Office of the Clerk/Treasurer

W240N3065 Pewaukee Road
Pewaukee, WI 53072
(262) 691-0770 Fax 691-1798

- REVISED - Please contact tarczewski@pewaukee.wi.us in advance if you would like to attend the meeting virtually

COMMON COUNCIL
MEETING NOTICE AND AGENDA
Monday, April 19, 2021
6:00 PM

Common Council Chambers ~ Pewaukee City Hall
W240 N3065 Pewaukee Road ~ Pewaukee, Wisconsin

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1. Call to Order and Pledge of Allegiance
2. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your District Alderperson prior to the meeting.
3. Consent Agenda
   - 3.1. Approve Accounts Payable Listing Dated April 19th, 2021
   - 3.2. Approval of Common Council Meeting Minutes Dated March 1st, 2021
4. **PUBLIC HEARING** regarding the Joseph Road Reconstruction and Utility Extensions Project.
   - 4.1 Discussion and Possible Action Regarding the Preliminary Engineers Report and Proposed Special Assessments.
   - 4.2 Discussion and Possible Action Regarding Awarding the Paul Road and Joseph Road Reconstruction Contract B to the Lowest Qualified Bidder, Wolf Paving Co., Inc. in the Amount of $940,028.60.
5. **PUBLIC HEARING** regarding the Paul Road, Roundy Drive, Roundy Circle East, and Roundy Circle West Road Rehabilitation Project [Wagner]
   - 5.1 Discussion and Possible Action Regarding the Preliminary Engineers Report and Proposed Special Assessments.
   - 5.2 Discussion and Possible Action Regarding Awarding the Paul Road and Joseph Road Reconstruction Contract A to the Lowest Qualified Bidder, Wolf Paving Co., Inc. in the Amount of $1,968,779.74.
6. **PUBLIC HEARING**, Discussion and Possible Action Regarding the Conditional Use Permit for Zeilhofer Properties, LLC for Property Located at N4 W22540 Bluemound Road (PWC 0963-997) for the Purpose of Constructing a New Freestanding Two-Story Storage Building [Fuchs]
7. **PUBLIC HEARING,** Discussion and Possible Action Regarding the Conditional Use Permit for Octane Coffee for Property Located at W229 N1400 Westwood Drive (PWC 0959-988-004) for the Purpose of Installing and Operating a Drive-Thru Coffee Business [Fuchs]
8. **PUBLIC HEARING**, Discussion and Possible Action Regarding the Conditional Use Permit

Request for TI Investors for the Property Located at W232 N2950 Roundy Circle East (PWC 0917-994-030) for the Purpose of a Warehouse and Distribution Use [Fuchs]

9. Discussion and Possible Action Regarding Re-Approval of the Preliminary Plat for the Cardinal Meadows Subdivision, Now Known as Greenland Subdivision (PWC 0928-980), Originally Approved by Plan Commission on January 17th, 2019 and Common Council on January 21st, 2019 [Fuchs]

10. Discussion and Possible Action Regarding a Certified Survey Map for the City of Pewaukee Engineering Department for Property Located at W223 N3251 Shady Lane (PWC 0912-982)for the Purpose of Dividing the Property Into Two Separate Lots and Installing a Dry Pond [Fuchs]

11. Discussion and Possible Action Regarding the 2020 Annual MS4 Permit [Wagner]

12. Discussion and Possible Action Regarding the First Amendment to the Developer's Agreement for Waters of Pewaukee [Wagner]

13. Discussion and Possible Action Regarding the Award of the Bid for the Well No. 5 HMO Treatment Facility & Building Modification to the Lowest Qualified Bidder, J. H. Hassinger, Inc., in the amount of $2,613,667.00 [Wagner / Muller].

14. Discussion and Possible Action Regarding Affordable and Multi-Family Housing [Mayor Bierce]

15. Discussion and Possible Action to Appoint Anne Golombowski to the Board of Review [Mayor Bierce]

16. Attorney Riffle to Swear In Aldermen Bergman, Clark and Wamser

17. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your district Alderperson prior to the meeting.

18. Closed Session – You are hereby notified that the Common Council and staff of the City of Pewaukee will convene into closed session after all regular scheduled business has been concluded and upon motion duly made and seconded and acted upon by roll-call vote as required under §19.85(1)(a), Stats. The purpose of the closed session is for the following:

    - §19.85(1)(e): Deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session, specifically for the consideration to acquire additional land for the Department of Public Works facilities at Green Road / Duplainville Road.

    You are further notified that at the conclusion of the Closed Session, the Common Council may convene into open session pursuant to 19.85(2), Stats., for possible additional discussion and action concerning any matters discussed in closed session and for adjournment.

19. Adjournment

Kelly Tarczewski
Clerk/Treasurer

April 16, 2021

NOTICE

It is possible that members of other governmental bodies of the municipality may be in attendance to gather information that may form a quorum. At the above stated meeting, no action will be taken by any governmental body other than the governmental body specifically referred to above in this notice.

Any person who has a qualifying disability under the Americans with Disabilities Act that requires the meeting or materials at the meeting to be in an accessible format must contact the Clerk/Treasurer, Kelly Tarczewski, at (262) 691-0770 three business days prior to the meeting so that arrangements may be made to accommodate your request.

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 3.1.

DATE: April 19, 2021

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Approve Accounts Payable Listing Dated April 19th, 2021

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

A/P 4-19-2021

Check Date	Check	Vendor Name	Description	Amount
04/08/2021	131718	OFFICE COPYING EQUIPMENT, LTD	CRT SHARP MX3571 CONTRACT	13.56
04/08/2021	131719	PREMIUM WATERS, INC	P&R WATER	20.99
			CRT WATER	65.75
				86.74
04/08/2021	131720	ROBERT KEWAN	IT Q1 MILEAGE	75.32
04/08/2021	131721	SEAT OF THE PANTS PRODUCTIONS LLC	P&R MARCH PROGRAMS	312.00
04/08/2021	131722	SOFT WATER, INC.	FD SOLAR SALT	34.00
04/08/2021	131723	STATE OF WI COURT FINES & ASSMTS	CRT STATE'S SHARE OF COURT COSTS & ASSES	13,678.10
04/08/2021	131724	VERIZON	FD TELEPHONE	21.06
04/08/2021	131725	VILLAGE OF PEWAUKEE	P&R SHARED REVENUES	41,104.69
			LIFEQUEST EMS COLLECTIONS	33,198.24
				74,302.93
04/08/2021	131726	WAUKESHA CO SHERIFF'S DEPT	CRT WARRANT FEE	60.00
04/08/2021	131727	WAUKESHA CO TECHNICAL COLLEGE	FD TRAINING	160.00
04/08/2021	131728	WAUKESHA CO TREASURER	CRT COUNTY JAIL ASSESSMENTS	4,091.34
04/08/2021	131729	WISCONSIN DEPARTMENT OF	HR EMPLOYEE SERVICES	282.00
04/16/2021	131730	AILCO EQUIPMENT FINANCE GROUP	IT PLOTTER LEASE APR 2021	412.00
04/16/2021	131731	AIR ONE EQUIPMENT	FD	812.50
04/16/2021	131732	AIRGAS USA	FD OXYGEN	107.12
04/16/2021	131733	ARTHUR GLYNN	SW 10566 UMS REFUND	217.90
04/16/2021	131734	AT&T CAROL STREAM IL	CT TELEPHONE	693.51
04/16/2021	131735	BARB CONSIGNY	4/6/21 ELECTION	121.13
04/16/2021	131736	BARB KARPFINGER	4/6/21 ELECTION	29.75
04/16/2021	131737	BATZNER PEST CONTROL	P&R PEST CONTROL	68.00
04/16/2021	131738	BILL PETTERSON	4/6/21 ELECTION	123.25
04/16/2021	131739	BILL SEVERSON	4/6/21 ELECTION	99.88
04/16/2021	131740	BOUNDTREE MEDICAL	FD MEDICAL SUPPLIES	410.66
04/16/2021	131741	BRENDA SAWALL	4/6/21 ELECTION	123.25
04/16/2021	131742	BRIAN THOMAS	4/6/21 ELECTION	68.00
04/16/2021	131743	BRONWYN GLOJEK	4/6/21 ELECTION	46.75
04/16/2021	131744	CENTURY FENCE	P&R BASEBALL DIAMOND MAINTENANCE	3,330.00
04/16/2021	131745	CERTIFIED FLEET CONSULTING	FD FLEET MAINTENANCE CONSULTING	1,975.00
04/16/2021	131746	CHARLENE LAPORTA	4/6/21 ELECTION	112.50
04/16/2021	131747	CHARLIE DWYER	BLD MARCH 2021 MILEAGE REIMBURSEMENT	130.48
04/16/2021	131748	CHERYL CARAULIA	4/6/21 ELECTION	286.88
04/16/2021	131749	CINTAS CORPORATION #184	FD MATS	61.14
			FD MATS	128.41
				189.55
04/16/2021	131750	DAN VERZAL	4/6/21 ELECTION	68.00
04/16/2021	131751	DARLENE WEIS	4/6/21 ELECTION	68.00
04/16/2021	131752	DARRELL STUMPF	4/6/21 ELECTION	121.13
04/16/2021	131753	DIVERSIFIED BENEFIT SERVICES, INC.	YEARLY COBRA SERVICES	800.00
04/16/2021	131754	DON NEITZEL	4/6/21 ELECTION	55.25
04/16/2021	131755	DONA MOORE	4/6/21 ELECTION	68.00
04/16/2021	131756	DONALD GILPIN	4/6/21 ELECTION	123.25
04/16/2021	131757	DWD-UI	MARCH UNEMPLOYMENT	305.68
04/16/2021	131758	EQUAL RIGHT DIVISION	P&R MARCH 2021 CHILD LABOR PERMITS	15.00
04/16/2021	131759	FE PETTERSON	4/6/21 ELECTION	63.75
04/16/2021	131760	GALLS	FD CLOTHING	367.90
			FD CLOTHING	278.93
				646.83

Check Date	Check	Vendor Name	Description	Amount
04/16/2021	131761	GERI COEN	4/6/21 ELECTION	29.75
04/16/2021	131762	GREG PASCUCCI	4/6/21 ELECTION	55.00
04/16/2021	131763	GWENN ROBINSON	4/6/21 ELECTION	55.00
04/16/2021	131764	HERBERT JERKE	4/6/21 ELECTION	123.25
04/16/2021	131765	HUMPHREY SERVICE PARTS, INC	P&R OIL FILTER	4.00
04/16/2021	131766	JANE KOHL	4/6/21 ELECTION	68.00
04/16/2021	131767	JEFF WEIGEL	4/6/21 ELECTION	29.75
04/16/2021	131768	JIM ZIEGERT	4/6/21 ELECTION	121.13
04/16/2021	131769	JOSEPH ALBERT	SW 10958 UMS REFUND	191.98
04/16/2021	131770	JUDY HUSCHKA	4/6/21 ELECTION	199.75
04/16/2021	131771	JUDY HYDE KRIEGER	4/6/21 ELECTION	52.50
04/16/2021	131772	JUDY THARMAN	4/6/21 ELECTION	123.25
04/16/2021	131773	JULIE MOLENDA	4/6/21 ELECTION	123.25
04/16/2021	131774	KAEREK HOMES INC	BLD 200895 OCCUPANCY BOND REFUND	500.00
04/16/2021	131775	KAREN ELLEFSON	4/6/21 ELECTION	123.25
04/16/2021	131776	KATHY STUMPF	4/6/21 ELECTION	121.13
04/16/2021	131777	KAY BLANKENHEIM	4/6/21 ELECTION	121.13
04/16/2021	131778	KWIK TRIP INC.	FD FUEL	3,927.48
04/16/2021	131779	LIFE-ASSIST INC	FD SAFETY RESTOCK	157.86
			FD SAFETY SUPPLIES	300.60
			FD WIPES	96.96
			FD MEDICAL SUPPLIES	101.05
				656.47
04/16/2021	131780	LISA WIMMER	4/6/21 ELECTION	182.50
04/16/2021	131781	MARCEY VESCIO	4/6/21 ELECTION	467.50
04/16/2021	131782	MARIANNE JERKE	4/6/21 ELECTION	123.25
04/16/2021	131783	MARY LU WEIGEL	4/6/21 ELECTION	29.75
04/16/2021	131784	MIKE SHERMAN	4/6/21 ELECTION	89.25
04/16/2021	131785	MOLLY HOLLMANN	4/6/21 ELECTION	46.75
04/16/2021	131786	MONTE EWING CONSULTING	BLD SPRING 2021 SEMINAR CODE TRAINING CD	175.00
04/16/2021	131787	NAPA	FD VEHICLE REPAIRS	3.52
04/16/2021	131788	NINA ZIETARA-NOWAKOWSKI	4/6/21 ELECTION	123.25
04/16/2021	131789	OCCUPATIONAL HEALTH CENTERS	HR EXAMS	279.50
04/16/2021	131790	OFFICE COPYING EQUIPMENT, LTD	BLD SHARP MX3070N CONTRACT	225.11
			FD SHARP MX3070N CONTRACT	90.97
				316.08
04/16/2021	131791	OFFICE DEPOT	BLD OFFICE SUPPLIES	43.53
			BLD OFFICE SUPPLIES	22.78
			FD OFFICE SUPPLIES	28.16
			FD OFFICE SUPPLIES	84.99
				179.46
04/16/2021	131792	PAM KNOLL	4/6/21 ELECTION	262.50
04/16/2021	131793	PAT DANIELS	4/6/21 ELECTION	123.25
04/16/2021	131794	PAULA SLESAR	4/6/21 ELECTION	123.25
04/16/2021	131795	PHYLLIS DECOSTE	4/6/21 ELECTION	123.25
04/16/2021	131796	PROHEALTH CARE MEDICAL ASSOCIATES	HR EXAMS	35.00
			HR EXAMS	50.00
			HR EXAMS	100.00
			HR EXAMS	50.00
			HR EXAMS	343.00
			HR EXAMS	50.00
			HR EXAMS	400.00

Check Date	Check	Vendor Name	Description	Amount
			HR EXAMS	343.00
				1,371.00
04/16/2021	131797	R&R INSURANCE SERVICES	MAY WORKERS COMP INSTALLMENT	27,357.00
04/16/2021	131798	REECE ROBINSON	4/6/21 ELECTION	46.75
04/16/2021	131799	RELIANT FIRE APPARATUS	FD REPAIRS	5,951.22
04/16/2021	131800	ROBERT PEREIRA	4/6/21 ELECTION	123.25
04/16/2021	131801	SHARON BERNER	4/6/21 ELECTION	53.13
04/16/2021	131802	SHIRLEY ROGAHN	4/6/21 ELECTION	121.13
04/16/2021	131803	TITAN PUBLIC SAFETY SOLUTIONS	IT MOVE DATABASES TO NEW SERVER	1,200.00
04/16/2021	131804	TOM LAZAR	4/6/21 ELECTION	46.75
04/16/2021	131805	TONY FOWLER	4/6/21 ELECTION	123.25
04/16/2021	131806	VILLAGE OF PEWAUKEE	P&R LAKEFRONT PARK UTILITY	202.70
			P&R VILLAGE PARK UTILITY	50.10
			P&R KIWANIS UTILITY	50.10
				302.90
04/16/2021	131807	WAUKESHA CO TREASURER	P&R PROGRAM PRINTING	50.00
			CRT INMATE BILLING	74.56
				124.56
04/16/2021	131808	WAUKESHA WATER UTILITY	SW SEWER SERVICE CHG	20,704.59
04/16/2021	131809	WISCOMM LLC	FD BATTERIES	599.40
100 TOTALS:				
Total of 115 Disbursements:				286,750.76

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 3.2.

DATE: April 19, 2021

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Approval of Common Council Meeting Minutes Dated March 1st, 2021

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

CC Minutes 3-1-2021

In Attendance:
Mayor Steve Bierce, Aldermen B. Bergman, C. Brown, B. Dziwulski, R. Grosch, J. Kara, and J. Wamser.

Also in Attendance:
Attorney S. Riffle, Administrator S. Klein, DPW Director M. Wagner, Utility Manager J. Mueller, City Planner & Community Development Director N. Fuchs, Lieutenant M. Moonen and Deputy Clerk A. Hurd.

1. Call to Order and Pledge of Allegiance

   Mayor Bierce called the meeting to order at 6:01 p.m. and requested everyone to stand for the Pledge of Allegiance.

2. Public Comment - None

3. Consent Agenda
   - 3.1. Approve Common Council Meeting Minutes Dated December 7th, 2020
   - 3.2. Approval of the Common Council Closed Session Meeting Dated February 15th, 2021
   - 3.3. Approve Accounts Payable Listing Dated March 1st, 2021

   A motion was made and seconded (B. Dziwulski, R. Grosch) to approve the consent agenda. Motion Passed: 6-For, 0-Against.

4. Presentation of the Community Development and Building Services Annual Report for 2020

   Mr. Fuchs stated the report highlights and summarizes the activities of the year, developments, and highlights some of the bigger projects. He said compared to 2019, things were down probably due to Covid. Building permits were not impacted as anticipated as there was only one less new home compared to 2019. Building Plan of Operations were down significantly. Mr. Fuchs stated the report also contains department goals for the year. Mr. Fuchs stated the Building Services Department is looking to become delegated and is working through the process with DSPS. This will allow plans to be reviewed inhouse or through a third party. Mr. Fuchs noted that Building Services will be implementing new software and is hoping to have it completed by October 2020.

   Mr. Kara asked about the revisions on page 8 to special event ordinances and the elimination of the requirements for outdoor entertainment permits. Mr. Fuchs stated outdoor entertainment permits could be tied into Business Plan of Operations or conditional use permits. This would alleviate having to go in front of Common Council once a year. The special event ordinance changes have to do more with when they are required and who needs them.

5. Discussion and Possible Action to Establish the 2021 Residential Paving Assessment Cap at $2,756.00 Per Parcel / Home

   Ms. Wagner stated this a standard pavement cap that happens every year for paving projects. The rates are adjusted annually based on the construction index. This year it increased by 2.67 percent,

which means the paving cap for 2021 will be $2,756.00 per residential parcel. Ms. Wagner was looking for Common Council to establish the 2021 rate.

A motion was made and seconded (J. Kara, B. Dziwulski) to establish the 2021 residential paving assessment cap at $2,756.00 per parcel. Motion Passed: 6-For, 0-Against.

6. Discussion and Possible Action to Concur with the Engineer's Recommendation of a 42-Foot Roadway Width for Joseph Road

Ms. Wagner stated Joseph Road serves existing industrial properties and is roughly 1,200 feet in length and does not currently have sewer and water. Ms. Wagner noted a standard roadway width for a commercial roadway is 34 feet back of curb to back of curb, which is about 14 ½ foot lanes. She said given the layout of the existing docks the trucks use the roadway to maneuver into the loading docks and based off truck turning movements, most trucks are going onto the shoulder to maneuver into the docks. With a 42-foot roadway, trucks can safely maneuver without damaging the curb and terrace area. Ms. Wagner recommended the roadway be constructed at 42 feet wide rather than 32 feet so the trucks can safely maneuver. Ms. Wagner stated $95,000.00 is the additional cost for that size roadway. She noted it will be 100 percent accessible to the properties since it is all commercial industrial lands.

Mayor Bierce asked if this would affect the right of way and Ms. Wagner commented it would not.

Mr. Bergman asked how the trucks maneuver in now. Ms. Wagner stated the area does not have curb and gutter currently and if they did, it is gone. She said it was a rural roadway and with all the truck turning movements Concrete Redi mix paved the entire terrace area so there is nothing left to tear up. Mr. Bergman asked where the storm water was going seeing as there are no ponds. Ms. Wagner stated everything runs west to east, which is the general nature of the road drainage. She said there is a little bit of "curb area" which created a trough that is not holding up. She noted this is the reason the City is proposing the urban section and mentioned the City will also be adding storm sewer for drainage, which will outlet to the railroad ditch. Mr. Bergman asked if the owners are aware of the expanding of the road to accommodate the trucks. Ms. Wagner said there has not been any communication with property owners regarding the roadway width. She stated the cost would be split between six properties in the Joseph Road assessment.

Discussion took place regarding the cost of the project and the need to move it up. Ms. Wagner stated the storm water and collection will be 100 percent be paid for out of stormwater utility, along with 50 percent of the curb.

A motion was made and seconded (B. Dziwulski, R. Grosch) to concur with the Engineers recommendation for a 42-foot roadway width on Joseph Road. Motion Passed: 6-For, 0-Against.

7. Discussion and Possible Action to Enact the 2021 Spring Weight Limits Beginning March 8, 2021 at 6:00 a.m.

Ms. Wagner stated there were no spring weight limits last year. She said the roads are most vulnerable right now and she was looking to adopt the spring weight limits on the same streets as in the past, except for Shelley Lynn. She noted all surrounding communities will enact at the same time,

posting on March 8th at 6:00 am. She mentioned that the City of Pewaukee has an end date of March 21st and it can be reevaluated if it is posted within 48 hours of expiring. She mentioned other communities do not have an end date and will end when they see fit. Ms. Wagner is recommending concurrence on the spring weight limits.

Ms. Brown asked when signs would be posted and what kind of notice the trucker drivers get. Ms. Wagner stated they get 48 hours notice and signs are currently being put up. She felt it would take them through Wednesday to have them all in. She noted that Lt. Moonen will also go out and take pictures to document the signs being installed so if there are challenges in court, the City will have date stamped pictures showing signage was posted. Ms. Wagner mentioned that the weight limits will also be posted on the City of Pewaukee website.

A motion was made and seconded (B. Dziwulski, C. Brown) to enact the spring weight limits beginning March 8, 2021 at 6:00am. Motion Passed For-6, Against-0.

8. Public Comment

Ms. Brown stated she wanted to update Common Council regarding the two overtime charges she questioned at the last meeting. She said she received a call from Lt. Moonen regarding the overtime charges. She was informed that Covid produced the overtime hours during the 3rd and 4th quarters last year and the additional money was not budgeted. Ms. Brown stated Lt. Moonen mentioned there was an increase in home-related incidents, drugs, violence, and mental health and it has taken a toll on the Sheriff's Department. She said Lt. Moonen understands the City of Pewaukee does not look forward to having these big bills and hopes 2021 is better. She noted all charges were legit and Lt. Moonen will address the issue and share more facts at the April meeting.

9. Closed Session – You are hereby notified that the Common Council and staff of the City of Pewaukee will convene into closed session after all regular scheduled business has been concluded and upon motion duly made and seconded and acted upon by roll-call vote as required under §19.85(1)(a), Stats. The purpose of the closed session is for the following:

- §19.85(1)(e): Deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session, specifically related to Waukesha Water Utility's Well #10.

You are further notified that at the conclusion of the Closed Session, the Common Council may convene into open session pursuant to 19.85(2), Stats., for possible additional discussion and action concerning any matters discussed in closed session and for adjournment.

A motion was made and seconded (J. Wamser, J. Kara) to go into closed session. Motion Passed For-6, Against-0 on a roll call vote.

10. Adjournment

A motion was made and seconded (B. Dziwulski, J. Kara) to adjourn the meeting at 7:06 p.m. Motion Passed For-6, Against-0.

Respectfully Submitted,

Kelly Tarczewski
Clerk/Treasurer

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 4.

DATE: April 19, 2021

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

PUBLIC HEARING regarding the Joseph Road Reconstruction and Utility Extensions Project.

BACKGROUND:

The City of Pewaukee authorized the road construction and utility extension project as part of the 2021 Budget.

Joseph Road is in pour condition and requires reconstruction. The project was bid to remove the existing asphalt and stone base, correct any subgrade instability, install new stone base, add curb and gutter, and place asphaltic concrete. As you may recall from a previous Council meeting, we increased the width of this roadway to accommodate the truck turning movements required by the existing loading dock locations.

Joseph Road is not currently serviced with municipal water or municipal sewer. The project was bid to extend these services for two reasons. One: the services are available nearby and these business are an island without municipal service whereas the surrounding areas all have municipal services. They are currently relying on well and septic. Two: the City's code requires businesses with this zoning class to be on municipal water and municipal sewer.

While not part of the assessable costs for the project, the Water Utility will also be completing a water main loop planned under the railroad to Springdale Estates (Emberwood Court). The costs for this loop will be paid for by the Water Utility as it is an overall system improvement and not a benefit to the individual property owners.

FINANCIAL IMPACT:

The 2021 budget allocated $350,000 from the Storm Water Utility and $375,000 from the City Road Fund.

The total project cost including engineering, administration, and contingencies is $1,222,037.18. The allocation to each budget component is 266,490.05 for the Storm Water Utility, $388,284.42 for the City Road Fund, $162,469.89 for the Sewer Utility, and $404,792.82 for the Water Utility.

The Storm Water Utility has allocated adequate budget for this project.

The City Road Fund is short by up to $13,284.42, however the City was borrowing for all road projects and we recommend increasing the borrowing to include this amount.

The 2021 Budget for the Water & Sewer Utility did not include this project. We propose the following budget re-allocations. Water Utility: Re-allocate up to $404,792.82 from the Lindsay Road (Balmer Park/Swan Vw. Farms to Sports Complex) to the Joseph Road extension. Sewer Utility: Re-allocate up to $162,469.89 from the Village of

Pewaukee Kopmeier - LS upgrade vs gravity install to the Joseph Road extension.

RECOMMENDED MOTION:

Common Council award the Paul Road and Joseph Road Reconstruction Contract B to the lowest qualified bidder, Wolf Paving Co., Inc., in the amount of $940,028.60 and accept the preliminary engineers report, special assessments, and attendant budget re-allocations.

ATTACHMENTS:

Description

Letter to residents

Joseph Preliminary Engineers Report

Department of Public Works
Engineering Division
W240N3065 Pewaukee Road • Pewaukee, WI 53072
Phone: (262) 691-0804 • Fax: (262) 691-5729
Email: publicworks@pewaukee.wi.us

April 9, 2021

To the businesses along Joseph Road:

As you may be aware, the pavement of Joseph Road is in poor condition and should be replaced. As such, we have bid the Joseph Road Reconstruction project which consists of full depth pavement and stone base removals. As part of the project, the City will be extending municipal water and sanitary sewer to the area ahead of the paving project. Curb and gutter is being placed in accordance with our standard road section. Storm sewer is being added.

The cost of the new storm sewer and half the new curb are paid by the Storm Water Utility. The costs of the sanitary sewer work are paid by the Sewer Utility. The costs of the water main extension are paid by the Water Utility. The road reconstruction and half of the curb repair costs are paid by the City of Pewaukee.

Beginning in 1984, the cost of road construction and curb extensions have been recovered through special assessments to the properties that abut the streets. In addition, all water main and sanitary sewer extensions have been recovered through special assessments to the properties that benefit from the extension. A Public Hearing for these proposed special assessments has been scheduled to begin at **6:00 p.m. on Monday, April 19, 2021 in the Common Council Chambers at the Pewaukee City Hall located at W240N3065 Pewaukee Road, Pewaukee, WI 53072.** The purpose of the public hearing is to provide a public forum where the merits of the project will be discussed and the affected property owners will have a chance to comment before the Common Council on the proposed project.

Enclosed is a portion of the assessment roll that shows the potential special assessments for your property. The road and curb assessments are due when the final assessment resolution is passed (anticipated summer 2022). The assessments may be paid over a 10-year period with annual simple interest accruing on any unpaid balance on the end of year tax bill.

The enclosure also includes the potential water main, water service, sanitary sewer, and sewer lateral assessments for your property. The assessments are due when the final resolution is passed (anticipated summer 2022). The assessments may be paid over a 10-year period with annual simple interest accruing on any unpaid balance on the end of year tax bill.

Connection to the sanitary sewer and water systems is mandatory after 5 years. At the time of connection, the Utilities will collect a Reserve Capacity Assessment of $5,015 per Residential Equivalent Unit (REU) for water and $3,140 per Residential Equivalent Connection (REC) for sewer (2021 rates). These assessments pay for additional oversizing of service mains, fire protection oversizing, water towers, wells, sewer treatment plants, etc. These assessments increase annually by a construction cost index.

These special assessments may be confusing, and we hope to provide a clear understanding of the proposals and the costs at the April 19th hearing. The decision to proceed with the project or cancel the project will be made by the Common Council at the April 19th meeting.

Magdelene Wagner, P.E., Director

During this unpresented time of COVID-19, we strongly encourage all attendees for the public hearing to wear a mask. Hand sanitizer will be available at the meeting as well.

If you have any questions or concerns, please feel free to contact our office at (262) 691-0804 for more information or to schedule an appointment.

Sincerely,



Magdelene Wagner, P.E.
Director of Public Works

CC: Common Council

Preliminary Report of the Engineer

On The Proposed Joseph Road

Pavement Reconstruction, Sanitary Sewer, and Water Main Assessments

In the City of Pewaukee

In accordance with the resolution passed by the City Council of the City of Pewaukee, we herewith submit our report on assessments for the reconstruction of Joseph Road, sanitary sewer extension, water main extension, and drainage improvements to be made in the City of Pewaukee. All data shown here is based on bid prices.

This report consists of the following Schedules:

Schedule "A": Summary of options for assessments and related costs.

Schedule "B": Legal descriptions, dated January and April 2021, and maps, dated April 2021, of all parcels within the assessment district.

Schedule "C": Estimated assessment for each parcel affected.

The properties against which the assessments are proposed are benefited and the improvements constitute an exercise of Police Powers.

Magdelene J. Wagner, P.E.
Director of Public Works/City Engineer
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
April 19, 2021

Prepared by:
Brian G. Leightner, E.I.T.
Civil Engineer
April 13, 2021

Schedule "A" – Joseph Road

The City of Pewaukee is considering the pavement reconstruction of Joseph Road. The improvements consist of road reconstruction, curb installation, inlet and drainage improvements, water extension, sewer extension, and related facilities.

The cost of the road improvements and 50% of curb installations will be apportioned to all property owners abutting the street with direct or indirect access. All non-residential properties shall pay the full road and curb assessment. Since all the properties within the assessment district are non-residential, the curb assessment was included in the road assessment and not a separate assessment.

Inlet repairs, drainage improvements, and 50% of the curb installations will be paid by the Storm Water Management Utility.

Water Main extensions to the easternmost hydrant on Joseph Road will be apportioned to all property owners with access to the water main extension. Water Main extensions beyond the easternmost hydrant on Joseph Road to the connection point from Emberwood Court will be paid by the Water Utility. Sanitary sewer extensions will be apportioned to all property owners with access to the sanitary sewer extension.

It is recommended the costs for road improvements in Joseph Road will be determined on a per acre basis.

It is recommended the costs for sewer and water extensions in Joseph Road will be determined on a per acre basis. The sewer laterals and water service extensions will be determined on a per unit basis.

UNIT RATE COMPUTATIONS

Road Rehabilitation per Acre Rate – Joseph Road

Estimated Road Reconstruction Costs (see attached breakdown)	$ 298,680.32
Engineering, Administration, & Contingencies	$ 89,604.10
Total Estimated Road Reconstruction Assessable Costs	$ 388,284.42

$\frac{\$388,284.42}{12.68 \text{ acres}} = \$ 30,610.77/\text{acre}$

Use $ 30,610.77 as the Road Reconstruction per Acre Rate.

Sanitary Sewer Extension per Acre Rate – Joseph Road

Estimated Sewer Main Extension Costs (see attached breakdown)	$ 99,361.23
Engineering, Administration, & Contingencies	$ 29,808.37
Total Estimated Sewer Main Extension Assessable Costs	$ 129,169.60

$\frac{\$\ 129,169.60}{7.61\ \text{acres}}$ = $ 16,980.87/acre

Use
$ 16,980.87
as the Sanitary Sewer per Acre Rate.

Sanitary Lateral per Unit Rate – Joseph Road

Estimated Sewer Lateral Costs (see attached breakdown)	$ 25,615.61
Engineering, Administration, & Contingencies	$ 7,684.68
Total Estimated Sewer Lateral Assessable Costs	$ 33,300.29

$\frac{\$33,300.29}{5\ \text{units}}$ = $ 6,660.06/unit

Use$ 6,660.06 as the Sanitary Lateral per Unit Rate.

Water Main Extension per Acre Rate – Joseph Road

Estimated Water Main Extension Costs (see attached breakdown)	$ 130,142.27
Engineering, Administration, & Contingencies	$ 39,042.68
Total Estimated Water Main Extension Assessable Cost	$ 169,184.95

$\frac{\$\ 169,184.95}{7.61\ \text{acres}}$ = $ 22,241.36/acre

Use
$ 22,241.36
as the Water Main per Acre Rate.

Water Service per Unit Rate – Joseph Road

Estimated Water Service Costs (see attached breakdown)	$ 21,206.46
Engineering, Administration, & Contingencies	$ 6,361.94
Total Estimated Service Assessable Cost	$ 27,568.40

$\frac{\$27,568.40}{5\ \text{units}}$ = $ 5,513.68/unit

Use $ 5,513.68 as the Water Service per Unit Rate.

City of Pewaukee Water System Improvements

Estimated Water System Costs (see attached breakdown)	$ 160,030.37
Engineering, Administration, & Contingencies	$ 48,009.11
Total Estimated Water System Cost	$ 208,039.48

Storm Water Management – Joseph Road

Estimated Drainage Improvement Costs	$ 204,992.34
Engineering, Administration, & Contingencies	$ 61,497.70
Total Estimated Drainage Improvement Costs	$ 266,490.05

COST SUMMARY

Cost Summary

Total Project Costs	$ 1,222,037.18
Total Joseph Road Assessable Costs (deduct)	$ (388,284.42)
Total Sanitary Sewer Assessable Costs (deduct)	$ (129,169.60)
Total Sanitary Lateral Assessable Costs (deduct)	$ (33,300.29)
Total Storm Water Utility Costs (deduct)	$ (266,490.05)
Total Water Main Assessable Costs (deduct)	$ (169,184.95)
Total Water Service Assessable Costs (deduct)	$ (27,568.40)
Total Water Main System Costs (deduct)	$ (208,039.48)
Net Non-assessable and City Costs	$ (0.00)

Computation of Costs
Total Reconstruction Project Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	1	$ 56,606.00	$ 56,606.00
61	Traffic Control	L.S.	1	$ 3,938.00	$ 3,938.00
62	Barrier Fence	L.F.	390	$ 3.00	$ 1,170.00
63	Dewatering/Geotextile Filter Bag Area	L.S.	1	$ 16,922.24	$ 16,922.24
64	Silt Fence	L.F.	490	$ 1.87	$ 916.30
65	Manufactured Ditch Check	EA.	3	$ 40.00	$ 120.00
66	Tracking Pad	S.F.	1,900	$ 1.74	$ 3,306.00
67	Inlet Sediment Guard (Type D)	EA.	8	$ 95.00	$ 760.00
68	Full Depth Saw Cutting	L.F.	1,535	$ 1.95	$ 2,993.25
69	Dust Control Using Water	1,000 GAL	10	$ 238.92	$ 2,389.20
70	10-inch Sanitary Sewer	L.F.	844	$ 84.57	$ 71,377.08
71	48-inch Sanitary Sewer Manhole	EA.	4	$ 4,814.50	$ 19,258.00
72	6-inch Sanitary Sewer Lateral	L.F.	154	$ 151.21	$ 23,286.34
73	Televised Sanitary Piping Inspection	L.F.	998	$ 2.75	$ 2,744.50
74	8-inch Water Main in Granular Backfill	L.F.	1,035	$ 94.14	$ 97,434.90
75	8-inch Water Main in Casing Pipe Jack and Bore	L.F.	120	$ 680.28	$ 81,633.60
76	8-inch Water Main Directional Drill	L.F.	91	$ 83.25	$ 7,575.75
77	6-inch Hydrant Lead in Granular Backfill	L.F.	115	$ 88.16	$ 10,138.40
78	Hydrant Assembly with Anchor Tee and 6-Inch Valve	EA.	4	$ 5,809.91	$ 23,239.64
79	Water Sampling Station with Curb Stop Shut Off Valve	EA.	1	$ 2,827.54	$ 2,827.54
80	8-inch Water Main Valve	EA.	3	$ 1,759.07	$ 5,277.21
81	Pipe Insulation	L.F.	24	$ 5.57	$ 133.68
82	2-inch Water Service in Granular Backfill	L.F.	144	$ 134.63	$ 19,386.72
83	2-inch HDPE Tap and Corporation Stop	EA.	6	$ 560.31	$ 3,361.86
84	2-inch Curb Valve and Curb Box	EA.	5	$ 626.74	$ 3,133.70
85	14-inch x 23-inch HERCP Storm Sewer CL IV in granular backfill	L.F.	515	$ 102.12	$ 52,591.80

Total Reconstruction Costs – Continued

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
86	14-inch x 23-inch HERCP Storm Sewer CL IV in Concrete Encasement	L.F.	420	$ 167.74	$ 70,450.80
87	14-inch x 23-inch Concrete End Section	EA.	1	$ 992.85	$ 992.85
88	48-inch Storm Sewer Manhole w/Fabric Wrap	EA.	4	$ 3,072.54	$ 12,290.16
89	72-inch Storm sewer Manhole w/Fabric Wrap	EA.	1	$ 3,954.00	$ 3,954.00
90	Storm Inlet w/Fabric Wrap	EA.	7	$ 2,319.14	$ 16,233.98
91	Televised Storm Piping Inspection	L.F.	938	$ 2.65	$ 2,485.70
92	Construct Roadway to Subgrade	L.S.	1	$ 42,423.90	$ 42,423.90
93	Excavation Below Subgrade	C.Y.	600	$ 19.43	$ 11,658.00
94	Excavation Below Subgrade (EBS) Backfill	TON	1,200	$ 16.11	$ 19,332.00
95	Geogrid in EBS Area	SY	1,700	$ 4.91	$ 8,347.00
96	Crushed Aggregate Base Course	TON	2,860	$ 12.82	$ 36,665.20
97	30-inch Concrete Curb and Gutter	L.F.	1,994	$ 24.60	$ 49,052.40
98	4-inch Asphaltic Concrete Binder Course	TON	1,010	$ 55.00	$ 55,550.00
99	Tack Coat	GAL	300	$ 2.50	$ 750.00
100	2-inch Asphaltic Concrete Surface Course	TON	505	$ 59.50	$ 30,047.50
101	Crushed Aggregate Driveway Replacement (10-inch Depth)	TON	380	$ 13.09	$ 4,974.20
102	4-inch Asphaltic Concrete Driveway Replacement	S.F.	3,200	$ 4.75	$ 15,200.00
103	6-inch Concrete Driveway	S.F.	2,650	$ 7.40	$ 19,610.00
104	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	1,070	$ 6.10	$ 6,527.00
105	Remove and Replace Mailbox	EA.	6	$ 95.00	$ 570.00
106	Rip Rap	TON	5	$ 75.00	$ 375.00
107	Geotextile Fabric	S.Y.	10	$ 1.72	$ 17.20
108	CN Railroad Flagmen Allowance	L.S.	1	$ 10,000.00	$ 10,000.00
109	CN Railroad Permit Items Allowance	L.S.	1	$ 10,000.00	$ 10,000.00

Total Reconstruction Costs – Continued

Subtotal of Contract	$ 940,028.60
Engineering, Administration, & Contingencies	$ 282,008.58
Total Project Costs	$ 1,222,037.18

Total Road Reconstruction Assessment Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.32	$ 56,606.00	$ 18,113.92
61	Traffic Control	L.S.	0.32	$ 3,938.00	$ 1,260.16
64	Silt Fence	L.F.	122.50	$ 1.87	$ 229.08
66	Tracking Pad	S.F.	603.40	$ 1.74	$ 1,049.92
67	Inlet Sediment Guard (Type D)	EA.	4.00	$ 95.00	$ 380.00
68	Full Depth Saw Cutting	L.F.	1,535.00	$ 1.95	$ 2,993.25
69	Dust Control Using Water	1,000 GAL	10.00	$ 238.92	$ 2,389.20
92	Construct Roadway to Subgrade	L.S.	1.00	$ 42,423.90	$ 42,423.90
93	Excavation Below Subgrade	C.Y.	600.00	$ 19.43	$ 11,658.00
94	Excavation Below Subgrade (EBS) Backfill	TON	1,200.00	$ 16.11	$ 19,332.00
95	Geogrid in EBS Area	SY	1,700.00	$ 4.91	$ 8,347.00
96	Crushed Aggregate Base Course	TON	2,860.00	$ 12.82	$ 36,665.20
97	30-inch Concrete Curb and Gutter	L.F.	997.00	$ 24.60	$ 24,526.20
98	4-inch Asphaltic Concrete Binder Course	TON	1,010.00	$ 55.00	$ 55,550.00
99	Tack Coat	GAL	300.00	$ 2.50	$ 750.00
100	2-inch Asphaltic Concrete Surface Course	TON	505.00	$ 59.50	$ 30,047.50
101	Crushed Aggregate Driveway Replacement (10-inch Depth)	TON	380.00	$ 13.09	$ 4,974.20
102	4-inch Asphaltic Concrete Driveway Replacement	S.F.	3,200.00	$ 4.75	$ 15,200.00
103	6-inch Concrete Driveway	S.F.	2,650.00	$ 7.40	$ 19,610.00
104	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	428.00	$ 6.10	$ 2,610.80
105	Remove and Replace Mailbox	EA.	6.00	$ 95.00	$ 570.00
	Subtotal of Contract				$ 298,680.32
	Engineering, Administration, & Contingencies				$ 89,604.10
	Total Project Costs				$ 388,284.42

Total Road Rehabilitation & Assessment Costs – Continued

Total Acres abutting the Road = 12.68457 acres

Computation of Acre Cost: $\frac{\$\ 388,284.42}{12.68\ \text{acres}} = \$\ 30,610.77/\text{acre}$

Use $ 30,610.77 as the Road Reconstruction per Acre Rate.

Total Estimated Sanitary Sewer Extension Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.13	$ 56,606.00	$ 7,358.78
61	Traffic Control	L.S.	0.13	$ 3,938.00	$ 511.94
66	Tracking Pad	S.F.	252.99	$ 1.74	$ 440.20
70	10-inch Sanitary Sewer	L.F.	844.00	$ 84.57	$ 71,377.08
71	48-inch Sanitary Sewer Manhole	EA.	4.00	$ 4,814.50	$ 19,258.00
72	6-inch Sanitary Sewer Lateral	L.F.	154.00	$ 151.21	$ 23,286.34
73	Televised Sanitary Piping Inspection	L.F.	998.00	$ 2.75	$ 2,744.50
	Subtotal of Contract				$ 124,976.84
	Engineering, Administration, & Contingencies				$ 37,493.05
	Total Estimated Sanitary Sewer Improvements				$ 162,469.89

Total Estimated Sanitary Sewer Main Extension Assessable Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.10	$ 56,606.00	$ 5,660.60
61	Traffic Control	L.S.	0.10	$ 3,938.00	$ 393.80
66	Tracking Pad	S.F.	201.58	$ 1.74	$ 350.75
70	10-inch Sanitary Sewer	L.F.	844.00	$ 84.57	$ 71,377.08
71	48-inch Sanitary Sewer Manhole	EA.	4.00	$ 4,814.50	$ 19,258.00
73	Televised Sanitary Piping Inspection	L.F.	844.00	$ 2.75	$ 2,321.00
	Subtotal of Contract				$ 99,361.23
	Engineering, Administration, & Contingencies				$ 29,808.37
	Total Project Costs				$ 129,169.60

Total Acres benefiting from sewer = 5 acres

Computation of Unit Cost: $\frac{\$\ 129{,}169.60}{7.61\ \text{acres}} = \$\ 16{,}980.87/\text{acre}$

Use $ 21,528.27 as the Sanitary Sewer Main per Acre Rate.

Total Estimated Sanitary Lateral Assessable Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.03	$ 56,606.00	$ 1,698.18
61	Traffic Control	L.S.	0.03	$ 3,938.00	$ 118.14
66	Tracking Pad	S.F.	51.41	$ 1.74	$ 89.45
72	6-inch Sanitary Sewer Lateral	L.F.	154.00	$ 151.21	$ 23,286.34
73	Televised Sanitary Piping Inspection	L.F.	154.00	$ 2.75	$ 423.50
	Subtotal of Contract				$ 25,615.61
	Engineering, Administration, & Contingencies				$ 7,684.68
	Total Project Costs				$ 33,300.29

Total Potential Units benefiting from sewer laterals = 5 units

Computation of Unit Cost: $\frac{\$\ 33{,}300.29}{5\ \text{units}} = \$\ 6{,}660.06/\text{unit}$

Use $ 6,660.06 as the Sanitary Lateral per Unit Rate.

Total Estimated Water Main Extension Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.33	$ 56,606.00	$ 18,679.98
61	Traffic Control	L.S.	0.33	$ 3,938.00	$ 1,299.54
62	Barrier Fence	L.F.	390.00	$ 3.00	$ 1,170.00
63	Dewatering/Geotextile Filter Bag Area	L.S.	1.00	$ 16,922.24	$ 16,922.24
64	Silt Fence	L.F.	245.00	$ 1.87	$ 458.15
66	Tracking Pad	S.F.	629.53	$ 1.74	$ 1,095.38
74	8-inch Water Main in Granular Backfill	L.F.	1,035.00	$ 94.14	$ 97,434.90
75	8-inch Water Main in Casing Pipe Jack and Bore	L.F.	120.00	$ 680.28	$ 81,633.60
76	8-inch Water Main Directional Drill	L.F.	91.00	$ 83.25	$ 7,575.75
77	6-inch Hydrant Lead in Granular Backfill	L.F.	115.00	$ 88.16	$ 10,138.40
78	Hydrant Assembly with Anchor Tee and 6-Inch Valve	EA.	4.00	$ 5,809.91	$ 23,239.64
79	Water Sampling Station with Curb Stop Shut Off Valve	EA.	1.00	$ 2,827.54	$ 2,827.54
80	8-inch Water Main Valve	EA.	3.00	$ 1,759.07	$ 5,277.21
81	Pipe Insulation	L.F.	24.00	$ 5.57	$ 133.68
82	2-inch Water Service in Granular Backfill	L.F.	144.00	$ 134.63	$ 19,386.72
83	2-inch HDPE Tap and Corporation Stop	EA.	6.00	$ 560.31	$ 3,361.86
84	2-inch Curb Valve and Curb Box	EA.	5.00	$ 626.74	$ 3,133.70
104	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	428.00	$ 6.10	$ 2,610.80
108	CN Railroad Flagmen Allowance	L.S.	0.75	$ 10,000.00	$ 7,500.00
109	CN Railroad Permit Items Allowance	L.S.	0.75	$ 10,000.00	$ 7,500.00
	Subtotal of Contract				$ 311,379.09
	Engineering, Administration, & Contingencies				$ 93,413.73
	Total Project Costs				$ 404,792.82

Total Estimated 8” Water Main Extension Assessable Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.14	$ 56,606.00	$ 7,924.84
61	Traffic Control	L.S.	0.14	$ 3,938.00	$ 551.32
66	Tracking Pad	S.F.	262.84	$ 1.74	$ 457.34
74	8-inch Water Main in Granular Backfill	L.F.	861.30	$ 94.14	$ 81,082.78
77	6-inch Hydrant Lead in Granular Backfill	L.F.	110.40	$ 88.16	$ 9,732.86
78	Hydrant Assembly with Anchor Tee and 6-Inch Valve	EA.	3.00	$ 5,809.91	$ 17,429.73
79	Water Sampling Station with Curb Stop Shut Off Valve	EA.	1.00	$ 2,827.54	$ 2,827.54
80	8-inch Water Main Valve	EA.	2.00	$ 1,759.07	$ 3,518.14
81	Pipe Insulation	L.F.	24.00	$ 5.57	$ 133.68
82	2-inch Water Service in Granular Backfill	L.F.	44.00	$ 134.63	$ 5,923.72
83	2-inch HDPE Tap and Corporation Stop	EA.	1.00	$ 560.31	$ 560.31
	Subtotal of Contract				$ 130,142.27
	Engineering, Administration, & Contingencies				$ 39,042.68
	Total Project Costs				$ 169,184.95

Total Acres benefiting from water = 7.60677 acres

Computation of Unit Cost: $\frac{\$\ 169{,}184.95}{7.61\ \text{acres}} = \$\ 22{,}241.36/\text{acre}$

Use $ 22,241.36 as the Water Main per Acre Rate.

Total Estimated Water Service Assessable Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.02	$ 56,606.00	$ 1,132.12
61	Traffic Control	L.S.	0.02	$ 3,938.00	$ 78.76
66	Tracking Pad	S.F.	43.20	$ 1.74	$ 75.17
82	2-inch Water Service in Granular Backfill	L.F.	100.00	$ 134.63	$ 13,463.00
83	2-inch HDPE Tap and Corporation Stop	EA.	5.00	$ 560.31	$ 2,801.55
84	2-inch Curb Valve and Curb Box	EA.	5.00	$ 626.74	$ 3,133.70
104	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	85.60	$ 6.10	$ 522.16
	Subtotal of Contract				$ 21,206.46
	Engineering, Administration, & Contingencies				$ 6,361.94
	Total Project Costs				$ 27,568.40

Total Potential Units benefiting from water services = 5 units

Computation of Unit Cost: $\frac{\$\ 27{,}568.40}{5\ \text{units}} = \$\ 5{,}513.68/\text{unit}$

Use $ 5,513.68 as the Water Service per Unit Rate.

Total Estimated Water System Improvement Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.17	$ 56,606.00	$ 9,623.02
61	Traffic Control	L.S.	0.17	$ 3,938.00	$ 669.46
62	Barrier Fence	L.F.	390.00	$ 3.00	$ 1,170.00
63	Dewatering/Geotextile Filter Bag Area	L.S.	1.00	$ 16,922.24	$ 16,922.24
64	Silt Fence	L.F.	245.00	$ 1.87	$ 458.15
66	Tracking Pad	S.F.	323.49	$ 1.74	$ 562.87
74	8-inch Water Main in Granular Backfill	L.F.	173.70	$ 94.14	$ 16,352.12
75	8-inch Water Main in Casing Pipe Jack and Bore	L.F.	120.00	$ 680.28	$ 81,633.60
76	8-inch Water Main Directional Drill	L.F.	91.00	$ 83.25	$ 7,575.75
77	6-inch Hydrant Lead in Granular Backfill	L.F.	4.60	$ 88.16	$ 405.54
78	Hydrant Assembly with Anchor Tee and 6-Inch Valve	EA.	1.00	$ 5,809.91	$ 5,809.91
80	8-inch Water Main Valve	EA.	1.00	$ 1,759.07	$ 1,759.07
104	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	342.40	$ 6.10	$ 2,088.64
108	CN Railroad Flagmen Allowance	L.S.	0.75	$ 10,000.00	$ 7,500.00
109	CN Railroad Permit Items Allowance	L.S.	0.75	$ 10,000.00	$ 7,500.00
	Subtotal of Contract				$ 160,030.37
	Engineering, Administration, & Contingencies				$ 48,009.11
	Total Project Costs				$ 208,039.48

Total Estimated Water System Improvement Costs (non-assessable) = $ 208,039.48

Total Estimated Storm Water Utility Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
60	Mobilization	L.S.	0.22	$ 56,606.00	$ 12,453.32
61	Traffic Control	L.S.	0.22	$ 3,938.00	$ 866.36
64	Silt Fence	L.F.	122.50	$ 1.87	$ 229.08
65	Manufactured Ditch Check	EA.	3.00	$ 40.00	$ 120.00
66	Tracking Pad	S.F.	414.08	$ 1.74	$ 720.50
67	Inlet Sediment Guard (Type D)	EA.	4.00	$ 95.00	$ 380.00
85	14-inch x 23-inch HERCP Storm Sewer CL IV in granular backfill	L.F.	515.00	$ 102.12	$ 52,591.80
86	14-inch x 23-inch HERCP Storm Sewer CL IV in Concrete Encasement	L.F.	420.00	$ 167.74	$ 70,450.80
87	14-inch x 23-inch Concrete End Section	EA.	1.00	$ 992.85	$ 992.85
88	48-inch Storm Sewer Manhole w/Fabric Wrap	EA.	4.00	$ 3,072.54	$ 12,290.16
89	72-inch Storm sewer Manhole w/Fabric Wrap	EA.	1.00	$ 3,954.00	$ 3,954.00
90	Storm Inlet w/Fabric Wrap	EA.	7.00	$ 2,319.14	$ 16,233.98
91	Televised Storm Piping Inspection	L.F.	938.00	$ 2.65	$ 2,485.70
97	30-inch Concrete Curb and Gutter	L.F.	997.00	$ 24.60	$ 24,526.20
104	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	214.00	$ 6.10	$ 1,305.40
106	Rip Rap	TON	5.00	$ 75.00	$ 375.00
107	Geotextile Fabric	S.Y.	10.00	$ 1.72	$ 17.20
108	CN Railroad Flagmen Allowance	L.S.	0.25	$ 10,000.00	$ 2,500.00
109	CN Railroad Permit Items Allowance	L.S.	0.25	$ 10,000.00	$ 2,500.00
	Subtotal of Contract				$ 204,992.34
	Engineering, Administration, & Contingencies				$ 61,497.70
	Total Project Costs				$ 266,490.05

Total Estimated Storm Water Utility Project Costs = $ 266,490.05

January 13, 2021

All that part of the SW ¼ of Section 13, Township 7 North, Range 19 East, in the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SW corner of the SW ¼ of Section 13, T7N, R19E Thence Due North Along the West Line of Said SW ¼, 254.48 Feet, Thence S84°29'39"E, 50.23 Feet to a point on the East R/W Line of Redford Blvd also being the SW Corner of Parcel "A" of Certified Survey Map No. 1242 also being the point of beginning of area to be Described; Thence continuing S84°29'39"E Along the South line of Said CSM 1242, 951.83 Feet to the SE corner of Joseph Road Condominiums, also being a Point on the West R/W line of the Canadian National Railroad; Thence N5°24'08"E Along said Railroad R/W 649.33 Feet to the NE corner of Tax Key Parcel #PWC0915990002; Thence N86°04'22"W Along the North Line of said Tax Key Parcel #PWC0915990002, 982.83 Feet, to the NW corner of said Tax Key Parcel Also Being a Point on the East R/W Line of Redford Blvd.; Thence S2°34'47"W Along Said R/W Line 623.07 Feet to the Point of Beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

April 13, 2021

All that part of the SW ¼ of Section 13, Township 7 North, Range 19 East, in the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SW corner of the SW ¼ of Section 13, T7N, R19E Thence Due North Along the West Line of Said SW ¼, 254.48 Feet, Thence S84°29'39"E, 345.23 Feet to the SW Corner of Parcel "B" Certified Survey Map No. 1242 also being the Point of Beginning of Area to be Described; Continuing S84°29'39"E Along the South Line of Said Certified Survey Map, 656.82 Feet to the SE Corner of Joseph Road Condominiums also being a Point on the West R/W line of the Canadian National Railroad; Thence N5°24'08"E Along said Railroad R/W 649.33 Feet to the NE corner of Tax Key Parcel #PWC0915990002; Thence N86°04'22"W Along the North Line of said Tax Key Parcel #PWC0915990002, 982.83 Feet, to the NW corner of said Tax Key Parcel Also Being a Point on the East R/W Line of Redford Blvd.; Thence S2°34'47"W Along Said R/W Line, 344.2 Feet, to the NW Corner of Parcel "A" of CSM 1242 also being the South R/W Line of Joseph Road; Thence S86°04'22"E Along Said South R/W Line, 301.44 Feet, to the NW Corner of Parcel "B" Certified Survey Map No. 1242; Thence S3°55'38"W Along the West Line of Said CSM, 286.60 Feet to the Point of Beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

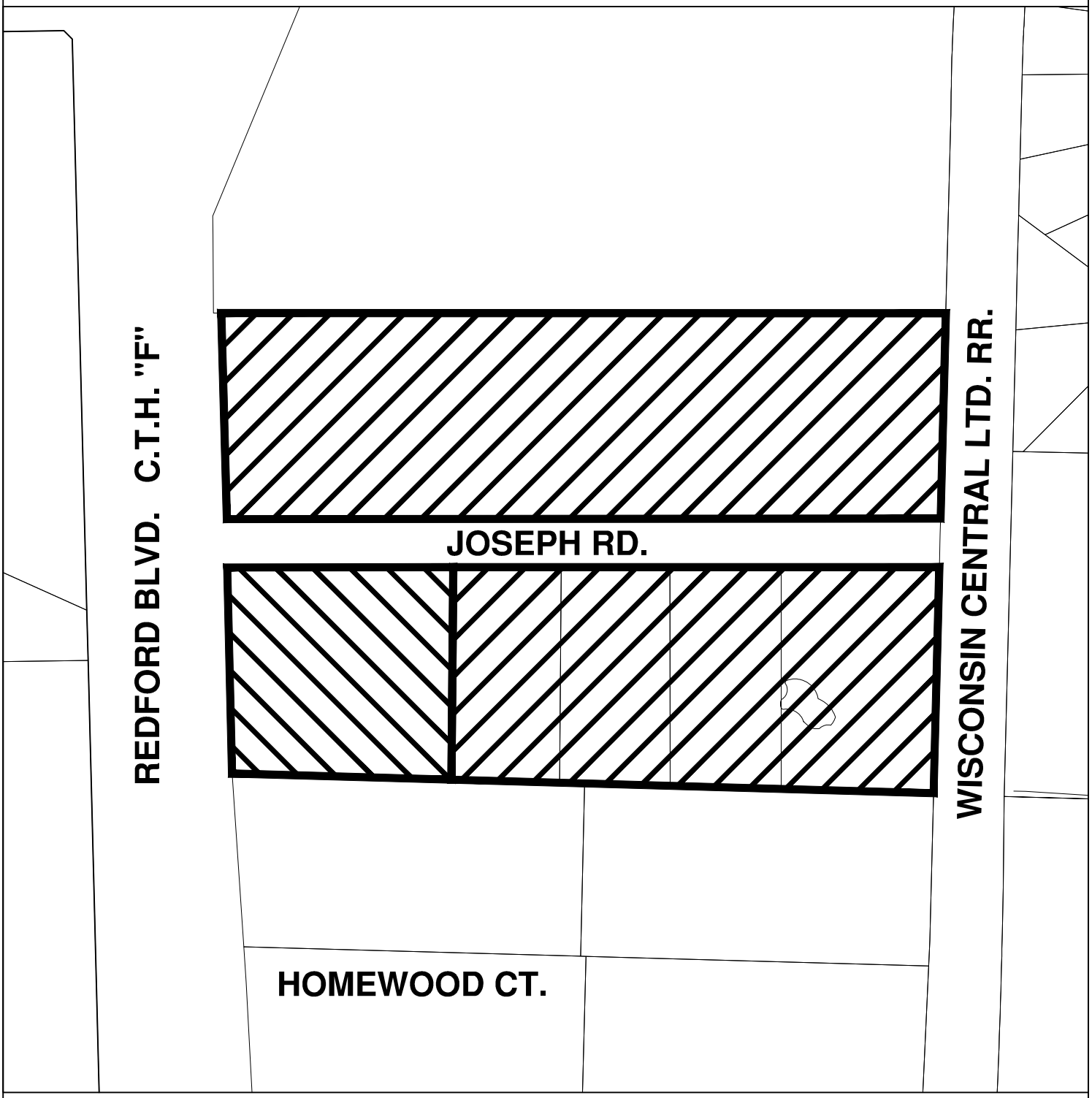
JOSEPH ROAD AREA 2021

RD-21-57553 & SS-21-12831 & WU-21-12831

SANITARY SEWER, WATER MAIN, AND ROAD ASSESSMENT

CITY OF PEWAUKEE

WAUKESHA COUNTY, WISCONSIN



CITY OF PEWAUKEE

LEGEND

ROAD ASSESSMENT

SEWER, WATER, AND ROAD ASSESSMENT

N W E S

0 100 200 300 400 500

SCALE IN FEET

DATE: APRIL, 2021

SCHEDULE C
PRELIMINARY ASSESSMENT ROLL
JOSEPH ROAD 2021 RECONSTRUCTION, WATER MAIN EXTENSION, SANITARY SEWER EXTENSION

No.	Owner's Name & Address	Tax Key No.	Description	Quantity	Unit	Cost/Unit	Cost	Total Assessment
1	OHM READFORD LLC	PWC 0915990001	Road Reconstruction	1.9556	Acre	$ 30,610.77	$ 59,862.42	$ 59,862.42
	W229N2494 COUNTY ROAD F		Water Assessment	1.9556	Acre	$ -	$ -	
	WAUKESHA WI 53186-1104		Water Service Assessment	0	Unit	$ -	$ -	
			Sewer Assessment	1.9556	Acre	$ -	$ -	
			Sewer Lateral Assessment	0	Unit	$ -	$ -	
2	R FREDRICK TRUCKING INC	PWC 0915990002	Road Reconstruction	6.24447	Acre	$ 30,610.77	$ 191,148.02	$ 191,148.02
	W229N2500 COUNTY ROAD F		Water Assessment - Deferred	3.12227	Acre	$ 22,241.36	$ 69,443.55	
	WAUKESHA WI 53186-1011		Water Service Assessment	0	Unit	$ -	$ -	
			Sewer Assessment - Deferred	3.12227	Acre	$ 16,980.87	$ 53,018.87	Deferred
			Sewer Lateral Assessment	0	Unit	$ -	$ -	$ 122,462.42
3	DBR SERVICES LLC	PWC 0915990003	Road Reconstruction	0.9835	Acre	$ 30,610.77	$ 30,105.69	$ 80,854.50
	13885 W CAPITOL DRIVE		Water Assessment	0.9835	Acre	$ 22,241.36	$ 21,874.38	
	BROOKFIELD WI 53005		Water Service Assessment	1	Unit	$ 5,513.68	$ 5,513.68	
			Sewer Assessment	0.9835	Acre	$ 16,980.87	$ 16,700.69	
			Sewer Lateral Assessment	1	Unit	$ 6,660.06	$ 6,660.06	
4	JOSEPH RD LLC	PWC 0915990004	Road Reconstruction	1.0026	Acre	$ 30,610.77	$ 30,690.36	$ 82,188.31
	6156 DARLIN DRIVE		Water Assessment	1.0026	Acre	$ 22,241.36	$ 22,299.19	
	DANE WI 53529-9638		Water Service Assessment	1	Unit	$ 5,513.68	$ 5,513.68	
			Sewer Assessment	1.0026	Acre	$ 16,980.87	$ 17,025.02	
			Sewer Lateral Assessment	1	Unit	$ 6,660.06	$ 6,660.06	
5	RAYMOND M GALINSKY	PWC 0915990006	Road Reconstruction	1.0318	Acre	$ 30,610.77	$ 31,584.19	$ 84,227.43
	N17W22602 WATERTOWN ROAD		Water Assessment	1.0318	Acre	$ 22,241.36	$ 22,948.64	
	WAUKESHA WI 53186		Water Service Assessment	1	Unit	$ 5,513.68	$ 5,513.68	
			Sewer Assessment	1.0318	Acre	$ 16,980.87	$ 17,520.87	
			Sewer Lateral Assessment	1	Unit	$ 6,660.06	$ 6,660.06	
6	TIMOTHY M HUBER	PWC 0915990007	Road Reconstruction	0.7333	Acre	$ 30,610.77	$ 22,446.88	$ 63,382.28
	W5525 SUN ROAD		Water Assessment	0.7333	Acre	$ 22,241.36	$ 16,309.59	
	JUNEAU WI 53039		Water Service Assessment	1	Unit	$ 5,513.68	$ 5,513.68	
			Sewer Assessment	0.7333	Acre	$ 16,980.87	$ 12,452.07	
			Sewer Lateral Assessment	1	Unit	$ 6,660.06	$ 6,660.06	
7	TIMOTHY HUBER AND WENDY HUBER	PWC 0915990008	Road Reconstruction	0.7333	Acre	$ 30,610.77	$ 22,446.88	$ 63,382.28
	W5525 SUN ROAD		Water Assessment	0.7333	Acre	$ 22,241.36	$ 16,309.59	
	JUNEAU WI 53039		Water Service Assessment	1	Unit	$ 5,513.68	$ 5,513.68	
			Sewer Assessment	0.7333	Acre	$ 16,980.87	$ 12,452.07	
			Sewer Lateral Assessment	1	Unit	$ 6,660.06	$ 6,660.06	

SCHEDULE C
PRELIMINARY ASSESSMENT ROLL
JOSEPH ROAD 2021 RECONSTRUCTION, WATER MAIN EXTENSION, SANITARY SEWER EXTENSION

Total Contribution in aid of Road Construction	12.68457	$	388,284.42
Total Contribution in aid of Water Main Construction	7.60677	$	169,184.95
Total Contribution in aid of Water Service Construction	5	$	27,568.40
Total Contribution in aid of Sewer Construction	7.60677	$	129,169.60
Total Contribution in aid of Sewer Lateral Construction	5	$	33,300.29

The properties against which contributions in aid of construction are proposed are benefited and the improvements constitute an exercise in Police Powers.

