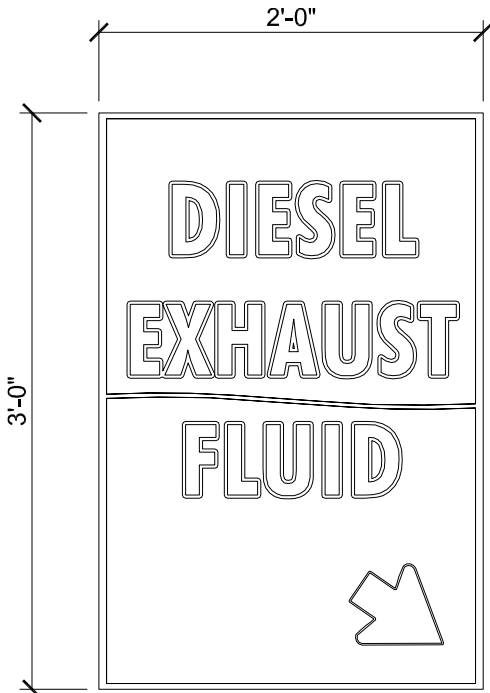
#31 KWIK TRIP FREESTANDING MONUMENT SIGN

SEE ATTACHED ARTWORK



KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

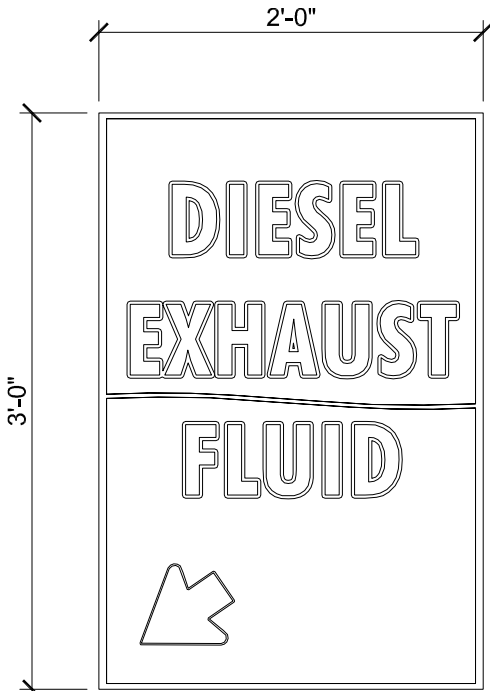
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		#	DATE	DESCRIPTION
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		—	—	—
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		—	—	—
DRAWN BY		X.XXXXXX		
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PROJ. NO.		0001		
DATE		2024 10-11		
SHEET		DS3		



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DEF SIGN A

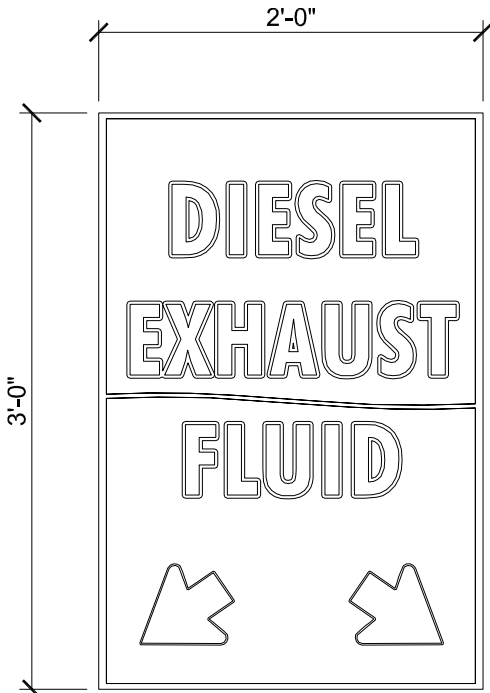
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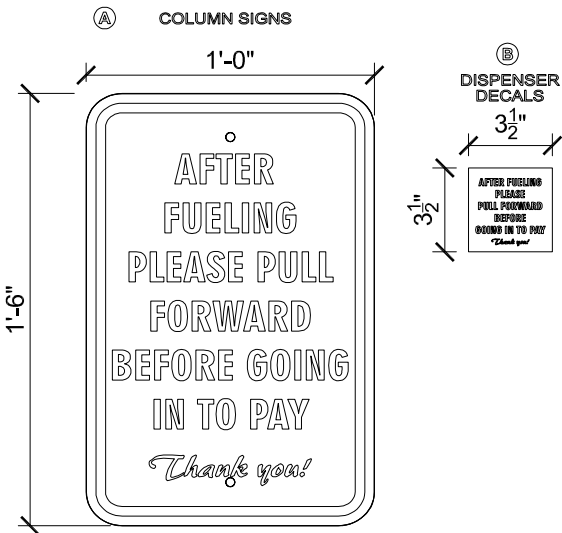
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DEF SIGN B

SCALE: 3/4" = 1'-0"



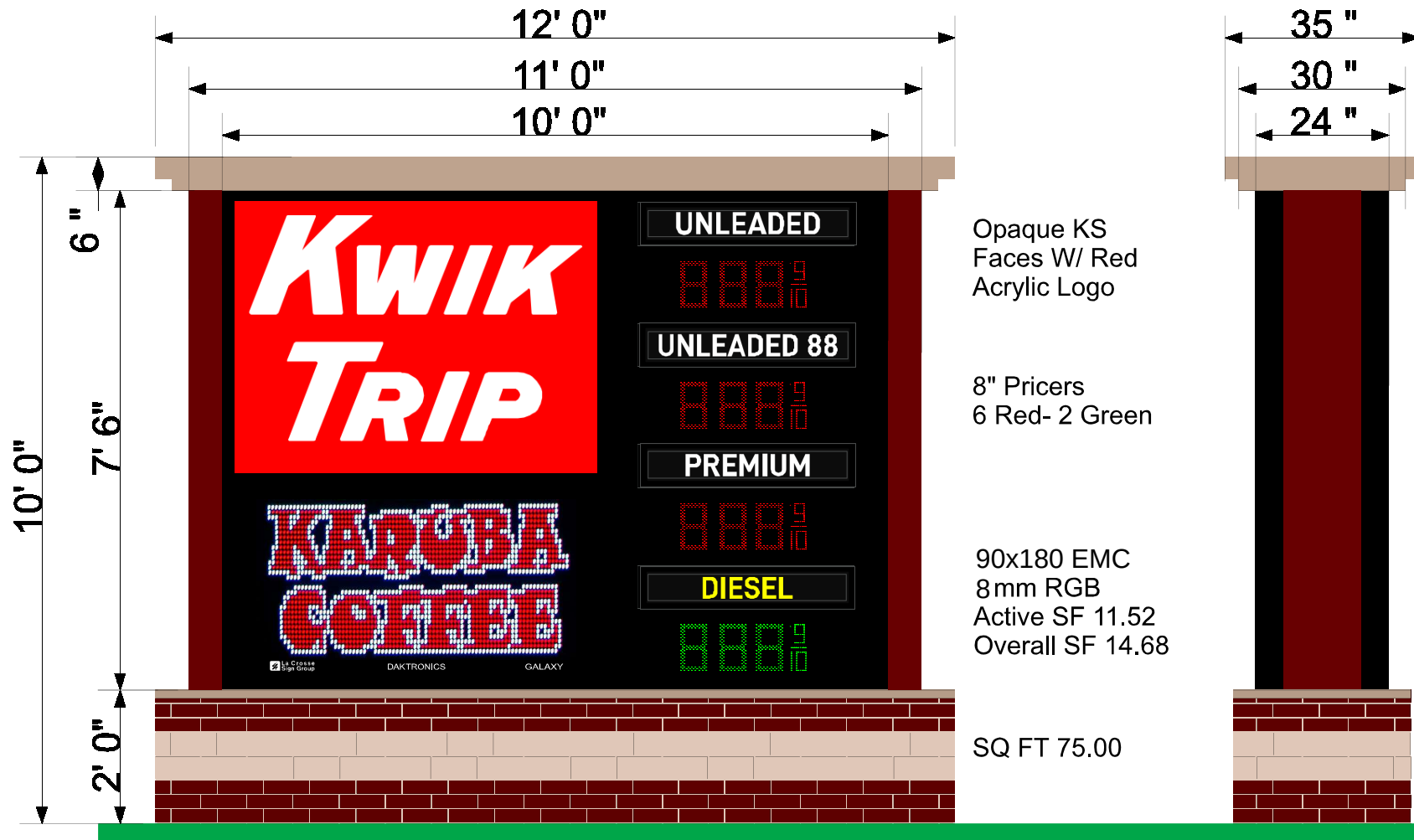
PULL AHEAD SIGN D

SCALE: 1 1/2" = 1'-0"



KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

DEF / DSL SIGNAGE		CONVENIENCE STORE #631 W. 2BAY CW & SIDE DIESEL		Mequon Rd & Maple Rd Germantown, WI	
#	DATE	DESCRIPTION			
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—	—	—			
—	—	—			
DRAWN BY		X.XXXXX			
SCALE		MULTIPLE			
PROJ. NO.		0001			
DATE		2024 10-11			
SHEET		DEF1			



Approved by: _____ Date: _____ Landlord: _____ Date: _____

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lacrossesign.com

DESIGN

SALES

FILE

COLOR KEY

*COLORS ON SKETCH ARE ONLY A REPRESENTATION. ACTUAL COLOR OF FINISHED PRODUCT MAY DIFFER.



1450 Oak Forest Drive • Onalaska, WI 54650 • 608-781-1450
2242 Mustang Way • Madison, WI 53718 • 608-222-5353
2502 Melby Street • Eau Claire, WI 54703 • 715-835-6189

Drawing by: Danielle Hadley

Sign Type: Monument

Date Created: 10/7/2018

Last Modified: 3/28/2019

Scale: 3/8" = 1' 0"

Job Name: Kwik Trip

Job Address:

Salesperson: Cindy Bluske

Job Number: 102023

Revision Number:

Job File Location:

① PPG NA 208400

② Black S/G paint

③ NA 208080 Beige

④ #2283 Red Acrylic

⑤ White of Acrylic

⑥ Black (230-22)

⑦ ☐

⑧ ☐

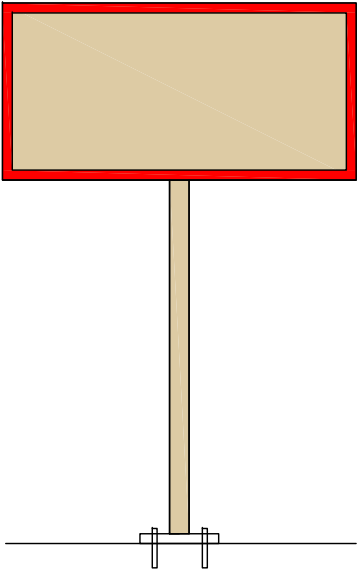
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⑩ ☐

⑪ ☐

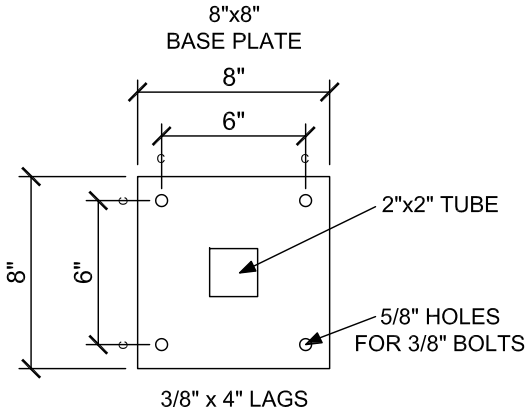
⑫ ☐

SINGLE SIDED NON-LIT DIRECTIONAL SIGN



DIRECTIONAL SIGN EXAMPLE

SCALE: NTS



NOTES:

- Sign vendor to anchor sign/s to concrete pad
- Sign vendor to anchor signs with (4) 3/8" x 4" lags & shield anchors. Use stainless steel hardware
- Stainless steel flat washers may be used under base plate as needed to shim sign to be plumb
- Concrete Pad installed by others (Kwik Trip/Kwik Star Concrete Vendor)
 - Concrete Pad to be 5"x 36"x 36"
 - Center of footing to be installed 48" from face of curb



DIRECTIONAL SIGN BASE PLATE

SCALE: 1 1/2" = 1'-0"

	KWIK TRIP, Inc. P.O. BOX 2107 1626 OAK STREET LA CROSSE, WI 54602-2107 PH. (608) 781-8988 FAX (608) 781-8960	PROJECT: Store- All Stores Date - 08/31/2023 DESCRIPTION: All Directional signs will have a single post per the detail above	SCB #1

TRAFFIC IMPACT ANALYSIS

DATE: October 14, 2024

FOR: Jeff Osgood
Kwik Trip, Inc.

FROM: Tammi Czewski, P.E., PTOE
Traffic Analysis & Design, Inc.

SUBJECT: **Maple Road Kwik Trip Relocation Traffic Impact Analysis**
Germantown, WI

INTRODUCTION

A Kwik Trip gas station/convenience store is currently located in the southwest quadrant of the Maple Road/Lannon Road intersection in the Village of Germantown, Wisconsin ([Exhibit 1](#)). Kwik Trip, Inc. proposes to build a new, larger Kwik Trip gas station/convenience store in the northeast quadrant of the intersection, redeveloping the existing Kwik Trip site with a different commercial use. This study evaluates the traffic impacts of these development plans to study intersections along Maple Road and Mequon Road.

STUDY AREA

The study intersections are identified on [Exhibit 1](#) and listed below:

- Maple Road & Mequon Road
- Maple Road & Kleinmann Drive/Commercial (Future Kwik Trip) Driveway
- Maple Road & Lannon Road
- Maple Road & Commerce Circle
- Mequon Road & Commercial (Future Kwik Trip) Driveway

The Maple Road/Mequon Road intersection operates with all-way stop control and the Maple Road/Lannon Road intersection operates with traffic signal control. All other study intersections operate with two-way stop control, where the stop signs are on the minor street approaches. A transportation detail illustrating the intersection lane configurations, speed limits, and approximate intersection spacing is on [Exhibit 2](#).

Descriptions of the roadways within the study area are below.

- Lannon Road (also designated as STH 167) is a four-lane divided northeast/southwest arterial highway with a posted speed limit of 45 miles per hour (mph) within the limits of the study area. It is part of the state trunk highway network as a connecting highway under the jurisdiction of the Village of Germantown. According to WisDOT, the Year 2023 annual average daily traffic (AADT) volumes on Lannon Road were 24,300 vehicles per day (vpd) southwest of Maple Road and 18,300 vpd to the northeast. Sidewalks do not currently exist along Lannon Road within the limits of the study area.
- Maple Road is a two-lane undivided north/south roadway south of Lannon Road and a four-lane divided roadway to the north of Lannon Road with a posted speed limit of 40 mph within the limits of the study area. The Year 2023 AADT volumes along Maple Road were 8,100 vpd north of Mequon Road and 6,200 vpd south of Commerce Circle. A sidewalk exists on the west side of Maple Road between Kleinmann Drive and Lannon Road, and on the east side of Maple Road north of Mequon Road.
- Mequon Road is a two-lane undivided east/west roadway that has a 40-mph speed limit and 2023 AADT of 4,400 vpd west of Maple Road and a 30-mph speed limit and 2016 AADT of 2,800 vpd east of Maple Road.
- Kleinmann Drive and Commerce Circle are two-lane undivided roadways that connect to the west side of Maple Road and provide access for commercial developments along the roadway.

PROPOSED DEVELOPMENT

The existing Kwik Trip on Maple Road has 10 fueling positions, a convenience store, and two-bay car wash, with two access driveways to Commerce Circle. Kwik Trip will maintain ownership of this property and replace development on this site with other commercial that is not a competing land use (e.g. gas station, coffee shop, restaurant, etc.). For the purposes of this study, a bank with three drive-through lanes was estimated to replace the Kwik Trip on the existing site.

A larger, new Kwik Trip is proposed to be constructed on the now vacant 4.3-acre site previously occupied by Wisconsin Mutual Insurance ([Exhibit 3](#)). The existing insurance building will be removed and replaced with a large convenience store, 20 regular fueling positions, two diesel fueling positions, and a two-bay car wash. Access to the site remains at one location to Maple Road, directly across from Kleinmann Drive and one location to Mequon Road, just east of the Maple Road intersection. Both access driveways are unrestricted with full-access turning movements to and from the mainline roadways. This study evaluates the Maple Road access for two conditions:

- Alternative 1: Full access driveway at Maple Road
- Alternative 2: Partial access driveway (right-out only) at Maple Road

The partial access alternative assumes a physical barrier would be installed in the median on Maple Road that allows left-turns into both Kleinmann Drive and the proposed Kwik Trip driveway but restricts outbound traffic from both locations to right-out only movements.

PEAK HOUR TRAFFIC VOLUMES – NO DEVELOPMENT**Data Collection/Existing Traffic Volumes**

TADI collected weekday traffic counts at the study intersections between September 23 and September 24, 2024. Traffic counts were also collected at the existing Kwik Trip driveways on Commerce Circle. Traffic counts at the Maple Road/Mequon Road intersection were collected from 6:00 a.m. to 7:00 p.m. for signal warrant studies. All other traffic counts were collected from 6:00-9:00 a.m. and from 3:00-6:00 p.m.

During the traffic count at Maple Road/Commerce Circle, field staff noted that a road closure was in place on Maple Road, south of the study area. As this road closure may have affected through traffic volumes on Maple Road, as well as turning movement patterns at the Maple Road/Lannon Road intersection, TADI obtained and compared the following additional data:

- May 2021 traffic count collected for a previous study.
- Hourly traffic volumes from the WisDOT 2023 AADT data on Maple Road and Lannon Road.
- AM peak hour verification recount at the Maple Road/Mequon Road intersection on October 11, 2024 (when the Maple Road closure was no longer in place).

Using these sets of data, it was concluded that the Maple Road closure did not significantly impact turning volumes at the Maple Road/Mequon Road intersection, as the original September count and October verification count resulted in similar traffic volumes and traffic patterns. It was also concluded that the May 2021 traffic count at the Maple Road/Lannon Road intersection had similar approach volumes on Maple Road and Lannon Road to the hourly volumes from the 2023 AADT data. Therefore, the May 2021 Maple Road/Lannon Road turning movement count replaced the September 2024 turning movement count in this study. All other turning movement counts from September 2024 were used, but through volumes on Maple Road were balanced (increased) from the May 2021 Maple Road/Lannon Road count. All traffic count data used for this study is included in [Appendix A](#).

The combined peak hours from the turning movement counts were determined to occur from 6:45-7:45 a.m. (AM peak hour) and from 4:00-5:00 p.m. (PM peak hour). Traffic counts were compiled for these peak hours, balanced between intersections, and are shown as the Year 2024 Existing Traffic Volumes on [Exhibit 4](#).

Forecasted Traffic Volumes

WisDOT historical AADT data available on Maple Road, Mequon Road, and Lannon Road were compiled to determine historical traffic growth trends in the study area. From the available data (2004 to 2023), traffic growth on Maple Road ranges from 0.5% (north of Mequon Road) to 2.0% (south of Commerce Circle) per year, traffic growth on Lannon Road averages at 1.0% per year, and traffic growth on Mequon Road averages at 0.0% per year (traffic volumes have consistently declined over time). The historical AADT data and growth trend graph is on [Exhibit 5](#).

These growth rates were applied to the study area roadways for a five-year period and traffic was balanced between intersections. The resulting Year 2029 Future Traffic Volumes evaluated in this study are on [Exhibit 6](#).

PEAK HOUR TRAFFIC VOLUMES – RELOCATED KWIK TRIP DEVELOPMENT

Existing Kwik Trip Traffic Removals

Build traffic volumes evaluated in this study include the removal of the existing Kwik Trip development volumes from the roadway system, additional traffic from proposed new commercial (bank) development on the existing Kwik Trip site, and additional traffic from the larger, new Kwik Trip development north of Lannon Road.

Based on the Kwik Trip driveway counts at Commerce Circle, the existing Kwik Trip development generates 305 trips during the weekday AM peak hour and 260 trips during the weekday PM peak hour ([Exhibit 7A](#)). Gas station developments typically generate a relatively high volume of pass-by trips (trips that are already on the roadway system but divert into the site before continuing on their original route). Using WisDOT pass-by trip allowances, pass-by trips for the existing Kwik Trip site were estimated as 55% of the total site trips.

Trip distributions for the Kwik Trip site were first based on the distribution of traffic turning at the Maple Road/Commerce Circle intersection, and then on the distribution of traffic turning at the remaining study intersections. So as not to generate negative trips for any one movement (after removing the Kwik Trip trips from the study intersections), different trip distributions were developed separately for the AM and PM peak hours. The new and pass-by trip distributions estimated for the existing Kwik Trip site are shown below the trip generation table on [Exhibit 7A](#). These trip removals were assigned to the intersections as shown on [Exhibit 7B](#) (Existing Kwik Trip New Trips) and on [Exhibit 7C](#) (Existing Kwik Trip Pass-by Trips).

Future Commercial (Bank) Traffic

At this time, no specific commercial development user has been identified for the existing Kwik Trip site in the southwest quadrant of the Maple Road/Lannon Road intersection. For this study, a bank was estimated as a potential future development use. Trips for the bank development were generated from the *ITE Trip Generation Manual, 11th Edition*. Based on ITE, a bank with three drive-through lanes generates 390 weekday daily trips, with 25 trips in the AM peak hour and 80 trips in the PM peak hour ([Exhibit 8A](#)). Using WisDOT pass-by trip allowances, pass-by trips for the bank were estimated at 35% of the total site trips.

The new and pass-by trip distributions estimated for the existing Kwik Trip development were applied to the new bank trips ([Exhibit 8A](#)). The new and pass-by bank trips were assigned to the study intersections based on these trips distributions and are shown on [Exhibit 8B](#) (Bank Development New Trips) and on [Exhibit 7C](#) (Bank Development Pass-by Trips).

Relocated Kwik Trip Traffic

Trip generation for the relocated Kwik Trip was based on WisDOT fitted curve equations applied to the 22 total fueling stations proposed for the site. The WisDOT fitted curve equations are from the October 20, 2022 trip generation guidance for Convenience Store/Gas Station Land Use. Based on WisDOT equations, a 22-fueling position gas station/convenience store with a store size greater than 6,000 square feet, and in an area with a population greater than 300,000 generates 4,640 trips during a typical weekday with 335 trips in the weekday AM peak hour and 335 trips in the weekday PM peak hour ([Exhibit 9A](#)). Compared to the existing Kwik Trip site, the larger, relocated Kwik Trip generates about 10% (30) more trips during the weekday AM peak hour and about 29% (75) more trips during the weekday PM peak hour. Using WisDOT pass-by trip allowances, pass-by trips for the relocated Kwik Trip site were estimated as 55% of the total site trips.

The new trip distributions estimated for the existing Kwik Trip development were applied to the relocated Kwik Trip trips ([Exhibit 9A](#)). Pass-by trips, however, were recalculated based on existing peak hour traffic patterns on Mequon Road and Maple Road north of Lannon Road. The higher traffic volumes on Maple Road, north of Lannon Road, the proximity to the Maple Road/Mequon Road intersection, and the secondary access via the Mequon Road/Lannon Road intersection are expected to result in different pass-by trip patterns that is generated by the existing Kwik Trip store.

The new and pass-by bank trips were assigned to the study intersections based on the estimated trip distributions and are shown [Exhibit 9B](#) (Relocated Kwik Trip New Trips – Alternative 1), [Exhibit 9C](#) (Relocated Kwik Trip Pass-by Trips – Alternative 1), [Exhibit 9D](#) (Relocated Kwik Trip New Trips – Alternative 2), and [Exhibit 9E](#) (Relocated Kwik Trip Pass-by Trips – Alternative 2).

Driveway Traffic Volumes

The existing new and pass-by Kwik Trip trips (to be removed), bank trips, and relocated Kwik Trip trips were added together to identify the total trip impact with the proposed development plans. These are identified as the Development Driveway trips. The Development Driveway Trips are on [Exhibit 10](#) (Alternative 1) and on [Exhibit 11](#) (Alternative 2).

Build Traffic Volumes

The Development Driveway Trips for Alternatives 1 and 2 were added to the Year 2029 Future Traffic Volumes to generate the Year 2029 Build Traffic Volumes. The Year 2029 Build Traffic Volumes are on [Exhibit 12](#) (Alternative 1) and on [Exhibit 13](#) (Alternative 2).

PEAK HOUR TRAFFIC OPERATIONS & QUEUES

The study intersections were analyzed using the Synchro 12 traffic analysis model (outputs based on the *Highway Capacity Manual, 7th Edition*) and the peak hour turning movement volumes estimated for each intersection. Intersection operation is defined by “level of service.” Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purposes of this study, LOS D or better was used to define acceptable peak hour operating conditions. The LOS definitions for signalized and unsignalized intersections are included before the Year 2024 Existing analysis output in [Appendix B](#).

The analyses were completed using the existing geometrics and traffic control, existing peak hour factors and heavy vehicles, WisDOT right-turn on red adjustment factors and WisDOT Saturation Flow Rate values ([Appendix B](#)).

Traffic Operations – Existing & Future Traffic Volumes (No Development)

The peak hour traffic operations (LOS, delays, and 95th percentile queues) with the existing transportation system are in tables on [Exhibit 14](#) (Year 2024 Existing Traffic) and on [Exhibit 15](#) (Year 2029 Future Traffic). The Maple Road/Mequon Road intersection operates with movements over capacity and at LOS E/F conditions during the weekday AM peak hour, and the Maple Road/Lannon Road intersection operates with a westbound left-turn movement that is at LOS E during the weekday PM peak hour. Queues for the eastbound left-turn movement at this intersection are reported as 300 feet during the weekday AM peak hour, but theoretically infinite.

Adding additional green time to the left-turn lanes at the Maple Road/Lannon Road intersection mitigates delays and queues to acceptable levels. Reversing eastbound and westbound lane configurations on Mequon Road and installing traffic signals at the Maple Road/Mequon Road intersection mitigates the LOS E and F delays. Based on a signal warrant analysis (see the Warrant Analysis section of this report), peak hour and crash warrants are currently met, justifying traffic signal installation at this intersection.

The Year 2029 Future Traffic Volumes were evaluated with the modified geometrics and traffic control. These improvements result in acceptable queues and delays (LOS D or better) with all movements under capacity during the weekday AM and PM peak hours ([Exhibit 16](#)).

The Synchro analysis files for the Year 2024 Existing Traffic Volumes are in [Appendix B](#). The Synchro analysis files for the Year 2029 Future Traffic Volumes are in [Appendix C](#).

Traffic Operations – Build Volumes (Relocated Kwik Trip)

The Year 2029 Build Traffic Volumes for access Alternatives 1 and 2 were modeled with the recommended modifications for the Existing and Future traffic conditions. Based on right-turn lane warrants (see the Warrant Analysis section of this report), a northbound right-turn lane was modeled on Maple Road at the relocated Kwik Trip driveway across from Kleinmann Drive. With the Existing/Future and Build modifications, all study intersections operate with all movements under capacity and with acceptable peak hour queues and delays for both Alternative 1 ([Exhibit 17](#)) and Alternative 2 ([Exhibit 18](#)). The Synchro analysis files for the Year 2029 Build Traffic Volumes are in [Appendix C](#).

WARRANT ANALYSIS

Right-Turn Lane Warrant – Maple Road/Relocated Kwik Trip Driveway

A right-turn lane warrant analysis was completed to determine if a northbound right-turn lane should be added on Maple Road at the relocated Kwik Trip driveway across from Kleinmann Drive. The turn lane warrant is based approaching and right-turn traffic volumes and a 45-mph roadway design speed (five mph over the posted speed limit). Based on the warrant analysis, a right-turn lane is warranted and recommended to be constructed on Maple Road with buildout of the relocated Kwik Trip development.

Traffic Signal Warrant Analysis – Maple Road/Mequon Road

A traffic signal warrant analysis was completed for the Maple Road/Mequon Road intersection to determine if signals are warranted for mitigating existing and future delays and crashes. Traffic signal warrant studies are based on traffic volume and other warranting criterion from the *Manual on Uniform Traffic Control Devices* (MUTCD). Chapter 4C of the MUTCD outlines the standards for determining the need for traffic signals at a particular location.

The parameters used for the warrant analyses at the Maple Road/Mequon Road intersection are:

- Volume warrant thresholds were based on a four-leg intersection with two-lane major street approaches and one-lane minor street approaches. Due to the presence of an eastbound and westbound right-turn lane, 0% of the minor street right-turn volumes were included.
- The posted speed limit on the major street (Maple Road) is 40 mph; therefore, no reduction of volume thresholds was applied.

The intersection currently operates with all-way stop sign control, and with four-lane northbound and southbound approaches. Due to the wide multi-lane approaches, the high peak traffic volumes to and from the light industrial development to the north, and the comparatively low eastbound and westbound traffic volumes, a relatively high number of crashes occur during a 12-month period.

During the traffic counts, field staff noted that northbound and southbound traffic on Maple Road frequently did not stop at the stop signs when traveling through the intersection. Crash reports at this intersection (collected from January 2019 through September 2024) confirmed that this behavior caused right and left-angle crashes that are correctable with traffic signal control. Other causes of the angle crashes were from vehicles in adjacent lanes blocking visibility, or confusion over right-of-way (who's turn to go). Since at least five crashes of the type susceptible to correction by signal in a 12-month period have occurred, Warrant 7, Crash Experience is met.

Although traffic volumes aren't high enough to meet volume requirements for Warrants 1, 2, or 3, the major street approach experiences nearly 10 vehicle-hours of delay during the weekday AM peak hour, exceeding the delay threshold for Warrant 3, Peak Hour Volume. Note that the delay threshold for Warrant 3 typically applies to the stop-controlled, minor street approach, but is applied to the major street in this case since all approaches operate with stop control. Warrant 3 is applicable for warranting traffic signals as traffic flow through the intersection is highly impacted by the traffic surges to and from the light industrial development, which creates significant shift-work traffic patterns during the peak hours.

The hourly traffic volumes, signal warrant analysis, and crash analysis for the Maple Road/Mequon Road intersection are in [Appendix E](#).

RECOMMENDATIONS

Based on the results of the traffic analysis, the following modifications are recommended (shown graphically on [Exhibit 19](#)). Modifications are divided into two categories: modifications required to mitigate existing/non-development issues and modifications required to accommodate the proposed development changes with the relocation of Kwik Trip to the north side of Lannon Road.

Recommended modifications are for jurisdictional consideration and are not legally binding. The Village of Germantown reserves the right to determine alternative solutions.

Existing/Future (No Development) Recommendations

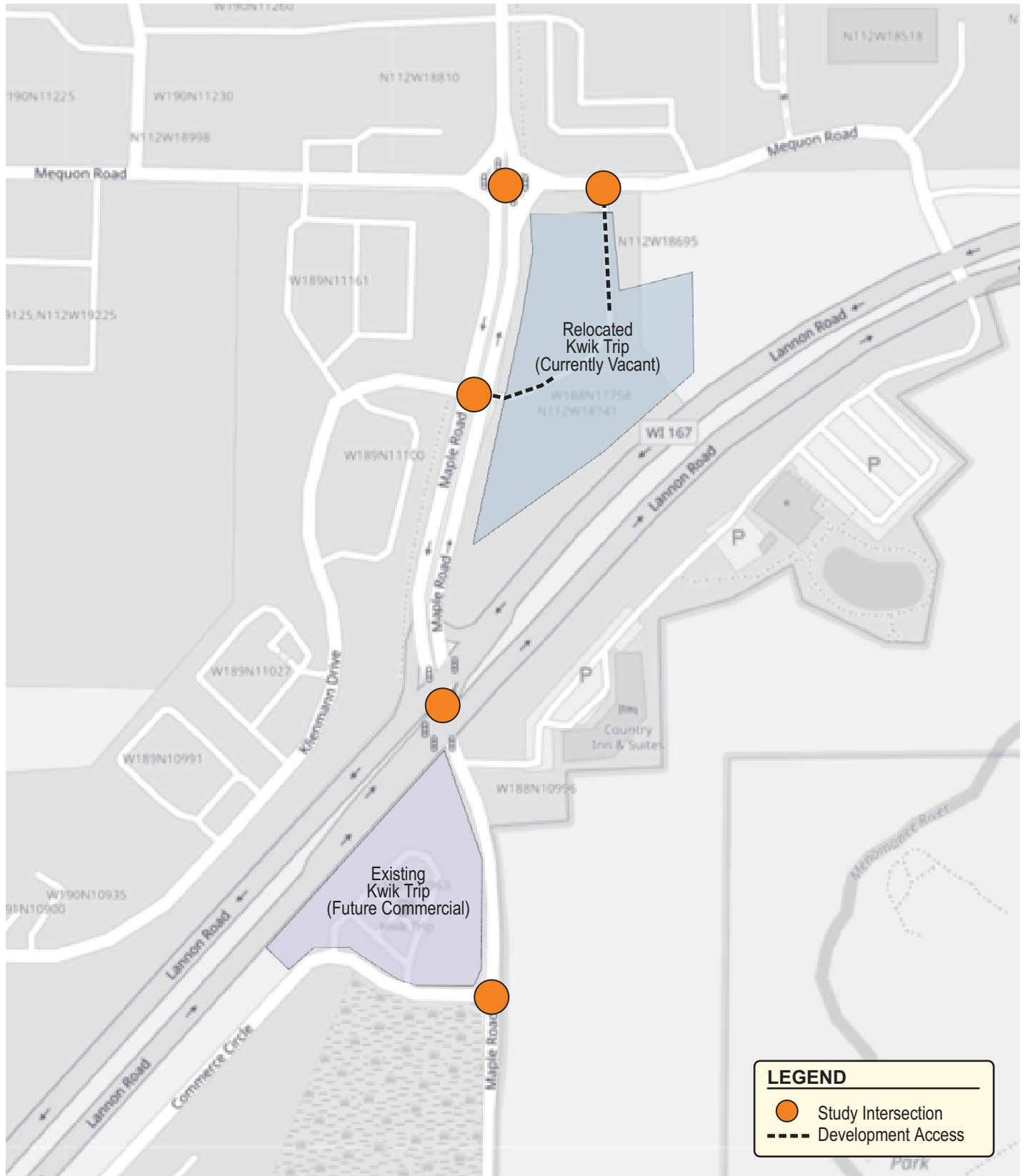
- Install traffic signal control at the Maple Road/Mequon Road intersection that is coordinated during the peak hours with the adjacent traffic signal at Maple Road/Lannon Road.
- With traffic signal control at the Maple Road/Mequon Road intersection, reverse the eastbound and westbound approach lanes from a shared left-turn/through plus right-turn lane to a left-turn lane plus shared through/right-turn lane.

Build (Relocated Kwik Trip Development) Recommendations

- Allow full-access turning movements at the relocated Kwik Trip driveways to both Maple Road and Mequon Road.
- Provide a northbound right-turn lane on Maple Road at the relocated Kwik Trip driveway across from Kleinmann Drive.

CONCLUSIONS

With the above modifications, the study intersections operate under capacity, with acceptable delays and queues during the peak hours.



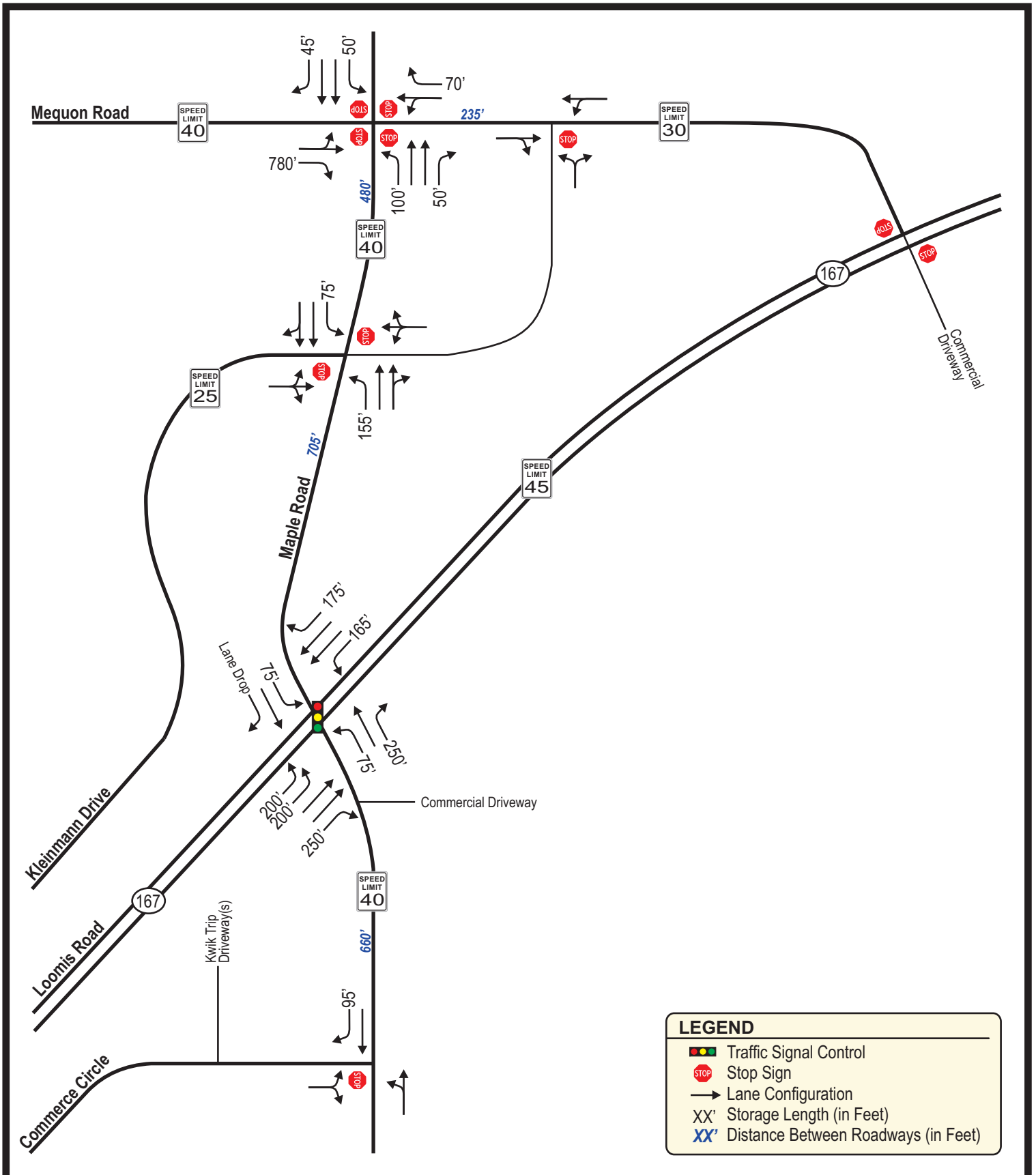


EXHIBIT 2 EXISTING TRANSPORTATION SYSTEM

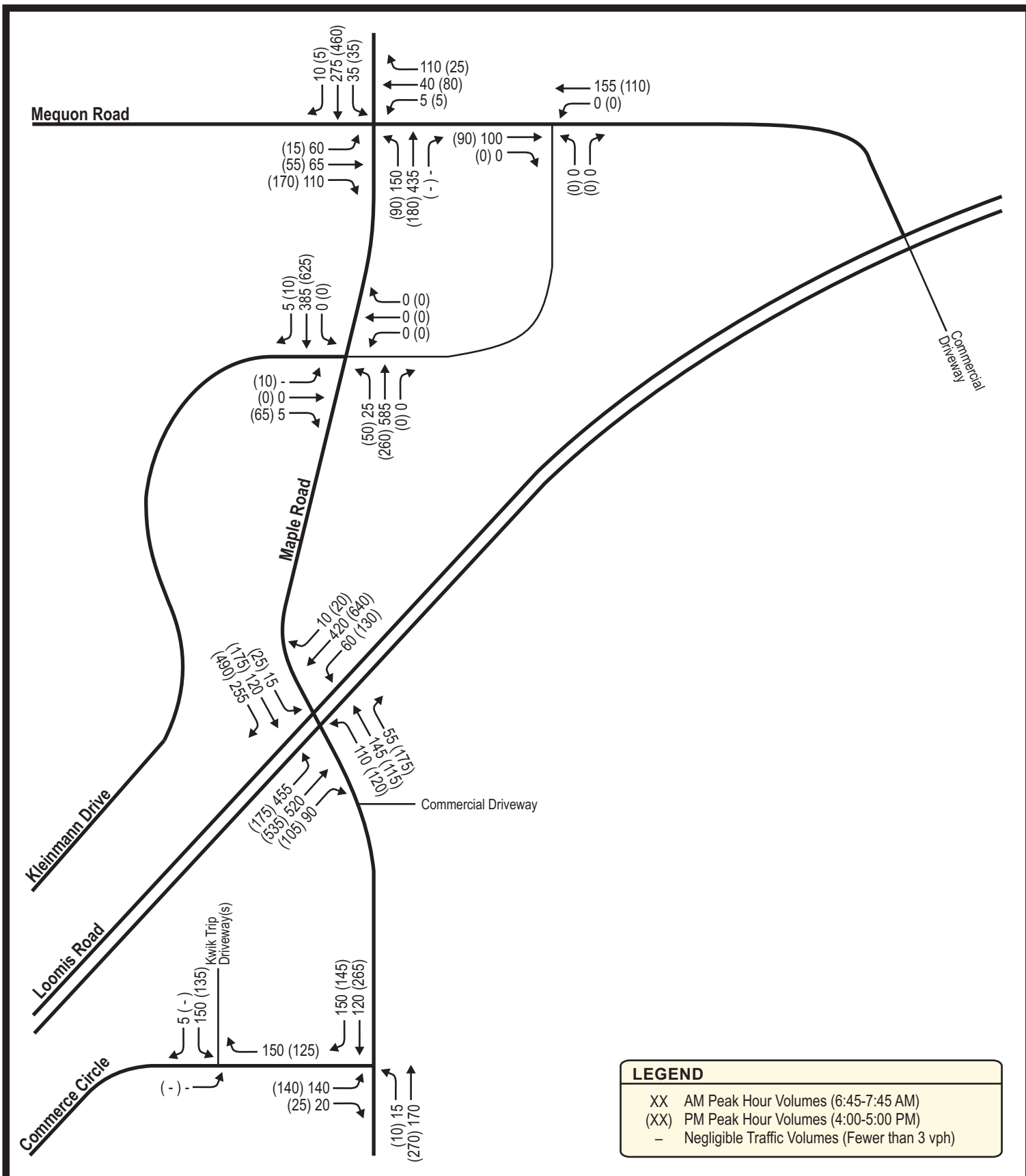


#3347 - 10/14/24



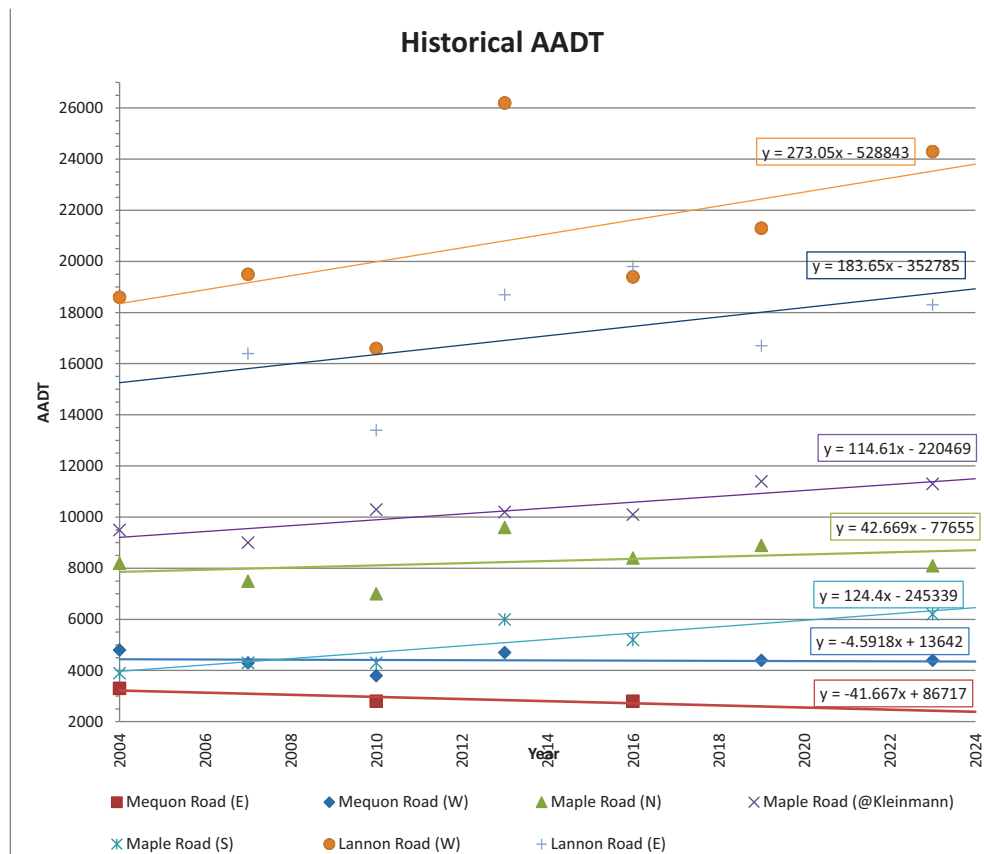
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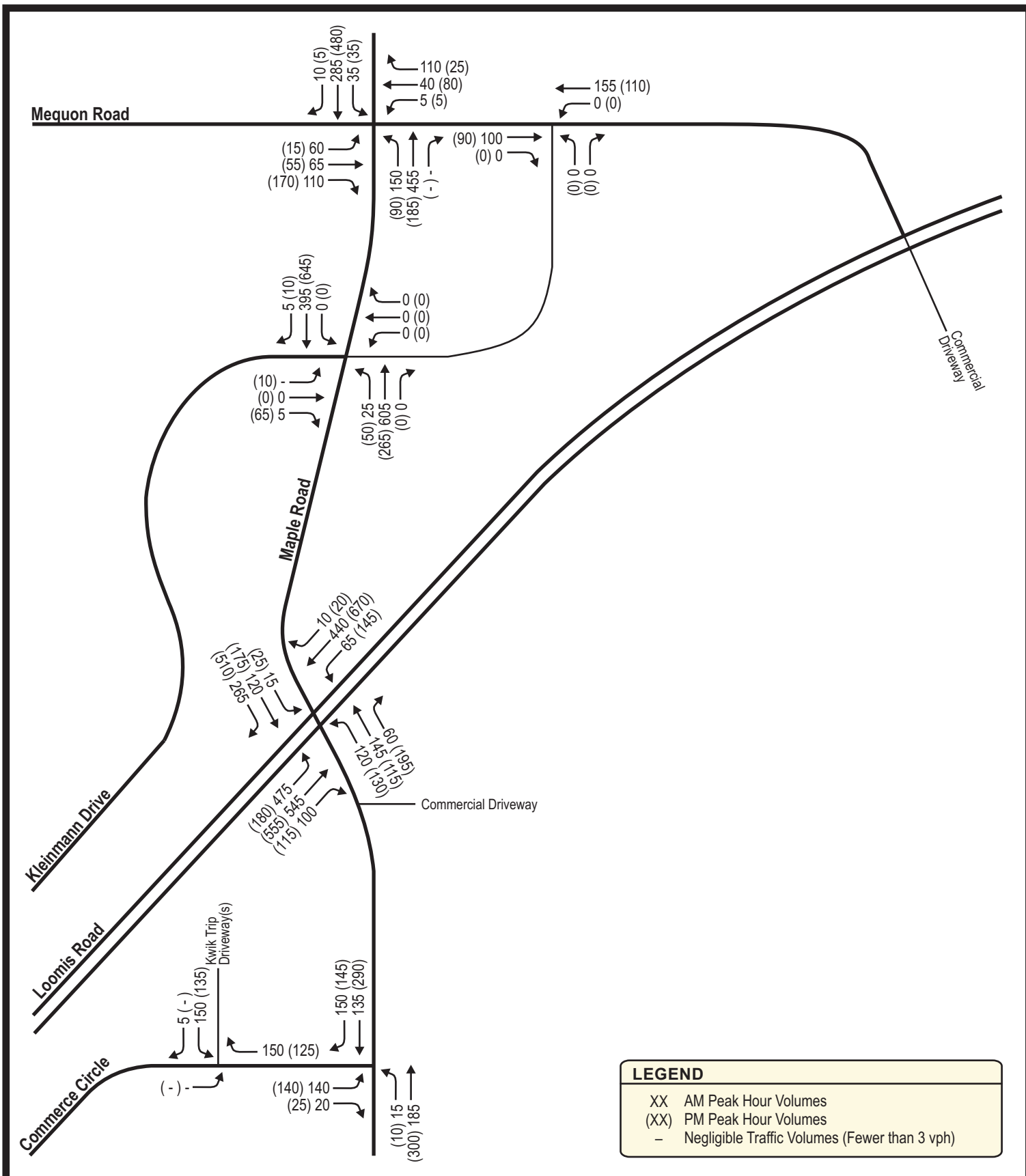
MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



Historical AADT							
Year	Mequon Road (W)	Mequon Road (E)	Maple Road (N)	Maple Road (@Kleinmann)	Maple Road (S)	Lannon Road (W)	Lannon Road (E)
2000							
2001							
2002							
2003							
2004	4800	3300	8200	9500	3900	18600	
2005							
2006							
2007	4300		7500	9000	4300	19500	16400
2008							
2009							
2010	3800	2800	7000	10300	4300	16600	13400
2011							
2012							
2013	4700		9600	10200	6000	26200	18700
2014							
2015							
2016		2800	8400	10100	5200	19400	19800
2017							
2018							
2019	4400		8900	11400		21300	16700
2020							
2021							
2022							
2023	4400		8100	11300	6200	24300	18300
2024							
Trendline Growth Rate							
	Mequon Road (W)	Mequon Road (E)	Maple Road (N)	Maple Road (@Kleinmann)	Maple Road (S)	Lannon Road (W)	Lannon Road (E)
Liner Eqn.	$y = -4.592x + 13642$	$y = -41.667x + 86717$	$y = 42.669x - 77655$	$y = 114.610x - 220469$	$y = 124.400x - 245339$	$y = 273.050x - 528843$	$y = 183.650x - 352785$
2024	4350	2380	8710	11500	6450	23810	18920
2029	4330	2170	8920	12070	7070	25180	19840
5-Yr Increase	-0.5%	-8.8%	2.4%	5.0%	9.6%	5.8%	4.9%
Growth/year	-0.09%	-1.76%	0.48%	0.99%	1.92%	1.15%	0.97%
Study %GR	0.00%	0.00%	0.50%	1.00%	2.00%	1.00%	1.00%

Notes:
 2029 AADT volumes were calculated from linear trendline equations from historical AADT values.
 Study %GR was applied to the Existing 2024 turning movement traffic counts in the Germantown Kwik Trip TIA.





Existing Kwik Trip - Trip Generation

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Existing Kwik Trip	N/A	10 Fuel Positions		150	155	305	125	135	260
Total Driveway Trips			2,910	150	155	305	125	135	260
Pass-by Trips ²	N/A	55%	1,600	85	85	170	70	70	140
New Trips			1,310	65	70	135	55	65	120

TRIP DISTRIBUTION (New Trips)

W. on Mequon Road	11% (9%)	10	10	5	5
E. on Mequon Road	0% (0%)	0	0	0	0
W. on Lannon Road	31% (24%)	25	25	15	15
E. on Lannon Road	18% (33%)	5	0	20	20
N. on Maple Road	30% (22%)	20	25	10	15
S. on Maple Road	11% (11%)	5	5	5	10
W. on Commerce Circle	0% (0%)	0	5	0	0
AM (PM)		65	70	55	65

TRIP DISTRIBUTION (Pass-by Trips)

EB Lannon Road	40% (35%)	35	35	25	25
WB Lannon Road	30% (45%)	25	25	30	30
NB on Maple Road	10% (5%)	10	10	5	5
SB on Maple Road	20% (15%)	15	15	10	10
AM (PM)		85	85	70	70



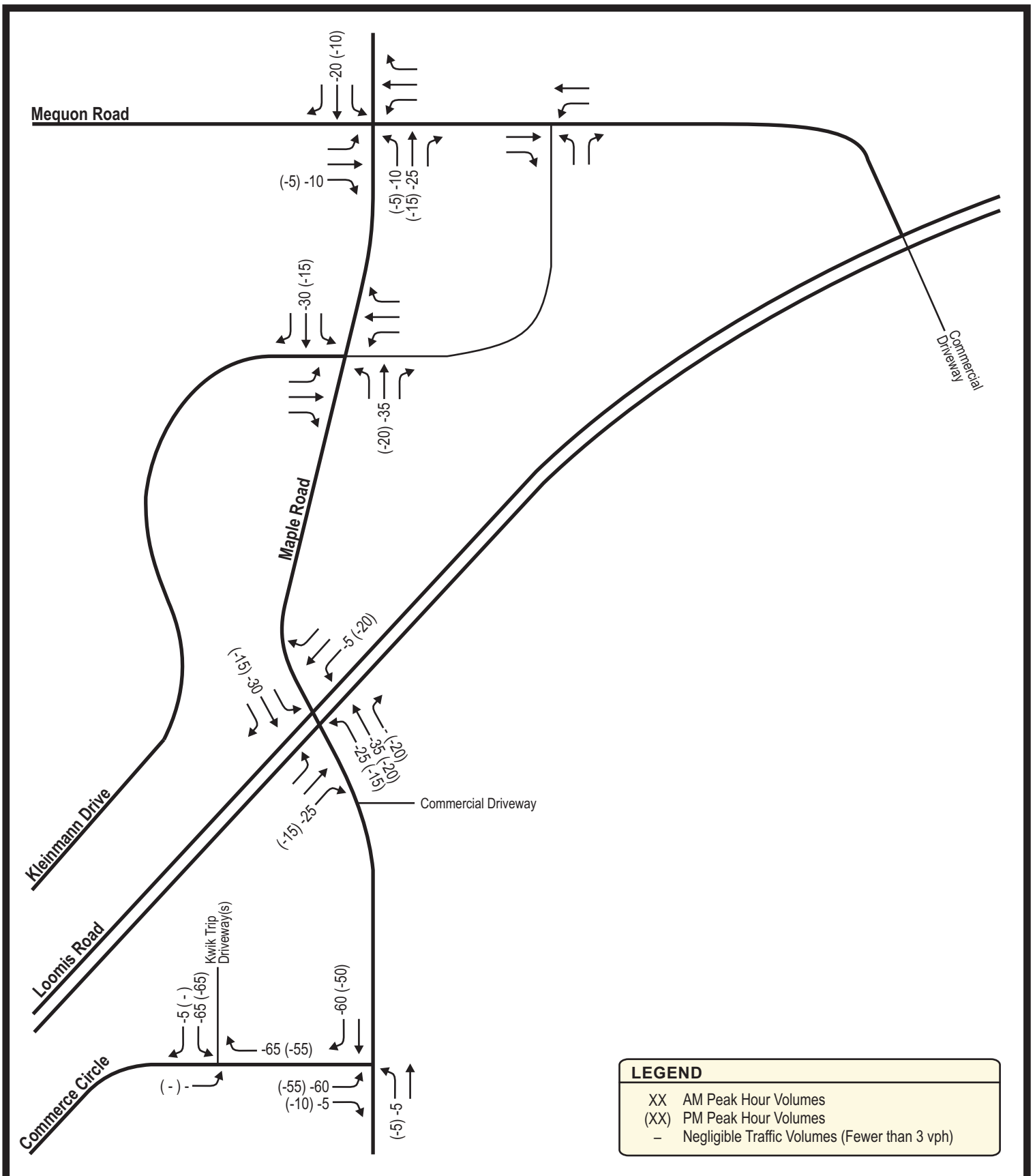
#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 7A TRIP GENERATION & TRIP DISTRIBUTION EXISTING KWIK TRIP (TO BE REMOVED)

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



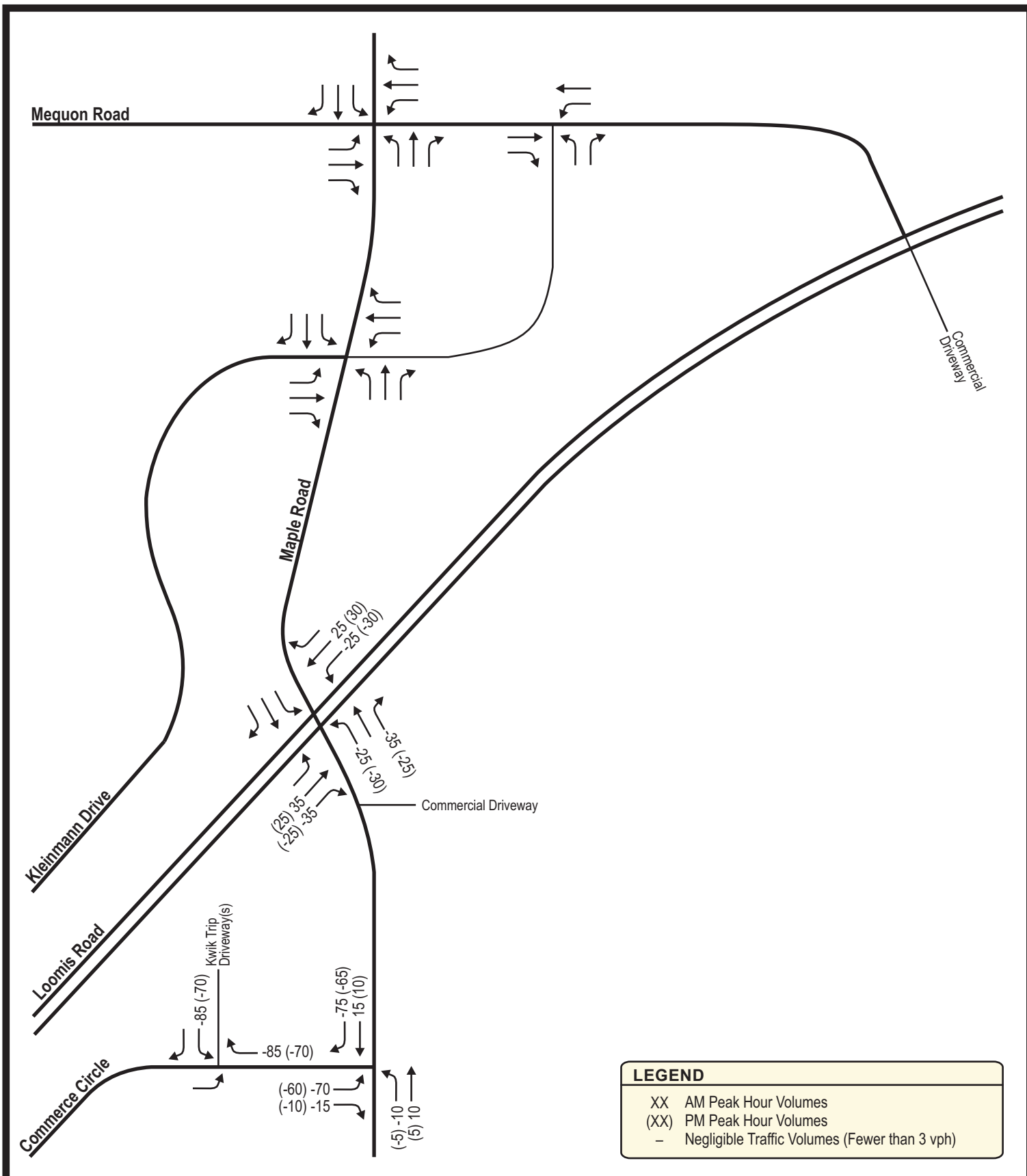
#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 7B EXISTING PEAK KWIK TRIP NEW TRIPS REMOVED FROM THE STUDY INTERSECTIONS

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



New Bank (Existing Kwik Trip Site) - Trip Generation¹

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Drive-in Bank	912	3 Lanes	390 FCE	15 (61%)	10 (39%)	25 FCE	40 (49%)	40 (51%)	80 (27.07)
Total Driveway Trips			390	15	10	25	40	40	80
Pass-by Trips ²		35%	140	5	5	10	15	15	30
New Trips			250	10	5	15	25	25	50

¹ Trip Rates (X.XX) and/or Fitted Curve Equations (FCE) are from the ITE Trip Generation Manual, 11th Edition.

² Pass-by trip percentages are based on the maximum WisDOT values for the land use type.

³ New trips distribution based on distribution calculated for the existing Kwik Trip on the same site.

TRIP DISTRIBUTION (New Trips)³

W. on Mequon Road	11% (9%)	0	0	5	5
E. on Mequon Road	0% (0%)	0	0	0	0
W. on Lannon Road	31% (24%)	5	5	5	5
E. on Lannon Road	18% (33%)	0	0	5	5
N. on Maple Road	30% (22%)	5	0	5	5
S. on Maple Road	11% (11%)	0	0	5	5
AM (PM)		10	5	25	25

TRIP DISTRIBUTION (Pass-by Trips)

EB Lannon Road	40% (35%)	5	5	5	5
WB Lannon Road	30% (45%)	0	0	5	5
NB on Maple Road	10% (5%)	0	0	0	0
SB on Maple Road	20% (15%)	0	0	5	5
AM (PM)		5	5	15	15



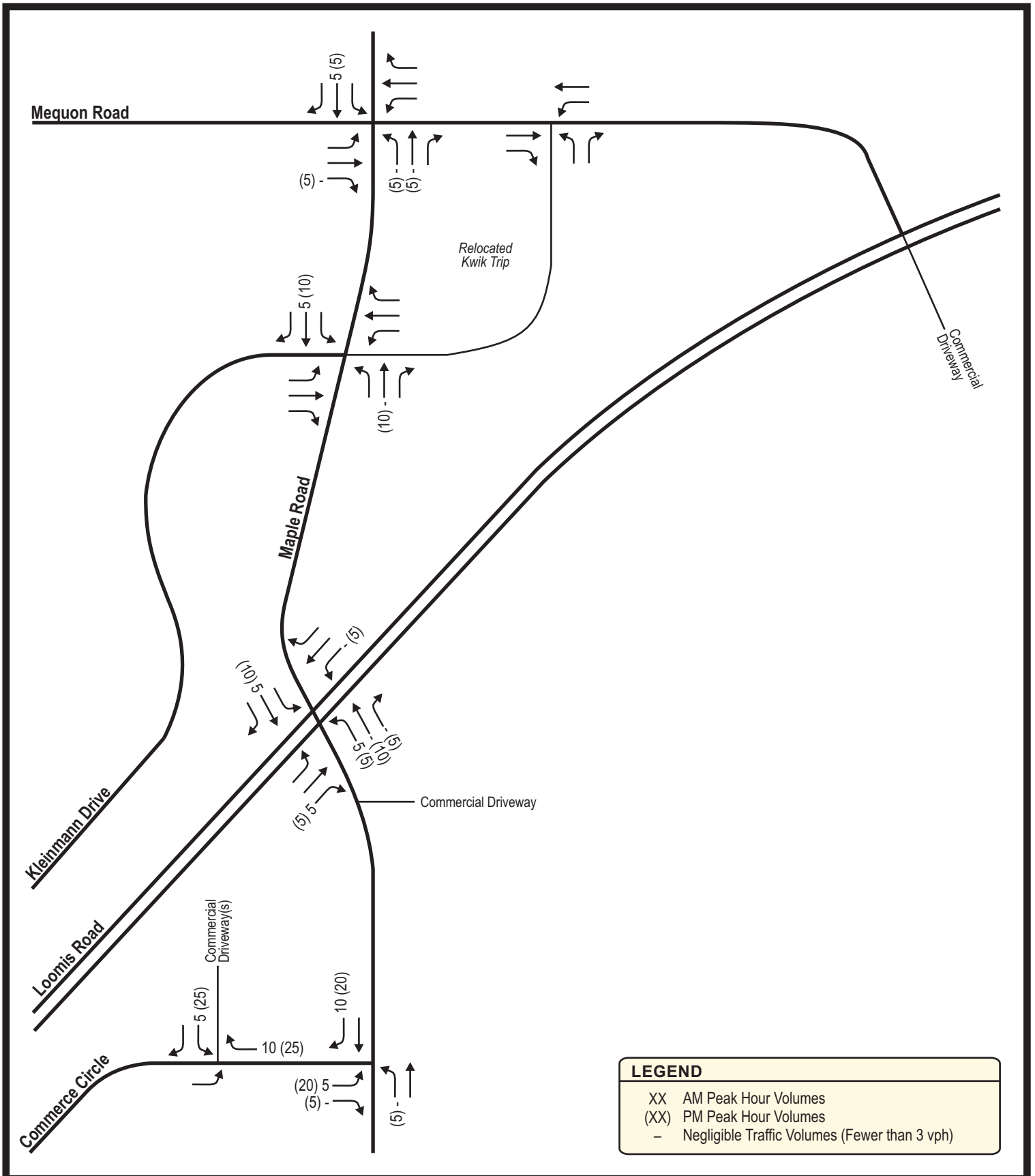
#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 8A TRIP GENERATION & TRIP DISTRIBUTION BANK DEVELOPMENT

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



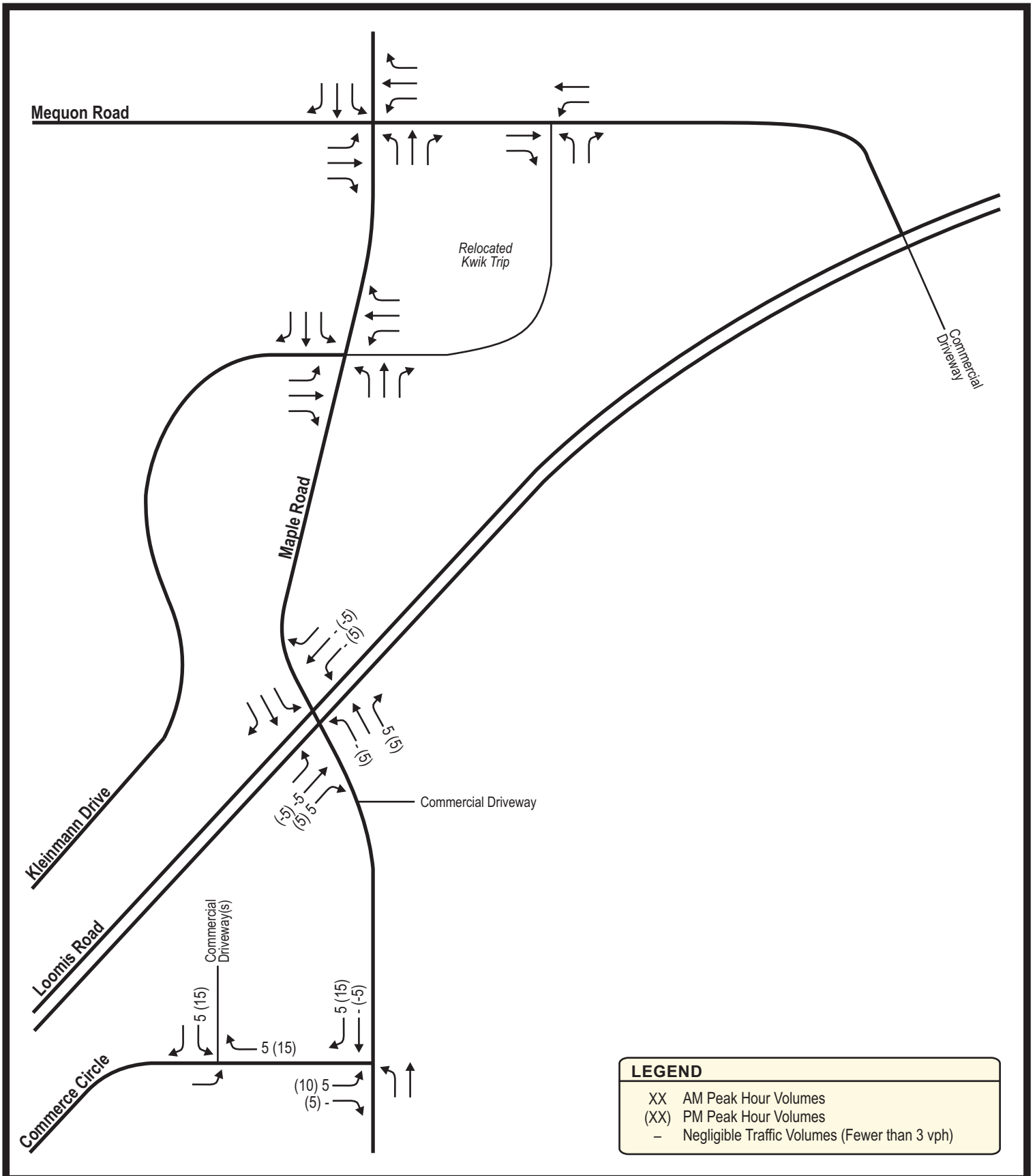
#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 8B BANK DEVELOPMENT NEW TRIPS

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 8C BANK DEVELOPMENT PASS-BY TRIPS

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN

New Kwik Trip - Trip Generation Table ¹

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Super Convenience Market/Gas Station (Store Category 3, Pop≥300k)	WisDOT	22 Fuel Positions	4,640 FCE	170 (51%)	165 (49%)	335 FCE	170 (50%)	165 (50%)	335 FCE
Total Driveway Trips			4,640	170	165	335	170	165	335
Pass-by Trips ²		55%	2,550	90	90	180	90	90	180
New Trips			7,190	80	75	155	80	75	155
Existing Kwik Trip				150	155	305	125	135	260
Trip Difference				20	10	30	45	30	75
% Change						10%			29%

¹ Fitted Curve Equations (FCE) are from the October 20, 2022 trip generation guidance for the Convenience Store/Gas Station Land Use.

² Pass-by trip percentages are based on the maximum WisDOT values for the land use type.

³ New trips distribution based on distribution calculated for the existing Kwik Trip. Pass-by trips were recalculated based on existing traffic patterns

TRIP DISTRIBUTION (New Trips) ³

W. on Mequon Road	11% (9%)	10	10	5	5
W. on Lannon Road	31% (24%)	25	25	20	20
E. on Lannon & Mequon Rds	18% (33%)	15	15	25	25
N. on Maple Road	30% (22%)	25	20	20	15
S. on Maple Road	11% (11%)	5	5	10	10
	100%	80	75	80	75

TRIP DISTRIBUTION (Pass-by Trips) ³

NB on Maple Road	25% (10%)	20	20	10	10
SB on Maple Road	10% (25%)	10	10	20	20
EB on Lannon Road	35% (25%)	30	30	25	25
WB on Lannon Road	20% (30%)	20	20	25	25
EB Mequon Road	5% (5%)	5	5	5	5
WB Mequon Road	5% (5%)	5	5	5	5
	AM (PM)	90	90	90	90



#3347 - 10/14/24



NOT TO SCALE

**EXHIBIT 9A
TRIP GENERATION & TRIP DISTRIBUTION
RELOCATED KWIK TRIP**

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



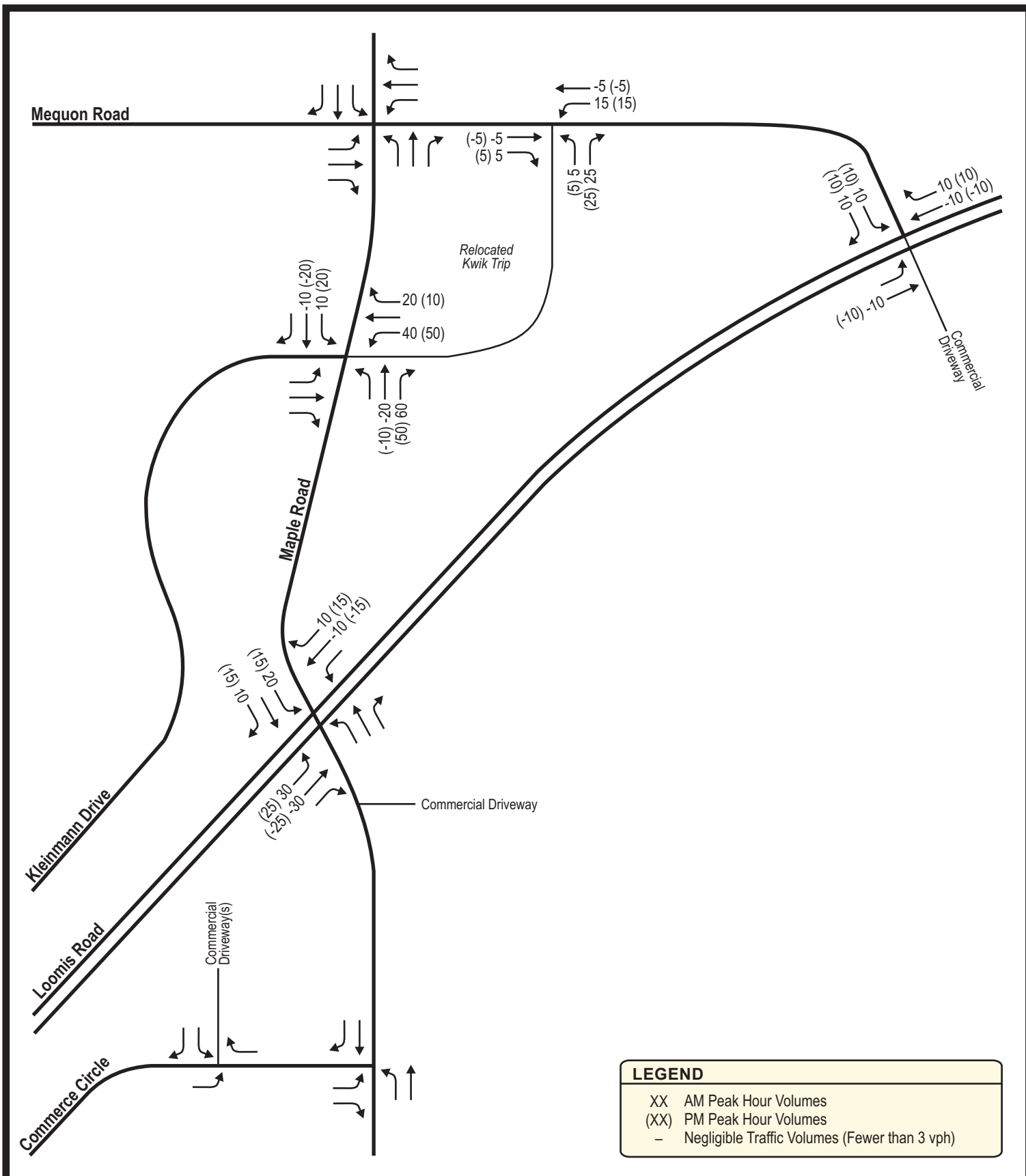
#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 9B RELOCATED KWIK TRIP DEVELOPMENT NEW TRIPS ALTERNATIVE 1: FULL ACCESS AT MAPLE ROAD

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 9C RELOCATED KWIK TRIP DEVELOPMENT PASS-BY TRIPS ALTERNATIVE 1: FULL ACCESS AT MAPLE ROAD

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN

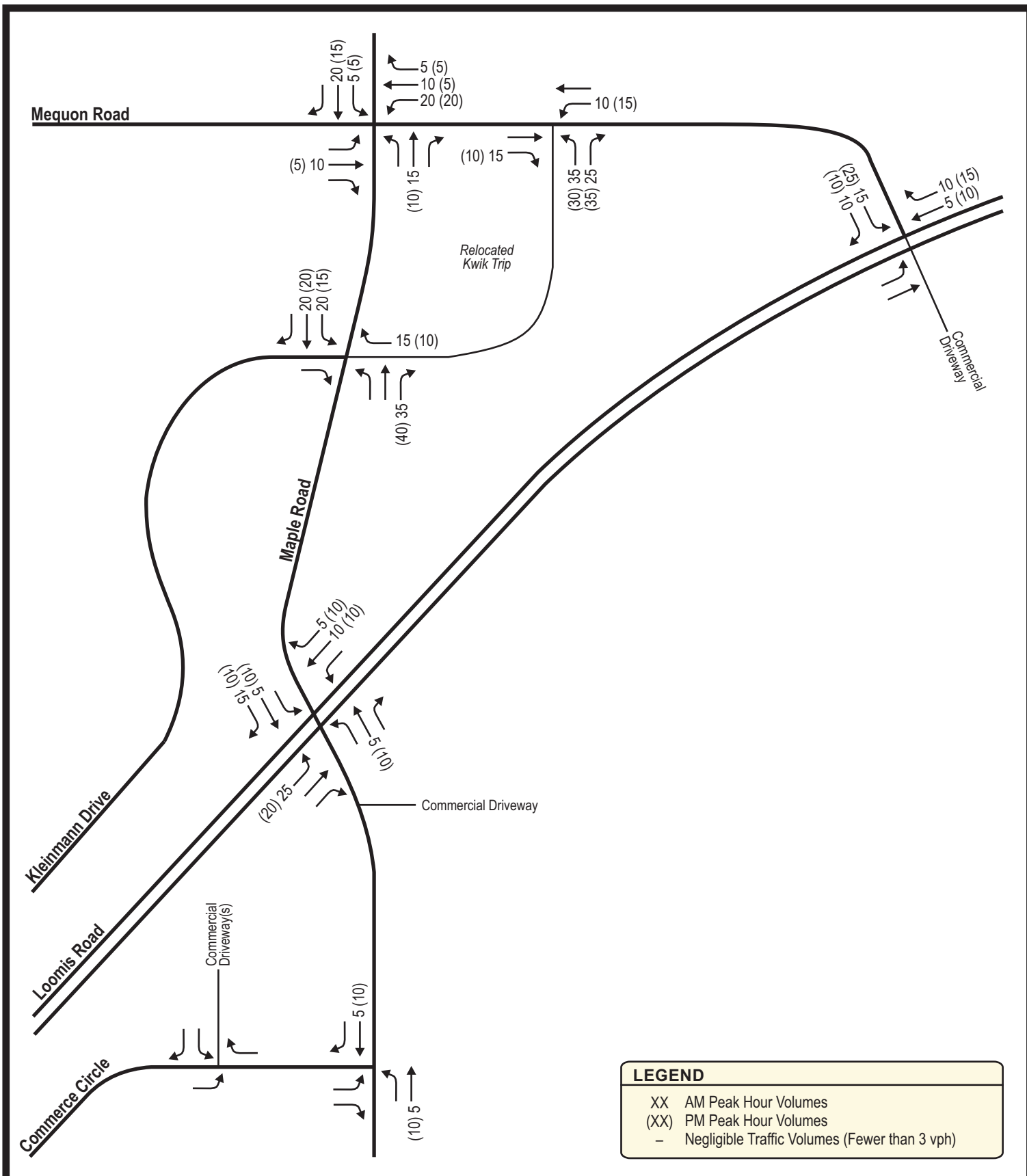


EXHIBIT 9D **RELOCATED KWIK TRIP DEVELOPMENT NEW TRIPS** **ALTERNATIVE 2: PARTIAL ACCESS AT MAPLE ROAD**

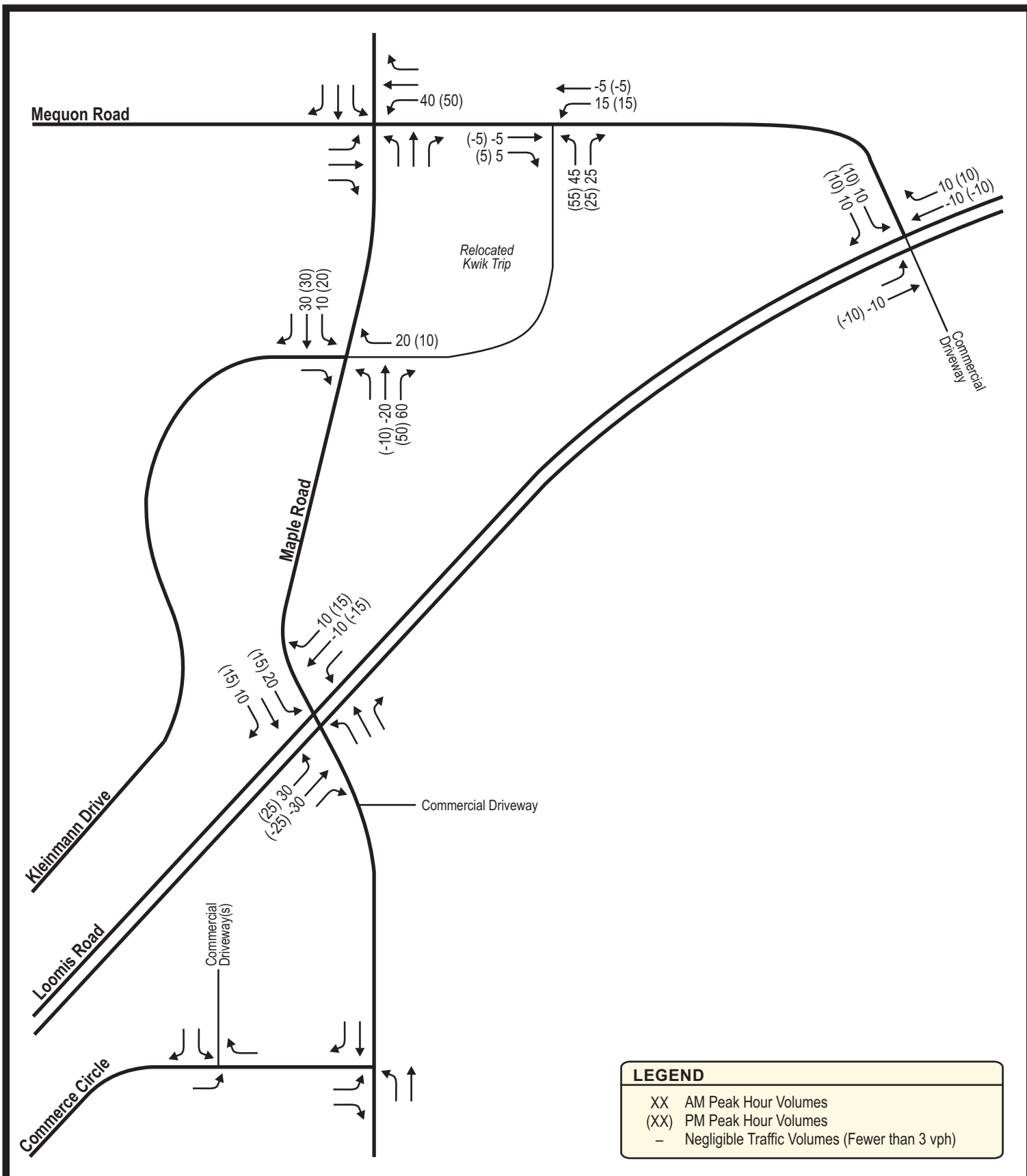
MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



#3347 - 10/14/24



NOT TO SCALE



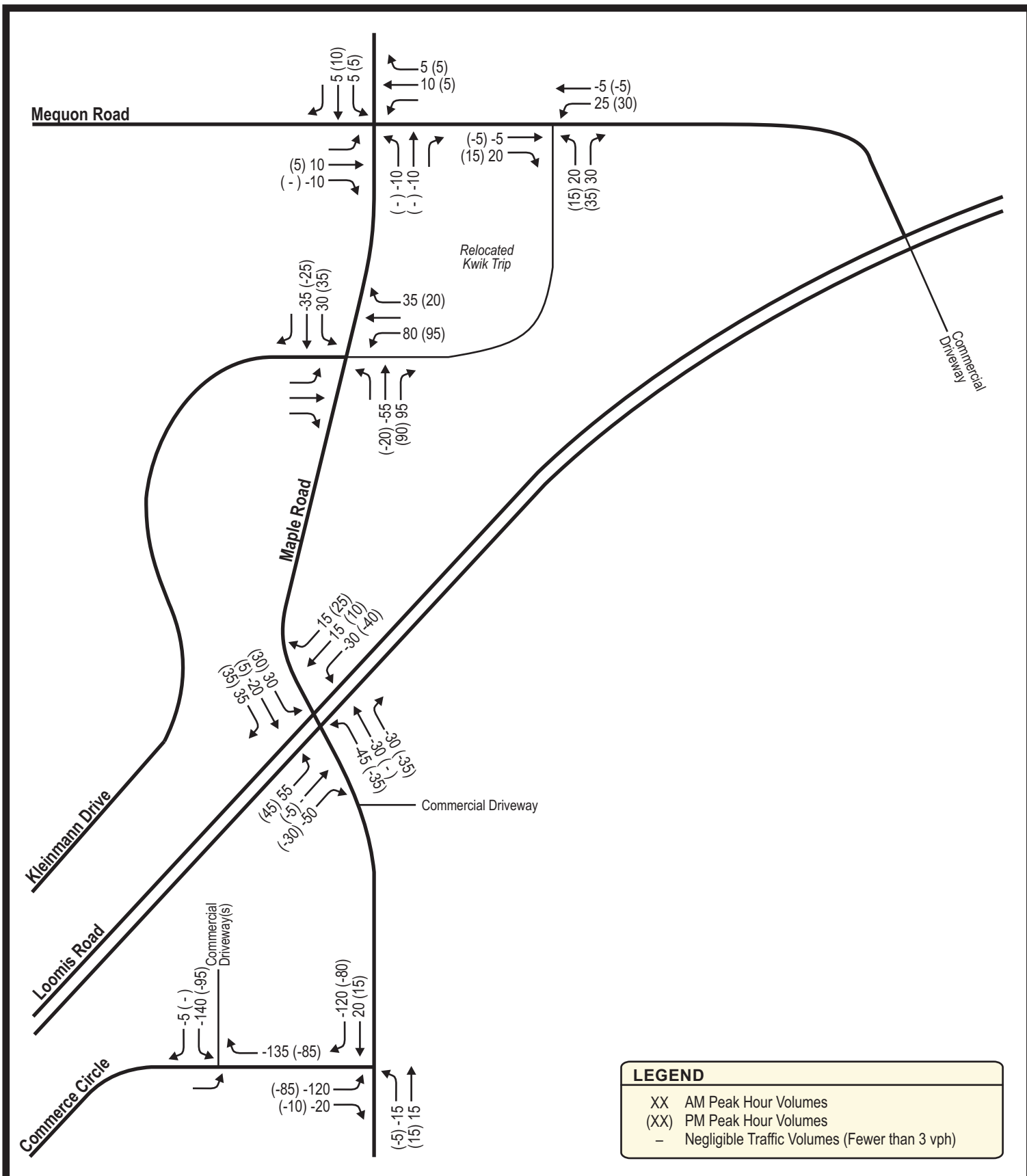


EXHIBIT 10
DEVELOPMENT DRIVEWAY TRIPS
(BANK - EXISTING KWIK TRIP + NEW KWIK TRIP)
ALTERNATIVE 1: FULL ACCESS AT MAPLE ROAD

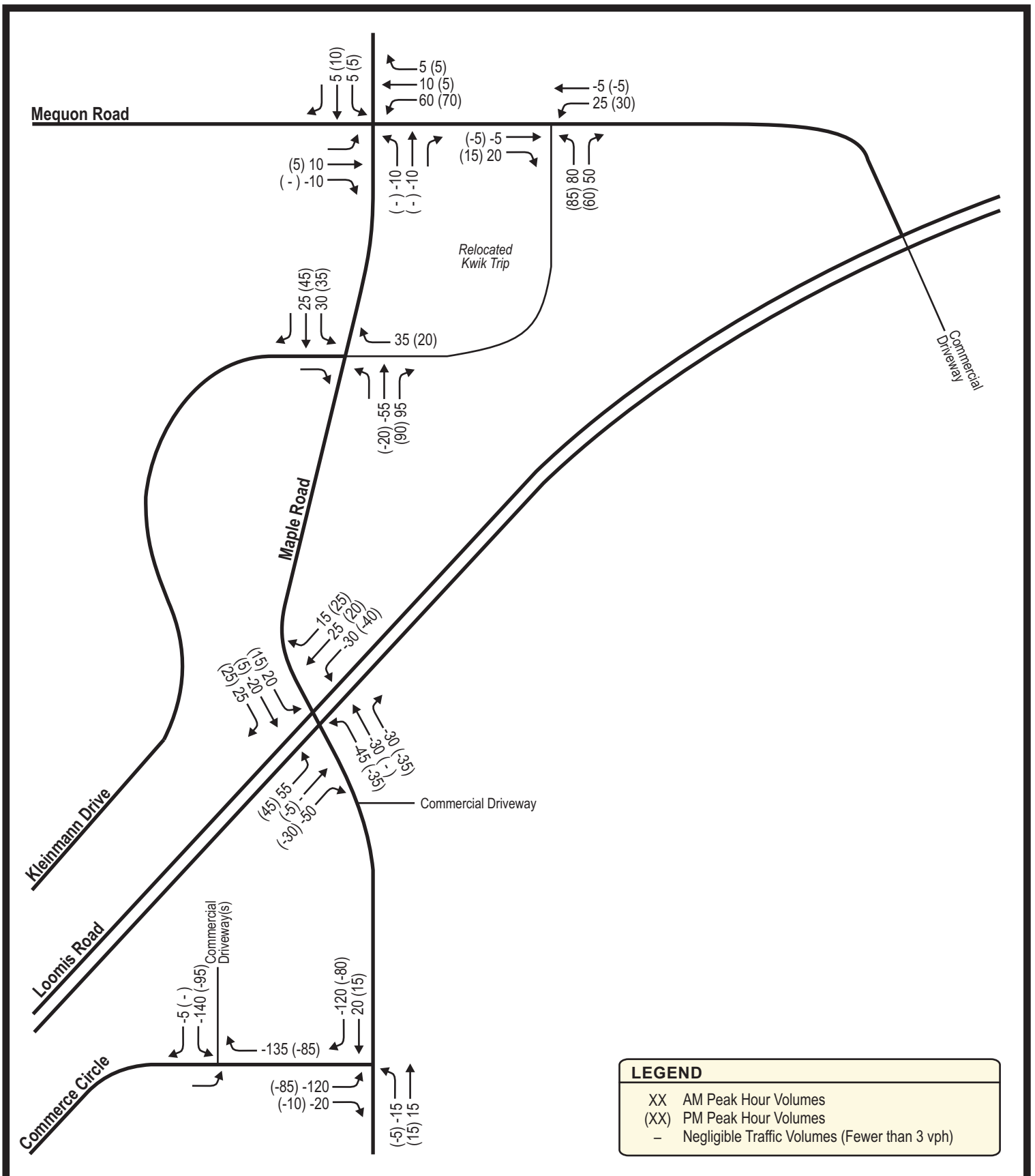
MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN

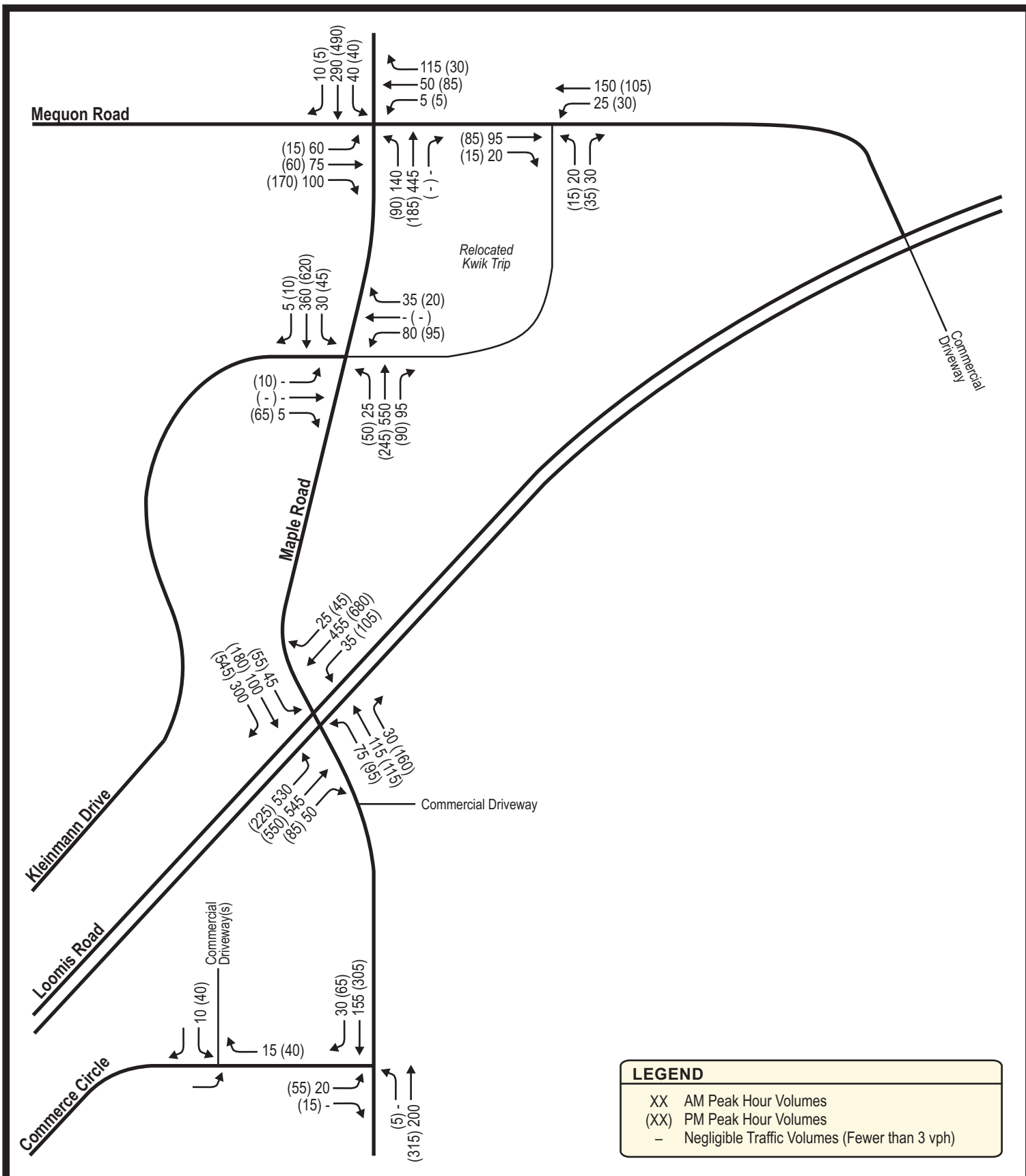


#3347 - 10/14/24



NOT TO SCALE





#3347 - 10/14/24



NOT TO SCALE

EXHIBIT 12 YEAR 2029 BUILD TRAFFIC VOLUMES ALTERNATIVE 1: FULL ACCESS AT MAPLE ROAD

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN

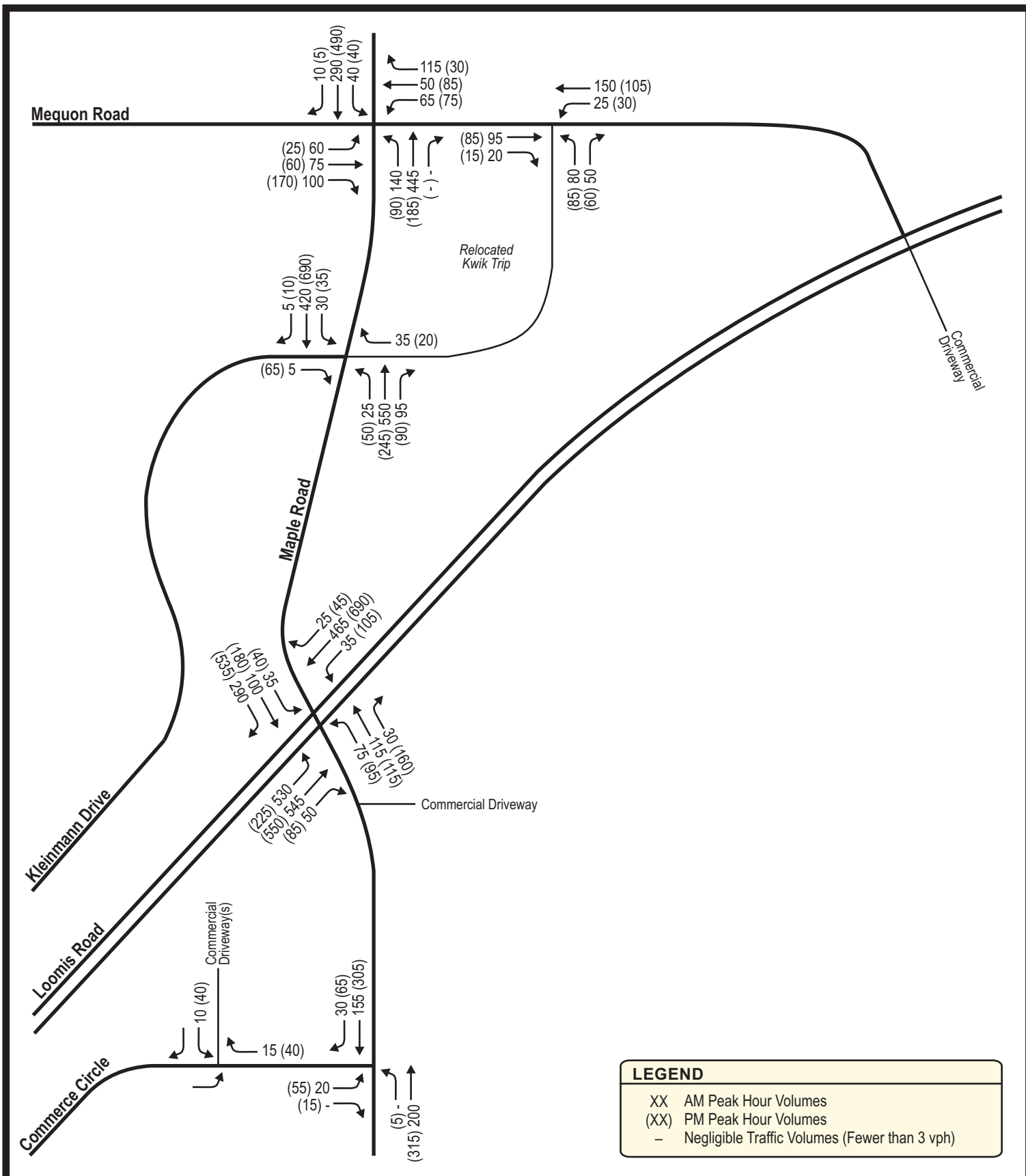


EXHIBIT 13 **YEAR 2029 BUILD TRAFFIC VOLUMES** **ALTERNATIVE 2: PARTIAL ACCESS AT MAPLE ROAD**

MAPLE ROAD KWIK TRIP TIA - GERMANTOWN, WISCONSIN



#3347 - 10/14/24



NOT TO SCALE

Year 2024 Existing Traffic Peak Hour Operating Conditions
Existing Transportation System

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↖	←	↗	↖	↑	↗	↘	↓	↖	
(100) Maple Road & Mequon Road Stop Sign Control (All-Way)	AM	Lanes->	<1	1	<1	1	1	1	2>	1	2>				
		LOS	C	C	C	C	C	C	F	C	D				E
		Delay	23.6	18.6	16.0	19.9	23.8	81.7	15.0	33.5					36.1
		v/c	0.51	0.41	0.19	0.43	0.56	1.01	0.14	0.71					
	Queue	70'	50'	20'	50'	85'	325'	15'	130'						
	PM	LOS	B	C	B	B	B	B	B	B	D				C
		Delay	12.7	15.0	13.9	11.0	14.1	14.4	11.3	27.9					17.7
		v/c	0.19	0.41	0.24	0.07	0.25	0.32	0.09	0.73					
Queue		20'	50'	25'	5'	25'	35'	10'	155'						
(200) Maple Road & Kleinmann Drive/Commercial Driveway Stop Sign Control (EB/WB)	Lanes->	<1>		<1>		1	2>	1	2>						
	AM	LOS	B		A		A	*	A	*					A
		Delay	12.0		0.0		8.6	*	0.0	*					0.3
		v/c	0.02		0.00		0.03	*	0.00	*					
		Queue	0'		0'		5'	*	0'	*					
	PM	LOS	B		A		A	*	A	*					A
		Delay	14.5		0.0		9.8	*	0.0	*					1.6
		v/c	0.19		0.00		0.07	*	0.00	*					
Queue		20'		0'		5'	*	0'	*						
(300) Maple Road & Lannon Road (STH 167) Traffic Signal Control	Lanes->	2	2	1	1	2	1	1	1	1	1	1	1		
	AM	LOS	D	B	A	D	B	B	D	C	C	D	C	A	C
		Delay	43.0	11.0	9.6	45.1	17.0	14.5	39.2	33.2	30.9	36.4	32.7	0.0	26.0
		v/c	0.80	0.28	0.07	0.68	0.29	0.01	0.51	0.46	0.13	0.08	0.40	0.00	
		Queue	~285	140'	40'	70'	110'	10'	110'	135'	40'	25'	115'	0'	
	PM	LOS	C	B	B	E	C	C	D	C	C	C	C	A	C
		Delay	26.6	15.7	13.6	56.0	28.8	21.6	38.5	29.3	29.6	32.0	30.6	0.0	27.3
		v/c	0.21	0.35	0.10	0.81	0.61	0.03	0.54	0.30	0.33	0.10	0.46	0.00	
Queue		85'	175'	55'	130'	200'	15'	125'	105'	105'	35'	155'	0'		
(400) Maple Road & Commerce Circle Stop Sign Control (EB)	Lanes->	< >		-		-		<1	-	-	1	1			
	AM	LOS	B			-			A	-	-	*	*		A
		Delay	13.2			-			8.0	-	-	*	*		3.6
		v/c	0.30			-			0.01	-	-	*	*		
		Queue	30'			-			0'	-	-	*	*		
	PM	LOS	C			-			A	-	-	*	*		A
		Delay	17.1			-			8.3	-	-	*	*		3.4
		v/c	0.38			-			0.01	-	-	*	*		
Queue		45'			-			0'	-	-	*	*			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

(~) indicates a queue is theoretically infinite.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

Year 2029 Future Traffic Peak Hour Operating Conditions
Existing Transportation System

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↖	←	↗	↖	↑	↗	↘	↓	↖	
(100) Maple Road & Mequon Road Stop Sign Control (All-Way)	AM	Lanes->	<1	1	<1	1	1	1	2>	1	2>				
		LOS	C	C	C	C	C	C	F	C	E				E
		Delay	24	19	16.2	20.3	24.1	97.9	15.2	36.6					40.9
		v/c	0.52	0.42	0.19	0.44	0.56	1.06	0.15	0.75					
	Queue	70'	50'	20'	55'	85'	370'	15'	140'						
	PM	LOS	B	C	B	B	B	B	B	B	D				C
		Delay	12.9	15.3	14.1	11.2	14.3	14.8	11.4	31.0					18.9
		v/c	0.19	0.42	0.24	0.07	0.26	0.33	0.09	0.77					
Queue		20'	50'	25'	5'	25'	35'	10'	175'						
(200) Maple Road & Kleinmann Drive/Commercial Driveway Stop Sign Control (EB/WB)	AM	Lanes->	<1>		<1>		1	2>	1	2>					
		LOS	B		A		A	*	A	*				A	
		Delay	12.2		0.0		8.7	*	0.0	*				0.3	
		v/c	0.02		0.00		0.03	*	0.00	*					
	Queue	0'		0'		5'	*	0'	*						
	PM	LOS	B		A		A	*	A	*				A	
		Delay	14.9		0.0		9.9	*	0.0	*				1.5	
		v/c	0.20		0.00		0.08	*	0.00	*					
Queue		20'		0'		5'	*	0'	*						
(300) Maple Road & Lannon Road (STH 167) Traffic Signal Control	AM	Lanes->	2	2	1	1	2	1	1	1	1	1	1		
		LOS	D	B	B	D	B	B	D	C	C	D	C	A	C
		Delay	50.2	11.6	10.0	45.4	17.2	14.5	38.9	32.6	30.4	35.8	32.1	0.0	27.7
		v/c	0.87	0.29	0.08	0.71	0.30	0.01	0.53	0.44	0.13	0.08	0.38	0.00	
	Queue	~300	155'	45'	75'	115'	10'	120'	130'	45'	25'	110'	0'		
	PM	LOS	C	B	B	E	C	C	D	C	C	C	C	A	C
		Delay	27.2	16.9	14.6	59.9	29.4	21.6	38.1	28.7	29.2	31.4	29.9	0.0	28.1
		v/c	0.23	0.37	0.11	0.82	0.64	0.03	0.56	0.29	0.36	0.10	0.44	0.00	
Queue		85'	190'	65'	140'	220'	15'	130'	105'	110'	35'	150'	0'		
(400) Maple Road & Commerce Circle Stop Sign Control (EB)	AM	Lanes->	< >		-		-	<1	-	-	1	1			
		LOS	B		-		A	-	-	*	*			A	
		Delay	13.7		-		8.0	-	-	*	*			3.6	
		v/c	0.31		-		0.02	-	-	*	*				
	Queue	35'		-		0'	-	-	*	*					
	PM	LOS	C		-		A	-	-	*	*			A	
		Delay	18.7		-		8.4	-	-	*	*			3.5	
		v/c	0.41		-		0.01	-	-	*	*				
Queue		50'		-		0'	-	-	*	*					

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

(~) indicates a queue is theoretically infinite.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

**Year 2029 Future Traffic Peak Hour Operating Conditions
Modified Transportation System**

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙	
(100) Maple Road & Mequon Road Traffic Signal Control	AM	Lanes->	1	1>	1	1>	1	2	1	1	2	1			
		LOS	D	C	D	C	A	A	A	A	A	A	A	B	
		Delay	39.9	33.8	37.7	32.4	1.6	0.3	0.0	6.6	6.9	5.9		12.1	
		v/c	0.42	0.67	0.04	0.58	0.33	0.29	0.00	0.09	0.19	0.01			
	Queue	60'	140'	10'	120'	15'	20'	0'	25'	60'	5'				
	PM	LOS	C	D	D	C	A	A	A	A	A	A	A	B	
		Delay	34.3	40.4	42.0	31.9	1.1	0.1	0.0	5.2	6.1	4.9		14.3	
		v/c	0.07	0.83	0.05	0.36	0.19	0.10	0.00	0.05	0.24	0.00			
Queue		20'	185'	10'	90'	10'	10'	0'	25'	105'	5'				
(200) Maple Road & Kleinmann Drive/Commercial Driveway Stop Sign Control (EB/WB)	AM	Lanes->	<1>			<1>			1	2>		1	2>		
		LOS	A			A			A	*		A	*		A
		Delay	9.4			0.0			8.2	*		0.0	*		0.3
		v/c	0.01			0.00			0.03	*		0.00	*		
	Queue	0'			0'			5'	*		0'	*			
	PM	LOS	B			A			A	*		A	*		A
		Delay	10.6			0.0			9.0	*		0.0	*		1.2
		v/c	0.12			0.00			0.06	*		0.00	*		
Queue		10'			0'			5'	*		0'	*			
(300) Maple Road & Lannon Road (STH 167) Traffic Signal Control	AM	Lanes->	2	2	1	1	2	1	1	1	1	1	1	1	
		LOS	C	B	B	D	C	B	D	C	C	D	D	A	C
		Delay	34.4	11.9	10.3	45.4	20.8	17.5	39.0	32.1	30.0	40.8	37.0	0.0	25.2
		v/c	0.67	0.30	0.08	0.71	0.35	0.01	0.53	0.43	0.13	0.07	0.37	0.00	
	Queue	240'	155'	45'	75'	130'	10'	120'	130'	45'	20'	85'	0'		
	PM	LOS	C	B	B	D	C	C	D	C	C	D	D	A	C
		Delay	27.9	17.6	15.2	52.3	29.4	21.6	38.1	27.9	28.5	37.0	35.7	0.0	28.3
		v/c	0.24	0.38	0.12	0.82	0.64	0.03	0.56	0.28	0.34	0.09	0.42	0.00	
Queue		85'	190'	65'	140'	220'	15'	130'	105'	110'	25'	115'	0'		
(400) Maple Road & Commerce Circle Stop Sign Control (EB)	AM	Lanes->	< >			-			<1		-	-	1	1	
		LOS	B			-			A	-		-	*	*	A
		Delay	13.7			-			8.0	-		-	*	*	3.6
		v/c	0.31			-			0.02	-		-	*	*	
	Queue	35'			-			0'	-		-	*	*		
	PM	LOS	C			-			A	-		-	*	*	A
		Delay	18.7			-			8.4	-		-	*	*	3.5
		v/c	0.41			-			0.01	-		-	*	*	
Queue		50'			-			0'	-		-	*	*		

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.
Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

**Year 2029 Build - Alternative 1 (Full Kwik Trip Access) Traffic Peak Hour Operating Conditions
with Year 2029 Future Traffic Recommended Modifications**

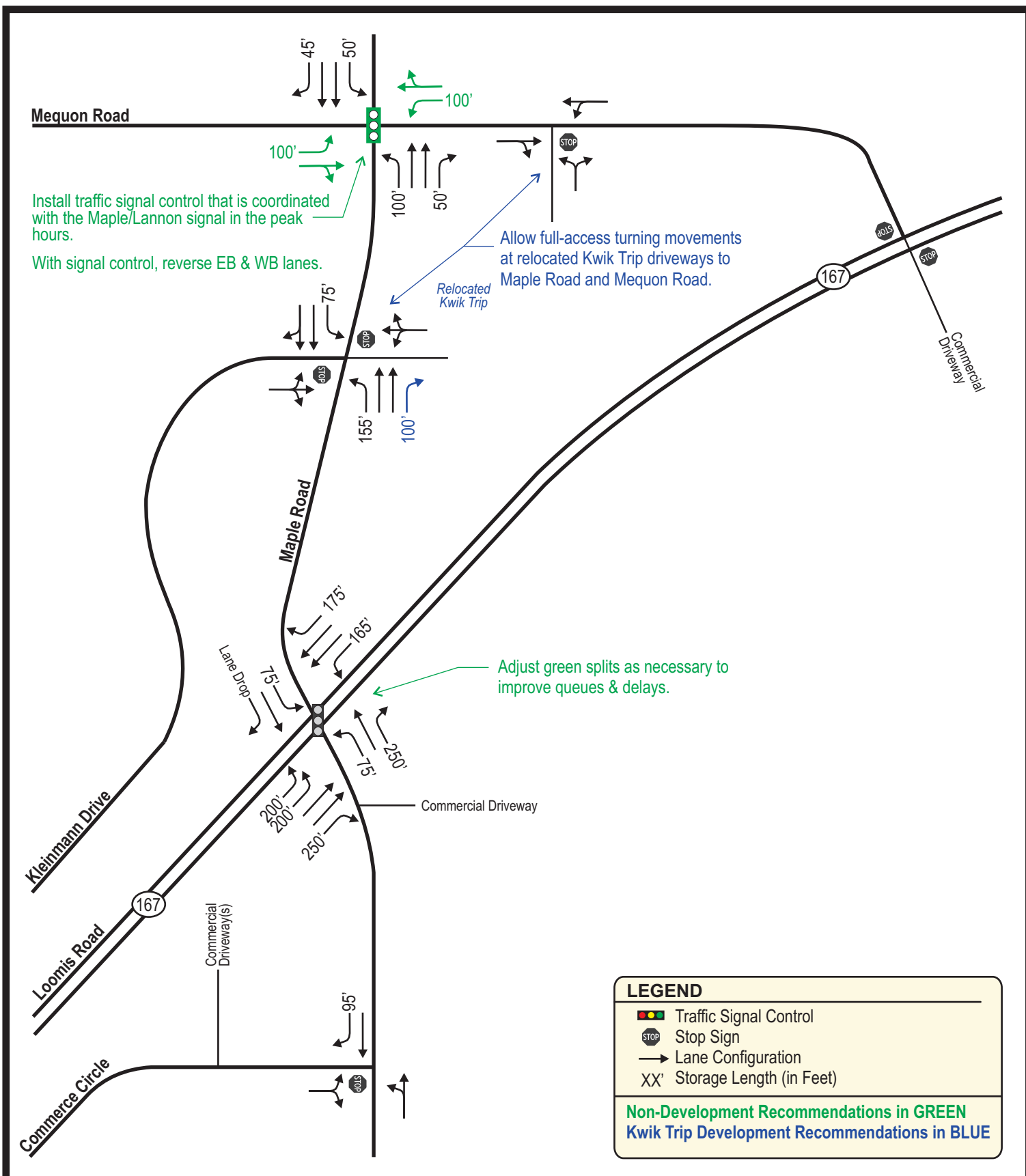
Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙	
(100) Maple Road & Mequon Road Traffic Signal Control	AM	Lanes->	1	1>		1	1>		1	2	1	1	2	1	
		LOS	D	C		D	C		A	A	A	A	A	A	B
		Delay	39.9	32.3		36.4	31.9		1.6	0.3	0.0	7.2	7.4	6.3	12.3
		v/c	0.42	0.63		0.04	0.60		0.31	0.29	0.00	0.10	0.20	0.01	
	PM	Queue	60'	140'		10'	135'		20'	25'	0'	25'	60'	5'	
		LOS	C	D		D	C		A	A	A	A	A	A	B
		Delay	34.5	40.3		41.9	32.0		1.1	0.1	0.0	5.3	6.2	5.0	14.5
		v/c	0.07	0.84		0.05	0.39		0.19	0.10	0.00	0.06	0.25	0.00	
Queue	20'	190'		10'	95'		15'	15'	0'	25'	110'	5'			
(200) Maple Road & Kleinmann Drive/Commercial Driveway Stop Sign Control (EB/WB)	AM	Lanes->	<1>			<1>			1	1	1	1	2>		
		LOS	B			C			A	*	*	A	*		A
		Delay	12.2			21.5			8.1	*	*	9.5	*		2.6
		v/c	0.02			0.41			0.03	*	*	0.05	*		
	PM	Queue	5'			50'			5'	*	*	5'	*		
		LOS	B			C			A	*	*	A	*		A
		Delay	11.2			16.7			8.9	*	*	8.1	*		2.8
		v/c	0.14			0.31			0.06	*	*	0.03	*		
Queue	15'			35'			5'	*	*	5'	*				
(300) Maple Road & Lannon Road (STH 167) Traffic Signal Control	AM	Lanes->	2	2	1	1	2	1	1	1	1	1	1	1	
		LOS	C	A	A	D	C	C	D	D	C	D	D	A	C
		Delay	25.0	8.9	7.4	44.6	25.1	21.0	40.5	35.6	33.3	43.9	39.5	0.0	23.0
		v/c	0.50	0.27	0.04	0.52	0.42	0.03	0.42	0.46	0.09	0.26	0.41	0.00	
	PM	Queue	215'	125'	25'	50'	135'	20'	85'	115'	30'	45'	80'	0'	
		LOS	C	B	B	D	C	C	D	C	C	D	D	A	C
		Delay	26.4	14.3	12.2	45.0	29.7	22.0	39.4	30.0	30.0	39.9	37.5	0.0	27.0
		v/c	0.27	0.34	0.08	0.79	0.65	0.06	0.48	0.31	0.32	0.23	0.49	0.00	
Queue	105'	165'	45'	110'	205'	25'	105'	110'	100'	60'	150'	0'			
(400) Maple Road & Commerce Circle Stop Sign Control (EB)	AM	Lanes->	< >			-			<1		-	-	1	1	
		LOS	B			-			A		-	-	*	*	A
		Delay	11.5			-			7.7		-	-	*	*	0.6
		v/c	0.04			-			0.00		-	-	*	*	
	PM	Queue	5'			-			0'		-	-	*	*	
		LOS	B			-			A		-	-	*	*	A
		Delay	14.8			-			8.2		-	-	*	*	1.4
		v/c	0.17			-			0.01		-	-	*	*	
Queue	15'			-			0'		-	-	*	*			
(500) Mequon Road & Commercial Driveway Stop Sign Control (NB)	AM	Lanes->	-	1>		<1		-	< >			-			
		Volume	-	-	-	-	-	-	-	-	-	-	-	-	A
		LOS	-	*		A		-	B			-			
		Delay	-	*		7.7		-	10.5			-			2.1
	PM	v/c	-	*		0.03		-	0.10			-			
		Queue	-	*		5'		-	10'			-			
		Volume	-	-	-	-	-	-	-	-	-	-	-	-	A
		LOS	-	*		A		-	A			-			2.5
Delay	-	*		7.5		-	9.6			-					
v/c	-	*		0.02		-	0.07			-					
Queue	-	*		5'		-	5'			-					

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.
Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

**Year 2029 Build - Alternative 2 (Partial Kwik Trip Access) Traffic Peak Hour Operating Conditions
with Year 2029 Future Traffic Recommended Modifications**

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay	
			Eastbound			Westbound			Northbound			Southbound				
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙		
(100) Maple Road & Mequon Road Traffic Signal Control	AM	Lanes->	1	1>		1	1>		1	2	1	1	2	1	13.3	
		LOS	D	C		D	C		A	A	A	A	A	A		
		Delay	38.5	31.1		39.7	30.8		1.7	0.3	0.0	7.6	7.9	6.7		
		v/c	0.39	0.60		0.44	0.58		0.32	0.29	0.00	0.11	0.20	0.01		
	PM	Queue	60'	140'		65'	135'		20'	25'	0'	25'	60'	5'	15.0	
		LOS	C	C		D	C		A	A	A	A	A	A		
		Delay	29.9	31.3		40.3	27.2		1.6	0.1	0.0	7.4	8.6	6.9		
		v/c	0.09	0.65		0.44	0.30		0.22	0.11	0.00	0.06	0.27	0.00		
Queue	30'	190'		75'	95'		15'	15'	0'	25'	110'	5'				
(200) Maple Road & Kleinmann Drive/Commercial Driveway Stop Sign Control (EB/WB)	AM	Lanes->	-		1	-		1	1	1	1	2>		0.7		
		LOS	-		A	-		A	A	*	*	A	*			
		Delay	-		8.7	-		9.0	8.4	*	*	9.5	*			
		v/c	-		0.01	-		0.05	0.03	*	*	0.05	*			
	Queue	-		0'	-		5'	5'	*	*	5'	*		1.3		
		LOS	-		A	-		A	A	*	*	A	*			
		Delay	-		9.4	-		8.6	9.1	*	*	8.1	*			
		v/c	-		0.09	-		0.02	0.06	*	*	0.03	*			
	Queue	-		10'	-		5'	5'	*	*	5'	*				
		LOS	-		B	-		B	B	*	*	B	*			
		Delay	-		10.9	-		10.2	10.6	*	*	10.3	*			
		v/c	-		0.09	-		0.02	0.06	*	*	0.03	*			
(300) Maple Road & Lannon Road (STH 167) Traffic Signal Control	AM	Lanes->	2	2	1	1	2	1	1	1	1	1	1	1	23.0	
		LOS	C	A	A	D	C	C	D	D	C	D	D	A		
		Delay	25.0	8.9	7.4	44.6	25.2	21.0	40.5	35.6	33.3	43.4	39.5	0.0		
		v/c	0.50	0.27	0.04	0.52	0.43	0.03	0.42	0.46	0.09	0.21	0.41	0.00		
	Queue	215'	125'	25'	50'	140'	20'	85'	115'	30'	35'	80'	0'	27.0		
		LOS	C	B	B	D	C	C	D	C	C	D	D		A	
		Delay	26.4	14.3	12.2	45.0	29.9	22.0	39.4	30.0	30.0	39.3	37.5		0.0	
		v/c	0.27	0.34	0.08	0.79	0.66	0.06	0.48	0.31	0.32	0.17	0.49		0.00	
	Queue	105'	165'	45'	110'	210'	25'	105'	110'	100'	40'	125'	0'	1.4		
		LOS	C	B	B	D	C	C	D	C	C	D	D		A	
		Delay	26.4	14.3	12.2	45.0	29.9	22.0	39.4	30.0	30.0	39.3	37.5		0.0	
		v/c	0.27	0.34	0.08	0.79	0.66	0.06	0.48	0.31	0.32	0.17	0.49		0.00	
(400) Maple Road & Commerce Circle Stop Sign Control (EB)	AM	Lanes->	< >			-			<1			-	-	1	1	0.6
		LOS	B			-			A			-	-	*	*	
		Delay	11.5			-			7.7			-	-	*	*	
		v/c	0.04			-			0.00			-	-	*	*	
	Queue	5'			-			0'			-	-	*	*	1.4	
		LOS	B			-			A			-	-	*		*
		Delay	14.8			-			8.2			-	-	*		*
		v/c	0.17			-			0.01			-	-	*		*
	Queue	15'			-			0'			-	-	*	*		
		LOS	B			-			A			-	-	*	*	
		Delay	14.8			-			8.2			-	-	*	*	
		v/c	0.17			-			0.01			-	-	*	*	
(500) Mequon Road & Commercial Driveway Stop Sign Control (NB)	AM	Lanes->	-	1>		<1		-	< >			-			4.3	
		Volume	-	-	-	-	-	-	-	-	-	-	-	-		
		LOS	-	*		A		-	B			-				
		Delay	-	*		7.7		-	12.5			-				
	Queue	-	*		0.03		-	0.28			-			4.8		
		Queue	-	5'		-		30'			-					
		Volume	-	-	-	-	-	-	-	-	-	-	-		-	
		LOS	-	*		A		-	B			-				
	PM	Delay	-	*		7.5		-	11.1			-				
		v/c	-	*		0.02		-	0.23			-				
		Queue	-	5'		-		25'			-					
		Queue	-	5'		-		25'			-					

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.
Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.