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 5.

DATE: April 19, 2021

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

PUBLIC HEARING regarding the Paul Road, Roundy Drive, Roundy Circle East, and Roundy Circle West Road Rehabilitation Project [Wagner]

BACKGROUND:

The City of Pewaukee authorized the road construction project for Paul Road, Roundy Drive, Roundy Circle East, and Roundy Circle West as part of the 2021 Budget.

Paul Road, Roundy Drive, Roundy Circle East, and Roundy Circle West are in poor condition and require rehabilitation. The project was bid to remove the existing asphalt pavement, complete any stone base repairs, repair damaged curb, and place new asphaltic concrete.

In addition, earlier this year, we discovered several sections of storm sewer needed spot lining due to failing joints or other conditions that compromise its structure in a reviewing of the televising we completed the prior year. As such, we bid spot lining and repairs. These costs were not anticipated when the 2021 budget was drafted, but it is prudent to make these repairs for the longevity of the storm sewer and the roadway.

Finally, we bid a water main relay on Paul Road. Over the last several years, we have experienced an increase in water main breaks in this stretch of roadway due to failing/deteriorating components including unused water service corporations and water valves components. Due to increase in these failures, we have determined it is prudent to replace this section of main.

FINANCIAL IMPACT:

The 2021 budget allocated $75,000 from the Storm Water Utility, $1,000,000 from the City Road Fund, and $650,000 from the Water Utility.

The total project cost including engineering, administration, and contingencies is $2,559,413.66. The allocation to each budget component is $247,530.46 for the Storm Water Utility, $1,886,967.72 for the City Road Fund, and $424,915.49 for the Water Utility.

The Storm Water Utility is short up to $172,530.46 which I recommend a re-allocation from the Storm Manholes and Inlet Repairs (budget $250,000) as we are still completing the inlet repair contract from 2020 due to its large contract.

The City Road Fund is short by up to $886,967.72, however the City was borrowing for all road projects and we recommend increasing the borrowing to include this amount.

The Water Utility Budget is adequate. The Water Utility is planning to borrow these funds.

RECOMMENDED MOTION:

Common Council award the Paul Road and Joseph Road Reconstruction Contract A to the lowest qualified bidder, Wolf Paving Co., Inc., in the amount of $1,968,779.74 and accept the preliminary engineers report, special assessments, and attendant budget re-allocations.

ATTACHMENTS:

Description

Letter to residents

Paul Roundy Preliminary Engineers Report

Department of Public Works
Engineering Division
W240N3065 Pewaukee Road • Pewaukee, WI 53072
Phone: (262) 691-0804 • Fax: (262) 691-5729
Email: publicworks@pewaukee.wi.us

April 9, 2021

To the businesses along Paul Road, Roundy Drive, Roundy Circle East, and Roundy Circle West:

As you may be aware, the pavement of Paul Road, Roundy Drive, Roundy Circle East, and Roundy Circle West is in poor condition and should be reconditioned. As such, we have bid the Roundy and Paul Road Reconditioning project which consists of full depth pavement milling. The full depth mill will remove the existing asphalt, storm inlets will be repaired, curb will be spot repaired, minor work on the sanitary system will be completed, minor work on the water system within Roundy Drive and Roundy Circle East and West will be completed, a portion of the water main within Paul Road will be replaced, and a new layer of asphalt placed.

The cost of storm sewer repairs and half the curb repairs are paid by the Storm Water Utility. The costs of the sanitary sewer work are paid by Sewer Utility. The costs of the water main repairs and replacement are paid by the Water Utility. The road reconstruction and half of the curb repair costs are paid by the City of Pewaukee.

Beginning in 1984, the cost of road construction and curb extensions have been recovered through special assessments to the properties that abut the streets. A Public Hearing for these proposed special assessments has been scheduled to begin at **6:00 p.m. on Monday, April 19, 2021 in the Common Council Chambers at the Pewaukee City Hall located at W240N3065 Pewaukee Road, Pewaukee, WI 53072.** The purpose of the public hearing is to provide a public forum where the merits of the project will be discussed and the affected property owners will have a chance to comment before the Common Council on the proposed project.

Enclosed is a portion of the assessment roll that shows the potential special assessments for your property. The road and curb assessments are due when the final assessment resolution is passed (anticipated summer 2022). The assessments may be paid over a 10-year period with annual simple interest accruing on any unpaid balance on the end of year tax bill.

These special assessments may be confusing, and we hope to provide a clear understanding of the proposals and the costs at the April 19th hearing. The decision to proceed with the project or cancel the project will be made by the Common Council at the April 19th meeting.

During this unpresented time of COVID-19, we strongly encourage all attendees for the public hearing to wear a mask. Hand sanitizer will be available at the meeting as well.

If you have any questions or concerns, please feel free to contact our office at (262) 691-0804 for more information or to schedule an appointment.

Sincerely,

Magdelene Wagner, P.E.
Director of Public Works

CC: Common Council

Preliminary Report of the Engineer

On The Proposed Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive

Pavement Rehabilitation and Water Main Relay Assessments

In the City of Pewaukee

In accordance with the resolution passed by the City Council of the City of Pewaukee, we herewith submit our report on assessments for the rehabilitation of Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive, water main relay extension, and drainage improvements to be made in the City of Pewaukee. All data shown here is based on bid prices.

The report consists of the following Schedules:

Schedule "A": Summary of options for assessments and related costs.

Schedule "B": Legal descriptions, dated March 2021, and maps, March 2021, of all parcels within the assessment district.

Schedule "C": Estimated assessment for each parcel affected.

The properties against which the assessments are proposed are benefited and the improvements constitute an exercise of Police Powers.

Magdelene J. Wagner, P.E.
Director of Public Works/City Engineer
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
April 19, 2021

Prepared by:
Brian G. Leightner, E.I.T.
Civil Engineer
April 12, 2021

Schedule "A" – Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive

The City of Pewaukee is considering the pavement rehabilitation of Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive. The improvements consist of road rehabilitation, curb repair, inlet and drainage repair, water replacement, and related facilities.

The cost of the road improvements and 50% of curb repairs will be apportioned to all property owners abutting the street with direct or indirect access. All non-residential properties shall pay the full road and curb assessment.

Inlet repairs, 50% of the curb extension and repairs, and drainage improvements will be paid by the Storm Water Management Utility.

Water main relay extensions, service replacements, and miscellaneous repairs will be paid by the Water Utility.

It is recommended the costs for the improvements in Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive be determined on an acre basis.

UNIT RATE COMPUTATIONS

Road Rehabilitation Unit Rate – Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive

Estimated Road Rehabilitation Costs (see attached breakdown)	$ 1,451,513.63
Engineering, Administration, & Contingencies	$ 435,454.09
Total Estimated Road Rehabilitation Assessable Cost	$ 1,886,967.72

$\frac{\$\ 1,886,967.72}{153.96\ \text{acres}} = \$\ 12,256.00/\text{acre}$

Use $ 12,256.00 as the Road Rehabilitation per Acre Rate.

Water Utility

Estimated Water Utility Costs	$ 326,858.07
Engineering, Administration, & Contingencies	$ 98,057.42
Total Estimated Water Utility Costs	$ 424,915.49

Storm Water Management – Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive

Estimated Storm Water Management Costs (see attached breakdown)	$ 190,408.05
Engineering, Administration, & Contingencies	$ 57,122.41
Total Storm Water Management Costs	$ 247,530.46

COST SUMMARY

Cost Summary

Total Project Costs	$ 2,559,413.66
Total Road Assessable Costs (deduct)	$ 1,886,967.72
Total Storm Water Utility Costs (deduct)	$ 247,530.46
Total Water Utility Costs (deduct)	$ 424,915.49
Net Non-assessable and City Costs	$ -

Computation of Costs
Total Project Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Mobilization	L.S.	1.00	$ 45,932.00	$ 45,932.00
2	Traffic Control	L.S.	1.00	$ 14,832.00	$ 14,832.00
3	Tracking Pad	S.F.	4,340.00	$ 1.46	$ 6,336.40
4	Inlet Sediment Guard (Type D)	EA.	72.00	$ 95.00	$ 6,840.00
5	Full Depth Saw Cut	L.F.	201.00	$ 1.95	$ 391.95
6	Dust Control Using Water	1,000 GAL	40.00	$ 59.73	$ 2,389.20
7	12-inch Water Main Relay in Granular Backfill	L.F.	1,579.00	$ 110.30	$ 174,163.70
8	12-inch Water Main in Casing Pipe in Granular Backfill	L.F.	13.00	$ 486.00	$ 6,318.00
9	Abandon Existing 12-inch Water Main	L.F.	1,590.00	$ 6.72	$ 10,684.80
10	6-inch Hydrant Lead in Granular Backfill	L.F.	65.00	$ 105.97	$ 6,888.05
11	Hydrant Assembly including 6-inch Hydrant Valve	EA.	4.00	$ 9,855.69	$ 39,422.76
12	Remove Existing Hydrant	EA.	4.00	$ 558.55	$ 2,234.20
13	12-inch Water Main Valve	EA.	7.00	$ 2,466.41	$ 17,264.87
14	Pipe Insulation	L.F.	40.00	$ 5.57	$ 222.80
15	2-inch HDPE Water Service in Granular Backfill	L.F.	29.00	$ 121.99	$ 3,537.71
16	Abandon Existing 2-inch Water Service	L.F.	370.00	$ 12.24	$ 4,528.80
17	Abandon Existing 4-inch Water Service	L.F.	33.00	$ 12.48	$ 411.84
18	Abandon 6-inch Water Service	L.F.	112.00	$ 12.48	$ 1,397.76
19	6-inch Water Service in Granular Backfill	L.F.	139.00	$ 150.76	$ 20,955.64
20	8-inch Water Service in Granular Backfill	L.F.	38.00	$ 142.31	$ 5,407.78
21	Water Service - Abandon Existing 8-inch Water Service	L.F.	94.00	$ 9.48	$ 891.12
22	6-inch Water Service Valve	EA.	5.00	$ 879.75	$ 4,398.75
23	8-inch Water Service Valve	EA.	1.00	$ 1,758.37	$ 1,758.37
24	2-inch Tap and Corporation Stop	EA.	1.00	$ 432.16	$ 432.16
25	2-inch Curb Valve and Curb Box	EA.	1.00	$ 623.53	$ 623.53
26	12-inch to 24-inch Storm Sewer Clean and Televise	L.F.	1,640.00	$ 16.00	$ 26,240.00

Total Project Costs – Continued

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
27	21-inch Diameter Storm Sewer CIPP Lining, Manhole 14.4-049 to 14.4-048 in Paul Road	L.F.	93.00	$ 88.00	$ 8,184.00
28	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-101 to 14.1-102 in Roundy Circle East	L.F.	63.00	$ 75.50	$ 4,756.50
29	15-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-100 to 14.1-101 in Roundy Circle East	L.F.	30.00	$ 157.00	$ 4,710.00
30	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-117 to 14.1-116 in Roundy Circle East	L.F.	34.00	$ 75.50	$ 2,567.00
31	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-087 to 14.1-089 in Roundy Circle West	L.F.	52.00	$ 75.50	$ 3,926.00
32	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-087 to 14.1-086 in Roundy Circle West	L.F.	32.00	$ 75.50	$ 2,416.00
33	Mortar pipe connections at MH 14.1-087 to 14.1-086	EA.	2.00	$ 525.00	$ 1,050.00
34	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-104 to 14.1-105 in Roundy Drive	L.F.	37.00	$ 75.50	$ 2,793.50
35	18-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-110 to 14.1-111 in Roundy Drive	L.F.	34.00	$ 174.00	$ 5,916.00
36	18-inch Diameter CIPP lining Manhole 14.1-112 to 14.1-113 in Roundy Drive	L.F.	19.00	$ 174.00	$ 3,306.00
37	24-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-085 to 14.1-086 in Roundy Drive	L.F.	44.00	$ 104.00	$ 4,576.00
38	Mortar pipe tapped in 14.6 feet	EA.	1.00	$ 525.00	$ 525.00
39	27-inch Diameter Manhole 14.1-094 to 14.1-093 reattach end section in Roundy Drive	EA.	1.00	$ 1,900.00	$ 1,900.00
40	24-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-086 to 14.1-090 in Roundy Drive	L.F.	93.00	$ 104.00	$ 9,672.00
41	Construct Road to Subgrade	L.S.	1.00	$ 193,131.05	$ 193,131.05
42	Excavation Below Subgrade	C.Y.	3,900.00	$ 19.43	$ 75,777.00
43	Excavation Below Subgrade (EBS) Backfill	TON	7,800.00	$ 16.11	$ 125,658.00

Total Project Costs – Continued

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
44	Geogrid in EBS Area	S.Y.	12,200.00	$ 4.68	$ 57,096.00
45	10-inch Crushed Aggregate Base Course	TON	17,000.00	$ 12.82	$ 217,940.00
46	30-inch Concrete Curb and Gutter Remove and Replace	L.F.	2,740.00	$ 44.85	$ 122,889.00
47	HES Concrete Curb and Gutter Remove and Replace	L.F.	1,486.00	$ 46.00	$ 68,356.00
48	Integral Curb and Gutter Remove and Replace	L.F.	93.00	$ 46.00	$ 4,278.00
49	Replace Concrete Bull Nose at Roundy Circle West, South End of Island	S.F.	160.00	$ 14.00	$ 2,240.00
50	4-inch Asphaltic Concrete Binder Course	TON	7,350.00	$ 54.20	$ 398,370.00
51	Tack Coat	GAL	2,150.00	$ 2.50	$ 5,375.00
52	2-inch Asphaltic Concrete Surface Course	TON	3,675.00	$ 58.00	$ 213,150.00
53	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	150.00	$ 18.00	$ 2,700.00
54	Sinkhole exploration and repair located at the intersection of Roundy Circle West and Roundy Drive	L.S.	1.00	$ 10,000.00	$ 10,000.00
55	Trench Bridging (if ordered by Engineer)	S.F.	500.00	$ 16.84	$ 8,420.00
56	Pavement Marking, Epoxy 4-Inch Solid Yellow	L.F.	130.00	$ 5.25	$ 682.50
57	Pavement Marking, Epoxy 8-Inch Solid White	L.F.	100.00	$ 8.50	$ 850.00
58	Pavement Marking, Epoxy 18-Inch Solid White	L.F.	30.00	$ 16.50	$ 495.00
59	Pavement Marking, Epoxy Arrow	EA.	2.00	$ 285.00	$ 570.00
	Subtotal of Contract				$ 1,968,779.74
	Engineering, Administration, & Contingencies				$ 590,633.92
	Total Project Costs				$ 2,559,413.66

Total Road Rehabilitation Assessment Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Mobilization	L.S.	0.74	$ 45,932.00	$ 33,989.68
2	Traffic Control	L.S.	0.74	$ 14,832.00	$ 10,975.68
3	Tracking Pad	S.F.	3,199.36	$ 1.46	$ 4,671.07
5	Full Depth Saw Cut	L.F.	201.00	$ 1.95	$ 391.95
6	Dust Control Using Water	1,000 GAL	40.00	$ 59.73	$ 2,389.20
41	Construct Road to Subgrade	L.S.	1.00	$ 193,131.05	$ 193,131.05
42	Excavation Below Subgrade	C.Y.	3,900.00	$ 19.43	$ 75,777.00
43	Excavation Below Subgrade (EBS) Backfill	TON	7,800.00	$ 16.11	$ 125,658.00
44	Geogrid in EBS Area	S.Y.	12,200.00	$ 4.68	$ 57,096.00
45	10-inch Crushed Aggregate Base Course	TON	17,000.00	$ 12.82	$ 217,940.00
46	30-inch Concrete Curb and Gutter Remove and Replace	L.F.	1,370.00	$ 44.85	$ 61,444.50
47	HES Concrete Curb and Gutter Remove and Replace	L.F.	743.00	$ 46.00	$ 34,178.00
48	Integral Curb and Gutter Remove and Replace	L.F.	46.50	$ 46.00	$ 2,139.00
49	Replace Concrete Bull Nose at Roundy Circle West, South End of Island	S.F.	160.00	$ 14.00	$ 2,240.00
50	4-inch Asphaltic Concrete Binder Course	TON	7,350.00	$ 54.20	$ 398,370.00
51	Tack Coat	GAL	2,150.00	$ 2.50	$ 5,375.00
52	2-inch Asphaltic Concrete Surface Course	TON	3,675.00	$ 58.00	$ 213,150.00
54	Sinkhole exploration and repair located at the intersection of Roundy Circle West and Roundy Drive	L.S.	1.00	$ 10,000.00	$ 10,000.00
56	Pavement Marking, Epoxy 4-Inch Solid Yellow	L.F.	130.00	$ 5.25	$ 682.50
57	Pavement Marking, Epoxy 8-Inch Solid White	L.F.	100.00	$ 8.50	$ 850.00
58	Pavement Marking, Epoxy 18-Inch Solid White	L.F.	30.00	$ 16.50	$ 495.00
59	Pavement Marking, Epoxy Arrow	EA.	2.00	$ 285.00	$ 570.00
	Subtotal of Contract				$ 1,451,513.63
	Engineering, Administration, & Contingencies				$ 435,454.09
	Total Project Costs				$ 1,886,967.72

Total Road Rehabilitation & Assessment Costs – Continued

Total Potential Acres abutting the Road = 153.9628 acres

Computation of Unit Cost: $\frac{\$\ 1,886,967.72}{153.96\ \text{acres}} = \$\ 12,256.00/\text{acre}$

Use $ 12,256.00 as the Road Rehabilitation per Acre Rate.

Total Estimated Water Utility Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Mobilization	L.S.	0.16	$ 45,932.00	$ 7,349.12
2	Traffic Control	L.S.	0.16	$ 14,832.00	$ 2,373.12
3	Tracking Pad	S.F.	721.36	$ 1.46	$ 1,053.19
4	Inlet Sediment Guard (Type D)	EA.	36.00	$ 95.00	$ 3,420.00
7	12-inch Water Main Relay in Granular Backfill	L.F.	1,579.00	$ 110.30	$ 174,163.70
8	12-inch Water Main in Casing Pipe in Granular Backfill	L.F.	13.00	$ 486.00	$ 6,318.00
9	Abandon Existing 12-inch Water Main	L.F.	1,590.00	$ 6.72	$ 10,684.80
10	6-inch Hydrant Lead in Granular Backfill	L.F.	65.00	$ 105.97	$ 6,888.05
11	Hydrant Assembly including 6-inch Hydrant Valve	EA.	4.000	$ 9,855.69	$ 39,422.76
12	Remove Existing Hydrant	EA.	4.000	$ 558.55	$ 2,234.20
13	12-inch Water Main Valve	EA.	7.000	$ 2,466.41	$ 17,264.87
14	Pipe Insulation	L.F.	40.000	$ 5.57	$ 222.80
15	2-inch HDPE Water Service in Granular Backfill	L.F.	29.000	$ 121.99	$ 3,537.71
16	Abandon Existing 2-inch Water Service	L.F.	370.000	$ 12.24	$ 4,528.80
17	Abandon Existing 4-inch Water Service	L.F.	33.000	$ 12.48	$ 411.84
18	Abandon 6-inch Water Service	L.F.	112.000	$ 12.48	$ 1,397.76
19	6-inch Water Service in Granular Backfill	L.F.	139.000	$ 150.76	$ 20,955.64
20	8-inch Water Service in Granular Backfill	L.F.	38.000	$ 142.31	$ 5,407.78
21	Water Service - Abandon Existing 8-inch Water Service	L.F.	94.000	$ 9.48	$ 891.12
22	6-inch Water Service Valve	EA.	5.000	$ 879.75	$ 4,398.75
23	8-inch Water Service Valve	EA.	1.000	$ 1,758.37	$ 1,758.37
24	2-inch Tap and Corporation Stop	EA.	1.000	$ 432.16	$ 432.16
25	2-inch Curb Valve and Curb Box	EA.	1.000	$ 623.53	$ 623.53
53	Topsoil, Seed, Fertilizer, Mulch and Erosion Mat	S.Y.	150.000	$ 18.00	$ 2,700.00
55	Trench Bridging (if ordered by Engineer)	S.F.	500.000	$ 16.84	$ 8,420.00
	Subtotal of Contract				$ 326,858.07
	Engineering, Administration, & Contingencies				$ 98,057.42
	Total Estimated Water Utility Improvements				$ 424,915.49

Total Estimated Water Utility Project Costs = $ 424,915.49

Total Estimated Storm Water Utility Project Costs

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Mobilization	L.S.	0.10	$ 45,932.00	$ 4,593.20
2	Traffic Control	L.S.	0.10	$ 14,832.00	$ 1,483.20
3	Tracking Pad	S.F.	419.28	$ 1.46	$ 612.15
4	Inlet Sediment Guard (Type D)	EA.	36.00	$ 95.00	$ 3,420.00
26	12-inch to 24-inch Storm Sewer Clean and Televise	L.F.	1,640.00	$ 16.00	$ 26,240.00
27	21-inch Diameter Storm Sewer CIPP Lining, Manhole 14.4-049 to 14.4-048 in Paul Road	L.F.	93.00	$ 88.00	$ 8,184.00
28	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-101 to 14.1-102 in Roundy Circle East	L.F.	63.00	$ 75.50	$ 4,756.50
29	15-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-100 to 14.1-101 in Roundy Circle East	L.F.	30.00	$ 157.00	$ 4,710.00
30	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-117 to 14.1-116 in Roundy Circle East	L.F.	34.00	$ 75.50	$ 2,567.00
31	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-087 to 14.1-089 in Roundy Circle West	L.F.	52.00	$ 75.50	$ 3,926.00
32	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-087 to 14.1-086 in Roundy Circle West	L.F.	32.00	$ 75.50	$ 2,416.00
33	Mortar pipe connections at MH 14.1-087 to 14.1-086	EA.	2.00	$ 525.00	$ 1,050.00
34	12-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-104 to 14.1-105 in Roundy Drive	L.F.	37.00	$ 75.50	$ 2,793.50
35	18-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-110 to 14.1-111 in Roundy Drive	L.F.	34.00	$ 174.00	$ 5,916.00
36	18-inch Diameter CIPP lining Manhole 14.1-112 to 14.1-113 in Roundy Drive	L.F.	19.00	$ 174.00	$ 3,306.00
37	24-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-085 to 14.1-086 in Roundy Drive	L.F.	44.00	$ 104.00	$ 4,576.00
38	Mortar pipe tapped in 14.6 feet	EA.	1.00	$ 525.00	$ 525.00
39	27-inch Diameter Manhole 14.1-094 to 14.1-093 reattach end section in Roundy Drive	EA.	1.00	$ 1,900.00	$ 1,900.00

Total Estimated Storm Water Utility Project Costs – Continued

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
40	24-inch Diameter Storm Sewer CIPP Lining, Manhole 14.1-086 to 14.1-090 in Roundy Drive	L.F.	93.00	$ 104.00	$ 9,672.00
46	30-inch Concrete Curb and Gutter Remove and Replace	L.F.	1,370.00	$ 44.85	$ 61,444.50
47	HES Concrete Curb and Gutter Remove and Replace	L.F.	743.00	$ 46.00	$ 34,178.00
48	Integral Curb and Gutter Remove and Replace	L.F.	46.50	$ 46.00	$ 2,139.00
	Subtotal of Contract				$ 190,408.05
	Engineering, Administration, & Contingencies				$ 57,122.41
	Total Project Costs				$ 247,530.46

Total Estimated Storm Water Utility Project Costs = $ 247,530.46

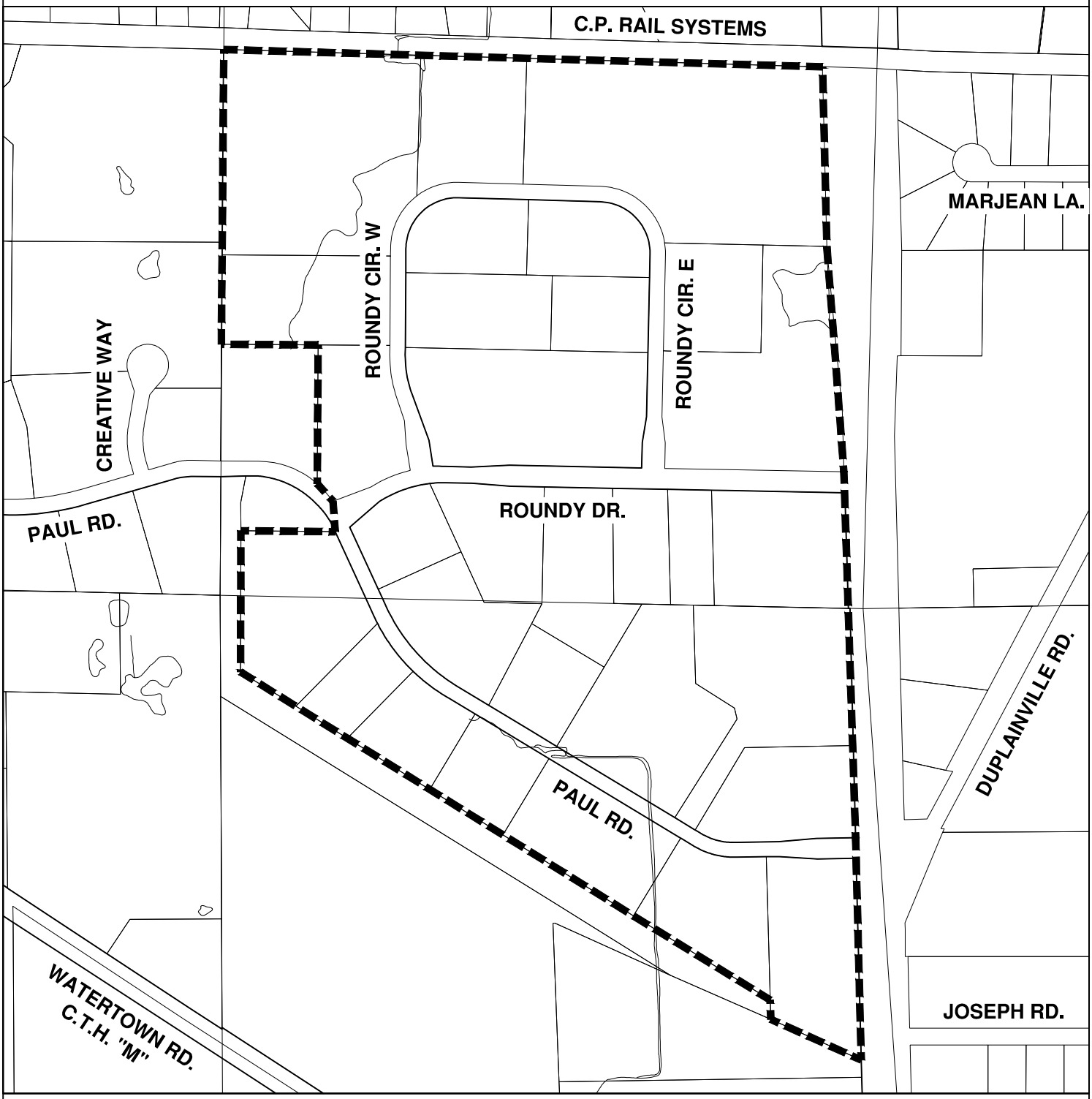
March 29, 2021

All that part of the NE ¼ and the SE ¼ of Section 14, Township 7 North, Range 19 East, in the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SW corner of the NE ¼ of Section 14, T7N, R19E, Also Being the Point of Beginning of Area to be Described; Thence N01°37'14"E, Along the West Line of said NE ¼ 462.55 Feet, To the south R/W Line of Paul Road, Thence S88°22'46"E , Along Said South R/W line, 100.00 Feet, To the NW Corner of Lot 2 of C.S.M. #5786; Thence S12°55'50"W, Along the West line of Said Lot 2, 112.08 Feet; Thence S1°17'56"W, Along Said West Line of Said Lot 2, 110.00 Feet, To the SW Corner of said Lot 2; Thence S88°55'06"E Along the South line of Said Lot 2, 368.62 Feet, To the West R/W line of Paul Road; Thence N18°31'08W, 202.93 Feet to the SE Corner of Parcel 4 C.S.M. #7877; Thence N1°37'14"E, Along the East Line of Said Parcel 4, 542.75 Feet, to the NE Corner of Said Parcel 4; Thence N88°22'46"W, Along the North Line of Said Parcel 4, 377.37 Feet, To the NW Corner of Said Parcel 4, Also being a point on the West Line of the NE ¼ of Section 14, T7N, R19E; Thence N1°37'14", Along Said West Line, 1446.31 Feet, to the South R/W Line of Chicago, Milwaukee, St. Paul and Pacific Railroad; Thence S87°06'30"E, Along said R/W Line, 2336.21 Feet, to the West R/W Line of C.T.F. "F"; Thence S0°09'11"E Along said West R/W, 709.314 Feet; Thence S04°13'18"E, Continuing Along Said West R/W, 634.25 Feet; Thence S0°09'11"E, Continuing Along West R/W, 238.46 Feet, to the North R/W Line of Roundy Dr.; Thence S01°13'59"E, Continuing Along Said West R/W, 530.58 Feet; Thence S0°09'11"E, Continuing Along Said West R/W, 1759.78 Feet; Thence N64°37'12"W, 814.16 Feet; Thence N56°58'34"W, 2062.99 Feet, To a point in the West Line of the SE ¼ of Section 14, T7N, R19E; Thence N0°58'03"E, Along Said West Line, 390.315 Feet to the point of beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

PAUL ROAD RECONSTRUCTION
ROAD RESURFACING
RD-21-57422
ROAD ASSESSMENT
CITY OF PEWAUKEE
WAUKESHA COUNTY, WISCONSIN



CITY OF PEWAUKEE

LEGEND

ROAD ASSESSMENT AREA BOUNDARY

N W E S

0 100 200 300 400 500 1000
SCALE IN FEET

DATE: MARCH, 2021

Schedule C
Preliminary Assessment Roll
Paul Road and Roundy's Road Reconditioning and Paul Road Water Main Relay

No.	Owner's Name & Mailing Address	Tax Key No.	Description	Acre	Cost/acre	Cost	Total assessment
1	ALL ONE STORAGE LLC 100 WILMONT DR WAUKESHA WI 53189	PWC 0917994003	Road Reconstruction	1.7583	$ 12,256.00	$ 21,549.72	$ 21,549.72
2	HEAT AND FROST INSULATORS LOCAL UNION NO 19 N27W23155 ROUNDY DR PEWAUKEE WI 53072	PWC 0917994004	Road Reconstruction	2.2476	$ 12,256.00	$ 27,546.58	$ 27,546.58
3	INTERNATIONAL UNION OF OPERATING ENG LOCAL #139 PO BOX 130 PEWAUKEE WI 53072-0130	PWC 0917994007	Road Reconstruction	4.269	$ 12,256.00	$ 52,320.85	$ 52,320.85
4	FISCHER PROPERTIES ROUNDY CIRCLE WEST LLC 903 N EVERGREEN CIR HARTLAND WI 53029-8636	PWC 0917994015	Road Reconstruction	3.8142	$ 12,256.00	$ 46,746.83	$ 46,746.83
5	ROUNDY CIRCLE EAST INVESTMENT LLC W231N2844 ROUNDY CIR EAST PEWAUKEE WI 53072	PWC 0917994018	Road Reconstruction	3.6651	$ 12,256.00	$ 44,919.46	$ 44,919.46
6	CRT RACING LLC W254N4842 ABERDEEN CT PEWAUKEE WI 53072-1328	PWC 0917994022	Road Reconstruction	2.5413	$ 12,256.00	$ 31,146.17	$ 31,146.17
7	BDMM LLC C/O BRIOHN PROPERTY MGMT LLC 3885 N BROOKFIELD RD #200 BROOKFIELD WI 53045-1983	PWC 0917994023	Road Reconstruction	3.0086	$ 12,256.00	$ 36,873.39	$ 36,873.39
8	T&D FLYNN IRON BRIDGE HOLDINGS LLC 101 N KESTREL DR COLLEGEVILLE PA 19426-2061	PWC 0917994024	Road Reconstruction	3.0087	$ 12,256.00	$ 36,874.62	$ 36,874.62
9	BYRNE FAMILY LIMITED PARTNERSHIP, 3 RP LLC C/O BRIOHN PROPERTY MANAGEMENT LLC 3885 N BROOKFIELD RD #200 BROOKFIELD WI 53045-1983	PWC 0917994025	Road Reconstruction	9.2448	$ 12,256.00	$ 113,304.25	$ 113,304.25
10	BUCKY FAN LLC W233N2847 ROUNDY CIR W PEWAUKEE WI 53072	PWC 0917994027	Road Reconstruction	5.2563	$ 12,256.00	$ 64,421.20	$ 64,421.20
11	FLINT LLC C/O BRIHON MANAGEMENT LLC 3885 N BROOKFIELD RD #200 BROOKFIELD WI 53045-1983	PWC 0917994029	Road Reconstruction	4.0855	$ 12,256.00	$ 50,071.88	$ 50,071.88
12	TI INVESTORS OF PEWAUKEE LLC 710 N PLANKINTON AVE MILWAUKEE WI 53203-2417	PWC 0917994030	Road Reconstruction	16.4753	$ 12,256.00	$ 201,921.24	$ 201,921.24
13	CMBB LLC C/O BRIAN P BYRNE 3885 N BROOKFIELD RD STE 200 BROOKFIELD WI 53045-1983	PWC 0917994033	Road Reconstruction	4.7141	$ 12,256.00	$ 57,776.00	$ 57,776.00
14	LARSON PROPERTIES FAMILY LIMITED PARTNERSHIP W233N2869 ROUNDY CIR W PEWAUKEE WI 53072	PWC 0917994034	Road Reconstruction	13.446	$ 12,256.00	$ 164,794.14	$ 164,794.14

No.	Owner's Name & Mailing Address	Tax Key No.	Description	Acre	Cost/acre	Cost	Total assessment
15	JELK LLC W324N1068 LAPHAM PEAK RD DELAFIELD WI 53018-2225	PWC 0917994035	Road Reconstruction	5.377	$ 12,256.00	$ 65,900.50	$ 65,900.50
16	SHEPARD INVESTMENT PROPERTIES LLC W209N11385 REGER CT GERMANTOWN WI 53022-2818	PWC 0917994037	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
17	SHEPARD INVESTMENT PROPERTIES LLC W209N11385 REGER CT GERMANTOWN WI 53022-2818	PWC 0917994038	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
18	WINDSOR EXECUTIVE DEVELOPMENT LLC C/O THOMSON COMPANIES N28W23000 ROUNDY DR STE 20 PEWAUKEE WI 53072-7301	PWC 0917994039	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
19	WINDSOR EXECUTIVE DEVELOPMENT LLC C/O THOMSON COMPANIES N28W23000 ROUNDY DR STE 20 PEWAUKEE WI 53072-7301	PWC 0917994040	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
20	GLO ENTERPRISES LLC N28W23000 W ROUNDY DR UNIT 200 PEWAUKEE WI 53072-7300	PWC 0917994043	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
21	DERKS REAL ESTATE PARTNERS LLC 2395 W WASHINGTON ST STE 106 WEST BEND WI 53095-2147	PWC 0917994044	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
22	TBSKB LLC PO BOX 841 MENOMONEE FALLS WI 53052-0841	PWC 0917994045	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
23	DARBOY DEVELOPMENT LLC 1700 STEPHEN ST LITTLE CHUTE WI 54140-2550	PWC 0917994047	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
24	MSS PROPERTY LLC C/O JAMES STAPLES N28W23050 W ROUNDY DR SUITE 100 PEWAUKEE WI 53072	PWC 0917994048	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
25	STAPLES & ASSOCIATES INC N28W23050 ROUNDY DR UNIT 100 PEWAUKEE WI 53072-4095	PWC 0917994049	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
26	DARBOY DEVELOPMENT LLC 1700 STEPHEN ST LITTLE CHUTE WI 54140-2550	PWC 0917994051	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
27	DARBOY DEVELOPMENT LLC 1700 STEPHEN ST LITTLE CHUTE WI 54140-2550	PWC 0917994052	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
28	GW WAMPUM LLC 524 LAC LA BELLE DR OCONOMOWOC WI 53066	PWC 0917994054	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51

No.	Owner's Name & Mailing Address	Tax Key No.	Description	Acre	Cost/acre	Cost	Total assessment
29	BROTHERS TOGETHER LLC C/O JOHN C KASDORF N28W23000 ROUNDY DR STE 203 PEWAUKEE WI 53072-7300	PWC 0917994057	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
30	PJW ENTERPRISES LLC 2096 N WATERSTONE CIR OCONOMOWOC WI 53066-8306	PWC 0917994058	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
31	BETTER ODDS LLC C/O MICHAEL SCHIEBLE 481 PARK AVE PEWAUKEE WI 53072-3440	PWC 0917994059	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
32	204 PROPERTIES LLC W264N2045 DEER HAVEN CT UNIT 2 PEWAUKEE WI 53072-6623	PWC 0917994060	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
33	TOPLINE PROPERTIES LLC N3923786 BROKEN HILL CIR N PEWAUKEE WI 53072-2759	PWC 0917994062	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
34	GLO ENTERPRISES LLC N28W23000 ROUNDY DR STE 200 PEWAUKEE WI 53072-7301	PWC 0917994063	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
35	PEWAUKEE FAMILY CHIROPRACTIIC SC N28W23000 ROUNDY DR STE 101 PEWAUKEE WI 53072	PWC 0917994064	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
36	WINDSOR EXECUTIVE DEVELOPMENT LLC C/O THOMSON COMPANIES N28W23000 ROUNDY DR STE 20 PEWAUKEE WI 53072-7301	PWC 0917994065	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
37	WINDSOR EXECUTIVE DEVELOPMENT LLC C/O THOMSON COMPANIES N28W23000 ROUNDY DR STE 20 PEWAUKEE WI 53072-7301	PWC 0917994066	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
38	WINDSOR EXECUTIVE DEVELOPMENT LLC C/O THOMSON COMPANIES N28W23000 ROUNDY DR STE 20 PEWAUKEE WI 53072-7301	PWC 0917994067	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
39	DARBOY DEVELOPMENT LLC 1700 STEPHEN ST LITTLE CHUTE WI 54140-2550	PWC 0917994068	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
40	GREEN MEDICAL CORPORATION, WINDSOR EXECUTIVE DEVELOPMENT LLC N28W23050 ROUNDY DR UNIT 206 PEWAUKEE WI 53072-4095	PWC 0917994069	Road Reconstruction	0.396256	$ 12,256.00	$ 4,856.51	$ 4,856.51
41	XYLEM INC N27W23293 ROUNDY DR PEWAUKEE WI 53072-4069	PWC 0917995001	Road Reconstruction	3.5403	$ 12,256.00	$ 43,389.91	$ 43,389.91
42	ST MANAGEMENT LLC N27W23310 ROUNDY DR PEWAUKEE WI 53072-4099	PWC 0917995002	Road Reconstruction	2.4414	$ 12,256.00	$ 29,921.79	$ 29,921.79

Schedule C
Preliminary Assessment Roll
Paul Road and Roundy's Road Reconditioning and Paul Road Water Main Relay

No.	Owner's Name & Mailing Address	Tax Key No.	Description	Acre	Cost/acre	Cost	Total assessment
43	PIONEER HOLDINGS LLC C/O JENS CONSTRUCTION CORP N26W23314 PAUL RD PEWAUKEE WI 53072	PWC 0917995005	Road Reconstruction	2.6403	$ 12,256.00	$ 32,359.51	$ 32,359.51
44	MATTATH HOLDINGS LLC C/O GERALD W FRYE 940 MADERA CIR ELM GROVE WI 53122	PWC 0917995006	Road Reconstruction	4.4449	$ 12,256.00	$ 54,476.68	$ 54,476.68
45	JRPM PROPERTIES LLC N26W23322 PAUL RD PEWAUKEE WI 53072-6290	PWC 0917995007	Road Reconstruction	4.3818	$ 12,256.00	$ 53,703.33	$ 53,703.33
46	MW DISTRIBUTION PROPERTY, LLC 222 S 9TH ST STE 2870 MINNEAPOLIS MN 55402	PWC 0920990	Road Reconstruction	7.3846	$ 12,256.00	$ 90,505.64	$ 90,505.64
47	MW DISTRIBUTION PROPERTY, LLC 222 S 9TH ST STE 2870 MINNEAPOLIS MN 55402	PWC 0920991	Road Reconstruction	7.7213	$ 12,256.00	$ 94,632.23	$ 94,632.23
48	RICHARD F LAYO 777 N VAN BUREN ST APT 1506 MILWAUKEE WI 53202-3861	PWC 0920993	Road Reconstruction	2.6576	$ 12,256.00	$ 32,571.54	$ 32,571.54
49	OSB PROPERTIES LLC C/O ID TECHNOLOGY 2051 FRANKLIN DR FORT WORTH TX 76106	PWC 0920993002	Road Reconstruction	2.1297	$ 12,256.00	$ 26,101.60	$ 26,101.60
50	XY PEWAUKEE LLC C/O BRIOHN MANAGEMENT LLC 3885 N BROOKFIELD RD STE 200 BROOKFIELD WI 53045-1983	PWC 0920993003	Road Reconstruction	6.1473	$ 12,256.00	$ 75,341.29	$ 75,341.29
51	BUONA TERRA LLC 3691 RED OAK CT HUBERTUS WI 53033-9695	PWC 0920993004	Road Reconstruction	2.6593	$ 12,256.00	$ 32,592.37	$ 32,592.37
52	MILLS HOTEL WYOMING LLC 4011 80TH ST KENOSHA WI 53142-4955	PWC 0920994	Road Reconstruction	4.8255	$ 12,256.00	$ 59,141.32	$ 59,141.32
53	PAUL ROAD PROPERTIES LLC 157 N MILWAUKEE ST MILWAUKEE WI 53202	PWC 0920995	Road Reconstruction	4.4981	$ 12,256.00	$ 55,128.70	$ 55,128.70
54	NORTH CENTRAL REGIONAL COUNCIL OF CARPENTERS 700 OLIVE ST ST PAUL MN 55130-4405	PWC 0920996	Road Reconstruction	5.6725	$ 12,256.00	$ 69,522.15	$ 69,522.15
			Total Contribution in aid of Road Construction	153.9628	acres		$ 1,886,967.72

The properties against which contributions in aid of construction are prosposed are benefited and the improvements constitute an exercise in Police Powers.

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 6.

DATE: April 19, 2021

DEPARTMENT: Planning

PROVIDED BY: Nick Fuchs

SUBJECT:

PUBLIC HEARING, Discussion and Possible Action Regarding the Conditional Use Permit for Zeilhofer Properties, LLC for Property Located at N4 W22540 Bluemound Road (PWC 0963-997) for the Purpose of Constructing a New Freestanding Two-Story Storage Building [Fuchs]

BACKGROUND:

At the request of the applicant, the Plan Commission tabled the Conditional Use Permit and Site & Building Plans for the Zeilhofer storage building at their April 15th meeting. The applicant is in the process of obtaining cost estimates for the extension of public sewer and water.

It is anticipated that the applicant will be ready to move forward at the May 20th Plan Commission meeting and June 7th Common Council meeting.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

It is recommended that this matter be postponed and continued to the June 7, 2021 Common Council meeting.

ATTACHMENTS:

Description

Zeilhofer Staff Report 3.18.21

Zeilhofer Narrative

Zeilhofer Revised Civil Plans

Zeilhofer Revised Exterior Elevations

Zeilhofer Revised Landscape Plans

Zeilhofer Responses to Staff Comments

Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770 Fax (262) 691-1798
fuchs@pewaukee.wi.us

REPORT TO THE PLAN COMMISSION

Meeting of March 18, 2021

Date: March 11, 2021

Project Name: Zeilhofer storage building Conditional Use and Site & Building Plan Review

Project Address/Tax Key No.: N4W22540 Bluemound Road/PWC 0963997

Applicant: Mark Wershay, Zimmerman Architectural Studios, Inc.

Property Owner: Robb Zeilhofer

Current Zoning: B-4 Office District

2050 Land Use Map Designation: Manufacturing / Fabrication / Warehousing

Use of Surrounding Properties: Industrial to the north and west, single-family residential to the south, and mixed use property zoned single-family residential to the east

Project Description/Analysis

The applicant submitted a Conditional Use Permit and a Site & Building Plan Review Application for the construction of a storage building upon property located at N4W22540 Bluemound Road.

The subject property currently contains a single-family home that was previously converted to an office. The applicant/property owner is currently utilizing the building as an office for his real estate management and construction business.

Conditional Use Permit

The subject property is zoned B-4 Office District. As noted above, the existing structure is being used as office space for Mr. Zeilhofer's business. The proposed storage building, which will house vehicles and equipment related to Mr. Zeilhofer's real estate business, is allowed as a conditional use per Sections 17.0209c. and 17.0209d. of the City's Zoning Code.

> Section 17.0209c. states, "…In addition to those uses specified elsewhere herein, the following uses may be deemed to be conditional uses by the Plan Commission: Any principal use in addition to the first such use on a single building parcel or space."
>
> Section 17.0209d. allows "Unclassified or Unspecified Uses may be permitted by the Plan Commission provided that such uses are similar in character to the principal uses permitted in the zoning district and create no circumstances that would detrimentally affect adjacent properties."

It can be noted that this property as well as the properties to the north, east and west are all designated as Manufacturing/Fabrication/Warehousing on the City's Year 2050 Land Use/Transportation Plan map. The proposed use is consistent with that designation.

It can also be noted that a rezoning was considered to accommodate this development; however, the property is 1.2677-acres, which is less than the 2-acre minimum lot size of the M-2 District and the 3-acre minimum of the M-4 District, which are both adjacent zoning districts to the subject property and would permit this use. Furthermore, building and parking setbacks are smaller in the B-4 District, which are more appropriate for a property of this size. As such, staff found that the Conditional Use option was appropriate.

Site & Building Plans

The proposed storage building is 2-stories and approximately 7,600 square feet. The building consists of cement board siding and a CMU foundation, which will be exposed on the south elevation and partially exposed on the sides of the building.

The north elevation includes three overhead doors and a service door. The south elevation has five overhead doors and a row of windows along the top of the building. The east and west elevations both contain windows and a service door. The building has a standing seam metal roof.

Considering the existing and proposed improvements, the site has almost 50% greenspace, which is in compliance with the City's minimum greenspace ratio of 40%.

In addition to the building, the site includes a gravel area to the north of the building, which will be used to store and park vehicles and trailers. A dumpster will be located within this area as well. *It is recommended that the applicant construct an enclosure around the dumpster to screen it and contain any loose trash and debris.*

As the development disturbs less than one acre of land, storm water management is not required. *It is recommended that final grading and erosion control plans shall be submitted for approval by the Engineering Department prior to any land disturbance activities.*

Parking:
There are six parking spaces along the west property line. Parking spaces are all a minimum of 180 square feet to comply with the City's Zoning Code standard. There is also an ADA accessible parking space located on the north side of the office building.

Lighting:
The only proposed lighting is on the building and shown on the north and south building elevations. In total there are three wall lights.

Signage:
The applicant plans to remove the existing freestanding sign and replace it with a new monument sign. The location is illustrated on the site plan. *Note that signage shall comply with all standards set forth in Section 17.0700 of the City's Zoning Code and require separate review and approval by the City Planner as well as a Sign Permit from the Building Services Department, prior to installation*.

Landscape Plan:
The Demo Plan (Sheet C1.20) shows the existing trees that will be removed. A Landscape Plan has been provided that illustrates the new plantings to be provided. This includes evergreen plantings along the east and west property lines to screen the paved area between the two buildings and the gravel area on the north end of the site.

Utilities:
Sewer and water is not located directly to this site. They would have to be extended from the south side of Bluemound Road at Takoma Drive. The applicant is requesting to construct this building without having to extend public utilities to the site. The applicant has noted that the proposed building does not have any water or sanitary needs.

Recommendation

Staff recommends that the Plan Commission recommend approval of the Conditional Use Permit and approve the Site & Building Plan Review Application, subject to Conditional Use approval and staff's recommendations as noted above in this report.

February 1, 2021

Nick Fuchs
Planner & Community Development Director
City of Pewaukee
W240N3065 Pewaukee Road
Pewaukee, WI 53072

RE: Zeilhofer Storage Building, N4W22540 Bluemound Road
Conditional Use and Plan Commission Submittals

Mr. Fuchs,

We are excited to present to you this request for Building Plan/Plan Commission review for a new freestanding two-story storage building located at N4W22540 Bluemound Road, Pewaukee WI 53186. This property is zoned B-4 and the existing office building on site will be maintained. Aside from some new exterior paving leading up to that structure, we are not improving it in any way as part of this project.

Following a preliminary review by Staff, it was determined that the existing lot size was not eligible for a rezoning to either a M-2 or M-4 District. Therefore, we are simultaneously requesting a Conditional Use Permit to allow the proposed contractor storage building on a B-4 property. Our property is flanked by manufacturing business parks on three sides.

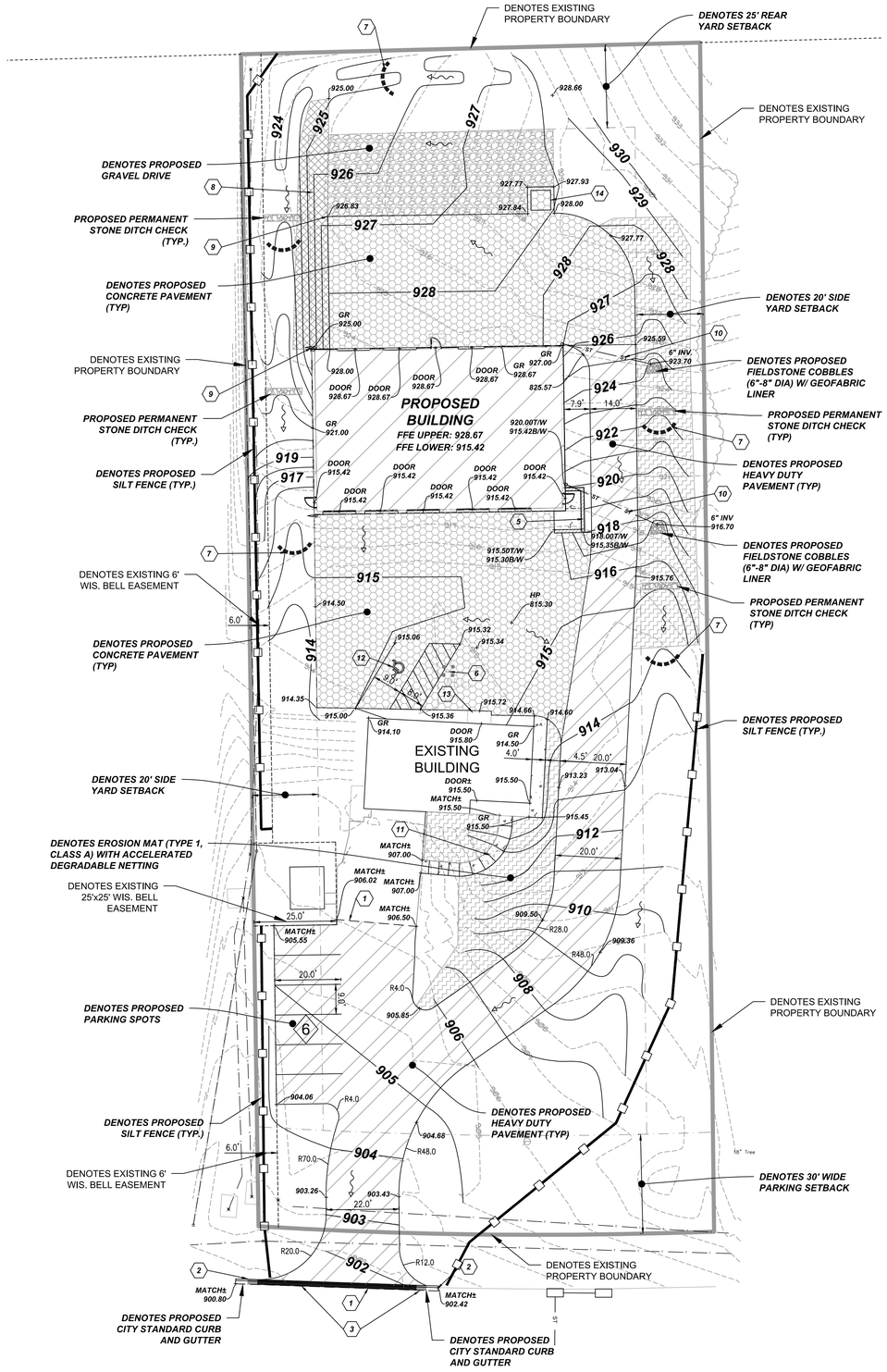
The proposed 7,600 square foot building will be used for storage of goods consumed in real estate management and real estate construction related businesses. Hours of operation would be unchanged; 7:00am – 7:00 pm, Monday through Saturday.

Construction would tentatively commence spring of 2021 and be wrapped up by spring of 2022. The estimated value of new construction is $900,000.

If you have any additional questions about our business plan, please reach out to me directly.

Thank you,

Robb Zeilhofer, Owner
Zeilhofer Properties, LLC
(414) 507-1550



SITE CALCULATION TABLE

TOTAL SITE AREA	1,136 AC
TOTAL DISTURBED AREA	0.881 AC
PROPOSED GREENSPACE	0.565 AC (49.7% OF SITE)

*CONTRACTOR SHALL STAY WITHIN THE SILT FENCE BOUNDARY AND FOLLOW THE GRADING, EROSION CONTROL AND DEMO PLAN AS NOT TO DISTURB OVER 1 ACRE.

NOTES

1. SAWCUT EXISTING PAVEMENT (FULL DEPTH) AND CREATE BUTT JOINT WHERE PROPOSED MEETS EXISTING
2. MATCH INTO EXISTING CURB AND GUTTER.
3. DENOTES PROPOSED 3' CURB TAPER.
4. INSTALL NEW DEPRESSED CURB AND GUTTER. MATCH INTO EXISTING CURB AND GUTTER.
5. DENOTES PROPOSED SEGMENTAL CONCRETE RETAINING WALL. OWNER PROVIDED AND INSTALLED.
6. EXISTING WATER WELL TO REMAIN. WELL TO BE MODIFIED AS NEEDED TO MEET CODE. INSTALL 4 BOLLARDS AROUND EXISTING WELL
7. DENOTES PROPOSED DITCH CHECK
8. DENOTES PROPOSED PERMANENT EROSION MATTING
9. DENOTES PROPOSED DOWNSPOUT AT GRADE WITH SPLASHBLOCK
10. DENOTES PROPOSED 6" DOWNSPOUT CONNECTION. MINIMUM SLOPE OF 1.00% REQUIRED (SEE DETAIL)
11. DENOTES PROPOSED STAIRS. OWNER PROVIDED AND INSTALLED
12. DENOTES PROPOSED ADA PARKING. 2% MAX SLOPE IN ANY DIRECTION
13. OWNER TO MODIFY TO PROVIDE ADA ACCESSIBILITY
14. DENOTES PROPOSED DUMPSTER LOCATION

EROSION CONTROL LEGEND

- SILT FILTER FENCE
- EROSION MAT
- DITCH CHECK
- PERMANENT EROSION MATTING

HATCH LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED GRAVEL DRIVE
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT

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DIGGER'S HOTLINE CALL BEFORE YOU DIG 1-800-242-8511

IN ACCORDANCE WITH WISCONSIN STATUTE 182.0175, DAMAGE TO TRANSMISSION FACILITIES, EXCAVATOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ADVANCE NOTICE TO THE DESIGNATED "ONE CALL SYSTEM" NOT LESS THAN THREE WORKING DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THESE DRAWINGS, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO EXCAVATOR'S WORK.

Zimmerman
ARCHITECTURAL STUDIOS, INC.
2122 West Mount Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

Consultant:

Harwood Engineering Consultants
255 North 21st Street | Milwaukee, WI 53233
P 414.475.5554 | www.hec1.com

HEC Project Number: 20-0110.00

Project:

Zeilhofer Properties, LLC
New Storage Building

Location:

N4W22540 Bluemound Road
Pewaukee, Wi 53186

Key Plan: North

PLAN COMMISSION
FINAL SUBMITTAL

Sheet:

GRADING & EROSION CONTROL PLAN

Scale: SCALE: 1" = 20' North

Revisions:

No.	Date:	Description:

Date:

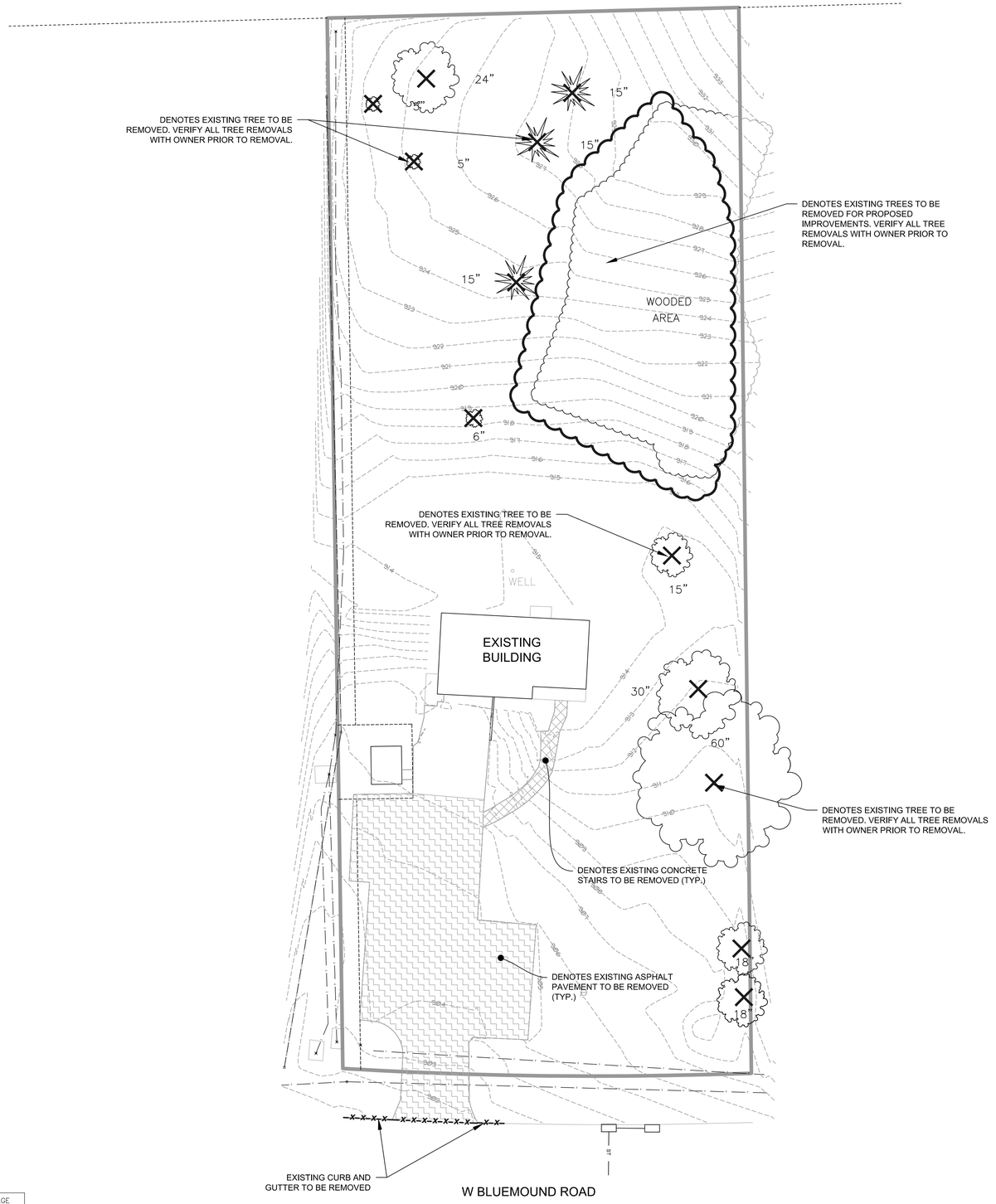
March 8, 2021

Project No.:

200110.00

Sheet No.:

C1.10



DEMOLITION LEGEND

- DENOTES ITEM TO BE REMOVED OR DEMOLISHED
- DENOTES PAVEMENT REMOVAL AREA
- DENOTES CONCRETE SIDEWALK REMOVAL AREA
- DENOTES ITEM TO BE ABANDONED OR REMOVED
- DENOTES TREE TO BE REMOVED OR RELOCATED (AS NOTED)

DIGGER'S HOTLINE — CALL BEFORE YOU DIG — 1-800-242-8511

IN ACCORDANCE WITH WISCONSIN STATUTE 182.0175, DAMAGE TO TRANSMISSION FACILITIES, EXCAVATOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ADVANCE NOTICE TO THE DESIGNATED "ONE CALL SYSTEM" NOT LESS THAN THREE WORKING DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THESE DRAWINGS, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO EXCAVATOR'S WORK.

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2122 West Mount Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
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Consultant:

Harwood Engineering Consultants
255 North 21st Street | Milwaukee, WI 53233
P 414.475.3334 | www.hecl.com

HEC Project Number: 20-0110.00

Project:

Zeilhofer Properties, LLC
New Storage Building

Location:

N4W22540 Bluemound Road
Pewaukee, Wi 53186

Key Plan: North

PLAN COMMISSION
FINAL SUBMITTAL

Sheet:

DEMO PLAN

Scale: North

SCALE: 1" = 20'

Revisions:

No.	Date:	Description:

Date:

March 8, 2021

Project No.:

200110.00

Sheet No.:

C1.20

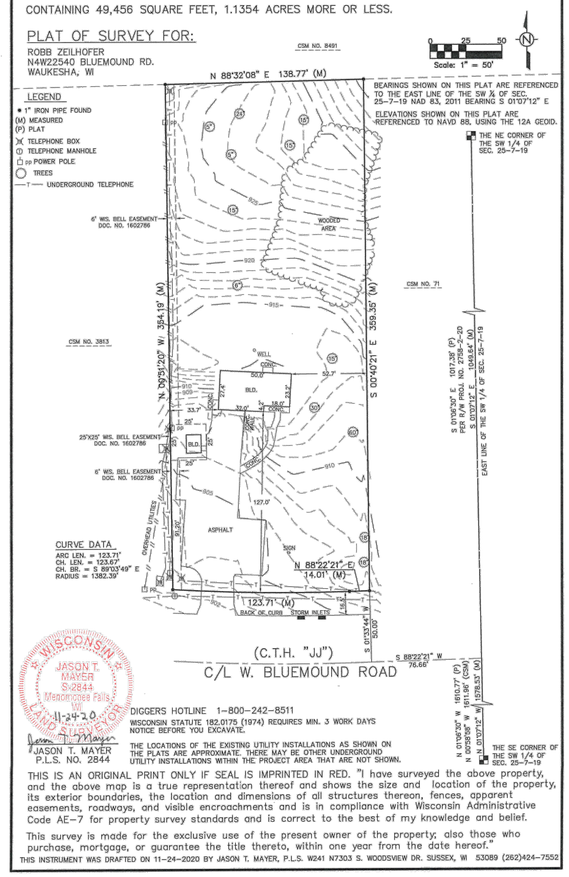
© Copyright Zimmerman Architectural Studios, Inc.

CERTIFIED SURVEY MAP NO. 147, RECORDED MARCH 30, 1964 IN VOLUME 1 OF CERTIFIED SURVEY MAPS O PAGE 21, AS DOCUMENT NO. 607491, BEING A PART OF THE NORTHEAST ¼ OF THE SOUTHWEST ¼ OF SECTION 25, TOWNSHIP 7 NORTH, RANGE 19 EAST, IN THE CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN, EXCEPTING THEREFROM THAT PART CONVEYED TO WAUKESHA COUNTY IN WARRANTY DEED RECORDED AS DOCUMENT NO. 1517378.

CONTAINING 49,456 SQUARE FEET, 1.1354 ACRES MORE OR LESS.

PLAT OF SURVEY FOR:

ROBB ZEILHOFER
N4W22540 BLUEMOUND RD.
WAUKESHA, WI



DIGGERS HOTLINE 1-800-242-8511
WISCONSIN STATUTE 182.0175 (1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

THE LOCATIONS OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLATS ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

JASON T. MAYER
P.L.S. NO. 2844

THIS IS AN ORIGINAL PRINT ONLY IF SEAL IS IMPRINTED IN RED. "I have surveyed the above property, and the above map is a true representation thereof and shows the size and location of the property, its exterior boundaries, the location and dimensions of all structures thereon, fences, apparent easements, roadways, and visible encroachments and is in compliance with Wisconsin Administrative Code AE-7 for property survey standards and is correct to the best of my knowledge and belief.

This survey is made for the exclusive use of the present owner of the property, also those who purchase, mortgage, or guarantee the title thereto, within one year from the date hereof."

THIS INSTRUMENT WAS DRAFTED ON 11-24-2020 BY JASON T. MAYER, P.L.S. W241 N7303 S. WOODSVIEW DR. SUSSEX, WI 53089 (262)424-7552

Zimmerman
ARCHITECTURAL STUDIOS, INC.
2122 West Mount Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
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Consultant:
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P 414.475.5554 | www.hec1.com

Project:
Zeilhofer Properties, LLC
New Storage Building

Location:
N4W22540 Bluemound Road
Pewaukee, Wi 53186

Key Plan: North

PLAN COMMISSION
FINAL SUBMITTAL

Sheet:
EXISTING SURVEY

Scale: North
SCALE: 1" = 50'

Revisions:

No.	Date:	Description:

Date:
March 8, 2021

Project No.:
200110.00

Sheet No.:
C1.30

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GENERAL NOTES:

DETAIL OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

WHEN POSSIBLE THE SILT FENCE SHOULD BE CONSTRUCTED IN AN ARC OR HORSESHOE SHAPE, WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.

① CROSS BRACE WITH 2" x 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.

② MINIMUM 14 GAGE WIRE REQUIRED, FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 17" C-C.

③ EXCAVATE A TRENCH A MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.

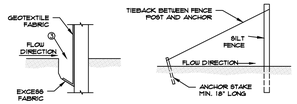
④ WIRE SUPPORT FENCE SHALL BE 14 GAGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 17" C-C.

⑤ GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLY-PROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED.

⑥ STEEL POSTS SHALL BE STUDDED "TEE" OR "U TYPE" WITH A MINIMUM WEIGHT OF 1.33 lbs/lin. ft. (WITHOUT ANCHORS). FIN ANCHORS SUFFICIENT TO RESIST POST PULL-OUT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 4" DIA. OR 1-1/2" x 3-1/2" EXCEPT WOOD POSTS FOR GEOTEXTILE FABRIC REINFORCED WITH NETTING SHALL BE A MINIMUM SIZE OF 1-1/8" x 1-1/8" OAK OR HICKORY.

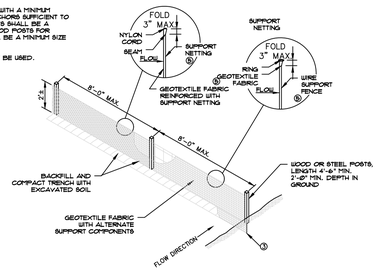
ALTERNATIVES A AND B ARE EQUAL AND EITHER MAY BE USED.

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

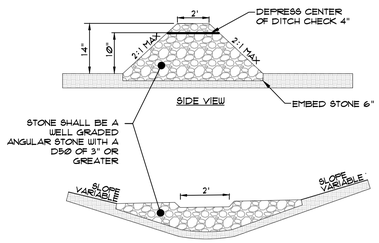


TRENCH DETAIL

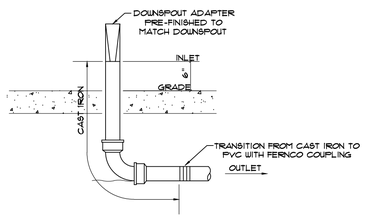
SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)



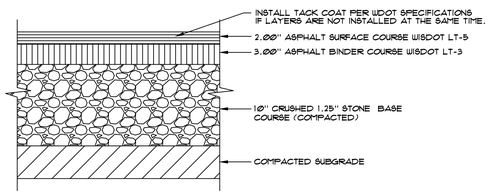
01 SILT FENCE DETAIL
NTS



02 STONE DITCH CHECK FRONT ELEVATION
NTS

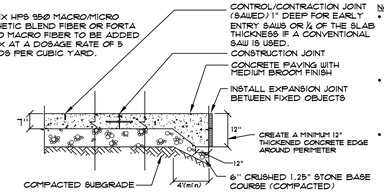


03 DOWNSPOUT DETAIL
NTS



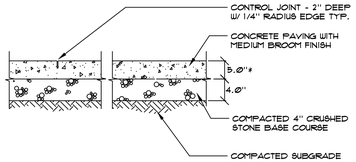
04 HEAVY DUTY ASPHALT DETAIL
NTS

NOTE:
- MATRIX HPS 950 MACRO/MICRO SYNTHETIC BLEND FIBER OR FORTA FERRO MACRO FIBER TO BE ADDED TO MIX AT A DOSAGE RATE OF 5 POUNDS PER CUBIC YARD.



NOTES:
- TIE BARS SHALL BE INSTALLED AT ALL AREAS WHERE CONCRETE PAVEMENT ABUTS CURB AND GUTTER AND CONSIST OF NO. 4 EPOXY COATED REINFORCING BARS 24 INCHES IN LENGTH AND 48 INCHES ON CENTER.
- CONTROL/ CONTRACTION/ CONSTRUCTION JOINTS SHALL BE SPACED AT 12' MAXIMUM AND CONSTRUCTED IN CONFORMANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI-330R) RECOMMENDATIONS.
- EXPANSION JOINTS SHALL BE PROVIDED WHERE PAVEMENT ABUTS FIXED OBJECTS, MEETING ACI-330R STANDARDS.

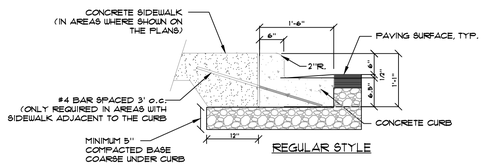
05 CONCRETE PAVEMENT DETAIL
NTS



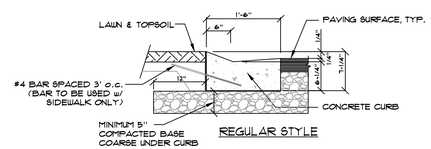
NOTE:
SIDEWALK SHALL BE 7" AT DRIVEWAY SECTIONS

NOTES:
- CONTROL JOINT SPACING SHALL BE A MAXIMUM OF 5' AND CONSTRUCTED IN CONFORMANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) RECOMMENDATIONS.
- EXPANSION JOINTS SHOULD BE PROVIDED WHERE PAVEMENT ABUTS FIXED OBJECTS.
- MATRIX BI BLEND MICRO FIBER TO BE ADDED AT A RATE OF 1.5 POUNDS PER CUBIC YARD.

06 CONCRETE SIDEWALK DETAIL
NTS

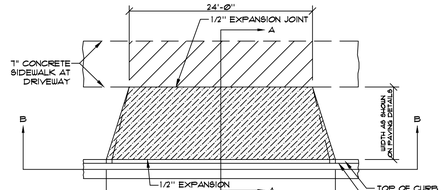


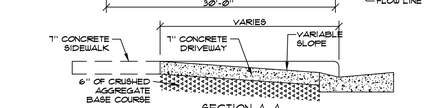
07 VERTICAL FACE CURB - 18" WIDE
NTS



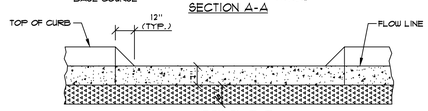
NOTE:
- REVERSE STYLE CURB LOCATIONS ARE NOTED ON THE PLANS.

08 18" DEPRESSED CURB
NTS



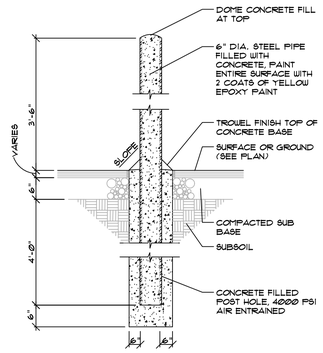


SECTION A-A



SECTION B-B

09 CONCRETE DRIVEWAY APPROACH
NTS



10 BOLLARD
NTS

Zimmerman
ARCHITECTURAL STUDIOS, INC.
2122 West Mount Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
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FACSIMILE [414] 476.8582

Consultant:

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255 North 21st Street | Milwaukee, WI 53233
P 414.475.3344 | www.hecl.com

HEC Project Number: 20-0110.00

Project:

Zeilhofer Properties, LLC
New Storage Building

Location:

N4W22540 Bluemound Road
Pewaukee, Wi 53186

Key Plan: North

PLAN COMMISSION
FINAL SUBMITTAL

Sheet:

CONSTRUCTION DETAILS

Scale:

Revisions:

No.	Date:	Description:

Date:

March 8, 2021

Project No.:

200110.00

Sheet No.:

C5.00

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Type 'WA'



WSR LED
Architectural Wall Sconce

Inverted available with WLU option only.

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Luminaire

Height: 7-1/4" (18.4 cm)
Width: 18" (45.7 cm)
Depth: 9" (22.8 cm)
Weight: 17 lbs (7.7 kg)

Optional Back Box (BBW)

Height: 4" (10.2 cm)
Width: 5-1/2" (14.0 cm)
Depth: 1-1/2" (3.8 cm)

For 3/4" NPT side-entry conduit

Introduction

The classic Architectural Wall Sconce is now available with the latest in LED technology. The result is a long-life, maintenance-free product with typical energy savings of 75% compared to metal halide versions. The integral battery backup option provides emergency egress lighting, without the use of a back-box or remote gear, so installations maintain their aesthetic integrity.

The WSR LED is ideal for replacing existing 50 – 175W metal halide wall-mounted products. The expected service life is 20+ years of nighttime use.

Ordering Information

EXAMPLE: WSR LED 2 10A700/40K SR3 MVOLT DDBTXD

WSR LED

Series	Light Engines	Performance Package	Distribution	Voltage	Mounting	Options[1]	Finish (required)
WSR LED	1 One engine (5120lm)	**700 mA options:**	SR2 Type II	MVOLT[2]	**Shipped included**	**Shipped installed**	DDBXD Dark bronze
	2 Two engines (2@5120lm)	10A700/30K 3000K	SR3 Type III	120	(Blank) Surface mount	PE Photoelectric cell, button type [3,4]	DBLXD Black
		10A700/40K 4000K	SR4 Type IV	208	**Shipped separately**[5]	SF Single fuse (120, 277, 347V) [4]	DNAXD Natural aluminum
		10A700/50K 5000K		240	BBW Surface-mounted back box	DF Double fuse (208, 240, 480V) [4]	DWHXD White
				277		DMG 0-10V dimming driver (no controls)	DSSXD Sandstone
				347	U/S Uplift 5 degrees	ELCW Emergency battery backup [6]	DDBTXD Textured dark bronze
				480		WLU Wet location door for up orientation [7]	DBLBXD Textured black
						PIR Motion/ambient light sensor [8]	DNATXD Textured natural aluminum
						DS Dual switching [9]	DWHGXD Textured white
						Shipped separately	DSSTXD Textured sandstone
						WG Wire guard	

Emergency Battery Operation

The emergency battery backup (ELCW option) is integral to the luminaire - no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product.

All ELCW configurations include an independent secondary driver with an integral relay to immediately detect AC power loss. Dual light engines are wired in parallel so both engines operate in emergency mode and provide additional component redundancy. These design features meet various interpretations of NFPA 70/NEC 2008 700.12.

The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time supply power is lost, per International Building Code Section 1006 and NFPA 101 Life Safety Code Section 7.9; provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions.

The examples below show illuminance of 1 fc average and 0.1 fc minimum of the single-engine Type IV product in emergency mode.

WST LED 1 10A700/40K SR4
MVOLT ELCW
10' x 10' Gridlines
8' and 12' Mounting Height

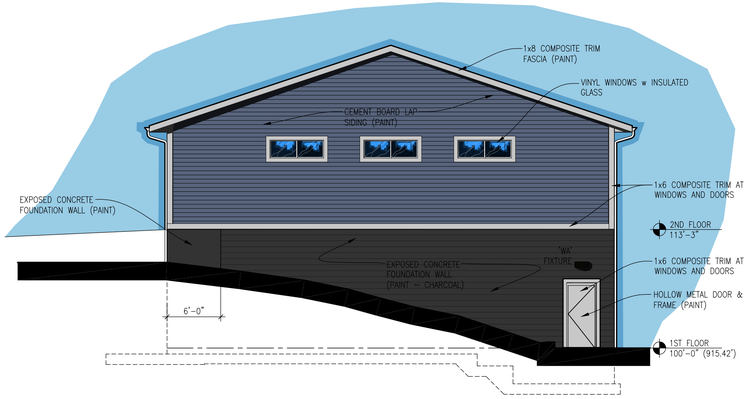
NOTES

1. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with photocell (PE) or motion sensor (PIR) options. See Table 2.
2. May also be ordered separately as an accessory Ex: WSBBW DDBXD U. Must specify finish.
3. Must be ordered with fixture; cannot be field installed.
4. Not available with MVOLT option. Button photocell (PE) can be ordered with a dedicated voltage option. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option. Not available with 480V option. Not available with motion/ambient light sensor (PIR).
5. Integral battery pack is rated for -20° to 60°C operating temperature. ELCW warranty is 3-year period. Not available with 347V or 480V. Not available with PIR or ELCW.
6. WLU not available with PIR or ELCW.
7. Specifies the SensorSwitch SFODL-7-DCP control (photocell included); see Motion Sensor Guide for details. Includes ambient light sensor. Not available with "PE" option (button type photocell). Dimming driver standard. Not available with WLU, 0-10V or DS.
8. Specifies the SensorSwitch SFODL-7-DCP; two independent drivers and light engines on two separate circuits. Not available with one engine, MVOLT, ELCW, WLU, SF, or DF. Must specify voltage; voltage must be the same for both drivers. When ordered with photocell (PE) or motion sensor (PIR), only the primary power source leads will be controlled.

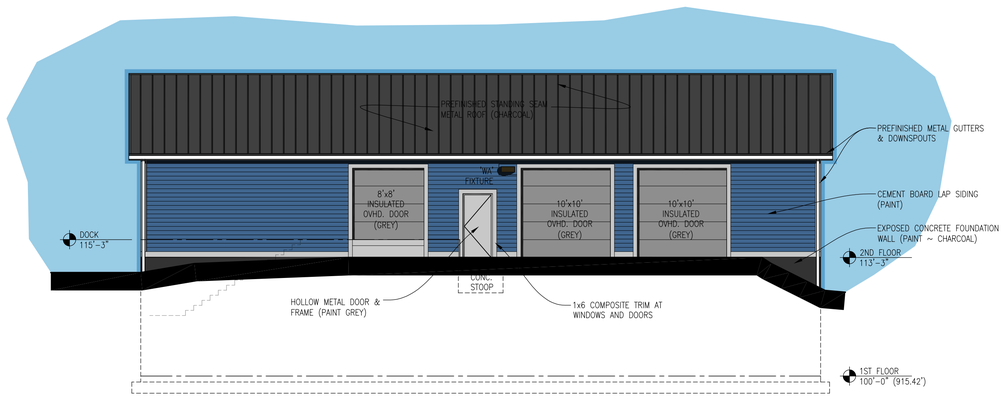
LITHONIA LIGHTING
One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com

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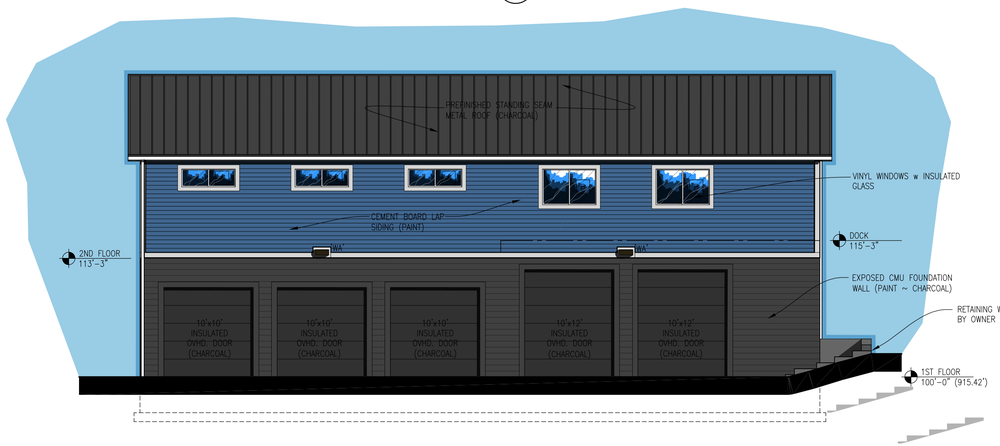
WSR-LED
Rev. 08/11/15



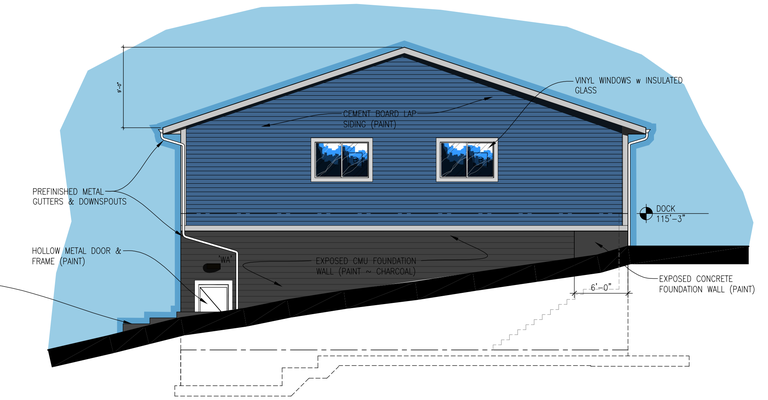
5 West Elevation
1/8" = 1'-0"



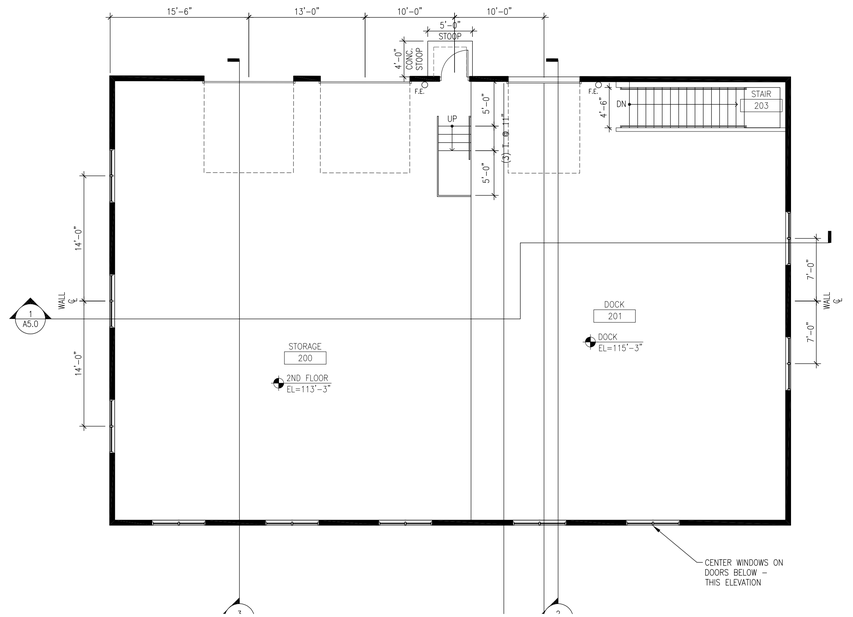
6 North Elevation
1/8" = 1'-0"



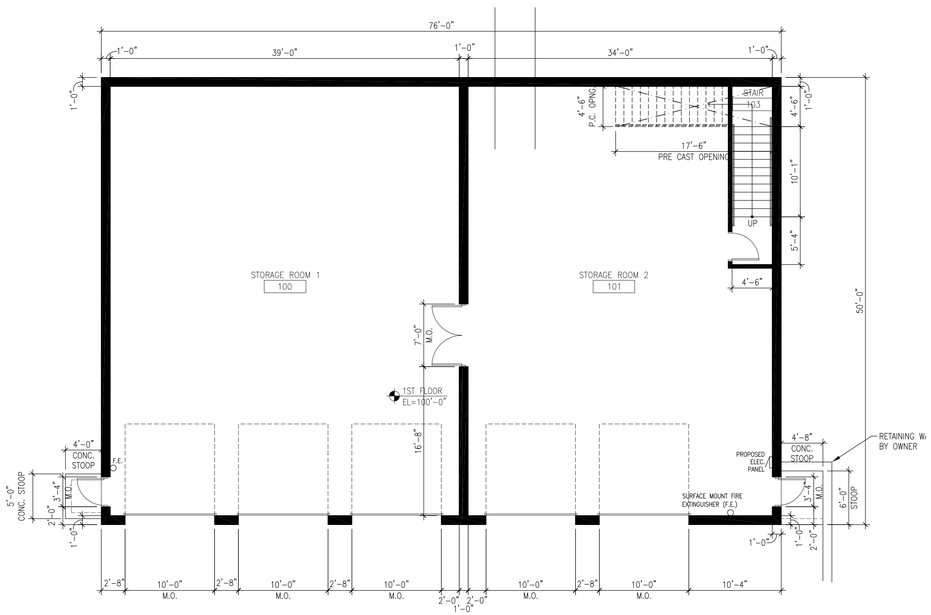
3 South Elevation
1/8" = 1'-0"



4 East Elevation
1/8" = 1'-0"



2 Upper Level Floor Plan
1/8" = 1'-0"



1 Lower Level Floor Plan
1/8" = 1'-0"

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2122 West Mount Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

Consultant:

HEC Project Number: 20-0110.00

Project:
Zeilhofer Properties, LLC
New Storage Building

Location:
N4W22540 Bluemound Road
Pewaukee, Wi 53186

Key Plan: North

PLAN COMMISSION
FINAL SUBMITTAL

Sheet:
Exterior Elevations

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

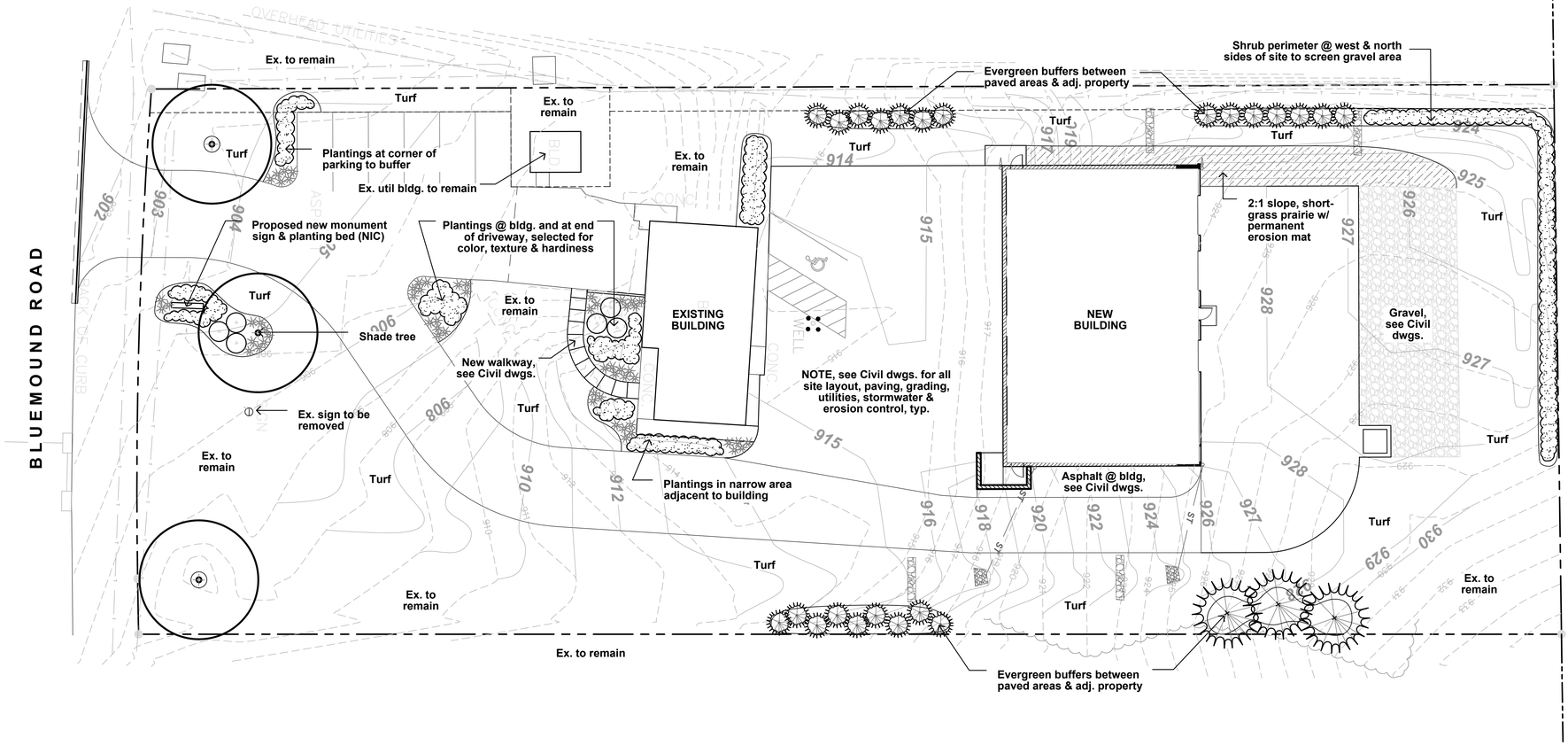
Revisions:

No.	Date:	Description:

Date:
March 8, 2021

Project No.:
200110.00

Sheet No.:
A4.0



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Consultant:

Harwood Engineering Consultants
255 North 21st Street | Milwaukee, WI 53233
P 414.475.5554 | www.hecl.com
HEC Project Number: 20-0110.00

Project:

Zeilhofer Properties, LLC
New Storage Building

Location:

N4W22540 Bluemound Road
Pewaukee, Wi 53186

Key Plan: North

Sheet:

Schematic Landscape Plan

Scale:

1/16"=1'-0" @ 36x24"

Revisions:

No.	Date:	Description:

Date:

March 8, 2021

Project No.:

200110.00

Sheet No.:

L1.00

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General Notes

1.00 Harwood Engineering's design scope is through Plan Commission submittal only. Remainder of project work (revisions per City approval requirements, final design, materials selections, species selection, detailing, shop drawing review, et al) shall be by Owner.

1.01 All landscape installation & maintenance to conform with all applicable local codes & ordinances, including (but not limited to) select portions of City of Pewaukee Municipal Code.

1.02 See Site / Civil dwgs. for work limits, scope of construction, hardscape, dimensions, construction notes, grading, stormwater management, site utilities & erosion control. See Landscape dwgs. for landscape plans, details, schedules, notes. See Arch. drawings for all other content.

1.03 Subcontractor (if any) shall provide shop drawings and material submittals of **all** hardscape & landscape construction elements shown in plan set for Owner review prior to construction.

1.04 Subcontractor shall provide samples for Owner's approval on all colors, finishes & materials prior to construction, including (but not limited to) topsoil, gravels, mulches, seed mixes et al.

1.05 Caution: underground utilities are present on site. Subcontractor shall verify location of all above- and below-grade utilities, both public & private, prior to commencement of site construction. If unanticipated above- or below-grade conditions are encountered, notify Owner prior to proceeding. Coordinate with local public utility locating entity as needed.

1.06 Subcontractor shall verify layout prior to construction. Contact Owner if discrepancies are found.

1.07 Subcontractor shall limit construction traffic to within work limit lines. See Civil drawings for limits of disturbance. All adjacent damage shall be the responsibility of the subcontractor to restore. Turf restoration outside of work limits shall be done with seeded turf.

1.08 Existing trees to remain on site shall be protected. Erect snow fencing @ 15' R or tree driplines, whichever is farther. All construction traffic, storage, compaction, parking or other disturbance within protection zones shall be prohibited for the duration of construction, except for work specifically indicated in the site plans.

1.09 All written dimensions supersede scaled dimensions. All dimensions are taken from face of curb, wall or existing building foundations.

Landscape Notes

2.01 Rough grading & topsoil import/spreading are to be completed by others. Finish grading, seed area and ornamental planting bed preparation shall be the subcontractor's responsibility. Verify all existing site and grading conditions prior to construction.

2.02 All landscape areas disturbed within the work limits shall be fine graded and restored with vegetative cover as shown. See plans for cover types & locations, see specifications for materials & installation.

2.03 Subcontractor shall verify plant quantities shown on plan. Symbol quantities take precedence over plant keys, except if noted in the schedule. The subcontractor shall forward a material list to the Owner prior to construction identifying species, sizes, quantities & plant sources to be used on the project.

2.04 All plant materials shall conform to the schedule and shall meet quality requirements outlined in the ANLA "American Standard for Nursery Stock", ANSI Z60.1-2004. The Owner reserves the right to reject any substandard planting material. Such rejected material shall be removed from the project site immediately.

2.05 An Owner's representative shall be allowed to inspect and approve trees at the nursery prior to delivery to the site. The subcontractor shall coordinate with the Owner in a timely fashion to confirm.

2.06 All nursery tags/labels shall be left on plant materials until the project punch-list inspection is completed by the Owner. Untagged materials will be assumed to be deficient.

2.07 All planting beds shall contain screened blended topsoil mix to a min. depth of 18". All seeded and/or sodded areas shall have min. 6". Subgrade shall be tilled and/or scarified prior to placement of topsoil. Suitable existing soil may be used & mixed if previously approved. Subcontractor shall be responsible for obtaining soil tests for existing or imported topsoil. Soil testing results shall include (but are not limited to) soil pH, % organic matter, phosphorus, potassium, calcium & texture (percentages of sand, silt and/or clay.) Remove excessive clay, gravel & stones detrimental to healthy plant growth. Remove all debris greater than 1" diameter.

2.08 Subcontractor shall be responsible for ensuring that all tree pits & planting areas drain properly. Notify Owner if drainage or moisture problems are encountered while planting.

2.09 Subcontractor shall backfill all trees, shrubs & evergreens with a mix of 1/3 plant starter mix & 2/3 remaining soil. Plant Starter Mix shall be provided by Liesener Soils, Cedarburg WI, or approved equal.

2.10 All perennial and groundcover areas shall receive a 3" layer of plant starter mix and perennial starter fertilizer, rototilled into the top 6" of blended topsoil in beds.

2.11 Unless otherwise shown, all perennials & shrubs shall be planted in triangular arrangements. For plants not shown individually, refer to the spacing shown in the plant schedule.

2.12 All plantings shall receive bark mulch in the beds. Bark mulch shall be hardwood bark, shredded, with no pieces larger than 1x4". Recycled mulch and/or dyed mulch will not be accepted. Mulch shall be applied @ 2-3" depth in woody planting areas and 1-2" depth in herbaceous areas. Mulch shall not touch plant trunks or stems.

2.13 Bed edging shall be 6" deep shovel-cut edging at all locations, typ.

2.14 Subcontractor shall provide positive drainage away from all structures for a minimum of 10'.

2.15 Subcontractor shall be responsible for providing base bid comprehensive landscape establishment, maintenance and warranty care for one year after installation. Work shall include all watering, weeding, pruning, fertilizing & pest management. Prior to beginning installation, the contractor shall submit a 12-mo. calendar for review/approval including all anticipated maintenance activities.

Seeding Notes & Mixes

3.01 This work shall consist of preparing the seed beds and furnishing, sowing and mulching the required seed on the various seeded areas, as outlined in the site plans and specifications. All turf restoration shall be seeded turf unless otherwise noted.

3.02 Rough grading, drainage work, topsoiling and fine grading shall be completed before sowing the seed mixes. The areas to be seeded shall be worked with plow chisels, discs & harrows, soil finishers and/or other appropriate equipment until a reasonably even and loose seedbed is obtained. Seed beds shall be prepared immediately in advance of the seeding. If proposed seed areas are weedy, contractor to apply herbicide or other weed control measures to eliminate weeds. Conform with seed supplier's specifications if required.

3.03 Confirm that anticipated project schedule date(s) fall within the respective seed supplier's approved calendar prior to installation. Installations completed outside of acceptable seeding dates shall be the performed at the sole responsibility and expense of the subcontractor. For dormant seeding, a min. of one over-seed application in the following season will be required.

3.04 Seeds shall be PLS and will be mixed in accordance w/ mfr's specifications. Provide invoices, bag-tags or mix analysis results for approval prior to installation.

3.05 Seed mixtures shall be sown by means of equipment adapted to the purpose. Mechanical distribution of seed (i.e. Truax seed drill, Brillion seeder, cultipacker, slit-seeder, drop spreader or broadcast spreader) are the only accepted methods. No hand-broadcasting of seed.

3.06 No seeding shall occur if the wind exceeds 12 MPH.

3.07 Coordinate erosion control and/or mulching with Civil dwgs:

- In sloped areas steeper than 4:1, erosion matting shall be installed by others. Landscape installation shall be coordinated with the erosion control contractor. Note areas where permanent erosion matting is specified.
- In areas with slopes between 4:1 and 8:1, subcontractor shall apply clean hay or straw mulch, free of debris and seeds, on all newly seeded areas. Mulch shall be uniformly spread over the designated area at a rate of 55 bales per acre or as indicated in the respective seed supplier's specifications. Mulch material shall be chopped and blown into the seeded area.
- Lightweight E.C. matting and/or hydromulch will be accepted as a no-cost alternate if approved by Owner prior to application.

3.08 See Civil dwgs for erosion control devices. Coordinate with erosion control contractor where required to ensure that topsoil, seeding and/or mat installations are properly coordinated.

3.09 Subcontractor shall be responsible for obtaining soil tests for all seeded areas. Soil testing results shall include (but are not limited to) soil pH, % organic matter, phosphorus, potassium, calcium & texture (percentages of sand, silt and/or clay.) Contaminated soil shall be removed from the project site if discovered. If necessary, supply soil amendments required for specified seed mixes and/or coordinate alternate mixes if soils cannot be properly conditioned.

3.10 Cover crop seeding: All seeded areas shall include temporary annual cover crop seeding. Cover crop shall be Annual Rye or approved alternate species, seed rates appropriate for the season (i.e. spring, summer or fall application.)

3.11 Seed mix substitutions shall be considered only if submitted for approval 10 days before the close of bidding. All mixes shall be installed & maintained per supplier's specifications.

BLUEGRASS MIX:
"Deluxe 50 Mix" shall be supplied by Reinders, Sussex WI, 262-786-3300. Apply @ 6 lbs per 1000 GSF.

SLOPE MIX:
"Erosion Control Mix for Medium Soils" shall be supplied by Prairie Nursery, Westfield WI, 800-476-9453 ph. Apply @ 10 lbs per AC, plus cover crop.

3.12 Subcontractor shall be responsible for providing base bid comprehensive seed area establishment, maintenance and warranty care for all seeded areas:

- Bluegrass areas shall be for one season after installation. Work shall include all watering, weeding, fertilizing & mowing. Assume one mowing per week, plus overseeding of any bare spots found after 60 days.

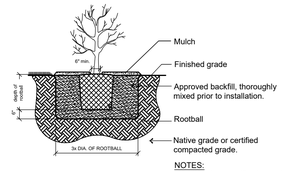
- All other seed areas shall be for three years after installation. Work shall include all watering, weeding (both spot herbicide and/or hand-pulling, depending on necessity), fertilizing, spring / fall clean-up & mowing. Expect 4-5 mowings in the first year, 3-4 mowings in the second year and 2-3 mowings in the third year. All mowings shall be timed to cut germinating weeds but not desirable forbs / grasses. Overseed each spring any bare areas larger than 1 sq. ft.

- Prior to beginning installation, the contractor shall submit a 36-month calendar for review/approval including all anticipated maintenance activities.

Preliminary Plant Schedule

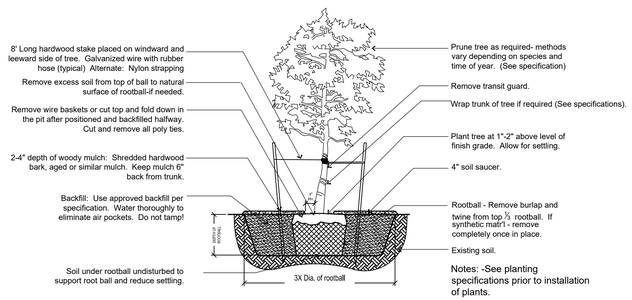
Note: Species & quantities TBD, final selections By Owner.

Symbol	Qty.	Botanical Name	Common Name	Installed Size	Root	Spacing	Notes
[Qty. 03] Shade Trees							
Ace Sie		Acer freemanii 'Sienna Glenn'	Sienna Glenn Maple	3" Cal.	B/B	As Shown	
[Qty. TBD] Ornamental Trees							
Ame Aut		Amelanchier x. 'Autumn Brilliance'	Autumn Brilliance Serviceberry	8' Ht.	B/B	As Shown	25x25' heavy 3-stem
[Qty. 03] Evergreen Trees							
Pic Gla		Pices glauca var densata	Black Hills Spruce	7' Ht.	B/B	As Shown	
[Qty. 23] Large Shrubs							
Thu Tec		Thuja occidentalis 'Technito'	Technito Dwf. Arborvitae	5' Ht.	B/B	As Shown	
Vib Red		Viburnum dentatum 'Red Feather'	Red Feather Arrowwood Viburnum	48" Ht.	B/B	As Shown	
[Qty. 925sf] Deciduous Shrubs							
Rib Gre		Ribes alpinum 'Green Mound'	Green Mound Alpine Currant	18-24" Ht.	2 Gal.	48" o.c.	
Spi Fri		Spiraea fritschiana	Fritsch Spirea	15-18" Ht.	2 Gal.	42" o.c.	
Vib Spi		Viburnum carlesii 'Spiced Bouquet'	Spiced Bouquet Comp. Kspice Viburnum	30-36" Ht.	7 Gal.	60" o.c.	
[Qty. 270sf] Evergreen Shrubs							
Jun Kal		Juniperus chinensis 'Kallay'	Kallay Compact Juniper	24" sprd.	7 Gal.	54-60" o.c.	
[Qty. 235sf] Perennials & Grasses							
Cal Ove		Calamagrostis acu. 'Overdam'	Overdam Feather Reed Grass	1 Gal.	Cont.	30-36" o.c.	
Hem Spp		50/50 mix of Hemerocallis 'Happy Returns' & 'Rosy Returns'		4.5"	Cont.	18-24" o.c.	In drifts of 3-5 per spp.
Spo Het		Sporobolus heterolepsis	Prairie Dropseed	1 Gal.	Cont.	18-24" o.c.	



NOTES:
-See planting specifications prior to installation of plants.

2 Shrub Planting Detail
Not To Scale



1 Tree Planting Detail
Not To Scale

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Consultant:
Harwood Engineering Consultants
255 North 21st Street | Milwaukee, WI 53233
P 414.475.5554 | www.hecl.com
HEC Project Number: 20-01 10.00

Project:
Zeilhofer Properties, LLC
New Storage Building

Location:
N4W22540 Bluemound Road
Pewaukee, WI 53186

Key Plan: North

Sheet:
Landscape Details, Schedules & Notes

Scale:
As Shown @ 36x24"

Revisions:

No.	Date:	Description:

Date:
March 8, 2021

Project No.:
200110.00

Sheet No.:
L5.00

Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770 Fax (262) 691-1798
fuchs@pewaukee.wi.us

Date:	February 15, 2021 (3/8/21 - A/E Comments in RED)
To:	Mark Wershay, Zimmerman Architectural Studios, Inc.
From:	Nick Fuchs, Planner & Community Development Director
RE:	Zeilhofer storage building Conditional Use and Site & Building Plan Review

Comments and Recommendations:

Below are comments and recommendations for the proposed development at N4W22540 Bluemound Road (Tax Key No. 0963997).

1. What type of materials and/or equipment will be stored within the building? **Materials and tools used in conjunction with our home remodeling and outdoor living installations. Construction materials such as tools, decking, stone, outdoor kitchens, etc.**
2. What is the purpose of the gravel area to the north of the building? Will any materials be stored outside? Are any vehicles or equipment parked overnight on the property? **The gravel area is for parking of vehicles and trailers. The area is located behind the building and screened with landscape. Vehicle storage will consist of trucks and trailers. They do not plan for any long-term storage of materials outside of the storage building.**
3. Are any dumpsters or other types of containers kept onsite? **Yes, they will be placed on a concrete pad within the larger gravel areas to the north. They are screened by the landscaping.**
4. Note the proposed monument sign will require staff review and approval of a Sign Permit. **Understood, this design will be installed at a future date and following building approval.**
5. It is recommended that parking spaces comply with Section 17.0601a., which states that the size of each parking space shall be not less than 180 square feet. **The drawings have been updated to reflect 180 square feet per space.**
6. Please provide at least one ADA compliant parking stall. **Added to drawings.**
7. Please show the B-4 District setbacks on the site plan. **Added to drawings.**
8. What color will the CMU foundation be painted? **Charcoal.**
9. What type of roof material is being used? **Standing seam metal roof as noted on the plans.**
10. Are the trees shown on the demolition plan all trees onsite or just those of a certain size and greater? **Per the Owner, the surveyor shot all trees not located in the current cluster on the north end of the lot. Those trees need to be removed to accommodate the new construction. There were no size minimums.**
11. There does not appear to be grading around the two 18" trees in southeast corner of the site and minimal grading around the 60" tree. Why are these trees being removed? It is recommended that all three trees be preserved. **All three trees are not in good health or aesthetically appealing. A portion of the 60" trees root system will need to be removed when putting in the drive which will place a declining tree in further decline. This large tree has a low crotch making it susceptible to failure. A much more appealing linden tree is planned for the SE corner where the two 18" trees would be removed.**

12. All new paving shall meet the standards of Section 17.0601c. of the City's Zoning Code. **Confirmed.**
13. Note that substantial evidence, pursuant to Section 62.23(7)(de) of WI State Statutes, must be presented at the public hearing for Common Council consideration of the Conditional Use Permit. **The Zeilhofer's currently rent a storage facility in Waukesha. This Conditional Use Request will consolidate their business to a single location and remove their rent obligation.**
14. Engineering Department comments are as follows:
    a. Permission from Waukesha County is required for the access and the changes within the right-of-way of Bluemound Road (CTH JJ). **We will be coordinating with Waukesha County for any required permits.**
    b. It is recommended that the property connect to municipal sewer and water. **The nearest adjacent municipal sewer and water lines are located a considerable distance from the building and would require crossing a County Roadway. Additional investigation finds that the sanitary across the street on Takoma Drive is 16.5' below grade. The proposed building does not have any water or sanitary needs.**
    c. The Demo plan does not appear to reflect the amount of tree removal required for the work shown on the Grading and Erosion Control Plan. **The demo area within the "Wooded area" has been expanded to reflect the grading and erosion control plan.**
    d. Clarification is needed on where the swale along the west side of the property drains. There is a swale until it nears the building. This flow is redirecting drainage which used to sheet flow across the neighbor's property to concentrating it in a swale and it appears to discharge into a swale on the adjacent property and/or is being directed at the little accessory building. Is there a drainage easement that allows this onto the adjacent property? It is not recommended to direct water to discharge towards any buildings. In addition, the swale appears to be directed at a planting bed. **We are currently redirecting the runoff south and to the existing shared swale along the west property line.**
    e. Please remove the City's curb and gutter detail and driveway connection as this is Waukesha County's jurisdiction. **City curb and gutter, and driveway connection has been removed.**
    f. The plans currently indicate less than 1 acre of disturbed area. However, if the development changes or additional area is disturbed during construction and it disturbs over 1 acres, the development will be required to meet the City's Chapter 19 ordinances. Any areas not supposed to be disturbed must be shown as protected on the plan and provisions provided to keep construction traffic from disturbing those areas. **Contractor shall stay within silt fence boundary and follow the grading, erosion control and demo plan as not to disturb over 1 acre.**

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 7.

DATE: April 19, 2021

DEPARTMENT: Planning

PROVIDED BY: Nick Fuchs

SUBJECT:

PUBLIC HEARING, Discussion and Possible Action Regarding the Conditional Use Permit for Octane Coffee for Property Located at W229 N1400 Westwood Drive (PWC 0959-988-004) for the Purpose of Installing and Operating a Drive-Thru Coffee Business [Fuchs]

BACKGROUND:

At their April 15, 2021 meeting, the Plan Commission unanimously approved the following motion:

> A motion was made and seconded (B. Bergman, D. Kiser) to approve the conditional use and site and building plans subject to the conditions of City staff review of the final landscape plan, signage conditions and review by the City Attorney, and including all staff recommendations from the staff report.

The full list of conditions is within the attached draft conditional use permit.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

A motion to approve the subject Conditional Use Permit, subject to the conditions as recommended by the Plan Commission and City Staff.

ATTACHMENTS:

Description

Octane CUP

Octane Coffee Staff Report

Octane Coffee Project Narrative

Octane Coffee Response to Staff Comments

Octane Coffee Letter of Acknowledgement

Octane Coffee Site & Building Plans

A COVENANT
REGARDING THE ISSUANCE OF A
CONDITIONAL USE PERMIT
BY THE
CITY OF PEWAUKEE

TAX KEY NUMBER(S) OR PARCEL(S) INVOLVED:

PWC 0959988004

CONDITIONAL USE PERMIT: NO. CUP-21-4-2

Recording area

Name & Return Address

City of Pewaukee
W240N3065 Pewaukee Rd
Pewaukee, WI 53072

LEGAL DESCRIPTION:

LOT 1 CERT SURV 7403 VOL 63/24 REC AS DOC# 1975258 PT SW1/4 SEC 24 & SE1/4 SEC 23 T7N R19E :: ALSO R.O.W. :: EX R2114/1165 DOC# 4075856

PERSON(S), AGENT(S) OR CORPORATION(S) PETITIONING FOR PERMIT:

Octane Coffee

WHEREAS, It is understood by all parties to this covenant that Section 62.23 of WIS. Statutes prescribes the legal basis for the granting of a conditional use permit by a City and Chapter 17 of the City Codes and Ordinances provides for the issuance of such permits as well as the standards by which all such uses will be measured; and,

WHEREAS, The City Plan Commission has held a meeting on April 15, 2021; has reviewed the various elements of the petitioner's proposal; and has recommended that a Conditional Use Permit be granted to the above-named petitioner for the property/parcel identified above; and,

WHEREAS, The City Common Council, held a public hearing meeting on April 19, 2021.

NOW, THEREFORE, let it be known that the City Common Council by its action on April 19, 2021 has,hereby, granted a Conditional Use Permit for the following use(s):

Installing and operating a drive-thru coffee business.

FURTHER, such approved use of the above designated parcel(s) are hereby allowed based on the following conditions being continually met:

1. At any time the subject use is discontinued or terminated for a period of 6 months, the applicant or property owner shall remove the structure and drive-through and restore the site to a parking area.
2. City staff review and approval of a final Landscape Plan.
3. Signage shall comply with all standards set forth in Section 17.0700 of the City's Zoning Code and require separate review and approval by the City Planner and City Attorney as well as a Sign Permit from the Building Services Department, prior to installation.

The parties hereto, namely the City of Pewaukee and the Equitable Owner of the property for which this conditional use has been sought, set their signatures or the signatures of their representatives below, thereby agreeing to the provisions and conditions set forth in this covenant.

_____ _____

Attest: Signature of equitable owner

_____

Date

_____ _____

Kelly Tarczewski
City Clerk

Steve Bierce
Mayor, City of Pewaukee

_____

Date

State of Wisconsin
County of Waukesha

Signed or attested before me on _____, 2021 by Steve Bierce, Mayor and Kelly Tarczewski, Clerk.

_____

(Seal) Ami Hurd
My Commission expires _____

This instrument was drafted by Ami Hurd, Deputy Clerk

Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770 Fax (262) 691-1798
fuchs@pewaukee.wi.us

REPORT TO THE PLAN COMMISSION

Meeting of March 18, 2021

Date: March 12, 2021

Project Name: Octane Coffee Conditional Use and Site & Building Plan Review

Project Address/Tax Key No.: W229N1400 Westwood Drive/PWC 0959988004

Applicant: Adrian Deasy and Adam James, Vision Architecture

Property Owner: American Property Acquisition LLC

Current Zoning: B-5 Highway Business District

2050 Land Use Map Designation: Retail/Service Commercial

Use of Surrounding Properties: Office to the north and west, I-94 to the south, and retail/commercial and industrial to the east

Project Description/Analysis

The applicant submitted a Conditional Use Permit and a Site & Building Plan Review Application for a standalone retail coffee drive-through business use upon property located at W229N1400 Westwood Drive.

The subject property currently contains a large multi-tenant building and associated parking areas. Current tenants include Veloce Indoor Speedway, Battle House Tactical Laser Tag, RiverGlen Christian Church, and Point Burger Bar.

Conditional Use Permit

The subject property is zoned B-5 Highway Business District, which allows "Drive-in" and "fast food" establishments as a Conditional Use. Octane Coffee is a startup business that utilizes mobile ordering and automated drink production to serve its customers. Additional information about this business can be found in the applicant's project narrative.

Hours of operation will be from 6:00 a.m. to 3:00 p.m. for the first 4 to 6 months of operations. The applicant has stated that they would then look to transition into daily 24-hour service.

Site & Building Plans

The Octane Coffee structure will be located on the north side of the site adjacent to Westwood Drive within the existing parking lot. The applicant is proposing to modify an 8' x 20' (160 square feet) shipping container, which will be placed on a new concrete slab.

The shipping container structure will be painted black and the majority clad in aluminum composite metal panels of different colors, including wood tone, charcoal, and red. The building will have LED

backlighting, which is the only new lighting that is being proposed. According to the applicant, there is already adequate lighting onsite.

The applicant is proposing to eliminate existing parking spaces and restripe the pavement to designate a drive-through lane. The applicant will also maintain 17 parking spaces within this area of the site.

Staff considered and suggested that curbing and landscape islands be installed to more aesthetically define the building location and drive-through lane. The applicant stated that they would like to initially function and operate as low risk as possible as they are a new startup business. Utilizing striping will also benefit the property owner in reusing the space or reverting the space back to parking if necessary in the future. *Staff recommends that the Conditional Use Permit be subject to annual reviews, as may be initiated and required by the City, to further consider the striping plan layout and allow for landscaping and curbing improvements as may be required by the Plan Commission and Common Council at that time.*

Additionally, staff recommends that planters be placed around the building and that a designated lane be included in the striping plan for vehicles to exit the drive-through. The applicant has indicated that they agree with these two recommendations.

The applicant's plans show three wall signs on the elevations, including a video display. The applicant has been informed that the City does not allow electronic message board type signs and that that sign will not be permitted. *Staff recommends that signage shall comply with all standards set forth in Section 17.0700 of the City's Zoning Code and require separate review and approval by the City Planner as well as a Sign Permit from the Building Services Department, prior to installation*.

Recommendation

Staff recommends that the Plan Commission recommend approval of the Conditional Use Permit and approve the Site & Building Plan Review Application, subject to Conditional Use approval and staff's recommendations as noted above in this report.

VISION
ARCHITECTURE, LLC

February 16, 2021

Project Narrative

Octane Coffee provides the world's fastest drive-thru coffee experience using a combination of mobile only ordering and completely automated drink production, delivery, and customer experience. Think of it like a Starbucks drive-thru but with robots making all of the drinks. A lot of emphasis was placed on improving value to customers by making ordering/payment/delivery faster, the experience more personalized, and the drinks more affordable.

Our small 'coffee hut' drive-thru unit is based around a 20ft shipping container and jam packed with industrial robotics to create premium coffee, tea, and juice drinks. All orders are prepared just before the customer arrives on site so drinks are always ready for express contactless pickup. We will be manufacturing these turn-key automated units here in the Milwaukee area with plans to ship them via flatbed trailer anywhere in the USA for installation. Our hope is to give new life and usefulness to underutilized parking lot space as the world transitions through Coronavirus and beyond.

The automation package is capable of running unattended for 24 hours at a time. We will be all hands on deck during the launch phase but will slowly transition to operations with no staff members on site. Longer term, an Octane Coffee employee will stop by for 30 minutes per day to restock the cups, lids, bean, milk, and to perform daily cleaning tasks on the equipment. There are backup and redundant systems to handle any issues that arise, failure notifications are sent directly to our team via text and email to handle immediately if necessary. New features, menu items, and customer experience pieces will be added to the system over time.

While the base structure will be a shipping container, significant improvements are planned for the exterior façade. The attached renderings show a combination of grey and wood tone aluminum composite panels decorating the outer skin and a flash of red to connect to the company branding and visually identify the pick-up location. We feel the building will be an attractive addition to the site.

The building and the pick-up area will require a new concrete slab. That slab will be installed in the existing paved area where shown on the site plan. The existing asphalt paving will be seal coated and re-stripped to provide the lane graphics as depicted. The goal is to create a safe and convenient coffee pick-up experience for Octane's customers while maintaining safe traffic flow around and through the site. The location selected will successfully provide both.

OFFERED BY: VISION ARCHITECTURE, LLC
BY:

Adam James, AIA
Partner
DATE: 2/16/2021

P.O. Box 224
Neenah, WI 54956
www.vision-architecture.net

Automated Coffee Shop, INC (dba Octane Coffee)
1319 Poplar Dr, Unit B
Waukesha, WI 53188

Adrian Deasy – Founder and CEO
adrian@octanemke.com, Cell: 715-556-0175

Date: March 10th, 2021

To: Nick Fuchs, Planner & Community Development Director

From: Adrian Deasy, Adam James – Vision Architecture

RE: Octane Coffee Conditional Use and Site & Building Plan Review – Staff Comments

Replies to comments and recommendations from February 26th are inline below:

1. **Does any tenant currently utilize that parking area on the north side of the building?**
    a. The north parking lot is only used as overflow and staff parking for Veloce Indoor Speedway (indoor go-carts). Our drive-thru layout retains 17 parking stalls for their use near the northeast corner of the building, close to the entry/exit door for Veloce.
2. **Please provide the property owner's signature or a letter of acknowledgement of the proposed applications and use of the property.**
    a. Will do, we have reached out to John Schlueter (property owner) for a signed letter of acknowledgement.
3. **What are the hours of operations?**
    a. Octane Coffee will be open from 6am to 3pm for the first 4-6 months of operations.
    b. We will eventually transition over to 24-hour service once the automation is proven to be reliable for unattended overnight operations.
4. **The three parking spaces that could be blocked by the drive thru lane should be removed.**
    a. The three parking spaces near our building were meant to be used as a holding area for new customers to be able to park, download our app, and make their first order without being pressured right into the drive-thru lane.
    b. During our launch and with the need to educate early customers on 'how our business works' (mobile app only ordering), we will be pointing new customers towards the 17 parking stalls as referenced above in Reply #1. Octane Coffee and Veloce are open during very different hours so the 17 stalls will suffice for both businesses needs at different times.
    c. We will remove these three parking spots from the layout but just wanted to clarify their intended purpose.
5. **Were other areas of the site considered? There may be locations, like the perimeter of the site, which would require less striping of the parking lot to create the drive thru lane.**
    a. Yes, we identified a few viable areas for a drive-thru on this property, but the north parking lot satisfied our business need for fast and convenient customer access.
    b. We had run scenarios with our drive-thru in the South parking lot (near I-94) but couldn't justify the extra driving distance for our customers, it would add 50-70 seconds to each drive-thru visit. We're aiming to serve a customer every 30 seconds, so this added time is a huge impact to our overall customer experience.

c. We aimed to lessen the time and cost requirements to get this first location up and running this Summer. The landlord wanted his risk to be minimal if our business failed in the first couple of years. In the current proposal, the north parking lot could be restriped and go back to normal use as a parking lot.

6. **Were other options considered other than just striping to designate the drive thru lane, such as installing landscape islands and curbs? This may better incorporate the building and use as a permanent improvement.**
    a. As I mentioned above, we wanted to minimize the risk if our business fails in the first couple of years. Adding curbing, landscaping, and additional lighting to the existing parking lot was intentionally avoided to decrease cost and risk.
    b. We are open to adding these features if they are required but wanted to propose a very simple installation first before complicating the situation.
7. **It is recommended that an exit lane be dedicated for vehicles that decide to exit the drive through.**
    a. We will add a 'bail out' lane into the current striping plan that will allow a car to exit the drive-thru if necessary.
8. **It is recommended that landscaping or planters be installed around the building.**
    a. Understood, we can add some planters around the building.
9. **Please be aware that the City generally does not allow metal as a primary building material.**
    a. Understood. With the footprint being so small (8ft x 20ft), it was a convenient and cost-effective choice for us to go with a shipping container as the building structure. This building method allows us to fabricate, wire, plumb, fully assemble, and test the automation inside and then move it to the installation site in one piece.
    b. The materials chosen are of high quality and will create a maintenance free exterior that will look good for years to come. The aluminum composite panels are typically used on high-end buildings due to their durable, long lasting finish and crisp clean aesthetic.
    c. We will note that the building is only occupied for 30 minutes per day to restock the consumables and perform the daily cleaning routines, like a vending machine. There is HVAC to keep the building at optimal conditions for the equipment and consumables stored in the unit.
10. **Is any lighting proposed? If so, please provide a Lighting Plan for review and approval. This should include a photometric plan and cut sheets/catalog pages of all light fixtures. Note that in no case shall light poles be taller than 20 feet measured from ground level.**
    a. There are currently no additional light poles or fixtures included in our proposal. The north parking lot and main building already have adequate fixtures and lighting available.
    b. The building itself does have an LED backlighting package as shown below. There are also 55" LED Monitors mounted to the building for customer interaction and digital signage (the heart shaped coffee cup below is one of the screens).



11. **Note that signage will require separate review and a Sign Permit prior to installation.**
    a. Understood. We planned to have two channel lettering signs mounted to the Main Building near the existing Veloce signage, of very similar size and style.
    b. The 'coffee hut' itself also has two of these channel lettering signs, but much smaller in format.
    c. We will submit the Sign Permit applications once the Zoning and Site Plan Amendments are approved.
12. **How is water and wastewater managed? Please provide details on providing municipal water and sewer to this site if services are required. Note that a review of the existing building's sewer REU (residential equivalent unit) may be required to determine if they are within the threshold of the current purchased capacity.**
    a. Water supply, sewer drain, and electric service will be trenched in through the existing parking lot to a drop underneath our building. We will be pouring a 16ft x 20ft concrete pad to serve as the foundation for our building as well as supporting the car at the drive-thru window. All utilities will be brought up through this foundation pad to supply the building.
    b. We will install a High Hazard Backflow Prevention Valve on the incoming water supply, this is required due to the espresso machines and the pressurized water tanks they contain.
    c. We will make sure all of the coffee equipment drainage to the sewer is done with 1" air gapped connections, which is a common requirement for these espresso machine installs.
    d. With our daily sales volume estimates, we will consume 40-60 gallons of incoming water per day with around 10-15 gallons of sewer waste daily. Waste is mainly created during the daily cleaning routines of the coffee equipment.
    e. There are no bathrooms or sinks in the building that create the typical waste stream of a comparable restaurant.
    f. All incoming water is filtered and actively monitored for hardness before it passes to our coffee makers. Coffee is 99% water, and the quality and taste are highly dependent on maintaining these parameters.

Automated Coffee Shop, INC (dba Octane Coffee)
1319 Poplar Dr, Unit B
Waukesha, WI 53188

Adrian Deasy – Founder and CEO
adrian@octanemke.com, Cell: 715-556-0175

Date: March 10th, 2021

To: John Schlueter – Frontline Commercial Real Estate, LLC

From: Adrian Deasy – Octane Coffee

RE: Octane Coffee - W229N1400 Westwood Dr, Proposed Coffee Drive-Thru and Renderings

We are currently in discussions with the City of Pewaukee Zoning Commission. They have requested the property owner's signature on the proposed application and use of the property located at W229N1400 Westwood Dr, Waukesha, WI 53186.