NOT TO SCALE

APPENDIX A

TRAFFIC COUNT DATA

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Friday, October 11, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	1.25	Non-Holiday	No Special Events

Base Information, Observed (1.25) Hour and Estimated (24) Hour Volume Summaries

Major St: Maple Road
 Minor St: Mequon Road
 Intersection of: Maple Road & Mequon Road

IX_ID:

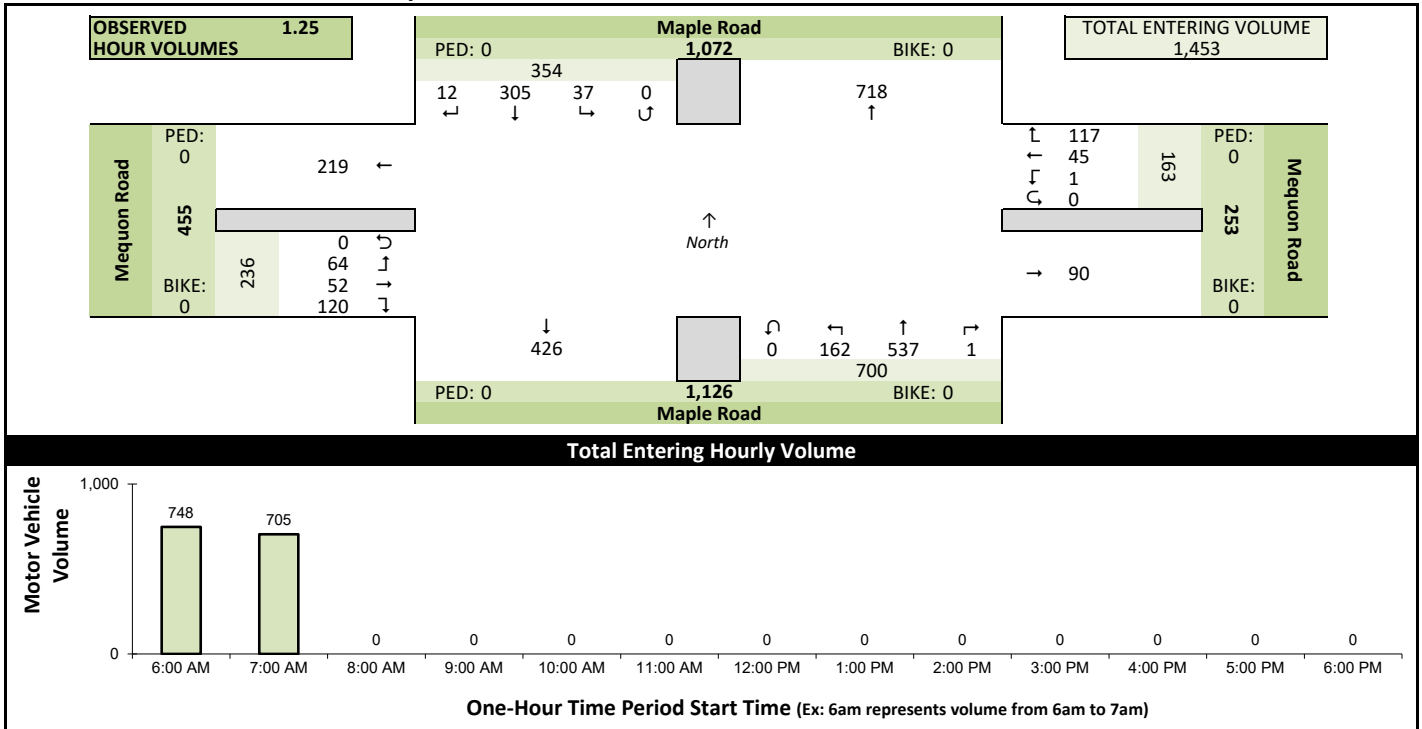
Site Information

Municipality	Village of Germantown		
County	66 - Washington	WisDOT Region	SE
Traffic Control	All-Way Stop		
Roadway Names		North Direction	↑
North Leg	Maple Road		
East Leg	Mequon Road		
South Leg	Maple Road		
West Leg	Mequon Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	

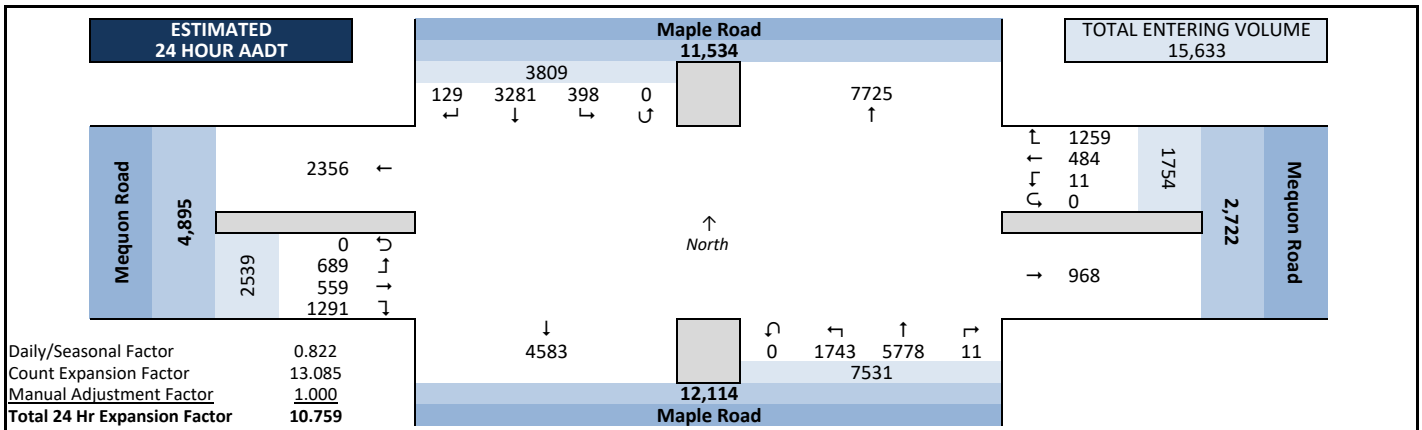
Count Information

Hrs Counted:		06:30 AM-07:45 AM	
1st Day of Count		Friday, October 11, 2024	
AM Peak Period		Clear & Dry	
Midday Peak Period		Clear & Dry	
PM Peak Period		Clear & Dry	
Calculated Peak Hours			
AM		PM	
Peak Hours Selected for Analysis			
AM		PM	
Daily/Seasonal Adjustment Group		(2) Urban Arterials & Collectors	
Count Expansion Group		(2) Urban Arterials & Collectors	
Daily/Seasonal Adjustment Factor		Count Expansion Factor	
Company Name		Manual Adj.	
Observers	AM Peak Period		Amy Scheuerlein
	Midday Peak Period		None
	PM Peak Period		None
Comments			
2021 DOT Daily & Seasonal Factors			

Observed 1.25 Hour Volume Summary



Estimated 24 Hour AADT

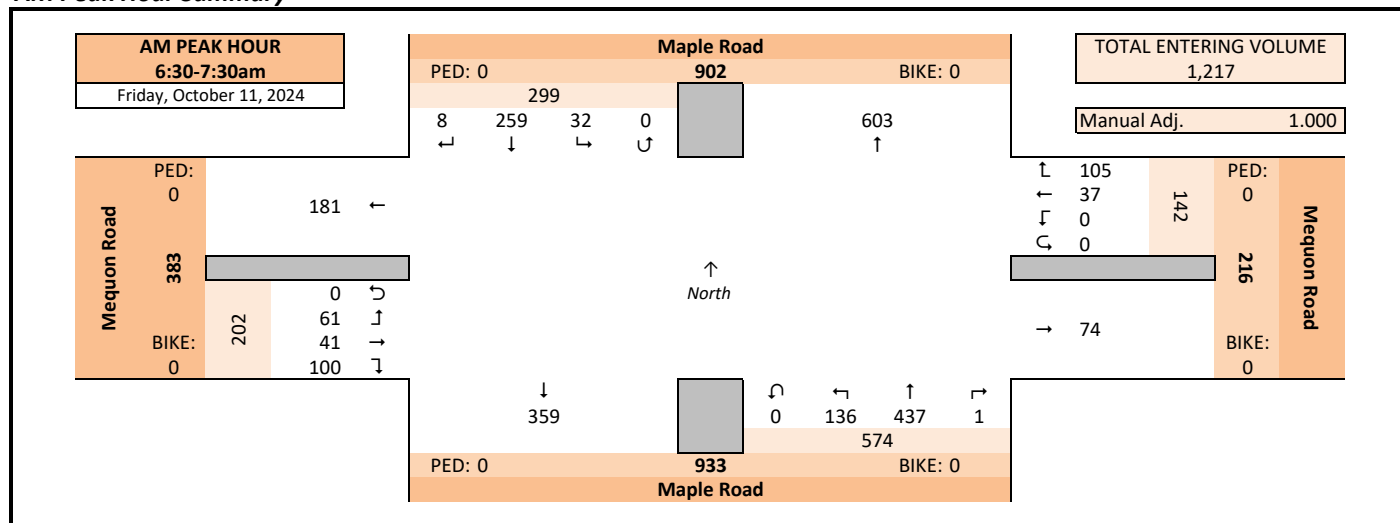
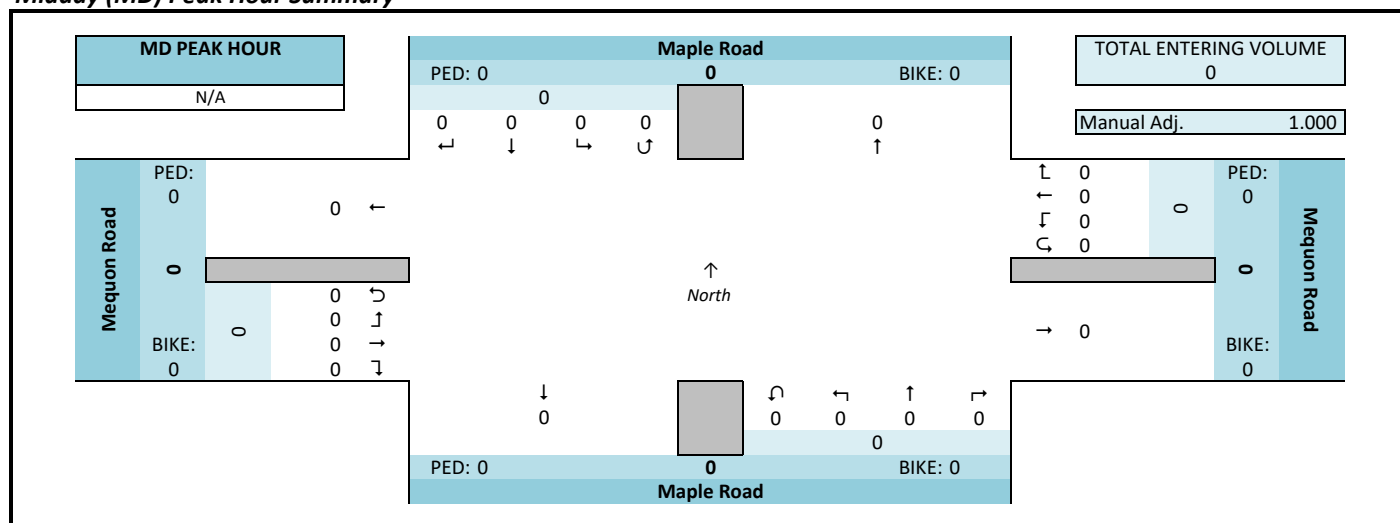


Peak Hour Volume Graphical Summary

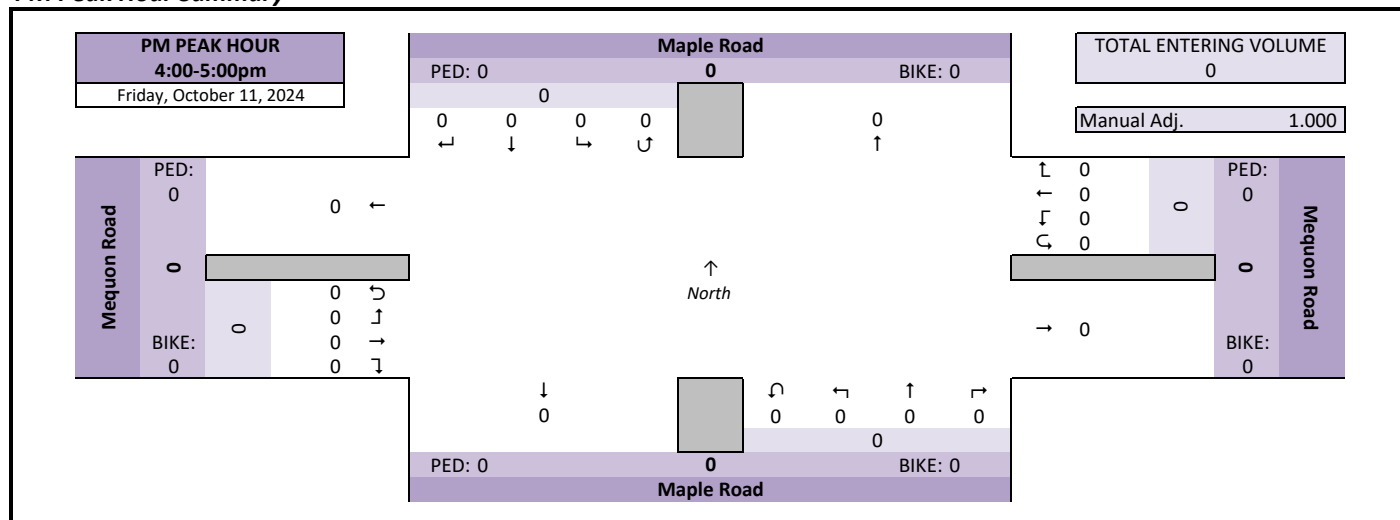
Count Basics		Page 2 of 13	
Start Date:	Friday, October 11, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	1.25	Non-Holiday	No Special Events

Maple Road & Mequon Road

AM Peak Hour Summary

**Midday (MD) Peak Hour Summary**

PM Peak Hour Summary



Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

Base Information, Observed (13) Hour and Estimated (24) Hour Volume Summaries

Major St: Maple Road
 Minor St: Mequon Road
 Intersection of: Maple Road & Mequon Road

IX_ID:

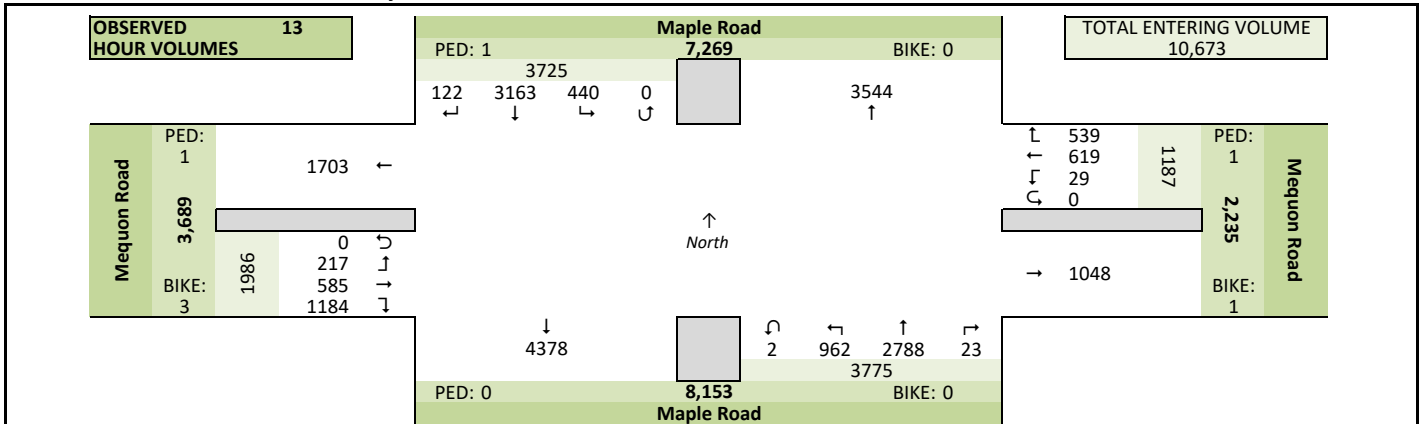
Site Information

Municipality	Village of Germantown		
County	66 - Washington	WisDOT Region	SE
Traffic Control	All-Way Stop		
Roadway Names		North Direction	↑
North Leg	Maple Road		
East Leg	Mequon Road		
South Leg	Maple Road		
West Leg	Mequon Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	

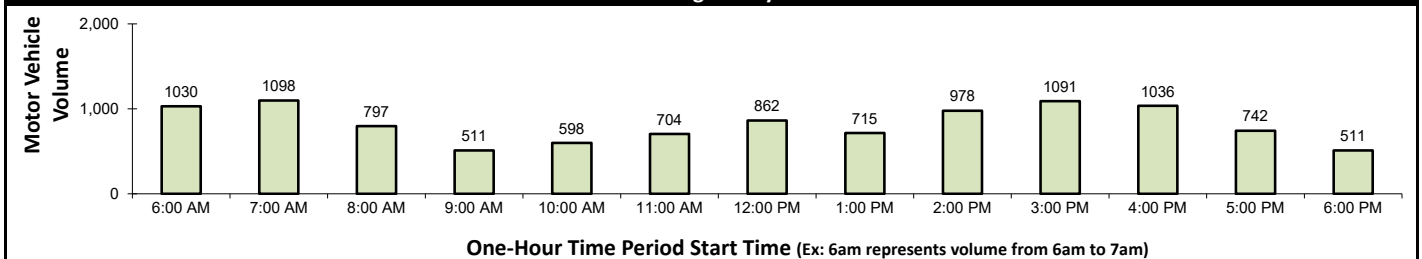
Count Information

Hrs Counted: 06:00 AM-07:00 PM					
1st Day of Count		Monday, September 23, 2024			Weather
AM Peak Period		Tuesday, September 24, 2024			Clear & Dry
Midday Peak Period		Tuesday, September 24, 2024			Clear & Dry
PM Peak Period		Monday, September 23, 2024			Clear & Dry
Calculated Peak Hours					
	AM	6:30-7:30am	MD	12:00-1:00pm	PM 2:45-3:45pm
Peak Hours Selected for Analysis					
	AM	6:45-7:45am	MD	12:00-1:00pm	PM 4:00-5:00pm
Daily/Seasonal Adjustment Group		(2) Urban Arterials & Collectors			
Count Expansion Group		(2) Urban Arterials & Collectors			
Daily/Seasonal Adjustment Factor		0.931	Count Expansion Factor		1.187
Company Name TADI, Inc.			Manual Adj. 1.000		
Observers	AM Peak Period		Wendy Picard		
	Midday Peak Period		Jane Fait		
	PM Peak Period		Wendy Picard		
Comments		2021 DOT Daily & Seasonal Factors			

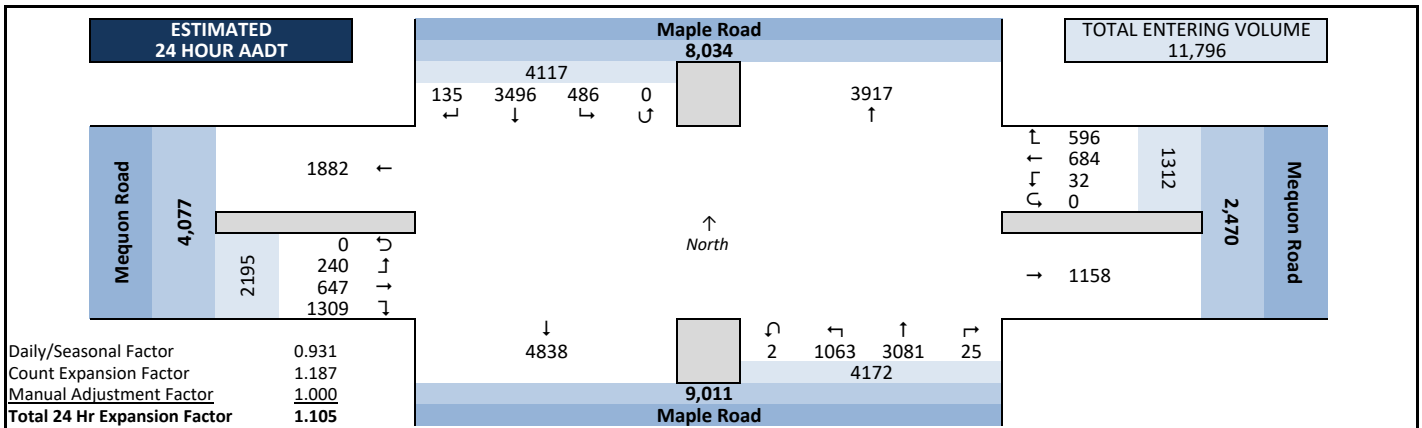
Observed 13 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT



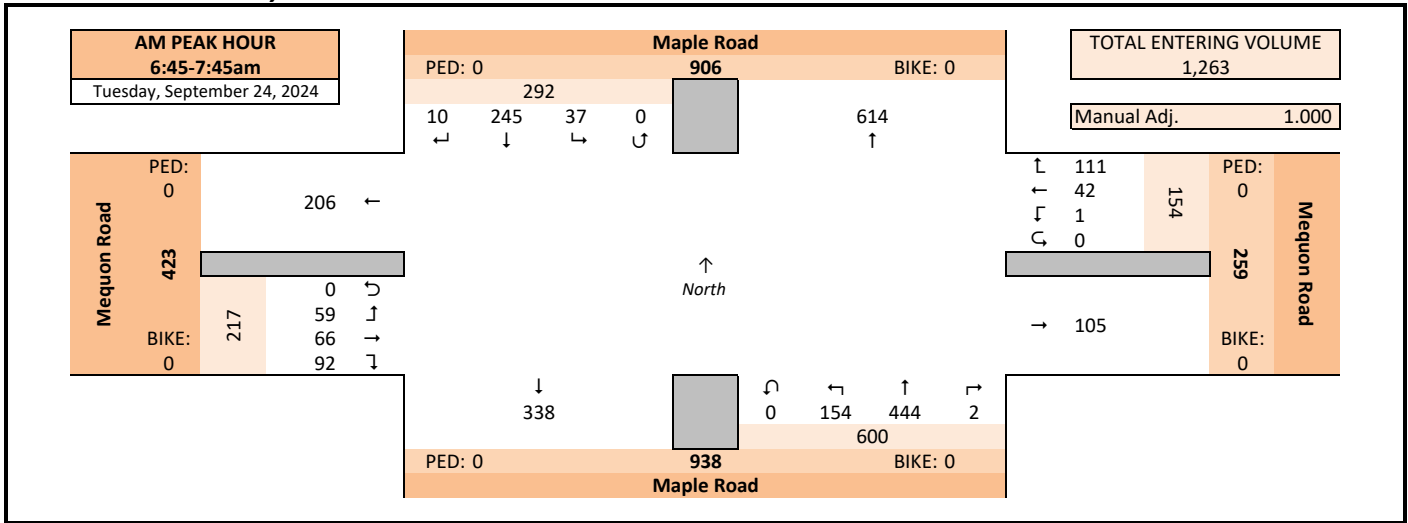
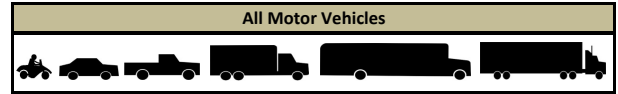
Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

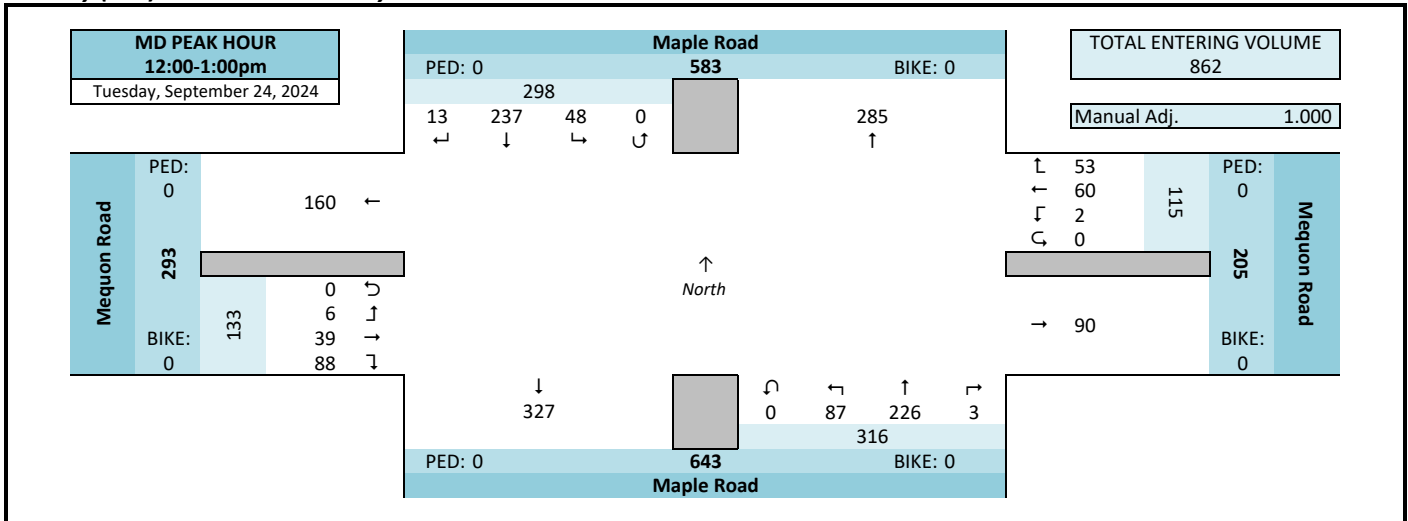
Count Basics		Page 2 of 13	
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 13		Non-Holiday	No Special Events

Maple Road & Mequon Road

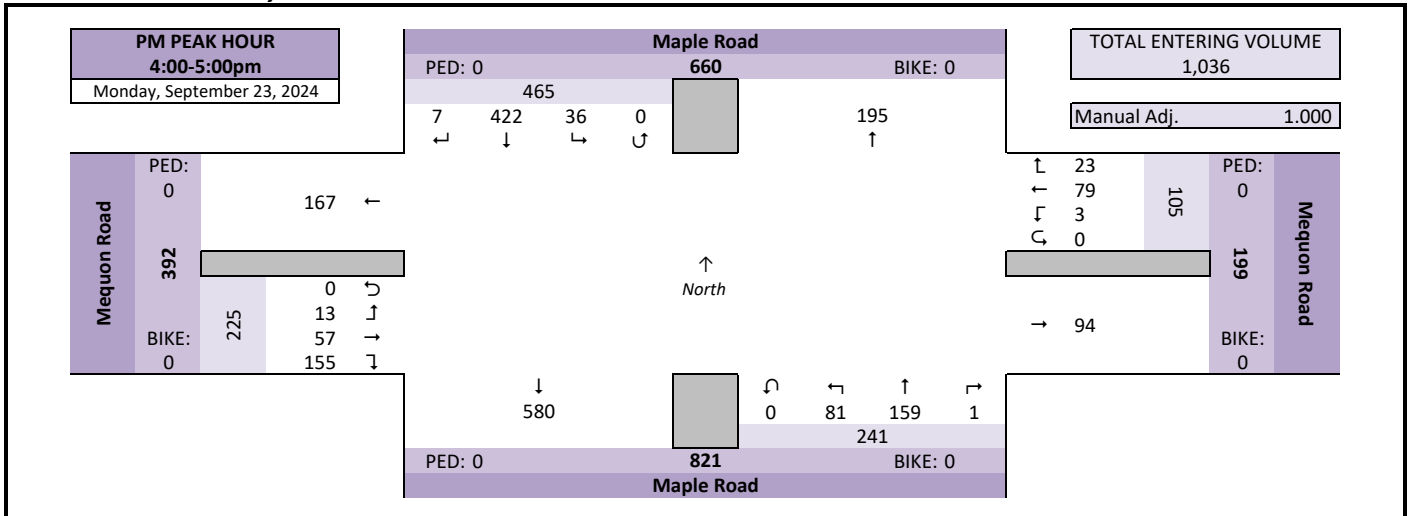
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

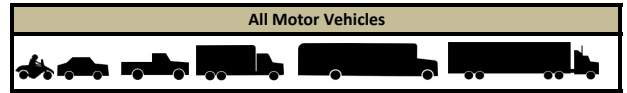


Intersection Traffic Volume Report

Peak Hour Volume Summary

Maple Road & Mequon Road

Count Basics			Page 3 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, September 24, 2024		↴					↶					↴					↷					
AM Peak Hour	AM Peak Hour	From North					From East					From South					From West					
		Maple Road					Mequon Road					Maple Road					Mequon Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	6:45 AM	3	38	4	0	45	69	9	0	0	78	0	209	60	0	269	7	12	35	0	54	446
	7:00 AM	2	101	22	0	125	21	10	0	0	31	0	72	34	0	106	42	18	15	0	75	337
	7:15 AM	2	57	6	0	65	12	13	0	0	25	0	73	20	0	93	19	12	6	0	37	220
	7:30 AM	3	49	5	0	57	9	10	1	0	20	2	90	40	0	132	24	24	3	0	51	260
	Peak Hour Volume	10	245	37	0	292	111	42	1	0	154	2	444	154	0	600	92	66	59	0	217	1263
	Rounded Hourly Volume	10	245	35	0	290	110	40	0	0	150	0	445	155	0	600	90	65	60	0	215	1255
	% Single Unit Trucks	10.0	11.8	13.5	0.0	12.0	2.7	7.1	0.0	0.0	3.9	0.0	3.6	1.9	0.0	3.2	2.2	4.5	10.2	0.0	5.1	5.6
% Heavy Trucks	0.0	2.4	0.0	0.0	2.1	2.7	0.0	100.0	0.0	2.6	0.0	2.0	3.9	0.0	2.5	5.4	0.0	0.0	0.0	2.3	2.4	
% Trucks (Total)	10.0	14.3	13.5	0.0	14.0	5.4	7.1	100.0	0.0	6.5	0.0	5.6	5.8	0.0	5.7	7.6	4.5	10.2	0.0	7.4	8.0	
Peak Hour Factor (PHF)	0.83	0.61	0.42	0.00	0.58	0.40	0.81	0.25	0.00	0.49	0.25	0.53	0.64	0.00	0.56	0.55	0.69	0.42	0.00	0.72	0.71	

Tuesday, September 24, 2024		↴					↶					↴					↷					
Midday (MD) Peak Hour	MD Peak Hour	From North					From East					From South					From West					
	Start Time	Maple Road					Mequon Road					Maple Road					Mequon Road					Totals
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	12:00 PM	5	90	17	0	112	8	8	0	0	16	0	51	16	0	67	28	16	2	0	46	241
	12:15 PM	1	50	12	0	63	22	18	0	0	40	2	66	24	0	92	25	9	2	0	36	231
	12:30 PM	2	51	9	0	62	11	12	1	0	24	0	52	25	0	77	19	6	1	0	26	189
	12:45 PM	5	46	10	0	61	12	22	1	0	35	1	57	22	0	80	16	8	1	0	25	201
	Peak Hour Volume	13	237	48	0	298	53	60	2	0	115	3	226	87	0	316	88	39	6	0	133	862
	Rounded Hourly Volume	15	235	50	0	300	55	60	0	0	115	5	225	85	0	315	90	40	5	0	135	865
	% Single Unit Trucks	23.1	9.7	6.2	0.0	9.7	5.7	10.0	0.0	0.0	7.8	0.0	8.8	6.9	0.0	8.2	3.4	2.6	33.3	0.0	4.5	8.1
% Heavy Trucks	7.7	7.6	0.0	0.0	6.4	1.9	3.3	0.0	0.0	2.6	0.0	9.7	8.0	0.0	9.2	9.1	2.6	0.0	0.0	6.8	7.0	
% Trucks (Total)	30.8	17.3	6.2	0.0	16.1	7.5	13.3	0.0	0.0	10.4	0.0	18.6	14.9	0.0	17.4	12.5	5.1	33.3	0.0	11.3	15.1	
Peak Hour Factor (PHF)	0.65	0.66	0.71	0.00	0.67	0.60	0.68	0.50	0.00	0.72	0.37	0.86	0.87	0.00	0.86	0.79	0.61	0.75	0.00	0.72	0.89	

Monday, September 23, 2024		↴					↶					↴					↷					
		From North					From East					From South					From West					
		Maple Road					Mequon Road					Maple Road					Mequon Road					
PM Peak Hour	PM Peak Hour	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	Start Time																					
	4:00 PM	2	117	3	0	122	3	20	0	0	23	1	46	23	0	70	32	15	3	0	50	265
	4:15 PM	0	94	8	0	102	8	19	3	0	30	0	40	19	0	59	18	15	5	0	38	229
	4:30 PM	1	114	15	0	130	6	21	0	0	27	0	38	23	0	61	71	15	3	0	89	307
	4:45 PM	4	97	10	0	111	6	19	0	0	25	0	35	16	0	51	34	12	2	0	48	235
	Peak Hour Volume	7	422	36	0	465	23	79	3	0	105	1	159	81	0	241	155	57	13	0	225	1036
	Rounded Hourly Volume	5	420	35	0	460	25	80	5	0	110	0	160	80	0	240	155	55	15	0	225	1035
	% Single Unit Trucks	14.3	2.8	2.8	0.0	3.0	4.3	2.5	0.0	0.0	2.9	0.0	8.8	6.2	0.0	7.9	1.9	0.0	7.7	0.0	1.8	3.9
	% Heavy Trucks	0.0	1.4	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	3.1	2.5	0.0	2.9	1.9	0.0	0.0	0.0	1.3	1.5
% Trucks (Total)	14.3	4.3	2.8	0.0	4.3	4.3	2.5	0.0	0.0	2.9	0.0	11.9	8.6	0.0	10.8	3.9	0.0	7.7	0.0	3.1	5.4	
Peak Hour Factor (PHF)	0.44	0.90	0.60	0.00	0.89	0.72	0.94	0.25	0.00	0.87	0.25	0.86	0.88	0.00	0.86	0.55	0.95	0.65	0.00	0.63	0.84	

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		Maple Road			Mequon Road			Maple Road			Mequon Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

15-Minute Motor Vehicle Data

Maple Road & Mequon Road

15-Minute Time Period Start Time	↙					←					↗					→					15-Min Totals	Hourly Sum	PHF	
	From North					From East					From South					From West								
	Maple Road					Mequon Road					Maple Road					Mequon Road								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	1	30	3	0	34	10	3	1	0	14	0	48	18	0	66	9	4	4	0	17	131	1030	0.5
	6:15 AM	3	34	3	0	40	10	4	0	0	14	1	78	20	0	99	13	5	2	0	20	173	1236	0.6
	6:30 AM	3	41	3	0	47	29	4	0	0	33	0	132	40	0	172	13	8	7	0	28	280	1283	0.7
	6:45 AM	3	38	4	0	45	69	9	0	0	78	0	209	60	0	269	7	12	35	0	54	446	1263	0.7
	7:00 AM	2	101	22	0	125	21	10	0	0	31	0	72	34	0	106	42	18	15	0	75	337	1098	0.8
	7:15 AM	2	57	6	0	65	12	13	0	0	25	0	73	20	0	93	19	12	6	0	37	220	1019	0.9
	7:30 AM	3	49	5	0	57	9	10	1	0	20	2	90	40	0	132	24	24	3	0	51	260	1006	0.9
	7:45 AM	0	59	7	0	66	14	8	0	0	22	2	88	29	0	119	41	29	4	0	74	281	931	0.8
	8:00 AM	5	43	6	0	54	17	8	0	0	25	1	102	21	0	124	35	18	2	0	55	258	797	0.7
	8:15 AM	3	44	1	0	48	13	13	1	0	27	0	64	25	0	89	23	10	10	0	43	207	670	0.8
	8:30 AM	3	53	4	0	60	8	8	0	0	16	0	59	8	0	67	31	9	2	0	42	185	591	0.8
	8:45 AM	3	34	4	0	41	8	9	0	0	17	0	47	13	0	60	13	9	7	0	29	147	521	0.8
9:00 AM	1	41	3	0	45	3	8	1	0	12	2	37	16	0	55	12	5	2	0	19	131	511	0.9	
9:15 AM	2	28	3	0	33	11	6	2	0	19	1	49	5	0	55	14	6	1	0	21	128	528	0.8	
9:30 AM	0	38	8	0	46	4	4	0	0	8	1	23	16	0	40	15	6	0	0	21	115	553	0.9	
9:45 AM	1	37	10	0	48	3	6	2	0	11	0	41	13	0	54	13	10	1	0	24	137	565	0.9	
Midday Peak Period	10:00 AM	2	28	7	0	37	5	12	1	0	18	0	41	16	0	57	29	5	2	0	36	148	598	0.8
	10:15 AM	2	47	9	0	58	5	10	0	0	15	0	36	12	0	48	18	11	3	0	32	153	622	0.9
	10:30 AM	0	30	4	0	34	10	9	0	0	19	0	37	15	0	52	13	7	2	0	22	127	625	0.9
	10:45 AM	3	38	5	0	46	10	8	0	0	18	1	49	14	0	64	17	19	6	0	42	170	683	0.9
	11:00 AM	2	59	13	0	74	7	6	2	0	15	0	35	13	0	48	19	13	3	0	35	172	704	0.9
	11:15 AM	0	45	5	0	50	11	12	0	0	23	1	42	7	1	51	18	10	4	0	32	156	773	0.8
	11:30 AM	3</																						

Hourly Time Period	↓					←					↑					→					Total Hourly Volume	PHF
	From North					From East					From South					From West						
	Maple Road					Mequon Road					Maple Road					Mequon Road						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
Start Time																						
AM 6:45 AM	10	245	37	0	292	111	42	1	0	154	2	444	154	0	600	92	66	59	0	217	1263	0.71
MD 12:00 PM	13	237	48	0	298	53	60	2	0	115	3	226	87	0	316	88	39	6	0	133	862	0.89
PM 4:00 PM	7	422	36	0	465	23	79	3	0	105	1	159	81	0	241	155	57	13	0	225	1036	0.84

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

Maple Road & Mequon Road

Count Basics		Page 9 of 13	
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks)



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	Maple Road					Mequon Road					Maple Road					Mequon Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	3	0	1	0	4	10	70
	6:15 AM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	3	1	0	0	4	8	83
	6:30 AM	0	11	1	0	12	1	0	0	0	1	0	2	3	0	5	2	0	0	0	2	20	93
	6:45 AM	0	10	0	0	10	2	2	0	0	4	0	11	1	0	12	1	0	5	0	6	32	101
	7:00 AM	0	7	3	0	10	1	0	0	0	1	0	6	1	0	7	2	2	1	0	5	23	101
	7:15 AM	0	11	1	0	12	1	1	0	0	2	0	1	2	0	3	1	0	0	0	1	18	109
	7:30 AM	1	7	1	0	9	2	0	1	0	3	0	7	5	0	12	3	1	0	0	4	28	123
	7:45 AM	0	14	3	0	17	0	1	0	0	1	0	6	3	0	9	2	3	0	0	5	32	117
	8:00 AM	0	11	1	0	12	4	1	0	0	5	0	6	3	0	9	2	3	0	0	5	31	106
	8:15 AM	0	13	0	0	13	1	1	0	0	2	0	5	3	0	8	7	1	1	0	9	32	108
	8:30 AM	0	6	1	0	7	4	3	0	0	7	0	4	2	0	6	2	0	0	0	2	22	103
	8:45 AM	0	8	0	0	8	0	1	0	0	1	0	7	3	0	10	2	0	0	0	2	21	106
	9:00 AM	0	10	1	0	11	0	1	1	0	2	0	10	7	0	17	3	0	0	0	3	33	120
	9:15 AM	0	9	1	0	10	3	0	0	0	3	0	10	0	0	10	4	0	0	0	4	27	120
	9:30 AM	0	6	2	0	8	2	0	0	0	2	1	7	4	0	12	2	1	0	0	3	25	127
	9:45 AM	0	6	2	0	8	1	1	1	0	3	0	16	4	0	20	4	0	0	0	4	35	130
Midday Peak Period	10:00 AM	1	6	0	0	7	3	1	0	0	4	0	16	3	0	19	3	0	0	0	3	33	135
	10:15 AM	0	13	1	0	14	2	1	0	0	3	0	8	5	0	13	4	0	0	0	4	34	135
	10:30 AM	0	9	1	0	10	1	1	0	0	2	0	11	2	0	13	3	0	0	0	3	28	131
	10:45 AM	0	15	2	0	17	1	0	0	0	1	0	12	4	0	16	2	2	2	0	6	40	132
	11:00 AM	0	9	1	0	10	3	1	2	0	6	0	11	3	0	14	2	0	1	0	3	33	118
	11:15 AM	0	12	0	0	12	0	2	0	0	2	0	11	1	0	12	3	0	1	0	4	30	115
	11:30 AM	0	10	2	0	12	0	0	0	0	0	0	13	3	0	16	1	0	0	0	1	29	113
	11:45 AM	0	12	1	0	13	3	0	0	0	3	0	4	3	0	7	3	0	0	0	3	26	121
	12:00 PM	1	12	0	0	13	1	0	0	0	1	0	10	3	0	13	3	0	0	0	3	30	130
	12:15 PM	0	8	1	0	9	0	2	0	0	2	0	8	4	0	12	3	1	1	0	5	28	130
	12:30 PM	1	11	1	0	13	2	3	0	0	5	0	10	4	0	14	3	1	1	0	5	37	131
	12:45 PM	2	10	1	0	13	1	3	0	0	4	0	14	2	0	16	2	0	0	0	2	35	127
	1:00 PM	1	10	1	0	12	1	3	0	0	4	0	9	1	0	10	3	1	0	0	4	30	131
	1:15 PM	1	11	0	0	12	0	1	0	0	1	0	9	2	0	11	2	1	2	0	5	29	130
	1:30 PM	3	10	1	0	14	1	0	0	0	1	0	8	5	0	13	2	2	1	0	5	33	129
	1:45 PM	1	13	2	0	16	1	2	0	0	3	0	10	3	0	13	5	1	1	0	7	39	120
PM Peak Period	2:00 PM	0	9	1	0	10	3	0	0	0	3	0	11	1	0	12	2	2	0	0	4	29	109
	2:15 PM	0	10	0	0	10	2	0	0	0	2	0	10	5	0	15	0	0	1	0	1	28	109
	2:30 PM	0	4	0	0	4	2	0	0	0	2	0	11	2	0	13	3	2	0	0	5	24	110
	2:45 PM	1	5	0	0	6	1	2	0	0	3	0	7	6	0	13	2	1	3	0	6	28	100
	3:00 PM	0	10	1	0	11	0	3	0	0	3	0	13	1	0	14	1	0	0	0	1	29	85
	3:15 PM	0	6	1	0	7	0	4	0	0	4	0	12	2	0	14	1	2	1	0	4	29	73
	3:30 PM	0	7	0	0	7	0	1	0	0	1	0	3	1	0	4	2	0	0	0	2	14	58
	3:45 PM	0	2	0	0	2	1	1	0	0	2	0	5	1	0	6	3	0	0	0	3	13	58
	4:00 PM	1	5	0	0	6	0	0	0	0	0	0	5	2	0	7	4	0	0	0	4	17	56
	4:15 PM	0	5	0	0	5	1	0	0	0	1	0	6	1	0	7	0	0	1	0	1	14	49
	4:30 PM	0	3	1	0	4	0	1	0	0	1	0	5	3	0	8	1	0	0	0	1	14	41
	4:45 PM	0	5	0	0	5	0	1	0	0	1	0	3	1	0	4	1	0	0	0	1	11	33
	5:00 PM	0	5	0	0	5	1	0	0	0	1	0	3	1	0	4	0	0	0	0	0	10	27
	5:15 PM	0	3	0	0	3	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	6	28
	5:30 PM	0	0	1	0	1	0	1	0	0	1	0	2	1	0	3	1	0	0	0	1	6	30
	5:45 PM	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	5	29
	6:00 PM	0	4	0	0	4	0	1	0	0	1	0	5	1	0	6	0	0	0	0	0	11	25
	6:15 PM	1	2	0	0	3	1	0	0	0	1	0	2	0	0	2	1	0	1	0	2	8	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	3	0	4	1	0	0	0	1	5	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	16	395	37	0	448	55	47	5	0	107	1	371	121	0	493	111	28	26	0	165	1213		

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	Maple Road					Mequon Road					Maple Road					Mequon Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 6:45 AM	1	35	5	0	41	6	3	1	0	10	0	25	9	0	34	7	3	6	0	16	103
MD 12:00 PM	4	41	3	0	48	4	8	0	0	12	0	42	13	0	55	11	2	2	0	15	130
PM 4:00 PM	1	18	1	0	20	1	2	0	0	3	0	19	7	0	26	6	0	1	0	7	50

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: Maple Road
 Minor St: Kleimmann Drive
 Intersection of: Maple Road & Kleimmann Drive

IX_ID:

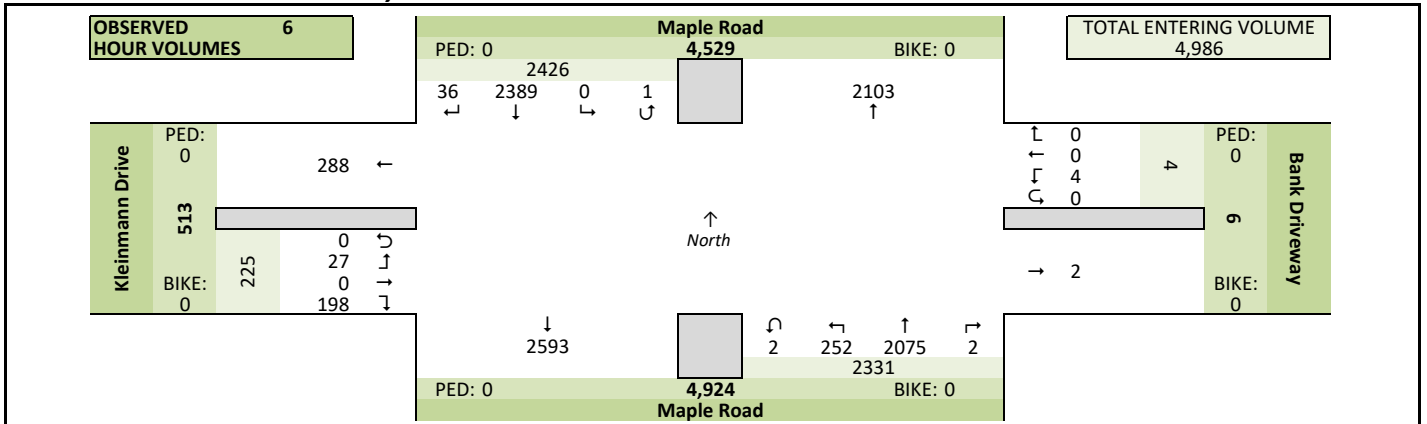
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Partial Stop Control
Roadway Names	North Direction
North Leg	Maple Road
East Leg	Bank Driveway
South Leg	Maple Road
West Leg	Kleimmann Drive
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

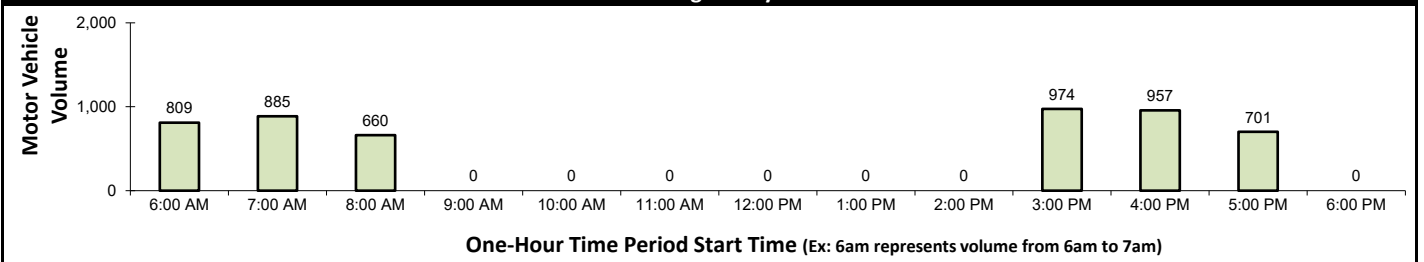
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Monday, September 23, 2024
Weather	Clear & Dry
AM Peak Period	Tuesday, September 24, 2024
Midday Peak Period	Tuesday, September 24, 2024
PM Peak Period	Monday, September 23, 2024
Calculated Peak Hours	
AM	6:30-7:30am
MD	
PM	3:00-4:00pm
Peak Hours Selected for Analysis	
AM	6:45-7:45am
MD	
PM	4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors
Count Expansion Group	(2) Urban Arterials & Collectors
Daily/Seasonal Adjustment Factor	0.931
Count Expansion Factor	2.327
Company Name	TADI, Inc.
Manual Adj.	1.000
Observers	
AM Peak Period	LuAnn Gaertner
Midday Peak Period	None
PM Peak Period	Jane Fait
Comments	2021 DOT Daily & Seasonal Factors

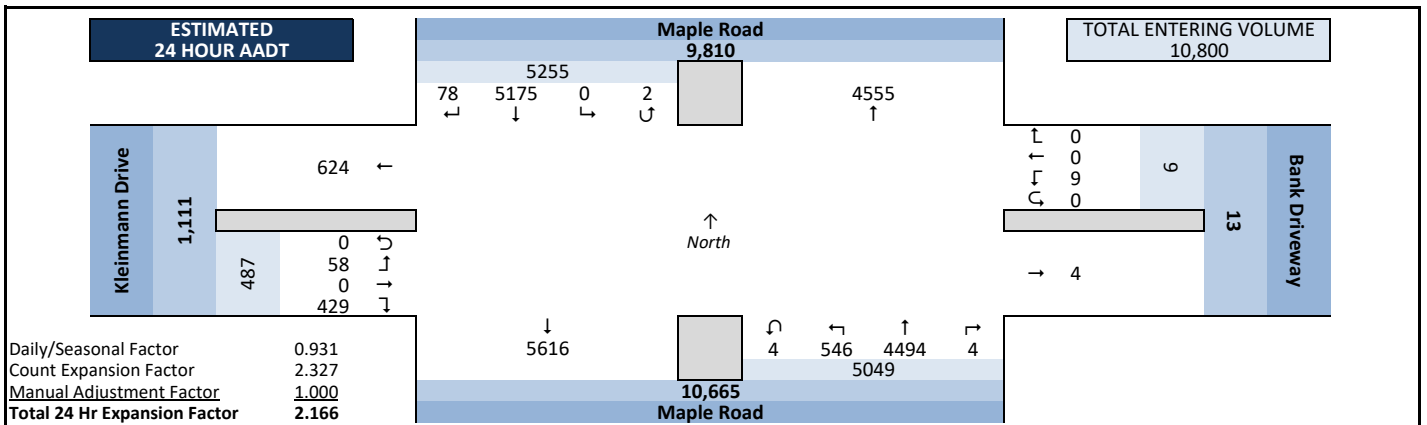
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT



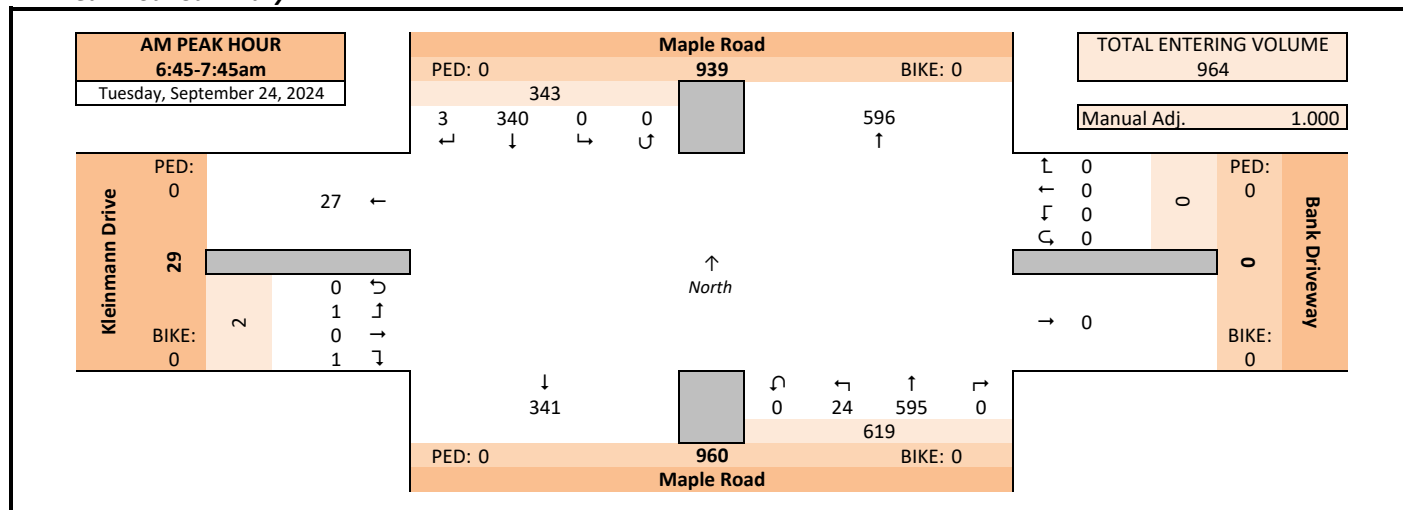
Peak Hour Volume Graphical Summary

Maple Road & Kleimmann Drive

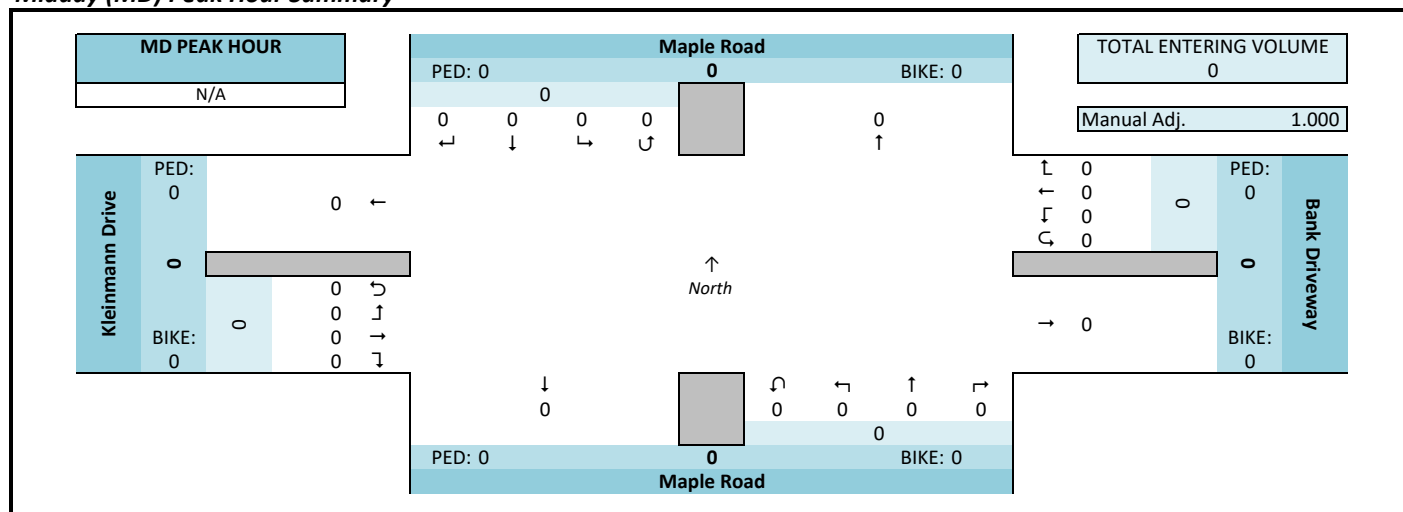
AM Peak Hour Summary

Count Basics		Page 2 of 13	
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

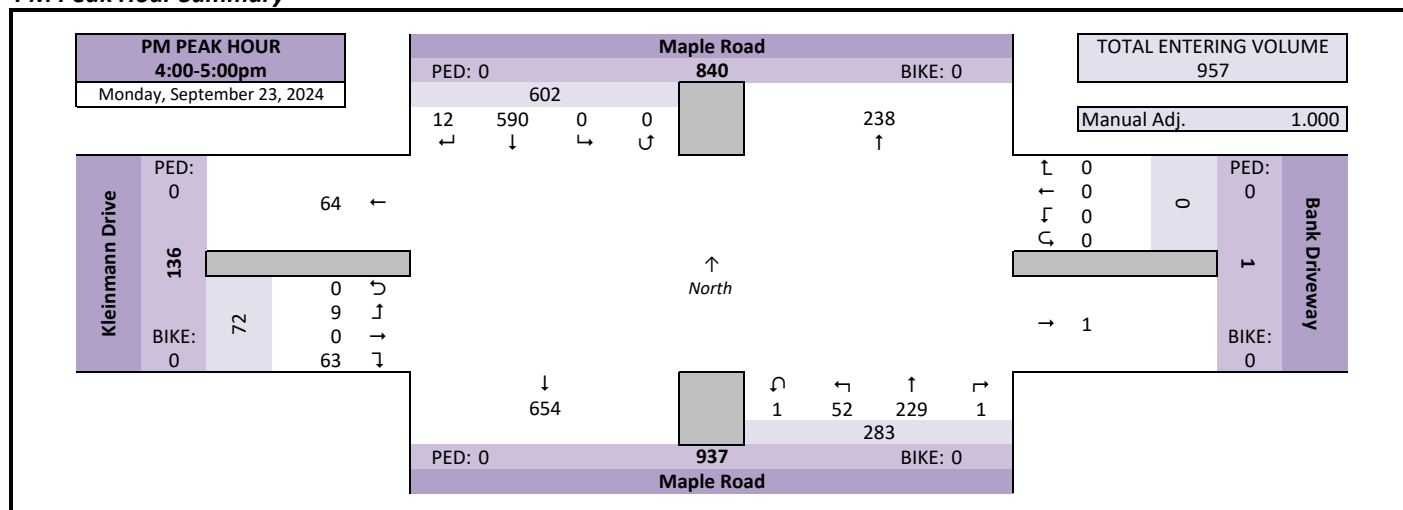
All Motor Vehicles



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

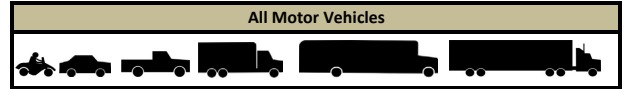


Intersection Traffic Volume Report

Peak Hour Volume Summary

Maple Road & Kleimann Drive

Count Basics			Page 3 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, September 24, 2024		From North Maple Road					From East Bank Driveway					From South Maple Road					From West Kleinmann Drive					Totals
AM Peak Hour		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
Start Time																						
6:45 AM		0	46	0	0	46	0	0	0	0	0	0	267	3	0	270	0	0	0	0	0	316
7:00 AM		0	142	0	0	142	0	0	0	0	0	0	104	6	0	110	0	0	0	0	0	252
7:15 AM		2	75	0	0	77	0	0	0	0	0	0	94	7	0	101	0	0	0	0	0	178
7:30 AM		1	77	0	0	78	0	0	0	0	0	0	130	8	0	138	1	0	1	0	2	218
Peak Hour Volume		3	340	0	0	343	0	0	0	0	0	0	595	24	0	619	1	0	1	0	2	964
Rounded Hourly Volume		5	340	0	0	345	0	0	0	0	0	0	595	25	0	620	0	0	0	0	0	965
% Single Unit Trucks		33.3	7.9	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	2.5	4.2	0.0	2.6	0.0	0.0	0.0	0.0	0.0	4.6
% Heavy Trucks		0.0	3.8	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	2.8
% Trucks (Total)		33.3	11.8	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	4.2	0.0	4.8	0.0	0.0	0.0	0.0	0.0	7.4
Peak Hour Factor (PHF)		0.37	0.60	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.75	0.00	0.57	0.25	0.00	0.25	0.00	0.25	0.76

N/A		From North Maple Road					From East Bank Driveway					From South Maple Road					From West Kleinmann Drive					Totals
MD Peak Hour		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
Start Time																						
12:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rounded Hourly Volume		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single Unit Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monday, September 23, 2024		From North Maple Road					From East Bank Driveway					From South Maple Road					From West Kleinmann Drive					Totals
PM Peak Hour		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
Start Time																						
4:00 PM		4	149	0	0	153	0	0	0	0	0	0	66	24	0	90	15	0	5	0	20	263
4:15 PM		2	112	0	0	114	0	0	0	0	0	0	57	8	1	66	15	0	1	0	16	196
4:30 PM		5	202	0	0	207	0	0	0	0	0	0	56	4	0	60	17	0	1	0	18	285
4:45 PM		1	127	0	0	128	0	0	0	0	0	1	50	16	0	67	16	0	2	0	18	213
Peak Hour Volume		12	590	0	0	602	0	0	0	0	0	1	229	52	1	283	63	0	9	0	72	957
Rounded Hourly Volume		10	590	0	0	600	0	0	0	0	0	0	230	50	0	280	65	0	10	0	75	955
% Single Unit Trucks		0.0	2.2	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	6.6	3.8	0.0	6.0	1.6	0.0	0.0	0.0	1.4	3.2
% Heavy Trucks		0.0	1.9	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	2.1
% Trucks (Total)		0.0	4.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	3.8	0.0	9.2	1.6	0.0	0.0	0.0	1.4	5.3
Peak Hour Factor (PHF)		0.60	0.73	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.25	0.87	0.54	0.25	0.79	0.93	0.00	0.45	0.00	0.90	0.84

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach Maple Road			Crossing East Approach Bank Driveway			Crossing South Approach Maple Road			Crossing West Approach Kleinmann Drive			Total Ped & Bike Volume
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

Maple Road & Kleimmann Drive

Count Basics			Page 5 of 13	
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	

All Motor Vehicles					
					

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	Maple Road					Bank Driveway					Maple Road					Kleinmann Drive								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	0	39	0	0	39	0	0	0	0	0	0	64	2	0	66	0	0	0	0	0	105	809	0.64
	6:15 AM	0	43	0	0	43	0	0	0	0	0	0	99	3	0	102	0	0	0	0	0	145	956	0.76
	6:30 AM	0	56	0	0	56	0	0	0	0	0	0	184	3	0	187	0	0	0	0	0	243	989	0.78
	6:45 AM	0	46	0	0	46	0	0	0	0	0	0	267	3	0	270	0	0	0	0	0	316	964	0.76
	7:00 AM	0	142	0	0	142	0	0	0	0	0	0	104	6	0	110	0	0	0	0	0	252	885	0.88
	7:15 AM	2	75	0	0	77	0	0	0	0	0	0	94	7	0	101	0	0	0	0	0	178	840	0.89
	7:30 AM	1	77	0	0	78	0	0	0	0	0	0	130	8	0	138	1	0	1	0	2	218	834	0.88
	7:45 AM	1	101	0	1	103	0	0	0	0	0	0	126	7	0	133	1	0	0	0	1	237	780	0.82
	8:00 AM	2	72	0	0	74	0	0	0	0	0	0	117	15	0	132	1	0	0	0	1	207	660	0.80
	8:15 AM	1	69	0	0	70	0	0	1	0	1	0	88	11	0	99	2	0	0	0	2	172		
	8:30 AM	0	81	0	0	81	0	0	0	0	0	0	70	9	0	79	4	0	0	0	4	164		
	8:45 AM	0	46	0	0	46	0	0	0	0	0	0	54	14	0	68	3	0	0	0	3	117		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	3:00 PM	2	189	0	0	191	0	0	0	0	0	0	88	5	0	93	6	0	3	0	9	293	974	0.83
	3:15 PM	1	117	0	0	118	0	0	0	0	0	0	72	9	0	81	8	0	0	0	8	207	944	0.90
	3:30 PM	1	206	0	0	207	0	0	1	0	1	1	43	7	0	51	2	0	0	0	2	261	933	0.89
	3:45 PM	6	109	0	0	115	0	0	1	0	1	0	51	29	0	80	15	0	2	0	17	213	957	0.84
	4:00 PM	4	149	0	0	153	0	0	0	0	0	0	66	24	0	90	15	0	5	0	20	263	957	0.84
	4:15 PM	2	112	0	0	114	0	0	0	0	0	0	57	8	1	66	15	0	1	0	16	196	937	0.82
	4:30 PM	5	202	0	0	207	0	0	0	0	0	0	56	4	0	60	17	0	1	0	18	285	933	0.82
	4:45 PM	1	127	0	0	128	0	0	0	0	0	1	50	16	0	67	16	0	2	0	18	213	792	0.81
	5:00 PM	1	132	0	0	133	0	0	0	0	0	0	62	18	0	80	28	0	2	0	30	243	701	0.72
	5:15 PM	3	86	0	0	89	0	0	1	0	1	0	52	15	0	67	31	0	4	0	35	192		
	5:30 PM	1	68	0	0	69	0	0	0	0	0	0	44	16	1	61	11	0	3	0	14	144		
	5:45 PM	2	45	0	0	47	0	0	0	0	0	0	37	13	0	50	22	0	3	0	25	122		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	36	2389	0	1	2426	0	0	4	0	4	2	2075	252	2	2331	198	0	27	0	225	4986			

Peak Hour All Vehicle Volume Summary

Hourly Time Period	From North					From East					From South				
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Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

Maple Road & Kleimann Drive

Count Basics			Page 9 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	Maple Road					Bank Driveway					Maple Road					Kleinmann Drive							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	8	0	0	8	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	9	55
	6:15 AM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7	61
	6:30 AM	0	14	0	0	14	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	20	68
	6:45 AM	0	10	0	0	10	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	19	71
	7:00 AM	0	9	0	0	9	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	15	78
	7:15 AM	1	9	0	0	10	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	14	84
	7:30 AM	0	12	0	0	12	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	23	96
	7:45 AM	0	15	0	0	15	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	26	90
	8:00 AM	0	14	0	0	14	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	21	83
	8:15 AM	0	18	0	0	18	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	26	
	8:30 AM	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	17	
	8:45 AM	0	10	0	0	10	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	19	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	11	0	0	11	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	25	69
	3:15 PM	0	6	0	0	6	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	21	60
	3:30 PM	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	12	50
	3:45 PM	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	51
	4:00 PM	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	16	51
	4:15 PM	0	5	0	0	5	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	11	44
	4:30 PM	0	4	0	0	4	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	13	38
	4:45 PM	0	6	0	0	6	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	11	29
	5:00 PM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9	22
	5:15 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	
	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	
	5:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	4	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	1	198	0	0	199	0	0	0	0	0	0	151	5	0	156	2	0	1	0	3	358		

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume
	Maple Road					Bank Driveway					Maple Road					Kleinmann Drive					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 6:45 AM	1	40	0	0	41	0	0	0	0	0	0	29	1	0	30	0	0	0	0	0	71
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:00 PM	0	24	0	0	24	0	0	0	0	0	0	24	2	0	26	1	0	0	0	1	51

Intersection Traffic Volume Report

Count Basics		Version 2013.14.1	Page 1 of 13
Start Date:	Tuesday, May 18, 2021	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

Base Information, Observed (13) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Maple Road and STH 167/Lannon Road**

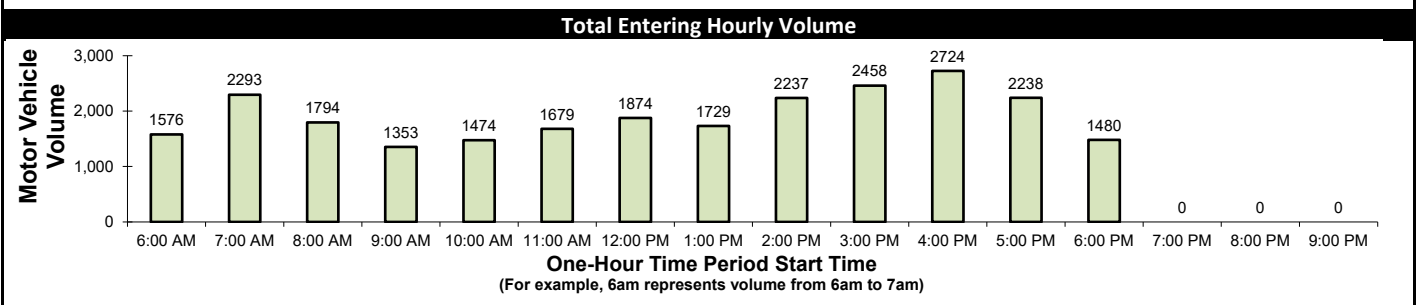
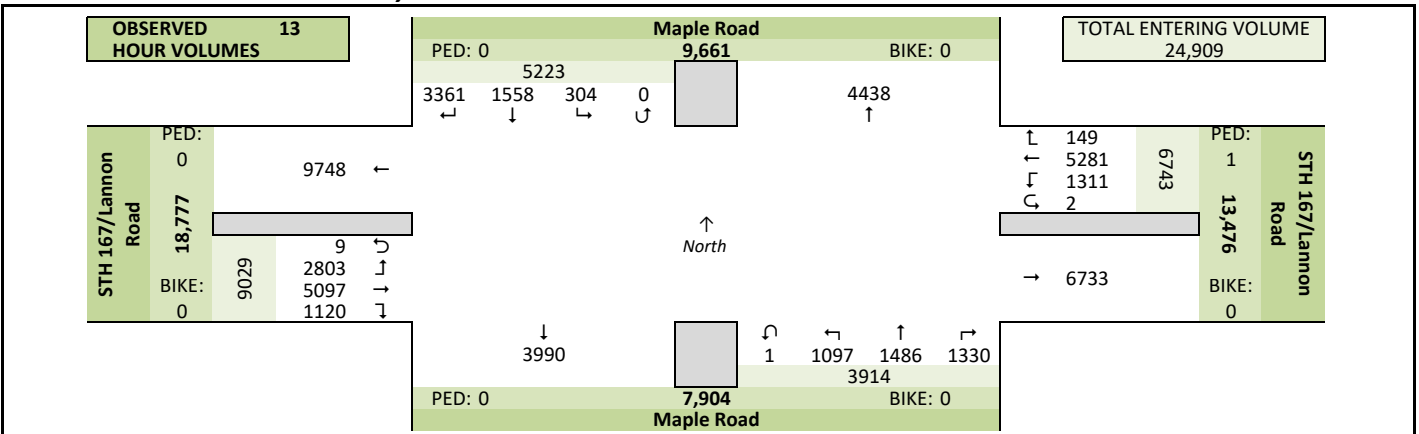
Site Information

Municipality	Village of Germantown		
County	Washington	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names		North Direction	↑
North Leg	Maple Road		
East Leg	STH 167/Lannon Road		
South Leg	Maple Road		
West Leg	STH 167/Lannon Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	

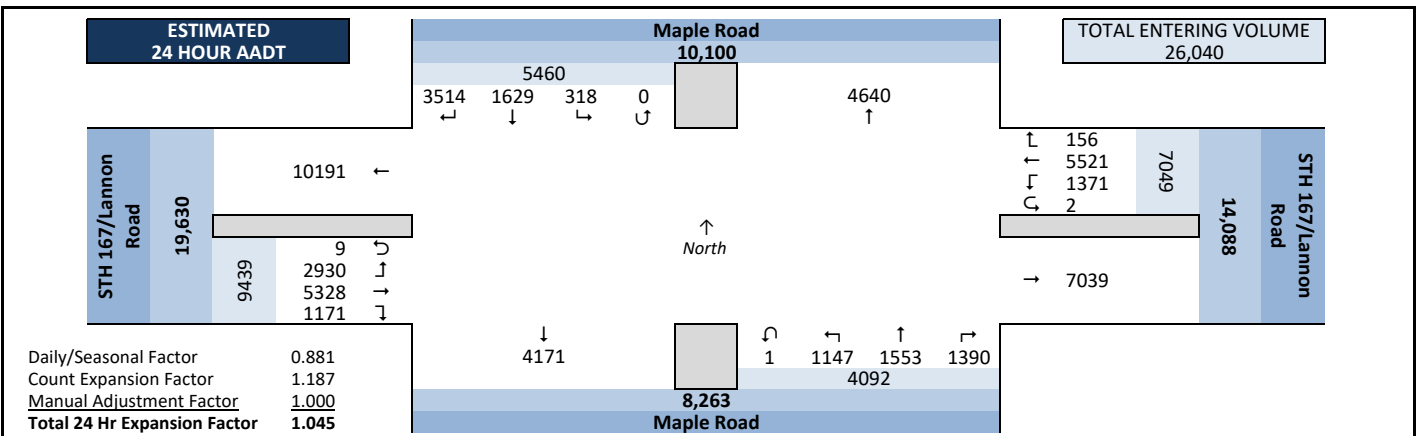
Count Information

Hrs Counted:		6:00 AM-7:00 PM	
1st Day of Count		Tuesday, May 18, 2021	
AM Peak Period		Tuesday, May 18, 2021	
Midday Peak Period		Tuesday, May 18, 2021	
PM Peak Period		Tuesday, May 18, 2021	
Calculated Peak Hours			
AM	7:00-8:00am	MD	12:00-1:00pm
PM	4:00-5:00pm		
Peak Hours Selected for Analysis			
AM	6:45-7:45am	MD	12:00-1:00pm
PM	4:00-5:00pm		
Daily/Seasonal Adjustment Group		(2) Urban Arterials & Collectors	
Count Expansion Group		(2) Urban Arterials & Collectors	
Daily/Seasonal Adjustment Factor		0.881	Count Expansion Factor
Company Name		TADI	Manual Adj.
Observers	AM Peak Period	TADI	
	Midday Peak Period	TADI	
	PM Peak Period	TADI	
Comments	2019 DOT Seasonal Factors		

Observed 13 Hour Volume Summary



Estimated 24 Hour AADT



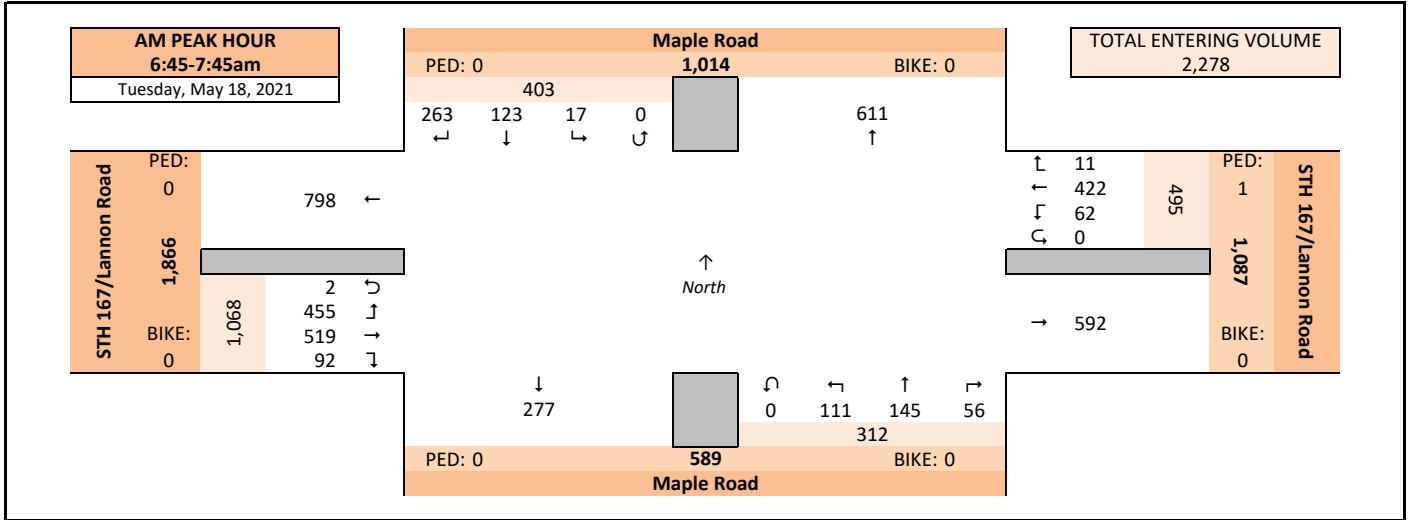
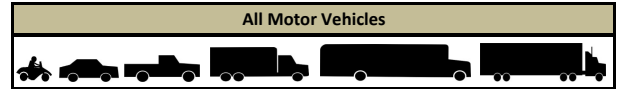
Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

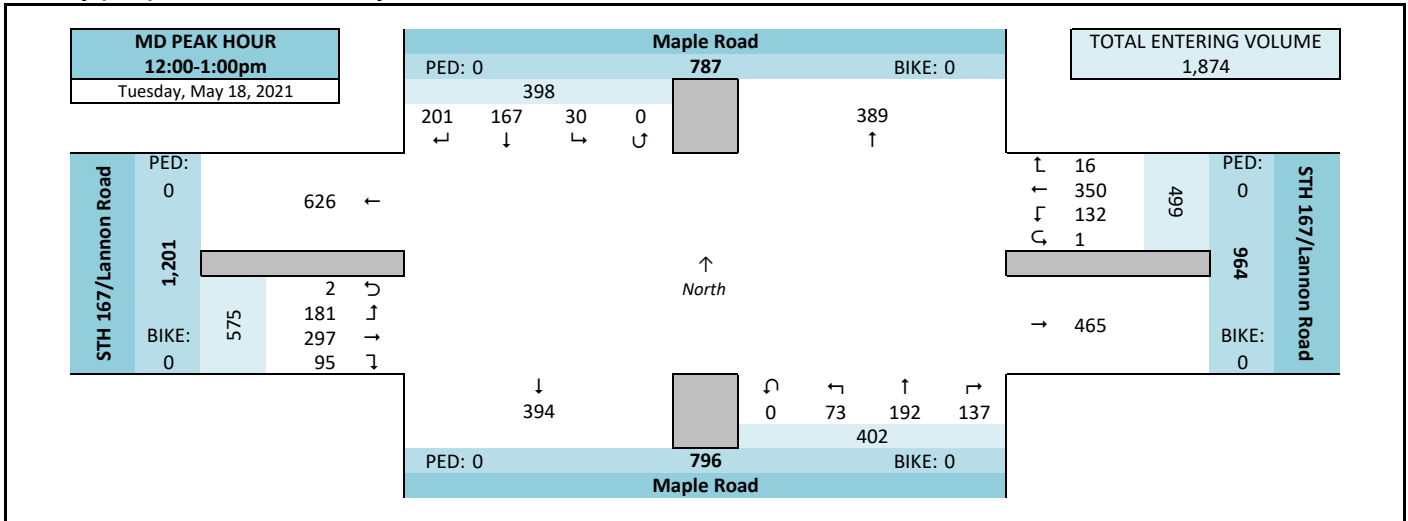
Maple Road and STH 167/Lannon Road

AM Peak Hour Summary

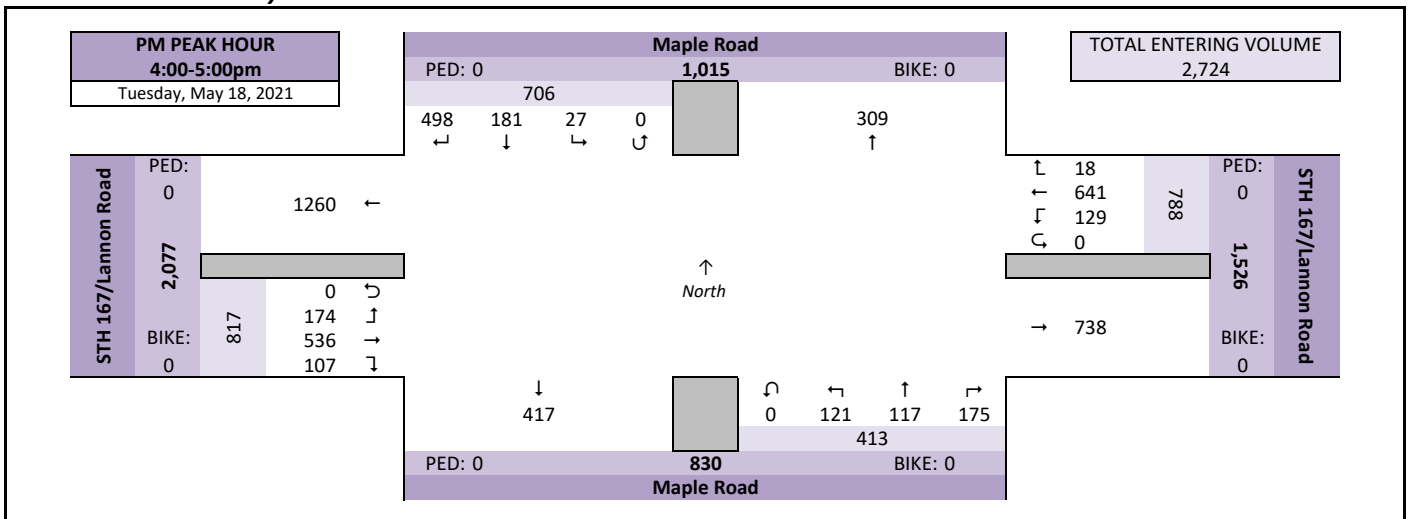
Count Basics		Page 2 of 13	
Start Date:	Tuesday, May 18, 2021	Weekday	Schools in Session
Total Number of Hours Counted: 13		Non-Holiday	No Special Events



Midday (MD) Peak Hour Summary



PM Peak Hour Summary



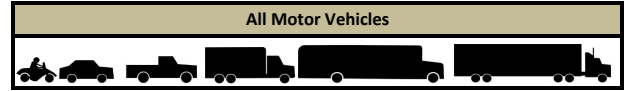
Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Tuesday, May 18, 2021	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

Peak Hour Volume Summary

Maple Road and STH 167/Lannon Road

Peak Hour Volumes, Truck Percentages, and PHFs

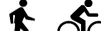


Tuesday, May 18, 2021		↴ From North					← From East					↱ From South					→ From West					
AM Peak Hour	AM Peak Hour	Maple Road					STH 167/Lannon Road					Maple Road					STH 167/Lannon Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	6:45 AM	40	17	5	0	62	2	76	12	0	90	13	32	24	0	69	26	128	164	0	318	539
	7:00 AM	109	48	8	0	165	4	111	11	0	126	13	62	23	0	98	14	118	131	1	264	653
	7:15 AM	56	31	3	0	90	2	130	20	0	152	22	23	33	0	78	27	135	78	1	241	561
	7:30 AM	58	27	1	0	86	3	105	19	0	127	8	28	31	0	67	25	138	82	0	245	525
	Peak Hour Volume	263	123	17	0	403	11	422	62	0	495	56	145	111	0	312	92	519	455	2	1068	2278
	Rounded Hourly Volume	265	125	15	0	405	10	420	60	0	490	55	145	110	0	310	90	520	455	0	1065	2270
	% Single Unit Trucks	7.6	11.4	35.3	0.0	9.9	9.1	5.5	4.8	0.0	5.5	10.7	2.1	7.2	0.0	5.4	10.9	7.7	5.7	0.0	7.1	7.0
	% Heavy Trucks	7.2	0.0	5.9	0.0	5.0	18.2	1.7	0.0	0.0	1.8	0.0	0.7	0.0	0.0	0.3	0.0	4.2	3.1	0.0	3.4	2.9
% Trucks (Total)	14.8	11.4	41.2	0.0	14.9	27.3	7.1	4.8	0.0	7.3	10.7	2.8	7.2	0.0	5.8	10.9	11.9	8.8	0.0	10.5	9.9	
Peak Hour Factor (PHF)	0.60	0.64	0.53	0.00	0.61	0.69	0.81	0.77	0.00	0.81	0.64	0.58	0.84	0.00	0.80	0.85	0.94	0.69	0.50	0.84	0.87	

Tuesday, May 18, 2021		↙					←					↗					→					
		From North					From East					From South					From West					
Midday (MD) Peak Hour	MD Peak Hour	Maple Road					STH 167/Lannon Road					Maple Road					STH 167/Lannon Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	12:00 PM	72	63	12	0	147	3	94	33	0	130	33	67	22	0	122	21	74	40	0	135	534
	12:15 PM	44	41	7	0	92	6	90	34	0	130	34	46	17	0	97	25	72	47	1	145	464
	12:30 PM	48	29	4	0	81	4	71	29	1	105	34	46	13	0	93	19	74	46	0	139	418
	12:45 PM	37	34	7	0	78	3	95	36	0	134	36	33	21	0	90	30	77	48	1	156	458
	Peak Hour Volume	201	167	30	0	398	16	350	132	1	499	137	192	73	0	402	95	297	181	2	575	1874
	Rounded Hourly Volume	200	165	30	0	395	15	350	130	0	495	135	190	75	0	400	95	295	180	0	570	1860
	% Single Unit Trucks	7.0	6.0	20.0	0.0	7.5	6.2	9.4	3.0	0.0	7.6	2.9	3.1	9.6	0.0	4.2	5.3	10.8	13.3	0.0	10.6	7.8
	% Heavy Trucks	14.4	0.6	6.7	0.0	8.0	6.2	4.6	0.8	0.0	3.6	0.0	1.0	0.0	0.0	0.5	0.0	5.1	16.6	0.0	7.8	5.2
% Trucks (Total)	21.4	6.6	26.7	0.0	15.6	12.5	14.0	3.8	0.0	11.2	2.9	4.2	9.6	0.0	4.7	5.3	15.8	29.8	0.0	18.4	13.0	
Peak Hour Factor (PHF)	0.70	0.66	0.62	0.00	0.68	0.67	0.92	0.92	0.25	0.93	0.95	0.72	0.83	0.00	0.82	0.79	0.96	0.94	0.50	0.92	0.88	

Tuesday, May 18, 2021		↙					←					↗					→					
		From North					From East					From South					From West					
PM Peak Hour	PM Peak Hour	Maple Road					STH 167/Lannon Road					Maple Road					STH 167/Lannon Road					Totals
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:00 PM	140	47	6	0	193	7	151	29	0	187	40	30	36	0	106	27	129	47	0	203	689
	4:15 PM	89	50	1	0	140	2	161	29	0	192	47	27	24	0	98	36	135	37	0	208	638
	4:30 PM	165	52	11	0	228	6	182	30	0	218	40	32	32	0	104	22	137	44	0	203	753
	4:45 PM	104	32	9	0	145	3	147	41	0	191	48	28	29	0	105	22	135	46	0	203	644
	Peak Hour Volume	498	181	27	0	706	18	641	129	0	788	175	117	121	0	413	107	536	174	0	817	2724
	Rounded Hourly Volume	500	180	25	0	705	20	640	130	0	790	175	115	120	0	410	105	535	175	0	815	2720
	% Single Unit Trucks	2.0	2.2	3.7	0.0	2.1	5.6	3.0	0.8	0.0	2.7	1.7	3.4	2.5	0.0	2.4	4.7	2.6	8.0	0.0	4.0	2.9
	% Heavy Trucks	2.4	0.6	0.0	0.0	1.8	0.0	0.8	2.3	0.0	1.0	0.0	0.0	0.8	0.0	0.2	0.0	1.7	8.0	0.0	2.8	1.7
% Trucks (Total)	4.4	2.8	3.7	0.0	4.0	5.6	3.7	3.1	0.0	3.7	1.7	3.4	3.3	0.0	2.7	4.7	4.3	16.1	0.0	6.9	4.6	
Peak Hour Factor (PHF)	0.75	0.87	0.61	0.00	0.77	0.64	0.88	0.79	0.00	0.90	0.91	0.91	0.84	0.00	0.97	0.74	0.98	0.93	0.00	0.98	0.90	

Peak Hour Pedestrian and Bicyclist Volumes

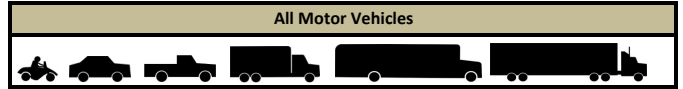
Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		Maple Road			STH 167/Lannon Road			Maple Road			STH 167/Lannon Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	1	0	1	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	1	0	1	0	0	0	0	0	0	1
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basics			Page 5 of 13	
Start Date:	Tuesday, May 18, 2021	Weekday	Schools in Session	
Total Number of Hours Counted:	13	Non-Holiday	No Special Events	

15-Minute Motor Vehicle Data

Maple Road and STH 167/Lannon Road



15-Minute Motor Vehicle Data

15-Minute Time Period Start Time		From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF
		Maple Road					STH 167/Lannon Road					Maple Road					STH 167/Lannon Road							
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	36	8	0	0	44	0	43	6	0	49	7	16	12	0	35	12	53	58	0	123	251	1576	0.73
	6:15 AM	43	9	2	0	54	0	46	11	0	57	11	21	10	0	42	20	83	79	1	183	336	1978	0.76
	6:30 AM	48	15	0	0	63	1	74	16	0	91	14	32	15	0	61	30	87	118	0	235	450	2203	0.84
	6:45 AM	40	17	5	0	62	2	76	12	0	90	13	32	24	0	69	26	128	164	0	318	539	2278	0.87
	7:00 AM	109	48	8	0	165	4	111	11	0	126	13	62	23	0	98	14	118	131	1	264	653	2293	0.88
	7:15 AM	56	31	3	0	90	2	130	20	0	152	22	23	33	0	78	27	135	78	1	241	561	2135	0.95
	7:30 AM	58	27	1	0	86	3	105	19	0	127	8	28	31	0	67	25	138	82	0	245	525	2015	0.91
	7:45 AM	61	18	4	0	83	2	75	9	0	86	17	36	22	0	75	23	166	121	0	310	554	1927	0.87
	8:00 AM	46	22	5	0	73	2	83	20	0	105	20	22	13	0	55	16	144	102	0	262	495	1794	0.91
	8:15 AM	31	20	8	0	59	1	84	15	0	100	17	17	21	0	55	18	148	61	0	227	441	1625	0.92
	8:30 AM	38	25	3	0	66	1	83	21	0	105	18	15	20	0	53	21	137	55	0	213	437	1515	0.87
	8:45 AM	36	24	4	0	64	2	74	26	0	102	21	16	12	0	49	12	139	55	0	206	421	1406	0.83
Midday Peak Period	9:00 AM	40	23	2	0	65	1	72	10	0	83	10	19	14	0	43	16	71	48	0	135	326	1353	0.92
	9:15 AM	38	20	3	0	61	3	79	23	0	105	15	21	17	0	53	13	68	31	0	112	331	1383	0.94
	9:30 AM	32	28	5	0	65	0	62	28	0	90	13	23	15	0	51	15	72	35	0	122	328	1393	0.95
	9:45 AM	40	20	4	0	64	6	68	29	1	104	17	22	19	0	58	13	87	41	1	142	368	1420	0.96
	10:00 AM	47	15	11	0	73	1	80	21	0	102	27	23	15	0	65	15	69	32	0	116	356	1474	0.87
	10:15 AM	48	22	4	0	74	0	72	30	0	102	21	15	15	0	51	12	64	37	1	114	341	1535	0.91
	10:30 AM	41	24	2	0	67	0	72	26	0	98	21	18	22	0	61	14	88	27	0	129	355	1581	0.94
	10:45 AM	30	26	8	0	64	6	89	29	0	124	26	26	19	0	71	26	100	37	0	163	422	1672	0.94
	11:00 AM	51	38	4	0	93	1	95	30	0	126	39	27	18	0	84	25	60	29	0	114	417	1679	0.94
	11:15 AM	39	31	8	0	78	2	84	30	0	116	35	26	25	0	86	13	68	26	0	107	387	1796	0.84
	11:30 AM	41	45	13	0	99	3	87	27	0	117	31	35	22	0	88	21	87	34	0	142	446	1873	0.88
	11:45 AM	45	48	6	0	99	5	95	30	0	130	22	35	21	0	78	14	66	42	0	122	429	1845	0.86
PM Peak Period	12:00 PM	72	63	12	0	147	3	94	33	0	130	33	67	22	0	122	21	74	40	0	135	534	1874	0.88
	12:15 PM	44	41	7	0	92	6	90	34	0	130	34	46	17	0	97	25	72	47	1	145	464	1795	0.97
	12:30 PM	48	29	4	0	81	4	71	29	1	105	34	46	13	0	93	19	74	46	0	139	418	1737	0.95
	12:45 PM	37	34	7	0	78	3	95	36	0	134	36	33	21	0	90	30	77	48	1	156	458	1741	0.95
	1:00 PM	60	29	10	0	99	0	92	31	0	123	29	32	31	0	92	24	87	30	0	141	455	1729	0.95
	1:15 PM	46	18	2	0	66	3	99	26	0	128	32	23	11	0	66	24	81	41	0	146	406	1783	0.88
	1:30 PM	57	23	3	0	83	3	87	28	0	118	33	33	14	0	80	19	88	34	0	141	422	1889	0.92
	1:45 PM	45	33	7	0	85	2	100	33	0	135	24	30	19	0	73	20	95	38	0	153	446	2051	0.88
	2:00 PM	85	31	6	0	122	2	110	29	0	141	37	35	21	0	93	26	77	50	0	153	509	2237	0.88
	2:15 PM	56	32	4	0	92	5	107	34	0	146	31	45	20	0	96	22	93	62	1	178	512	2361	0.93
	2:30 PM	90	43	9	0	142	7	114	24	0	145	30	32	24	0	86	38	106	67	0	211	584	2410	0.95
	2:45 PM	123	38	11	0	172	4	140	29	0	173	29	21	31	0	81	28	99	79	0	206	632	2500	0.93
3:00 PM	157	36	14	0	207	4	152	30	0	186	25	32	28	0	85	22	79	54	0	155	633	2458	0.91	
3:15 PM	101	30	6	0	137	7	131	26	0	164	25	18	31	0	74	26	114	46	0	186	561	2514	0.91	
3:30 PM	152	49	7	0	208	4	145	28	0	177	31	19	44	0	94	25	125	45	0	195	674	2591	0.94	
3:45 PM	98	31	12	0	141	4	105	36	0	145	37	31	30	0	98	32	124	50	0	206	590	2670	0.89	
4:00 PM	140	47	6	0	193	7	151	29	0	187	40	30	36	0	106	27	129	47	0	203	689	2724	0.90	
4:15 PM	89	50	1	0	140	2	161	29	0	192	47	27	24	0	98	36	135	37	0	208	638	2709	0.90	
4:30 PM	165	52	11	0	228	6	182	30	0	218	40	32	32	0	104	22	137	44	0	203	753	2651	0.88	
4:45 PM	104	32	9	0	145	3	147	41	0	191	48	28	29	0	105	22	135	46	0	203	644	2438	0.90	
5:00 PM	120	52	6	0	178	2	179	29	0	210	31	38	23	0	92	25	124	45	0	194	674	2238	0.83	
5:15 PM	83	35	8	0	126	2	125	34	0	161	30	38	27	1	96	25	128	44	0	197	580	1949	0.84	
5:30 PM	57	23	3	0	83	3	156	41	0	200	28	32	19	0	79	18	111	49	0	178	540	1764	0.82	
5:45 PM	58	22	5	0	85	3	118	24	0	145	30	20	15	0	65	22	84	43	0	149	444	1578	0.89	
6:00 PM	44	20	4	0	68	2	111	14	0	127	21	21	18	0	60	14	76	40	0	130	385	1480	0.94	
6:15 PM	47	17	5	0	69	4	117	15	0	136	27	24	6	0	57	21	74	38	0	133	395			
6:30 PM	51	26	5	0	82	1	89	15	0	105	13	20	15	0	48	21	68	30	0	119	354			
6:45 PM	38	18	7	0	63	5	74	25	0	104	17	23	18	0	58	25	55	40	1	121	346			
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals		3361	1558	304	0																			

Intersection Traffic Volume Report

Count Basics				Page 9 of 13
Start Date:	Tuesday, May 18, 2021	Weekday	Schools in Session	
Total Number of Hours Counted:	13	Non-Holiday	No Special Events	

15-Minute Heavy Vehicle Data

Maple Road and STH 167/Lannon Road



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	Maple Road					STH 167/Lannon Road					Maple Road					STH 167/Lannon Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	9	1	0	0	10	0	4	0	0	4	0	0	1	0	1	0	4	0	0	8	23	124
	6:15 AM	11	0	0	0	11	0	3	1	0	4	0	0	0	0	0	0	8	2	0	10	25	168
	6:30 AM	14	2	0	0	16	0	6	1	0	7	0	0	1	0	1	0	6	4	0	10	34	207
	6:45 AM	7	2	1	0	10	0	7	1	0	8	1	0	1	0	2	1	14	7	0	22	42	226
	7:00 AM	9	7	4	0	20	0	8	2	0	10	3	1	2	0	6	0	13	18	0	31	67	237
	7:15 AM	13	4	1	0	18	1	9	0	0	10	0	1	1	0	2	4	25	5	0	34	64	231
	7:30 AM	10	1	1	0	12	2	6	0	0	8	2	2	4	0	8	5	10	10	0	25	53	237
	7:45 AM	15	2	0	0	17	0	7	0	0	7	5	0	4	0	9	2	11	7	0	20	53	242
	8:00 AM	13	3	2	0	18	0	11	2	0	13	2	2	2	0	6	0	15	9	0	24	61	253
	8:15 AM	9	6	3	0	18	1	15	0	0	16	0	1	4	0	5	3	16	12	0	31	70	244
	8:30 AM	15	1	0	0	16	0	9	1	0	10	2	1	3	0	6	3	12	11	0	26	58	239
	8:45 AM	11	2	2	0	15	0	12	2	0	14	2	0	5	0	7	2	17	9	0	28	64	231
Midday Peak Period	9:00 AM	15	0	1	0	16	1	11	0	0	12	0	1	0	0	1	1	9	13	0	23	52	224
	9:15 AM	14	5	2	0	21	1	12	1	0	14	0	2	1	0	3	1	16	10	0	27	65	225
	9:30 AM	12	0	1	0	13	0	10	1	0	11	0	1	2	0	3	0	12	11	0	23	50	212
	9:45 AM	12	2	0	0	14	0	12	0	0	12	1	2	2	0	5	2	8	16	0	26	57	213
	10:00 AM	10	1	4	0	15	0	13	1	0	14	2	2	0	0	4	1	12	7	0	20	53	242
	10:15 AM	16	0	2	0	18	0	6	3	0	9	0	3	1	0	4	1	9	11	0	21	52	241
	10:30 AM	9	3	0	0	12	0	15	0	0	15	0	1	1	0	2	4	10	8	0	22	51	245
	10:45 AM	13	1	3	0	17	2	14	1	0	17	2	0	5	0	7	8	28	9	0	45	86	249
	11:00 AM	12	4	2	0	18	0	11	3	0	14	2	0	4	0	6	3	4	7	0	14	52	222
	11:15 AM	9	1	2	0	12	1	7	1	0	9	6	2	5	0	13	2	10	10	0	22	56	232
	11:30 AM	6	2	0	0	8	0	7	5	0	12	1	0	9	0	10	1	10	14	0	25	55	225
	11:45 AM	12	1	2	0	15	0	11	0	0	11	0	1	5	0	6	1	9	17	0	27	59	228
PM Peak Period	12:00 PM	10	3	2	0	15	0	14	0	0	14	2	1	1	0	4	2	14	13	0	29	62	243
	12:15 PM	10	3	1	0	14	0	8	0	0	8	1	1	0	0	2	2	11	12	0	25	49	244
	12:30 PM	12	2	2	0	16	1	10	1	0	12	1	1	4	0	6	0	9	15	0	24	58	255
	12:45 PM	11	3	3	0	17	1	17	4	0	22	0	5	2	0	7	1	13	14	0	28	74	241
	1:00 PM	17	2	1	0	20	0	14	3	0	17	3	3	4	0	10	1	7	8	0	16	63	219
	1:15 PM	14	1	0	0	15	0	22	0	0	22	0	2	0	0	2	0	9	12	0	21	60	206
	1:30 PM	15	1	0	0	16	1	11	0	0	12	1	0	0	0	1	4	3	8	0	15	44	197
	1:45 PM	8	3	2	0	13	0	10	0	0	10	0	1	4	0	5	3	15	6	0	24	52	202
	2:00 PM	11	2	1	0	14	0	7	2	0	9	2	2	1	0	5	1	10	11	0	22	50	202
	2:15 PM	10	1	0	0	11	0	7	3	0	10	2	1	1	0	4	0	17	9	0	26	51	189
	2:30 PM	9	2	0	0	11	0	7	3	0	10	0	2	3	0	5	1	11	11	0	23	49	182
	2:45 PM	10	0	0	0	10	0	16	0	0	16	0	2	0	0	2	1	10	13	0	24	52	180
3:00 PM	9	0	1	0	10	0	8	0	0	8	1	2	1	0	4	0	6	9	0	15	37	169	
3:15 PM	7	2	3	0	12	2	10	1	0	13	1	1	1	0	3	0	11	5	0	16	44	159	
3:30 PM	11	0	1	0	12	0	8	1	0	9	1	0	3	0	4	3	8	11	0	22	47	153	
3:45 PM	10	1	1	0	12	0	9	1	0	10	2	0	1	0	3	0	10	6	0	16	41	129	
4:00 PM	6	0	0	0	6	1	6	1	0	8	0	1	2	0	3	0	6	4	0	10	27	124	
4:15 PM	4	2	0	0	6	0	8	2	0	10	2	2	0	0	4	3	4	11	0	18	38	128	
4:30 PM	6	1	0	0	7	0	5	0	0	5	0	0	2	0	2	0	5	4	0	9	23	102	
4:45 PM	6	2	1	0	9	0	5	1	0	6	1	1	0	0	2	2	8	9	0	19	36	94	
5:00 PM	7	1	0	0	8	0	6	1	0	7	1	0	2	0	3	3	5	5	0	13	31	75	
5:15 PM	1	0	0	0	1	0	3	1	0	4	0	0	2	0	2	0	1	4	0	5	12	59	
5:30 PM	2	0	0	0	2	0	7	1	0	8	0	0	0	0	0	1	2	2	0	5	15	61	
5:45 PM	2	0	0	0	2	0	4	1	0	5	1	0	0	0	1	3	3	3	0	9	17	53	
6:00 PM	1	0	0	0	1	0	2	0	0	2	0	0	3	0	3	2	1	6	0	9	15	44	
6:15 PM	3	0	0	0	3	0	1	1	0	2	0	2	1	0	3	0	3	3	0	6	14		
6:30 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5	7		
6:45 PM	1	0	0	0	1	0	4	0	0	4	0	0	1	0	1	0	0	2	0	2	8		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		490	84	52	0	626	15	455	54	0	524	53	53	102	0	208	78	492	450	0	1020	2378	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume
	Maple Road					STH 167/Lannon Road					Maple Road					STH 167/Lannon Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 6:45 AM	39	14	7	0	60	3	30	3	0	36	6	4	8	0	18	10	62	40	0	112	226
MD 12:00 PM	43	11	8	0	62	2	49	5	0	56	4	8	7	0	19	5	47	54	0	106	243
PM 4:00 PM	22	5	1	0	28	1	24	4	0	29	3	4	4	0	11	5	23	28	0	56	124

Intersection Traffic Volume Report

Count Basics		Version 2024.04		Page 1 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: STH 167 - Lannon Road
 Minor St: Maple Road
 Intersection of: STH 167 - Lannon Road & Maple Road

IX_ID:

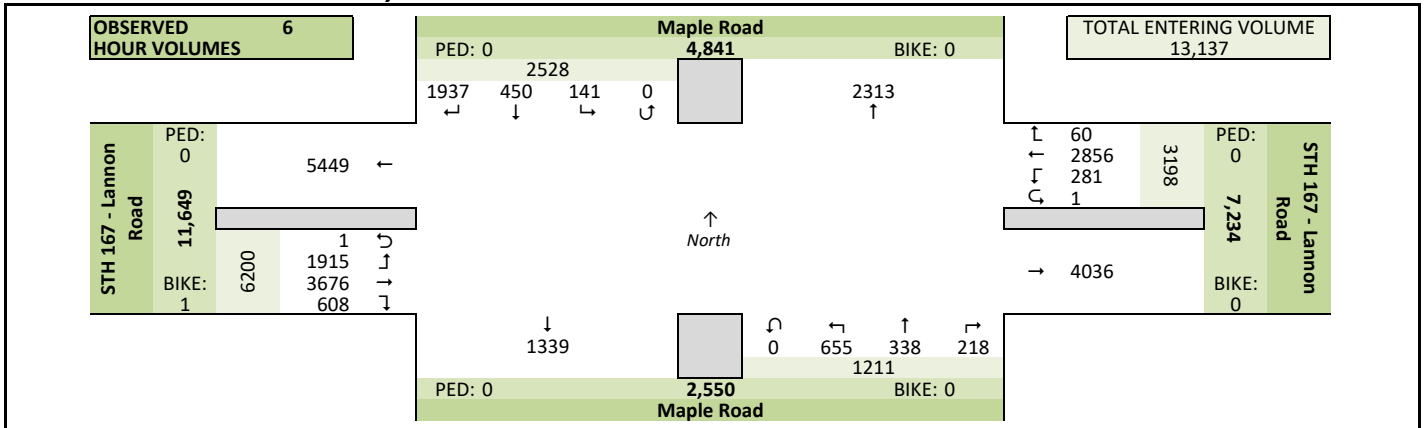
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Traffic Signal
Roadway Names	North Direction
North Leg	Maple Road
East Leg	STH 167 - Lannon Road
South Leg	Maple Road
West Leg	STH 167 - Lannon Road
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

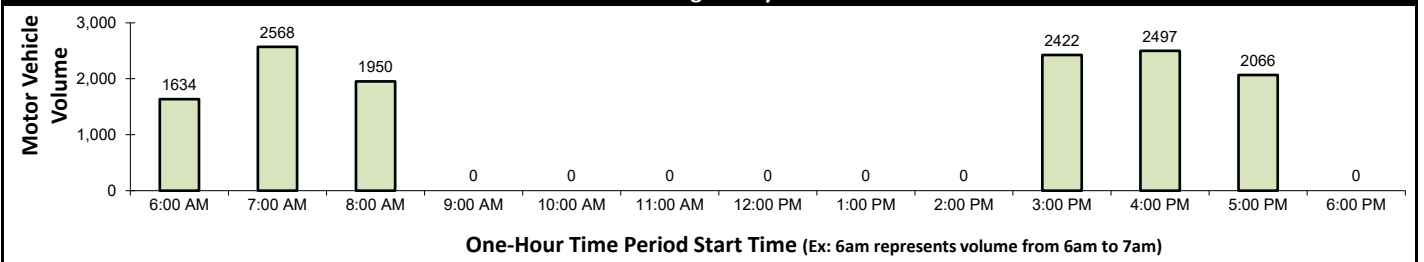
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Monday, September 23, 2024
Weather	Clear & Dry
AM Peak Period	Tuesday, September 24, 2024
Midday Peak Period	Tuesday, September 24, 2024
PM Peak Period	Monday, September 23, 2024
Calculated Peak Hours	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Peak Hours Selected for Analysis	
AM	6:45-7:45am
MD	
PM	4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors
Count Expansion Group	(2) Urban Arterials & Collectors
Daily/Seasonal Adjustment Factor	0.931
Count Expansion Factor	2.327
Company Name	TADI, Inc.
Manual Adj.	1.000
Observers	AM Peak Period: Amy Scheuerlein Midday Peak Period: None PM Peak Period: Amy Scheuerlein
Comments	2021 DOT Daily & Seasonal Factors

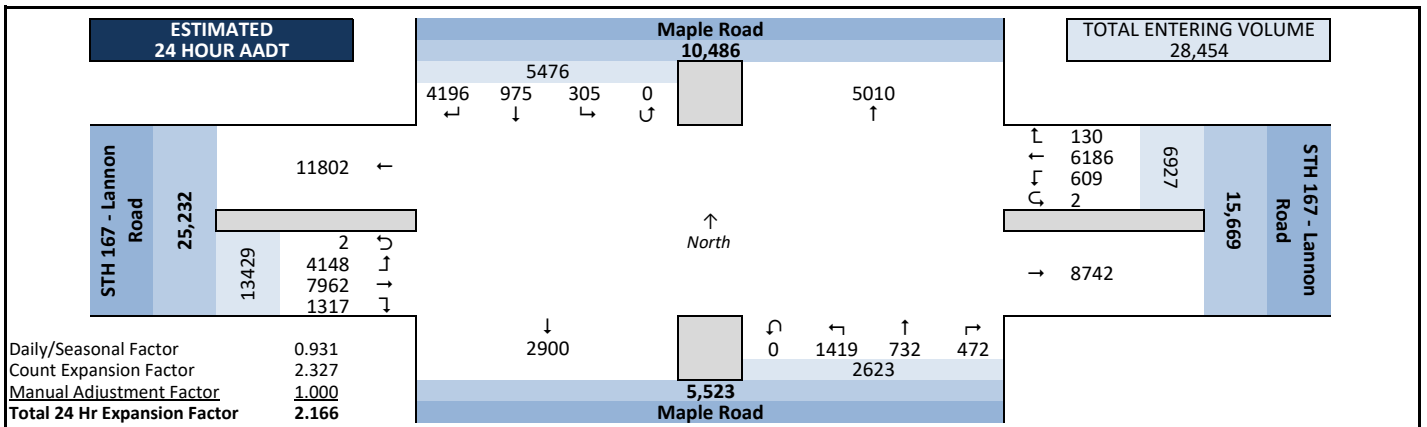
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



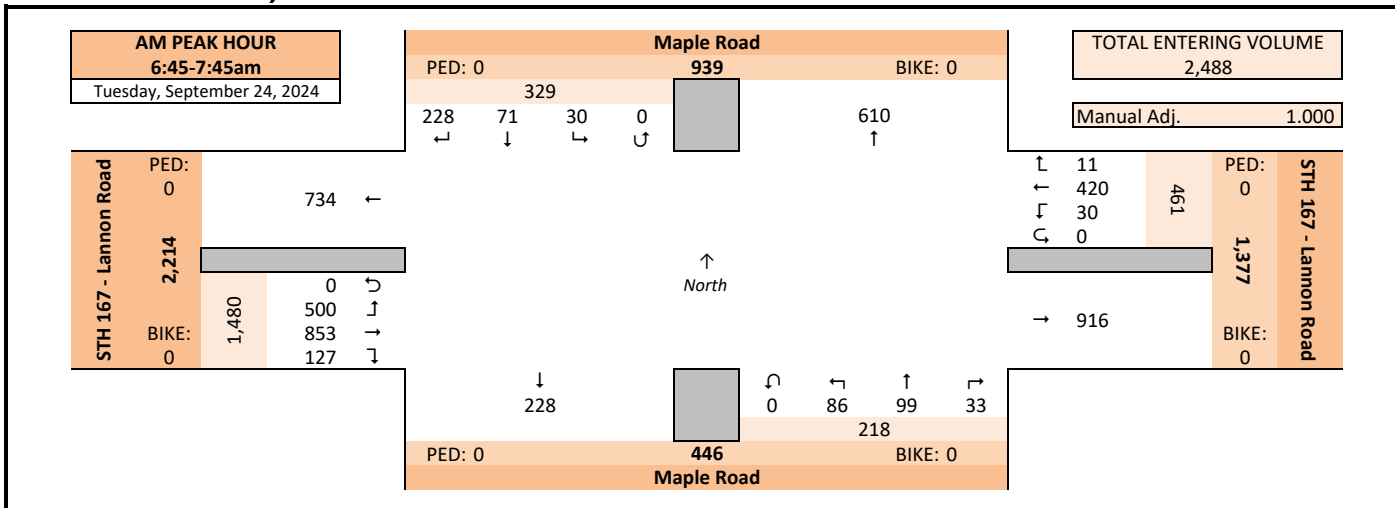
Estimated 24 Hour AADT



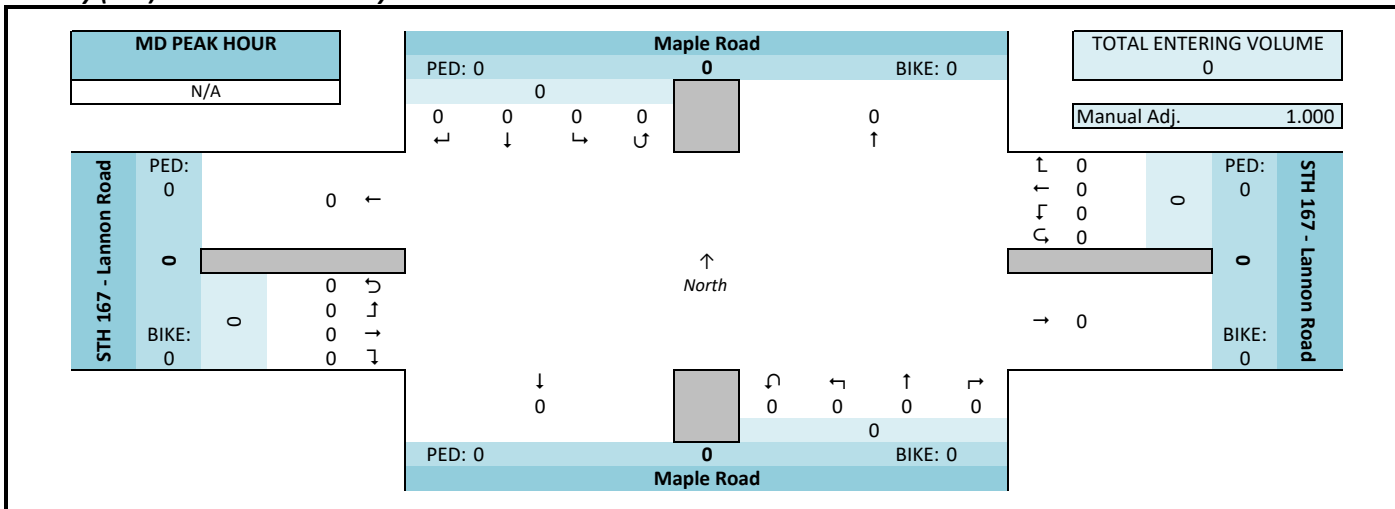
Peak Hour Volume Graphical Summary

STH 167 - Lannon Road & Maple Road

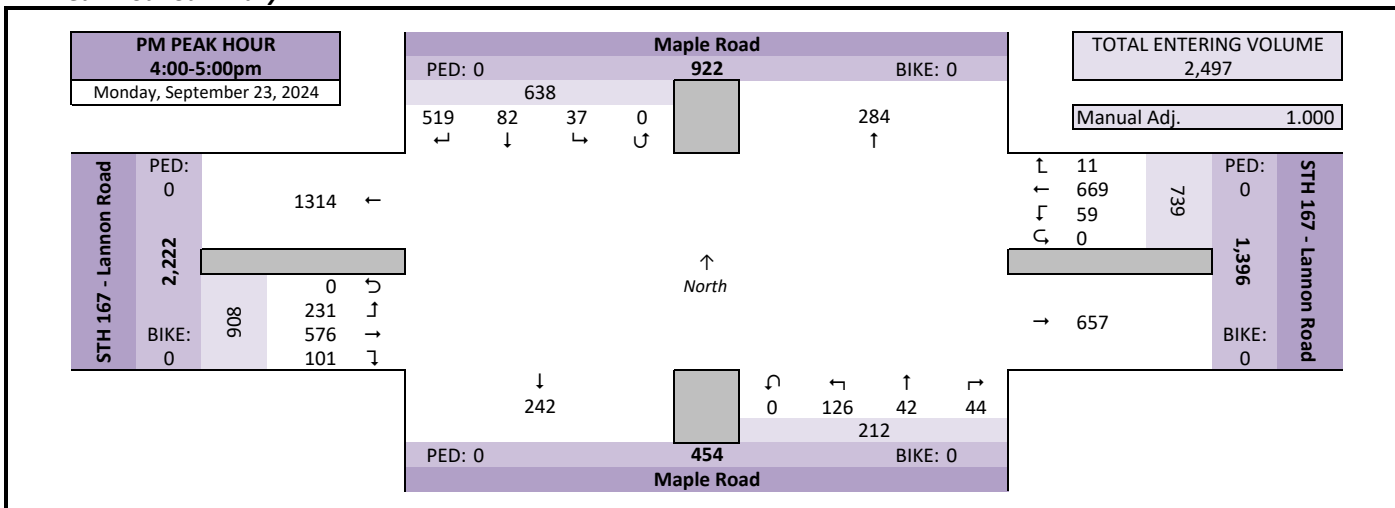
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

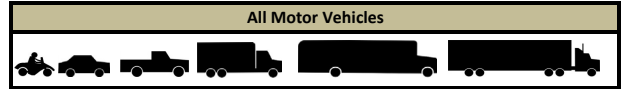


Intersection Traffic Volume Report

Peak Hour Volume Summary

STH 167 - Lannon Road & Maple Road

Count Basics				Page 3 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, September 24, 2024		↕					↖					↗					↘					
		From North					From East					From South					From West					
		Maple Road					STH 167 - Lannon Road					Maple Road					STH 167 - Lannon Road					
AM Peak Hour	AM Peak Hour	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	Start Time																					
	6:45 AM	32	9	3	0	44	3	70	4	0	77	9	56	13	0	78	16	163	212	0	391	590
	7:00 AM	97	29	8	0	134	3	119	8	0	130	10	12	18	0	40	37	211	86	0	334	638
	7:15 AM	48	16	10	0	74	3	114	11	0	128	10	13	29	0	52	35	229	86	0	350	604
	7:30 AM	51	17	9	0	77	2	117	7	0	126	4	18	26	0	48	39	250	116	0	405	656
	Peak Hour Volume	228	71	30	0	329	11	420	30	0	461	33	99	86	0	218	127	853	500	0	1480	2488
	Rounded Hourly Volume	230	70	30	0	330	10	420	30	0	460	35	100	85	0	220	125	855	500	0	1480	2490
	% Single Unit Trucks	6.6	8.5	6.7	0.0	7.0	18.2	5.5	13.3	0.0	6.3	6.1	4.0	8.1	0.0	6.0	2.4	3.6	2.0	0.0	3.0	4.4
	% Heavy Trucks	4.4	0.0	10.0	0.0	4.0	9.1	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	2.9	2.6	0.0	2.6	2.4
% Trucks (Total)	11.0	8.5	16.7	0.0	10.9	27.3	7.1	13.3	0.0	8.0	6.1	4.0	8.1	0.0	6.0	2.4	6.6	4.6	0.0	5.5	6.8	
Peak Hour Factor (PHF)	0.59	0.61	0.75	0.00	0.61	0.92	0.88	0.68	0.00	0.89	0.82	0.44	0.74	0.00	0.70	0.81	0.85	0.59	0.00	0.91	0.95	

N/A		From North					From East					From South					From West					
Midday (MD) Peak Hour	MD Peak Hour	Maple Road					STH 167 - Lannon Road					Maple Road					STH 167 - Lannon Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Monday, September 23, 2024		↓					←					↑					→					
		From North					From East					From South					From West					
PM Peak Hour	PM Peak Hour	Maple Road					STH 167 - Lannon Road					Maple Road					STH 167 - Lannon Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:00 PM	136	18	5	0	159	2	158	15	0	175	11	12	35	0	58	30	136	73	0	239	631
	4:15 PM	107	14	8	0	129	4	155	15	0	174	11	9	24	0	44	18	147	58	0	223	570
	4:30 PM	176	25	10	0	211	0	189	13	0	202	12	11	33	0	56	34	128	46	0	208	677
	4:45 PM	100	25	14	0	139	5	167	16	0	188	10	10	34	0	54	19	165	54	0	238	619
	Peak Hour Volume	519	82	37	0	638	11	669	59	0	739	44	42	126	0	212	101	576	231	0	908	2497
	Rounded Hourly Volume	520	80	35	0	635	10	670	60	0	740	45	40	125	0	210	100	575	230	0	905	2490
	% Single Unit Trucks	1.9	1.2	0.0	0.0	1.7	0.0	2.7	3.4	0.0	2.7	0.0	2.4	2.4	0.0	1.9	2.0	3.1	7.8	0.0	4.2	2.9
	% Heavy Trucks	1.9	0.0	2.7	0.0	1.7	0.0	0.6	0.0	0.0	0.5	2.3	0.0	0.0	0.0	0.5	0.0	1.9	3.5	0.0	2.1	1.4
	% Trucks (Total)	3.9	1.2	2.7	0.0	3.4	0.0	3.3	3.4	0.0	3.2	2.3	2.4	2.4	0.0	2.4	2.0	5.0	11.3	0.0	6.3	4.3
Peak Hour Factor (PHF)	0.74	0.82	0.66	0.00	0.76	0.55	0.88	0.92	0.00	0.91	0.92	0.87	0.90	0.00	0.91	0.74	0.87	0.79	0.00	0.95	0.92	

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		Maple Road			STH 167 - Lannon Road			Maple Road			STH 167 - Lannon Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

STH 167 - Lannon Road & Maple Road

Count Basics			Page 5 of 13	
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	

All Motor Vehicles					
					

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	Maple Road					STH 167 - Lannon Road					Maple Road					STH 167 - Lannon Road								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	38	1	1	0	40	0	53	4	0	57	4	14	12	0	30	17	44	49	0	110	237	1634	0.69
	6:15 AM	37	3	0	0	40	1	61	10	0	72	4	14	17	0	35	23	75	84	0	182	329	2035	0.80
	6:30 AM	42	14	0	0	56	0	72	4	1	77	6	28	19	0	53	11	118	163	0	292	478	2310	0.91
	6:45 AM	32	9	3	0	44	3	70	4	0	77	9	56	13	0	78	16	163	212	0	391	590	2488	0.95
	7:00 AM	97	29	8	0	134	3	119	8	0	130	10	12	18	0	40	37	211	86	0	334	638	2568	0.96
	7:15 AM	48	16	10	0	74	3	114	11	0	128	10	13	29	0	52	35	229	86	0	350	604	2537	0.95
	7:30 AM	51	17	9	0	77	2	117	7	0	126	4	18	26	0	48	39	250	116	0	405	656	2399	0.90
	7:45 AM	42	41	13	0	96	2	81	7	0	90	9	19	24	0	52	35	279	118	0	432	670	2209	0.82
	8:00 AM	41	29	3	0	73	2	92	10	0	104	14	11	24	0	49	25	238	118	0	381	607	1950	0.80
	8:15 AM	47	14	6	0	67	1	112	10	0	123	6	12	19	0	37	18	144	77	0	239	466		
	8:30 AM	70	15	5	0	90	2	84	16	0	102	7	8	32	0	47	20	135	72	0	227	466		
	8:45 AM	32	11	8	0	51	4	74	5	0	83	6	10	24	0	40	24	154	59	0	237	411		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	3:00 PM	160	22	5	0	187	3	177	19	0	199	6	14	44	0	64	32	131	74	0	237	687	2422	0.88
	3:15 PM	89	21	7	0	117	2	136	20	0	158	14	10	39	0	63	19	141	64	0	224	562	2366	0.94
	3:30 PM	176	24	5	0	205	2	133	14	0	149	10	5	36	0	51	21	117	46	1	185	590	2374	0.94
	3:45 PM	98	22	3	0	123	7	112	18	0	137	12	8	42	0	62	30	168	63	0	261	583	2461	0.91
	4:00 PM	136	18	5	0	159	2	158	15	0	175	11	12	35	0	58	30	136	73	0	239	631	2497	0.92
	4:15 PM	107	14	8	0	129	4	155	15	0	174	11	9	24	0	44	18	147	58	0	223	570	2518	0.93
	4:30 PM	176	25	10	0	211	0	189	13	0	202	12	11	33	0	56	34	128	46	0	208	677	2495	0.92
	4:45 PM	100	25	14	0	139	5	167	16	0	188	10	10	34	0	54	19	165	54	0	238	619	2305	0.88
	5:00 PM	122	25	5	0	152	3	178	17	0	198	15	12	25	0	52	23	163	64	0	250	652	2066	0.79
	5:15 PM	85	27	5	0	117	6	147	14	0	167	11	9	27	0	47	26	140	50	0	216	547		
	5:30 PM	67	12	1	0	80	2	153	17	0	172	7	15	23	0	45	35	107	48	0	190	487		
	5:45 PM	44	16	7	0	67	1	102	7	0	110	10	8	36	0	54	21	93	35	0	149	380		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	1937	450	141	0	2528	60	2856	281	1	3198	218	338	655	0	1211	608	3676	1915	1	6200	13137			

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total	PHF
	Maple Road					STH 167 - Lannon Road					Maple Road					STH 167 - Lannon Road					Hourly	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Volume	
AM 6:45 AM	228	71	30	0	329	11	420	30	0	461	33	99	86	0	218	127	853	500	0	1480	2488	0.95
PM 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 4:00 PM	519	82	37	0	638	11	669	59	0	739	44	42	126	0	212	101	576	231	0	908	2497	0.92

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

STH 167 - Lannon Road & Maple Road

Count Basics			Page 9 of 13
Start Date:	Monday, September 23, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period	Start Time	From North Maple Road					From East STH 167 - Lannon Road					From South Maple Road					From West STH 167 - Lannon Road					15-Min Totals	Hourly Sum
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	6:00 AM	8	0	0	0	8	0	3	0	0	3	0	1	1	0	2	1	4	0	0	5	18	117
	6:15 AM	4	0	0	0	4	0	3	1	0	4	0	0	1	0	1	0	7	1	0	8	17	136
	6:30 AM	12	2	0	0	14	0	3	1	0	4	0	0	2	0	2	0	7	7	0	14	34	150
	6:45 AM	7	2	0	0	9	1	9	0	0	10	1	2	1	0	4	1	17	7	0	25	48	168
	7:00 AM	6	0	2	0	8	1	9	0	0	10	1	0	2	0	3	1	11	4	0	16	37	174
	7:15 AM	5	1	2	0	8	0	2	2	0	4	0	0	1	0	1	1	13	4	0	18	31	189
	7:30 AM	7	3	1	0	11	1	10	2	0	13	0	2	3	0	5	0	15	8	0	23	52	222
	7:45 AM	10	5	1	0	16	1	11	1	0	13	1	0	6	0	7	0	9	9	0	18	54	206
	8:00 AM	11	0	1	0	12	1	9	2	0	12	4	0	1	0	5	3	13	7	0	23	52	202
	8:15 AM	14	1	2	0	17	0	10	2	0	12	2	1	5	0	8	3	17	7	0	27	64	
	8:30 AM	6	1	3	0	10	0	6	1	0	7	0	0	2	0	2	1	8	8	0	17	36	
	8:45 AM	9	0	1	0	10	1	13	0	0	14	0	0	1	0	1	4	12	9	0	25	50	
Midday Peak Period	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	11	0	0	0	11	0	9	2	0	11	1	0	3	0	4	0	8	12	0	20	46	131
	3:15 PM	5	0	1	0	6	0	4	1	0	5	1	0	1	0	2	0	10	13	0	23	36	115
	3:30 PM	6	1	1	0	8	0	4	0	0	4	1	0	1	0	2	1	2	5	0	8	22	111
	3:45 PM	4	0	0	0	4	1	8	2	0	11	0	0	1	0	1	1	6	4	0	11	27	113
	4:00 PM	8	0	0	0	8	0	5	0	0	5	1	0	1	0	2	1	7	7	0	15	30	108
	4:15 PM	5	1	0	0	6	0	5	0	0	5	0	1	1	0	2	0	11	8	0	19	32	96
	4:30 PM	4	0	0	0	4	0	7	1	0	8	0	0	1	0	1	1	4	6	0	11	24	74
	4:45 PM	3	0	1	0	4	0	5	1	0	6	0	0	0	0	0	0	7	5	0	12	22	63
	5:00 PM	2	0	0	0	2	0	8	0	0	8	0	0	0	0	0	0	4	4	0	8	18	51
	5:15 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	4	2	0	7	10	
	5:30 PM	0	0	0	0	0	0	6	0	0	6	0	1	1	0	2	2	1	2	0	5	13	
	5:45 PM	2	1	0	0	3	0	3	0	0	3	0	1	1	0	2	0	1	1	0	2	10	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		152	18	16	0	186	7	152	19	0	178	13	9	37	0	59	22	198	140	0	360	783	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period	Start Time	From North Maple Road					From East STH 167 - Lannon Road					From South Maple Road					From West STH 167 - Lannon Road					Total Hourly Volume
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	6:45 AM	25	6	5	0	36	3	30	4	0	37	2	4	7	0	13	3	56	23	0	82	168
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	20	1	1	0	22	0	22	2	0	24	1	1	3	0	5	2	29	26	0	57	108

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: Maple Road
 Minor St: Commerce Circle
 Intersection of: Maple Road & Commerce Circle

IX_ID:

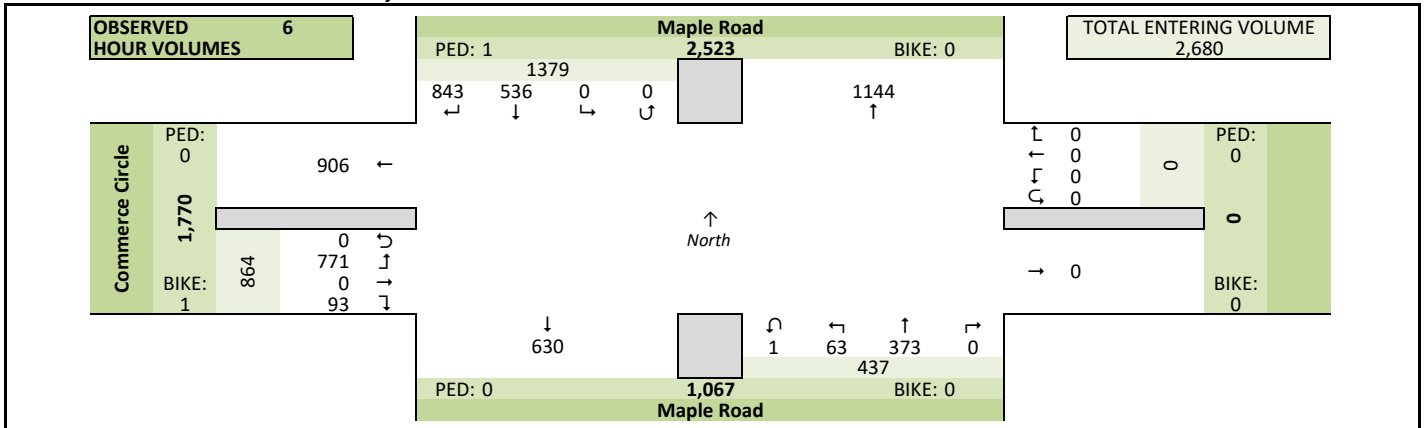
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Partial Stop Control
Roadway Names	North Direction ↑
North Leg	Maple Road
East Leg	
South Leg	Maple Road
West Leg	Commerce Circle
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

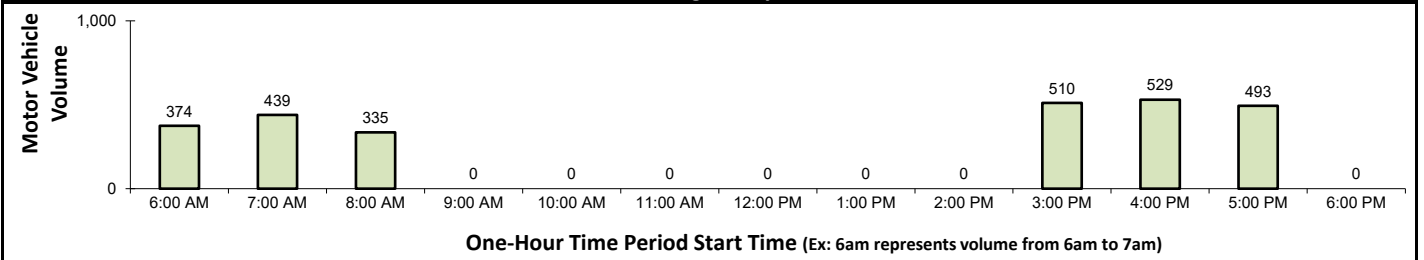
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Wednesday, September 25, 2024
Weather	Clear & Dry
AM Peak Period	Wednesday, September 25, 2024
Midday Peak Period	Wednesday, September 25, 2024
PM Peak Period	Wednesday, September 25, 2024
Calculated Peak Hours	
AM	6:30-7:30am
MD	
PM	3:30-4:30pm
Peak Hours Selected for Analysis	
AM	6:45-7:45am
MD	
PM	4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors
Count Expansion Group	(2) Urban Arterials & Collectors
Daily/Seasonal Adjustment Factor	0.870
Count Expansion Factor	2.327
Company Name	TADI, Inc.
Manual Adj.	1.000
Observers	AM Peak Period: Luann Gaertner Midday Peak Period: None PM Peak Period: Jane Fait
Comments	2021 DOT Daily & Seasonal Factors

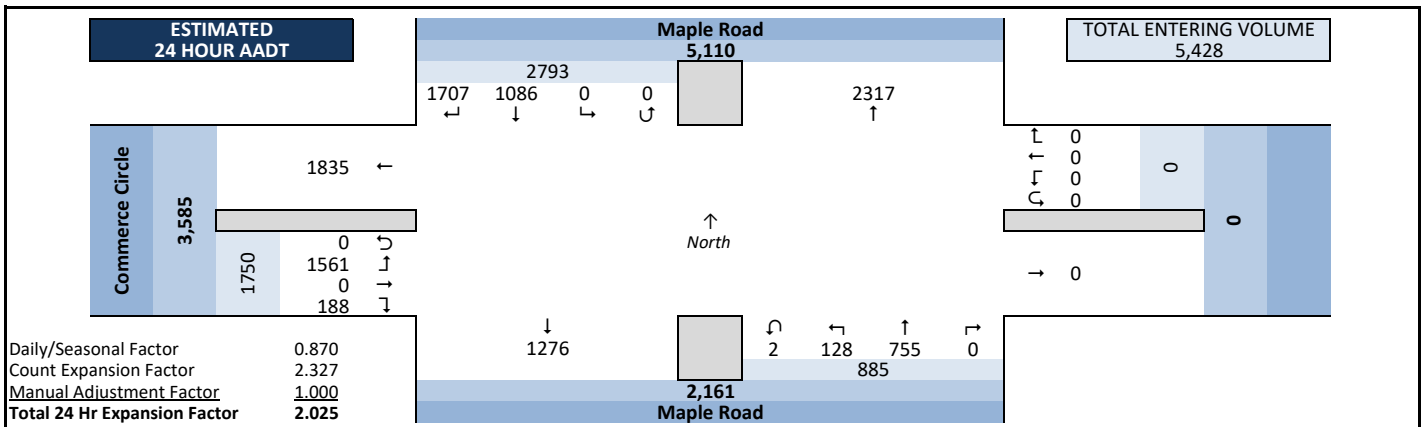
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

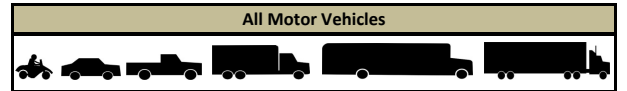


Intersection Traffic Volume Report

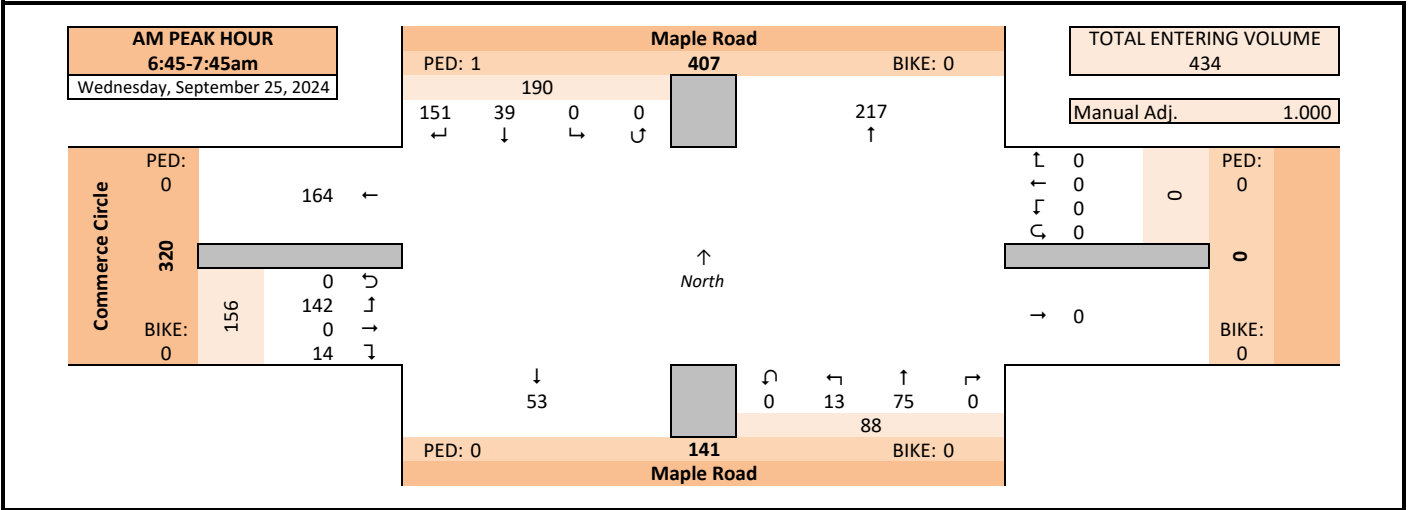
Peak Hour Volume Graphical Summary

Maple Road & Commerce Circle

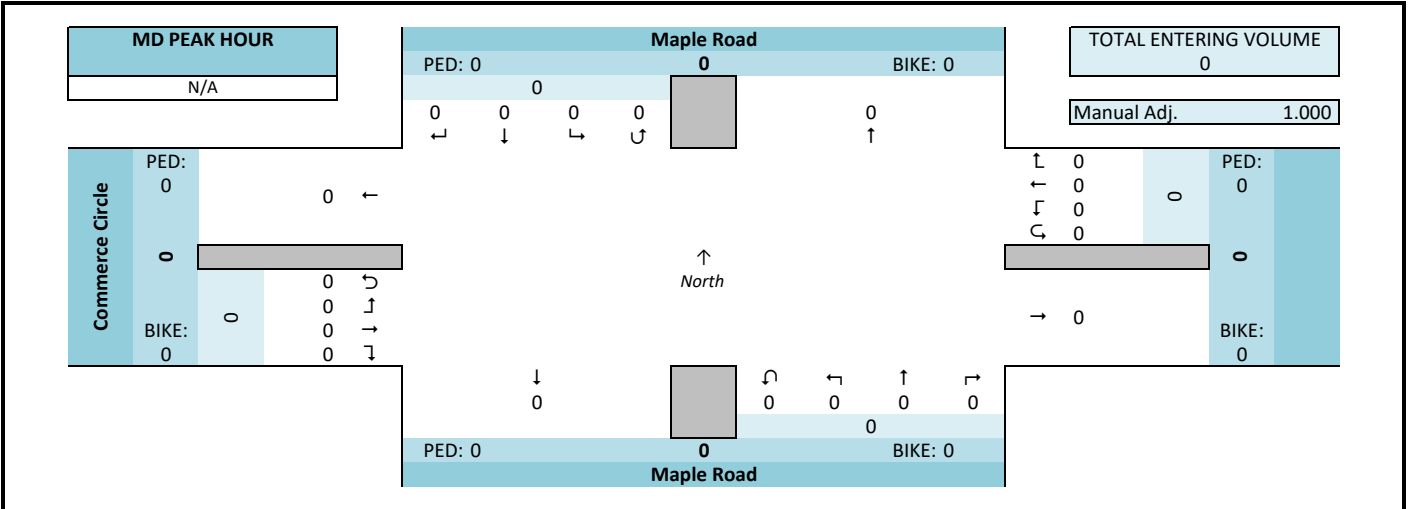
Count Basics		Page 2 of 13	
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