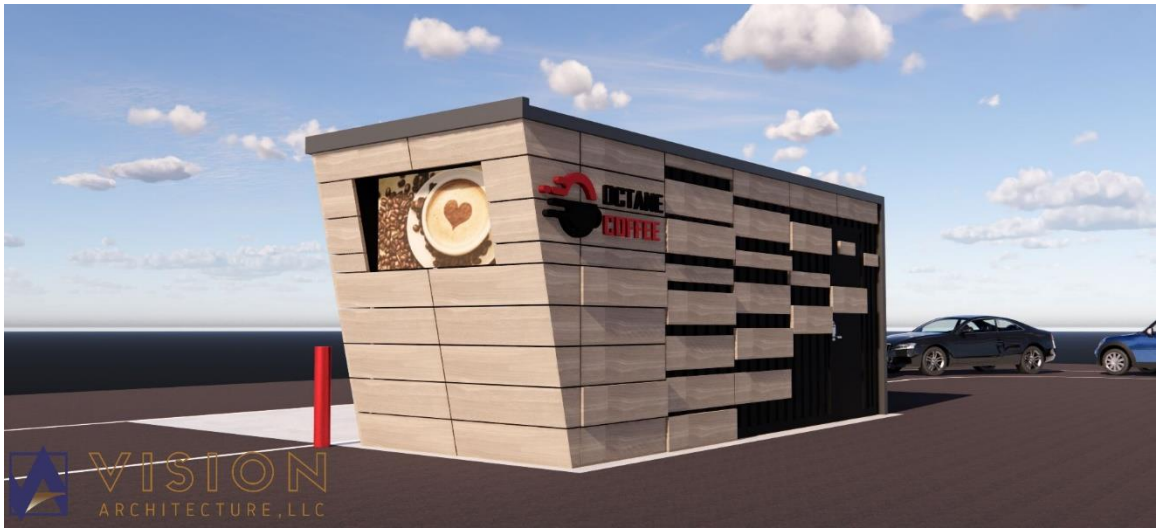
Octane Coffee intends to launch a standalone coffee drive-thru in the north parking lot during Summer 2021.

A proposed elevation view of the drive-thru is shown below, our 8ft x 20ft building is the orange rectangle.



Our ‘coffee hut’ building is proposed to be built using a 20ft shipping container as the primary structure with an aluminum façade. Preliminary renderings from our architect, Vision Architecture out of Neenah, are shown below. The aluminum façade pieces have a wood grain texture printed on them and have varying heights and depths to create a mixture of modern industrial, natural elements, and futuristic design.







The automation package housed inside of the standalone building is designed to run for 24 hours at a time, fully unattended by humans. The unit requires 30 minutes of human labor per day to restock the consumables and perform the daily cleaning routines. We will be assembling, wiring, plumbing, and testing this unit at our manufacturing shop space in Waukesha before moving it to the installation location. We have a full compliment of sensors and redundant production systems to ensure reliable drink production and delivery. Should problems arise, the system will notify us by call/text/email and we'll send someone over to resolve the issues.

Customers order exclusively via our mobile ordering app with plans for eventual 24/7/365 service. All drinks are prepared and delivered via a custom suite of industrial robotics and off-the-shelf food preparation equipment. Our app uses the customer's mobile phone GPS to schedule and release drinks 1-2 minutes before the customer arrives on site for express drink pick-up in 30 seconds (or less) per vehicle. No buttons to push, no people to talk to. We sell time, with a great cup of coffee.

If you find this proposal acceptable, please sign and date below.



3/10/2021

John Schlueter – Frontline Commercial Real Estate, LLC Date

Property Owner - W229N1400 Westwood Dr, Waukesha, WI 53186



ENLARGED SITE PLAN

SCALE: 1" = 20'-0"



SITE PLAN

SCALE: 1" = 60'-0"

VISION
ARCHITECTURE, LLC
P.O. Box 224
Neenah, WI 54956
920-904-4300
www.vision-architecture.net

Proposed Development For:

Octane MKE

Pewaukee, Wisconsin

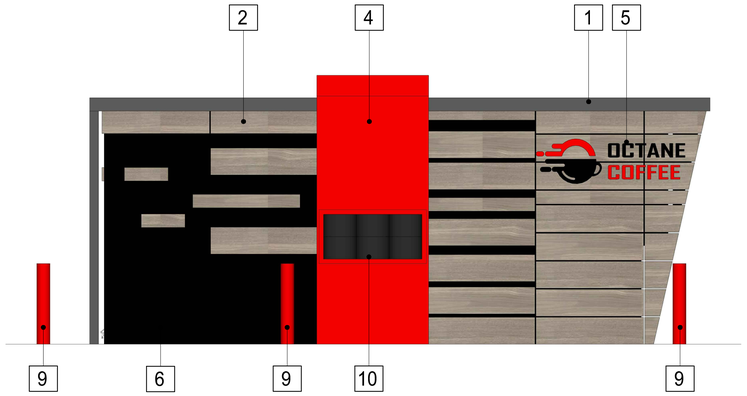
Issue Date: 2/16/2021

Revisions:

A0.1

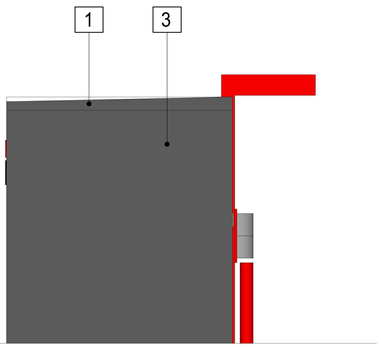
Exterior Materials:

1. PRE-FINISHED METAL ROOF EDGE - CHARCOAL
2. ALUMINUM COMPOSITE METAL PANELS - WOOD TONE
3. ALUMINUM COMPOSITE METAL PANELS - CHARCOAL
4. ALUMINUM COMPOSITE METAL PANELS - RED
5. WALL MOUNTED SIGNAGE
6. SHIPPING CONTAINER - PAINT FLAT BLACK
7. ACCESS DOOR - PAINT FLAT BLACK
8. VIDEO DISPLAY
9. PIPE BOLLARDS
10. DRINK PICK-UP CHAMBER



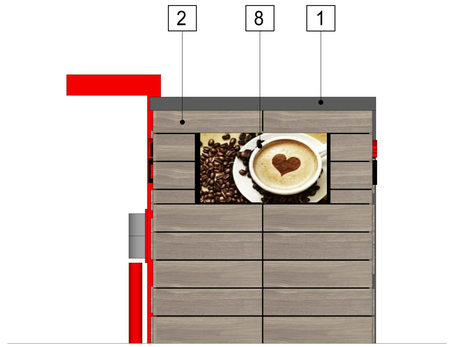
SOUTH ELEVATION

SCALE: 3/16" = 1'-0"



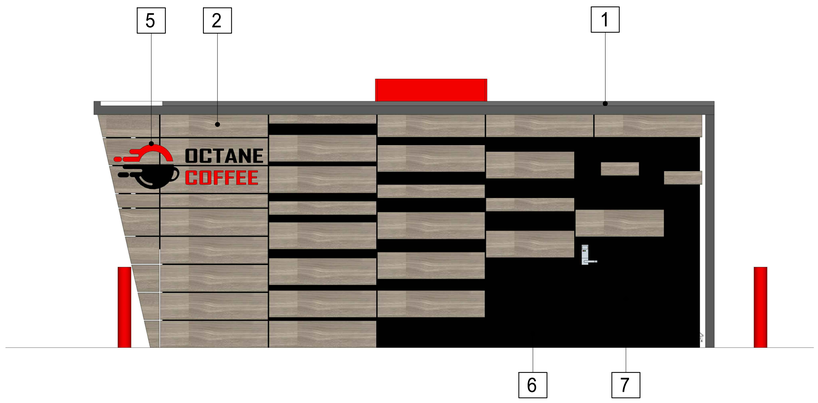
WEST ELEVATION

SCALE: 3/16" = 1'-0"



EAST ELEVATION

SCALE: 3/16" = 1'-0"



NORTH ELEVATION

SCALE: 3/16" = 1'-0"

VISION
ARCHITECTURE, LLC
P.O. Box 224
Neenah, WI 54956
920-904-4300
www.vision-architecture.net

Proposed Development For:

Octane MKE

Pewaukee, Wisconsin

Issue Date: 2/16/2021

Revisions:

A1.0









VISION
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P.O. Box 224
Neenah, WI 54956
920-904-4300
www.vision-architecture.net

Proposed Development For:

Octane MKE

Pewaukee, Wisconsin

Issue Date: 2/16/2021

Revisions:

A1.1

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 8.

DATE: April 19, 2021

DEPARTMENT: Planning

PROVIDED BY: Nick Fuchs

SUBJECT:

PUBLIC HEARING, Discussion and Possible Action Regarding the Conditional Use Permit Request for TI Investors for the Property Located at W232 N2950 Roundy Circle East (PWC 0917-994-030) for the Purpose of a Warehouse and Distribution Use [Fuchs]

BACKGROUND:

At their April 15, 2021 meeting, the Plan Commission unanimously approved the following motion:

> A motion was made and seconded (B. Bergman, D. Kiser) to approve the conditional use and site and building plans subject to the conditions of City staff recommendations, the County approving the applicant's TIA with respect to the intersection at Redford Boulevard, the screening items brought up, shifting the smoking kiosk farther south, City staff review of any additions of awnings or accents at entrances, final Engineering review, and a 20-foot limit on wall packs.

A complete list of conditions can be found in the attached draft conditional use permit.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

A motion to approve the Conditional Use Permit submitted by TI Investors of Pewaukee, subject to the conditions within the draft Conditional Use Permit.

ATTACHMENTS:

Description

TI Investors CUP
TI Investors Staff Report
TI Investors Narrative
TI Investors Supplemental Narrative
TI Investors Project Plans
TI Investors Site Plan
TI Investors Landscape Plan

TI Investors Lighting Plan
TI Investors Floor Plan
TI Investors Response Letter
TI Investors Additional Comments & Responses
TI Investors TIA
TI Investors TIA Peer Review Memo 4.12.21
TI Investors Last Mile IR Peer Review Memo

A COVENANT
REGARDING THE ISSUANCE OF A
CONDITIONAL USE PERMIT
BY THE
CITY OF PEWAUKEE

TAX KEY NUMBER(S) OR PARCEL(S) INVOLVED:

PWC 0917994030

CONDITIONAL USE PERMIT: NO. CUP-21-4-1

Recording area

_____

Name & Return Address

City of Pewaukee
W240N3065 Pewaukee Rd
Pewaukee, WI 53072

LEGAL DESCRIPTION:

Parcel One (1) of CERTIFIED SURVEY MAP NO. 7902, being a Redivision of Parcel Two (2) of Certified Survey Map No. 7877, being in the Northwest One-quarter (1/4), Northeast One-quarter (1/4), Southeast One-quarter (1/4) and Southwest One-quarter (1/4) of the Northeast One-quarter (1/4) of Section Fourteen (14), in Township Seven (7) North, Range Nineteen (19) East, in the City of Pewaukee, County of Waukesha, State of Wisconsin, recorded in the Office of the Register of Deeds for Waukesha County on December 27, 1995 in Volume 68 of Certified Survey Maps at Pages 147 to 150 inclusive, as Document No. 2089436.

PERSON(S), AGENT(S) OR CORPORATION(S) PETITIONING FOR PERMIT:

TI Investors

WHEREAS, It is understood by all parties to this covenant that Section 62.23 of WIS. Statutes prescribes the legal basis for the granting of a conditional use permit by a City and Chapter 17 of the City Codes and Ordinances provides for the issuance of such permits as well as the standards by which all such uses will be measured; and,

WHEREAS, The City Plan Commission has held a meeting on April 15, 2021; has reviewed the various elements of the petitioner's proposal; and has recommended that a Conditional Use Permit be granted to the above-named petitioner for the property/parcel identified above; and,

WHEREAS, The City Common Council, held a public hearing meeting on April 19, 2021.

NOW, THEREFORE, let it be known that the City Common Council by its action on April 19, 2021 has hereby, granted a Conditional Use Permit for the following use(s):

Operating a 24-hour small product order-fulfilling facility.

FURTHER, such approved use of the above designated parcel(s) are hereby allowed based on the following conditions being continually met:

1. Applicant shall relocate the smoking shelter further south on the property and the location and detailed plans shall be reviewed and approved by the City Planner, prior to issuance of a Building Permit.
2. Detailed plans and specifications shall be provided, for staff review and approval, of the door and awning on the east side of the building and all mechanical equipment, prior to issuance of a Building Permit.
3. Final grading, erosion control and storm water management plans shall be approved by the Engineering Department prior to any land disturbance activities.
4. The applicant shall satisfy all recommendations listed on page 3 of the consultant's TIA review memo dated April 12, 2021.
5. The Traffic Impact Analysis shall be reviewed and approved by Waukesha County. If any traffic signals are required by the County, all costs shall be borne by the applicant.
6. No building lighting shall be installed at a height greater than 20-feet.

The parties hereto, namely the City of Pewaukee and the Equitable Owner of the property for which this conditional use has been sought, set their signatures or the signatures of their representatives below, thereby agreeing to the provisions and conditions set forth in this covenant.

_____ _____

Attest: Signature of equitable owner

_____

Date

_____ _____

Kelly Tarczewski
City Clerk

Steve Bierce
Mayor, City of Pewaukee

_____

Date

State of Wisconsin
County of Waukesha

Signed or attested before me on _____, 2021 by Steve Bierce, Mayor and Kelly Tarczewski, Clerk.

_____

(Seal) Ami Hurd
My Commission expires _____

This instrument was drafted by Ami Hurd, Deputy Clerk

Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770 Fax (262) 691-1798
fuchs@pewaukee.wi.us

REPORT TO THE PLAN COMMISSION

Meeting of April 15, 2021

Date: April 9, 2021

Project Name: TI Investors Conditional Use and Site & Building Plan Review

Project Address/Tax Key No.: W232N2950 Roundy Circle East/PWC 0917994030

Applicant: TI Investors of Pewaukee LLC

Property Owner: TI Investors of Pewaukee LLC

Current Zoning: M-4 Industrial Park District

2050 Land Use Map Designation: Manufacturing / Fabrication / Warehousing

Use of Surrounding Properties: CP Rail System and multi-family residential to the north and industrial to the south, east and west

Project Description/Analysis

The applicant submitted a Conditional Use Permit and a Site & Building Plan Review Application for a warehouse and distribution use and the construction of a parking lot to the east side of the building located at W232N2950 Roundy Circle East.

The site plan also includes additional parking spaces on the west side of the existing parking area as well as proposed landscaping, lighting, and storm water management improvements. Other proposed site modifications are discussed below.

The subject property is about 16.5 acres and consists of an approximately 165,000 square foot industrial building.

Conditional Use Permit

The subject property is zoned M-4 Industrial Park District. The proposed use is most appropriately allowed within the M-1 District, which allows warehousing and distribution. The M-4 District allows all principal, accessory, and conditional uses in the M-1 District as a Conditional Use. Therefore, the applicant submitted a Conditional Use Permit.

It can be noted that this property is designated as Manufacturing/Fabrication/Warehousing on the City's Year 2050 Land Use/Transportation Plan map. The proposed use is consistent with that designation.

Site & Building Plans

Parking:

The site plan includes a new parking area to the east of the building, which includes 101 parking spaces. These spaces are all 10' x 20' (200 square feet) in size. An additional 21 spaces will also be added to the existing west parking lot. These spaces are 9' x 20' (180 square feet).

Following these improvements, the site will consist of 48% impervious surfaces and 52% greenspace, which is in compliance with the City's required minimum greenspace ratio of 40%.

Landscaping:
The Landscape Plan includes 15 deciduous trees and 35 evergreen trees. The plantings are located along the east side of the new parking lot, next to the new parking spaces on the west side of the property, and on the berm adjacent to Roundy Circle East.

Lighting:
The applicant submitted a lighting plan that illustrates new building and parking lot lighting.

At the time of this report, the applicant was not able to provide cut sheets or catalog pages of the proposed lights. They were also not able to respond to questions regarding the mounting height of building lighting and the peak height of the light poles. Staff is also not aware if any existing lighting would remain. If so, staff is not sure if the existing and proposed lights will match.

The applicant has been made aware that the peak height of light poles and fixtures may not exceed 20-feet as measured from the ground level.

Other Site Changes:
In addition to the parking, landscaping, storm water and lighting changes, the applicant is also proposing to install:

- a 16.5' x 12'smoking shelter near the northwest corner of the building;
- a new door and awning on the east side of the building;
- two HVAC units on the west end of the south elevation;
- an auger on the south side of the building;
- an Air Rotation Unit (ARU) on the west side of the building, just south of the shelter; and
- an ARU on the north side of the building.

Details of the auger have been provided, but staff has not received cut sheets for the proposed mechanical equipment. Also, only sample shelter and awning pictures have been submitted, but not the actual details of what will be constructed.

Staff recommends eliminating the smoking shelter from the plan. Staff finds that it would be best to limit as much activity as possible on the north side of the property due to the abutting condominium development on the north side of the railroad tracks.

If the shelter were to be approved, *staff recommends that detailed plans of the shelter be submitted for City Planner review and approval*. Note that shelter would have to be relocated or resized to be a minimum of 10-feet from the building per Section 17.0902b. (below).

17.0902b. All detached accessory structures or uses shall not be closer than ten (10) feet from any other structure on the property and, shall not exceed 18 feet in height.

Alternatively, the applicant could consider adding an awning area to the building, extending from the southernmost door on the west side of the building to provide employees with a sheltered area.

Staff also recommends that detailed plans and specifications shall be provided, for staff review and approval, of the door and awning on the east side of the building and all mechanical equipment, prior to issuance of a Building Permit.

Storm Water Management:
Storm water management is required and is currently being reviewed by the City's consultant and Engineering Department. *It is recommended that final grading, erosion control and storm water management plans shall be approved by the Engineering Department prior to any land disturbance activities.*

Signage:
Note that any proposed signage shall comply with all standards set forth in Section 17.0700 of the City's Zoning Code and require separate review and approval by the City Planner as well as a Sign Permit from the Building Services Department, prior to installation.

Traffic Impact Analysis:
Due to the amount of traffic associated with this use, staff requested a Traffic Impact Analysis (TIA) be completed. An initial draft TIA was prepared and reviewed by the City's consultant, TADI, Inc. This memo is attached for review.

The applicant recently resubmitted the TIA to address consultant comments; however, that review will not be complete until April 13th. As such, the final results of the TIA will be presented at the April 15th Plan Commission meeting.

Recommendation

Staff is not making a recommendation regarding the proposed use and site changes until the TIA review is complete and additional lighting information is provided.

Petition for Conditional Use Narrative

Project Address: W232 N2950 Roundy Circle East, Pewaukee, WI

Request

We are requesting a conditional M-1 zone usage at W232 N2950 Roundy Circle East, Pewaukee, WI, currently zoned for an M-4 use.

Business/Use Information

The facility will store a variety of small product inventory received from larger fulfillment centers in our supply chain network. Orders will be fulfilled via removing inventory from shelves and packaging them for shipment. While the facility will operate nearly 24 hours a day, order shipment times will occur between 4:30AM – 10PM.

Future Development Plans

Currently, there are no future development plans other than those illustrated in the drawings provided.

Site and Building Improvements

The proposed development is located on a 16.50 acre lot along Roundy Circle East west of Redford Blvd and south of the Canadian Pacific Railroad in the City of Pewaukee, Wisconsin. The project consists of an existing industrial building to remain, an addition of (21) parking spaces on the west of the building, and a new 101 space van parking lot on the east side of the building. The van parking lot will be accessed via the existing onsite truck loading area.

On the western end of the site, (2) rain gardens will be installed to manage runoff form the expanded parking lot. A stormwater management detention pond system will be installed at the southeast corner of the site for the van parking lot.

Tentative Development Schedule

We are expecting our general contractor to mobilize in the first half of May 2021. Barring any major delays, construction is scheduled to finish near the end of September 2021 or the beginning of October 2021. The facility will begin operations shortly after.

Estimated Project Value

The estimated project value is roughly $13 million.

Fuchs, Nick

From: Degiulio, Kyle <kyledeg@amazon.com>
Sent: Friday, April 9, 2021 7:07 AM
To: Fuchs, Nick; Whitley, Logan
Cc: Baillie, Gregg; Rojer, Jacob; Broberg, Carl; Frank Dekan; Hurd, Ami
Subject: RE: SWI1 - W232N2950 ROUNDY CIR E (PWC 0917994030)

Nick,

Hopefully the narrative below can explain how the site operates and will complement the data we've shared in the TIS. The TIS highlights that we will have 136 employees working in the building, expect 15 line haul trucks bringing inventory, and 1,065 FLEX driver trips.

The Amazon building launching in Pewaukee will support our Same Day Delivery program network. The fulfillment operation will receive line haul trailers from our supply chain network and store the product within our fulfillment centers. Our leadership teams (management and associates) will fulfill customer demand via removing inventory from our storage shelves and packaging the orders for shipment. The Same Day network will deliver directly to customers within local communities; Delivery Partners will leverage their own cars to retrieve shipments from the fulfillment centers and deliver directly to customers' doorsteps. While the fulfillment center will operate nearly 24 hours a day, we will delight customers with shipments between 4:30AM – 10PM. In addition, because these new facilities are in close proximity to customers, it reduces the need for aircraft transport and generally decreases the distance drivers travel to deliver packages to our customers. This also supports our commitment to the Climate Pledge to be net zero carbon by 2040. Lastly, this building it will create hundreds of part-time and full-time jobs in the local community, including more opportunities for Amazon Flex Delivery Partners to choose work that fits their schedules.

Thanks,

Kyle

Kyle DeGiulio
Amazon
Manager, Economic Development Policy
313-737-3540
kyledeg@amazon.com

From: Fuchs, Nick <fuchs@pewaukee.wi.us>
Sent: Thursday, April 8, 2021 4:30 PM
To: Whitley, Logan <logwhitl@amazon.com>
Cc: Degiulio, Kyle <kyledeg@amazon.com>; Baillie, Gregg <gbaillie@amazon.com>; Rojer, Jacob <Jacob.Rojer@kimley-horn.com>; Broberg, Carl <Carl.Broberg@stantec.com>; Frank Dekan <Frank.Dekan@zilber.com>; Hurd, Ami <hurd@pewaukee.wi.us>
Subject: RE: [EXTERNAL] SWI1 - W232N2950 ROUNDY CIR E (PWC 0917994030)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you can confirm the sender and know the content is safe.

Thanks.

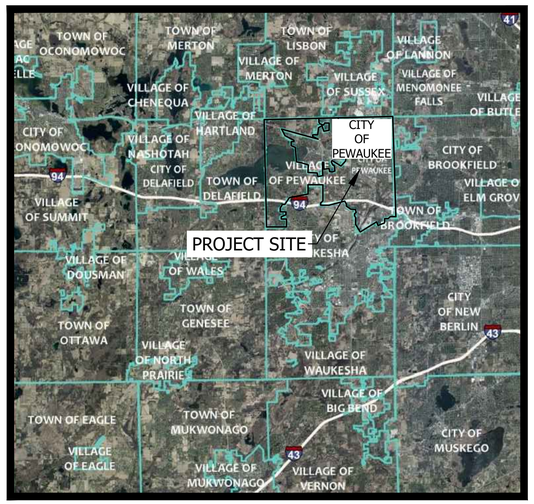
Nick Fuchs

The locations of existing utility installations as shown on this plan are approximate. There may be other underground utility installations within the project area that are not shown.

Stantec assumes no responsibility for damages, liability or costs resulting from changes or alterations made to this plan without written consent of Stantec.

These drawings have been prepared based on information provided by others. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result.

SSD-SWI1
CITY OF PEWAUKEE
WAUKESHA COUNTY, WISCONSIN

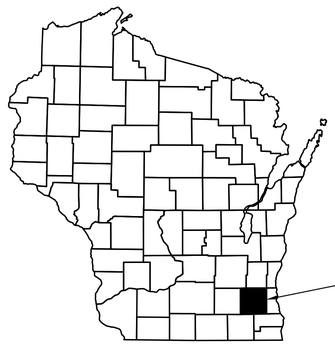


VICINITY MAP
NO SCALE

N



LOCATION MAP
NO SCALE



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SHEET NUMBER	SHEET TITILE
G0.01	TITLE SHEET AND PROJECT INFORMATION
G0.02	LEGEND
G0.03	GENERAL NOTES & SPECIFICATIONS
G0.04	GENERAL NOTES & SPECIFICATIONS
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C1.01	EROSION CONTROL PLAN
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C1.03	EROSION CONTROL DETAILS
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C8.01	CONSTRUCTION DETAILS
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C8.03	CONSTRUCTION DETAILS
EX. HYD.	EXISTING HYDROLOGY
PR. HYD.	PROPOSED HYDROLOGY

DIGGERS HOTLINE
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www.DiggersHotline.com

PROJECT TEAM:

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MEQUON, WI

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MEQUON, WI

Contact:
CARL BROBERG
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Carl.Broberg@stantec.com

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ORIGINAL SHEET - ARCH D

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Revision	By	Appd	YYYY.MM.DD
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Permit/Seal

WISCONSIN
CARL BROBERG E-46307 WAUNAKEE WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
TITLE SHEET AND PROJECT INFORMATION

Project No.
218011653

Scale
AS NOTED

Revision
0

Drawing No.
G0.01

EXISTING TOPOGRAPHIC SYMBOLS

- SANITARY MANHOLE
- STORM MANHOLE
- STORM INLET
- CLEANOUT
- CATCH BASIN
- LATERAL
- UNKNOWN MANHOLE
- WELL
- HYDRANT
- WATER VALVE
- DOWN SPOUT
- SPRINKLER VALVE
- WATER SHUT OFF
- STANDPIPE
- WATER MANHOLE
- FLOOD LIGHT
- LIGHT POLE
- TRAFFIC SIGNAL
- UTILITY POLE
- GUY WIRE
- FIBER OPTIC MARKER
- FIBER OPTIC MANHOLE/VAULT
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE/VAULT
- TELEPHONE MARKER
- TRANSFORMER
- ELECTRIC METER/PEDESTAL
- ELECTRIC MANHOLE/VAULT
- CABLE TV RISER/BOX
- CABLE TV MANHOLE/VAULT
- GAS VALVE
- GAS METER
- GAS MARKER
- AIR CONDITIONING UNIT
- VENT
- DIRECTIONAL ARROW
- DUMPSTER
- HANDICAP STALL
- SPOT ELEVATION
- SIGN
- MAIL BOX
- FLAG POLE
- BASKETBALL HOOP
- BOLLARD
- CROSS CUT
- IRON PIPE
- IRON REBAR/ROD
- MAG NAIL
- SECTION MONUMENT
- BENCH MARK
- CONIFER TREE
- DECIDUOUS TREE
- BUSH
- WETLAND SYMBOL

EXISTING TOPOGRAPHIC LINES

- RETAINING WALL
- FENCE - CHAIN LINK
- TREE LINE (WET — WET)
- WETLAND

SURVEY LINES

- BOUNDARY
- EXISTING CENTERLINE
- EXISTING EASEMENT
- EXISTING EASEMENT
- EXISTING RIGHT OF WAY
- NO ACCESS EASEMENT
- ADJACENT PROPERTY BOUNDARY
- FIRE DEPARTMENT ACCESS DRIVE

EXISTING UTILITY LINES

- SANITARY SEWER
- STORM SEWER
- WATER MAIN (W)
- FIBER OPTIC LINE
- TELEPHONE LINE
- ELECTRIC LINE
- OVERHEAD WIRES
- CABLE TELEVISION
- GAS MAIN
- RAILROAD TRACKS
- CULVERTS

NEW UTILITY LINES

- FORCE MAIN (FM)
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER DRAINTILE
- STORM SEWER
- WATER MAIN
- WATER SERVICE
- PIPE CASING

FUTURE UTILITY LINES

- FORCE MAIN (FM)
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER DRAINTILE
- STORM SEWER
- WATER MAIN
- WATER SERVICE
- PIPE CASING

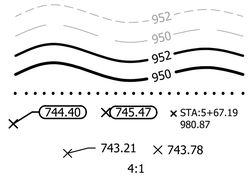
CONCRETE CURB AND GUTTER

- EXISTING
- FUTURE
- DEMOLITION

HATCH PATTERNS

EXISTING	NEW	DEMOLITION	SECTION
RIP-RAP	CONCRETE	GRASSED AEREA	EARTH
BUILDING	ASPHALT ROAD/DWY		ROCK
			SAND
			GRAVEL

GRADING INFORMATION



- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- NEW CONTOUR MINOR
- NEW CONTOUR MAJOR
- NEW GRADING LIMITS / SLOPE LIMITS
- NEW SPOT ELEVATION
- EXISTING SPOT ELEVATION
- RUN:RISE (SLOPE)

ABBREVIATIONS

CL.	CENTERLINE
CONC.	CONCRETE
EL.	ELEVATION
EXT.	EXISTING
INV.	INVERT
MON.	MONUMENT
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
R.O.W	RIGHT OF WAY
SEC. A.	SECTION
SQ. FT.	SQUARE FEET
W/	WITH
(R)	RECORDED AS
(D)	DEEDED AS

Stantec

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Permit/Seal

WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SW11

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
LEGEND

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	G0.02

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ORIGINAL SHEET - ARCH D

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GOVERNING AGENCIES AND APPLICABLE CODES/GUIDELINES/REGULATIONS (MOST STRINGENT SHALL APPLY)	
ASTM INTERNATIONAL	
AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORATION OFFICALS (AASHTO)	
AMERICAN NATIONAL STANDARD INSTITUTE (ANSI) NOTE: ASA IS NOW ANSI	
AMERICAN WATER WORKS ASSOCIATION (AWWA)	
CITY OF PEWAUKEE MUNICIPAL CODE	CHAPTER 19 OF THE CITY OF PEWAUKEE (CITY) MUNICIPAL CODE; SECTION 19.03 OF THE CITY MUNICIPAL CODE; SECTION 19.09 C. OF THE CITY MUNICPAL CODE
STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONISIN (GREEN BOOK)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION (WISDOT)	WISDOT PRODUCT ACCEPTABILITY LIST (PAL) WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION
WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR)	WDNR CONSERVATION PRACTICE STANDARDS 1061, 1055 WDNR TECHNICAL STANDARD 1059
WISCONSIN STATE AND STATUTES AND ADMINISTRATIVE CODE	CHAPTER NR 151-NR 811, WIS. ADM. CODE
GOVERNING TECHNICAL STANDARDS	CITY OF PEWAUKEE TECHNICAL STANDARDS LATEST EDITION

GENERAL

WORKING HOURS:

1. WORKING HOURS ARE MONDAY THROUGH FRIDAY FROM 7:00 A.M. TO 7:00 P.M.
2. NO DELIVERIES OR EQUIPMENT START UP BEFORE 7:00 A.M.
3. CONTACT THE CITY FOR APPROVAL FOR HOLIDAY, WEEKEND AND/OR AFTER-HOURS WORK.

INSPECTION:

1. INSPECTION BY CITY OR ITS REPRESENTATIVE IS REQUIRED FOR ALL UTILITY AND PAVING WORK THAT WILL ULTIMATELY BE UNDER THE CITY'S OWNERSHIP. SOME PRIVATE WORK MAY BE REQUIRED TO BE INSPECTED AS WELL.

GENERAL:

1. LIMESTONE SCREENINGS ARE NOT PERMITTED AS TRENCH BACKFILL.
2. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED IN PAVED AREAS AND WITHIN 5 FEET OF THE PAVED AREAS. SPOIL BACKFILL WILL BE ALLOWED IN NON-PAVEMENT AREAS. SLURRY BACKFILL IS REQUIRED IN EXISTING PAVED AREAS.
3. STONE CHIPS SHALL BE USED FOR BEDDING AND COVER ON ALL UTILITY PIPING.
4. COMPACTION TESTING IS REQUIRED IN ALL TRENCHES WITHIN A PUBLIC ROADWAY. MINIMUM 95 PERCENT OF MAXIMUM DRY DENSITY FOR FILL DEPTHS 20 FEET OR LESS AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR) WITH MOISTURE CONTENT OF -1 TO +3 PERCENT OF OPTIMUM MOISTURE CONTENT FOR COHESIVE SOILS AND +3 TO -3 PERCENT FOR GRANULAR MATERIAL.
5. CONTRACTOR IS RESPONSIBLE FOR ACCURACY, FITTING AND PROTECTION OF WORK BEFORE, DURING, AND AFTER INSTALLATION.
6. TRACER WIRE AND WARNING TAPE ARE REQUIRED ON ALL MAIN LINE AND LATERAL/SERVICES. SEE SPECIFIC UTILITY SECTION FOR TYPE AND LOCATION.
7. ALL CONSTRUCTION EQUIPMENT MUST USE DESIGNATED ROADS FOR HAULING AND DELIVERIES TO AND FROM SITE.
8. CONTRACTOR SHALL MAINTAIN 1 SET OF PLANS MARKED UP TO SHOW ACTUAL LOCATIONS AND ELEVATIONS OF UTILITY WORK ON A DAILY BASIS.
9. CONTRACTORS SHALL MAINTAIN REASONABLE ACCESS FOR RESIDENTS, EMERGENCY VEHICLES, GARBAGE PICK-UP, MAIL DELIVERY AND SCHOOL BUSES.
10. MAILBOXES THAT ARE DAMAGED OR REMOVED DURING CONSTRUCTION ACTIVITIES MUST BE RE-INSTALLED PRIOR TO NEXT DAY MAIL SERVICE.

STORM SEWER INSTALLATION

1. ALL INLET STRUCTURES SHALL BE PRECAST. FOR ADJUSTMENTS, USE PRO-RING OR CONCRETE RINGS. FULL CONCRETE RINGS MUST BE USED WITH FULL BED OF MORTAR AT FRAME AND BETWEEN RINGS. PRO-RING SHALL NOT BE USED WHEN CHIMNEY NEEDS TO BE CORBELLED. ENTIRE CHIMNEY SHALL BE EITHER ALL PRO-RING OR ALL CONCRETE RINGS. DO NOT INSTALL BOTH TYPES OF RINGS ON ONE STRUCTURE. WOOD WEDGES AND DRY STAKING OF ADJUSTING RINGS ARE NOT ACCEPTABLE. MAXIMUM CHIMNEY HEIGHT IS 12 INCHES.
   a. IN RESIDENTIAL OR LOW RUNOFF AREAS, THE INLET FRAME AND GRATE MUST BE:
      i. FOR STRAIGHT FACE CURB: NEENAH R-3228-K TYPE C GRATE FOR 24"X 30" STRUCTURE; R-3067 OR R-3246 FOR 24"X 36" STRUCTURE (FRAME WILL BE 6 INCHES SHORTER THAN CONCRETE FLANGE).
      ii. FOR ROLL FACE CURB: NEENAH R-3501-R OR R-3067 WITH MOUNTABLE CURB BOX TYPE C GRATE FOR 24"X 30" AND 24"X 36"STRUCTURE.
      iii. FOR FIELD INLETS: NEENAH R-2560-E2 BEEHIVE GRATE R-2560 SERIES, DEPENDENT ON STRUCTURE SIZE, SUBJECT TO CITY ENGINEER'S APPROVAL.
   b. IN INDUSTRIAL, COMMERCIAL OR HIGH RUNOFF AREAS, THE INLET FRAME AND GRATE MUST BE NEENAH R-3228-K TYPE C GRATE.
   c. SET CASTINGS 1/2 INCH BELOW FINAL GRADE.
2. ALL MANHOLES SHALL BE A MINIMUM OF 48 INCHES IN DIAMETER WITH A NEENAH R- 1661 MANHOLE FRAME WITH VENTED LID. ALL MANHOLES LARGER THAN 48 INCHES MUST BE NOTED ON THE PLAN AND WILL BE REQUIRED TO BE CONSTRUCTED. ALL INLETS SHALL BE A 24"X 36" (INSIDE DIMENSIONS) PRECAST STRUCTURE. SHOP DRAWINGS MAY BE SUBMITTED TO THE CITY ENGINEER FOR REVIEW AND APPROVAL JUSTIFYING THE USE OF A SMALLER MANHOLE. APPROVAL WILL BE AT THE DISCRETION OF THE CITY ENGINEER AND PROVIDED ON A CASE-BY-CASE BASIS.
3. CONNECTIONS TO MANHOLES/INLETS/CATCH BASINS SHALL BE MADE INTO PRECAST SECTION OF STRUCTURE AND USE BLOCK/BRICK AND MORTAR TO ENCLOSE OPENING AND BACK PLASTER INTERIOR AND EXTERIOR. DRY STACKING OF BRICK/BLOCK IS NOT PERMITTED.
4. ALL OPEN-ENDED PIPE OUTLETS FROM STORM SEWERS SHALL HAVE A FLARED END SECTION AND GRATE TO SECURE THE OPEN END OF THE PIPE, AS APPROVED BY THE CITY ENGINEER.
5. STONE CHIPS ARE REQUIRED FOR BEDDING AND COVER.
6. ALL STORM SEWERS SHALL HAVE MECHANICALLY COMPACTED GRANULAR BACKFILL IN PAVED AREAS AND WITHIN 5 FEET OF THE PAVED AREAS. SPOIL BACKFILL WILL BE ALLOWED IN NON- PAVEMENT AREAS. SLURRY BACKFILL IS REQUIRED IN EXISTING PAVED AREAS.
7. FLOW THRU INLETS IN CURB AND GUTTER SHALL BE CONSTRUCTED TO 1/2 INCH FINAL GRADE, AND ALL INTERIM (LOW POINT) INLETS IN CURB AND GUTTER SHALL BE CONSTRUCTED TO ALLOW FOR ONE FULL ADJUSTING RING (MINIMUM DEPTH 1-3/4 INCH) PRIOR TO SURFACE PAVING AND 5 FEET OF TEMPORARY CURB ON EITHER SIDE OF INLET. INTERIM INLETS SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE INSTALLATION OF FINAL LIFT OF ASPHALT.
8. INSTALL GREEN DIRECT BURY RATE INSULATED AWG 10 TRACER WIRE ALONG PIPE AND GREEN "CAUTION STORM LINE BURIED BELOW" WARNING TAPE 2 TO 3 FEET BELOW FINISH GRADE.
9. ALL MAIN LINE STORM SEWER SHALL INCLUDE TRACER WIRE.
   a. TRACER WIRE IS TO BE DIRECT BURIAL RATED INSULATED AWS 10 OR 12 COPPER CLAD STEEL.
   b. USE DIRECT BURIAL RATED COATING (HIGH DENSITY POLYETHYLENE (HDPE) OR HIGH MOLECULAR WEIGHT POLYETHYLENE (HMWPE)), MINIMUM 30 MIL. NYLON COATING IS NOT ACCEPTABLE (I.E., THHN AND THWN).
   c. USE INSULATED AWG 10 OR 12 COPPER CLAD STEEL, HIGH STRENGTH WITH MINIMUM 600 POUND BREAK LOAD.
   d. THE PROTECTIVE COATING MUST BE GREEN IN COLOR.
   e. CONDUCTIVITY TESTING (CONTINUITY) OF THE WIRE SHALL BE PERFORMED PRIOR TO ACCEPTANCE. UTILITY STAFF MUST WITNESS THE TESTING.
   f. SPLICES SHALL BE COPPERHEAD SNAKEBITE LOCKING CONNECTOR (LSC1230C) AND/OR MAINLINE-TO-SERVICE CONNECTOR (3WB-01). SPLICES SHALL BE KEPT TO A MINIMUM.
   g. 3/4 INCH CONDUIT SHALL BE ATTACHED TO EACH STRUCTURE WHERE THE TRACER WIRE IS TO BE BROUGHT TO THE SURFACE.
   h. TRACER WIRE BOXES SHALL BE PROVIDED AT LOCATIONS WHERE TRACER WIRE IS TO COME TO THE SURFACE OR TO BE USED AS MARKERS FOR BENDS WHERE NO STRUCTURE IS CLOSE ENOUGH TO AID IN LOCATION THE STORM SEWER. TRACER WIRE BOXES ARE TO BE VALVCO BRAND OR COPPERHEAD SNAKEPIT.
   i. IN ROADWAY, TERMINATE TRACER WIRE INSIDE STRUCTURE USING COPPERHEAD TWIST- ON CONNECTOR SCB-01 OR SCB-01-LG. IN NON-PAVEMENT AREAS, TERMINATE TRACER WIRE A VALVCO BRAND OR COPPERHEAD SNAKEPIT TRACER WIRE BOX.
   j. CONDUCTIVITY TESTING (CONTINUITY) WILL BE LINE TRACING COMPLETED BY CITY STAFF WITH THEIR EQUIPMENT IN THE PRESENCE OF A DEVELOPER/CONTRACTOR REPRESENTATIVE. LINE TRACING OF THE WIRE SHALL BE PERFORMED PRIOR TO ACCEPTANCE.
10. STORM SEWER AND CULVERT CROSSINGS OF THE WATER MAIN WITH LESS THAN 3 FEET OF SEPARATION WILL REQUIRE INSULATION. THE WATER MAIN SHALL BE INSULATED ON THE TOP AND SIDES CREATING A "BOX" AROUND THE PIPE. CONTACT CITY ENGINEER WHEN THE SEPARATION DISTANCE IS LESS THAN 2 FEET.
11. SET MANHOLES IN ROADWAY TO 3/8 INCH TO 1/2 INCH BELOW FINAL PAVEMENT GRADE.
12. ALL OTHER SPECIFICATIONS NOT COVERED HERE ARE TO BE COVERED BY THE CURRENT STANDARD SPECIFICATION FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN AND ITS ADDENDA (GREEN BOOK).

GRADING

1. AFTER THE INTERIM GRADING PLAN HAS BEEN APPROVED AND THE ACTUAL GRADING HAS BEEN COMPLETED, THE DEVELOPER SHALL SUBMIT AN "AS-BUILT" PLAN FOR GRADING, MAJOR SWALES, STORM WATER MANAGEMENT FEATURES (E.G., PONDS, BIO-SWALES, BIO-RETENTION FACILITIES, INFILTRATION PONDS OR TRENCHES, EMERGENCY SPILLWAYS) OUTLOTS, EASEMENTS, AND ROAD CONSTRUCTION. ALL GRADES MUST BE WITHIN 0.10 FOOT OF THE PROPOSED GRADES.
2. WETLAND LIMITS SHALL BE MARKED WITH A PERMANENT WETLAND MARKER EVERY 50 FEET.
3. DEVELOPER SHALL PLACE TOPSOIL AND ESTABLISH VEGETATION IN ALL DISTURBED AREAS IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1059.
4. ALL DRAINAGE SWALES SHALL HAVE A MINIMUM 1% SLOPE.

EROSION CONTROL

1. BMPS SHALL COMPLY WITH THE WDNR CONSERVATION PRACTICE STANDARDS AND WITH WISDOT PRODUCT ACCEPTABILITY LIST.
2. INLET PROTECTION SHALL BE TYPE D FOR INLETS IN ALL DEAD LOW AREAS AND TYPE A FOR ALL FIELD INLETS.
3. EROSION CONTROL REINFORCEMENT MAT SHALL BE REQUIRED FOR AREAS OF CONCENTRATED FLOW (SUCH AS SWALES, TEMPORARY DIVERSIONS, ETC.), SLOPES EXCEEDING 4 FEET HORIZONTAL TO 1 FOOT VERTICAL, SEDIMENT TRAPS, SEDIMENT BASINS, AND DETENTION PONDS, OR AS REQUIRED BY THE CITY ENGINEER.
4. DRAINAGE SWALES, TEMPORARY DIVERSIONS, SEDIMENT TRAPS, SEDIMENT BASINS AND DETENTION PONDS ARE REQUIRED TO BE STABILIZED AND FULLY OPERATIONAL PRIOR TO RECEIVING RUNOFF. FULLY OPERATIONAL INCLUDES THE INSTALLATION OF THE OUTLET STRUCTURES (PRIMARY AND EMERGENCY) FOR SEDIMENT TRAPS, SEDIMENT BASINS AND DETENTION PONDS.
5. ALL PUMPED EFFLUENT FROM DEWATERING OPERATIONS (TRENCH DEWATERING OR OTHERWISE) SHALL BE DISCHARGED TO A GEOTEXTILE FILTER BAG CONFORMING TO WDNR CONSERVATION PRACTICE STANDARD 1061. THE GEOTEXTILE BAG SHALL BE PLACED ON VEGETATED/STABILIZED GROUND AND DISCHARGE TO A SEDIMENT BASIN OR TRAP. SHOULD NO BASIN EXIST, THE GEOTEXTILE BAG SHALL BE PLACED ON FILTER FABRIC AND SURROUNDED BY A SEDIMENT BALE BARRIER CONFORMING TO WDNR CONSERVATION PRACTICE STANDARD 1055. THE FILTER FABRIC SHALL BE BROUGHT UP THE SIDES AND OVER THE TOP OF THE HAY BALES AND SECURED. DISCHARGE SHALL NOT BE ALLOWED TO FLOW OVER UNPROTECTED GROUND. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS PRIOR TO SEDIMENT REMOVAL.
6. SOIL STOCKPILES SHALL BE LOCATED AWAY FROM CHANNELIZED FLOW AND NO CLOSER THAN 25 FEET FROM ROADS, DITCHES, LAKES, STREAMS, PONDS, WETLANDS AND/OR ENVIRONMENTAL CORRIDORS, UNLESS APPROVED BE THE CITY ENGINEER. STOCKPILES LEFT INACTIVE FOR 7 DAYS OR LONGER SHALL BE STABILIZED.
7. SOIL STOCKPILES SHALL HAVE SILT FENCE OR OTHER PERIMETER CONTROL PLACED ON THE DOWNSTREAM SIDE OF THE STOCKPILE.
8. DITCH CHECKS SHALL BE INSTALLED IN SWALES, CHANNELS AND DIVERSIONS AND BE PLACED PERPENDICULAR TO FLOW. DITCH CHECKS SHALL BE DESIGNED SO THAT WATER CAN FLOW OVER THE DITCH CHECK AND NOT AROUND THEM. THE DITCH CHECK SHALL EXTEND FAR ENOUGH SO THAT GROUND LEVEL AT THE ENDS OF THE DITCH CHECK IS HIGHER THAN THE LOW POINT IN THE TOP-CENTER OF THE DITCH CHECK.
9. SILT FENCE SHALL NOT BE PLACED IN AREAS THAT RECEIVE CONCENTRATED FLOW SUCH AS DITCHES, SWALES, DOWNSTREAM OF CULVERTS, STORM SEWER OUTFALLS OR POND DISCHARGES. SILT FENCE SHALL NOT BE PLACED PERPENDICULAR TO CONTOURS SUCH AS ALONG THE SLOPE OF A HILL. SILT FENCE SHALL BE PROPERLY ENTRENCHED AND STAKED. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE TO PREVENT WATER FROM FLOWING AROUND THE ENDS OF THE FENCE. INSTALLATIONS OF SILT FENCE WHICH ARE GREATER THAN 1 YEAR OLD WILL NOT BE CONSIDERED EFFECTIVE AND WILL BE REQUIRED TO BE REPLACED.
10. DISTURBED AREAS THAT REMAIN INACTIVE FOR GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY STABILIZATION MEASURES SUCH AS SOIL TREATMENT, TEMPORARY SEEDING, MULCHING OR EROSION CONTROL REINFORCEMENT MATTING. INACTIVE MEANS THAT NO SITE GRADING, LANDSCAPING OR UTILITY WORK IS OCCURRING ON THE SITE, AND THAT PRECIPITATION EVENTS ARE NOT LIMITING THESE ACTIVITIES. FROZEN SOILS DO NOT EXCLUDE THE SITE FROM THIS REQUIREMENT.
11. WINTER CONSTRUCTION SITE EROSION CONTROL
   a. GENERAL: A PROJECT INVOLVING CONSTRUCTION BETWEEN NOVEMBER 1 AND MAY 1 WILL REQUIRE MEASURES TO STABILIZE THE SITE OVER WINTER. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, GRAVEL ROAD BASE OR 70 PERCENT MATURE VEGETATIVE COVER OR RIP-RAP BY NOVEMBER 1, THEN THE SITE MUST BE PROTECTED WITH OVER-WINTER STABILIZATION PRACTICES.
   b. CONSIDERATIONS: WINTER EXCAVATION AND EARTHWORK ACTIVITIES SHOULD BE LIMITED IN EXTENT AND DURATION TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS.
      i. EXPOSE ONLY AS MUCH AREA AS NECESSARY TO COMPLETE THE WORK AND CAN BE STABILIZED IN 1 DAY PRIOR TO ANY RAIN OR SNOW EVENT.
      ii. SUBSEQUENT WORK AREAS SHOULD NOT BE EXPOSED UNTIL THE PREVIOUSLY EXPOSED AREA HAS BEEN STABILIZED.
      iii. ALL EROSION AND SEDIMENT CONTROL MEASURES INSTALLED FOR THE PROJECT SHOULD BE ROUTINELY MAINTAINED, CLEANED, INSPECTED, AND REPAIRED AS NEEDED FOR THE CONSTRUCTION SEASON. TEMPORARY EMBANKMENTS SHOULD BE FULLY VEGETATED OR OTHERWISE STABILIZED BY ACCEPTED METHODS.
   c. MAINTENANCE REQUIREMENTS:
      i. MAINTENANCE MEASURES SHOULD OCCUR THROUGHOUT CONSTRUCTION, INCLUDING THE OVER-WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM OR PERIOD OF THAWING AND RUNOFF, THE CONSTRUCTION SITE CONTRACTOR SHOULD CONDUCT AN INSPECTION OF ALL EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO ENSURE THEIR CONTINUING FUNCTION.
      ii. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO NOVEMBER 1, THE CONTRACTOR SHOULD CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF VEGETATIVE COVER AND REPAIR ANY DAMAGED AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 70 PERCENT AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH).
   d. SPECIFICATIONS: TO ADEQUATELY PROVIDE SEDIMENT AND EROSION CONTROL DURING COLD WEATHER AND EARLY SPRING RUNOFF, THE FOLLOWING STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM NOVEMBER 1 TO MAY 1:
      i. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHOULD BE LIMITED TO ONLY WHAT IS REQUIRED TO PERFORM THE WORK. THE EXPOSED AREA SHOULD BE PROTECTED AGAINST EROSION BY METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR RUNOFF PRODUCING CONDITIONS.
      ii. STABILIZATION AS FOLLOWS SHOULD BE COMPLETED WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE OR THAT WILL OTHERWISE EXIST FOR MORE THAN 14 DAYS:
         1. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE LESS THAN 15 PERCENT WHICH DO NOT EXHIBIT A MINIMUM 70 PERCENT VEGETATIVE GROWTH BY NOVEMBER 1, OR WHICH IS DISTURBED AFTER NOVEMBER 1, SHOULD BE DORMANT SEEDED AT A RATE 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND COVERED WITH 2 TO 3 TONS OF HAY OR STRAW MULCH PER ACRE WITH EITHER ANCHORED NETTING OR AN APPROVED TACKIFIER FROM THE WISDOT PRODUCT ACCEPTABILITY LIST. AN EROSION CONTROL BLANKET OR TYPE A SOIL STABILIZER FROM THE WISDOT PRODUCT ACCEPTABILITY LIST MAY BE USED IN LIEU OF MULCH AND NETTING OR MULCH AND TACKIFIER.
2. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE GREATER THAN 15 PERCENT WHICH DO NOT EXHIBIT A MINIMUM OF 70 PERCENT VEGETATIVE GROWTH BY NOVEMBER 1 OR WHICH ARE DISTURBED AFTER NOVEMBER 1, SHOULD BE DORMANT SEEDED AT A RATE 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET.
   iii. ALL STONE COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 1.
   iv. INSTALLATION OF ANCHORED HAY OR STRAW MULCH SHOULD NOT OCCUR OVER SNOW GREATER THAN 1 INCH IN DEPTH.
   v. ALL MULCH APPLIED DURING WINTER SHOULD BE ANCHORED WITH NETTING OR TACKIFIER FROM WISDOT PRODUCT ACCEPTABILITY LIST.
   vi. STOCKPILES OF SOIL MATERIALS SHOULD BE SEEDED AND MULCHED FOR OVER- WINTER PROTECTION WITH HAY OR STRAW AT 2 TO 3 TONS PER ACRE. MULCHING SHOULD BE DONE WITHIN 24 HOURS OF STOCKPILING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. NO SOIL STOCKPILE SHOULD BE LOCATED WITHIN 25 FEET OF ANY WETLAND OR OTHER WATER RESOURCE AREA. SOIL STABILIZER TYPE A OR EROSION CONTROL BLANKET MAY BE USED IN LIEU OF MULCH.
   vii. FROZEN MATERIALS SHOULD BE STOCKPILED SEPARATELY AND IN A LOCATION THAT IS AWAY FROM ANY AREA NEEDING TO BE PROTECTED. STOCKPILES OF FROZEN MATERIAL CAN MELT IN THE SPRING AND BECOME UNWORKABLE AND DIFFICULT TO TRANSPORT DUE TO HIGH MOISTURE CONTENT IN THE SOIL.
   viii. INSTALLATION OF EROSION CONTROL BLANKETS SHOULD NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH OR OVER FROZEN GROUND.
   ix. ALL GRASS-LINED DITCHES AND CHANNELS SHOULD BE CONSTRUCTED AND STABILIZED BY OCTOBER 15. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM 70 PERCENT VEGETATIVE GROWTH BY NOVEMBER 1, OR WHICH ARE DISTURBED AFTER NOVEMBER 1, SHOULD BE STABILIZED WITH TEMPORARY STONE AND FILTER FABRIC OR TEMPORARY SEED AND EROSION CONTROL BLANKETS APPROPRIATE TO THE DESIGN FLOW CONDITIONS.
   x. ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 1.
   xi. SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHOULD CONFORM TO CONSERVATION PRACTICE STANDARD 1071 V.C.1.C ANCHORED IN PLACE AND IN FULL CONTACT WITH THE GROUND SURFACE. SILT FENCE AND HAY BALES SHOULD NOT BE INSTALLED WHEN FROZEN GROUND CONDITIONS PREVENT PROPER EMBEDMENT OF THESE BARRIERS.
   xii. AFTER DECEMBER 1, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS CEASED FOR THE WINTER SEASON SHOULD BE PROTECTED WITH A 3 INCH LAYER OF SAND AND GRAVEL WITH A GRADATION CONFORMING TO TABLE 37 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.

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Notes

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Permit/Seal

WISCONSIN
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PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

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Title
GENERAL NOTES AND SPECIFICATIONS

Project No.	Scale
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ORIGINAL SHEET - ARCH D

ROADWAY AND PAVING

HMA PAVEMENT:

1. THE ASPHALT SHALL BE PLACED IN 2 LIFTS. THE RESIDENTIAL BINDER COURSE SHALL BE 3.25 INCHES THICK. THE SURFACE COURSE SHALL BE 1.75 INCHES THICK. THE FINAL CENTERLINE CROWN SHALL BE 2.0 PERCENT. THE SURFACE COURSE SHALL BE SET 0.25 INCHES ABOVE THE CURB FLANGE ELEVATION.
2. THE ASPHALT PAVEMENT SHALL BE AS FOLLOWS:
   a. RESIDENTIAL ROADS - STATE SPECIFICATION 460 AND:
   i. BINDER 3 LT 58-28 S (19MM E-0.3)
   ii. SURFACE 5 LT 58-28 S (9.5MM E-0.3)
   b. ARTERIAL ROADS - STATE SPECIFICATION 460 AND:
   i. BINDER 3 LT 58-28 S (19 MM E-1)
   ii. SURFACE 5 LT 58-28 S (9.5MM E-1)
   c. COMMERCIAL ROADS - STATE SPECIFICATION 460 AND:
   i. BINDER 3 LT 58-28 S (19 MM E-1)
   ii. SURFACE 4 LT 58-28 S (12.5 MM E-1)
3. THE CONTRACTOR SHALL SUBMIT, FOR THE CITY'S VERIFICATION, AN ASPHALTIC MIX DESIGN MEETING ALL NECESSARY CRITERIA. THE ASPHALTIC MIX DESIGN SHALL CONSIST OF AGGREGATE GRADUATION, AGGREGATE BLEND PERCENTAGES, JOB MIX FORMULA (JMF), RECOMMENDED ASPHALT CONTENT, RECOMMENDED PLANT MIX TEMPERATURE RANGE AND SHALL BE SIGNED BY A LICENSED PROFESSIONAL ENGINEER.

CONCRETE PAVEMENT:

1. STONE BASE SHALL CONSIST OF 8 INCHES OF CRUSHED LIMESTONE TRAFFIC BOND (TB) AND CONFORM TO THE FOLLOWING: 5 INCH BASE LAYER OF 1-1/4 INCH TB AND 3 INCH SURFACE LAYER OF 3/4 INCH TB, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE WISDOT STANDARDS SPECIFICATIONS, SECTION 211.
2. CONCRETE PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE WISDOT STANDARDS SPECIFICATIONS, SECTIONS 415 AND 501.
3. CONCRETE SHALL BE AIR ENTRAINED, GRADE A, USING PORTLAND CEMENT AND AGGREGATES IN ACCORDANCE WITH THE LATEST EDITION OF THE WISDOT STANDARD SPECIFICATIONS, SECTION 501. THE USE OF CALCIUM CHLORIDE IS NOT ACCEPTABLE.
4. CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE WISDOT STANDARDS SPECIFICATIONS, SECTION 601.
5. THE CONCRETE PAVEMENT SHALL BE AS FOLLOWS:
   a. MINIMUM CONCRETE CONTENT, 6.0 SACKS PER CUBIC YARD
   b. COMPRESSIVE STRENGTH AFTER 28 DAYS CURED: 3,500 PSI MAXIMUM AMOUNT OF WATER PER BAG OF CEMENT: 6.0 GALLONS
   c. SIZE OF COURSE AGGREGATES REQUIRED: NO. 1 PLUS NO. 2.
   d. AIR CONTENT: 4.5 PERCENT - 7.5 PERCENT
   e. SLUMP
   i. PAVEMENT: MAXIMUM 3 INCHES
   ii. CURB AND GUTTER: SLIP-FORM 2.5 INCHES; NON-SLIP FORM MAXIMUM 4 INCHES
   iii. DRIVEWAY APPROACH: MAXIMUM 4 INCHES
   iv. TESTING SHALL CONFORM TO ASTM C143 STANDARD SLUMP CONE FIELD TEST PROCEDURE.
6. DOWEL AND JOINT LOCATIONS IN STREET PAVEMENT TO BE DETERMINED FOR EACH PROJECT.

GENERAL NOTES - SITE PLAN:

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND DIMENSION OF ENTRANCES, VESTIBULES, STAIRS, RETAINING WALLS, RAMPS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.

CONTRACTOR SHALL PROVIDE EROSION CONTROL FACILITIES IN ACCORDANCE WITH THE CITY OF PEWAUKEE EROSION CONTROL ORDINANCE AND WISCONSIN DNR TECHNICAL STANDARDS.

ALL DIMENSIONS AND CORRESPONDING HORIZONTAL CONTROL RELATED TO PAVING REPRESENT FINISHED GRADES UNLESS OTHERWISE INDICATED. BUILDINGS ARE DIMENSIONED TO FACE OF BUILDING

BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL OR POINT OF CONNECTION AND VERIFY THE SIZE, LOCATION AND ELEVATION OF ALL UTILITIES.

ALL SITE SIGNAGE MUST COMPLY WITH THE MOST RECENT EDITION OF THE FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

CONTRACTOR TO CONFIRM SITE LIGHTING WITH OWNER.

INSTALLATION:

1. FLOW-THRU INLETS IN CURB AND GUTTER SHALL BE CONSTRUCTED TO 1/2 INCH FINAL GRADE. ALL INTERIM (LOW POINT) INLETS IN CURB AND GUTTER SHALL BE CONSTRUCTED TO ALLOW FOR ONE FULL ADJUSTING RING (MINIMUM DEPTH 1-3/4 INCH) PRIOR TO SURFACE PAVING AND 5 FEET OF TEMPORARY CURB ON EITHER SIDE OF INLET. INTERIM INLETS SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE INSTALLATION OF THE FINAL LIFT OF ASPHALT.
2. ADJUST ALL MANHOLES AND VALVE BOXES TO 3/8 INCH TO 1/2 INCH BELOW FINAL PAVEMENT GRADE.
3. THE CURB SHALL BE RAMPED WITH 3 FEET OF ASPHALT WHEN BINDER IS PLACED. THIS RAMP MUST BE MILLED OUT PRIOR TO THE FINAL LIFT OF ASPHALT.
4. **A PROOF ROLL IS REQUIRED ON THE SUBGRADE AND THE STONE BASE WITH A FULLY-LOADED QUAD AXLE DUMP TRUCK. AREAS EXHIBITING A DEFLECTION GREATER THAN 1/2 INCH SHALL BE RECONSTRUCTED BY REMOVING A MINIMUM OF 1 FOOT EXISTING MATERIAL OR UNTIL STABLE SOIL IS ENCOUNTERED, WHICHEVER IS GREATER; INSTALL GEOTEXTILE TENSAR TX 160 AND A MINIMUM OF 8 INCHES, 3 INCH TB, AND 4 INCHES, 1-1/4 INCH TB. CONTACT THE CITY FOR ANY DEPTHS GREATER THAN 2 FEET.**
5. **ADDITIONAL PROOF ROLLS MAY BE REQUIRED BY THE CITY ENGINEER OR DESIGNATED REPRESENTATIVE IF SITE CONDITIONS CHANGE (E.G., RAIN) PRIOR TO PAVING.**
6. THE STONE BASE COURSE SHALL CONSIST OF 10 INCHES OF CRUSHED LIMESTONE TB AND CONFORM TO THE FOLLOWING: 5 INCH BASE LAYER OF 1-1/4 INCH TB, AND 5 INCH SURFACE LAYER OF 3/4 INCH TB. EACH LAYER SHALL BE ROLLED AND COMPACTED IN ACCORDANCE WITH THE WISDOT SPECIFICATIONS.
7. THE STONE BASE COURSE SHALL CONSIST OF 8 INCHES OF CRUSHED LIMESTONE TB FOR CONCRETE PAVING AND CONFORM TO THE FOLLOWING: A 5 INCH BASE LAYER OF 1-1/4 INCH TB AND A 3 INCH SURFACE LAYER OF 3/4 INCH TB. EACH LAYER SHALL BE ROLLED AND COMPACTED IN ACCORDANCE WITH THE WISDOT SPECIFICATIONS.
8. CONCRETE THICKNESS OF 7 INCHES FOR STREET PAVEMENT.
9. CONTRACTOR MUST SUBMIT ASPHALT AND CONCRETE MIX DESIGNS AND RECEIVE THE APPROVAL OF THE ENGINEERING DIVISION PRIOR TO PAVING.
10. A PRE-POUR/PAVING MEETING MUST BE SCHEDULED WITH THE ENGINEERING DIVISION PRIOR TO PAVING.
11. **NO ASPHALT BINDER PAVEMENT SHALL BE PLACED: AFTER THE WEDNESDAY BEFORE THANKSGIVING DAY; WHEN THE AIR TEMPERATURE IS BELOW 35 DEGREES FAHRENHEIT; ON FROZEN BASE; OR DURING RAIN EVENTS UNLESS SPECIFICALLY DIRECTED BY THE CITY ENGINEER.** THE BASE IS CONSIDERED TO BE FROZEN WHEN THE SURFACE TEMPERATURE OF THE BASE IS AT OR BELOW 32 DEGREES FAHRENHEIT AS MEASURED BY THE CITY'S FIELD REPRESENTATIVE WITH AN INFRARED TEMPERATURE GAUGE. **NO ASPHALT SURFACE PAVEMENT SHALL BE PLACED: AFTER OCTOBER 15; WHEN THE TEMPERATURE IS BELOW 55 DEGREES FAHRENHEIT; OR DURING RAIN EVENTS, UNLESS SPECIFICALLY DIRECTED BY THE CITY ENGINEER.**
12. ALL STREETS SHALL BE TACKED WITH CSS-1 OIL AT THE RATE OF 0.05 TO 0.15 GALLONS PER SQUARE YARD PRIOR TO PAVING IN ACCORDANCE WITH STATE SPECIFICATION 455.3.2. TACK MUST BE APPLIED BETWEEN EACH LAYER OF ASPHALTIC CONCRETE, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. THE TACK MUST BE ALLOWED TO CURE BEFORE PAVING.
13. DELIVERED BINDER COURSE SHALL HAVE A MINIMUM TEMPERATURE OF 225 DEGREES FAHRENHEIT. DELIVERED SURFACE COURSE SHALL HAVE A MINIMUM TEMPERATURE OF 250 DEGREES FAHRENHEIT.
14. ASPHALTIC CONCRETE PAVING SHALL FOLLOW STATE SPECIFICATIONS 450, 460, AND 465, UNLESS OTHERWISE NOTED WITHIN THESE TECHNICAL STANDARDS OR IN A CONTRACT SPECIFICATION OF THE PROJECT. THE MAXIMUM VARIATIONS ARE 1/8 INCH ACROSS A 5 FOOT STRAIGHT EDGE, THICKNESS WITHIN 1/4 INCH OF DESIGN, AND FINISH ELEVATION WITHIN 1/4 INCH OF DESIGN.
15. THE CITY REQUIRES ALL PAVEMENTS BE TESTED BY NUCLEAR DENSITY TESTING. THE CONTRACTOR SHALL PROVIDE THE TESTING AND A COPY OF THE RESULTS TO THE CITY ENGINEER. DENSITY TESTS MUST BE TAKEN 1 FOOT FROM THE CENTERLINE OF THE ROADWAY, 1 FOOT FROM THE EDGE OF PAVEMENT, AND THE CENTER OF THE DRIVING LANE EVERY 300 FEET PER LANE PER LINEAR FOOT OF ASPHALT PLACED. DENSITY TESTS SHOULD NOT BE LOCATED WITHIN 10 FEET OF A MANHOLE STRUCTURE. THE FIRST TEST LOCATION SHALL BE SELECTED TO TEST THE DENSITY OF THE FIRST 40 TONS PLACED FOR EACH LANE FOR EACH LAYER.
16. COMPACTION OF THE BINDER AND SURFACE COURSES SHALL BE IN ACCORDANCE WITH THE WISDOT SPECIFICATIONS SECTION 460.3.3, EXCEPT AS FOLLOWS: THE MINIMUM ACCEPTABLE DENSITY OF THE SURFACE COURSE SHALL BE 93 PERCENT AND THE MINIMUM ACCEPTABLE DENSITY OF THE BINDER SHALL BE 91.5 PERCENT.
17. ASPHALT DRIVEWAY REPLACEMENT SHALL CONSIST OF A MINIMUM 3 INCH (ONE LIFT) OF SURFACE COURSE. WHERE THE EXISTING DRIVEWAY THICKNESS EXCEEDS THE MINIMUM, THE CONTRACTOR SHALL MATCH EXISTING THICKNESS.
18. ASPHALT LOAD TICKET SHALL CONTAIN THE FOLLOWING INFORMATION:
   a. DATE
   b. TIME
   c. NAME OF ASPHALT PLANT OR OTHER SUPPLIER
   d. PROJECT LOCATION
   e. TRUCK NUMBER
   f. MIX DESIGN NUMBER
   g. MIX TYPE INCLUDING THE GRADATION, TRAFFIC, BINDER, AND DESIGNATION CODES
   h. GROSS, NET AND TARE WEIGHTS
   i. LOAD COUNT
   j. CUMULATIVE TONNAGE
   k. LOAD COUNT
   l. TICKET NUMBER
19. FOR CONCRETE FORMS, USE WOOD OR METAL FORMS STRAIGHT AND WITH SUFFICIENT STRENGTH TO RESIST SPRINGING, TIPPING, OR OTHER DISPLACEMENT DURING DEPOSITING AND CONSOLIDATING THE CONCRETE. USE SURFACED PLANKS FOR WOOD FORMS AT LEAST 2 INCH NOMINAL THICKNESS STOCK, EXCEPT FOR SHARPLY CURVED SECTIONS. USE METAL FORMS OF ENGINEER APPROVED SECTION. USE FORMS THAT ARE THE FULL DEPTH OF THE REQUIRED CURB AND GUTTER.
20. FOR CONCRETE CONSOLIDATION, USE HAND-OPERATED SINGLE SPUD INTERNAL VIBRATORS CAPABLE OF CONSOLIDATING CONCRETE PAVEMENT ADJACENT TO FORMS, JOINTS, OR FIXTURES. ENSURE THAT VIBRATORS PRODUCE A MINIMUM OF 7,000 IMPULSES PER MINUTE.
21. CONCRETE WHICH HAS NOT BEEN DISCHARGED FROM THE TRUCK WITHIN 1-1/2 HOURS OR 300 DRUM TURNS AFTER MIXING SHALL BE REJECTED.
22. CONCRETE WHICH MEETS OR EXCEEDS A TEMPERATURE OF 90 DEGREES FAHRENHEIT SHALL BE REJECTED.
23. CONCRETE CURB AND GUTTER SHALL BE JOINTED EVERY 10 FEET, WITH A FELT JOINT EVERY 200-250 FEET, AT ALL RADII, AND WITHIN 5 FEET OF AN INLET.
24. CURB AND GUTTER SHALL NOT BE PLACED: WHEN THE AIR TEMPERATURE IS BELOW 35 DEGREES FAHRENHEIT; ON FROZEN BASE; OR DURING RAIN EVENTS. THE BASE IS CONSIDERED TO BE FROZEN WHEN A SURFACE TEMPERATURE OF THE BASE IS AT OR BELOW 32 DEGREES FAHRENHEIT, AS MEASURED BY THE CITY'S FIELD REPRESENTATIVE WITH AN INFRARED TEMPERATURE GAUGE.
25. WHEN THE AIR TEMPERATURE IS EXPECTED TO DROP BELOW FREEZING, THE CONTRACTOR SHALL COVER THE SURFACE OF THE CONCRETE WITH STRAW OR HAY TO A SUFFICIENT DEPTH TO PREVENT FREEZING. SUCH PROTECTION SHALL BE FURNISHED FOR AT LEAST 5 DAYS AFTER THE CONCRETE HAS BEEN POURED OR UNTIL OPENING STRENGTH HAS BEEN REACHED. OTHER METHODS OF PROTECTION FROM FREEZING MAY BE USED WHEN APPROVED BY THE CITY ENGINEER.
   a. 22 TO <28 F SINGLE LAYER OF POLYETHYLENE.
   b. 17 TO <22 F DOUBLE LAYER OF POLYETHYLENE.
   c. <17 F 6 INCHES OF LOOSE, DRY STRAW OR HAY BETWEEN 2 LAYERS OF POLYETHYLENE.
26. **TWO #4 DOWELS ARE REQUIRED TO BE DRILLED INTO EXISTING CONCRETE CURB AND GUTTER WHEN REPLACING CURB ON EITHER SIDE OF A NEW SECTION EXCEPT NEAR INLETS.**
27. CONCRETE DRIVEWAYS SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES AND INCLUDE WIRE MESH REINFORCEMENT. WHERE THE DRIVEWAY THICKNESS EXCEEDS THE MINIMUM, THE CONTRACTOR SHALL MATCH EXISTING THICKNESS. USE HIGH EARLY STRENGTH (HES) CONCRETE AS DIRECTED BY THE CITY ENGINEER.
28. CURING COMPOUND IS REQUIRED ON ALL NEW CONCRETE.
29. CONCRETE LOAD TICKET SHALL CONTAIN THE FOLLOWING INFORMATION:
   a. DATE
   b. NAME OF READY MIX CONCRETE PLANT OR OTHER SUPPLIER
   c. PROJECT LOCATION
   d. TRUCK NUMBER
   e. TYPE (STANDARD, A.E. OR H.E.S.)
   f. BRAND OF CEMENT USED IN BATCH
   g. CEMENT CONTENT IN BAGS PER CUBIC YARD OF CONCRETE
   h. AGGREGATE SIZE
   i. A.E. ADMIXTURE, IF USED
   j. % FLY ASH, IF USED
   k. OTHER ADMIXTURES (ONLY WITH PRIOR APPROVAL OF THE CITY ENGINEER)
   l. BATCH OUT TIME
   m. ARRIVAL TIME AT JOB SITE
   n. TIME TRUCK FINISHED UNLOADING
   o. TOTAL AMOUNT OF WATER ADDED AFTER BATCHING (IN GALLONS)
30. CONCRETE CURB MUST HAVE A MINIMUM 7 DAYS TO CURE PRIOR TO ANY WORK BEING COMPLETED ADJACENT TO THE CURB INCLUDING, BUT NOT LIMITED TO, PLACEMENT OF BACKFILL, TOPSOIL, OR PAVING. IF THE CURE TIME IS LESS THAN 7 DAYS, A CONCRETE CYLINDER BREAK IS REQUIRED, AND IT MUST SHOW A MINIMUM STRENGTH OF 3,000 PSI. CURBS MUST BE BACKFILLED AFTER A MINIMUM 7 DAYS FOR STANDARD CONCRETE (3 DAYS FOR HIGH EARLY STRENGTH) AND PRIOR TO PAVING.
31. TEMPORARY PAVEMENT STRIPING IS REQUIRED ON ALL BINDER PAVEMENT THE SAME DAY IT WAS PAVED. FOLLOW STATE SPECIFICATION 649 WITH REFLECTORIZED PAINT OR TAPE.
32. PAVEMENT STRIPING IS REQUIRED WITHIN 24 HOURS OF SURFACE PAVING. FOLLOW STATE SPECIFICATION 646 WITH EPOXY PAINT AND 646.2.3 WITH GLASS BEADS. TEMPORARY PAVEMENT STRIPING SHOULD BE PLACED ON THE BINDER PAVING IF SURFACE PAVING WILL NOT OCCUR WITHIN 24 HOURS. SIGNS MUST BE POSTED NOTIFYING THE TRAVELING PUBLIC THAT THERE IS "NO CENTER STRIPE" OR SIMILAR.
33. ALL OTHER SPECIFICATIONS NOT COVERED HERE ARE TO BE COVERED BY THE LATEST EDITION OF THE WISDOT TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND ITS ADDENDA.

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Notes

Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD
File Name: 218011653G-001	KAL Dwn.	EOR Dsgn.	CB Chkd. 2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
GENERAL NOTES AND SPECIFICATIONS

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	G0.04

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ORIGINAL SHEET - ARCH D

REMOVAL LEGEND

TREE REMOVAL

CURB DEMOLITION

- HmB-Hochheim Loam (2-6% Slopes)
- HmB2 Hochheim Loam (2-6% Slopes, Eroded)
- HmC2-Hochheim Loam (6-12% Slopes, Eroded)
- HmD2-Hochheim Loam (12-20% Slopes, Eroded)
- LmB-Lamartine Silt Loam (0-3% Slopes)
- MgA-Martinton Silt Loam (1-3% Slopes)
- ShB-Saylesville Silt Loam (2-6% Slopes)
- ThB-Theresa Silt Loam (2-6% Slopes)
- W-Water

CURVE TABLE				
CURVE NO.	LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C3	361.36'	260.00'	N48°31'26"W	332.97'
(RECORDED)			(N48°31'25"W)	

NOTE

1. Vertical Datum: North American Vertical Datum of 1988(12) (NAVD88). Reference Benchmark: Concrete monument with brass cap at the northwest corner of the Northeast 1/4 Section 14, Town 7 North, Range 19 East, Elevation = 871.45.

LEGAL DESCRIPTION:

AS DESCRIBED IN FIRST AMERICAN TITLE INSURANCE COMPANY - WISCONSIN TITLE SERVICE COMPANY, INC. COMMITMENT NUMBER 2007A0138 WITH AN EFFECTIVE DATE OF JULY 9, 2020.

Parcel One (1) of CERTIFIED SURVEY MAP NO. 7902, being a Redivision of Parcel Two (2) of Certified Survey Map No. 7877, being in the Northwest One-quarter (1/4), Northeast One-quarter (1/4), Southeast One-quarter (1/4) and Southwest One-quarter (1/4) of the Northeast One-quarter (1/4) of Section Fourteen (14), in Township Seven (7) North, Range Nineteen (19) East, in the City of Pewaukee, County of Waukesha, State of Wisconsin, recorded in the Office of the Register of Deeds for Waukesha County on December 27, 1995 in Volume 68 of Certified Survey Maps at Pages 147 to 150 inclusive, as Document No. 2089436.

Tax Key No: PWC 0917-994-030
Address: W232 N2950 Roundy Circle East, Pewaukee, WI 53072

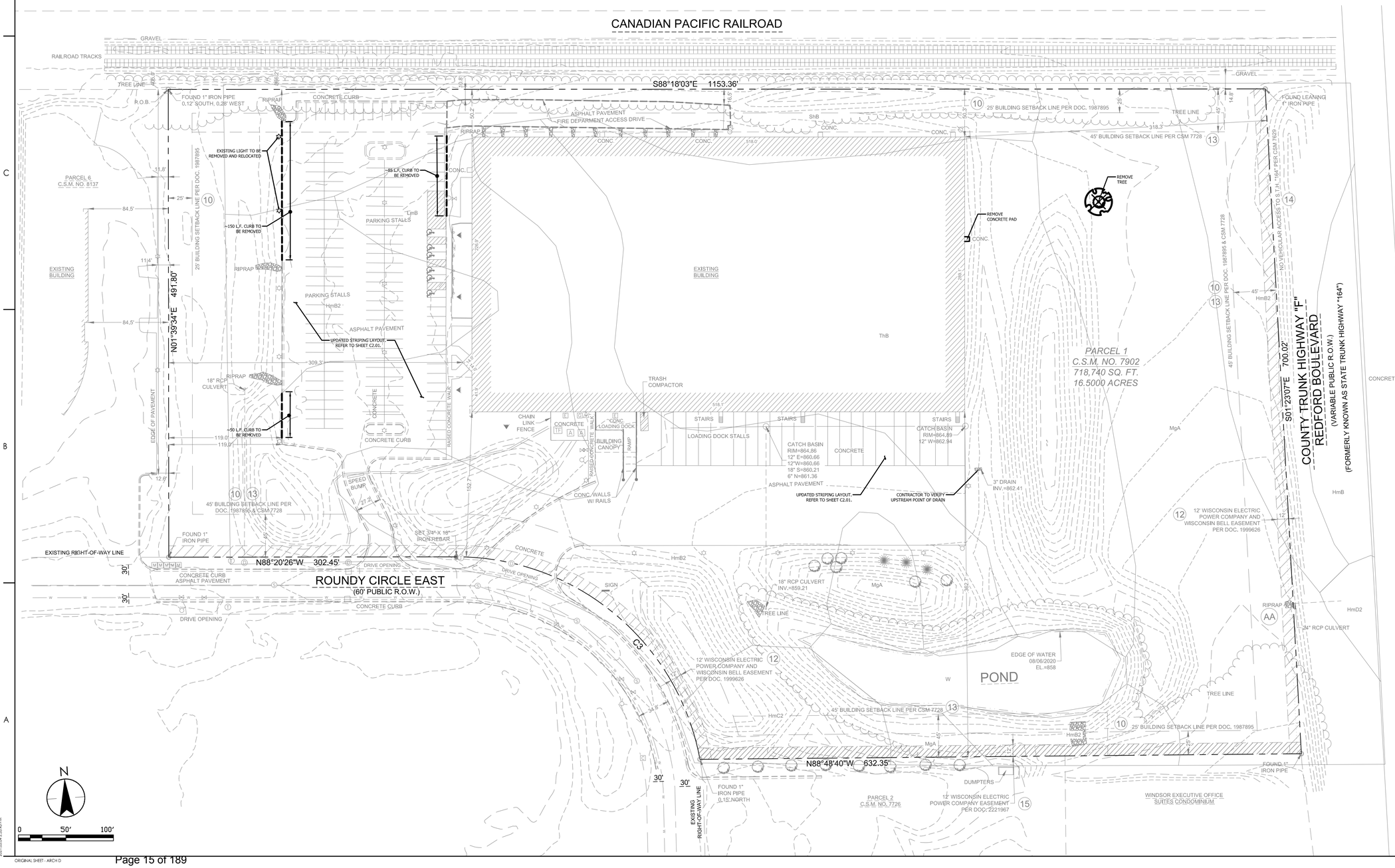
NOTES CORRESPONDING TO SCHEDULE B - II

1 - 4, 9, 17-18 NOT SURVEY RELATED
5 - 8, 16 VISIBLE EVIDENCE SHOWN IF ANY

10. Declaration of Development Standards and Protective Covenants recorded on September 5, 1985 in Reel 697, Image 374, as Document No. 1310657. Amendment to Declaration of Development Standards and Protective Covenants recorded on August 17, 1994, as Document No. 1987895. Assignment and Assumption of Declaration recorded on May 22, 2008, as Document No. 3573662. Building setbacks of Front=45 feet; Side=25 feet as graphically shown on the survey and other matters that affects the subject property but cannot be plotted.
11. Notice of Developer's Agreement Affecting Land recorded on November 15, 1994 in Reel 2009, Image 460, as Document No. 2007417. Affects subject property but cannot be plotted.
12. Utility Easement recorded on October 11, 1994 in Reel 1996, Image 936, as Document No. 1999626. 12' Wisconsin Electric Power Company and Wisconsin Bell Easement as graphically shown on survey.
13. Setback lines of 45 feet from Lot lines as shown on the recorded plat of Certified Survey Map No. 7728. Setback lines graphically shown on survey.
14. Access Restriction as shown on the recorded plat of Certified Survey Map No. 7629, reciting as follows: "No vehicular access to S.T.H. 164". No Access graphically shown on survey.
15. Distribution Easement Underground recorded on June 16, 1997 in Reel 2454, Image 977, as Document No. 2221967. 12' Wisconsin Electric Power Company Easement for underground cables as graphically shown on survey.

TABLE A

1. Monuments placed at all corners of the subject property boundary.
2. Address (as disclosed in title commitment): W232 N2950 Roundy Circle East, Pewaukee, WI 53072.
3. Flood Zone Classification: The property lies with in Zone "X" of the Flood Insurance Rate Map Community Panel No. 55133C0204G with an effective date of NOVEMBER 5, 2014. Zone "X" areas are determined to be outside the 0.2% annual chance floodplain.
4. Gross Land Area: 718,740 Square Feet (16.5000 Acres).
6. Letter / Zoning Report not supplied by client at time of survey.
7. (a) The exterior dimensions of all buildings at ground level graphically shown on survey.
   (b)(1) The exterior building square footage is 149,843 SQ. FT.
   (c) Measured height of buildings graphically shown on survey.
8. Substantial features observed in the process of conducting the survey graphically shown on survey.
9. There are 147 regular parking spaces, 22 loading dock stalls and 6 disabled parking spaces clearly designated on the surface of the subject property.
   Total parking = 175 stalls.
11. Underground utility locations shown are based on field location markings by Digger's Hotline ticket #20203012363 with a clear date of JULY 27, 2020. The location and size of underground structures and utilities shown hereon have been located based on a reasonable visual observation and are shown for informational purposes only. PINNACLE ENGINEERING GROUP, LLC. does not guarantee the location of utilities shown. Contact Digger's Hotline prior to the start of any activity.
16. No evidence of recent earth moving work, building construction or building additions observed in the process of conducting the fieldwork.
20. Certificate of Professional Liability Insurance furnished upon request and in effect throughout the contract term.



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Notes

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Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C0.01	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

CARL BROBERG E-46307 WAUNAKEE WI
WISCONSIN PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
EXISTING SITE CONDITIONS AND REMOVALS

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	C0.01

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ORIGINAL SHEET - ARCH D

EROSION CONTROL LEGEND

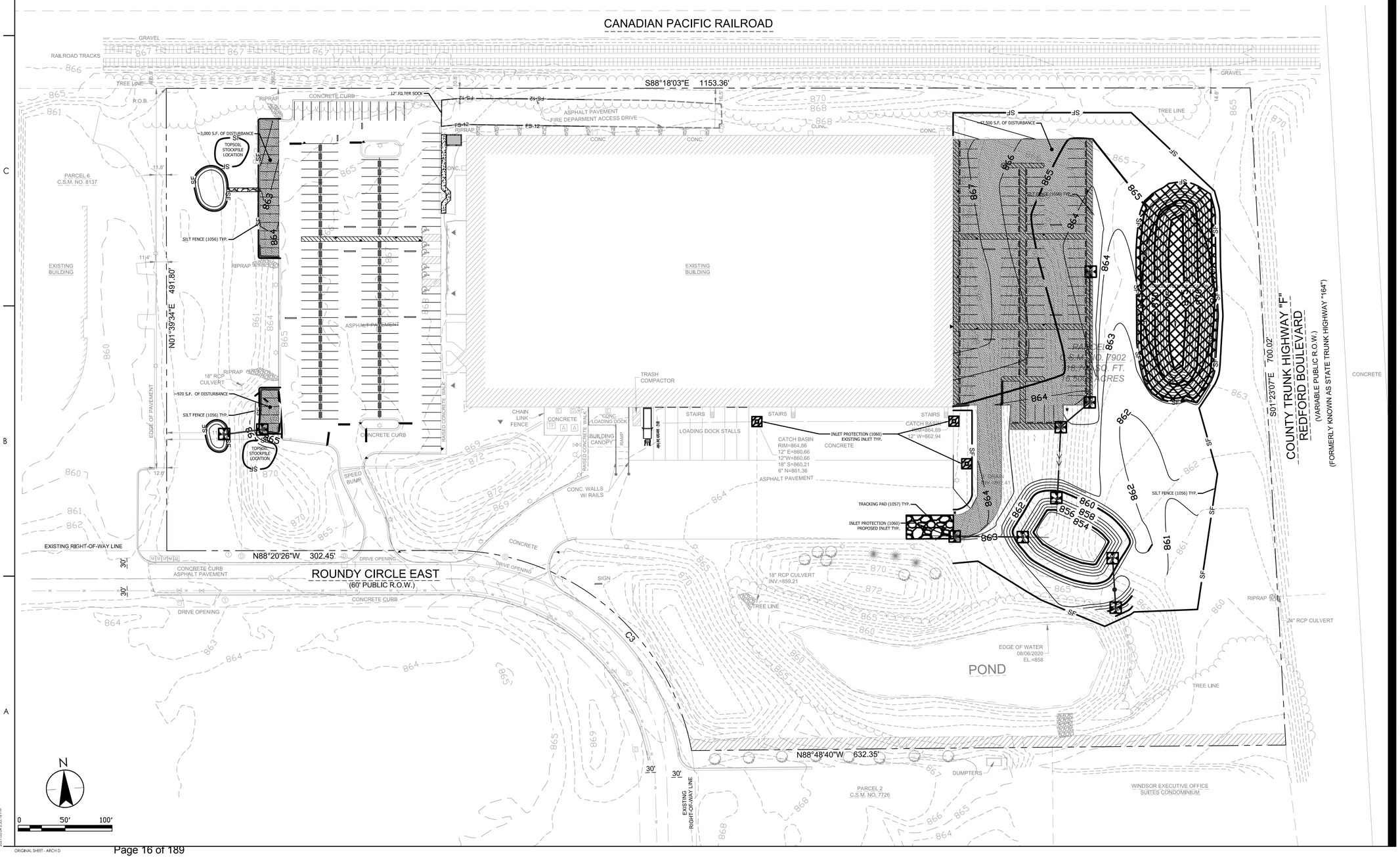
- 952 — EXISTING CONTOUR MINOR
- 950 — EXISTING CONTOUR MAJOR
- 952 — PROPOSED CONTOUR MINOR
- 950 — PROPOSED CONTOUR MAJOR
- INTERIM MANUFACTURED PERIMETER CONTROL AND SLOPE INTERRUPTION PRODUCTS - IMPC (1071) — 3 / C1.03
- SF — SILT FENCE (1056) — 1 / C1.02
- DITCH CHECK - STRAW BALE (1062) — 1 / C1.03
- FS-12 — FILTER SOCK
- INLET PROTECTION (1060) EXISTING INLET — 2 / C1.02
- INLET PROTECTION (1060) PROPOSED INLET — 2 / C1.02
- TRACKING PAD (1057) — 2 / C1.03
- EROSION MAT NON-CHANNEL (1052)

CONSTRUCTION SEQUENCE:
TRACKING PAD AT APPROVED ENTRANCE POINTS 8/1
STAKE WETLAND CORNERS 8/1
INSTALL SILT FENCE 8/5
TREE REMOVAL 8/1 - 8/8
INSTALL OTHER BEST MANAGEMENT PRACTICES 8/8
STRIPPING AND CLEARING 8/8 - 8/15
ROUGH GRADING 8/8
FINAL GRADING/TOPSOILING WHENEVER POSSIBLE
***TEMPORARY SEEDING SHALL OCCUR WHENEVER GRADES ARE ESTABLISHED
PREPARE WORK SURFACE FOR PARKING LOT 8/8
***TEMPORARY SEEDING SHALL OCCUR WHENEVER GRADES ARE ESTABLISHED
UTILITY CONSTRUCTION 8/17
ROADWAY CONSTRUCTION 8/17
REMAINING FINAL GRADING/TOPSOILING 12/1
LANDSCAPING AND PERMANENT SEEDING 5/21

NOTES:
WETLAND CORNERS SHALL BE STAKED WITH CEDAR POST PRIOR TO LAND DISTURBING ACTIVITIES.

PROPOSED POND AREAS SHALL BE USED AS TEMPORARY SEDIMENT BASINS DURING ROUGH GRADING ACTIVITIES. SEDIMENT BASINS SHALL BE RE-EXCAVATED POST ROUGH GRADING ACTIVITIES TO REMOVED ANY ACCUMULATED SEDIMENT. TEMPORARY SEDIMENT BASINS SHALL ADHERE TO WDNR TECHNICAL STANDARD 1064.

51,420 S.F. OF DISTURBANCE



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Permit/Seal

WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
EROSION CONTROL PLAN

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	C1.01

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ORIGINAL SHEET - ARCH D

EROSION CONTROL PLAN

GENERAL NOTES

1. Contractor shall conform to all relevant federal, state, and local regulations; the conditions included in any permit; and to the conditions included in the project engineer's plans unless otherwise approved by the Wisconsin Department of Natural Resources (WDNR) and project engineer. Any changes or revisions to the erosion control plans are required to be approved by the City of Pewaukee prior to implementation.
2. Erosion control devices shall conform to the latest edition of the WDNR technical standards and WI DOT Product Acceptability List (PAL).
3. A copy of the erosion control plan and permits shall be kept onsite and available for inspection throughout the duration of the project. Submit plan revisions or amendments to the WDNR at least 5 days prior to field implementation. Any changes or revisions to the erosion control plans are required to be approved by the City of Pewaukee prior to implementation.
4. At no time may construction equipment or fill be placed in a waterway or wetland, except as approved by WDNR permit. The contractor shall not store any equipment or materials in any wetland, floodplain, or floodway.
5. Public and private access roads shall be kept free of tracked sediment and at a minimum cleaned at the end of each workday (not by flushing). As well, the contractor shall take minimization measures for dust control to the maximum extent practicable.
6. Bare soil areas, including soil stockpiles, left undisturbed for 7 days, shall be stabilized with: temporary or permanent seed and mulch (properly anchored by crimping, netting, or tackifier); hydromulch; tarp; or other approved method.
7. The use, storage and disposal of chemicals, oil & grease, cement and other compounds and materials used on the construction site shall be managed during the construction period to prevent their transport by runoff into waters of the state; in the event of any spill notification shall be immediately reported to the WDNR and local authorities. All construction debris and litter shall be cleaned daily.
8. If the contractor determines that dewatering will be necessary, a dewatering plan shall conform to the City of Pewaukee Technical Standards and shall be submited by the contractor to the WDNR for approval. All pumped effluent from dewatering operations (trench dewatering or otherwise) shall be discharged to a geotextile filter bag conforming to WDNR Conservation Practice Standard 1061. The geotextile bag shall be placed on vegetated/stabilized ground and discharge to a sediment basin or trap. Should no basin/trap exist, geotextile bag shall be placed on filter fabric and surrounded by a sediment bale barrier conforming to Conservation Practice Standard 1055. The filter fabric shall be brought up the sides and over the top of the hay bales and secured. Discharge shall not be allowed to flow over unprotected ground. In no case shall pumped water be diverted outside the project limits prior to sediment removal. Notify the WDNR if dewatering is scheduled to occur in areas of soil and/or groundwater contamination, or if dewatering will occur from a high capacity well (70 GPM or greater). Provide anti-scour protection and maintain non-erosive flow during dewatering.
9. Between September 15 and October 15 stabilize with mulch, tackifier and a perennial seed mix with winter wheat, annual rye, oats or annual rye. During the non-growing season (Oct. 15 - April 15), winter stabilization shall include seeding with dormant seed mix and winter wheat and the use of mulch and polymer/tackifier (as an anchoring method) or a Class 1-type B erosion mat on all bare soil areas of the site. Winter stabilization shall comply with the City of Pewaukee technical standards.
   - Mulch shall consist of hay or straw free of diseased plant residue, noxious weeds, harmful chemical residues, heavy metals, hydrocarbons, and other known environmental toxicants.
   - Mulch shall cover a minimum of 80% of the soil surface and shall be ½ to 1 ½ inches thick.
   - If the conditions are too cold to apply a polymer/tackifier, a mulch crimper or biodegradable netting shall be used as a temporary alternate anchoring method.
10. If snow cover prevents the installation of these items; the condition of the site, including the amount of snow cover, will be noted on every erosion and sediment control inspection report. Once the snow is 2 inches or less on a majority of the site, the above-mentioned winter stabilization methods shall be immediately employed and shall comply with the City of Pewaukee technical standards.
11. All finish graded ditches and swales shall be planted, sodded or seeded and mulched or matted immediately after completion.
12. If any item in the erosion control plan requires modification, the contractor shall submit an erosion control plan revision to the project engineer and WDNR Stormwater Specialist to receive approval before proceeding. Winter stabilization shall comply with the City of Pewaukee technical standards.
13. All land disturbing activities shall be conducted in a logical sequence as to minimize the amount of bare soil exposed at any one time. Maintain existing vegetation as long as possible.
14. Any off-site sediment deposits shall be cleaned up and restored or stabilized with 24 hours, weather permitting, of any off-site sediment deposition. All sediment shall be properly disposed of and stabilized in an upland location on or off-site.
15. Make appropriate provisions for watering, as needed, during the first 8 weeks following seeding or planting areas whenever more than 7 consecutive days of dry weather occur (no rain).

EROSION CONTROL INSTALLATION AND SEQUENCING

- Building demolition, site grading, utility installation, building construction will not be permitted prior to installation of erosion controls and best management practices according to the appropriate phase of construction.
- The construction site is a farmstead with a house, barn, wooded uplands, wetlands, and some cropped areas. The project land disturbing activities will include construction of one main building and fifteen smaller town home style buildings, a public roadway with a permitted wetland fill, 5 stormwater ponds, and pavement construction.
- Upon completion of grading any disturbed ground shall be temporality seeded and mulch placed within 7 days.
- Sediment Basins shall be re-excavated to remove any deposited sediment during construction and final graded to proposed pond grading design.
- Permanent stabilization shall occur after final grading, of any areas that were temporarily seeded.

REMOVAL OF EROSION CONTROL MEASURES

Removal of the erosion control measures is only permitted after the site achieves final stabilization and with the approval of the City of Pewaukee and the Wisconsin DNR. Final stabilization means that all land disturbing construction activities at the construction site have been completed and that a uniform perennial vegetative cover has been established with a density of at least 70 percent of the cover for the unpaved areas and areas not covered by permanent structures or that employ equivalent permanent stabilization measures.

1. Inlet Protection Devices shall be removed when all land disturbing construction activities have been completed and the site has reached final stabilization. Final stabilization is defined as an established uniform perennial vegetative cover with an overall site density of at least 70%.
2. Silt Fence shall be removed when all land disturbing construction activities have been completed and the area has reached final stabilization. Any soil disturbance that has occurred because of its removal shall be immediately stabilized.
3. Tracking Pad shall be removed when all land disturbing construction activities have been completed along its associated access road. Any soil disturbance that has occurred as a result its removal shall be immediately stabilized.
4. Interim Manufactured Perimeter Control shall be removed when all land disturbing construction activities have been completed and the area has reached final stabilization. Any soil disturbance that has occurred because of its removal shall be immediately stabilized.

EROSION CONTROL INSPECTION AND MAINTENANCE

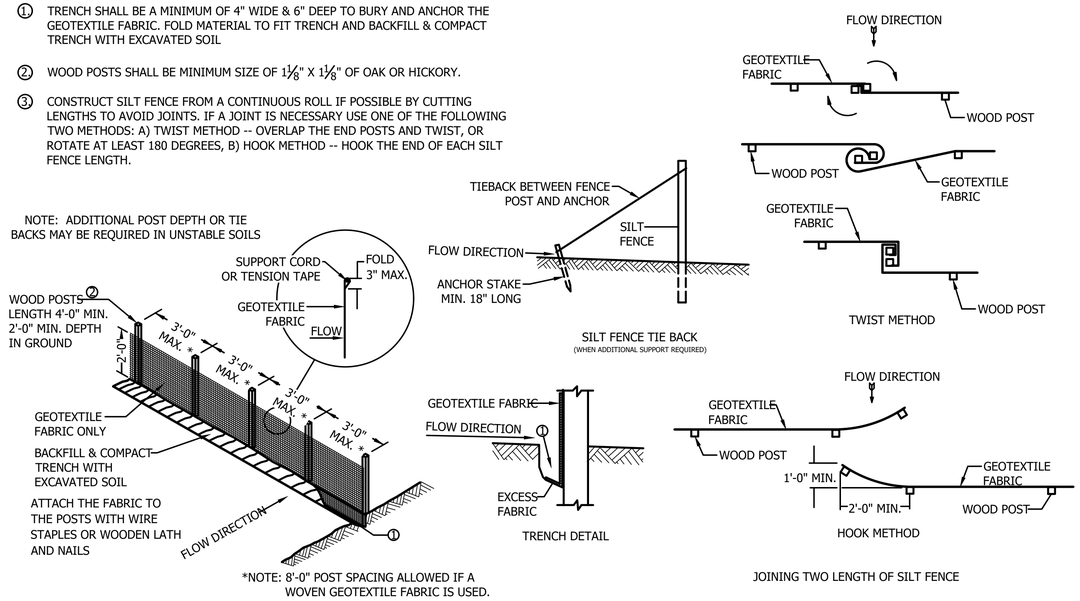
1. Inspect all erosion control measures prior to commencing grading activities. Erosion control measures shall be inspected weekly and within 24 hours of every ½ inch or greater rain event. Maintenance shall be in accordance with the WDNR technical standards and the engineer's plans and specifications and as deemed necessary by regulatory agencies. Keep inspection reports on-site and available upon request. All maintenance and/or repairs shall be completed within 24 hours of notification by the erosion control inspector. The contractor shall maintain an erosion control logbook on site noting inspection date and times, repairs necessary, and repairs made.
2. The contractor shall install and maintain the erosion control measures in accordance with WDNR technical standards and as follows:
   A. Tracking Pad (1057) - Maintenance shall take place by scraping or top-dressing with additional aggregate. A minimum 50-foot-long and 12-inch thick pad consisting of a minimum of 3-inch clear washed stone shall be maintained. The width of the tracking pad shall extend the full distance of the egress point.
   B. Silt Fence (1056) - Sediment /debris/deposits shall be removed when they reach 50% of the height of the silt fence. Removed sediment shall be deposited in a suitable non-wetland or floodplain area and stabilized. Silt fence that is damaged or not performing as designed shall be repaired or replaced immediately.
   C. Inlet protection (1060) - Maintenance shall be conducted to keep inlets functioning without ponding water for prolong periods. Inlet fabric shall be replaced as needed.
   D. Interim Manufactured Perimeter Control (1071) - Sediment /debris/deposits shall be removed when they reach 50% of the height of the Interim Manufactured Perimeter Control product. Removed sediment shall be deposited in a suitable non-wetland or floodplain area and stabilized. Interim Manufactured Perimeter Control that is damaged or not performing as designed shall be repaired or replaced immediately

GENERAL NOTES

① TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL

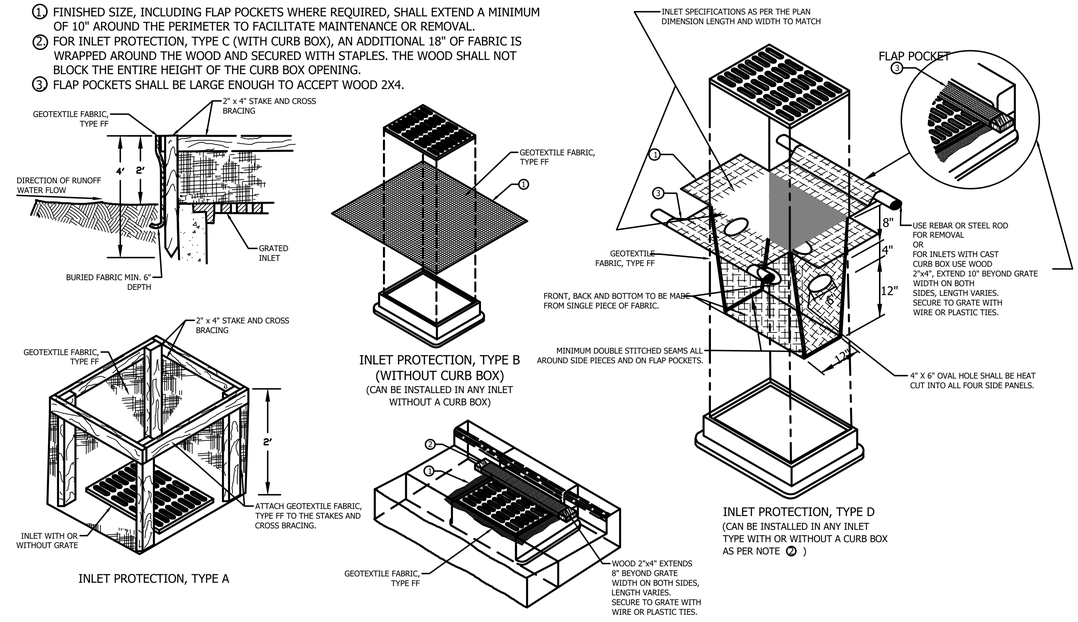
② WOOD POSTS SHALL BE MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

③ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) TWIST METHOD -- OVERLAP THE END POSTS AND TWIST, OR ROTATE AT LEAST 180 DEGREES, B) HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.



1 SILT FENCE
NTS

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



2 INLET PROTECTION
NTS

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Permit/Seal

STATE OF WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SW11

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
EROSION CONTROL DETAILS

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	C1.02

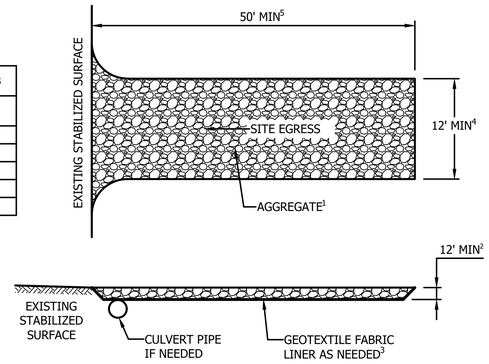
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ORIGINAL SHEET - ARCH D

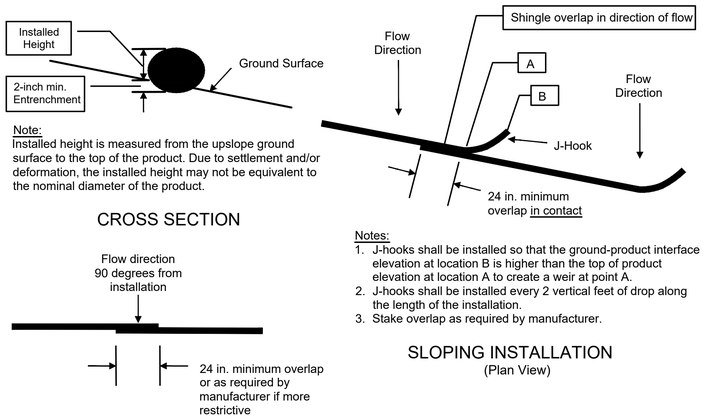
NOTES

1. USE HARD, DURABLE, ANGULAR STONE OR RECYCLED CONCRETE MEETING THE GRADATION IN TABLE 1. WHERE THIS GRADATION IS NOT AVAILABLE, MEET THE GRADATION IN WISCONSIN DEPARTMENT OF TRANSPORTATION (DOT) 2018 STANDARD SPECIFICATIONS, SECTION 312, SELECT CRUSHED MATERIAL.
2. SLOPE THE STONE TRACKING PAD IN A MANNER TO DIRECT RUNOFF TO AN APPROVED TREATMENT PLACE.
3. SELECT FABRIC TYPE BASED ON SOIL CONDITIONS AND VEHICLES LOADING.
4. INSTALL TRACKING PAD ACROSS FULL WIDTH OF THE ACCESS POINT, OR RESTRICT EXISTING TRAFFIC TO A DEDICATED EGRESS LAND A LEAST 12 FEET WIDE ACROSS THE TOP OF THE PAD.
5. IF A 50' PAD LENGTH IS NOT POSSIBLE DUE TO SITE GEOMETRY, INSTALL THE MAXIMUM LENGTH PRACTICABLE AND SUPPLEMENT WITH ADDITIONAL PRACTICES AS NEEDED.

Table 1. Gradation for stone tracking pads	
Sieve Size	Percent by weight passing
3"	100
2-1/2"	90-100
1-1/2"	25-60
3/4"	0-20
3/8"	0-5



2 TRACKING PAD (1057)
NTS



3 INTERIM MANUFACTURED PERIMETER CONTROL - IMPC (1051)
NTS

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Notes

Revision	By	Appd	YYYY.MM.DD
Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C1.01	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
EROSION CONTROL DETAILS

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	C1.03

\\us2545-prsfs01\Workgroup\2021\Temporary\218011653.std.set\Drawings\sheet files\218011653C1.01 2021.03.04 2:55:18 PM

ORIGINAL SHEET - ARCH D

SIGNAGE KEYED NOTES

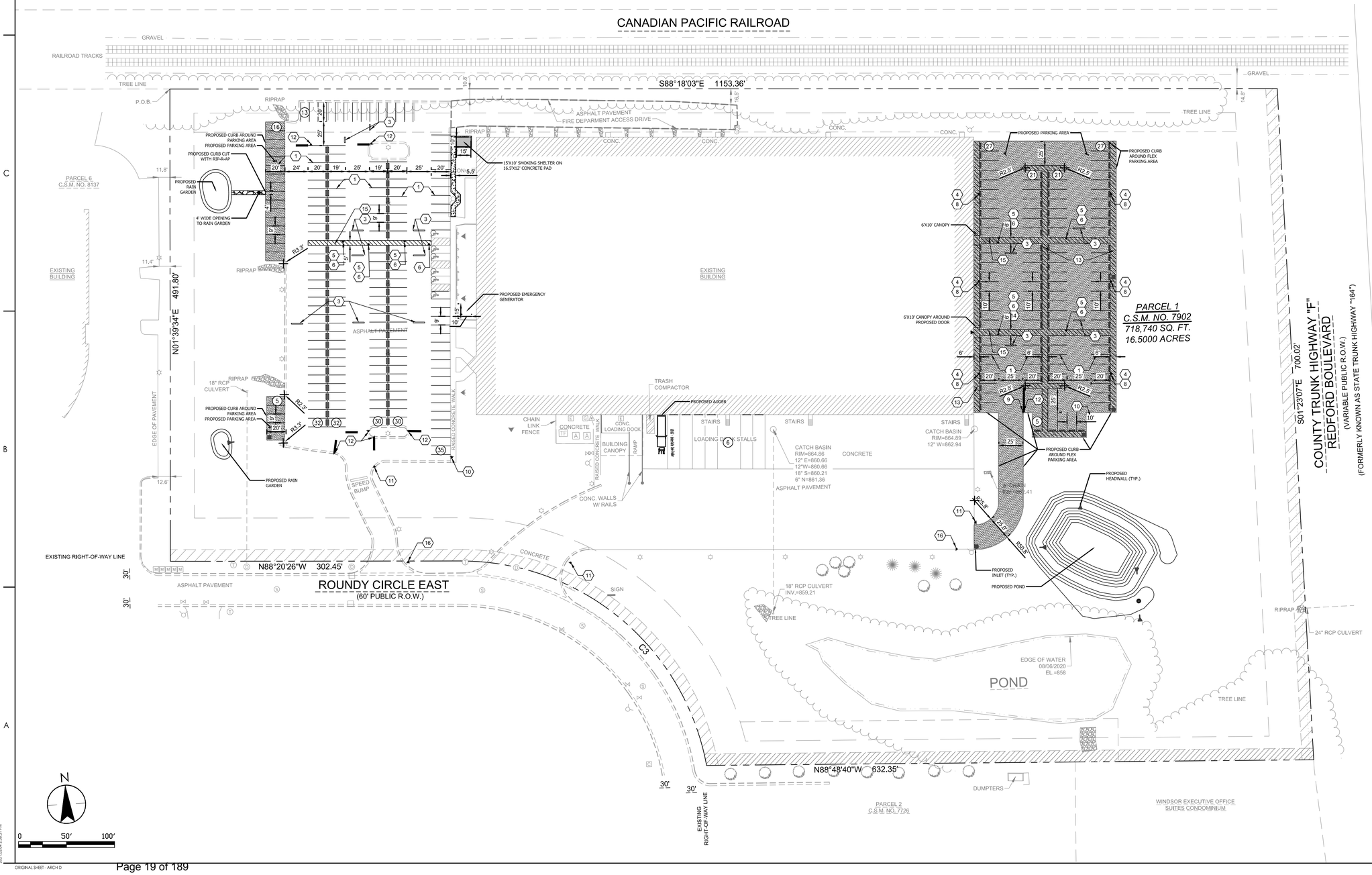
1. INSTALL 4" WIDE YELLOW STRIPE (TYP.)
2. INSTALL PG-20 RAISED CROSSWALK
3. INSTALL PG-16 SPEED BUMP
4. INSTALL S-3 SPEED LIMIT SIGN
5. INSTALL S-3 (MOD) SPEED LIMIT SIGN
6. INSTALL S-5 AND S-5A CROSSWALK SIGN
7. INSTALL S-6 SPEED BUMP SIGN
8. INSTALL S-6 ONE WAY SIGN
9. INSTALL S-2 DO NOT ENTER SIGN
10. INSTALL AS-26 ASSEMBLE AREA SIGN
11. INSTALL AS-53 WAYFINDING SIGN
12. INSTALL S-1 STOP SIGN WITH PG-1 STRIPED STOP BAR
13. INSTALL PG-10 STRIPING
14. INSTALL RADAR SPEED
15. INSTALL CROSSWALK
16. INSTALL NO TRUCK ENTRY SIGN

PARCEL PARKING CALCULATIONS

ASSOCIATE SPACES (INCLUDES ADA)	193
UTR/VAN LOADING	101
TRAILER/TRUCK LOADING	6
TOTAL PARKING SPACES	300

SITE CALCULATIONS

	SQ FT	AC
PARCEL AREA	718,740	16.5
EXISTING IMPERVIOUS AREA	289,303	6.641
EXISTING PERVIOUS AREA	429,437	9.859
PROPOSED IMPERVIOUS AREA	345,033	7.921
PROPOSED PERVIOUS AREA	373,707	8.579
COVERAGE	48.0%	



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File Name: 218011653C2.01	KAL Dwn.	EOR Dsgn.	CB Chkd. 2021.03.04 YYYY.MM.DD

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WISCONSIN
CARL BROBERG E-46307 WAUNAKEE WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SW11

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
SITE PLAN

Project No.
218011653

Scale
AS NOTED

Revision
0 2

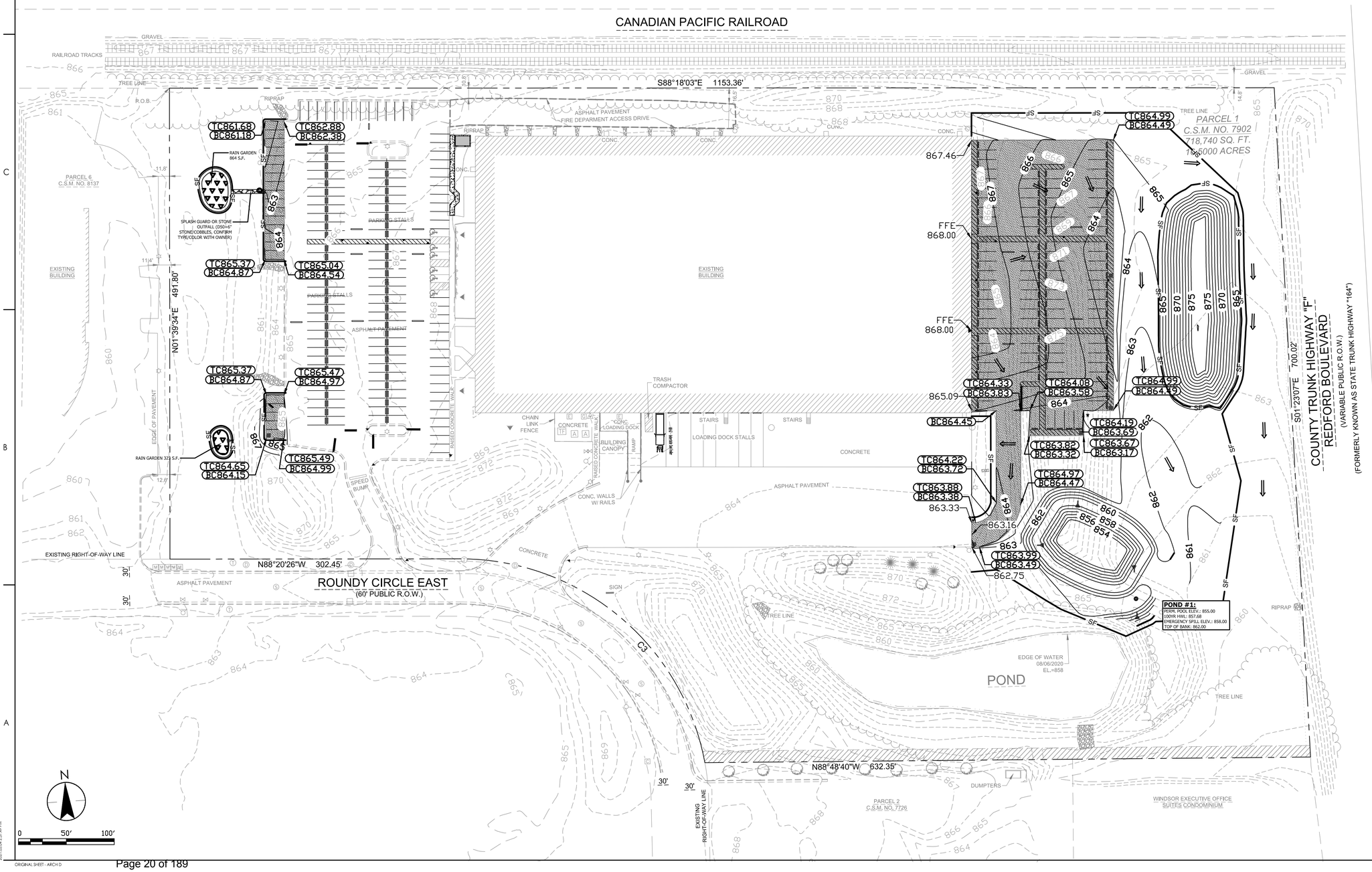
Drawing No.
C2.01

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ORIGINAL SHEET - ARCH D

GRADING NOTES:

1. THE PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO THE WISCONSIN D.O.T. STANDARD SPECIFICATIONS, LOCAL ORDINANCES, SPECIFICATIONS, AND RECOMMENDATIONS IN THE GEOTECHNICAL REPORT.
2. THE CONTRACTOR SHALL MAINTAIN SITE DRAINAGE THROUGHOUT CONSTRUCTION. THIS MAY INCLUDE THE EXCAVATION OF TEMPORARY DITCHES OR PUMPING TO ALLEVIATE WATER PONDING.
3. SILT FENCE AND OTHER EROSION CONTROL FACILITIES MUST BE INSTALLED PRIOR TO CONSTRUCTION OR ANY OTHER LAND DISTURBING ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EROSION CONTROL FACILITIES ONCE THE THREAT OF EROSION HAS PASSED AND WITH THE APPROVAL OF THE GOVERNING AGENCY.
4. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPUTATIONS OF ALL GRADING AND FOR ACTUAL LAND BALANCE, INCLUDING UTILITY TRENCH SPOIL. THE CONTRACTOR SHALL IMPORT OR EXPORT MATERIAL AS NECESSARY TO COMPLETE THE PROJECT.
5. THE SUBGRADE SHALL BE PROOF-ROLLED AND INSPECTED BY THE GEOTECHNICAL ENGINEER BEFORE ANY MATERIAL IS PLACED.
6. ALL FILL SHALL BE CONSIDERED STRUCTURAL FILL AND SHALL BE PLACED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
7. ALL SIDEWALKS SHALL HAVE A MAXIMUM 2.0% CROSS SLOPE. SEE TYPICAL DETAIL.
8. SOIL STOCKPILES SHALL BE LOCATED AWAY FROM CHANNELIZED FLOW AND NO CLOSER THAN 25 FEET FROM ROADS, DITCHES, LAKES, STREAMS, PONDS WETLAND AND/OR ENVIRONMENTAL CORRIDORS.
9. ELEVATIONS ARE FINISHED GRADE UNLESS OTHERWISE NOTED.



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Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C3.01	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG
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WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
GRADING PLAN

Project No.
218011653

Scale
AS NOTED

Revision
0

Drawing No.
C3.01

ORIGINAL SHEET - ARCH D

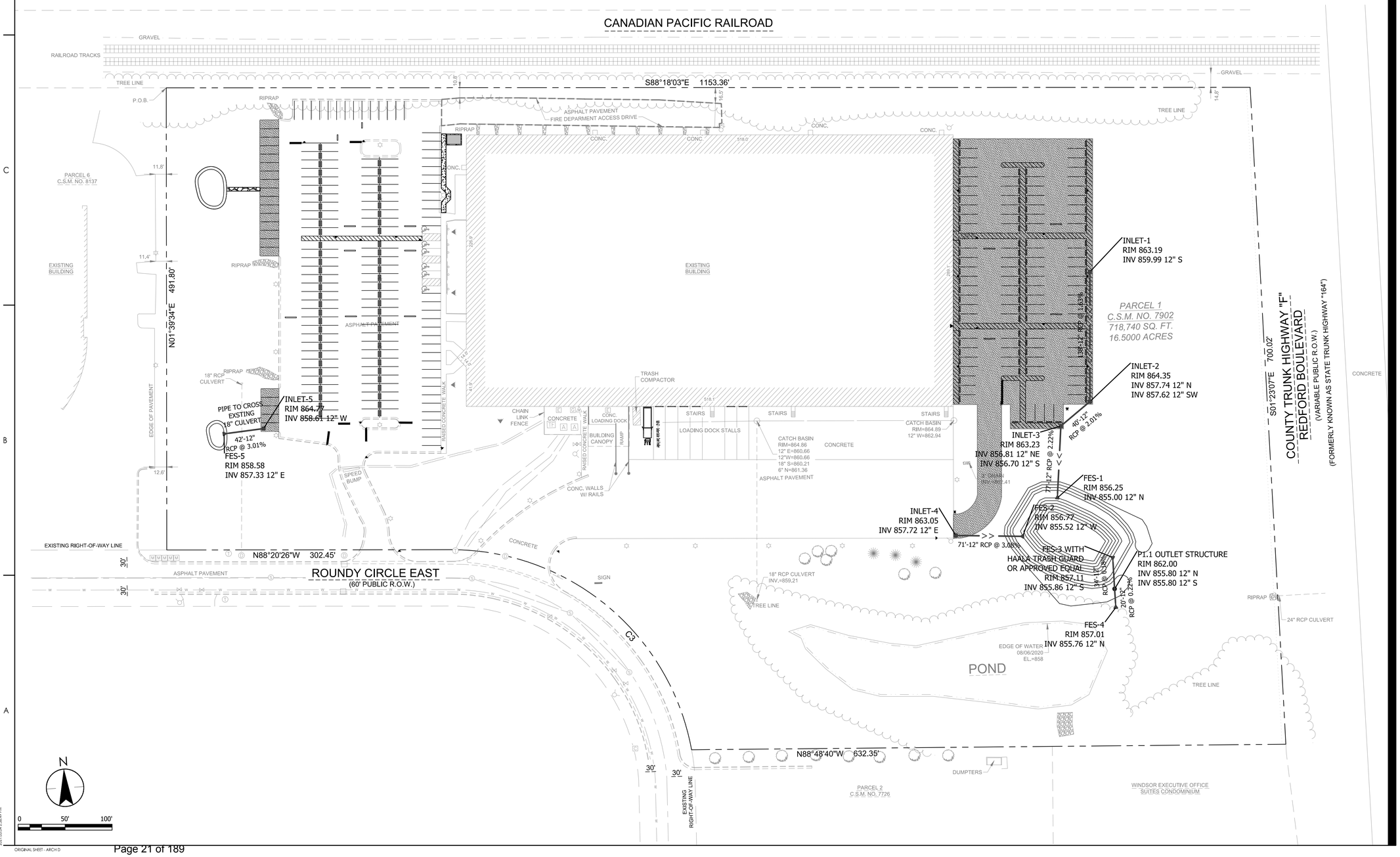
STORM SEWER NOTES

RIM ELEVATIONS ARE GIVEN TO THE FLOW LINE OF CURB FOR INLET GRATES OR THE CENTER OF THE MANHOLE STRUCTURE FOR MANHOLES. PIPE LENGTHS ARE MEASURED TO THE CENTER OF STRUCTURE OR THE END OF PIPE WHERE THERE IS AN ENDWALL.

THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

ALL STORM WERE CONSTRUCTION SHALL BE CONSTRUCTED PER THE CITY OF PEWAUKEE STANDARD SPECIFICATIONS.

1. CONTRACTOR TO MAINTAIN MINIMUM 18" CLEARANCE WHEN WATER MAIN CROSSES ABOVE OR BELOW STORM SEWER.
2. CONTRACTOR TO MAINTAIN MINIMUM 18" CLEARANCE WHEN WATER SERVICE CROSSES ABOVE OR BELOW STORM SEWER.
3. WATERMAIN WITHIN 3 FEET OR LESS OF CLEARANCE SHALL REQUIRE INSULATION PER CITY OF PEWAUKEE TECHNICAL STANDARDS.
4. BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL OR POINT OF CONNECTION AND VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES. IF ANY EXISTING UTILITIES ARE NOT AS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REDESIGN.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING REQUIRED CASTING IS COMPATIBLE WITH SPECIFIED STRUCTURE. IF NOT COMPATIBLE, CONTACT ENGINEER IMMEDIATELY.
6. ALL STORM SEWER AREA DRAINS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL DESIGN-BUILD STORM BUILDING LATERALS AND ASSOCIATED AREA DRAINS.