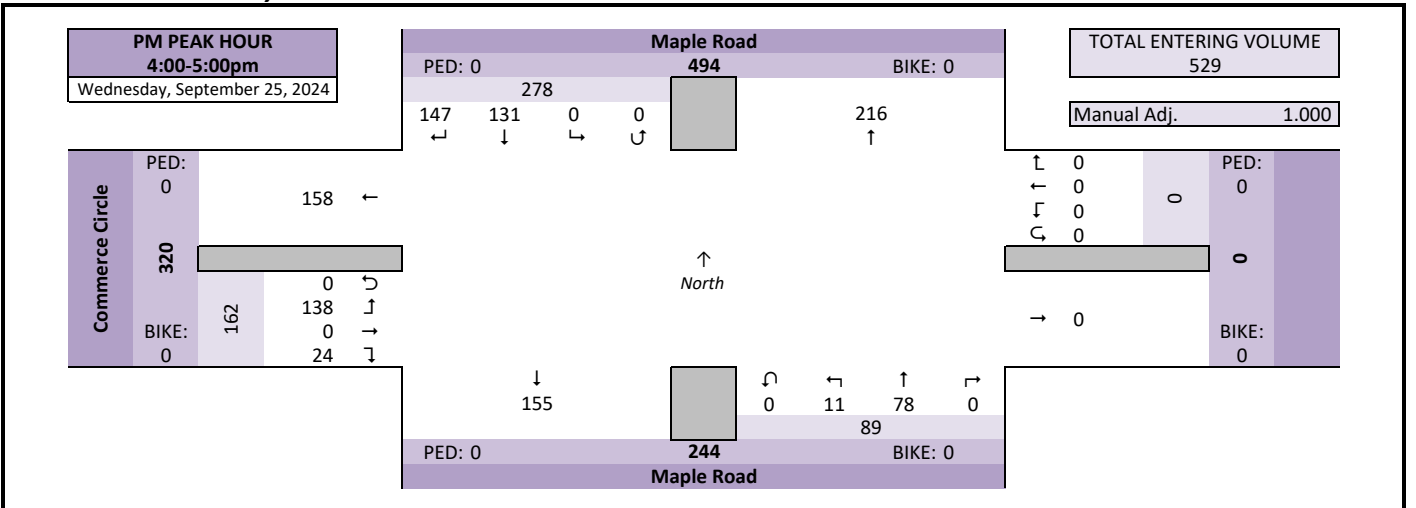
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

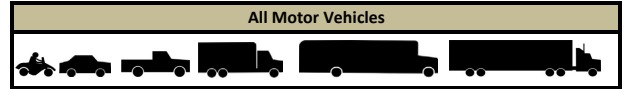


Intersection Traffic Volume Report

Peak Hour Volume Summary

Maple Road & Commerce Circle

Count Basics			Page 3 of 13
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, September 25, 2024		From North					From East					From South					From West					Totals
		Maple Road										Maple Road					Commerce Circle					
AM Peak Hour		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM Peak Hour	Start Time																					
	6:45 AM	27	5	0	0	32	0	0	0	0	0	0	37	1	0	38	4	0	27	0	31	101
	7:00 AM	38	15	0	0	53	0	0	0	0	0	0	13	3	0	16	4	0	35	0	39	108
	7:15 AM	50	13	0	0	63	0	0	0	0	0	0	10	6	0	16	4	0	41	0	45	124
	7:30 AM	36	6	0	0	42	0	0	0	0	0	0	15	3	0	18	2	0	39	0	41	101
	Peak Hour Volume	151	39	0	0	190	0	0	0	0	0	0	75	13	0	88	14	0	142	0	156	434
	Rounded Hourly Volume	150	40	0	0	190	0	0	0	0	0	0	75	15	0	90	15	0	140	0	155	435
	% Single Unit Trucks	17.9	2.6	0.0	0.0	14.7	0.0	0.0	0.0	0.0	0.0	0.0	6.7	7.7	0.0	6.8	14.3	0.0	14.8	0.0	14.7	13.1
	% Heavy Trucks	1.3	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.7
	% Trucks (Total)	19.2	2.6	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	8.0	7.7	0.0	8.0	14.3	0.0	14.8	0.0	14.7	13.8
Peak Hour Factor (PHF)	0.75	0.65	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.54	0.00	0.58	0.87	0.00	0.87	0.00	0.87	0.87	

N/A		From North					From East					From South					From West					Totals
		Maple Road										Maple Road					Commerce Circle					
MD Peak Hour		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
Midday (MD) Peak Hour	Start Time																					
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

Wednesday, September 25, 2024		↴					↶					↴					↷					
		From North					From East					From South					From West					
PM Peak Hour		Maple Road										Maple Road					Commerce Circle					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:00 PM	47	38	0	0	85	0	0	0	0	0	0	23	0	0	23	5	0	33	0	38	146
	4:15 PM	38	29	0	0	67	0	0	0	0	0	0	20	0	0	20	8	0	36	0	44	131
	4:30 PM	37	33	0	0	70	0	0	0	0	0	0	19	5	0	24	6	0	40	0	46	140
	4:45 PM	25	31	0	0	56	0	0	0	0	0	0	16	6	0	22	5	0	29	0	34	112
	Peak Hour Volume	147	131	0	0	278	0	0	0	0	0	0	78	11	0	89	24	0	138	0	162	529
	Rounded Hourly Volume	145	130	0	0	275	0	0	0	0	0	0	80	10	0	90	25	0	140	0	165	530
	% Single Unit Trucks	6.1	1.5	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	3.4	0.0	0.0	3.6	0.0	3.1	3.6
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.6	0.2
	% Trucks (Total)	6.1	1.5	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	3.4	0.0	0.0	4.3	0.0	3.7	3.8
	Peak Hour Factor (PHF)	0.78	0.86	0.00	0.00	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.46	0.00	0.93	0.75	0.00	0.86	0.00	0.88	0.91

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		Maple Road			Maple Road			Maple Road			Commerce Circle			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	1	0	1	0	0	0	0	0	0	0	0	1	
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	1	0	1	0	0	0	0	0	0	0	0	1	
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

Maple Road & Commerce Circle

Count Basics			Page 5 of 13	
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	

All Motor Vehicles					
					

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	Maple Road										Maple Road					Commerce Circle								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	30	2	0	0	32	0	0	0	0	0	0	4	0	0	4	1	0	24	0	25	61	374	0.79
	6:15 AM	42	2	0	0	44	0	0	0	0	0	0	5	3	0	8	0	0	41	0	41	93	421	0.88
	6:30 AM	44	9	0	0	53	0	0	0	0	0	0	13	6	0	19	6	0	41	0	47	119	452	0.91
	6:45 AM	27	5	0	0	32	0	0	0	0	0	0	37	1	0	38	4	0	27	0	31	101	434	0.88
	7:00 AM	38	15	0	0	53	0	0	0	0	0	0	13	3	0	16	4	0	35	0	39	108	439	0.89
	7:15 AM	50	13	0	0	63	0	0	0	0	0	0	10	6	0	16	4	0	41	0	45	124	407	0.82
	7:30 AM	36	6	0	0	42	0	0	0	0	0	0	15	3	0	18	2	0	39	0	41	101	370	0.87
	7:45 AM	38	20	0	0	58	0	0	0	0	0	0	13	0	0	13	4	0	31	0	35	106	343	0.81
	8:00 AM	20	13	0	0	33	0	0	0	0	0	0	11	4	1	16	7	0	20	0	27	76	335	0.85
	8:15 AM	36	17	0	0	53	0	0	0	0	0	0	9	1	0	10	2	0	22	0	24	87		
	8:30 AM	20	12	0	0	32	0	0	0	0	0	0	16	0	0	16	3	0	23	0	26	74		
	8:45 AM	44	14	0	0	58	0	0	0	0	0	0	9	2	0	11	5	0	24	0	29	98		
Midday Peak Period	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:00 PM	36	29	0	0	65	0	0	0	0	0	0	18	4	0	22	1	0	33	0	34	121	510	0.87	
3:15 PM	36	33	0	0	69	0	0	0	0	0	0	11	2	0	13	4	0	34	0	38	120	535	0.92	
3:30 PM	34	44	0	0	78	0	0	0	0	0	0	21	6	0	27	3	0	38	0	41	146	546	0.93	
3:45 PM	35	32	0	0	67	0	0	0	0	0	0	11	4	0	15	7	0	34	0	41	123	540	0.92	
4:00 PM	47	38	0	0	85	0	0	0	0	0	0	23	0	0	23	5	0	33	0	38	146	529	0.91	
4:15 PM	38	29	0	0	67	0	0	0	0	0	0	20	0	0	20	8	0	36	0	44	131	517	0.92	
4:30 PM	37	33	0	0	70	0	0	0	0	0	0	19	5	0	24	6	0	40	0	46	140	516	0.92	
4:45 PM	25	31	0	0	56	0	0	0	0	0	0	16	6	0	22	5	0	29	0	34	112	503	0.94	
5:00 PM	33	50	0	0	83	0	0	0	0	0	0	19	1	0	20	3	0	28	0	31	134	493	0.92	
5:15 PM	37	35	0	0	72	0	0	0	0	0	0	20	3	0	23	4	0	31	0	35	130			
5:30 PM	34	30	0	0	64	0	0	0	0	0	0	19	1	0	20	4	0	39	0	43	127			
5:45 PM	26	24	0	0	50	0	0	0	0	0	0	21	2	0	23	1	0	28	0	29	102			
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals		843	536	0	0	1379	0	0	0	0	0	0	373	63	1	437	93	0	771	0	864	2680		

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume	PHF
	Maple Road					Maple Road					Commerce Circle											
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 6:45 AM	151	39	0	0	190	0	0	0	0	0	0	75	13	0	88	14	0	142	0	156	434	0.88
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:00 PM	147	131	0	0	278	0	0	0	0	0	0	78	11	0	89	24	0	138	0	162	529	0.91

15-Minute Heavy Vehicle Data

Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks)

Peak Hour Heavy Vehicle Volume Summary

San Jose Water, Females, Volume Summary																					
Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	Maple Road										Maple Road					Commerce Circle					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 6:45 AM	29	1	0	0	30	0	0	0	0	0	0	6	1	0	7	2	0	21	0	23	60
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:00 PM	9	2	0	0	11	0	0	0	0	0	0	3	0	0	3	0	6	0	6	20	20

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: Commerce Circle

Minor St: KT DWs

Intersection of: Commerce Circle & KT DWs

IX_ID:

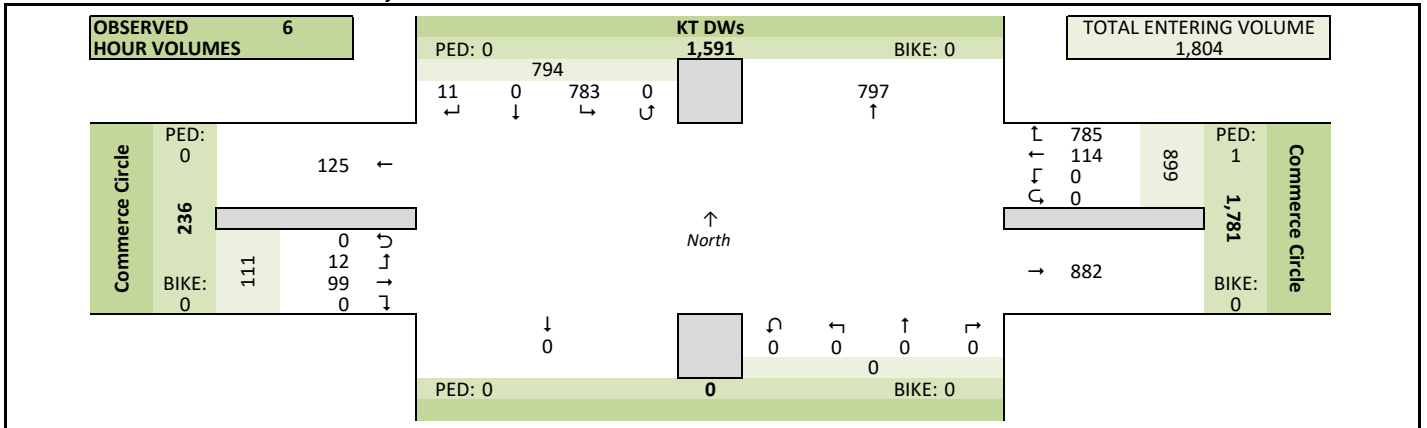
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Uncontrolled
Roadway Names	North Direction
North Leg	KT DWs
East Leg	Commerce Circle
South Leg	
West Leg	Commerce Circle
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

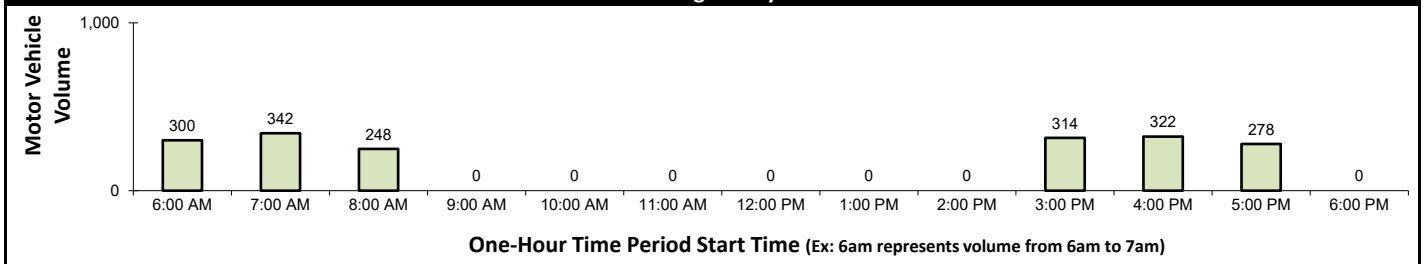
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Wednesday, September 25, 2024
Weather	Clear & Dry
AM Peak Period	Wednesday, September 25, 2024
Midday Peak Period	Wednesday, September 25, 2024
PM Peak Period	Wednesday, September 25, 2024
Calculated Peak Hours	
AM	6:30-7:30am
MD	
PM	3:45-4:45pm
Peak Hours Selected for Analysis	
AM	6:45-7:45am
MD	
PM	4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors
Count Expansion Group	(2) Urban Arterials & Collectors
Daily/Seasonal Adjustment Factor	0.870
Count Expansion Factor	2.327
Company Name	TADI, Inc.
Manual Adj.	1.000
Observers	AM Peak Period: Amy Scheuerlein Midday Peak Period: None PM Peak Period: Amy Scheuerlein
Comments	2021 DOT Daily & Seasonal Factors

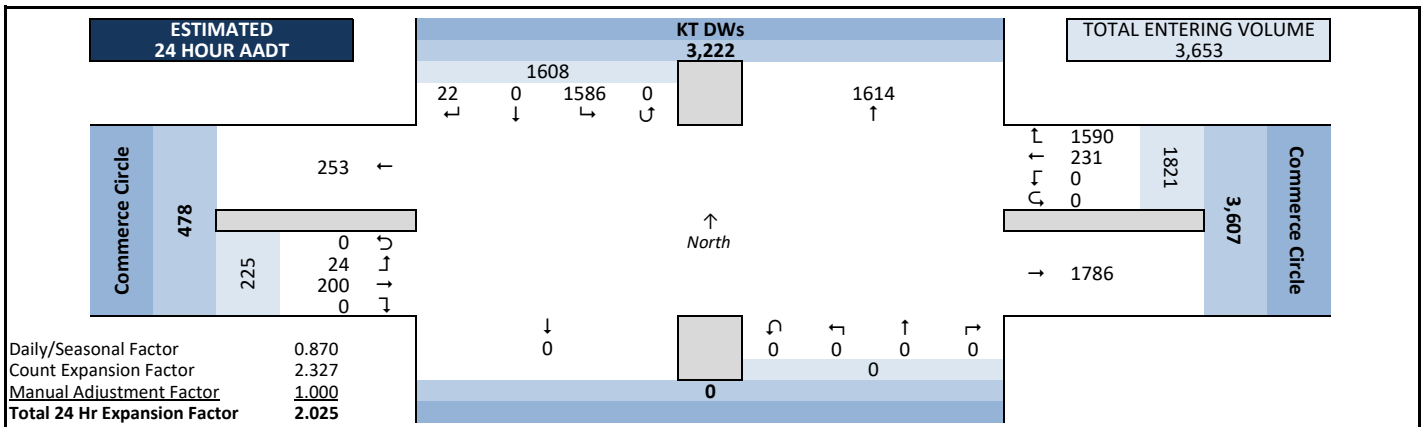
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

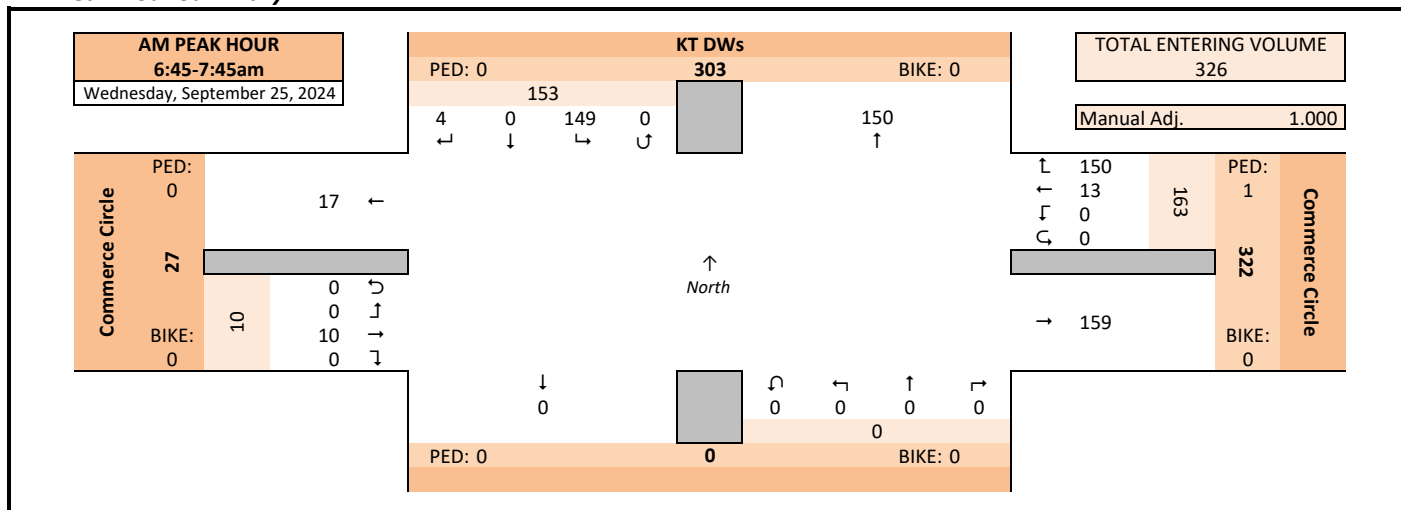


Peak Hour Volume Graphical Summary

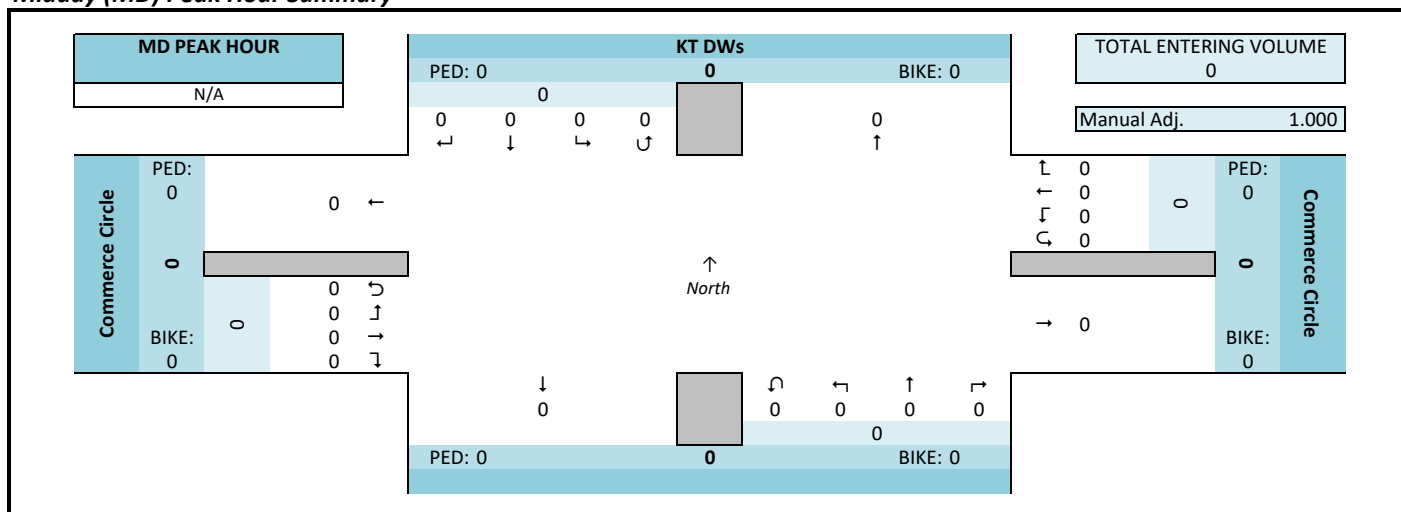
Count Basics			Page 2 of 13
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

Commerce Circle & KT DWs

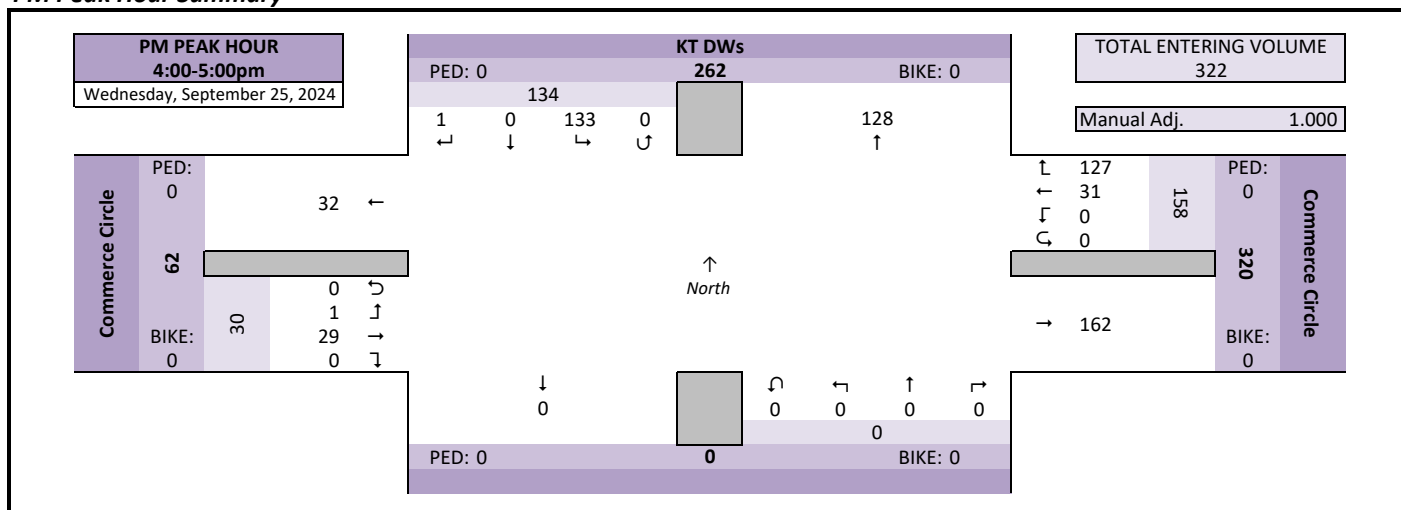
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

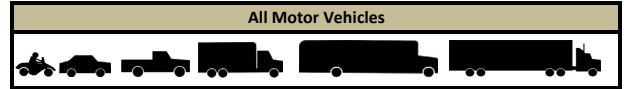


Intersection Traffic Volume Report

Peak Hour Volume Summary

Commerce Circle & KT DWs

Count Basics			Page 3 of 13
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, September 25, 2024		↴					↶					↴					↷						
		From North					From East					From South					From West						
		KT DWs					Commerce Circle					Commerce Circle					Commerce Circle						
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		Totals
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		Totals
AM Peak Hour	Start Time																						
	6:45 AM	0	0	30	0	30	25	1	0	0	26	0	0	0	0	0	0	0	1	0	0	1	57
	7:00 AM	0	0	34	0	34	37	3	0	0	40	0	0	0	0	0	0	0	4	0	0	4	78
	7:15 AM	2	0	42	0	44	51	6	0	0	57	0	0	0	0	0	0	0	3	0	0	3	104
	7:30 AM	2	0	43	0	45	37	3	0	0	40	0	0	0	0	0	0	0	2	0	0	2	87
	Peak Hour Volume	4	0	149	0	153	150	13	0	0	163	0	0	0	0	0	0	0	10	0	0	10	326
	Rounded Hourly Volume	5	0	150	0	155	150	15	0	0	165	0	0	0	0	0	0	0	10	0	0	10	330
	% Single Unit Trucks	50.0	0.0	12.8	0.0	13.7	15.3	53.8	0.0	0.0	18.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	60.0	17.5
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	% Trucks (Total)	50.0	0.0	12.8	0.0	13.7	15.3	61.5	0.0	0.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	60.0	17.8
Peak Hour Factor (PHF)	0.50	0.00	0.87	0.00	0.85	0.74	0.54	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.62	0.78	

N/A		From North					From East					From South					From West					Totals
Midday (MD) Peak Hour	MD Peak Hour	KT DWs					Commerce Circle					Commerce Circle					Commerce Circle					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

Wednesday, September 25, 2024		↓ From North					← From East					↑ From South					→ From West						
PM Peak Hour	PM Peak Hour	KT DWs					Commerce Circle					Commerce Circle					Commerce Circle						
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	
	4:00 PM	0	0	33	0	33	35	10	0	0	45	0	0	0	0	0	0	0	5	0	0	5	83
	4:15 PM	0	0	35	0	35	31	7	0	0	38	0	0	0	0	0	0	0	9	0	0	9	82
	4:30 PM	1	0	36	0	37	34	6	0	0	40	0	0	0	0	0	0	0	11	0	0	11	88
	4:45 PM	0	0	29	0	29	27	8	0	0	35	0	0	0	0	0	0	0	4	1	0	5	69
	Peak Hour Volume	1	0	133	0	134	127	31	0	0	158	0	0	0	0	0	0	0	29	1	0	30	322
	Rounded Hourly Volume	0	0	135	0	135	125	30	0	0	155	0	0	0	0	0	0	0	30	0	0	30	320
	% Single Unit Trucks	100.0	0.0	1.5	0.0	2.2	3.9	12.9	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	0.0	0.0	10.0	4.7
	% Heavy Trucks	0.0	0.0	0.8	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
% Trucks (Total)	100.0	0.0	2.3	0.0	3.0	3.9	12.9	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	0.0	0.0	10.0	5.0	
Peak Hour Factor (PHF)	0.25	0.00	0.92	0.00	0.91	0.91	0.77	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.25	0.00	0.68	0.91	

Peak Hour Pedestrian and Bicyclist Volumes

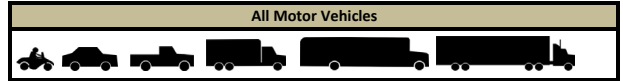
Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		KT DWs			Commerce Circle			Commerce Circle			Commerce Circle			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	1	0	1	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	1	0	1	0	0	0	0	0	0	1
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

Commerce Circle & KT DWs

Count Basics			Page 5 of 13	
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	



15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	KT DWs					Commerce Circle					Commerce Circle					Commerce Circle								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	0	0	26	0	26	29	0	0	0	29	0	0	0	0	0	0	0	0	0	0	55	300	0.72
	6:15 AM	0	0	41	0	41	43	0	0	0	43	0	0	0	0	0	0	0	0	0	0	84	323	0.78
	6:30 AM	0	0	50	0	50	51	2	0	0	53	0	0	0	0	0	0	1	0	0	1	104	343	0.82
	6:45 AM	0	0	30	0	30	25	1	0	0	26	0	0	0	0	0	0	1	0	0	1	57	326	0.78
	7:00 AM	0	0	34	0	34	37	3	0	0	40	0	0	0	0	0	0	4	0	0	4	78	342	0.82
	7:15 AM	2	0	42	0	44	51	6	0	0	57	0	0	0	0	0	0	3	0	0	3	104	320	0.77
	7:30 AM	2	0	43	0	45	37	3	0	0	40	0	0	0	0	0	0	2	0	0	2	87	279	0.80
	7:45 AM	1	0	34	0	35	35	2	0	0	37	0	0	0	0	0	0	1	0	0	1	73	243	0.83
	8:00 AM	0	0	29	0	29	22	3	0	0	25	0	0	0	0	0	0	1	1	0	2	56	248	0.79
	8:15 AM	0	0	27	0	27	34	1	0	0	35	0	0	0	0	0	0	0	1	0	1	63		
	8:30 AM	0	0	29	0	29	18	2	0	0	20	0	0	0	0	0	0	1	1	0	2	51		
	8:45 AM	0	0	26	0	26	39	7	0	0	46	0	0	0	0	0	0	3	3	0	6	78		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	3:00 PM	1	0	26	0	27	30	8	0	0	38	0	0	0	0	0	0	8	1	0	9	74	314	0.96
	3:15 PM	2	0	29	0	31	28	11	0	0	39	0	0	0	0	0	0	9	0	0	9	79	323	0.97
	3:30 PM	0	0	28	0	28	31	8	0	0	39	0	0	0	0	0	0	12	0	0	12	79	326	0.98
	3:45 PM	0	0	35	0	35	29	11	0	0	40	0	0	0	0	0	0	6	1	0	7	82	335	0.95
	4:00 PM	0	0	33	0	33	35	10	0	0	45	0	0	0	0	0	0	5	0	0	5	83	322	0.91
	4:15 PM	0	0	35	0	35	31	7	0	0	38	0	0	0	0	0	0	9	0	0	9	82	302	0.86
	4:30 PM	1	0	36	0	37	34	6	0	0	40	0	0	0	0	0	0	11	0	0	11	88	296	0.84
	4:45 PM	0	0	29	0	29	27	8	0	0	35	0	0	0	0	0	0	4	1	0	5	69	289	0.89
	5:00 PM	0	0	27	0	27	28	5	0	0	33	0	0	0	0	0	0	3	0	0	3	63	278	0.86
	5:15 PM	0	0	31	0	31	34	6	0	0	40	0	0	0	0	0	0	4	1	0	5	76		
	5:30 PM	0	0	39	0	39	31	3	0	0	34	0	0	0	0	0	0	6	2	0	8	81		
	5:45 PM	2	0	24	0	26	26	1	0	0	27	0	0	0	0	0	0	5	0	0	5	58		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	11	0	783	0	794	785	114	0	0	899	0	0	0	0	0	0	99	12	0	111	1804			

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume	PHF
	KT DWs					Commerce Circle					Commerce Circle					Commerce Circle						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 6:45 AM	4	0	149	0	153	150	13	0	0	163	0	0	0	0	0	0	10	0	0	10	326	0.78
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM 4:00 PM	1	0	133	0	134	127	31	0	0	158	0	0	0	0	0	0	29	1	0	30	322	0.91

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

Commerce Circle & KT DWs

Count Basics			Page 9 of 13
Start Date:	Wednesday, September 25, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	KT DWs					Commerce Circle					Commerce Circle					Commerce Circle							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	16
	6:15 AM	0	0	3	0	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	28
	6:30 AM	0	0	2	0	2	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	6	45
	6:45 AM	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4	58
	7:00 AM	0	0	5	0	5	5	0	0	0	5	0	0	0	0	0	0	3	0	0	3	13	60
	7:15 AM	1	0	5	0	6	10	4	0	0	14	0	0	0	0	0	0	2	0	0	2	22	54
	7:30 AM	1	0	8	0	9	6	3	0	0	9	0	0	0	0	0	0	1	0	0	1	19	34
	7:45 AM	0	0	3	0	3	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	6	22
	8:00 AM	0	0	5	0	5	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7	24
	8:15 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	
	8:30 AM	0	0	4	0	4	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	7	
	8:45 AM	0	0	1	0	1	4	2	0	0	6	0	0	0	0	0	0	1	0	0	1	8	
Midday Peak Period	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	2	0	2	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	6	11
	3:15 PM	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	7
	3:30 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	6
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
	4:00 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	16
	4:15 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	17
	4:30 PM	1	0	0	0	1	1	3	0	0	4	0	0	0	0	0	0	1	0	0	1	6	17
	4:45 PM	0	0	2	0	2	2	0	0	0	2	0	0	0	0	0	0	2	0	0	2	6	13
	5:00 PM	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	9
	5:15 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
	5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	
	5:45 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	4	0	48	0	52	54	17	0	0	71	0	0	0	0	0	0	0	13	0	0	13	136	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	KT DWs					Commerce Circle					Commerce Circle					Commerce Circle					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 6:45 AM	2	0	19	0	21	23	8	0	0	31	0	0	0	0	0	0	6	0	0	6	58
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:00 PM	1	0	3	0	4	5	4	0	0	9	0	0	0	0	0	0	3	0	0	3	16

Wisconsin Department of Transportation

Hourly Traffic Volume Report

2023-Aug-07 to 2023-Aug-09

Coverage Count

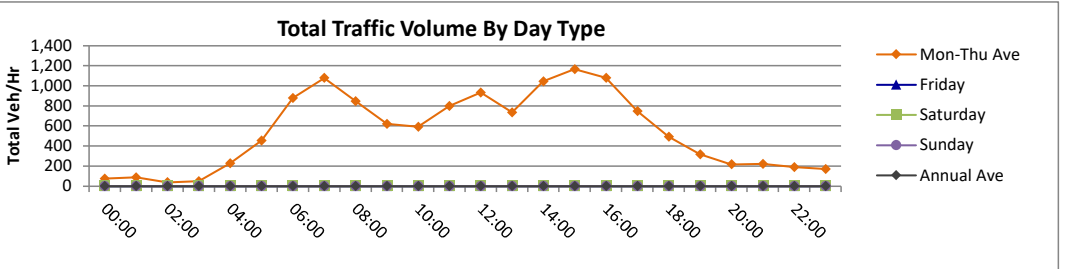
50 Hour Count - Averages and Graphs Do Not Include All Days

Location	MAPLE RD SOUTH OF W MEQUON RD GERMANTOWN										Segment ID	
Site #	660448										Seasonal Factor Group	2
Region	SE										Daily Factor Group	2
County	WASHINGTON										Axle Factor Group	6
Funct. Class	U Minor Arterial										Growth Factor Group	

Hour	Sun			Mon 2023-08-07			Tues 2023-08-08			Wed 2023-08-09			Thur			Fri			Sat		
	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total
00:00-00:59			-			-	17	48	65	22	60	82			-			-			-
01:00-01:59			-			-	15	67	82	28	64	92			-			-			-
02:00-02:59			-			-	12	18	30	15	30	45			-			-			-
03:00-03:59			-			-	29	27	56	24	17	41			-			-			-
04:00-04:59			-			-	180	57	237	175	43	218			-			-			-
05:00-05:59			-			-	342	119	461	335	114	449			-			-			-
06:00-06:59			-			-	654	237	891	611	254	865			-			-			-
07:00-07:59			-			-	594	521	1,115	528	512	1,040			-			-			-
08:00-08:59			-	438	388	826	460	382	842	510	360	870			-			-			-
09:00-09:59			-	287	321	608	286	336	622	286	339	625			-			-			-
10:00-10:59			-	270	346	616	230	338	568			-			-			-			-
11:00-11:59			-	314	435	749	398	450	848			-			-			-			-
12:00-12:59			-	433	457	890	462	513	975			-			-			-			-
13:00-13:59			-	363	395	758	349	365	714			-			-			-			-
14:00-14:59			-	428	599	1,027	440	623	1,063			-			-			-			-
15:00-15:59			-	348	839	1,187	346	800	1,146			-			-			-			-
16:00-16:59			-	294	752	1,046	325	786	1,111			-			-			-			-
17:00-17:59			-	278	459	737	313	447	760			-			-			-			-
18:00-18:59			-	250	239	489	231	263	494			-			-			-			-
19:00-19:59			-	121	186	307	120	207	327			-			-			-			-
20:00-20:59			-	120	94	214	122	96	218			-			-			-			-
21:00-21:59			-	76	139	215	78	148	226			-			-			-			-
22:00-22:59			-	126	59	185	136	55	191			-			-			-			-
23:00-23:59			-	38	131	169	42	128	170			-			-			-			-
Daily Total	-	-	-	-	-	-	6,181	7,031	13,212	-	-	-	-	-	-	-	-	-	-	-	-

AM Peak	-	-	-	-	-	-	654	521	1,115	611	512	1,040	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	06:00	07:00	07:00	06:00	07:00	07:00	-	-	-	-	-	-	-	-	-
MD Peak	-	-	-	-	433	599	1,027	462	623	1,063	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	12:00	14:00	14:00	12:00	14:00	14:00	-	-	-	-	-	-	-	-	-	-	-
PM Peak	-	-	-	-	348	839	1,187	346	800	1,146	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	15:00	15:00	15:00	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-
Daily Peak	-	-	-	-	-	-	654	800	1,146	-	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	06:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	10.6%	11.4%	8.7%	-	-	-	-	-	-	-	-	-	-	-	-
Daily Ave	-	-	-	-	-	-	258	293	551	-	-	-	-	-	-	-	-	-	-	-	-

Seasonal Fctr																					
Daily Fctr																					
Axle Factor																					
Pulse Fctr																					
Overall Fctr	0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000	



Hour	Mon-Thurs Average			Mon-Fri Average			7 Day Average			Estimated Annual Ave		
	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total
00:00-00:59	20	54	74	-	-	-	-	-	-	0	0	0
01:00-01:59	22	66	87	-	-	-	-	-	-	0	0	0
02:00-02:59	14	24	38	-	-	-	-	-	-	0	0	0
03:00-03:59	27	22	49	-	-	-	-	-	-	0	0	0
04:00-04:59	178	50	228	-	-	-	-	-	-	0	0	0
05:00-05:59	339	117	455	-	-	-	-	-	-	0	0	0
06:00-06:59	633	246	878	-	-	-	-	-	-	0	0	0
07:00-07:59	561	517	1,078	-	-	-	-	-	-	0	0	0
08:00-08:59	469	377	846	-	-	-	-	-	-	0	0	0
09:00-09:59	286	332	618	-	-	-	-	-	-	0	0	0
10:00-10:59	250	342	592	-	-	-	-	-	-	0	0	0
11:00-11:59	356	443	799	-	-	-	-	-	-	0	0	0
12:00-12:59	448	485	933	-	-	-	-	-	-	0	0	0
13:00-13:59	356	380	736	-	-	-	-	-	-	0	0	0
14:00-14:59	434	611	1,045	-	-	-	-	-	-	0	0	0
15:00-15:59	347	820	1,167	-	-	-	-	-	-	0	0	0
16:00-16:59	310	769	1,079	-	-	-	-	-	-	0	0	0
17:00-17:59	296	453	749	-	-	-	-	-	-	0	0	0
18:00-18:59	241	251	492	-	-	-	-	-	-	0	0	0
19:00-19:59	121	197	317	-	-	-	-	-	-	0	0	0
20:00-20:59	121	95	216	-	-	-	-	-	-	0	0	0
21:00-21:59	77	144	221	-	-	-	-	-	-	0	0	0
22:00-22:59	131	57	188	-	-	-	-	-	-	0	0	0
23:00-23:59	40	130	170	-	-	-	-	-	-	0	0	0
Daily Total	6,072	6,977	13,049	-	-	-	-	-	-	0	0	0

AM Peak	633	517	1,078	-	-	-	-	-	-	0	0	0
Hour	06:00	07:00	07:00	-	-	-	-	-	-	00:00	00:00	00:00
MD Peak	448	611	1,045	-	-	-	-	-	-	0	0	0
Hour	12:00	14:00	14:00	-	-	-	-	-	-	10:00	10:00	10:00
PM Peak	347	820	1,167	-	-	-	-	-	-	0	0	0
Hour	15:00	15:00	15:00	-	-	-	-	-	-	15:00	15:00	15:00
Daily Peak	633	820	1,167	-	-	-	-	-	-	0	0	0
Hour	06:00	15:00	15:00	-	-	-	-	-	-	00:00	00:00	00:00
% of Total	10.4%	11.7%	8.9%	-	-	-	-	-	-	#DIV/0!	#DIV/0!	#####
Daily Ave	253	291	544	-	-	-	-	-	-	0	0	0

AM	579	449
PM	310	769

Wisconsin Department of Transportation

Hourly Traffic Volume Report

2023-Jul-24 to 2023-Jul-26

Coverage Count

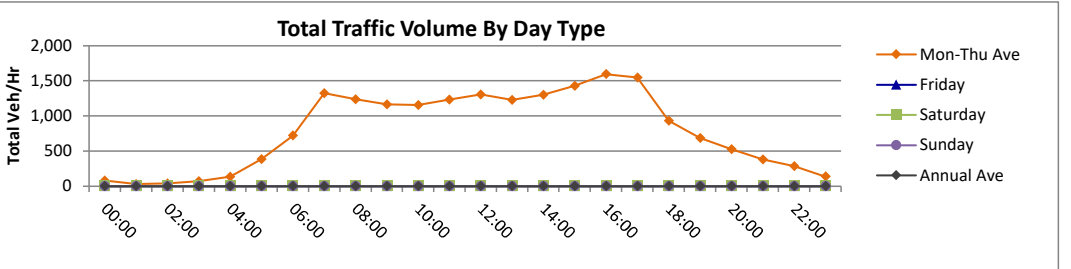
49 Hour Count - Averages and Graphs Do Not Include All Days

Location	STH 167 EAST OF MAPLE RD GERMANTOWN	Segment ID	3712
Site #	660449	Seasonal Factor Group	2
Region	SE	Daily Factor Group	2
County	WASHINGTON	Axle Factor Group	5
Funct. Class	U Principal Arterial - Other	Growth Factor Group	1

Hour	Sun			Mon 2023-07-24			Tues 2023-07-25			Wed 2023-07-26			Thur			Fri			Sat		
	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total
00:00-00:59			-			-	47	30	77	43	34	77			-			-			-
01:00-01:59			-			-	12	14	26	20	15	35			-			-			-
02:00-02:59			-			-	25	6	31	25	18	43			-			-			-
03:00-03:59			-			-	45	32	77	30	36	66			-			-			-
04:00-04:59			-			-	72	61	133	70	66	136			-			-			-
05:00-05:59			-			-	210	160	370	235	165	400			-			-			-
06:00-06:59			-			-	425	298	723	394	321	715			-			-			-
07:00-07:59			-			-	774	554	1,328	769	552	1,321			-			-			-
08:00-08:59			-			-	720	518	1,238	743	494	1,237			-			-			-
09:00-09:59			-	634	581	1,215	578	574	1,152	589	536	1,125			-			-			-
10:00-10:59			-	570	579	1,149	546	612	1,158			-			-			-			-
11:00-11:59			-	545	676	1,221	586	653	1,239			-			-			-			-
12:00-12:59			-	653	656	1,309	614	682	1,296			-			-			-			-
13:00-13:59			-	579	631	1,210	593	647	1,240			-			-			-			-
14:00-14:59			-	638	662	1,300	583	720	1,303			-			-			-			-
15:00-15:59			-	626	780	1,406	664	781	1,445			-			-			-			-
16:00-16:59			-	717	850	1,567	721	901	1,622			-			-			-			-
17:00-17:59			-	673	831	1,504	691	898	1,589			-			-			-			-
18:00-18:59			-	439	497	936	433	491	924			-			-			-			-
19:00-19:59			-	328	335	663	346	362	708			-			-			-			-
20:00-20:59			-	277	225	502	278	270	548			-			-			-			-
21:00-21:59			-	200	144	344	245	169	414			-			-			-			-
22:00-22:59			-	170	111	281	172	112	284			-			-			-			-
23:00-23:59			-	60	52	112	82	77	159			-			-			-			-
Daily Total	-	-	-	-	-	-	9,462	9,622	19,084	-	-	-	-	-	-	-	-	-	-	-	-

AM Peak	-	-	-	-	-	-	774	574	1,328	769	552	1,321	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	07:00	09:00	07:00	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-
MD Peak	-	-	-	-	653	676	1,309	614	720	1,303	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	12:00	11:00	12:00	12:00	14:00	14:00	-	-	-	-	-	-	-	-	-	-	-
PM Peak	-	-	-	-	717	850	1,567	721	901	1,622	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	16:00	16:00	16:00	16:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-
Daily Peak	-	-	-	-	-	-	774	901	1,622	-	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	07:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	8.2%	9.4%	8.5%	-	-	-	-	-	-	-	-	-	-	-	-
Daily Ave	-	-	-	-	-	-	394	401	795	-	-	-	-	-	-	-	-	-	-	-	-

Seasonal Fctr																					
Daily Fctr																					
Axle Factor																					
Pulse Fctr																					
Overall Fctr	0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000	



Hour	Mon-Thurs Average			Mon-Fri Average			7 Day Average			Estimated Annual Ave		
	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total
00:00-00:59	45	32	77	-	-	-	-	-	-	0	0	0
01:00-01:59	16	15	31	-	-	-	-	-	-	0	0	0
02:00-02:59	25	12	37	-	-	-	-	-	-	0	0	0
03:00-03:59	38	34	72	-	-	-	-	-	-	0	0	0
04:00-04:59	71	64	135	-	-	-	-	-	-	0	0	0
05:00-05:59	223	163	385	-	-	-	-	-	-	0	0	0
06:00-06:59	410	310	719	-	-	-	-	-	-	0	0	0
07:00-07:59	772	553	1,325	-	-	-	-	-	-	0	0	0
08:00-08:59	732	506	1,238	-	-	-	-	-	-	0	0	0
09:00-09:59	600	564	1,164	-	-	-	-	-	-	0	0	0
10:00-10:59	558	596	1,154	-	-	-	-	-	-	0	0	0
11:00-11:59	566	665	1,230	-	-	-	-	-	-	0	0	0
12:00-12:59	634	669	1,303	-	-	-	-	-	-	0	0	0
13:00-13:59	586	639	1,225	-	-	-	-	-	-	0	0	0
14:00-14:59	611	691	1,302	-	-	-	-	-	-	0	0	0
15:00-15:59	645	781	1,426	-	-	-	-	-	-	0	0	0
16:00-16:59	719	876	1,595	-	-	-	-	-	-	0	0	0
17:00-17:59	682	865	1,547	-	-	-	-	-	-	0	0	0
18:00-18:59	436	494	930	-	-	-	-	-	-	0	0	0
19:00-19:59	337	349	686	-	-	-	-	-	-	0	0	0
20:00-20:59	278	248	525	-	-	-	-	-	-	0	0	0
21:00-21:59	223	157	379	-	-	-	-	-	-	0	0	0
22:00-22:59	171	112	283	-	-	-	-	-	-	0	0	0
23:00-23:59	71	65	136	-	-	-	-	-	-	0	0	0
Daily Total	9,444	9,453	18,897	-	-	-	-	-	-	0	0	0

AM Peak	772	564	1,325	-	-	-	-	-	-	0	0	0
Hour	07:00	09:00	07:00	-	-	-	-	-	-	00:00	00:00	00:00
MD Peak	634	691	1,303	-	-	-	-	-	-	0	0	0
Hour	12:00	14:00	12:00	-	-	-	-	-	-	10:00	10:00	10:00
PM Peak	719	876	1,595	-	-	-	-	-	-	0	0	0
Hour	16:00	16:00	16:00	-	-	-	-	-	-	15:00	15:00	15:00
Daily Peak	772	876	1,595	-	-	-	-	-	-	0	0	0
Hour	07:00	16:00	16:00	-	-	-	-	-	-	00:00	00:00	00:00
% of Total	8.2%	9.3%	8.4%	-	-	-	-	-	-	#DIV/0!	#DIV/0!	#####
Daily Ave	394	394	787	-	-	-	-	-	-	0	0	0

AM	681	492
PM	719	876

Wisconsin Department of Transportation

Hourly Traffic Volume Report

2023-Aug-14 to 2023-Aug-16

Coverage Count

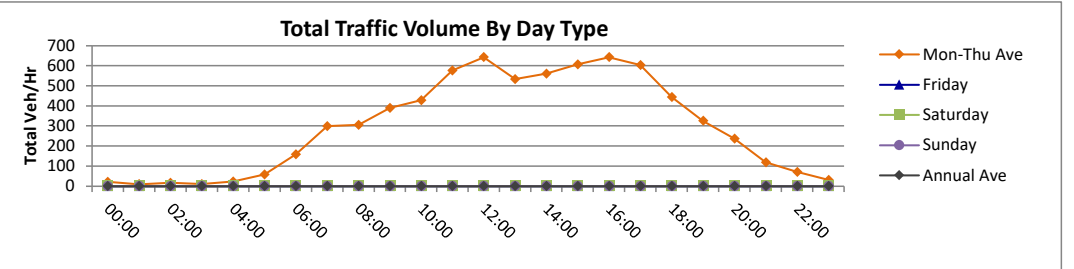
49 Hour Count - Averages and Graphs Do Not Include All Days

Location	MAPLE RD NORTH OF STH 175 GERMANTOWN										Segment ID	
Site #	660466										Seasonal Factor Group	2
Region	SE										Daily Factor Group	2
County	WASHINGTON										Axle Factor Group	6
Funct. Class	U Minor Arterial										Growth Factor Group	

Hour	Sun			Mon 2023-08-14			Tues 2023-08-15			Wed 2023-08-16			Thur			Fri			Sat		
	Undivided Hwy		Total	Undivided Hwy		Total	Undivided Hwy		Total	Undivided Hwy		Total	Undivided Hwy		Total	Undivided Hwy		Total	Undivided Hwy		Total
00:00-00:59			-			-		17	17		24	24			-			-			-
01:00-01:59			-			-		9	9		10	10			-			-			-
02:00-02:59			-			-		15	15		19	19			-			-			-
03:00-03:59			-			-		11	11		9	9			-			-			-
04:00-04:59			-			-		22	22		22	22			-			-			-
05:00-05:59			-			-		56	56		61	61			-			-			-
06:00-06:59			-			-		158	158		160	160			-			-			-
07:00-07:59			-			-		282	282		315	315			-			-			-
08:00-08:59			-		284	284		322	322		311	311			-			-			-
09:00-09:59			-		374	374		405	405			-			-			-			-
10:00-10:59			-		371	371		484	484			-			-			-			-
11:00-11:59			-		468	468		683	683			-			-			-			-
12:00-12:59			-		592	592		694	694			-			-			-			-
13:00-13:59			-		465	465		602	602			-			-			-			-
14:00-14:59			-		481	481		640	640			-			-			-			-
15:00-15:59			-		546	546		668	668			-			-			-			-
16:00-16:59			-		552	552		734	734			-			-			-			-
17:00-17:59			-		493	493		713	713			-			-			-			-
18:00-18:59			-		383	383		506	506			-			-			-			-
19:00-19:59			-		273	273		377	377			-			-			-			-
20:00-20:59			-		175	175		298	298			-			-			-			-
21:00-21:59			-		106	106		130	130			-			-			-			-
22:00-22:59			-		52	52		88	88			-			-			-			-
23:00-23:59			-		24	24		37	37			-			-			-			-
Daily Total	-	-	-	-	-	-	-	7,951	7,951	-	-	-	-	-	-	-	-	-	-	-	-

AM Peak	-	-	-	-	-	-	-	405	405	-	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	-	09:00	09:00	-	-	-	-	-	-	-	-	-	-	-	-
MD Peak	-	-	-	-	-	592	592	-	694	694	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	12:00	12:00	-	12:00	12:00	-	-	-	-	-	-	-	-	-	-	-
PM Peak	-	-	-	-	-	552	552	-	734	734	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	16:00	16:00	-	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-
Daily Peak	-	-	-	-	-	-	-	734	734	-	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	-	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	-	9.2%	9.2%	-	-	-	-	-	-	-	-	-	-	-	-
Daily Ave	-	-	-	-	-	-	-	331	331	-	-	-	-	-	-	-	-	-	-	-	-

Seasonal Fctr																					
Daily Fctr																					
Axle Factor																					
Pulse Fctr																					
Overall Fctr	0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000	



Hour	Mon-Thurs Average			Mon-Fri Average			7 Day Average			Estimated Annual Ave		
	Undivided Hwy		Total	Undivided Hwy		Total	Undivided Hwy		Total	Undivided Hwy		Total
00:00-00:59	-	21	21	-	-	-	-	-	-	-	0	0
01:00-01:59	-	10	10	-	-	-	-	-	-	-	0	0
02:00-02:59	-	17	17	-	-	-	-	-	-	-	0	0
03:00-03:59	-	10	10	-	-	-	-	-	-	-	0	0
04:00-04:59	-	22	22	-	-	-	-	-	-	-	0	0
05:00-05:59	-	59	59	-	-	-	-	-	-	-	0	0
06:00-06:59	-	159	159	-	-	-	-	-	-	-	0	0
07:00-07:59	-	299	299	-	-	-	-	-	-	-	0	0
08:00-08:59	-	306	306	-	-	-	-	-	-	-	0	0
09:00-09:59	-	390	390	-	-	-	-	-	-	-	0	0
10:00-10:59	-	428	428	-	-	-	-	-	-	-	0	0
11:00-11:59	-	576	576	-	-	-	-	-	-	-	0	0
12:00-12:59	-	643	643	-	-	-	-	-	-	-	0	0
13:00-13:59	-	534	534	-	-	-	-	-	-	-	0	0
14:00-14:59	-	561	561	-	-	-	-	-	-	-	0	0
15:00-15:59	-	607	607	-	-	-	-	-	-	-	0	0
16:00-16:59	-	643	643	-	-	-	-	-	-	-	0	0
17:00-17:59	-	603	603	-	-	-	-	-	-	-	0	0
18:00-18:59	-	445	445	-	-	-	-	-	-	-	0	0
19:00-19:59	-	325	325	-	-	-	-	-	-	-	0	0
20:00-20:59	-	237	237	-	-	-	-	-	-	-	0	0
21:00-21:59	-	118	118	-	-	-	-	-	-	-	0	0
22:00-22:59	-	70	70	-	-	-	-	-	-	-	0	0
23:00-23:59	-	31	31	-	-	-	-	-	-	-	0	0
Daily Total	-	7,108	7,108	-	-	-	-	-	-	-	0	0

AM Peak	-	390	390	-	-	-	-	-	-	-	0	0
Hour	-	09:00	09:00	-	-	-	-	-	-	-	00:00	00:00
MD Peak	-	643	643	-	-	-	-	-	-	-	0	0
Hour	-	12:00	12:00	-	-	-	-	-	-	-	10:00	10:00
PM Peak	-	643	643	-	-	-	-	-	-	-	0	0
Hour	-	16:00	16:00	-	-	-	-	-	-	-	15:00	15:00
Daily Peak	-	643	643	-	-	-	-	-	-	-	0	0
Hour	-	12:00	12:00	-	-	-	-	-	-	-	00:00	00:00
% of Total	-	9.0%	9.0%	-	-	-	-	-	-	-	#DIV/0!	#####
Daily Ave	-	296	296	-	-	-	-	-	-	-	0	0

AM 264
PM 643

Wisconsin Department of Transportation

Hourly Traffic Volume Report

2023-Jul-24 to 2023-Jul-26

Coverage Count

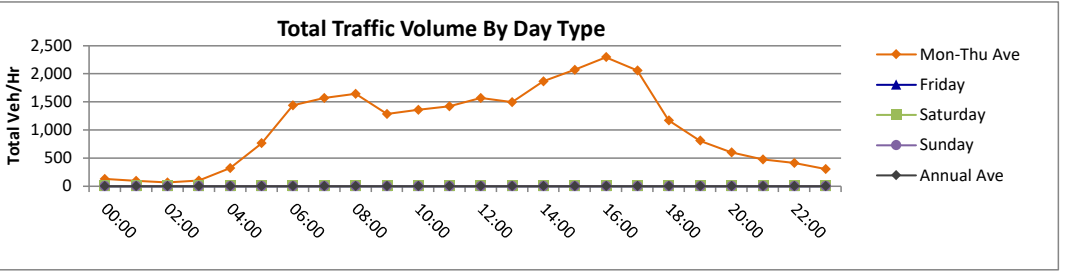
51 Hour Count - Averages and Graphs Do Not Include All Days

Location	STH 167 BTWN USH USH 41-45 & MAPLE RD GERMANTOWN	Segment ID	9137
Site #	660588	Seasonal Factor Group	2
Region	SE	Daily Factor Group	2
County	WASHINGTON	Axle Factor Group	5
Funct. Class	U Principal Arterial - Other	Growth Factor Group	1

Hour	Sun			Mon 2023-07-24			Tues 2023-07-25			Wed 2023-07-26			Thur			Fri			Sat		
	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total
00:00-00:59			-			-	49	74	123	49	84	133			-			-			-
01:00-01:59			-			-	25	62	87	28	73	101			-			-			-
02:00-02:59			-			-	28	34	62	33	35	68			-			-			-
03:00-03:59			-			-	58	40	98	48	46	94			-			-			-
04:00-04:59			-			-	220	90	310	229	101	330			-			-			-
05:00-05:59			-			-	498	281	779	495	250	745			-			-			-
06:00-06:59			-			-	934	487	1,421	954	501	1,455			-			-			-
07:00-07:59			-	343	202	545	1,212	914	2,126	1,121	918	2,039			-			-			-
08:00-08:59			-	875	684	1,559	956	762	1,718	938	709	1,647			-			-			-
09:00-09:59			-	746	699	1,445	725	708	1,433	512	466	978			-			-			-
10:00-10:59			-	638	651	1,289	689	732	1,421			-			-			-			-
11:00-11:59			-	635	768	1,403	680	756	1,436			-			-			-			-
12:00-12:59			-	795	774	1,569	766	801	1,567			-			-			-			-
13:00-13:59			-	690	782	1,472	741	775	1,516			-			-			-			-
14:00-14:59			-	839	1,001	1,840	838	1,050	1,888			-			-			-			-
15:00-15:59			-	745	1,275	2,020	799	1,320	2,119			-			-			-			-
16:00-16:59			-	872	1,325	2,197	931	1,462	2,393			-			-			-			-
17:00-17:59			-	825	1,169	1,994	869	1,257	2,126			-			-			-			-
18:00-18:59			-	543	621	1,164	541	633	1,174			-			-			-			-
19:00-19:59			-	366	436	802	349	464	813			-			-			-			-
20:00-20:59			-	307	272	579	295	329	624			-			-			-			-
21:00-21:59			-	215	221	436	266	242	508			-			-			-			-
22:00-22:59			-	220	170	390	267	169	436			-			-			-			-
23:00-23:59			-	85	200	285	95	224	319			-			-			-			-
Daily Total	-	-	-	-	-	-	12,831	13,666	26,497	-	-	-	-	-	-	-	-	-	-	-	-

AM Peak	-	-	-	-	-	-	1,212	914	2,126	1,121	918	2,039	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	07:00	07:00	07:00	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-
MD Peak	-	-	-	-	839	1,001	1,840	838	1,050	1,888	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	14:00	14:00	14:00	14:00	14:00	14:00	-	-	-	-	-	-	-	-	-	-	-
PM Peak	-	-	-	-	872	1,325	2,197	931	1,462	2,393	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	16:00	16:00	16:00	16:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-
Daily Peak	-	-	-	-	-	-	1,212	1,462	2,393	-	-	-	-	-	-	-	-	-	-	-	-
Hour	-	-	-	-	-	-	07:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	9.4%	10.7%	9.0%	-	-	-	-	-	-	-	-	-	-	-	-
Daily Ave	-	-	-	-	-	-	535	569	1,104	-	-	-	-	-	-	-	-	-	-	-	-

Seasonal Fctr																					
Daily Fctr																					
Axle Factor																					
Pulse Fctr																					
Overall Fctr	0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000	



Hour	Mon-Thurs Average			Mon-Fri Average			7 Day Average			Estimated Annual Ave		
	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total	Pos Dir	Neg Dir	Total
00:00-00:59	49	79	128	-	-	-	-	-	-	0	0	0
01:00-01:59	27	68	94	-	-	-	-	-	-	0	0	0
02:00-02:59	31	35	65	-	-	-	-	-	-	0	0	0
03:00-03:59	53	43	96	-	-	-	-	-	-	0	0	0
04:00-04:59	225	96	320	-	-	-	-	-	-	0	0	0
05:00-05:59	497	266	762	-	-	-	-	-	-	0	0	0
06:00-06:59	944	494	1,438	-	-	-	-	-	-	0	0	0
07:00-07:59	892	678	1,570	-	-	-	-	-	-	0	0	0
08:00-08:59	923	718	1,641	-	-	-	-	-	-	0	0	0
09:00-09:59	661	624	1,285	-	-	-	-	-	-	0	0	0
10:00-10:59	664	692	1,355	-	-	-	-	-	-	0	0	0
11:00-11:59	658	762	1,420	-	-	-	-	-	-	0	0	0
12:00-12:59	781	788	1,568	-	-	-	-	-	-	0	0	0
13:00-13:59	716	779	1,494	-	-	-	-	-	-	0	0	0
14:00-14:59	839	1,026	1,864	-	-	-	-	-	-	0	0	0
15:00-15:59	772	1,298	2,070	-	-	-	-	-	-	0	0	0
16:00-16:59	902	1,394	2,295	-	-	-	-	-	-	0	0	0
17:00-17:59	847	1,213	2,060	-	-	-	-	-	-	0	0	0
18:00-18:59	542	627	1,169	-	-	-	-	-	-	0	0	0
19:00-19:59	358	450	808	-	-	-	-	-	-	0	0	0
20:00-20:59	301	301	602	-	-	-	-	-	-	0	0	0
21:00-21:59	241	232	472	-	-	-	-	-	-	0	0	0
22:00-22:59	244	170	413	-	-	-	-	-	-	0	0	0
23:00-23:59	90	212	302	-	-	-	-	-	-	0	0	0
Daily Total	12,251	13,039	25,290	-	-	-	-	-	-	0	0	0

AM Peak	944	718	1,641	-	-	-	-	-	-	0	0	0
Hour	06:00	08:00	08:00	-	-	-	-	-	-	00:00	00:00	00:00
MD Peak	839	1,026	1,864	-	-	-	-	-	-	0	0	0
Hour	14:00	14:00	14:00	-	-	-	-	-	-	10:00	10:00	10:00
PM Peak	902	1,394	2,295	-	-	-	-	-	-	0	0	0
Hour	16:00	16:00	16:00	-	-	-	-	-	-	15:00	15:00	15:00
Daily Peak	944	1,394	2,295	-	-	-	-	-	-	0	0	0
Hour	06:00	16:00	16:00	-	-	-	-	-	-	00:00	00:00	00:00
% of Total	7.7%	10.7%	9.1%	-	-	-	-	-	-	#DIV/0!	#DIV/0!	#####
Daily Ave	510	543	1,054	-	-	-	-	-	-	0	0	0

AM 905 632
PM 902 1,394

APPENDIX B

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Year 2024 Existing Traffic Volumes
plus
LOS Definitions
Saturation Flow Rate Calculations

Level of Service Definitions

LOS	Signalized Intersections Control Delay/Vehicle (sec/veh)	Unsignalized Intersections Avg. Control Delay (sec/veh)	Relative Delay
A	≤10	≤10	Short Delays
	Free-flow traffic operations at average travel speeds. Vehicles completely unimpeded in ability to maneuver. Minimal delay at signalized intersections.		
B	> 10 - 20	> 10 - 15	
	Reasonably unimpeded traffic operations at average travel speeds. Vehicle maneuverability slightly restricted. Low traffic delays.		
C	> 20 - 35	> 15 - 25	
	Stable traffic operations. Lane changes becoming more restricted. Travel speeds reduced to half of average free flow travel speeds. Longer intersection delays.		
D	> 35 - 55	> 25 - 35	Moderate Delays
	Small increases in traffic flow can cause increased delays. Delays likely attributable to increased traffic, reduced signal progression, and adverse timing.		
E	> 55 - 80	> 35 - 50	
	Significant delays. Travel speeds reduced to one-third of average free flow travel speed.		
F	> 80	> 50	Long Delays
	Extremely low speeds. Intersection congestion. Long delays. Extensive traffic queues at intersections.		

Source: Highway Capacity Manual, Transportation Research Board, Washington, D.C., 2010

Date: **October 10, 2024**

BASE SATURATION FLOW RATE CALCULATIONS

Intersection Name
Maple Road & STH 167/Lannon Road

Exit Ramp:	No
Speed Limit:	40

Urbanized Area/Cluster Population
1,376,476

Sat. Flow Rate (pc/h/ln)				
1900		1910		1910



Exit Ramp:
No
Speed Limit:
45

Sat. Flow (pc/h/ln)	1985
	1985
	1900

# of Lanes	2	L
Lane Type		L-T
	2	T
		T-R
	1	R

# of Lanes				
Lane Type				
1		1		1
R	T-R	T	L-T	L
Traffic Signal				
L	L-T	T	T-R	R
1		1		1
Lane Type				
# of Lanes				

R	1
T-R	
T	2
L-T	
L	1
Lane Type	# of Lanes

1900	
1972	
1972	

Exit Ramp:
No
Speed Limit:
45



Bureau of Traffic Operations
Last Updated: **4/7/2022**

1910		1910		1900
Sat. Flow Rate (pc/h/ln)				

Speed Limit:	40
Exit Ramp:	No

Date: **October 10, 2024**

BASE SATURATION FLOW RATE CALCULATIONS

Intersection Name
Maple Road & STH 167/Mequon Road

Exit Ramp:	No
Speed Limit:	40

Urbanized Area/Cluster Population
1,376,476

Sat. Flow Rate (pc/h/ln)			
1900		1931	1931



Exit Ramp:
No
Speed Limit:
40

Sat. Flow (pc/h/ln)	
1900	
1900	

# of Lanes		L
Lane Type	1	L-T
		T
		T-R
	1	R

# of Lanes				
Lane Type				
1		2		1
R	T-R	T	L-T	L
Traffic Signal				
L	L-T	T	T-R	R
1		2		1
Lane Type				
# of Lanes				

R	1
T-R	
T	
L-T	1
L	

1900	
1900	

Exit Ramp:
No
Speed Limit:
30



Bureau of Traffic Operations
Last Updated: **4/7/2022**

1931		1931		1900
Sat. Flow Rate (pc/h/ln)				

Speed Limit:	40
Exit Ramp:	No

Intersection												
Intersection Delay, s/veh	36.1											
Intersection LOS	E											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕	↕	↕↔		↕	↕↔	
Traffic Vol, veh/h	60	65	110	5	40	110	150	435	1	35	275	10
Future Vol, veh/h	60	65	110	5	40	110	150	435	1	35	275	10
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	7	7	7	7	7	7	6	6	6	14	14	14
Mvmt Flow	85	92	155	7	56	155	211	613	1	49	387	14
Number of Lanes	0	1	1	0	1	1	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	21.3	18.8	51.8	26.8
HCM LOS	C	C	F	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	48%	0%	11%	0%	100%	0%	0%
Vol Thru, %	0%	100%	99%	52%	0%	89%	0%	0%	100%	90%
Vol Right, %	0%	0%	1%	0%	100%	0%	100%	0%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	290	146	125	110	45	110	35	183	102
LT Vol	150	0	0	60	0	5	0	35	0	0
Through Vol	0	290	145	65	0	40	0	0	183	92
RT Vol	0	0	1	0	110	0	110	0	0	10
Lane Flow Rate	211	408	206	176	155	63	155	49	258	143
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.56	1.023	0.515	0.507	0.405	0.187	0.424	0.141	0.704	0.387
Departure Headway (Hd)	9.537	9.019	9.014	10.523	9.563	10.795	10.02	10.607	10.087	10.015
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	380	404	401	345	378	335	361	340	362	362
Service Time	7.267	6.749	6.744	8.223	7.263	8.495	7.72	8.307	7.787	7.715
HCM Lane V/C Ratio	0.555	1.01	0.514	0.51	0.41	0.188	0.429	0.144	0.713	0.395
HCM Control Delay, s/veh	23.8	81.7	21	23.6	18.6	16	19.9	15	33.5	18.9
HCM Lane LOS	C	F	C	C	C	C	C	B	D	C
HCM 95th-tile Q	3.3	12.9	2.8	2.7	1.9	0.7	2	0.5	5.1	1.8

HCM 7th TWSC
200: Maple Road & Kleinmann Drive/Commercial Dwy.

2024 Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↕		↙	↕	
Traffic Vol, veh/h	1	0	5	0	0	0	25	585	0	0	385	5
Future Vol, veh/h	1	0	5	0	0	0	25	585	0	0	385	5
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	-	-	-	-	-	-	155	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	12	12	12
Mvmt Flow	1	0	7	0	0	0	33	770	0	0	507	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	961	1345	257	1089	1349	385	513	0	0	770	0	0
Stage 1	510	510	-	836	836	-	-	-	-	-	-	-
Stage 2	451	836	-	253	513	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.2	-	-	4.34	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.25	-	-	2.32	-	-
Pot Cap-1 Maneuver	214	153	749	173	152	619	1028	-	-	778	-	-
Stage 1	520	541	-	332	385	-	-	-	-	-	-	-
Stage 2	563	385	-	735	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	207	148	749	166	147	619	1028	-	-	778	-	-
Mov Cap-2 Maneuver	207	148	-	166	147	-	-	-	-	-	-	-
Stage 1	520	541	-	322	373	-	-	-	-	-	-	-
Stage 2	545	373	-	728	539	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.01		0	0.35	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1028	-	-	521	-	778	-
HCM Lane V/C Ratio	0.032	-	-	0.015	-	-	-
HCM Control Delay (s/veh)	8.6	-	-	12	0	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0	-

Queues

300: Maple Road & Lannon Road

2024 Existing Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	479	547	59	63	442	7	116	153	36	16	126	166
v/c Ratio	1.39	0.27	0.07	0.41	0.24	0.01	0.63	0.56	0.16	0.09	0.48	0.11
Control Delay (s/veh)	225.1	11.8	12.0	46.2	12.2	11.7	50.5	42.8	32.9	31.8	40.5	0.2
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 (s/veh)	225.1	11.8	12.0	46.2	12.2	11.7	50.5	42.8	32.9	31.8	40.5	0.2
Queue Length 50th (ft)	~188	80	14	35	65	2	63	83	18	8	67	0
Queue Length 95th (ft)	#285	141	41	72	108	9	111	133	42	24	113	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	345	2039	873	462	1856	800	308	456	386	287	435	1455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.27	0.07	0.14	0.24	0.01	0.38	0.34	0.09	0.06	0.29	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2024 Existing Traffic
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	455	520	90	60	420	10	110	145	55	15	120	255
Future Volume (veh/h)	455	520	90	60	420	10	110	145	55	15	120	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1847	1847	1781	1821	1821	1811	1746	1746	1737
Adj Flow Rate, veh/h	479	547	59	63	442	7	116	153	36	16	126	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	8	8	8	6	6	6	11	11	11
Cap, veh/h	598	1982	846	93	1521	654	226	332	280	200	318	
Arrive On Green	0.17	0.55	0.55	0.05	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	3496	3595	1535	1759	3509	1510	1231	1821	1535	1115	1746	1472
Grp Volume(v), veh/h	479	547	59	63	442	7	116	153	36	16	126	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1759	1755	1510	1231	1821	1535	1115	1746	1472
Q Serve(g_s), s	11.8	7.2	1.6	3.2	7.3	0.2	8.3	6.8	1.8	1.2	5.7	0.0
Cycle Q Clear(g_c), s	11.8	7.2	1.6	3.2	7.3	0.2	14.0	6.8	1.8	7.9	5.7	0.0
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	598	1982	846	93	1521	654	226	332	280	200	318	
V/C Ratio(X)	0.80	0.28	0.07	0.68	0.29	0.01	0.51	0.46	0.13	0.08	0.40	
Avail Cap(c_a), veh/h	598	1982	846	469	1521	654	314	461	389	279	442	
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	0.00
Uniform Delay (d), s/veh	35.8	10.7	9.4	41.9	16.5	14.5	38.6	32.8	30.8	36.4	32.4	0.0
Incr Delay (d2), s/veh	7.1	0.3	0.2	3.2	0.5	0.0	0.7	0.4	0.1	0.1	0.3	0.0
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(50%),veh/ln	5.4	2.6	0.5	1.4	2.8	0.1	2.4	2.9	0.6	0.3	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.0	11.0	9.6	45.1	17.0	14.5	39.2	33.2	30.9	36.4	32.7	0.0
LnGrp LOS	D	B	A	D	B	B	D	C	C	D	C	
Approach Vol, veh/h	1085			512			305			142		
Approach Delay, s/veh	25.1			20.4			35.2			33.1		
Approach LOS	C			C			D			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.4	45.0		23.6	10.8	55.6		23.6				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	9.0	39.0		22.8	24.0	24.0		22.8				
Max Q Clear Time (g_c+I1), s	13.8	9.3		9.9	5.2	9.2		16.0				
Green Ext Time (p_c), s	0.0	6.2		0.3	0.1	5.9		0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	26.0											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th TWSC
400: Maple Road & Commerce Circle

2024 Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	20	15	170	120	150
Future Vol, veh/h	140	20	15	170	120	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	15	15	8	8	16	16
Mvmt Flow	161	23	17	195	138	172

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	368	138	310	0	-	0
Stage 1	138	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Critical Hdwy	6.55	6.35	4.18	-	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.435	2.272	-	-	-
Pot Cap-1 Maneuver	607	877	1217	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	598	877	1217	-	-	-
Mov Cap-2 Maneuver	598	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	779	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v13.19		0.65	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	146	-	622	-	-
HCM Lane V/C Ratio	0.014	-	0.296	-	-
HCM Control Delay (s/veh)	8	0	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.2	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	101	0	0	155	0	0
Future Vol, veh/h	101	0	0	155	0	0
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	71	71	71	71	71	71
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	142	0	0	218	0	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	142	0	361	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	218	-
Critical Hdwy	-	-	4.17	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.263	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1410	-	638	905
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	818	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1410	-	638	905
Mov Cap-2 Maneuver	-	-	-	-	638	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1410	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection												
Intersection Delay, s/veh	17.7											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱	↱	↱↲		↱	↱↲	
Traffic Vol, veh/h	15	55	170	5	80	25	90	180	1	35	460	5
Future Vol, veh/h	15	55	170	5	80	25	90	180	1	35	460	5
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	11	11	11	4	4	4
Mvmt Flow	18	65	202	6	95	30	107	214	1	42	548	6
Number of Lanes	0	1	1	0	1	1	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	14.3	13.2	13.8	22.5
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	21%	0%	6%	0%	100%	0%	0%
Vol Thru, %	0%	100%	98%	79%	0%	94%	0%	0%	100%	97%
Vol Right, %	0%	0%	2%	0%	100%	0%	100%	0%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	120	61	70	170	85	25	35	307	158
LT Vol	90	0	0	15	0	5	0	35	0	0
Through Vol	0	120	60	55	0	80	0	0	307	153
RT Vol	0	0	1	0	170	0	25	0	0	5
Lane Flow Rate	107	143	73	83	202	101	30	42	365	188
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.253	0.317	0.161	0.187	0.409	0.238	0.064	0.09	0.737	0.379
Departure Headway (Hd)	8.488	7.976	7.965	8.097	7.283	8.478	7.739	7.777	7.267	7.244
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	422	450	450	442	494	423	461	460	497	496
Service Time	6.252	5.739	5.727	5.861	5.047	6.251	5.512	5.533	5.023	5
HCM Lane V/C Ratio	0.254	0.318	0.162	0.188	0.409	0.239	0.065	0.091	0.734	0.379
HCM Control Delay, s/veh	14.1	14.4	12.3	12.7	15	13.9	11	11.3	27.9	14.4
HCM Lane LOS	B	B	B	B	B	B	B	B	D	B
HCM 95th-tile Q	1	1.3	0.6	0.7	2	0.9	0.2	0.3	6.1	1.8

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↕		↵	↕	
Traffic Vol, veh/h	10	0	65	0	0	0	50	260	0	0	625	10
Future Vol, veh/h	10	0	65	0	0	0	50	260	0	0	625	10
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	-	-	-	-	-	-	155	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	0	0	0	9	9	9	4	4	4
Mvmt Flow	12	0	77	0	0	0	60	310	0	0	744	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1024	1179	378	801	1185	155	756	0	0	310	0	0
Stage 1	750	750	-	429	429	-	-	-	-	-	-	-
Stage 2	274	429	-	372	756	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.5	6.5	6.9	4.28	-	-	4.18	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.5	4	3.3	2.29	-	-	2.24	-	-
Pot Cap-1 Maneuver	191	191	623	279	191	870	806	-	-	1233	-	-
Stage 1	372	419	-	580	588	-	-	-	-	-	-	-
Stage 2	712	585	-	626	419	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	177	177	623	226	177	870	806	-	-	1233	-	-
Mov Cap-2 Maneuver	177	177	-	226	177	-	-	-	-	-	-	-
Stage 1	372	419	-	537	544	-	-	-	-	-	-	-
Stage 2	659	542	-	548	419	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.55		0	1.58	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	806	-	-	466	-	1233	-
HCM Lane V/C Ratio	0.074	-	-	0.192	-	-	-
HCM Control Delay (s/veh)	9.8	-	-	14.5	0	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	-	0	-

Queues

300: Maple Road & Lannon Road

2024 Existing Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	190	582	71	141	696	13	130	125	118	27	190	330
v/c Ratio	0.38	0.33	0.09	0.60	0.40	0.02	0.75	0.41	0.45	0.13	0.62	0.21
Control Delay (s/veh)	37.4	16.0	15.5	47.4	16.9	14.8	60.0	36.4	38.4	31.2	43.3	0.3
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 (s/veh)	37.4	16.0	15.5	47.4	16.9	14.8	60.0	36.4	38.4	31.2	43.3	0.3
Queue Length 50th (ft)	51	99	20	77	127	4	72	65	62	13	102	0
Queue Length 95th (ft)	83	174	55	130	199	16	124	107	104	34	156	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	498	1753	751	246	1734	748	350	620	524	415	613	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.33	0.09	0.57	0.40	0.02	0.37	0.20	0.23	0.07	0.31	0.21
Intersection Summary												

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2024 Existing Traffic
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	535	105	130	640	20	120	115	175	25	175	490
Future Volume (veh/h)	175	535	105	130	640	20	120	115	175	25	175	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1924	1924	1856	1880	1880	1870	1865	1865	1856
Adj Flow Rate, veh/h	190	582	71	141	696	13	130	125	118	27	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	3	3	3	2	2	2	3	3	3
Cap, veh/h	884	1686	720	174	1137	489	241	419	353	270	415	
Arrive On Green	0.25	0.47	0.47	0.10	0.31	0.31	0.22	0.22	0.22	0.22	0.22	0.00
Sat Flow, veh/h	3496	3595	1535	1832	3655	1572	1200	1880	1585	1134	1865	1572
Grp Volume(v), veh/h	190	582	71	141	696	13	130	125	118	27	190	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1832	1828	1572	1200	1880	1585	1134	1865	1572
Q Serve(g_s), s	3.9	9.2	2.3	6.8	14.6	0.5	9.5	5.0	5.6	1.8	7.9	0.0
Cycle Q Clear(g_c), s	3.9	9.2	2.3	6.8	14.6	0.5	17.4	5.0	5.6	6.8	7.9	0.0
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	884	1686	720	174	1137	489	241	419	353	270	415	
V/C Ratio(X)	0.21	0.35	0.10	0.81	0.61	0.03	0.54	0.30	0.33	0.10	0.46	
Avail Cap(c_a), veh/h	884	1686	720	204	1137	489	371	623	525	393	618	
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	0.00
Uniform Delay (d), s/veh	26.6	15.1	13.3	39.9	26.4	21.5	37.8	29.1	29.4	32.0	30.3	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.3	16.1	2.5	0.1	0.7	0.1	0.2	0.1	0.3	0.0
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(50%),veh/ln	1.5	3.5	0.8	3.7	6.2	0.2	2.7	2.2	2.1	0.5	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.6	15.7	13.6	56.0	28.8	21.6	38.5	29.3	29.6	32.0	30.6	0.0
LnGrp LOS	C	B	B	E	C	C	D	C	C	C	C	
Approach Vol, veh/h	843			850			373			217		
Approach Delay, s/veh	18.0			33.2			32.6			30.7		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.8	34.0		27.2	14.6	48.2		27.2				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	13.0	28.0		29.8	10.0	31.0		29.8				
Max Q Clear Time (g_c+I1), s	5.9	16.6		9.9	8.8	11.2		19.4				
Green Ext Time (p_c), s	0.2	5.9		0.6	0.0	7.5		0.6				

Intersection Summary

HCM 7th Control Delay, s/veh	27.3
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	25	10	270	265	145
Future Vol, veh/h	140	25	10	270	265	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	154	27	11	297	291	159

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	610	291	451	0	-	0
Stage 1	291	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	455	743	1105	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	449	743	1105	-	-	-
Mov Cap-2 Maneuver	449	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v17.07		0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	64	-	478	-	-
HCM Lane V/C Ratio	0.01	-	0.38	-	-
HCM Control Delay (s/veh)	8.3	0	17.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.8	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	91	0	0	110	0	0
Future Vol, veh/h	91	0	0	110	0	0
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	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	108	0	0	131	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	108	0	239	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1476	-	749	945
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1476	-	749	945
Mov Cap-2 Maneuver	-	-	-	-	749	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	895	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1476	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

APPENDIX C

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Year 2029 Future Traffic Volumes

Intersection	
Intersection Delay, s/veh	40.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕	↕	↕↔		↕	↕↔	
Traffic Vol, veh/h	60	65	110	5	40	110	150	455	1	35	285	10
Future Vol, veh/h	60	65	110	5	40	110	150	455	1	35	285	10
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	7	7	7	7	7	7	6	6	6	14	14	14
Mvmt Flow	85	92	155	7	56	155	211	641	1	49	401	14
Number of Lanes	0	1	1	0	1	1	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	21.7	19.1	60.5	28.9
HCM LOS	C	C	F	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	48%	0%	11%	0%	100%	0%	0%
Vol Thru, %	0%	100%	99%	52%	0%	89%	0%	0%	100%	90%
Vol Right, %	0%	0%	1%	0%	100%	0%	100%	0%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	303	153	125	110	45	110	35	190	105
LT Vol	150	0	0	60	0	5	0	35	0	0
Through Vol	0	303	152	65	0	40	0	0	190	95
RT Vol	0	0	1	0	110	0	110	0	0	10
Lane Flow Rate	211	427	215	176	155	63	155	49	268	148
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.563	1.077	0.542	0.51	0.409	0.188	0.428	0.142	0.736	0.404
Departure Headway (Hd)	9.592	9.073	9.069	10.695	9.734	10.967	10.192	10.713	10.193	10.124
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	376	402	398	340	372	329	355	337	356	358
Service Time	7.348	6.829	6.824	8.395	7.434	8.667	7.892	8.413	7.893	7.824
HCM Lane V/C Ratio	0.561	1.062	0.54	0.518	0.417	0.191	0.437	0.145	0.753	0.413
HCM Control Delay, s/veh	24.1	97.9	22.1	24	19	16.2	20.3	15.2	36.6	19.5
HCM Lane LOS	C	F	C	C	C	C	C	C	E	C
HCM 95th-tile Q	3.3	14.7	3.1	2.8	1.9	0.7	2.1	0.5	5.6	1.9

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	1	0	5	0	0	0	25	605	0	0	395	5
Future Vol, veh/h	1	0	5	0	0	0	25	605	0	0	395	5
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	-	-	-	-	-	-	155	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	12	12	12
Mvmt Flow	1	0	7	0	0	0	33	796	0	0	520	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	987	1385	263	1122	1388	398	526	0	0	796	0	0
Stage 1	523	523	-	862	862	-	-	-	-	-	-	-
Stage 2	464	862	-	260	526	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.2	-	-	4.34	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.25	-	-	2.32	-	-
Pot Cap-1 Maneuver	205	145	741	163	144	607	1016	-	-	760	-	-
Stage 1	510	534	-	320	375	-	-	-	-	-	-	-
Stage 2	553	375	-	728	532	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	198	140	741	157	139	607	1016	-	-	760	-	-
Mov Cap-2 Maneuver	198	140	-	157	139	-	-	-	-	-	-	-
Stage 1	510	534	-	310	363	-	-	-	-	-	-	-
Stage 2	535	363	-	722	532	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.19		0	0.34	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1016	-	-	509	760	-	-
HCM Lane V/C Ratio	0.032	-	-	0.016	-	-	-
HCM Control Delay (s/veh)	8.7	-	-	12.2	0	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0	-

Queues

2029 Future Traffic

300: Maple Road & Lannon Road

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	500	574	65	68	463	7	126	153	39	16	126	173
v/c Ratio	1.45	0.29	0.08	0.43	0.25	0.01	0.65	0.53	0.16	0.09	0.46	0.12
Control Delay (s/veh)	250.0	12.5	12.7	46.5	12.7	12.1	50.9	41.0	32.3	30.9	38.9	0.2
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 (s/veh)	250.0	12.5	12.7	46.5	12.7	12.1	50.9	41.0	32.3	30.9	38.9	0.2
Queue Length 50th (ft)	~201	87	16	37	70	2	69	82	20	8	66	0
Queue Length 95th (ft)	#300	153	46	76	116	10	118	131	44	24	111	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	345	2004	858	462	1830	789	308	456	386	287	435	1455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.45	0.29	0.08	0.15	0.25	0.01	0.41	0.34	0.10	0.06	0.29	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2029 Future Traffic
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	545	100	65	440	10	120	145	60	15	120	265
Future Volume (veh/h)	475	545	100	65	440	10	120	145	60	15	120	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1847	1847	1781	1821	1821	1811	1746	1746	1737
Adj Flow Rate, veh/h	500	574	65	68	463	7	126	153	39	16	126	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	8	8	8	6	6	6	11	11	11
Cap, veh/h	572	1951	833	96	1521	654	236	345	291	208	331	
Arrive On Green	0.16	0.54	0.54	0.05	0.43	0.43	0.19	0.19	0.19	0.19	0.19	0.00
Sat Flow, veh/h	3496	3595	1535	1759	3509	1510	1231	1821	1535	1112	1746	1472
Grp Volume(v), veh/h	500	574	65	68	463	7	126	153	39	16	126	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1759	1755	1510	1231	1821	1535	1112	1746	1472
Q Serve(g_s), s	12.6	7.8	1.8	3.4	7.8	0.2	9.0	6.7	1.9	1.2	5.7	0.0
Cycle Q Clear(g_c), s	12.6	7.8	1.8	3.4	7.8	0.2	14.6	6.7	1.9	7.9	5.7	0.0
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	572	1951	833	96	1521	654	236	345	291	208	331	
V/C Ratio(X)	0.87	0.29	0.08	0.71	0.30	0.01	0.53	0.44	0.13	0.08	0.38	
Avail Cap(c_a), veh/h	572	1951	833	469	1521	654	314	461	389	279	442	
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	0.00
Uniform Delay (d), s/veh	36.7	11.2	9.8	41.8	16.6	14.5	38.2	32.3	30.3	35.7	31.9	0.0
Incr Delay (d2), s/veh	13.5	0.4	0.2	3.6	0.5	0.0	0.7	0.3	0.1	0.1	0.3	0.0
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(50%),veh/ln	6.1	2.8	0.6	1.5	2.9	0.1	2.6	2.9	0.7	0.3	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.2	11.6	10.0	45.4	17.2	14.5	38.9	32.6	30.4	35.8	32.1	0.0
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	
Approach Vol, veh/h	1139			538			318			142		
Approach Delay, s/veh	28.5			20.7			34.8			32.5		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.7	45.0		24.3	10.9	54.8		24.3				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	9.0	39.0		22.8	24.0	24.0		22.8				
Max Q Clear Time (g_c+I1), s	14.6	9.8		9.9	5.4	9.8		16.6				
Green Ext Time (p_c), s	0.0	6.5		0.3	0.1	6.0		0.4				

Intersection Summary

HCM 7th Control Delay, s/veh	27.7
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	20	15	185	135	150
Future Vol, veh/h	140	20	15	185	135	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	15	15	8	8	16	16
Mvmt Flow	161	23	17	213	155	172

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	402	155	328	0	-	0
Stage 1	155	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	6.55	6.35	4.18	-	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.435	2.272	-	-	-
Pot Cap-1 Maneuver	580	858	1199	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	570	858	1199	-	-	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	765	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v13.73		0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	135	-	595	-	-
HCM Lane V/C Ratio	0.014	-	0.309	-	-
HCM Control Delay (s/veh)	8	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.3	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	101	0	0	155	0	0
Future Vol, veh/h	101	0	0	155	0	0
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	71	71	71	71	71	71
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	142	0	0	218	0	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	142	0	361	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	218	-
Critical Hdwy	-	-	4.17	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.263	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1410	-	638	905
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	818	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1410	-	638	905
Mov Cap-2 Maneuver	-	-	-	-	638	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1410	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection												
Intersection Delay, s/veh	18.9											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱	↱	↱↲		↱	↱↲	
Traffic Vol, veh/h	15	55	170	5	80	25	90	185	1	35	480	5
Future Vol, veh/h	15	55	170	5	80	25	90	185	1	35	480	5
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	11	11	11	4	4	4
Mvmt Flow	18	65	202	6	95	30	107	220	1	42	571	6
Number of Lanes	0	1	1	0	1	1	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	14.6	13.4	14.1	24.5
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	21%	0%	6%	0%	100%	0%	0%
Vol Thru, %	0%	100%	98%	79%	0%	94%	0%	0%	100%	97%
Vol Right, %	0%	0%	2%	0%	100%	0%	100%	0%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	123	63	70	170	85	25	35	320	165
LT Vol	90	0	0	15	0	5	0	35	0	0
Through Vol	0	123	62	55	0	80	0	0	320	160
RT Vol	0	0	1	0	170	0	25	0	0	5
Lane Flow Rate	107	147	75	83	202	101	30	42	381	196
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.255	0.329	0.167	0.19	0.415	0.241	0.065	0.091	0.774	0.398
Departure Headway (Hd)	8.567	8.055	8.044	8.194	7.38	8.584	7.845	7.82	7.31	7.288
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	418	445	445	437	486	417	455	458	495	493
Service Time	6.34	5.828	5.816	5.964	5.149	6.365	5.625	5.582	5.071	5.049
HCM Lane V/C Ratio	0.256	0.33	0.169	0.19	0.416	0.242	0.066	0.092	0.77	0.398
HCM Control Delay, s/veh	14.3	14.8	12.4	12.9	15.3	14.1	11.2	11.4	31	14.8
HCM Lane LOS	B	B	B	B	C	B	B	B	D	B
HCM 95th-tile Q	1	1.4	0.6	0.7	2	0.9	0.2	0.3	6.9	1.9

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↕		↙	↕	
Traffic Vol, veh/h	10	0	65	0	0	0	50	265	0	0	645	10
Future Vol, veh/h	10	0	65	0	0	0	50	265	0	0	645	10
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	-	-	-	-	-	-	155	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	0	0	0	9	9	9	4	4	4
Mvmt Flow	12	0	77	0	0	0	60	315	0	0	768	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1051	1208	390	818	1214	158	780	0	0	315	0	0
Stage 1	774	774	-	435	435	-	-	-	-	-	-	-
Stage 2	277	435	-	384	780	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.5	6.5	6.9	4.28	-	-	4.18	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.5	4	3.3	2.29	-	-	2.24	-	-
Pot Cap-1 Maneuver	183	183	612	271	183	866	789	-	-	1227	-	-
Stage 1	360	409	-	575	584	-	-	-	-	-	-	-
Stage 2	709	582	-	616	409	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	169	169	612	219	169	866	789	-	-	1227	-	-
Mov Cap-2 Maneuver	169	169	-	219	169	-	-	-	-	-	-	-
Stage 1	360	409	-	532	540	-	-	-	-	-	-	-
Stage 2	655	538	-	538	409	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.88		0	1.58	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	789	-	-	453	-	1227	-
HCM Lane V/C Ratio	0.075	-	-	0.197	-	-	-
HCM Control Delay (s/veh)	9.9	-	-	14.9	0	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	-	0	-

Queues

2029 Future Traffic

300: Maple Road & Lannon Road

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	196	603	78	158	728	13	141	125	131	27	190	344
v/c Ratio	0.39	0.36	0.11	0.62	0.43	0.02	0.75	0.38	0.48	0.12	0.59	0.22
Control Delay (s/veh)	37.6	17.6	17.0	46.4	17.9	15.7	58.8	34.9	38.0	30.0	40.8	0.3
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 (s/veh)	37.6	17.6	17.0	46.4	17.9	15.7	58.8	34.9	38.0	30.0	40.8	0.3
Queue Length 50th (ft)	52	109	24	85	137	4	78	64	68	13	101	0
Queue Length 95th (ft)	86	191	63	142	218	16	130	104	111	33	152	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	498	1676	717	264	1700	733	355	620	524	415	613	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.36	0.11	0.60	0.43	0.02	0.40	0.20	0.25	0.07	0.31	0.22
Intersection Summary												

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2029 Future Traffic
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	555	115	145	670	20	130	115	195	25	175	510
Future Volume (veh/h)	180	555	115	145	670	20	130	115	195	25	175	510
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1924	1924	1856	1880	1880	1870	1865	1865	1856
Adj Flow Rate, veh/h	196	603	78	158	728	13	141	125	131	27	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	3	3	3	2	2	2	3	3	3
Cap, veh/h	855	1622	692	192	1137	489	252	434	366	277	431	
Arrive On Green	0.24	0.45	0.45	0.10	0.31	0.31	0.23	0.23	0.23	0.23	0.23	0.00
Sat Flow, veh/h	3496	3595	1535	1832	3655	1572	1200	1880	1585	1121	1865	1572
Grp Volume(v), veh/h	196	603	78	158	728	13	141	125	131	27	190	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1832	1828	1572	1200	1880	1585	1121	1865	1572
Q Serve(g_s), s	4.0	10.0	2.6	7.6	15.4	0.5	10.3	4.9	6.2	1.8	7.9	0.0
Cycle Q Clear(g_c), s	4.0	10.0	2.6	7.6	15.4	0.5	18.1	4.9	6.2	6.8	7.9	0.0
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	855	1622	692	192	1137	489	252	434	366	277	431	
V/C Ratio(X)	0.23	0.37	0.11	0.82	0.64	0.03	0.56	0.29	0.36	0.10	0.44	
Avail Cap(c_a), veh/h	855	1622	692	204	1137	489	373	623	525	390	618	
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	0.00
Uniform Delay (d), s/veh	27.2	16.3	14.3	39.5	26.7	21.5	37.4	28.5	29.0	31.3	29.6	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.3	20.4	2.8	0.1	0.7	0.1	0.2	0.1	0.3	0.0
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(50%),veh/ln	1.6	3.8	0.9	4.3	6.6	0.2	2.9	2.1	2.3	0.5	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.2	16.9	14.6	59.9	29.4	21.6	38.1	28.7	29.2	31.4	29.9	0.0
LnGrp LOS	C	B	B	E	C	C	D	C	C	C	C	
Approach Vol, veh/h	877			899			397			217		
Approach Delay, s/veh	19.0			34.7			32.2			30.1		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.0	34.0		28.0	15.4	46.6		28.0				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	13.0	28.0		29.8	10.0	31.0		29.8				
Max Q Clear Time (g_c+I1), s	6.0	17.4		9.9	9.6	12.0		20.1				
Green Ext Time (p_c), s	0.2	5.8		0.6	0.0	7.6		0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	28.1											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	25	10	300	290	145
Future Vol, veh/h	140	25	10	300	290	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	154	27	11	330	319	159

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	670	319	478	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	419	717	1079	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	414	717	1079	-	-	-
Mov Cap-2 Maneuver	414	-	-	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v18.69		0.27	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	58	-	442	-	-
HCM Lane V/C Ratio	0.01	-	0.41	-	-
HCM Control Delay (s/veh)	8.4	0	18.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	2	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	91	0	0	110	0	0
Future Vol, veh/h	91	0	0	110	0	0
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	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	108	0	0	131	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	108	0	239	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1476	-	749	945
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1476	-	749	945
Mov Cap-2 Maneuver	-	-	-	-	749	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	895	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1476	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Queues

2029 Future Traffic w/Modifications

100: Maple Road & Mequon Road

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	247	7	211	211	641	1	49	401	9
v/c Ratio	0.43	0.72	0.04	0.62	0.34	0.28	0.00	0.11	0.19	0.01
Control Delay (s/veh)	36.0	43.9	25.2	39.4	3.6	1.9	2.0	8.3	7.3	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.0	43.9	25.2	39.4	3.6	1.9	2.0	8.3	7.3	7.5
Queue Length 50th (ft)	42	131	3	110	10	16	0	9	42	2
Queue Length 95th (ft)	60	141	10	122	m16	21	m0	23	60	7
Internal Link Dist (ft)		1001		145		397			293	
Turn Bay Length (ft)	100		100		100		50	50		45
Base Capacity (vph)	315	554	269	544	612	2255	993	441	2097	923
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.45	0.03	0.39	0.34	0.28	0.00	0.11	0.19	0.01
Intersection Summary										
m Volume for 95th percentile queue is metered by upstream signal.										

HCM 7th Signalized Intersection Summary

100: Maple Road & Mequon Road

2029 Future Traffic w/Modifications

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	65	110	5	40	110	150	455	1	35	285	10
Future Volume (veh/h)	60	65	110	5	40	110	150	455	1	35	285	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1796	1796	1796	1796	1796	1796	1840	1840	1811	1719	1719	1693
Adj Flow Rate, veh/h	85	92	155	7	56	155	211	641	1	49	401	9
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	7	7	7	7	7	7	6	6	6	14	14	14
Cap, veh/h	204	137	231	177	96	266	644	2232	980	542	2085	916
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	1.00	1.00	1.00	0.64	0.64	0.64
Sat Flow, veh/h	1124	601	1013	1088	421	1165	960	3495	1535	724	3267	1434
Grp Volume(v), veh/h	85	0	247	7	0	211	211	641	1	49	401	9
Grp Sat Flow(s),veh/h/ln	1124	0	1614	1088	0	1586	960	1748	1535	724	1633	1434
Q Serve(g_s), s	6.6	0.0	12.6	0.5	0.0	10.7	2.4	0.0	0.0	2.4	4.6	0.2
Cycle Q Clear(g_c), s	17.2	0.0	12.6	13.1	0.0	10.7	6.9	0.0	0.0	2.4	4.6	0.2
Prop In Lane	1.00		0.63	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	0	368	177	0	362	644	2232	980	542	2085	916
V/C Ratio(X)	0.42	0.00	0.67	0.04	0.00	0.58	0.33	0.29	0.00	0.09	0.19	0.01
Avail Cap(c_a), veh/h	334	0	556	303	0	546	644	2232	980	542	2085	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	0.0	31.6	37.6	0.0	30.9	0.3	0.0	0.0	6.3	6.7	5.9
Incr Delay (d2), s/veh	1.4	0.0	2.1	0.1	0.0	1.5	1.4	0.3	0.0	0.3	0.2	0.0
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(50%),veh/ln	1.8	0.0	4.9	0.1	0.0	4.1	0.2	0.1	0.0	0.3	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.9	0.0	33.8	37.7	0.0	32.4	1.6	0.3	0.0	6.6	6.9	5.9
LnGrp LOS	D		C	D		C	A	A	A	A	A	A
Approach Vol, veh/h	332			218			853			459		
Approach Delay, s/veh	35.3			32.6			0.6			6.9		
Approach LOS	D			C			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	63.5			26.5			63.5			26.5		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	47.0			31.0			47.0			31.0		
Max Q Clear Time (g_c+l1), s	8.9			19.2			6.6			15.1		
Green Ext Time (p_c), s	6.0			1.3			3.2			1.1		
Intersection Summary												
HCM 7th Control Delay, s/veh				12.1								
HCM 7th LOS				B								

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	1	0	5	0	0	0	25	605	0	0	395	5
Future Vol, veh/h	1	0	5	0	0	0	25	605	0	0	395	5
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	-	-	-	-	-	-	155	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	12	12	12
Mvmt Flow	1	0	7	0	0	0	33	796	0	0	520	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	987	1385	263	1122	1388	398	526	0	0	796	0	0
Stage 1	523	523	-	862	862	-	-	-	-	-	-	-
Stage 2	464	862	-	260	526	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.2	-	-	4.34	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.25	-	-	2.32	-	-
Pot Cap-1 Maneuver	451	222	*994	*337	221	*922	1142	-	-	925	-	-
Stage 1	645	621	-	*463	476	-	-	-	-	-	-	-
Stage 2	869	476	-	*937	619	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Cap-1 Maneuver	438	216	*994	*325	215	*922	1142	-	-	925	-	-
Mov Cap-2 Maneuver	438	216	-	*325	215	-	-	-	-	-	-	-
Stage 1	645	621	-	*450	462	-	-	-	-	-	-	-
Stage 2	844	462	-	*931	619	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.43	0	0.33	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	820	925	-	-
HCM Lane V/C Ratio	0.029	-	-	0.01	-	-	-
HCM Control Delay (s/veh)	8.2	-	-	9.4	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0	-

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

Queues

2029 Future Traffic w/Modifications

300: Maple Road & Lannon Road

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	500	574	65	68	463	7	126	153	39	16	126	173
v/c Ratio	0.93	0.29	0.08	0.43	0.28	0.01	0.65	0.53	0.16	0.09	0.46	0.12
Control Delay (s/veh)	64.3	12.5	12.7	46.5	15.8	15.0	50.9	41.0	32.3	23.6	30.1	0.2
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 (s/veh)	64.3	12.5	12.7	46.5	15.8	15.0	50.9	41.0	32.3	23.6	30.1	0.2
Queue Length 50th (ft)	146	87	16	37	80	2	69	82	20	6	54	0
Queue Length 95th (ft)	#241	153	46	76	130	11	118	131	44	m18	84	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	536	2004	858	462	1637	706	308	456	386	287	435	1455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.29	0.08	0.15	0.28	0.01	0.41	0.34	0.10	0.06	0.29	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2029 Future Traffic w/Modifications

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	545	100	65	440	10	120	145	60	15	120	265
Future Volume (veh/h)	475	545	100	65	440	10	120	145	60	15	120	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1847	1847	1781	1821	1821	1811	1746	1746	1737
Adj Flow Rate, veh/h	500	574	65	68	463	7	126	153	39	16	126	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	8	8	8	6	6	6	11	11	11
Cap, veh/h	746	1929	824	96	1326	570	236	356	300	215	341	
Arrive On Green	0.21	0.54	0.54	0.05	0.38	0.38	0.20	0.20	0.20	0.06	0.06	0.00
Sat Flow, veh/h	3496	3595	1535	1759	3509	1510	1231	1821	1535	1112	1746	1472
Grp Volume(v), veh/h	500	574	65	68	463	7	126	153	39	16	126	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1759	1755	1510	1231	1821	1535	1112	1746	1472
Q Serve(g_s), s	11.8	7.9	1.8	3.4	8.5	0.3	9.0	6.6	1.9	1.2	6.2	0.0
Cycle Q Clear(g_c), s	11.8	7.9	1.8	3.4	8.5	0.3	15.2	6.6	1.9	7.9	6.2	0.0
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	746	1929	824	96	1326	570	236	356	300	215	341	
V/C Ratio(X)	0.67	0.30	0.08	0.71	0.35	0.01	0.53	0.43	0.13	0.07	0.37	
Avail Cap(c_a), veh/h	746	1929	824	469	1326	570	307	461	389	280	442	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	0.00
Uniform Delay (d), s/veh	32.5	11.5	10.1	41.8	20.1	17.5	38.3	31.8	29.9	40.8	36.8	0.0
Incr Delay (d2), s/veh	1.9	0.4	0.2	3.6	0.7	0.0	0.7	0.3	0.1	0.1	0.2	0.0
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(50%),veh/ln	4.9	2.8	0.6	1.5	3.3	0.1	2.6	2.8	0.7	0.4	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.4	11.9	10.3	45.4	20.8	17.5	39.0	32.1	30.0	40.8	37.0	0.0
LnGrp LOS	C	B	B	D	C	B	D	C	C	D	D	
Approach Vol, veh/h	1139			538			318			142		
Approach Delay, s/veh	21.7			23.9			34.6			37.5		
Approach LOS	C			C			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.2	40.0		24.8	10.9	54.3		24.8				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	14.0	34.0		22.8	24.0	24.0		22.8				
Max Q Clear Time (g_c+I1), s	13.8	10.5		9.9	5.4	9.9		17.2				
Green Ext Time (p_c), s	0.0	5.9		0.3	0.1	6.0		0.4				

Intersection Summary

HCM 7th Control Delay, s/veh	25.2
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	20	15	185	135	150
Future Vol, veh/h	140	20	15	185	135	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	15	15	8	8	16	16
Mvmt Flow	161	23	17	213	155	172

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	402	155	328	0	-	0
Stage 1	155	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	6.55	6.35	4.18	-	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.435	2.272	-	-	-
Pot Cap-1 Maneuver	580	858	1199	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	570	858	1199	-	-	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	765	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v13.73		0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	135	-	595	-	-
HCM Lane V/C Ratio	0.014	-	0.309	-	-
HCM Control Delay (s/veh)	8	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.3	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	101	0	0	155	0	0
Future Vol, veh/h	101	0	0	155	0	0
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	71	71	71	71	71	71
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	142	0	0	218	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	142
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.17
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.263
Pot Cap-1 Maneuver	-	-	1410
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1410
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1410	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Queues

2029 Future Traffic w/Modifications

100: Maple Road & Mequon Road

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	267	6	125	107	220	1	42	571	4
v/c Ratio	0.06	0.73	0.04	0.31	0.22	0.10	0.00	0.06	0.25	0.00
Control Delay (s/veh)	25.0	43.5	24.2	29.6	3.2	1.6	2.0	7.9	8.0	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.0	43.5	24.2	29.6	3.2	1.6	2.0	7.9	8.0	8.0
Queue Length 50th (ft)	8	141	3	60	4	4	0	8	65	1
Queue Length 95th (ft)	21	186	11	89	10	8	m0	23	104	5
Internal Link Dist (ft)		1001		145		397			293	
Turn Bay Length (ft)	100		100		100		50	50		45
Base Capacity (vph)	485	636	296	691	484	2121	934	731	2264	997
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.42	0.02	0.18	0.22	0.10	0.00	0.06	0.25	0.00
Intersection Summary										
m Volume for 95th percentile queue is metered by upstream signal.										

HCM 7th Signalized Intersection Summary

100: Maple Road & Mequon Road

2029 Future Traffic w/Modifications

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	55	170	5	80	25	90	185	1	35	480	5
Future Volume (veh/h)	15	55	170	5	80	25	90	185	1	35	480	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1856	1856	1856	1856	1856	1856	1764	1764	1737	1870	1870	1841
Adj Flow Rate, veh/h	18	65	202	6	95	30	107	220	1	42	571	4
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	11	11	11	4	4	4
Cap, veh/h	250	78	242	123	265	84	560	2248	987	858	2383	1046
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	1.00	1.00	1.00	0.67	0.67	0.67
Sat Flow, veh/h	1256	398	1236	1104	1352	427	790	3352	1472	1160	3553	1560
Grp Volume(v), veh/h	18	0	267	6	0	125	107	220	1	42	571	4
Grp Sat Flow(s),veh/h/ln	1256	0	1633	1104	0	1779	790	1676	1472	1160	1776	1560
Q Serve(g_s), s	1.1	0.0	14.1	0.5	0.0	5.5	1.4	0.0	0.0	1.1	5.7	0.1
Cycle Q Clear(g_c), s	6.6	0.0	14.1	14.6	0.0	5.5	7.1	0.0	0.0	1.1	5.7	0.1
Prop In Lane	1.00		0.76	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	0	320	123	0	349	560	2248	987	858	2383	1046
V/C Ratio(X)	0.07	0.00	0.83	0.05	0.00	0.36	0.19	0.10	0.00	0.05	0.24	0.00
Avail Cap(c_a), veh/h	492	0	635	336	0	692	560	2248	987	858	2383	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	34.8	41.8	0.0	31.3	0.3	0.0	0.0	5.1	5.8	4.9
Incr Delay (d2), s/veh	0.1	0.0	5.7	0.2	0.0	0.6	0.8	0.1	0.0	0.1	0.2	0.0
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(50%),veh/ln	0.3	0.0	5.9	0.1	0.0	2.4	0.1	0.0	0.0	0.2	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.3	0.0	40.4	42.0	0.0	31.9	1.1	0.1	0.0	5.2	6.1	4.9
LnGrp LOS	C		D	D		C	A	A	A	A	A	A
Approach Vol, veh/h	285			131			328			617		
Approach Delay, s/veh	40.1			32.4			0.4			6.0		
Approach LOS	D			C			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	66.4			23.6			66.4			23.6		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	43.0			35.0			43.0			35.0		
Max Q Clear Time (g_c+I1), s	9.1			16.1			7.7			16.6		
Green Ext Time (p_c), s	2.2			1.5			4.2			0.6		
Intersection Summary												
HCM 7th Control Delay, s/veh	14.3											
HCM 7th LOS	B											

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	0	65	0	0	0	50	265	0	0	645	10
Future Vol, veh/h	10	0	65	0	0	0	50	265	0	0	645	10
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	-	-	-	-	-	-	155	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	0	0	0	9	9	9	4	4	4
Mvmt Flow	12	0	77	0	0	0	60	315	0	0	768	12

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1051	1208	390	818	1214	158	780	0	0	315	0	0
Stage 1	774	774	-	435	435	-	-	-	-	-	-	-
Stage 2	277	435	-	384	780	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.5	6.5	6.9	4.28	-	-	4.18	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.5	4	3.3	2.29	-	-	2.24	-	-
Pot Cap-1 Maneuver	329	269	*922	*530	267	1015	954	-	-	1311	-	-
Stage 1	527	525	-	*651	633	-	-	-	-	-	-	-
Stage 2	810	631	-	*872	523	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Cap-1 Maneuver	308	252	*922	*455	251	1015	954	-	-	1311	-	-
Mov Cap-2 Maneuver	308	252	-	*455	251	-	-	-	-	-	-	-
Stage 1	527	525	-	*611	594	-	-	-	-	-	-	-
Stage 2	760	592	-	*799	523	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v10.63		0	1.43	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	954	-	-	728	1311	-	-
HCM Lane V/C Ratio	0.062	-	-	0.123	-	-	-
HCM Control Delay (s/veh)	9	-	-	10.6	0	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	-	0	-

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

Queues

2029 Future Traffic w/Modifications

300: Maple Road & Lannon Road

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	196	603	78	158	728	13	141	125	131	27	190	344
v/c Ratio	0.39	0.36	0.11	0.64	0.43	0.02	0.75	0.38	0.48	0.12	0.59	0.22
Control Delay (s/veh)	37.6	17.4	16.9	48.2	17.9	15.7	58.8	34.9	38.0	23.6	32.8	0.3
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 (s/veh)	37.6	17.4	16.9	48.2	17.9	15.7	58.8	34.9	38.0	23.6	32.8	0.3
Queue Length 50th (ft)	52	107	23	86	137	4	78	64	68	11	80	0
Queue Length 95th (ft)	86	192	63	142	218	16	130	104	111	m25	115	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	498	1695	726	272	1700	733	355	620	524	415	613	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.36	0.11	0.58	0.43	0.02	0.40	0.20	0.25	0.07	0.31	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2029 Future Traffic w/Modifications

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	555	115	145	670	20	130	115	195	25	175	510
Future Volume (veh/h)	180	555	115	145	670	20	130	115	195	25	175	510
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1924	1924	1856	1880	1880	1870	1865	1865	1856
Adj Flow Rate, veh/h	196	603	78	158	728	13	141	125	131	27	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	3	3	3	2	2	2	3	3	3
Cap, veh/h	822	1586	677	193	1137	489	252	452	381	289	448	
Arrive On Green	0.24	0.44	0.44	0.11	0.31	0.31	0.24	0.24	0.24	0.08	0.08	0.00
Sat Flow, veh/h	3496	3595	1535	1832	3655	1572	1200	1880	1585	1121	1865	1572
Grp Volume(v), veh/h	196	603	78	158	728	13	141	125	131	27	190	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1832	1828	1572	1200	1880	1585	1121	1865	1572
Q Serve(g_s), s	4.1	10.1	2.7	7.6	15.4	0.5	10.3	4.9	6.2	2.1	8.7	0.0
Cycle Q Clear(g_c), s	4.1	10.1	2.7	7.6	15.4	0.5	19.0	4.9	6.2	6.9	8.7	0.0
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	822	1586	677	193	1137	489	252	452	381	289	448	
V/C Ratio(X)	0.24	0.38	0.12	0.82	0.64	0.03	0.56	0.28	0.34	0.09	0.42	
Avail Cap(c_a), veh/h	822	1586	677	244	1137	489	361	623	525	390	618	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	0.00
Uniform Delay (d), s/veh	27.9	16.9	14.8	39.4	26.7	21.5	37.4	27.8	28.3	37.0	35.5	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.3	12.9	2.8	0.1	0.7	0.1	0.2	0.1	0.2	0.0
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(50%),veh/ln	1.6	3.9	0.9	3.9	6.6	0.2	2.9	2.1	2.3	0.6	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.9	17.6	15.2	52.3	29.4	21.6	38.1	27.9	28.5	37.0	35.7	0.0
LnGrp LOS	C	B	B	D	C	C	D	C	C	D	D	
Approach Vol, veh/h	877			899			397			217		
Approach Delay, s/veh	19.7			33.3			31.8			35.9		
Approach LOS	B			C			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.2	34.0		28.8	15.5	45.7		28.8				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	13.0	28.0		29.8	12.0	29.0		29.8				
Max Q Clear Time (g_c+I1), s	6.1	17.4		10.7	9.6	12.1		21.0				
Green Ext Time (p_c), s	0.2	5.8		0.6	0.0	7.1		0.6				

Intersection Summary

HCM 7th Control Delay, s/veh	28.3
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	25	10	300	290	145
Future Vol, veh/h	140	25	10	300	290	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	154	27	11	330	319	159

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	670	319	478	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	419	717	1079	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	414	717	1079	-	-	-
Mov Cap-2 Maneuver	414	-	-	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v18.69		0.27	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	58	-	442	-	-
HCM Lane V/C Ratio	0.01	-	0.41	-	-
HCM Control Delay (s/veh)	8.4	0	18.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	2	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	91	0	0	110	0	0
Future Vol, veh/h	91	0	0	110	0	0
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	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	108	0	0	131	0	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	108	0	239	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1476	-	749	945
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1476	-	749	945
Mov Cap-2 Maneuver	-	-	-	-	749	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1476	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

APPENDIX D

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Year 2029 Build Traffic Volumes Alternatives 1 & 2

Queues

2029 Build Alt 1 (Full KT Access)

100: Maple Road & Mequon Road

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	247	7	232	197	627	1	56	408	9
v/c Ratio	0.48	0.71	0.04	0.68	0.32	0.28	0.00	0.12	0.19	0.01
Control Delay (s/veh)	38.5	43.8	25.2	42.3	3.7	2.5	3.0	8.4	7.3	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.5	43.8	25.2	42.3	3.7	2.5	3.0	8.4	7.3	7.5
Queue Length 50th (ft)	43	131	3	123	12	20	0	11	42	2
Queue Length 95th (ft)	61	141	10	133	21	27	m0	25	61	7
Internal Link Dist (ft)		1001		145		397			293	
Turn Bay Length (ft)	100		100		100		50	50		45
Base Capacity (vph)	297	577	277	564	608	2259	995	449	2101	925
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.43	0.03	0.41	0.32	0.28	0.00	0.12	0.19	0.01
Intersection Summary										
m Volume for 95th percentile queue is metered by upstream signal.										

HCM 7th Signalized Intersection Summary

100: Maple Road & Mequon Road

2029 Build Alt 1 (Full KT Access)

AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	60	75	100	5	50	115	140	445	1	40	290	10	
Future Volume (veh/h)	60	75	100	5	50	115	140	445	1	40	290	10	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width 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	
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	1796	1796	1796	1796	1796	1796	1840	1840	1811	1719	1719	1693	
Adj Flow Rate, veh/h	85	106	141	7	70	162	197	627	1	56	408	9	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	
Percent Heavy Veh, %	7	7	7	7	7	7	6	6	6	14	14	14	
Cap, veh/h	203	168	224	194	116	268	626	2189	961	539	2046	898	
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	1.00	1.00	1.00	0.63	0.63	0.63	
Sat Flow, veh/h	1103	699	930	1088	481	1114	954	3495	1535	733	3267	1434	
Grp Volume(v), veh/h	85	0	247	7	0	232	197	627	1	56	408	9	
Grp Sat Flow(s),veh/h/ln	1103	0	1629	1088	0	1596	954	1748	1535	733	1633	1434	
Q Serve(g_s), s	6.7	0.0	12.2	0.5	0.0	11.6	2.4	0.0	0.0	2.8	4.8	0.2	
Cycle Q Clear(g_c), s	18.3	0.0	12.2	12.7	0.0	11.6	7.2	0.0	0.0	2.8	4.8	0.2	
Prop In Lane	1.00		0.57	1.00		0.70	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	203	0	392	194	0	384	626	2189	961	539	2046	898	
V/C Ratio(X)	0.42	0.00	0.63	0.04	0.00	0.60	0.31	0.29	0.00	0.10	0.20	0.01	
Avail Cap(c_a), veh/h	330	0	579	319	0	567	626	2189	961	539	2046	898	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	38.5	0.0	30.6	36.3	0.0	30.4	0.3	0.0	0.0	6.8	7.2	6.3	
Incr Delay (d2), s/veh	1.4	0.0	1.7	0.1	0.0	1.5	1.3	0.3	0.0	0.4	0.2	0.0	
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(50%),veh/ln	1.8	0.0	4.7	0.1	0.0	4.5	0.2	0.1	0.0	0.4	1.5	0.1	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	39.9	0.0	32.3	36.4	0.0	31.9	1.6	0.3	0.0	7.2	7.4	6.3	
LnGrp LOS	D		C	D		C	A	A	A	A	A	A	
Approach Vol, veh/h	332				239				825				473
Approach Delay, s/veh	34.2				32.0				0.6				7.4
Approach LOS	C				C				A				A
Timer - Assigned Phs	2		4		6		8						
Phs Duration (G+Y+Rc), s	62.4		27.6		62.4		27.6						
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0						
Max Green Setting (Gmax), s	46.0		32.0		46.0		32.0						
Max Q Clear Time (g_c+I1), s	9.2		20.3		6.8		14.7						
Green Ext Time (p_c), s	5.8		1.3		3.3		1.3						
Intersection Summary													
HCM 7th Control Delay, s/veh	12.3												
HCM 7th LOS	B												

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	
Traffic Vol, veh/h	1	1	5	80	1	35	25	550	95	30	360	5
Future Vol, veh/h	1	1	5	80	1	35	25	550	95	30	360	5
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	-	-	-	-	-	-	155	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	12	12	12
Mvmt Flow	1	1	7	105	1	46	33	724	125	39	474	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	984	1470	240	1106	1349	362	480	0	0	849	0	0
Stage 1	556	556	-	789	789	-	-	-	-	-	-	-
Stage 2	428	914	-	316	559	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.2	-	-	4.34	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.25	-	-	2.32	-	-
Pot Cap-1 Maneuver	414	182	*994	321	225	*946	1193	-	-	847	-	-
Stage 1	614	599	-	489	499	-	-	-	-	-	-	-
Stage 2	853	430	-	872	597	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Cap-1 Maneuver	363	169	*994	293	209	*946	1193	-	-	847	-	-
Mov Cap-2 Maneuver	363	169	-	293	209	-	-	-	-	-	-	-
Stage 1	586	571	-	475	485	-	-	-	-	-	-	-
Stage 2	787	418	-	824	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.18		21.5	0.3	0.72
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1193	-	-	511	369	847	-
HCM Lane V/C Ratio	0.028	-	-	0.018	0.414	0.047	-
HCM Control Delay (s/veh)	8.1	-	-	12.2	21.5	9.5	-
HCM Lane LOS	A	-	-	B	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	2	0.1	-

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

Queues

2029 Build Alt 1 (Full KT Access)

300: Maple Road & Lannon Road

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	558	574	33	37	479	16	79	121	20	47	105	196
v/c Ratio	0.77	0.25	0.03	0.28	0.31	0.02	0.50	0.52	0.10	0.31	0.48	0.13
Control Delay (s/veh)	41.5	8.9	9.1	44.1	17.1	15.3	47.0	44.5	34.6	33.4	36.0	0.2
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 (s/veh)	41.5	8.9	9.1	44.1	17.1	15.3	47.0	44.5	34.6	33.4	36.0	0.2
Queue Length 50th (ft)	155	75	7	20	86	5	43	66	10	21	46	0
Queue Length 95th (ft)	213	127	23	50	135	18	84	115	30	43	79	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	728	2256	966	462	1548	667	314	456	386	295	435	1455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.25	0.03	0.08	0.31	0.02	0.25	0.27	0.05	0.16	0.24	0.13
Intersection Summary												

HCM 7th Signalized Intersection Summary 300: Maple Road & Lannon Road

2029 Build Alt 1 (Full KT Access)

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	545	50	35	455	25	75	115	30	45	100	300
Future Volume (veh/h)	530	545	50	35	455	25	75	115	30	45	100	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1847	1847	1781	1821	1821	1811	1746	1746	1737
Adj Flow Rate, veh/h	558	574	33	37	479	16	79	121	20	47	105	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	8	8	8	6	6	6	11	11	11
Cap, veh/h	1113	2159	922	71	1131	486	190	266	224	179	255	
Arrive On Green	0.32	0.60	0.60	0.04	0.32	0.32	0.15	0.15	0.15	0.05	0.05	0.00
Sat Flow, veh/h	3496	3595	1535	1759	3509	1510	1255	1821	1535	1165	1746	1472
Grp Volume(v), veh/h	558	574	33	37	479	16	79	121	20	47	105	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1759	1755	1510	1255	1821	1535	1165	1746	1472
Q Serve(g_s), s	11.7	6.8	0.8	1.9	9.6	0.7	5.5	5.5	1.0	3.6	5.3	0.0
Cycle Q Clear(g_c), s	11.7	6.8	0.8	1.9	9.6	0.7	10.8	5.5	1.0	9.0	5.3	0.0
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	1113	2159	922	71	1131	486	190	266	224	179	255	
V/C Ratio(X)	0.50	0.27	0.04	0.52	0.42	0.03	0.42	0.46	0.09	0.26	0.41	
Avail Cap(c_a), veh/h	1113	2159	922	469	1131	486	325	461	389	304	442	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	0.00
Uniform Delay (d), s/veh	24.9	8.5	7.3	42.3	23.9	20.9	40.0	35.2	33.3	43.6	39.1	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.1	2.2	1.2	0.1	0.5	0.5	0.1	0.3	0.4	0.0
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(50%),veh/ln	4.5	2.3	0.2	0.8	3.9	0.2	1.7	2.4	0.4	1.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	8.9	7.4	44.6	25.1	21.0	40.5	35.6	33.3	43.9	39.5	0.0
LnGrp LOS	C	A	A	D	C	C	D	D	C	D	D	
Approach Vol, veh/h	1165			532			220			152		
Approach Delay, s/veh	16.5			26.3			37.2			40.8		
Approach LOS	B			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.7	35.0		20.3	9.6	60.0		20.3				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	19.0	29.0		22.8	24.0	24.0		22.8				
Max Q Clear Time (g_c+I1), s	13.7	11.6		11.0	3.9	8.8		12.8				
Green Ext Time (p_c), s	0.6	5.4		0.3	0.0	6.1		0.4				

Intersection Summary

HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1	1	200	155	30
Future Vol, veh/h	20	1	1	200	155	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	15	15	8	8	16	16
Mvmt Flow	23	1	1	230	178	34

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	410	178	213	0	-	0
Stage 1	178	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.55	6.35	4.18	-	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.435	2.272	-	-	-
Pot Cap-1 Maneuver	573	832	1323	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	573	832	1323	-	-	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.46	0.04	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	9	-	581	-	-
HCM Lane V/C Ratio	0.001	-	0.042	-	-
HCM Control Delay (s/veh)	7.7	0	11.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	20	25	150	20	30
Future Vol, veh/h	95	20	25	150	20	30
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	71	71	71	71	71	71
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	134	28	35	211	28	42

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	162
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.17
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.263
Pot Cap-1 Maneuver	-	-	1387
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1387
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.09	10.48
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	728	-	-	257	-
HCM Lane V/C Ratio	0.097	-	-	0.025	-
HCM Control Delay (s/veh)	10.5	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Queues

2029 Build Alt 1 (Full KT Access)

100: Maple Road & Mequon Road

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	273	6	137	107	220	1	48	583	4
v/c Ratio	0.06	0.73	0.04	0.34	0.23	0.10	0.00	0.07	0.26	0.00
Control Delay (s/veh)	24.7	43.3	24.0	29.9	4.1	2.6	4.0	8.1	8.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.7	43.3	24.0	29.9	4.1	2.6	4.0	8.1	8.2	8.0
Queue Length 50th (ft)	8	144	3	66	6	6	0	9	67	1
Queue Length 95th (ft)	21	189	11	97	17	14	m0	26	108	5
Internal Link Dist (ft)		1001		145		397			293	
Turn Bay Length (ft)	100		100		100		50	50		45
Base Capacity (vph)	479	637	291	689	474	2111	929	727	2253	992
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.43	0.02	0.20	0.23	0.10	0.00	0.07	0.26	0.00
Intersection Summary										
m Volume for 95th percentile queue is metered by upstream signal.										