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Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C5.01	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

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CARL BROBERG
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WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

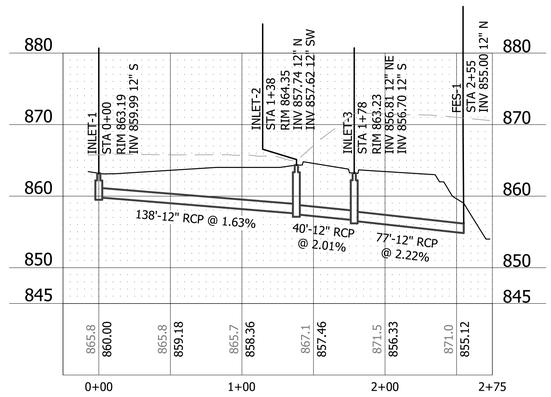
PEWAUKEE, WI 53072

Title
UTILITY/STORM SEWER PLAN

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	**C4.01**

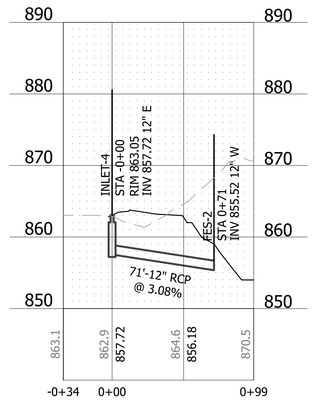
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ALIGNMENT: ALIGNMENT 1
DRAWING SCALE: 30
SCALE: 6
EXAGERATION SCALE: 5.00
DATUM: 845.00
TOP ELEV=880
BOTTOM ELEV=845

SET TOTAL STATION LENGTH TO 14+50 PER SHEET
SET TOTAL DATUM HEIGHT TO 80 FT



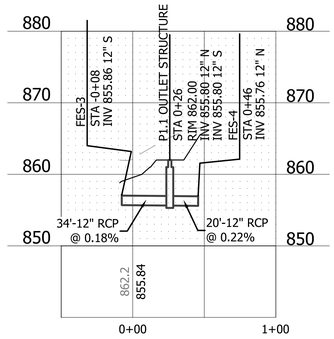
PROFILE VIEW: PROFILE VIEW: INLET 4 - FES 2
ALIGNMENT: ALIGNMENT 2
DRAWING SCALE: 30
SCALE: 6
EXAGERATION SCALE: 5.00
DATUM: 850.00
TOP ELEV=890
BOTTOM ELEV=850

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SET TOTAL DATUM HEIGHT TO 80 FT



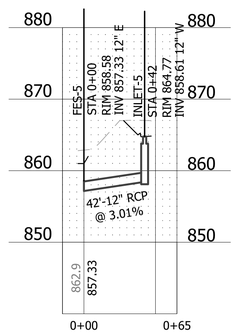
PROFILE VIEW: FES 3 - P1.1 OUTLET STRUCTURE - FES 4
ALIGNMENT: ALIGNMENT 3
DRAWING SCALE: 30
SCALE: 6
EXAGERATION SCALE: 5.00
DATUM: 850.00
TOP ELEV=880
BOTTOM ELEV=850

SET TOTAL STATION LENGTH TO 14+50 PER SHEET
SET TOTAL DATUM HEIGHT TO 80 FT



PROFILE VIEW: INLET 5 - FES 5
ALIGNMENT: ALIGNMENT 4
DRAWING SCALE: 30
SCALE: 6
EXAGERATION SCALE: 5.00
DATUM: 850.00
TOP ELEV=880
BOTTOM ELEV=850

SET TOTAL STATION LENGTH TO 14+50 PER SHEET
SET TOTAL DATUM HEIGHT TO 80 FT





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ORIGINAL SHEET - ARCH D

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Notes

Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C5.01	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

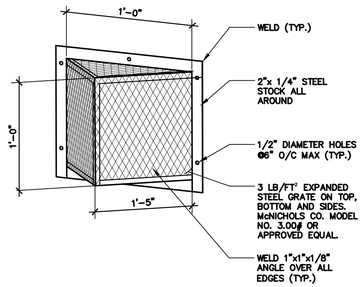
PEWAUKEE, WI 53072

Title
STORM SEWER PROFILES

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	C4.02

PROPOSED STORMWATER PONDS - SUMMARY

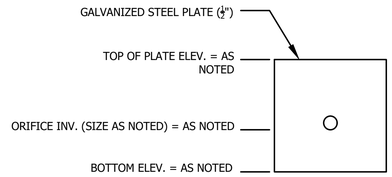
POND #	PROPOSED STORAGE (AC-FT)	OUTLET SIZE (INCHES DIA.)	OUTLET INV.	ORIFICE SIZE (INCHES DIA.)	ORIFICE INV.	TOP OF WEIR PLATE	EMERGENCY-SPILL (30' CREST LENGTH) ELEV.	TOP OF BANK ELEV.	PERMANENT POOL ELEV.	BOTTOM OF POND	2YR HWL	2YR RELEASE RATE (CFS)	10YR HWL	10YR RELEASE RATE (CFS)	100YR HWL	100YR RELEASE RATE (CFS)
POND_1	0.591	24	855.00	4	855.00	856.00	858.00	862.00	855.00	850.00	856.16	0.8700	856.6900	4.3100	857.6800	14.8900



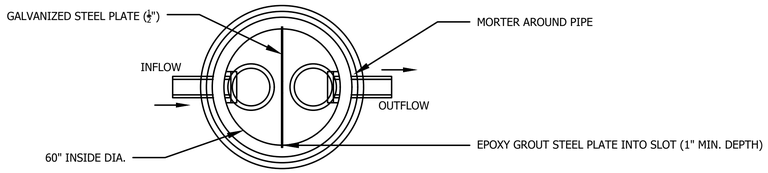
NOTES FOR TRASH RACK

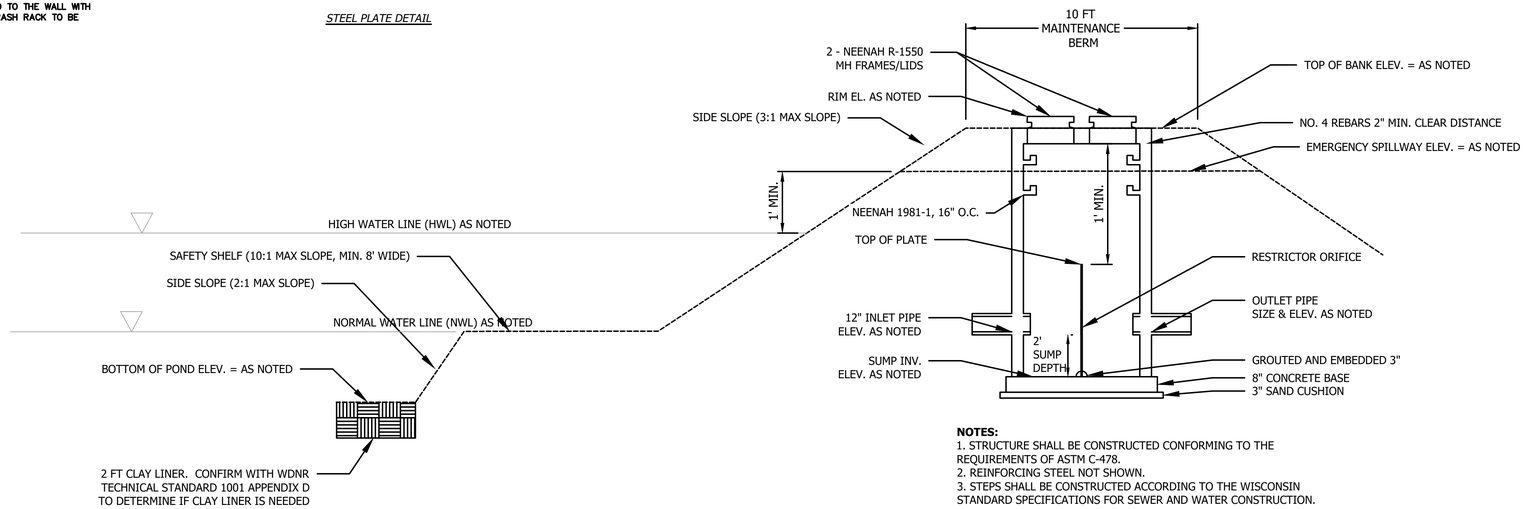
1. TRASH RACK TO BE CENTERED OVER OPENING
2. STEEL TO CONFORM TO ASTM A-36
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK



STEEL PLATE DETAIL



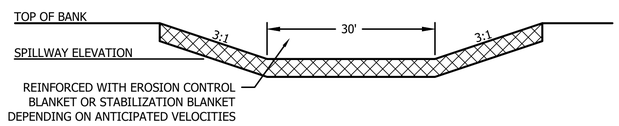


NOTES:
1. STRUCTURE SHALL BE CONSTRUCTED CONFORMING TO THE REQUIREMENTS OF ASTM C-478.
2. REINFORCING STEEL NOT SHOWN.
3. STEPS SHALL BE CONSTRUCTED ACCORDING TO THE WISCONSIN STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION.

TYPICAL POND OUTLET STRUCTURE

NOT TO SCALE

1



EMERGENCY SPILLWAY

NOT TO SCALE

2

\\US2545-pcfs01\Workgroup\2207\Temporary\218011653.sw1\Drawings\Sheet Files\218011653_pr_hydrology nov 2020 2021.03.04 2:41:02 PM

ORIGINAL SHEET - ARCH D

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Notes

Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD
File Name: 218011653_PR_HYDROLOGY NOV 2020	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

STATE OF WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

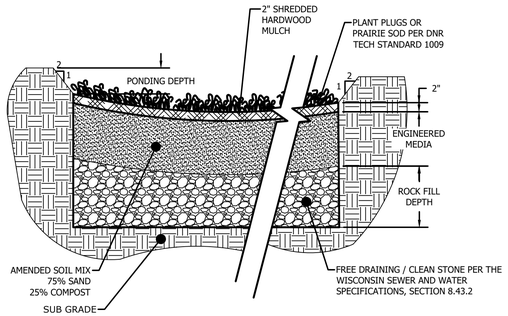
Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
PROPOSED POND SUMMARY

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	**C4.03**



RG ID #	PONDING DEPTH (IN)	ENGINEERED MEDIA DEPTH (FT)	ROCK FILL DEPTH (FT)	TOTAL DEPTH TO WEIR (FT)	TOTAL DEPTH OF RAIN GARDEN (FT)	MINIMUM BOTTOM AREA (SF)	MINIMUM TOP AREA (SF)
1	8	1	0.83	1.33	2.83	864	1,215
2	8	1	0.83	1.33	2.83	323	553

1 RAIN GARDEN DETAIL
NTS

RAIN GARDEN 1 - SIZING CALCULATIONS

REFERENCE: WDNR CONSERVATION PRACTICE STANDARD - RAIN GARDEN 1009

AREA = DRAINAGE AREA X SIZING FACTOR (TABLE 2)

TABLE 2:
RAIN GARDEN PONDING DEPTH: 8"
RUNOFF VOLUME CONTROL GOAL: 100%
SOIL TYPE: CLAY LOAM
SIZING FACTOR: 0.25

DRAINAGE AREA: ROOF AREA

AREA = 2,903 SF X 0.25 = 726 SF

NOTE: DESIGN PONDING AREA IS EQUAL TO THE BOTTOM OF THE RAIN GARDEN AND DOES NOT INCLUDE THE SIDE SLOPES

RAIN GARDEN 2 - SIZING CALCULATIONS

REFERENCE: WDNR CONSERVATION PRACTICE STANDARD - RAIN GARDEN 1009

AREA = DRAINAGE AREA X SIZING FACTOR (TABLE 2)

TABLE 2:
RAIN GARDEN PONDING DEPTH: 8"
RUNOFF VOLUME CONTROL GOAL: 100%
SOIL TYPE: CLAY LOAM
SIZING FACTOR: 0.25

DRAINAGE AREA: ROOF AREA

AREA = 886 SF X 0.25 = 222 SF

NOTE: DESIGN PONDING AREA IS EQUAL TO THE BOTTOM OF THE RAIN GARDEN AND DOES NOT INCLUDE THE SIDE SLOPES

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	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG E-46307 WAUNAKEE WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
PROPOSED RAIN GARDEN SUMMARY

Project No.
218011653

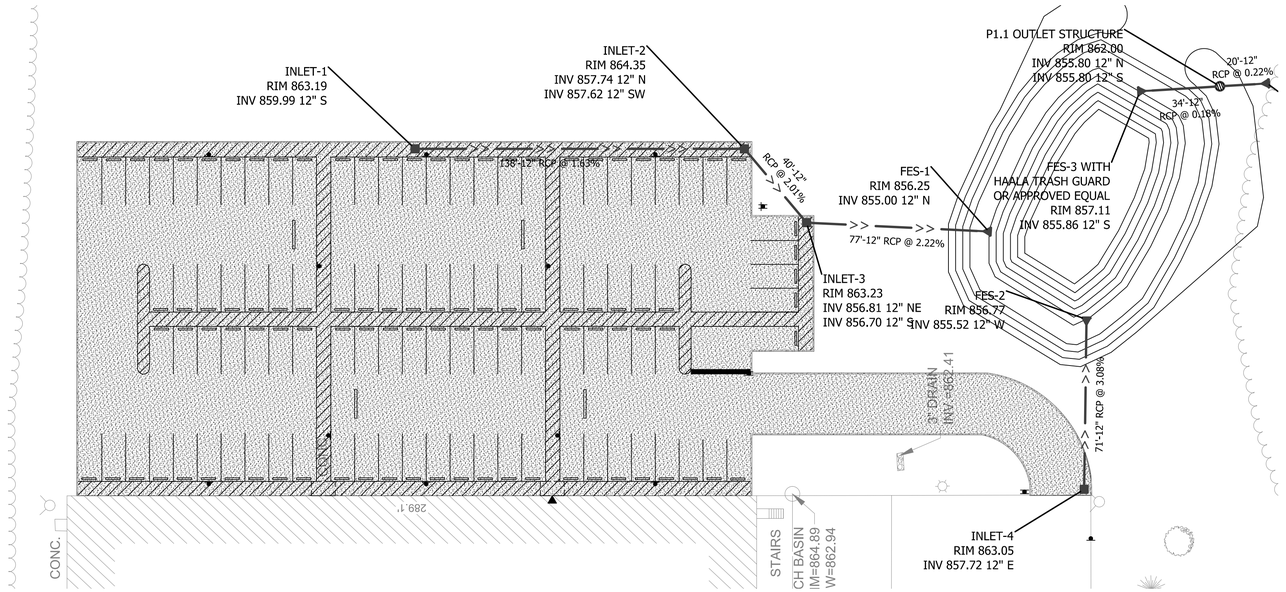
Scale
AS NOTED

Revision
0

Drawing No.
C4.04

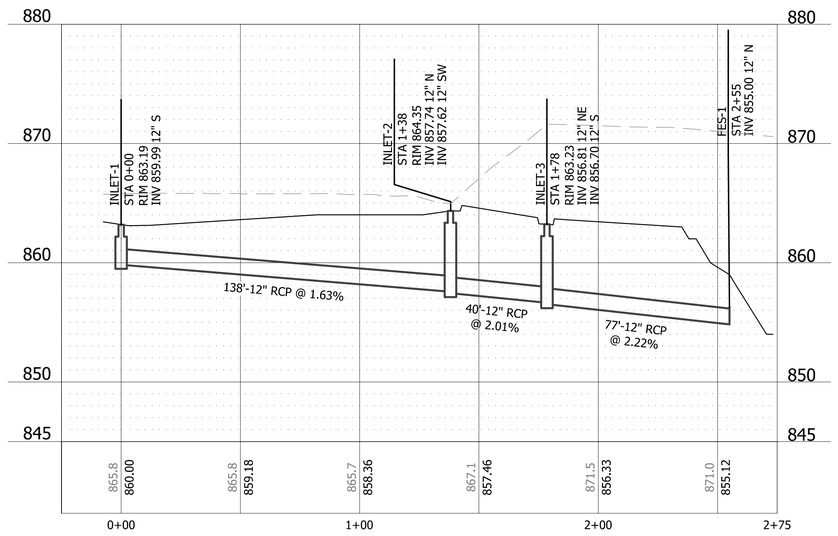
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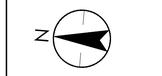
ORIGINAL SHEET - ARCH D



PROFILE VIEW: PROFILE VIEW: INLET 1 - INLET 2 - INLET 3 - FES 3
ALIGNMENT: ALIGNMENT 1
DRAWING SCALE: 30
SCALE: 6
EXAGERATION SCALE: 5.00
DATUM: 845.00
TOP ELEV=880
BOTTOM ELEV=845

SET TOTAL STATION LENGTH TO 14+50 PER SHEET
SET TOTAL DATUM HEIGHT TO 80 FT





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ORIGINAL SHEET - ARCH D

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Notes

Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C4.01	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG E-46307 WAUNAKEE WI
PROFESSIONAL ENGINEER

Client/Project Logo

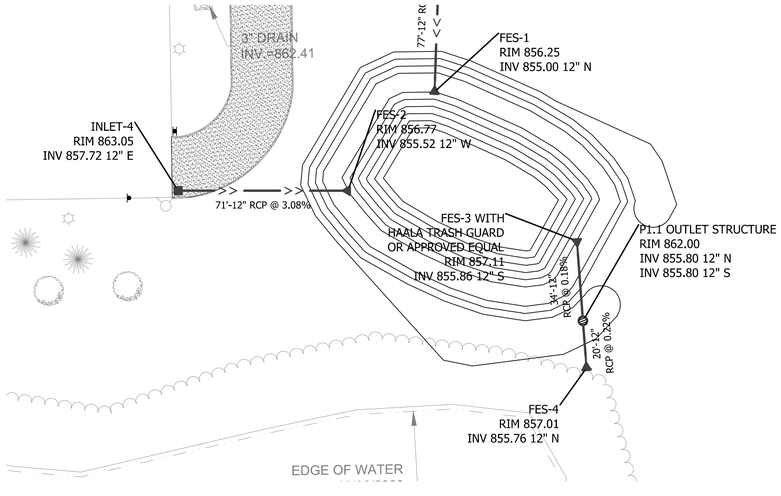
Client/Project
SSD-SWI1

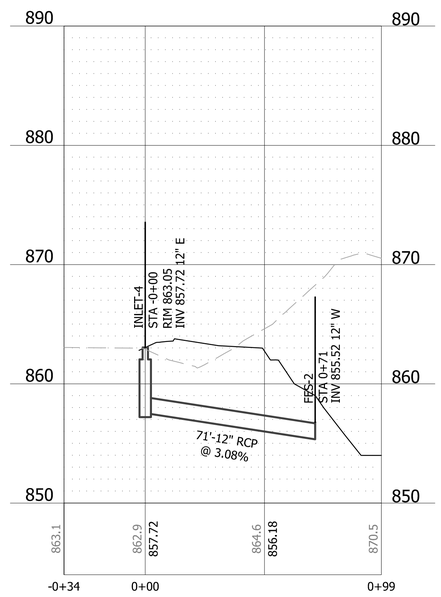
W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
STORM SEWER PLAN (ALIGNMENT 1)

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	C5.01





PROFILE VIEW: PROFILE VIEW: INLET 4 - FES 2
ALIGNMENT: ALIGNMENT 2
DRAWING SCALE: 30
SCALE: 6
EXAGERATION SCALE: 5.00
DATUM: 850.00
TOP ELEV=890
BOTTOM ELEV=850

SET TOTAL STATION LENGTH TO 14+50 PER SHEET
SET TOTAL DATUM HEIGHT TO 80 FT

N

0 30' 60'

ORIGINAL SHEET - ARCH D

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Client/Project
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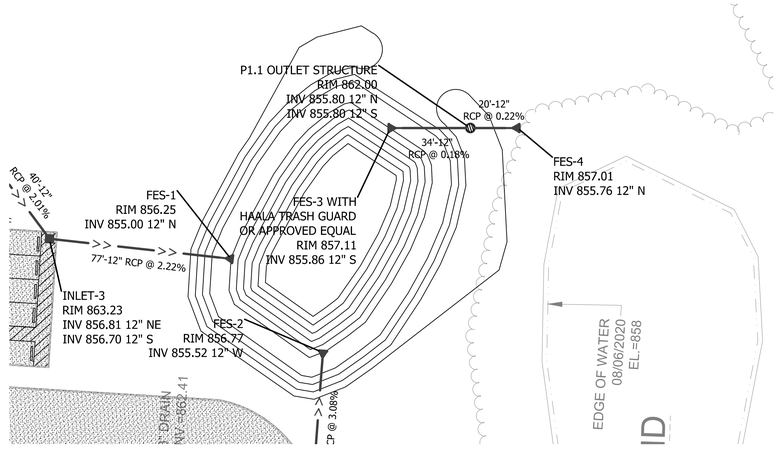
W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
STORM SEWER PLAN (ALIGNMENT 2)

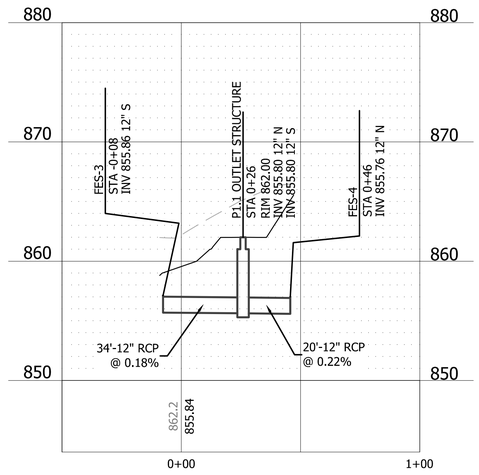
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Revision	Drawing No.
0	C5.02

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PROFILE VIEW: FES 3 - P1.1 OUTLET STRUCTURE - FES 4
ALIGNMENT: ALIGNMENT 3
DRAWING SCALE: 30
SCALE: 6
EXAGERATION SCALE: 5.00
DATUM: 850.00
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BOTTOM ELEV=850

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SET TOTAL DATUM HEIGHT TO 80 FT



N

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ORIGINAL SHEET - ARCH D

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	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

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Client/Project Logo

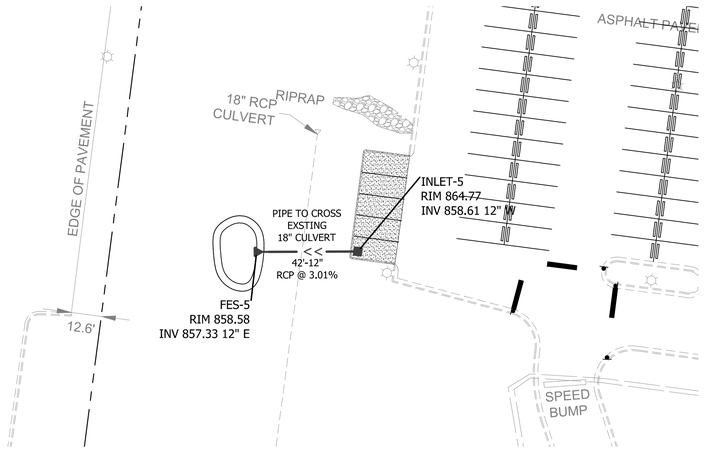
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SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

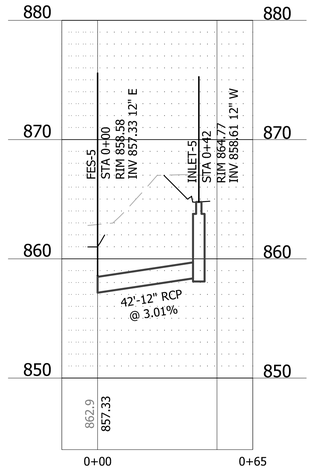
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Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	C5.03



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SCALE: 6
EXAGERATION SCALE: 5.00
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SET TOTAL DATUM HEIGHT TO 80 FT





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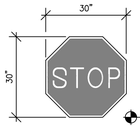
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W232 N2950 ROUNDYS CIRCLE EAST

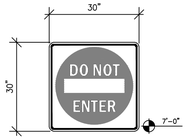
PEWAUKEE, WI 53072

Title
STORM SEWER PLAN (ALIGNMENT 4)

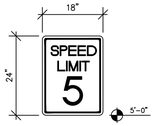
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218011653	AS NOTED
Revision	Drawing No.
0	C5.04



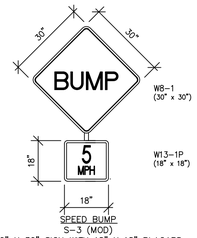
STOP
S-1
30" X 30" (SINGLE LANE)
36" X 36" (MULTIPLE LANE)
MUTCD: R1-1
USE AT INTERSECTIONS IN PARKING LOT AND DRIVE AISLES.
POST AND PANEL MOUNT
NO SIGNS SHALL BE MOUNTED TO THE BACK OF A STOP SIGN THAT EXTENDS BEYOND THE EDGES OF THE STOP SIGN.



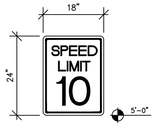
DO NOT ENTER
S-2
30" X 30"
MUTCD: R5-1
USE TO PROHIBIT TRAVEL IN THE WRONG DIRECTION.
TYPICAL AT ONE-WAY ROADS.
POST AND PANEL MOUNT.
DO NOT ENTER SIGN SHALL NOT BE MOUNTED TO THE BACK OF A STOP SIGN



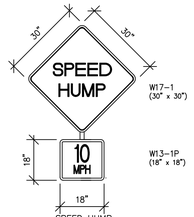
SPEED LIMIT
S-3
24" X 30" (SINGLE LANE)
30" X 36" (MULTIPLE LANE)
MUTCD: R2-1
DOT STANDARD SPEED LIMIT 5 MPH SIGN
USE TO CONTROL SPEED ALONG DRIVE AISLES WITHOUT ADJACENT PARKING SPOTS.



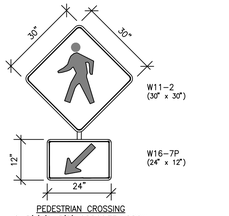
SPEED BUMP
S-3 (MOD)
30" X 30" SIGN WITH 18" X 18" PLACARD
MUTCD: W8-1 SIGN WITH W13-1P (5MPH) PLACARD
USE AT SPEED BUMPS
POST AND PANEL MOUNT



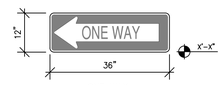
SPEED LIMIT
S-4
24" X 30" (SINGLE LANE)
30" X 36" (MULTIPLE LANE)
MUTCD: R2-1-10
DOT STANDARD SPEED LIMIT 10 MPH SIGN.
USE TO CONTROL SPEED ALONG DRIVE AISLES WITHOUT ADJACENT PARKING SPOTS.



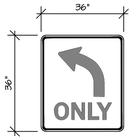
SPEED HUMP
S-4(MOD)
30" X 30" SIGN WITH 18" X 18" PLACARD
MUTCD: W17 SIGN WITH W13-1P (10 MPH) PLACARD
DOT STANDARD SPEED HUMP SIGN, WITH 10 MPH SIGN SUPPLEMENTAL PLACARD
USE AT SPEED BUMPS
POST AND PANEL MOUNT



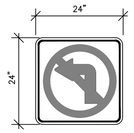
PEDESTRIAN CROSSING
S-5(L)/S-5(R) OPPOSITE ARROW
30" X 30" SIGN WITH 12" X 24" PLACARD
MUTCD W11-2 SIGN WITH W16-7PL PLACARD / W16-7PR PLACARD OPPOSITE)
DOT STANDARD PEDESTRIAN CROSSING SIGN WITH ARROW.
USE AT MID-BLOCK PEDESTRIAN CROSSINGS.
POST AND PANEL MOUNT
LED LIGHTS OR RECTANGULAR RAPID FLASH BEACON MAY BE ADDED AT HIGH TRAFFIC INTERSECTIONS



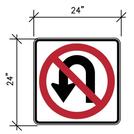
ONE WAY
S-7(R)/S-7(L) OPPOSITE ARROW
12" X 36"
MUTCD: R6-1L
DOT STANDARD VERTICALLY ORIENTED ONE WAY LEFT ARROW SIGN.
USE ALONG ONE WAY DRIVE AISLES.
POST AND PANEL MOUNT.



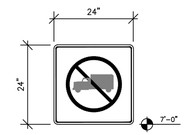
LEFT ONLY
S-9(L)/S-9(R) OPPOSITE ARROW
30" X 36"
MUTCD: (R3-5L)
DOT STANDARD LEFT TURN ONLY SIGN
POST AND PANEL MOUNT
PER MUTCD SECTION 2B.20, THE MANDATORY MOVEMENT LANE CONTROL (R3-5) SIGN SHALL INDICATE ONLY THE SINGLE VEHICLE MOVEMENT THAT IS REQUIRED FROM THE LANE. THESE SIGNS SHOULD ONLY BE USED AT INTERSECTIONS WHERE MOVEMENT IS RESTRICTED BY THAT LANE, NOT ALONG ONE WAY DRIVE AISLES.



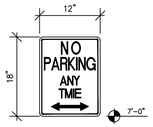
NO LEFT TURN
S-11(L)/S-11(R) OPPOSITE ARROW
24" X 24"
MUTCD: R3-2
DOT STANDARD RIGHT "NO LEFT TURN" SIGN.
USE TO PROHIBIT TURNING TRAFFIC.
POST AND PANEL MOUNT
PER MUTCD SECTION 2B.18-11, WHERE ONE WAY SIGNS ARE USED, NO LEFT TURN AND NO RIGHT TURN SIGNS MAY BE OMITTED. IN MOST CASES, THIS SIGN IS NOT NECESSARY, SINCE ONE WAY SIGNS ARE USED TO DEPICT FLOW OF TRAFFIC.



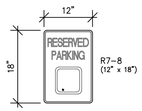
NO U TURN
S-12
24" X 24"
MUTCD: R3-4
DOT STANDARD RIGHT "NO U TURN" SIGN.
USE TO PROHIBIT TURNING TRAFFIC.
POST AND PANEL MOUNT



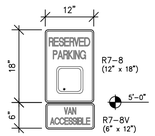
NO TRUCK
S-13
24" X 24"
MUTCD: R5-2
DOT STANDARD "TRUCK ACCESS" SIGN.
USE TO PROHIBIT TRUCK TRAFFIC.
POST AND PANEL MOUNT.



NO PARKING ANY TIME
S-15
12" X 18"
MUTCD: R8-3
DOT STANDARD "NO PARKING" SIGN.
USE TO PROHIBIT PARKING.
POST AND PANEL MOUNT



ACCESSIBLE PARKING
S-15
12" X 18"
MUTCD: R7-8
DOT STANDARD VERTICALLY ORIENTED ACCESSIBLE PARKING SIGN.
USE TO DEMARCATE ACCESSIBLE PARKING SPACES.
ONE SIGN PER SPACE OR AS REQUIRED BY LOCAL AUTHORITY
POST AND PANEL MOUNT
COORDINATE WITH LOCAL AHJ FOR LOCAL GRAPHIC EQUAL.



VAN ACCESSIBLE PARKING
S-16
12" X 18" WITH 12" X 6" PLACARD
MUTCD: R7-8P
DOT STANDARD VERTICALLY ORIENTED VAN ACCESSIBLE PARKING SIGN.
USE TO DEMARCATE VAN ACCESSIBLE PARKING SPACES.
ONE SIGN PER SPACE OR AS REQUIRED BY LOCAL AUTHORITY
POST AND PANEL MOUNT
COORDINATE WITH LOCAL AHJ FOR LOCAL GRAPHIC EQUAL.



NO TRESPASSING
S-17
18" X 12"
DOT STANDARD NO TRESPASSING SIGN.
USE TO PROHIBIT ACCESS.
MOUNT ON PERIMETER FENCING AT 200 FEET MAX SPACING AND ON ENTRY GATE
POST AND PANEL MOUNT WHERE APPROPRIATE

NOTES:
1. ADDITIONAL MUTCD COMPLIANT SIGNAGE MAY BE ADDED ON AN INDIVIDUAL SITE BASIS.

SIGNAGE NOTES:
1. REFER TO SIGNAGE AND STRIPING PLAN FOR LOCATIONS OF SIGNS AND PAVEMENT MARKINGS.
2. ALL SIGNAGE, STRIPING, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. ALL STRIPING SHALL BE LONG LIFE EPOXY RESIN AND 4" WIDE UNLESS OTHERWISE NOTED. ALL PAVEMENT GRAPHICS SHALL BE HOT-APPLIED THERMOPLASTIC (REFLECTIVE)
4. COLOR SHALL BE WHITE ON ASPHALT AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED.
5. ASPHALT SPEED HUMPS AND SPEED BUMPS SHALL BE USED IN COLDER SLIMATES WHERE SNOW REMOVAL EQUIPMENT IS INTENDED TO BE USED. RUBBER SPEED HUMPS AND SPEED BUMPS MAY BE USED IN WARMER CLIMATES OR REGIONS WHERE CONCRETE PAVEMENT IS PREVALENT.
6. ALL PROPOSED SIGNAGE AND STRIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE TENANT FULFILLMENT WORLDWIDE REAL ESTATE SIGNAGE STANDARDS REVISION 16 DATED QUARTER 2, 2019.
7. FINAL QUANTITIES SHALL BE COORDINATED AND VERIFIED IN FIELD.
8. ADDITIONAL SIGNAGE NOT SHOWN ON GRAPHICS PLAN (E.G. FIRE LANES) MAY BE REQUIRED PER LOCAL CODE AND/OR AHJ SUB-CONTRACTOR SHALL COORDINATE WITH LOCAL AHJ AND PROVIDE AS REQUIRED.
9. MOUNT SIGNAGE ACCORDING TO LOCAL CODES.
10. TYPICAL SIGN FONT IS SET IN AERIAL.

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	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

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WAUNAKEE
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Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

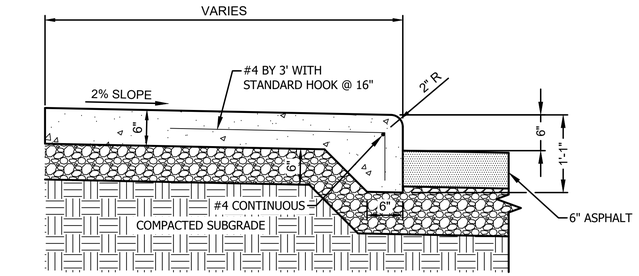
PEWAUKEE, WI 53072

Title
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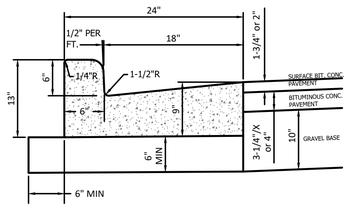
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218011653	AS NOTED
Revision	Drawing No.
0	C8.01

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ORIGINAL SHEET - ARCH D

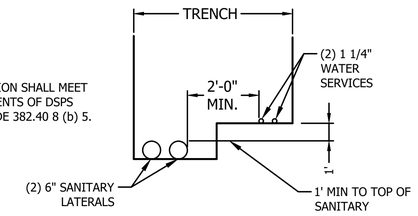


1 6" WALK WHEN NOT FLUSH WITH ASPHALT
NTS

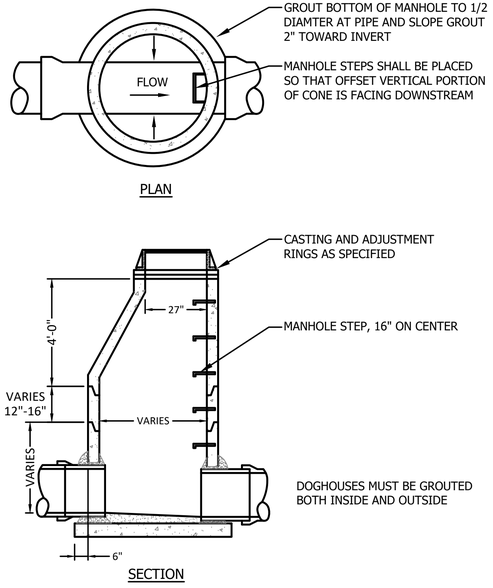


2 30-INCH TYPICAL CURB AT ISLAND (FIGURE F)
NTS

INSTALLATION SHALL MEET REQUIREMENTS OF DSPS ADMIN CODE 382.40 8 (b) 5.



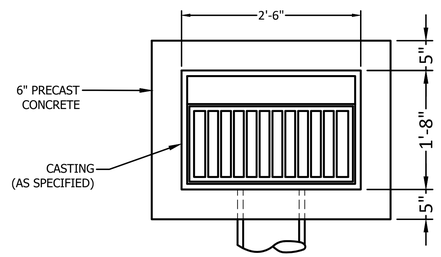
3 SHARED SERVICES SECTION
NTS

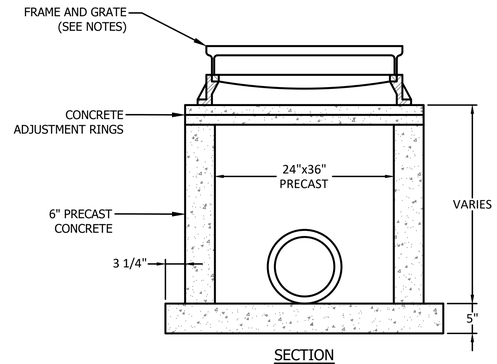


4 TYPICAL STORM MANHOLE
NTS

INLET FRAME AND GRATE NOTE:

- FOR STRAIGHT FACE CURB: NEENAH R-3228-K TYPE C GRATE FOR 24"x30" STRUCTURE; R-3067 OR R3246 FOR 24"x36" STRUCTURE (FRAME WILL BE 6 INCHES SHORTER THAN CONCRETE FLANGE
- FOR ROLL FACE CURB: NEENAH R-3501-R OR R-3067 WITH MOUNTABLE CURB BOX TYPE C GRATE FOR 24"x30" OR 24"x36" STRUCTURE





5 TYPICAL INLET
NTS

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Notes

Revision	By	Appd	YYYY.MM.DD
Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C8.01	KAL Dwn.	EOR Dsgn.	C8 Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
CONSTRUCTION DETAILS

Project No.
218011653

Scale
AS NOTED

Revision
0

Drawing No.
C8.02

\\ca0245-pwfs01\workgroup\2021\temporary\218011653.tsd swi1\drawings\sheet files\218011653c8.01
2021.03.04 3:19:56 PM

ORIGINAL SHEET - ARCH D

METAL APRON ENDWALLS

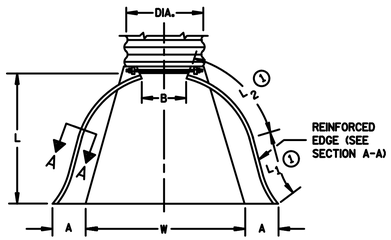
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L_1 ①	L_2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29⅝	42	2½ to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75⅝	84	2½ to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85½	102	2¼ to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1½ to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1½ to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1½ to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1½ to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

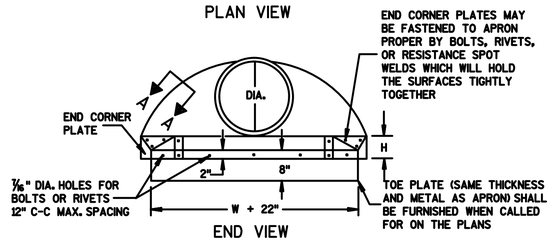
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48⅜	72⅞	24	2	3 to 1
15	2¼	6	27	46	73	30	2¼	3 to 1
18	2½	9	27	46	73	36	2½	3 to 1
21	2¾	9	36	37½	73½	42	2¾	3 to 1
24	3	9½	43½	30	73½	48	3	3 to 1
27	3¼	10½	49½	24	73½	54	3¼	3 to 1
30	3½	12	54	19¾	73½	60	3½	3 to 1
36	4	15	63	34¼	97¼	72	4	3 to 1
42	4½	21	63	35	98	78	4½	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5½	27	65	* 33¼-35 **	* 98¼- 100 **	90	5½	2⅔ to 1
60	6	* 30-35 **	60	39	99	96	5	2 to 1
66	6½	* 24-30 **	* 72-78 **	* 21-27 **	99	102	5½	2 to 1
72	7	* 24-36 **	78	21	99	108	6	2 to 1
78	7½	* 24-36 **	78	21	99	114	6½	2 to 1
84	8	36	90½	21	111½	120	6½	1½ to 1
90	8½	41	87½	24	111½	132	6½	1½ to 1

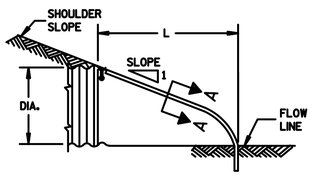
*MINIMUM
**MAXIMUM



PLAN VIEW

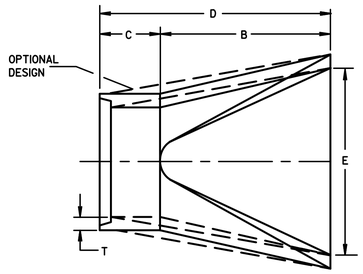


END VIEW

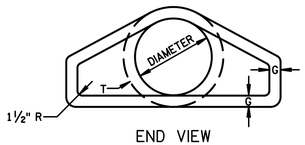


SIDE ELEVATION

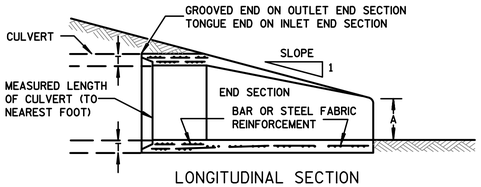
METAL ENDWALLS



PLAN

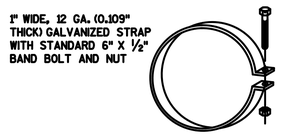


END VIEW



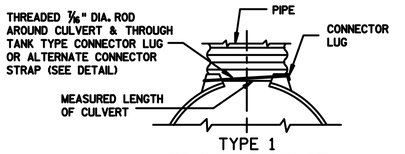
LONGITUDINAL SECTION

CONCRETE ENDWALLS

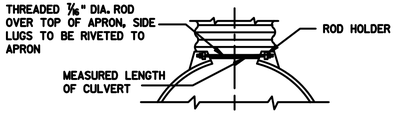


ALTERNATE FOR TYPE 1 CONNECTION

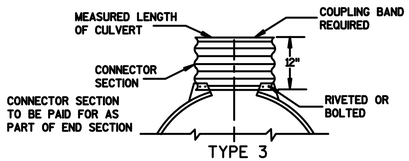
END SECTION CONNECTOR STRAP



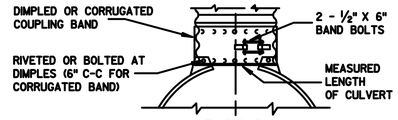
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

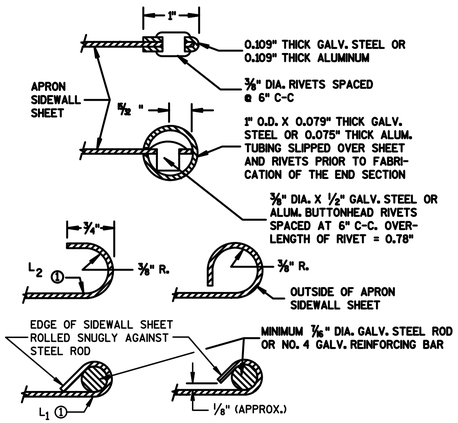
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

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Notes

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Issued	By	Appd	YYYY.MM.DD
File Name: 218011653C8.01	KAL Dwn.	EOR Dsgn.	C8 Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
CONSTRUCTION DETAILS

Project No.
218011653

Scale
AS NOTED

Revision
0

Drawing No.
C8.03

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ORIGINAL SHEET - ARCH D

EXISTING WATERSHED SUMMARY				
SUBCATCHMENT	TOTAL DRAINAGE AREA (SF)	CURVE NUMBER	TIME OF CONCENTRATION (MIN.)	EXISTING OUTFALL
1	234,025	72	21.5	WETLAND
2	78,802	78	24	SWALE
3	2,903	70	6	PUBLIC SEWER
4	886	70	6	PUBLIC SEWER

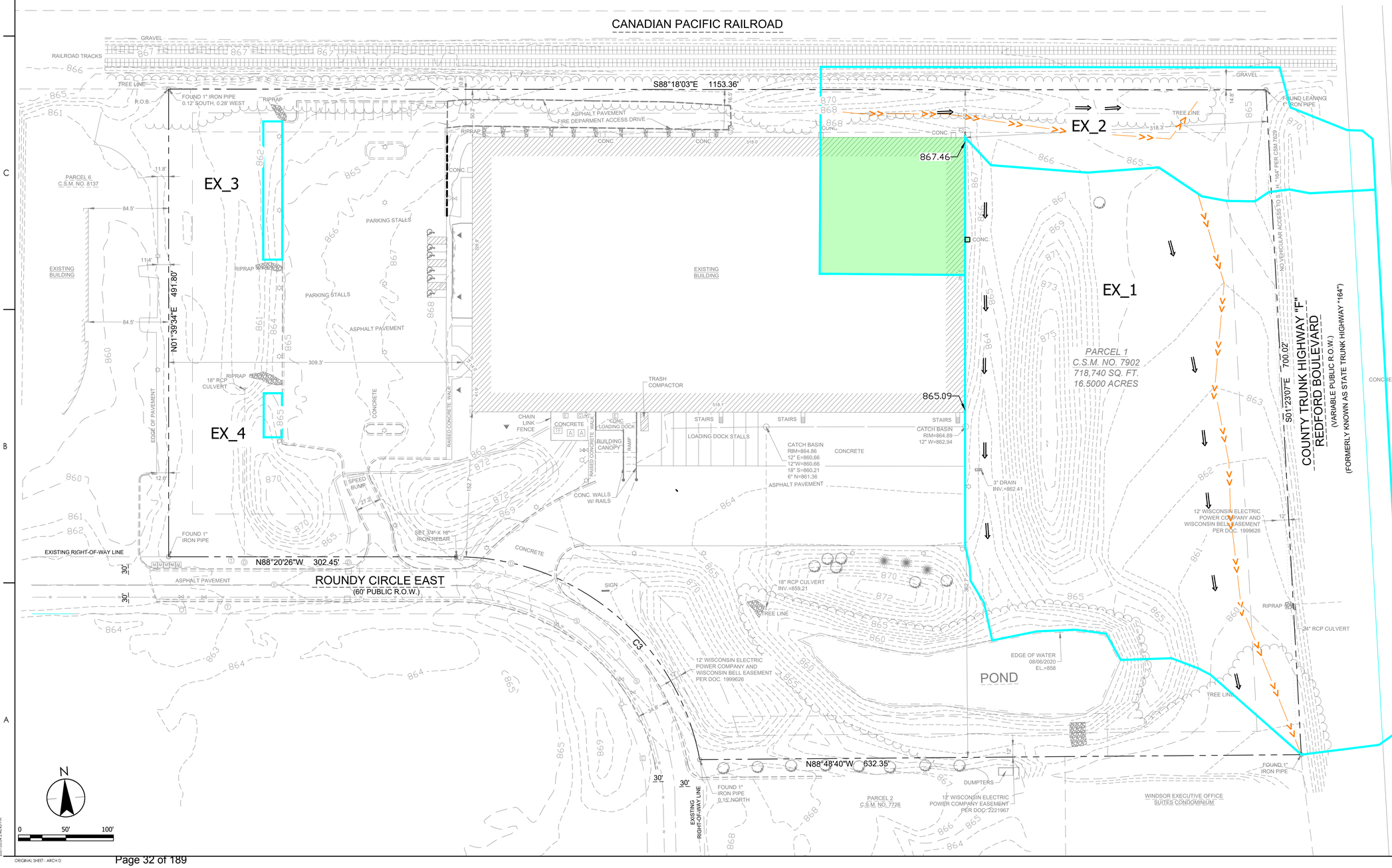
EXISTING RELEASE RATE SUMMARY	
STORM EVENT	TOTAL SITE RELEASE RATE (CFS)
1YR-24HR	3.44
2YR-24HR	4.80
10YR-24HR	10.46
100YR-24HR	24.78

EXISTING IMPERVIOUS AREA

EXISTING DRAINAGE ARROW

EXISTING TIME OF CONCENTRATION ROUTE

EXISTING SUB-WATERSHED BOUNDARIES



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Notes

Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD

File Name: 218011653_EX_HYDROLOGY JAN 2021	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

Permit/Seal

WISCONSIN PROFESSIONAL ENGINEER
CARL BROBERG
E-46307
WAUNAKEE
WI

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
EXISTING HYDROLOGY

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	EX.HYD

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ORIGINAL SHEET - ARCH D

PROPOSED WATERSHED SUMMARY				
SUBCATCHMENT	TOTAL DRAINAGE AREA (ACRES)	CURVE NUMBER	TIME OF CONCENTRATION (MIN.)	PROPOSED OUTFALL
PR_1	1.633	81	31	WETLAND
PR_2	1.715	70	6	SWALE
PR_3	1.870	70	22	PUBLIC SEWER
PR_4	1.285	83	6	PUBLIC SEWER

PROPOSED RELEASE RATE SUMMARY	
STORM EVENT	TOTAL SITE RELEASE RATE (CFS)
1YR-24HR	1.49
2YR-24HR	1.91
10YR-24HR	6.61
100YR-24HR	21.05

PROPOSED IMPERVIOUS AREA

EXISTING IMPERVIOUS AREA

PROPOSED DRAINAGE ARROW

PROPOSED TIME OF CONCENTRATION ROUTE

PROPOSED SUB-WATERSHED BOUNDARIES

CANADIAN PACIFIC RAILROAD

GRAVEL

RAILROAD TRACKS

TREE LINE

R.O.B.

FOUND 1" IRON PIPE 0.12' SOUTH, 0.28' WEST

RIPRAP

CONCRETE CURB

S88°18'03"E 1153.36'

ASPHALT PAVEMENT

FIRE DEPARMENT ACCESS DRIVE

CONC

PR_2

TC864.99
BC864.49

FOUND LEANING IRON PIPE

TC861.68
BC861.18

TC862.88
BC862.38

PARCEL 6
C.S.M. NO. 8137

867.46

FFE
868.00

TC865.37
BC864.87

TC865.04
BC864.54

EXISTING BUILDING

N01°39'34"E 491.80'

ASPHALT PAVEMENT

TC865.37
BC864.87
CULVERT

TC865.47
BC864.97

TRASH COMPACTOR

TC864.33
BC863.83

TC864.08
BC863.58

TC864.99
BC864.49

PR_1

CHAIN LINK FENCE

CONCRETE

CONC. LOADING DOCK

BUILDING CANOPY

RAMP

STAIRS

LOADING DOCK STALLS

CATCH BASIN
RIM=864.89
12" W=862.94

BC864.45

TC864.41
BC863.61

TC863.82
BC863.32

TC863.67
BC863.17

CATCH BASIN
RIM=864.86
12" E=860.66
12"W=860.66
18" S=860.21
6" N=861.36

TC864.22
BC863.72

TC864.97
BC864.47

TC863.88
BC863.38

EDGE OF PAVEMENT

TC865.49
BC864.99

TC864.65
BC864.15

SPEED BUMP

CONC. WALLS W/ RAILS

ASPHALT PAVEMENT

FOUND 1" IRON PIPE

SET 3/4"-X 18" IRON REBAR

EXISTING RIGHT-OF-WAY LINE

N88°20'26"W 302.45'

CONCRETE CURB
ASPHALT PAVEMENT

DRIVE OPENING

ROUNDY CIRCLE EAST
(60' PUBLIC R.O.W.)

TC863.99
BC863.49

18" RCP CULVERT
INV.=859.21

SIGN

TREE LINE

C3

EDGE OF WATER
08/06/2020
EL.=858

POND

RIPRAP

24" RCP CULVERT

N88°48'40"W 632.35'

FOUND 1" IRON PIPE 0.15' NORTH

EXISTING RIGHT-OF-WAY LINE

PARCEL 2
C.S.M. NO. 7726

DUMPTERS

WINDSOR EXECUTIVE OFFICE SUITES CONDOMINIUM

FOUND 1" IRON PIPE

S01°23'07"E 700.02'

COUNTY TRUNK HIGHWAY "F"
REDFORD BOULEVARD
(VARIABLE PUBLIC R.O.W.)
(FORMERLY KNOWN AS STATE TRUNK HIGHWAY "164")

N

0 50' 100'

ORIGINAL SHEET - ARCH D

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Notes

Revision	By	Appd	YYYY.MM.DD

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File Name: 218011653_PR_HYDROLOGY NOV 2020	KAL Dwn.	EOR Dsgn.	CB Chkd.	2021.03.04 YYYY.MM.DD

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CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
PROPOSED HYDROLOGY

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	PR.HYD

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CONCRETE CURB AND GUTTER

EXISTING
FUTURE

HATCH PATTERNS

EXISTING		NEW	
RIP-RAP	WETLANDS	CONCRETE	
BUILDING		ASPHALT ROAD/DWY	

GRADING INFORMATION

952 950 952 950

EXISTING CONTOUR MINOR
EXISTING CONTOUR MAJOR
NEW CONTOUR MINOR
NEW CONTOUR MAJOR

EXISTING TOPOGRAPHIC LINES

RETAINING WALL
FENCE - CHAIN LINK
TREE LINE
WETLAND

SURVEY LINES

BOUNDARY
EXISTING CENTERLINE
EXISTING EASEMENT
EXISTING RIGHT OF WAY
NO ACCESS EASEMENT
ADJACENT PROPERTY BOUNDARY
FIRE DEPARTMENT ACCESS DRIVE

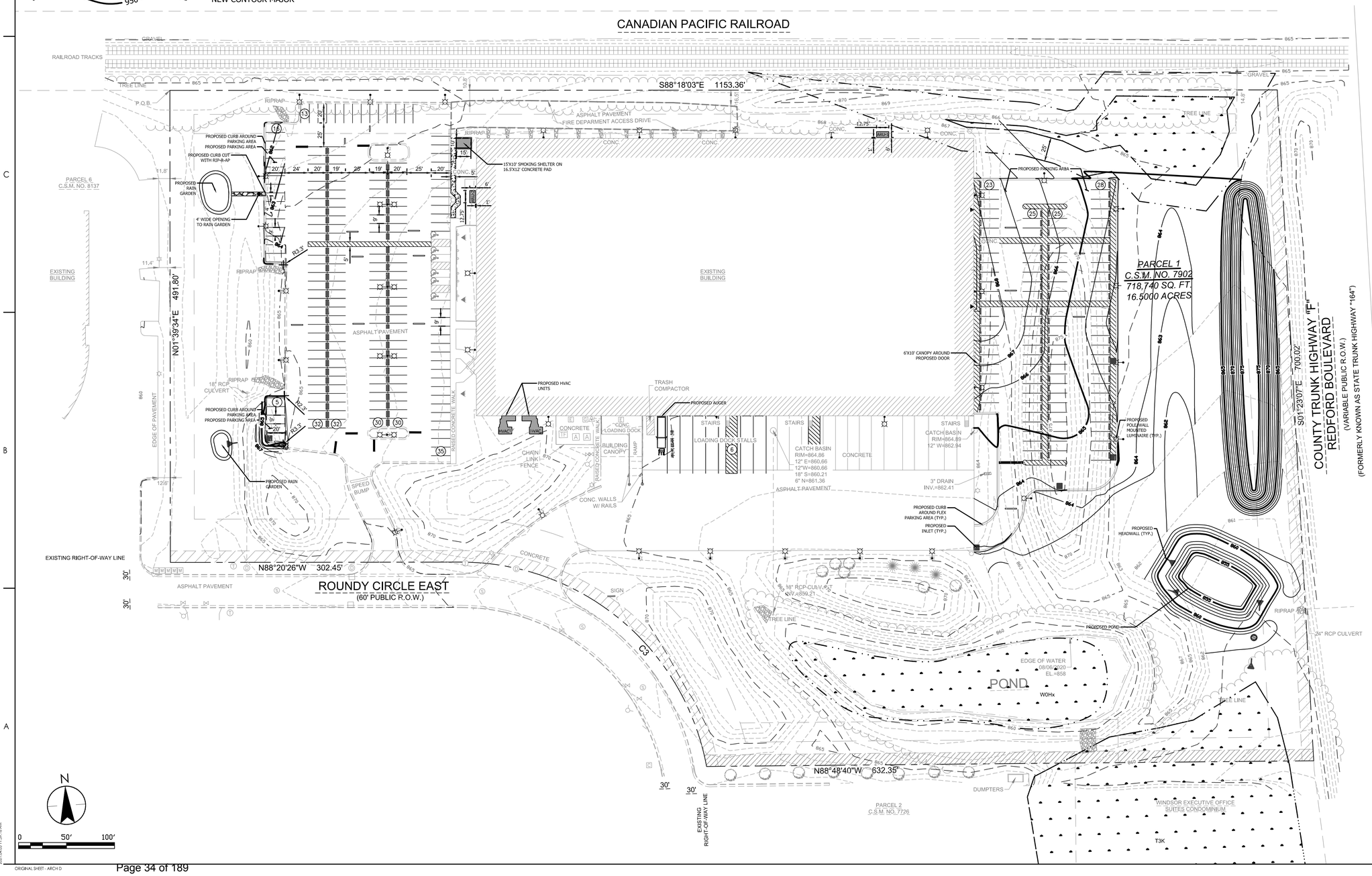
NOTE: PRELIMINARY WETLAND BOUNDARY. DETERMINATION MADE OUTSIDE OF GROWING SEASON.

PARCEL PARKING CALCULATIONS

ASSOCIATE SPACES (INCLUDES ADA)	193
UTR/VAN LOADING	101
TRAILER/TRUCK LOADING	6
TOTAL PARKING SPACES	300

SITE CALCULATIONS

	SQ FT	AC
PARCEL AREA	718,740	16.5
EXISTING IMPERVIOUS AREA	289,303	6.641
EXISTING PERVIOUS AREA	429,437	9.859
PROPOSED IMPERVIOUS AREA	345,033	7.921
PROPOSED PERVIOUS AREA	373,707	8.579
COVERAGE	48.0%	



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WISCONSIN
CARL BROBERG
E-46307
WAUNAKEE
WI
PROFESSIONAL ENGINEER

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
SITE PLAN

Project No.	Scale
218011653	AS NOTED

Revision 1 2

Drawing No.
C2.01

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ORIGINAL SHEET - ARCH D

NOTE: PRELIMINARY WETLAND BOUNDARY. DETERMINATION MADE OUTSIDE OF GROWING SEASON.

SEEDING NOTES AND SPECIFICATIONS

1. GENERAL: PROVIDE TOPSOILING, SEEDBED PREPARATION, FERTILIZING, SEEDING AND MULCHING OF ALL NEWLY GRADED FINISHED EARTH SURFACES, UNLESS INDICATED OTHERWISE, AND AT ALL AREAS INSIDE OR OUTSIDE THE LIMITS OF CONSTRUCTION THAT ARE DISTURBED BY THE CONTRACTOR'S OPERATIONS. SOW SEED FROM APRIL 1 TO MAY 31 FOR SPRING PLANTING AND FROM AUGUST 16 TO OCTOBER 15 FOR FALL PLANTING. SEEDING PERIOD MAY BE EXTENDED OR REDUCED ACCORDING TO PREVAILING WEATHER CONDITIONS AT THE TIME, AS DIRECTED BY THE LANDSCAPE ARCHITECT.
2. TOPSOILING: COMPLY WITH SOIL EROSION & SEDIMENT CONTROL PLAN AND NOTES. ADDITIONAL REQUIREMENTS FOR LAWN AREAS:
   A. FINISHED SURFACE OF THE TOPSOIL SHALL CONFORM TO THE FINISHED GRADE AND SHALL BE FREE FROM DEPRESSIONS, HOLLOWS, OR OTHER IRREGULARITIES.
   B. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE RUBBLE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

PLANT MATERIALS LIST – PEWAUKEE, WI

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
		DECIDUOUS TREES				
2	AR	ACER RUBRUM 'OCTOBER GLORY'	'OCTOBER GLORY' RED MAPLE	2–2 1/2" CAL.	B&B	MATCHED, 6' BRANCH BREAK
4	AS	ACER SACCHARUM 'GREEN MOUNTAIN'	'GREEN MOUNTAIN' SUGAR MAPLE	2–2 1/2" CAL.	B&B	MATCHED, 6' BRANCH BREAK
2	BN	BETULA NIGRA 'HERITAGE'	'HERITAGE' RIVER BIRCH	10–12' HT.	B&B	FULL, 3 TRUNK MIN.–SIMILAR SIZE
5	PK	PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	2–2 1/2" CAL.	B&B	
1	QP	QUERCUS PALUSTRIS	PIN OAK	2–2 1/2" CAL.	B&B	MATCHED, 6' BRANCH BREAK
1	QR	QUERCUS RUBRUM	NORTHERN RED OAK	2–2 1/2" CAL.	B&B	MATCHED, 6' BRANCH BREAK
		EVERGREEN TREES				
13	IA	ILEX x AQUIPERNYI 'MESCHICK' DRAGON LADY	DRAGON LADY HOLLY	4–5' HT.	B&B	4–5' O.C.
11	PA	PICEA ABIES	NORWAY SPRUCE	7–8' HT.	B&B	
7	PG	PICEA GLAUCA	WHITE SPRUCE	7–8' HT.	B&B	
4	PT	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	7–8' HT.	B&B	

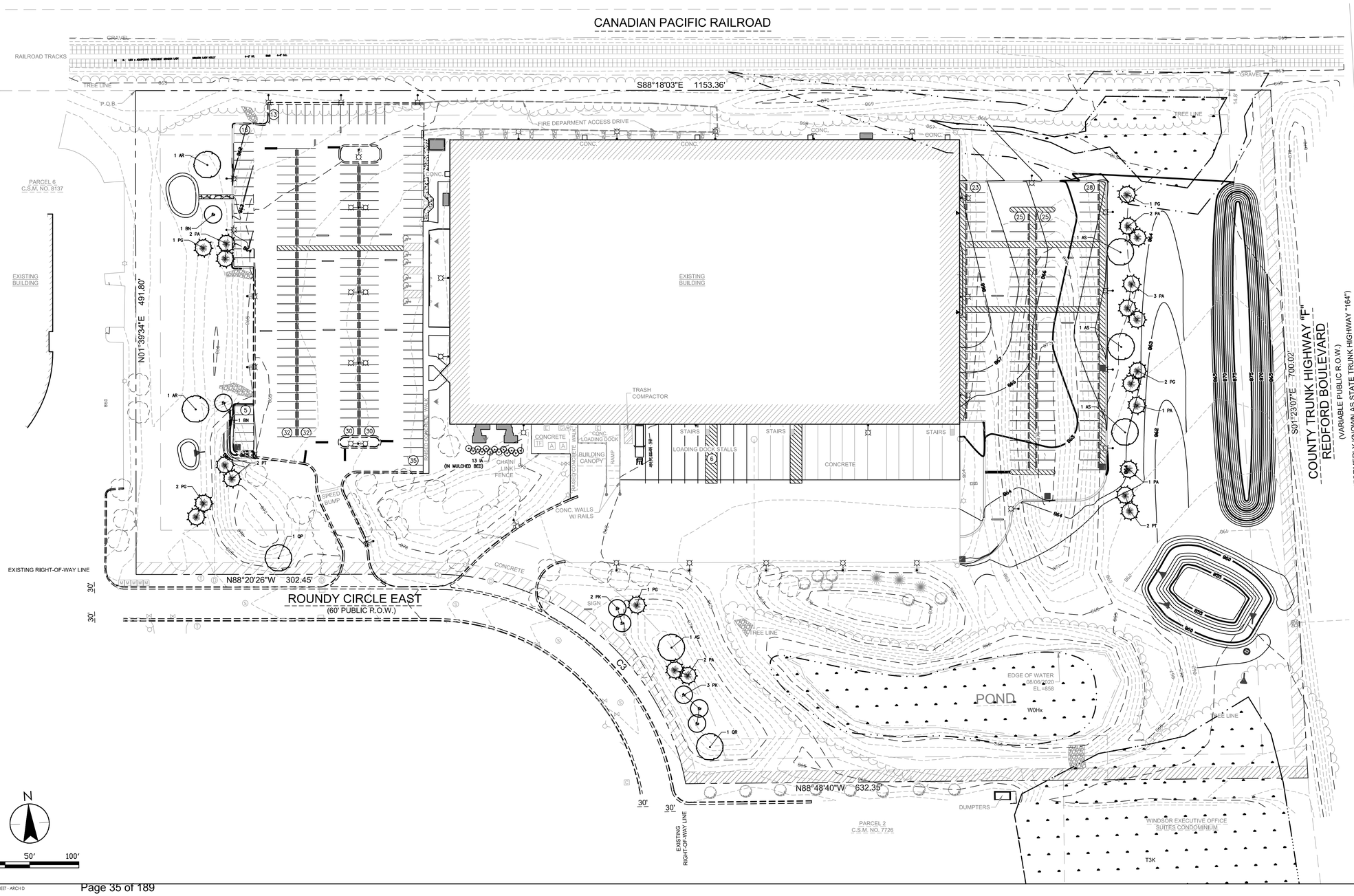
LANDSCAPE LEGEND

PROPOSED

- DECIDUOUS TREE
- ORNAMENTAL TREE
- EVERGREEN TREE

EXISTING

- EXISTING VEGETATION



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Notes

Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD
File Name: 218011653L1.01- REDUCED	KAL Dwn.	EOR Dsgn.	CB Chkd. 2021.03.04 YYYY.MM.DD

Permit/Seal

Client/Project Logo

Client/Project
SSD-SWI1

W232 N2950 ROUNDYS CIRCLE EAST

PEWAUKEE, WI 53072

Title
LANDSCAPE PLAN

Project No.	Scale
218011653	AS NOTED
Revision	Drawing No.
0	L1.01

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ORIGINAL SHEET - ARCH D

ELECTRICAL - SYMBOL LIST

SYMBOL	DESCRIPTION
	POLE/WALL MOUNTED LUMINAIRE
	POST TOP LUMINAIRE
	24"x24"x24" ELECTRICAL PULL BOX
	12"x24"x24" ELECTRICAL HAND HOLE
	UNDERGROUND CONDUIT AND WIRE
	BOLLARD

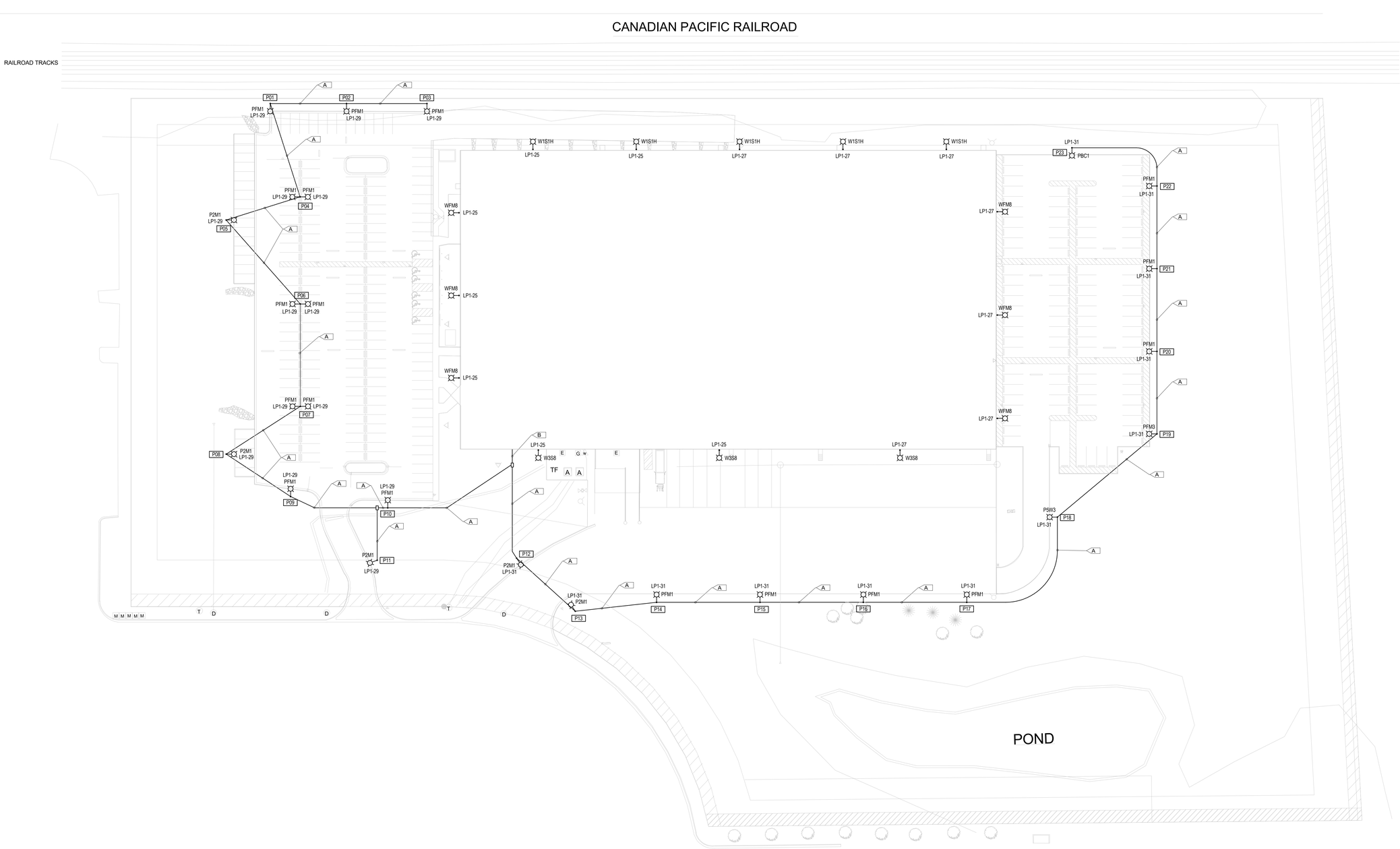
FEEDER SCHEDULE

FEEDER #	NO. OF CONDUITS	SIZE OF CONDUIT	NO. & SIZE OF CONDUCTORS IN EACH CONDUIT (U.O.N.)
A	1	1 1/4"	1#8 & 1#8N & 1#8G
B	1	1 1/4"	2#8 & 2#8N & 1#8G

SITE LIGHTING GENERAL NOTES:

1. POLE BASES SHALL HAVE A 3' CLEARANCE TO ROADWAYS AND CAR PARKING WHEN INSTALLED BEHIND THE CURB, AND 12' CLEARANCE TO TRAILER PARKING.
2. REFER TO LIGHTING CONTROL SCHEDULE ON DWG. E771 FOR SEQUENCE OF OPERATION.
3. PROVIDE RELAY PANEL "LCP" FOR CONTROL OF EXTERIOR LIGHTING. SEE DWG. E301 FOR RELAY PANEL LOCATION. COORDINATE LIGHT FIXTURE CONTROL PROGRAMMING WITH OWNER.
4. REFER TO LUMINAIRE SCHEDULE ON SHEET E005 FOR MOUNTING HEIGHTS UNLESS OTHERWISE NOTED.