HCM 7th Signalized Intersection Summary 100: Maple Road & Mequon Road

2029 Build Alt 1 (Full KT Access)

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	60	170	5	85	30	90	185	1	40	490	5
Future Volume (veh/h)	15	60	170	5	85	30	90	185	1	40	490	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1856	1856	1856	1856	1856	1856	1764	1764	1737	1870	1870	1841
Adj Flow Rate, veh/h	18	71	202	6	101	36	107	220	1	48	583	4
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	11	11	11	4	4	4
Cap, veh/h	244	85	242	123	260	93	551	2237	982	854	2371	1041
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	1.00	1.00	1.00	0.67	0.67	0.67
Sat Flow, veh/h	1242	426	1212	1097	1306	466	782	3352	1472	1160	3553	1560
Grp Volume(v), veh/h	18	0	273	6	0	137	107	220	1	48	583	4
Grp Sat Flow(s),veh/h/ln	1242	0	1637	1097	0	1772	782	1676	1472	1160	1776	1560
Q Serve(g_s), s	1.1	0.0	14.4	0.5	0.0	6.0	1.5	0.0	0.0	1.3	5.9	0.1
Cycle Q Clear(g_c), s	7.2	0.0	14.4	14.9	0.0	6.0	7.4	0.0	0.0	1.3	5.9	0.1
Prop In Lane	1.00		0.74	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	0	326	123	0	353	551	2237	982	854	2371	1041
V/C Ratio(X)	0.07	0.00	0.84	0.05	0.00	0.39	0.19	0.10	0.00	0.06	0.25	0.00
Avail Cap(c_a), veh/h	480	0	637	331	0	689	551	2237	982	854	2371	1041
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	0.0	34.6	41.8	0.0	31.3	0.4	0.0	0.0	5.2	6.0	5.0
Incr Delay (d2), s/veh	0.1	0.0	5.6	0.2	0.0	0.7	0.8	0.1	0.0	0.1	0.2	0.0
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(50%),veh/ln	0.3	0.0	6.0	0.1	0.0	2.6	0.1	0.0	0.0	0.3	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.5	0.0	40.3	41.9	0.0	32.0	1.1	0.1	0.0	5.3	6.2	5.0
LnGrp LOS	C		D	D		C	A	A	A	A	A	A
Approach Vol, veh/h	291			143			328			635		
Approach Delay, s/veh	39.9			32.4			0.4			6.1		
Approach LOS	D			C			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	66.1			23.9			66.1			23.9		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	43.0			35.0			43.0			35.0		
Max Q Clear Time (g_c+I1), s	9.4			16.4			7.9			16.9		
Green Ext Time (p_c), s	2.2			1.5			4.3			0.7		
Intersection Summary												
HCM 7th Control Delay, s/veh	14.5											
HCM 7th LOS	B											

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	
Traffic Vol, veh/h	10	1	65	95	1	20	50	245	90	35	620	10
Future Vol, veh/h	10	1	65	95	1	20	50	245	90	35	620	10
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	-	-	-	-	-	-	155	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	0	0	0	9	9	9	4	4	4
Mvmt Flow	12	1	77	113	1	24	60	292	107	42	738	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1093	1345	375	864	1244	146	750	0	0	399	0	0
Stage 1	827	827	-	411	411	-	-	-	-	-	-	-
Stage 2	265	518	-	453	833	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.5	6.5	6.9	4.28	-	-	4.18	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.5	4	3.3	2.29	-	-	2.24	-	-
Pot Cap-1 Maneuver	301	214	*922	*484	255	1034	984	-	-	1216	-	-
Stage 1	484	492	-	*674	649	-	-	-	-	-	-	-
Stage 2	823	577	-	*872	490	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Cap-1 Maneuver	266	194	*922	*400	231	1034	984	-	-	1216	-	-
Mov Cap-2 Maneuver	266	194	-	*400	231	-	-	-	-	-	-	-
Stage 1	467	475	-	*633	610	-	-	-	-	-	-	-
Stage 2	754	542	-	*769	474	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.2	16.73	1.15	0.42
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	984	-	-	671	444	1216	-
HCM Lane V/C Ratio	0.06	-	-	0.135	0.311	0.034	-
HCM Control Delay (s/veh)	8.9	-	-	11.2	16.7	8.1	-
HCM Lane LOS	A	-	-	B	C	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	1.3	0.1	-

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

Queues

2029 Build Alt 1 (Full KT Access)

300: Maple Road & Lannon Road

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	245	598	57	114	739	30	103	125	108	60	196	367
v/c Ratio	0.49	0.31	0.07	0.56	0.42	0.04	0.64	0.42	0.43	0.30	0.67	0.23
Control Delay (s/veh)	39.3	13.9	13.8	48.2	16.7	14.1	52.6	37.5	38.6	33.0	41.8	0.3
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 (s/veh)	39.3	13.9	13.8	48.2	16.7	14.1	52.6	37.5	38.6	33.0	41.8	0.3
Queue Length 50th (ft)	67	97	15	63	136	9	56	65	56	26	87	0
Queue Length 95th (ft)	104	167	43	111	206	26	103	110	99	59	148	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	498	1932	827	237	1756	757	337	620	524	415	613	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.31	0.07	0.48	0.42	0.04	0.31	0.20	0.21	0.14	0.32	0.23
Intersection Summary												

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2029 Build Alt 1 (Full KT Access)

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	550	85	105	680	45	95	115	160	55	180	545
Future Volume (veh/h)	225	550	85	105	680	45	95	115	160	55	180	545
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1924	1924	1856	1880	1880	1870	1865	1865	1856
Adj Flow Rate, veh/h	245	598	57	114	739	30	103	125	108	60	196	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	3	3	3	2	2	2	3	3	3
Cap, veh/h	915	1776	758	145	1137	489	214	402	339	261	399	
Arrive On Green	0.26	0.49	0.49	0.08	0.31	0.31	0.21	0.21	0.21	0.07	0.07	0.00
Sat Flow, veh/h	3496	3595	1535	1832	3655	1572	1193	1880	1585	1144	1865	1572
Grp Volume(v), veh/h	245	598	57	114	739	30	103	125	108	60	196	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1832	1828	1572	1193	1880	1585	1144	1865	1572
Q Serve(g_s), s	5.0	9.1	1.8	5.5	15.7	1.2	7.5	5.0	5.2	4.6	9.1	0.0
Cycle Q Clear(g_c), s	5.0	9.1	1.8	5.5	15.7	1.2	16.7	5.0	5.2	9.6	9.1	0.0
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	915	1776	758	145	1137	489	214	402	339	261	399	
V/C Ratio(X)	0.27	0.34	0.08	0.79	0.65	0.06	0.48	0.31	0.32	0.23	0.49	
Avail Cap(c_a), veh/h	915	1776	758	224	1137	489	354	623	525	395	618	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	0.00
Uniform Delay (d), s/veh	26.4	13.8	12.0	40.7	26.8	21.8	38.8	29.8	29.8	39.8	37.1	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.2	4.3	2.9	0.2	0.6	0.2	0.2	0.2	0.3	0.0
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(50%),veh/ln	2.0	3.4	0.6	2.5	6.8	0.4	2.2	2.2	1.9	1.4	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.4	14.3	12.2	45.0	29.7	22.0	39.4	30.0	30.0	39.9	37.5	0.0
LnGrp LOS	C	B	B	D	C	C	D	C	C	D	D	
Approach Vol, veh/h	900			883			336			256		
Approach Delay, s/veh	17.5			31.4			32.9			38.0		
Approach LOS	B			C			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.6	34.0		26.4	13.1	50.5		26.4				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	13.0	28.0		29.8	11.0	30.0		29.8				
Max Q Clear Time (g_c+I1), s	7.0	17.7		11.6	7.5	11.1		18.7				
Green Ext Time (p_c), s	0.2	5.8		0.7	0.0	7.4		0.6				

Intersection Summary

HCM 7th Control Delay, s/veh	27.0
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	15	5	315	305	65
Future Vol, veh/h	55	15	5	315	305	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	60	16	5	346	335	71

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	692	335	407
Stage 1	335	-	-
Stage 2	357	-	-
Critical Hdwy	6.44	6.24	4.13
Critical Hdwy Stg 1	5.44	-	-
Critical Hdwy Stg 2	5.44	-	-
Follow-up Hdwy	3.536	3.336	2.227
Pot Cap-1 Maneuver	407	702	1147
Stage 1	720	-	-
Stage 2	704	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	404	702	1147
Mov Cap-2 Maneuver	404	-	-
Stage 1	716	-	-
Stage 2	704	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.78	0.13	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	28	-	445	-	-
HCM Lane V/C Ratio	0.005	-	0.173	-	-
HCM Control Delay (s/veh)	8.2	0	14.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	15	30	105	15	35
Future Vol, veh/h	85	15	30	105	15	35
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	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	101	18	36	125	18	42

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	119	0	307	110
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	196	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1463	-	686	943
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1463	-	668	943
Mov Cap-2 Maneuver	-	-	-	-	668	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	815	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.67	9.62
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	839	-	-	400	-
HCM Lane V/C Ratio	0.071	-	-	0.024	-
HCM Control Delay (s/veh)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Queues

2029 Build Alt 2 (Partial KT Access)

100: Maple Road & Mequon Road

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	247	92	232	197	627	1	56	408	9
v/c Ratio	0.48	0.71	0.55	0.68	0.32	0.28	0.00	0.12	0.19	0.01
Control Delay (s/veh)	38.5	43.8	43.0	42.3	3.7	2.5	3.0	8.4	7.3	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.5	43.8	43.0	42.3	3.7	2.5	3.0	8.4	7.3	7.5
Queue Length 50th (ft)	43	131	47	123	12	20	0	11	42	2
Queue Length 95th (ft)	61	141	65	133	21	27	m0	25	61	7
Internal Link Dist (ft)		1001		145		397			293	
Turn Bay Length (ft)	100		100		100		50	50		45
Base Capacity (vph)	297	577	277	564	608	2259	995	449	2101	925
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.43	0.33	0.41	0.32	0.28	0.00	0.12	0.19	0.01
Intersection Summary										
m Volume for 95th percentile queue is metered by upstream signal.										

HCM 7th Signalized Intersection Summary
100: Maple Road & Mequon Road

2029 Build Alt 2 (Partial KT Access)

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	75	100	65	50	115	140	445	1	40	290	10
Future Volume (veh/h)	60	75	100	65	50	115	140	445	1	40	290	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1796	1796	1796	1796	1796	1796	1840	1840	1811	1719	1719	1693
Adj Flow Rate, veh/h	85	106	141	92	70	162	197	627	1	56	408	9
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	7	7	7	7	7	7	6	6	6	14	14	14
Cap, veh/h	218	176	234	209	121	281	614	2148	943	531	2008	882
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	1.00	1.00	1.00	0.61	0.61	0.61
Sat Flow, veh/h	1103	699	930	1088	481	1114	954	3495	1535	733	3267	1434
Grp Volume(v), veh/h	85	0	247	92	0	232	197	627	1	56	408	9
Grp Sat Flow(s),veh/h/ln	1103	0	1629	1088	0	1596	954	1748	1535	733	1633	1434
Q Serve(g_s), s	6.6	0.0	12.0	7.3	0.0	11.5	2.5	0.0	0.0	2.9	5.0	0.2
Cycle Q Clear(g_c), s	18.0	0.0	12.0	19.4	0.0	11.5	7.5	0.0	0.0	2.9	5.0	0.2
Prop In Lane	1.00		0.57	1.00		0.70	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	0	411	209	0	402	614	2148	943	531	2008	882
V/C Ratio(X)	0.39	0.00	0.60	0.44	0.00	0.58	0.32	0.29	0.00	0.11	0.20	0.01
Avail Cap(c_a), veh/h	332	0	579	321	0	567	614	2148	943	531	2008	882
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	0.0	29.7	38.2	0.0	29.5	0.3	0.0	0.0	7.2	7.6	6.7
Incr Delay (d2), s/veh	1.1	0.0	1.4	1.5	0.0	1.3	1.4	0.3	0.0	0.4	0.2	0.0
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(50%),veh/ln	1.8	0.0	4.6	2.0	0.0	4.4	0.2	0.1	0.0	0.4	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.5	0.0	31.1	39.7	0.0	30.8	1.7	0.3	0.0	7.6	7.9	6.7
LnGrp LOS	D		C	D		C	A	A	A	A	A	A
Approach Vol, veh/h	332			324			825			473		
Approach Delay, s/veh	33.0			33.3			0.7			7.8		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	61.3			28.7			61.3			28.7		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	46.0			32.0			46.0			32.0		
Max Q Clear Time (g_c+l1), s	9.5			20.0			7.0			21.4		
Green Ext Time (p_c), s	5.8			1.3			3.3			1.3		
Intersection Summary												
HCM 7th Control Delay, s/veh	13.3											
HCM 7th LOS	B											

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱	↱	↱↱	↱	↱	↱↱	
Traffic Vol, veh/h	0	0	5	0	0	35	25	550	95	30	420	5
Future Vol, veh/h	0	0	5	0	0	35	25	550	95	30	420	5
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	-	-	0	-	-	0	155	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	12	12	12
Mvmt Flow	0	0	7	0	0	46	33	724	125	39	553	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	280	-	-	362	559	0	0	849	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.9	-	-	6.9	4.2	-	-	4.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.3	-	-	3.3	2.25	-	-	2.32	-	-
Pot Cap-1 Maneuver	0	0	974	0	0	*946	1107	-	-	847	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			0			0	0	-	-	0	-	-
Mov Cap-1 Maneuver	-	-	974	-	-	*946	1107	-	-	847	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.72	9	0.31	0.62
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1107	-	-	974	946	847	-
HCM Lane V/C Ratio	0.03	-	-	0.007	0.049	0.047	-
HCM Control Delay (s/veh)	8.4	-	-	8.7	9	9.5	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.2	0.1	-

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

Queues

2029 Build Alt 2 (Partial KT Access)

300: Maple Road & Lannon Road

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	558	574	33	37	489	16	79	121	20	37	105	189
v/c Ratio	0.77	0.25	0.03	0.28	0.32	0.02	0.50	0.52	0.10	0.25	0.48	0.13
Control Delay (s/veh)	41.5	8.9	9.1	44.1	17.1	15.3	47.0	44.5	34.6	29.1	33.5	0.2
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 (s/veh)	41.5	8.9	9.1	44.1	17.1	15.3	47.0	44.5	34.6	29.1	33.5	0.2
Queue Length 50th (ft)	155	75	7	20	88	5	43	66	10	16	46	0
Queue Length 95th (ft)	213	127	23	50	138	18	84	115	30	m37	79	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	728	2256	966	462	1548	667	314	456	386	295	435	1455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.25	0.03	0.08	0.32	0.02	0.25	0.27	0.05	0.13	0.24	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2029 Build Alt 2 (Partial KT Access)

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	545	50	35	465	25	75	115	30	35	100	290
Future Volume (veh/h)	530	545	50	35	465	25	75	115	30	35	100	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1847	1847	1781	1821	1821	1811	1746	1746	1737
Adj Flow Rate, veh/h	558	574	33	37	489	16	79	121	20	37	105	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	8	8	8	6	6	6	11	11	11
Cap, veh/h	1113	2159	922	71	1131	486	190	266	224	179	255	
Arrive On Green	0.32	0.60	0.60	0.04	0.32	0.32	0.15	0.15	0.15	0.05	0.05	0.00
Sat Flow, veh/h	3496	3595	1535	1759	3509	1510	1255	1821	1535	1165	1746	1472
Grp Volume(v), veh/h	558	574	33	37	489	16	79	121	20	37	105	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1759	1755	1510	1255	1821	1535	1165	1746	1472
Q Serve(g_s), s	11.7	6.8	0.8	1.9	9.9	0.7	5.5	5.5	1.0	2.8	5.3	0.0
Cycle Q Clear(g_c), s	11.7	6.8	0.8	1.9	9.9	0.7	10.8	5.5	1.0	8.3	5.3	0.0
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	1113	2159	922	71	1131	486	190	266	224	179	255	
V/C Ratio(X)	0.50	0.27	0.04	0.52	0.43	0.03	0.42	0.46	0.09	0.21	0.41	
Avail Cap(c_a), veh/h	1113	2159	922	469	1131	486	325	461	389	304	442	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	0.00
Uniform Delay (d), s/veh	24.9	8.5	7.3	42.3	24.0	20.9	40.0	35.2	33.3	43.2	39.1	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.1	2.2	1.2	0.1	0.5	0.5	0.1	0.2	0.4	0.0
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(50%),veh/ln	4.5	2.3	0.2	0.8	4.0	0.2	1.7	2.4	0.4	0.8	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	8.9	7.4	44.6	25.2	21.0	40.5	35.6	33.3	43.4	39.5	0.0
LnGrp LOS	C	A	A	D	C	C	D	D	C	D	D	
Approach Vol, veh/h	1165			542			220			142		
Approach Delay, s/veh	16.5			26.4			37.2			40.5		
Approach LOS	B			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.7	35.0		20.3	9.6	60.0		20.3				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	19.0	29.0		22.8	24.0	24.0		22.8				
Max Q Clear Time (g_c+I1), s	13.7	11.9		10.3	3.9	8.8		12.8				
Green Ext Time (p_c), s	0.6	5.4		0.3	0.0	6.1		0.4				

Intersection Summary

HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1	1	200	155	30
Future Vol, veh/h	20	1	1	200	155	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	15	15	8	8	16	16
Mvmt Flow	23	1	1	230	178	34

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	410	178	213
Stage 1	178	-	-
Stage 2	232	-	-
Critical Hdwy	6.55	6.35	4.18
Critical Hdwy Stg 1	5.55	-	-
Critical Hdwy Stg 2	5.55	-	-
Follow-up Hdwy	3.635	3.435	2.272
Pot Cap-1 Maneuver	573	832	1323
Stage 1	822	-	-
Stage 2	777	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	573	832	1323
Mov Cap-2 Maneuver	573	-	-
Stage 1	821	-	-
Stage 2	777	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.46	0.04	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	9	-	581	-	-
HCM Lane V/C Ratio	0.001	-	0.042	-	-
HCM Control Delay (s/veh)	7.7	0	11.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	4.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	20	25	150	80	50
Future Vol, veh/h	95	20	25	150	80	50
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	71	71	71	71	71	71
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	134	28	35	211	113	70
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	162	0	430	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	282	-
Critical Hdwy	-	-	4.17	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.263	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1387	-	582	899
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1387	-	566	899
Mov Cap-2 Maneuver	-	-	-	-	566	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	744	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	1.09		12.54		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	660	-	-	257	-	
HCM Lane V/C Ratio	0.278	-	-	0.025	-	
HCM Control Delay (s/veh)	12.5	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	

Queues

2029 Build Alt 1 (Partial KT Access)

100: Maple Road & Mequon Road

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	273	89	137	107	220	1	48	583	4
v/c Ratio	0.11	0.73	0.52	0.34	0.23	0.10	0.00	0.07	0.26	0.00
Control Delay (s/veh)	25.7	43.3	40.3	29.9	4.3	2.8	4.0	8.1	8.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.7	43.3	40.3	29.9	4.3	2.8	4.0	8.1	8.2	8.0
Queue Length 50th (ft)	14	144	45	66	8	8	0	9	67	1
Queue Length 95th (ft)	30	189	77	97	17	14	m0	26	108	5
Internal Link Dist (ft)		1001		145		397			293	
Turn Bay Length (ft)	100		100		100		50	50		45
Base Capacity (vph)	479	637	291	689	474	2111	929	727	2253	992
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.43	0.31	0.20	0.23	0.10	0.00	0.07	0.26	0.00
Intersection Summary										
m Volume for 95th percentile queue is metered by upstream signal.										

HCM 7th Signalized Intersection Summary 100: Maple Road & Mequon Road

2029 Build Alt 1 (Partial KT Access)

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	60	170	75	85	30	90	185	1	40	490	5
Future Volume (veh/h)	25	60	170	75	85	30	90	185	1	40	490	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1856	1856	1856	1856	1856	1856	1764	1764	1737	1870	1870	1841
Adj Flow Rate, veh/h	30	71	202	89	101	36	107	220	1	48	583	4
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	11	11	11	4	4	4
Cap, veh/h	324	110	313	201	338	120	495	2039	895	785	2160	949
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	1.00	1.00	1.00	0.61	0.61	0.61
Sat Flow, veh/h	1242	426	1212	1097	1306	466	782	3352	1472	1160	3553	1560
Grp Volume(v), veh/h	30	0	273	89	0	137	107	220	1	48	583	4
Grp Sat Flow(s),veh/h/ln	1242	0	1637	1097	0	1772	782	1676	1472	1160	1776	1560
Q Serve(g_s), s	1.8	0.0	13.4	7.1	0.0	5.6	2.0	0.0	0.0	1.5	6.9	0.1
Cycle Q Clear(g_c), s	7.4	0.0	13.4	20.4	0.0	5.6	8.9	0.0	0.0	1.5	6.9	0.1
Prop In Lane	1.00		0.74	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	0	423	201	0	458	495	2039	895	785	2160	949
V/C Ratio(X)	0.09	0.00	0.64	0.44	0.00	0.30	0.22	0.11	0.00	0.06	0.27	0.00
Avail Cap(c_a), veh/h	486	0	637	344	0	689	495	2039	895	785	2160	949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	29.7	38.8	0.0	26.8	0.6	0.0	0.0	7.2	8.3	6.9
Incr Delay (d2), s/veh	0.1	0.0	1.7	1.5	0.0	0.4	1.0	0.1	0.0	0.1	0.3	0.0
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(50%),veh/ln	0.5	0.0	5.2	2.0	0.0	2.4	0.1	0.0	0.0	0.4	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.9	0.0	31.3	40.3	0.0	27.2	1.6	0.1	0.0	7.4	8.6	6.9
LnGrp LOS	C		C	D		C	A	A	A	A	A	A
Approach Vol, veh/h	303			226			328			635		
Approach Delay, s/veh	31.2			32.3			0.6			8.5		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	60.7			29.3			60.7			29.3		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	43.0			35.0			43.0			35.0		
Max Q Clear Time (g_c+l1), s	10.9			15.4			8.9			22.4		
Green Ext Time (p_c), s	2.2			1.6			4.3			0.9		
Intersection Summary												
HCM 7th Control Delay, s/veh	15.0											
HCM 7th LOS	B											

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱	↱	↱↱	↱	↱	↱↱	
Traffic Vol, veh/h	0	0	65	0	0	20	50	245	90	35	690	10
Future Vol, veh/h	0	0	65	0	0	20	50	245	90	35	690	10
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	-	-	0	-	-	0	155	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	0	0	0	9	9	9	4	4	4
Mvmt Flow	0	0	77	0	0	24	60	292	107	42	821	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	417	-	-	146	833	0	0	399	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.92	-	-	6.9	4.28	-	-	4.18	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.31	-	-	3.3	2.29	-	-	2.24	-	-
Pot Cap-1 Maneuver	0	0	*899	0	0	1034	932	-	-	1216	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			0			0	0	-	-	0	-	-
Mov Cap-1 Maneuver	-	-	*899	-	-	1034	932	-	-	1216	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.38		8.56		1.19		0.38	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	932	-	-	899 1034	1216	-	-
HCM Lane V/C Ratio	0.064	-	-	0.086 0.023	0.034	-	-
HCM Control Delay (s/veh)	9.1	-	-	9.4 8.6	8.1	-	-
HCM Lane LOS	A	-	-	A A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3 0.1	0.1	-	-

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

Queues

2029 Build Alt 1 (Partial KT Access)

300: Maple Road & Lannon Road

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	245	598	57	114	750	30	103	125	108	43	196	361
v/c Ratio	0.49	0.31	0.07	0.56	0.43	0.04	0.64	0.42	0.43	0.22	0.67	0.23
Control Delay (s/veh)	39.3	13.9	13.8	48.2	16.7	14.1	52.6	37.5	38.6	26.2	37.7	0.3
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 (s/veh)	39.3	13.9	13.8	48.2	16.7	14.1	52.6	37.5	38.6	26.2	37.7	0.3
Queue Length 50th (ft)	67	97	15	63	138	9	56	65	56	18	83	0
Queue Length 95th (ft)	104	167	43	111	210	26	103	110	99	39	123	0
Internal Link Dist (ft)		674			679			287			626	
Turn Bay Length (ft)	200		250	165		175	75		250	75		
Base Capacity (vph)	498	1932	827	237	1756	757	337	620	524	415	613	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.31	0.07	0.48	0.43	0.04	0.31	0.20	0.21	0.10	0.32	0.23
Intersection Summary												

HCM 7th Signalized Intersection Summary

300: Maple Road & Lannon Road

2029 Build Alt 1 (Partial KT Access)

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	550	85	105	690	45	95	115	160	40	180	535
Future Volume (veh/h)	225	550	85	105	690	45	95	115	160	40	180	535
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1892	1892	1811	1924	1924	1856	1880	1880	1870	1865	1865	1856
Adj Flow Rate, veh/h	245	598	57	114	750	30	103	125	108	43	196	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	3	3	3	2	2	2	3	3	3
Cap, veh/h	915	1776	758	145	1137	489	214	402	339	261	399	
Arrive On Green	0.26	0.49	0.49	0.08	0.31	0.31	0.21	0.21	0.21	0.07	0.07	0.00
Sat Flow, veh/h	3496	3595	1535	1832	3655	1572	1193	1880	1585	1144	1865	1572
Grp Volume(v), veh/h	245	598	57	114	750	30	103	125	108	43	196	0
Grp Sat Flow(s),veh/h/ln	1748	1797	1535	1832	1828	1572	1193	1880	1585	1144	1865	1572
Q Serve(g_s), s	5.0	9.1	1.8	5.5	16.0	1.2	7.5	5.0	5.2	3.2	9.1	0.0
Cycle Q Clear(g_c), s	5.0	9.1	1.8	5.5	16.0	1.2	16.7	5.0	5.2	8.3	9.1	0.0
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	915	1776	758	145	1137	489	214	402	339	261	399	
V/C Ratio(X)	0.27	0.34	0.08	0.79	0.66	0.06	0.48	0.31	0.32	0.16	0.49	
Avail Cap(c_a), veh/h	915	1776	758	224	1137	489	354	623	525	395	618	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	0.00
Uniform Delay (d), s/veh	26.4	13.8	12.0	40.7	26.9	21.8	38.8	29.8	29.8	39.1	37.1	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.2	4.3	3.0	0.2	0.6	0.2	0.2	0.1	0.3	0.0
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(50%),veh/ln	2.0	3.4	0.6	2.5	6.9	0.4	2.2	2.2	1.9	0.9	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.4	14.3	12.2	45.0	29.9	22.0	39.4	30.0	30.0	39.3	37.5	0.0
LnGrp LOS	C	B	B	D	C	C	D	C	C	D	D	
Approach Vol, veh/h	900			894			336			239		
Approach Delay, s/veh	17.5			31.5			32.9			37.8		
Approach LOS	B			C			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.6	34.0		26.4	13.1	50.5		26.4				
Change Period (Y+Rc), s	6.0	6.0		7.2	6.0	6.0		7.2				
Max Green Setting (Gmax), s	13.0	28.0		29.8	11.0	30.0		29.8				
Max Q Clear Time (g_c+I1), s	7.0	18.0		11.1	7.5	11.1		18.7				
Green Ext Time (p_c), s	0.2	5.7		0.6	0.0	7.4		0.6				

Intersection Summary

HCM 7th Control Delay, s/veh	27.0
HCM 7th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	15	5	315	305	65
Future Vol, veh/h	55	15	5	315	305	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	95
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	60	16	5	346	335	71
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	692	335	407	0	-	0
Stage 1	335	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	407	702	1147	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	404	702	1147	-	-	-
Mov Cap-2 Maneuver	404	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	14.78	0.13		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	28	-	445	-	-	
HCM Lane V/C Ratio	0.005	-	0.173	-	-	
HCM Control Delay (s/veh)	8.2	0	14.8	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.6	-	-	

Intersection						
Int Delay, s/veh	4.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	15	30	105	85	60
Future Vol, veh/h	85	15	30	105	85	60
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	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	101	18	36	125	101	71

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	119	0	307	110
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	196	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1463	-	686	943
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1463	-	668	943
Mov Cap-2 Maneuver	-	-	-	-	668	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	815	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.67	11.13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	759	-	-	400	-
HCM Lane V/C Ratio	0.227	-	-	0.024	-
HCM Control Delay (s/veh)	11.1	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

APPENDIX E

WARRANT STUDIES

Right-Turn Lane Warrants

Traffic Signal Warrants

Crash Analysis

Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

100%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: #100 - Maple Road & Mequon Road
County: Washington County
Village: Germantown, WI

Major Street: Maple Road
Critical Approach Speed: 40 mph
Lanes: 2 or more lanes

Minor Street: Mequon Road
Critical Approach Speed: 30 mph
Lanes: 1 lane

% Right Turns Included
From North (SB) 100%
From East (WB) 0%
From South (NB) 100%
From West (EB) 0%

In built-up area of isolated community of < 10,000 population? No
Total number of approaches at intersection? 4 or more
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level?

Analysis based on PROJECTED volume data.

Forecast Year	Within 5 Years of Construction?	Time (HH:MM)			
		From	AM / PM	To	AM / PM
Year 2024 Existing Traffic		6:00	AM	6:00	PM

Warrant Evaluation Summary	Warrant Met:
Warrant 1: Eight - Hour Vehicular Volume	No
Condition A: Minimum Vehicular Volume	No
Condition B: Interruption of Continuous Traffic	No
Condition C: Combination: 80% of A and B	No
Warrant 2: Four-Hour Volume	No
Warrant 3: Peak Hour Volume	Yes
Warrant 4: Pedestrian Volume	N/A
Criterion A: Four-Hour	
Criterion B: Peak-Hour	
Warrant 5: School Crossing	N/A
Warrant 6: Coordinated Signal System	N/A
Warrant 7: Crash Experience	Yes
Warrant 8: Roadway Network	N/A
Warrant 9: Intersection Near a Grade Crossing	N/A

Warrant Analysis Conducted By:

Name: Tammi Czewski
Agency: TADI
Date: 10/10/2024

Warrant 1: Eight - Hour Vehicular Volume

100%

Warrant Evaluated? Yes

Warrant Satisfied? No

Manually Set To:

Condition A : Min. Veh. Volume		
Volume Level	100%	80%
Major Rd. Req	600	480
Minor Rd. Req	150	120
Number of Hours	0	0

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	100%	80%
Major Rd. Req	900	720
Minor Rd. Req	75	60
Number of Hours	0	4

Satisfied? No

Condition C: Combination of A & B at 80%		
---	--	--

Satisfied? No

6:00 AM		Enter Start Time (Military Time) (HH:MM)			Total
Time Period	From	To	Major Road: Both App. (VPH)	Minor Road: High App. (VPH)	
1	6:00	7:00	772	77	849
2	7:00	8:00	763	111	874
3	8:00	9:00	543	67	610
4	9:00	10:00	376	31	407
5	10:00	11:00	396	55	451
6	11:00	12:00	484	66	550
7	12:00	13:00	614	62	676
8	13:00	14:00	503	53	556
9	14:00	15:00	724	60	784
10	15:00	16:00	767	74	841
11	16:00	17:00	706	82	788
12	17:00	18:00	499	74	573
13	18:00	19:00	353	37	390
14	19:00	20:00	0	0	0
15	20:00	21:00	0	0	0
16	21:00	22:00	0	0	0

Warrant 2: Four-Hour Volume

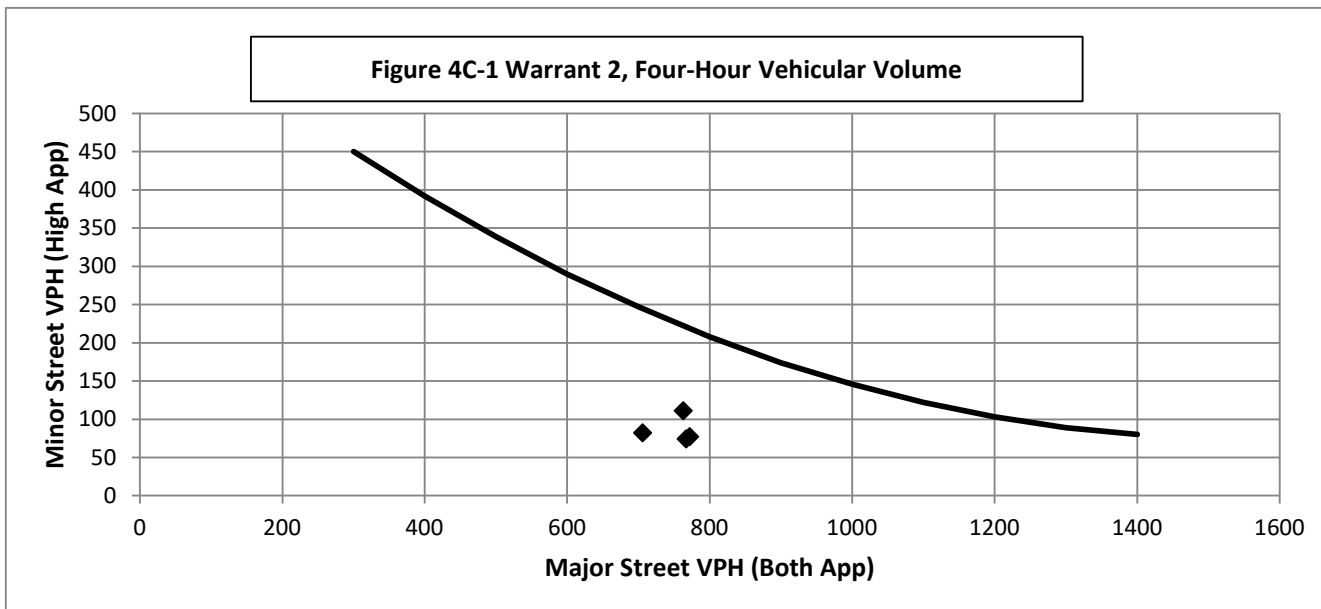
100%

Warrant Evaluated? Yes

Warrant Satisfied? No

Manually Set To:

Hour Start	7:00	6:00	15:00	16:00
Major Road Vol.	763	772	767	706
Minor Road Vol.	111	77	74	82



Warrant 3: Peak Hour Volume

100%

Warrant Evaluated? Yes

Condition justifying use of warrant:

Light industrial development creates significant peaking.
9.9 veh-hours of delay in the AM peak hour.

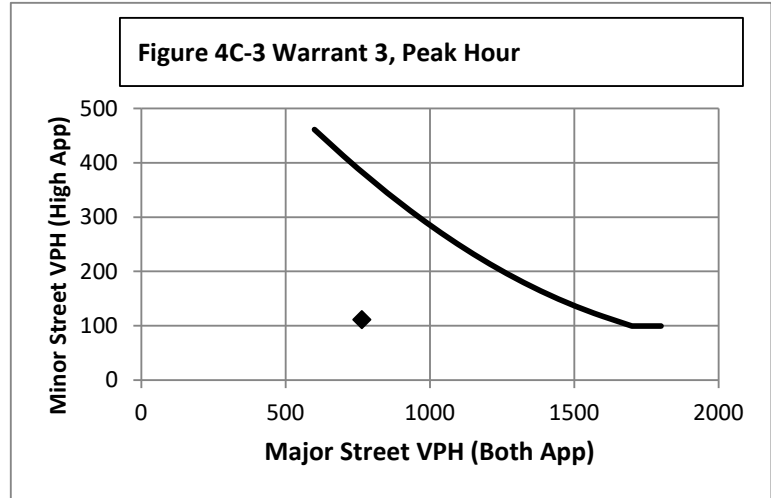
Criteria		Met?
Delay on Minor Approach	4	Yes
Volume on Minor Approach	100	Yes
Total Entering Volume (veh/h)	800	

Manually Set Peak Hour?

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
7:00	763	111

Warrant Satisfied? Yes

Manually Set To:



Warrant 4: Pedestrian Volume

100%

Warrant Evaluated?

Warrant Satisfied? N/A

Manually Set To:

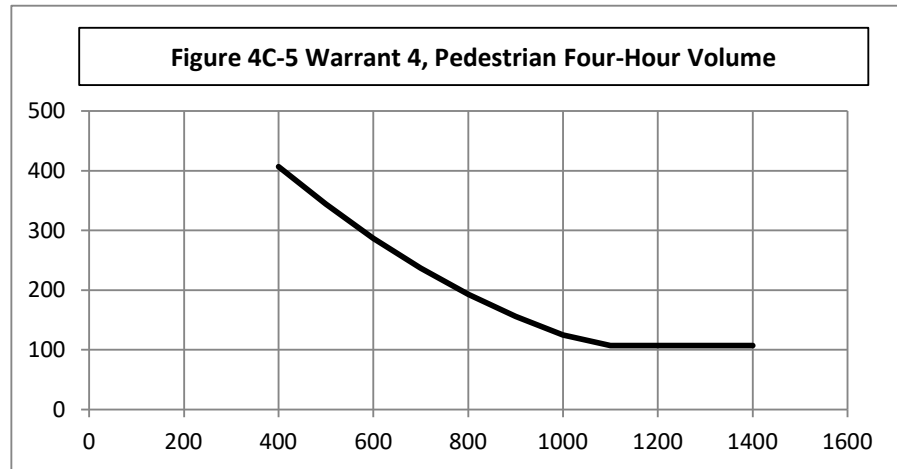
Criterion A: Four Hour

Hour (Start)	Pedestrian Volume	Major Road Vol.
		0
		0
		0
		0

Manually Set Major Rd Vol?

Avg. walk speed less than 3.5 ft/s?

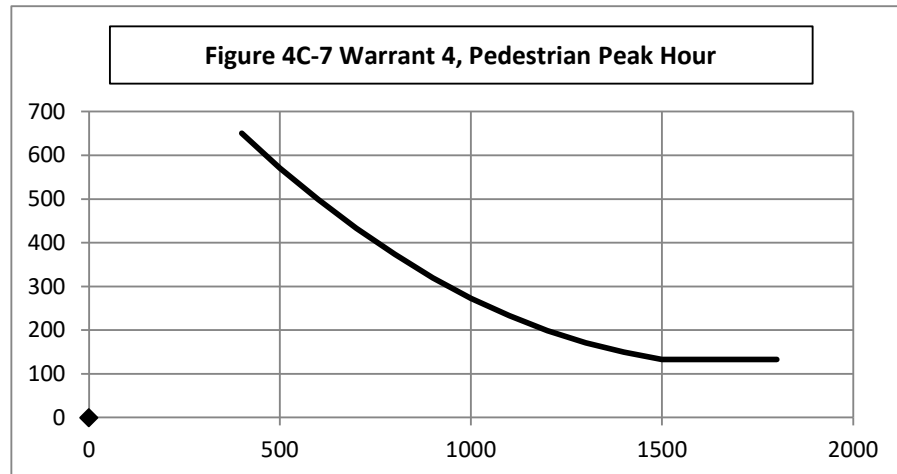
Criterion A Satisfied?



Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

Criterion B Satisfied?



Warrant 5: School Crossing

100%

Warrant Evaluated?

Warrant Satisfied? N/A

Manually Set To:

Criteria

Fulfilled?

1	There are a MINIMUM of 20 school children during the highest crossing hour.	
2	There are fewer adequate gaps in the major road traffic stream during the period when the school children are using the crossing than the number of minutes in the same period.	
3	The nearest traffic signal along the major road is located more than 300 ft away. Or, the nearest traffic signal is within 300 ft but the proposed traffic signal will not restrict the progressive movement of traffic.	

Warrant 6: Coordinated Signal System

100%

Warrant Evaluated?

Warrant Satisfied? N/A

Manually Set To:

Criteria

Fulfilled?

1	Signal spacing > 1000 ft	
2	On a one-way road or a road that has traffic predominantly in one direction, the adjacent signals are so far apart that they do not provide the necessary degree of vehicle platooning.	
3	On a two-way road, adjacent signals do not provide the necessary degree of platooning and the proposed and the adjacent signals will collectively provide a progressive operation.	

Warrant 7: Crash Experience

100%

Warrant Evaluated? Yes

Warrant Satisfied? Yes

Manually Set To:

Criteria

Met?

Fulfilled?

1	Adequate trial of other remedial measures has failed to reduce crash frequency.			Yes	
	Measures Tried:	Install AWSC			
2	Five or more reported crashes, of types susceptible to correction by signal, have occurred within a 12 month period.	# of crashes per 12 months		Yes	
		5			
3	Warrant 1, Condition A (80%)			No	Yes
	Warrant 1, Condition B (80%)			No	
	Warrant 4, Criterion A (80%)			No	
	Warrant 4, Criterion B (80%)			Yes	

Warrant 8: Roadway Network

100%

Warrant Evaluated?

Warrant Satisfied? N/A

Manually Set To:

Criteria

Met?

Fulfilled?

1	Total entering volume of at least 1,000 veh/h during typical weekday peak hour		874	No	No
	Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.			No	
2	Total entering vol. of at least 1,000 veh/h for each of any 5 hrs of non-normal business day (Sat. or Sun.)				
	Hour				
	Volume				

Characteristics of Major Routes - Select yes if all intersecting routes have characteristic

Fulfilled?

1	Part of the road or highway system that serves as the principal roadway network for through traffic flow	
2	Rural or suburban highway outside of, entering, or traversing a city	
3	Appears as a major route on an official plan	

Warrant 9: Intersection Near a Grade Crossing

100%

Warrant Evaluated?

Warrant Satisfied? N/A

Manually Set To:

Adjustment Factors			Manually Set Peak Hour?				
Rail Traffic per Day	% High Occupancy Buses on Minor Road	% Tractor-Trailer Trucks on Minor Road	D	Peak Hour	Major Road Vol.	Minor Road Vol.	Adjusted Minor Vol.
1	0	0% to 2.5%	660	7:00	763	111	37.185

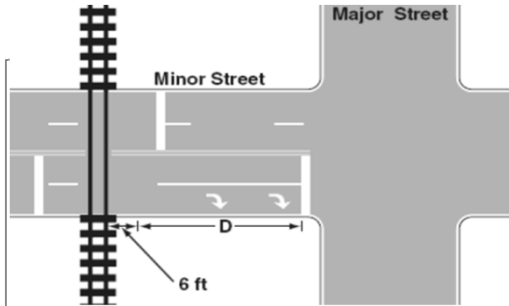
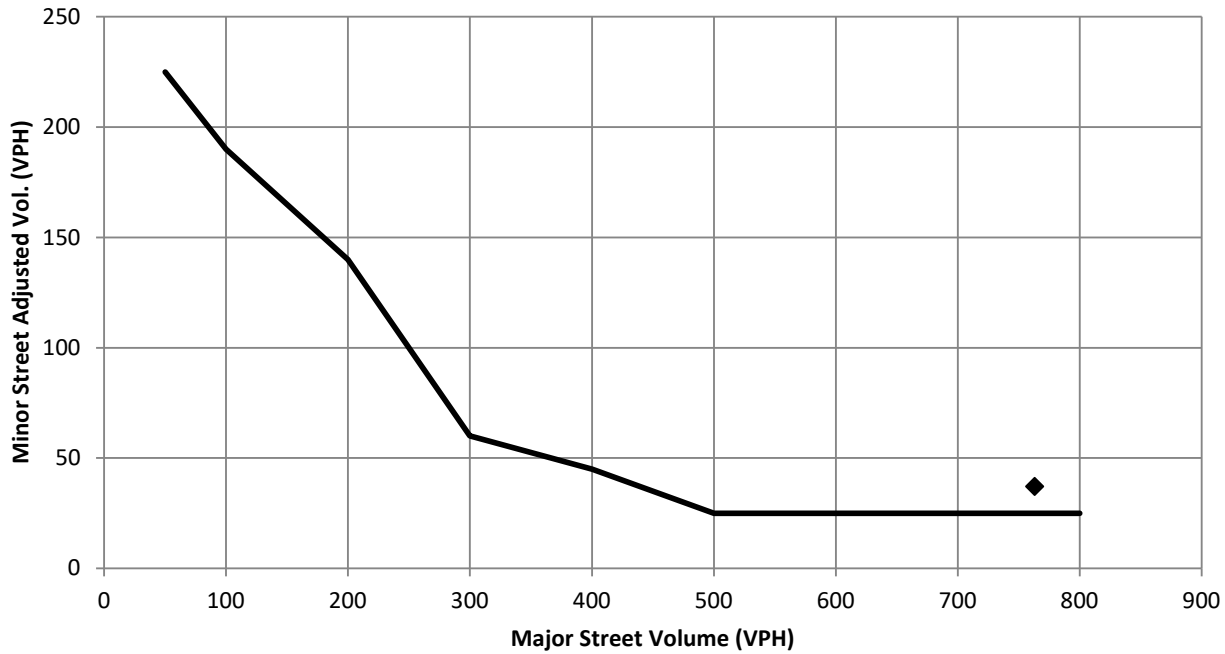


Figure 4C-9 Warrant9, Intersection Near a grade Crossing (One Approach Lane at the Track Crossing)



Conclusions/Comments:

Updated: 12/6/2017

Hourly Volume Data																						
One Hour Time Period Start Time		↓ From North (SB)					← From East (WB)					↑ From South (NB)					→ From West (EB)					Total Vehicle Volume
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	6:00	10	143	13	0	166	118	20	1	0	139	1	467	138	0	606	42	29	48	0	119	1030
	7:00	7	266	40	0	313	56	41	1	0	98	4	323	123	0	450	126	83	28	0	237	1098
	8:00	14	174	15	0	203	46	38	1	0	85	1	272	67	0	340	102	46	21	0	169	797
	9:00	4	144	24	0	172	21	24	5	0	50	4	150	50	0	204	54	27	4	0	85	511
MD	10:00	7	143	25	0	175	30	39	1	0	70	1	163	57	0	221	77	42	13	0	132	598
	11:00	6	230	46	0	282	37	37	3	0	77	1	153	47	1	202	77	54	12	0	143	704
	12:00	13	237	48	0	298	53	60	2	0	115	3	226	87	0	316	88	39	6	0	133	862
	13:00	12	204	30	0	246	46	52	1	0	99	2	194	61	0	257	63	39	11	0	113	715
PM	14:00	11	335	54	0	400	44	53	7	0	104	0	236	88	0	324	96	38	16	0	150	978
	15:00	8	451	58	0	517	15	72	2	0	89	2	175	73	0	250	170	50	15	0	235	1091
	16:00	7	422	36	0	465	23	79	3	0	105	1	159	81	0	241	155	57	13	0	225	1036
	17:00	14	262	29	0	305	27	71	1	0	99	1	144	49	0	194	70	54	20	0	144	742
	18:00	9	152	22	0	183	23	33	1	0	57	2	126	41	1	170	64	27	10	0	101	511
	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20:00																					0
	21:00																					0
Totals		122	3163	440	0	3725	539	619	29	0	1187	23	2788	962	2	3775	1184	585	217	0	1986	10673

Note: Copy volume data and paste into cells using paste special -> values

Note: U-Turns are counted as Left Turns in the Volume Totals

Please Select the Major Road:

N/S

Major Road Left Turn as Minor Approach?

% Right Turns Included (Default 0%)

From North (SB)	100%
From East (WB)	0%
From South (NB)	100%
From West (EB)	0%

Major Road Volume Totals: North/South				
Right	Thru	Left	T+LT	Total
11	610	151	761	772
11	589	163	752	763
15	446	82	528	543
8	294	74	368	376
8	306	82	388	396
7	383	94	477	484
16	463	135	598	614
14	398	91	489	503
11	571	142	713	724
10	626	131	757	767
8	581	117	698	706
15	406	78	484	499
11	278	64	342	353
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
145	5951	1404	7355	7500

Minor Road Highest Volume: East/West				
Right	Thru	Left	T+LT	Total
0	29	48	77	77
0	83	28	111	111
0	46	21	67	67
0	27	4	31	31
0	42	13	55	55
0	54	12	66	66
0	60	2	62	62
0	52	1	53	53
0	53	7	60	60
0	72	2	74	74
0	79	3	82	82
0	54	20	74	74
0	27	10	37	37
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	678	171	849	849

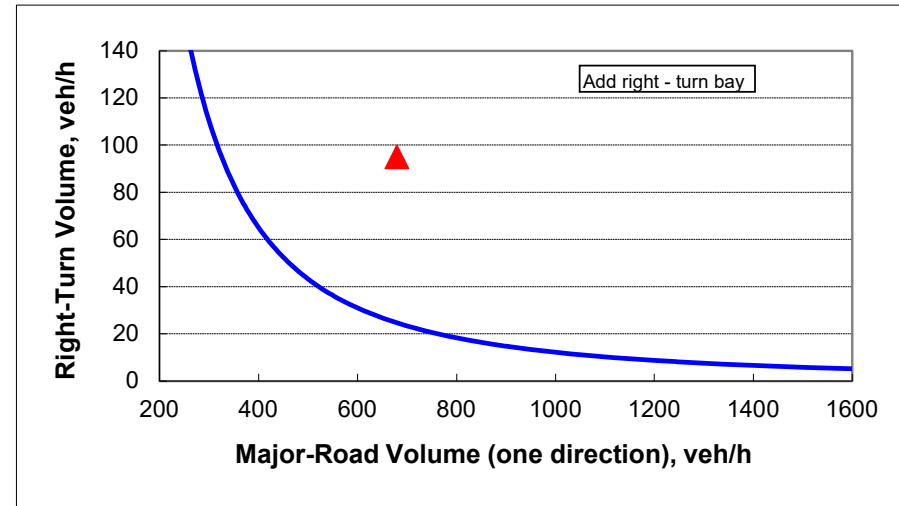
Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	45
Major-road volume (one direction), veh/h:	680
Right-turn volume, veh/h:	95

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	25
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Add right-turn bay.	



Intersection Collision Diagram

Location: Maple Rd & Mequon Rd
Municipality: Germantown
County: Washington
Traffic Control: All-Way Stop

From: 1/1/2019 5 Years
To: 9/30/2024 9 Months
AADT: 13,300
Area Type: Urban
GPS Coordinates: 43.221069, -88.142373

TOTAL CRASHES: 24

AVG. CRASHES/YEAR: 4.2

CRASH RATE: 0.86 per MEV

KAB CRASH RATE: 0.07 per MEV

ECONOMIC LOSS*: \$671,600

*KA=\$684K, B=\$217K, C=\$123K, PDO=\$10.8K

Maple Rd

Mn Misc. Crashes
1 North Leg

SB₆ 1
SB₅ 2

SB₂ 3
NB₁ 5

EB₄ 1

NB₂ 2

WB₂ 7

YEAR	K	A	B	C	PDO	TOT.	ECON. LOSS
2019	0	0	0	0	4	4	\$ 43,200
2020	0	0	1	0	1	2	\$ 227,800
2021	0	0	0	0	7	7	\$ 75,600
2022	0	0	0	0	3	3	\$ 32,400
2023	0	0	1	0	7	8	\$ 292,600

TOTAL 0 0 2 0 22 24 \$ 671,600

K = Fatal, A = Suspected Serious Injury, B = Suspected Minor Injury,
C = Possible Injury, PDO = No Apparent Injury

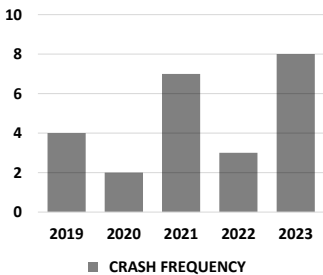


WB 1,400 Entering ADT



ECON. LOSS
COLOR SCALE
> \$1 M
> \$500 K
Ped/Bike

ANNUAL CRASH TRENDS



ROAD CONDITIONS		
DRY	17	71%
WET	6	25%
SNOW	1	4%
ICE	0	0%
OTH.	0	0%
TOT.	24	

LIGHT CONDITIONS		
DAY	20	83%
DARK	4	17%
TOT.	24	

DRIVER BEHAVIOR		
ALCOHOL	0	0%
DRUGS	0	0%
SPEED	1	4%

SEASON		
SPRING	4	17%
SUMMER	5	21%
FALL	5	21%
WINTER	10	42%
TOT.	24	

FAILURE TO YIELD		
NB	3	13%
SB	4	17%
EB	1	4%
WB	1	4%
TBD	0	0%
TOT.	9	38%

DISRGRD. CONTROL		
NB	3	13%
SB	1	4%
EB	0	0%
WB	0	0%
TBD	0	0%
TOT.	4	17%

VEHICLE DAMAGE		
OTHER/UNK.	0	0%
NONE	1	2%
VERY MINOR	0	0%
MINOR	18	40%
MODERATE	18	40%
SEVERE	8	18%
VERY SEVERE	0	0%
TOTAL VEHICLES	45	

NOTES:

Injury crashes have been vetted.

DAY/TIME TRENDS

	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	UNK		TOT.
MON	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	MON	4
TUE	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	TUE	4
WED	1	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	2	1	0	0	0	0	0	0	0	WED	7
THU	0	0	0	0	0	0	0	2	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	THU	6
FRI	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FRI	1
SAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	SAT	1
SUN	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	SUN	1
	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	UNK		TOT.
TOT.	1	0	0	0	0	0	1	5	2	0	0	0	4	0	2	1	4	1	0	1	1	0	1	0	0	TOT.	24

Corresponds to Collision Diagram

[illegible]



Stormwater Management Plan

Kwik Trip Store #631
STH 167 & Maple Rd
Village of Germantown
Washington County, WI

REI # 11757



**COMPREHENSIVE
SERVICES WITH
PRACTICAL
SOLUTIONS**



Stormwater Management Plan For:

**Kwik Trip Store #631
STH 167 & Maple Rd
Village of Germantown
Washington County, WI**

REI # 11757

**Prepared For:
Kwik Trip, Inc.
1813 Kramer Street
La Crosse, WI 54602**

10/9/2024

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7.0	Erosion Control Plan
8.0	Long Term Maintenance
9.0	References

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Sheet STM-1 (Appendix 3&4):	Post Development Watershed Areas

LIST OF APPENDICES

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Appendix 2	Site Soils Information
Appendix 3	Water Quality Calculations & WinSLAMM Inputs
Appendix 4	Post-Development Conditions Peak Flow Analysis
Appendix 5	Detention Pond Safe Passage Analysis
Appendix 6	USLE Map & Calculations
Appendix 7	Storm Water Management Maintenance Schedule and Procedures

Executive Summary

The proposed project consists of constructing a new Kwik Trip convenience store, vehicle fueling, parking and driving surfaces, and miscellaneous other amenities. The development will occur on a 4.36-acre property located at 607 E Pioneer Street within the City of Crandon, Forest County, Wisconsin. Land disturbance associated with the project is estimated to be at 3.8 acres. The project site is a redevelopment and is subject to the post-construction stormwater requirements for a redevelopment site found within NR 151.121 - NR 151.126. The development will also require compliance defined within the *Village of Germantown Post-Stormwater Ordinance*¹ and runoff management requirements defined within the *MMSD Rules and Regulations*².

Stormwater Management requirements will be achieved utilizing overland flow coupled with a storm sewer conveyance system that routes stormwater runoff to a proposed wet detention pond. The wet detention pond will treat and detain the stormwater runoff prior to discharging it to the public storm sewer system in Maple Road.

Although the overall site exceeds the peak flow requirements defined in the *MMSD Rules and Regulations*², the peak flow leaving the wet detention pond meets said requirement. The exceedance of the overall site is due to undetained perimeter area (almost entirely greenspace) having a higher peak flow than what is required for the overall site. However, the perimeter greenspace, in all likelihood, would meet the peak volume requirements stated in the *MMSD Rules and Regulations*². For this reason, REI's professional opinion is that the site meets all required post-construction stormwater management performance standards. Additional detail relative to the stormwater management system design can be found within the report, appendices, stormwater figures, and plan set.

1.0 Introduction and Overview of the Proposed Project

Project Owner: Kwik Trip, Inc.

Project

Location: STH 167 & Maple Road

Project City: Village of Germantown

Project
County/State: Washington County, WI

Property Area: 4.36 Acres

Area of Land

Disturbance: 3.8 Acres

Existing Site The existing site consists of a 9,200 sq. ft. building with associated parking and driving
Description: surfaces. Runoff is generally in the southwest direction towards Maple Road.

The proposed development consists of a new Kwik Trip convenience store, vehicle fueling, parking and driving surfaces, and miscellaneous other amenities. Hydrology in the proposed condition will be similar to the existing condition. Runoff of the majority of the proposed development will be conveyed to a wet detention pond in the southwest corner of the property, which will provide stormwater management for the site.

WDNR
Compliance: Wisconsin Administrative Code ch. NR 151 and NR 216

Development Re-Development

Classification: (Refer to Appendix 1 for NR 151 post-construction performance standards)

Local Village of Germantown Post-Construction Stormwater Ordinance¹

Compliance: MMSD Rules and Regulations²

Anticipated

Construction 4/1/2025

Start Date:

2.0 Site Soils Evaluation

Additional data regarding the site soils can be found in **Appendix 2** of this report.

Table 1A
Soils Summary per the Web Soil Survey³

Soil Type	USGS Classification	Infiltration Rate (in/hr)	Hydro Group	Water Table	Restrictive Depth
HmB2, HmC2	Loam	0.06 - 0.20	D	>80 in.	20 - 40 in.
HmD2	Loam	0.06 - 0.20	D	>80 in.	20 - 36 in.
OuB2	Silt Loam	0.06 - 0.20	C	~24 - 42 in.	22 - 40 in.
Sf	Sand	-	D	~60 - 80 in.	>80 in.
VsA	Silt Loam	0.60 - 2.00	B/D	~0 - 24 in.	>80 in.

Table 1B
Soils Summary per Onsite Exploration

Boring/Test Pit #	Stormwater Facility	Stormwater Facility Bottom Elv	Infiltration Rate (in/hr)	Water Table Elv	Bedrock Elv
9	Wet Det. Pond	853.00	0.04	856.4*	N/A

note: infiltration rate is based off of the limiting soil layer

***Per Geotech report, the water table elevation at B-9 is 8-ft below existing grade. Existing grade at the wet detention pond location is elevation 862± (existing grade per Geotech report is 864.4 is same location). Elevation shown on Table 1B is based on Geotech report.**

3.0 Water Quality

Calculation Appendix 3

Reference:

Figure STM-1

Reference:

Software: WinSLAMM Version 10.5

Rainfall: Green Bay, 1969 (March 29 - November 25)

State Stormwater Requirements (WDNR) 40% Total Suspended Solids (TSS) reduction of parking lots and roads in the post-development conditions as compared to no controls.

Local Stormwater Requirements (Village of Germantown) *Village of Germantown Post-Construction Stormwater Ordinance*¹ refers to current state standards for water quality requirements.

Table 2
Water Quality Device Summary

Water Quality Device	Permanent Pool Area (sf)	Storage Depth (in)	Control Structure
Wet Detention Pond	5,564	78	Manhole with weir plate having a primary 4"-dia. orifice and a secondary 5"-dia. orifice

Table 3
Total Suspended Solids (TSS) Removal Summary

Development Type	Required (% of No Control)	TSS Generated (lbs)	TSS Leaving Site (lbs)	% TSS Removed
Redevelopment	40	1,854	506.6	72.68

4.0 Peak Flow Reduction

Post-development Runoff Calculation Reference: Appendix 4
Post-development Runoff Figure Reference: STM-1

Software: HydroCAD Version 10.20-5a
Rainfall Reference: NRCS Rainfall Distributions and 24-hour Duration Rainfall Depths for each Wisconsin County⁵
Rainfall Distribution: MSE 3

State Stormwater Requirements: (WDNR) Since the project is classified as a redevelopment site it qualifies for the peak flow exemption as found within NR 151.123 (2) (b).
 (Village of Germantown) *Village of Germantown Post-Construction Stormwater Ordinance*¹ refers to runoff management requirements defined within the *MMSD Rules and Regulations*² which states that redevelopment sites having greater than one-half acre of new impervious are to have peak flow no higher than 0.15 cfs and 0.5 cfs multiplied by the area of the site for the 2-year and 100-year storm events, respectively.

Stormwater Device Summary: Refer to Table 2

Table 4
Peak Flow Summary

Development Condition	2-yr Storm Peak Flow	100-yr Storm Peak Flow
Peak Flow Runoff Requirement (Site Area = 4.364 ac.)	0.65	2.18
Post-Development w/o detention	12.54	35.17
Post-Development (Total Site)	1.35	5.92
Post-Development (From Wet Det. Pond)	0.63	2.01

note: peak flow units are in cfs

Table 5 summarizes the results of the maximum water surface elevation in each pond. Infiltration rates for each device (if applicable) were ignored for this analysis.

Calculation Reference: Appendix 5
Figure Reference: STM-1
Reference: (Appendix 4)

Table 5
100-year Peak Water Elevation

Stormwater Device	100-Year Peak Elevation	Top of Pond Elevation	Overflow Elevation
Wet Det. Pond	863.49	864.50	863.50

5.0 Infiltration Performance

Since the project site is classified as a redevelopment site, it qualifies for the infiltration exemption as found within NR 151.123 (3) (b) 3. The *Village of Germantown Post-Construction Stormwater Ordinance*¹ refers to NR 151 regulation.

6.0 Protective Area Setbacks

There are no natural features located near the proposed project improvements that require special consideration for this project.

7.0 Erosion Control Plan

An erosion control plan, and associated details, were developed for the proposed construction and are included within the construction plan set. The site contractor will be responsible for implementing and maintaining the erosion control measures throughout construction until they may be removed following site stabilization.

Plan Sheet Sheets C600-603
Reference:

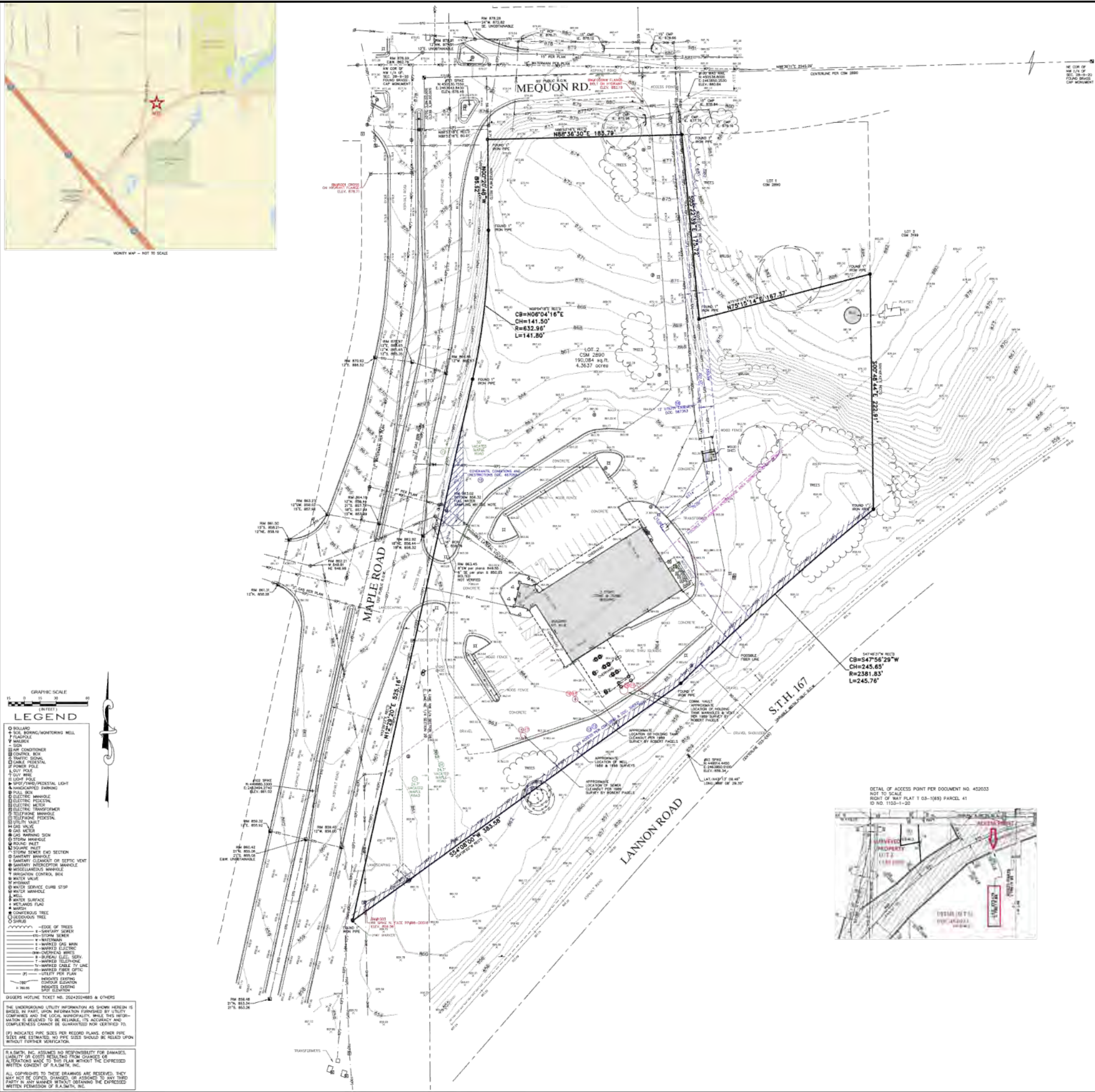
A Soil Loss & Sediment Discharge Calculation Tool (USLE) and accompanying Figure were completed to assure WDNR erosion control compliance and is included within **Appendix 6**.

8.0 Long Term Maintenance

Inspection and routine maintenance of the proposed structural and non-structural stormwater best-management practices will be required to ensure they continue to function following completion of the construction project. A maintenance schedule has been prepared and is included within **Appendix 7**. It will be the landowner's responsibility to document the inspections and ensure any followup action is completed in a timely manner.

9.0 References

- 1) Village of Germantown Post-Construction Stormwater Ordinance. Chapter 27. Post-Construction Stormwater Management. Village of Germantown. Code of Ordinances. June 2023.
- 2) MMSD Rules and Regulations. Chapter 13. Surface Water and Stormwater. Subchapter III. Stormwater Runoff Management Requirements. Milwaukee Metropolitan Sewerage District. March 2023.
- 3) Web Soil Survey of Washington County, Wisconsin. United States Department of Agriculture. Soil Conservation Service. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- 4) Site Evaluation for Stormwater Infiltration. Technical Standard 1002. Wisconsin Department of Natural Resources. Conservation Practice Standards February 2004.
- 5) NRCS Rainfall Distributions and 24-hour Duration Rainfall Depths for each Wisconsin County. National Engineering Handbook (NEH) Part 650. Chapter 2. Appendix 1. United States Department of Agriculture.



ALTA/NSPS LAND TITLE SURVEY STORE #631 - GERMANTOWN

Known as N112 W18741 Mequon Road and W188N1116, W188N11758 & W188 N11762 Maple Road, in the Village of Germantown, Washington County, Wisconsin.

Lot Two (2) of CERTIFIED SURVEY MAP No. 2590 recorded in the Office of the Register of Deeds for Washington County, Wisconsin on April 29, 1986, in Volume 18, Pages 129-132, as Document No. 490681, said certified survey map being a part of the Northwest 1/4 of the Northwest 1/4 of Section 28 and Northeast 1/4 of the Northeast 1/4 of Section 29, Township 9 North, Range 20 East, in the Village of Germantown, Washington County, Wisconsin.

Prepared for: Kwik Trip, Inc.
Survey No. 157613-RSM

A. Basis of Bearings
Bearings are based on the North line of the Northwest 1/4 of Section 28-9-20, which bears North 85°38'30" East, Wisconsin State Plane Coordinate System, South Zone (NAD83/2011).

B. Title Commitment
This survey was prepared based on First American Title Insurance Company National Commercial Services title commitment number NCS-1212465-MAC, commitment date March 19, 2024, which lists the following easements and/or restrictions from schedule B-1:

1-3, 5, 10, Visible evidence shown, if any.

4, 5-9, 19, Not survey related.

11. Rights for entrance to, maintenance, construction, or repair of any utility structures, improvements or services which may be under the surface of the portion of the insured premises lying within vacated Maple Road, pursuant to Section 66.1005(2) (a) Wisconsin Statutes.

Resolution No. 12-86, resolution regarding discontinued portion of Maple Road as set forth in Quit Claim Deed recorded May 09, 1986 in Volume 885 of Records, Page 585 as Document No. 491363, lies within or crosses the surveyed property - its location is shown.

12. Easements, dedications, reservations, provisions, relinquishments, reverts, certificates, and any other matters as provided for or delineated on Certified Survey Map No. 2890 recorded April 29, 1986, in Volume 18, Pages 129-132, as Document No. 490681 referenced in the legal description contained herein. Reference is hereby made to said plat for particulars. Lies within or crosses the surveyed property - its location is shown.

13. Covenants, Conditions and Restrictions as set forth in document recorded on April 07, 1969 in Volume 463, Page 617 as Document No. 306921, lies within or crosses the surveyed property - its location is shown.

14. Covenants, Conditions and Restrictions as set forth in Quit Claim Deed recorded on May 07, 1983 in Volume 790 of Records, Page 86 as Document No. 452033, does not lie within or cross the surveyed property - its location is shown-see detail. Access point is on the South side of Lannon Road, East of Surveyed property.

15. Covenants, Conditions and Restrictions as set forth in deed recorded on May 14, 1984 in Volume 627, Page 126 as Document No. 467059, lies within or crosses the surveyed property - its location is shown.

16. Holding Tank Agreement:
Dated: September 15, 1989
Parties: Village of Germantown, Washington County, State of Wisconsin and Ron Robbins a/k/a Ronald W. Robbins
Recorded: September 23, 1989 in Volume 910 of Records, Page 119
Instrument No.: 498849, lies within or crosses the surveyed property - it is a blanket easement - location of tank, vent and cleanout shown per 1989 survey by Robert Pagels.

17. Holding Tank Agreement:
Dated: September 13, 1991
Parties: Village of Germantown, Washington County, State of Wisconsin and Kibbern State Bank
Recorded: September 30, 1991 in Volume 1144, Page 552
Instrument No.: 506058, lies within or crosses the surveyed property - it is a blanket easement - location of tank, vent and cleanout shown per 1989 survey by Robert Pagels.

18. Utility Easement to Wisconsin Electric Power Company and Wisconsin Bell, Inc., dated October 07, 1991, recorded/October 25, 1991 in Volume 1149, Page 649 as Document No. 587363, lies within or crosses the surveyed property - its location is shown.

C. Flood Note
According to flood insurance rate map of the Village of Germantown, community panel number 56131C0037D, effective date of 11/02/2013, this site falls in zone X (areas determined to be outside the 0.2% annual chance floodplain).

D. Parking Spaces
There are 35 total parking spaces consisting of 31 regular and 2 handicapped parking spaces marked on this site.

E. Elevations
Elevations refer to NAVD83 Datum. Starting benchmark - Northwest 1/4 corner Section 28-9-20, Brass cap monument elevation 877.87'

F. Municipal Zoning
The zoning information listed below is taken from a Zoning Report prepared by The Village of Germantown, dated May 30, 2024.
Zoning Classification: B-3 General Business, Highway Interchange Overlay District (HIA)
Setback Requirements, not specified in letter. Listed setbacks per Zoning code provided with Letter as follows:

Principal Structures
Lot Frontage at Setback: Minimum 50 ft.
Front yard: None, except that the front yard for newly constructed principal buildings shall be the average of the front yard of adjoining or neighboring properties.
Side yards: None, except as required in Sections 17.07 and 17.50
Rear yards: Minimum 25 ft.
Number of stories: Maximum 2 1/2

Accessory Building:
Front yard: Minimum 5 ft.
Side yards: Minimum 5 ft.
Rear yard: Minimum 5 ft.

Building Height:
Principal building: Maximum 45 ft.
Accessory building: Maximum 15 ft.

HIA, Highway Interchange Area District (Overlay District)
Setback: Setback from intersecting highway shall be 160' from Centerline or 100' from the right of way line (SHOWN), whichever is greater, or 50 feet from the right-of-way of a frontage road

Parking Requirements 1 space for each 200 square feet of floor area, plus 1 space for each 2 employees.
The subject parcel is located within a wellhead protection area, which may impact sign design and placement.

G. Notes
As to Table A Item 11
Surveyor's responsibility to coordinate markings shall be limited to one marking request to 811 (national "call before you dig" number) based on the property address, as provided by the client.
Note to the client, insurer, and lender - With regard to Table A, Item 11, information from the sources checked within will be combined with observed evidence of utilities pursuant to Section 5.5 in, to develop a view of the underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response.
As of the field date indicated below in certificate (most recent site visit/inspection), it appears some underground utilities were not marked. This affected the surveyor's assessment of the location of the utilities resulting in partial illustration and/or mapping per plan. Where additional or more detailed information is required, the client is advised that excavation may be necessary.

There are proposed changes in street right of way lines. Document 467059 (Exception 15 - blue hatch) indicates areas subject to dedication upon request.

There is no visible evidence of recent street or sidewalk construction or repairs observed in the process of conducting the fieldwork.

The area computed land area of Lot 2 does not match CSM 2590, and is less than the platted Lot by 1.966 s.f. or 0.045 ac.

Sanitary manhole note - from Timothy Zimmerman at Village (tzimmerman@germantown.gov)
- Misc. Manhole near entrance to Maple Road is a Sanitary manhole. Vis. find the manhole full of water.

To: Kwik Trip, Inc., a Wisconsin corporation
First American Title Insurance Company National Commercial Services

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS and includes Items 1, 2, 3, 4, 5, 6(a), 6(b), 7(a), 7(b), 8, 9, 11(a), 11(b), 14, 17, 18, 20(a) and 20(b) of Table A thereof. The fieldwork was completed on May 23, 2024.

Date of Plat or Map: June 12, 2024

I CERTIFY, that this survey was prepared under my supervision and is correct to the best of my professional knowledge and belief and complies with Chapter A-8.7 of the Wisconsin Administrative Code.

John P. Casucci



John P. Casucci
Professional Land Surveyor
Registration Number 5-2055
john.casucci@earthlink.net



SHEET 1 OF 1

Kwik TRIP

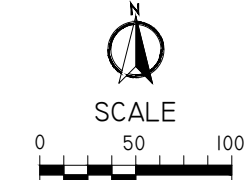
STORES

Kwik STAR

STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

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CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
REI Engineering, INC.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9704 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



ALTA
CONVENIENCE STORE #631
STH 167 & MAPLE ROAD
GERMANTOWN, WI

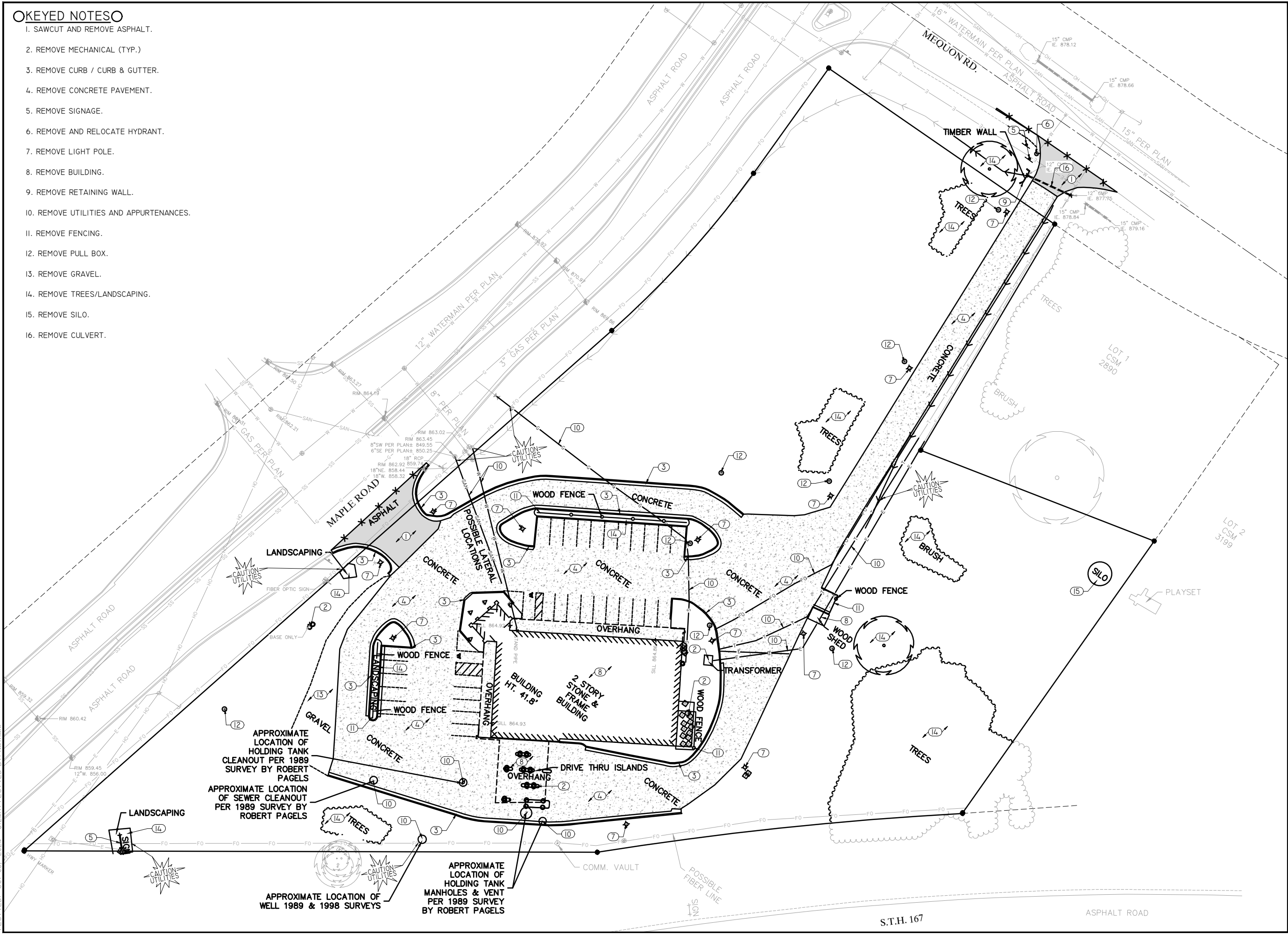
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SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET

C010

OKEYED NOTES

- 1. SAWCUT AND REMOVE ASPHALT.
- 2. REMOVE MECHANICAL (TYP.)
- 3. REMOVE CURB / CURB & GUTTER.
- 4. REMOVE CONCRETE PAVEMENT.
- 5. REMOVE SIGNAGE.
- 6. REMOVE AND RELOCATE HYDRANT.
- 7. REMOVE LIGHT POLE.
- 8. REMOVE BUILDING.
- 9. REMOVE RETAINING WALL.
- 10. REMOVE UTILITIES AND APPURTENANCES.
- 11. REMOVE FENCING.
- 12. REMOVE PULL BOX.
- 13. REMOVE GRAVEL.
- 14. REMOVE TREES/LANDSCAPING.
- 15. REMOVE SILO.
- 16. REMOVE CULVERT.



Kwik Trip

STORES

Kwik Star

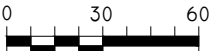
STORES

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SCALE



DEMO PLAN

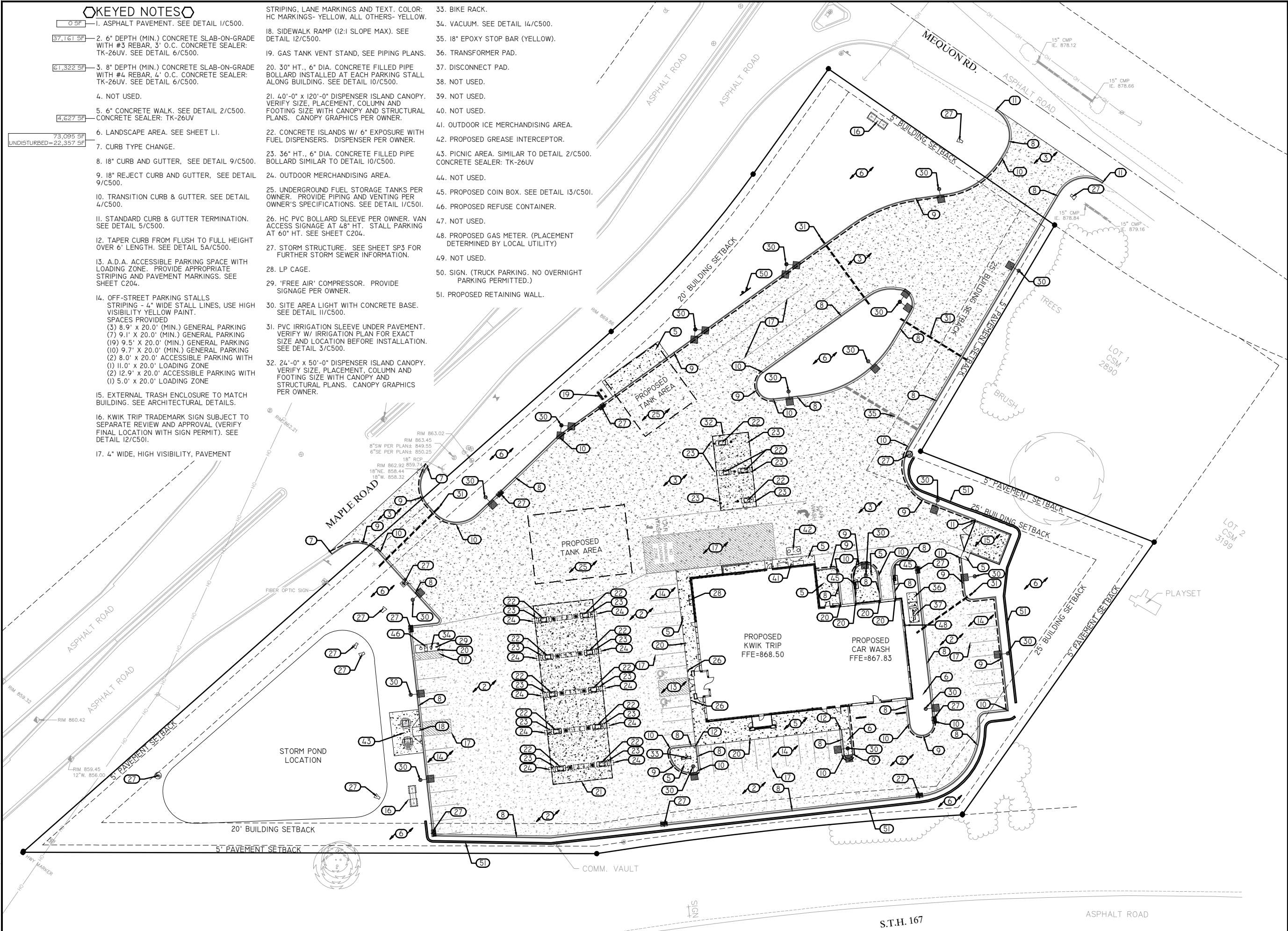
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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DRAWING FILE: Q:\11700-11799\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C100-SITE KEYNOTE PLAN.DWG LAYOUT: C100
PLOTTED: OCT 08, 2024 - 3:25PM PLOTTED BY: NATHAN P



KEYED NOTES

1. ASPHALT PAVEMENT. SEE DETAIL 1/C500.
2. 6" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #3 REBAR, 3' O.C. CONCRETE SEALER: TK-26UV. SEE DETAIL 6/C500.
3. 8" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #4 REBAR, 4' O.C. CONCRETE SEALER: TK-26UV. SEE DETAIL 6/C500.
4. NOT USED.
5. 6" CONCRETE WALK. SEE DETAIL 2/C500. CONCRETE SEALER: TK-26UV
6. LANDSCAPE AREA. SEE SHEET L1.
7. CURB TYPE CHANGE.
8. 18" CURB AND GUTTER, SEE DETAIL 9/C500.
9. 18" REJECT CURB AND GUTTER, SEE DETAIL 9/C500.
10. TRANSITION CURB & GUTTER. SEE DETAIL 4/C500.
11. STANDARD CURB & GUTTER TERMINATION. SEE DETAIL 5/C500.
12. TAPER CURB FROM FLUSH TO FULL HEIGHT OVER 6" LENGTH. SEE DETAIL 5A/C500.
13. A.D.A. ACCESSIBLE PARKING SPACE WITH LOADING ZONE. PROVIDE APPROPRIATE STRIPING AND PAVEMENT MARKINGS. SEE SHEET C204.
14. OFF-STREET PARKING STALLS STRIPING - 4" WIDE STALL LINES, USE HIGH VISIBILITY YELLOW PAINT. SPACES PROVIDED
(3) 8.9' x 20.0' (MIN.) GENERAL PARKING
(7) 9.1' x 20.0' (MIN.) GENERAL PARKING
(19) 9.5' x 20.0' (MIN.) GENERAL PARKING
(10) 9.7' x 20.0' (MIN.) GENERAL PARKING
(2) 8.0' x 20.0' ACCESSIBLE PARKING WITH
(1) 11.0' x 20.0' LOADING ZONE
(2) 12.9' x 20.0' ACCESSIBLE PARKING WITH
(1) 5.0' x 20.0' LOADING ZONE
15. EXTERNAL TRASH ENCLOSURE TO MATCH BUILDING. SEE ARCHITECTURAL DETAILS.
16. KWIK TRIP TRADEMARK SIGN SUBJECT TO SEPARATE REVIEW AND APPROVAL (VERIFY FINAL LOCATION WITH SIGN PERMIT). SEE DETAIL 12/C501.
17. 4" WIDE, HIGH VISIBILITY, PAVEMENT

- STRIPING, LANE MARKINGS AND TEXT. COLOR: HC MARKINGS- YELLOW, ALL OTHERS- YELLOW.
18. SIDEWALK RAMP (12:1 SLOPE MAX). SEE DETAIL 12/C500.
19. GAS TANK VENT STAND, SEE PIPING PLANS.
20. 30" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD INSTALLED AT EACH PARKING STALL ALONG BUILDING. SEE DETAIL 10/C500.
21. 40'-0" x 120'-0" DISPENSER ISLAND CANOPY. VERIFY SIZE, PLACEMENT, COLUMN AND FOOTING SIZE WITH CANOPY AND STRUCTURAL PLANS. CANOPY GRAPHICS PER OWNER.
22. CONCRETE ISLANDS W/ 6" EXPOSURE WITH FUEL DISPENSERS. DISPENSER PER OWNER.
23. 36" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD SIMILAR TO DETAIL 10/C500.
24. OUTDOOR MERCHANDISING AREA.
25. UNDERGROUND FUEL STORAGE TANKS PER OWNER. PROVIDE PIPING AND VENTING PER OWNER'S SPECIFICATIONS. SEE DETAIL 1/C501.
26. HC PVC BOLLARD SLEEVE PER OWNER. VAN ACCESS SIGNAGE AT 48" HT. STALL PARKING AT 60" HT. SEE SHEET C204.
27. STORM STRUCTURE. SEE SHEET SP3 FOR FURTHER STORM SEWER INFORMATION.
28. LP CAGE.
29. 'FREE AIR' COMPRESSOR. PROVIDE SIGNAGE PER OWNER.
30. SITE AREA LIGHT WITH CONCRETE BASE. SEE DETAIL 11/C500.
31. PVC IRRIGATION SLEEVE UNDER PAVEMENT. VERIFY W/ IRRIGATION PLAN FOR EXACT SIZE AND LOCATION BEFORE INSTALLATION. SEE DETAIL 3/C500.
32. 24'-0" x 50'-0" DISPENSER ISLAND CANOPY. VERIFY SIZE, PLACEMENT, COLUMN AND FOOTING SIZE WITH CANOPY AND STRUCTURAL PLANS. CANOPY GRAPHICS PER OWNER.
33. BIKE RACK.
34. VACUUM. SEE DETAIL 14/C500.
35. 18" EPOXY STOP BAR (YELLOW).
36. TRANSFORMER PAD.
37. DISCONNECT PAD.
38. NOT USED.
39. NOT USED.
40. NOT USED.
41. OUTDOOR ICE MERCHANDISING AREA.
42. PROPOSED GREASE INTERCEPTOR.
43. PICNIC AREA. SIMILAR TO DETAIL 2/C500. CONCRETE SEALER: TK-26UV
44. NOT USED.
45. PROPOSED COIN BOX. SEE DETAIL 13/C501.
46. PROPOSED REFUSE CONTAINER.
47. NOT USED.
48. PROPOSED GAS METER. (PLACEMENT DETERMINED BY LOCAL UTILITY)
49. NOT USED.
50. SIGN. (TRUCK PARKING. NO OVERNIGHT PARKING PERMITTED.)
51. PROPOSED RETAINING WALL.

Kwik
TRIP

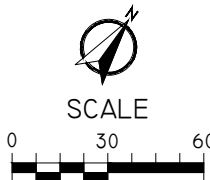
STORES

Kwik
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STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

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WAUSAU, WISCONSIN 54401
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EMAIL: MAIL@REIENGINEERING.COM



SITE KEYNOTE PLAN

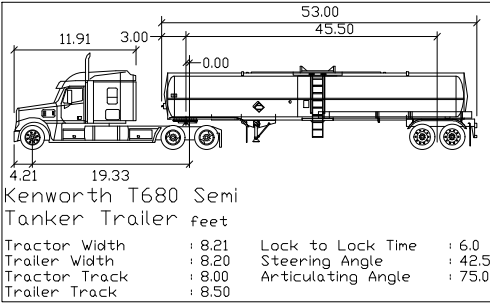
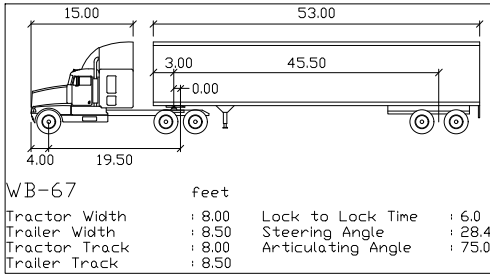
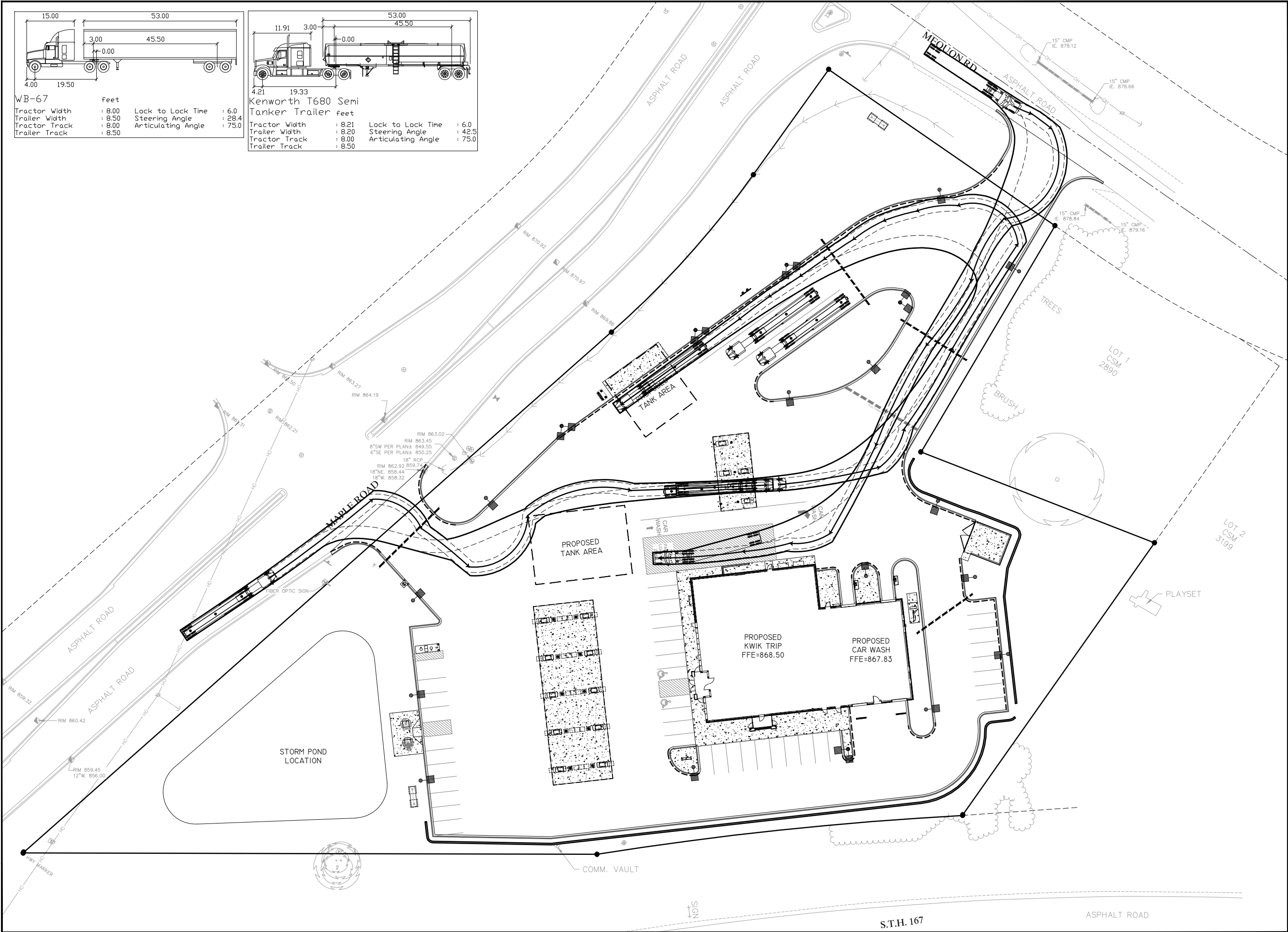
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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SCALE	GRAPHIC
PROJ. NO.	11757
DATE	10/09/24 - REVIEW DOCUMENTS
SHEET	C100

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PLOTTED: OCT 08, 2024 - 3:25PM PLOTTED BY: NATHANP





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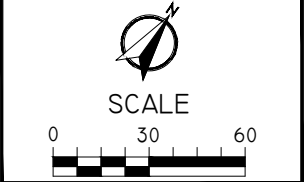
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EMAIL: MAIL@REIENGINEERING.COM



SITE CIRCULATION
PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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SCALE: GRAPHIC

PROJ. NO.: 11757

DATE: 10/09/24 - REVIEW DOCUMENTS

SHEET: C180

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PLOTTED: OCT 08, 2024 - 3:26PM PLOTTED BY: NATHAN P

LAYOUT NOTES:

1. PLAN PREPARED FROM AN ALTA/ACSM LAND TITLE SURVEY BY:
R.A. SMITH, INC.
262-781-1000
2. CURBS ARE DIMENSIONED TO BACK OF CURB.
3. CONVENIENCE STORE, AND ISLAND COMPLEXES ARE LOCATED FROM THE NORTHEASTERN MOST PROPERTY CORNER AND ALIGNED PARALLEL/PERPENDICULAR TO THE REFERENCE LINE LABELED N47°37'24"E, UNLESS OTHERWISE INDICATED ON THIS PLAN.
4. UNLESS SHOWN OTHERWISE ON THIS DRAWING, CONTRACTOR SHALL PROVIDE CONTROL JOINTS, CONSTRUCTION JOINTS, AND EXPANSION JOINTS IN SLAB ON GRADE, SIDEWALKS AND DRIVES.
CONTROL JOINT MAXIMUM DISTANCE: WALKS- 8' O.C., ALL OTHERS- 15' O.C. SAW CUT CONTROL JOINTS MINIMUM ONE-QUARTER CONCRETE THICKNESS.
EXPANSION JOINT MAXIMUM DISTANCE: WALKS- 24' O.C., ALL OTHERS- 40' O.C. DOWEL ALL EXPANSION JOINTS- MAXIMUM 24" O.C.
5. CONCRETE IN ISLAND COMPLEX SHALL BE SMOOTH FINISHED.
6. EXTERIOR CONCRETE SURFACES TO BE SEALED.
CONCRETE SEALER:
APR 15- OCT 31 USE: TK-26UV
NOV 1- DEC 31 USE: TK-290
7. EXPANSION JOINTS SHALL BE DECK-O-FOAMED AND CAULKED WITH SLI.
8. DIAGONAL STRIPING LINES (HATCHING) IN THE " NO PARKING LOADING ZONE" AREA AND ANY OTHER AREA THAT IS HATCHED SHALL BE SPACED 5' ON CENTER.
9. LETTERING FOR ALL WORDING SUCH AS " NO PARKING LOADING ZONE" AND CARWASH SHOULD BE 12" TALL.
10. ALL DIAGONAL STRIPING SHALL BE ANGLED AS CLOSE TO DIMENSIONED ANGLE AS POSSIBLE.
- II. CURBS AROUND THE RAISED FILLS SHALL BE PAINTED YELLOW.

↑↑ - FOR INFORMATIONAL PURPOSES ONLY

SITE DATA:

ZONING DISTRICT: B3
TOTAL SITE AREA - EXISTING/PROPOSED: 190,357 SF
EX. IMPERVIOUS: 61,276 SF (32%)
EX. PERVIOUS: 129,081 SF (68%)
PARKING REQUIREMENTS
PARKING REQUIRED
PARKING PROVIDED
BUILDING HEIGHTS
CONVENIENCE STORE
CANOPY
SERVICE STATION
= 1 STALL PER 2 EMPLOYEES +1
42 STALLS
20.0'
19.5'

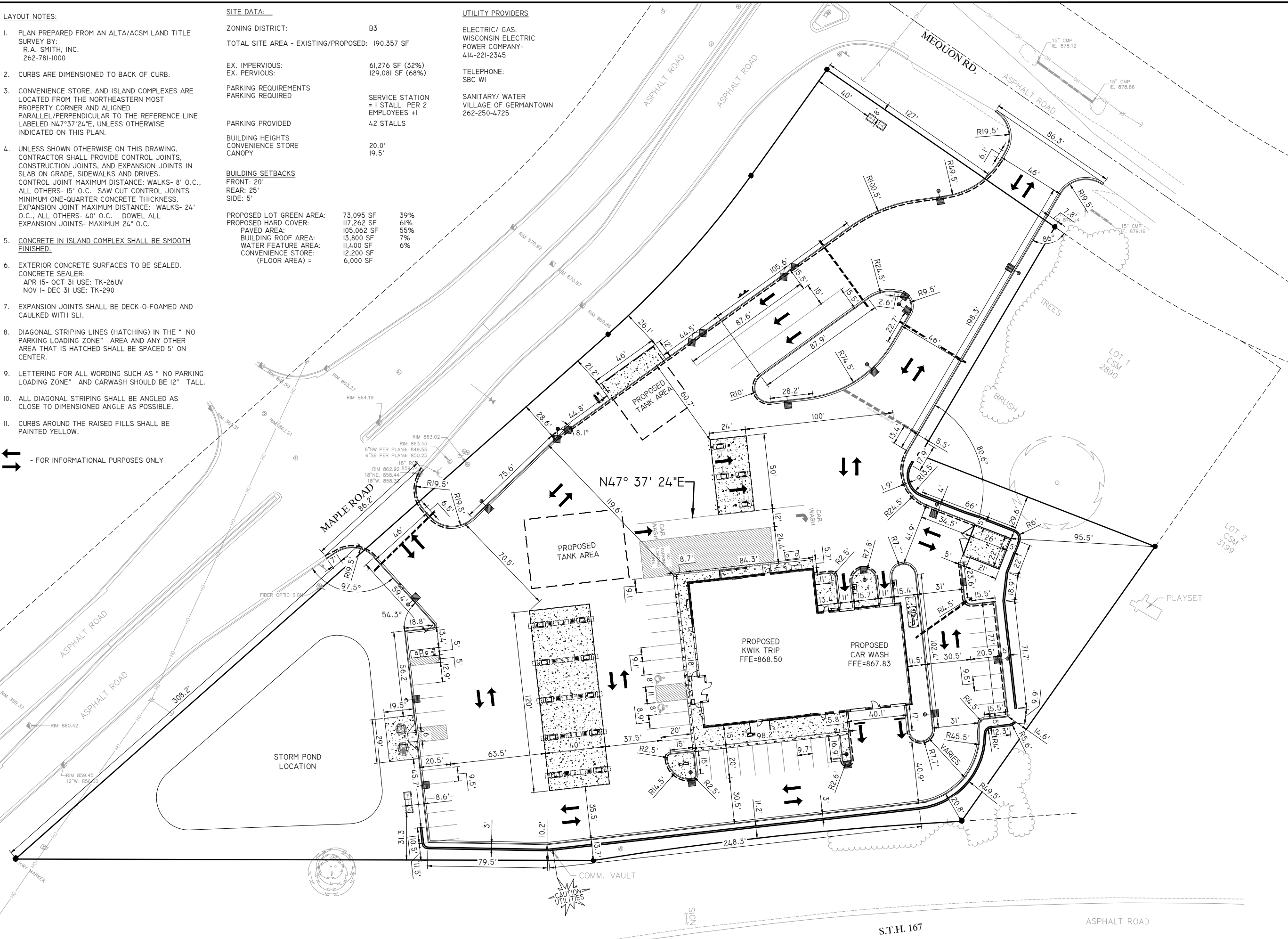
BUILDING SETBACKS

FRONT: 20'
REAR: 25'
SIDE: 5'

PROPOSED LOT GREEN AREA: 73,095 SF 39%
PROPOSED HARD COVER: 117,262 SF 61%
PAVED AREA: 105,062 SF 55%
BUILDING ROOF AREA: 13,800 SF 7%
WATER FEATURE AREA: 11,400 SF 6%
CONVENIENCE STORE: 12,200 SF
(FLOOR AREA) = 6,000 SF

UTILITY PROVIDERS

ELECTRIC/ GAS:
WISCONSIN ELECTRIC
POWER COMPANY-
414-221-2345
TELEPHONE:
SBC WI
SANITARY/ WATER
VILLAGE OF GERMANTOWN
262-250-4725



**KWIK
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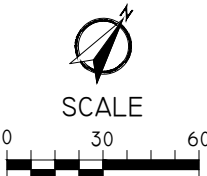
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FAX (608) 781-8960

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EMAIL: MAIL@REIENGINEERING.COM



SITE DIMENSION PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
		

NOTE: CONTRACTOR TO OBTAIN RIGHT-OF-WAY EXCAVATION PERMIT PRIOR TO BEGINNING SITE WORK.

CALL DIGGERS HOTLINE @ 1-800-242-8511 AT LEAST 3 WORKING DAYS PRIOR TO EXCAVATING.

CONSTRUCTION NOTE:

COORDINATE WITH OWNER FOR POSSIBLE CONSTRUCTION FENCING AND GATE LOCATIONS AND APPROPRIATE SIGNAGE INSTALLATION.

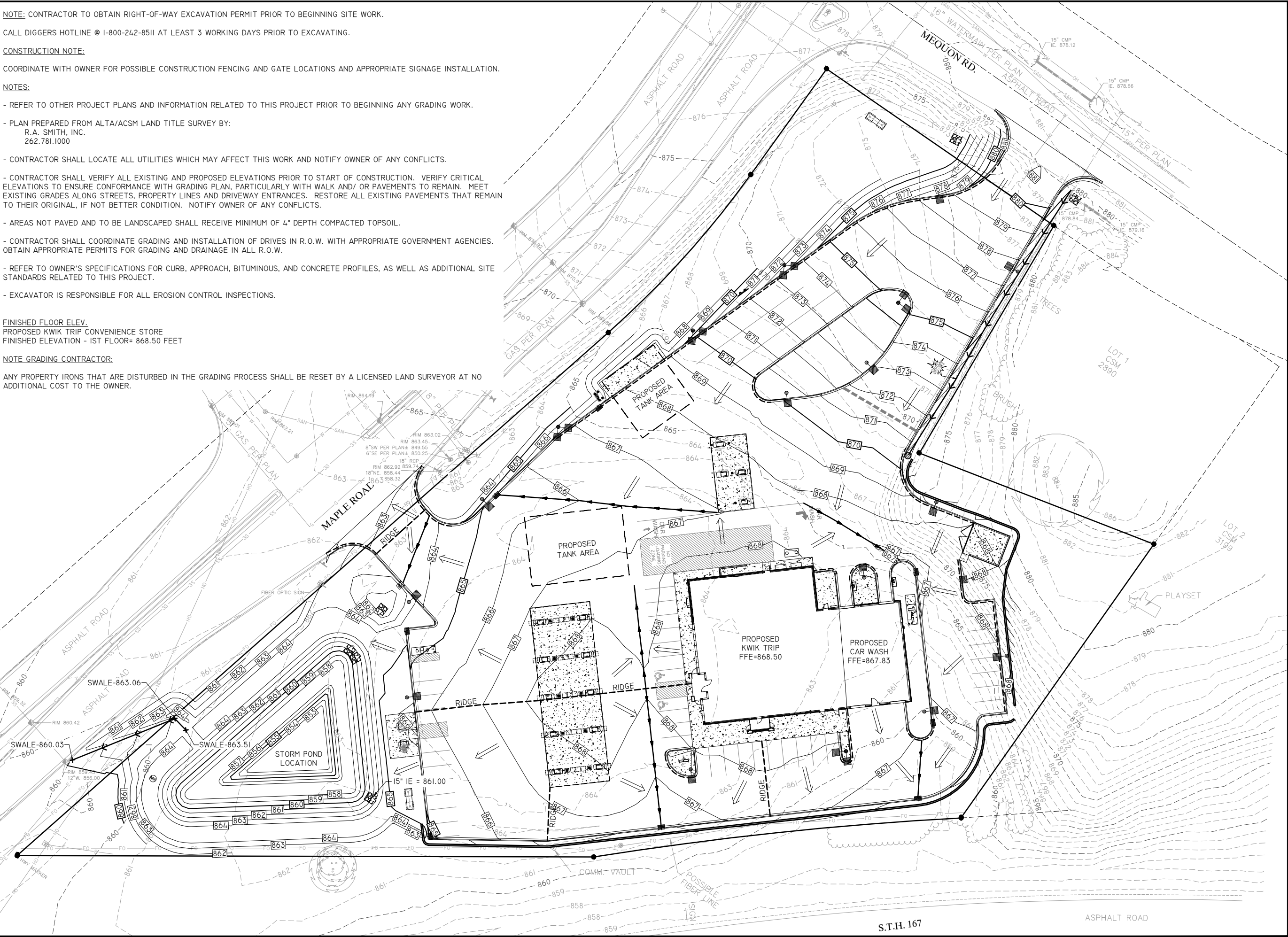
NOTES:

- REFER TO OTHER PROJECT PLANS AND INFORMATION RELATED TO THIS PROJECT PRIOR TO BEGINNING ANY GRADING WORK.
- PLAN PREPARED FROM ALTA/ACSM LAND TITLE SURVEY BY:
R.A. SMITH, INC.
262.781.1000
- CONTRACTOR SHALL LOCATE ALL UTILITIES WHICH MAY AFFECT THIS WORK AND NOTIFY OWNER OF ANY CONFLICTS.
- CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED ELEVATIONS PRIOR TO START OF CONSTRUCTION. VERIFY CRITICAL ELEVATIONS TO ENSURE CONFORMANCE WITH GRADING PLAN, PARTICULARLY WITH WALK AND/ OR PAVEMENTS TO REMAIN. MEET EXISTING GRADES ALONG STREETS, PROPERTY LINES AND DRIVEWAY ENTRANCES. RESTORE ALL EXISTING PAVEMENTS THAT REMAIN TO THEIR ORIGINAL, IF NOT BETTER CONDITION. NOTIFY OWNER OF ANY CONFLICTS.
- AREAS NOT PAVED AND TO BE LANDSCAPED SHALL RECEIVE MINIMUM OF 4" DEPTH COMPACTED TOPSOIL.
- CONTRACTOR SHALL COORDINATE GRADING AND INSTALLATION OF DRIVES IN R.O.W. WITH APPROPRIATE GOVERNMENT AGENCIES. OBTAIN APPROPRIATE PERMITS FOR GRADING AND DRAINAGE IN ALL R.O.W.
- REFER TO OWNER'S SPECIFICATIONS FOR CURB, APPROACH, BITUMINOUS, AND CONCRETE PROFILES, AS WELL AS ADDITIONAL SITE STANDARDS RELATED TO THIS PROJECT.
- EXCAVATOR IS RESPONSIBLE FOR ALL EROSION CONTROL INSPECTIONS.

FINISHED FLOOR ELEV.
PROPOSED KWIK TRIP CONVENIENCE STORE
FINISHED ELEVATION - 1ST FLOOR= 868.50 FEET

NOTE GRADING CONTRACTOR:

ANY PROPERTY IRONS THAT ARE DISTURBED IN THE GRADING PROCESS SHALL BE RESET BY A LICENSED LAND SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.



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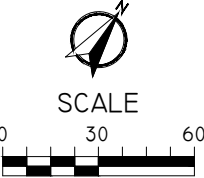
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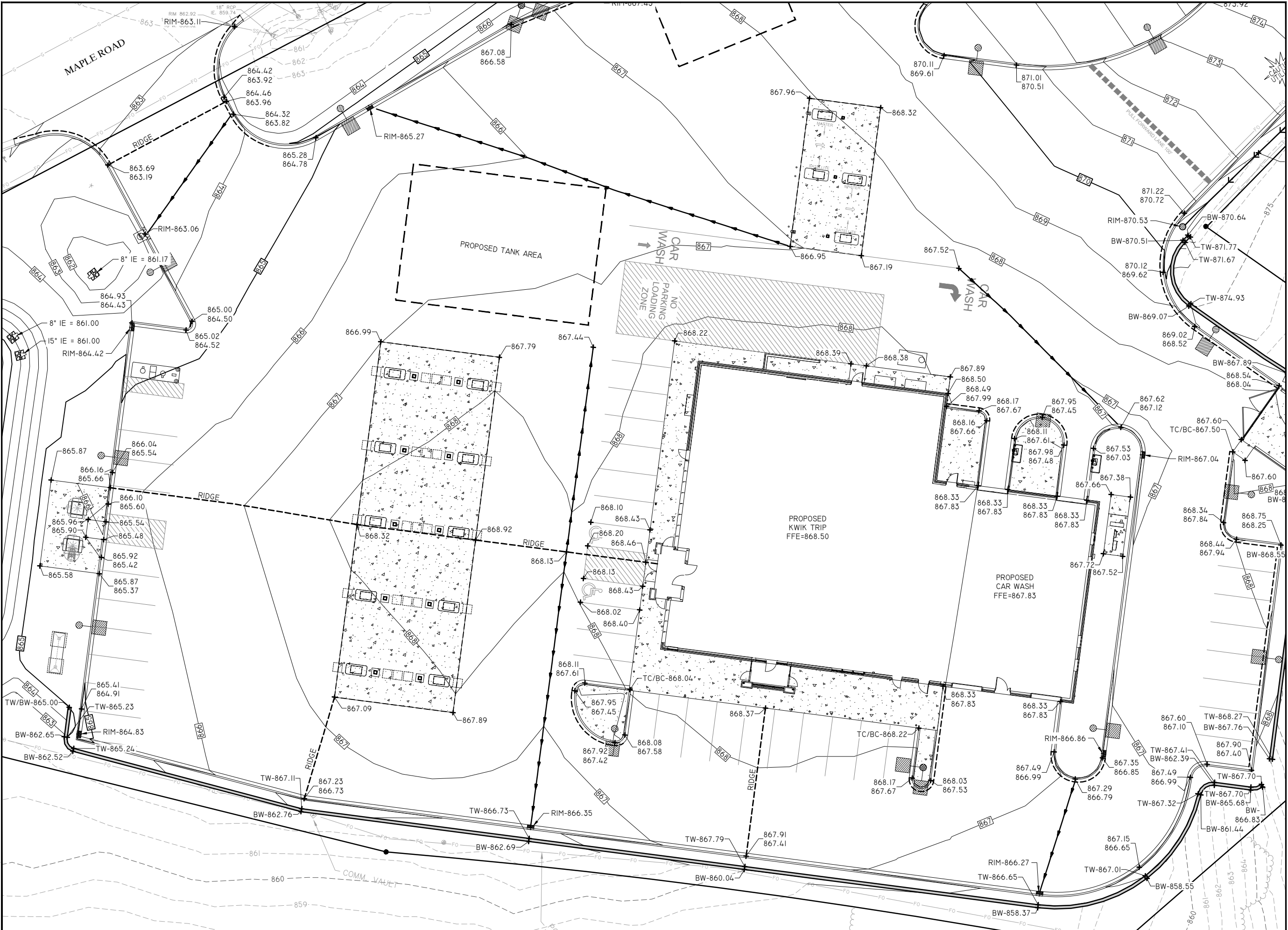
GRADING PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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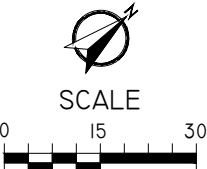
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GRADING PLAN DETAIL
- SOUTH

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
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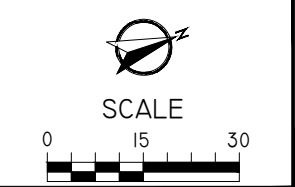
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GRADING PLAN DETAIL
- NORTH

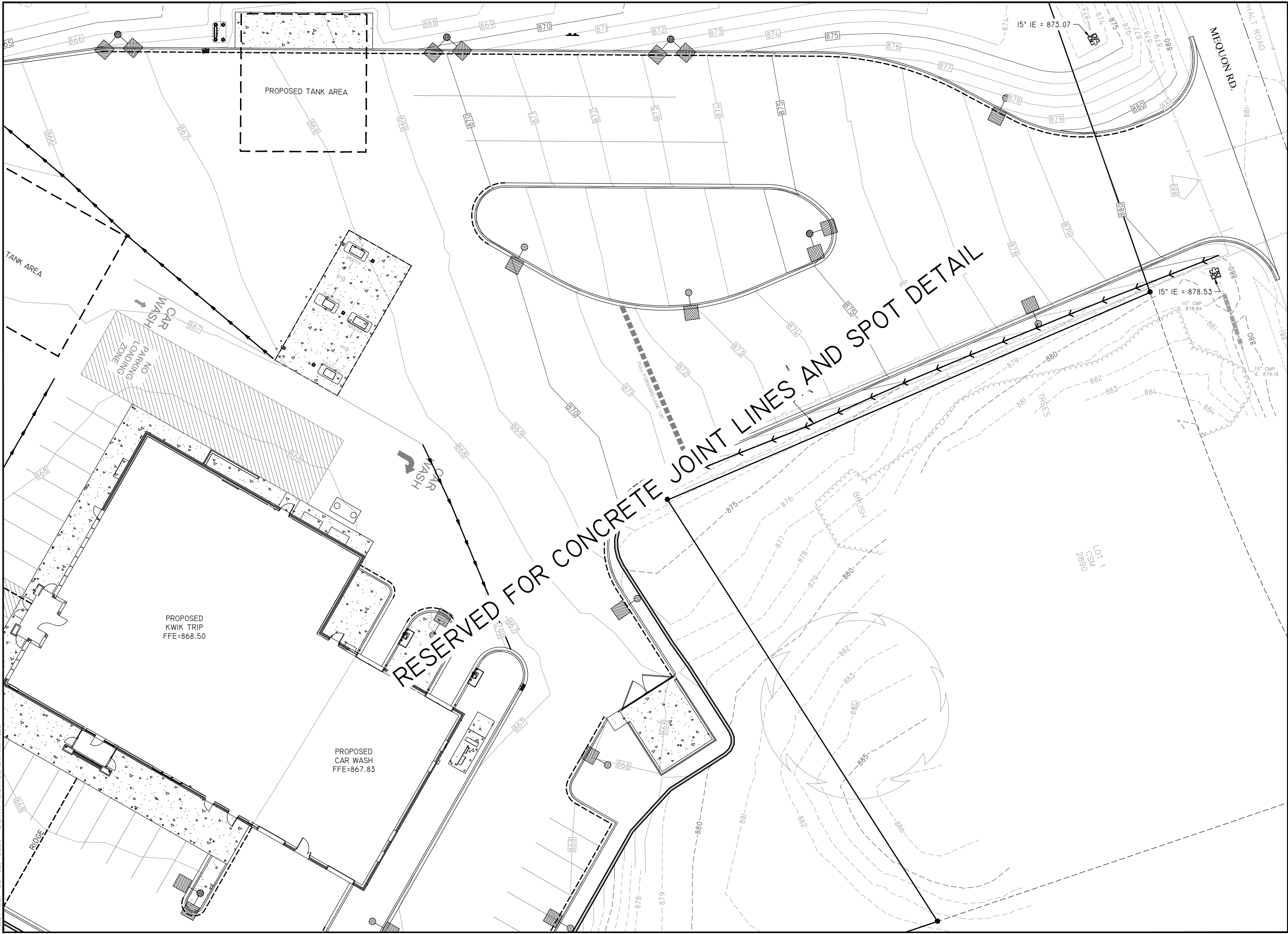
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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SCALE



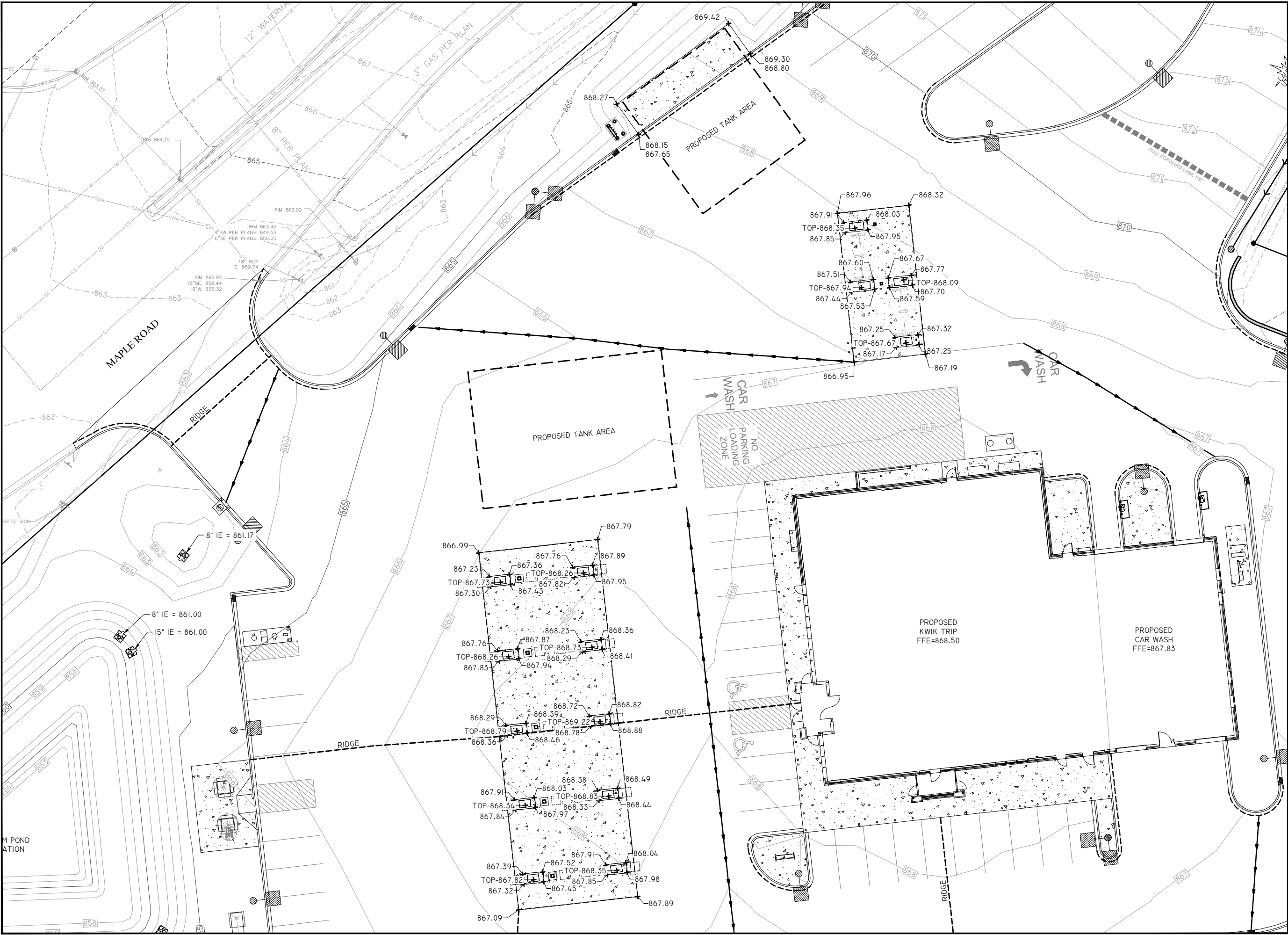
GRADING PLAN SPOT
DETAIL - NORTH

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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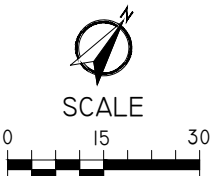
STORES

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STAR**

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KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
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EMAIL: MAIL@REIENGINEERING.COM



CANOPY AND TANK
GRADING DETAILS

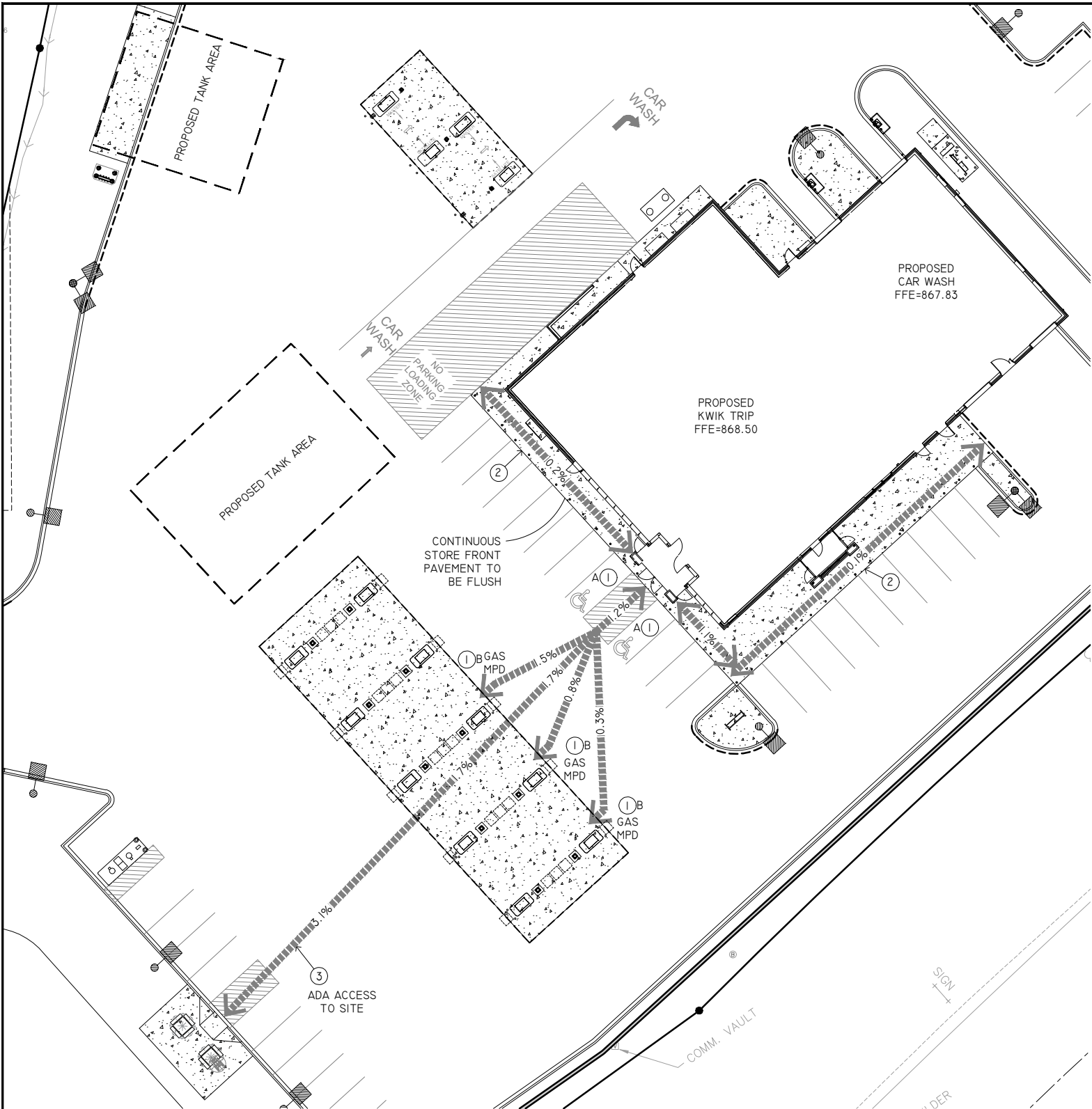
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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DATE: 10/09/24 - REVIEW DOCUMENTS
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PLAN KEYNOTES

1. ACCESSIBLE STALLS
A. STRIPING - 4" WIDE STALL LINES, USE HIGH VISIBILITY BLUE PAINT.

SPACES PROVIDED
(2) 8'-0"X 20'-0" ACCESSIBLE PARKING WITH
(1) 11'-0"X 20'-0" LOADING ZONE

B. ACCESSIBLE FUELING POINT AND DISPENSER AND VALET. VALET AND KEY PAD ON PUMP SHALL CONFORM TO ADA REACH DIMENSIONS AS SHOWN IN DETAIL. SEE NOTES FOR CONVENIENCE STORE ACCESSIBILITY.
2. PAVEMENTS FLUSH FOR ACCESSIBILITY.
3. ACCESSIBLE ROUTE TO STORE.



Know what's below.
Call before you dig.

NOTES FOR CONVENIENCE STORE ACCESSIBILITY
AT LEAST 1 MPD (MULTI PRODUCT DISPENSER) COVERING ALL GRADES OF FUEL MUST BE ACCESSIBLE IN A 30'X48" CLEAR LEVEL FLOOR AREA (CLF).

ALL PUMP CONTROLS SHALL BE < 48" (2010 STANDARD). WINDOW WASHER, PAPER TOWEL DISPENSER, LITERATURE, FIRE EXTINGUISHER, EMERGENCY FUEL STOPS, ETC. BE ACCESSIBLE 30'X48" CLF SPACE AND WITHIN A FORWARD OR SIDE APPROACH REACH RANGE.

PROVIDE ISA (INDUSTRY STANDARD ARCHITECTURE) AT EACH ACCESSIBLE FUEL POSITION ON FACE OF PUMP.

PROVIDE ISA AT EACH ACCESSIBLE FUELING POSITION VISIBLE TO APPROACHING VEHICLES.

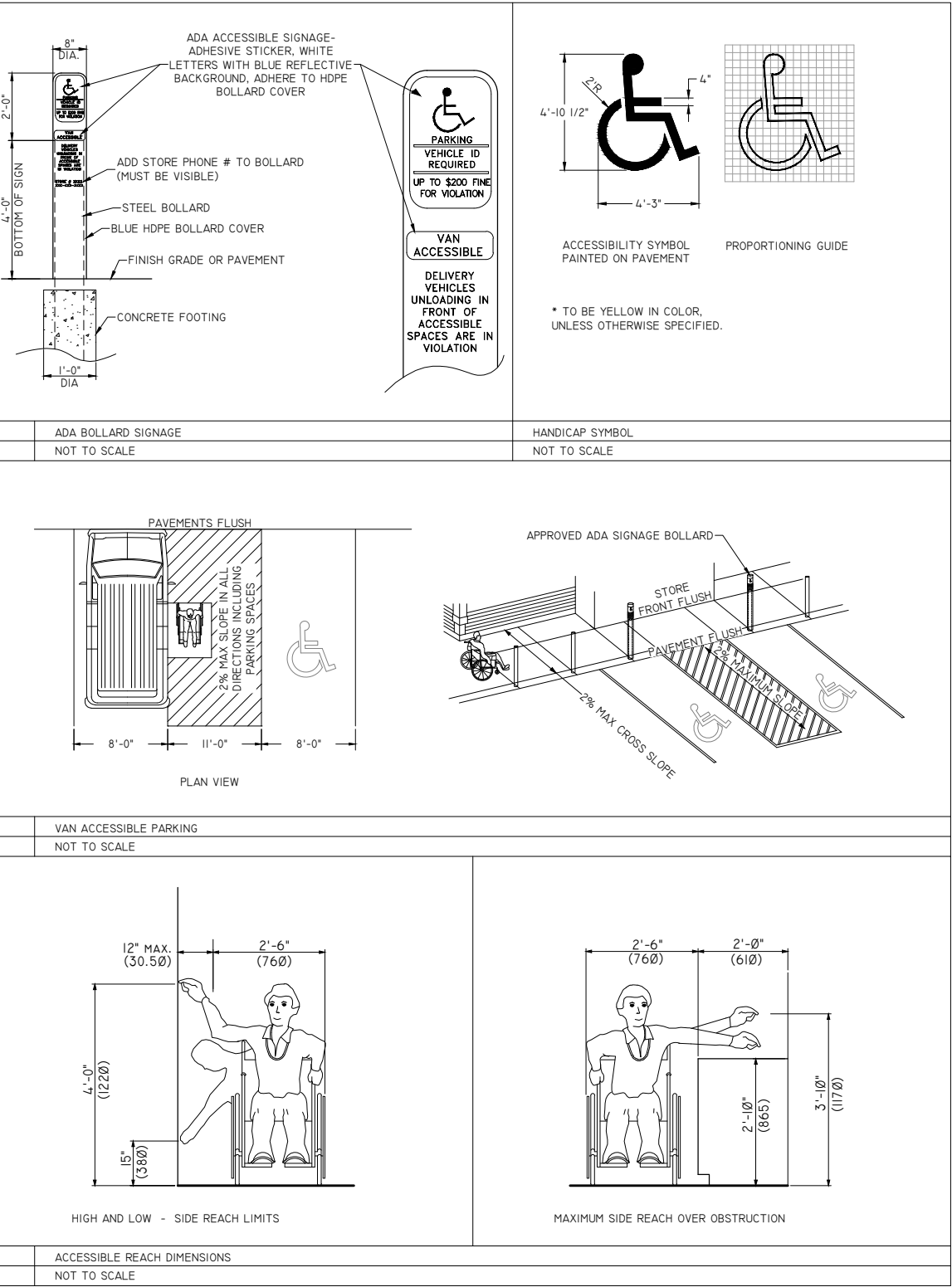
PROVIDE A SIGN AT EACH ACCESSIBLE FUELING POSITION WITH STORE TELEPHONE NUMBER, ADVISING AVAILABLE FUELING ASSISTANCE.

ANY PAY FUNCTION- I.E. AIR/VACUUM ETC. ARE REQUIRED TO HAVE AN ACCESSIBLE ROUTE TO STORE ENTRANCE. CONTROLS SHALL BE ACCESSIBLE 30'X48" CLF SPACE AND WITHIN A FORWARD OR SIDE APPROACH REACH RANGE.

NOTES:

- REFER TO THE DOCUMENT FROM THE DEPARTMENT OF JUSTICE ON "2010 ADA STANDARDS FOR ACCESSIBLE DESIGN". CONTRACTOR SHALL REFERENCE CURRENT A.D.A. GUIDELINES AND LOCAL REGULATIONS FOR SITE ACCESSIBILITY. IN ALL CASES THE MINIMUM REQUIREMENTS SHALL BE PROVIDED ON SITE TO ENSURE COMPLIANCE TO ALL REGULATIONS.
- KWIK TRIP STANDARD ENTRANCE DOOR IS AUTOMATIC SLIDING DOOR SYSTEM DESIGNED TO COMPLY WITH ALL ACCESS CODES AND LAWS. ENTRANCE DOORS FOR ACCESSIBLE ROUTES WILL HAVE A MINIMUM CLEAR OPENING OF 32"
- STORE FRONTS WILL PROVIDE FLUSH PAVEMENTS ALONG ACCESSIBLE ROUTES WITH PROTECTIVE SECURITY BOLLARDS INDICATED AND SPACED BETWEEN PARKING SURFACES AND BUILDING WALK PER PLAN.

- NO OBJECTS OR DISPLAYS SHOULD PROTRUDE INTO THE MINIMUM CLEAR SPACE OF THE ACCESSIBLE ROUTES TO THE STORE ENTRANCE. THIS WILL INCLUDE SEASONAL DISPLAY VENDING AREAS AS WELL AS OTHER OUTDOOR STORAGE UNITS FOR PROPANE AND ICE, ETC.
- PER A.D.A GUIDELINES- CLEAR WIDTH OF ACCESSIBLE ROUTES SHALL BE 36" AND PERMITTED TO BE REDUCED TO 32" FOR A LENGTH OF 24".
- ACCESS ISLES SERVING WHEEL CHAIR LIFTS OR CHAIR ACCESS FROM VEHICLES ARE REQUIRED TO BE NEARLY LEVEL IN ALL DIRECTIONS TO PROVIDE SAFE TRANSFER OF WHEELCHAIRS TO AND FROM VEHICLES. THE EXCEPTION WOULD BE FOR DRAINAGE. MAXIMUM SLOPE FOR THE ACCESS ISLE IS 1:48. NO CURB RAMPS SHALL BE A PART OF THE ACCESS ISLE.
- IDENTIFICATION SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY WITH THE DESIGNATION OF 1 "VAN ACCESSIBLE" IN EVERY 8 ACCESSIBLE SPACES ON SITE.



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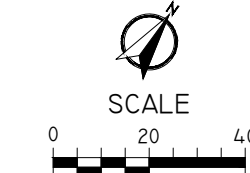
STORES

**Kwik
STAR**

STORES

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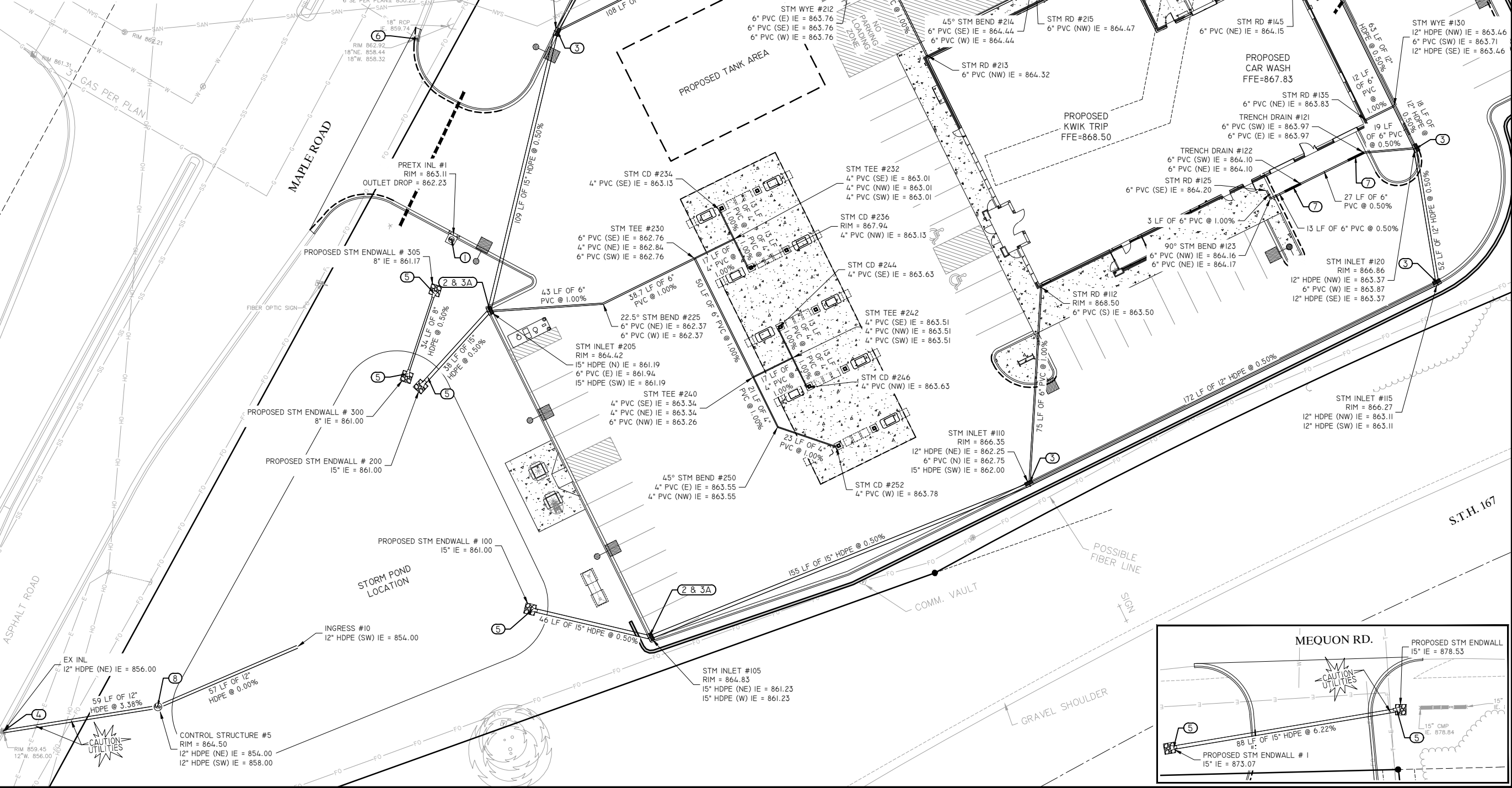
ACCESSIBILITY PLAN
CONVENIENCE STORE #631
STH 167 & MAPLE ROAD
GERMANTOWN, WI

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DATE	10/09/24 - REVIEW DOCUMENTS
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KEYED NOTES

1. PRETX UNIT. SEE DETAIL 1/C502.
2. INSTALL OIL SEPARATOR ON OUTLET PIPE OF PROPOSED CATCH BASIN. (SNOUT OR APPROVED EQUAL)
- 3A. INSTALL STORM SEWER INLET WITH NO SUMP. SEE DETAIL 7 & 11/C501.
4. CORE AND CONNECT 12" HDPE PIPE TO EXISTING STRUCTURE.
5. INSTALL STORM ENDWALL.
6. ADJUST RIM OF EXISTING STRUCTURE.
7. INSTALL TRENCH DRAIN. SEE DETAIL 10/C501.
8. INSTALL OUTLET CONTROL STRUCTURE. SEE DETAIL F/C603.
9. INSTALL STORM SEWER AREA DRAIN. SEE DETAIL 3/C501.



KWIK TRIP

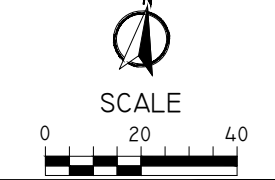
STORES

KWIK STAR

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STORM SEWER PLAN

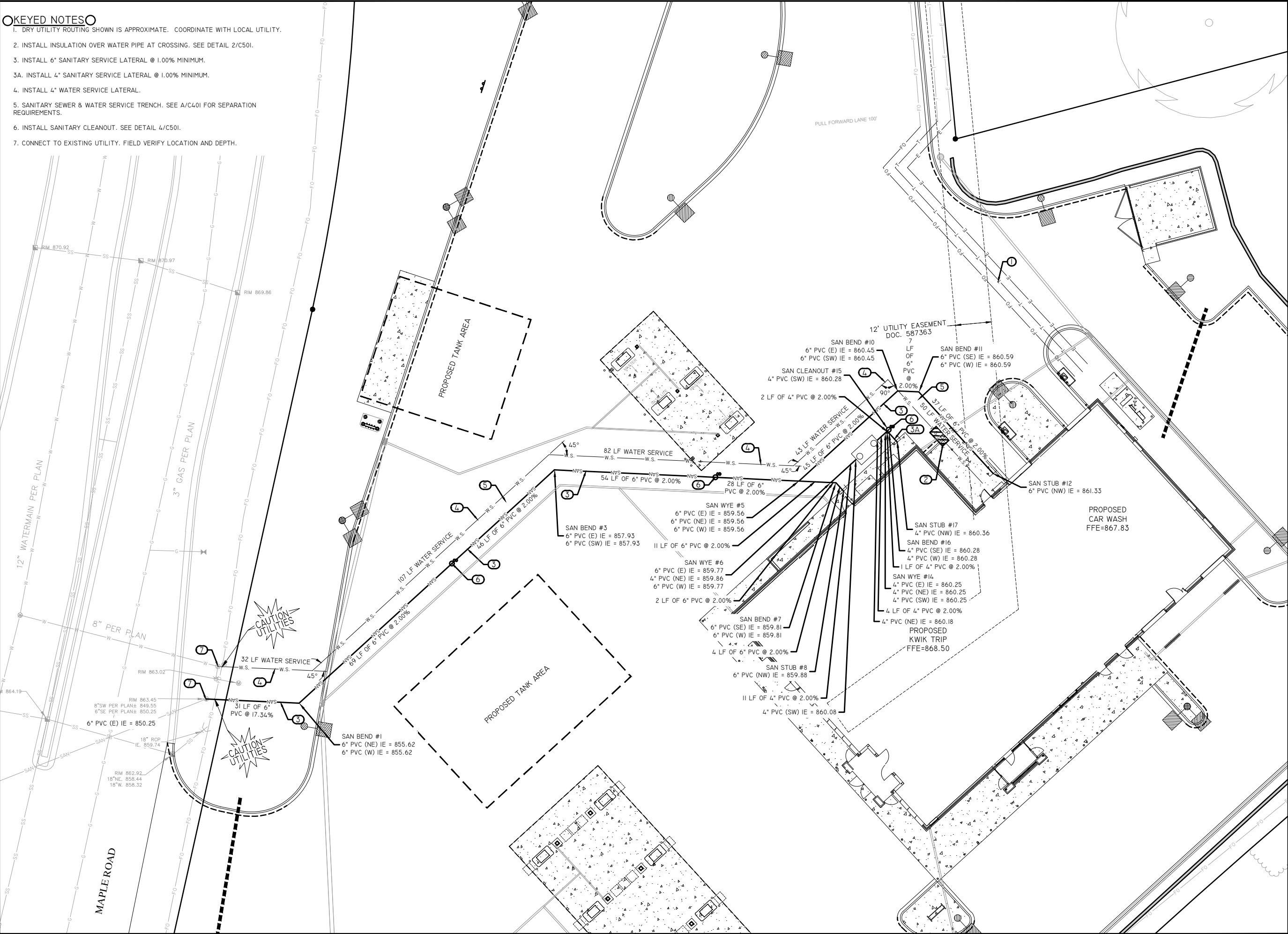
CONVENIENCE STORE #631

**STH 167 & MAPLE ROAD
GERMANTOWN, WI**

#	DATE	DESCRIPTION
		

OKEYED NOTES

- 1. DRY UTILITY ROUTING SHOWN IS APPROXIMATE. COORDINATE WITH LOCAL UTILITY.
- 2. INSTALL INSULATION OVER WATER PIPE AT CROSSING. SEE DETAIL 2/C501.
- 3. INSTALL 6" SANITARY SERVICE LATERAL @ 1.00% MINIMUM.
- 3A. INSTALL 4" SANITARY SERVICE LATERAL @ 1.00% MINIMUM.
- 4. INSTALL 4" WATER SERVICE LATERAL.
- 5. SANITARY SEWER & WATER SERVICE TRENCH. SEE A/C401 FOR SEPARATION REQUIREMENTS.
- 6. INSTALL SANITARY CLEANOUT. SEE DETAIL 4/C501.
- 7. CONNECT TO EXISTING UTILITY. FIELD VERIFY LOCATION AND DEPTH.



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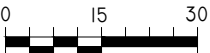
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SCALE



UTILITY PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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- GENERAL :
1. COMPLY WITH THE WORK SAFETY PRACTICES SPECIFIED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS. OSHA PROHIBITS ENTRY INTO "CONFINED SPACES," SUCH AS MANHOLES AND INLETS (SEE 29 CFR SECTION 1910.146), WITHOUT UNDERTAKING CERTAIN SPECIFIC PRACTICES AND PROCEDURES. CONSTRUCTION SAFETY IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR, WHO IS ALSO SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCING OF THE CONSTRUCTION OPERATIONS.
 2. EXISTING BOUNDARY, LOCATION, TOPOGRAPHIC, AND UTILITY INFORMATION SHOWN ON THIS PLAN IS FROM A FIELD SURVEY BY R.A. SMITH, INC. DATED JUNE 12, 2024.
 3. PERFORM ALL UTILITY WORK IN ACCORDANCE WITH STATE AND CITY REQUIREMENTS.
 4. CONNECT TO EXISTING SANITARY SEWER MH'S BY CORE DRILLING. CONNECT TO EXISTING STORM SEWER MH'S BY EITHER SAWCUTTING OR CORE DRILLING. USE SAWS OR DRILLS THAT PROVIDE WATER TO THE BLADE. MEET ALL CITY STANDARDS AND SPECIFICATIONS FOR THE THE CONNECTION. RECONSTRUCT INVERTS AFTER INSTALLATION. USE WATER STOP GASKETS IN ORDER TO PROVIDE WATERTIGHT SEALS WHEN PENETRATING A STRUCTURE WALL WITH A PIPE. TAKE MEASUREMENTS BEFORE BEGINNING CONSTRUCTION TO ENSURE THAT SERVICE CONNECTIONS DO NOT CUT INTO MAINTENANCE ACCESS STRUCTURE JOINTS OR PIPE BARREL JOINTS.
 5. PERFORM TRENCH EXCAVATIONS FOR ALL UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF O.S.H.A. 29 CFR, PART 1926, SUBPART P, "EXCAVATIONS AND TRENCHES." (WWW.OSHA.GOV)
 6. COORDINATE BUILDING UTILITY CONNECTION LOCATIONS AT 5 FT. OUT FROM THE PROPOSED BUILDING WITH THE WITH THE INTERIOR PLUMBING CONTRACTOR PRIOR TO CONSTRUCTION. VERIFY WATER AND SEWER SERVICE LOCATIONS AND ELEVATIONS WITH THE MECHANICAL ENGINEER PRIOR TO CONSTRUCTION.
 7. THE SUBSURFACE UTILITY INFORMATION SHOWN ON THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
 8. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN ARE FROM RECORD INFORMATION. THE ENGINEER DOES NOT GUARANTEE THAT ALL EXISTING UTILITIES ARE SHOWN OR, IF SHOWN, EXIST IN THE LOCATIONS INDICATED ON THE PLAN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE FINAL VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES (INCLUDING WATER AND SEWER LINES AND APPURTENANCES). NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 9. CONTACT UTILITY COMPANIES FOR LOCATIONS OF ALL PUBLIC AND PRIVATE UTILITIES WITHIN THE WORK AREA PRIOR TO BEGINNING CONSTRUCTION. CONTACT DIGGER'S HOTLINE AT (414) 259-1181 IN THE MILWAUKEE METRO AREA, OR 1-800-242-8511 ELSEWHERE IN WISCONSIN FOR EXACT LOCATIONS OF EXISTING UTILITIES AT LEAST 72 HOURS (NOT INCLUDING WEEKENDS AND HOLIDAYS) BEFORE BEGINNING ANY CONSTRUCTION. OBTAIN TICKET NUMBER AND MEET WITH REPRESENTATIVES OF THE VARIOUS UTILITIES AT THE SITE. PROVIDE THE OWNER WITH THE TICKET NUMBER INFORMATION. DIGGER'S HOTLINE IS A FREE SERVICE THAT LOCATES MUNICIPAL AND UTILITY COMPANY LINES, BUT DOES NOT LOCATE PRIVATE UTILITY LINES. USE AN INDEPENDENT LOCATOR SERVICE OR OTHER MEANS IN ORDER TO OBTAIN LOCATIONS OF PRIVATE UTILITY LINES INCLUDING, BUT NOT LIMITED TO, UNDERGROUND ELECTRIC CABLES, TELEPHONE, TV, AND LAWN SPRINKLER LINES.
 10. POT HOLE TO VERIFY THE POSITIONS OF EXISTING UNDERGROUND FACILITIES AT A SUFFICIENT NUMBER OF LOCATIONS IN ORDER TO ASSURE THAT NO CONFLICT WITH THE PROPOSED WORK EXISTS AND THAT SUFFICIENT CLEARANCE IS AVAILABLE.

11. WHERE EXISTING GAS, ELECTRIC, CABLE, OR TELEPHONE UTILITIES CONFLICT WITH THE WORK, COORDINATE THE ABANDONMENT, RELOCATION, OFFSET, OR SUPPORT OF THE EXISTING UTILITIES WITH THE APPROPRIATE LOCAL UTILITY COMPANIES. COORDINATE NEW GAS METER AND GAS LINE INSTALLATION, ELECTRIC METER AND ELECTRIC SERVICE INSTALLATION, CABLE SERVICE, AND TELEPHONE SERVICE INSTALLATION WITH THE LOCAL UTILITY COMPANIES.
12. ARRANGE FOR AND SECURE SUITABLE DISPOSAL AREAS OFF-SITE. DISPOSE OF ALL EXCESS SOIL, WASTE MATERIAL, DEBRIS, AND ALL MATERIALS NOT DESIGNATED FOR SALVAGE. WASTE MATERIAL AND DEBRIS INCLUDES TREES, STUMPS, PIPE, CONCRETE, ASPHALTIC CONCRETE, CANS, OR OTHER WASTE MATERIAL FROM THE CONSTRUCTION OPERATIONS. OBTAIN THE RIGHTS TO ANY WASTE AREA FOR DISPOSAL OF UNSUITABLE OR SURPLUS MATERIAL EITHER SHOWN OR NOT SHOWN ON THE PLANS. ALL WORK IN DISPOSING OF SUCH MATERIAL SHALL BE CONSIDERED INCIDENTAL TO THE WORK. ALL DISPOSAL MUST CONFORM TO APPLICABLE SOLID WASTE DISPOSAL PERMIT REGULATIONS. OBTAIN ALL NECESSARY PERMITS AT NO COST TO THE OWNER.
13. STRAIGHT LINE SAW-CUT EXISTING BITUMINOUS OR CONCRETE SURFACING AT THE PERIMETER OF PAVEMENT REMOVAL AREAS. USE SAWS THAT PROVIDE WATER TO THE BLADE. TACK, AND MATCH ALL CONNECTIONS TO EXISTING BITUMINOUS PAVEMENT.
14. RELOCATE OVERHEAD POWER, TELEPHONE, AND CABLE LINES AS REQUIRED.
15. ALL MATERIALS REQUIRED FOR THIS WORK SHALL BE NEW MATERIAL CONFORMING TO THE REQUIREMENTS FOR CLASS, KIND, GRADE, SIZE, QUALITY, AND OTHER DETAILS SPECIFIED HEREIN OR AS SHOWN ON THE PLANS. DO NOT USE RECYCLED OR SALVAGED AGGREGATE, ASPHALTIC PAVEMENT, CRUSHED CONCRETE, OR SCRAP SHINGLES. UNLESS OTHERWISE INDICATED, THE CONTRACTOR SHALL FURNISH ALL REQUIRED MATERIALS.
16. RESTORE THE PUBLIC RIGHT-OF-WAY. REPLACE ANY CONCRETE CURB AND GUTTER, BITUMINOUS PAVEMENT, SIDEWALK, OR VEGETATIVE COVER DAMAGED BY THE CONSTRUCTION ACTIVITY. RESTORE DAMAGED TURF WITH SOD WITHIN THE PUBLIC RIGHT-OF-WAY. THE WORK AREA SHOWN IS GENERAL AND MAY NEED TO BE ADJUSTED IN THE FIELD.
17. WHEN SAWING OR DRILLING CONCRETE OR MASONRY, USE SAWS THAT PROVIDE WATER TO THE BLADE. DO NOT ALLOW THE SLURRY PRODUCED BY THIS PROCESS TO BE TRACKED OUTSIDE OF THE IMMEDIATE WORK AREA OR DISCHARGED INTO THE SEWER SYSTEM.
18. ADJUST ALL CURB STOPS, VALVE BOXES, MAINTENANCE HOLE CASTINGS, CATCH BASIN CASTINGS, CLEANOUT COVERS, AND SIMILAR ITEMS TO FINISHED GRADE.
19. INSTALL ALL PIPE WITH THE ASTM IDENTIFICATION NUMBERS ON THE TOP FOR INSPECTION. COMMENCE PIPE LAYING AT THE LOWEST POINT IN THE PROPOSED SEWER LINE. LAY THE PIPE WITH THE BELL END OR RECEIVING GROOVE END OF THE PIPE POINTING UPGRADE. WHEN CONNECTING TO AN EXISTING PIPE, UNCOVER THE EXISTING PIPE IN ORDER TO ALLOW ANY ADJUSTMENTS IN THE PROPOSED LINE AND GRADE BEFORE LAYING ANY PIPE.
20. OBTAIN AND PAY FOR ALL PERMITS, TESTS, INSPECTIONS, ETC. REQUIRED BY AGENCIES THAT HAVE JURISDICTION OVER THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR ALL BONDS, LETTERS OF CREDIT, OR CASH SURETIES RELATED TO THE WORK. EXECUTE AND INSPECT WORK IN ACCORDANCE WITH ALL LOCAL AND STATE CODES, RULES, ORDINANCES, OR REGULATIONS PERTAINING TO THE PARTICULAR TYPE OF WORK INVOLVED.
21. OBTAIN PERMITS FROM THE CITY FOR WORK IN THE PUBLIC RIGHT-OF-WAY.

22. CONSTRUCT SANITARY SEWER, WATERMAIN, AND STORM SEWER UTILITIES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, SIXTH EDITION, OR THE LATEST REVISED EDITION.

23. TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THESE CODE SECTIONS AS PER 182.0715(2R) OF THE STATUTES.

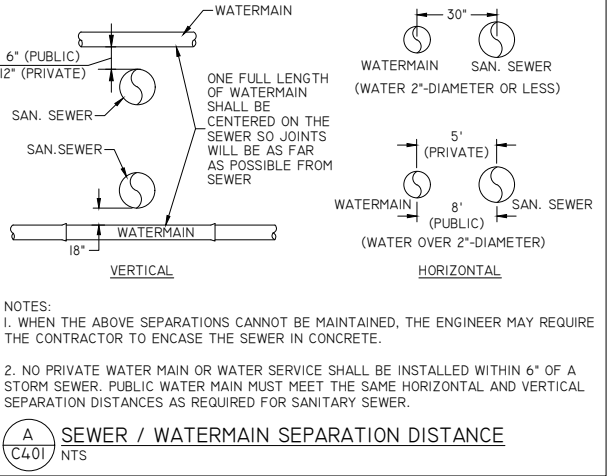
24. INSTALL ALL PIPE WITH THE ASTM IDENTIFICATION NUMBERS ON THE TOP FOR INSPECTION. COMMENCE PIPE LAYING AT THE LOWEST POINT IN THE PROPOSED SEWER LINE. LAY THE PIPE WITH THE BELL END OR RECEIVING GROOVE END OF THE PIPE POINTING UPGRADE. WHEN CONNECTING TO AN EXISTING PIPE, UNCOVER THE EXISTING PIPE IN ORDER TO ALLOW ANY ADJUSTMENTS IN THE PROPOSED LINE AND GRADE BEFORE LAYING ANY PIPE. DO NOT LAY PIPES IN WATER OR WHEN THE TRENCH CONDITIONS ARE UNSUITABLE FOR SUCH WORK.

WATER DISTRIBUTION SYSTEM :

1. BRING ALL SITE UTILITIES TO 5' OUTSIDE OF THE BUILDING LINE WITH THE EXCEPTION OF THE WATER SERVICE. EXTEND WATER SERVICE INTO THE BUILDING AND UP TO THE FLANGE FOR THE WATER METER.
2. SEPARATION OF WATER AND SEWER: PROVIDE HORIZONTAL AND VERTICAL SEPARATIONS AS REQUIRED BY CODE. SEE DETAIL A/C401.
3. WATERMAIN DEPTH: MAINTAIN 7.5 FEET OF COVER OVER THE TOP OF THE WATER LINES TO THE FINISHED GRADE. VERIFY ELEVATION OF PROPOSED AND EXISTING WATER LINES AT ALL UTILITY CROSSINGS. INSTALL THE WATER LINES AT GREATER DEPTHS IN ORDER TO CLEAR STORM SEWERS, SANITARY SEWERS, OR OTHER UTILITIES AS REQUIRED. INCLUDE COSTS TO LOWER WATER LINES IN THE BASE BID.
4. DISINFECTION: DISINFECT ALL COMPLETED WATERMAINS IN ACCORDANCE WITH AWWA STANDARD C651. IF THE TABLET OR CONTINUOUS FEED METHODS ARE USED, DISINFECT USING WITH WATER THAT CONTAINS AT LEAST 50 PPM OF AVAILABLE CHLORINE. DO NOT USE THE TABLET METHOD ON SOLVENT-WELDED PLASTIC OR ON SCREWED-JOINT STEEL PIPE BECAUSE OF THE DANGER OF RISK OR EXPLOSION FROM THE REACTION OF THE JOINT COMPOUNDS WITH THE CALCIUM HYPOCHLORITE. RETAIN THE TREATED WATER IN THE PIPELINE FOR AT LEAST 24 HOURS. MEASURE THE CHLORINE RESIDUAL AT THE END OF THE 24 HOUR PERIOD. THE FREE CHLORINE RESIDUAL MUST BE AT LEAST 10 MG/L MEASURED AT ANY POINT IN THE LINE. MEASUREMENT OF THE CHLORINE CONCENTRATION AT REGULAR INTERVALS SHALL BE IN ACCORDANCE WITH STANDARD METHODS, AWWA M-12, OR USING APPROPRIATE CHLORINE TEST KITS.
5. TESTING: PRESSURE TEST AND PERFORM BACTERIOLOGICAL TESTS ON ALL WATER LINES UNDER THE SUPERVISION OF THE CITY PUBLIC WORKS DEPARTMENT. NOTIFY THE CITY AT LEAST 24 WORKING HOURS PRIOR TO ANY TESTING. PRESSURIZE THE WATERLINE TO 1034-KPA (150-PSI) GAUGE PRESSURE (MEASURED AT THE POINT OF LOWEST ELEVATION) BY MEANS OF A PUMP CONNECTED TO THE PIPE IN A SATISFACTORY MANNER. MAINTAIN THE TEST PRESSURE FOR A MINIMUM OF 2 HOURS. DO NOT ADD WATER TO THE WATERMAIN IN ORDER TO MAINTAIN THE REQUIRED PRESSURE DURING THE WATER MAIN PRESSURE TESTING. THE TEST SECTION OF PIPE IS ACCEPTABLE WITH A PRESSURE DROP OF 14 KPA (2 PSI) OR LESS.
6. USE MUELLER H 10300 OR FORD EM 2 7057, OR APPROVED EQUAL, AT ALL CURB STOP LOCATIONS. STATIONARY ROD IS REQUIRED ON ALL CURB STOPS.
7. BUILDING WATER SERVICES: WATER SERVICE PIPE SHALL MEET THE FOLLOWING SPECIFICATIONS AND BE APPROVED BY THE LOCAL GOVERNING AGENCY. 2.5 INCH OR LESS: HDPE PER ASTM D2737 SDR 9 OR TYPE K COPPER PER ASTM B - 88. 4 INCH OR GREATER: DIP PER AWWA C151 OR PVC PER AWWA C-900.
8. TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THE WISCONSIN STATUTES 182.0175(2R) AND THE WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES SPS 382.30(11)(H).

STORM DRAINAGE :

1. UNLESS OTHERWISE INDICATED, USE REINFORCED, PRECAST, CONCRETE MAINTENANCE HOLES AND CATCH BASINS CONFORMING TO ASTM C478, FURNISHED WITH WATER STOP RUBBER GASKETS AND PRECAST BASES. JOINTS FOR ALL PRECAST MAINTENANCE HOLE SECTIONS SHALL HAVE CONFINED, RUBBER "O"-RING GASKETS IN ACCORDANCE WITH ASTM C923. THE INSIDE BARREL DIAMETER SHALL NOT BE LESS THAN 48 INCHES.
2. ALL JOINTS AND CONNECTIONS TO CATCH BASINS OR MANHOLES SHALL BE WATERTIGHT OR APPROVED CONNECTION. USE RESILIENT RUBBER SEALS, WATERSTOP GASKETS, OR APPROVED EQUAL. CEMENT MORTAR JOINTS ARE NOT ALLOWED UNLESS OTHERWISE PERMITTED BY LOCAL MUNICIPALITY.
3. INSTALL CATCH BASIN CASTINGS WITH SPECIFIED TOP ELEVATION AT THE FLOWLINE OF RIM.
4. PVC PIPE: USE SOLID-CORE, SDR-35, ASTM D3034 POLYVINYL CHLORIDE (PVC) PIPE FOR DESIGNATED PVC STORM SEWER SERVICES 4 TO 15-INCHES IN DIAMETER. USE SOLID-CORE, SDR-35, ASTM F679 POLYVINYL CHLORIDE (PVC) PIPE FOR DESIGNATED PVC STORM SEWER SERVICES 18 TO 27-INCHES IN DIAMETER. JOINTS FOR ALL STORM SEWER SHALL HAVE PUSH-ON JOINTS WITH ELASTOMERIC GASKETS. USE OF SOLVENT CEMENT JOINTS IS ALLOWED FOR BUILDING SERVICES. SOLVENT CEMENT JOINTS IN PVC PIPE MUST INCLUDE USE OF A PRIMER WHICH IS OF CONTRASTING COLOR TO THE PIPE AND CEMENT. PIPE WITH SOLVENT CEMENT JOINTS SHALL BE JOINED WITH PVC CEMENT CONFORMING TO ASTM D2564. LAY ALL PVC PIPE ON A CONTINUOUS GRANULAR BED. INSTALLATION MUST COMPLY WITH ASTM D2321.
5. TESTING: TEST ALL PORTIONS OF STORM SEWER THAT ARE WITHIN 10 FEET OF BUILDINGS, WITHIN 10 FEET OF BURIED WATER, LINES, WITHIN 50 FEET OF WATER WELLS, OR THAT PASS THROUGH SOIL OR WATER IDENTIFIED AS BEING CONTAMINATED. TEST ALL FLEXIBLE STORM SEWER LINES FOR DEFLECTION AFTER THE SEWER LINE HAS BEEN INSTALLED AND BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF THE TEST FAILS, MAKE NECESSARY REPAIRS AND RETEST.
6. USE NEENAH R-1550A FRAME WITH 2050D GRATE ON ALL PROPOSED CATCH BASINS.
7. INSTALL DETECTABLE UNDERGROUND MARKING TAPE DIRECTLY ABOVE ALL PVC, POLYETHYLENE, AND OTHER NONCONDUCTIVE UNDERGROUND UTILITIES AT A DEPTH OF 457 MM (18 INCHES) BELOW FINISHED GRADE, UNLESS OTHERWISE INDICATED. BRING THE TAPE TO THE SURFACE AT VARIOUS LOCATIONS IN ORDER TO PROVIDE CONNECTION POINTS FOR LOCATING UNDERGROUND UTILITIES. INSTALL BLUE RHINO TRIVIEW FLEX TEST STATIONS, OR APPROVED EQUAL, WITH BLACK CAPS AT EACH SURFACE LOCATION.
8. TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THESE CODE SECTIONS AS PER 182.0715(2R) OF THE STATUTES.
9. THE MINIMUM DEPTH OF COVER FOR BUILDING AND CANOPY ROOF DRAIN LEADERS WITHOUT INSULATION IS 5 FEET. INSULATE ROOF DRAIN LEADERS AT LOCATIONS WHERE THE DEPTH OF COVER IS LESS THAN 5 FEET. PROVIDE A MINIMUM INSULATION THICKNESS OF 2 INCHES. THE INSULATION MUST BE AT LEAST 4 FEET WIDE AND CENTERED ON THE PIPE. INSTALL THE INSULATION BOARDS 6 INCHES ABOVE THE TOPS OF THE PIPES ON MECHANICALLY COMPACTED AND LEVELED PIPE BEDDING MATERIAL. USE HIGH DENSITY, CLOSED CELL, RIGID BOARD MATERIAL EQUIVALENT TO DOW STYROFOAM HI-40 PLASTIC FOAM INSULATION.
10. CLEANOUTS: INSTALL CLEANOUTS ON ALL ROOF DRAINS IN ACCORDANCE WITH S.P.S 382.35 (3)(C)(1.). THE DISTANCE BETWEEN CLEANOUTS IN HORIZONTAL PIPING SHALL NOT EXCEED 100 FEET FOR PIPES 10-INCHES AND UNDER IN SIZE. CLEANOUTS SHALL BE OF THE SAME NOMINAL SIZE AS THE PIPES THEY SERVE OR 6-INCH DIAMETER MINIMUM FOR PIPES 6 INCHES IN DIAMETER OR GREATER. INSTALL A METER BOX FRAME AND SOLID LID (NEENAH R-1914-A, OR APPROVED EQUAL) OVER ALL CLEANOUTS.
11. INSTALL ALL PIPE WITH THE ASTM IDENTIFICATION NUMBERS ON THE TOP FOR INSPECTION. COMMENCE PIPE LAYING AT THE LOWEST POINT IN THE PROPOSED SEWER LINE. LAY THE PIPE WITH THE BELL END OR RECEIVING GROOVE END OF THE PIPE POINTING UPGRADE. WHEN CONNECTING TO AN EXISTING PIPE, UNCOVER THE EXISTING PIPE IN ORDER TO ALLOW ANY ADJUSTMENTS IN THE PROPOSED LINE AND GRADE BEFORE LAYING ANY PIPE. DO NOT LAY PIPES IN WATER OR WHEN THE TRENCH CONDITIONS ARE UNSUITABLE FOR SUCH WORK.
12. INSTALL STORM SEWER IN ACCORDANCE WITH SECTION 608 OF THE WISDOT STANDARD SPECIFICATIONS.
13. INSTALL CATCH BASINS, MANHOLES, AND INLETS IN ACCORDANCE WITH SECTION 611 OF THE WISDOT STANDARD SPECIFICATIONS.



SANITARY SEWER :

1. PIPE: USE SOLID-CORE, SDR-35, ASTM D3034 (OR APPROVED EQUAL) POLYVINYL CHLORIDE (PVC) PLASTIC PIPE FOR ALL DESIGNATED PVC SANITARY SEWER SERVICES. JOINTS FOR ALL SANITARY SEWER SHALL HAVE PUSH-ON JOINTS WITH ELASTOMERIC GASKETS. USE OF SOLVENT CEMENT JOINTS IS ALLOWED FOR BUILDING SERVICES. SOLVENT CEMENT JOINTS IN PVC PIPE MUST INCLUDE USE OF A PRIMER WHICH IS OF CONTRASTING COLOR TO THE PIPE AND CEMENT. PIPE WITH SOLVENT CEMENT JOINTS SHALL BE JOINED WITH PVC CEMENT CONFORMING TO ASTM D2564. LAY ALL PVC PIPE ON A CONTINUOUS GRANULAR BED. INSTALLATION MUST COMPLY WITH ASTM D2321.
2. CLEANOUTS: INSTALL CLEANOUTS ON ALL SANITARY SEWER SERVICES. THE DISTANCE BETWEEN CLEANOUTS IN HORIZONTAL PIPING SHALL NOT EXCEED 100 FEET FOR PIPES 4-INCH AND OVER IN SIZE. CLEANOUTS SHALL BE OF THE SAME NOMINAL SIZE AS THE PIPES THEY SERVE OR 6-INCH DIAMETER MINIMUM FOR PIPES 6 INCHES IN DIAMETER OR GREATER. INCLUDE FROST SLEEVES AND CONCRETE FRAME AND PIPE SUPPORT. INSTALL A METER BOX FRAME AND SOLID LID (NEENAH R-1914-A, OR APPROVED EQUAL) OVER ALL CLEANOUTS.
3. TESTING: PRESSURE TEST ALL SANITARY SEWER LINES. TEST ALL FLEXIBLE SANITARY SEWER LINES FOR DEFLECTION AFTER THE SEWER LINE HAS BEEN INSTALLED AND BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF THE TEST FAILS, MAKE NECESSARY REPAIRS AND RETEST.
4. UNLESS OTHERWISE INDICATED, USE REINFORCED, PRECAST, CONCRETE MAINTENANCE HOLES CONFORMING TO ASTM C478, FURNISHED WITH PRECAST BASES. SANITARY SEWER MAINTENANCE HOLES SHALL BE SUPPLIED WITH PRE-FORMED INVERTS AND FLEXIBLE NEOPRENE SLEEVE CONNECTIONS FOR ALL LATERAL LINES 375 MM (15 INCHES) IN DIAMETER OR LESS, UNLESS OTHERWISE INDICATED. JOINTS FOR ALL PRECAST MAINTENANCE HOLE SECTIONS SHALL HAVE CONFINED, RUBBER "O"-RING GASKETS IN ACCORDANCE WITH ASTM C923. THE INSIDE BARREL DIAMETER SHALL NOT BE LESS THAN 48 INCHES.
5. INSTALL FLEXIBLE WATERTIGHT OR APPROVED CONNECTION FRAME/CHIMNEY SEALS ON ALL SANITARY SEWER MAINTENANCE HOLES. USE EITHER MANUFACTURED MAINTENANCE HOLE FRAME/CHIMNEY SEALS OR ELASTOMERIC WATERPROOFING FRAME/CHIMNEY SEALS.
6. USE NEENAH FOUNDRY CO. R-1642 CASTING WITH SELF-SEALING, SOLID, TYPE B LID, OR APPROVED EQUAL, ON ALL SANITARY SEWER MAINTENANCE HOLES. COVERS SHALL BEAR THE "SANITARY SEWER" LABEL.
7. THE MINIMUM DEPTH OF COVER FOR SANITARY SEWER WITHOUT INSULATION IS 5 FEET. INSULATE SANITARY SEWER SERVICES AT LOCATIONS WHERE THE DEPTH OF COVER IS LESS THAN 5 FEET. PROVIDE A MINIMUM INSULATION THICKNESS OF 2 INCHES. THE INSULATION MUST BE AT LEAST 4 FEET WIDE AND CENTERED ON THE PIPE. INSTALL THE INSULATION BOARDS 6 INCHES ABOVE THE TOPS OF THE PIPES ON MECHANICALLY COMPACTED AND LEVELED PIPE BEDDING MATERIAL. USE HIGH DENSITY, CLOSED CELL, RIGID BOARD MATERIAL EQUIVALENT TO DOW STYROFOAM HI-40 PLASTIC FOAM INSULATION.
8. TRACER WIRE: LOCATING REQUIREMENTS - A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS OF THE WISCONSIN STATUTES 182.0175(2R) AND THE WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES SPS 82.30(11)(H).

HDPE REQUIREMENTS :

1. INSTALL DUAL-WALL, SMOOTH INTERIOR, CORRUGATED HIGH-DENSITY POLYETHYLENE (HDPE) PIPE AT LOCATIONS INDICATED ON THE PLAN.
2. DUAL-WALL, SMOOTH INTERIOR, CORRUGATED HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M252 FOR PIPE SIZES 4-INCH TO 10-INCH DIAMETER.
3. DUAL-WALL, SMOOTH INTERIOR, CORRUGATED HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2306 FOR PIPE SIZES 12-INCH TO 60-INCH DIAMETER.
4. ALL FITTINGS MUST COMPLY WITH ASTM STANDARD D3212.
5. WATER-TIGHT JOINTS MUST BE USED AT ALL CONNECTIONS INCLUDING STRUCTURES.
6. LAY ALL HDPE PIPE ON A CONTINUOUS GRANULAR BED. INSTALLATION MUST COMPLY WITH ASTM D2321. ALL SECTIONS OF THE CORRUGATED HDPE PIPE SHALL BE COUPLED IN ORDER TO PROVIDE WATER TIGHT JOINTS.
7. PERFORM DEFLECTION TESTS ON ALL HDPE PIPE AFTER THE SEWER LINES HAVE BEEN INSTALLED AND BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF THE TEST FAILS, MAKE NECESSARY REPAIRS AND PERFORM THE TEST AGAIN UNTIL ACCEPTABLE. SUPPLY THE MANDREL FOR DEFLECTION TESTING. IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID BALL OR MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE BALL OR MANDREL SHALL BE CLEARLY STAMPED WITH THE DIAMETER. PERFORM THE TESTS WITHOUT MECHANICAL PULLING DEVICES.



STORES



STORES

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NO SCALE

UTILITY NOTES

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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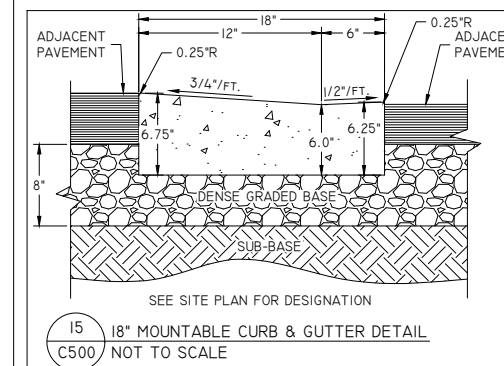
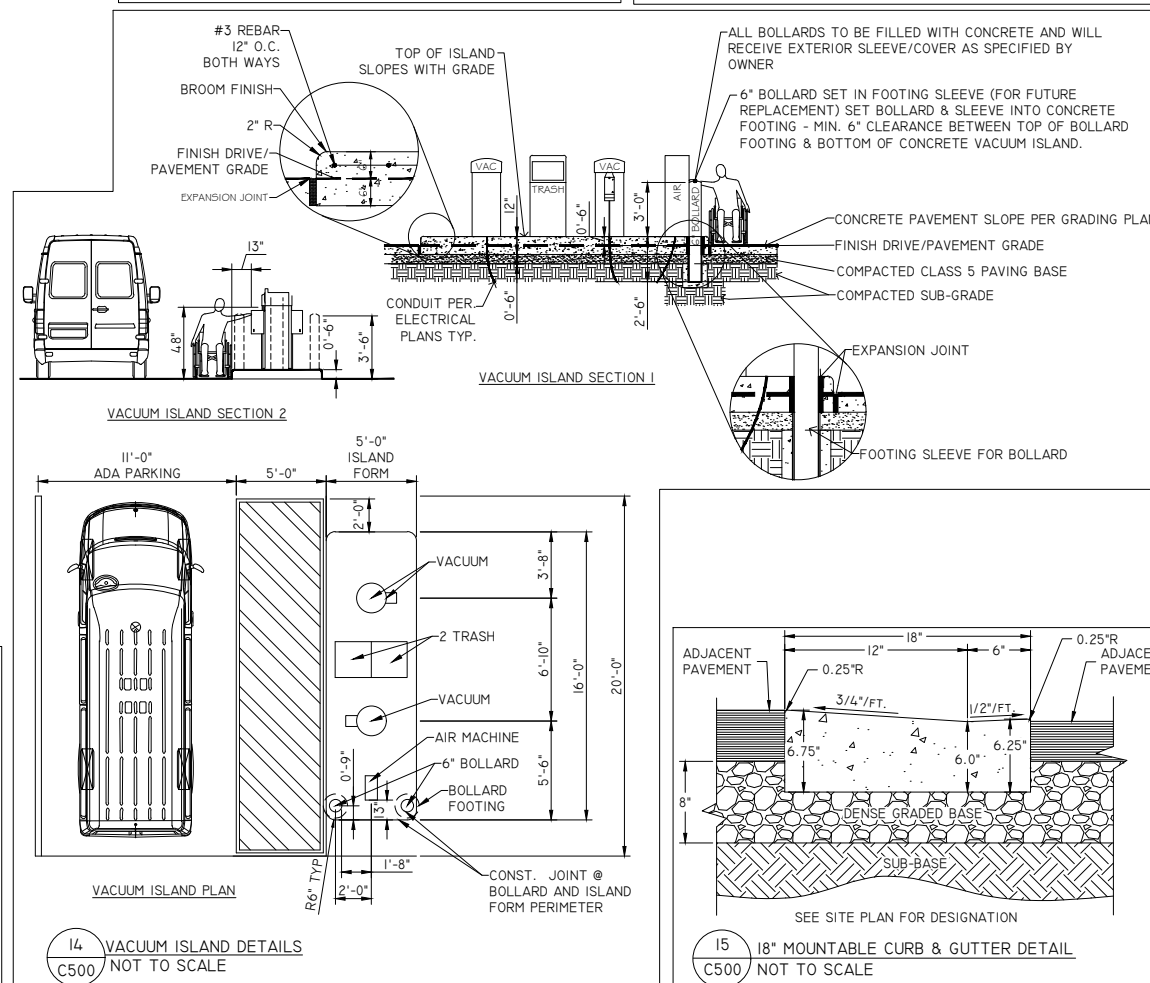
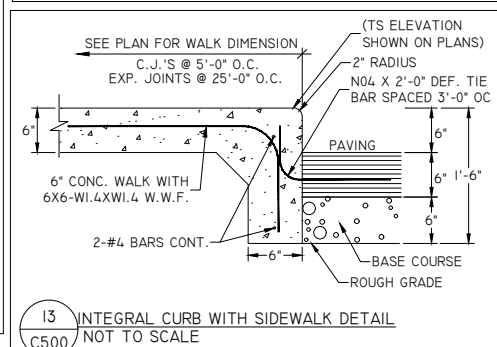
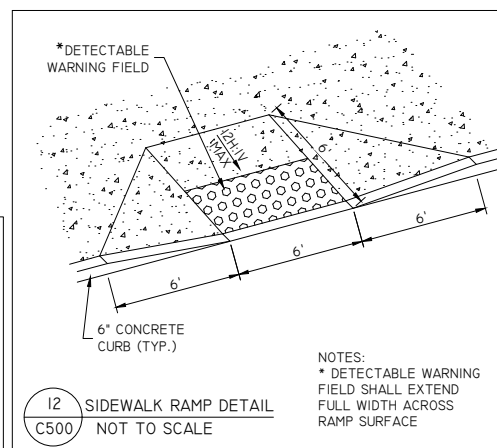
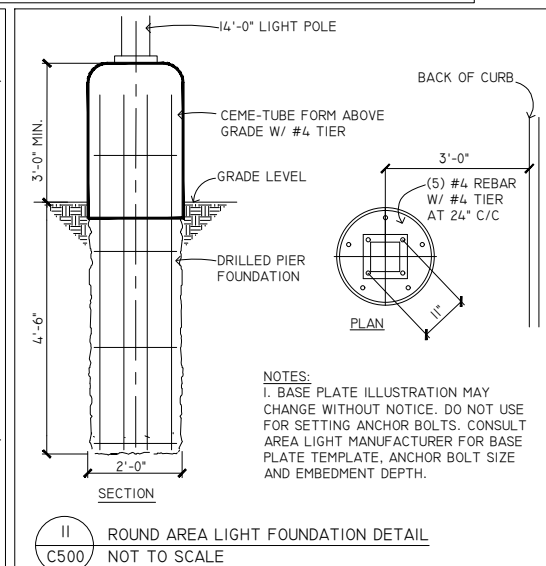
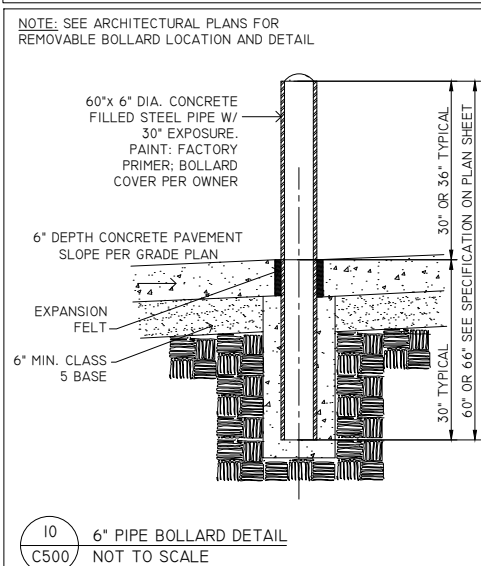
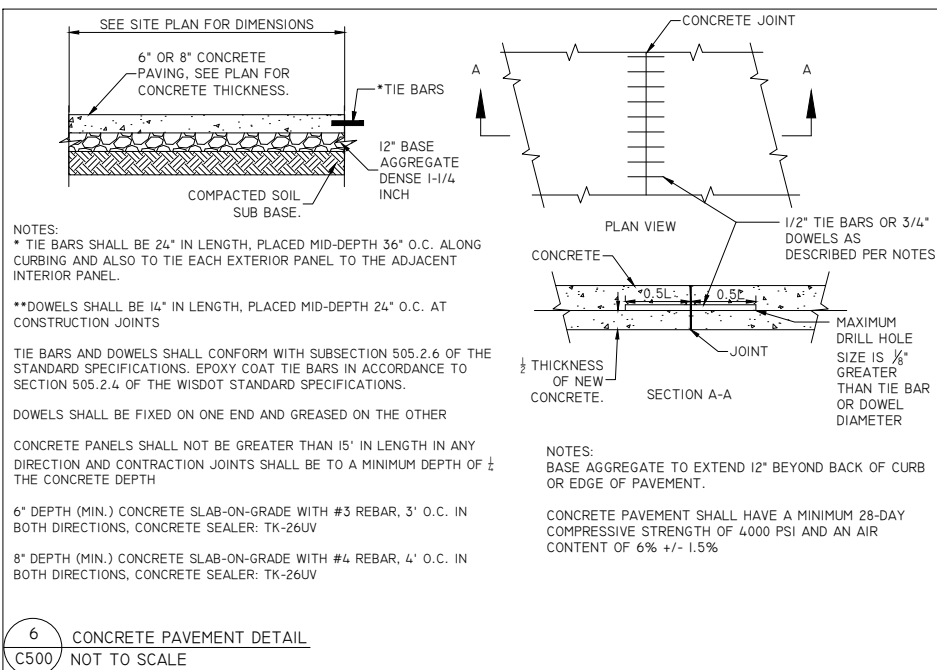
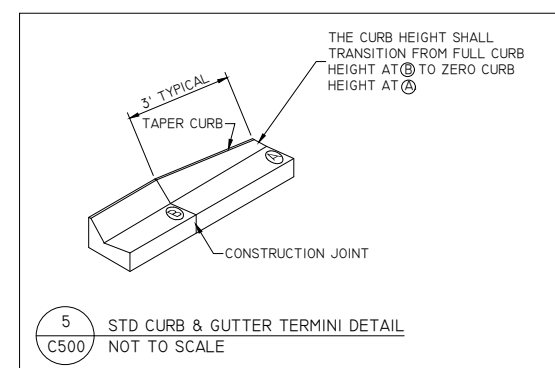
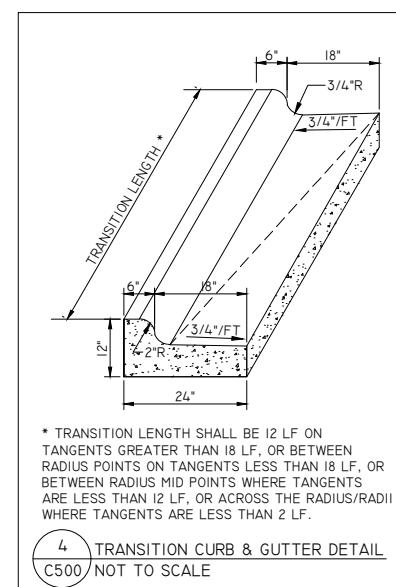
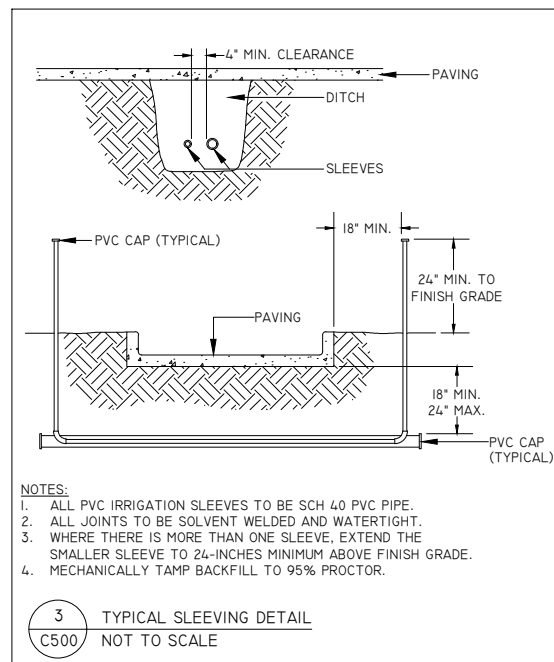
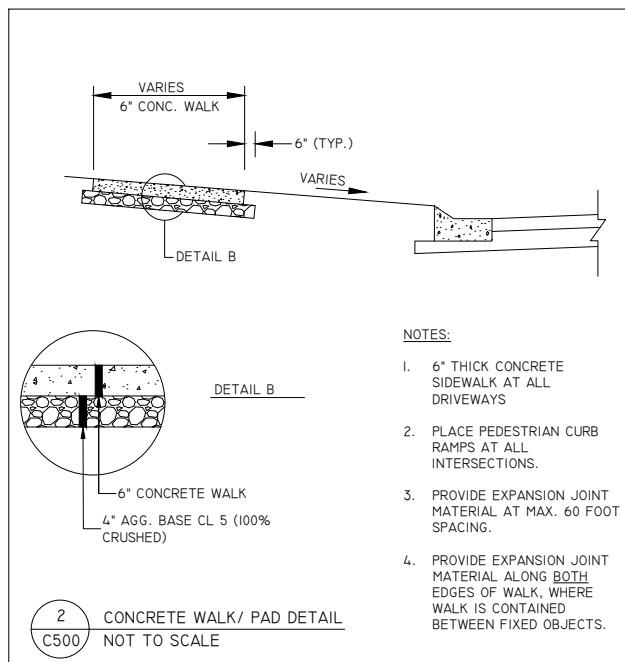
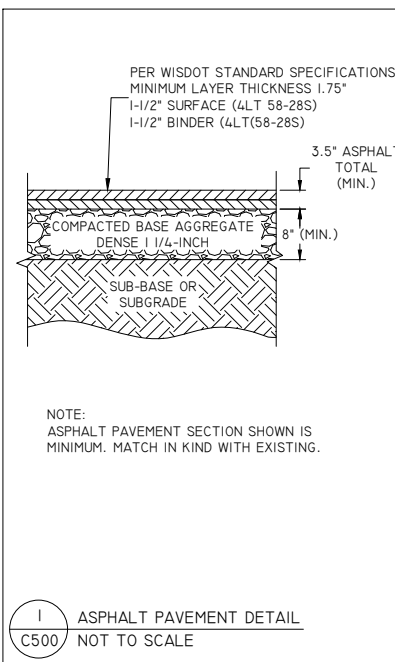
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DATE 10/09/24 - REVIEW DOCUMENTS

SHEET C401



**KWIK
TRIP**

STORES

The Kwik Star logo, featuring the word "Kwik" in a bold, italicized sans-serif font above the word "Star" in a similar font, with a five-pointed star replacing the letter "a".

STORES

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NO SCALE

SITE PLAN DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

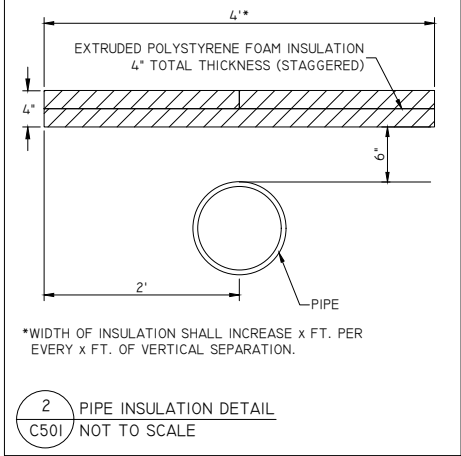
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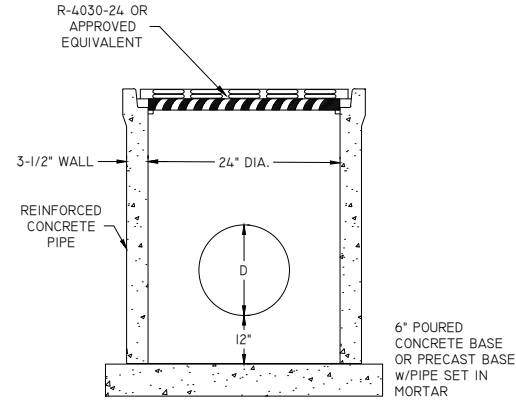
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SEE PETROLEUM DETAILS

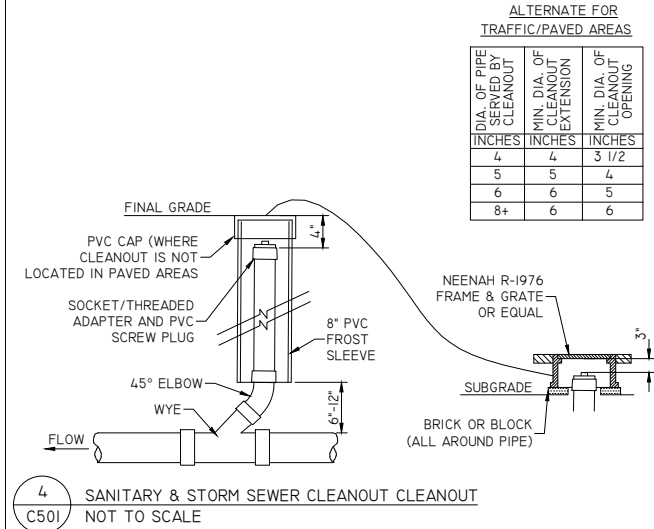
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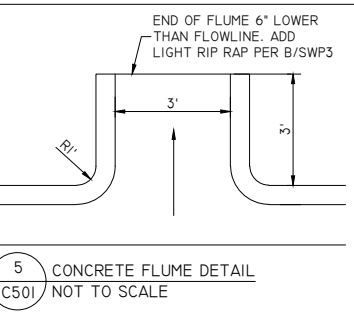
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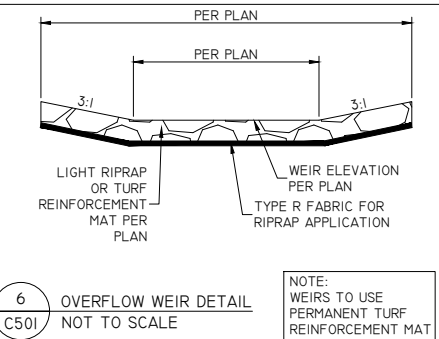
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ALTERNATE FOR TRAFFIC/PAVED AREAS

DIA. OF PIPE SERVED BY CLEANOUT	MIN. DIA. OF W/PIPE ON EXTENSION	MIN. DIA. OF CLEANOUT OPENING
4	4	3 1/2
5	5	4
6	6	5
8+	6	6

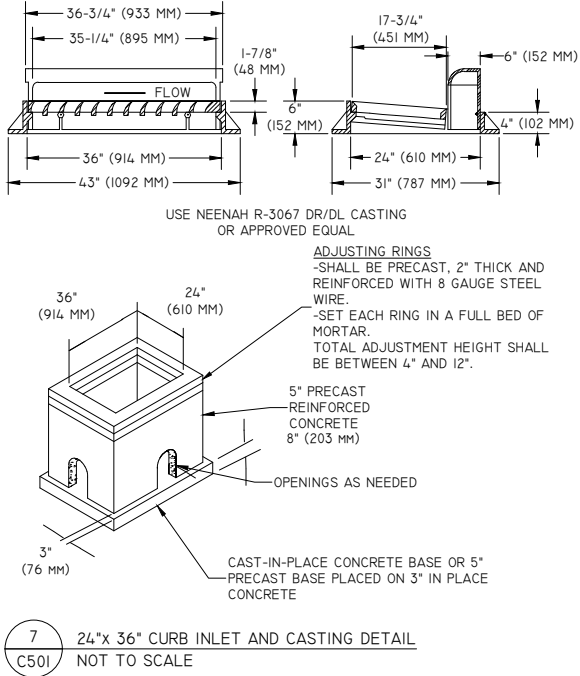


5 CONCRETE FLUME DETAIL
C501 NOT TO SCALE

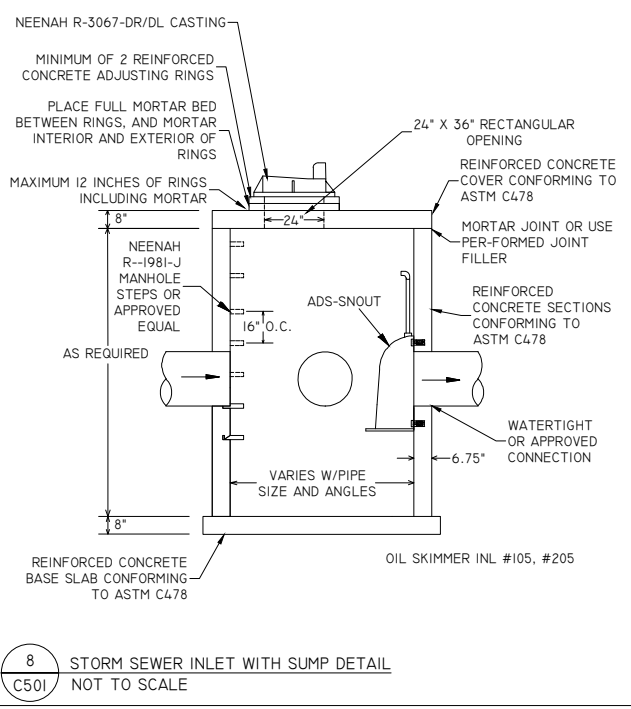


6 OVERFLOW WEIR DETAIL
C501 NOT TO SCALE

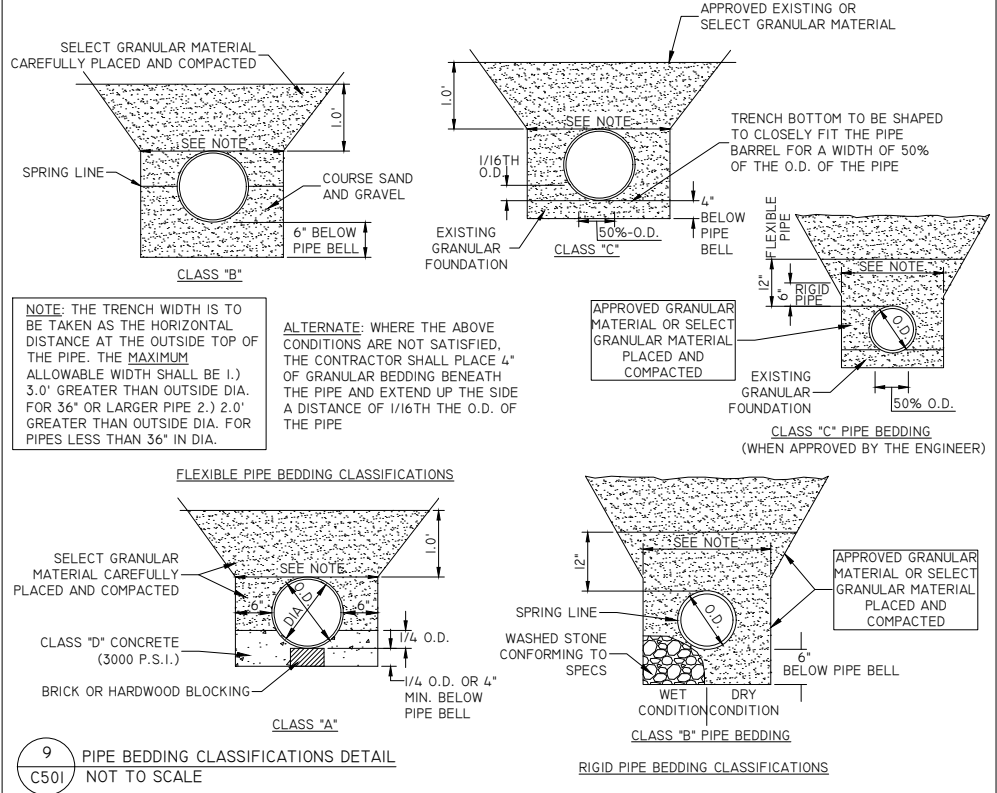
NOTE: WEIRS TO USE PERMANENT TURF REINFORCEMENT MAT



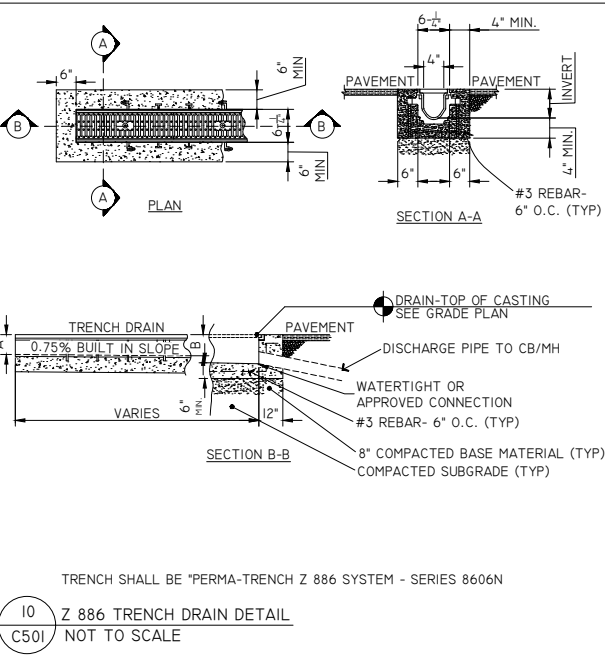
7 24"x 36" CURB INLET AND CASTING DETAIL
C501 NOT TO SCALE



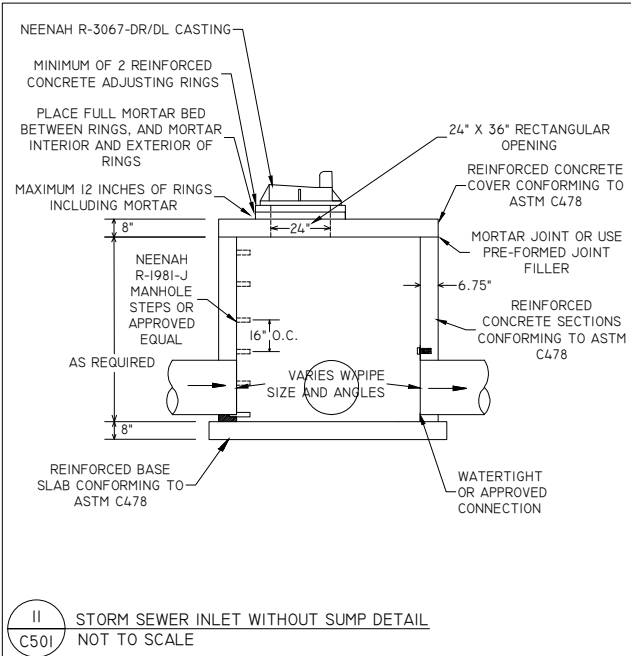
8 STORM SEWER INLET WITH SUMP DETAIL
C501 NOT TO SCALE



9 PIPE BEDDING CLASSIFICATIONS DETAIL
C501 NOT TO SCALE



10 Z 886 TRENCH DRAIN DETAIL
C501 NOT TO SCALE



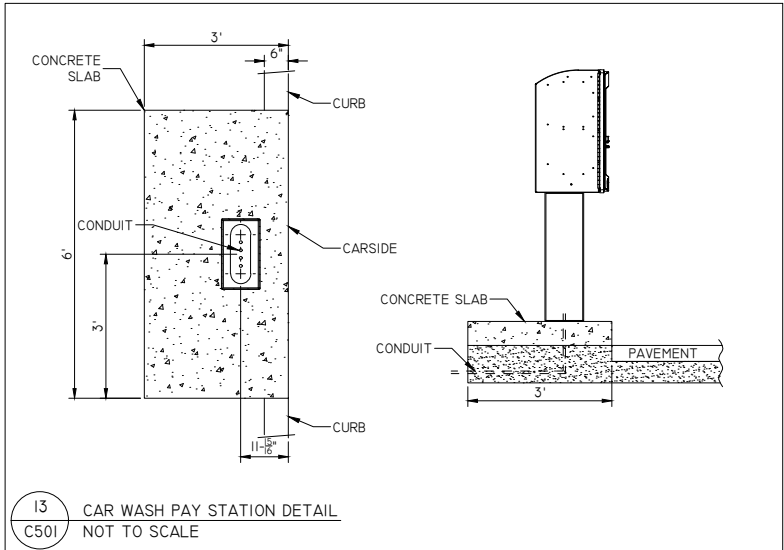
11 STORM SEWER INLET WITHOUT SUMP DETAIL
C501 NOT TO SCALE

- NOTES:
- SIGN VENDOR TO ANCHOR SIGN/S TO CONCRETE PAD
 - SIGN VENDOR TO ANCHOR SIGNS WITH (4) 3/8" X 4" LAGS & SHIELD ANCHORS. USE STAINLESS STEEL HARDWARE
 - STAINLESS STEEL FLAT WASHERS MAY BE USED UNDER BASE PLATE AS NEEDED TO SHIM SIGN TO BE PLUMB
 - CONCRETE PAD INSTALLED BY OTHERS (KWIK TRIP/KWIK STAR CONCRETE VENDOR)
 - CONCRETE PAD TO BE 5'X 36'X 36"

SINGLE SIDED DIRECTIONAL SIGN



12 DIRECTIONAL SIGN CONCRETE BASE DETAIL
C501 NOT TO SCALE



13 CAR WASH PAY STATION DETAIL
C501 NOT TO SCALE

KWIK TRIP

STORES

KWIK STAR

STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
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FAX (608) 781-8960

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WAUSAU, WISCONSIN 54401
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EMAIL: MAIL@REIENGINEERING.COM

NO SCALE

SITE PLAN DETAILS

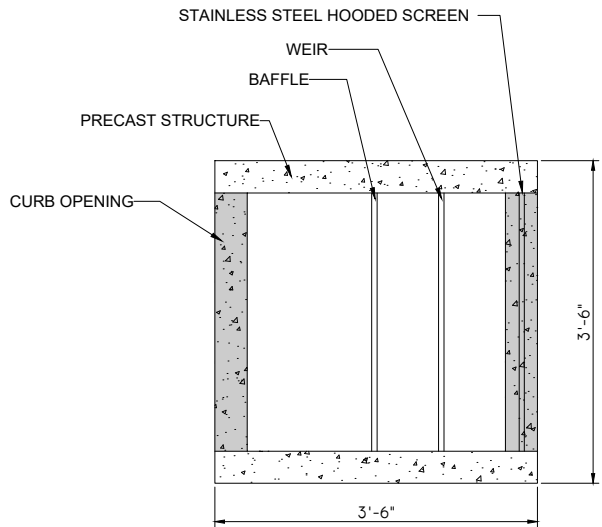
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

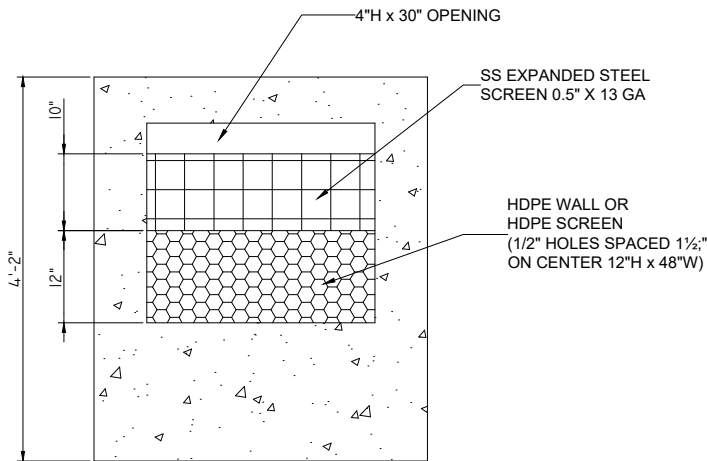
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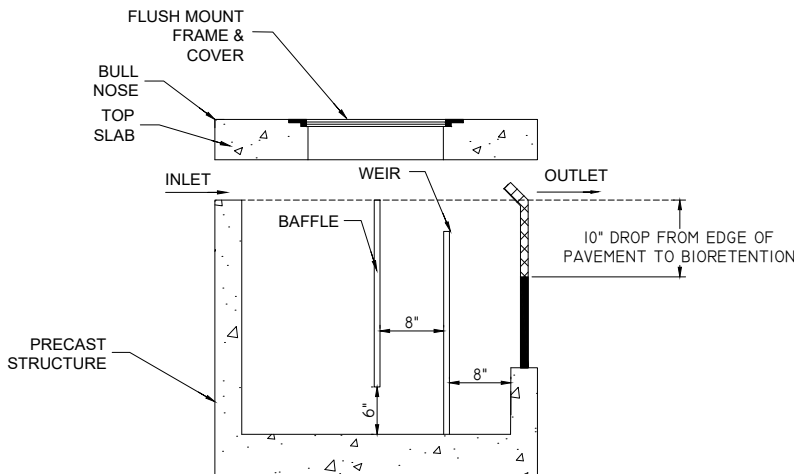
DRAWING FILE: Q:\11700-11799\11757 - KWIK TRIP #631 - GERMANTOWN\DRAWING\PLANS\11757-C500-SITE DETAILS.DWG LAYOUT: C502
PLOTTED: OCT 08, 2024 - 3:34PM PLOTTED BY: NATHANP



PLAN VIEW

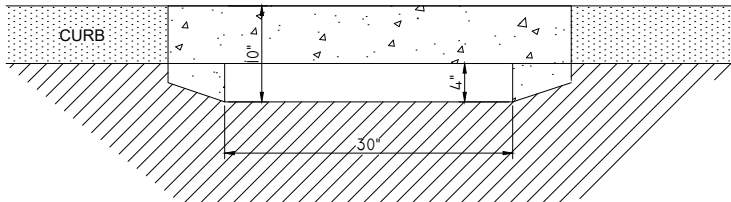


BACK VIEW

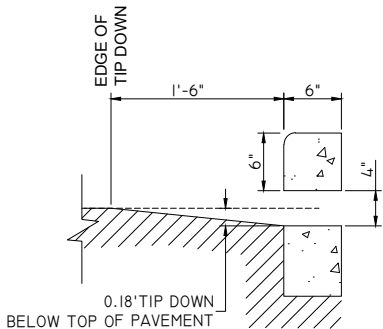


ELEVATION VIEW

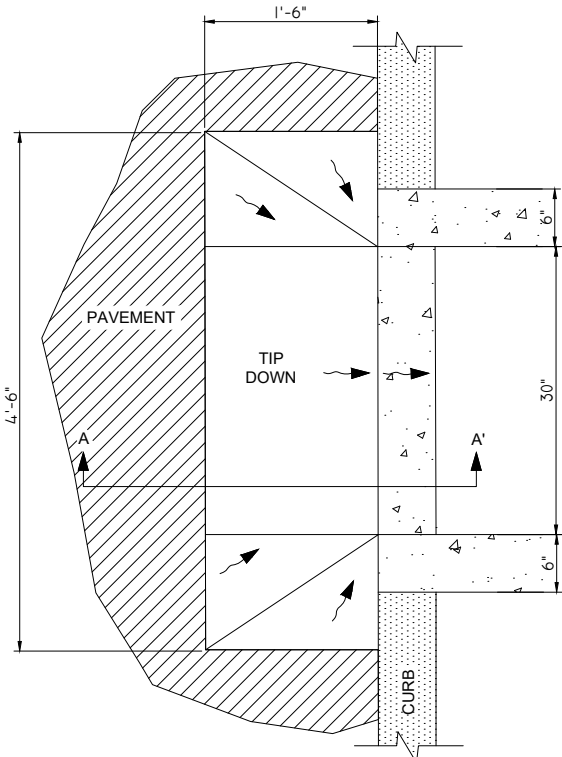
1 PRETX 30X30 UNIT DETAIL
C502 NOT TO SCALE



CURB FACE



SECTION A-A



PLAN

PRETX - 8" CURB REVEAL DETAIL
NOT TO SCALE

PRETX SPECIFICATIONS

A. GENERAL

1. PRETX SYSTEMS ARE A PRE-FILTER AND CRITICAL MAINTENANCE DEVICE THAT EXTENDS THE OPERATING LIFE AND REDUCES THE MAINTENANCE BURDEN OF BIORETENTION SYSTEMS, RAIN GARDENS, BIOSWALES AND OTHER TYPES OF SURFACE BEST MANAGEMENT PRACTICES BY FILTERING OUT SEDIMENT, TRASH AND DEBRIS AT THE INLET.

B. PRODUCTS

1. ACCEPTABLE SYSTEM SUPPLIER:
CONVERGENT WATER TECHNOLOGIES, INC. OR ITS
AUTHORIZED VALUE-ADDED RESELLER
P: (800) 711-5428; W: WWW.CONVERGENTWATER.COM

C. CONSTRUCTION AND SEQUENCING

1. EXCAVATION AND INSTALLATION
 - a. ROUGH GRADE THE PRE-TX SYSTEM AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE PRE-TX SYSTEM FACILITIES TO WITHIN 1 FOOT OF STRUCTURE BOTTOM .
 - b. PLACE 1 FOOT BED OF COARSE STONE TO ELEVATION OF BASE OF STRUCTURE.
 - c. ESTABLISH ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT AND TIP DOWN, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS.
2. INSTALLATION
 - a. PLACE THE PRECAST SYSTEM TO NECESSARY ELEVATION.
 - b. FOR PRETX-SURFACE:
 - VERIFY ELEVATIONS FOR ADJACENT CURBS.
 - VERIFY EDGE OF PAVEMENT TIP DOWN PAVEMENT GRADING FOR INLET GRATE.
 - VERIFY CURB ELEVATION IN RELATION TO PAVEMENT AND TIP DOWN.
 - VERIFY OUTLET INVERT FOR KNEE WALL IN RELATION TO FILTER MEDIA.
- C. INSTALL BAFFLES, WEIR, AND SCREENS AS INDICATED ON DRAWINGS.
- D. VERIFY MAINTENANCE ACCESS THROUGH GRATE OR COVER AND CLEARANCE FOR VACTOR.
- e. INSTALL TOP OF STRUCTURE LEVEL WITH ADJACENT CURB OR SIDEWALK AS PER MANUFACTURERS SPECIFICATIONS. ENGINEER FIELD VISIT REQUIRED PRIOR TO BACKFILLING.
6. BACKFILLING
 - a. BACKFILL WITH APPROVED SOIL AND STONE TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
 - b. BACKFILL WITH 12" OF NO. 57 STONE AROUND REAR, LEFT, AND RIGHT SIDES TO LEVEL WITH TOP OF HDPE SCREEN.
 - c. BACKFILL WITH BIORETENTION SOIL MIX BEYOND STONE BACKFILL TO EQUAL ELEVATION OF THE TOP OF HDPE SCREEN.
 - d. DO NOT BACKFILL SOIL OR STONE AGAINST STAINLESS SCREEN.
 - e. DO NOT COMPACT ADJACENT FILTRATION SYSTEM SOIL WITH MECHANICAL EQUIPMENT.
 - f. STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/ OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
4. CLEAN UP
 - a. AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIALS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTLY ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

KWIK
TRIP

STORES

KWIK
STAR

STORES

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FAX (608) 781-8960

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PHONE: 715.675.9194 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM

NO SCALE

SITE PLAN DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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SCALE NOT TO SCALE
PROJ. NO. 11757
DATE 10/09/24 - REVIEW DOCUMENTS
SHEET

C502

SOIL DATA	
SURFACE SOIL	PAVE
SUB-SURFACE SOIL	SILT
DEPTH OF GROUND WATER	±8 FT
DOWN-STREAM TRIBUTARY	MENOMINEE RIVER

(C) DEWATERING BAGS SHALL BE READILY AVAILABLE AND SHALL BE USED AT ALL TIMES IN THE PROCESS OF DEWATERING.

	INSTALL WISDOT URBAN TYPE B EROSION CONTROL BLANKET ON SIDE SLOPES OF 4:1 OR GREATER. SEE DETAIL E/C602 FOR INSTALLATION.
ESTIMATED PRELIMINARY EROSION CONTROL QUANTITIES (ACTUAL QUANTITIES SUBJECT TO CHANGE)	
ITEM	QUANTITY
ROCK CONSTRUCTION ENTRANCE	400 SQ.YD.
INLET PROTECTION	12
EROSION CONTROL BLANKET	2,000 SQ.YD.
RIP RAP	30 CU. YD.
SILT FENCE	870 L.F.
CULVERT PROTECTION	0
DITCH CHECK	AS NEEDED
BIO ROLL/EROSION LOG	AS NEEDED

CONTACT:
KWIK TRIP, INC
P0 BOX 2107
LACROSSE, WI 54602

1. TEMPORARY ROCK CONSTRUCTION ENTRANCE/EXIT. SEE DETAIL A/C602.
2. INSTALL SILT FENCE. SEE DETAIL D/C602.
3. PROVIDE INLET PROTECTION. REFER TO SWP2 FOR ACCEPTABLE PRODUCTS.
4. INSTALL LIGHT RIPRAP ON TYPE R GEOTEXTILE FABRIC. SEE DETAIL B/C602.
5. WET POND WITH TYPE A LINER TO SERVE AS SEDIMENT TRAP DURING CONSTRUCTION. SEE DETAILS A & B/C603.
SEDIMENT TRAP DETAILS
 - TRAP BOTTOM ELEV. = 4.5' BELOW WEIR ELEV OR DEEPER
 - TRAP TOP ELEV. = 864.50 - 6-FT WIDE WEIR ELEV. = 863.50
6. CONSTRUCT EMERGENCY OVERFLOW WEIR, WITH LIGHT RIPRAP ON TYPE R GEOTEXTILE FABRIC. SEE DETAIL 6/C501.
7. INSTALL DITCH CHECKS @ MAX. OF 200-FT INTERVALS OR EVERY 2-FT OF DROP. SEE DETAIL D/C603.

04/01/25- PROVIDE CONSTRUCTION ACCESS
- INSTALL PERIMETER CONSTRUCTION ACCESS FENCING
- INSTALL SILT FENCE
- INSTALL INLET PROTECTION ON EXISTING STORM STRUCTURES
- PRE-CONSTRUCTION MEETING
- DEMO AND REMOVE EXISTING BUILDINGS
- SAWCUT AND REMOVE PAVEMENT, STRIP TOPSOIL, REMOVALS

04/08/25- ROUGH GRADING
- INSTALL DIVERSIONS AND SEDIMENT TRAP

04/22/25- CONSTRUCT BUILDING
- SITE UTILITY INSTALLATION

05/08/25- INSTALL INLET PROTECTION ON NEW STORM STRUCTURES

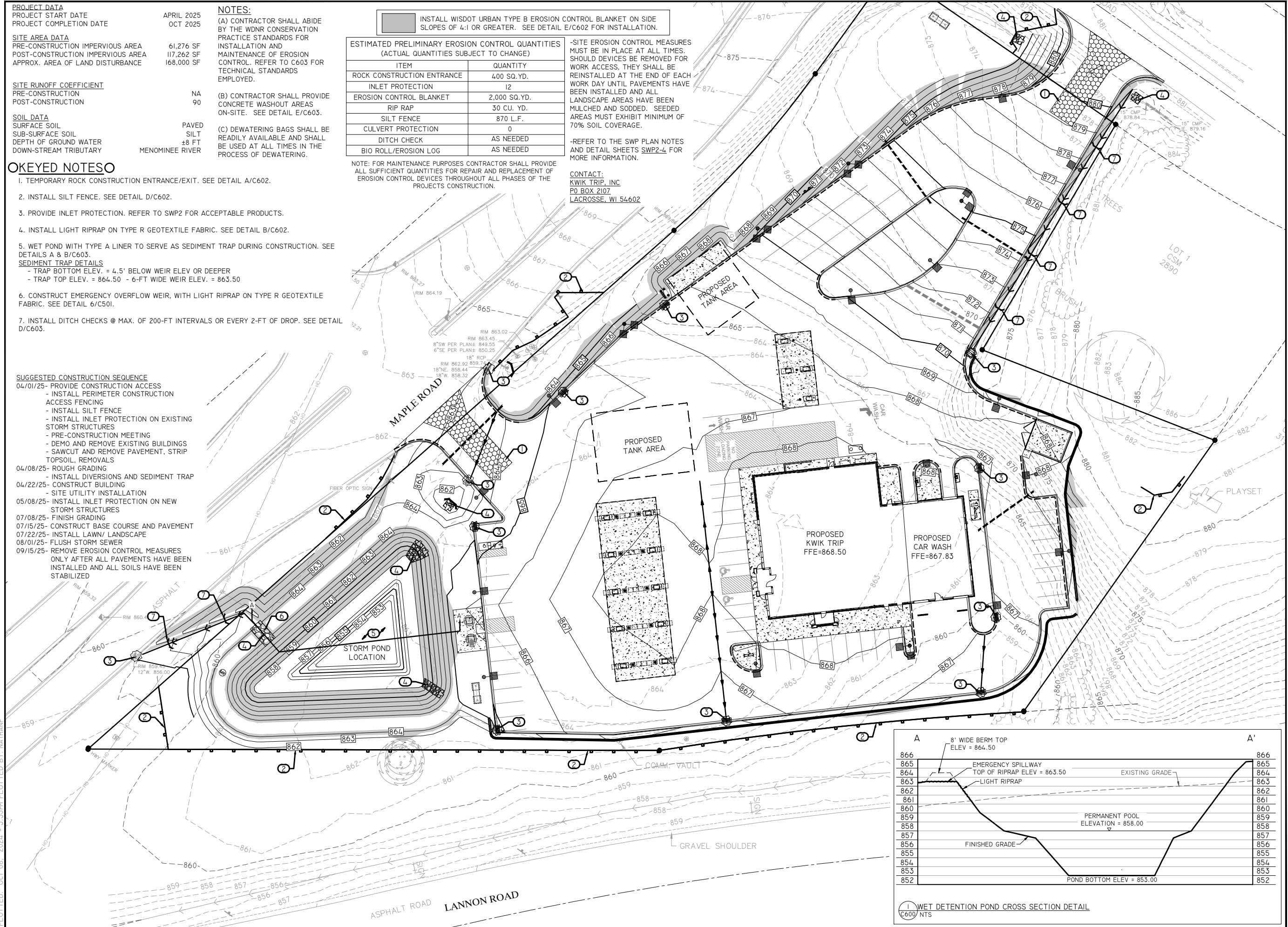
07/08/25- FINISH GRADING

07/15/25- CONSTRUCT BASE COURSE AND PAVEMENT

07/22/25- INSTALL LAWN/ LANDSCAPE

08/01/25- FLUSH STORM SEWER

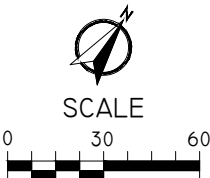
09/15/25- REMOVE EROSION CONTROL MEASURES ONLY AFTER ALL PAVEMENTS HAVE BEEN INSTALLED AND ALL SOILS HAVE BEEN STABILIZED



STORES



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**CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING**
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4080 N. 20TH AVENUE
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PHONE: 715.675.9784 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
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SCALE	GRAPHIC	
PROJ. NO.	11757	
DATE	10/09/24 - REVIEW DOCUMENTS	
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DRAWING FILE: Q:\11700-11799\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C600-EROSION CONTROL PLAN.DWG LAYOUT: C601 PLOTTED: OCT 08, 2024 - 3:35PM PLOTTED BY: NATHANP

STORM WATER POLLUTION PREVENTION PLAN

POLLUTION PREVENTION PLAN

ALL CONTRACTORS / SUBCONTRACTORS SHALL CONDUCT THEIR OPERATIONS IN A MANNER THAT MINIMIZES EROSION AND PREVENTS SEDIMENTS FROM LEAVING THE PROJECT SITE. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLIANCE AND IMPLEMENTATION OF THE POLLUTION PREVENTION PLAN (PPP) FOR THEIR ENTIRE CONTRACT. THE RESPONSIBILITY SHALL BE FURTHER SHARED WITH SUBCONTRACTORS WHOSE WORK IS A SOURCE OF POTENTIAL POLLUTION AS DEFINED IN THE PPP.

I. SITE DESCRIPTION

THIS POLLUTION PREVENTION PLAN IS FOR THE CONSTRUCTION OF THE KWIK TRIP CONVENIENCE STORE #631 PROJECT. THE PROJECT IS LOCATED IN SECTION 28, TOWNSHIP 09, RANGE 20, WASHINGTON COUNTY, WISCONSIN.

THIS PPP COVERS 4.37 ACRES WITH AN ESTIMATED 3.86 ACRES BEING DISTURBED THROUGH EXCAVATION, GRADING, AND PAVING. THE PORTION OF THE PPP COVERED BY THIS CONTRACT HAS 4.37 ACRES BEING DISTURBED.

THE PROJECT IS LOCATED IN AN AREA OF (HMB2 - HOCHHEIM LOAM, HMC2 - HOCHHEIM LOAM, HMD2 - HOCHHEIM LOAM, OUB2 - OZAUKEE SILT LOAM, SF - SANDY AND GRAVELLY LAND, USA - VIRGIL SILTY LOAM). THE ESTIMATED CURVE NUMBER FOR THIS PPP AFTER CONSTRUCTION IS XX.

REFER TO PLANS: KWIK TRIP CONVENIENCE STORE #631 FOR LOCATIONS OF TYPICAL SLOPES, DITCH GRADES, AND MAJOR STRUCTURAL AND NON-STRUCTURAL CONTROLS. A COPY OF THIS PLAN WILL BE ON FILE AT THE PROJECT ENGINEER'S OFFICE AND ON-SITE. RUNOFF FROM THIS WORK WILL OVERLAND FLOW THROUGH DETENTION POND, DITCHES, STORM SEWER TO MENOMINEE RIVER.

THIS PROJECT IS NOT LOCATED WITHIN A 100-YEAR FLOODPLAIN.

POTENTIAL SOURCES OF POLLUTION:

SITE SOURCES OF POLLUTION GENERATED AS A RESULT OF THIS WORK RELATE TO SILTS AND SEDIMENT WHICH MAY BE TRANSPORTED AS A RESULT OF A STORM EVENT. HOWEVER, THIS PPP PROVIDES CONVEYANCE FOR OTHER (NON-PROJECT RELATED) OPERATIONS. THESE OTHER OPERATIONS HAVE STORM WATER RUNOFF, THE REGULATION OF WHICH IS BEYOND THE CONTROL OF THIS PPP. POTENTIALLY THIS RUNOFF CAN CONTAIN POLLUTANTS RELATED TO SITE-SPECIFIC LAND USES. EXAMPLES ARE:

RURAL AGRICULTURAL ACTIVITIES:

RUNOFF FROM AGRICULTURAL LAND USE CAN POTENTIALLY CONTAIN CHEMICALS INCLUDING HERBICIDES, PESTICIDES, FUNGICIDES, AND FERTILIZERS.

CONSTRUCTION ACTIVITIES:

RUNOFF FROM CONSTRUCTION ACTIVITIES CAN POTENTIALLY CONTAIN FUELS, OILS, AND CHEMICALS FROM SPECIFIC CONSTRUCTION RELATED ACTIVITIES.

2. CONTROLS

INLET PROTECTION DEVICES SHALL BE PLACED AROUND INTAKES. SILT FENCE SHALL BE PLACED AT LOCATIONS WHERE RUNOFF CAN MOVE OFFSITE. VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION SHALL BE PRESERVED. AS AREAS REACH THEIR FINAL GRADE, ADDITIONAL SILT FENCES, SILT BASINS, INTERCEPTING DITCHES, SOD FLUMES, LETDOWNS, BRIDGE END DRAINS, AND EARTH DIKES SHALL BE INSTALLED AS SPECIFIED IN THE PLANS AND / OR AS REQUIRED BY PROJECT ENGINEER. THIS MAY INCLUDE USING SILT FENCE AS DITCH CHECKS. TEMPORARY STABILIZING SHALL BE COMPLETED AS THE DISTURBED AREAS ARE CONSTRUCTED. IF CONSTRUCTION ACTIVITY IS NOT PLANNED TO OCCUR IN A DISTURBED AREA IMMEDIATELY, THE AREA SHALL BE STABILIZED BY TEMPORARY SEEDING OR MULCHING WITHIN 14 DAYS. OTHER STABILIZING METHODS SHALL BE USED OUTSIDE THE SEEDING PERIOD.

THIS WORK SHALL BE DONE IN ACCORDANCE WITH THE WISCONSIN TRANSPORTATION STANDARD SPECIFICATIONS. CONTRACTOR SHALL ALSO FOLLOW ALL REQUIREMENTS OF THE WASHINGTON COUNTY EROSION AND SEDIMENT CONTROL REGULATIONS.

AS THE WORK PROGRESSES, ADDITIONAL EROSION CONTROL ITEMS SUCH AS SOD FLUMES, DITCH CHECKS, ROCK OUTLET PROTECTION, AND LETDOWN STRUCTURES AND OTHER APPROPRIATE MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS DETERMINED BY THE ENGINEER AFTER FIELD INVESTIGATION. THE CONSTRUCTION WILL BE COMPLETED WITH THE ESTABLISHMENT OF PERMANENT PERENNIAL VEGETATION OF ALL DISTURBED AREAS BY THE CONTRACTOR.

3. OTHER CONTROLS

CONTRACTOR DISPOSAL OF UNUSED CONSTRUCTION MATERIALS AND CONSTRUCTION MATERIAL WASTE SHALL COMPLY WITH APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER, OR SEPTIC SYSTEM REGULATIONS. IN THE EVENT OF A CONFLICT WITH OTHER GOVERNMENT LAWS, RULES, AND REGULATIONS, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

MUD TRACK-OUT SHALL BE CLEANED OFF THE ROADWAY NIGHTLY AND BEFORE ANY RAINFALL EVENT. WATER MAY NOT BE USED TO CLEAN THE ROADWAY.

CONTRACTOR SHALL KEEP PERMIT, INSPECTION LOGS, SITE PLAN, AND OTHER PERMIT DATA ON SITE AT ALL TIMES. MATERIAL SHALL BE PLACED IN AN EASILY ACCESSIBLE MAILBOX THAT IS CLEARLY MARKED "SWPPP".

ALL FUELS AND OILS SHALL BE CONTAINED BY A SECONDARY CONTAINMENT BERM OR WITHIN A TRAILER.

ALL SILT FENCE AND INLET PROTECTION DEVICES AS SHOWN SHALL BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION WHENEVER POSSIBLE.

A NOTICE OF DISCONTINUATION MUST BE FILED WITH THE WDNR ONCE VEGETATION HAS BEEN ESTABLISHED TO A MINIMUM COVERAGE OF 70%.

CONTRACTOR SHALL MARK ON THE INITIAL STORM WATER POLLUTION PREVENTION PLAN THE LOCATION OF STORAGE AREAS FOR FUELS AND OILS, PORTA-POTTY, DUMPSTER OR WASTE CONTAINMENT BINS, CONCRETE WAS OUT AREA, AND OTHER NECESSARY ITEMS.

ENTRANCES SHALL BE MAINTAINED TO CONTROL MUD TRACK-OUT FROM THE SITE.

THE STORMWATER POLLUTION PREVENTION PLAN SHALL BE UPDATED AS NECESSARY DURING CONSTRUCTION.

APPROVED STATE OF LOCAL PLANS:

DURING THE COURSE OF THIS CONSTRUCTION, IT IS POSSIBLE THAT SITUATIONS WILL ARISE WHERE UNKNOWN MATERIALS WILL BE ENCOUNTERED. WHEN SUCH SITUATIONS ARE ENCOUNTERED, THEY WILL BE HANDLED ACCORDING TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS IN EFFECT AT THE TIME.

4. MAINTENANCE

THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL TEMPORARY EROSION CONTROL MEASURES IN PROPER WORKING ORDER, INCLUDING CLEANING, REPAIRING, OR REPLACING THEM THROUGHOUT THE CONTRACT PERIOD. CLEANING OF SILT CONTROL DEVICES SHALL BEGIN WHEN THE FEATURES HAVE LOST 50% OF THEIR CAPACITY.

5. INSPECTIONS

INSPECTIONS SHALL BE MADE JOINTLY BY THE CONTRACTOR AND THE CONTRACTING AUTHORITY EVERY SEVEN CALENDAR DAYS. THE CONTRACTOR SHALL IMMEDIATELY BEGIN CORRECTIVE ACTION ON ALL DEFICIENCIES FOUND. THE FINDINGS OF THIS INSPECTION SHALL BE RECORDED IN THE PROJECT DIARY. THIS PPP MAY BE REVISED BASED ON THE FINDING OF THE INSPECTION. THE CONTRACTOR SHALL IMPLEMENT ALL REVISIONS. ALL CORRECTIVE ACTIONS SHALL BE COMPLETED WITHIN 3 CALENDAR DAYS OF THE INSPECTION.

6. NON-STORM DISCHARGES

THIS INCLUDES SUBSURFACE DRAINS (I.E. FIELD TILE, SUBDRAINS), SLOPE DRAINS, AND BRIDGE END DRAINS. THE VELOCITY OF THE DISCHARGE FROM THESE FEATURES MAY BE CONTROLLED BY THE USE OF PATIO BLOCKS, CLASS A STONE, OR EROSION STONE.

7. SEQUENCE OF CONSTRUCTION ACTIVITIES

ALL EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO COMMENCING ANY CONSTRUCTION ON-SITE. FIRST, ALL NOTED REMOVALS SHALL BE COMPLETED. SECOND, GRADING CAN COMMENCE TO BRING SOIL TO FINAL GRADE.. NEXT, INSTALLATION OF UTILITIES AND PAVING SHALL BE COMPLETED. FINALLY, THE DISTURBED AREAS SHALL BE SEEDED, FERTILIZED, AND MULCHED AS SHOWN IN THE PLANS.

OWNER CERTIFICATION:

"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME (PRINTED OR TYPED): _____

TITLE: _____

SIGNATURE: _____

DATE: _____

NAME OF COMPANY, IF APPLICABLE: _____

ADDRESS: _____

CITY, STATE, ZIP CODE: _____

TELEPHONE NUMBER: _____

ADDRESS OF THE SITE: _____

CONTRACTOR / SUBCONTRACTOR CERTIFICATION:

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE AS PART OF THIS CERTIFICATION. FURTHER, BY MY SIGNATURE, I UNDERSTAND THAT I AM BECOMING CO-PERMITTEE, ALONG WITH THE OWNER(S) AND OTHER CONTRACTORS AND SUBCONTRACTORS SIGNING SUCH CERTIFICATIONS, TO THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES NPDES GENERAL PERMIT NO. 2 FOR "STORM WATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY FOR CONSTRUCTION ACTIVITIES" AT THE IDENTIFIED SITE. AS A CO-PERMITTEE, I UNDERSTAND THAT I, AND MY COMPANY, ARE LEGALLY REQUIRED UNDER THE CLEAN WATER ACT AND THE CODE OF WISCONSIN, TO ENSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN DEVELOPED UNDER THE NPDES PERMIT AND THE TERMS OF THE NPDES PERMIT."

NAME (PRINTED OR TYPED): _____

TITLE: _____

SIGNATURE: _____

DATE: _____

NAME OF CONTRACTING FIRM: _____

ADDRESS: _____

CITY, STATE, ZIP CODE: _____

TELEPHONE NUMBER: _____

ADDRESS OF THE SITE: _____

CONTRACTORS/SUBCONTRACTORS WHO WILL IMPLEMENT EACH EROSION CONTROL MEASURE:

SILT FENCE: CONTRACTOR (WITH ADDRESS AND TELEPHONE NUMBER)

TOPSOIL BERM: CONTRACTOR (WITH ADDRESS AND TELEPHONE NUMBER)

STABILIZED CONSTRUCTION ENTRANCE: CONTRACTOR (WITH ADDRESS AND TELEPHONE NUMBER)

CONCRETE WASH-OUT AREA: CONTRACTOR (WITH ADDRESS AND TELEPHONE NUMBER)

DUMPSTER: CONTRACTOR (WITH ADDRESS AND TELEPHONE NUMBER)

PORT-A-POTTY: CONTRACTOR (WITH ADDRESS AND TELEPHONE NUMBER)

INLET PROTECTION DEVICE: CONTRACTOR (WITH ADDRESS AND TELEPHONE NUMBER)



STORES



STORES

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LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960



EROSION CONTROL NOTES

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

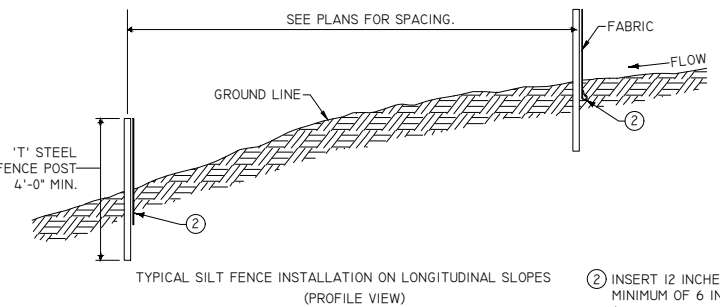
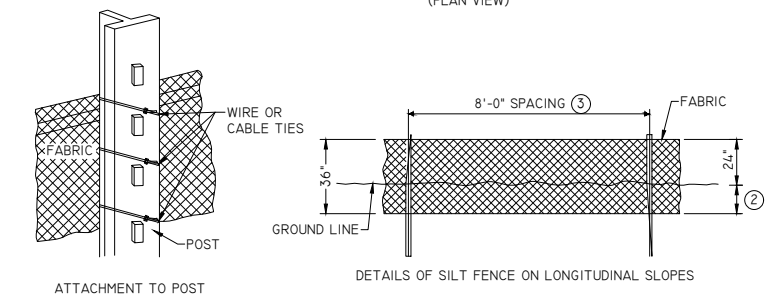
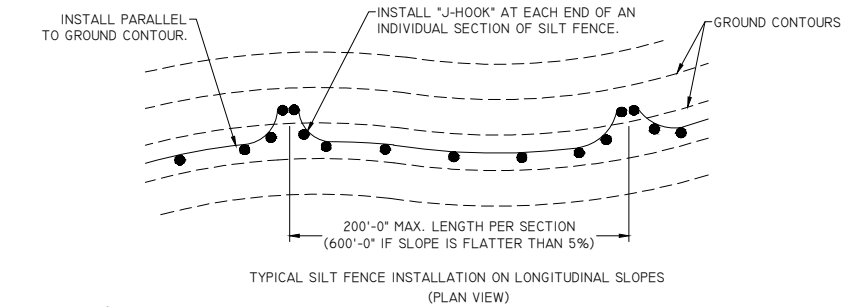
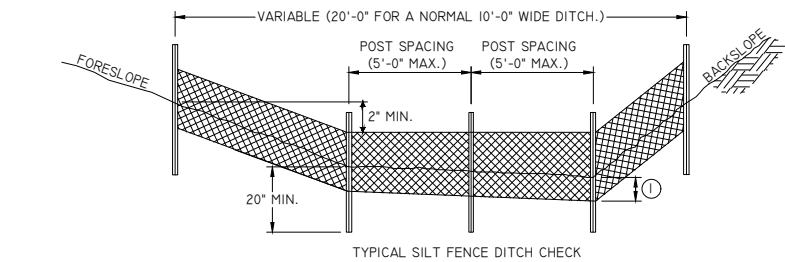
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DRAWN BY	NAP	XXX
SCALE	GRAPHIC	
PROJ. NO.	11757	
DATE	10/09/24	- REVIEW DOCUMENTS
SHEET		C601

DRAWING FILE: Q:\11700-11799\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C600-EROSION CONTROL PLAN.DWG LAYOUT: C602
PLOTTED: OCT 08, 2024 - 3:35PM PLOTTED BY: NATHANP

① ENTRANCE LENGTH: 50 FOOT MINIMUM (30 FOOT FOR SINGLE FAMILY RESIDENTIAL), OR AS SPECIFIED IN THE CONTRACT DOCUMENTS. LENGTH OF ENTRANCE MAY BE INCREASED IF SEDIMENT TRACK-OUT OCCURS.

A STABILIZED CONSTRUCTION ENTRANCE
C602 FOR CONSTRUCTION EGRESS POINTS
NTS

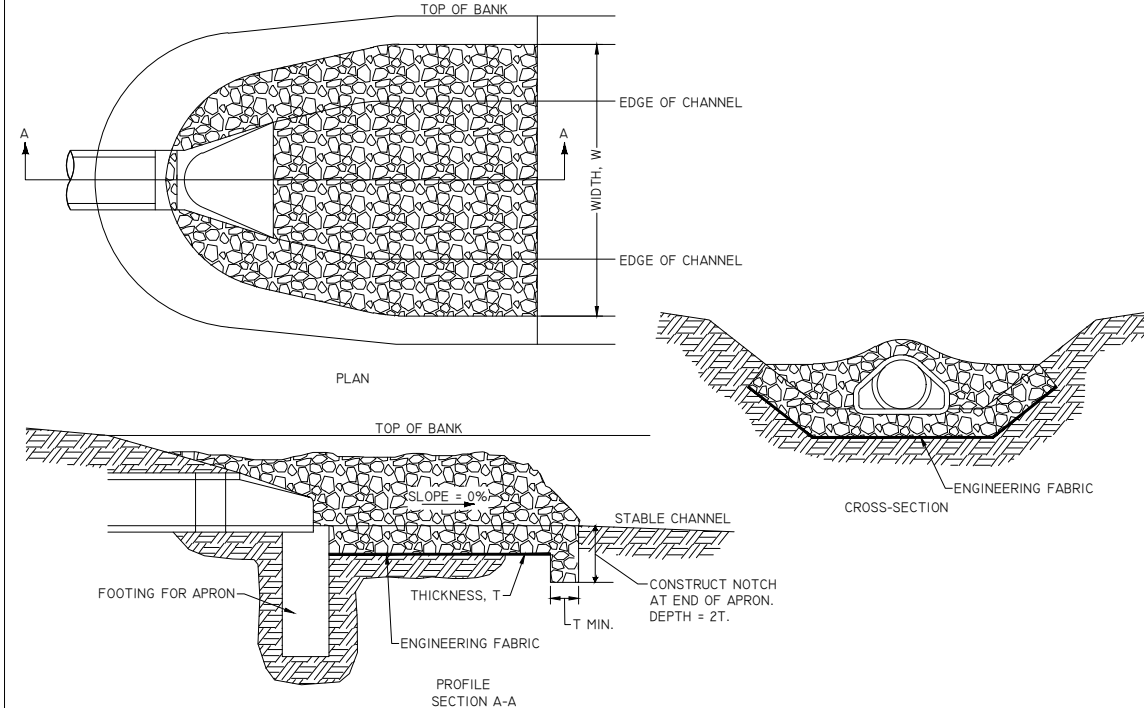
① INSERT 12 INCHES OF FABRIC A MINIMUM OF 6 INCHES DEEP (FABRIC MAY BE FOLDED BELOW THE GROUND LINE).



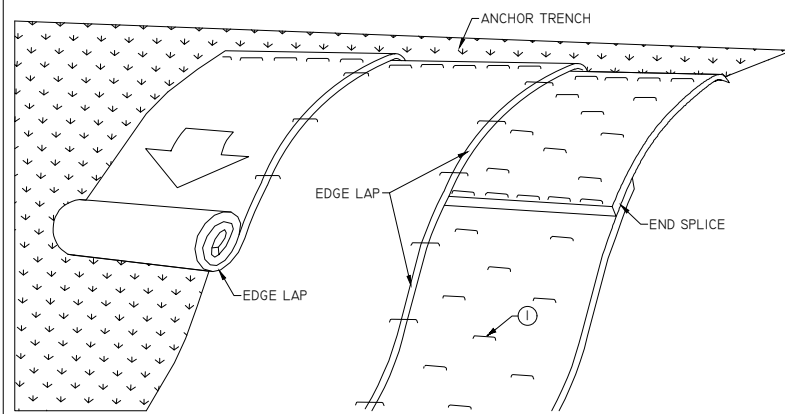
D SILT FENCE
C602 NTS

② INSERT 12 INCHES OF FABRIC A MINIMUM OF 6 INCHES DEEP (FABRIC MAY BE FOLDED BELOW THE GROUND LINE).

③ REDUCE POST SPACING TO 5'-0" AT WATER CONCENTRATION AREAS, OR AS REQUIRED TO ADEQUATELY SUPPORT FENCE.



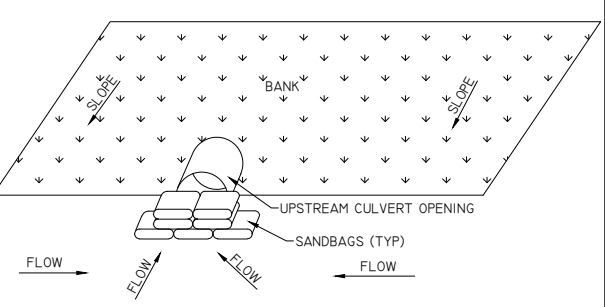
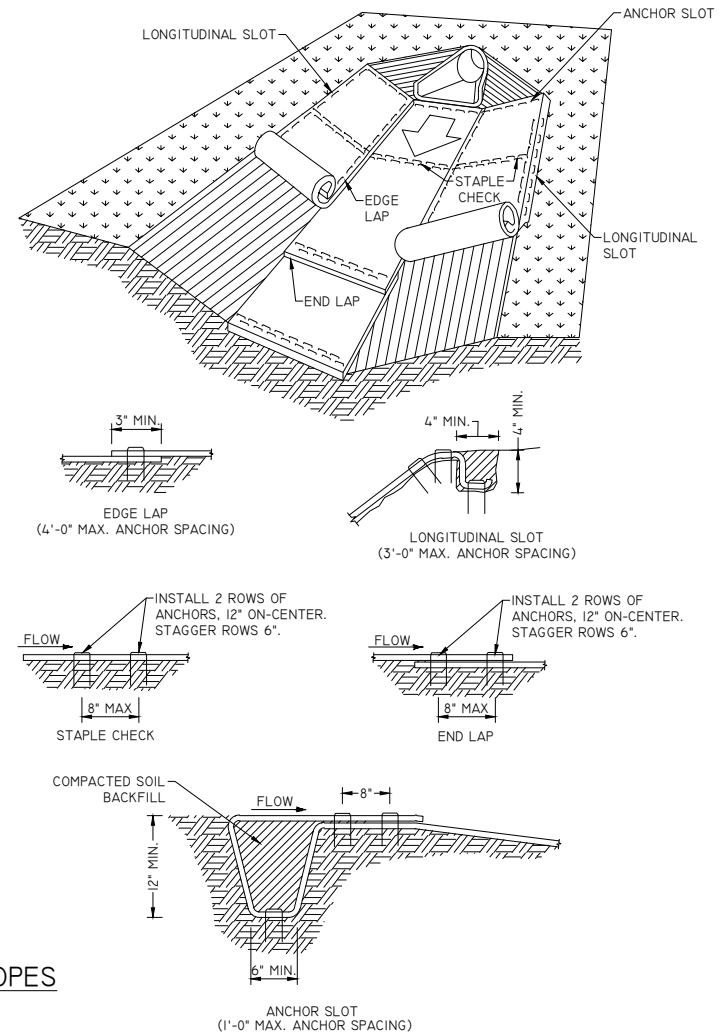
B RIP RAP APRON FOR PIPE OUTLET INTO CHANNEL
C602 NTS



① SECURE BLANKET TO GROUND ACCORDING TO MANUFACTURER'S RECOMMENDED ANCHORING PATTERN AND MINIMUM SHOWN IN TABLE I.

TABLE I		
MAX. SLOPE	MIN. ANCHORS	
≤3:1	1.5/YD ²	
2:1	2/YD ²	
1:1	2.5/YD ²	

E ROLLED EROSION CONTROL (RECP) INSTALLATION ON SLOPES
C602 NTS



C CULVERT PROTECTION
C602 NTS

ALL EROSION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED PER WDNR STANDARDS
[HTTP://DNR.WI.GOV/ORG/WATER/WM/NPS/STORMWATER/TECHSTDS.HTM](http://DNR.WI.GOV/ORG/WATER/WM/NPS/STORMWATER/TECHSTDS.HTM)

Kwik TRIP

STORES

Kwik STAR

STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
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REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
REI Engineering, INC.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9784 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM

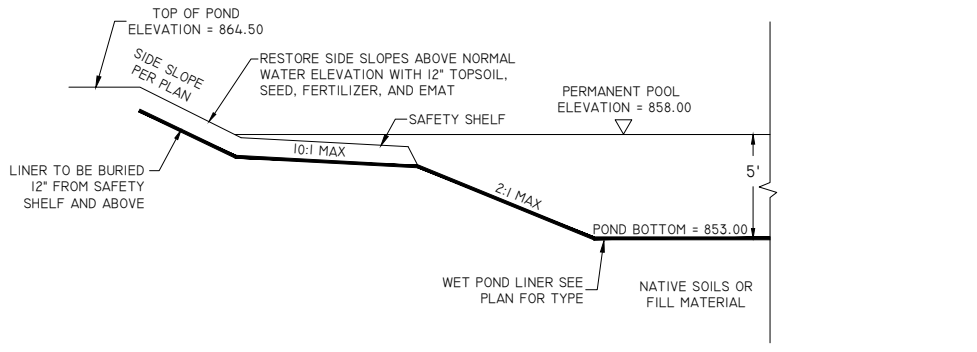
EROSION CONTROL
DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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DRAWING FILE: Q:\11700-11799\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C600-EROSION CONTROL PLAN.DWG LAYOUT: C603
PLOTTED: OCT 08, 2024 - 3:36PM PLOTTED BY: NATHANP



GENERAL POND LINER SPECIFICATIONS (REFER TO APPENDIX D OF WDNR TECHNICAL STANDARD 1001 FOR DETAILED SPECIFICATIONS)

- *1. TYPE A LINER (ANY OF THE FOLLOWING)
- CLAY LINER: MINIMUM THICKNESS OF 2 FEET WITH AN IN-PLACE HYDRAULIC CONDUCTIVITY OF 1×10^{-7} CM/SEC OR LESS.
 - HDPE: MINIMUM THICKNESS OF 60 MIL.
 - GCL: GEOSYNTHETIC CLAY LINER PER NRCS SPECIFICATIONS OUTLINED IN APPENDIX D.

TYPE B LINER (ANY OF THE FOLLOWING)

- CLAY LINER: MINIMUM THICKNESS OF 2 FEET WITH AN IN-PLACE HYDRAULIC CONDUCTIVITY OF 1×10^{-6} CM/SEC OR LESS.
- HDPE: MINIMUM THICKNESS OF 40 MIL.
- PPL: MINIMUM THICKNESS OF 30 MIL.

TYPE C LINER (ANY OF THE FOLLOWING)

- SILT/CLAY LINER: MINIMUM THICKNESS OF 2 FEET
- HDPE: ANY THICKNESS
- PPL: MINIMUM THICKNESS OF 20 MIL
- PVC: MINIMUM THICKNESS OF 30 MIL
- EPDM: MINIMUM THICKNESS OF 45 MIL

NOTE:

1. SHOULD THE CONTRACTOR ENCOUNTER SEASONAL OR PERCHED GROUNDWATER DURING CONSTRUCTION OF THE POND AND IT'S LINER, CONTACT ENGINEER FOR UNDERDRAIN RECOMMENDATIONS.

2. MANUFACTURED LINERS SHALL BE PROVIDED WITH AIR-RELEASE VENTS TO PREVENT FLOATING.

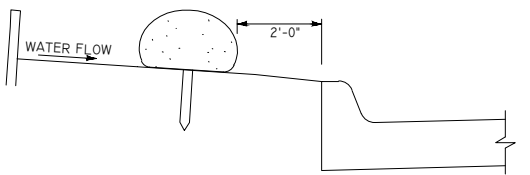
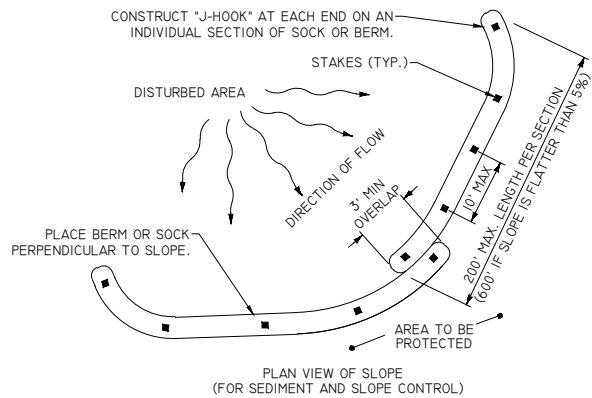
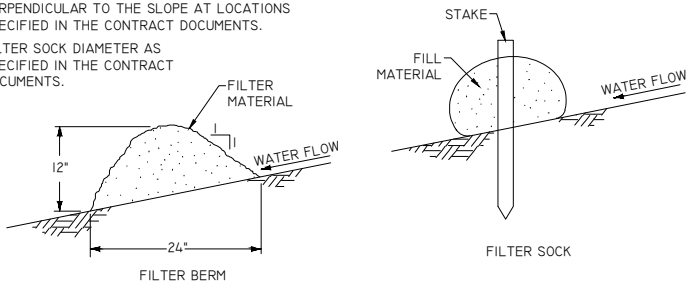
3. CONTRACTOR TO PROVIDE POND LINER DOCUMENTATION TO OWNER PRIOR TO FINAL ACCEPTANCE.

A WET POND LINER C603 NTS

BERM SHOWN IS TYPICAL FOR SLOPES FLATTER THAN 3:1. FOR STEEPER SLOPES, INCREASE BERM SIZE AS DIRECTED BY THE ENGINEER.

PLACE BERM IN UNCOMPACTED WINDROW PERPENDICULAR TO THE SLOPE AT LOCATIONS SPECIFIED IN THE CONTRACT DOCUMENTS.

FILTER SOCK DIAMETER AS SPECIFIED IN THE CONTRACT DOCUMENTS.



SECTION VIEW AT STREET
(FOR PERIMETER CONTROL ALONG STREET)
TYPICAL PLACEMENT OF BERM OR SOCK

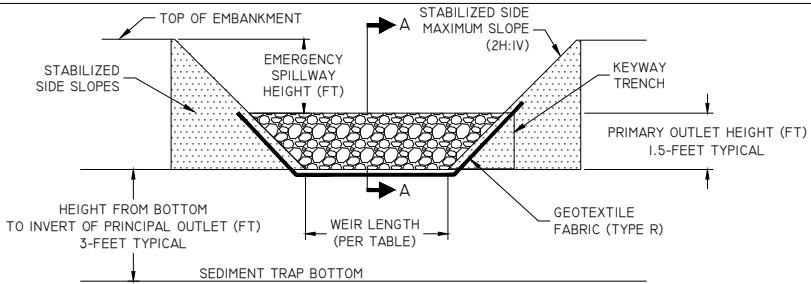
C FILTER BERM AND FILTER SOCK C603 NTS

- NOTES:
1. SIDE SLOPES AND FACES OF EARTHEN EMBANKMENT AROUND OUTLET SHALL BE ARMORED WITH RIPRAP OR STABILIZED WITH EROSION MAT SUFFICIENT TO HANDLE FLOWS FROM THE 10-YEAR STORM.
 2. STONE (SHORT DURATION): 3-6" WELL GRADED ANGULAR CLEAR STONE.
 3. STONE (6+ MONTHS): COMBINATION OF LIGHT RIPRAP WITH 12"-THICK LAYER OF 1" ANGULAR CLEAR STONE.
 4. REFER TO WDNR TECH STD 1063 FOR ADDITIONAL INFORMATION.

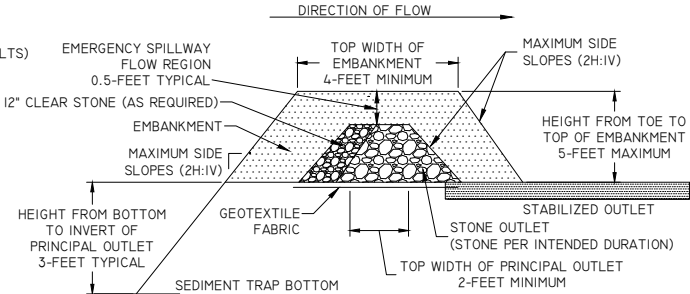
- * AS = 625 X ADR (COARSE GRAINED SOILS + SANDS)
AS = 1560 X ADR (MEDIUM GRAINED SOILS + LOAMS, SILTS)
AS = 5300 X ADR (FINE GRAINED SOILS + CLAYS)

ADR (OC)	WEIR LENGTH (FT)
1	4
2	6
3	8
4	10
5	12

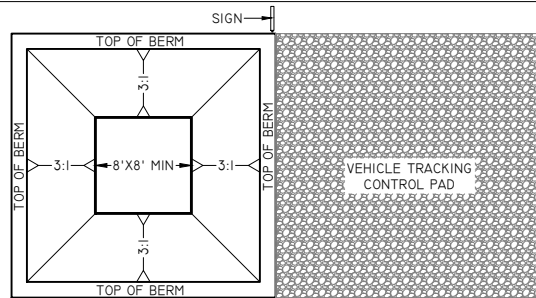
B SEDIMENT TRAP DETAIL C603 NTS



CROSS-SECTION VIEW OF PRINCIPAL OUTLET



VIEW A-A OF PRINCIPAL OUTLET



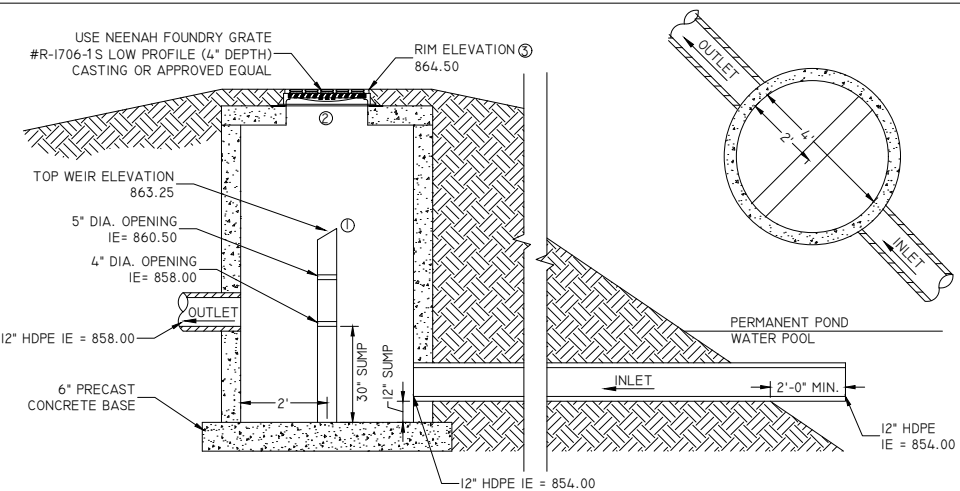
CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SEE EROSION CONTROL PLAN FOR LOCATIONS OF CONCRETE WASHOUT AREA(S). TO BE PLACED A MIN. OF 50' FROM DRAINAGEWAYS, BODIES OF WATER, AND INLETS.)
2. THE CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL PAD IS REQ'D AT THE ACCESS POINT(S).
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA(S), AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREAS TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

6. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE
7. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
8. WHEN CONCRETE WASHOUT AREA(S) IS REMOVED, THE DISTURBED AREA SHALL BE STABILIZED PER SITE EROSION CONTROL MEASURES.
9. INSPECT WEEKLY AND DURING AND AFTER ALL STORM EVENTS. CLEAN-OUT OR COVER WASHOUT AREA PRIOR TO PREDICTED STORM EVENTS TO PREVENT OVER-FLOW.

E CONCRETE WASHOUT AREA C603 NTS



F OUTLET CONTROL STRUCTURE C603 NTS

- ① 4" THICK MASONRY WALL OR 1/2" STEEL PLATE. GROUT OR SEAL ALONG SIDES OF MANHOLE
- ② FORM OPENING IN TOP SLAB TO FIT CASTING
- ③ ADJUST GRADING AT THE OUTLET STRUCTURE TO COVER CASTING TO THE PROPOSED RIM ELEVATION

INSTALL & MAINTAIN IN ACCORDANCE WITH DNR TECHNICAL STANDARD 1062.

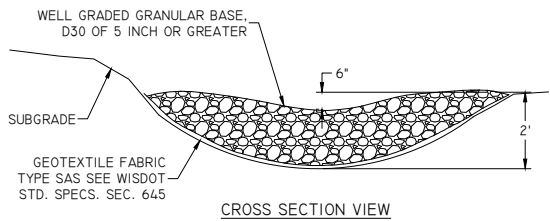
DITCH CHECKS TO BE REMOVED AFTER THE DITCH IS VEGETATED AND STABILIZED.

AREA UNDER THE DITCH CHECK TO BE SEEDD AFTER THE DITCH CHECK IS REMOVED.

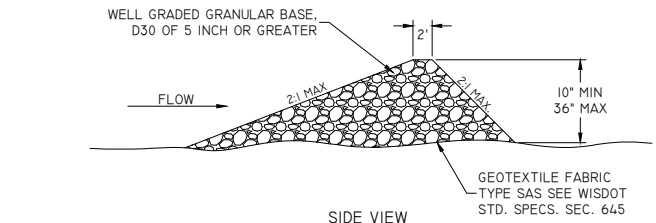
PLACE EROSION MAT OVER THESE SEEDD AREAS.

NOTE:

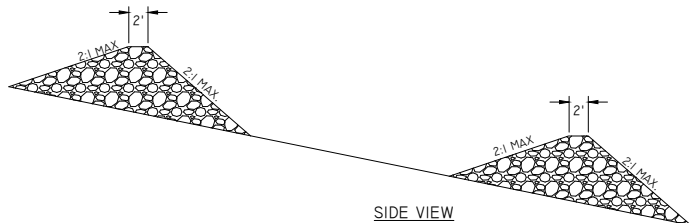
CONTRACTOR MAY REFER TO THE WISDOT PAL FOR OTHER APPROVED DITCH CHECKS AND THEIR INSTALLATION



CROSS SECTION VIEW



SIDE VIEW



SIDE VIEW

D STONE DITCH CHECKS C603 NTS

Kwik Trip

STORES

Kwik Star

STORES

KWIK TRIP, Inc.
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1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
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REI Engineering, INC.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9704 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM

EROSION CONTROL
DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

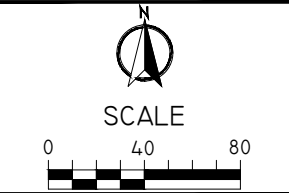
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- (A) LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION, AND IS RESPONSIBLE FOR ANY DAMAGE TO THEM DURING CONSTRUCTION.
- (B) CALL DIGGERS HOTLINE @ 811 OR 1-800-242-8511 AT LEAST 5 WORKING DAYS PRIOR TO DEMOLITION, EXCAVATION OR ANY CONSTRUCTION ACTIVITY.
- (C) ALL PLANT MATERIAL SHALL BE GUARANTEED ONE (1) FULL YEAR UPON TOTAL COMPLETION OF PROJECT AND ACCEPTANCE BY OWNER, WITH A ONE TIME REPLACEMENT WARRANTY UPON REQUEST BY OWNER. WARRANTY EXPIRES AFTER FIRST FULL YEAR FOLLOWING PROJECT COMPLETION.
- (D) LANDSCAPE CONTRACTOR SHALL VERIFY MINIMUM 6" TOPSOIL DEPTH FOR ALL AREAS TO BE SEEDED/SODDED THROUGHOUT PROJECT SITE. CONTRACTOR IS REQUIRED TO CORRECT ANY DEFICIENCIES PRIOR TO SEED/SOD. TOPSOIL SHALL BE CLEAN AND FREE OF STONES, WEEDS AND OTHER UNDESIRABLE DEBRIS.
- (E) LANDSCAPE CONTRACTOR SHALL VERIFY MINIMUM 12" PLANTING SOIL DEPTH FOR ALL PROPOSED PLANTING BED AREAS THROUGHOUT THE PROJECT SITE. CONTRACTOR IS REQUIRED TO CORRECT ANY DEFICIENCIES PRIOR TO PLANT INSTALLATION. PLANTING SOIL & AREA SHALL BE CLEAN AND FREE OF STONES, WEEDS, CONCRETE WASTE AND OTHER UNDESIRABLE DEBRIS.
- (F) LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REPAIRING TOPSOIL AND SODDING ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITY, INCLUDING ALL R.O.W. AND ADJACENT PROPERTIES.
- (G) CONTRACTOR SHALL CLEAN ALL PAVEMENT AREAS AFTER LANDSCAPE CONSTRUCTION ACTIVITIES ARE COMPLETE AND APPROVED BY OWNER. *THIS TO BE DONE DAILY AS DEEMED NECESSARY BY MUNICIPALITY.