SITE LIGHTING DRAWING NOTES:



1 E110 **OVERALL SITE PLAN - LIGHTING**
1" = 40'-0"

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No.	Revision	By	Appd	YYYY.MM.DD
1				

No.	Issued	By	Appd	YYYY.MM.DD
1	ISSUED FOR PERMIT			2021.03.16

Permit/Seal

WISCONSIN MICHAEL T. FITZPATRICK E-44771 ST. PAUL, MN 3/15/21 PROFESSIONAL ENGINEER

SSD-SWI1

Project No.:218011653
File Name: N/A

Author	Designer	Checker	01/04/21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

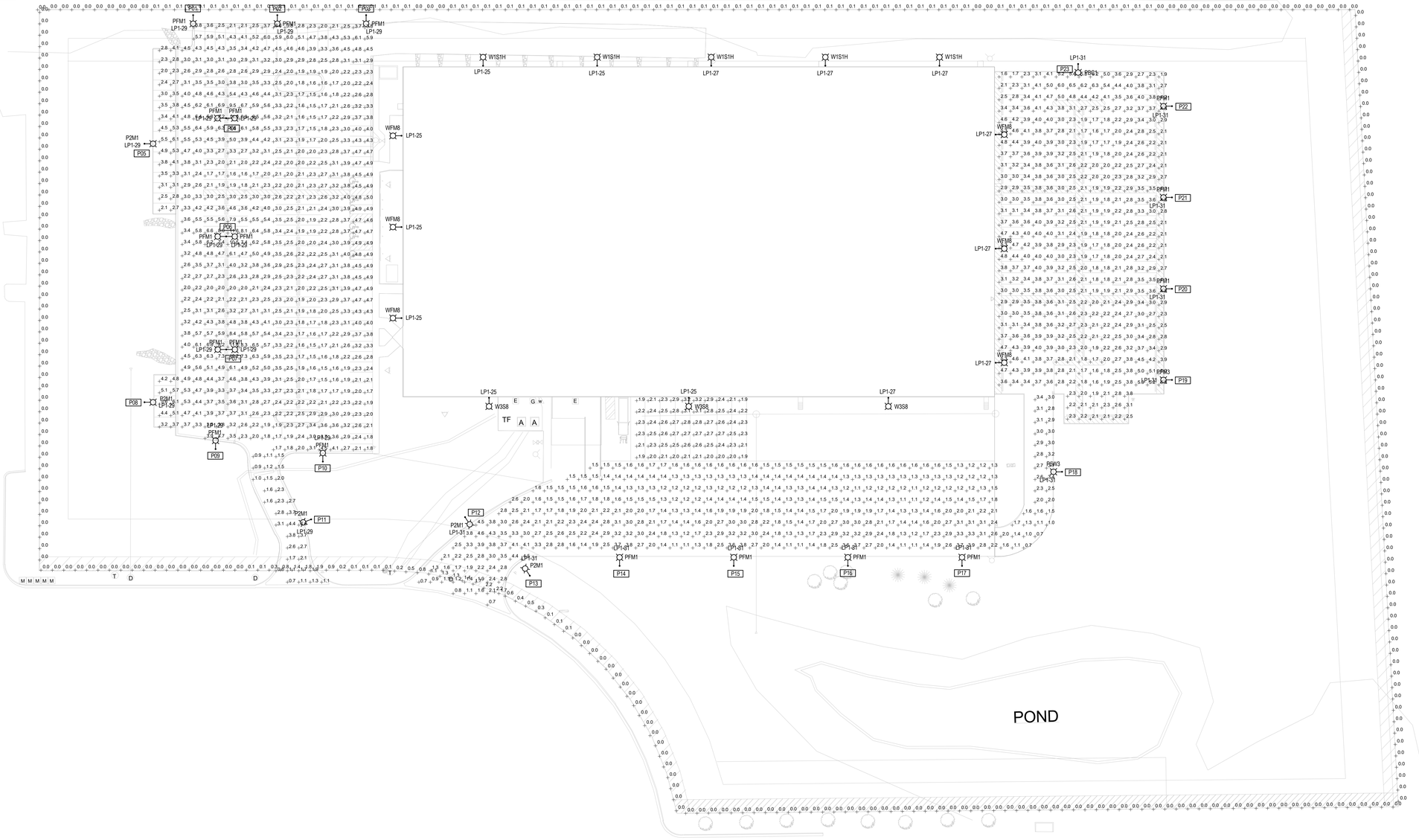
Title
OVERALL SITE PLAN - LIGHTING

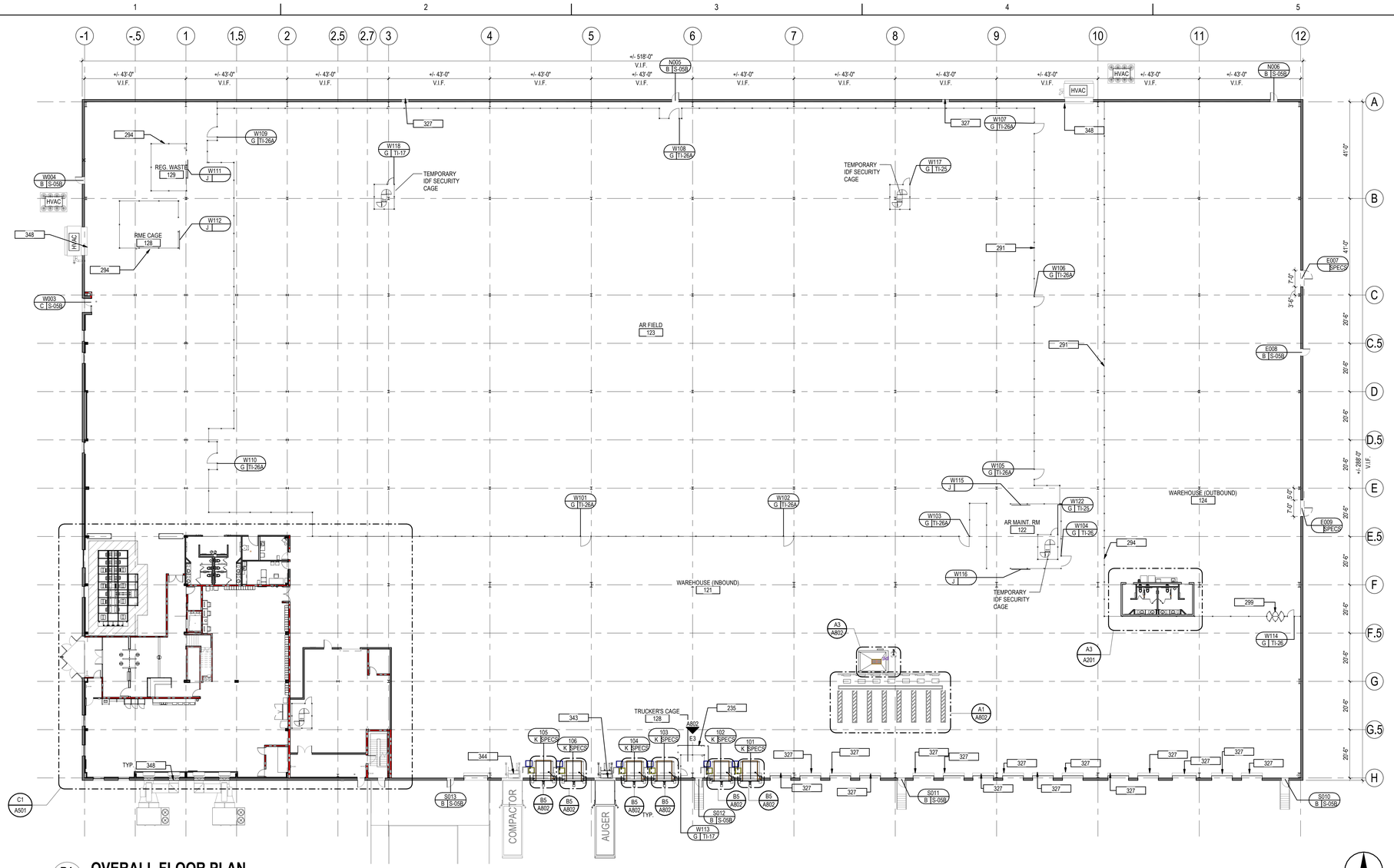
Scale: As indicated
Revision:1
Drawing No. **E110**

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ORIGINAL SHEET - ARCH E1

CANADIAN PACIFIC RAILROAD

RAILROAD TRACKS





B1 A201 OVERALL FLOOR PLAN

1" = 20'-0"

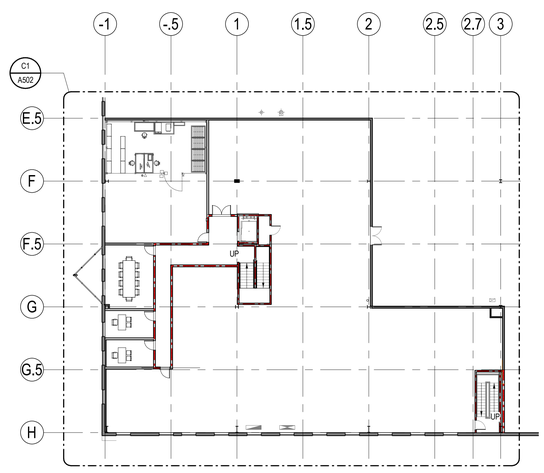
CONSTUCTION GENERAL NOTES

- FIELD VERIFY ALL DIMENSIONS AND ADVISE ARCHITECT OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK OR PROCUREMENT OF DIMENSION SENSITIVE PRODUCTS.
- DIMENSIONS ARE TO THE FACE OF FINISH SURFACE, UNLESS NOTED OTHERWISE.
- GYPSUM WALL BOARD:
  - WORK SHALL COMPLY WITH ASTM C840 STANDARD SPECIFICATIONS FOR APPLICATION AND FINISHING OF GYPSUM BOARD.
  - GYPSUM WALL BOARD TO RECEIVE LEVEL 4 FINISHES PER ASTM C840. SURFACE SHALL BE SMOOTH AND READY TO RECEIVE FINISH MATERIAL. PROVIDE MOISTURE RESISTANT GWB IN RESTROOM WETWALLS AND AT SINK COUNTERS.
  - GYPSUM WALL BOARD NOT TO RECEIVE FINISHES SHALL BE FINISHED TO LEVEL 2 FINISH PER ASTM C840.
  - WATER RESISTANT GYPSUM TO BE 5/8" DENS ARMOR PLUS OR EQUAL COMPLYING WITH ASTM C1178, C1288 OR C1325. PROVIDE AT PARTITIONS ADJACENT TO PLUMBING FIXTURES.
  - ALL GYPSUM WALL BOARD IS TO BE 5/8" THICK UNLESS NOTED OTHERWISE. PROVIDE TYPE 'X' GYPSUM WALLBOARD AT ALL FIRE RATED PARTITIONS.
  - ALL EXISTING GYP. BD. WALLS TO BE REPAIRED IF REQUIRED AND PREPARED FOR NEW FINISH INSTALLATION.
- WHERE PARTITIONS ARE ALIGNED WITH EXISTING, ALIGN FROM FINISH FACE OF BOTH AND ENSURE SMOOTH UNIFORM SURFACE.
- UNIFORM LOAD AT PARTITIONS IS 5 PSF WITH ALLOWABLE DEFLECTION OF L/240 UNLESS SHELVING AND EQUIPMENT IS PROPOSED FOR ATTACHMENT.
- ALL PARTITIONS TO BE BUILT TO DECK SHALL ENCOMPASS ANY STRUCTURE SUCH AS JOISTS AND BEAM THAT MAY NEED TO BE FRAMED OUT TO PROVIDE DRYWALL TO DECK. ALL PENETRATIONS AND FLUTES IN DECK SHALL BE SEALED AS REQUIRED.
- PROVIDE BRACING PER MANUFACTURER RECOMMENDATIONS OF ALL PARTITIONS THAT DO NOT EXTENDED FULL HEIGHT TO UNDERSIDE OF STRUCTURE ABOVE.
- ALL PARTITION FRAMING THAT EXTENDS FROM SLAB TO STRUCTURE ABOVE. PROVIDE GALVANIZED STEEL SHEET DEEP LEG DEFLECTION TRACK (20 GA). SLP-TRK' BY SLP TRACK SYSTEM, INC. SECURE TO STRUCTURE WITH FASTENER AT 2'-0" O.C. MAXIMUM. DO NOT SECURE TRACK TO VERTICAL STUDS. PROVIDE MINIMUM 2-1/2" TO TOP OF STUDS.
- ALL BOTTOM TRACK RUNNERS TO BE HELD IN PLACE WITH FASTENERS AT 2'-0" O.C. MAX. WITH HILTI POWDER DRIVER ANCHORS #2388, 0.145" DIA. SHANK WITH 1-1/8" MIN. PENETRATION.
- PROVIDE HORIZONTAL BRIDGING IN ALL PENETRATION FRAMING AT MAXIMUM OF 6'-0" O.C. VERTICALLY, UNLESS NOTED OTHERWISE.
- METAL STUD NON-STRUCTURAL WALL SYSTEMS TO FOLLOW C754 AND ASTM 645.
- FIRE STOPPING REQUIREMENTS: ALL PENETRATIONS WITHIN OR THROUGH RATED ASSEMBLIES SHALL BE TIGHTLY SEALED USING APPROVED LISTED MATERIAL & SYSTEM COMPLYING WITH ASTM E 814 OR UL-1479 (AS PER CODE). SEALANT MEETING THESE REQUIREMENTS TO BE FLAME STOP OR APPROVED EQUAL.
- PROVIDE COMPRESSIBLE FIRESTOPPING MATERIAL AT CEILING LEVEL OF ALL PARTITIONS IN WHICH THE GYP. BD DOES NOT EXTEND TO DECK. HOLD FIRESTOPPING IN PLACE WITH 1" WIDE (25GA.) 1 1/2" X 1 1/2" IMPALING ANGLE ON EACH STUD TO SECURE EACH END OF MATERIAL.
- PROVIDE ACOUSTICAL SEALANT AT THE CONNECTION OF ALL GYP. BD. TO DECK OR SLAB CONDITIONS. HOLD GYP. BD. 3/8" OFF STRUCTURE FOR SEALANT. PROVIDE J-BEAD AT ALL SEALED EDGES.
- PER 719.2 & 719.3 OF IBC, ALL CONCEALED AND EXPOSED INSULATION SHALL HAVE A CLASS A FRAME SPREAD AND SMOKE DEVELOPMENT INDEX PER ASTM E 84.
- INSULATING MATERIALS WHEN INSTALLED IN BUILDINGS OF ANY TYPE CONSTRUCTION SHALL COMPLY WITH LOCAL JURISDICTION CODE.
- ALL PLYWOOD & BLOCKING TO BE FIRE RETARDANT TREATED.
- PROVIDE CONTROL JOINTS IN ALL WALLS EXCEEDING 30' IN LENGTH AND HEIGHT AND EVERY 30' THEREAFTER, USG#093.
- ALL EXISTING FIRE EXTINGUISHERS THAT ARE TO BE REUSED, SHALL BE INSPECTED AND RECHARGED/ UPDATED AS REQUIRED BY LOCAL JURISDICTION, TYP.
- ALL SLABS TO BE STRIPPED AND PREPARED FOR SEALING AND TENANT FLOOR STRIPING. REPAIR ALL CONTROL JOINTS AS REQUIRED.
- G.C. TO COORDINATE W/ TENANT'S SECURITY SYSTEM PROVIDER FOR REWORKING/ UPGRADE OF EXISTING SYSTEM.
- ALL DOORS SHALL BE LOCATED WITH HINGE SIDE FRAME 4" OFF ADJACENT FINISHED WALL, (AT CORNER CONDITION), UNLESS NOTED OTHERWISE.

Keynote Legend	
Key Value	Keynote Text
235	PRE-FABRICATED GUARDRAIL, SEE DETAIL C4/A801
291	AR PERIMETER FENCE INSTALLED BY G.C. COORDINATE LAYOUT AND LOCATION WITH TENANT PRIOR TO INSTALLATION.
294	PERIMETER FENCE INSTALLED BY G.C. COORDINATE LAYOUT AND LOCATION WITH TENANT PRIOR TO INSTALLATION.
299	MAX SECURITY TURNSTILE GC TO COORDINATE WITH TENANT TEAM FOR EXACT SPECIFICATIONS AND INSTALLATION REQUIREMENTS WHERE THESE TURNSTILE AND ASSOCIATED HARDWARE ARE TO BE INSTALLED BY GC.
327	SECURE ALL EXISTING UNUSED MAN DOORS IN PLACE. REFER TO DEMOLITION PLAN FOR ADDITIONAL INFORMATION.
343	NEW AUGER,SPECIFICATION PROVIDED BY TENANT; SEE STRUCTURAL FOR WALL CUT OUT DETAILS ; SEE ELECTRICAL FOR POWER REQUIREMENTS.
344	EXISTING COMPACTOR; GC TO COORDINATE WITH TENANT TO DETERMINE IF EXISTING EQUIPMENT TO BE USED OR DISCARDED TO PREPARE FOR NEW COMPACTOR SPEC PROVIDED BY TENTANT; SEE ELECTRICAL DRAWING.
348	EXTERIOR SLAB MOUNTED AIR RECIRCULATING UNIT AND ASSOCIATED EQUIPMENT; SEE MECHANICAL; SEE STRUCTURAL
604	STAINLESS STEEL 2"X2"X48"H CORNER GUARD AT ALL EXPOSED OUTSIDE CORNERS OF GWB

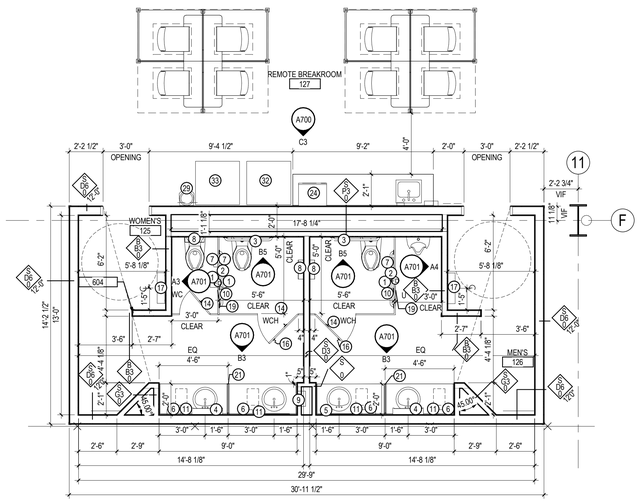
WALL TYPES LEGEND

- NEW WALL
- EXISTING WALL
- NEW 1-HR RATED WALL
- EXISTING 1-HR RATED WALL



A1 A201 OVERALL MEZZANINE PLAN

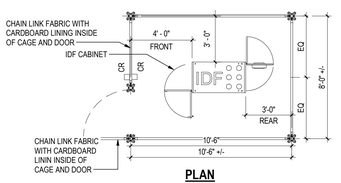
1" = 20'-0"



A3 A201 ENLARGED REMOTE BREAKROOM PLAN

1/4" = 1'-0"

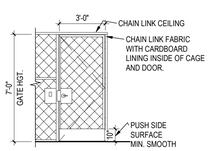
RESTROOM ACCESSORIES							
MARK	ITEM	SUPPLIED BY TENANT	OF	OI	CF	CI	Comments
1	TOILET PAPER DISPENSER	MOUNT AT 31" AFF. TO TOP OF UNIT WITH 6 12" MAX. FROM FRONT EDGE OF TOILET.	No	No	Yes	Yes	MOUNT AT 31" AFF. TO TOP OF UNIT, 8" TO CENTER FROM FRONT EDGE OF TOILET
2	GRAB BAR - 42"	MOUNT 12" FROM REAR WALL, 33"-36" AFF.	No	No	Yes	Yes	MOUNT 12" FROM REAR WALL, 33"-36" AFF
3	GRAB BAR - 36"	MOUNT 6" FROM SIDE WALL, 33"-36" AFF.	No	No	Yes	Yes	MOUNT 6" FROM SIDE WALL, 33"-36" AFF
4	ANGLED MIRROR	Mount with bottom of reflective surface at 36' - 40' AFF.	No	No	Yes	Yes	MOUNT WITH BOTTOM OF REFLECTIVE SURFACE 36" - 40" AFF
5	CHANNEL FRAME MIRROR		No	No	Yes	Yes	MOUNT WITH BOTTOM OF REFLECTIVE SURFACE 36" - 40" AFF
6	PAPER TOWEL DISPENSER		No	No	Yes	Yes	MOUNT BOTTOM OF UNIT AT 3'-4 AFF
7	SANITARY NAPKIN DISPOSAL		No	No	Yes	Yes	MOUNT TOP OF UNIT 21" AFF
8	TOILET SEAT COVER DISPENSER	Stainless steel. Mount top of unit at 30" to 48" AFF.	No	No	Yes	Yes	MOUNT TOP OF UNIT 30"-48" AFF
9	SANITARY NAPKIN / TAMPON DISPENSER	Stainless steel, Free/no coin	No	No	Yes	Yes	MOUNT TOP OF UNIT AT 62" AFF
10	GRAB BAR - 18"		No	No	Yes	Yes	MOUNT 40" FROM SIDE WALL, 39"-41" AFF AT BOTTOM
11	SOAP DISPENSER	Mount top of unit at 46" AFF.	No	No	Yes	Yes	MOUNT TOP OF UNIT AT 46" AFF
14	COAT HOOK	Mount top of coat hook at 60" AFF.	No	No	Yes	Yes	MOUNT TOP OF STANDARD COAT HOOK AT 60" AFF, ADA AT 48" AFF MAX
16	TLT PARTITION WALL BUMPER		No	No	Yes	Yes	MOUNT 3" FROM TOP OF PARTITION DOOR
17	WALL SHELF	Mount top of shelf at 48" AFF.	No	No	Yes	Yes	MOUNT TOP OF SHELF AT 48" AFF MAX
19	TOILET PARTITION		No	No	Yes	Yes	
21	PLEXI-GLASS DIVIDERS	PER DB-0112	Yes	Yes	No	No	



PLAN

NOTE:

1. TEMPORARY CAGES FOR IDF CABINET DURING CONSTRUCTION ONLY.
2. GC PROVIDE QUANTITIES TO BE LOCATED BY TENANT
3. FENCE POST & GATE TO BE GALVANIZED



DOOR ELEVATION

FOR GATE HARDWARE - REFER TO HARDWARE SET TI-25 IN THE SPECIFICATIONS. PROVIDE MOUNTING PLATES FOR HARDWARE AND CARD READER.

A5 A201 TEMPORARY IDF SECURITY CAGE

1/4" = 1'-0"

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Issued	By	Appd	YYYY.MM.DD
ISSUED FOR PERMIT			2021.03.16
Revision			
1			2021.03.16

Permit/Seal



SSD - SWI1

W232 N2950 Roundy Circle East, Pewaukee, WI 53072

Project No.:218011653

File Name: N/A

JM	JN	AC	2021.03.16
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title

OVERALL FLOOR PLAN

Scale: As indicated

Revision:

Drawing No. **A201**

ORIGINAL SHEET - ARCH E1

Stantec Consulting Services Inc.
1500 Spring Garden Suite 1100, Philadelphia PA 19130-4067

April 5, 2021
File: 218011653

Attention: Nick Fuchs
City of Pewaukee
Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone: 261.291.0770

Dear Nick,

Reference: W232N2950 Roundy Circle East (Tax Key No. 0917994030)
TI Investors of Pewaukee LLC Conditional Use and Site & Building Plan Review

We have reviewed your letter dated March 29, 2021. Our responses to the comments are described below in the same order that they appear in your comment letter.

Please note that the plan has been modified to include the preliminary location of wetlands at the northeast corner of the site. We have modified the parking lot accordingly to be 25' from the limits of the wetland.

1) *Note that substantial evidence, pursuant to Section 62.23(7)(de) of WI State Statutes, must be presented at the public hearing for Common Council consideration of the Conditional Use Permit.*

   Stantec Response: Noted .

2) *It is recommended that a Landscape Plan be submitted for Plan Commission review. Staff recommends that plantings be added to the front berm adjacent to Roundy Circle East as well as along the east side of the property between the proposed parking lot and Redford Boulevard. New plantings are also suggested along the west property line adjacent to the new parking stalls.*

   Stantec Response: See attached landscape plan.

3) *Is any new lighting proposed?*

   Stantec Response: Yes, see attached plan.

4) *Note that any proposed signage will require separate staff review and approval of a Sign Permit. Signs shall comply with Section 17.0700 of the City's Zoning Code.*

Reference: **W232N2950 Roundy Circle East (Tax Key No. 0917994030)**
TI Investors of Pewaukee LLC Conditional Use and Site & Building Plan Review

Stantec Response: The proposed signage will be limited todirectional signage directing associates where to enter and other employees where to enter.

5) *Are any vehicles or trailers parked/stored overnight on the property?*

Stantec Response: Flex operations only occur during the day. The facility operates 24 hours a day - any cars in the associate lot at night are for people working inside. Trailers are not stored on site aside from the ones being unloaded (6 max) at the dock doors.

6) *Are any dumpsters or other types of containers kept onsite? If existing, are they currently contained within an enclosure?*

Stantec Response: An existing dumpster is to remain. An auger will be installed as well. They will not be enclosed.

7) *Please address the consultant's comments regarding the Traffic Impact Analysis as soon as possible so a final recommendation can be presented at the April 15th Plan Commission meeting.*

Stantec Response: The response to the Traffic Impact Analysis is included in this resubmission.

8) *Note that final grading, erosion control, and storm water management plans will require Engineering Department review and approval. The City will forward consultant comments as soon as they are received.*

Stantec Response: Noted.

9) *Please submit the attached Business Plan of Operation Application and Notice of Intent to Discharge Wastewater Form.*

Stantec Response: The Business Plan of Operation Application and Notice of Intent to Discharge Wastewater Form will be submitted at a later date, closer to construction.

If you have any questions concerning this letter, please do not hesitate to contact me with any questions.

Sincerely,

Stantec Consulting Services Inc.



E Omar Rosa PE
Senior Associate

Reference: **W232N2950 Roundy Circle East (Tax Key No. 0917994030)**
TI Investors of Pewaukee LLC Conditional Use and Site & Building Plan Review

Phone: 215 665 7147
EOmar.Rosa@stantec.com

c. Loga Whitley

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Fuchs, Nick

From: Whitley, Logan <logwhitl@amazon.com>
Sent: Friday, April 9, 2021 9:22 AM
To: Fuchs, Nick
Cc: Degiulio, Kyle; Baillie, Gregg; Rojer, Jacob; Broberg, Carl; Frank Dekan; Hurd, Ami
Subject: RE: SWI1 - W232N2950 ROUNDY CIR E (PWC 0917994030)
Attachments: SWI-1 M Sheet M001 - Mechanical Equip Schedules.pdf

Nick,

Here are updated responses. Someone from the architectural team is planning to attend the meeting on April 15th. I will make sure they are prepared to answer the outstanding questions below. Let me know if you need anything else!

1. Do you have details of the proposed smoking shelter? What does that look like? How close is that to the building?
   a. The smoking shelter is 6' from the building.
   b. We allow the GC to choose between several manufacturers – 1. Shelters Direct (images below); 2. Austin Mohawk; 3. HandiHut; 4. PortaFab Corporation.




2. A large size Sheet C2.01 was dropped off that includes HVAC units along the front of the building. The reduced size Sheet C2.01 that was submitted for Plan Commission does not include the HVAC units. Both plans are dated March 4, 2021.
   a. Are the HVAC units proposed or not?
      i. Yes
   b. Do you have details of these units?
      i. The two units are Carrier Model 48A9S020KN, 20 ton, 460V-3ph-60hz, with 5,300 lb operating weight. Please find attached sheet M001 for RTU-1 and RTU-2 equipment schedules with additional details.
   c. I realize there is screening proposed on the landscape plan, but could these be relocated from the front of the building?
      i. The front of the building includes four existing openings that will be used for the RTU's supply and return ducts. Relocating the units to another location will require new openings on the existing building and will require to verify static pressure calculations.
3. The reduced size plan includes an emergency generator. Is that proposed? Is that contained within an enclosure? Please provide additional details.
   a. Yes it is proposed, no enclosure is planned
4. Please also provide additional details and information for the proposed auger. Also, the note adjacent to the proposed auger is not legible.
   a. A cut sheet for the auger and compactor can be downloaded here: https://studio.bluebeam.com/share/pxq3vj
5. The larger plan set includes two ARUs. If proposed, please provide additional details.

a. The two units are Johnson Air Rotation Model AR85DC-20-MG-DX105-F, 104.3 ton, 460V-3ph-60hz, with 17,100 lb operating weight. Please find attached sheet M001 for ARU-1 and ARU-2 equipment schedules with additional details.

6. Do you have a sample picture or rendering of the canopy that will be placed on the east side of the building.
   a. No canopy is proposed, instead it's an awning. Sample pictures below, although the manufacturer has not been chosen.




7. Please provide the cut sheets for the proposed lighting. Also, what is the peak height of the parking lot lighting and the mounting height of the building lights? Sheet E110 references a Sheet E005, but I don't see that that was provided. Note light poles may not exceed 20-feet measured from the ground level.
   a. Architect to provide more information
8. Is any existing parking lot or building lighting remaining? If so, does the proposed lighting match existing?
   a. Architect to provide more information
9. Are there any other exterior site modifications besides those mentioned above and the parking, storm water, grading, lighting, and landscaping?
   a. Concrete pads for mechanical equipment.

Thank you,

Logan Whitley
Project Engineer | GES Design & Construction
e: logwhitl@amazon.com **| c:** 214-728-9898

amazon

From: Fuchs, Nick <fuchs@pewaukee.wi.us>
Sent: Friday, April 9, 2021 6:49 AM
To: Whitley, Logan <logwhitl@amazon.com>
Cc: Degiulio, Kyle <kyledeg@amazon.com>; Baillie, Gregg <gbaillie@amazon.com>; Rojer, Jacob <Jacob.Rojer@kimley-horn.com>; Broberg, Carl <Carl.Broberg@stantec.com>; Frank Dekan <Frank.Dekan@zilber.com>; Hurd, Ami <hurd@pewaukee.wi.us>
Subject: RE: [EXTERNAL] SWI1 - W232N2950 ROUNDY CIR E (PWC 0917994030)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you can confirm the sender and know the content is safe.

FYI - I'm finalizing my report right now as packets go out this morning. If the architect can respond to these questions this morning that would be appreciated.

Thanks.

Nick Fuchs
Planner & Community Development Director
City of Pewaukee
W240N3065 Pewaukee Road

TRAFFIC IMPACT ANALYSIS

LAST-MILE WAREHOUSE FACILITY

PEWAUKEE, WISCONSIN

Prepared By:

Kimley-Horn and Associates, Inc.

APRIL 2021

Kimley»Horn

TRAFFIC IMPACT ANALYSIS

LAST-MILE WAREHOUSE FACILITY

PEWAUKEE, WISCONSIN

REPORT CERTIFICATION

I hereby certify that this Traffic Impact Analysis has been prepared by me or under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

Date: 4/5/2021

Emily A. Moser, P.E., PTOE
License No. 42527
WisDOT TIA Certification # SE12-804-202
Kimley-Horn and Associates, Inc.



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A. Traffic

B. Existing Transportation System with Background Traffic Operational Analysis

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I. Warrant Analysis for Intersection Traffic Control

1. INTRODUCTION AND EXECUTIVE SUMMARY

A. PURPOSE OF REPORT AND STUDY OBJECTIVES

The last-mile warehouse facility site is proposed to the west of Redford Boulevard and north of Roundy Circle E in Pewaukee, Wisconsin. Kimley-Horn and Associates, Inc. (Kimley-Horn) has been retained to prepare a traffic impact analysis (TIA) for the proposed development, with a scheduled build-out year of 2021. A TIA Initial Review document was submitted to the City of Pewaukee on March 19th, 2021, to confirm the scope and basis for the TIA. This report provides detailed documentation of the procedures, assumptions, findings, and conclusions of the analysis and summarizes the existing conditions in the study area, site-specific trip generation, site operations, the turning movement counts collected, the results of the operational analysis, and mitigation recommendations in the study area. The format, including exhibit numbers and chapter titles, follows the guidance in the Wisconsin Department of Transportation (WisDOT) "Traffic Impact Analysis Guidelines" dated January 2021.

B. EXECUTIVE SUMMARY

Proposed Development

The last-mile warehouse facility site is proposed to the west of Redford Boulevard and north of Roundy Circle E in Pewaukee, Wisconsin. The proposed site will modify the existing warehouse on site (approximately 152,680 square feet). The footprint of the building and site accesses will not be modified. However, the developer is proposing the following changes to the operations and parking layout:

- Remove 16 truck docks and keep 6 truck docks
- Add 21 employee parking spaces to the west parking lot
- Construct a new 101-stall parking lot on the east side of the existing building

The proposed site will have a total of 193 parking stalls in the employee parking lot to the west of the building, six truck docks to the south, and 101 parking stalls for delivery vehicles to the east. The conceptual site plan is shown in **Exhibit 1-1**. The anticipated completion date is in 2021.

Study Area

The study area includes the following existing intersections:

- Redford Boulevard & Roundy Drive (side street stop-controlled)
- Roundy Drive & Roundy Circle E (side street stop-controlled)
- Roundy Drive & Roundy Circle W (side street stop-controlled)

In the Build Conditions, the site accesses will also be analyzed. The development will utilize the two existing site accesses; the west access will be for employees only while the east access will be the delivery vehicle/truck access.

Trip Generation

Traffic generated by the proposed facility is unique to the site and considered non-standard for most land uses. Therefore, trip generation was provided by the end user based on historical data and the planned operations of the facility. The site is anticipated to generate 2,432 daily trips, 253 trips in the Site AM peak hour, 79 trips in the network AM peak hour, and 143 trips in the site/network PM peak hour. The proposed last-mile warehouse facility does not have seasonal peak operations as it is limited by the capacity of the building and efficiency of on-site operations. Therefore, the trip generation analyzed represents the peak capacity of the proposed last-mile warehouse facility.

Capacity Analysis

Using *Synchro* software and the *Highway Capacity Manual 6th Edition (HCM)*, Kimley-Horn conducted a capacity analysis to determine the operations of the study intersections with and without the proposed development. Three peak hours were analyzed: Site AM peak hour (7:00 AM – 8:00 AM), Network AM peak hour (8:00 AM – 9:00 AM), and Site/Network PM peak hour (5:00 PM – 6:00 PM). These peak hours were analyzed during three scenarios: Existing (2021) Conditions, Base Year (2021) Build Development (Existing Transportation System), and Base Year (2021) Build Development (Improved Transportation System).

The intersections of Roundy Drive & Roundy Circle E and Roundy Drive & Roundy Circle W are anticipated to continue to operate at LOS B with the proposed site traffic, which had minimal impacts on delay and LOS. There were no queuing issues reported at these two intersections during any analysis scenarios.

In the Existing/Base Year (2021) scenario, the eastbound left-turn at Redford Boulevard & Roundy Drive operates at LOS D in the Site AM peak hour and LOS E in the Network AM and Site/Network PM peak hours. Longer delays are not uncommon for side street stop-controlled movements on higher volume corridors such as Redford Boulevard. Operational analysis results were consistent with observed operations at Redford Boulevard & Roundy Drive. In the Existing/Base Year (2021) scenario, no queues extend beyond the provided storage bay.

With the addition of the proposed site traffic, the eastbound left-turn at Redford Boulevard & Roundy Drive is anticipated to degrade from LOS D to LOS E during the Site AM peak hour. In the Network AM and Site/Network PM peak hours, this movement is anticipated to degrade from LOS E to LOS F. All 95th percentile queues are anticipated to be within their respective storage bay length. A signal warrant analysis was conducted, and a signal is not warranted at this time with anticipated site traffic. The intersection is shown to meet Warrant 3; however, Warrant 3 alone is not sufficient justification for the installation of a traffic signal. While the eastbound left-turn is expected to operate at LOS F with an average delay of approximately 69.5 seconds per vehicle, the intersection does not meet signal warrants and is expected to continue to operate at LOS F. The installation of a traffic signal would improve the side street operations if deemed necessary in the future. **Appendix I** provides signal warrants for the intersection.

Recommendations

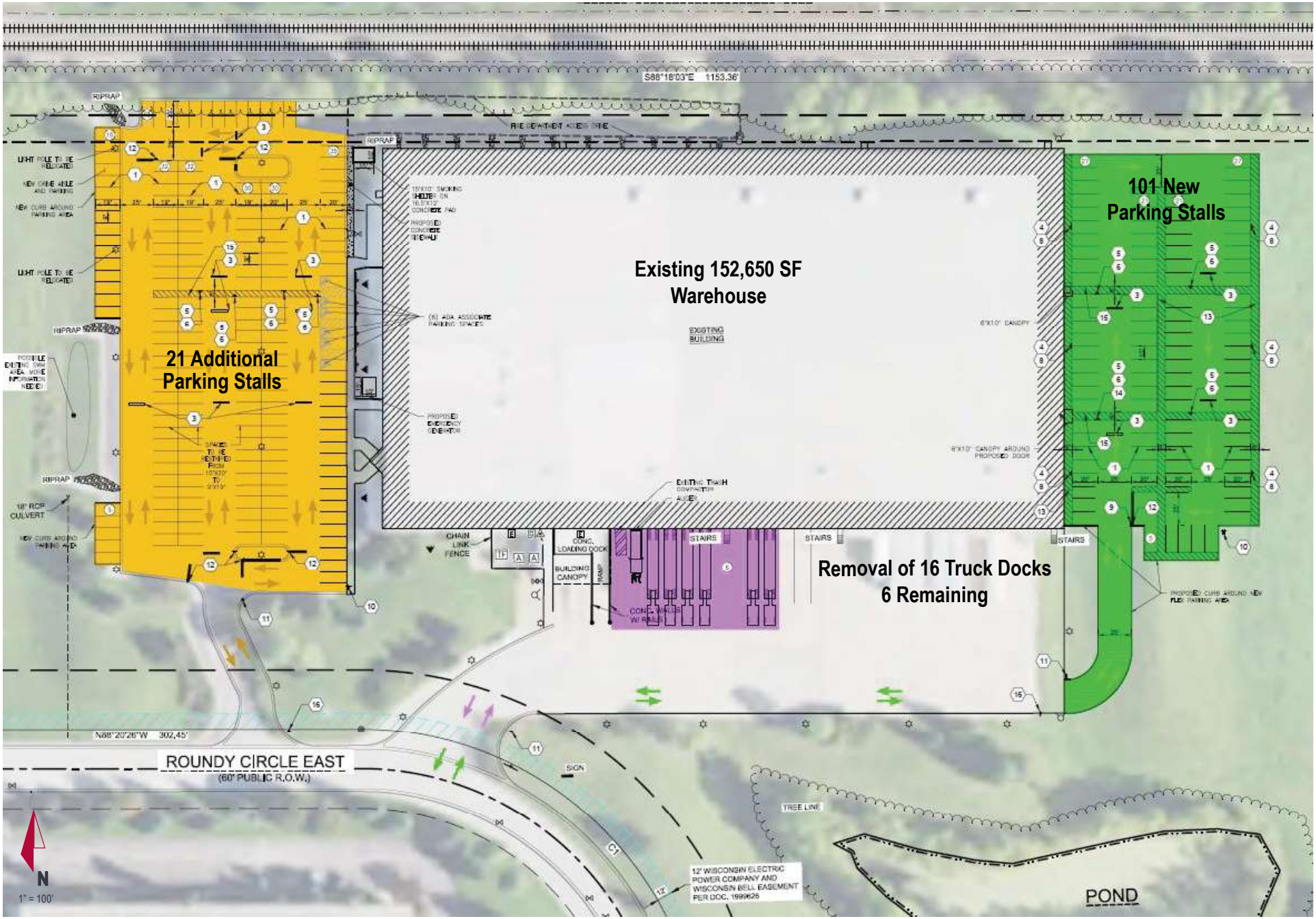
Based on the results of the operational and truck turning analyses, **Exhibit 1-4** illustrates the recommended improvements in the study area. Note that improvements are recommended to the City of Pewaukee for consideration and are not legally binding. The City of Pewaukee reserves the right to determine alternative solutions.

Redford Boulevard & Roundy Drive intersection:

- Install pavement markings on the eastbound approach to delineate separate left- and right-turn lanes.
- Monitor future traffic volumes and operations and reevaluate traffic signal warrants in the future if needed.

Roundy Circle E & Roundy Drive intersection:

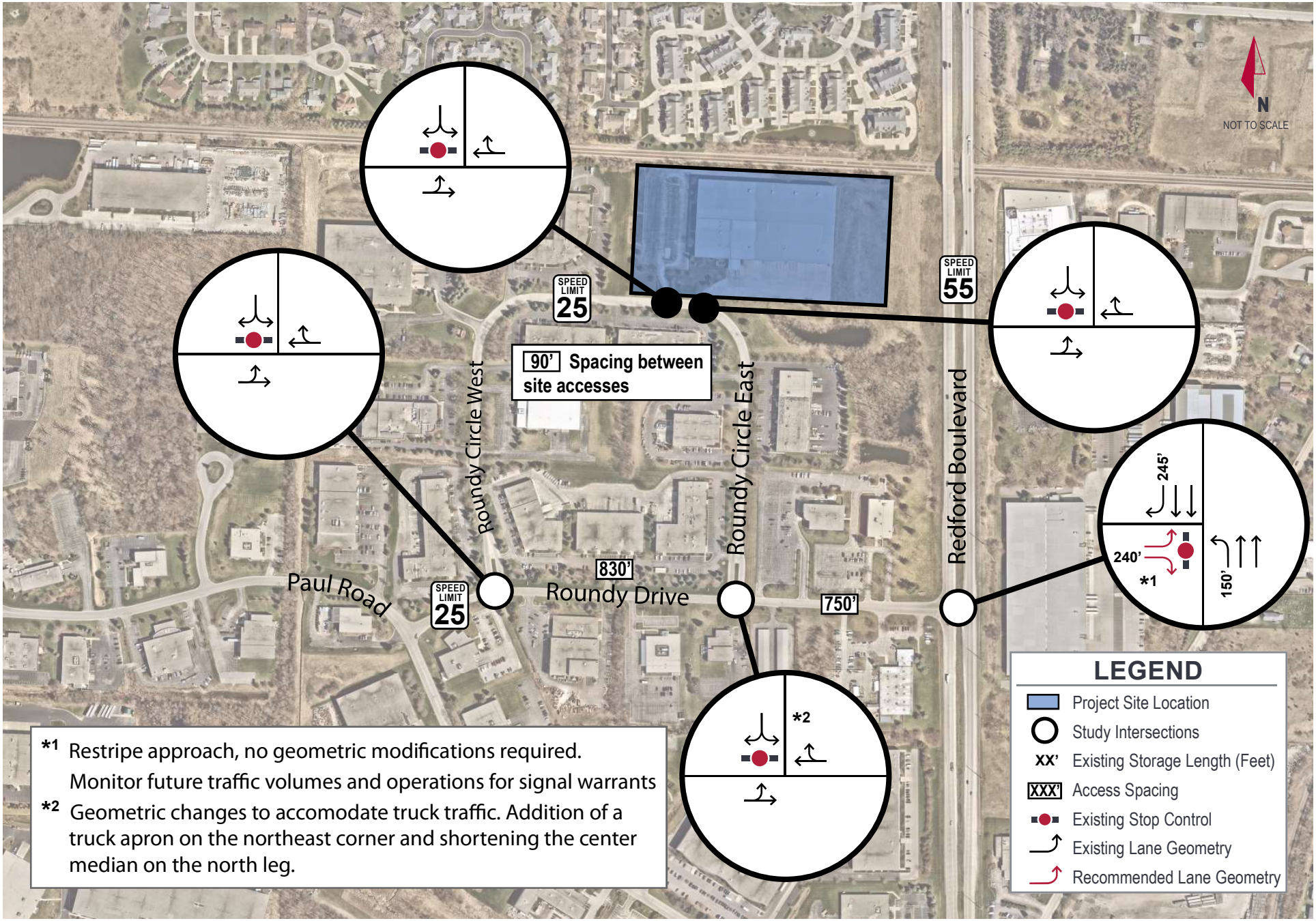
- To accommodate Westbound right truck turning traffic, the northeast corner of the intersection should provide a 60-foot-long and 10-foot-wide truck apron.
- To accommodate southbound left truck turning traffic, the center island on the north leg should be shortened by 10 feet.



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EXHIBIT 1-1
SITE PLAN


N
NOT TO SCALE
SPEED LIMIT 25
SPEED LIMIT 55
90' Spacing between site accesses
Roundy Circle West
Roundy Circle East
Redford Boulevard
Paul Road
830'
Roundy Drive
750'
245'
240'
*1
150'
*2
SPEED LIMIT 25
LEGEND
Project Site Location
Study Intersections
XX' Existing Storage Length (Feet)
XXX' Access Spacing
Existing Stop Control
Existing Lane Geometry
Recommended Lane Geometry
*1 Restripe approach, no geometric modifications required. Monitor future traffic volumes and operations for signal warrants
*2 Geometric changes to accomodate truck traffic. Addition of a truck apron on the northeast corner and shortening the center median on the north leg.

2. PROPOSED DEVELOPMENT

A. ON-SITE DEVELOPMENT

1. Development Description and Site Location

The Pewaukee last-mile warehouse facility site is located to the west of Redford Boulevard and north of Roundy Circle E in Pewaukee, Wisconsin. The existing site is currently a 152,650 square-foot warehouse with 22 truck docks to the south and a 153-stall surface parking lot to the west. The parcel is 16.48 acres with 664 feet of frontage along Roundy Circle E. The existing site has two site accesses. **Exhibit 2-1** provides the site location.

The proposed changes to the site operations and parking layout are the following: the removal of 16 truck loading docks with 6 truck docks remaining, the addition of 40 parking stalls to the west lot, and the construction of a new 101-stall parking lot on the east side of the building. The warehouse itself is anticipated to remain largely unchanged. All modifications to the site are expected to be complete in 2021. The proposed site has 6 truck docking stations, 294 parking stalls, and is intended to be used as a last-mile warehouse facility.

2. Land Use and Intensity

The facility will utilize the existing 152,650 square-foot building. The proposed last-mile warehouse facility most closely represents a General Wholesale Business/ Warehouse (M-1) land use per the City of Pewaukee Zoning Code.

3. Proposed Site Plan & Site Operations

The proposed last-mile warehouse facility will distribute goods that are delivered to the site via trucks and then delivered from the site to surrounding locations via employee-owned passenger vehicles. Each user type is provided separate parking and loading activity locations within the site plan. Employee parking would be provided in a lot on the west side of the building. Truck loading would occur along the south side of the building. Delivery vehicle parking would be provided in a lot on the east side of the building. Customers will not be able to access the site. The development will utilize the two existing site accesses; the west access will be for employees only while the east access will be the delivery vehicle/truck access. The existing site accesses are approximately 90 feet apart. These separate access driveways and parking lots will accommodate the movement of goods being delivered to the site via trucks and then delivered locally via employee-owned vehicles to businesses and residences in the surrounding areas. The proposed site plan is included in **Exhibit 2-2**.

4. Development Phasing and Timing

The development is anticipated to open in 2021, and construction will be completed in a single phase.

B. STUDY AREA

1. Influence Area

Located in the City of Pewaukee approximately one and a half miles north of Interstate 94 along Redford Boulevard, the proposed development is expected to serve an area within a 45-minute drive of the site, including the greater Milwaukee area.

2. Area of Significant Impact

The area of significant traffic impact consists of the Redford Boulevard, Roundy Drive, and Roundy Circle. Most site traffic will utilize Redford Boulevard to access Interstate 94 (I-94) or State Trunk Highway 190 (STH 190).

The study area for the proposed development consists of the following three intersections. The existing traffic control is listed after each intersection.

- Redford Boulevard & Roundy Drive (side street stop)
- Roundy Drive & Roundy Circle E (side street stop)
- Roundy Drive & Roundy Circle W (side street stop)

C. OFF-SITE LAND USE AND DEVELOPMENT

There are no known off-site development plans in the study area at this time.

Per the City of Pewaukee zoning map, there are no changes in the study area from the existing zoning to the 2035 or 2050 horizon years. **Exhibit 2-4** provides the existing and future land uses surrounding the site. The site is located in a Manufacturing/Fabrication/Warehousing area.

D. SITE ACCESSIBILITY

The site will maintain the existing access along Roundy Circle E. It is expected that the primary route to and from the site will utilize Roundy Circle E, Roundy Drive, and Redford Boulevard to connect the site to I-94 and STH 190.

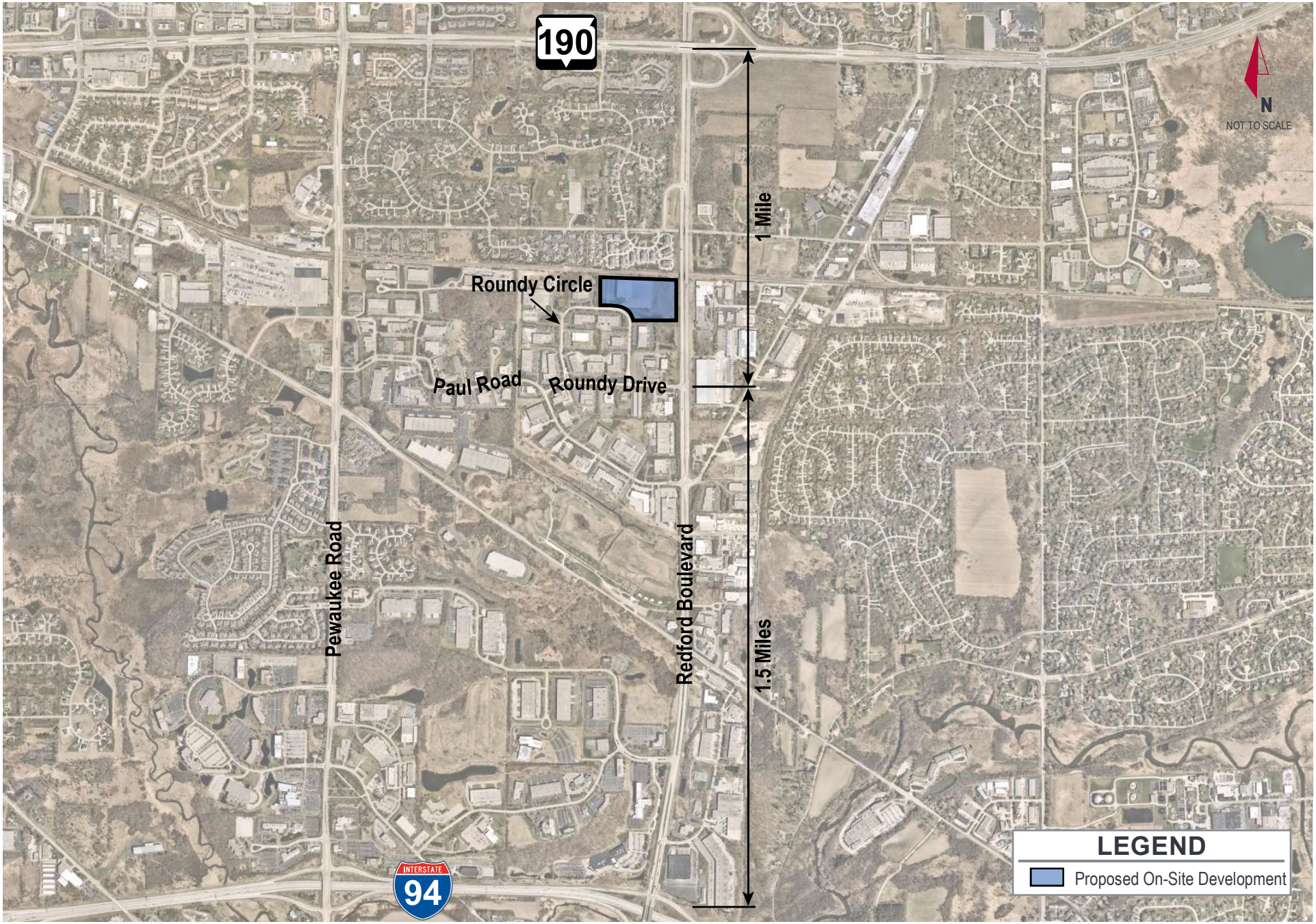
Descriptions of the study area intersections are outlined below:

- Roundy Drive & Redford Boulevard: a three-legged intersection at which Redford Boulevard is free-flowing and Roundy Drive is stop controlled. Redford Boulevard has two lanes in each direction with a dedicated northbound left-turn lane and a dedicated southbound right-turn lane. Roundy Drive is approximately 40 feet wide curb to curb and is currently striped a single eastbound land westbound lane. However, the eastbound lane is approximately 20 feet wide and based on intersection observations, it operates as a two-lane approach. For the purpose of this study, the approach was assumed to have a 10-foot-wide dedicated eastbound left-turn lane and a 10-foot-wide dedicated eastbound right-turn lane.
- Roundy Drive & Roundy Circle E: a three-legged intersection at which Roundy Drive is free-flowing and Roundy Circle E is stop controlled. All approaches are a single lane.
- Roundy Drive & Roundy Circle W: a three-legged intersection at which Roundy Drive is free-flowing and Roundy Circle W is stop controlled. All approaches are a single lane.

Based on a review of the Waukesha County Roadway Plan, there are no known roadway improvements in the project vicinity.

The multimodal access within the study area is listed below:

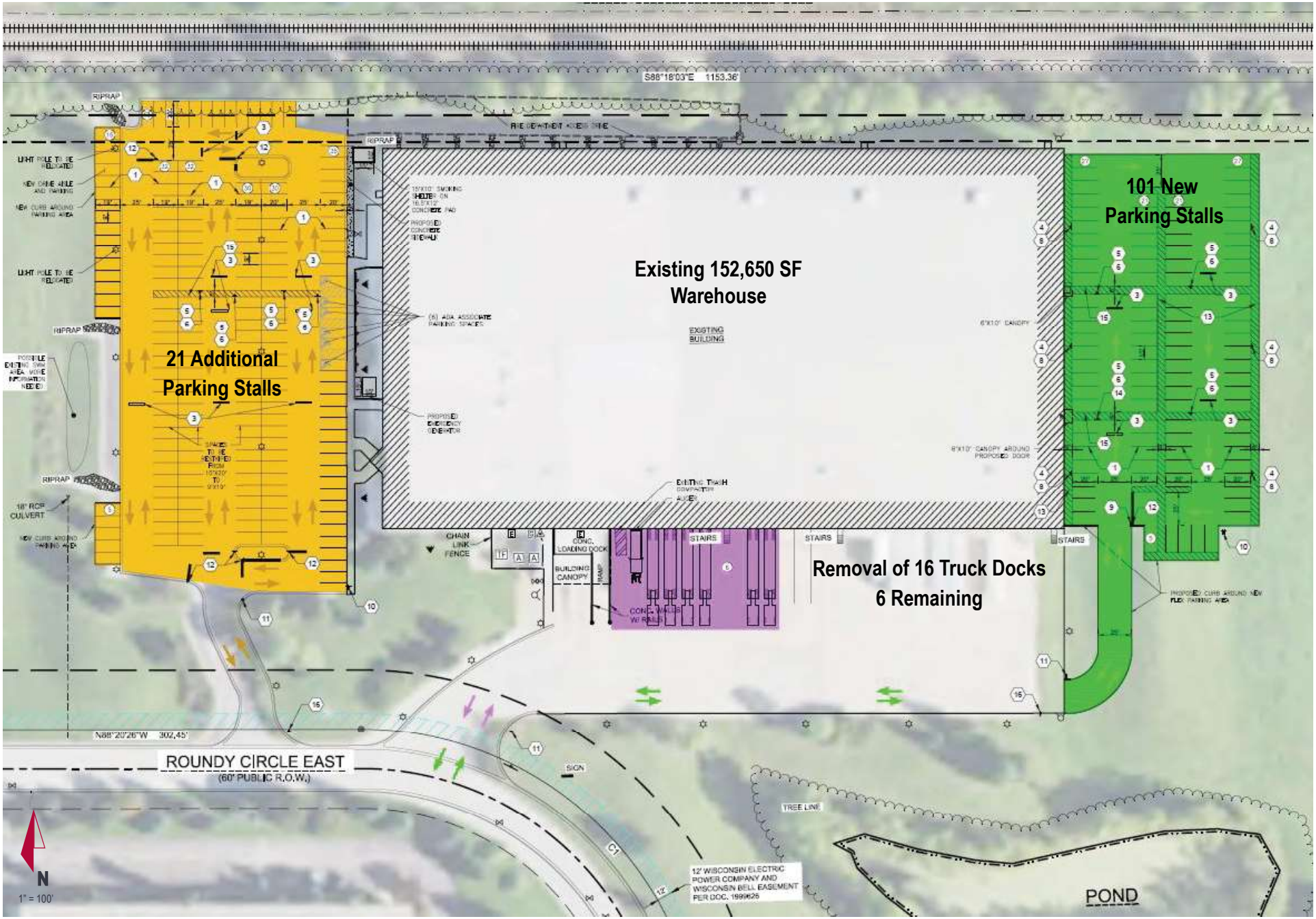
- Sidewalks are not provided on the roadways in the study area.
- There is no transit service in the study area.
- There are no dedicated bicycle lanes on roadways surrounding the project site. Redford Boulevard has paved shoulders that are considered an on-road bike accommodation in the Waukesha County Bike Plan.



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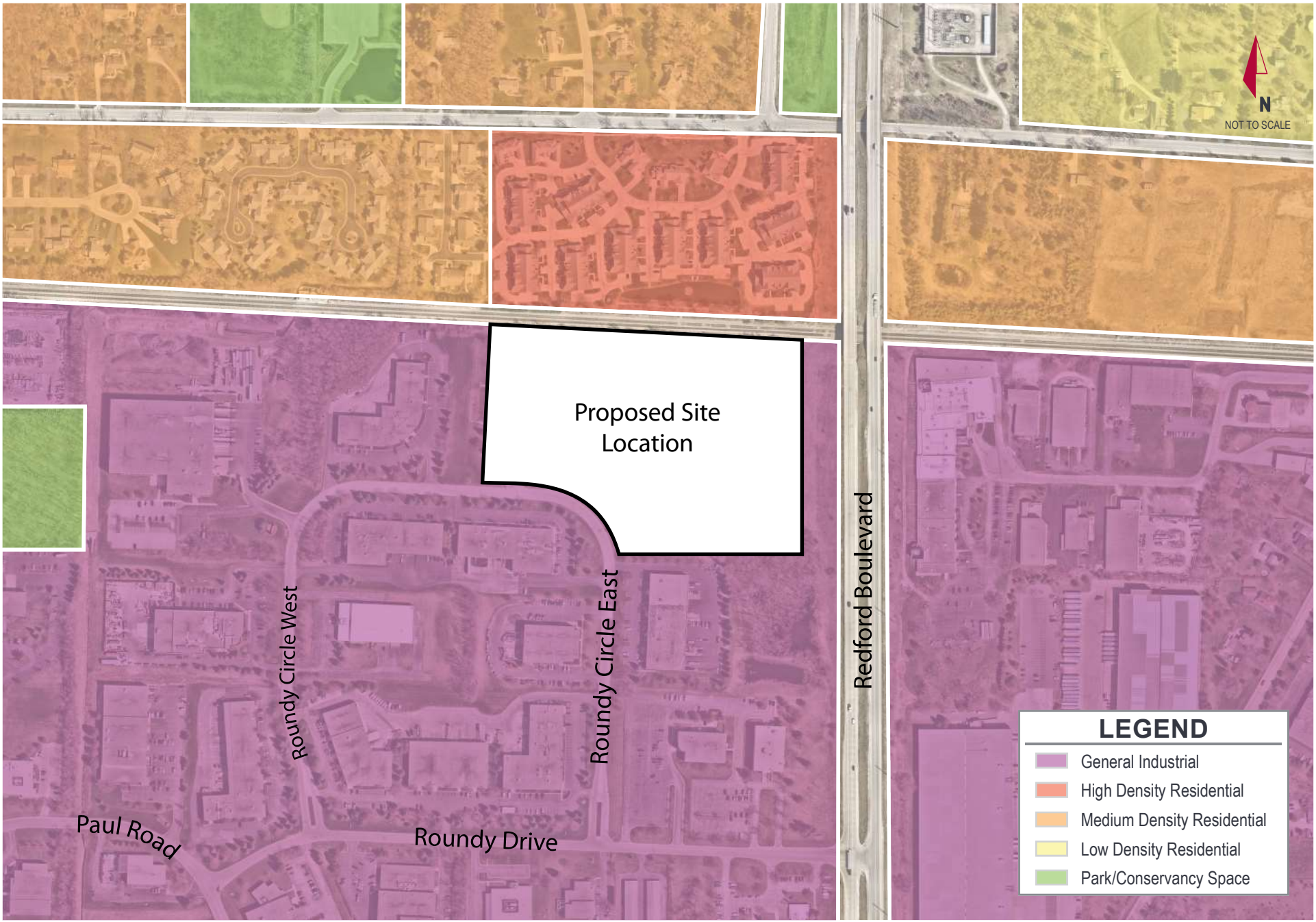
EXHIBIT 2-1
SITE LOCATION MAP



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EXHIBIT 2-2
SITE PLAN



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EXHIBIT 2-4

EXISTING AND PROPOSED LAND USE FOR STUDY AREA

3. ANALYSIS OF EXISTING CONDITIONS

A. PHYSICAL CHARACTERISTICS

The following roadways compose the proposed site's area of influence:

Redford Boulevard (County Road F) is a north-south roadway that runs along the eastern boundary of the site and is classified as a primary arterial. Redford Boulevard is a four-lane divided roadway with dedicated left-turn and right-turn lanes at intersecting streets. According to the WisDOT Traffic Counts Map, the most recent data is from 2018. The Annual Average Daily Traffic (AADT) on Redford Boulevard was 25,600 vehicles per day (vpd) north of Roundy Drive. The speed limit on Redford Boulevard is 55 miles per hour (mph).

Roundy Drive is an east-west roadway that is south of the site. Roundy Drive is classified as a local road and is a two-lane undivided roadway. There is no reported AADT for Roundy Drive. The speed limit on Roundy Drive is 25 mph.

Roundy Circle (East & West) is an access loop that provides access to the south of the site and is classified as a local road. The eastern half of the loop is Roundy Circle E, and the western half is Roundy Circle W. Roundy Circle is a two-lane undivided roadway. There is no reported AADT for Roundy Circle. The speed limit on Roundy Circle is 25 mph.

There are no known planned City, County, or state roadway improvement projects in the project vicinity. **Exhibit 3-1** depicts the existing transportation system. The network is composed of three roads and three unsignalized intersections.

B. TRAFFIC VOLUMES

Turning movement counts (TMCs) were collected on Tuesday, March 2nd, 2021. The study area intersections and the TMC duration are listed below:

- Redford Boulevard & Roundy Drive – 24-hour TMC
- Roundy Drive & Roundy Circle E – 6:00AM to 9:00AM and 3:00PM to 6:00PM
- Roundy Drive & Roundy Circle W – 6:00AM to 9:00AM and 3:00PM to 6:00PM

The peak hours were determined based on the hourly turning movement volumes at Roundy Boulevard & Roundy Drive as well as the proposed last-mile warehouse facility trip generation peak hours. The AM peak hour of the proposed last-mile warehouse facility is before the traditional network AM peak hour while the PM trip generation aligns with the network PM peak hour. Therefore, three peak hours will be analyzed. The analysis timeframes are listed below.

- Site AM Peak Hour (7:00AM – 8:00AM)
- Network AM Peak Hour (8:00AM – 9:00AM)
- Site/Network PM Peak Hour (5:00PM – 6:00PM)

It should be noted that the highest trip generation peak for the proposed development is from 6:00AM – 7:00AM. However, this peak hour was not chosen for analysis because the traffic volumes on the adjacent

roadways are significantly lower than 7:00AM – 8:00AM. The selected Site AM peak hour (7:00 AM – 8:00 AM) is expected to show the greatest impacts to the network based on the combination of site trips and higher network traffic.

The raw turning movement volumes for the Site AM (7:00 AM – 8:00 AM), Network AM (8:00 AM – 9:00 AM), and Site/Network PM (5:00 PM – 6:00 PM) peak hours are shown in **Exhibit 3-2A**.

As previously mentioned, the traffic volumes were collected in March of 2021. Because of potential changes to traffic patterns and volumes due to COVID-19, historic traffic volumes in the area were compared to the collected counts. The latest count in the area is a 2018 WisDOT daily traffic count on Redford Boulevard north of Roundy Drive. The 2018 AADT was 25,600 vpd on Redford Boulevard. The 24-hour count collected in March 2021 at Redford Boulevard and Roundy Drive resulted in 22,000 vpd on the north leg of the intersection. There are no historic counts on Roundy Drive or Roundy Circle. Using the ratio of the 2018 and 2021 AADTs on Redford Boulevard, a 17% increase was applied to the raw TMCs at all three intersections to determine the adjusted traffic volumes to be used for analysis.

The adjusted turning movement volumes for the Site AM (7:00 AM – 8:00 AM), Network AM (8:00 AM – 9:00 AM), and Site/Network PM (5:00 PM – 6:00 PM) peak hours are shown in **Exhibit 3-2B**.

The raw turning movement count data is provided in **Appendix A**.

C. CAPACITY/LEVEL OF SERVICE

A capacity analysis was performed to quantify the delay and level of service (LOS) at the study intersections during the weekday Site AM (7:00AM – 8:00AM) peak hour, Network AM (8:00AM – 9:00AM) peak hour, and Site/Network PM (5:00PM – 6:00PM) peak hour. The capacity analysis was performed using Synchro software (Version 10) which utilizes methodologies contained in the Transportation Research Board's *Highway Capacity Manual (HCM), 6th Edition*.

The capacity of an intersection quantifies its ability to accommodate traffic volumes and is measured in average delay per vehicle. It is expressed in terms of LOS which ranges from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). The LOS grades shown below, which are provided in the *HCM*, quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 3-1**. The range of control delay for each rating (as detailed in the *HCM*) is also shown in **Table 3-1**. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red signals, higher delays are tolerated for the corresponding LOS ratings. For unsignalized intersections, the intersection LOS is reported as the worst stop-controlled (side street) movement.

Table 3-1 – Level of Service Information[1]

Level of Service	Average Control Delay (seconds/vehicle)	Description
A	0-10 (Unsignalized); 0-10 (Signalized)	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	>10-15 (Unsignalized); >10-20 (Signalized)	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.
C	>15-25 (Unsignalized); >20-35 (Signalized)	Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds.
D	>25-35 (Unsignalized); >35-55 (Signalized)	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	>35-50 (Unsignalized); >55-80 (Signalized)	High control delay; average travel speed no more than 33 percent of free flow speed.
F	>50 (Unsignalized); >80 (Signalized)	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.

[1] HCM, 6th Edition

The factored traffic volumes shown in **Exhibit 3-2B** were used in the Existing/Base Year (2021) Background analysis. As previously discussed, these volumes were based on March 2021 TMCs which were impacted by COVID-19 and then grown to reflect more typical traffic volumes. **Exhibit 3-3** summarizes the delay, LOS, 95th percentile queues, and storage lane lengths for the study intersections under Base Year (2021) Background conditions during the Site AM, Network AM, and Site/Network PM peak hours. This analysis assumed the existing geometry at all study intersections.

It should be noted that Redford Boulevard has a 35-foot wide median. Vehicles making the eastbound left-turn movement onto northbound Redford Boulevard were observed crossing the southbound lanes, waiting in the median, and then completing the left-turn when there was a gap in northbound traffic.

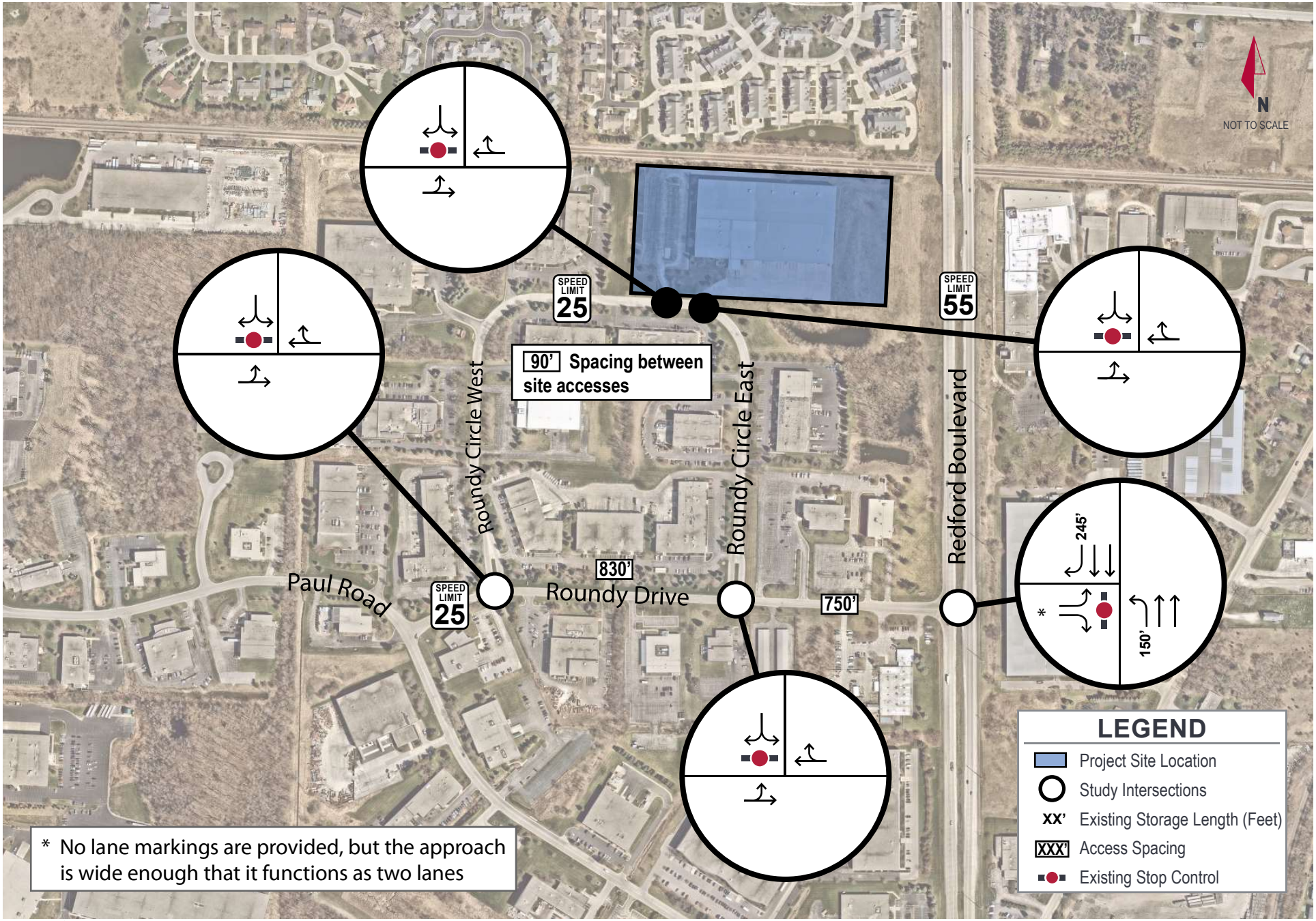
Based on the analysis, the intersection of Roundy Drive & Roundy Circle E and the intersection of Roundy Drive & Roundy Circle West operate at LOS B or better in all three peak hours. The eastbound left-turn at Redford Boulevard & Roundy Drive Operates at LOS D in the Site AM peak hour and LOS E in the Network AM and Site/Network PM peak hours. Longer delays are not uncommon for side street stop-controlled movements on higher volumes corridors such as Redford Boulevard. Operational analysis results were consistent with observed operations at Redford Boulevard & Roundy Drive.

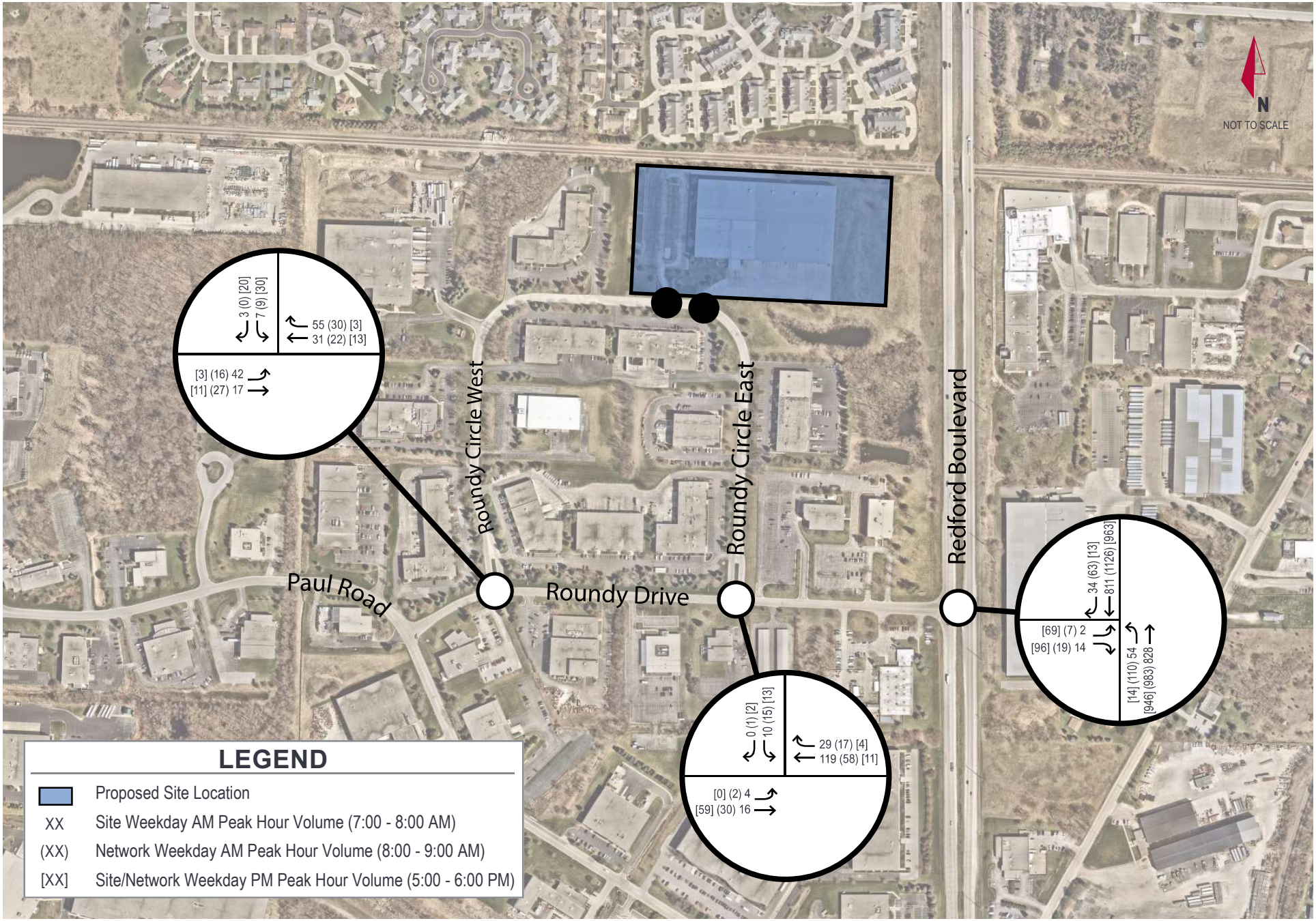
All 95th percentile queues are anticipated to be within the provided storage capacity. The HCM reports are provided in **Appendix B**.

D. SOURCES OF DATA

For this study, the primary source of data was TMCs conducted by Kimley-Horn's subconsultant. The TMCs were conducted using traffic cameras that recorded traffic volumes at the three study intersections on Tuesday, March 2nd, 2021. At the intersection of Redford Boulevard and Roundy Drive, a 24-hour TMC was recorded. At the other two study intersections, data was collected from 6:00 AM – 9:00 AM and 3:00 PM – 6:00 PM to capture the peak hour volumes. The 2018 AADT along Redford Boulevard as indicated on the Wisconsin Department of Transportation (WisDOT) Traffic Count Map was also used as a comparison point.

No traffic forecast data was required for this study since the site is expected to be operational in the same year as the counts were collected. Additionally, no signal timing data was needed because all study area intersections are unsignalized.

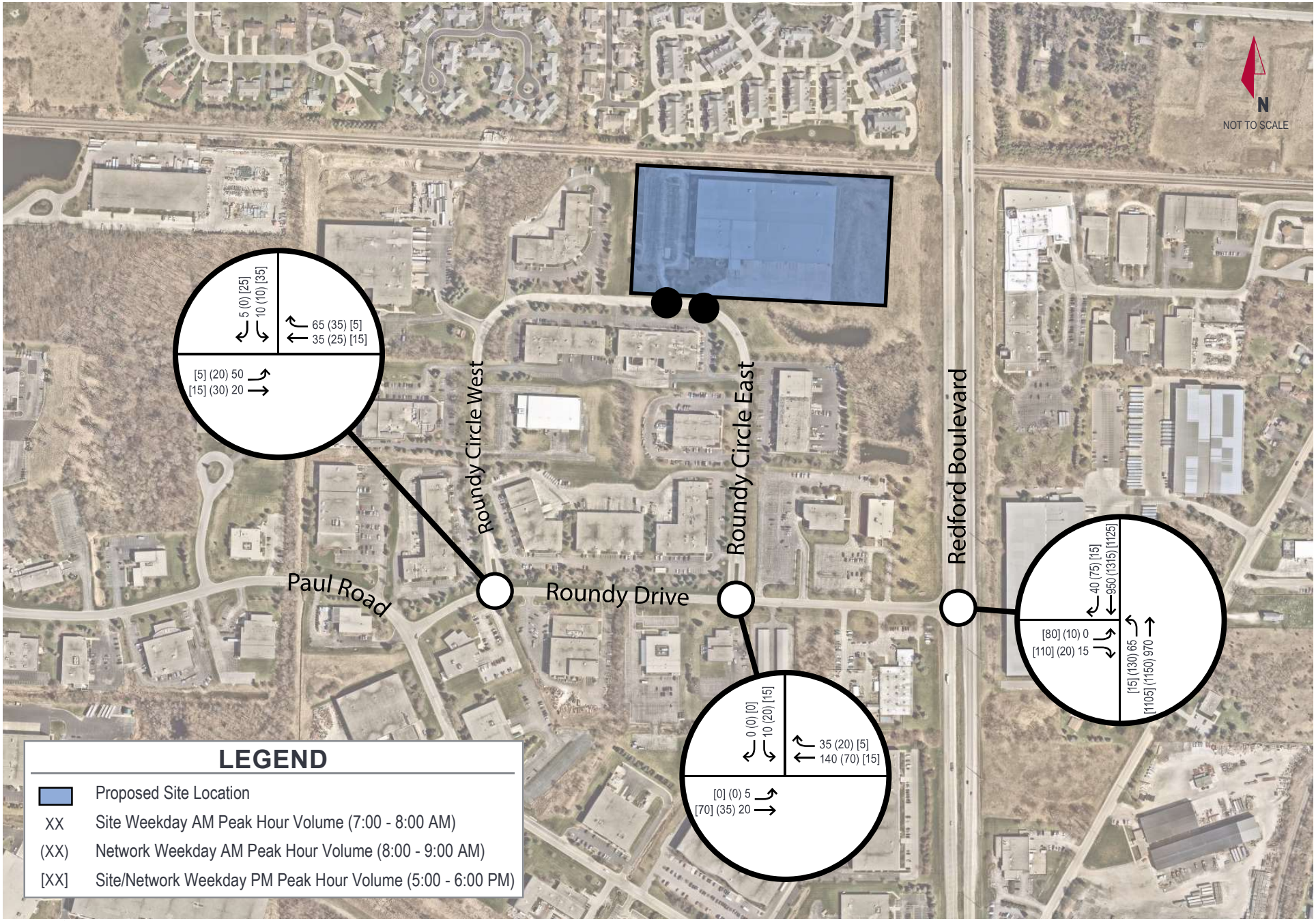

N
NOT TO SCALE
SPEED LIMIT 25
SPEED LIMIT 55
90' Spacing between site accesses
Roundy Circle West
Roundy Circle East
Redford Boulevard
Paul Road
SPEED LIMIT 25
830'
Roundy Drive
750'
245'
150'
*
LEGEND
Project Site Location
Study Intersections
XX' Existing Storage Length (Feet)
XXX' Access Spacing
Existing Stop Control
* No lane markings are provided, but the approach is wide enough that it functions as two lanes



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PEWAUKEE, WISCONSIN

EXHIBIT 3-2A
EXISTING (2021) TRAFFIC VOLUMES



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LAST-MILE WAREHOUSE FACILITY
PEWAUKEE, WISCONSIN

EXHIBIT 3-2B
BASE YEAR (2021) BACKGROUND TRAFFIC VOLUMES

Intersection	Traffic Control	Peak Hour	Parameter	Operations by Movement												Overall Intersection	
				Eastbound			Westbound			Northbound			Southbound				
				L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
Redford Boulevard & Roundy Drive	OWSC	Site AM	Delay (S/Veh)	27.0	-	12.9	-	-	-	12.0	-	-	-	-	-	27.0	D*
			LOS	D	-	B	-	-	-	B	-	-	-	-	-		
			V/C Ratio	0.01	-	0.04	-	-	-	0.13	-	-	-	-	-		
			95th % Queue (ft)	0	-	3	-	-	-	10	-	-	-	-	-		
		Network AM	Delay (S/Veh)	49.3	-	15.2	-	-	-	17.2	-	-	-	-	-	49.3	E*
			LOS	E	-	C	-	-	-	C	-	-	-	-	-		
			V/C Ratio	0.12	-	0.06	-	-	-	0.32	-	-	-	-	-		
			95th % Queue (ft)	10	-	5	-	-	-	35	-	-	-	-	-		
		Site/ Network PM	Delay (S/Veh)	43.6	-	16.0	-	-	-	11.6	-	-	-	-	-	43.6	E*
			LOS	E	-	C	-	-	-	B	-	-	-	-	-		
			V/C Ratio	0.49	-	0.26	-	-	-	0.03	-	-	-	-	-		
			95th % Queue (ft)	58	-	25	-	-	-	3	-	-	-	-	-		
Roundy Drive & Roundy Circle E	OWSC	Site AM	Delay (S/Veh)	7.7	-	-	-	-	-	-	-	-	10.0	-	9.3	10.0	B*
			LOS	A	-	-	-	-	-	-	-	-	B	-	A		
			V/C Ratio	0.01	-	-	-	-	-	-	-	-	0.02	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	3	-	0		
		Network AM	Delay (S/Veh)	0.0	-	-	-	-	-	-	-	-	9.3	-	8.7	9.3	A*
			LOS	A	-	-	-	-	-	-	-	-	A	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	0.03	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	3	-	0		
		Site/ Network PM	Delay (S/Veh)	7.3	-	-	-	-	-	-	-	-	9.5	-	8.5	9.5	A*
			LOS	A	-	-	-	-	-	-	-	-	A	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	0.03	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	3	-	0		
Roundy Drive & Roundy Circle W	OWSC	Site AM	Delay (S/Veh)	7.6	-	-	-	-	-	-	-	-	10.3	-	8.8	10.3	B*
			LOS	A	-	-	-	-	-	-	-	-	B	-	A		
			V/C Ratio	0.05	-	-	-	-	-	-	-	-	0.02	-	0.01		
			95th % Queue (ft)	3	-	-	-	-	-	-	-	-	3	-	0		
		Network AM	Delay (S/Veh)	7.4	-	-	-	-	-	-	-	-	9.3	-	8.5	9.3	A*
			LOS	A	-	-	-	-	-	-	-	-	A	-	A		
			V/C Ratio	0.01	-	-	-	-	-	-	-	-	0.01	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	0	-	0		
		Site/ Network PM	Delay (S/Veh)	7.3	-	-	-	-	-	-	-	-	9.1	-	8.5	9.1	A*
			LOS	A	-	-	-	-	-	-	-	-	A	-	A		
			V/C Ratio	0.01	-	-	-	-	-	-	-	-	0.05	-	0.03		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	5	-	3		

*Overall intersection delay for unsignalized intersections is shown as the highest movement delay

4. PROJECTED TRAFFIC

A. BACKGROUND TRAFFIC FORECASTING

The proposed development is anticipated to be completed and in operation by the end of 2021. With 2021 being both the existing year and opening year of the development, no background/future growth was applied to the turning movement volumes beyond the adjustment for COVID-19 impacts described in Section 3.B.

Exhibit 3-2A shows the raw, unadjusted AM and PM peak hour volumes. **Exhibit 3-2B** shows the adjusted Existing/Base Year (2021) background turning movement volumes.

B. ON-SITE DEVELOPMENT TRAFFIC FORECASTING

1. Trip Generation

Traffic generated by the proposed facility is unique to the site and considered non-standard for most land uses. Therefore, trip generation was provided by the end user based on historical data and the planned operations of the facility. **Table 4-1** provides the anticipated trip generation broken down by site users for the proposed Pewaukee last-mile warehouse facility in the three analysis peak hours. It should be noted that this last-mile warehouse will not use delivery vans, personal vehicles will be used for deliveries. The site is anticipated to generate 2,432 daily trips, 253 trips in the Site AM peak hour, 79 trips in the network AM peak hour, and 143 trips in the site/network PM peak hour. The hourly breakdown of trips per day is provided in **Exhibit 4-3**.

Table 4-1 – Peak Hour Trip Generation

Site Users	Daily Trips	Site AM Peak-Hour (7:00-8:00 AM)					Network AM Peak-Hour (8:00-9:00 AM)					Site/Network PM Peak-Hour (5:00-6:00 PM)				
		Total Trips	IN		OUT		Total Trips	IN		OUT		Total Trips	IN		OUT	
			%	Trips	%	Trips		%	Trips	%	Trips		%	Trips	%	Trips
Associates (Passenger Vehicles)	270	0	0%	0	0%	0	15	0%	0	100%	15	26	0%	0	100%	26
Trucks	30	1	100%	1	0%	0	0	0%	0	0%	0	1	0%	0	100%	1
Delivery Vehicles (Passenger Vehicles)	2,132	252	50%	126	50%	126	64	50%	32	50%	32	116	50%	58	50%	58
Total Trips	**2,432**	**253**	**50%**	**127**	**50%**	**126**	**79**	**41%**	**32**	**59%**	**47**	**143**	**41%**	**58**	**59%**	**85**

The trip generation volumes shown in **Table 4-1** are the facility's peak operating volumes. The proposed last-mile warehouse facility does not have seasonal peak operations as it is limited by the capacity of the building and efficiency of on-site operations. The trip generation analyzed represents the peak capacity of the proposed last-mile warehouse facility. This facility will not be open for customer pick-up/drop-off.

2. Mode Split

There are no sidewalks on either side of any of the study area roadways, and there is very limited pedestrian activity in the area. Redford Boulevard does have striped shoulders that can be used as an on-street bicycle facility. It is assumed, however, that all of trips to the facility will be vehicle trips.

3. Determination of Pass-By and Linked-Trip Traffic

All trips generated by the site will be new or primary trips. Therefore, no Pass-By or linked-trip traffic are expected.

4. Trip Distribution

The site trips were distributed to adjacent roadways based on the current traffic patterns in the area, a general assessment of the major regional roadways surrounding the study area, and an analysis of vehicle type and site use. It should be noted that the facility is generally intended to serve customers within a 45-minute drive of the site. This results in the site delivering goods to the greater Milwaukee area. Separate distributions were created for the user types. In general, the following global trip distribution was assumed for employees and delivery vehicles:

- 65% south on Redford Boulevard
- 25% north on Redford Boulevard
- 10% west on Paul Road

The employee site distribution is shown on **Exhibit 4-4A**, and the delivery vehicle site distribution is shown on **Exhibit 4-4B**. While the global distributions are the same for the two user types, they have different site trip assignments at the site accesses.

In general, the following global trip distribution was assumed for trucks:

- 70% south on Redford Boulevard
- 30% north on Redford Boulevard

The truck site distribution is shown on **Exhibit 4-4C**. All inbound and outbound trip distributions are the same for all three user types.

5. Trip Assignment

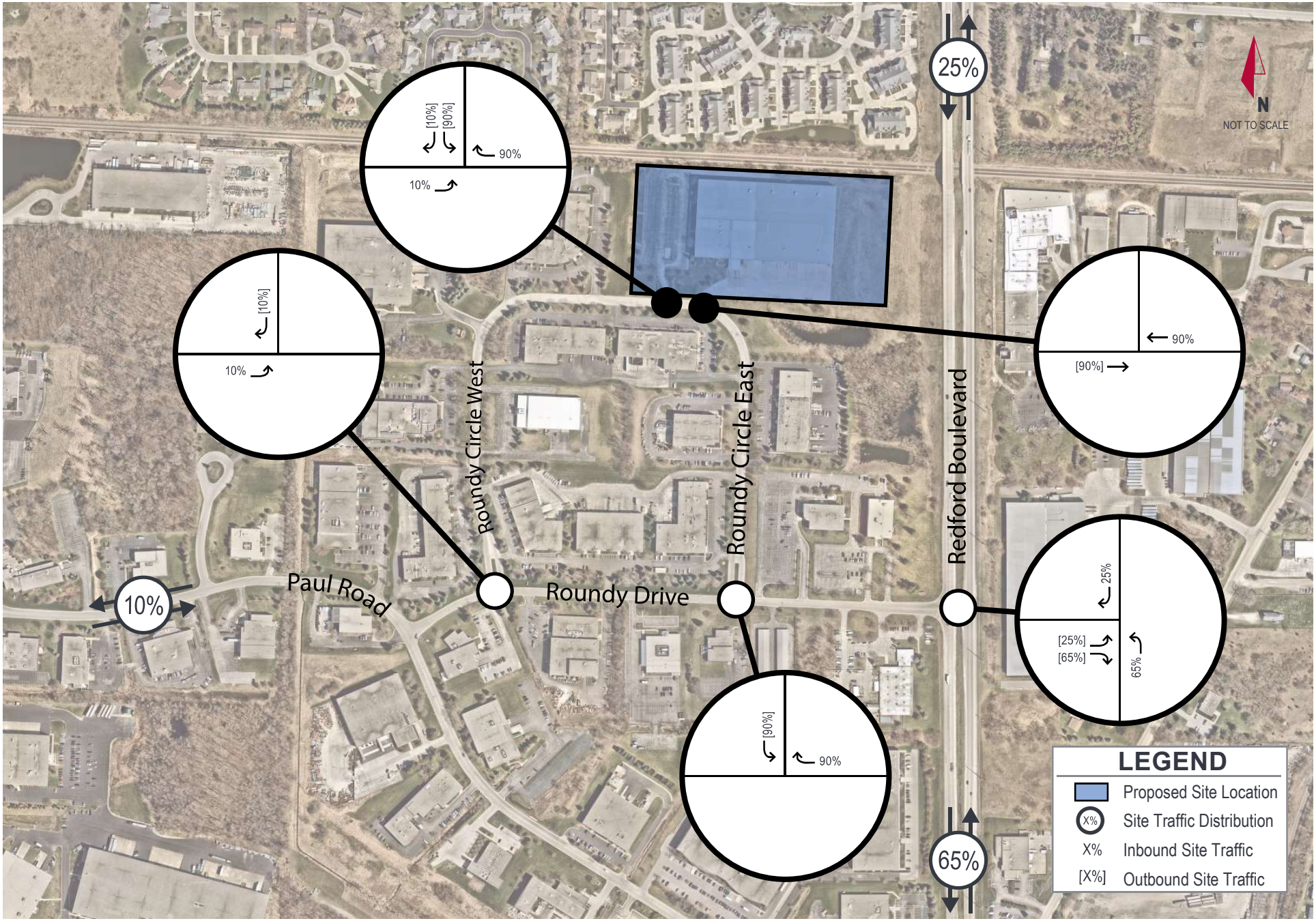
The project site traffic for the Site AM, Network AM, and Site/Network PM peak hours was assigned to the site driveways and study area intersections as shown on **Exhibit 4-5**.

C. BUILD AND TOTAL TRAFFIC

Build traffic volumes were developed by adding Existing/Opening Year background volumes (**Exhibit 3-2B**) and the site development traffic volumes (**Exhibit 4-5**). **Exhibit 4-11** shows the Site AM, Network AM, and Site/Network PM peak hour build volumes.

	Employees (Passenger Vehicles)			Trucks			Delivery Vehicles (Passenger Vehicles)			Total		
Time	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
0:00	0	0	0	2	0	2	0	0	0	2	0	2
1:00	0	0	0	0	1	1	0	0	0	0	1	1
2:00	0	0	0	0	1	1	0	0	0	0	1	1
3:00	15	0	15	2	0	2	52	52	104	69	52	121
4:00	0	0	0	0	1	1	105	105	210	105	106	211
5:00	0	0	0	1	1	2	126	126	252	127	127	254
6:00	51	0	51	0	1	1	126	126	252	177	127	304
7:00	0	0	0	1	0	1	126	126	252	127	126	253
8:00	0	15	15	0	0	0	32	32	64	32	47	79
9:00	17	0	17	1	1	2	33	33	66	51	34	85
10:00	0	0	0	0	0	0	33	33	66	33	33	66
11:00	0	51	51	1	0	1	24	24	48	25	75	100
12:00	0	0	0	1	0	1	54	54	108	55	54	109
13:00	26	0	26	0	1	1	54	54	108	80	55	135
14:00	0	0	0	1	1	2	54	54	108	55	55	110
15:00	0	17	17	1	1	2	58	58	116	59	76	135
16:00	27	0	27	1	0	1	58	58	116	86	58	144
17:00	0	0	0	0	2	2	58	58	116	58	60	118
18:00	0	26	26	0	1	1	58	58	116	58	85	143
19:00	0	0	0	1	0	1	14	14	28	15	14	29
20:00	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	1	1	0	0	0	0	1	1
22:00	0	27	27	1	0	1	0	0	0	1	27	28
23:00	0	0	0	1	2	3	0	0	0	1	2	3
Total	**136**	**136**	**272**	**15**	**15**	**30**	**1,065**	**1,065**	**2,130**	**1,216**	**1,216**	**2,432**

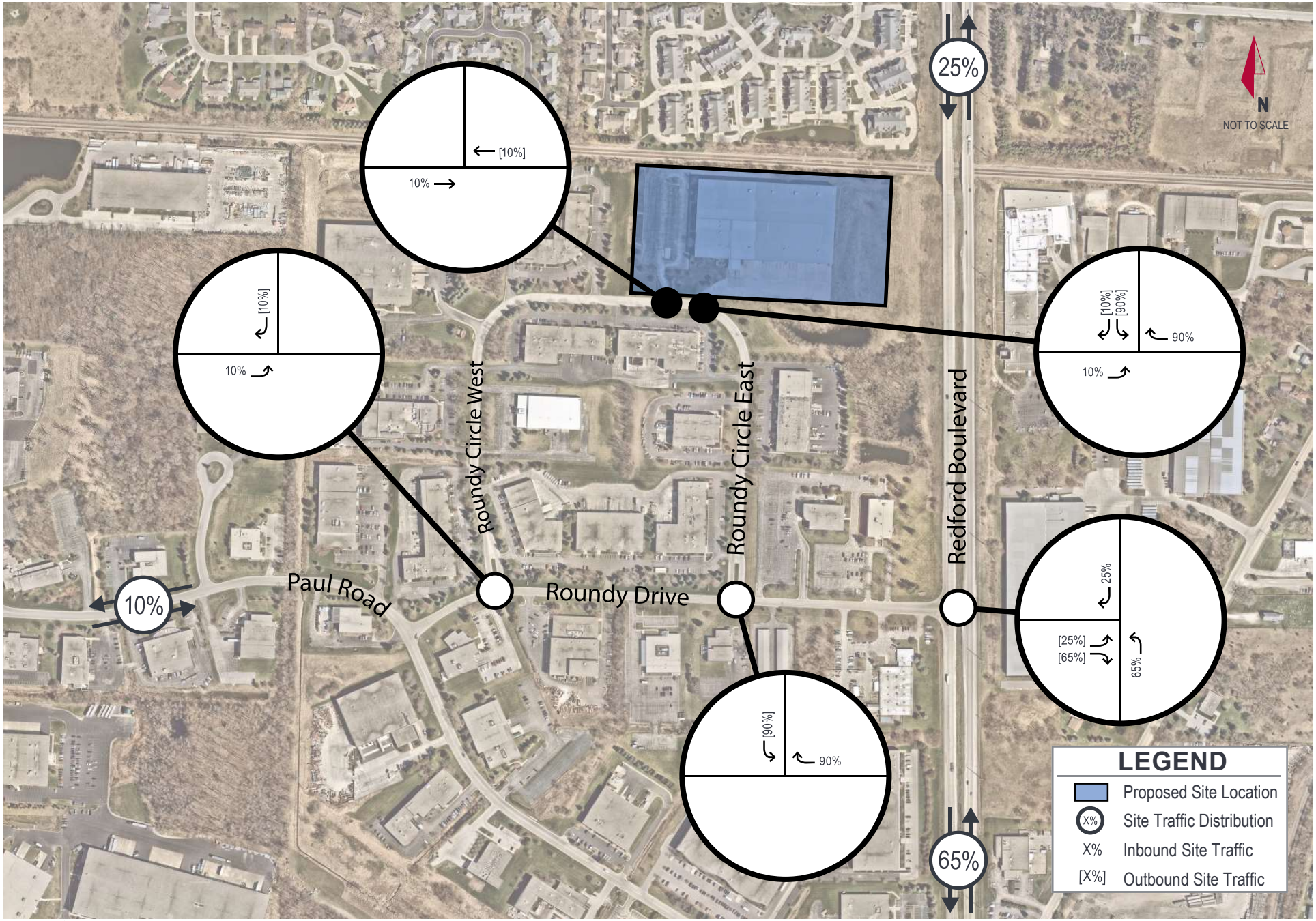
EXHIBIT 4-3
TRIP GENERATION TABLE



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LAST-MILE WAREHOUSE FACILITY
PEWAUKEE, WISCONSIN

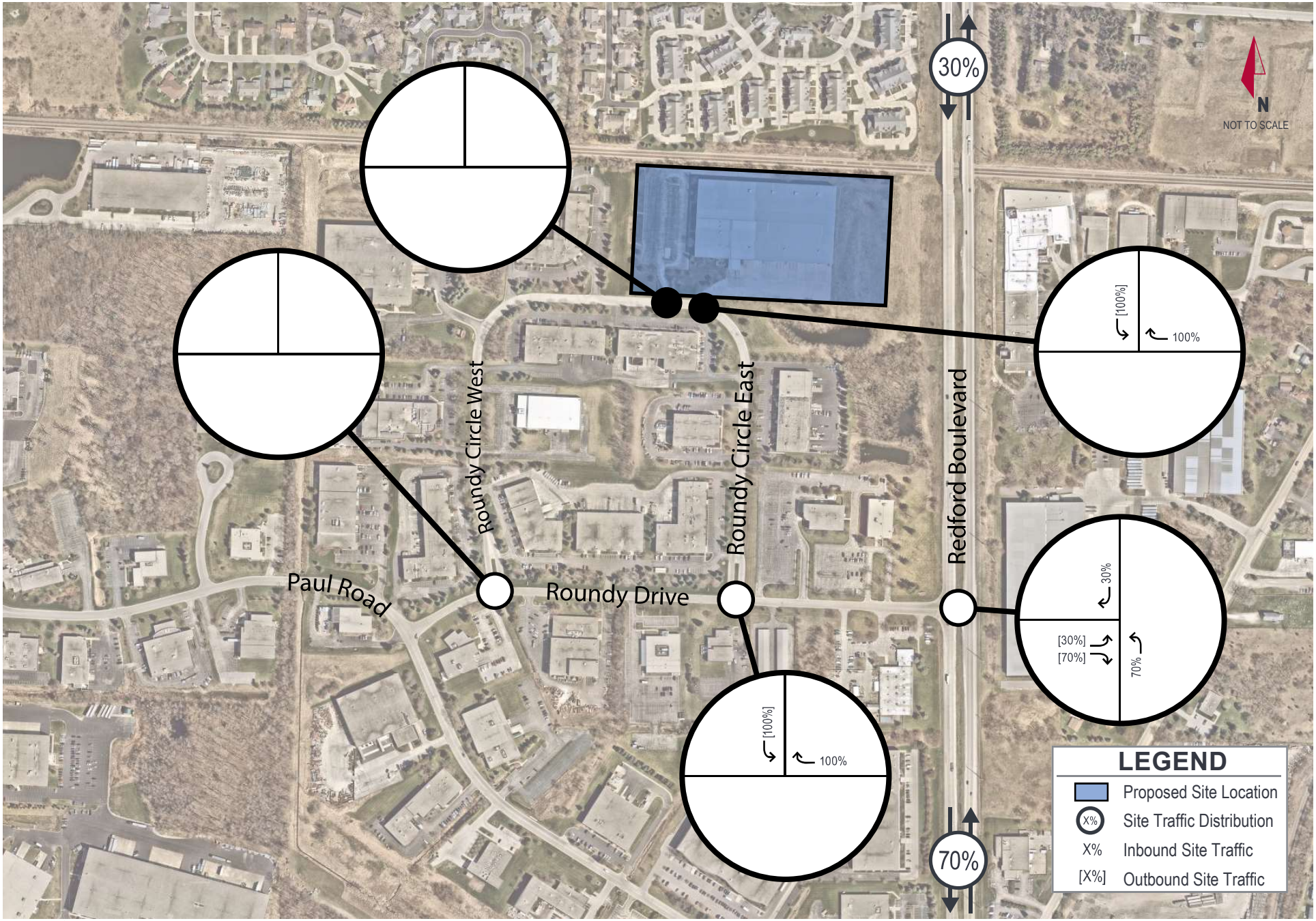
EXHIBIT 4-4A
EMPLOYEE
TRIP DISTRIBUTION



Kimley»Horn

LAST-MILE WAREHOUSE FACILITY
PEWAUKEE, WISCONSIN

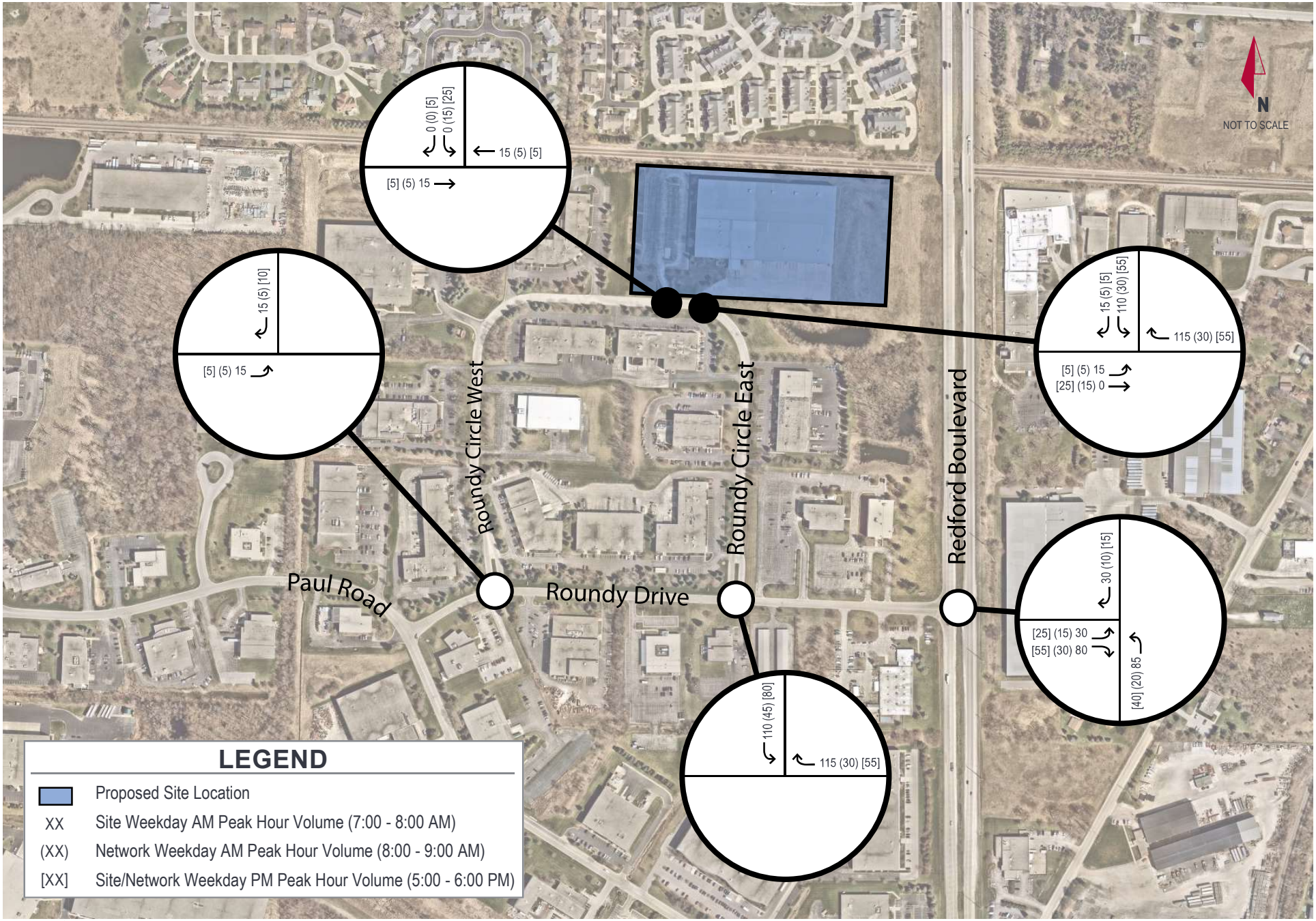
EXHIBIT 4-4B
DELIVERY VEHICLE TRIP DISTRIBUTION

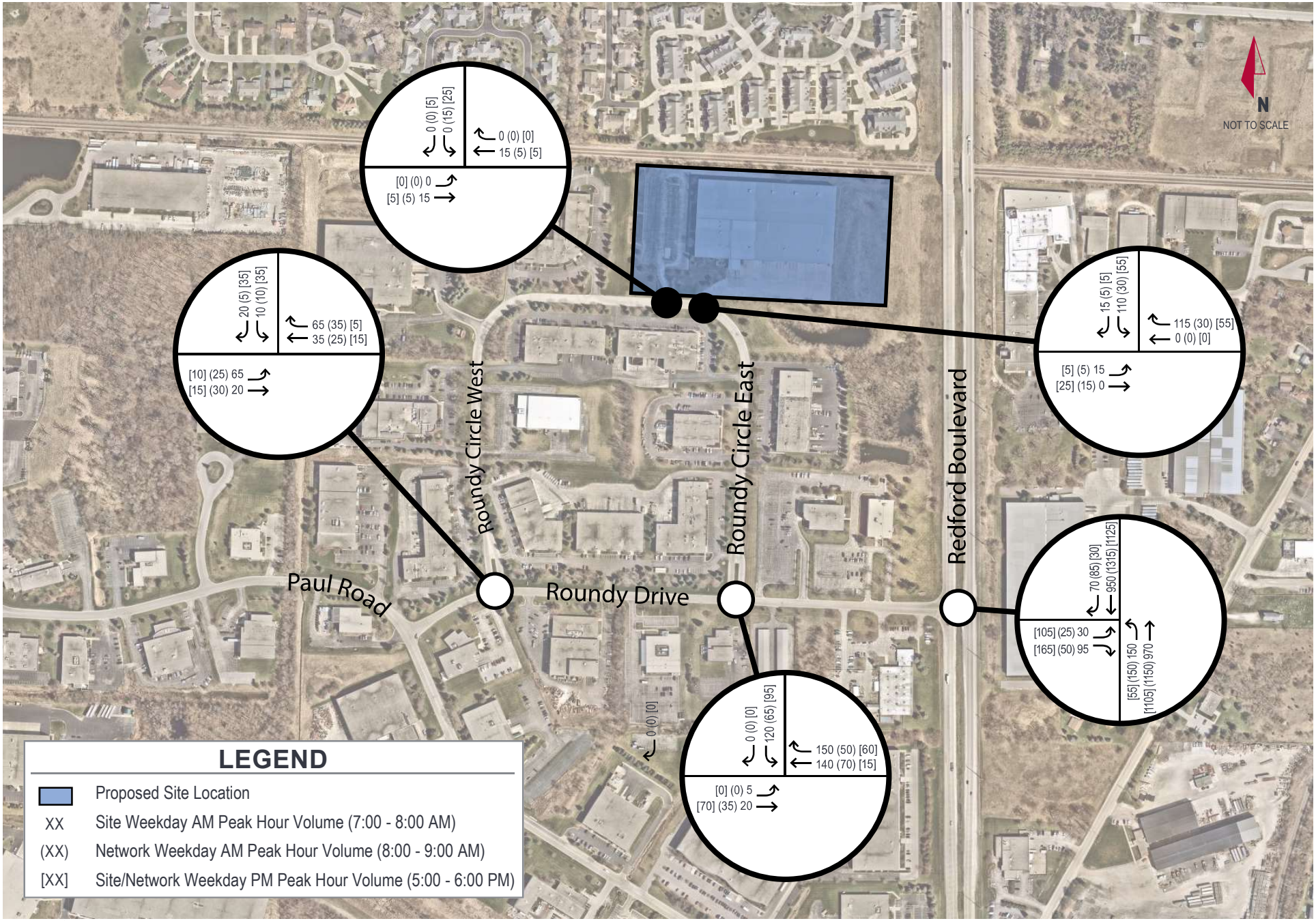


Kimley»Horn

LAST-MILE WAREHOUSE FACILITY
PEWAUKEE, WISCONSIN

EXHIBIT 4-4C
TRUCK
TRIP DISTRIBUTION


N
NOT TO SCALE
Roundy Circle West
Roundy Circle East
Redford Boulevard
Paul Road
Roundy Drive
0 (0) [5]
0 (15) [25]
15 (5) [5]
[5] (5) 15
15 (5) [10]
[5] (5) 15
15 (5) [5]
110 (30) [55]
115 (30) [55]
[5] (5) 15
[25] (15) 0
30 (10) [15]
[25] (15) 30
[55] (30) 80
[40] (20) 85
110 (45) [80]
115 (30) [55]
LEGEND
Proposed Site Location
XX Site Weekday AM Peak Hour Volume (7:00 - 8:00 AM)
(XX) Network Weekday AM Peak Hour Volume (8:00 - 9:00 AM)
[XX] Site/Network Weekday PM Peak Hour Volume (5:00 - 6:00 PM)



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LAST-MILE WAREHOUSE FACILITY
PEWAUKEE, WISCONSIN

EXHIBIT 4-11
BASE YEAR (2021) BUILD DEVELOMENT TRAFFIC VOLUMES

5. TRAFFIC AND IMPROVEMENT ANALYSIS

A. SITE ACCESS

The proposed last-mile warehouse facility will have a total of two (2) site accesses, which will remain unchanged from the existing accesses. Both site accesses provide connections onto Roundy Circle E. The west access will be utilized by employees, and the east access will serve trucks and delivery vehicles.

B. CAPACITY/LEVEL OF SERVICE ANALYSIS

Traffic models for each scenario were developed using Synchro, and the delay and LOS were evaluated for each scenario using HCM 6th Edition procedures. The scenarios that were analyzed are the Base Year (2021) Build Development (Existing Transportation System) and the Base Year (2021) Build Development (Improved Transportation System)

Base Year (2021) Build Conditions, Existing Transportation System

The traffic volumes shown in **Exhibit 4-11** were used in the Base Year (2021) Build analysis with the existing transportation system. **Exhibits 5-3A & 5-3B** summarize the delay, LOS, 95th percentile queues, and storage lane lengths for the study intersections under Base Year (2021) Build conditions with the existing transportation system during the Site AM, Network AM, and Site/Network PM peak hours.

Based on the analysis, the study intersections and site accesses are anticipated to operate at overall LOS B or better during all three peak hours with the exception of Redford Boulevard & Roundy Drive. The eastbound left-turn at Redford Boulevard & Roundy Drive is anticipated to operate at LOS E during the Site AM peak hour and LOS F during the Network AM and Site/Network PM peak hours. The average delay for the eastbound left-turn in the Site/Network PM peak is anticipated to be 69.5 seconds per vehicle. As previously mentioned, longer delays are not uncommon for side street stop-controlled movements on higher volume corridors such as Redford Boulevard. The installation of a traffic signal would improve the side street operations.

All 95th percentile queues are anticipated to be within the provided storage capacity. The HCM reports are provided in **Appendix D**.

C. QUEUEING ANALYSIS

Exhibits 5-18 & 5-21 provide the simulated 95th percentile queue lengths for the Existing/Base year (2021) background and build traffic scenarios. The storage shown reflects the total length of the turn lane. Link distances for through movements are not shown as all link distances well exceed the expected queues.

Existing/Base Year (2021) Background Conditions, Existing Transportation System

As Shown in **Exhibit 5-18**, all the 95th percentile queue lengths are anticipated to be within the available storage bays. No turn lane expansions are required in the Existing/Base year (2021) Background Conditions.

Base Year (2021) Build Conditions, Existing Transportation System

As Shown in **Exhibit 5-21**, all the 95th percentile queue lengths are anticipated to be within the available storage bays. No turn lane expansions are required in the Base year (2021) Build Conditions.

D. PEDESTRIAN, BICYCLE, AND TRAIL CONSIDERATIONS

There are no sidewalks on either side of any of the study area roadways, and there is very limited pedestrian activity in the area. Redford Boulevard does have striped shoulders that can be used as an on-street bicycle facility. It is assumed, however, that all of trips to the facility will be vehicle trips.

F. TRAFFIC CONTROL NEEDS

The site driveways are proposed to remain stop-controlled and is expected to operate acceptably with this traffic control. The Roundy Drive & Roundy Circle E, Roundy Drive & Roundy Circle W, and Redford Boulevard & Roundy Drive intersections currently operate with one-way stop control. Under Base Year (2021) build conditions, the Roundy Drive & Roundy Circle E and Roundy Drive & Roundy Circle W intersections are projected to operate acceptable; however, the stop-controlled approach at Redford Boulevard & Roundy Drive is anticipated to operate at LOS F in the network peak hours. Therefore, a signal warrant analysis was conducted.

As discussed in further detail in Section 5.G. below, the Redford Boulevard & Roundy Drive intersection only meets warrant 3. However, warrant 3 alone is not sufficient justification for the installation of a traffic signal. It is recommended to monitor future traffic volumes and operations at the intersection and reevaluate traffic signal warrants in the future if needed.

In addition to traffic control, truck turning movement were analyzed to determine if the existing geometry is sufficient at the study area intersections. **Exhibits 5-28A and 5-28B** show the truck turning movements at the truck site access, Roundy Circle E & Roundy Drive, and Redford Boulevard & Roundy Circle. The following geometric changes are recommended in order to accommodate truck turning movements (WB-67).

<u>Roundy Circle E & Roundy Drive intersection:</u>

- To accommodate westbound right truck turning traffic, the northeast corner of the intersection should provide a 60-foot-long and 10-foot-wide truck apron.
- To accommodate southbound left truck turning traffic, the center island on the north leg should be shortened by 10 feet.

G TRAFFIC SIGNAL WARRANT ANALYSIS

A signal warrant analysis was completed based on the poor level of service for the side street left turning movement at Roundy Drive & Redford Boulevard. Guidelines from the Wisconsin Manual on Uniform Traffic Control Devices (WisMUTCD) were referenced for the signal warrant analysis completed in this report. Based on this, right-turn volumes were excluded from the Roundy Drive minor street approach since it functions as two lanes with an exclusive right-turn lane. The following data was utilized to complete the analysis:

- Base Year (2021) Build approach volumes
- Lane geometry
- Speed limits near the study intersection

To determine whether a traffic signal is warranted at the study intersection, the following warrants were considered relevant based on the site characteristics and were included in the analysis: Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume), and Warrant 3 (Peak Hour).

A summary of the signal warrant analysis completed for the build traffic volumes is shown in **Table 5-1**. The detailed warrant analysis is provided in **Appendix I**. Based on the analysis, Warrants 1a, 1b, and 2 are not met while Warrant 3 is met. Satisfaction of Warrant 3 alone is not sufficient justification for the installation of a traffic signal.

Per WisDOT standards, Warrant 3 should only be considered when traffic suffers undue delay when entering or crossing the major street. This threshold is 4 vehicle hours of delay for a single lane approach. With an average delay of 69.5 seconds for the 96 vehicles in the Site/Network PM peak hour making the eastbound left-turn, this results in approximately 1.85 vehicle hours of delay. Since this does not meet the delay threshold, a traffic signal is not warranted at this intersection with the anticipated traffic volumes in the Base Year (2021) Build condition. It is recommended to monitor future traffic volumes and operations at the intersection and reevaluate traffic signal warrants in the future if needed.

Table 5-1 – Signal Warrant Analysis Summary

Warrant	Requirement	Results	Warrant Met
Warrant 1A Eight-Hour Vehicular Volume	8 hours	0 hours	**No**
Warrant 1B Eight-Hour Vehicular Volume	8 hours	3 hours	**No**
Warrant 2 Four-Hour Vehicular Volume	4 hours	2 hours	**No**
Warrant 3 Peak Hour	1 hour	1 hour	**Yes**

Intersection	Traffic Control	Peak Hour	Parameter	Operations by Movement												Overall Intersection	
				Eastbound			Westbound			Northbound			Southbound				
				L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
Redford Boulevard & Roundy Drive	OWSC	Site AM	Delay (S/Veh)	44.3	-	15.0	-	-	-	14.1	-	-	-	-	-	44.3	E*
			LOS	E	-	B	-	-	-	B	-	-	-	-	-		
			V/C Ratio	0.28	-	0.24	-	-	-	0.31	-	-	-	-	-		
			95th % Queue (ft)	28	-	23	-	-	-	33	-	-	-	-	-		
		Network AM	Delay (S/Veh)	66.1	-	16.3	-	-	-	18.3	-	-	-	-	-	66.1	F*
			LOS	F	-	C	-	-	-	C	-	-	-	-	-		
			V/C Ratio	0.32	-	0.15	-	-	-	0.38	-	-	-	-	-		
			95th % Queue (ft)	30	-	13	-	-	-	43	-	-	-	-	-		
		Site/ Network PM	Delay (S/Veh)	69.5	-	18.3	-	-	-	12.2	-	-	-	-	-	69.5	F*
			LOS	F	-	C	-	-	-	B	-	-	-	-	-		
			V/C Ratio	0.71	-	0.39	-	-	-	0.10	-	-	-	-	-		
			95th % Queue (ft)	105	-	48	-	-	-	8	-	-	-	-	-		
Roundy Drive & Roundy Circle E	OWSC	Site AM	Delay (S/Veh)	8.0	-	-	-	-	-	-	-	-	11.9	-	9.8	11.9	B*
			LOS	A	-	-	-	-	-	-	-	-	B	-	A		
			V/C Ratio	0.01	-	-	-	-	-	-	-	-	0.23	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	23	-	0		
		Network AM	Delay (S/Veh)	7.5	-	-	-	-	-	-	-	-	9.7	-	8.8	9.6	A*
			LOS	A	-	-	-	-	-	-	-	-	A	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	0.08	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	8	-	0		
		Site/ Network PM	Delay (S/Veh)	7.5	-	-	-	-	-	-	-	-	10.8	-	8.7	10.8	B*
			LOS	A	-	-	-	-	-	-	-	-	B	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	0.21	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	20	-	0		
Roundy Drive & Roundy Circle W	OWSC	Site AM	Delay (S/Veh)	7.7	-	-	-	-	-	-	-	-	10.7	-	8.9	10.7	B*
			LOS	A	-	-	-	-	-	-	-	-	B	-	A		
			V/C Ratio	0.06	-	-	-	-	-	-	-	-	0.02	-	0.03		
			95th % Queue (ft)	5	-	-	-	-	-	-	-	-	3	-	3		
		Network AM	Delay (S/Veh)	7.4	-	-	-	-	-	-	-	-	9.3	-	8.6	9.3	A*
			LOS	A	-	-	-	-	-	-	-	-	A	-	A		
			V/C Ratio	0.02	-	-	-	-	-	-	-	-	0.01	-	0.01		
			95th % Queue (ft)	3	-	-	-	-	-	-	-	-	0	-	0		
		Site/ Network PM	Delay (S/Veh)	7.3	-	-	-	-	-	-	-	-	9.2	-	8.6	9.2	A*
			LOS	A	-	-	-	-	-	-	-	-	A	-	A		
			V/C Ratio	0.01	-	-	-	-	-	-	-	-	0.05	-	0.05		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	5	-	3		