SYMBOL	COMMON NAME	BOTANICAL NAME	SIZE	CONT.	QTY
DECIDUOUS TREES					
	Autumn Blaze® Freeman Maple	Acer x freemanii 'Jeffersred'	2.5" Cal.	B&B	11
	Fall Fiesta® Sugar Maple	Acer saccharum 'Bailsta'	2" Cal.	B&B	18
	Red Oak	Quercus rubra	3" Cal.	B&B	8
	Swamp White Oak	Quercus bicolor	3" Cal.	B&B	7
EVERGREEN TREES					
	Black Hills White Spruce	Picea glauca 'Densata'	6" Ht.	B&B	2
	White Pine	Pinus alba	6" Ht.	B&B	8
	White Spruce	Picea glauca	6" Ht.	B&B	20
DECIDUOUS SHRUBS					
	Tiny Wine® Ninebark	Physocarpus opulifolius 'SMPOTW'	3 gal.	Pot	62
EVERGREEN SHRUBS					
	Dark Green Anglo-Japanese Yew	Taxus x media 'Dark Green'	5 gal.	Pot	11
	Kallay Compact Pfizer Juniper	Juniperus chinensis 'Kallays Compact'	3 gal.	Pot	25
	Mini Arcade Juniper	Juniperus sabinia 'Mini Arcade'	3 gal.	Pot	58
PERENNIALS					
	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	1 gal.	Pot	27
	Prairie Dropseed	Sporobolus heterolepis	1 gal.	Pot	104
	Shenandoah Switch Grass	Panicum virgatum 'Shenandoah'	1 gal.	Pot	68



KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960



LANDSCAPE PLAN

CONVENIENCE STORE #631

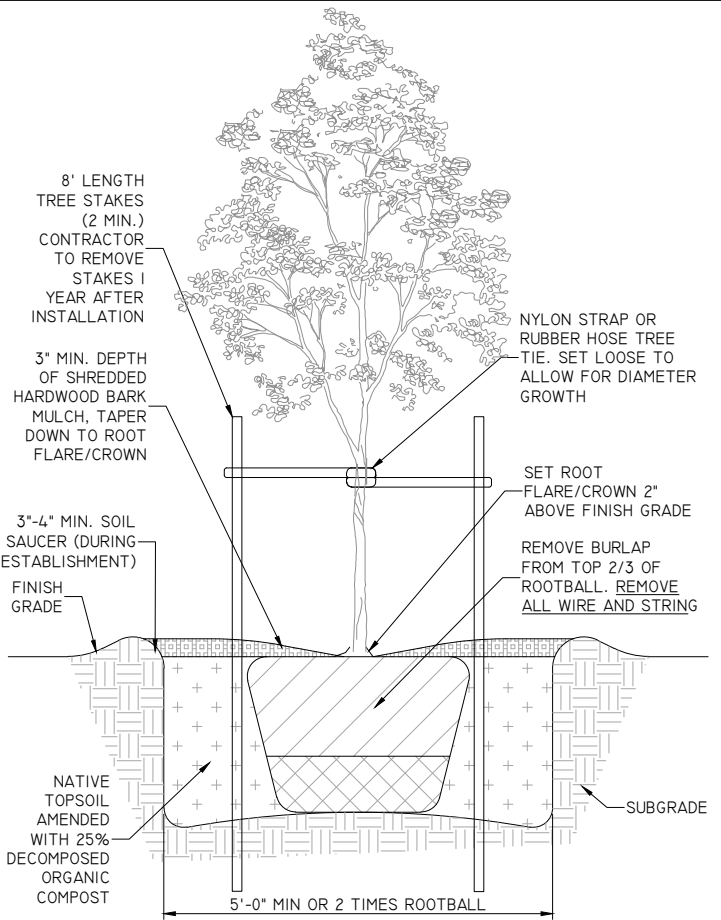
STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION

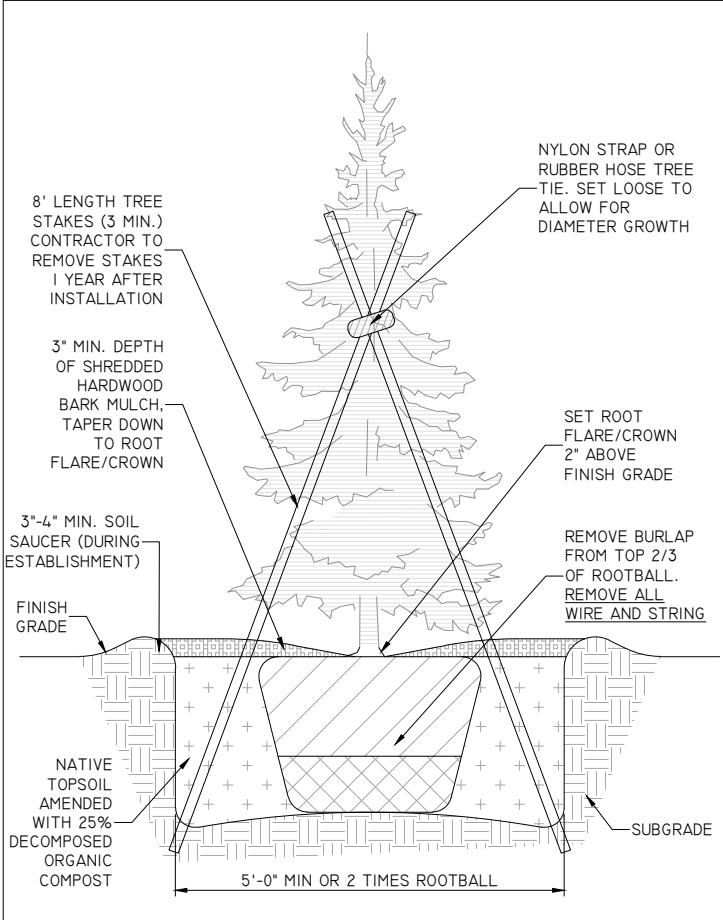
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DATE	10/09/24 - REVIEW DOCUMENTS
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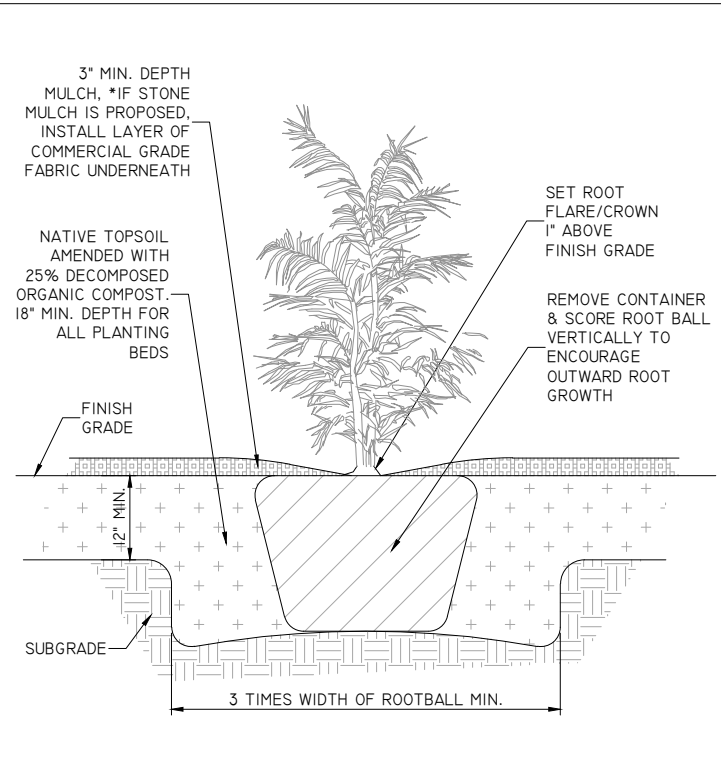
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PLOTTED: OCT 08, 2024 - 3:59PM PLOTTED BY: NATHANP



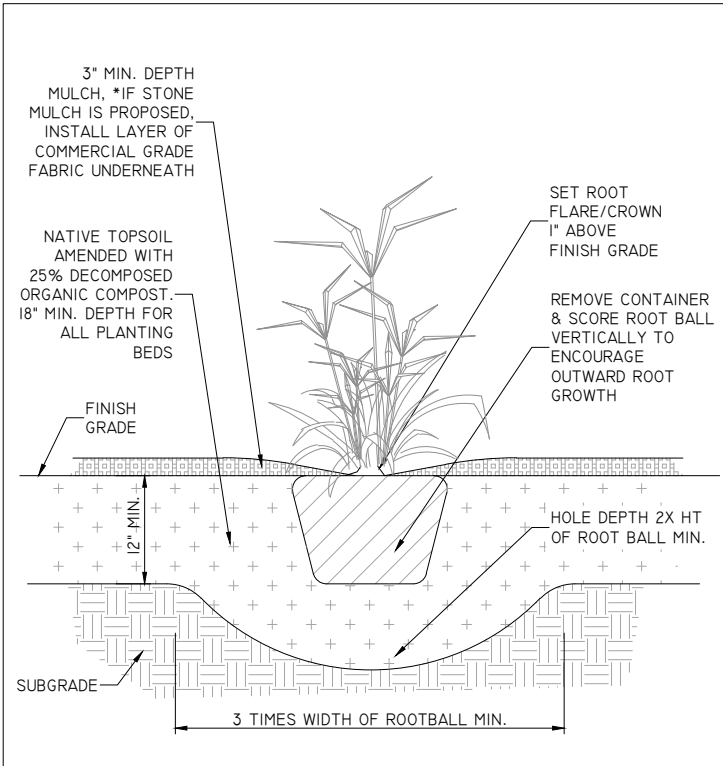
DECIDUOUS TREE - PLANTING DETAIL



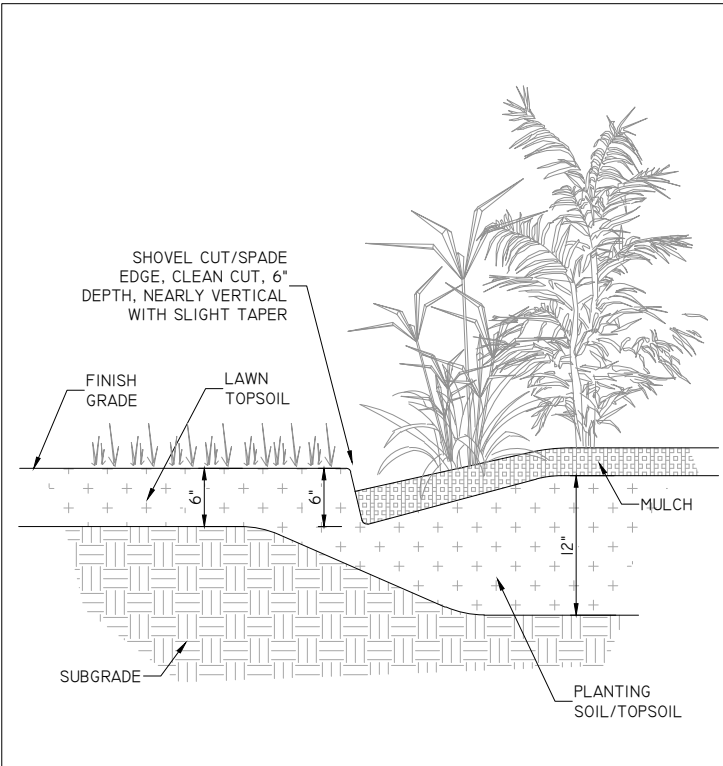
EVERGREEN TREE - PLANTING DETAIL



SHRUB - PLANTING DETAIL



PERENNIAL - PLANTING DETAIL



SHOVEL CUT EDGE - DETAIL

KWIK
TRIP

STORES

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STAR

STORES

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REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
REI Engineering, INC.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9184 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM

LANDSCAPE DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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PROJ. NO. 11757
DATE 10/09/24 - REVIEW DOCUMENTS
SHEET

C703

**GRÄEF**

275 West Wisconsin Avenue, Suite 300
Milwaukee, WI 53203
414 / 259 1500
414 / 259 0037 fax

OVERALL SITE:
AVERAGE: 3.2
MAXIMUM: 78.7
MINIMUM: 0.0

D20	-44
S7E	-6
CF	-20
CFBK	-8
P13	-5
P13L	-1
P1F	-14
P1FL	-4

PROVIDE (19) 16' POLES.

1. FOOTCANDLE LEVELS SHOWN ON THIS PLAN ARE CALCULATED AT GRADE LEVEL.
2. ALL POLES SHALL BE INSTALLED A MINIMUM OF 3'-0" FROM BACK OF CURB TO EDGE OF POLE BASE UNLESS NOTED.
3. POLE THAT ARE LOCATED AT CORNER OF ISLAND SHALL BE A MINIMUM OF 10'-0" FROM BACK OF CURB TO EDGE OF POLE BASE. POLES THAT ARE INSTALLED LESS THAN 6'-0" FROM BACK OF CURB TO EDGE OF POLE BASE SHALL HAVE PROTECTIVE BOLLARDS INSTALLED AROUND THE POLE BASE. COORDINATE WITH KWIK TRIP PRIOR TO INSTALLATION.

- 1 COORDINATE LOCATION AND MOUNTING HEIGHT OF SECURITY CAMERA WITH OWNER.
- 2 CONTRACTOR SHALL POLE MOUNT FIXTURE 6'-0" FROM BACK OF CURB TO EDGE OF POLE BASE.
- 3 CONTRACTOR SHALL POLE MOUNT FIXTURE 2'-0" FROM BACK OF CURB TO EDGE OF POLE BASE TO AVOID UNDERGROUND UTILITIES.
- 4 CONTRACTOR SHALL POLE MOUNT FIXTURE 3'-0" FROM BACK OF CURB TO EDGE OF POLE BASE NEAR RETAINING WALL.
- 5 CONTRACTOR SHALL POLE MOUNT FIXTURE 5'-0" FROM BACK OF CURB TO EDGE OF POLE BASE TO AVOID UNDERGROUND UTILITIES.

D20- RECESSED LED DOWNLIGHT
GOTHAM EVO-3530-8AR-WD-120-TRW

ST7E- LED STRIP LIGHT MOUNTED IN GABLE LITHONIA
TZ1.LN196-1000LM-FST-MVOLT

CF- LSI LIGHTING: SCV-LED-23L-SCFT-UNV-DIM-50-WHT MOUNTED
UNDER GAS CANOPY MOUNT FIXTURES WITH FORWARD
THROW OPTIC AIMING IN DIRECTION OF ARROW.

CFBK- LSI LIGHTING: SCV-LED-23L-SCFT-UNV-DIM-50-BLK
MOUNTED UNDER DIESEL CANOPY MOUNT FIXTURES WITH
FORWARD THROW OPTIC AIMING IN DIRECTION OF ARROW.

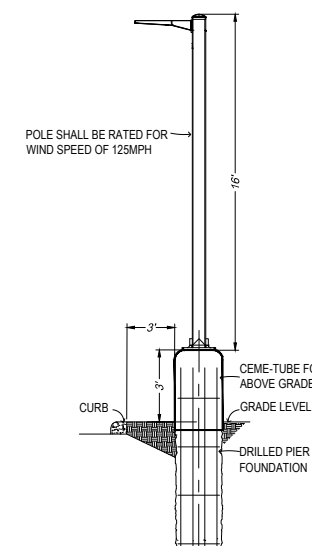
P13- LSI LIGHTING: MRS-LED-18L-SIL-3-UNV-50-70CRI-WHT

P13L- LSI LIGHTING: MRS-LED-18L-SIL-3-UNV-50-70CRI-WHT-IL

P1F- LSI LIGHTING: MRS-LED-18L-SIL-FT-UNV-50-70CRI-WHT

P1FL- LSI LIGHTING: MRS-LED-18L-SIL-FT-UNV-50-70CRI-WHT-IL

	LED LIGHT MOUNTED UNDER FUEL CANOPIES
	LED STRIP LIGHT MOUNTED IN GABLE
	RECESSED LED DOWNLIGHT
	POLE MOUNTED LED FIXTURE
	CAMERA

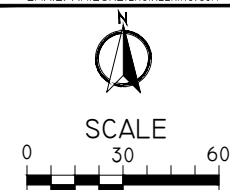


NOT TO SCALE

STORES

STORES

KWIK TRIP, Inc.
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1626 OAK STREET
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FAX (608) 781-8960



PHOTOMETRIC LIGHTING PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
		

DRAWN BY		XXX
SCALE	GRAPHIC	
PROJ. NO.	11757	
DATE	10/09/24 - REVIEW DOCUMENTS	
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Appendix 1

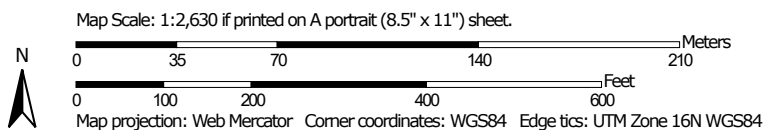
NR 151 Post Construction Standards

WISCONSIN DNR NR 151 STORMWATER PERFORMANCE STANDARDS APPLICABLE TO PROJECTS WITH ONE OR MORE ACRES OF DISTURBANCE (After January 1, 2011)				
DEVELOPMENT TYPE	TOTAL SUSPENDED SOLIDS (TSS)	PEAK FLOW	INFILTRATION	PROTECTIVE AREA SETBACKS
New Development Infill $\geq$ 5 ac Redevelopment of Sites Permitted after October 1, 2004 New Transportation Facilities	Reduce by 80% compared to no controls	Peak discharge matches pre-dev. discharge rate for 1-yr and 2-yr, 24-hr storm events	Low Impervious (up to 40% connected - eg parks, cemeteries, low density residential) – infiltrate 90% pre-development infiltration volume, w/ 1% device area cap	75 ft for outstanding resource waters and highly-susceptible wetlands
			Moderate Impervious (up to 40-80% connected - eg single- and multi-family residential, industrial, institutional, office parks) – infiltrate 75% pre-development infiltration volume w/ 2% device area cap	50 ft for lakes, perennial and intermittent streams, and wetlands that are neither classified as highly susceptible nor less susceptible
			High Impervious (Over 80% connected - eg commercial strips, shopping centers, commercial downtown) – infiltrate 60% pre-development infiltration volume w/ 2% device area cap	10-30 feet for less susceptible wetlands based upon average wetland width
			Most New Transportation Facilities (above the local residential classification) are Exempt	10 feet for concentrated flow channels with drainage areas over 130 acres
Infill < 5 acres	Reduce by 40% compared to no controls (80% on/after October 1, 2012)	Exempt	Exempt	Exempt
Highway Reconstruction	Reduce by 40% compared to no controls	Exempt	Exempt	Exempt
Redevelopment of Sites Permitted Prior to October 1, 2004	Reduce parking areas and roads by 40% compared to no controls	Exempt	Exempt	Exempt
Post-Construction Site or Transportation Facility w/ Less than 10% Connected Impervious (assuming cumulative impervious is beneath 1 acre)	Exempt	Exempt	Exempt	Follow as if New Construction

Appendix 2

Site Soils Information

Soil Map—Washington County, Wisconsin



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

10/4/2024
Page 1 of 3
Page 273 of 479

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Washington County, Wisconsin

Survey Area Data: Version 24, Sep 3, 2024

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

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CeC2	Casco loam, 6 to 12 percent slopes, eroded	0.1	0.2%
GP	Gravel pit	0.7	1.9%
GrB	Grays silt loam, 2 to 6 percent slopes	1.5	3.9%
HmB2	Hochheim loam, 2 to 6 percent slopes, eroded	2.7	7.3%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	8.0	21.4%
HmD2	Hochheim loam, 12 to 20 percent slopes, eroded	2.0	5.2%
LmA	Lamartine silt loam, 0 to 3 percent slopes	0.1	0.2%
MgA	Martinton silt loam, 1 to 3 percent slopes	2.3	6.2%
MtA	Mequon silt loam, 1 to 3 percent slopes	2.3	6.0%
Mzb	Montgomery silty clay loam	1.4	3.7%
OuB2	Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes, eroded	3.5	9.4%
Pc	Palms mucky peat, 0 to 2 percent slopes	0.1	0.2%
Sf	Sandy and gravelly land	5.9	15.8%
ThB2	Theresa silt loam, 2 to 6 percent slopes, eroded	0.3	0.8%
VsA	Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	6.7	17.8%
Totals for Area of Interest		37.6	100.0%

Washington County, Wisconsin

HmB2—Hochheim loam, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t03w

Elevation: 820 to 1,330 feet

Mean annual precipitation: 29 to 36 inches

Mean annual air temperature: 43 to 46 degrees F

Frost-free period: 135 to 175 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Hochheim, eroded, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim, Eroded

Setting

Landform: Drumlins

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Crest, side slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 7 inches: loam

Bt - 7 to 16 inches: loam

C - 16 to 33 inches: gravelly sandy loam

Cd - 33 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: 20 to 40 inches to densic material

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 60 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: D
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained
(G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained
(G095BY005WI)
Hydric soil rating: No

Minor Components

Theresa, eroded

Percent of map unit: 10 percent
Landform: Till plains
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Lamartine

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

Data Source Information

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 24, Sep 3, 2024

Washington County, Wisconsin

HmC2—Hochheim loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t03r

Elevation: 900 to 1,340 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 43 to 46 degrees F

Frost-free period: 135 to 175 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hochheim, eroded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim, Eroded

Setting

Landform: Drumlins

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Crest, side slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 7 inches: loam

Bt - 7 to 16 inches: clay loam

C - 16 to 33 inches: gravelly sandy loam

Cd - 33 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 40 inches to densic material

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 60 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained
(G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained
(G095BY005WI)
Hydric soil rating: No

Minor Components

Theresa

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Hochheim

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F095XB006WI - Shallow Upland
Hydric soil rating: No

Data Source Information

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 24, Sep 3, 2024

Washington County, Wisconsin

HmD2—Hochheim loam, 12 to 20 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t72w

Elevation: 820 to 1,330 feet

Mean annual precipitation: 28 to 36 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 130 to 175 days

Farmland classification: Not prime farmland

Map Unit Composition

Hochheim, eroded, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim, Eroded

Setting

Landform: Drumlins

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 6 inches: loam

Bt - 6 to 16 inches: clay loam

C - 16 to 30 inches: gravelly loam

Cd - 30 to 79 inches: gravelly loam

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: 20 to 36 inches to densic material

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 60 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained with limitations (G095BY006WI)
Other vegetative classification: Mod AWC, adequately drained with limitations (G095BY006WI)
Hydric soil rating: No

Minor Components

Theresa

Percent of map unit: 10 percent
Landform: Drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Hochheim

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F095XB006WI - Shallow Upland
Hydric soil rating: No

Data Source Information

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 24, Sep 3, 2024

Washington County, Wisconsin

OuB2—Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2sn0c

Elevation: 650 to 1,010 feet

Mean annual precipitation: 31 to 39 inches

Mean annual air temperature: 44 to 49 degrees F

Frost-free period: 125 to 185 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Ozaukee, high carbonate substratum, eroded, and similar soils: 96 percent

Minor components: 4 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ozaukee, High Carbonate Substratum, Eroded

Setting

Landform: Ground moraines, end moraines

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Thin mantle of loess over silty and clayey till

Typical profile

Ap - 0 to 7 inches: silt loam

Bt1 - 7 to 11 inches: silty clay loam

2Bt2 - 11 to 22 inches: silty clay

2Bt3 - 22 to 27 inches: silty clay loam

2Cd - 27 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: 22 to 40 inches to densic material

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 24 to 42 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 60 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F110XY012IL - Moist Glacial Drift Upland Forest

Forage suitability group: Mod AWC, adequately drained with
limitations (G095BY006WI)

Other vegetative classification: Mod AWC, adequately drained with
limitations (G095BY006WI)

Hydric soil rating: No

Minor Components

Ashkum, drained

Percent of map unit: 2 percent

Landform: End moraines, ground moraines

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Concave

Ecological site: R110XY024IL - Ponded Depressional Sedge
Meadow

Hydric soil rating: Yes

Urban land

Percent of map unit: 1 percent

Landform: Ground moraines

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Orthents, clayey

Percent of map unit: 1 percent

Landform: Ground moraines

Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F095XB010WI - Loamy and Clayey Upland

Hydric soil rating: No

Data Source Information

Soil Survey Area: Washington County, Wisconsin

Survey Area Data: Version 24, Sep 3, 2024

Washington County, Wisconsin

Sf—Sandy and gravelly land

Map Unit Setting

National map unit symbol: g91m

Elevation: 790 to 1,250 feet

Mean annual precipitation: 32 to 35 inches

Mean annual air temperature: 37 to 55 degrees F

Frost-free period: 145 to 165 days

Farmland classification: Not prime farmland

Map Unit Composition

Sandy and gravelly land and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sandy And Gravelly Land

Setting

Parent material: Sandy and gravelly outwash

Typical profile

C - 0 to 10 inches: sand

Properties and qualities

Slope: 0 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Depth to water table: About 60 to 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: D

Ecological site: F095XB010WI - Loamy and Clayey Upland

Hydric soil rating: No

Data Source Information

Soil Survey Area: Washington County, Wisconsin

Survey Area Data: Version 24, Sep 3, 2024

Washington County, Wisconsin

VsA—Virgil silt loam, gravelly substratum, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wsqx

Elevation: 750 to 1,150 feet

Mean annual precipitation: 31 to 35 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 110 to 171 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Virgil, gravelly substratum, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Virgil, Gravelly Substratum

Setting

Landform: Drainageways on outwash plains

Landform position (three-dimensional): Dip, talf

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Loess over calcareous, stratified sandy and gravelly outwash

Typical profile

Ap - 0 to 9 inches: silt loam

E - 9 to 13 inches: silt loam

Bt - 13 to 44 inches: silty clay loam

2BC - 44 to 49 inches: sandy loam

2C - 49 to 79 inches: stratified gravel to sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: About 0 to 24 inches

Frequency of flooding: None

Frequency of ponding: Occasional

Calcium carbonate, maximum content: 20 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Forage suitability group: High AWC, high water table
(G095BY007WI)
Other vegetative classification: High AWC, high water table
(G095BY007WI)
Hydric soil rating: No

Minor Components

Sebewa

Percent of map unit: 4 percent
Landform: Depressions on outwash plains
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave
Across-slope shape: Concave, linear
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

Drummer, drained

Percent of map unit: 4 percent
Landform: Depressions on outwash plains
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave
Across-slope shape: Concave, linear
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

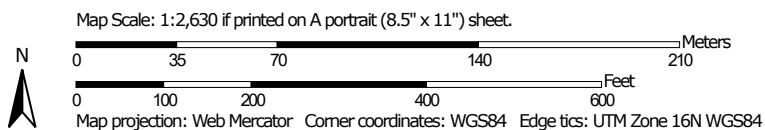
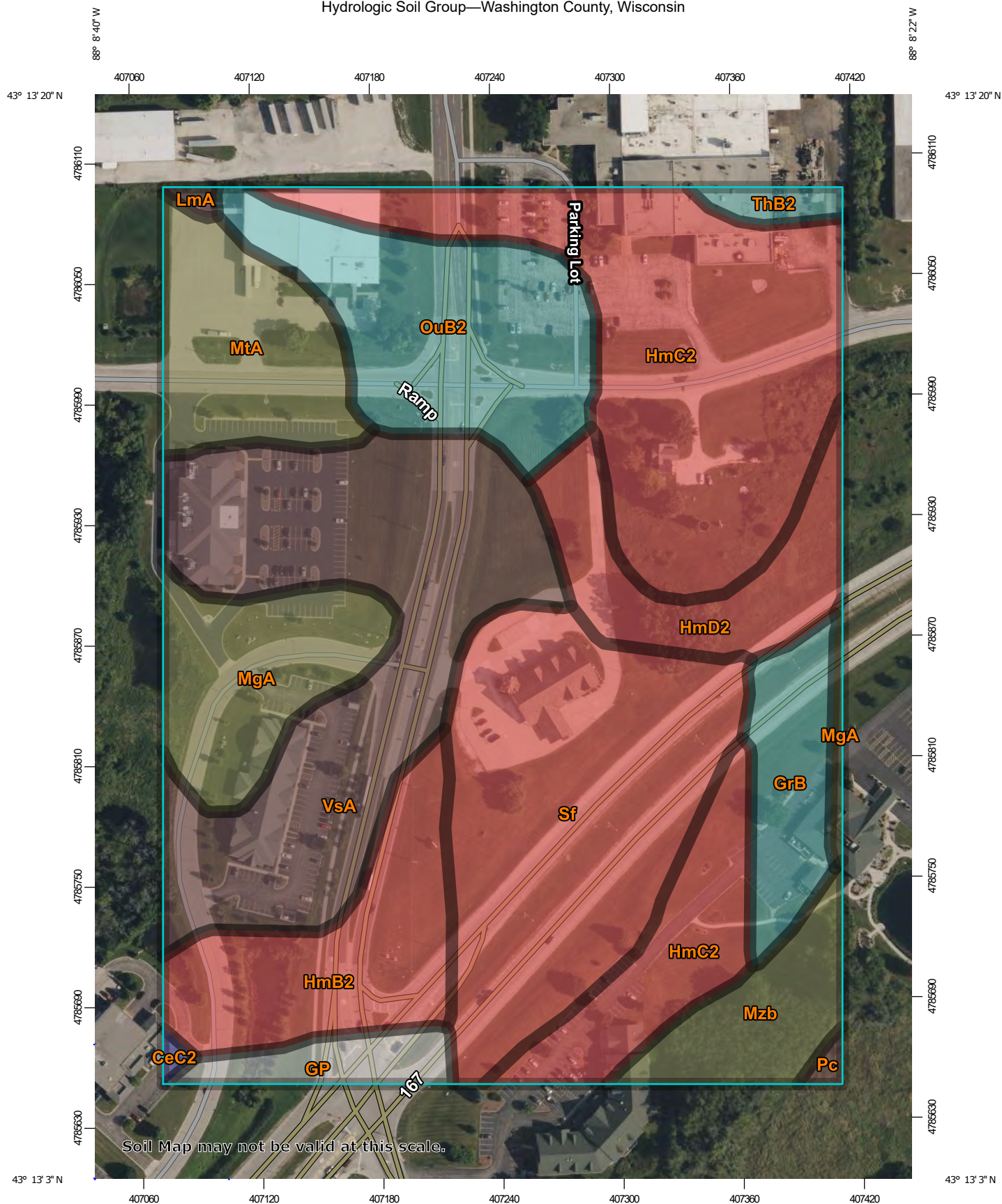
Sable

Percent of map unit: 2 percent
Landform: Depressions on outwash plains
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave
Across-slope shape: Concave, linear
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 24, Sep 3, 2024

Hydrologic Soil Group—Washington County, Wisconsin



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

10/4/2024
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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 24, Sep 3, 2024

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

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CeC2	Casco loam, 6 to 12 percent slopes, eroded	B	0.1	0.2%
GP	Gravel pit		0.7	1.9%
GrB	Grays silt loam, 2 to 6 percent slopes	C	1.5	3.9%
HmB2	Hochheim loam, 2 to 6 percent slopes, eroded	D	2.7	7.3%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	D	8.0	21.4%
HmD2	Hochheim loam, 12 to 20 percent slopes, eroded	D	2.0	5.2%
LmA	Lamartine silt loam, 0 to 3 percent slopes	B/D	0.1	0.2%
MgA	Martinton silt loam, 1 to 3 percent slopes	C/D	2.3	6.2%
MtA	Mequon silt loam, 1 to 3 percent slopes	C/D	2.3	6.0%
Mzb	Montgomery silty clay loam	C/D	1.4	3.7%
OuB2	Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes, eroded	C	3.5	9.4%
Pc	Palms mucky peat, 0 to 2 percent slopes	B/D	0.1	0.2%
Sf	Sandy and gravelly land	D	5.9	15.8%
ThB2	Theresa silt loam, 2 to 6 percent slopes, eroded	C	0.3	0.8%
VsA	Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	B/D	6.7	17.8%
Totals for Area of Interest			37.6	100.0%

Description

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

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

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

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

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

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

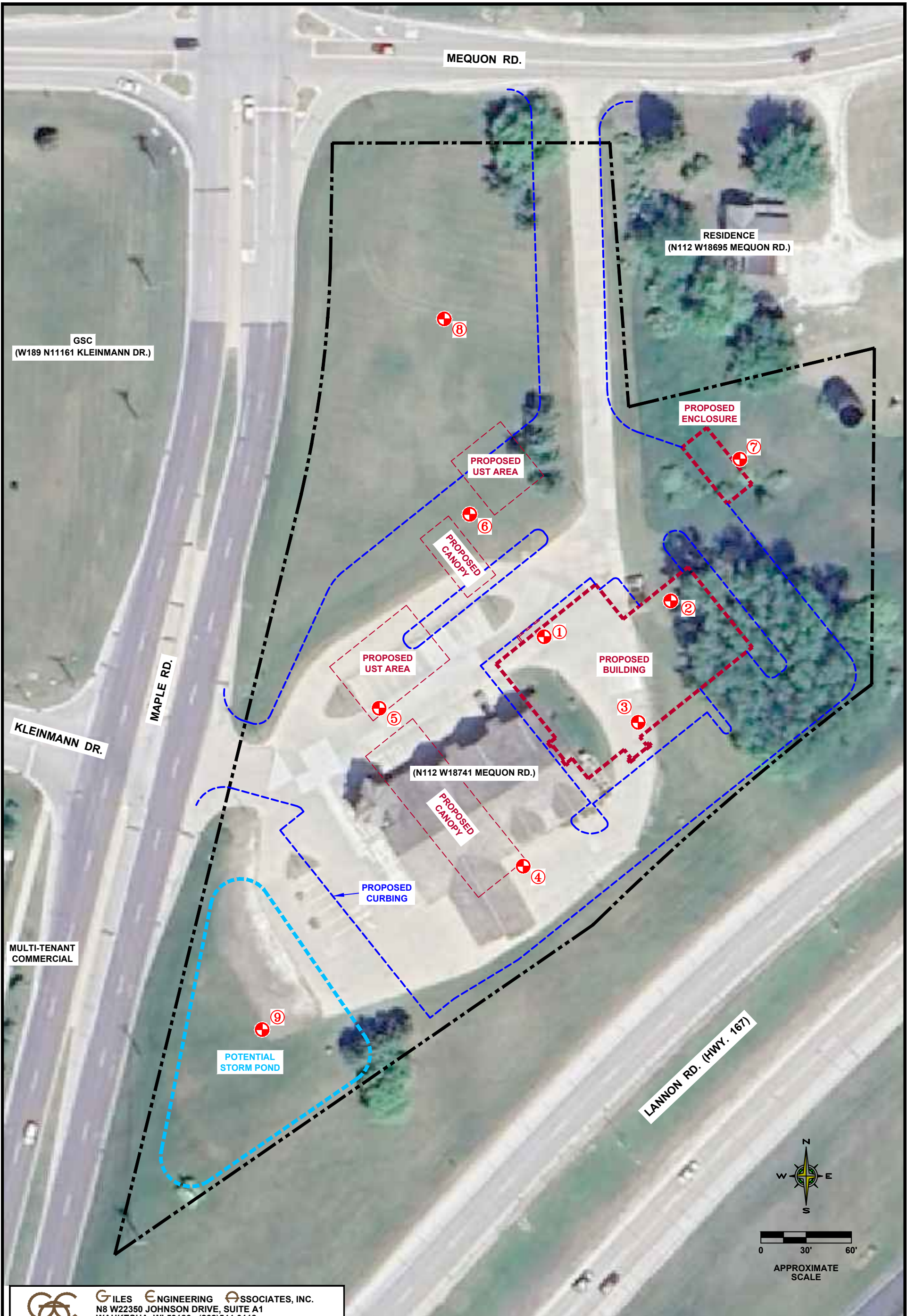
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher





GILES ENGINEERING ASSOCIATES, INC.

N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118
www.gilesengr.com

FIGURE 1
TEST BORING LOCATION PLAN
PROPOSED KWIK TRIP KT631 RELOCATION
N112 W18741 MEQUON ROAD
GERMANTOWN, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
GDB/AJG	<i>AJG</i>	approx. 1"=60'	06-13-24	--
PROJECT NO.: 1G-2405020			CAD No. 1g2405020-blp	

- NOTES:
- 1.) TEST BORING LOCATIONS ARE APPROXIMATE AND WERE DRILLED AT THE LOCATIONS STAKED IN THE FIELD BY PIONEER ENVIRONMENTAL GROUP.
 - 2.) PROPOSED FEATURES ARE APPROXIMATE BASED ON THE FILE (KT631 proposed BLM map.pdf), UNDATED, PROVIDED BY THE CLIENT.

LEGEND:



1

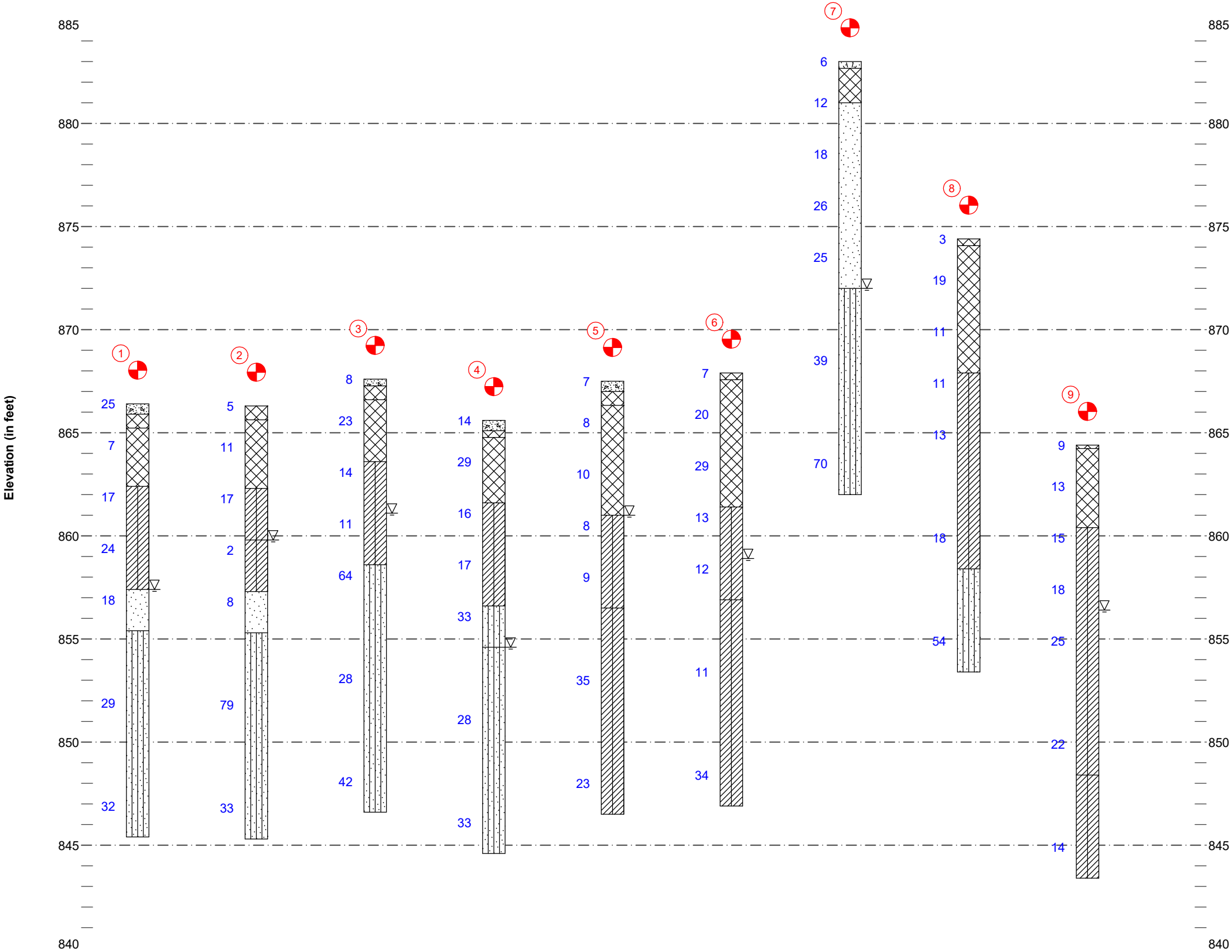
GEOTECHNICAL TEST BORING



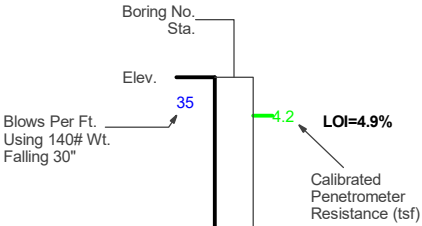
PROPERTY LINE

FENCE DIAGRAM

SCALE: VERTICAL: 1" = 5.45'
HORIZONTAL: N.T.S.



LEGEND OF BORING



Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O.D. x 1.4" I.D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

MATERIAL SYMBOLS

	CONCRETE - Concrete		FILL - Fill (made ground)
	CL-ML - USCS Low Plasticity Silty Clay		SP - USCS Poorly-graded Sand
	MLS - USCS Sandy Silt		TOPSOIL - Topsoil

FIGURE 2
Proposed Kwik Trip 631 Relocation
N112 W18741 Mequon Road
Germantown, Wisconsin
Project No. 1G-2405020



BORING NO. & LOCATION: 1	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 866.4 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±6" Portland Cement Concrete										
±8" Base Course										
Fill: Brown Silty Clay, little Sand-Moist		865	1-SS	25		1.5		17	*BDL	
			2-SS	7		3.0		24	*BDL	
Brown Silty Clay, little Sand-Moist	5		3-SS	17				22	*BDL	
		860								
			4-SS	24				15	*BDL	
Brown fine to medium Sand, trace Silt-Wet	10		5-SS	18					*BDL	
Gray Sandy Silt-Wet		855								
	15		6-SS	29				15	*BDL	
		850								
	20		7-SS	32				16	*BDL	

Boring Terminated at about 21 feet (EL. 845.4')

Water Observation Data			Remarks:
	Water Encountered During Drilling: 9 ft.		*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:		
	Cave Depth At End of Drilling:		
	Water Level After Drilling:		
	Cave Depth After Drilling:		

Changes in strata indicated by the lines are approximate boundary between soil types. The actual transition may be gradual and may vary considerably between test borings. Location of test boring is shown on the Boring Location Plan.

BORING NO. & LOCATION: 2	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 866.3 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±8" Topsoil Fill: Dark Gray Silty Clay, little Sand and Organic Matter-Moist		865	1-SS	5		1.5		18	*BDL	
Fill: Brown Silty Clay, little Sand, trace Gravel-Moist			2-SS	11					*BDL	
Brown Silty Clay, little Sand, trace Gravel-Moist	5		3-SS	17					*BDL	
Brown Silty Clay with Silty fine to medium Sand lenses-Wet		860	4-SS	2				15	*BDL	
Brown fine to medium Sand, trace Silt-Wet	10		5-SS	8					*BDL	
Gray Sandy Silt, trace Gravel-Wet		855								
	15		6-SS	79					*BDL	
		850								
	20		7-SS	33				16	*BDL	

Boring Terminated at about 21 feet (EL. 845.3')

Water Observation Data		Remarks:
	Water Encountered During Drilling: 6.5 ft.	*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:	
	Cave Depth At End of Drilling:	
	Water Level After Drilling:	
	Cave Depth After Drilling:	

Changes in strata indicated by the lines are approximate boundary between soil types. The actual transition may be gradual and may vary considerably between test borings. Location of test boring is shown on the Boring Location Plan.

BORING NO. & LOCATION: 3	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 867.6 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±4" Portland Cement Concrete										
±8" Base Course			1-SS	8					*BDL	
Fill: Brown Silty fine to medium Sand, trace Silt and Gravel-Moist		865	2-SS	23					*BDL	
Brown Silty Clay, little Sand-Moist to Wet at ±6½ feet	5		3-SS	14		3.0		13	*BDL	
		860	4-SS	11				20	*BDL	
Brown Sandy Silt-Wet	10		5-SS	64					*BDL	
		855								
	15		6-SS	28					*BDL	
		850								
	20		7-SS	42					*BDL	

Boring Terminated at about 21 feet (EL. 846.6')

	Water Observation Data	Remarks:
	Water Encountered During Drilling: 6.5 ft.	*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:	
	Cave Depth At End of Drilling:	
	Water Level After Drilling:	
	Cave Depth After Drilling:	

Changes in strata indicated by the lines are approximate boundary between soil types. The actual transition may be gradual and may vary considerably between test borings. Location of test boring is shown on the Boring Location Plan.

BORING NO. & LOCATION: 4	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 865.6 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±6" Portland Cement Concrete		865								
±4" Base Course			1-SS	14					*BDL	
Fill: Brown Silty Clay, little Sand, trace Gravel-Moist			2-SS	29					*BDL	
Brown Silty Clay, little Sand-Moist	5	860	3-SS	16					*BDL	
			4-SS	17					*BDL	
Brown Sandy Silt-Moist	10	855	5-SS	33					*BDL	
Gray Sandy Silt-Wet	15	850	6-SS	28					*BDL	
	20	845	7-SS	33					*BDL	

Boring Terminated at about 21 feet (EL. 844.6')

Water Observation Data			Remarks:
▽	Water Encountered During Drilling: 11 ft.		*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
▼	Water Level At End of Drilling:		
⋯	Cave Depth At End of Drilling:		
▼	Water Level After Drilling:		
■	Cave Depth After Drilling:		

Changes in strata indicated by the lines are approximate boundary between soil types. The actual transition may be gradual and may vary considerably between test borings. Location of test boring is shown on the Boring Location Plan.

BORING NO. & LOCATION: 5	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 867.5 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±6" Portland Cement Concrete										
±8" Base Course			1-SS	7					*BDL	
Fill: Dark Brown and Brown Silty Clay, little Sand-Moist (Includes Silty fine to medium Sand lenses at ±4 feet)		865	2-SS	8		3.0		15	*BDL	
	5		3-SS	10		1.0		6	*BDL	
		860	4-SS	8		1.0		15	*BDL	
Brown Silty Clay, little Sand-Wet	10		5-SS	9				15	*BDL	
		855								
Gray Silty Clay, little Sand-Wet (Includes Sandy Silt lenses between ±14 feet and ±16 feet)	15		6-SS	35					*BDL	
		850								
	20		7-SS	23					*BDL	

Boring Terminated at about 21 feet (EL. 846.5')

Water Observation Data		Remarks:
	Water Encountered During Drilling: 6.5 ft.	*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:	
	Cave Depth At End of Drilling:	
	Water Level After Drilling:	
	Cave Depth After Drilling:	

Changes in strata indicated by the lines are approximate boundary between soil types. The actual transition may be gradual and may vary considerably between test borings. Location of test boring is shown on the Boring Location Plan.

BORING NO. & LOCATION: 6	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 867.9 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±4" Topsoil Fill: Dark Brown Silty Clay, little Sand and Organic Matter-Moist Fill: Brown Silty fine to medium Sand-Moist			1-SS	7					*BDL	
		865	2-SS	20					*BDL	
	5		3-SS	29					*BDL	
Brown Silty Clay, little Sand-Moist to Wet at ±9 feet		860	4-SS	13		2.0		10	*BDL	
	10		5-SS	12		2.0		15	*BDL	
Gray Silty Clay with Sandy Silt lenses-Wet		855								
	15		6-SS	11		1.3		10	*BDL	
		850								
	20		7-SS	34		2.3		11	*BDL	

Boring Terminated at about 21 feet (EL. 846.9')

Water Observation Data		Remarks:
	Water Encountered During Drilling: 9 ft.	*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:	
	Cave Depth At End of Drilling:	
	Water Level After Drilling:	
	Cave Depth After Drilling:	

Changes in strata indicated by the lines are approximate boundary between soil types. The actual transition may be gradual and may vary considerably between test borings. Location of test boring is shown on the Boring Location Plan.

BORING NO. & LOCATION: 7	TEST BORING LOG	 GILES ENGINEERING ASSOCIATES, INC.	
SURFACE ELEVATION: 883 feet			PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020
COMPLETION DATE: 06/06/24			
FIELD REP: JAMES BLAIR			

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±4" Topsoil: Dark Brown Silty Clay, little Sand and Organic Matter-Moist			1-SS	6					*BDL	
Fill: Brown Silty fine to medium Sand, trace Silt-Moist			2-SS	12					*BDL	
Brown fine to medium Sand, trace Silt-Moist		880								
	5		3-SS	18					*BDL	
		875	4-SS	26					*BDL	
	10		5-SS	25					*BDL	
Brown Sandy Silt-Wet		870								
	15		6-SS	39					*BDL	
		865								
	20		7-SS	70					*BDL	

Boring Terminated at about 21 feet (EL. 862')

	Water Observation Data	Remarks:
	Water Encountered During Drilling: 11 ft.	*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:	
	Cave Depth At End of Drilling:	
	Water Level After Drilling:	
	Cave Depth After Drilling:	

BORING NO. & LOCATION: 8	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 874.4 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±4" Topsoil Fill: Dark Brown Silty Clay, little Sand and Organic Matter-Moist Fill: Dark Brown Silty Clay, little Sand, trace Gravel-Moist	5	870	1-SS	3					*BDL	
			2-SS	19					*BDL	
			3-SS	11		1.3		16	*BDL	
Brown Silty Clay, little Sand-Moist	10	865	4-SS	11		3.3		10	*BDL	
			5-SS	13	1.7	1.3		17	*BDL	
			6-SS	18		2.0		5	*BDL	
Gray Sandy Silt-Wet	20	855	7-SS	54				9	*BDL	

Boring Terminated at about 21 feet (EL. 853.4')

	Water Observation Data	Remarks:
	Water Encountered During Drilling:	*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:	
	Cave Depth At End of Drilling:	
	Water Level After Drilling:	
	Cave Depth After Drilling:	

Changes in strata indicated by the lines are approximate boundary between soil types. The actual transition may be gradual and may vary considerably between test borings. Location of test boring is shown on the Boring Location Plan.

BORING NO. & LOCATION: 9	TEST BORING LOG PROPOSED KWIK TRIP 631 RELOCATION N112 W18741 MEQUON ROAD GERMANTOWN, WISCONSIN PROJECT NO: 1G-2405020	 GILES ENGINEERING ASSOCIATES, INC.
SURFACE ELEVATION: 864.4 feet		
COMPLETION DATE: 06/06/24		
FIELD REP: JAMES BLAIR		

MATERIAL DESCRIPTION	Depth (ft)	Elevation	Sample No. & Type	N	Q _u (tsf)	Q _p (tsf)	Q _s (tsf)	W (%)	PID	NOTES
±2" Topsoil Fill: Dark Brown Silty Clay, little Sand and Organic Matter-Moist Fill: Brown Silty fine to medium Sand-Moist			1-SS	9						*BDL
			2-SS	13						*BDL
Brown Silty Clay, little Sand-Moist to Wet at ±8 feet	5	860	3-SS	15	1.0			11		*BDL
			4-SS	18						*BDL
			5-SS	25						*BDL
Gray Silty Clay, little Sand-Wet	15	850	6-SS	22		2.0		16		*BDL
			7-SS	14						*BDL

Boring Terminated at about 21 feet (EL. 843.4')

Water Observation Data		Remarks:
	Water Encountered During Drilling: 8 ft.	*PID Results are lab screened results that may reflect differently from field screened results. *BDL = Below Detection Limit
	Water Level At End of Drilling:	
	Cave Depth At End of Drilling:	
	Water Level After Drilling:	
	Cave Depth After Drilling:	



Soil and Site Evaluation – Stormwater Infiltration

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]

Page 1 of 4

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but is not limited to: vertical and horizontal reference point (BM); direction and percent of slope; scale or dimensions; north arrow; and BM referenced to nearest road. PLEASE PRINT ALL INFORMATION		COUNTY Washington
		PARCEL ID
PROPERTY OWNER	PROPERTY LOCATION	
PROPERTY OWNER'S MAILING ADDRESS	Govt. Lot_ NW ¼ NW ¼, S28, T9N, R20E	
CITY, STATE, ZIP CODE	PHONE	Lot #, Block #, Subd. Name or CSM #: <u>CSM 2890</u>
		Municipality: <u>Germantown</u>
		☐ City ☒ Village ☐ Town
		Nearest Road: <u>Maple Road</u>
Drainage area _____ ☐ sq. ft. ☐ acres Test site suitable for (check all that apply): ☐ Site not suitable ☐ Bioretention ☐ Reuse ☐ Subsurface Dispersal System ☐ Irrigation ☐ Other _____		HYDRAULIC APPLICATION TEST METHOD ☐ Morphological Evaluation ☐ Double Ring Infiltrometer ☐ Other: (specify) _____ _____
		SOIL MOISTURE Date of soil borings: <u>6/6/24</u> USDA-NRCS WETS VALUE: ☐ Dry = 1 ☐ Normal = 2 ☐ Wet = 3

1 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 866.4 ft. Elevation of Limiting Factor 857.4 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
PVMT	0-14	--	--	--	--	--	--	--	--	--
FILL	14-48	10 YR 5/4	--	SICL	1, F, SBK	M, FI	C, W	<5%	90%	0.04
B	48-108	10 YR 5/4	--	SICL	MA	M, FI	C, W	<5%	90%	0.04
C	108-132	10 YR 5/4	--	LS	1, M, GR	M, FI	G, S	<5%	20%	1.63
C	132-252	10 YR 6/1	--	SIL	1, F GR	M, FI	--	<5%	55%	0.13

Comments: Water encountered at 9 feet below ground surface.

2 #OBS.		☐ Pit	☒ Boring	Ground Surface Elevation <u>866.3</u> ft.		Elevation of Limiting Factor <u>859.8</u> ft.				
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
FILL	0-8	10 YR 3/1	--	SICL	1, VF, SBK	M, FR	C, W	<5%	90%	0.04
FILL	8-48	10 YR 5/4	--	SICL	1, F, SBK	M, FI	C, W	10%	90%	0.04
B	48-108	10 YR 5/4	--	SICL	MA	M, FI	C, W	10%	90%	0.04
C	108-132	10 YR 5/4	--	LS	1, M, GR	M, FI	G, S	<5%	20%	1.63
C	132-252	10 YR 6/1	--	SIL	1, F GR	M, FI	--	10%	55%	0.13
Comments: Water encountered at 6½ feet below ground surface.										

3 #OBS.		☐ Pit	☒ Boring	Ground Surface Elevation <u>867.6</u> ft.		Elevation of Limiting Factor <u>861.1</u> ft.				
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
PVMT	0-12	--	--	--	--	--	--	--	--	--
FILL	12-48	10 YR 5/4	--	LS	1, M, GR	M, FI	C, W	10%	20%	1.63
B	48-108	10 YR 5/4	--	SICL	1, F, SBK	M, FI	C, W	<5%	90%	0.04
C	108-252	10 YR 6/1	--	SIL	1, F GR	M, FI	--	<5%	55%	0.13
Comments: Water encountered at 6½ feet below ground surface.										

4 #OBS.		☐ Pit	☒ Boring	Ground Surface Elevation <u>865.6</u> ft.		Elevation of Limiting Factor <u>854.6</u> ft.				
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
PVMT	0-10	--	--	--	--	--	--	--	--	--
FILL	10-48	10 YR 5/4	--	SICL	1, F, SBK	M, FI	C, W	10%	90%	0.04
B	48-108	10 YR 5/4	--	SICL	MA	M, FI	C, W	<5%	90%	0.04
C	108-132	10 YR 5/4	--	SIL	1, F GR	M, FI	--	<5%	55%	0.13
C	132-252	10 YR 6/1	--	SIL	1, F GR	M, FI	--	<5%	55%	0.13
Comments: Water encountered at 11 feet below ground surface.										

5 #OBS.		☐ Pit	☒ Boring	Ground Surface Elevation <u>867.5</u> ft.		Elevation of Limiting Factor <u>861</u> ft.				
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
PVMT	0-14	--	--	--	--	--	--	--	--	--
FILL	14-78	10 YR 5/4	--	SICL	1, F, SBK	M, FI	C, W	<5%	90%	0.04
B	78-132	10 YR 5/4	--	SICL	MA	M, FI	C, W	<5%	90%	0.04
C	132-192	10 YR 6/1	--	SIL	1, F GR	M, FI	C, W	<5%	55%	0.13
C	192-252	10 YR 6/1	--	SICL	1, F, SBK	M, FI	--	<5%	90%	0.04
Comments: Water encountered at 6½ feet below ground surface.										

6 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 867.9 ft. Elevation of Limiting Factor 868.9 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
FILL	0-4	10 YR 3/3	--	SICL	1, VF, SBK	M, FR	C, W	<5%	90%	0.04
FILL	4-78	10 YR 5/4	--	SICL	1, F, SBK	M, FI	C, W	<5%	90%	0.04
B	78-132	10 YR 5/4	--	SICL	MA	M, FI	C, W	<5%	90%	0.04
C	132-252	10 YR 6/1	--	SICL	1, M, SBK	M, FI	--	<5%	90%	0.04

Comments: Water encountered at 9 feet below ground surface.

7 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 883 ft. Elevation of Limiting Factor 872 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
FILL	0-4	10 YR 3/3	--	SICL	1, VF, SBK	M, FR	C, W	<5%	90%	0.04
FILL	4-24	10 YR 5/4	--	SL	1, M, GR	M, FI	C, W	<5%	10%	0.50
C	24-132	10 YR 5/4	--	LS	1, M, GR	M, FI	C, W	<5%	20%	1.63
C	132-252	10 YR 5/4	--	SIL	1, F, GR	M, FI	--	<5%	55%	0.13

Comments: Water encountered at 11 feet below ground surface.

8 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 874.4 ft. Elevation of Limiting Factor 858.4 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
FILL	0-4	10 YR 5/4	--	SICL	1, VF, SBK	M, FR	C, W	<5%	90%	0.04
FILL	4-78	10 YR 3/3	--	SICL	1, F, SBK	M, FI	C, W	10%	90%	0.04
B	78-192	10 YR 5/4	--	SICL	MA	M, FI	C, W	<5%	90%	0.04
C	192-252	10 YR 6/1	--	SIL	1, F GR	M, FI	--	<5%	55%	0.13

Comments: Wet soil encountered at 16 feet below ground surface.

9 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 864.4 ft. Elevation of Limiting Factor 856.4 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
FILL	0-2	10 YR 3/3	--	SICL	1, VF, SBK	M, FR	C, W	<5%	90%	0.04
FILL	2-48	10 YR 5/4	--	SICL	1, M, SBK	M, FI	C, W	<5%	90%	0.04
B	48-192	10 YR 5/4	--	SICL	MA	M, FI	C, W	<5%	90%	0.04
C	192-252	10 YR 6/1	--	SICL	1, F, SBK	M, FI	--	<5%	90%	0.04

Comments: Water encountered at 8 feet below ground surface.

Overall Site Comments:

Benjamin M. Stark, P.E.		P.E. No.: 48164-6
Name (Please Print)	Signature	Credential Number
N8 W22350 Johnson Drive, Waukesha, WI	June 6, 2024	(262) 544-0118
Address	Date Evaluation Conducted	Phone Number

Appendix 3

Water Quality Calculations & WinSLAMM Inputs

POST DEVELOPMENT
WATERSHED AREA

4.806 AC.
XX% IMPERVIOUS
CN= 90

SUB-AREA I

AREA = 3.522 AC.
79% IMPERVIOUS
CN = 94
TC = 6.0 MIN.

SUB-AREA IA

AREA = 0.442 AC.
XX% IMPERVIOUS
CN = XX
TC = 6.0 MIN.

SUB-AREA 2

AREA = 0.842 AC.
1% IMPERVIOUS
CN = 72
TC = 6.0 MIN.

SUB-AREA I

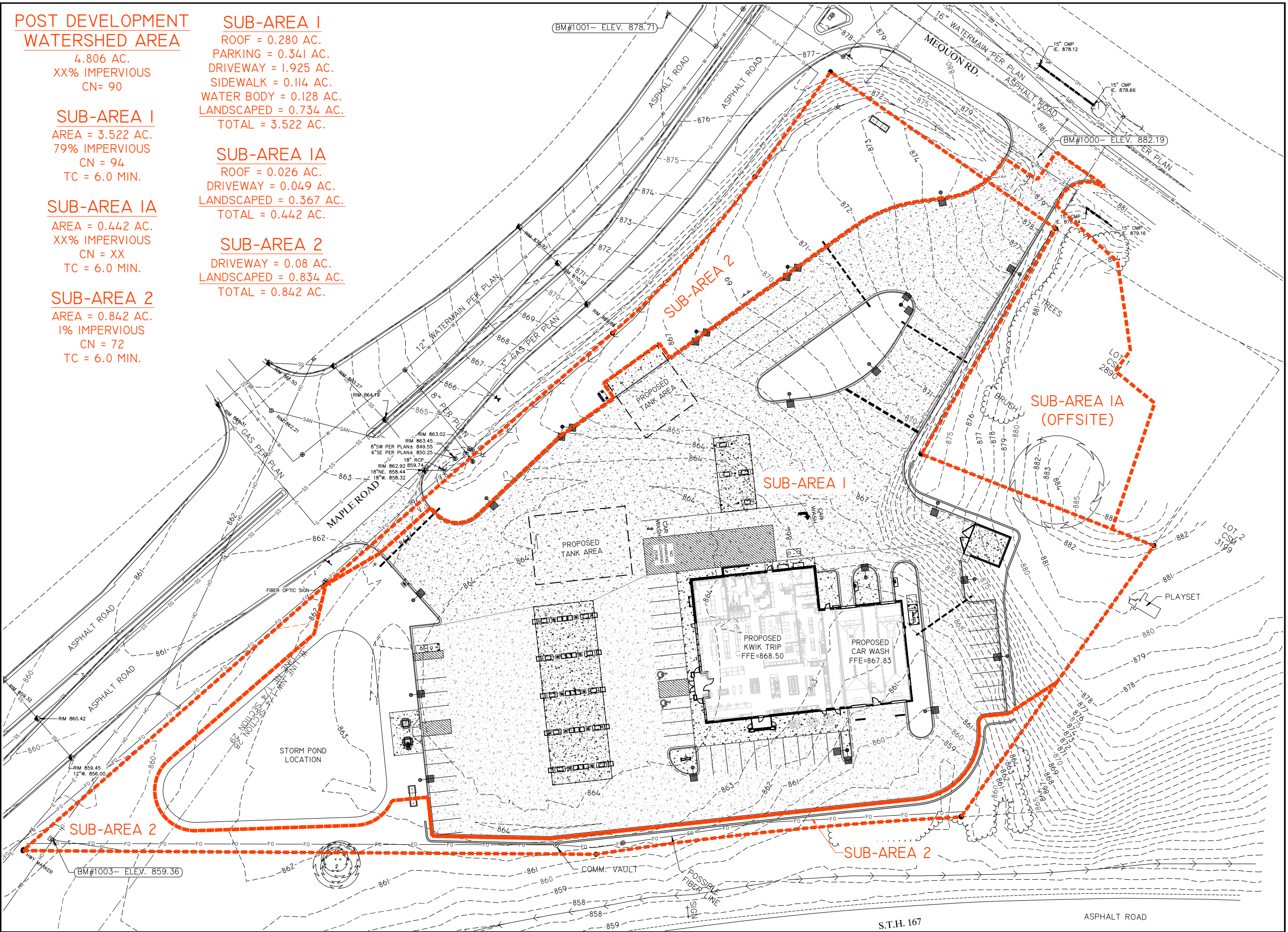
ROOF = 0.280 AC.
PARKING = 0.341 AC.
DRIVEWAY = 1.925 AC.
SIDEWALK = 0.114 AC.
WATER BODY = 0.128 AC.
LANDSCAPED = 0.734 AC.
TOTAL = 3.522 AC.

SUB-AREA IA

ROOF = 0.026 AC.
DRIVEWAY = 0.049 AC.
LANDSCAPED = 0.367 AC.
TOTAL = 0.442 AC.

SUB-AREA 2

DRIVEWAY = 0.08 AC.
LANDSCAPED = 0.834 AC.
TOTAL = 0.842 AC.



**Kwik
TRIP**

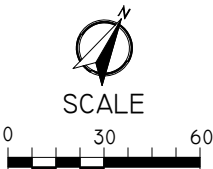
STORES

**Kwik
STAR**

STORES

WI 54602-2107
(608) 781-8988
FAX (608) 781-8960

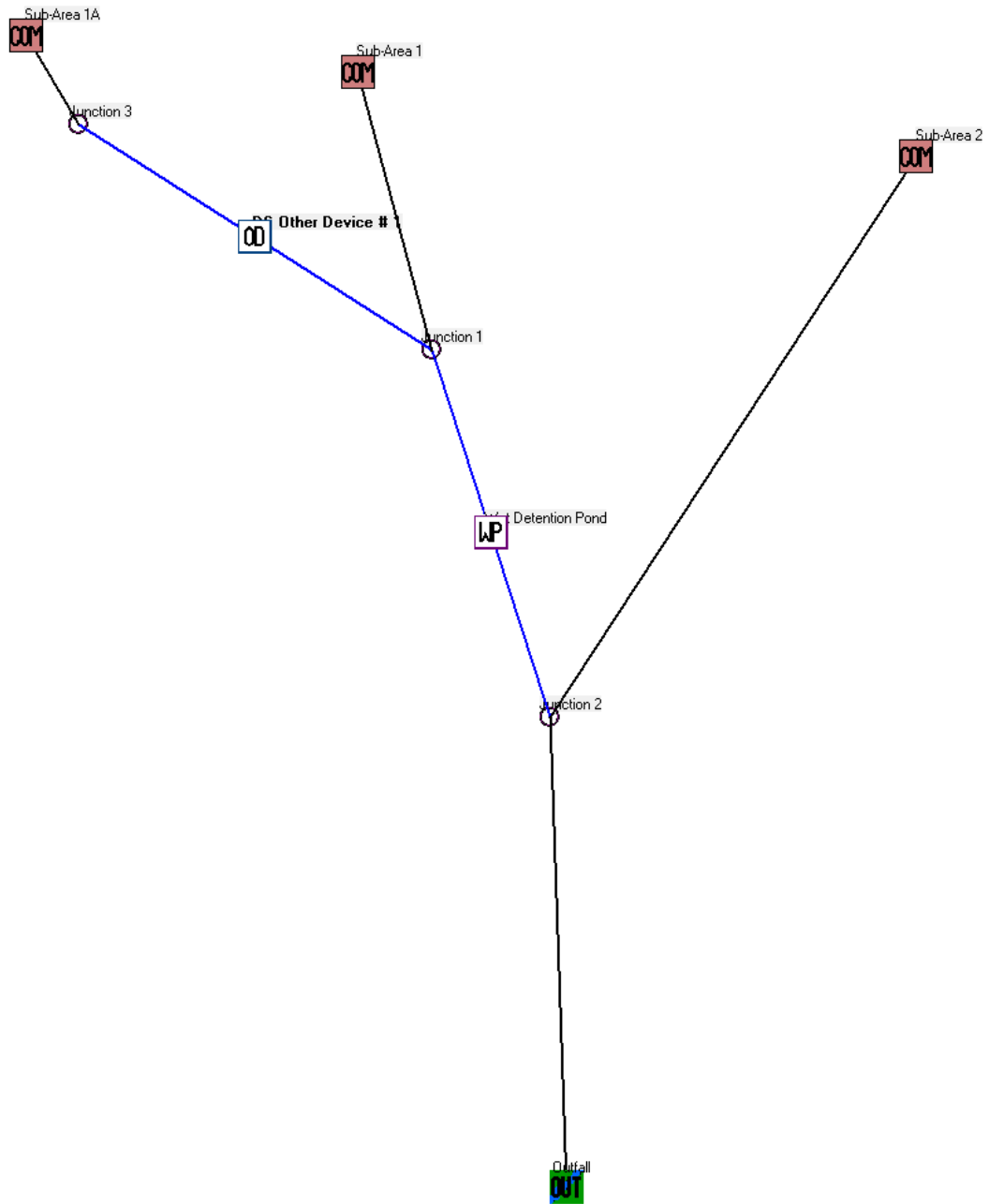
REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
REI Engineering, INC.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9784 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



STORE #631
67 & MAPLE ROAD
ERMANTOWN, WI

DRAWN BY: NAP
SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: STM-I

SITE TSS REMOVAL WINSLAMM INPUT



WET DETENTION POND INPUT

Wet Detention Control Device

Pond Number 1
Drainage System Control Practice

Initial Stage Elevation (ft):

Maximum Inflow into Pond (cfs)
Enter 0 or leave blank for no limit:

Enter Two Stage Area Values in Rows 1
and 2, and Press to Interpolate

	Stage (ft)	Area (acres)	Cumulative Volume (ac-ft)
0	0.00	0.0000	0.0000
1	0.01	0.0284	0.0000
2	1.00	0.0368	0.032
3	2.00	0.0462	0.074
4	3.00	0.0567	0.125
5	4.00	0.0677	0.188
6	4.20	0.0700	0.201
7	5.00	0.1277	0.280
8	6.00	0.1520	0.420
9	7.00	0.1775	0.585
10	8.00	0.2043	0.776
11	9.00	0.2322	0.994
12	10.00	0.2615	1.241
13	11.00	0.2922	1.518
14	11.50	0.3080	1.668
15			
16			
17			

Create Pond Stage-Area Values Refresh Schematic

Enter fraction (greater than 0) that you want to modify all pond areas by and then select 'Modify Pond Areas' button

 Modify Pond Areas

Copy Pond Data Paste Pond Data Recalculate Cumulative Volume

Save or Delete Pond Data to Database File Get Pond Data From Database File

Only Vertical Dimension to Relative Scale

To Delete This Practice,
Right Mouse Click on
Icon and Select Delete

Press 'F1' for Help

Remove Sharp Crested Weir

Weir Length (ft)	4.00
Height from datum to bottom of weir opening (ft)	10.25

V-Notch Weir

Weir Angle (<180 degrees)	
Height from datum to bottom of weir opening (ft)	
Number of V-Notch weirs	

Orifice Set 1

Orifice Diameter (ft)	0.33
Invert elevation above datum (ft)	5.00
Number of orifices in set	1

Orifice Set 2

Orifice Diameter (ft)	0.42
Invert elevation above datum (ft)	7.50
Number of orifices in set	1

Orifice Set 3

Orifice Diameter (ft)	
Invert elevation above datum (ft)	
Number of orifices in set	

Stone Weeper

Width at bottom of weeper (ft)	
Weeper side slope (H:1V)	
Upstream side slope (H:1V)	
Downstream side slope (H:1V)	
Horizontal flow path length at top of weeper (ft)	
Average rock diameter (ft)	
Distance from bottom to top of weeper (ft)	
Height from datum to bottom of weeper (ft)	

Vertical Stand Pipe

Pipe diameter (ft)	
Height above datum (ft)	

	Add	Add
Month	Evaporation (in/day)	Water Withdraw Rate (ac-ft/day)
Jan	0.00	0.000
Feb	0.00	0.000
Mar	0.00	0.000
Apr	0.00	0.000
May	0.00	0.000
Jun	0.00	0.000
Jul	0.00	0.000
Aug	0.00	0.000
Sep	0.00	0.000
Oct	0.00	0.000
Nov	0.00	0.000
Dec	0.00	0.000

	Add	Add
Stage (ft)	Natural Seepage Rate (in/hr)	Other Outflow Rate (cfs)
0.00	0.00	0.000
0.01	0.00	0.000
1.00	0.00	0.000
2.00	0.00	0.000
3.00	0.00	0.000
4.00	0.00	0.000
4.20	0.00	0.000

Broad Crested Weir (Required)

Weir crest length (ft)	6.00
Weir crest width (ft)	14.00
Height from datum to bottom of weir opening (ft)	10.50

Seepage Basin

Infiltration rate (in/hr)	
Width of device (ft)	
Length of device (ft)	
Invert elevation of seepage basin inlet above datum (ft)	

WINSLAMM OUTPUT

File Name:
Q:\11700-11799\11757 - Kwik Trip #631 - Germantown\Engineer\Stormwater Management\Modeling-winSlamm\11757-Water Quality Analysis.mdb

Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	240500		0.42	123.5 (1)	1854 (1)	
Outfall Total with Controls	240753	-0.11 %	0.42	33.70	506.6	72.68 %

Current File Output: Annualized Total
After Outfall Controls

244097	Years in Model Run:	0.99	513.6
--------	---------------------	------	-------

(1) Values reduced to remove off-site loadings due to setting Other Control Device Concentration Reduction values to 1.

Print Output Summary to .csv File

Print Output Summary to Text File

Print Output Summary to Printer

Total Area Modeled (ac)

4.806

Receiving Water Impacts Due To Stormwater Runoff

(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.42	Poor
With Controls	0.42	Poor

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Outfall
Flow Duration
Curve Calculations

ANNUAL YIELD OF TSS (NO CONTROL) = 1,854 lbs

ANNUAL YIELD OF TSS AFTER CONTROLS = 506.6 lbs

PERCENT TSS REDUCTION = 72.68%

Data file name: Q:\11700-11799\11757 - Kwik Trip #631 - Germantown\Engineer\Stormwater Management\Modeling-WinSlamm\11757-Water Quality Analysis.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppd
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Date: 10-09-2024 Time: 12:41:33
Site information:

LU# 1 - Commercial: Sub-Area 1 Total area (ac): 3.522
1 - Roofs 1: 0.280 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.341 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 1.925 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.114 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.020 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
46 - Large Landscaped Areas 2: 0.714 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.128 ac. PSD File: Source Area PSD File:
LU# 2 - Commercial: Sub-Area 2 Total area (ac): 0.842
25 - Driveways 1: 0.008 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.290 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
46 - Large Landscaped Areas 2: 0.159 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
47 - Large Landscaped Areas 3: 0.385 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 3 - Commercial: Sub-Area 1A Total area (ac): 0.442
1 - Roofs 1: 0.026 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.049 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.367 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - Wet Detention Pond
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
 Outlet type: Sharp Crested Weir
 1. Sharp crested weir length (ft): 4
 2. Sharp crested weir height from invert: 1.25
 3. Sharp crested weir invert elevation above datum (ft): 10.25
 Outlet type: Orifice 1
 1. Orifice diameter (ft): 0.33
 2. Number of orifices: 1
 3. Invert elevation above datum (ft): 5
 Outlet type: Orifice 2
 1. Orifice diameter (ft): 0.42
 2. Number of orifices: 1
 3. Invert elevation above datum (ft): 7.5
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 6
 2. Weir crest width (ft): 14
 3. Height from datum to bottom of weir opening: 10.5
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0284	0.00	0.00
2	1.00	0.0368	0.00	0.00
3	2.00	0.0462	0.00	0.00
4	3.00	0.0567	0.00	0.00
5	4.00	0.0677	0.00	0.00
6	4.20	0.0700	0.00	0.00
7	5.00	0.1277	0.00	0.00
8	6.00	0.1520	0.00	0.00
9	7.00	0.1775	0.00	0.00
10	8.00	0.2043	0.00	0.00
11	9.00	0.2322	0.00	0.00
12	10.00	0.2615	0.00	0.00
13	11.00	0.2922	0.00	0.00
14	11.50	0.3080	0.00	0.00

Control Practice 2: Other Device CP# 1 (DS) - DS Other Device # 1
Fraction of drainage area served by device (ac) = 1.00
Particulate Concentration reduction fraction = 1.00
Filterable Concentration reduction fraction = 0.00
Runoff volume reduction fraction = 0

Appendix 4

Post-Development Conditions Peak Flow Analysis

POST DEVELOPMENT
WATERSHED AREA

4.806 AC.
XX% IMPERVIOUS
CN= 90

SUB-AREA I

AREA = 3.522 AC.
79% IMPERVIOUS
CN = 94
TC = 6.0 MIN.

SUB-AREA IA

AREA = 0.442 AC.
XX% IMPERVIOUS
CN = XX
TC = 6.0 MIN.

SUB-AREA 2

AREA = 0.842 AC.
1% IMPERVIOUS
CN = 72
TC = 6.0 MIN.

SUB-AREA I

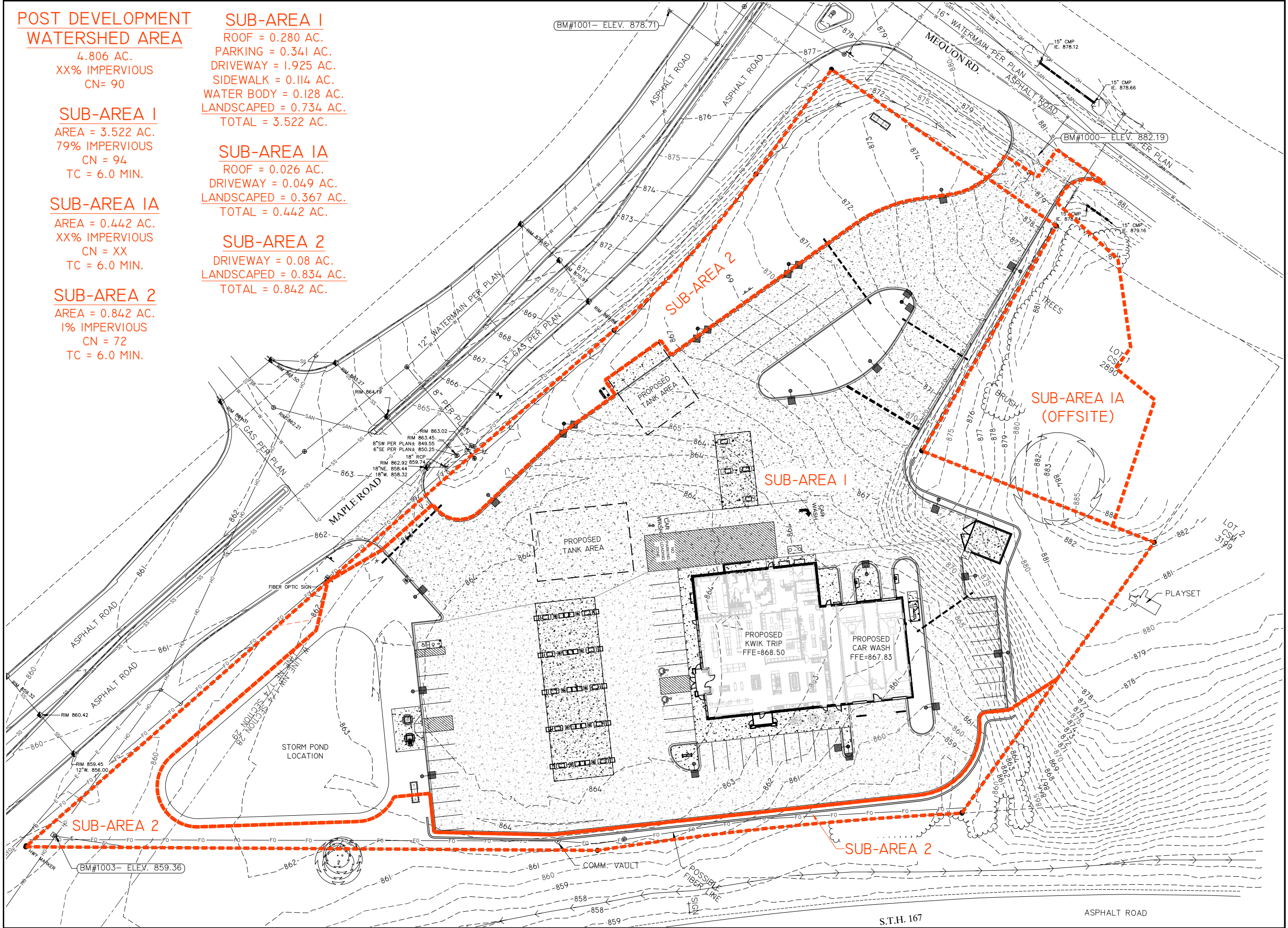
ROOF = 0.280 AC.
PARKING = 0.341 AC.
DRIVEWAY = 1.925 AC.
SIDEWALK = 0.114 AC.
WATER BODY = 0.128 AC.
LANDSCAPED = 0.734 AC.
TOTAL = 3.522 AC.

SUB-AREA IA

ROOF = 0.026 AC.
DRIVEWAY = 0.049 AC.
LANDSCAPED = 0.367 AC.
TOTAL = 0.442 AC.

SUB-AREA 2

DRIVEWAY = 0.08 AC.
LANDSCAPED = 0.834 AC.
TOTAL = 0.842 AC.



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SCALE
0 30 60

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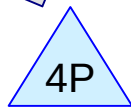
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PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: STM-I



Sub-Area 1



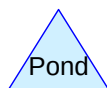
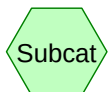
Sub-Area 2



Wet Detention Pond



Post Development
Runoff



Routing Diagram for 11757-Post Peak Flow

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11757-Post Peak Flow

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	MSE 24-hr	3	Default	24.00	1	2.65	2

11757-Post Peak Flow*MSE 24-hr 3 2-Year Rainfall=2.65"*

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Sub-Area 1

Runoff Area=3.522 ac 79.16% Impervious Runoff Depth=2.13"
Tc=6.0 min CN=WQ Runoff=11.75 cfs 0.624 af

Subcatchment2S: Sub-Area 2

Runoff Area=0.842 ac 0.95% Impervious Runoff Depth=0.69"
Flow Length=396' Tc=10.6 min CN=WQ Runoff=0.79 cfs 0.049 af

Pond 4P: Wet Detention Pond

Peak Elev=860.44' Storage=16,795 cf Inflow=11.75 cfs 0.624 af
Primary=0.63 cfs 0.622 af Secondary=0.00 cfs 0.000 af Outflow=0.63 cfs 0.622 af

Link 5L: Post Development Runoff

Inflow=1.35 cfs 0.671 af
Primary=1.35 cfs 0.671 af

Total Runoff Area = 4.364 ac Runoff Volume = 0.673 af Average Runoff Depth = 1.85"
35.93% Pervious = 1.568 ac 64.07% Impervious = 2.796 ac

11757-Post Peak Flow

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MSE 24-hr 3 2-Year Rainfall=2.65"

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Summary for Subcatchment 1S: Sub-Area 1

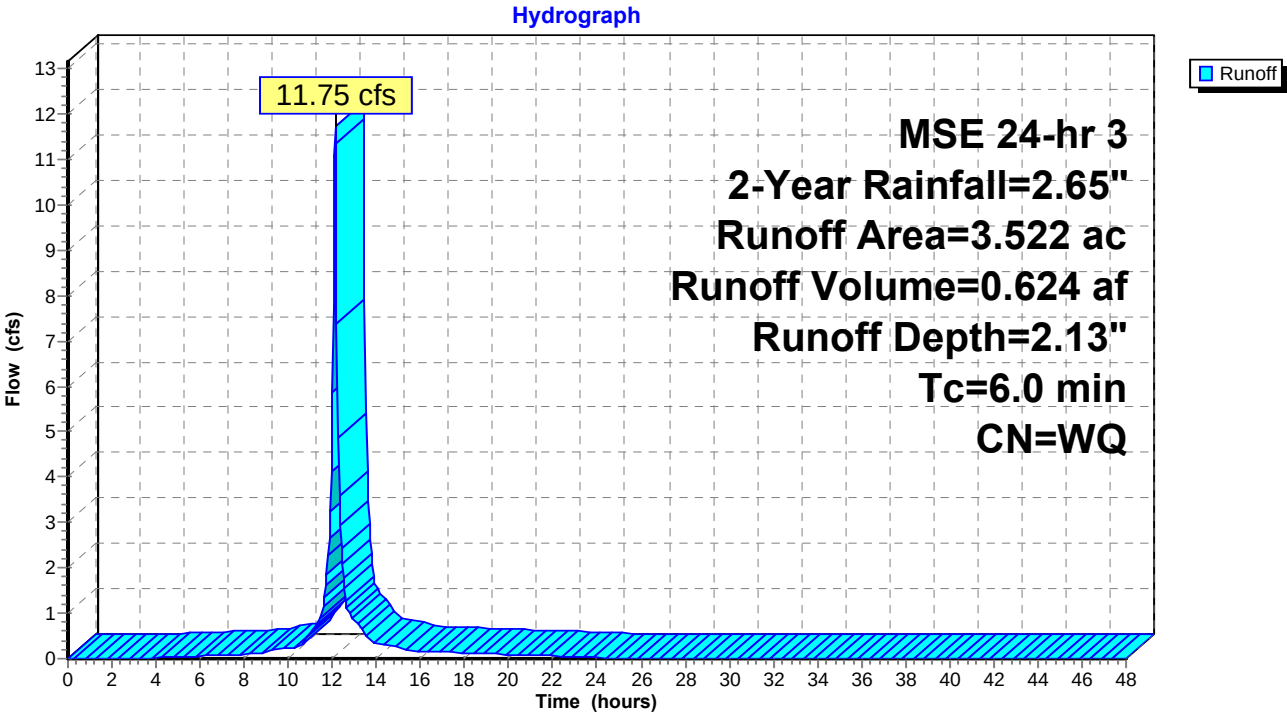
Runoff = 11.75 cfs @ 12.13 hrs, Volume= 0.624 af, Depth= 2.13"
Routed to Pond 4P : Wet Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.65"

	Area (ac)	CN	Description
*	0.280	98	Roof
*	0.341	98	Parking
*	1.925	98	Driveway
*	0.114	98	Sidewalk
	0.020	61	>75% Grass cover, Good, HSG B
	0.714	80	>75% Grass cover, Good, HSG D
*	0.128	100	Water Body
	3.522		Weighted Average
	0.734		20.84% Pervious Area
	2.788		79.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: Sub-Area 1



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MSE 24-hr 3 2-Year Rainfall=2.65"

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Summary for Subcatchment 2S: Sub-Area 2

Runoff = 0.79 cfs @ 12.20 hrs, Volume= 0.049 af, Depth= 0.69"
Routed to Link 5L : Post Development Runoff

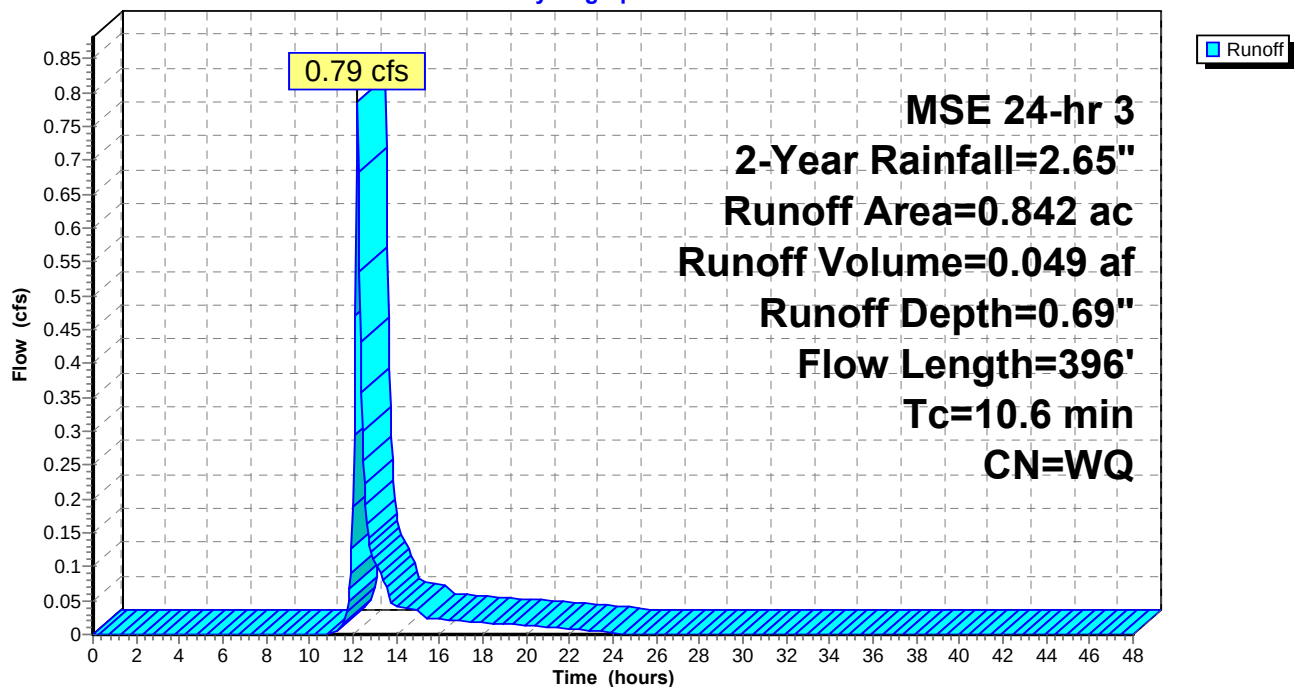
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.65"

Area (ac)	CN	Description
* 0.008	98	Driveway
0.290	61	>75% Grass cover, Good, HSG B
0.159	74	>75% Grass cover, Good, HSG C
0.385	80	>75% Grass cover, Good, HSG D
0.842		Weighted Average
0.834		99.05% Pervious Area
0.008		0.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0310	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 2.65"
1.6	296	0.0360	3.05		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.6	396	Total			

Subcatchment 2S: Sub-Area 2

Hydrograph



11757-Post Peak Flow

MSE 24-hr 3 2-Year Rainfall=2.65"

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Summary for Pond 4P: Wet Detention Pond

Inflow Area = 3.522 ac, 79.16% Impervious, Inflow Depth = 2.13" for 2-Year event
 Inflow = 11.75 cfs @ 12.13 hrs, Volume= 0.624 af
 Outflow = 0.63 cfs @ 13.33 hrs, Volume= 0.622 af, Atten= 95%, Lag= 72.3 min
 Primary = 0.63 cfs @ 13.33 hrs, Volume= 0.622 af
 Routed to Link 5L : Post Development Runoff
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 5L : Post Development Runoff

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 860.44' @ 13.33 hrs Surf.Area= 8,240 sf Storage= 16,795 cf

Plug-Flow detention time= 328.0 min calculated for 0.622 af (100% of inflow)
 Center-of-Mass det. time= 327.0 min (1,087.2 - 760.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	858.00'	60,396 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.00	5,564	342.3	0	0	5,564
859.00	6,619	361.2	6,084	6,084	6,679
860.00	7,731	380.0	7,168	13,252	7,848
861.00	8,900	398.9	8,309	21,560	9,083
862.00	10,113	417.3	9,500	31,060	10,346
863.00	11,392	436.1	10,746	41,807	11,692
864.00	12,728	454.9	12,054	53,860	13,097
864.50	13,417	464.4	6,535	60,396	13,829

Device	Routing	Invert	Outlet Devices
#1	Primary	858.00'	12.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 858.00' / 856.00' S= 0.0333 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	858.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	860.50'	5.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	863.25'	4.0' long x 1.25' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	863.50'	6.0' long + 3.0 ' /' SideZ x 14.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Primary OutFlow Max=0.63 cfs @ 13.33 hrs HW=860.44' (Free Discharge)

- 1=Culvert (Passes 0.63 cfs of 4.16 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.63 cfs @ 7.27 fps)
- 3=Orifice/Grate (Controls 0.00 cfs)
- 4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=858.00' (Free Discharge)

- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

11757-Post Peak Flow

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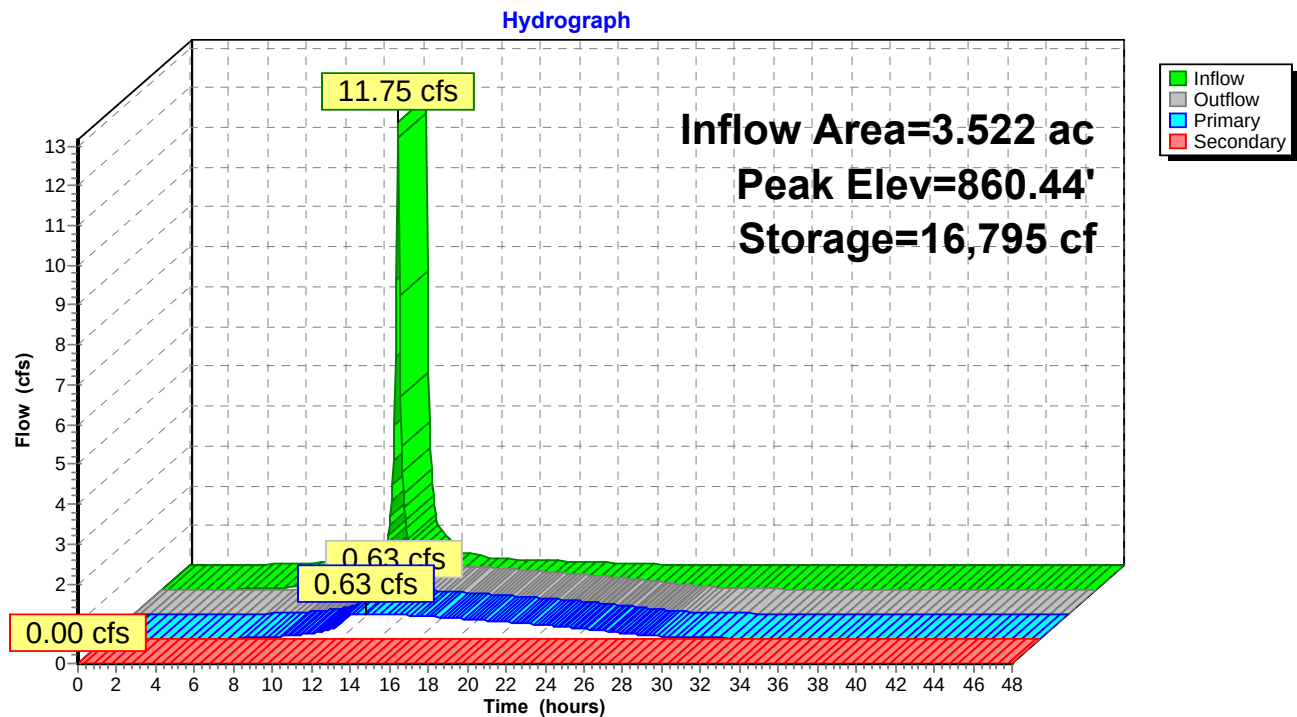
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MSE 24-hr 3 2-Year Rainfall=2.65"

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Pond 4P: Wet Detention Pond



11757-Post Peak Flow

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MSE 24-hr 3 2-Year Rainfall=2.65"

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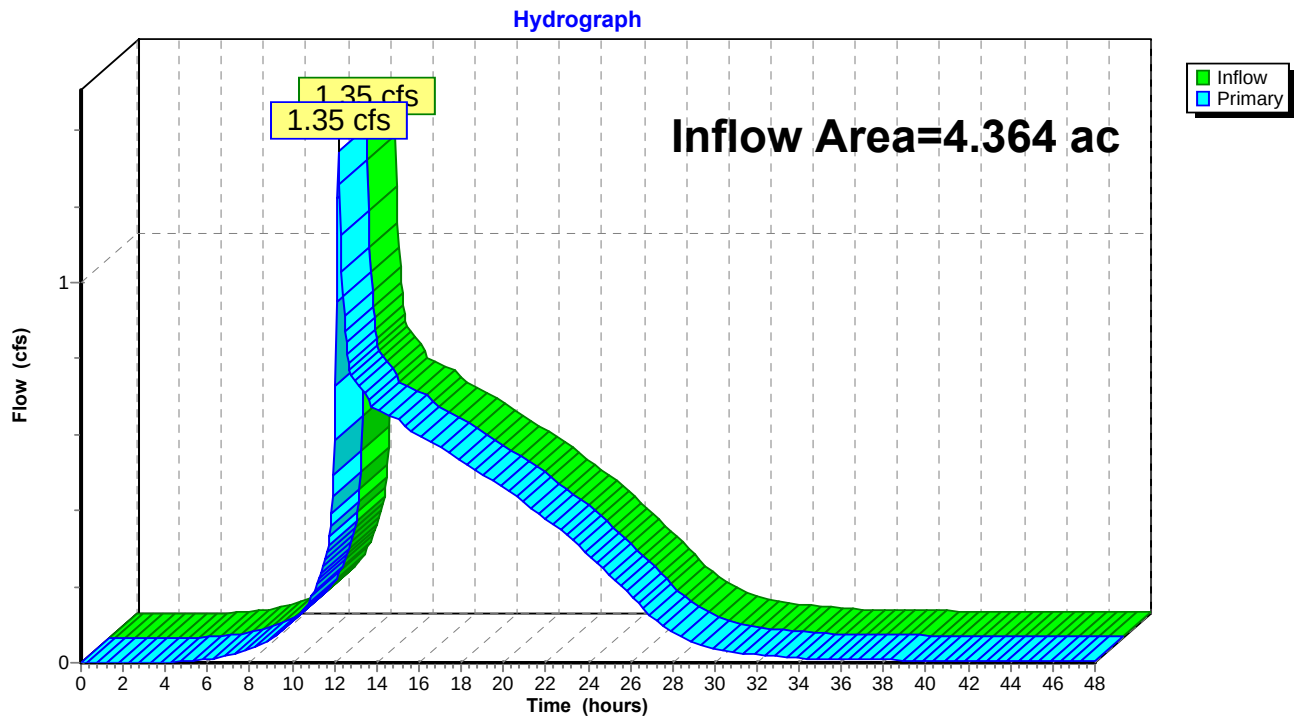
Page 8

Summary for Link 5L: Post Development Runoff

Inflow Area = 4.364 ac, 64.07% Impervious, Inflow Depth > 1.84" for 2-Year event
Inflow = 1.35 cfs @ 12.20 hrs, Volume= 0.671 af
Primary = 1.35 cfs @ 12.20 hrs, Volume= 0.671 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 5L: Post Development Runoff



11757-Post Peak Flow

MSE 24-hr 3 100-Year Rainfall=6.41"

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Page 1

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Sub-Area 1

Runoff Area=3.522 ac 79.16% Impervious Runoff Depth=5.75"
Tc=6.0 min CN=WQ Runoff=30.96 cfs 1.687 af

Subcatchment2S: Sub-Area 2

Runoff Area=0.842 ac 0.95% Impervious Runoff Depth=3.41"
Flow Length=396' Tc=10.6 min CN=WQ Runoff=4.21 cfs 0.239 af

Pond 4P: Wet Detention Pond

Peak Elev=863.26' Storage=44,800 cf Inflow=30.96 cfs 1.687 af
Primary=2.01 cfs 1.683 af Secondary=0.00 cfs 0.000 af Outflow=2.01 cfs 1.683 af

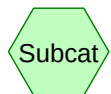
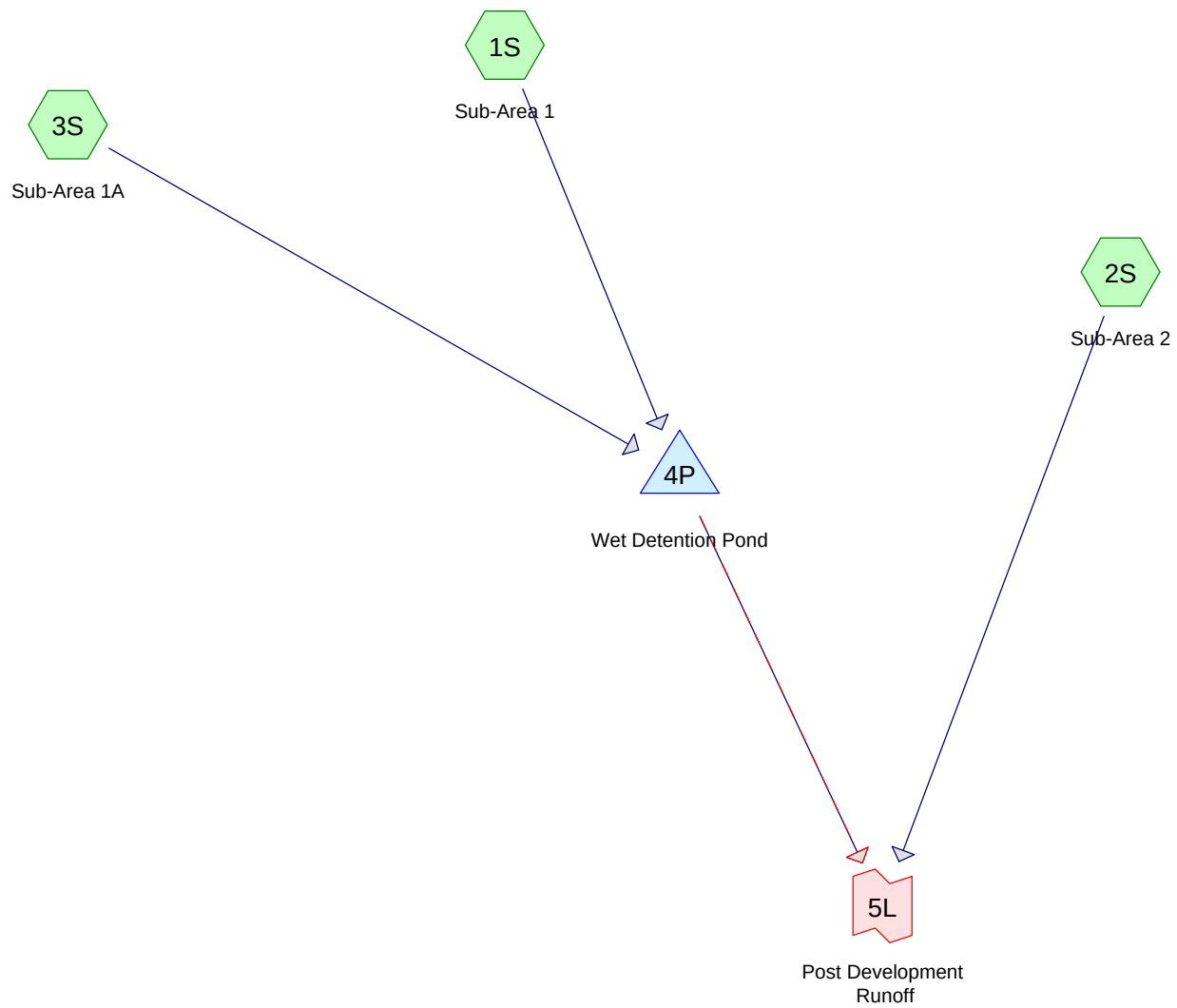
Link 5L: Post Development Runoff

Inflow=5.92 cfs 1.923 af
Primary=5.92 cfs 1.923 af

Total Runoff Area = 4.364 ac Runoff Volume = 1.927 af Average Runoff Depth = 5.30"
35.93% Pervious = 1.568 ac 64.07% Impervious = 2.796 ac

Appendix 5

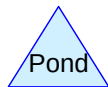
Detention Pond Safe Passage Analysis



Subcat



Reach



Pond



Link

Routing Diagram for 11757-Post Peak Flow-100
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11757-Post Peak Flow-100

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	100-Year	MSE 24-hr	3	Default	24.00	1	6.41	2

11757-Post Peak Flow-100

MSE 24-hr 3 100-Year Rainfall=6.41"

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Page 3

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Sub-Area 1

Runoff Area=3.522 ac 79.16% Impervious Runoff Depth=5.75"
Tc=6.0 min CN=WQ Runoff=30.96 cfs 1.687 af

Subcatchment2S: Sub-Area 2

Runoff Area=0.842 ac 0.95% Impervious Runoff Depth=3.41"
Flow Length=396' Tc=10.6 min CN=WQ Runoff=4.21 cfs 0.239 af

Subcatchment3S: Sub-Area 1A

Runoff Area=0.442 ac 16.97% Impervious Runoff Depth=4.50"
Tc=6.0 min CN=WQ Runoff=3.36 cfs 0.166 af

Pond 4P: Wet Detention Pond

Peak Elev=863.49' Storage=47,517 cf Inflow=34.32 cfs 1.853 af
Primary=3.56 cfs 1.849 af Secondary=0.00 cfs 0.000 af Outflow=3.56 cfs 1.849 af

Link 5L: Post Development Runoff

Inflow=6.03 cfs 2.088 af
Primary=6.03 cfs 2.088 af

Total Runoff Area = 4.806 ac Runoff Volume = 2.092 af Average Runoff Depth = 5.22"
40.26% Pervious = 1.935 ac 59.74% Impervious = 2.871 ac

11757-Post Peak Flow-100

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MSE 24-hr 3 100-Year Rainfall=6.41"

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Summary for Subcatchment 1S: Sub-Area 1

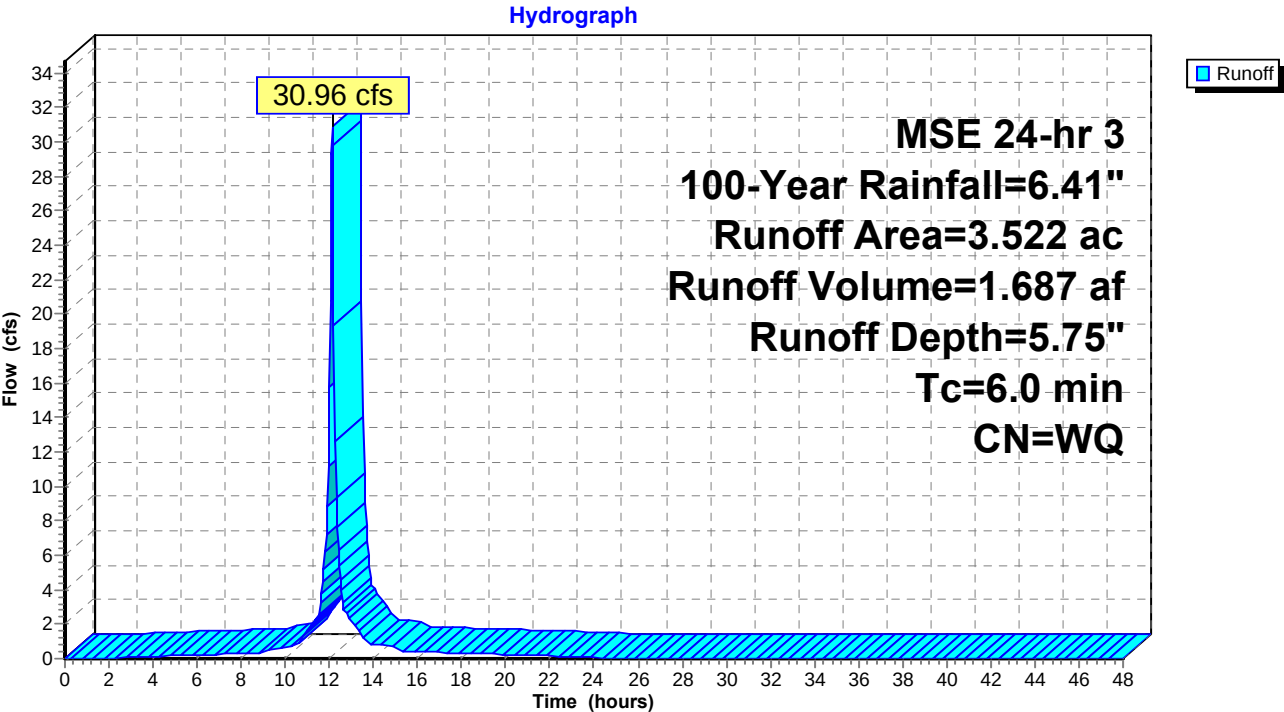
Runoff = 30.96 cfs @ 12.13 hrs, Volume= 1.687 af, Depth= 5.75"
Routed to Pond 4P : Wet Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.41"

	Area (ac)	CN	Description
*	0.280	98	Roof
*	0.341	98	Parking
*	1.925	98	Driveway
*	0.114	98	Sidewalk
	0.020	61	>75% Grass cover, Good, HSG B
	0.714	80	>75% Grass cover, Good, HSG D
*	0.128	100	Water Body
	3.522		Weighted Average
	0.734		20.84% Pervious Area
	2.788		79.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: Sub-Area 1



11757-Post Peak Flow-100

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MSE 24-hr 3 100-Year Rainfall=6.41"

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Summary for Subcatchment 2S: Sub-Area 2

Runoff = 4.21 cfs @ 12.19 hrs, Volume= 0.239 af, Depth= 3.41"
Routed to Link 5L : Post Development Runoff

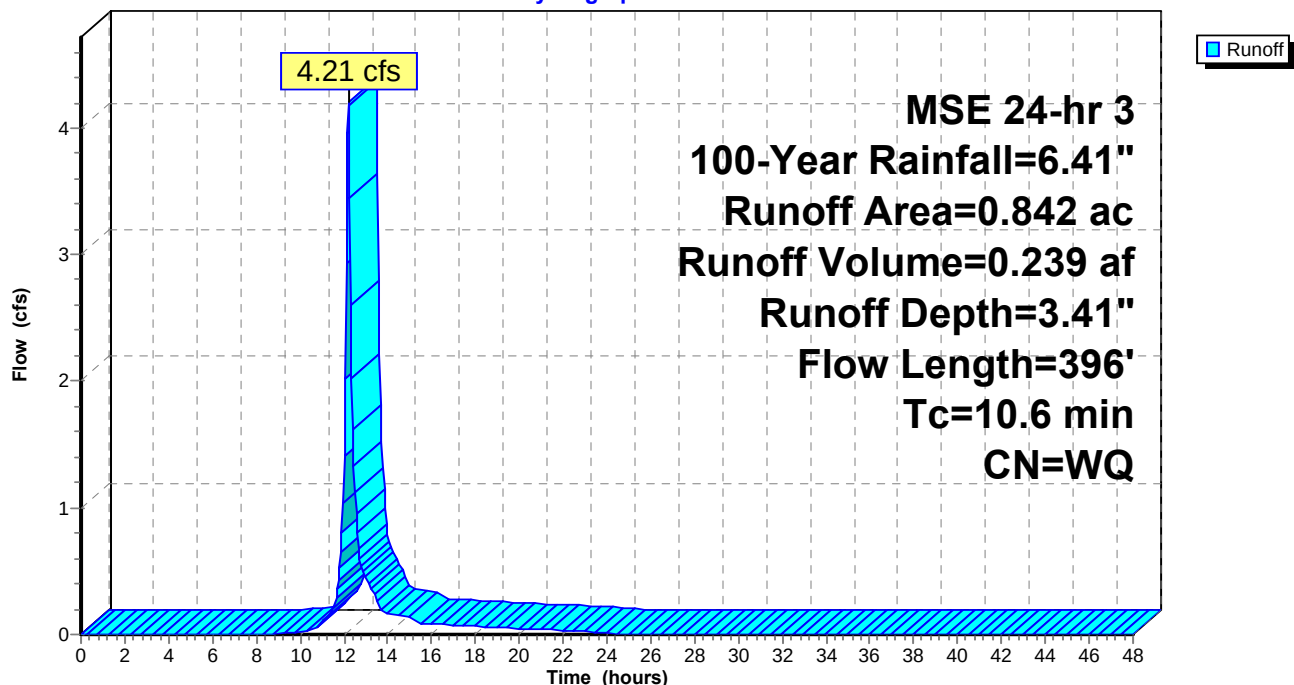
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.41"

Area (ac)	CN	Description
* 0.008	98	Driveway
0.290	61	>75% Grass cover, Good, HSG B
0.159	74	>75% Grass cover, Good, HSG C
0.385	80	>75% Grass cover, Good, HSG D
0.842		Weighted Average
0.834		99.05% Pervious Area
0.008		0.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0310	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 2.65"
1.6	296	0.0360	3.05		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.6	396	Total			

Subcatchment 2S: Sub-Area 2

Hydrograph



11757-Post Peak Flow-100

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MSE 24-hr 3 100-Year Rainfall=6.41"

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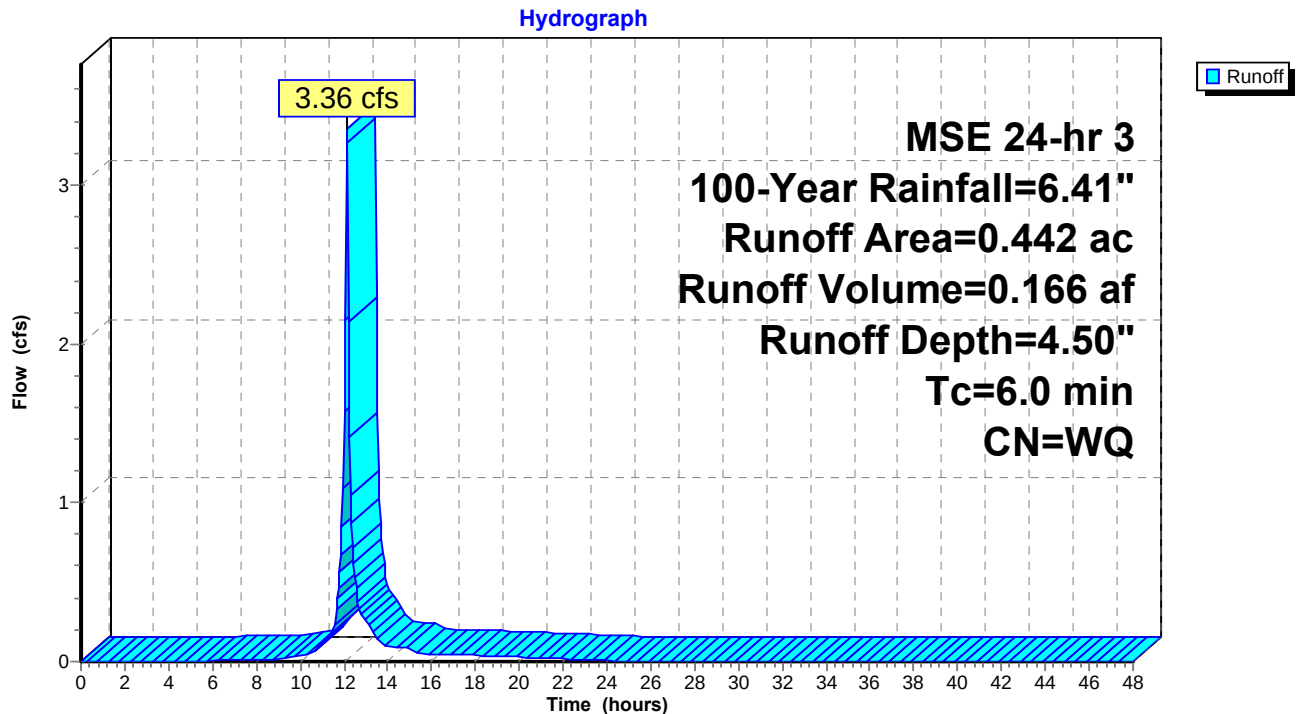
Summary for Subcatchment 3S: Sub-Area 1A

Runoff = 3.36 cfs @ 12.13 hrs, Volume= 0.166 af, Depth= 4.50"
Routed to Pond 4P : Wet Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.41"

Area (ac)	CN	Description
* 0.026	98	Roof
* 0.049	98	Driveway
0.367	80	>75% Grass cover, Good, HSG D
0.442		Weighted Average
0.367		83.03% Pervious Area
0.075		16.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 3S: Sub-Area 1A

11757-Post Peak Flow-100

MSE 24-hr 3 100-Year Rainfall=6.41"

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Summary for Pond 4P: Wet Detention Pond

Inflow Area = 3.964 ac, 72.23% Impervious, Inflow Depth = 5.61" for 100-Year event
 Inflow = 34.32 cfs @ 12.13 hrs, Volume= 1.853 af
 Outflow = 3.56 cfs @ 12.62 hrs, Volume= 1.849 af, Atten= 90%, Lag= 29.3 min
 Primary = 3.56 cfs @ 12.62 hrs, Volume= 1.849 af
 Routed to Link 5L : Post Development Runoff
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 5L : Post Development Runoff

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 863.49' @ 12.62 hrs Surf.Area= 12,034 sf Storage= 47,517 cf

Plug-Flow detention time= 320.8 min calculated for 1.849 af (100% of inflow)
 Center-of-Mass det. time= 319.4 min (1,071.2 - 751.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	858.00'	60,396 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.00	5,564	342.3	0	0	5,564
859.00	6,619	361.2	6,084	6,084	6,679
860.00	7,731	380.0	7,168	13,252	7,848
861.00	8,900	398.9	8,309	21,560	9,083
862.00	10,113	417.3	9,500	31,060	10,346
863.00	11,392	436.1	10,746	41,807	11,692
864.00	12,728	454.9	12,054	53,860	13,097
864.50	13,417	464.4	6,535	60,396	13,829

Device	Routing	Invert	Outlet Devices
#1	Primary	858.00'	12.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 858.00' / 856.00' S= 0.0333 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	858.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	860.50'	5.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	863.25'	4.0' long x 1.25' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	863.50'	6.0' long + 3.0 ' /' SideZ x 14.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Primary OutFlow Max=3.55 cfs @ 12.62 hrs HW=863.49' (Free Discharge)

- 1=Culvert (Passes 3.55 cfs of 6.67 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.97 cfs @ 11.11 fps)
- 3=Orifice/Grate (Orifice Controls 1.09 cfs @ 8.03 fps)
- 4=Sharp-Crested Rectangular Weir (Weir Controls 1.49 cfs @ 1.59 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=858.00' (Free Discharge)

- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

11757-Post Peak Flow-100

Prepared by REI Engineering

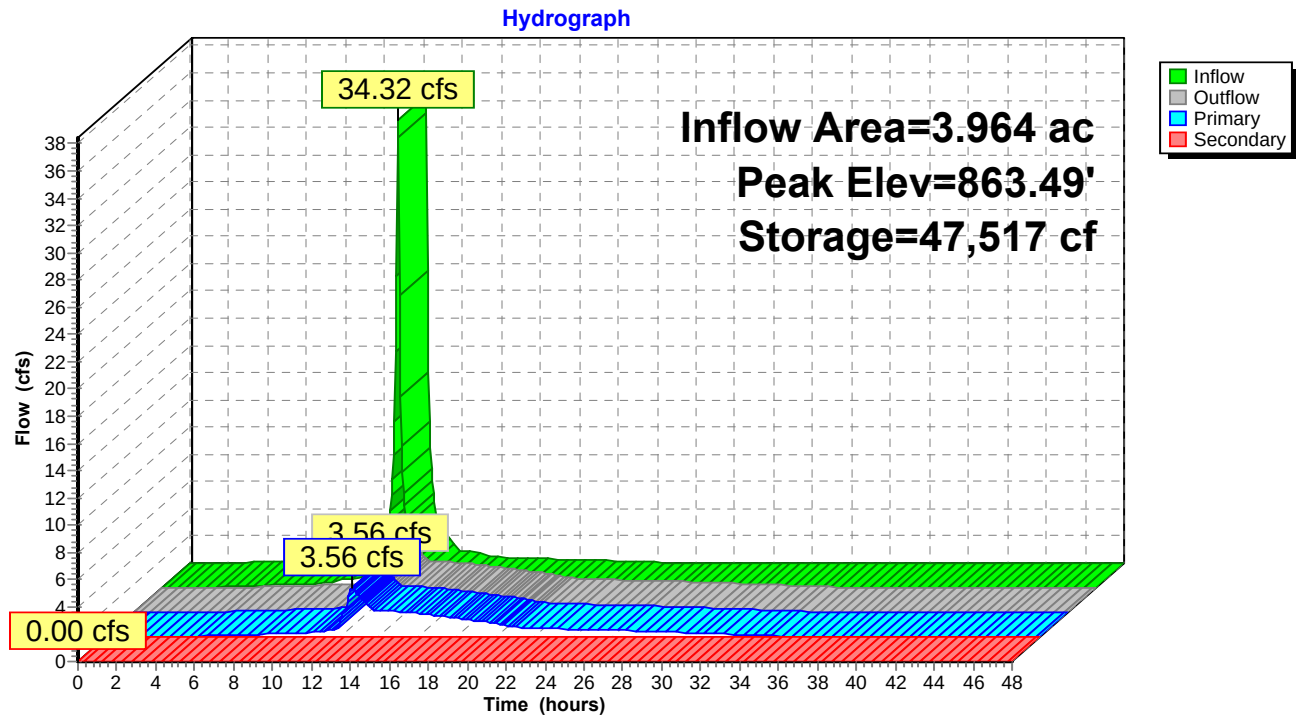
HydroCAD® 10.20-5a s/n 03070 © 2023 HydroCAD Software Solutions LLC

MSE 24-hr 3 100-Year Rainfall=6.41"

Printed 10/9/2024

Page 8

Pond 4P: Wet Detention Pond



11757-Post Peak Flow-100

Prepared by REI Engineering

HydroCAD® 10.20-5a s/n 03070 © 2023 HydroCAD Software Solutions LLC

MSE 24-hr 3 100-Year Rainfall=6.41"

Printed 10/9/2024

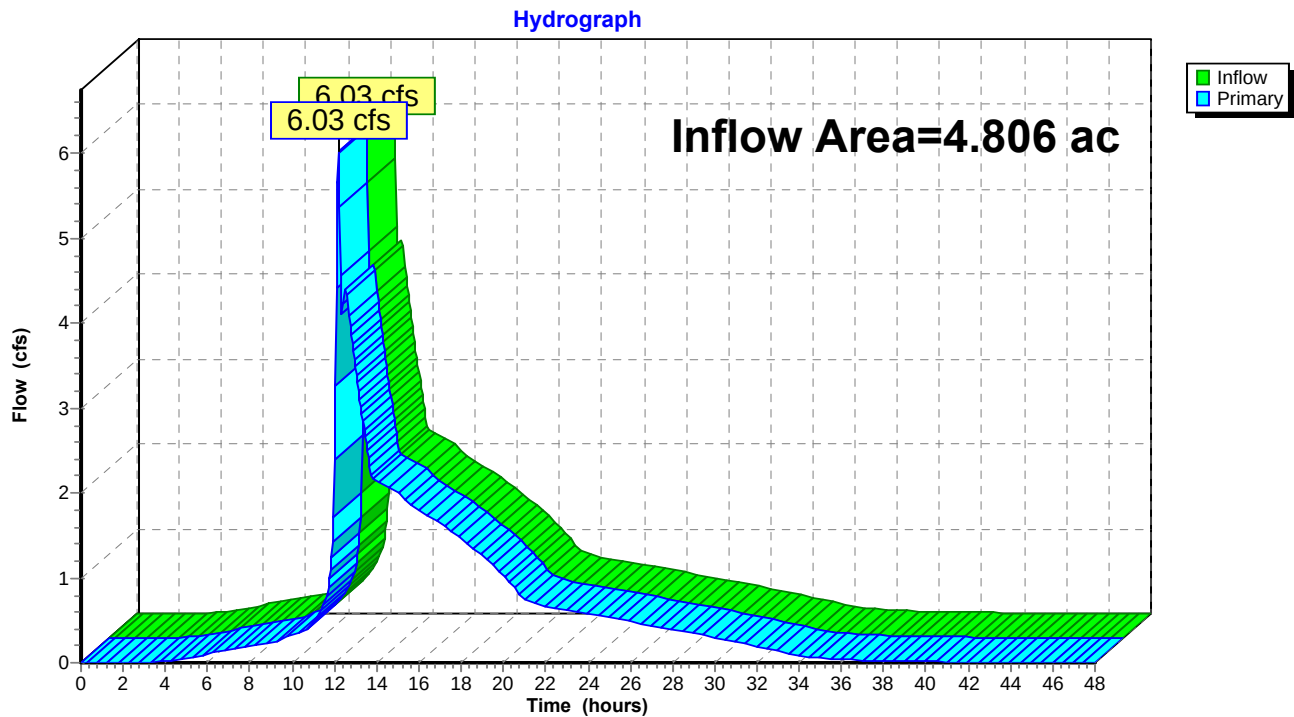
Page 9

Summary for Link 5L: Post Development Runoff

Inflow Area = 4.806 ac, 59.74% Impervious, Inflow Depth > 5.21" for 100-Year event
Inflow = 6.03 cfs @ 12.19 hrs, Volume= 2.088 af
Primary = 6.03 cfs @ 12.19 hrs, Volume= 2.088 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 5L: Post Development Runoff



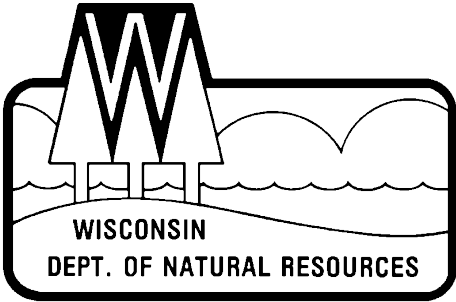
Appendix 6

USLE Map & Calculations



Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin



WDNR Version 2.0 (06-29-2017)

YEAR 1

Developer: Kwik Trip, Inc.

Project: Kwik Trip #631

Date: 10/09/24

County: Washington

Version 1.0

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground	04/01/25	06/01/25	16.4%	120	Sandy Loam	0.28	3.4%	400	0.59	1.00	3.2	1.043	Silt Fence	2.0
Bare Ground	06/01/25	08/01/25	43.1%	120	Sandy Loam	0.28	4.5%	295	0.81	1.00	11.7	0.956	Sediment Basin	2.2
Seed with Mulch or Er	08/01/25	10/31/25	33.4%	120	Sandy Loam	0.28	5.0%	80	0.48	0.10	0.5	0.906	Silt Fence	0.3
End	10/31/25	----	----	----	-----	----			----	-----	----	0.000		0.0
		----	----	----	-----	----			----	-----	----	0.000		0.0
		----	----	----	-----	----			----	-----	----	0.000		0.0
TOTAL											15.5		TOTAL	4.6
													% Reduction Required	NONE

Notes:
See Help Page for further descriptions of variables and items in drop-down boxes.
The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.
For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

Recommended Permanent Seeding Dates:
4/15-6/1 and 8/1-8/21 Turf, introduced grasses and legumes
Thaw-6/30 Native Grasses, forbs, and legumes

Designed By:	GSW
Date	10/8/2024

Appendix 7

Storm Water Management Maintenance Schedule and Procedures

**Post Construction Long Term Maintenance Plan for
Kwik Trip # 631 Village of Germantown, Washington County, Wisconsin**

System Description:

The property is located at STH 167 & Maple Road, Village of Germantown, Washington County, Wisconsin. The site consists of a series of storm water conveyances through sheet draining, piping, and a wet detention pond.

System Maintenance**Catch Basin / Manhole and Oil Skimmer**

- The facility structures should be checked annually for signs of damage and cracks to top slab, walls and bottom.
- The structure's cover or grate should be fully in place.
- Metal grates shall be free of debris and vegetation.
- Grates should be checked for missing or broken members of the grate.
- Ladder should be inspected for missing rungs, wall attachments, rust, cracks or sharp edges.
- The structure bottom and pipes should be clear of vegetation and debris.
- Remove sediment when it is within 12 inches from the lowest pipe invert or 50% of sump depth.

Trench Drain

- The facility structures should be checked annually for signs of damage and cracks to top grate.
- The structure's bottom and walls to be checked for cracks.
- Metal grates shall be free of debris and vegetation.
- Grates should be checked for missing or broken members of the grate.
- The structure bottom and pipes should be clear of sediment and debris.

OUR MISSION

To serve our customers and community more effectively than anyone else by treating our customers, co-workers and suppliers as we, personally, would like to be treated, and to make a difference in someone's life.

Outflow Control Structures

- The facility structures should be checked annually for signs of damage and cracks to top slab, walls and bottom.
- The structure's cover or grate should be fully in place.
- Metal grates shall be free of debris and vegetation.
- Grates should be checked for missing or broken members of the grate.
- Ladder should be inspected for missing rungs, wall attachments, misalignment, rust, cracks or sharp edges.
- Removed debris from interior trash rack (if present).
- The connection of the interior steel plates to the structure should be inspected for cracks.
- The structure bottom and pipes should be clear of vegetation and debris.
- Remove sediment when it within 12 inches from the lowest pipe invert.

Apron and Riprap

- The facility structures should be checked annually for signs of damage to apron.
- The end of pipe, apron and surrounding riprap should be free of debris.
- Inspect for erosion around apron.
- Inspect for erosion and sediment accumulation within the riprap.

Storm Detention Areas/Infiltration Ponds

- The facility should be checked annually for signs of erosion or bare soil along the perimeter, inlet pipe or swale, side slopes and at the inlet/outlet devices.
- Remove any dead or invasive vegetation and trees.
- Keep all areas free of debris.
- Remove sediment by hand with a flat-bottomed shovel during dry periods. Remove only the amount of sediment necessary to restore hydraulic capacity, leaving as much of the vegetation in place as possible. Reseed or unplug any damaged turf or vegetation.

****NOTE**

- Some sediment may contain contaminants that requires special disposal. If there is uncertainty about what the sediment contains or it is known to contain contaminants, the Department of Natural Resources should be consulted through Kwik Trip's Environmental Department. Generally, special attention or sampling should be given to sediment accumulated in fueling areas, large parking lots, or other areas where pollutants (other than clean soil) are suspected to accumulate and be conveyed by storm runoff.
- Some sediment collected may be free of pollutants and can be used as fill material. It is vital that this material not be placed in any way that will promote or allow re-suspension in the storm runoff.

Tasks	Street Clean	Underground Storm Sewer System	Catch Basin	Apron/ Rip Rap	Wet Pond	Outflow Control Structure	Schedule
Inspection		X	X	X	X	X	Annual
Clean Streets	X						Annual
Mowing					X		0-2 times per year
System Clean Out		X				X	1 Time per 4 years



Kwik Trip Stormwater BMP Inspection

Store #: 1732

Number of BMPs: 15

Location (City, State): City of Green Bay, Brown County, WI

Weather: _____

Inspection date: _____

Inspection By: _____

Inspection Results:

<u>Maintenance Required:</u>	YES	NO	N/A	<u>Maintenance Required:</u>	YES	NO	N/A
Infall Erosion	☐	☐	☐	Trench Drain	☐	☐	☐
Outfall Erosion	☐	☐	☐	Oil/Debris Separator	☐	☐	☐
Outlet Structure	☐	☐	☐	Catch Basin/Manhole	☐	☐	☐
Depth/Sediment Accumulation	☐	☐	☐	Apron	☐	☐	☐
Infiltration Pond	☐	☐	☐	Rip Rap	☐	☐	☐
Other Structure	☐	☐	☐	Other			

Attach pictures on last page

Communication Notes

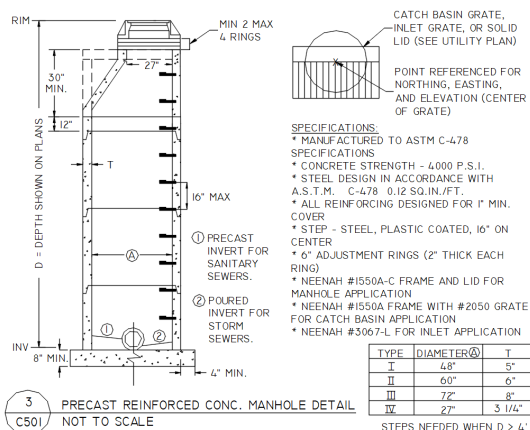
Phone ☐ Fax ☐ Written ☐ E-Mail ☐ Personal Discussion ☐

To whom: _____

Comments: _____

Structure

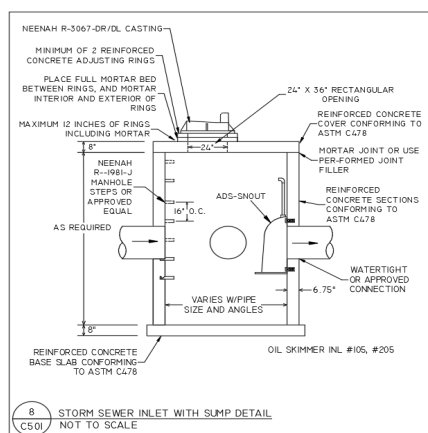
Quantity: 09



- Casting
- Adjustment rings and mortar
- Concrete cover and mortar
- Steps (if present), wall and floor
- Pipes and seals
- If sediment is present, use a rod to determine depth and if it needs to be removed

Oil Skimmer

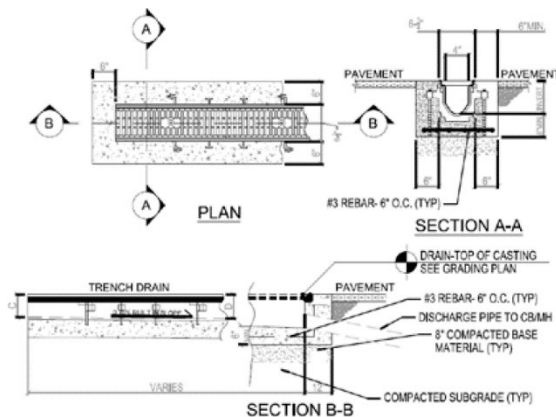
Quantity: 02



- Casting
- Adjustment rings and mortar
- Concrete cover and mortar
- Steps (if present), wall and floor
- Pipes, snout and seals
- If sediment is present, use a rod to determine depth and if it needs to be removed

Trench Drain

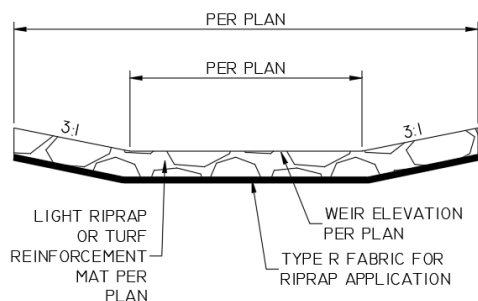
Quantity: 01



- Casting
- Surrounding concrete / pavement
- Trench condition
- Pipes and seals
- Sediment depth

Outfall / Overflow

Quantity: 1



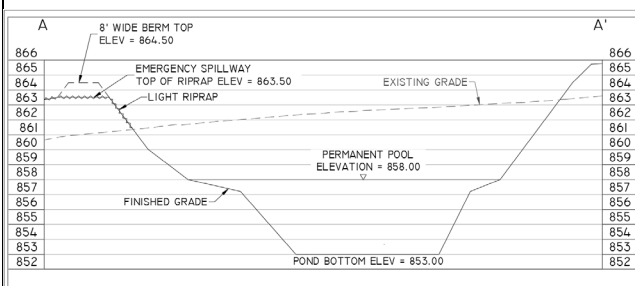
6 OVERFLOW WEIR DETAIL
SP6 NOT TO SCALE

NOTE:
WEIRS TO USE
PERMANENT TURF
REINFORCEMENT MAT

- Sides
- Sediment depth
- Signs of erosion

Wet Detention Pond

Quantity: 1

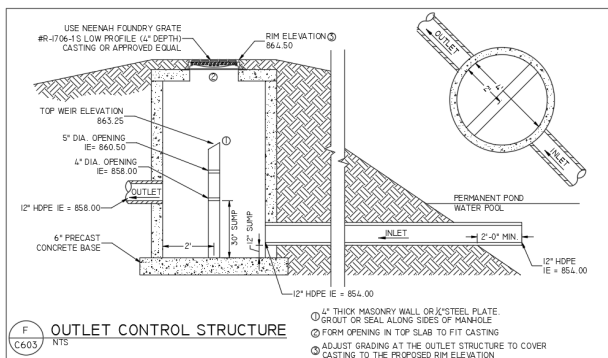


1 WET DETENTION POND CROSS SECTION DETAIL
C600 NTS

- Vegetation (weeds or bare spots)
- Sediment depth / odor
- Erosion
- Emergency spill way
- Side Slopes

Outlet Control Structure

Quantity: 1



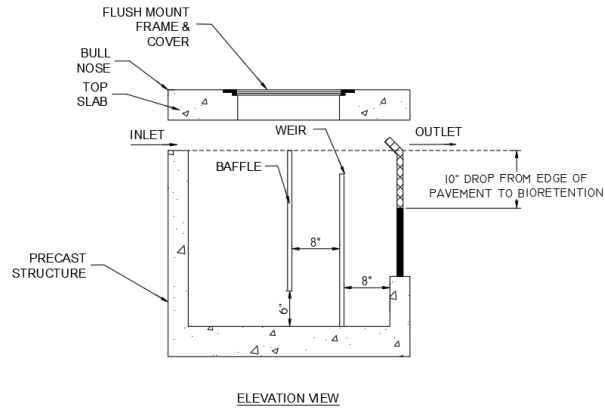
F OUTLET CONTROL STRUCTURE
C603 NTS

① 4" THICK MASONRY WALL OR 1/2" STEEL PLATE
② GROUT OR SEAL ALONG SIDES OF MANHOLE
③ FORM OPENING IN TOP SLAB TO FIT CASTING
④ ADJUST GRADING AT THE OUTLET STRUCTURE TO COVER CASTING TO THE PROPOSED RIM ELEVATION

- Vegetation (weeds or bare spots)
- Sediment depth / odor
- Erosion
- Emergency spill way
- Side Slopes

PRETX 30x30 Unit

Quantity: 1



- Casting
- Adjustment rings and mortar
- Concrete cover and mortar
- Steps (if present), wall and floor
- Pipes, snout and seals
- If sediment is present, use a rod to determine depth and if it needs to be removed



Photos Before Maintenance	Photos After Maintenance (if required)
Structure:	
Structure:	

Structure:	
Structure:	
Structure:	

Structure:

Wellhead Protection CUP Checklist

Application Document Ref & Page #
--

17.40.11 CONDITIONAL USES.

- | | |
|--|--|
| <p>(3) All requests for a conditional use permit shall be submitted in writing to the Germantown Village Planning and Zoning Department, and shall include all of the following:</p> <ul style="list-style-type: none"> (a) A site plan map with all building and structure footprints, driveways, sidewalks, parking lots, stormwater management structures, groundwater monitoring wells, and 2-foot ground elevation contours. (b) A business plan and/or other documentation which describes in detail the use, activities, and structures proposed. (c) An environmental assessment report prepared by a licensed environmental engineer which details the risk to, and potential impact of, the proposed use, activities, and structures on groundwater quality. In the event of a substitution or relocation of a pre-existing use under this section, the report shall address the ways that the substituted or relocated use will reduce the risk to groundwater compared to the pre-existing use. (d) An operational safety plan, which details the operational procedures for material processes and containment, best management practices, stormwater runoff management, and groundwater monitoring. (e) A contingency plan which addresses in detail the actions that will be taken should a contamination event caused by the proposed use, activities, or structures occur. <p>(4) All applicants submitting a request for a conditional use permit shall reimburse the Village for all consultant fees and expenses and technical review committee expenses associated with this review, plus administrative costs and processing fees.</p> <p>(5) All conditional use permits granted shall be subject to conditions that will include environmental and safety monitoring determined necessary to afford adequate protection of the public water supply. These conditions shall include all of the following:</p> <ul style="list-style-type: none"> (a) Provide current copies of all federal, state and local facility operation approval or certificates and on-going environmental monitoring results to the Village. (b) Establish environmental or safety structures/monitoring to include an operational safety plan, material processes and containment, operations monitoring, best management practices, stormwater runoff management, and groundwater monitoring. (c) Replace equipment or expand in a manner that improves the environmental and safety technologies in existence. (d) Prepare, file and maintain a current contingency plan which details the response to any emergency which occurs at the facility, including notifying municipal, county and state officials. Provide a current copy to the Village. <p>(6) The Germantown Village Board shall decide upon a request for a conditional use permit only after full consideration of the recommendations made by the Germantown Groundwater Technical Review Committee. Any conditions above and beyond those specified in conditional uses, subsection (5) herein that are recommended by the Germantown Groundwater Technical Review Committee may be applied to the granting of the conditional use permit.</p> | <p><u>Section 3.0 (Page 3) & Pages 12-15</u></p> <p><u>Section 4.0 (Page 3)</u></p> <p><u>Section 5.0 (Pages 4-5)</u></p> <p><u>Section 6.0 (Pages 5-6) & stand-alone Spill Response Plan</u></p> <p><u>Section 7.0 (Page 6) & stand-alone Spill Response Plan</u></p> <p><u>Section 8.0 (Page 6, last paragraph)</u></p> <p><u>Section 6.0 (Pages 5-6) & stand-alone Spill Response Plan</u></p> <p><u>Section 5.0 (Pages 4-5)</u></p> <p><u>Section 7.0 (Page 6) & stand-alone Spill Response Plan</u></p> |
|--|--|

**17.40.12 PROVISIONS AND REQUIREMENTS FOR PRE-EXISTING USES OR FACILITIES
REQUIRING A CONDITIONAL USE PERMIT OR LISTED AS A PROHIBITED USE.**

**Application
Document Ref
& Page #**

(4) Conditional Use Permit Requirements. At a minimum, conditional use permits granted by the Village pursuant to subsection 17.40.12(3) above shall include conditions that require the following:

(a) to the extent feasible, based upon scientific, engineering and economic factors, all site, building and other improvements shall be repaired, rebuilt, expanded, relocated, or substituted using best management practices, designs and technologies which are state of the art, such that they diminish the potential for wellhead contamination; and

Section 5.0 (Pages 4-5) &
Section 8.0 (Page 6, first
paragraph)

(b) to the extent feasible, based upon scientific, engineering, and economic factors, the replacement, substitution, or augmentation of equipment and machinery and the installation thereof shall utilize state of the art equipment and machinery which diminishes potential for wellhead contamination; and

Section 5.0 (Pages 4-5) &
Section 8.0 (Page 6, first
paragraph)

(c) The relocation of pre-existing uses or facilities is allowed provided all the following are met:

(i) The pre-existing use or facility is relocated within the same Groundwater Protection Overlay District;

Section 8.0 (Page 6, second
paragraph & Page 11)

(ii) The new location meets all applicable separation distance requirements set forth under subsection 17.40.09;

Section 8.0 (Page 6, second
paragraph & Page 11)

(iii) The use or facility can obtain all applicable Federal, State and Local approvals and permits;

Section 8.0 (Page 6, last
paragraph)

(iv) The owner of the property or current site from which the pre-existing use or facility is relocating from records a deed restriction against the property that prohibits future uses and/or facilities that require a conditional use permit under subsection 17.40.11 or are listed as a prohibited use in subsection 17.40.11; and

Section 8.0 (Page 7, first
paragraph)

(v) The owner of the property or operator of the pre-existing use or facility being relocated causes the property and all structures, equipment, and systems located thereon to be altered and/or restored to a physical condition that can be reasonably expect to not cause groundwater contamination, including but not limited to the removal of storage tanks, pipes, and systems that previously contained or utilized hazardous, flammable, or other liquids or materials that had the potential to contaminate the Village's groundwater resources. Such alteration and restoration shall meet all applicable Federal, State, and Local agency requirements (e.g. Wisconsin's Cleanup Rules and Laws).

Section 8.0 (Page 7,
second paragraph)



Environmental

PHONE 608-793-6283

FAX 608-781-8960

EMAIL environmental@kwiktrip.com

1626 Oak St., P.O. Box 2107
La Crosse, WI 54602

www.kwiktrip.com

Conditional Use Permit Request Wellhead Protection Proposed Kwik Trip #631 Relocation N112W18741 Mequon Rd. Germantown, WI 53022

Date: October 11, 2024

1.0 Introduction

This request is intended to accompany our submittal to the Village of Germantown for the requested conditional use permit (CUP) application for our proposed project located at N112W18741 Mequon Rd. This proposed location is within a current wellhead protection area within the Village, so a CUP is required.

1.1 Site Location and Legal Description

The subject property is located in a part of the NW ¼ of the NW ¼ of Section 28 and the NE ¼ of the NE ¼ of Section 29, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin. The subject property consists of 1 parcel of land totaling approximately 4.37 acres located on the western side of the Village of Germantown. Specifically, the subject property is at N112W18741 Mequon Rd, Germantown, WI 53022. A Site Location Map is included as Figure 1.

1.2 Site Description

The subject property is located in an area of residential and commercial properties adjacent to a business park in the western portion of the Village of Germantown. The subject property consists of a two-story commercial bank property. There is a concrete parking lot connecting to public roads in two locations with the rest of the land being undeveloped green space. An Aerial Map is included as Figure 2.

1.3 Physical Setting

The subject property is located in an area of Washington County that is typified by glacial outwash sediments consisting of unsorted mixtures of clay, sand, gravel, and boulders. Beneath the sediments,

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sedimentary bedrock units, predominantly limestone/dolomite underlined by sandstone and shale is found in the area.

Based on a review of USGS topographical maps of the area, the vicinity surrounding the subject property is relatively flat, with rolling hills, and with low lying areas with associated wetland/rivers. The property and STH 167 rides along an elevated flute of land that slopes off to the northwest and southeast. The subject property slopes off towards the Menomonee River a 1/3 of a mile to the southeast.

Washington County is characterized by two groundwater systems: a shallow “water-table” system, within the glacial deposits, and a deeper sandstone aquifer. The general direction of shallow groundwater flow in the vicinity of the subject property was not determined in the field as part of the recent Phase I or II Environmental Site Assessments. However, the depth to ground water based on adjoining site information is approximately 10 feet below grade. Shallow groundwater flow in glacial deposits typically mimics surface water drainage. Anticipated groundwater flow direction at the subject property is likely to occur towards southeast, towards the Menomonee River.

1.4 Wellhead Protection Area

The current Kwik Trip located at W188N10963 Maple Road is right on the outskirts of the 5-year travel time for the Graef Wellhead Protection area. Village Well #3 is located approximately 4,800 feet northeast and Village Wells #5 and #7 are located approximately 1.2 miles east/northeast from the site. The proposed new Kwik Trip parcel is diagonally across HWY 167 from the current location, which is still within the same Graef Wellhead Protection area. This new location is approximately 3,800 feet from Well #3 and 1.1 miles from Wells #5 and #7. See attached Wellhead Protection Area Map (Figure 3) for reference.

2.0 Conditional Use Permit Request

As specified in the Village of Germantown Wellhead Protection ordinance, all requests for a conditional use permit shall be submitted in writing to the Germantown Village Planning and Zoning Department, and shall include all of the following:

- (a) A site plan map with all building and structure footprints, driveways, sidewalks, parking lots, stormwater management structures, groundwater monitoring wells, and 2-foot ground elevation contours.
- (b) A business plan and/or other documentation which describes in detail the use, activities, and structures proposed.
- (c) An environmental assessment report prepared by a licensed environmental engineer which details the risk to, and potential impact of, the proposed use, activities, and structures on groundwater quality. In the event of a substitution or relocation of a pre-existing use under this section, the report shall address the ways that the substituted or relocated use will reduce the risk to groundwater compared to the pre-existing use.
- (d) An operational safety plan, which details the operational procedures for material processes and containment, best management practices, stormwater runoff management, and groundwater monitoring.
- (e) A contingency plan which addresses in detail the actions that will be taken should a contamination event caused by the proposed use, activities, or structures occur.

The following sections provide further details on these items.

3.0 Site Plan Map

Refer to attached civil plan sheet C100 (Site Keynote Plan) for the proposed Kwik Trip building footprint, driveways, sidewalks, parking lot area.

Plan sheet C200 (Grade Plan) details the proposed final ground elevation contours.

Plan sheet C300 (Storm Sewer Plan) details the stormwater management structures. Of note are the oil skimmer structures located prior to the on-site stormwater pond. Two of these structures are proposed since there are two outfall locations into the stormwater pond. These structures are designed to capture any surface fuel spills that enter the stormwater system. It acts as an oil-water separator and is able to contain approximately 100-200 gallons of product. Refer to attached plan sheet C501 (Site Plan Details) for a schematic of the storm sewer inlet with sump detail.

An on-site stormwater pond is also proposed for the new development. The pond not only provides suspended solids removal prior to discharge, but it also provides another location to detect and recover a large fuel spill. Having an onsite stormwater pond is more protective for the environment versus if the stormwater system is connected directly to the village mains underground where surface spills and discharges can go unnoticed.

Please note that installation of groundwater monitoring wells are not proposed during development. It is not common practice to install monitoring wells solely as a contingency when there has not been any signs of a petroleum release. Refer to later sections that further detail the petroleum system leak prevention and leak detection technologies which are state of the art, such that they diminish the potential for wellhead contamination.

4.0 Business Plan

Kwik Trip, Inc. is proposing the construction of a 11,120 square-foot convenience store with attached 1-bay carwash and an attached dumpster enclosure with fueling canopy and separate diesel fuel canopy. The proposed method of operation for this development will be consistent with that for our existing convenience stores within the area. The requested hours of operation will be 24 hours for all uses. The type of products that will be sold will be similar to that of our existing stores: gasoline, in line diesel, E-85, Unleaded 88, groceries, bakery and dairy, hot and cold food and beverages, tobacco products, off-sale alcohol products, lotto, convenience store merchandise, ice, and propane. The outside merchandising of products is being requested next to the store (ice and propane) and miscellaneous merchandising under the gas canopy. The proposed store is projected to have between 28-35 full and part time employees, with 2-8 on staff at any given time.

5.0 Environmental Assessment Report

Several improvements are planned for the new Kwik Trip fueling system to reduce the risk to groundwater compared to the pre-existing use. Kwik Trip in some areas exceeds state and federal guidelines for what is required to operate a retail gas operation with respect to monitoring fuel systems. Kwik Trip also has a documented spill response plan in place to handle any situation that may arise. Below are additional details on the primary environmental protection improvements.

5.1 Double-Wall Flexible Fuel Piping

The proposed new fuel system will utilize double-wall flexible fuel piping from the underground storage tanks to the fuel dispensers. Double-wall design allows for a means to contain a release from the primary pipe if it were to occur. If product would happen to be released from the primary pipe, it would travel through the outer secondary pipe and be contained in a liquid tight sump. Sumps are located at the submersible head on each tank and under each product dispenser. These sumps are designed to contain and alert the operator of a release. All sumps are also equipped with a liquid sensor, which alerts our coworkers and the 24/7 Kwik Trip Operation Support Center immediately of any liquid that has entered the sump. Kwik Trip has an in-house fuel service technician team who would then receive a work order to investigate the alarms and make immediate corrective action, if needed.

Current Kwik Trip fuel piping is double-wall fiberglass piping that was installed in 1995. Fiberglass piping comes in straight sections that have to be joined together by fittings to create bends or for long sections. These fittings and joints are much more susceptible to have leaks that can contribute to groundwater contamination versus the new flexible fuel piping systems. Existing joints are not located within a containment, whereas the new flexible piping would have no joints outside a containment structure. Additionally, double-wall fiberglass piping is susceptible on getting moisture or water within the annular space that can undergo freeze-thaw cycles and result in cracking. This is especially true in the Wisconsin climate.

Below is summary of advantages that new proposed flexible fuel piping has versus old fiberglass piping:

- Eliminates the need to hand-build joints in the field;
- No cutting, fitting and welding of underground fittings;
- Termination points can be contained safely inside containment sumps, no need to bury joints underground;
- Reduction in or elimination of potential leak points;
- No need to use adhesives or glue kits to connect pipe to fittings;
- Flexible piping can withstand freeze-thaw if moisture gets in annular space, and;
- Can be installed in any type of weather conditions.

5.2 Line Leak Detection

Not only will the new underground fuel lines be flexible double-wall piping, but they will also be equipped with electronic line leak detection (ELLD). This ELLD system is installed in the pipe run for each product dispensed and is designed to shut down flow to the dispenser if there is a pressure loss in the product pipe. An alert is then sent to the Kwik Trip 24-hr Operation Support team to send out a fuel technician to evaluate if there is an issue.

Current Kwik Trip fuel lines are not equipped with this type of precise leak detection.

5.3 Double-Wall Fiberglass Tanks

The proposed new underground fuel tanks work on the same premise as the double-wall piping. Tanks will be constructed as a double-wall fiberglass tank. There is a membrane between the two layers that allows for monitoring of liquid in the event it is released from the primary tank. This membrane space is called the interstitial space. Within the interstitial space is a riser pipe that allows the space to be continuously monitored with a liquid sensor. These sensors also alert our coworkers and the 24/7 Kwik Trip Operation Support Center immediately of any liquid that has entered this interstitial space. Kwik Trip has an in-house fuel service technician team who would then receive a work order to investigate the alarms and make immediate corrective action if needed. If product is found within the interstitial space, the tank will be shut down and fuel removed until a repair can be made.

Current Kwik Trip underground fuel tanks are double-wall fiberglass tanks installed in 1995. This older style fiberglass tank is not equipped with interstitial monitoring for leak detection. Rather, their means for leak detection is statistical inventory reconciliation (SIR). That leak detection method relies on comparing fuel sales to how much fuel is left in the underground tank to determine if there is unaccounted for fuel that may be due to a leak. This leak detection does not provide the immediate notification that the new proposed interstitial monitoring would provide. Leaks detected from SIR monitoring also comes after the fact and can be several days or even weeks after a leak has started.

5.4 Double-Wall Spill Buckets

The proposed new fuel system will also utilize double-wall spill buckets to further enhance spill prevention. A spill bucket is in place where the fuel delivery tanker connects to the underground fuel tank for filling. If any product is inadvertently spilled while connecting or disconnecting to the tank, it is captured by this spill bucket. These spill buckets can hold approximately 5-gallons of product. The spill bucket also has a secondary wall, or secondary containment, as another layer of protection if there is a crack in the primary spill bucket. There is a visual gauge that shows if any fuel is accumulating in this secondary containment.

Current Kwik Trip fills only have a single-wall spill bucket, which are much more susceptible to have leaks that go unnoticed.

6.0 Operational Safety Plan

Many items discussed in the above Environmental Assessment Report section are also applicable to this section on operational safety. The proposed new fuel system will have secondary containment present by utilizing double-wall flexible fuel piping, double-wall fiberglass tanks, and double-wall spill buckets. Additionally, liquid-tight containment sumps will be present beneath each fuel dispenser and where fuel piping comes out of the underground fuel tank (called the submersible turbine pump sump). All containment sumps are also equipped with a liquid sensor, which alerts our coworkers immediately of any liquid that has entered the sump.

Spill response best management practices are further outlined within the Spill Response Plan in the following Contingency Plan section.

Stormwater runoff management is previously discussed in Site Plan Map section. A highlight of that section are inclusion of an oil-skimmer structure that is capable of capturing a fuel spill prior to leaving the Kwik Trip property. Additionally, an on-site stormwater pond will be present to provide another location to detect and recover a large fuel spill.

As previously mentioned in the Site Plan Map section, installation of groundwater monitoring wells are not proposed during development. It is not common practice to install monitoring wells solely as a contingency when there has not been any signs of a petroleum release.

7.0 Contingency Plan

Kwik Trip has an established Spill Response Plan outlining how fuel spill situations are handled. The plan is included as a separate stand-alone document. Information contained in the plan describes response actions, identifies the chain of command, gives information on spill reporting requirements, and lists the companies and phone numbers of the people that can respond to a spill.

This spill response plan has proven to be effective over the years from a tanker accident down to a small spill. Kwik Trip has an internal call center (called Operation Support Center) that is staffed 24 hours a day, 365 days a year, to take calls from retail stores in the event of a spill. If a call comes in from a store, operations support staff gathers information about the spill, then they can determine the severity of the situation and contact the appropriate people or teams to respond. We have 24/7 on-call spill response vendors set up in all geographic locations that Kwik Trip has stores.

All Kwik Trip store locations are also equipped with the basic spill response material. Absorbent material packaged in 25 pound bags are kept at store level and can be ordered from our warehouse. Each store also has a 55 gallon drum for containerizing the absorbent material after the clean-up. A separate company is then contracted to pick up and properly disposed of the used absorbent material.

All Kwik Trip retail co-workers are also Class C certified, which means they have been training in basic understanding of gas equipment and operation, tank monitors and alarms, and spill response.

8.0 Conclusion

Based on information provided in this document, the proposed Kwik Trip relocation project will reduce the risk to groundwater compared to the pre-existing store location. The new location will utilize state of the art equipment to diminish the potential for wellhead contamination.

The pre-existing facility is also being relocated within the same Groundwater Protection Overlay District (Graef Wellhead Protection Area). It's being relocated approximately 1,000 feet northeast of the existing location. This new location is approximately 3,800 feet from Village of Germantown Well #3 and 1.1 miles from Wells #5 and #7, which also meets all separation distance requirements as set forth under subsection 17.40.09 of the Village of Germantown Wellhead Protection ordinance.

Prior to commencing operation, Kwik trip will obtain all applicable Federal, State, and Local approvals and permits to operate a retail fuel station/convenience store.

Once the new Kwik Trip location development is complete, the pre-existing store location will file a deed restriction against the property that prohibits future uses and/or facilities that require a conditional use permit under subsection 17.40.11 or are listed as prohibited use in subsection 17.40.11 of the Village of Germantown Wellhead Protection ordinance.

Lastly, once the new Kwik Trip is complete, the pre-existing location will have all fuel equipment removed to prevent the potential for any future groundwater contamination. This includes removal of the underground storage tanks and piping.

Please contact Kevin Nestingen at 608.793.6464 or knestingen@kwiktrip.com if you have questions or require further information on this Conditional Use Permit request.

Sincerely,

KWIK TRIP, INC.



Kevin D. Nestingen, PE
Environmental Compliance Manager
Wisconsin PE License #44284-6

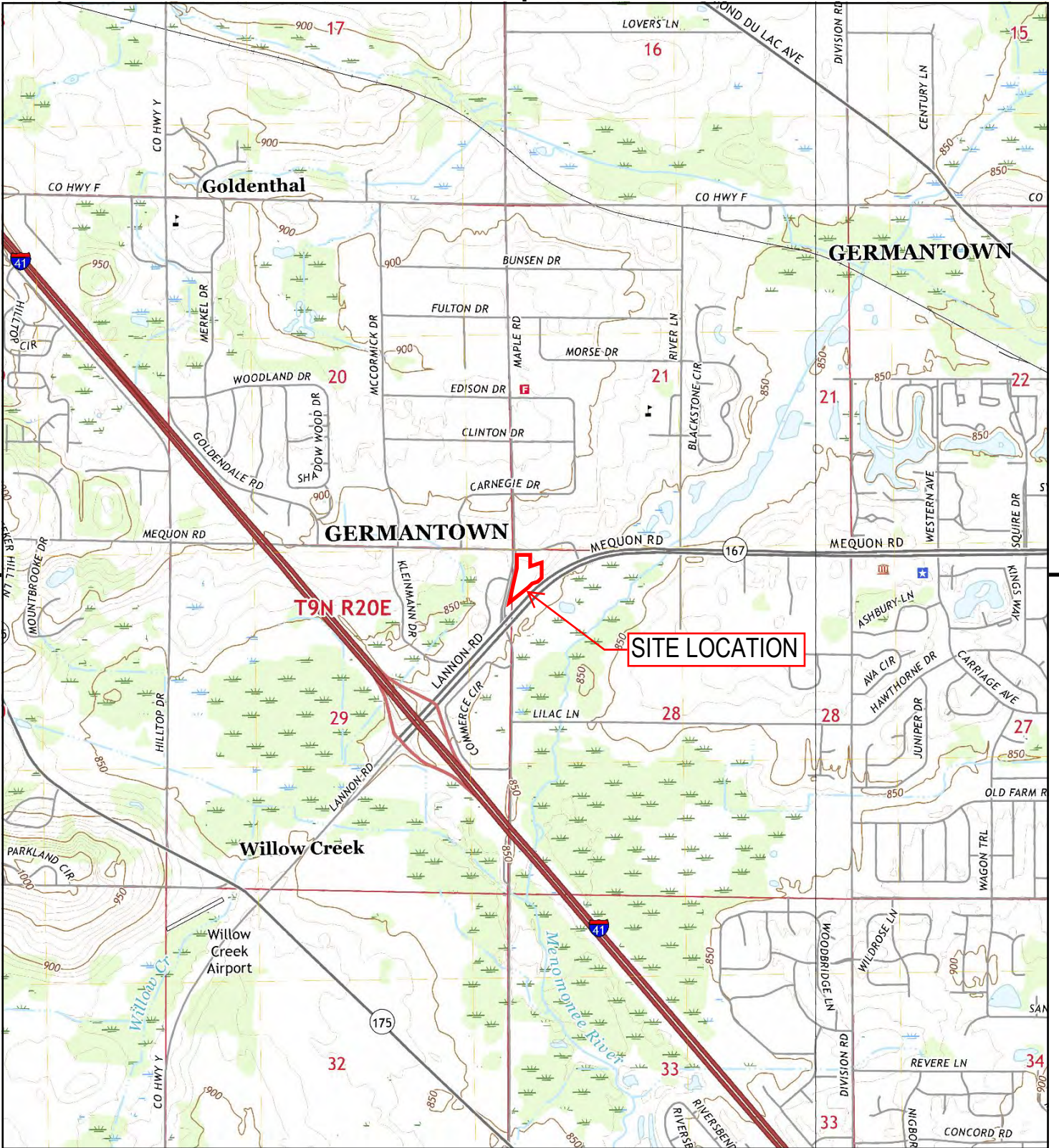


Attachments:

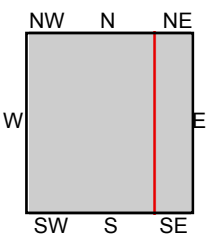
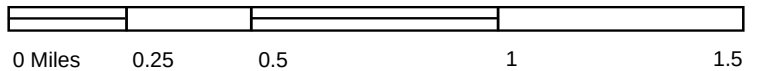
Figures

Spill Response Plan (stand-alone document)

Figures



This report includes information from the following map sheet(s).



TP, Sussex, 2022, 7.5-minute
SE, Menomonee Falls, 2022, 7.5-minute

FIGURE 1 - SITE LOCATION MAP
PROPOSED KWIK TRIP #631 RELOCATION
N112 W18741 MEQUON ROAD
GERMANTOWN, WISCONSIN





INQUIRY #: 7646882.8

YEAR: 2020



= 500'

**FIGURE 2 - 2020 AERIAL MAP
PROPOSED KWIK TRIP #631 RELOCATION
N112 W18741 MEQUON ROAD
GERMANTOWN, WISCONSIN**

FIGURE 3

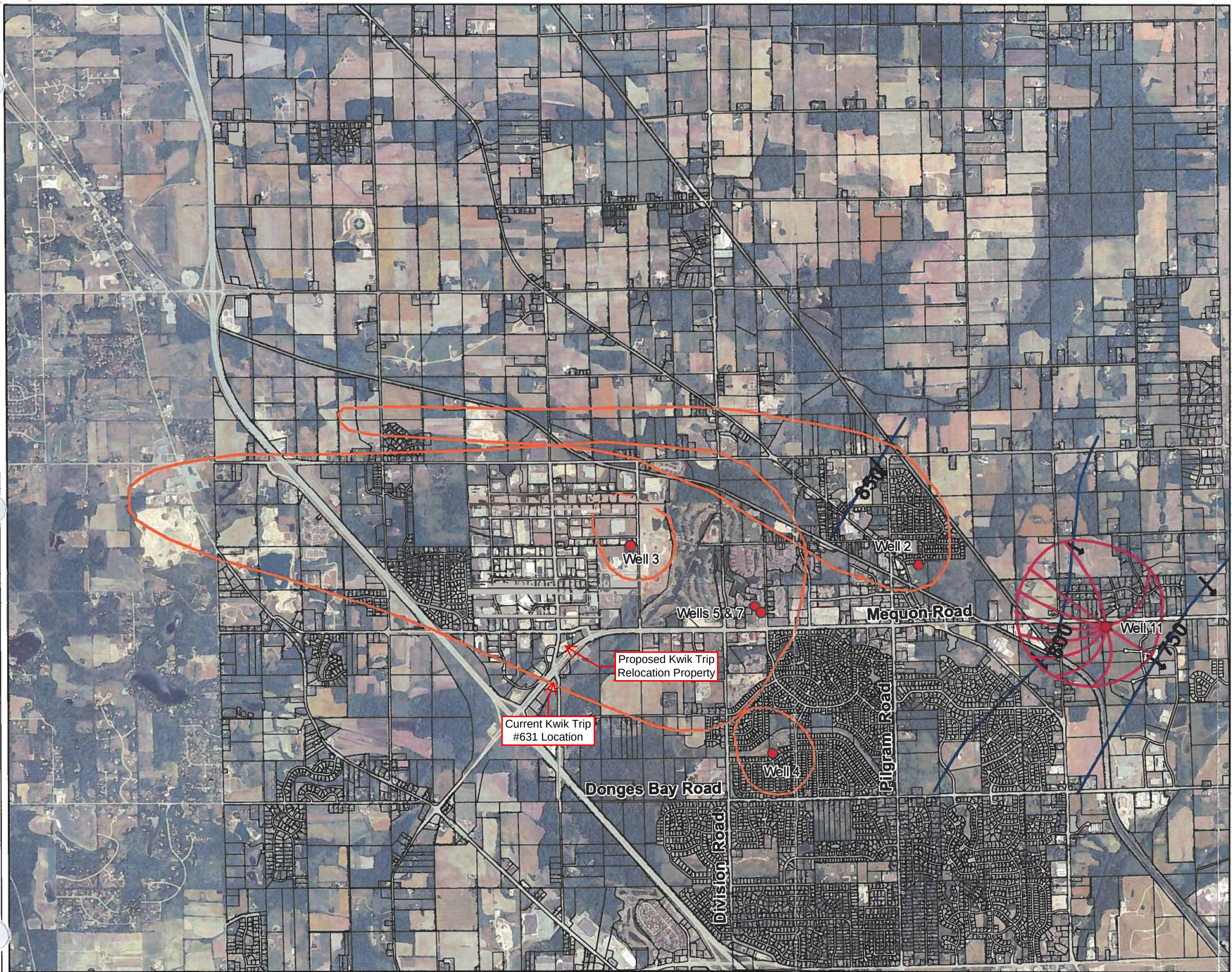
**Wellhead Protection Areas for
Germantown Well No. 11***

**Village of Germantown
Washington County, Wisconsin**

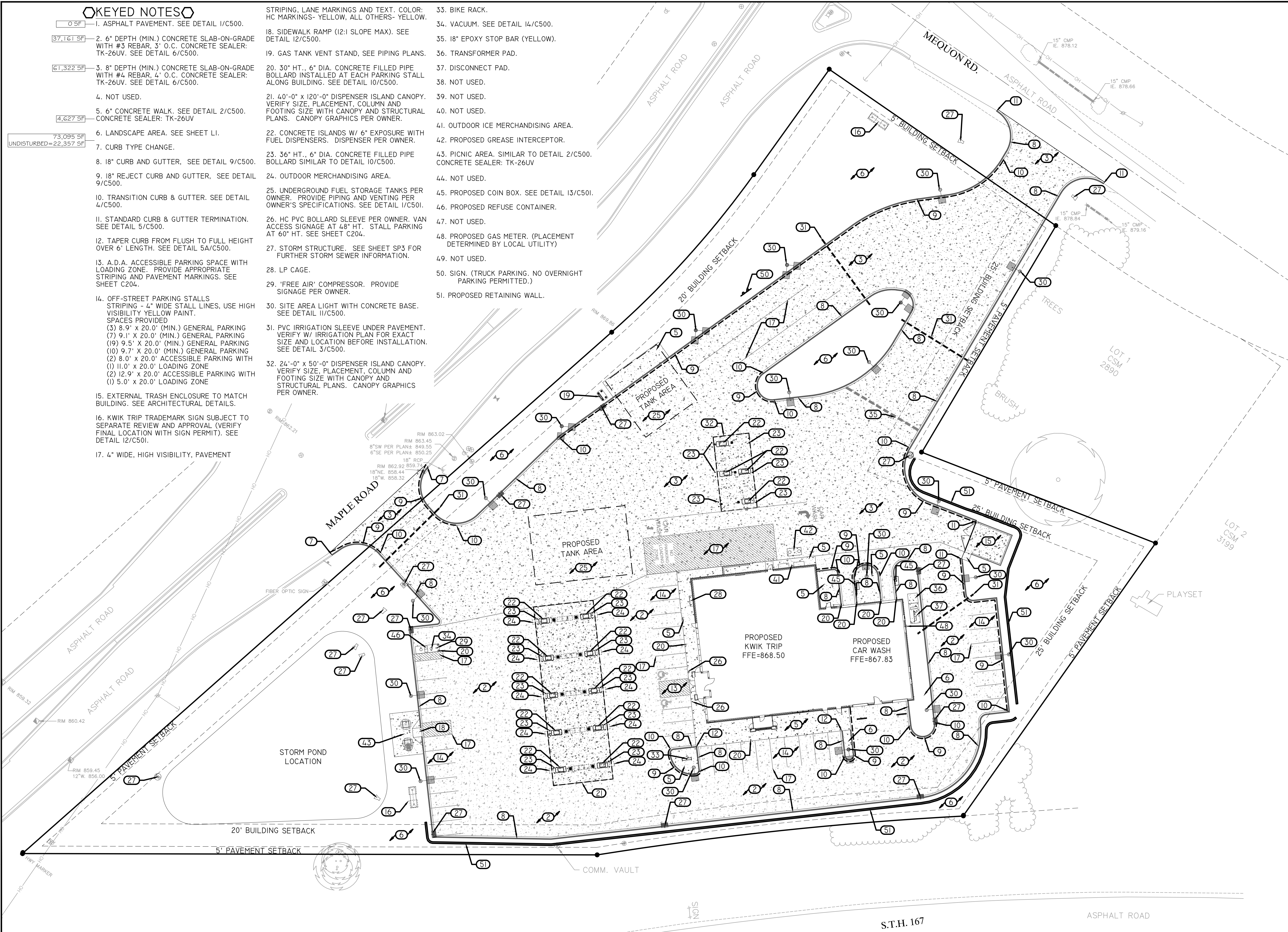
*WHPA for Well 11 delineated by
Ruekert-Mielke, 2010 in Amendment
No. 1 to Wellhead Protection Plan for
Municipal Well Nos. 2, 3, 3, 5, & 7
delineated by Graef, 2008

Legend

- Village Well Sites
- Direction of Groundwater Flow
- 800 Potentiometric Surface Elevation of Sandstone Aquifer (Static Condition)
- Wellhead Protection Area Well 11 (Based on 5-Year TOT)
- Graef Wellhead Protection Areas Wells 2-5 & 7 (Based on 5-Year TOT)



DRAWING FILE: Q:\11700-11799\11757 - Kwik Trip #631 - GERMANTOWN\DRAWING\PLANS\11757-C100-SITE KEYNOTE PLAN.DWG LAYOUT: C100
PLOTTED: OCT 08, 2024 - 3:30PM PLOTTED BY: TODDW



KEYED NOTES

- 0.5' 1. ASPHALT PAVEMENT. SEE DETAIL 1/C500.
- 37,161 5' 2. 6" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #3 REBAR, 3" O.C. CONCRETE SEALER: TK-26UV. SEE DETAIL 6/C500.
- 61,322 5' 3. 8" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #4 REBAR, 4" O.C. CONCRETE SEALER: TK-26UV. SEE DETAIL 6/C500.
4. NOT USED.
- 4,627 5' 5. 6" CONCRETE WALK. SEE DETAIL 2/C500. CONCRETE SEALER: TK-26UV
- 73,095 5' 6. LANDSCAPE AREA. SEE SHEET LI.
- UNDISTURBED=22,357 5' 7. CURB TYPE CHANGE.
8. 18" CURB AND GUTTER. SEE DETAIL 9/C500.
9. 18" REJECT CURB AND GUTTER. SEE DETAIL 9/C500.
10. TRANSITION CURB & GUTTER. SEE DETAIL 4/C500.
11. STANDARD CURB & GUTTER TERMINATION. SEE DETAIL 5/C500.
12. TAPER CURB FROM FLUSH TO FULL HEIGHT OVER 6' LENGTH. SEE DETAIL 5A/C500.
13. A.D.A. ACCESSIBLE PARKING SPACE WITH LOADING ZONE. PROVIDE APPROPRIATE STRIPING AND PAVEMENT MARKINGS. SEE SHEET C204.
14. OFF-STREET PARKING STALLS. STRIPING - 4" WIDE STALL LINES, USE HIGH VISIBILITY YELLOW PAINT. SPACES PROVIDED (3) 8.9' x 20.0' (MIN.) GENERAL PARKING (7) 9.1' x 20.0' (MIN.) GENERAL PARKING (19) 9.5' x 20.0' (MIN.) GENERAL PARKING (10) 9.7' x 20.0' (MIN.) GENERAL PARKING (2) 8.0' x 20.0' ACCESSIBLE PARKING WITH (1) 11.0' x 20.0' LOADING ZONE (2) 12.9' x 20.0' ACCESSIBLE PARKING WITH (1) 5.0' x 20.0' LOADING ZONE
15. EXTERNAL TRASH ENCLOSURE TO MATCH BUILDING. SEE ARCHITECTURAL DETAILS.
16. KWIK TRIP TRADEMARK SIGN SUBJECT TO SEPARATE REVIEW AND APPROVAL (VERIFY FINAL LOCATION WITH SIGN PERMIT). SEE DETAIL 12/C501.
17. 4" WIDE, HIGH VISIBILITY, PAVEMENT

- STRIPING, LANE MARKINGS AND TEXT. COLOR: HC MARKINGS- YELLOW, ALL OTHERS- YELLOW.
18. SIDEWALK RAMP (12:1 SLOPE MAX). SEE DETAIL 12/C500.
19. GAS TANK VENT STAND. SEE PIPING PLANS.
20. 30" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD INSTALLED AT EACH PARKING STALL ALONG BUILDING. SEE DETAIL 10/C500.
21. 40'-0" x 120'-0" DISPENSER ISLAND CANOPY. VERIFY SIZE, PLACEMENT, COLUMN AND FOOTING SIZE WITH CANOPY AND STRUCTURAL PLANS. CANOPY GRAPHICS PER OWNER.
22. CONCRETE ISLANDS W/ 6" EXPOSURE WITH FUEL DISPENSERS. DISPENSER PER OWNER.
23. 36" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD SIMILAR TO DETAIL 10/C500.
24. OUTDOOR MERCHANDISING AREA.
25. UNDERGROUND FUEL STORAGE TANKS PER OWNER. PROVIDE PIPING AND VENTING PER OWNER'S SPECIFICATIONS. SEE DETAIL 1/C501.
26. HC PVC BOLLARD SLEEVE PER OWNER. VAN ACCESS SIGNAGE AT 48" HT. STALL PARKING AT 60" HT. SEE SHEET C204.
27. STORM STRUCTURE. SEE SHEET SP3 FOR FURTHER STORM SEWER INFORMATION.
28. LP CAGE.
29. 'FREE AIR' COMPRESSOR. PROVIDE SIGNAGE PER OWNER.
30. SITE AREA LIGHT WITH CONCRETE BASE. SEE DETAIL 11/C500.
31. PVC IRRIGATION SLEEVE UNDER PAVEMENT. VERIFY W/ IRRIGATION PLAN FOR EXACT SIZE AND LOCATION BEFORE INSTALLATION. SEE DETAIL 3/C500.
32. 24'-0" x 50'-0" DISPENSER ISLAND CANOPY. VERIFY SIZE, PLACEMENT, COLUMN AND FOOTING SIZE WITH CANOPY AND STRUCTURAL PLANS. CANOPY GRAPHICS PER OWNER.
33. BIKE RACK.
34. VACUUM. SEE DETAIL 14/C500.
35. 18" EPOXY STOP BAR (YELLOW).
36. TRANSFORMER PAD.
37. DISCONNECT PAD.
38. NOT USED.
39. NOT USED.
40. NOT USED.
41. OUTDOOR ICE MERCHANDISING AREA.
42. PROPOSED GREASE INTERCEPTOR.
43. PICNIC AREA. SIMILAR TO DETAIL 2/C500. CONCRETE SEALER: TK-26UV
44. NOT USED.
45. PROPOSED COIN BOX. SEE DETAIL 13/C501.
46. PROPOSED REFUSE CONTAINER.
47. NOT USED.
48. PROPOSED GAS METER. (PLACEMENT DETERMINED BY LOCAL UTILITY)
49. NOT USED.
50. SIGN. (TRUCK PARKING. NO OVERNIGHT PARKING PERMITTED.)
51. PROPOSED RETAINING WALL.

Kwik
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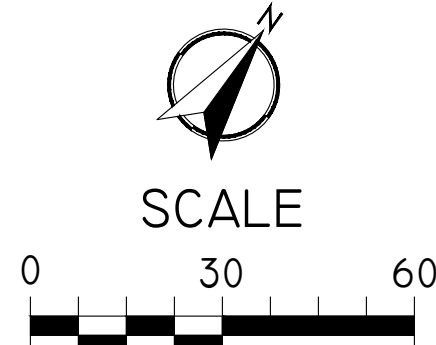
STORES

Kwik
STAR

STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
REI Engineering, Inc.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9784 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



SITE KEYNOTE PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
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DRAWN BY: NAP
SCALE: GRAPHIC
PROJ. NO.: 11757
DATE: 10/09/24 - REVIEW DOCUMENTS
SHEET: C100

NOTE: CONTRACTOR TO OBTAIN RIGHT-OF-WAY EXCAVATION PERMIT PRIOR TO BEGINNING SITE WORK.

CALL DIGGERS HOTLINE @ 1-800-242-8511 AT LEAST 3 WORKING DAYS PRIOR TO EXCAVATING.

CONSTRUCTION NOTE:

COORDINATE WITH OWNER FOR POSSIBLE CONSTRUCTION FENCING AND GATE LOCATIONS AND APPROPRIATE SIGNAGE INSTALLATION.

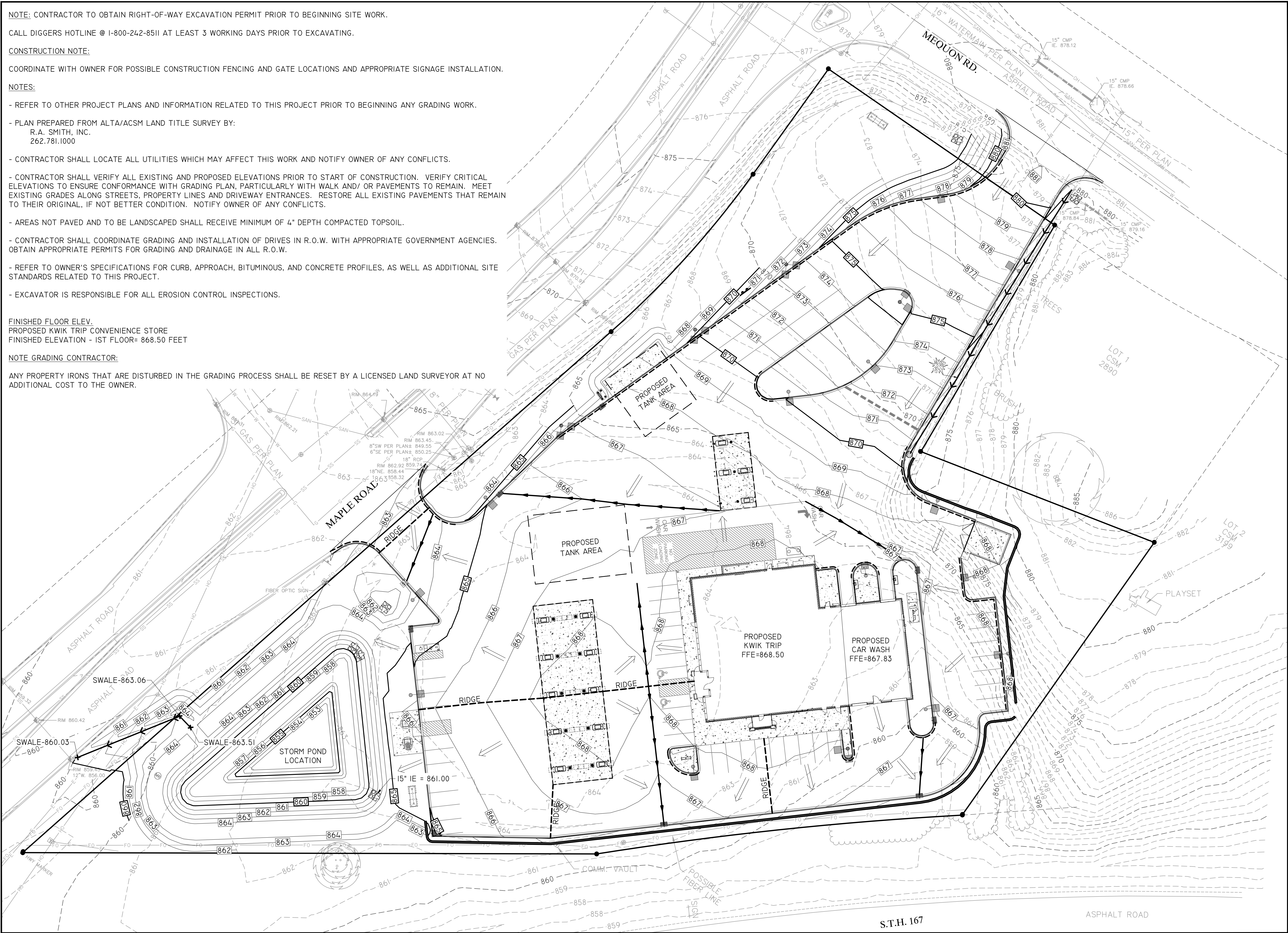
NOTES:

- REFER TO OTHER PROJECT PLANS AND INFORMATION RELATED TO THIS PROJECT PRIOR TO BEGINNING ANY GRADING WORK.
- PLAN PREPARED FROM ALTA/ACSM LAND TITLE SURVEY BY:
R.A. SMITH, INC.
262.781.1000
- CONTRACTOR SHALL LOCATE ALL UTILITIES WHICH MAY AFFECT THIS WORK AND NOTIFY OWNER OF ANY CONFLICTS.
- CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED ELEVATIONS PRIOR TO START OF CONSTRUCTION. VERIFY CRITICAL ELEVATIONS TO ENSURE CONFORMANCE WITH GRADING PLAN, PARTICULARLY WITH WALK AND/ OR PAVEMENTS TO REMAIN. MEET EXISTING GRADES ALONG STREETS, PROPERTY LINES AND DRIVEWAY ENTRANCES. RESTORE ALL EXISTING PAVEMENTS THAT REMAIN TO THEIR ORIGINAL, IF NOT BETTER CONDITION. NOTIFY OWNER OF ANY CONFLICTS.
- AREAS NOT PAVED AND TO BE LANDSCAPED SHALL RECEIVE MINIMUM OF 4" DEPTH COMPACTED TOPSOIL.
- CONTRACTOR SHALL COORDINATE GRADING AND INSTALLATION OF DRIVES IN R.O.W. WITH APPROPRIATE GOVERNMENT AGENCIES. OBTAIN APPROPRIATE PERMITS FOR GRADING AND DRAINAGE IN ALL R.O.W.
- REFER TO OWNER'S SPECIFICATIONS FOR CURB, APPROACH, BITUMINOUS, AND CONCRETE PROFILES, AS WELL AS ADDITIONAL SITE STANDARDS RELATED TO THIS PROJECT.
- EXCAVATOR IS RESPONSIBLE FOR ALL EROSION CONTROL INSPECTIONS.

FINISHED FLOOR ELEV.
PROPOSED KWIK TRIP CONVENIENCE STORE
FINISHED ELEVATION - 1ST FLOOR= 868.50 FEET

NOTE GRADING CONTRACTOR:

ANY PROPERTY IRONS THAT ARE DISTURBED IN THE GRADING PROCESS SHALL BE RESET BY A LICENSED LAND SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.



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TRIP

STORES

Kwik
STAR

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PHONE: 715.675.9784 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



SCALE

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GRADING PLAN

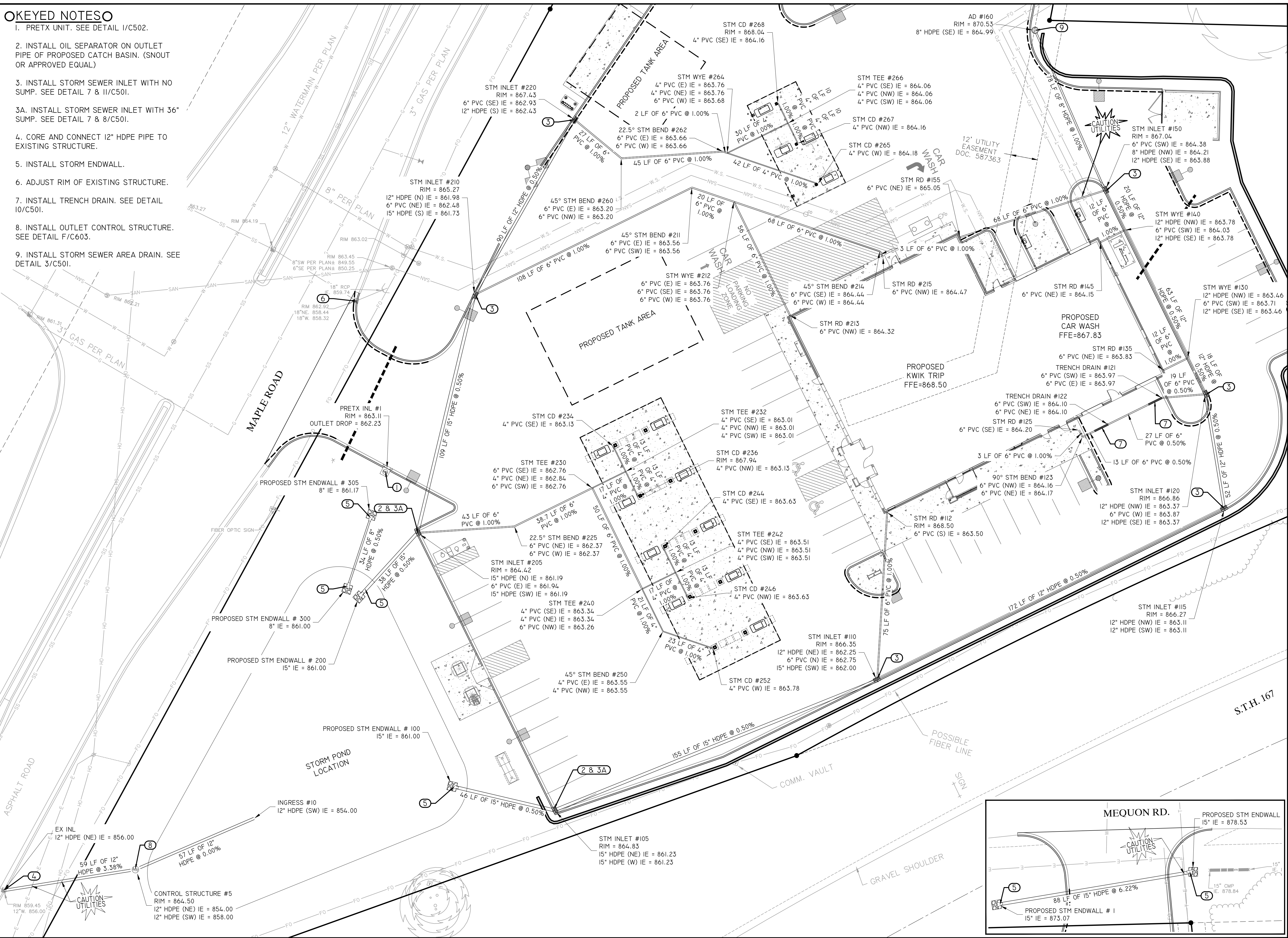
CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

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OKEYED NOTES

1. PRETX UNIT. SEE DETAIL 1/C502.
2. INSTALL OIL SEPARATOR ON OUTLET PIPE OF PROPOSED CATCH BASIN. (SNOUT OR APPROVED EQUAL)
3. INSTALL STORM SEWER INLET WITH NO SUMP. SEE DETAIL 7 & 11/C501.
- 3A. INSTALL STORM SEWER INLET WITH 36" SUMP. SEE DETAIL 7 & 8/C501.
4. CORE AND CONNECT 12" HDPE PIPE TO EXISTING STRUCTURE.
5. INSTALL STORM ENDWALL.
6. ADJUST RIM OF EXISTING STRUCTURE.
7. INSTALL TRENCH DRAIN. SEE DETAIL 10/C501.
8. INSTALL OUTLET CONTROL STRUCTURE. SEE DETAIL F/C603.
9. INSTALL STORM SEWER AREA DRAIN. SEE DETAIL 3/C501.



Kwik Trip

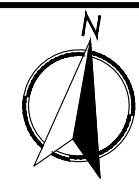
STORES

Kwik Star

STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
REI Engineering, INC.
4080 N. 20TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: 715.675.9784 FAX: 715.675.4060
EMAIL: MAIL@REIENGINEERING.COM



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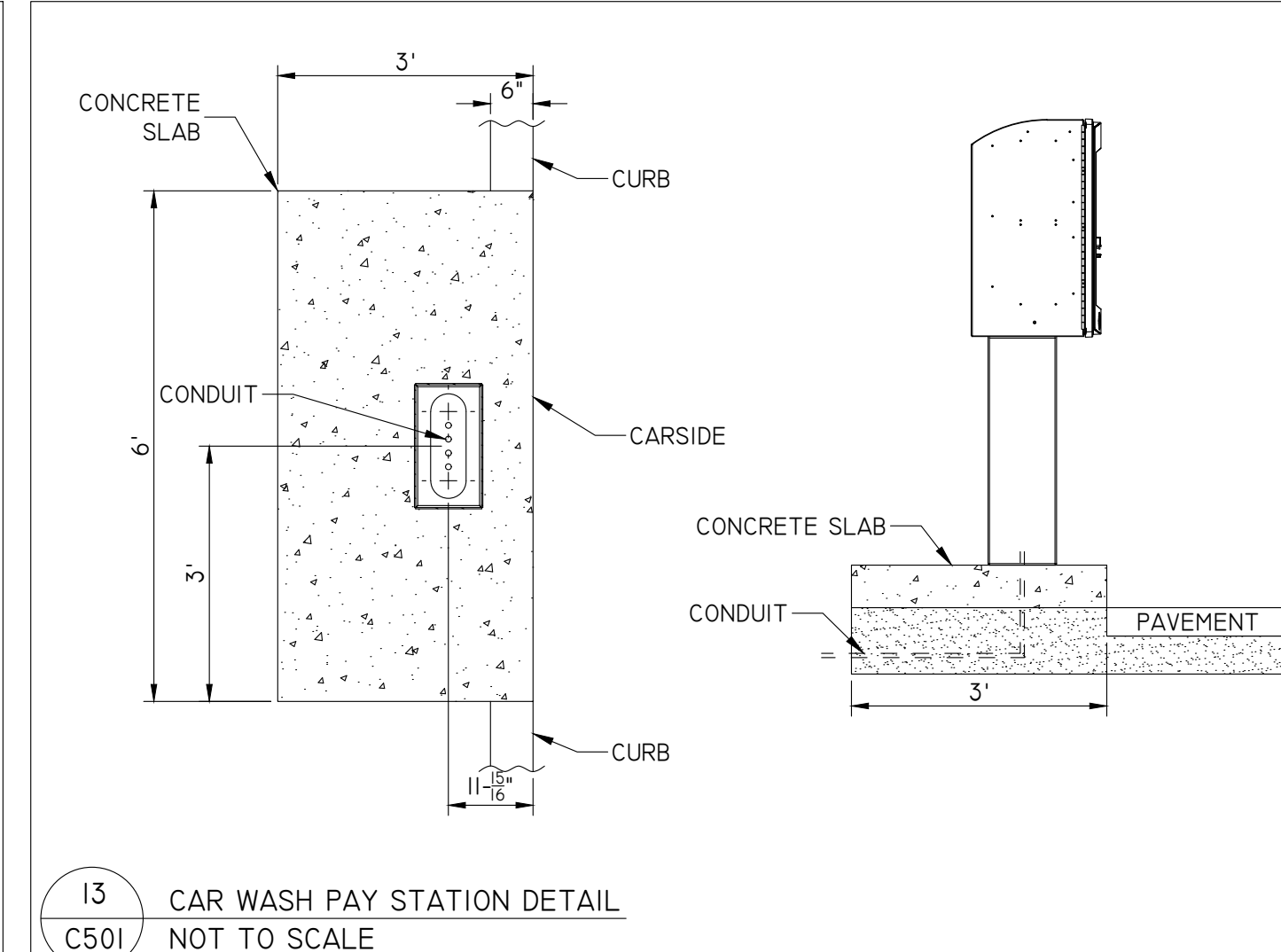
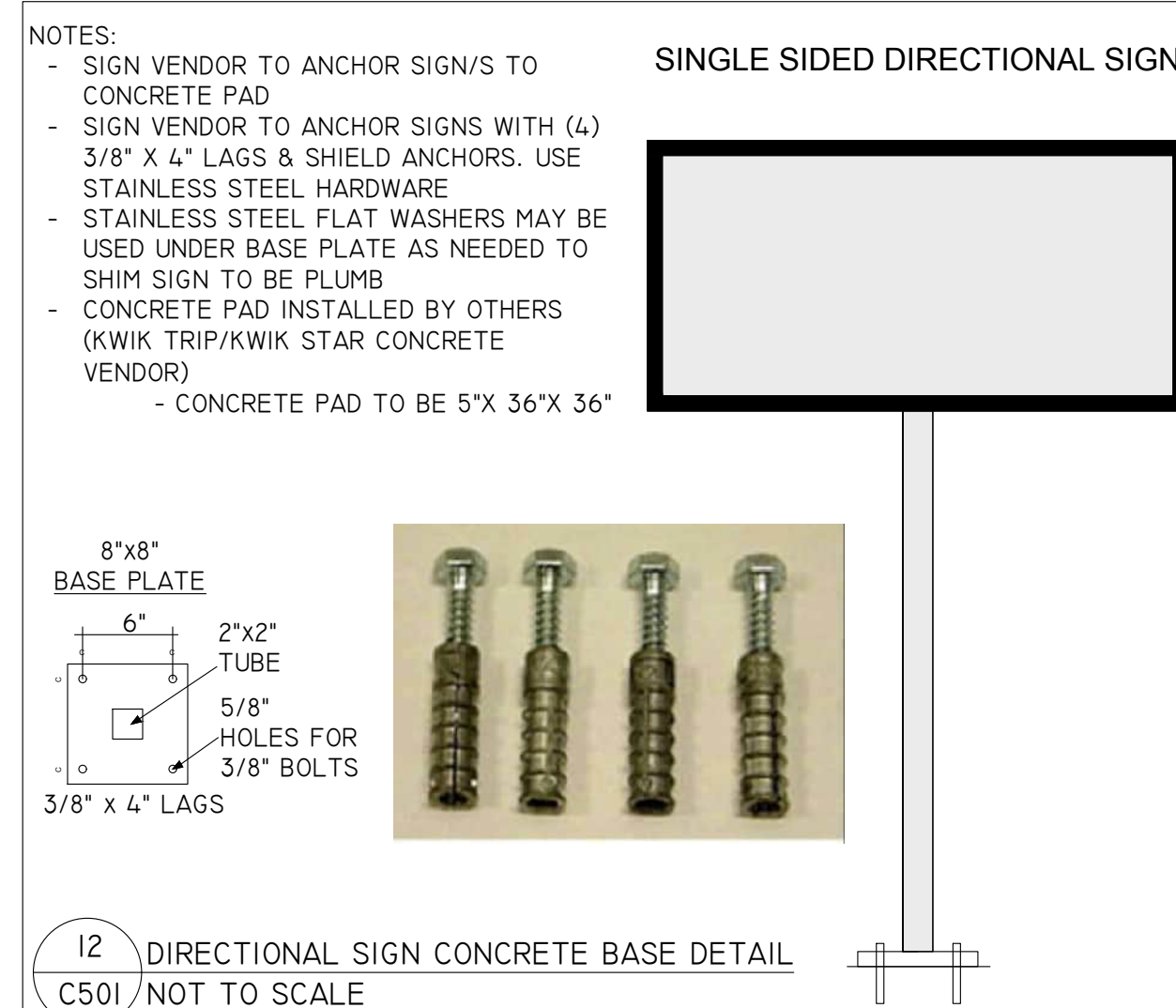
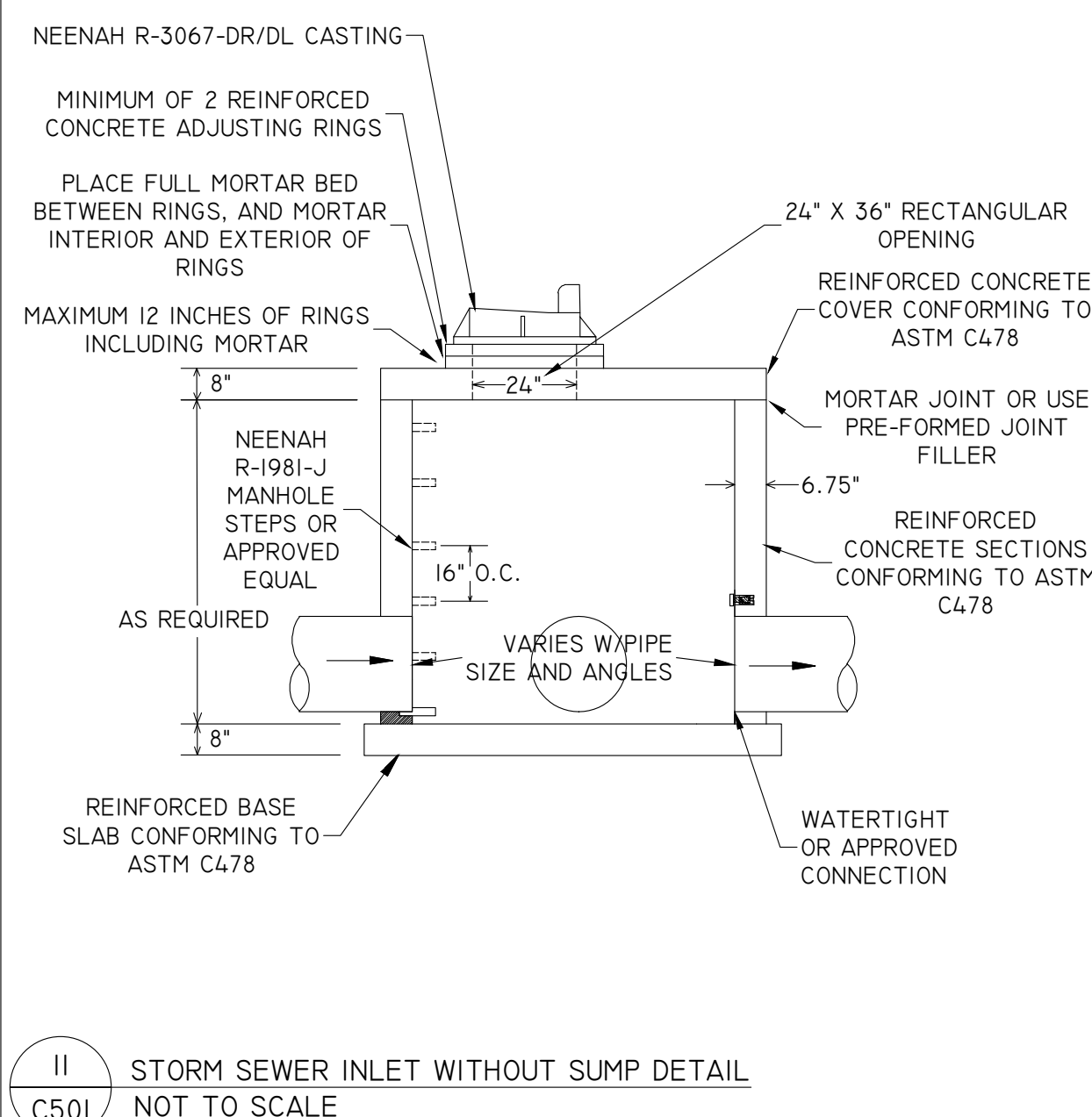
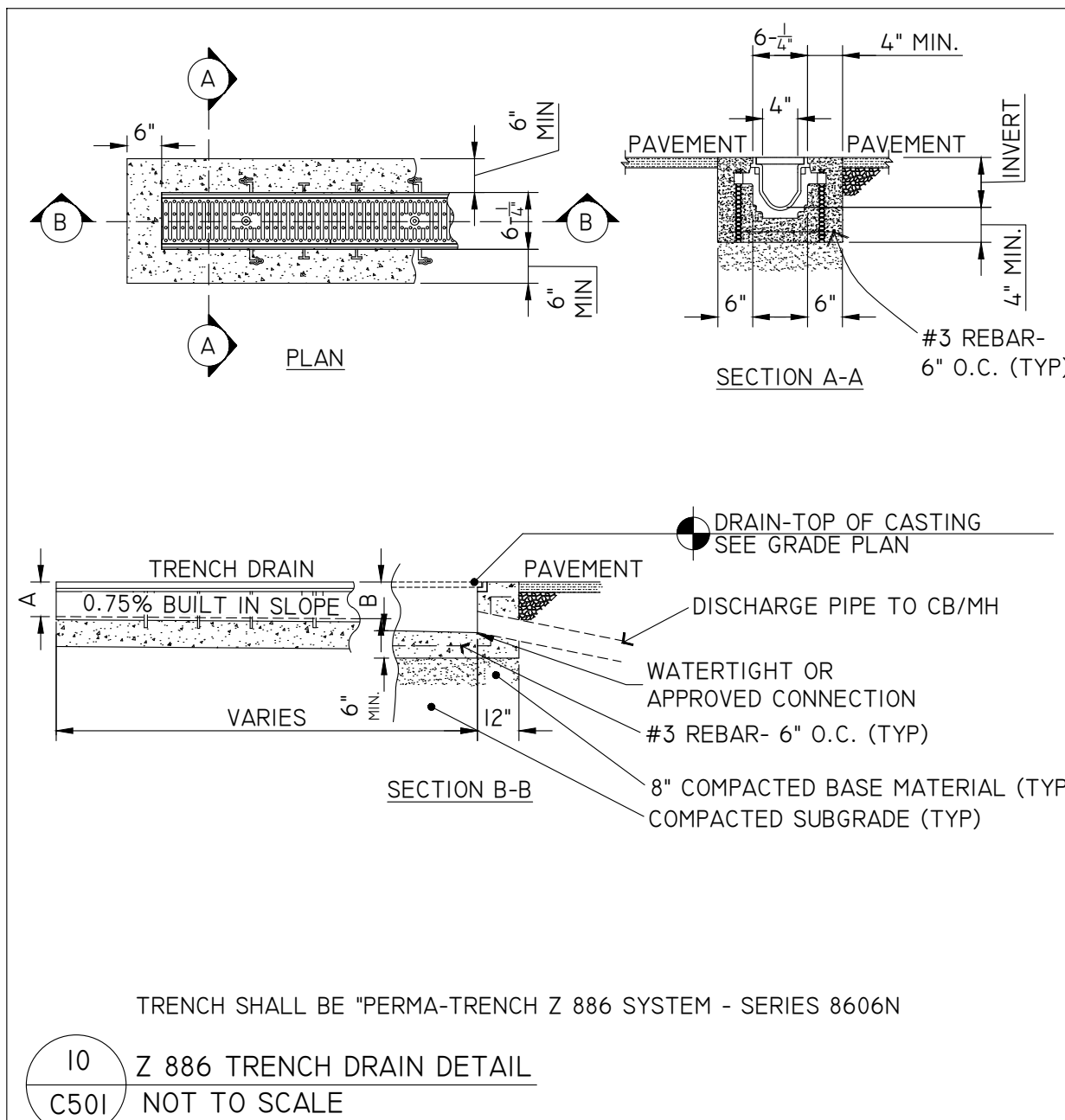
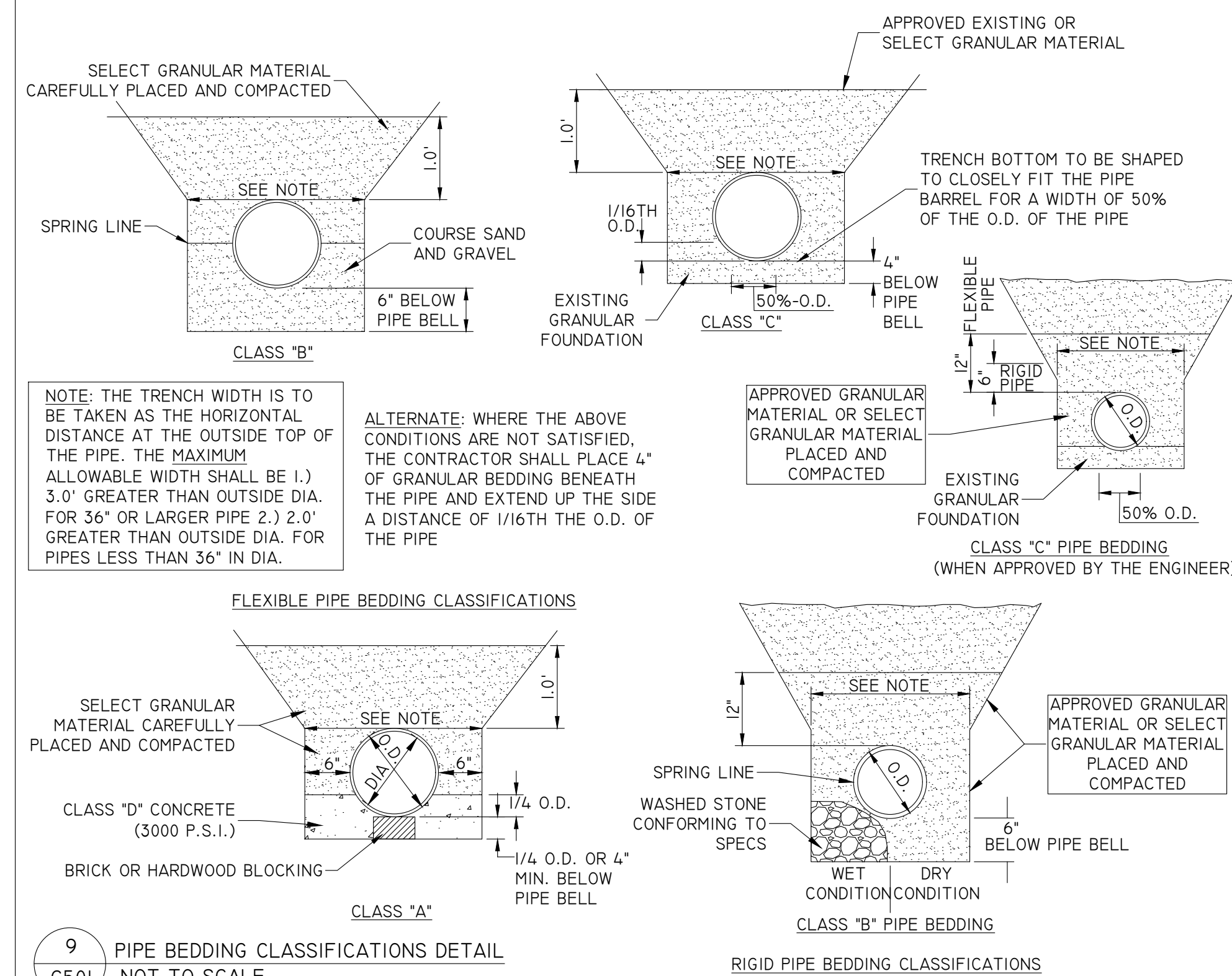
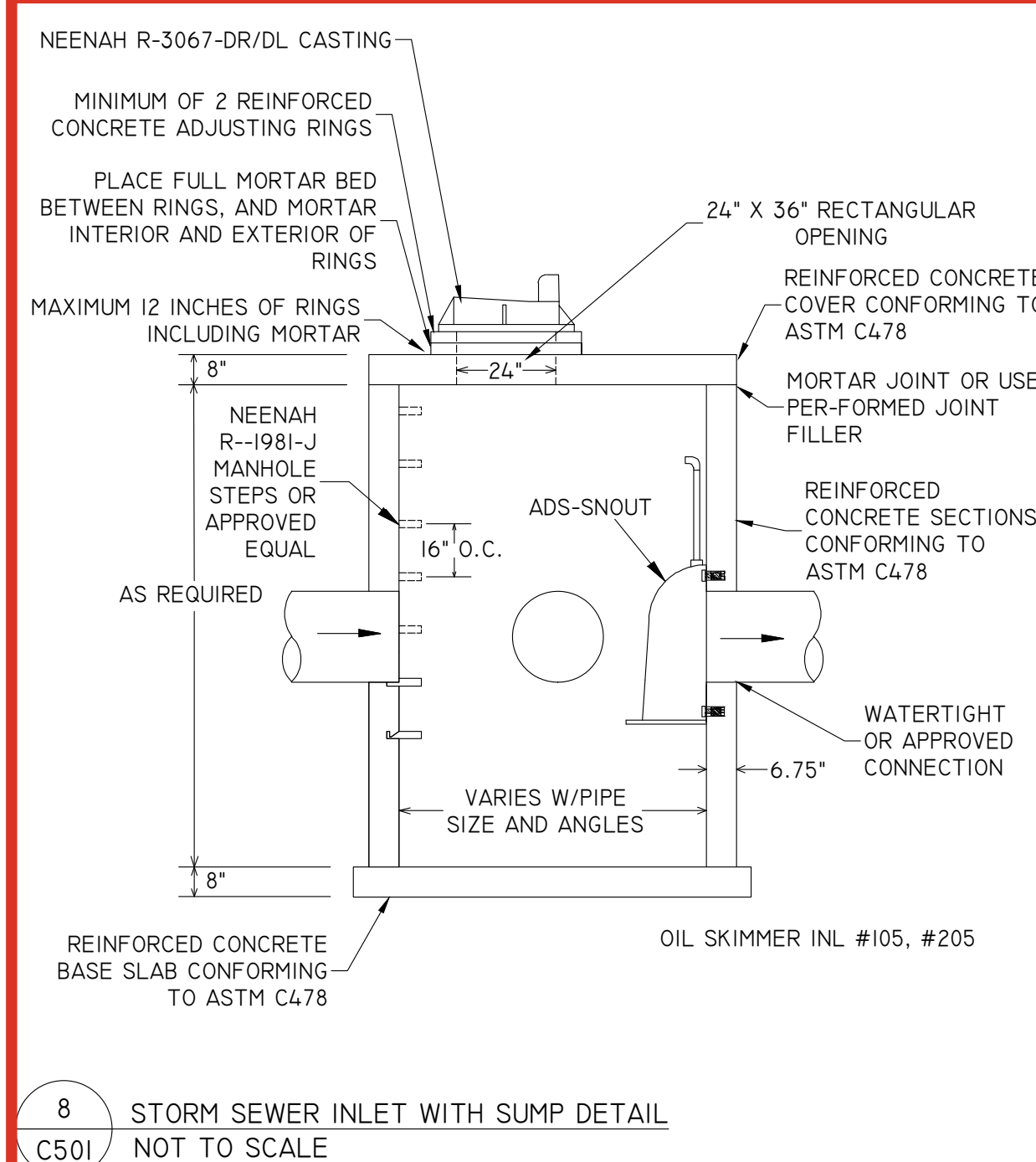
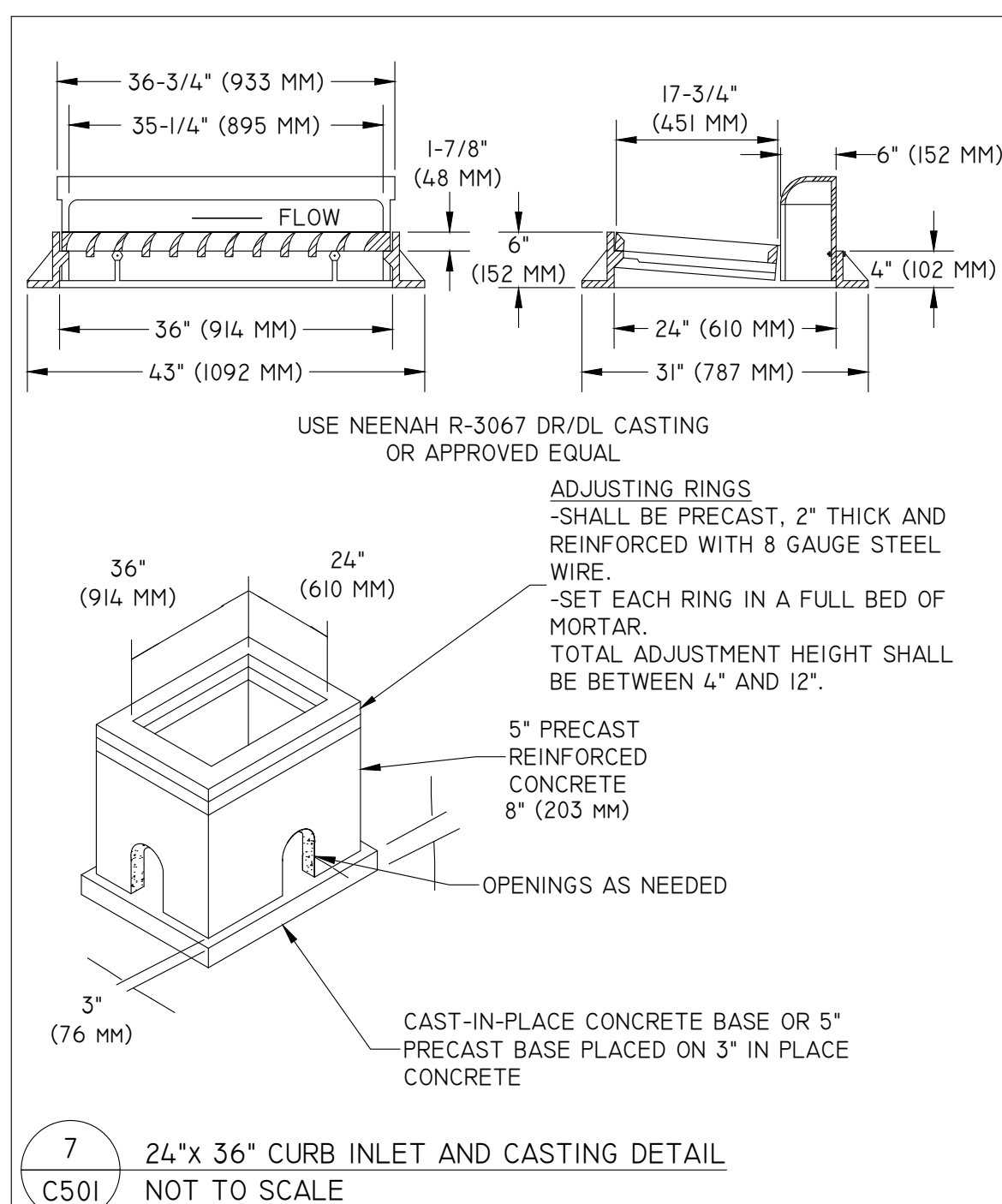
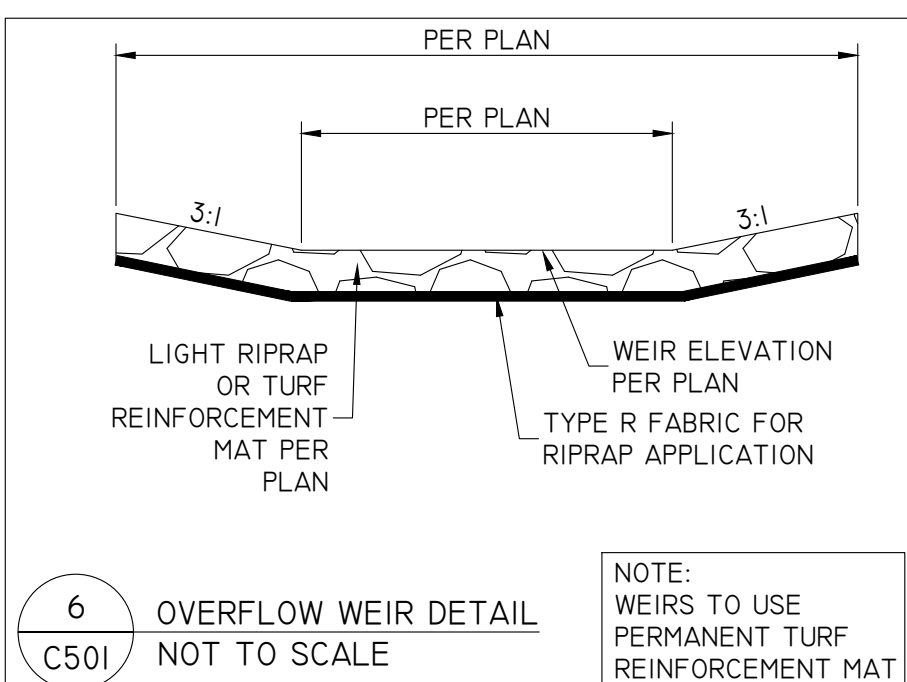
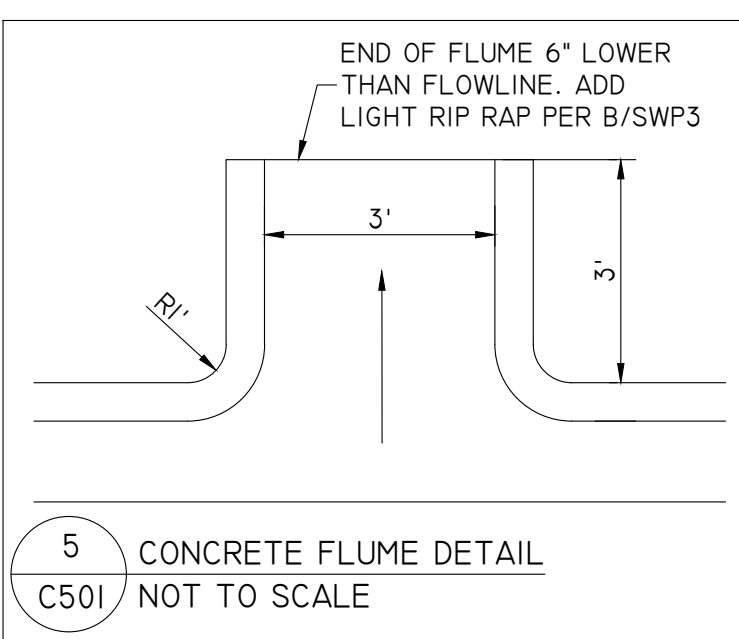
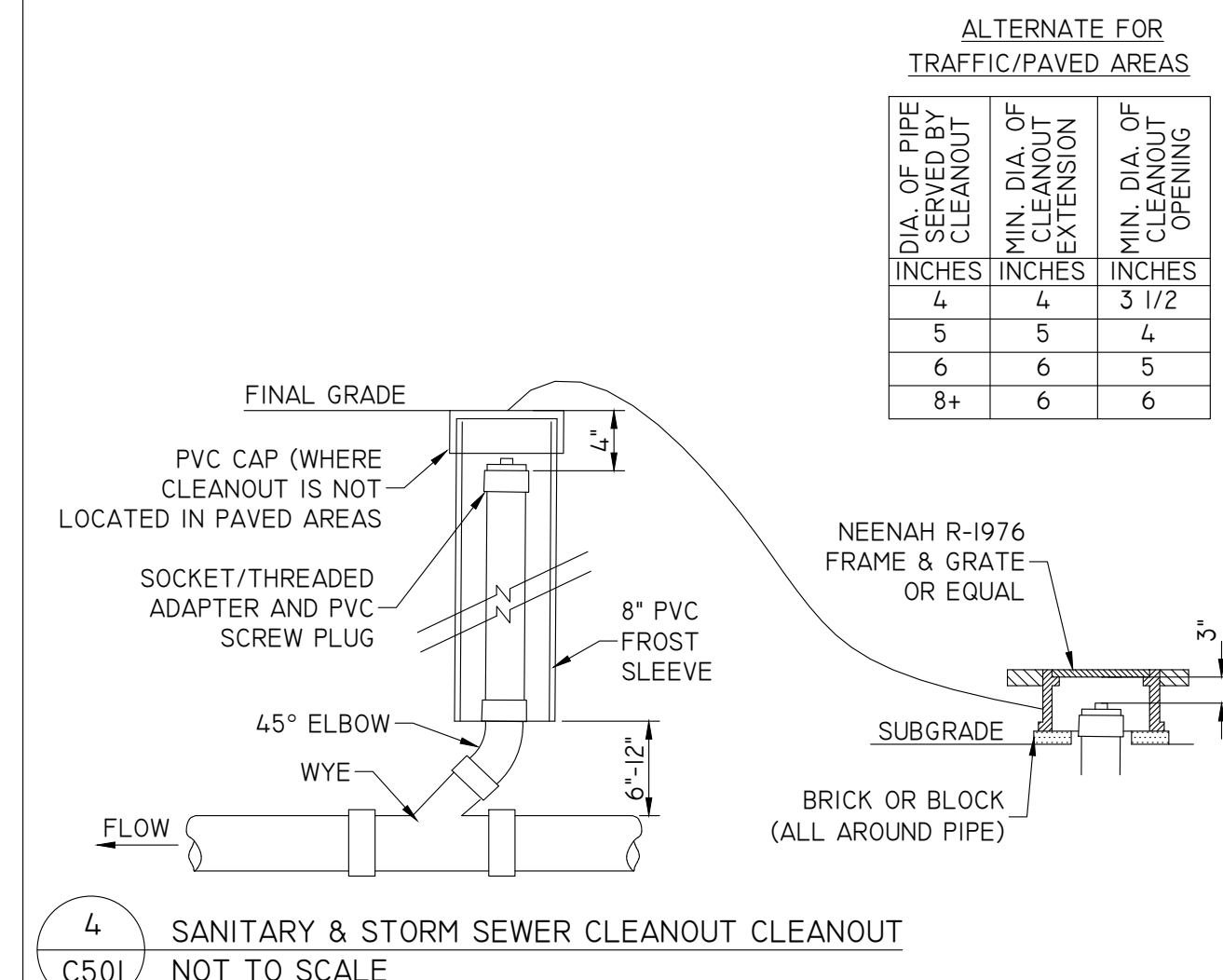
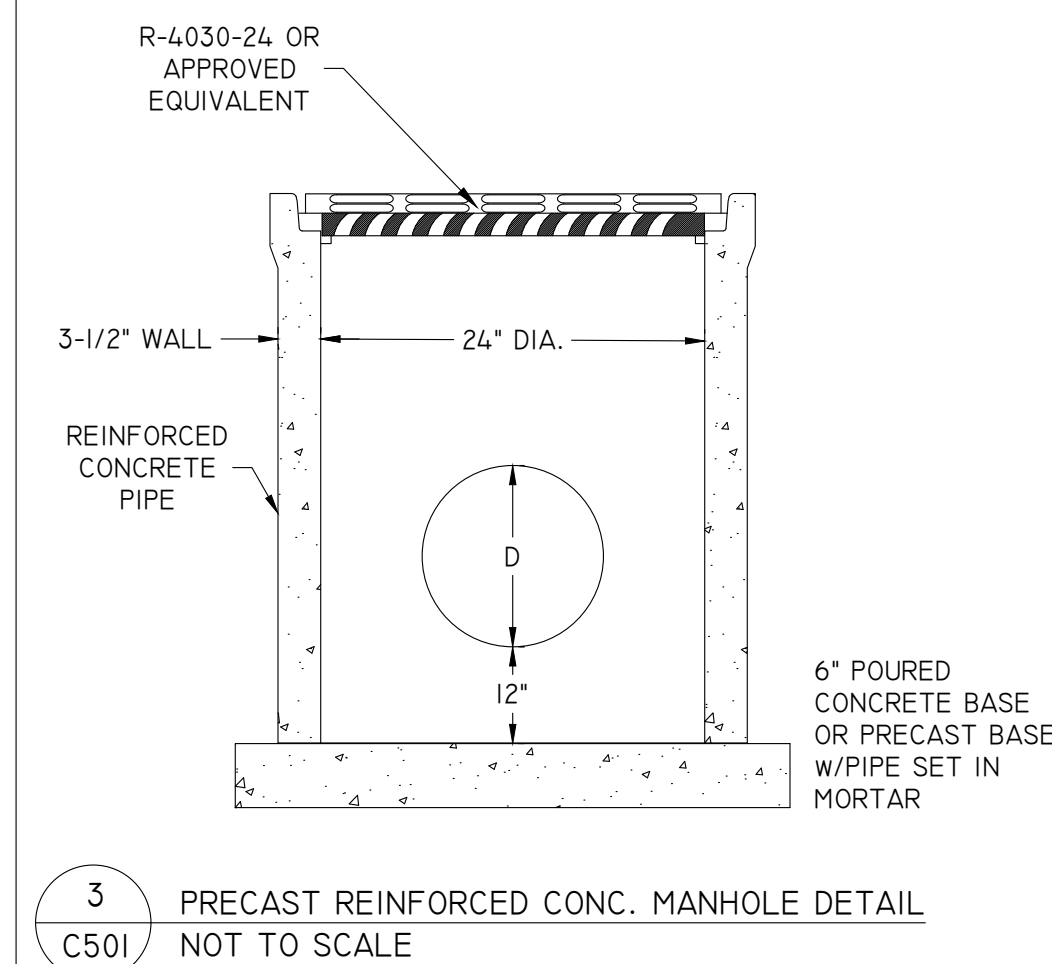
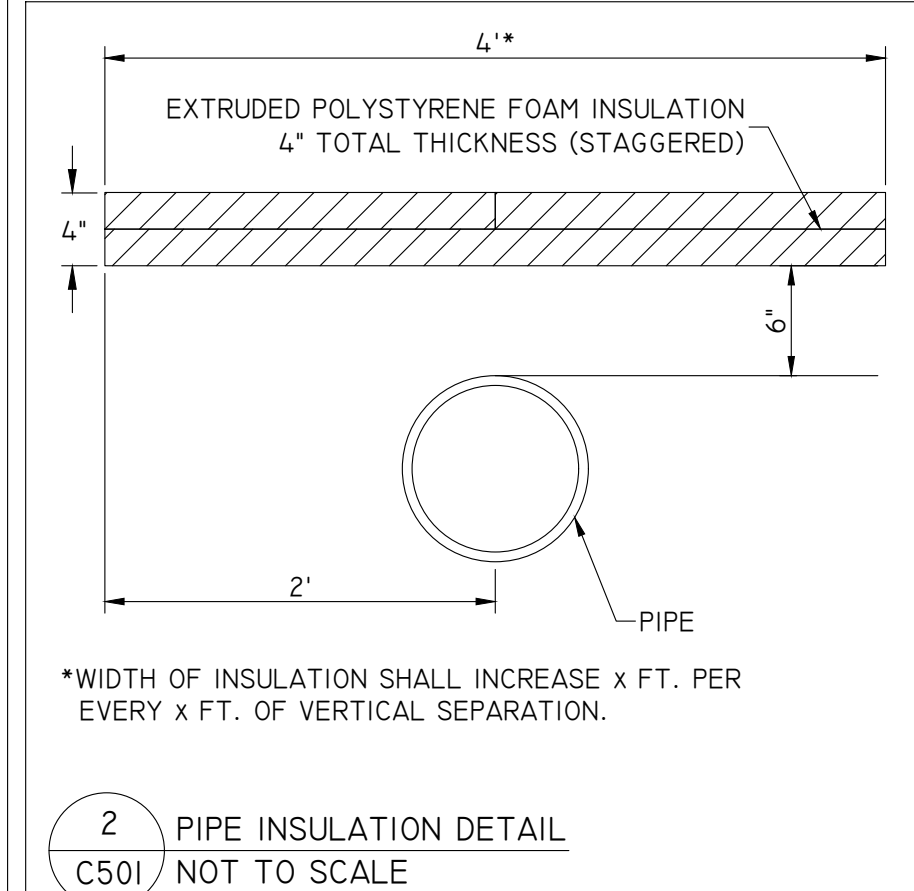
STORM SEWER PLAN

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
		



STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
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NO SCALE

SITE PLAN DETAILS

CONVENIENCE STORE #631

STH 167 & MAPLE ROAD
GERMANTOWN, WI

#	DATE	DESCRIPTION
<u>1</u>		

DRAWN BY NAP

SCALE NOT TO SCALE

PROJ. NO. 11757

DATE 10/09/24 - REVIEW DOCUMENTS

SHEET

Environmental Standard Operating Procedure (SOP) Spill Response Plan



Rev. 10 (Sep. 12, 24



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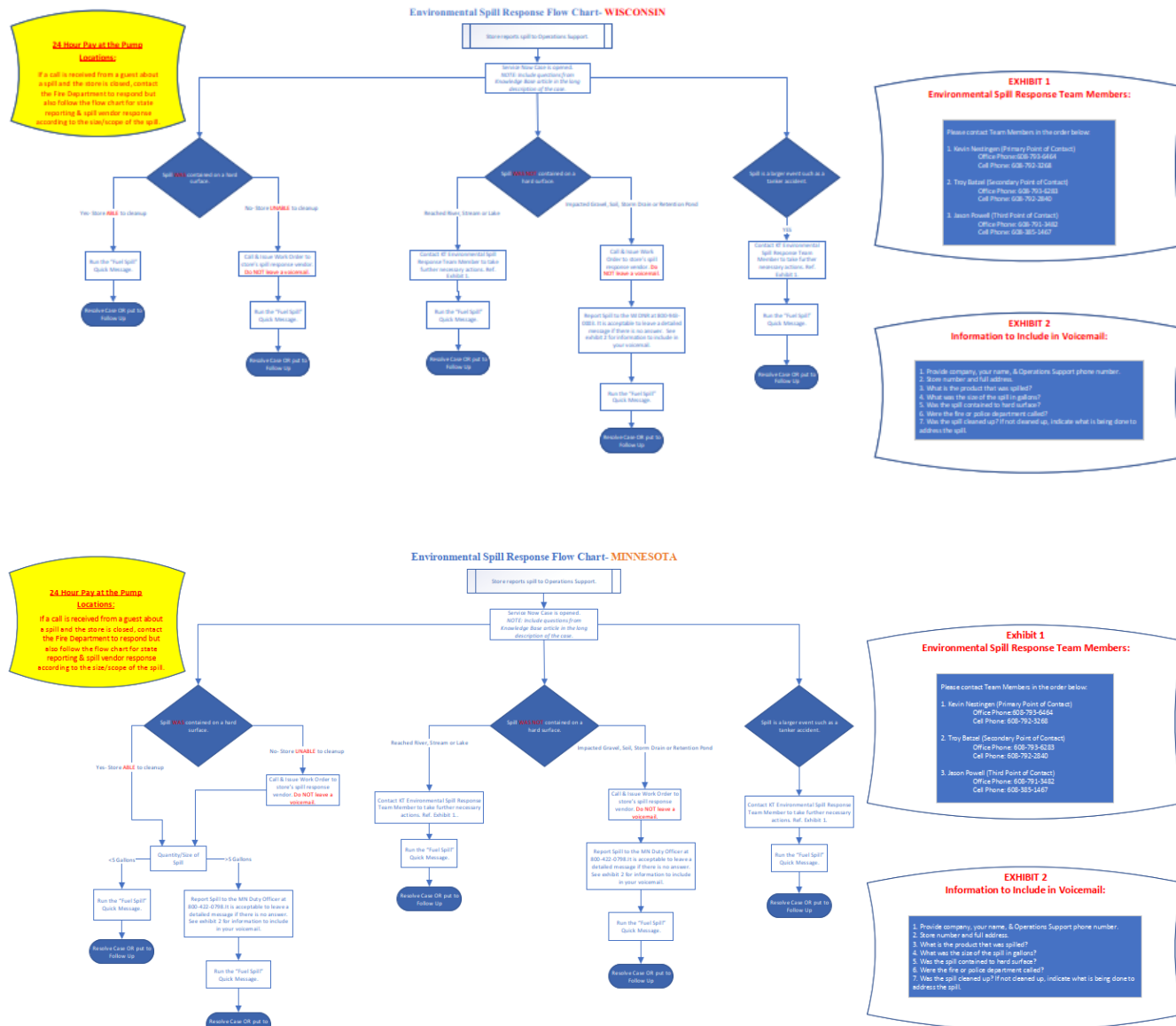
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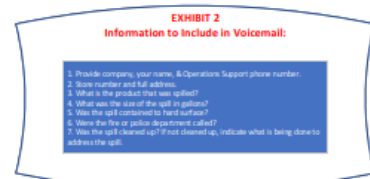
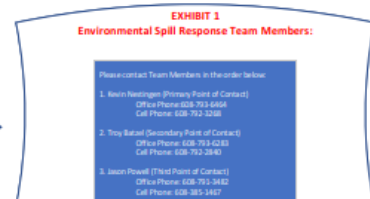
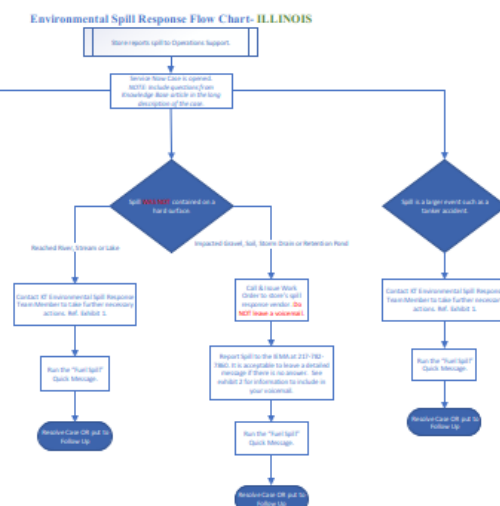
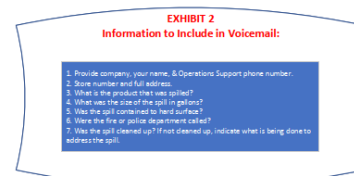
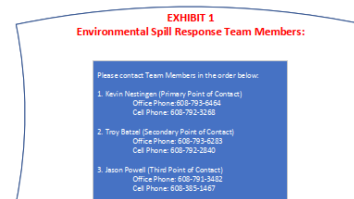
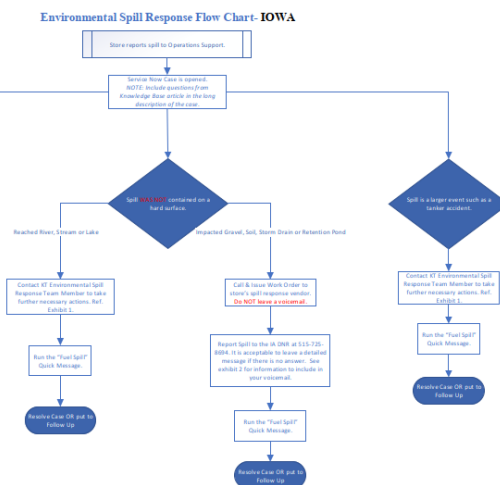
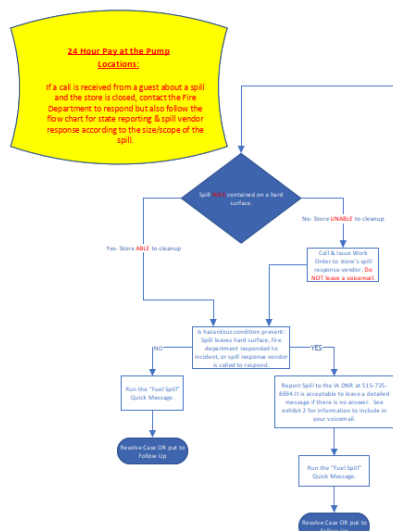
1.0 Purpose

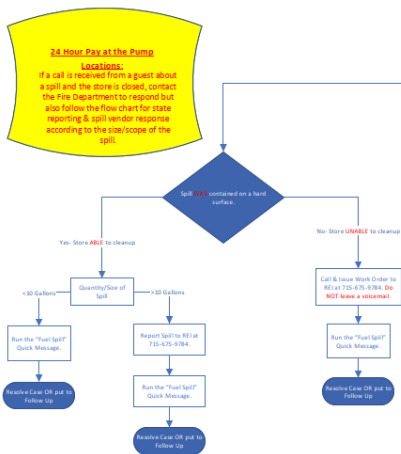
The purpose of the Spill Response Plan is to comply with Minnesota State Statutes 2002 Chapters 115E.04 and 115E.045. It also is to be utilized as a tool for Kwik Trip in having a documented procedure on how to respond to a spill situation. The information contained in this booklet describes response actions, identifies the chain of command, gives information on spill reporting requirements, and lists the companies and phone numbers of the people that can respond to a spill.

Chapter 115E of Minnesota Rules describes the requirements for what is to be included in the spill response plans. A copy of Chapter 115E.02, 115E.03, 115E.04 and 115E.045 are included in Section 10.2 in this booklet.

2.0 Spill Response Flow Chart by State







Environmental Spill Response Flow Chart- MICHIGAN

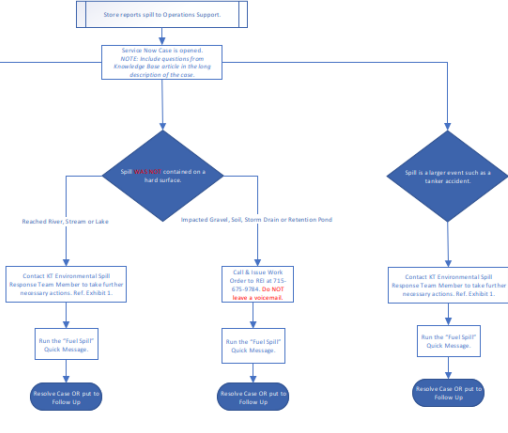


EXHIBIT 1
Environmental Spill Response Team Members:

Please contact Team Members in the order below:

1. Kevin Nestingen (Primary Point of Contact)
 Office Phone: 608-793-6464
 Cell Phone: 608-792-5268
2. Troy Betzel (Secondary Point of Contact)
 Office Phone: 608-793-6283
 Cell Phone: 608-792-5242
3. Jason Powell (Third Point of Contact)
 Office Phone: 608-793-3482
 Cell Phone: 608-355-5467

EXHIBIT 2
Information to Include in Voicemail:

1. Provide company, your name, & Operations Support phone number.
2. Store number and full address.
3. What is the product that was spilled?
4. What was the size of the spill in gallons?
5. Was the spill contained to hard surface?
6. Were the fire or police department called?
7. Was the spill cleaned up? If not cleaned up, indicate what is being done to address the spill.



Environmental Spill Response Flow Chart- NORTH DAKOTA

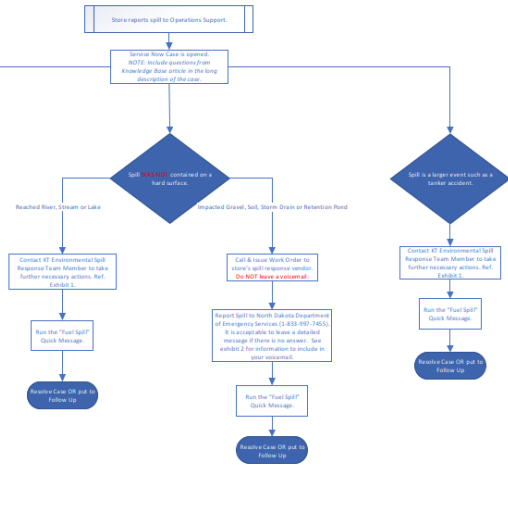


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24 Hour Pay at the Pump Locations:

If a call is received from a guest about a spill and the store is closed, contact the Fire Department to respond but also follow the flow chart for state reporting & spill vendor response according to the size/scope of the spill.

Environmental Spill Response Flow Chart- ILLINOIS

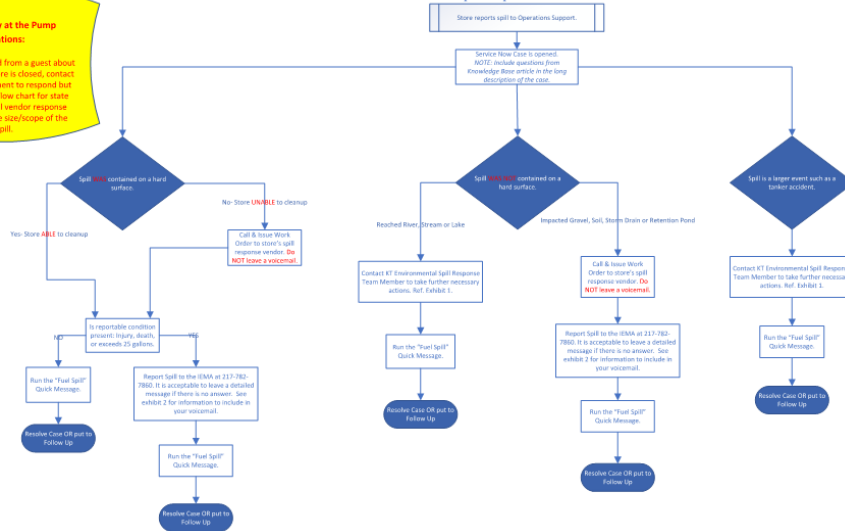


EXHIBIT 1 Environmental Spill Response Team Members:

Please contact Team Members in the order below:

1. Troy Batzel (Primary Point of Contact)
Office Phone: 608-793-6283
Cell Phone: 608-792-2840
2. Kevin Nostinger (Secondary Point of Contact)
Office Phone: 608-793-6664
Cell Phone: 608-792-3268
3. Jason Powell (Third Point of Contact)
Office Phone: 608-793-3482
Cell Phone: 608-385-1467

EXHIBIT 2 Information to Include in Voicemail:

1. Provide company, your name, & Operations Support phone number.
2. Store number and full address.
3. What is the product that was spilled?
4. What was the size of the spill in gallons?
5. Was the spill contained to hard surface?
6. Were the fire or police department called?
7. Was the spill cleaned up? If not cleaned up, indicate what is being done to address the spill.

24 Hour Pay at the Pump Locations:

If a call is received from a guest about a spill and the store is closed, contact the Fire Department to respond but also follow the flow chart for state reporting & spill vendor response according to the size/scope of the spill.

Environmental Spill Response Flow Chart- SOUTH DAKOTA

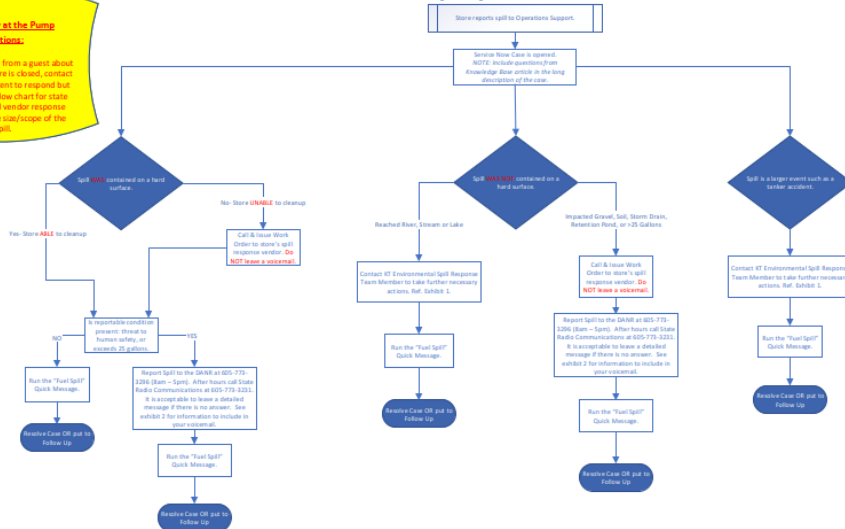


EXHIBIT 1 Environmental Spill Response Team Members:

Please contact Team Members in the order below:

1. Kevin Nostinger (Primary Point of Contact)
Office Phone: 608-793-6283
Cell Phone: 608-792-2840
2. Troy Batzel (Secondary Point of Contact)
Office Phone: 608-793-6664
Cell Phone: 608-792-3268
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4. What was the size of the spill in gallons?
5. Was the spill contained to hard surface?
6. Were the fire or police department called?
7. Was the spill cleaned up? If not cleaned up, indicate what is being done to address the spill.

3.0 Response Implementation Authority Information

This section identifies the individual or individuals within Kwik Trip that have the authority to implement a response action along with their title. Contact phone numbers are included in Section 13.5.

Primary:	Kevin Nestingen
Title:	Environmental Compliance Manager
Name:	Troy Batzel
Title:	Principal of Environmental Compliance
Name:	Jason Powell
Title:	Environmental Project Coordinator
Name:	Bryan Novy
Title:	Director of Retail Projects
Name:	Erik Peterson
Title:	Vice President of Store Engineering
Name:	Operations Support staff
Title:	

4.0 How To Respond To Discharges

4.1 Small Fuel Discharges

Small discharges that occur from our facilities or our transport trucks are addressed in a similar manner as a large discharge, the differences would be in the order in which they would contact the local authorities or Operations Support.

In the event of a small spill (gasoline, diesel, E85 or diesel exhaust fluid (DEF)), the store co-worker would assess the size or quantity of the spill and determine the required response based on their assessment. If the co-worker determines that the spill is of a small quantity and does not pose a threat to safety or the environment, they will move to clean up. The first rule is to always make sure that the situation is safe, this means they need to keep all customers clear of the spill area. They then would apply absorbent material to the spill. Once the material has been applied to the spill area they would sweep up the material and containerize it for pick up. At that point they would contact Operations Support to notify them of the spill and the material that would need to be picked up for disposal.

4.2 Large Fuel Discharges

Large discharges follow a different chain of events due to the threat to safety and the environment.

In the case of a large spill (gasoline diesel, E85), or an anticipated release to the environment, the assessment would have been made that safety or environment were compromised. The first step would be to hit the emergency shut off button, which kills power to the dispenser islands and canopy. The next step is to keep people clear of the area. If the co-worker is able to safely contain the spill they would do so at this time. The local authorities would be the first point of contact, which would be the local fire department and police department. Once the local authorities have been alerted to the discharge the next call would be to our Operations Support, which is staffed 24 hours a day. Ops Support would gather the information regarding the spill and immediately contact the Environmental Manager or the person in authority (PIN). The PIN has the responsibility to determine the appropriate response to the spill based on the information provided by store co-workers, fire department and/or police department. This would also include state and sometimes federal reporting of the spill.

There are several companies that are equipped to respond to large discharges and are listed in the Contact Information (Section 9.0). These companies have access to vacuum trucks, absorbent booms, floor dry, absorbent towels and trained personnel along with many other tools and equipment. Many times the local authorities have the capabilities to contain the spill and remove the threat to safety. In the event they are not able to contain the product, or it has been released to a sensitive area, the hazmat teams would be notified and be asked to respond.

4.3 DEF Spill Response

Spills or leaks involving DEF will follow the same basic procedure as petroleum products even though DEF is mostly water based. Spilled DEF still needs to be recovered and should be prevented from leaving a hard surface. DEF does have the potential to impact groundwater, rivers, and streams if released to the environment.

Below are minimum requirements for the initial spill response assessment:

- Take pictures of the dispenser and area of the spill
- Take pictures of the lot
- Determine what direction things may have flowed from the leak area
- Check the areas it may have flowed to such as: ponds, ditches, storm inlets, green space, etc.
- Utilize a field urea meter to assess areas it may have flowed
- Note weather conditions and what they were during the time of the spill and also at the time of your site visit
- Look for signs of crystallization that occurs from DEF drying
- Complete a short report that covers all findings from the visit, including urea field meter results
- Send to KT and the State

4.4 CNG Spill Response

The purpose of the compressed natural gas (CNG) spill response plan is to lay out the process that needs to be followed to ensure the safety of our co-workers and guests. We also want to make sure that there is a clear plan with regard to response and reporting to applicable agencies.

A leak from a CNG system will be discovered as a result of an odor (mercaptin, or rotten egg smell), fire coming from the system, or an alarm condition from the system.

If a leak is discovered (store response)

- Hit the emergency stop button
- Call Operations Support
- Keep co-workers and customers away from the area
- Do not reset Emergency stop switch until leak is stopped, repairs have been made and the system is verified tight

Operations Support Protocol

- If there is a fire, instruct the store to call 911 and to keep people clear of the area
- Instruct Fire Department to close main valve to eliminate gas coming from supply line
- If damage or injury, follow accident protocol and contact Stephanie Fox
- Notify people on the spill call list

- Do not reset Emergency stop switch until leak is stopped, repairs have been made and the system is verified tight
- If the leak is coming from the Utility provider service line call the Utility provider emergency number provided
- Instruct the store to lock out and tag the dispenser as out of order until repair is made

Store Engineering service/repair protocol

- Contact regional service or appropriate service contractor

4.5 Fuel Blending Sites (SPCC Plans)

Each Kwik Trip fuel blending/biodiesel site will have its own Spill Prevention, Control, and Countermeasure (SPCC) Plan. The purpose of the SPCC Plan is to describe measures implemented by facility management employees to prevent oil discharges from occurring, and to prepare facility management employees to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge. Additionally, the SPCC Plans are used as a reference for oil storage information and testing records, as a tool to communicate practices on preventing and responding to discharges with employees, as a guide to facility inspections, and as a resource during emergency response.

The Plans will be prepared to meet the requirements of Title 40, Code of Federal Regulations, part 112 (40 CFR part 112). The United States Environmental Protection Agency (US EPA) has established regulations for oil pollution prevention in the Code of Federal Regulations, Title 40 (40 CFR), Parts 110 through 112. The regulations require that a SPCC Plan be prepared if it could reasonably be expected that a harmful quantity of oil could be discharged into navigable waters of the United States or adjoining shorelines. The SPCC regulations apply to owners or operators of facilities that meet the following three primary criteria:

- The facility must be non-transportation related and engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products.
- The facility must have an aggregate aboveground storage capacity greater than 1,320 gallons (excluding those tanks and oil filled equipment below 55 gallons in capacity, the capacity of a container that is “permanently closed”, and the capacity of a “motive power container”) or an aggregate underground storage capacity greater than 42,000 gallons (excluding those that are currently subject to all of the technical requirements of 40 CFR Part 280 or all of the technical requirements of state programs approved under 40 CFR Part 281).
- There must be reasonable expectation that, due to its location, the facility could discharge oil into or upon the navigable waters or adjoining shorelines of the United States.

The US EPA requires that a complete copy of the SPCC Plan be maintained at the facility if it is attended at least four hours per day or at the nearest office if the facility is not attended.

4.6 Indoor Air Quality Response

These pages outline the process that will be followed by Operations Support in the event of an indoor air quality issue or complaint.

Problem:

Unknown smell or odor inside the store

Questions to ask regarding odor:

- When did you first notice this smell?
- Where in the building is the smell the strongest?
- Do you smell it outside as well?
- Has anyone complained of ill effects and what are the symptoms?
 - If yes, create another call for the co-worker illness and assign it to HR Daily, this will create a call for HR to follow up with the co-worker. (If after hours/weekend, then call Jill Rettler (HR) to make her aware of the situation and determine if immediate action is needed.)
- Have we had any service vendors out recently and for what?
- What does it smell like? Natural Gas (Rotten Eggs) or Gasoline?
 - If yes, do we have a gas container in the store or does this store have natural gas service to the store (see attached list to see where we pay for natural gas)?
- Have we had any fuel deliveries recently?

----- If they feel that it is a natural gas, gasoline, or propane type smell then the Fire Department should be called out to investigate to determine if it is an explosive environment. If there is a threat of fire or explosion and the area needs to be evacuated, please refer to evacuation procedures listed on the Kwik Net HR Services/Safety Manual/Emergency Procedures.

Other known smell or odor sources could be:

- Do we have any dry drain traps in the floor in the following store areas: bathrooms, fountain pop machines, kitchen floor drains? If this area has the strongest odor have the store pour approximately a gallon of water down the drain. This will fill the trap and prevent air from coming back up through the pipe.
- Paint or open cleaning chemicals in the store, have they been closed back up? Do we need to open up the back and front door of the store to air it out?

If the smell/odor cannot be confirmed to a known source, store personnel should contact Ops Support for further direction.

Last step is to e-mail the District Leader and Zone Leader to make them aware of the situation.

5.0 Description of Training

Kwik Trip has developed a training program as part of a state and federal requirement for staff to be Class C certified, All retail co-workers complete this training. This training covers the following information:

- 1) Where to find emergency stop switch.
- 2) Who to call and when.
- 3) Information you need to gather in the event of a spill.
- 4) Equipment and materials needed in a response action.
- 5) How to assess a spill and how respond accordingly.

All retail co-workers are required to complete the training module which is available on the KwikNet 24/7.

All people considered to be PIN's (persons in authority) have gone through a training session with the Environmental Compliance Manager.

6.0 Communication and Incident Command

Communication and incident command are very important when trying to accomplish a successful spill response action. It is very important to have one point of contact during this type of situation to ensure a smooth response. Our point of contact is the person in authority (PIN) listed on the “Response Implementation Authority Information” section who is handling the response action. This person will be responsible for communicating with local authorities to better understand the spill situation in progress until a representative from the company can arrive on site. They will also be in contact with the necessary Federal and State agencies for reporting purposes.

The PIN will coordinate the response action based on the report from the incident commander on site. The PIN will contact the appropriate response persons and inform the incident commander of those people's role in the response action.

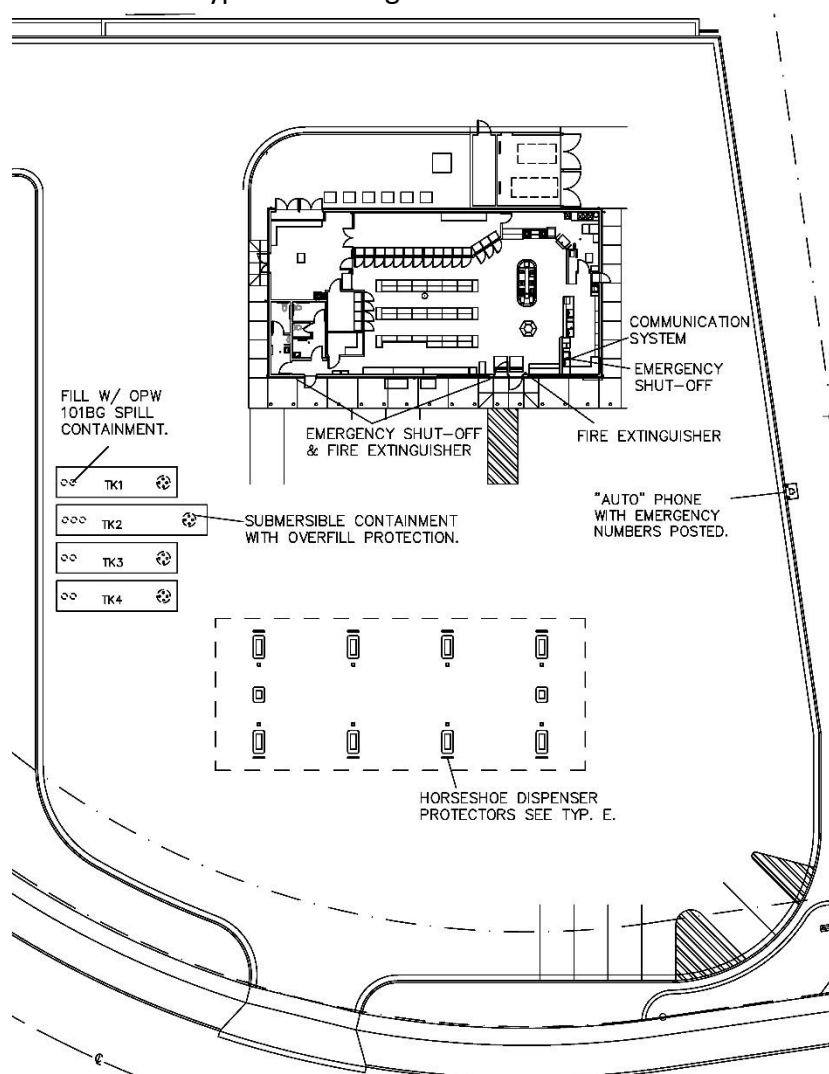
Hazmat teams responding to the incident should always have a team leader, this person would communicate with the PIN during the course of the response action.

It is the job of the PIN to be the center of communication between the local authorities, hazmat teams and State and/or Federal agencies.

In many cases, the incident command role will be a shared duty based on the experience of the on-site personnel.

7.0 Facility Description

Kwik Trip stores are all relatively similar in construction. Most locations consist of a convenience store that is approximately 7,000 - 9,000 square feet in size. They all have a gasoline operation that typically has 4-10 multi-product dispensers that are supplied by pressurized piping coming from underground storage tanks. The underground tanks that store the product range in size from 10,000 gallons capacity to 30,000 gallons. The products that are usually sold at our facilities are Unleaded, Plus and Premium gasoline, as well as diesel. In addition to selling E85, biodiesel and in some cases electric vehicle charging, Kwik Trip has CNG (Compressed Natural Gas) infrastructure throughout Minnesota, Wisconsin and Iowa. A typical site diagram is shown below.



This is a typical site layout, which shows the location of the emergency stop switch, telephone and fire extinguishers. It also depicts the layout of the gas operation and underground storage tanks.

8.0 Transport Vessel Description

Our transports that haul product to our sites are made of aluminum and are divided into 3 compartments. The compartments have the following capacities 4,400 gallons, 2,300 gallons and 3,000 gallons. Each transport is equipped with an emergency shut off switch located at the front of the transport trailer. They also all carry spill response kits located under the belly of the transport trailer. These kits include drain mats, booms, floor dry and absorbent towels.

8.1 Transport Spill Kit Contents

- 1 spill kit bag
- 1 drain blocker
- 4 bags of Sphag-Sorb absorbent
- 4 Sphag-Sorb absorbent snakes
- 20-50 absorbent pads in the cabinet on truck

8.2 Transport Trailer Spec Sheet

The following page shows specifications of the typical transport. Click [HERE](#) for link to a .pdf document with additional specification information.

9.0 Contact Information

9.1 State Spill Reporting

WI DNR

1-800-943-0003

MN Duty Officer

1-800-422-0798

IA DNR

515-725-8694

National Response Center

1-800-424-8802

9.2 Hazmat Response Contacts

Wisconsin

Clean Harbors Southeast and South-Central Region : 1-800-645-8265
SET (Secondary): 877-437-7455
REI North and Central Region: 715-675-9784
UP Environmental NE Region (Secondary): 906-466-9900
WCEC (Secondary) Central to North Region: 1-888-923-2778
WCEC West-central Region : 1-888-923-2778
Clean Harbors West-central region: (Secondary): 1-800-645-8265

Minnesota

WCEC: 1-888-923-2778
Clean Harbors (secondary): 1-800-645-8265

Iowa

All of Iowa except SE region: Hazmat Response: 1-800-229-5252
Seneca SE region: (secondary): 1-800-369-5500

Michigan

REI: 715-675-9784
UP Environmental (secondary): 906-466-9900 (O) 906-280-8908 ©

Illinois

Clean Harbors covers east region: 1-800-645-8265
Seneca covers west region: 1-800-369-5500
SET (secondary): 877-437-7455

South Dakota

WCEC: 1-888-923-2778
Clean Harbors (Secondary): 1-800-645-8265

North Dakota

WCEC: 1-888-369-5500
Clean Harbors (Secondary): 1-800-645-8265

9.3 Emergency Spill Response Contacts

Primary Contacts

WCEC

24-hr Spill Hotline: 1-888-544-9481

SET

24-hr Hotline: 1-877-437-7455

Clean Harbors

24-hr Spill Hotline: 1-800-645-8265

REI - Ken Lassa

Office: 715-675-9784

Cell: 715-574-3430

Bay West - Jim Stockinger

24-hr Spill Hotline: 1-800-279-0456

Cell: 612-207-0561

SCS Engineers - Eric Oelkers

Office: 608-224-2830

Cell: 608-444-3934

HMR (Hazmat Response - John Towle

W: (515) 297-8664

C: (913) 333-8985

Seneca

24-hr Hotline: 1-800-369-5500

9.7 Store Engineering Phone List

Store Engineering Delivery		-----	-----	-----
Store Engineering Service Desk		-----	-----	-----
Store Engineering Ship Outs		-----	-----	-----
Aaron Asp		608-604-4983	-----	-----
Aaron Bowen		262-282-9609	-----	-----
Aaron Bradle		-----	608-799-6963	-----
Aaron Bright		608-792-9407	-----	-----
Aaron Harmon		-----	-----	-----
Aaron Sill		608-317-7109	-----	-----
Adam Cook		-----	-----	-----
Adam Gibbs		262-770-0309	-----	-----
Adam Kleine		920-946-7755	-----	-----
Adam Raisanen		920-309-7280	-----	-----
Adam Schwartz		-----	-----	-----
Adam Vettel		319-830-0797	-----	-----
Addison Skeels			920-251-4627	
AJ Loken		608-864-0618	-----	-----
Alex Lenzer		608-225-4416	-----	-----
Alex Pollex		-----	608-769-7442	-----
Alex Polnaszek		-----	608-385-5491	-----
Alex Will		608-317-6197	-----	-----
Ali Van Dalen		-----	320-761-4908	-----
Allison Christianson		-----	608-385-4994	-----
Alyx Bushnell		-----	608-397-4103	-----
Amy Wermager		-----	608-518-9230	-----

Anden Schieldt		-----	-----	-----
Andre Larsen		920-680-1365	-----	-----
Andrew Tauzell		712-754-2500	-----	-----
Andrew Wegner		-----	319-533-7658	-----
Andy Logue		-----	319-431-8497	-----
Andy Martell		715-586-0735	-----	-----
Andy Norton		608-633-1192	-----	-----
Barbara McIntyre		-----	608-669-3073	-----
Ben Hendrickson		-----	-----	-----
Ben Hyland		920-918-0920	-----	-----
Ben Ipsen		-----	978-257-5007	-----
Ben Krause		-----	715-207-5522	-----
Ben Patten		715-252-6259	-----	-----
Bill Eastman		608-317-6141	-----	608-489-2236
Bill Glauner		715-891-7527	-----	-----
Bill Horihan		608-317-8669	-----	-----
Bill Sanderson		608-386-0684	-----	-----
Bjorn Berg		608-606-3998	-----	-----
Bob Alf		920-295-2586	-----	-----
Bob Lynch		262-470-4085	-----	-----
Bo Collins		-----	-----	-----
Brad Chambers		507-340-2839	-----	-----
Brad Fry		608-792-7450	-----	-----
Brandon Bohnert		563-676-0936	-----	-----
Brett Attlen		-----	-----	-----
Brett Needham		608-216-1149	-----	-----
Brian Arntsen		920-585-0296	-----	-----
Brian Barter		262-909-4148	-----	-----
Brian Kruk		608-487-3005	-----	608-487-7724
Brian Nighbor		-----	715-299-3658	-----
Brittani Devine		-----	608-519-6397	-----
Brittany Erler		-----	608-792-8287	-----
Brock White		920-699-2922	-----	-----

Bruce Henslin		608-386-6423	-----	-----
Bryan Novy		608-317-0530	-----	608-786-4975
Cameron Stowe		218-760-1710	-----	-----
Carl Klemp		-----	608-385-9233	-----
Carla Lang		-----	608-769-2438	-----
Chad Feyen		608-386-0682	-----	-----
Chad Juel		-----	608-738-2492	-----
Chad Nienow		507-990-3114	-----	-----
Charlotte Gonyo		-----	608-738-7252	-----
Charles Redbird		-----	715-538-5104	-----
Chase Jacobson		608-548-7425	-----	-----
Chelsey George		-----	608-386-9603	-----
Chris Fenske		920-969-8169	-----	-----
Chris Johnson		507-459-5132	-----	-----
Chris Nutini		-----	608-518-8254	-----
Christian Niemi		-----	-----	-----
Cody Flury		608-343-0899	-----	-----
Cody Miles		-----	414-533-1446	-----
Corey Hoffman		319-296-8589	-----	-----
Corey Kessel		763-229-3732	-----	-----
Cory Joas		-----	-----	-----
Cory Lang		608-769-5264	-----	-----
Coty Tonne				
Dalton Treanor		-----	608-790-5308	-----
Dan Covart		608-790-0571	952-807-2987	952-707-9825
Dan Heath		608-769-3413	-----	-----
Dan Perreault		608-632-4029	-----	-----
Dan Steele		-----	608-386-3527	-----
Daniel Nusse		818-915-6226	-----	-----
Daniel Schmaltz		715-236-9998	-----	715-736-6615
Darrion Marquardt		-----	-----	-----
Dave Cedarblade		763-334-0146	-----	-----
Dave McDowell		608-518-0077	-----	-----

Dave Piggott		608-658-3397	-----	-----
Dave Powell		608-504-6009	-----	-----
David Forrest		414-595-4773	ony	-----
David Gryskiewicz		608-572-3467	-----	-----
David J Johnson		262-397-6426	-----	-----
David Kirchner		608-343-1325	-----	-----
David Link		920-210-2767	-----	-----
David Mottl		262-719-9784	-----	-----
David Thompson		-----	-----	-----
David Zweibohmer		641-229-5720	-----	-----
Derec Koch		641-224-5934	-----	-----
Derek Rieber		608-738-3459	-----	-----
Devin Boynton		507-990-8172	-----	-----
Desmond Gerdes		507-514-3792	-----	-----
Dirk Hagedorn		262-323-6148	-----	-----
Drake Evers		507-208-5608	-----	-----
Duane Bennett		-----	920-253-7226	-----
Dustin Ditzman		309-945-8158	-----	-----
Dustin Wilkening		651-706-1771	-----	-----
Dylan Noel		-----	608-397-5737	-----
Elias Johnson		-----	608-863-6407	-----
Eli Ruff		507-327-7461	-----	-----
Emily Helwig		-----	507-458-0628	-----
Emma Jagodka		-----	952-451-0563	-----
Emma Reber		-----	-----	-----
Eric Matthews		920-213-5916	-----	-----
Eric Presuhn		715-969-4920	-----	-----
Eric Thompson		507-438-6470	-----	-----
Eric Valentine		-----	-----	-----
Erica Lampert		-----	-----	-----
Erik Culver		608-793-6087	715-379-0665	-----
Erik Peterson		608-792-5370	-----	608-786-3199
Ethan Niles		-----	608-797-5458	-----

Evan Oeltjenbruns		507-841-4895	-----	----
Garrett Spafford		608-451-4258		
Gary Boynton		507-259-5024	-----	-----
Genevieve Mortenson		-----	-----	-----
Greg Guenther		608-790-3767	-----	-----
Heather Servais		-----	-----	-----
Holly Daines				
Isaac Eastling		715-421-0165	-----	-----
Isaac Laube		608-498-0926	-----	-----
Isaiah Schwinn		920-449-8596	-----	-----
Isaiah Graewin		-----	608-498-2909	----
Jacob Beckel		-----	507-279-4526	-----
Jacob Johnson		612-229-3144	-----	-----
Jacob Nordstrom		-----	608-738-8211	----
Jakob Hallback-Kettner		-----	608-797-3084	----
Jake Stern		-----	-----	-----
Jamal Holmes		319-464-2287	-----	-----
James Oldenburg		608-317-0346	-----	-----
Jamie Olson		-----	608-386-5878	-----
Jared Nordaas		-----	507-995-1786	-----
Jarred Koss		507-269-2772	-----	-----
Jason Martin		-----	-----	-----
Jason Mozena		712-363-7614	-----	-----
Jason Powell		-----	608-385-1467	-----
Jason Smothers			262-865-1099	
Jason Wucki		608-780-7663	-----	-----
Jay Marco		608-396-1228	-----	-----
Jean Drinkman		-----	608-387-0769	-----
Jeff Anderson		-----	218-428-3750	-----
Jeff Benvenuto		262-620-0651	-----	-----
Jeff Dahl		-----	-----	-----
Jeff Fontano		-----	651-329-5181	----
Jeff Groth		320-333-0285	-----	-----

Jeff Kerska		-----	-----	
Jeff Osgood		608-792-2136	-----	-----
Jeremy Turben		608-606-9333	-----	-----
Jill Langrehr		-----	608-486-4980	-----
Jill McDonah		-----	-----	-----
Jim Coblentz		608-386-2639	-----	608-489-4591
Jim Freitag		507-469-0497	-----	-----
Jim Lopez		952-693-3062	-----	-----
Jim Smith		715-697-0063	-----	-----
Joe Bechle		608-317-2363	-----	-----
Joe Gauthier		920-901-9826	-----	-----
Joe Kappers		651-785-8949	-----	-----
Joe Theisen		715-271-5210	-----	-----
Joe Tomman		563-219-1744	-----	-----
Joel Krueger		-----	608-385-5756	-----
Joey Hafemann		262-384-1596	-----	-----
John Halverson		-----	507-450-7115	-----
John Prunty		262-501-9691	-----	-----
John Vandagriff		651-212-1055	-----	-----
John Wahl		-----	608-317-5550	-----
Jordan Stricker		920-542-8053	920-542-8053	-----
Jordan Skilling		319-333-9922	-----	-----
Jordan Wilke		940-287-4605	-----	-----
Jon Davis		715-220-0740		
Josh Johnson		715-392-2954	-----	-----
Josh Merrell		608-386-8350	-----	-----
Josh Meyer		319-230-1103	-----	-----
Justin Gilbertson		608-865-0029	-----	-----
Justin Lowrance		262-818-8411	-----	-----
Kat Watson		612-390-4669	-----	-----
Kayla Kyser		-----	715-316-7151	-----
Keith McIntyre		608-635-5809	-----	-----
Ken Seidel		-----	-----	608-779-9469

Kendon Thurk		608-792-4120	-----	-----
Kevin Boldt		-----	507-429-6102	-----
Kevin Brathall		715-222-1097	-----	-----
Kevin Harris		-----	608-790-2226	-----
Kevin King		920-583-0400	-----	-----
Kevin Nestingen		-----	608-792-3268	-----
Kevin Tassoul		920-845-5070		
Kim Lovejoy		-----	-----	-----
Kim Sake		-----	-----	-----
Kollin Hemenway		920-202-0565	-----	-----
Kristen Gran			608-797-9686	-----
Kristine Kish		-----	608-738-1236	-----
Kurtis Huber		-----	608-848-9040	-----
Kyle Bourget		-----	-----	-----
Kyle Drysdale		715-581-2331	-----	-----
Lacey Baum		-----	608-317-5005	-----
Larry Zielke		608-797-1520	-----	-----
Lauren Fortin		-----	-----	-----
Lauren Mueller		-----	608-881-1597	-----
Leah Berlin		608-797-1547	-----	-----
Lincoln Beery		507-216-2581	-----	-----
Logan Schlough		-----	715-308-8420	-----
Lon Anderson		715-815-0821	-----	-----
Lucas Walz		608-317-7444	-----	-----
Luke Christenson		507-273-4145	-----	-----
Lyle Antony		608-317-6140	-----	608-526-4963
Lynette Dickie-Privet		-----	507-450-6489	-----
Malia Kirchner		507-676-2601	-----	-----
Mandy Dale		-----	-----	-----
Manuel Carpenter		-----	608-498-7450	-----
Mark Ervin		715-344-7774	-----	-----
Mark Graff		-----	608-797-2335	-----
Mark Lukken		571-481-1464	-----	-----

Mark Parsneau		608-792-6121	-----	-----
Mark Reps		608-780-4051	-----	-----
Mark Thesing		608-317-6143	-----	507-895-6730
Mark Vinz		-----	608-397-5540	-----
Mary Semrow		-----	608-558-4526	-----
Marty Putz		-----	608-317-0195	-----
Mason Reed		608-633-1645	-----	-----
Matt Bartlett		608-780-7276	-----	-----
Matt Franklin		715-305-3819	-----	-----
Matt Franzini		704-677-4718	-----	-----
Matt Gran		608-780-0744	-----	-----
Matt Massie		608-385-9864	-----	-----
Matt Theisen		608-865-0944	-----	-----
Matt Thony		608-381-4836	-----	-----
Matthew Lepke		-----	-----	-----
Matthew Vetsch		5075009073	608-797-7216	-----
Max Merrell		608-799-4895	-----	-----
McKayla Haldorson		-----	608-385-5286	-----
Melissa Gabrielson				
Michael Nelson		-----	-----	
Michelle Scanlan		-----	507-429-1812	507-482-7052
Mike Clark		608-797-2200	-----	-----
Mike Ferron		715-574-5310	-----	-----
Mike Ideker		-----	-----	-----
Mike McDermott		608-778-6180	-----	-----
Mike Miles		-----	-----	-----
Mike Mellom		608-212-5962	-----	-----
Mike Rochester		-----	608-397-4142	-----
Mike Schaefer		920-960-8194	-----	-----
Mike Welsh		608-317-6145	-----	-----
Mitch Luster		-----	608-412-2145	-----
Mitch Williams		608-498-3786	608-669-6322	-----
Nate Byom		-----	608-792-7780	-----

Nathan Best		-----	715-379-0959	-----
Nick Newman		-----	608-317-9446	608-783-7623
Nick Spors		608-921-2670	-----	-----
Pang Vang		-----	608-764-0390	-----
Patrick Klopotek		608-495-1738	-----	-----
Pao Xiong		651-457-5622	-----	-----
Paul Evers		507-269-1703	-----	-----
Paul Stanhope		-----	-----	-----
Paul Van Keulen		507-226-7302	-----	-----
Peter Bergrud		507-458-1280	-----	-----
Peter Seich		-----	920-287-1826	-----
Phillip Tennant		-----	608-799-9290	-----
Raider Yang		-----	-----	-----
Randy LeBeau		701-471-5603	-----	-----
Rich Williams		920-993-9089	-----	-----
Rich Wolfert		608-797-9424	-----	-----
Rob Mickow		608-317-3728	763-228-1253	-----
Robbie Olson		262-720-2622	-----	-----
Robert Dinkle		608-239-0682	-----	-----
Robert Preston		815-708-4471	-----	-----
Ron Humm		-----	-----	608-518-2365
Ron Kind		715-512-1373	-----	-----
Ron McAtee		-----	319-331-9898	-----
Rory Severson		608-279-5913	-----	-----
Ross Weber		-----	612-327-3651	-----
Ryan Allen		218-729-7004	-----	-----
Ryan Bader		-----	608-385-0385	-----
Ryan Keeney		-----	608-397-4101	-----
Ryan Philippi		320-557-8054	-----	-----
Ryan Roberts		608-343-3447	-----	-----
Ryan Thorne		-----	608-385-2439	-----
Sadie Mashak		-----	920-222-1941	-----
Sam Bratz		262-631-9116	-----	-----

Sam Rusch			-----	-----
Sarah Sweet		-----	608-797-1115	-----
Scott Dus		-----	-----	608-781-2919
Scott Murtz		-----	-----	-----
Scott Teigen		715-556-4444	-----	715-235-6626
Scott Zietlow		608-385-6938	-----	-----
Sierra Bahr		-----	608-498-9915	-----
Seth Waddell		-----	608-343-0978	-----
Shane Easton		-----	612-619-8273	-----
Shane Enos		-----	319-252-7555	-----
Shannon Jandt		608-385-6295	-----	-----
Sharon Schmelzer		-----	-----	-----
Stacy McArdle		-----	608-790-4422	-----
Steve Boldt		608-790-3977	-----	-----
Steve Lowe		608-780-9157	-----	-----
Steven Linberg		715-440-1059		
Taylor Keehn		-----	608-604-8204	----
Tanner Sampson		319-240-4277	-----	-----
Ted Cone		608-792-2539	-----	-----
Terry Path		608-633-0327	-----	-----
Terry Roesler		608-498-0739	608-498-0739	608-779-9519
Terry Sanders		608-769-4234	-----	-----
Tim Farrell		507-440-3455	-----	-----
Tina Friedl		-----	-----	-----
Thomas Nelson		-----	-----	-----
Tim Woxland		608-799-3359	-----	608-534-5625
TJ Alioto		262-370-4168	-----	-----
Todd Bornholdt		608-406-0375	-----	-----
Todd Crogan		-----	-----	-----
Todd Fox		-----	608-498-2106	-----
Tom Bartel		920-418-4322	-----	-----
Tom Winters		-----	563-568-1985	-----
Tom Witzke		-----	-----	-----

Tony Kissinger		920-205-1186	-----	-----
Tony Streicher		608-317-2852	-----	-----
Tony Towbridge		612-298-5186	-----	-----
Tony Xiong		651-212-1409	-----	-----
Tony Zeman		608-386-1148	-----	-----
Tracy Christopherson		-----	608-797-5709	-----
Tracey Schmidt		-----	608-397-3387	507-725-8227
Travis Hutzenbuhler		-----	-----	-----
Travis Lockington		608-498-0562	-----	-----
Travis Swarthout		507-269-3350	-----	-----
Trent Kastenschmidt		-----	-----	-----
Trevor Swarthout		507-990-1998	-----	-----
Troy Batzel		608-792-2840	-----	608-526-1132
Troy Cutsforth		563-379-1686	-----	-----
Tucker Kunkel		608-449-4857	-----	-----
Tyler Brones		952-217-6263	-----	-----
Tyler Hannah		-----	608-632-0958	-----
Vero Saylor		-----	-----	-----
Vicki Kruse		608-780-7142	-----	-----
Vicky Mueller		-----	608-780-9425	-----
Vince Hildestad		608-834-9390	-----	-----
Wayne Fox		-----	608-558-6864	-----
Wendy Sutton		-----	608-792-2965	-----
Yazan Mahmoud		507-589-8581	-----	-----
Zach Ferron		715-297-7300	-----	-----
Zach Stackhouse		-----	-----	-----
Zoe Katrichis		-----	-----	-----
378				
Campus Maint Shop		-----	-----	-----
Brandon Batzel		-----	608-792-4307	-----
David Woodliff		608-792-9789	-----	-----
Mike Massoth		608-792-9667	-----	-----
Mike Schultz		608-317-8276	-----	608-781-0752

Mitchell Iverson		-----	715-299-9307	-----
Peter Sinnett		608-604-4447	-----	-----
Ric Tuma		608-487-4059	-----	-----
Scott Berg		608-790-7452	-----	608-452-3322
Scott Sill		-----	608-386-2185	-----
Tim Pralle		-----	608-386-7914	-----
Todd Stafslein		-----	608-780-7218	-----
Wade Resac		608-397-3940	-----	-----
Other Office				
Cindy Allen		-----	-----	-----
Brad Fogarty		608-498-6542	-----	-----
Sandy Malay		608-769-4416	-----	-----
Joan Elsing		608-792-7124	-----	-----
Chuck Thoftne		608-792-4861	-----	-----
Greg Olson		608-792-3461	-----	-----
Contractors			-----	507-498-3722
Aaron (Concrete Solutions)		608- 792-0438		
J.D. (Call Const.)		608-792-2999	-----	-----
Mike McGregor(CallConst.)		608-792-3204	-----	-----
Shawn Burkhardt(Call Const)		608-792-7865	-----	-----
Stafferd Call		608-792-3251	-----	-----
Tim Padesky		608-780-1322	-----	608-783-8168
Store Engineering Delivery		-----	-----	783-0737 OFFICE
Store Engineering Service Desk		-----	-----	-----
			-----	-----

10.0 Reporting Requirements

Don't be afraid to report spills to state agencies, the situation will not become worse for doing so but not reporting can have huge consequences.

When to Report

MN 800-422-0798

If spill is off of an impervious surface, has made its way to soil or storm sewer or is greater than 5 gallons.

WI 800-943-0003

If spill is off of the impervious surface, has made its way to soil or storm sewer or can adversely impact or threaten to adversely impact public health, welfare or the environment.

IA 515-281-8694

If spill is off of the impervious surface, has made its way to soil or storm sewer or creates a hazardous condition.

MI Email: EGLE-stdtanks@michigan.gov For further information contact EGLE-RRD or phone 800-MICHUST

Releases of a regulated substance of any amount from underground storage tank (UST) systems (includes the emergency shutoff valve on down) subject to registration; overfill from UST fill pipe or vent onto ground;

IL Illinois Emergency Management Agency (IEMA)/State Emergency Response Commission (SERC) at 1-800-782-7860 (within state) or (217) 782-7860 (when calling from out-ofstate)

If a spill meets the minimum reporting limits, if someone is injured or killed, there was an evacuation, a motor vehicle was overturned on a hwy, any spill of petroleum that results in a release to the environment that is >25 gallons

SD DANR at 605-773-3296

The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water); The discharge causes an immediate danger to human health or

safety; The discharge exceeds 25 gallons; if you release a gaseous substance and need help converting to gallons

ND North Dakota Department of Environmental Quality (1-701-328-5210)

If a spill or discharge of liquid or solid waste which may cause pollution of waters of the state must be reported immediately

Federal

NRC 800-424-8802

When spill reaches a creek, lake, or river you must report to the NRC. Also, if a transport tanker is involved in an accident that causes a spill.

10.1 Spill Reporting Law – Federal (National Response Center)



Below is from the United States Environmental Protection Agency (US EPA) website on December 16, 2016 (<https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release>).

When are you required to report a spill or release?

Any person or organization responsible for a release or spill is required to notify the federal government when the amount reaches a federally-determined limit. Separate reporting requirements exist for:

- Oil spills
- Hazardous substance releases

States also may have separate reporting requirements. However, anyone who discovers a hazardous substance release or oil spill is encouraged to contact the federal government, regardless of whether they are the responsible party. All it takes is a single telephone call to the National Response Center at (800) 424-8802.

Oil Spills

EPA has established requirements to report spills to navigable waters or adjoining shorelines. EPA has determined that discharges of oil in quantities that may be harmful to public health or the environment include those that:

- Violate applicable water quality standards;
- Cause a film or "sheen" upon, or discoloration of the surface of the water or adjoining shorelines; or
- Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Any person in charge of vessels or facilities that discharge oil in such quantities is required to report the spill to the federal government. EPA provides several exemptions from the oil spill reporting requirements.

The requirement for reporting oil spills stems from the Discharge of Oil Regulation, known as the "sheen rule." Under this regulation, oil spill reporting does not depend on the specific amount of oil spilled, but on the presence of a visible sheen created by the spilled oil. Reporting an oil discharge may also be required under the Spill Prevention, Control, and Countermeasure (SPCC) Rule. For more information on reporting oil discharges, please see: Oil Discharge Reporting Requirements: How to Report to the National Response Center and EPA.

Hazardous Substances

For releases of hazardous substances, the federal government has established Superfund Reportable Quantities (RQs). If a hazardous substance is released to the environment in an amount that equals or exceeds its RQ, the release must be reported to federal authorities, unless certain reporting exemptions for hazardous substance releases also apply.

Under the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, the federal government has designated several hundred substances as "extremely hazardous substances" based on their acute lethal toxicity. Under the law, releases of these extremely hazardous substances trigger reporting requirements to state and local authorities, as well as the federal authorities. The owner or operator of a facility that releases an extremely hazardous substance in an amount greater than its established RQ must follow requirements on how to report to the appropriate authorities (in many cases, the State Emergency Response Commission (SERC) and the Local Emergency Planning Committee (LEPC)) for the location where the incident occurs.

What information is needed when reporting a spill or release?

Reporting a hazardous substance release or oil spill takes only a few minutes. To report a release or spill, contact the federal government's centralized reporting center, the National Response Center (NRC), at 1-800-424-8802. The NRC is staffed 24 hours a day by personnel who will ask you to provide as much information about the incident as possible. Please include the following:

- Your name, location, organization, and telephone number
- Name and address of the party responsible for the incident; or name of the carrier or vessel, the railcar/truck number, or other identifying information
- Date and time of the incident
- Location of the incident
- Source and cause of the release or spill
- Types of material(s) released or spilled
- Quantity of materials released or spilled

- Medium (e.g. land, water) affected by release or spill
- Danger or threat posed by the release or spill
- Number and types of injuries or fatalities (if any)
- Weather conditions at the incident location
- Whether an evacuation has occurred
- Other agencies notified or about to be notified
- Any other information that may help emergency personnel respond to the incident

If reporting directly to the NRC is not possible, reports also can be made to the EPA Regional office or the U.S. Coast Guard Marine Safety Office in the area where the incident occurred. In general, EPA should be contacted if the incident involves a release to inland areas or inland waters. The U.S. Coast Guard should be contacted for releases to coastal waters, the Great Lakes, ports and harbors, or the Mississippi River. EPA or the U.S. Coast Guard will relay release and spill reports to the NRC promptly.

For more information, please see: [Reporting Spills and Environmental Violations](#)

10.2 Spill Reporting Law – Minnesota

Reporting of petroleum releases

Petroleum Remediation Program

Minnesota state law requires immediate reporting upon the discovery of a spill, leak, overfill, or other signs of a petroleum release to the environment. Minnesota Statute 115.061 Duty to Notify; Avoiding Water Pollution, in effect since 1969, describes requirement to notify the Minnesota Pollution Control Agency (MPCA) of spills and leaks.

What and how much has to be reported?

For petroleum products:

- Report all releases known to be greater than five gallons.
- Report any detectable past releases because a volume greater than five gallons was likely released. If contamination is encountered at a previously closed petroleum tank release sites, please refer to Assessment of petroleum contamination at closed leak sites for assistance.

Evidence of a petroleum release includes:

- Organic vapor readings above background levels
- Visual soil staining or petroleum odors
- Free product and/or petroleum sheen
- Analytical data indicating petroleum contaminants are present

Who is required to report?

Anyone who encounters a petroleum spill or release must notify the MPCA, such as:

- Property owners
- Individuals, partnerships, companies, and corporations
- Government entities
- Owners of substances being stored or transported by another company
- Contractors and/or consultants

When to report?

The Minnesota Department of Public Safety operates a 24-hour duty officer service for all state reporting requirements. Immediately report spills and releases to the Minnesota duty officer upon discovery. The duty officer records all pertinent information about the release and then makes the appropriate notifications to all necessary state and local governments.

To report a spill or leak – call the Minnesota duty officer at 651-649-5451 or 800-422-0798

Webpages and Phone Numbers

MPCA General Line	651-296-6300 or 1-800-657-3864
MPCA Staff	http://www.pca.state.mn.us/wfhy3ec
Petrofund Webpage	http://mn.gov/commerce/topics/Petrofund/
Petrofund Phone	651-539-1515 or 1-800-638-0418
Emergency Response Webpage	http://www.pca.state.mn.us/yhiz7fd
Minnesota State Duty Officer	651-649-5451 or 1-800-422-0798

2016 Minnesota Statutes – Chapter 115E

Chapter 115E of Minnesota Rules describes the requirements for what is to be included in the spill response plans. A copy of Chapter 115E.02, 115E.03, 115E.04 and 115E.045 are included in Section 10.2 in this booklet.

115E.02 DUTY TO PREVENT DISCHARGES.

A person who owns or operates a vessel or facility transporting, storing, or otherwise handling hazardous substances or oil or who is otherwise in control of hazardous substances or oil shall take reasonable steps to prevent the discharge of those materials in a place or manner that might cause pollution of the land, waters, or air of the state or that might threaten the public's safety or health.

History: 1991 c 305 s 2

115E.03 DUTY TO PREPARE FOR RESPONSE TO DISCHARGES.

Subdivision 1. **General preparedness.** A person who owns or operates a vessel or facility transporting, storing, or otherwise handling hazardous substances or oil or who is otherwise in control of hazardous substances or oil shall be prepared at all times to rapidly and thoroughly recover discharged hazardous substances or oil that were under that person's control and to take all other actions necessary to minimize or abate pollution of land, waters, and air of the state and to protect the public's safety and health.

Subd. 2. **Specific preparedness.** The following persons shall comply with the specific requirements of subdivisions 3 and 4 and section 115E.04:

- (1) persons who own or operate a vessel that is constructed or adapted to carry, or that carried, oil or hazardous substances in bulk as cargo or cargo residue;
- (2) persons who own or operate railroad car rolling stock transporting an aggregate total of more than 100,000 gallons of oil or hazardous substance as cargo in Minnesota in any calendar month;
- (3) persons who own or operate facilities containing 1,000,000 gallons or more of oil or hazardous substance in tank storage at any time;
- (4) persons who own or operate facilities where there is transfer of an average monthly aggregate total of more than 1,000,000 gallons of oil or hazardous substances to or from vessels, tanks, rolling stock, or pipelines, except for facilities where the primary transfer activity is the retail sales of motor fuels;
- (5) persons who own or operate hazardous liquid pipeline facilities through which more than 100,000 gallons of oil or hazardous substance is transported in any calendar month; and
- (6) persons required to demonstrate preparedness under section 115E.05.

Subd. 3. **Level of preparedness.** A person described in subdivision 2 shall maintain a level of preparedness that ensures that effective response can reliably be made to worst case discharges.

Subd. 4. **Demonstrating satisfactory preparedness.** A person required to maintain preparedness under subdivision 2 may demonstrate satisfactory preparedness to the commissioner of the lead agency through one or a combination of the following means:

- (1) adequate response personnel and equipment in the usual employ of the person;
- (2) adequate response personnel and equipment available from for-hire cleanup contractors with arrangements made for their deployment;
- (3) adequate response personnel and equipment from a response cooperative or community awareness and emergency response organization meeting guidelines prepared by the lead agency with arrangements made for their deployment; or
- (4) adequate response personnel and equipment of local, state, or federal public sector response organizations with arrangements made for their deployment.

Subd. 5. **Department of Transportation.** The commissioner of transportation may examine the evidence of financial responsibility required under section 1016 of the Oil Pollution Act of 1990 for a vessel and may apply the sanctions in that section.

History: 1991 c 305 s 3; 1993 c 341 art 2 s 1

115E.04 PREVENTION AND RESPONSE PLANS.

Subdivision 1. **Plan contents.** Persons required to show specific preparedness under section 115E.03, subdivision 2, shall prepare and maintain a prevention and response plan for a worst case discharge. The plan must:

- (1) describe how it is consistent with the requirements of the national or area contingency plans developed under the Oil Pollution Act of 1990;
- (2) describe the measures taken to prevent discharges from occurring, including prevention of a worst case discharge, prevention of discharges of lesser magnitude, and prevention of discharges similar to those that have occurred from the vessel or facility during its history of operation;
- (3) identify the individual or individuals having full authority to implement response actions, and those individuals' qualifications and titles;
- (4) identify how communication and incident command relationships will be established between the individuals in command of a vessel or facility response and the following persons:
 - (i) individuals in the employ of the owner or operator of the vessel or facility who are responding to the discharge;
 - (ii) appropriate federal, state, and local officials; and
 - (iii) other persons providing emergency response equipment and personnel;
- (5) describe the facility or vessel and identify the locations and characteristics of potential worst case discharges from the vessel or facility;
- (6) identify the means under section 115E.03, subdivision 4, that will be used to satisfy the requirement to have adequate equipment and personnel to respond to a worst case discharge;
- (7) contain copies of contracts, correspondence, or other documents showing that adequate personnel and equipment as described in section 115E.03, subdivision 4, will be available to respond to a worst case discharge;
- (8) describe the actions that will be taken by the persons described in section 115E.03, subdivision 4, in the event of a worst case discharge; and
- (9) describe the training, equipment testing, periodic drills, and unannounced drills that will be used to ensure that the persons and equipment described in section 115E.03, subdivision 4, are ready for response.

A plan submitted to the federal government under the Oil Pollution Act of 1990 or prepared under other law may be used to satisfy the requirements in clauses (1) to (9) provided that the information required by clauses (1) to (9) is included in the plan.

Subd. 2. Timing. (a) A person required to be prepared under section 115E.03, other than a person who owns or operates a motor vehicle, rolling stock, or a facility that stores less than 250,000 gallons of oil or a hazardous substance, shall complete the response plan required by this section by March 1, 1993, unless one of the commissioners orders the person to demonstrate preparedness at an earlier date under section 115E.05.

(b) A person who owns or operates a motor vehicle, rolling stock, or a facility that stores less than 250,000 gallons of oil or a hazardous substance shall complete the response plan required by this section by January 1, 1994.

(c) Plans required under section 115E.04 or 115E.045 must be updated every three years. Plans must be updated before three years following a significant discharge, upon significant change in vessel or facility operation or ownership, upon significant change in the national or area contingency plans under the Oil Pollution Act of 1990, or upon change in the capabilities or role of a person named in a plan who has an important response role.

Subd. 3. Notification. (a) The commissioner of public safety must be notified when any of the following takes place:

(1) submission of the plan to the federal government;

(2) granting of exemptions or extensions of time by the federal government for submission of the plan; or

(3) completion of the plan if submission to the federal government is not required.

(b) Notification under this subdivision must be on a form prescribed by the commissioner of public safety and must include:

(1) a description of the facility or vessel;

(2) a description of the activities involving oil or hazardous substances;

(3) a description of the types of materials being handled, including whether agricultural chemicals are involved; and

(4) other information required by the commissioner.

(c) The commissioner of public safety shall transmit a copy of the notification to the other commissioners as appropriate, depending on the types of materials involved.

Subd. 4. Review of prevention and response plan. (a) A person required to show specific preparedness under section 115E.03, subdivision 2, must submit a copy of the prevention and response plan to any of the commissioners who request it and to an official of a political subdivision with appropriate jurisdiction upon the official's request, or the plan and equipment and material named in the plan may be examined upon the request of an authorized agent of a commissioner or official.

(b) Upon the request of one or more of the commissioners, a person shall demonstrate the adequacy of prevention and response plans and preparedness measures by conducting announced or unannounced drills, calling persons and organizations named in a prevention and response plan and verifying roles and capabilities, locating and testing response equipment, questioning response personnel, or other means that in the judgment of the requesting commissioner demonstrate preparedness. Before requesting an unannounced drill, the requesting commissioner shall notify the other commissioners that a drill will be requested and invite them to participate in or witness the drill. If an unannounced drill is conducted to the satisfaction of the commissioners, the person conducting the drill may not be required to conduct an additional unannounced drill in the same calendar year.

Subd. 5. **Citizens advisory groups.** The commissioner of the Pollution Control Agency, the Department of Agriculture, or the Department of Public Safety may establish, or a local official may request a commissioner to establish, a citizens advisory group following a discharge of oil or a hazardous substance. The purpose of the citizens advisory group is to facilitate exchange of information and concerns related to the discharge and response between the owner or operator of the vessel or facility, the governmental responders, and the affected members of the public.

History: 1991 c 305 s 4; 1992 c 593 art 2 s 1; 1993 c 341 art 2 s 2; 1995 c 240 art 2 s 6

115E.045 RESPONSE PLANS FOR TRUCKS AND CERTAIN TANK FACILITIES.

Subdivision 1. **Response plan for trucks.** (a) By June 1, 1994, a person who owns or operates trucks or cargo trailer rolling stock transporting an average monthly aggregate total of more than 10,000 gallons of oil or hazardous substances as bulk cargo in this state shall prepare and maintain a prevention and response plan in accordance with this subdivision. The plan must include:

- (1) the name and business and nonbusiness telephone numbers of the individual or individuals having full authority to implement response action;
- (2) the telephone number of the local emergency response organizations, as defined in section 299K.01, subdivision 3, if the organizations cannot be reached by calling 911;
- (3) a description of the type of rolling stock and the maximum potential discharge that could occur from the equipment;
- (4) the telephone number of the single answering point system established under section 115E.09;
- (5) the telephone number of an individual or company with adequate personnel and equipment available to respond to a discharge, along with evidence that the individual or company and the individual responsible for preparing the plan have made arrangements for such response;
- (6) a description of the training that the owner or operator's truck or cargo trailer operators have received in handling hazardous materials and the emergency response information available in the vehicle; and
- (7) a description of the action that will be taken by a truck or cargo trailer owner or operator in response to a discharge.

(b) The response plan must be retained on file at the person's principal place of business.

Subd. 2. **Response plan for certain tank facilities.** (a) By June 1, 1994, a person who owns or operates a facility that stores more than 10,000 gallons but less than 1,000,000 gallons of oil or hazardous substances in aboveground tanks shall prepare and maintain a prevention and response plan in accordance with this subdivision. The abbreviated plan must include:

- (1) the name and business and nonbusiness telephone numbers of the individual or individuals having full authority to implement response action;
- (2) the telephone number of the local emergency response organizations, as defined in section 299K.01, subdivision 3, if the organizations cannot be reached by calling 911;
- (3) a description of the facility, tank capacities, spill prevention and secondary containment measures at the facility, and the maximum potential discharge that could occur at the facility;
- (4) the telephone number of the single answering point system established under section 115E.09;
- (5) documentation that adequate personnel and equipment will be available to respond to a discharge, along with evidence that prearrangements for such response have been made;
- (6) a description of the training employees at the facility receive in handling hazardous materials and in emergency response information; and
- (7) a description of the action that will be taken by the facility owner or operator in response to a discharge.

(b) The response plan must be retained on file at the person's principal place of business.

Subd. 3. **Notice of plan completion.** A person required to prepare a response plan under this section shall notify the commissioner of public safety when the plan has been completed. Upon request, the person shall provide a copy of the plan to the commissioner of the Pollution Control Agency.

Subd. 4. **Agricultural chemicals exempt.** This section does not apply to agricultural chemicals, as defined in section 18D.01, subdivision 3, that are subject to chapter 18B or 18C.

History: 1993 c 341 art 2 s 3; 1994 c 589 s 2

10.3 Spill Reporting Law – Wisconsin



Below is from the Wisconsin Department of Natural Resources (WDNR) website on December 16, 2016 (<http://dnr.wi.gov/topic/Spills/define.html>).

What is a spill?

Spills are discharges of hazardous substances that adversely impact, or threaten to adversely impact, human health, welfare or the environment and require an immediate response.

For detailed information on spill reporting requirements, see [Section 292.11, Wis. Stats. \[PDF exit DNR\]](#) and [Chapter NR 706, Wis. Admin. Code \[PDF exit DNR\]](#).

Do I have to report my spill?

Your spill is **reportable** to the DNR if:

- **there is an impact to human health;**
Note: An evacuation is considered a threat to human health.
- **there is an impact to the environment;**
Note: Water of the state includes a threat or spill into a sanitary sewer, storm sewer, and/or surface water.
- **there is a fire, explosion or safety hazard;**
Note: A slippery road condition is considered a safety hazard.
- **you have not immediately cleaned up the spill;**
Note: Has it evaporated or been cleaned up in accordance with NR700-726?
- **the spill was more than the reportable quantities listed below.***

*A hazardous substance that is "discharged" into a secondary containment structure, that is completely contained and can be recovered with no discharge to the environment, is not subject to the discharge notification requirements.

Reportable quantities

If your spill is **more** than the amounts listed below, you **must** report it to the DNR.

Petroleum compounds

- Petroleum product completely contained on an impervious surface.
- Less than 1 gallon of gasoline or light grade petroleum product onto a pervious surface or runs off an impervious surface.
- Less than 5 gallons of medium or heavy grade petroleum products onto a pervious surface or runs off an impervious surface.

Agrichemical compounds

- Less than 250 pounds dry fertilizer.
- Less than 25 gallons of a liquid fertilizer.
- Pesticides that would cover less than 1 acre of land if applied according to label instructions.

Federal reportable quantities

The federal reportable quantity for a specific substance as outlined in the [CERCLA RQ column of the Sara Title 3 list of lists \[exit DNR\]](#).

How to report a spill

Discharges of hazardous substances generally fall into one of two broad categories:

1. **Spills** - Spills that need an immediate response. These can include a tank truck rollover, failure of a storage tank valve or failure of a wall in a manure storage lagoon. **Call the 24-hour spill hotline at 1-800-943-0003.**
2. **Discovery of Spills Through Analysis** - Soil or groundwater contamination that is discovered via sampling. The best way to report discovery of a discharge that is identified through analysis of soil or water is to use DNR's [Notification For Hazardous Substance Discharge \(Non-Emergency Only\) \(Form 4400-225\) \[PDF\]](#). This form includes information about how to fax or email the form DNR. Please include a summary of the laboratory data with the form. Don't wait for a written report describing the contamination – immediately fax or email the form, or make a phone call to a [DNR regional office](#), immediately.

Federal reporting requirements

A responsible party may also have to comply with other state and/or federal reporting requirements relating to the Emergency Planning and Community Right to Know Act (EPCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). To report a spill, contact the [The Federal Government National Response Center \[exit DNR\]](#) (800-424-8802).

To determine if you have a reportable spill, please check either of these two EPA resources.

- ## Regional Spill Coordinators - WDNR contacts

Name	Region	Office
24 Hour Hotline	Statewide	800-943-0003
Cody Heinze	Northeast	920-883-9383
Jeff Paddock	Northern	715-828-8544
Trevor Bannister	South Central	608-347-0058
Riley Neumann	Southeast	414-750-7030
Jayson Schrank	West Central	715-410-8841



10.4 Spill Reporting Law – Iowa



Below is from the Iowa Department of Natural Resources (IDNR) Environmental Services Division Field Services & Compliance Bureau guidance document, Iowa Administrative Code Chapter 131 Notification of Hazardous Conditions, revised July 2015.

Notification of Hazardous Conditions

Summary of Key Points and Definitions

“Hazardous Condition” means any situation involving the actual, imminent or probable spillage, leakage, or release of a hazardous substance onto the land, into a water of the state or into the atmosphere which, because of quantity, strength and toxicity of the hazardous substance, its mobility in the environment and its persistence, creates an immediate or potential danger to the public health or safety or to the environment.

“Hazardous Substance” means any substance or mixture of substance that presents a danger to the public health or safety and includes, but is not limited to, a substance that is toxic, corrosive, or flammable, or that is an irritant or that, in confinement, generates pressure through decomposition, heat, or other means. The following are examples of substances which, in sufficient quantity, may be hazardous: acids; alkalis; explosives; fertilizers; heavy metals such as chromium, arsenic, mercury, lead, and cadmium; industrial chemicals; paint thinners; paints; pesticides; petroleum products; poisons; radioactive materials; sludges; and organic solvents.

“Hazardous substances” may include any hazardous waste identified or listed by the administrator of the United States Environmental Protection Agency under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976, or any toxic pollutant listed under Section 307 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous substance designated under Section 311 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous material designated by the secretary of transportation under the Hazardous Materials Transportation Act (49 CFR 172.101)

Key Points

Who is Required to Report Hazardous Conditions

Any person manufacturing, storing, handling, transporting, or disposing of a hazardous substance shall notify the department at (515) 725-8694 and the local police department or the office of the sheriff of the affected county of the occurrence of a hazardous condition as soon as possible but not later than six hours after the onset of the hazardous condition or the discovery of the hazardous condition. A sheriff or police chief who has been notified of a hazardous condition shall immediately notify the department. Reports made pursuant to this rule shall be confirmed in writing as provided in 131.2(2).

Reporting Subsequent Findings

All subsequent finding and laboratory results should be reported and submitted in writing to the department as soon as they become available.

Reminder: VERBAL REPORTS ARE REQUIRED WITHIN 6 HOURS OF INCIDENCE OCCURRENCE OR DISCOVERY.

Guidelines for Reporting Hazardous Conditions Verbal Reporting

Report the Condition if:

- The hazardous substance has the potential to leave the property by run-off, sewers, tile lines, culverts, drains, utility lines, or some other conduit, or,
- The hazardous substance has the potential to reach a water of the state – either surface water or groundwater or,
- The hazardous substance can be detected in the air at the boundaries of the facility property by the senses (sight and smell) or by monitoring equipment or,
- There is a potential threat to the public health and safety or,
- Local officials (Fire department, law enforcement, Hazmat, public health, and emergency management) respond to the incident or,
- The release exceeds a Federal Reportable Quantity (RQ).

~ If in Doubt, Report It ~

**IDNR REQUIRES VERBAL REPORTS WITHIN 6 HOURS OF
INCIDENCE OCCURRENCE OR DISCOVERY**

- It is recommended that all spills be cleaned up although a particular spill may not be reportable. A series of small spills over time can result in one big cleanup.
- Department rules stress the immediate or potential danger that a spill may cause.
- A written report of the Hazardous Condition is required within 30 days of the verbal notification.

In general, Iowa reporting requirements are more stringent than Federal reporting requirements. However, the **time limit** for reporting at the Federal level is more immediate.

Guidelines for Reporting Hazardous Conditions Written Report Requirements

The Iowa Department of Natural Resources Requires a written report of any Hazardous Condition.
(VERBAL REPORT REQUIRED WITHIN 6 HOURS)

Written Report

The written report of such a hazardous condition shall be submitted to the department within 30 days and contain the following information:

- a. The exact location of the hazardous condition.
- b. The time and date of onset or discovery of the hazardous condition.
- c. The name of the material, the manufacturer's name, and the volume of each material involved in the hazardous condition in addition to contaminants within the material if they by themselves could cause a hazardous condition.
- d. The medium (land, water, or air) in which the hazardous condition occurred or exists.
- e. The name, address, and telephone number of the party responsible for the hazardous condition.
- f. The time and date of the verbal report to the department of the hazardous condition.
- g. The weather conditions at the time of the hazardous condition onset of discovery.
- h. The name, mailing address, and telephone number of the person reporting the hazardous condition.
- i. The name and telephone of the person closest to the scene of the hazardous condition who can be contacted for further information and action.
- j. Any other information, such as the circumstances leading to the hazardous condition, visible effects, and containment measures taken that may assist in the proper evaluation by the department.

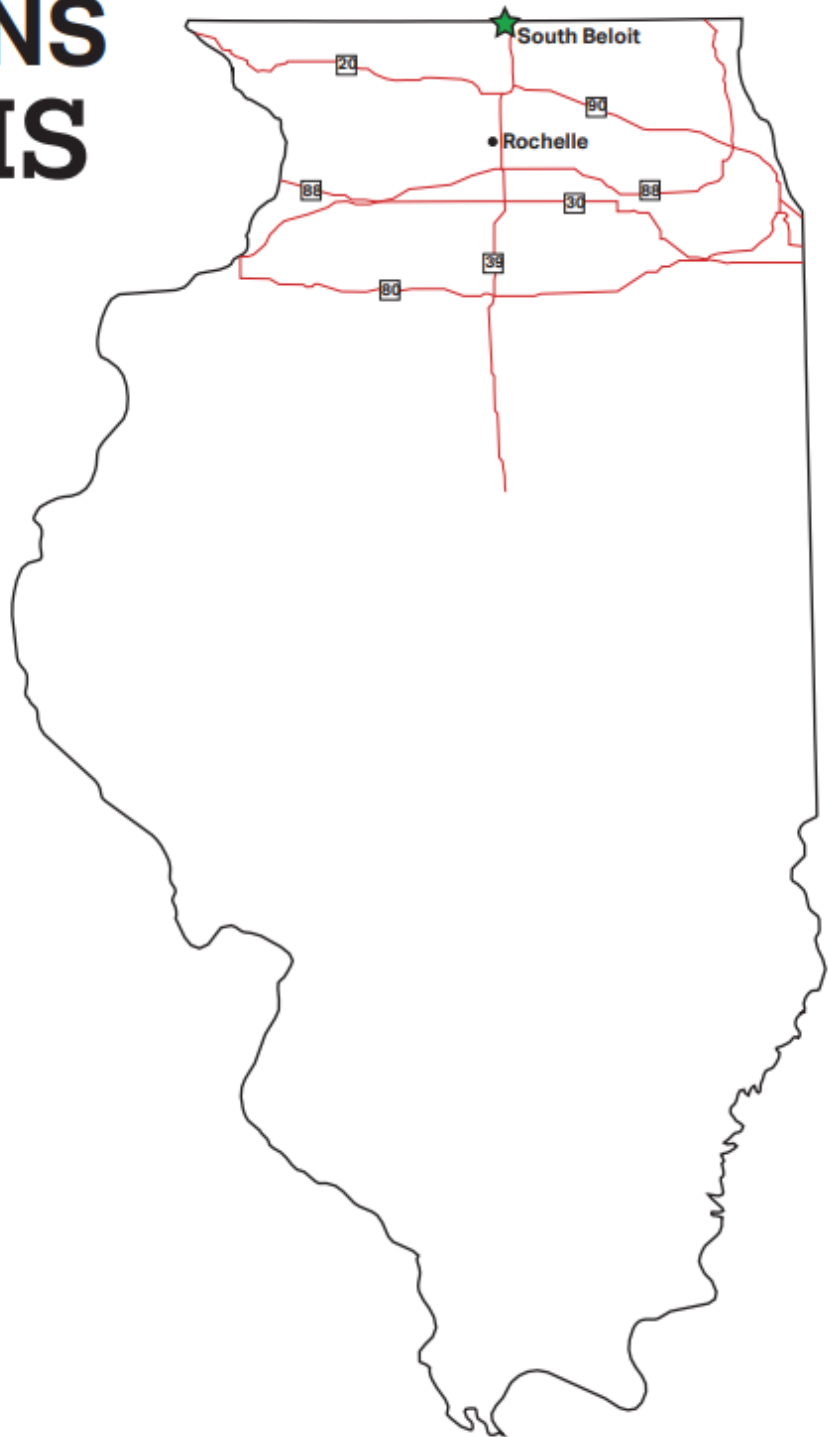
The written report should include the IDNR Spill Number (assigned at the time of the verbal report) and be addressed to the duty officer responding to the spill. Reports can be sent via mail, fax, or electronic mail to the addresses listed below.

Mail	Fax	E-Mail
Iowa DNR Field Services Emergency Response 7900 Hickman Rd. Suite 200 Windsor Heights, IA 50324	515/281-7229	Emergency_Response@dnr.iowa.gov

11.0 Kwik Trip Locations

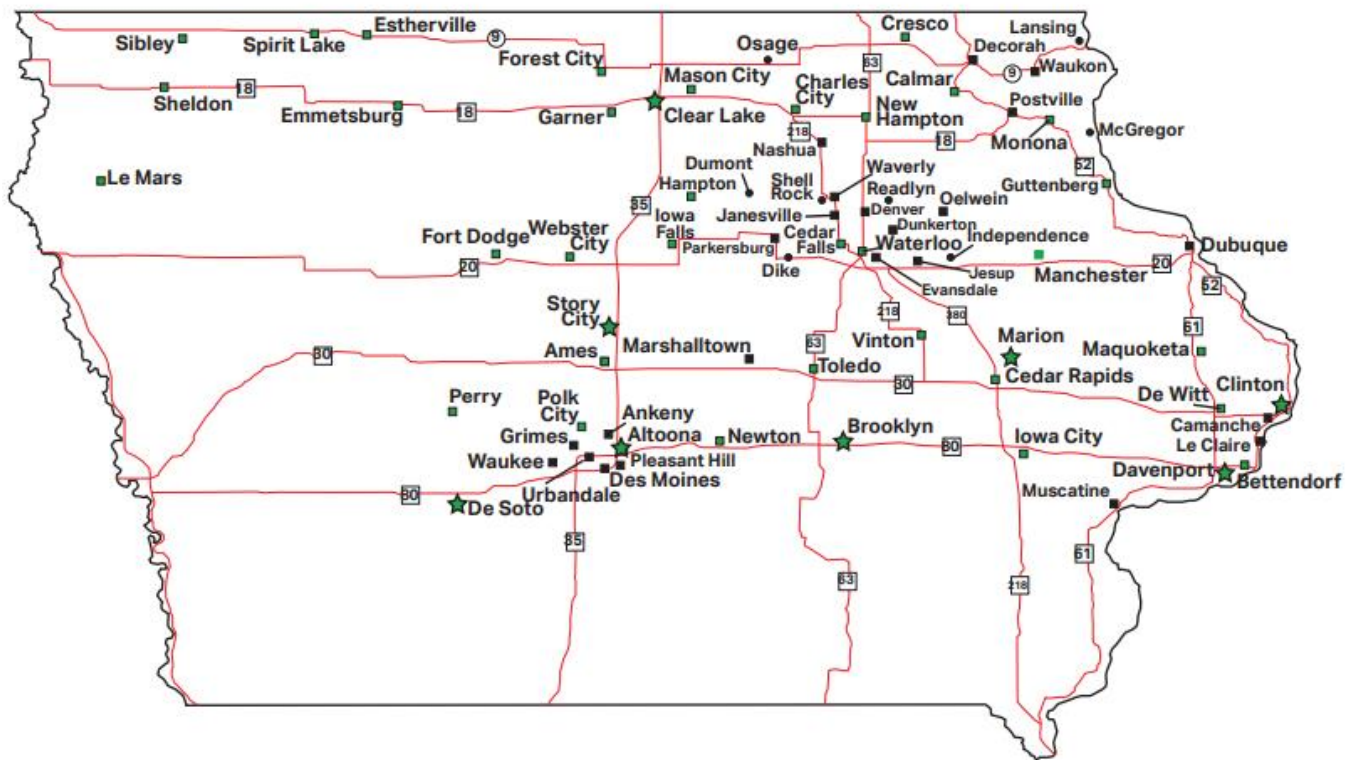
Kwik STAR

**LOCATIONS
ILLINOIS**



Kwik Star

LOCATIONS IOWA



Kwik TripTM

LOCATIONS

MICHIGAN



Kwik Trip

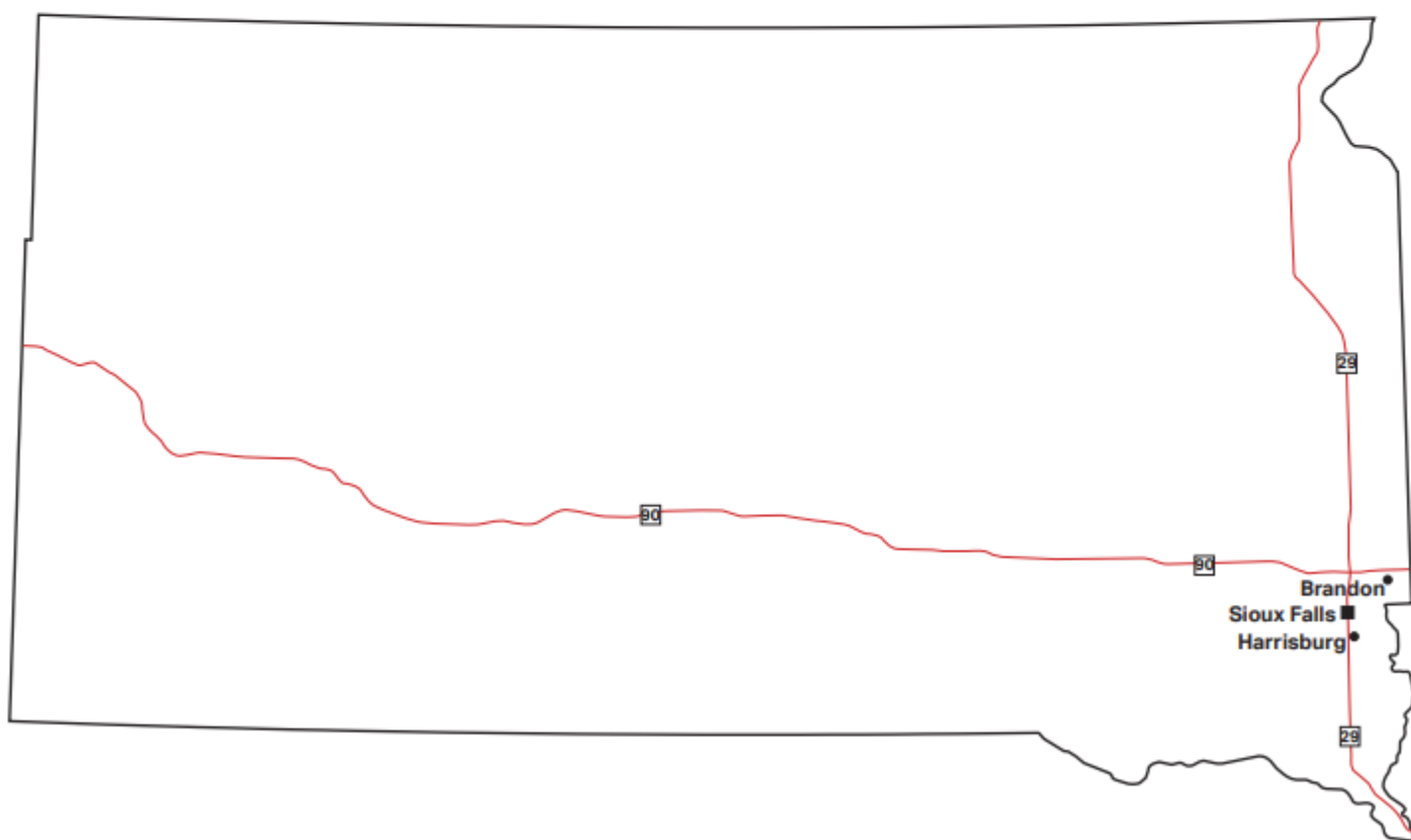
LOCATIONS

MINNESOTA

The map illustrates the distribution of Kwik Trip locations across Minnesota. Major highways are highlighted in red, and cities are labeled in black. Green stars indicate the specific locations of Kwik Trip stores. The map covers the entire state, showing the proximity of these locations to major urban centers and transportation routes.



LOCATIONS SOUTH DAKOTA



KwikTrip™

LOCATIONS WISCONSIN



12.0 Safety Data Sheets

A complete list of Safety Data Sheets (SDSs) for products present at a Kwik Trip properties are located on the Damarco Solutions searchable website using the hyperlink [HERE](#).

13.0 Spill Response Summary Report Requirements

The responding consultant should provide a summary report at the conclusion including the following, at a minimum:

- 1.0 Introduction
- 2.0 Hazardous Substance Discharged, Toxicity, Mobility and Volume
- 3.0 Duration of Discharge
- 4.0 Time discharge was Responded to and Properly Contained
- 5.0 Mitigation Efforts (including if efforts may have accelerated migration of pollution of hazardous substances)
- 6.0 Weather Conditions
- 7.0 Migration Potential of the Contamination
- 8.0 Nature and Scope of Immediate Response Actions
- 9.0 Sampling Results to Confirm Adequacy of Response
- 10.0 Visual and Olfactory Evidence of Contamination
- 11.0 Actual or Potential Environmental Impacts
- 12.0 Proximity of Contamination to Receptors
- 13.0 Present and Anticipated Future Land Use
- 14.0 Exposure Routes Evaluation and Summary of Remediation to the Extent Practicable
- 15.0 Other Relevant Information
- 16.0 Conclusions and Recommendations

Figures

Figure 1 – Site Vicinity Map

Figure 2 – Site Map (note: show release area)

Appendices

Appendix A – Photographs

Appendix B – Disposal Documentation

Appendix C – WTM Coordinates of Spill

Note: Report should be submitted to Kwik Trip electronically and to the appropriate state agency according to their requirements. Iowa requires a specific form be completed within 30 days of the release.

13.1 Required Reporting

Iowa



Written Report for Hazardous Conditions
The Iowa Department of Natural Resources
Requires a written report of any Hazardous Condition.

(VERBAL REPORT REQUIRED WITHIN 6 HOURS)

Written Report. The written report of a hazardous condition shall be submitted to the department within 30 days and contain the following information (Please complete as much as possible):

DNR Spill Number for hazardous condition:	
---	--

Location of hazardous condition:

Physical Address		city	
Legal Address	Lat/Long or Twn/Rng	zip	
Other description			

Time and Date of *onset or discovery* of hazardous condition:

Time ☐ AM ☐ PM Date _____

Time and Date of *verbal report* to the department of the hazardous condition:

Time ☐ AM ☐ PM Date _____

The Hazardous Condition:

Name of material/substance(s)	Manufacturer	Volume

If more space is needed add additional pages. Attach a Material Safety Data Sheet (MSDS) if possible.

The medium in which the hazardous condition occurred/existed (Check all that apply):

☐ Ground Water ☐ Surface Water ☐ Land ☐ Air

Weather Conditions during the time of the hazardous condition onset or discovery:

Temperature	Wind Direction	Wind Speed	Humidity	Precipitation

Contact Information:

	Name	Company	Mailing Address	Telephone
Person Reporting (if known)				
Party Responsible				
Site Contact				

Cause of the Incident: Write a narrative of the events leading to the incident

Initial Actions Taken: Write a narrative of the initial actions and instructions taken or required.

Written reports should include the DNR spill number and be addressed to the duty officer responding to the spill. Reports can be sent via mail, fax, or electronic mail.

Mail	Fax	Email
IDNR Emergency Response 7900 Hickman Rd Ste 200 Windsor Heights, IA 50324-4432	515/281-7229	Emergency_Response@dnr.iowa.gov

South Dakota

INCIDENT FOLLOW-UP REPORT

(Page 1 of 2)

DANR CASE FILE #: _____

**RETURN
COMPLETED
FORM TO:**

SOUTH DAKOTA DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES (DANR)
INSPECTION, COMPLIANCE, AND REMEDIATION PROGRAM
JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE SD 57501-3182

NAME/TYPE OF PRODUCT SPILLED: _____

TOTAL AMOUNT OF PRODUCT SPILLED: _____

POUNDS OF ACTIVE INGREDIENT SPILLED (fertilizer/pesticide spills): _____

AMOUNT OF PRODUCT RECOVERED: _____

WAS SURFACE WATER OR GROUND WATER IMPACTED BY THE SPILL?: _____

SPILL DATE: _____ DATE CLEANUP OCCURRED: _____

SPILL LOCATION (physical address, directions, distance to nearest intersection or landmark, etc.): _____

LATITUDE/LONGITUDE: _____

LAND USE (Residential, Commercial, Agricultural, Industrial, Other – describe): _____

RESPONSIBLE PARTY: _____

MAILING ADDRESS: _____

CITY/STATE: _____ TELEPHONE NUMBER: _____

PROPERTY OWNER: _____

MAILING ADDRESS: _____

CITY/STATE: _____ TELEPHONE NUMBER: _____

CONSULTANT / CLEANUP CONTRACTOR (if applicable): _____

MAILING ADDRESS: _____

CITY/STATE: _____ TELEPHONE NUMBER: _____

INSURANCE PROVIDER (if applicable): _____

NAME OF INSURED: _____

POLICY NUMBER: _____ CLAIM NUMBER: _____

MAILING ADDRESS: _____

CITY/STATE: _____ TELEPHONE NUMBER: _____

INCIDENT FOLLOW-UP REPORT (Page 2 of 2)

DANR CASE FILE #: _____

WAS SOIL EXCAVATED?: _____ DIMENSIONS OF EXCAVATION: _____

CUBIC YARDS EXCAVATED: _____

DISPOSAL SITE (Name of Facility): _____

DISPOSAL DATE: _____

If soil was disposed, attach copies of disposal receipts

FERTILIZER/PESTICIDE SPILLS ONLY**!!REQUIRES DANR PRE-APPROVAL!!**

WILL THE CONTAMINATED SOIL/MATERIAL BE LAND APPLIED?: _____

WHAT CROP IS/WILL BE GROWN ON THE LAND APPLICATION SITE?: _____

LEGAL DESCRIPTION OF THE LAND APPLICATION SITE: _____

TOTAL ACRES SOIL/MATERIAL WILL BE APPLIED TO: _____

YARDS/POUNDS/ETC. OF SOIL/MATERIAL TO BE APPLIED: _____

CONCENTRATION OF CHEMICAL IN THE SOIL/MATERIAL TO BE APPLIED?: _____

THIS SECTION**FOR DANR**

LAND APPLICATION APPROVAL DATE: _____

OFFICE USE

APPLICATION APPROVED BY: _____

ONLY

WAS SPILL CONTAINED TO IMMEDIATE AREA?: _____

DISTANCE TO AND NAME OF NEAREST SURFACE WATER (include currently dry perennial streams): _____

DISTANCE TO NEAREST WATER WELL (if applicable): _____

OWNER OF NEAREST WATER WELL (if applicable): _____

DESCRIBE RESPONSE ACTION AND ADDITIONAL WORK PLANNED: _____

FORM COMPLETED BY: _____

DATE: _____

E-MAIL ADDRESS: _____

Village of



Germantown

Engineering Department

Memorandum

To: Jeff Retzlaff, Director of Community Development

From: Kevin Driscoll, Village Engineer

Date: November 26, 2024

Re: N112 W18741 Mequon Road - Kwik Trip Relocation

Items Reviewed:

- | | |
|-------------------------------|-----------------|
| 1. Civil Plan Set | Dated: 10/09/24 |
| 2. Stormwater Management Plan | Dated: 10/09/24 |

General Comments:

1. Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
2. The submitted plans have been reviewed for general conformance with State and Village design guidelines. Additional comments could arise as a result of the plan completion and modifications. The items listed below will need to be fully resolved before the Engineering Dept. can recommend a formal approval of the plans and permit for construction.
3. This project will require a WRAPP/NOI from the DNR. Please submit a copy of the approved permit prior to final approval.
4. As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
5. A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
6. A Permit for Excavation of Roadway for Utility Work within the ROW is required, along with a Village Erosion Control Permit. Contact the Village Engineering Department to obtain permits.
7. As a guide to the review response: Items in *italics* are resolved or acknowledged, items in regular font are to be addressed yet, items in **Bold** are additional feedback to remaining original comment.

C-200 Grading Plan

1. Plans show a berm and swale being created in the Maple Avenue ROW. Its not clear what the purpose of the berm is and a berm is not desired within the ROW. Remove the berm or provide more information on the purpose for review.
2. Show overland flow path through the site with large bold arrows.
3. Recommend showing storm sewer pipes on grading plans.
4. Show pond overflow elevation and top of berm elevations.
5. Show storm sewer diameters. Show inlet connections and how they are connected to the retention pond.

C-201 Grading Plan Detail – South

1. Review grading around storm inlet 150. Rim elevation is shown higher than contours.

C-300 Grading Plan Detail – South

1. Existing inlet catch basin has 12-inch dia. to collect road runoff, and drains into storm sewer main. Proposed Discharge pipe diameter is 12-inch dia. from proposed storm water pond. Connect storm water pond discharge pipe to existing storm sewer with new manhole in the median.

C-400 Water

1. Sheet C400 – Add NOTE #8. install tracer wire per Germantown specification in the Development Handbook.
2. Sheet C400 – Shows 32 LF Water Service - Remove existing 6" or 8" gate valve. Install 8" x 4" reducer, install 4" R/W Mueller gate valve at ROW line
3. Sheet C401 – NOTES for Water Distribution System #6. – No station rods allowed
4. Sheet C401 – NOTES for Water Distribution System #7.

C603 Erosion Control Details

1. Specify liner type that will be used for this project (Type A, B or C).
2. Clay liner to extend to 2 year water elevation. Note elevation on detail.
3. Show required keyway under berm on the details.
4. Outlet control structure (inlet invert 854, outlet invert 858, allows for 4-ft pond fluctuation. Plus additional 6-ft fluctuation to 864. Emergency spillway is 863.5 for 100yr

Stormwater Management Plan

1. Executive summary references a different project. A Storm Water Management Plan refers to Crandon, and Green Bay data set from 1969. Update with relevant information.
2. Section 3 of the report references the Green Bay rainfall file but the SLAMM model is using the correct Milwaukee rainfile file.
3. Section 3, table 2 list a storage depth of 78". Provide information as to what this represents. The proposed basin has a depth of 60"
4. Clarify the Executive Summary statement, where, the overall site exceeds the peak flow requirements defined in the *MMSD Rules and Regulations*. The Project must meet MMSD unit rate or volumetric requirements, including undetained areas. Portions of the site that are undetained and undisturbed do not need to be included. Parcel is 4.37 acres. Inflow area is identified as 4.806 acres. Clarify drainage analysis.
5. Show proposed grading on exhibit STM-1.
6. Show Tc paths on exhibit STM-1
7. Provide information on how the 100 year storm event will be routed to the basin. It appears some inlets will overflow offsite and not make it to the basin.
8. Revise SLAMM model to clayey for Type C and D soils per WDNR guidance.
9. Provide storm sewer calculations.

Traffic

1. Traffic Study identified right turn northbound lane. Coordinate with staff to prepare agreement for work in the public right of way.
2. Traffic Study to Clarify anticipated trips generated, and requirements for acceleration and deceleration lanes, and potentially any stop signs or signals.

MEETING:	REGULAR MEETING OF THE GROUNDWATER TECHNICAL REVIEW COMMITTEE
DATE AND TIME:	Monday, November 25, 2024 11:00 AM
LOCATION:	Germantown Village Hall Board Room N112 W17001 Mequon Road

MINUTES

- I. **CALL TO ORDER:** *This meeting has been given public notice in accordance with Section 19.83 and 19.84, Wis. Stats, in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.*
Administrative Coordinator Deb Remich called the meeting to order at 11:06am.
- II. **ROLL CALL:**
All committee members were present.
- III. **ELECTION OF A CHAIRPERSON:**
Motion: Appoint Jeff Retzlaff as Chairperson
Motioned By: Matthew Mortwedt
Seconded By: John Delain
Yes: Matthew Mortwedt, Kevin Driscoll, John Delain, Paul Haugen, Jeff Retzlaff
No: None
Abstain: None
Motion Passed (Yes 5, No 0, Abstained 0)
- IV. **APPROVAL OF MINUTES:**
 - A. GTRC Minutes 9-4-24
Motion: Approve 9/4/24 Minutes
Motioned By: Kevin Driscoll
Seconded By: Matthew Mortwedt
Yes: Matthew Mortwedt, Kevin Driscoll, John Delain, Paul Haugen, Jeff Retzlaff
No: None
Abstain: None
Motion Passed (Yes 5, No 0, Abstained 0)
- V. **NEW BUSINESS:**
 - A. Jeff Osgood, Agent for Kwik Trip, Inc., and Ben Venue Properties, Property Owner; Review and Recommendation for a Conditional Use Permit (CUP) Application to Allow a "Motor Vehicle Filling Station" within a Groundwater Protection Overlay District Pursuant to Section 17.40.12(3) of the Village Zoning Code. (DISCUSSION & ACTION)
Associate Planner Jordan Yanke went over the Kwik Trip proposal briefly. Director Retzlaff discussed the Wellhead Protection checklist. He went through the ordinance and listed the applicable sections including requirements for a CUP in the Wellhead

Protection area. He discussed the Kwik Trip document dated 10/11/24 summarizing their request for a CUP within the Wellhead Protection area. Village Engineer Driscoll stated that he is supportive of the project as per chapters 17.40.11 & 17.40.12 and stated that the equipment will be replaced with new equipment with updated safety features which will curtail Wellhead contamination. Chief Delain was in agreement.

Motion: Approve CUP as presented subject to the applicant following their submittal documents as presented.

Motioned By: Kevin Driscoll

Seconded By: John Delain

Yes: Matthew Mortwedt, Kevin Driscoll, John Delain, Paul Haugen, Jeff Retzlaff

No: None

Abstain: None

Motion Passed (Yes 5, No 0, Abstained 0)

Water Superintendent Haugen asked for utility connection information. Driscoll suggested adding a condition within his engineering memo to include his comments. Retzlaff stated that the information Superintendent Haugen is asking for would be included with the Site Plan approval.

VI. ADJOURNMENT:

Motion: Adjourn at 11:23am

Motioned By: John Delain

Seconded By: Matthew Mortwedt

Yes: Matthew Mortwedt, Kevin Driscoll, John Delain, Paul Haugen, Jeff Retzlaff

No: None

Abstain: None

Motion Passed (Yes 5, No 0, Abstained 0)

ORDINANCE NO. ____-2025

AN ORDINANCE TO AMEND THE OFFICIAL ZONING MAP OF THE
VILLAGE OF GERMANTOWN ZONING CODE

WHEREAS, the Village of Germantown has adopted a Zoning Code under the authority granted by Wis. Stats. 61.35 and 62.23(7); and

WHEREAS, the Plan Commission has considered this petition for a Rezoning and found the request to be consistent with the Village's 2050 Comprehensive Plan; and

WHEREAS, the Plan Commission forwarded a recommendation of approval to the Village Board for the Rezoning at its meeting on December 9, 2024;

NOW, THEREFORE, the Village Board of the Village of Germantown, Wisconsin, do ordain as follows:

SECTION I

That the zoning map of the Village of Germantown is amended by rezoning from the B-3: General Business District to the B-5: Highway Business District for the following described property:

Lot 2 of Certified Survey Map No. 2890, recorded in the Washington County Registry on April 29, 1986, in Volume 16 of Certified Survey Maps on Pages 129-132, as Document No. 490681, and being a part of the Northwest ¼ of the Northwest ¼ of Section 28 of the Northeast ¼ of the Northeast ¼ of Section 29, Town 9 North, Range 20 East, in the Village of Germantown, County of Washington, State of Wisconsin.

Address: N112 W18741 Mequon Road
Tax Key No: GTVN_282-990

SECTION II

The terms and provisions of this ordinance are severable. Should any term or provision of this ordinance be found to be invalid by a court of competent jurisdiction, the remaining terms and provisions shall remain in full force and effect.

SECTION III

All ordinances or parts of ordinances contravening the terms of this ordinance are hereby to that extent repealed.

SECTION IV

This ordinance shall take effect and be in full force upon its passage and the day after its publication.

Adopted: January 6, 2025

Dean Wolter, Village President

ATTEST:

Donna Ott, Village Clerk

Approved as to form:

Brian C. Sajdak, Village Attorney

Published:

CUP # ___-2025

Document No.

CONDITIONAL USE PERMIT

Document Title

**VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN
CONDITIONAL USE ZONING PERMIT**

Whereas the Applicants:

**Jeff Osgood, Kwik Trip, Inc. Applicant and
Ben Venue Properties, Property Owner**

agree to comply with applicable Codes and Ordinances of the Village of Germantown, Wisconsin, and further agrees that all work done pursuant to the permission granted herewith will conform with the applications and drawings filed with and approvals granted by officials of the Village for the purpose of obtaining this permit.

Now, therefore, this permit is issued to allow the use and operation of a "Self-Service Carwash" from the property located at N112 W18741 Mequon Road pursuant to Section 17.32(3)(g) of the Village Zoning Code.

Name & Return Address:

**Village of Germantown
P.O. Box 337
Germantown, WI 53022**

Parcel Identification No:

GTNV_282-990

**On the following described property located in the Village of Germantown,
Washington County, Wisconsin:**

Lot 2 of Certified Survey Map No. 2890, recorded in the Washington County Registry on April 29, 1986, in Volume 16 of Certified Survey Maps on Pages 129-132, as Document No. 490681, and being a part of the Northwest ¼ of the Northwest ¼ of Section 28 of the Northeast ¼ of the Northeast ¼ of Section 29, Town 9 North, Range 20 East, in the Village of Germantown, County of Washington, State of Wisconsin.

Tax Key No: 282-990

Address: N112 W18741 Mequon Road

Pursuant to the following condition(s):

1. The uses and activities allowed on the property shall be limited to those uses and activities specified in the Conditional Use Permit (CUP) application and project narrative dated October 14, 2024, and October 17, 2024, and supporting site plan documents revised dated September 5, 2024. Days and hours of operation shall be in accordance with those specified in the CUP supporting documents submitted to the Village.
2. The Owner/Operator is responsible for reporting any significant changes in the type, intensity, amount, or location of the land use and activities, days and hours of operation, size or location or other operational characteristics of said uses and activities authorized under this CUP to the Village Zoning Administrator.
3. If the use, activities and/or operation subject of this permit falls out of conformity with the conditions herein, or, where there is a change in the nature, character, intensity or extent of the activities or uses which causes problems or harmful effects that were not anticipated at the time of approval of this CUP, the Conditional Use Permit (CUP) may be modified or terminated by the Village Board by the amendment to or addition of conditions after public hearing thereon.
4. All temporary and permanent exterior signs require a permit and shall comply with all

current sign regulations. Off-premises advertising and directional signage is regulated by the Village and requires a permit if/when allowed.

5. All future site improvements, including all building, parking area, landscaping, storm water management facilities, signage, exterior lighting, and any other improvements made to or on the property that are necessary for the land use and activities authorized under this CUP shall be submitted for review and approval by the Village through the Zoning Permit or Site Plan application process as determined by the Village Zoning Administrator. If required, Site Plan review and approval will include Plan Commission review and approval.
6. Building permits and commercial building code plan approval are required for the planned building and canopy construction. Contact SAFEbuilt staff in Inspection Services at Village Hall prior to any work for more information.
7. No overnight parking of semi-trailer trucks shall be permitted on site.
8. Pursuant to Section 17.47 of the Zoning Code, if the Village observes and/or receives complaints regarding negative impacts associated with and/or created by business-related activities conducted on the property, including but not limited to noise, dust or other airborne materials, the Property Owner/Operator shall work with the Village to identify the source of such impact(s), evaluate alternative mitigation measures, and implement a mutually-agreeable solution to mitigating the impact(s).
9. Applicant/owner/operator shall enter into an agreement with the Village in the form of a Memorandum of Understanding (MOU) that stipulates future financial contributions/proportionate costs the applicant/owner/operator would be required to make towards road alterations/improvements necessitated by traffic impacts associated with the site. The MOU shall address potential road alterations/improvements at the Maple Road site entrance across from Kleinmann Drive and the intersection of Maple Road/Mequon Road. The MOU shall be reviewed and approved by the Village Engineer and Village Attorney, prior to issuance of a building permit and commencement of construction activities for the new Kwik Trip facility.

Granted by the Village Board of the Village of Germantown, Washington County, Wisconsin
on the _____ day of _____, 2025.

Dean Wolter, Village President

ATTEST:

Donna Ott, Village Clerk

STATE OF WISCONSIN) SS
WASHINGTON COUNTY)
Personally came before me this _____ day of _____, 2025, the above
named Dean Wolter, Village President, and Donna Ott, Village Clerk, to me known to be the
persons who executed the foregoing instrument and acknowledged the same.

{type or print name of Notary on this line}

{signature of Notary on this line}

Notary Public, State of Wisconsin
My Commission Expires: _____

ACCEPTANCE OF TERMS AND CONDITIONS BY APPLICANT

I hereby accept the terms and conditions set forth in this Permit and realize that non-adherence to the terms and conditions as stated hereon may result in the revocation of this Permit by the Village of Germantown.

Dated this ____ day of _____, 2025

Jeff Osgood (Kwik Trip, Inc.), Applicant

STATE OF WISCONSIN) SS
_____) COUNTY)

Personally came before me this ____ day of _____, 2025, being the above named _____, to me known to be the person who executed the foregoing instrument and acknowledged the same.

{type or print name of Notary on this line}

{signature of Notary on this line}

Notary Public, State of Wisconsin
My Commission Expires: _____

ACCEPTANCE OF TERMS AND CONDITIONS BY PROPERTY OWNER

I hereby accept the terms and conditions set forth in this Permit and realize that non-adherence to the terms and conditions as stated hereon may result in the revocation of this Permit by the Village of Germantown.

Dated this ____ day of _____, 2025

Steven Schellin (Ben Venue Properties), Property Owner

STATE OF WISCONSIN) SS
_____) COUNTY)

Personally came before me this ____ day of _____, 2025, being the above named _____, to me known to be the person who executed the foregoing instrument and acknowledged the same.

{type or print name of Notary on this line}

{signature of Notary on this line}

Notary Public, State of Wisconsin
My Commission Expires: _____

This instrument was drafted by:

Jordan Yanke
Associate Planner
Village of Germantown, Wisconsin

CUP # __-2025

Document No.

CONDITIONAL USE PERMIT

Document Title

VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN
 CONDITIONAL USE ZONING PERMIT

Whereas the Applicants:

**Jeff Osgood, Kwik Trip, Inc., Applicant and
 Ben Venue Properties, Property Owner**

agree to comply with applicable Codes and Ordinances of the Village of Germantown, Wisconsin, and further agrees that all work done pursuant to the permission granted herewith will conform with the applications and drawings filed with and approvals granted by officials of the Village for the purpose of obtaining this permit.

Now, therefore, this permit is issued to allow the use and operation of a "Motor Vehicle Filling Station" from the property located at N112 W18741 Mequon Road pursuant to Section 17.40.10(1)(m) and Section 17.40.12(3) of the Village Zoning Code.

Name & Return Address:

**Village of Germantown
 P.O. Box 337
 Germantown, WI 53022**

Parcel Identification No:

GTNV_282-990

**On the following described property located in the Village of Germantown,
 Washington County, Wisconsin:**

Lot 2 of Certified Survey Map No. 2890, recorded in the Washington County Registry on April 29, 1986, in Volume 16 of Certified Survey Maps on Pages 129-132, as Document No. 490681, and being a part of the Northwest ¼ of the Northwest ¼ of Section 28 of the Northeast ¼ of the Northeast ¼ of Section 29, Town 9 North, Range 20 East, in the Village of Germantown, County of Washington, State of Wisconsin.

Tax Key No: 282-990

Address: N112 W18741 Mequon Road

Pursuant to the following condition(s):

1. Applicant/owner shall provide current copies of all federal, state, and local facility operation approval or certificates and on-going environmental monitoring results to the Village.
2. Applicant/owner shall establish environmental or safety structures/monitoring to include an operation safety plan, material processes and containment, operations monitoring, best management practices, stormwater runoff management, and groundwater monitoring.
3. Replace equipment or expand in a manner that improves the environmental and safety technologies in existence.
4. Prepare, file, and maintain a current contingency plan which details the response to any emergency which occurs at the facility, including notifying municipal, county, and state officials. Provide a current copy to the Village.
5. To the extent feasible, based upon scientific, engineering and economic factors, all site, building and other improvements shall be repaired, rebuilt, expanded, relocated, or substituted using best management practices, designs and technologies which are state of the art, such that they diminish the potential for wellhead contamination.

6. To the extent feasible, based upon scientific, engineering, and economic factors, the replacement, substitution, or augmentation of equipment and machinery and the installation thereof shall utilize state of the art equipment and machinery which diminishes potential for wellhead contamination.
7. The relocation of pre-existing uses or facilities is allowed provided all the following are met:
 - a. The pre-existing use or facility is relocated within the same Groundwater Protection Overlay District.
 - b. The new location meets all applicable separation distance requirements set forth under subsection 17.40.09.
 - c. The use or facility can obtain all applicable Federal, State and Local approvals and permits.
 - d. The owner of the property or current site from which the pre-existing use or facility is relocating from records a deed restriction against the property that prohibits future uses and/or facilities that require a conditional use permit under subsection 17.40.11 or are listed as a prohibited use in subsection 17.40.11. A copy of the recorded deed restriction shall be submitted to the Village.
 - e. The owner of the property or operator of the pre-existing use or facility being relocated causes the property and all structures, equipment, and systems located thereon to be altered and/or restored to a physical condition that can be reasonably expect to not cause groundwater contamination, including but not limited to the removal of storage tanks, pipes, and systems that previously contained or utilized hazardous, flammable, or other liquids or materials that had the potential to contaminate the Village's groundwater resources. Such alteration and restoration shall meet all applicable Federal, State, and Local agency requirements (e.g. Wisconsin's Cleanup Rules and Laws). Documentation providing proof of meeting this condition shall be submitted to the Village.
8. Applicant/company shall add the Village as an insured party on their Pollution Liability Insurance Policy. Proof of compliance with this condition shall be submitted to and accepted by the Village.
9. Applicant/owner/operator shall enter into an agreement with the Village in the form of a Memorandum of Understanding (MOU) that stipulates future financial contributions/proportionate costs the applicant/owner/operator would be required to make towards road alterations/improvements necessitated by traffic impacts associated with the site. The MOU shall address potential road alterations/improvements at the Maple Road site entrance across from Kleinmann Drive and the intersection of Maple Road/Mequon Road. The MOU shall be reviewed and approved by the Village Engineer and Village Attorney, prior to issuance of a building permit and commencement of construction activities for the new Kwik Trip facility.

Granted by the Village Board of the Village of Germantown, Washington County, Wisconsin
on the _____ day of _____, 2025.

Dean Wolter, Village President

ATTEST:

Donna Ott, Village Clerk

STATE OF WISCONSIN) SS
WASHINGTON COUNTY)
Personally came before me this _____ day of _____, 2025, the above
named Dean Wolter, Village President, and Donna Ott, Village Clerk, to me known to be the
persons who executed the foregoing instrument and acknowledged the same.

{type or print name of Notary on this line}

{signature of Notary on this line}

Notary Public, State of Wisconsin
My Commission Expires: _____

ACCEPTANCE OF TERMS AND CONDITIONS BY APPLICANT

I hereby accept the terms and conditions set forth in this Permit and realize that non-adherence to the terms and conditions as stated hereon may result in the revocation of this Permit by the Village of Germantown.

Dated this ____ day of _____, 2025

Jeff Osgood (Kwik Trip, Inc.), Applicant

STATE OF WISCONSIN) SS
_____) COUNTY)

Personally came before me this ____ day of _____, 2025, being the above named _____, to me known to be the person who executed the foregoing instrument and acknowledged the same.

{type or print name of Notary on this line}

{signature of Notary on this line}

Notary Public, State of Wisconsin
My Commission Expires: _____

ACCEPTANCE OF TERMS AND CONDITIONS BY PROPERTY OWNER

I hereby accept the terms and conditions set forth in this Permit and realize that non-adherence to the terms and conditions as stated hereon may result in the revocation of this Permit by the Village of Germantown.

Dated this ____ day of _____, 2025

Steven Schellin (Ben Venue Properties), Property Owner

STATE OF WISCONSIN) SS
_____) COUNTY)

Personally came before me this ____ day of _____, 2025, being the above named _____, to me known to be the person who executed the foregoing instrument and acknowledged the same.

{type or print name of Notary on this line}

{signature of Notary on this line}

Notary Public, State of Wisconsin
My Commission Expires: _____

This instrument was drafted by:

Jordan Yanke
Associate Planner
Village of Germantown, Wisconsin

BUSINESS OF THE VILLAGE BOARD

MEETING DATE: January 6, 2025

PLACEMENT: Ordinance

ITEM TITLE: An Ordinance Amending Section 9.07 of the Germantown Municipal Code Related to Noise Disturbances Within the Village and Creating Section 12.03 of the Germantown Municipal Code Related to Permitting Outdoor Entertainment Within the Village

SUBMITTED BY: Brian Sajdak, Attorney

SUMMARY EXPLANATION:

Following discussion at the August Public Safety Committee meeting, the proposed ordinance reflects the discussion about various options that exist. Based upon scheduling and technology issues at the October meeting, this item was tabled for the attendance by the Village Attorney, and is now being brought back for discussion. The purpose of the discussion on the current agenda is to review the proposed ordinance and make changes as the Committee sees fit. If there are no changes, the Committee could then forward on to the Village Board for consideration and adoption.

ATTACHMENT:

1. Ordinance Amending Noise Regulations

STAFF RECOMMENDATION:

A motion to approve the proposed ordinance as amended

ACTION BY Committee:

The Public Safety Committee recommended approval by a vote of 3-0 at its December meeting.

ORDINANCE NO. _____-24

AN ORDINANCE AMENDING SECTION 9.07 OF THE GERMANTOWN MUNICIPAL
CODE RELATED TO NOISE DISTURBANCES WITHIN THE VILLAGE AND
CREATING SECTION 12.03 OF THE GERMANTOWN MUNICIPAL CODE RELATED
TO PERMITTING OUTDOOR ENTERTAINMENT WITHIN THE VILLAGE

WHEREAS, the Village Board previously created section 9.07 of the Germantown Municipal Code which regulates noise disturbances within the Village; and

WHEREAS, the Village Board recognizes that noise is threat to the public health and welfare, public safety, quality of life and property values; and

WHEREAS, the Village Board similarly recognizes that amenities within the Village, including outdoor entertainment during the warmer months, also improves the quality of life for residents; and

WHEREAS, the Village Board desires to amend the Municipal Code to better regulate various noise sources within the Village; and

WHEREAS, the Village Board has determined that proper regulation of noise within the Village furthers the public health, safety and welfare of the community;

NOW, THEREFORE, the Village Board of the Village of Germantown, Wisconsin, do ordain as follows:

SECTION I

Section 9.07 of the Germantown Municipal Code is amended to read as follows
(NOTE: Added text is double underlined; Deleted text is ~~struck through~~):

9.07 NOISE DISTURBANCES PROHIBITED.

(1) **GENERAL.** Except as may be otherwise provided for in this section,
no~~No~~ person shall make, continue or cause to be made any loud, disturbing,
discordant or unnecessary sounds, ~~or noises or vibrations~~ such as may tend to
annoy or disturb a person of ordinary sensibilities in or about any public street,
alley or park or any private residence.

(2) **TYPES OF LOUD AND UNNECESSARY NOISES.** The following acts are declared to be loud, disturbing and unnecessary noises in violation of this section, but this enumeration shall not be deemed to be exclusive:

(a) Horns, Signaling Devices. The sounding of any horn or signaling device on any automobile, motorcycle or other vehicle on any street or public place in the Village for longer than 3 seconds in any period of one minute or less, except as a danger warning; the creation of any unreasonable loud or harsh sound by means of any signaling device and the sounding of any plainly audible device for an unnecessary and unreasonable period of time; the use of any horn, whistle or other device operated by engine exhaust; and the use of any signaling device when traffic is for any reason held up.

(b) Radios, Televisions, Instruments, Loudspeakers, Public Address Systems, and Similar Devices. Except for Village celebrations, parades, and community events authorized and regulated by the Village Board, and except where the person is operating in compliance with an outdoor entertainment permit issued by the Village Board, the operation, playing or permitting the operation or playing of any radio, television, phonograph, drum, musical instrument, sound amplifier, loudspeaker, pubic address system or similar device which produces, reproduces or amplifies sound:

1. In such a manner as to create a noise disturbance across a residential real property boundary. ~~Except for those licensed premises holding and operating in accordance with an outdoor premises extension under section 12.02(7)(q).~~ The operation of any radio, television, instrument, phonograph, machine or device between the hours of 10:00 p.m. and 6:00 a.m. in a manner as to be plainly audible at the property line of the building, structure or vehicle in which it is located shall be prima facie evidence of a violation of this section.

2. In such a manner as to create a noise disturbance at 50 feet (15 meters) from such device, when operated in or on a public right-of-way or public space.

3. In such a manner as to unreasonably disturb the occupant(s) of an adjacent unit in a multi-family residential structure.

(c) ~~Loudspeakers, Amplifiers, Public Address Systems or Other Similar Devices . Except for Village celebrations authorized and regulated by the Village Board, using, operating or permitting the use~~

~~or operation of any loudspeaker, sound amplifier, public address system or other machine or device for the producing or reproducing of sound which increases the volume of voice, music or other sounds:~~

~~1. — In such a manner as to create a noise disturbance across a residential real property boundary. Except for those licensed premises holding and operating in accordance with an outdoor premises extension under section 12.02(7)(q), the operation of any loudspeaker, sound amplifier, public address system or other machine or device between the hours of 10:00 p.m. and 6:00 a.m. in a manner as to be plainly audible at the property line of the building, structure or vehicle in which it is located shall be prima facie evidence of a violation of this section.~~

~~2. — In such a manner as to create a noise disturbance at 50 feet (15 meters) from such device. when operated in or on a public right-of-way or public space.~~

(c) Outdoor Power Equipment. The operation of any gas-powered outdoor power equipment such as lawn mowers, saws, hedge clippers, leaf blowers, snow removal equipment, and the like between the hours of 10:00 p.m. and 6 a.m., except that snow removal equipment may be operated at any time during the pendency of an official snow emergency and at any time within 24 hours following a snowfall of two inches or greater.

(d) Exhausts. The discharge into the open air of the exhaust or any internal combustion engine or motor boat, except through a muffler or other device which will effectively prevent loud or explosive noises therefrom.

(e) Construction and Use of Tools and Equipment. Between 10:00 p.m. and 6:00 a.m. the following day, any of the following activities such that sound therefrom creates a noise disturbance:

~~1. — The erection (including excavation), demolition, alteration or repair of any building as well as the operation of any pile driver, excavating equipment, pneumatic hammer, derrick, steam or electric hoist, or any other similar equipment attended by loud or unusual noise. The Building Inspector shall have the authority, upon determining that the loss or inconvenience which would result to any party in interest would be extraordinary and of such nature as to warrant special consideration, to grant permission for a period necessary within~~

~~which time such work and operation may take place within the hours of 10:00 p.m. and 6:00 a.m.~~

~~2. Operating or permitting the operation of any tools or equipment including, but not limited to, lawn mowers, chain saws, powered garden and lawn equipment, and other nonconstruction maintenance equipment.~~

1. Commercial Operations. The outdoor use by any commercial contractor of any construction tools and equipment between the hours of 9:00 p.m. and 7:00 a.m. on weekdays, and 5:00 p.m. and 8:00 a.m. on weekends and public holidays.

2. Residential Homeowner Activities. The outdoor use by any residential homeowner or tenant of any construction tools and equipment between the hours of 10:00 p.m. and 7:00 a.m. on weekdays, and 9:00 p.m. and 8:00 a.m. on weekends and public holidays.

3. Hours of operation may be extended, except on Sundays, for operations or work under public contracts where the Village's Director of Public Works deems such extension reasonably necessary under the circumstances. The Director may revoke such permission upon 24-hour notice to the general contractor of such work. The Building Inspector shall have the authority, upon determining that the loss or inconvenience which would result to any party in interest would be extraordinary and of such nature as to warrant special consideration, to grant permission to extend the hours of operation.

4. This section does not apply to emergency work of public service utilities.

(f) Schools, Courts, Churches, Hospitals. The creation of any excessive noise on any street adjacent to any school, institution of learning, church or court while in use, or adjacent to any hospital, which unreasonably interferes with the normal operation of that institution or which disturbs or unduly annoys patients in the hospital provided that conspicuous signs are displayed on those streets indicating a school, hospital or court street.

(g) Animals and Birds. Owning, possessing or harboring any animal or bird which frequently or for continued duration, howls, barks, meows, squawks or makes other sounds which ~~create a noise~~

disturbance materially interferes with or affects the health, comfort, peace and quiet of the public, or the reasonable use and enjoyment of the neighboring residential properties where the animal sounds are shown to have occurred either as an episode of continuous noise lasting for a minimum period of fifteen (15) minutes, or repeated episodes of intermittent noise lasting for a minimum period of thirty (30) minutes. It shall be an affirmative defense under this division that the animal was intentionally provoked by a party other than the owner to make such noise.

(h) Explosives, Firearms and Similar Devices. Impulsive sound from explosives, firearms and similar devices shall be regulated solely by the provisions of § SPS 307.44, Wis. Adm. Code, as amended from time to time, hereby adopted by reference, exclusive of provisions relating to penalties. Any act required to be performed or prohibited by § SPS 307.44 is required or prohibited by this section.

(i) Emergency Signaling Devices.

1. The sounding or permitting the sounding outdoors of any fire, burglar or emergency government alarm, siren, whistle or similar signaling device such that the sound therefrom creates a noise disturbance, except for actual emergency purposes.

2. Testing a stationary emergency signaling device shall occur at the same time of day each time such a test is performed, but not before 7:00 a.m. or after 7:00 p.m. Any such testing shall use only the minimum cycle test time. In no case shall such test time exceed 60 seconds.

(3) **EXEMPTIONS.** The provisions of this section shall not apply to:

(a) Any vehicle of the Village, County or State while engaged in necessary public business.

(b) Excavations or repairs of streets or other public construction by or on behalf of the Village, County or State at night when public welfare and convenience renders it impossible to perform such work during the day.

(c) Operation of emergency equipment. Emergency equipment shall include ambulance, police, fire, snow removal, civil defense, disaster, etc., necessary for the health, safety and protection of the citizens of the Village.

(d) ~~Snowblowers, snow plows and other snow removal equipment shall also be exempt from this section.~~ Noises ordinarily associated with an approved use of property, or those noises which are expressly authorized by a permit, authorization or approval from a duly authorized governmental entity.

(e) Implements of husbandry being operated for agricultural purposes.

(4) DETERMINING VIOLATIONS. In determining whether a noise constitutes a violation under this section, the following characteristics and conditions should be considered when assessing whether the noise would tend to annoy or disturb a person of ordinary sensibilities:

(a) The time of day when the noise occurs.

(b) The duration of the noise.

(c) The frequency or pitch of the noise.

(d) The proximity of the noise to a structure in which sleeping may occur.

(e) The use, nature, and zoning of the property from which a noise emanates and the property where it is perceived.

(f) The number of people and their activities that are affected or are likely to be affected by the noise.

(g) The level of the noise in comparison to the level of ambient noise.

SECTION II

Section 12.03 of the Germantown Municipal Code is created to read as follows:

12.03 OUTDOOR ENTERTAINMENT PERMIT.

(1) **PURPOSE.** The Village recognizes that noise is threat to the public health and welfare, public safety, quality of life and property values. The Village similarly recognizes that amenities within the Village, including outdoor entertainment during the warmer months, also improves the quality of life for residents. It is the policy of the Village to regulate outdoor entertainment within the Village in order to balance these competing interests.

(2) **PERMIT REQUIRED.** No person may provide any of the following types of entertainment that is, wholly or in any part, including fixtures, attendees, and sound systems, outside of a fully enclosed permanent structure without a permit:

- (a) Amplified or non-amplified music, including live singers, musicians, bands, or orchestras, recorded music, karaoke, juke boxes, live DJ's, background music, radios, and the like.
- (b) Audio-visual broadcasts, including the presentation of live televised events such as a sporting event, television shows, movies and the like.

(3) **PERMIT TYPES.** There shall be two types of outdoor entertainment permits:

- (a) Annual Permit: Allows the permittee to provide outdoor entertainment outside an enclosed structure during specified hours. The permit period is July 1 through June 30, with each year requiring a new permit.
- (b) Temporary permit: Allows the permittee to provide activities outside an enclosed structure during a specified period or periods for special, limited occurrences.

(4) **APPLICATION PROCESS.**

(a) Application Filing Dates.

1. Applications for annual permits must be submitted to the Village Clerk no later than close of business on the last Friday in April. Any application for an annual permit received after the deadline will be processed on a non-prorated basis subject to the regular meeting schedule of the reviewing bodies.

2. Applications for temporary permits must be submitted to the Village Clerk no less than 60 days before the desired date to provide music or other activity, in order for the permit to be processed.

(b) Permit fees shall be set from time to time by resolution of the Village Board.

(c) Permit applications must be accompanied by a scaled drawing or map showing the location of all speakers, televisions, performance locations, and the like, a site plan, and a plan of operation setting forth the dates, hours, location, type and scope of the operation for all outdoor activities.

(d) The Village Clerk will mail notice of the Public Safety Committee meeting at which the application will be reviewed to the owners of all properties located within 500 feet of the applicant's property lines at least 15 days prior to the meeting.

(e) The Village Board, after review and recommendation by the Public Safety Committee, shall approve, approve with conditions, change or deny any permit application. The Village Board, in granting any permit under this section, may impose conditions and restrictions on the permit found to be necessary to minimize the impact of the outdoor entertainment upon surrounding properties including limiting the dates and times of activities and requiring technologically reasonable steps to minimize noise and other impacts.

(5) **EXCEPTIONS.** No permit under this section shall be required for outdoor entertainment activities which occur as part of an authorized parade or on property owned by the Village, the Germantown School District, Washington County, and the State of Wisconsin.

(6) **VIOLATIONS.** Any person providing outdoor entertainment without a permit or in violation of the terms of the permit issued under this section is guilty of violating this section and is subject to the penalties found section 12.04.

SECTION III

The terms and provisions of this ordinance are severable. Should any term or provision of this ordinance be found to be invalid by a court of competent jurisdiction, the remaining terms and provisions shall remain in full force and effect.

SECTION IV

All ordinances or parts of ordinances contravening the terms of this ordinance are hereby to that extent repealed.

SECTION V

This ordinance shall take effect and be in full force upon its passage and the day after its publication.

Introduced by _____ on _____, 2024.

Adopted: _____, 2024

Vote: Ayes:

Nays:

Absent:

Dean Wolter, Village President

ATTEST:

Donna Ott, Village Clerk

Approved as to form:

Brian C. Sajdak, Village Attorney

Published:

BUSINESS OF THE VILLAGE BOARD

MEETING DATE: January 6, 2025

PLACEMENT: Action Item

ITEM TITLE: Revised Purchasing Policies and Ordinance to Amend Municipal Code to Reflect Revised Policies

SUBMITTED BY:

SUMMARY EXPLANATION:

Attached to this file is a Purchasing Policy and a proposed change to Village ordinances related to purchasing procedures for review and approval by the General Government & Finance Committee and the Village Board.

If approved, this would establish Village Board approved policies related to the acquisition of goods and services by Village staff. This policy addresses the following areas:

- Purchasing processes for operating and capital expenses
- Capital purchases
- Competitive pricing
- Petty cash

The proposed ordinance change would increase Village purchasing authorizations as listed in the table below, in order to streamline purchasing processes. These authorizations were last increased in 2017.

Level of Approval	Current Limit
Department Head	\$2,500
Village Administrator	\$7,500
Standing Committee	\$15,000

The proposed changes would better align Germantown with the authorizations in place for other nearby communities. The City of Mequon authorizes department heads to approve purchases under \$5,000, the Finance Director to approve purchases under \$10,000 and the Administrator to approve purchases under \$25,000. Purchases of \$25,000 and over must be approved by a Common Council Committee. Menomonee Falls authorizes the Village Administrator to approve all purchases under \$25,000, while all purchases \$25,000 and higher must be approved by their General Government & Finance Committee and Village Board. Hartford authorizes the Village Administrator to approve all non-utility purchases under \$30,000, and the Common Council approves purchases \$30,000 and higher. West Bend allows department heads to approve purchases up to \$5,000 and the Administrator up to \$10,000. All of their purchases \$10,000 and higher need Common Council approval.

The General Government & Finance Committee reviewed the proposed changes and is recommending approval to the Village Board.

ATTACHMENT:

1. Procurement Policy Final Draft 241114
2. Ordinance Amending Claims Procedure - 2024

STAFF RECOMMENDATION:

Approve proposed purchasing policies and ordinance to amend municipal code to reflect revised policies as recommended.

ACTION BY Committee:

Village of Germantown

Purchasing Policy

Purpose

The budget is designed to provide a sufficient level of detail to provide funding authorization for most ongoing operating expenditures. However, it is understood that purchasing must follow some rules that cannot be included in the annual budget or the Village Code. Because of the diverse nature of municipal government, these requirements will be different based on the amount and type of spending. The Village Board has adopted the following Purchasing policies to clarify these requirements.

Purchasing Processes

There are several levels of authorization that may be necessary to initiate a purchase using municipal funds. The level of authorization required will depend on which of the following conditions may apply to the purchase.

Operational Expenses including professional services, maintenance and office supplies

During the budgeting process, the Village Board approves department budgets with the understanding that some of the spending within those budget amounts may be made without direct board approval consistent with Chapter 3.08 of the Municipal Code of Ordinances. However, all such spending must follow the parameters set out in these policies.

Authorizations:

Purchases less than \$5,000

1. For purchases and contracts that are under \$5,000 and have already been approved by the budget, only department head approval is required.
2. Department heads may delegate this approval when necessary; any such delegation must be reported in advance (when possible) to the Village Administrator, Village Finance Director, and Accounts Payable Personnel to ensure efficient payment of invoices. Department heads may sign contracts valued at \$5,000 or less.
3. Purchases of \$500 or more should be entered into the Tyler Munis Financial Management system as a contract, purchase order or requisition in advance of the purchase. In cases where advanced entry is not possible, a check request may be entered into Tyler Munis Financials with appropriate documentation as soon as possible after the purchase.
4. A purchasing card should generally be used for small dollar purchases.

Purchases of \$5,000 up to \$15,000

1. Village Administrator authorization is required; this authorization should occur before the purchase, except in cases of emergency.
2. A requisition, purchase order or contract should be completed in Tyler Munis and submitted to the Village Administrator for approval.
3. If a contract must be signed for purchases up to \$15,000, Village Administrator should be the contract signatory.
4. Purchases within this category should follow the Competitive Pricing policy as outlined in the Other Purchasing Policies Section.

Purchases of \$15,000 up to \$24,999.99

1. Committee of jurisdiction authorization is required, in addition to the Village Administrator.
2. A requisition, purchase order or contract should be entered into Tyler Munis after Committee approval has been received.
3. If a contract must be signed for purchases of \$15,000 up to \$25,000, the Village Administrator is authorized to sign contracts that have been approved by Committee.
4. Purchases within this category should follow the Competitive Pricing policy as outlined in the Other Purchasing Policies Section.

Purchases \$25,000 and over

1. Village Board Authorization is required, in addition to Village Administrator and Committee approvals.
2. A requisition, purchase order or contract should be entered into Tyler Munis after Committee approval has been received.
3. Staff must seek proposals for purchase over \$25,000 and provide three such proposals/quotes to the board along with the request. When three proposals/quotes are not available, staff should explain their methodology for solicitation and present proposals/quotes available. The Village Administrator is authorized to sign contracts that have been approved by the Village Board.
4. Purchases within this category should follow the Competitive Pricing policy as outlined in the Other Purchasing Policies Section.

Blanket Contracts

For multiple purchases of the same item(s):

- Some items must be purchased multiple times throughout the year. In this situation, a “blanket” purchase order may be approved through the process listed above for a specified dollar amount.
- This blanket purchase order serves as a purchase limit. Each purchase is then deducted from the total amount, until the approved amount has been spent. If additional items are needed after this time, a new purchase order must be approved by the Village Board.

Capital Purchases

Because of the nature of Capital Purchases, the process is somewhat different than for general purchases. Any Capital Spending MUST be part of a Capital Project approved during the annual Village Budget. Capital Purchases made outside these projects will require full Village Board approval before they can be made, except in emergency situations. However, approval of Capital Projects in the annual budget does not mean automatic approval of all purchases made for those projects; in general, these purchases will follow the same process as all other purchasing, with the exception that any public construction projects must follow the guidelines established in Wis. Stat. 62.15.

Other Purchasing Policies

Competitive Pricing

To help ensure that the Village is getting high quality goods or services at the most competitive pricing, the following purchasing best practices should be applied based upon the item's expected purchase cost, and/or nature of the purchase. Price will often not be the only factor in deciding on a vendor, but it should always be a consideration.

Purchases dictated by state statute or state contract are exempt from these requirements. It is expected that all Village employees implement these practices into their department's purchasing, to the extent they are able.

On-Going or Renewable Contracts

Many Village contracts for services, licenses, subscriptions, etc. are renewable on an annual basis. Renewable contracts can benefit the Village by providing continuity, stability, and efficiency. These contracts should be reviewed with the Village Board at intervals of no less than every five years and should periodically be opened to an RFP process.

Competitive Pricing on Professional Services, General Goods and Purchases

1. While there are no specific bidding processes required for items under \$5,000 in value, price checking should be done whenever practical.
2. For purchases from \$5,000-\$25,000 in value, price checking from at least 3 vendors is required to be documented. If three vendors are not available or if item is exempt from bidding, documentation of these reasons should be made.
3. If the item to be purchased is \$25,000 or more in value, the following methods should be used:

Written price quotes from at least 3 vendors are required for items to be purchased that are \$25,000 or more in value. Quotes should be based on substantially equivalent products. All quotes should be based on the minimum appropriate standard for acceptable quality. However, multiple quotes are not required when pricing is based on

the bidding done by other governments, such as items purchased under State contract pricing.

Additional Considerations – General Goods:

- Pricing should be considered in conjunction with obtaining the appropriate quality of goods.
- Product availability and the timeliness of delivery may also impact purchasing decisions.
- The scope of products and the efficiencies of consolidating orders may be a differential factor.
- Making quantity or bulk purchases should be considered if significant savings can be realized. For general supplies, consolidation of orders among departments should always be considered.
- The amount of time spent on purchasing should be commensurate with the product costs.

Additional Considerations – Contracts:

Pricing may not be the sole criteria in selecting service providers. Contracts and proposals may also be evaluated based on a combination of factors that result in the best benefit to the Village, including but not limited to:

- The Understanding of the work required by the Village
- The Quality and Responsiveness of the proposal
- Willingness to accept contract terms or conditions
- Demonstrated competence and professional qualifications of the firm
- Background and related experience of the specific individuals to be assigned to the project
- Recent experience in successfully performing similar services / References
- Proposed methodology for completing work
- Level of staff interaction required to complete work

Sole Source Contacts and Purchases

Competitive procurement processes are not always in the best interest of the Village, and a sole source purchase may be appropriate. Examples of conditions which may warrant a sole source purchase include:

- *Emergency purchases.* During emergency events, time may not permit following standard purchasing procedures. The Village Administrator should be informed of emergency purchases as soon as possible.
- *Unique products.* Some products are unique and only available from a single vendor. This information should be made clear during the approval process.
- *Need to Conform for Prior Purchases:* In some cases, only a single vendor can provide a product that conforms to products previously purchased by the Village. For example, an additional module to the Village's financial system would likely need be purchased from

Tyler Munis so it interfaced with the rest of the system. This information should be made clear during the purchasing process.

- **Standards:** For compatibility, ease of maintenance, or other factors, the Village may adopt standards for certain products or systems. For example, having consistent door and locking hardware across all Village buildings makes future maintenance cheaper and easier to prepare for and enhances security. Other examples include:
 - Centralized or networked HVAC and security systems
 - Fleet standards for equipment groups, such as Chevrolet pick-up trucks that have substantially similar maintenance needs and have similar parts platforms that allow for ease of maintenance, staff training, etc.

Petty Cash Policy

Purpose

The Village of Germantown's petty cash fund is intended for small, incidental expenses where it is infeasible or impractical to use the Village's standard purchasing processes.

Custodians

Each department is responsible for securing and controlling their petty cash funds. All funds must be stored securely in a locked location. Theft or loss of funds is the responsibility of the respective department.

Authorized Departments and Fund Limits

The following departments are authorized to maintain petty cash funds for operational needs:

- **Finance Department:** For miscellaneous transactions, set at \$525
- **Police Department:** For miscellaneous transactions, set at \$200

Departments may request fund limit adjustments through the Finance Director.

Appropriate Use

Petty cash should only be used to reimburse individuals for out-of-pocket expenditures under \$50. It can be used in place of the Village's purchasing process only for small, incidental expenses. Specific uses include:

- **Change:** At various department locations and events.
- **Reimbursements:** For minor, incidental department expenses.

Prohibited Uses

Petty cash should not be used for:

- Travel expenses (use Employee Expense Report).
- Advances for travel.
- Purchases that should go on a department credit card.
- Vendor or contractor payments (use Accounts Payable).
- Employee awards or services (use Payroll).
- Any taxable or non-taxable personal benefits.
- Personal borrowing (no IOUs).

The Finance Director may update this list as necessary and will notify departments of changes.

Setting Up a Petty Cash Fund

Departments seeking petty cash funds should submit a memo to the Finance Director detailing the purpose, amount requested, and denominations needed. Approved requests will be issued a check, cashed at the bank, and distributed to the requesting department.

Custodian Responsibilities

Department custodians must ensure petty cash is used only when standard purchasing methods (e.g., credit cards, check requests) are infeasible. They must perform an annual reconciliation for audit purposes and report any loss of funds immediately.

Reimbursement Process

Petty cash should be reconciled and replenished monthly. Reimbursement requests, including original receipts and approval from the department head or designee, must be submitted to the Finance Department. Requests should specify desired currency denominations, if any.

Closing a Petty Cash Account

Petty cash accounts must be closed when the fund's purpose is complete. The Finance Department may review fund usage and recommend account closure or reduction. Upon closing, all remaining funds should be returned to the Finance Department along with a final reconciliation.

Review Cycle

This policy shall be reviewed regularly to ensure its relevance to the Village of Germantown's operations.

Other Procurement Processes

- Documentation is required for *all* purchases, whether through petty cash, purchase order, voucher or credit card.
- Department heads have the responsibility for securing documentation from department employees and providing it as required to the Finance Director and/or the Village Administrator.
- Once a purchase or contract has been approved and initiated, it is understood that the Village is obligated to the vendor for payment.

ORDINANCE NO. ____-14

AN ORDINANCE AMENDING SECTION 3.08 OF THE
MUNICIPAL CODE OF GERMANTOWN RELATING TO THE
VILLAGE'S PURCHASE AND CLAIMS PROCEDURES

WHEREAS, the Village Board having previously adopted Section 3.08 of the Municipal Code of Germantown which specifies certain procedures relating to purchases made by the Village; and

WHEREAS, the Village Administrator has identified the need for certain changes within those procedures to better reflect current best practices and increased costs since the last time the procedures were put in place; and

WHEREAS, the regulations relating to purchases made by the Village is a matter in the interest of the Village Board's financial powers;

NOW, THEREFORE, the Village Board of the Village of Germantown, Wisconsin, do ordain as follows:

SECTION I:

Section 3.08(2)(a) of the Municipal Code of Germantown is hereby amended to read as follows (Note: additions are double underlined; Deleted text is ~~struck through~~):

(4)(a) **Budgeted Items.** The following amounts apply to purchases of goods as well as to contracts for services approved by the Village Board in the budget process:

- | | |
|---|--|
| 1. Up to \$2,500.00 <u>Up to \$15,000</u> <u>\$5,000</u> | Department head or
department delegate
authorization |
| 2. Up to \$7,500 <u>\$5,001 to \$15,000</u> | Village Administrator
authorization |
| 3. Up to \$15,000 <u>\$15,001 to 24,999.99</u> | Committee authorization |
| 4. \$Over \$15,000 <u>\$25,000 and above</u> | Village Board authorization |

SECTION II:

The terms and provisions of this ordinance are severable. Should any term or provision of this ordinance be found to be invalid by a court of competent jurisdiction, the remaining terms and provisions shall remain in full force and effect.

SECTION III:

All ordinances or parts of ordinances contravening the terms of this ordinance are hereby to that extent repealed.

SECTION IV:

This ordinance shall take effect and be in full force upon its passage and the day after publication.

Introduced by Trustee:

Adopted: _____, 2024 Vote: Ayes: Nays: Absent:

Dean Wolter, Village President

ATTEST:

Donna OttUp to \$15,000, Village Clerk

Approved as to form:

Brian C. Sajdak, Village Attorney

Published: _____

BUSINESS OF THE VILLAGE BOARD

MEETING DATE: January 6, 2025

PLACEMENT: Action Item

ITEM TITLE: Contracts for General Legal Services and Municipal Court Legal Services

SUBMITTED BY: Steve Kreklow, Administrator

SUMMARY EXPLANATION:

At the direction of the Village Board, staff issued an RFP for Legal Services and solicited proposals from various legal firms. A draft RFP was presented to the General Government & Finance Committee in September and feedback from the Committee was incorporated into the final version.

I sent the RFP directly to 11 law firms and posted the RFP on the League of Municipalities classified section and on the Village website. We received five proposals. All proposals that we received are included in the packet. The proposals were reviewed and rated by a panel of evaluators that included the Village Clerk, the Finance Director, the Community Development Director, the Director of the Public Works Department and me. All evaluators rated all proposals based on the criteria of General Legal Services Experience, Municipal Court Experience, General Legal Services Cost, Municipal Court Cost and Qualifications of Staff. The scores from each evaluator and the totals are included in the packet. The table below summarizes the scores.

Firm	General Legal Services Experience	Municipal Court Experience	Qualifications of Staff	General Legal Services Cost	Municipal Court Cost
Axley	18	14	22	5	
Dempsey	19	10	19	10	
Houseman Feind	8	24	12	20	
Linder Marsack	7	7	8	15	
Wesolowski et. al.	23	20	16	25	

The Finance Director calculated the average hourly rate for each proposal based on the staff submitted in their proposal. The results of that analysis are in the next table:

Proposal	Average Hourly Rate
Axley	\$280.45
Dempsey	\$279.00
Houseman Feind	\$205.00
Lindner Marsack	\$260.00
Wesolowski et. al.	\$198.50

The Evaluation Panel recommends that the Village Board award the contract for General Legal Services to Wesolowski, Reidenbach & Sajdak and the contract for Municipal Court Services to Houseman Feind. The panel unanimously concurs that this arrangement would provide the highest level of services to the Village at the lowest cost. Both General Legal Services and Municipal Court Services are currently both being provided by Wesolowski, Reidenbach & Sajdak. I have discussed the arrangement with both law firms and both are amenable to the division of responsibilities.

The contracts will be for hourly rates as listed in the proposals in the packet. The total amount of the contracts will vary each year depending amount of work necessary and the accounts used to pay for the contracts will vary depending on the nature of the work being performed. Funds budgeted in the 2025 budget should be adequate to pay for both contracts.

ATTACHMENT:

1. Rating Spreadsheet
2. Wesolowski Reidenbach and Sajdak - 2024 Germantown General Legal Services RFP Response

STAFF RECOMMENDATION:

Authorize the Village Administrator to enter into an agreement with Wesolowski, Reidenbach & Sajdak at the rates specified in their attached proposal.

ACTION BY Committee:

Firm	General Legal Services Experience	Municipal Court Experience	Qualifications of Staff	General Legal Services Cost	Municipal Court Cost	Total
Axley	18	14	22	5	5	64
Dempsey	19	10	19	10	10	68
Houseman Feind	8	24	12	20	20	84
Linder Marsack	7	7	8	15	15	52
Wesolowski et. al.	23	20	16	25	25	109

Please rate each law firm on a scale of 1-5, with 5 being the best score, for each category above.

Axley	General Legal Services Experience	Municipal Court Experience	Qualifications of Staff	General Legal Services Cost	Municipal Court Cost	Total
Evaluator A	5	3	5	1	1	15
Evaluator B	2	2	3	1	1	9
Evaluator C	3	3	5	1	1	13
Evaluator D	3	3	4	1	1	12
Evaluator E	5	3	5	1	1	15
Total	18	14	22	5	5	64

Dempsey	General Legal Services Experience	Municipal Court Experience	Qualifications of Staff	General Legal Services Cost	Municipal Court Cost	Total
Evaluator A	4	3	4	2	2	15
Evaluator B	4	2	3	2	2	13
Evaluator C	5	2	4	2	2	15
Evaluator D	3	1	4	2	2	12
Evaluator E	3	2	4	2	2	13
Total	19	10	19	10	10	68

Houseman Feind	General Legal Services Experience	Municipal Court Experience	Qualifications of Staff	General Legal Services Cost	Municipal Court Cost	Total
Evaluator A	2	5	3	4	4	18
Evaluator B	3	5	3	4	4	19
Evaluator C	1	5	2	4	4	16
Evaluator D	1	4	2	4	4	15
Evaluator E	1	5	2	4	4	16
Total	8	24	12	20	20	84

Linder Marsack	General Legal Services Experience	Municipal Court Experience	Qualifications of Staff	General Legal Services Cost	Municipal Court Cost	Total
Evaluator A	1	1	2	3	3	10
Evaluator B	1	2	3	3	3	12
Evaluator C	2	1	1	3	3	10
Evaluator D	1	2	1	3	3	10
Evaluator E	2	1	1	3	3	10
Total	7	7	8	15	15	52

Wesolowski et. al.	General Legal Services Experience	Municipal Court Experience	Qualifications of Staff	General Legal Services Cost	Municipal Court Cost	Total
Evaluator A	5	3	4	5	5	22
Evaluator B	5	4	3	5	5	22
Evaluator C	4	4	3	5	5	21
Evaluator D	5	5	3	5	5	23
Evaluator E	4	4	3	5	5	21
Total	23	20	16	25	25	109

WESOLOWSKI, REIDENBACH & SAJDAK, S.C.
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BRIAN C. SAJDAK
EDUARDO M. BORDA
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SENDER'S EMAIL:
BRIAN@WRSLEGAL.NET

November 11, 2024

Via Hand Delivery

Mr. Steven R. Kreklow, Administrator
Village of Germantown
N112 W17001 Mequon Road
Germantown, WI 53022

Re: Proposal for Legal Services

Dear Mr. Kreklow:

Thirteen years ago, we commenced our legal services proposal to the Village noting that while we are very proud of the work we do in service as municipal attorneys, we always recognize the responsibility accompanying the duty of representing a municipal governing body, its public officers, employees and boards and commissions, and the citizens for whom the government exists, and are humbled by the privilege to serve in that capacity. This is as true today as it was then, and it has been our privilege to serve the residents of the Village of Germantown as the Village Attorney since that time. We look forward to the opportunity to continue that service. Please consider this our response to the Village's Request for Proposals for General Legal Services dated October 24, 2024.

Relevant Experience

In addition to the nearly 13 years serving the citizens of Germantown, we have also represented the City of Franklin for more than 34 years, the Village of Hales Corners for more than 31 years, the City of Mequon for 10 years, and the Southern Ozaukee Fire and Emergency Services Department since its inception in 2022. Please feel free to contact any elected official or officer in these municipal entities for any reference you deem necessary. In addition to the general legal representation provided to the entities above, our attorneys also provide municipal court representation to the Cities of South Milwaukee and Cudahy, and the Village of Mount Pleasant.

Our attorneys have also represented numerous other municipal bodies on a project or contract basis including the Western Lakes Fire District, the Cities of Greenfield, Brookfield, and Oak Creek, the Village of Mount Pleasant, the Community Development Authority of the Village of Sturtevant, and the Town of Franklin (Manitowoc County). Additionally, from 2001 essentially through 2010, we represented the Waste Facility Siting Committee, negotiating an expansion

application by Waste Management of Wisconsin, Inc., for the Metro Recycling & Disposal Facility serving the Milwaukee Metropolitan area.¹ We have also assisted the Intergovernmental Cooperation Council (comprised of the 19 Mayors and Village Presidents in Milwaukee County and the County Executive) with requested legal advice.

We provide all the general legal services necessary to a Wisconsin municipality, including representation before local Municipal Courts, State Circuit and Appellate Courts, State agencies, and Federal District and Appellate Courts. We have represented municipal clients in administrative law matters before or involving the Wisconsin Department of Natural Resources, the State Elections Commission, the Waste Facility Siting Board, the Department of Corrections, the Department of Health and Family Services, the Office of the Commissioner of Railroads, and the Public Service Commission. We have provided legal representation to municipalities in substantial development and redevelopment projects including drafting of development agreements, acquisition of property for public purposes, the creation and operation of tax increment districts; as well as providing advice and all services necessary to create, implement, and regulate complex planned development districts, and advise on other zoning-related matters. Lastly, we have extensive experience in the day-to-day operational aspects of municipal government including drafting and interpreting ordinances, advising on open meetings and open records laws, the process for imposing special assessments and impact fees, alcohol beverage licensing, providing guidance on elections law and operations, employment and personnel matters, and advising on matters related to the operation of sewer and water utilities. Our attorneys also have prior experience representing the private sector in many of these same areas. In short, we are experienced municipal lawyers.

Our Proposal

A strong commitment to public service is the bedrock of our representation of municipal entities. We also understand that tax dollars are increasingly tight. To that end, we consider it to be our obligation to provide quality legal representation at a relatively very inexpensive cost. Guided by these principles, we would propose to provide legal services to the Village utilizing the following fee structure:

Principal Attorney Rate (Attorneys Wesolowski & Sajdak):	\$200 per hour
Attorney Rate:	\$170 per hour

We recognize that this is an increase over our current rates. This increase was necessary based on the significant cost increases driven by health insurance and general inflationary pressures. However, we believe that these rates still reflect a bargain, comparatively, when you consider the breadth of experience we provide and the market rates for other municipal attorneys.²

¹ The Committee included the memberships of Milwaukee, Waukesha and Racine Counties, the Towns of Raymond and Norway, and the Cities of Muskego and Franklin.

² An informal survey this summer of southeast Wisconsin municipal rates indicates that the average rate is \$220/hour, with many firms contemplating increases in the near-term.

Brian C. Sajdak would continue as the Village Attorney and provide general legal services under this proposal. Matthew S. Rademacher would undertake the formal duties of Village Prosecutor to handle municipal court duties under this proposal. Mr. Rademacher would also provide general legal services in support and backup to Mr. Sajdak, and Jesse A. Wesolowski and the remaining members of the firm would be available to provide a legal representation continuum without absence. Based on our experience, we do not envision any logistical issues or conflicts of substance. Further, because we are a firm that almost exclusively represents governmental units, there is little risk of conflicts between the Village and private clients. Conflicts may, on rare occasions, arise between our representation of the Village and another one of our municipal clients. In those circumstances, we refer both clients to outside counsel.

We are a full-service municipal law firm, and we generally handle all aspects of legal services to a municipality. The sole exception to that practice is those circumstances where the Village might be better served by outside counsel that brings a high level of specialized knowledge or experience. In these circumstances, we recommend that the Village utilize this specialized counsel. Be assured that it is not our attempt or desire to “pass off” work to outside counsel. However, two such circumstances immediately come to mind. First, the issuance of municipal bond obligations is highly regulated and complex. As such, we recommend that the Village continue to use specialized bond counsel. Second, in the ordinary scope of representation, an attorney must rely upon Village staff members to be forthright and honest on all matters, including where mistakes have been made. An inherent difficulty arises when that attorney handles labor and employment matters related to those same staff members — especially when addressing those mistakes. Therefore, we recommend that the Village continue to use specialized labor and employment counsel for significant or complex labor and employment matters.

Our Philosophy

In addition to the foregoing, our philosophy as to the provision of legal services to a municipality is simply that the level of legal services shall be as directed by the elected governing body. We firmly believe that the municipal attorney’s role is not to set policy, but instead to help the governing body effectuate the policies that the body desires to implement. Subject to the direction of the governing body, we may interact with all officials and employees and any citizen upon inquiry, or only with or through those designated for that purpose by the governing body, and all to the level requested. We are always mindful that the government is by the people, for the people.

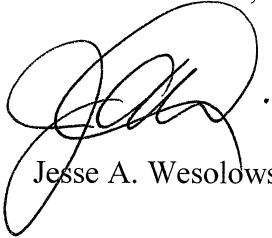
We expect to keep our clients advised as to new developments in municipal law and we participate extensively with other municipal attorneys and municipal associations, as is in part set forth on the enclosed resumes. While perhaps not stated in elegant terms, our internal operating procedure is four-pronged: i) tell the truth; ii) care about the people; iii) work hard; and iv) make no mistakes.

We look forward to the opportunity to meet with you, any member of the Village Board, or any other Village representatives to discuss in much more detail our qualifications in relation to the Village’s needs and our interest in continued service.

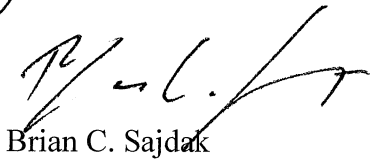
Thank you for your time and attention to this application.

Cordially,

WESOLOWSKI, REIDENBACH & SAJDAK, S.C.

A handwritten signature in black ink, appearing to read 'J. Wesolowski', with a large, looping flourish at the end.

Jesse A. Wesolowski

A handwritten signature in black ink, appearing to read 'B. Sajdak', with a large, sweeping flourish at the end.

Brian C. Sajdak

Enclosures

BRIAN SAJDAK

PROFILE

Accomplished attorney adept at blending creative thinking with effective relationship-building to advocate for clients' interests exhibited by a proven track record as the lead municipal counsel for multiple Milwaukee-area municipalities. Skilled in delivering comprehensive legal advice to clients and managing multiple cases in a timely manner.

WORK EXPERIENCE

Attorney

2008 – Present

Wesolowski, Reidenbach & Sajdak, S.C., Franklin, WI

- Appointed as municipal counsel to multiple Milwaukee-area municipalities handling all legal matters facing a municipality.
- Negotiated development agreements for over \$500 million in new real estate development including through the creation of Tax Increment Financing Districts.
- Maintained knowledge of changes in state and federal laws that could impact a case or client's rights and interests.
- Advised clients concerning business and real estate transactions, potential risks, claim liability, advisability of prosecuting or defending lawsuits, and legal rights and obligations.
- Reviewed investigations to determine appropriate charges, likelihood of success in prosecution and potential cost.

Associate Attorney

2002 – 2008

Weiss Berzowski Brady LLP, Milwaukee, WI

- Extensive real estate experience including eminent domain and tax assessment litigation, land use approvals, and drafting of documents including offers to purchase, occupancy agreements and leases.
- Handled an extensive case load of civil litigation matters at all stages of litigation for clients ranging from individuals to Fortune 500 companies.
- Represented clients before numerous governmental bodies on various zoning, land use, and licensing issues.

Law Intern

1999 – 2002

Waukesha County Corporation Counsel, Waukesha, WI

- Performed legal research and prepared memos on various topics affecting county government including zoning, eminent domain, employment and general insurance and liability issues.
- Represented the County in numerous contested civil commitment and juvenile hearings.
- Drafted a wide range of pleadings including pretrial discovery and motions, trial documents and appellate briefs and motions.
- Reviewed, analyzed and modified various contractual documents including cell tower lease agreements.

EDUCATION

Juris Doctorate

2001

Marquette University Law School, Milwaukee, WI

- CALI Excellence for the Future Award Recipient — Pretrial Practice
- Marquette Law Alumni and St. Thomas More Scholarship Recipient

Bachelor of Science in Communication Arts and Political Science

1998

University of Wisconsin, Madison, WI

BRIAN SAJDAK

PROFESSIONAL ACTIVITIES

State Bar of Wisconsin

Local Government and Administrative Law Section

- Member, Section Board (2012 – 2018)
- Chair, Section Board (2015 – 2016)

Publications and Technology Task Force of the Public Education Committee

- Co-Chair (2011 – 2012)

League of Wisconsin Municipalities

Municipal Attorneys Section

- Secretary (2021 – 2022)
- President (2022 – 2023)

PUBLICATIONS & SPEAKING

- Electronic Meetings Under the New Robert's Rules of Order, The Municipality, April 2021
- Frequent speaker at Continuing Legal Education seminars on topics including public bidding, zoning and land use, property tax assessments, open records/meetings law real estate, and litigation.

TRAINING

Federal Emergency Management Agency

Completed Emergency Management Institute courses:

- IS-100: Introduction to Incident Command System
- IS-200: ICS for Single Resources and Initial Action Incident
- IS-240: Leadership and Influence
- IS-241: Decision Making and Problem Solving
- IS-242: Effective Communication IS-700: National Incident Management System (NIMS), An Introduction
- IS-914: Surveillance Awareness: What You Can Do

Matt Rademacher

Legal Experience:

Wesolowski, Reidenbach & Sajdak, SC, Franklin, Wisconsin

Associate Attorney, May 2024 to Present

Prosecute traffic and ordinance violations in municipal and circuit courts for various municipalities in Milwaukee, Racine, and Washington counties; provide general legal guidance as requested.

Village of Rochester, Rochester, Wisconsin

Assistant Village Administrator/Prosecutor/Zoning Administrator, August 2022 to May 2024

Zoning Administrator, May 2024 to Present

Administer and enforce Village zoning codes; prosecuted traffic and ordinance violations in circuit court; provided legal guidance and wrote ordinances as necessary; directed meetings with elected and appointed officials in accordance with open meetings law; assisted with administration of local government processes.

Village of Menomonee Falls, Menomonee Falls, Wisconsin

Assistant Village Attorney, May 2022 to July 2022

Legal Intern, May 2021 to May 2022

Prosecuted traffic and ordinance violations in municipal court; coordinated between Village Attorney's office and court officials; appeared on behalf of Village in small claims and circuit court; enforced Village regulations.

Marquette Volunteer Legal Clinic, Milwaukee, Wisconsin

Legal Volunteer, September 2019 to January 2021

Other Experience:

Vilter Manufacturing, Cudahy, Wisconsin

Shipping & Receiving Manager, June 2018 to July 2019

Holland, Mosinee, Wisconsin

Terminal Manager, August 2014 to May 2018

United States Army Reserve, Wausau, Wisconsin

October 2000 to November 2012, Commissioned May 2006

Deployed to Afghanistan August 2010 to August 2011. Achieved rank of Captain as an Army Engineer.

Education:

Marquette University Law School, Milwaukee, Wisconsin

Juris Doctor, cum laude, May 2022

GPA: 3.455/4.000 Class Rank: Top 20%

Litigation Certificate

CALI Awards: Legal Analysis, Writing, and Research 2, (Spring 2020); Civil Pretrial Practice, (Fall 2021);

Advanced Legal Writing - Litigation (Spring 2022)

Dean's List (Fall 2021, Spring 2022)

Jenkins Honors Moot Court; Winner: Franz C. Eschweiler Award - Best Brief (Spring 2021)

Alpha Sigma Nu Jesuit Honor Society

Pro Bono Honor Society, (120+ hours *pro bono* service)

University of Wisconsin-Stevens Point, Stevens Point, Wisconsin

Bachelor of Arts in History (minor in Military Science), *cum laude*, May 2006

GPA: 3.547/4.000

Interests:

Camping; Brewers Baseball; Military History (Reenactor specializing in British impressions from the World Wars, and member of Warbirds Living History Group at EAA Airventure (Oshkosh, WI)).

Jesse A. Wesolowski
Franklin, Wisconsin

Education: Marquette University Law School
Juris Doctor, May 1980
American Jurisprudence Award – Evidence II

University of Wisconsin – Milwaukee
1974 - 1977 Bachelor of Science (with honors)
Major: Criminal Justice

University of Wisconsin – Madison
1773 - 1974; Theta Delta Chi Fraternity – President 1974

Don Bosco High School, Milwaukee, Wisconsin 1972

Professional Experience:

Admitted to Practice: · State of Wisconsin, United States
District Court, Eastern and Western
Districts of Wisconsin, May 19, 1980
· United States Court of Appeals for the
Seventh Circuit, February 11, 1992
· United States Supreme Court, May 17,
1993

Employment Experience:

Fleming, Kukor & Wesolowski, S.C., *et seq.*, Attorney 1980 - 1993
Wesolowski, Reidenbach & Romell, S.C., *et nunc*,
Wesolowski, Reidenbach & Sajdak, S.C., Attorney 1993 to present

City Attorney, City of Franklin, May 4, 1990 to present

Village Attorney, Village of Hales Corners, March 8, 1993 to present

Attorney for the Waste Facility Siting Committee established pursuant to §289.33, Stats., (comprised of representatives from Town of Raymond, Town of Norway, Racine County, City of Muskego, Waukesha County, [Milwaukee County 2003-2010] and City of Franklin), 1990 – 1992; 1994 – 1997; 2003 - 2010

Honors, Awards and Professional Activities:

League of Wisconsin Municipalities Municipal Attorneys Institute

Topic Lecturer: Development and Impact Fees, June 1994, Merri-
mac, Wisconsin; "Comprehensive Plans: The 'Consistent With' Re-
quirement in 2010", June, 2010, Fontana, Wisconsin; "PDDs/PUDs:
When, Where and Why", June 2015, Delavan, Wisconsin

League of Wisconsin Municipalities Annual Conference

Topic Lecturer: Development Fees, October 1994, Green Bay, Wis-
consin; Boards and Commissions, Utilities, "Working with Boards
and Commissions: An Introduction for Governing Body Members,
Library Board", October 2012, Lake Delton, Wisconsin

American Planners' Association Convention

Section Panelist, September 1997, Madison, Wisconsin

State Bar of Wisconsin Annual Convention

Topic Lecturer: "Off-Levy Funding of Municipal Government and
Services", May 2007, Milwaukee, Wisconsin; "When Times Are
Tough: Tax Base and Jobs Development and Assistance Entities
Primer", May 2010, Madison, Wisconsin

State Bar of Wisconsin Government Lawyers Division and Administra-
tive & Local Government Law Section Continuing Legal Education
Programs

Co-Presenter: Ethics - Conflicts of Interest for Local Government
Attorneys, June 2011, Madison, Wisconsin; Co-Chair: Parliamentary
Procedure, January 2012, Madison, Wisconsin; Co-Chair: Current
Issues in Land Use Law, March 2012, Madison, Wisconsin; Present-
er: Public Records, Open Meetings Seminar "Volume Database Re-
quests in a World Gone Viral", September 2012, Madison, Wiscon-
sin; Co-Chair: "Public Utilities & Municipalities: Who's in Control?",
April 2014, Madison, Wisconsin; Co-Chair: Current Issues in Land
Use Law, April 2015, Madison, Wisconsin; Author: numerous arti-
cles in the Administrative & Local Government Law Section News-
letter

Counsel to the Milwaukee County Intergovernmental Co-operation
Council (the 19 Milwaukee County municipalities' Mayors and Vil-
lage Presidents and the Milwaukee County Executive) 2009 - 2014

Executive Director, Community Development Authority of the City
of Franklin, Wisconsin; November 17, 2008 to present

Member State Bar of Wisconsin – Administrative & Local Govern-
ment Law Section: Board of Directors: 2005 – 2012, Chairman 2010

– 2011, Immediate Past Chairman 2011 – 2012; CLE Committee liaison to the Government Lawyers Division 2011 to present

Martindale-Hubbell Legal Ability and General Recommendations Rating: AV (highest possible rating issued by confidential peer review process achieved by less than 14% of lawyers in America): 1990 (first year of eligibility) to present

League of Wisconsin Municipalities Municipal Attorneys Institute Secretary, June 18, 2014 to June 19, 2015, President, June 19, 2015 to June 15, 2016

Activities: Big Brothers YMCA Milwaukee 1975 – 1976

Project Inquiry Milwaukee 1981 – 1983

Milwaukee Area Technical College: Business Law Instructor 1984

Franklin School Board: Citizen volunteer; FEA contract negotiations 1983 – 1984

Franklin Economic Development Commission 1989 – 1990

St. Martin of Tours, Parish counsel 1992 to present

Holy Assumption, Parish counsel 1993 to 1999 upon Archdiocesan closure

Milwaukee Lakefront Marathon 1991, 1992, 1993

1995 Ingalls Pond Open; 2nd Place Tonnage

1996 NNF and GC; 1st Place Tonnage

BUSINESS OF THE VILLAGE BOARD

MEETING DATE: January 6, 2025

PLACEMENT: Action Item

ITEM TITLE: Temporary Pay Adjustment for Interim Police Chief

SUBMITTED BY: Steve Kreklow, Administrator

SUMMARY EXPLANATION:

As you know, Police Chief Mike Snow is retiring effective January 6th. The Police & Fire Commission is in the process of selecting the next Police Chief and anticipates filling the position by early March. The Commission voted unanimously to appoint Captain Pat Merten as interim Police Chief for the period between Chief Snow's retirement and the start date of the next Chief. Village Board approval is needed to provide a temporary pay increase for Captain Merten while he is taking on the additional duties. I recommend a temporary 5% increase in his pay. This would increase Captain Merten's pay from \$4,787.44 per pay period to \$5,026.81 per pay period.

ATTACHMENT:

STAFF RECOMMENDATION:

Approve temporary increase to Captain Pat Merten's pay from \$4,787.44 per pay period to \$5,026.81 per pay period while he serves as Interim Police Chief.

ACTION BY Committee: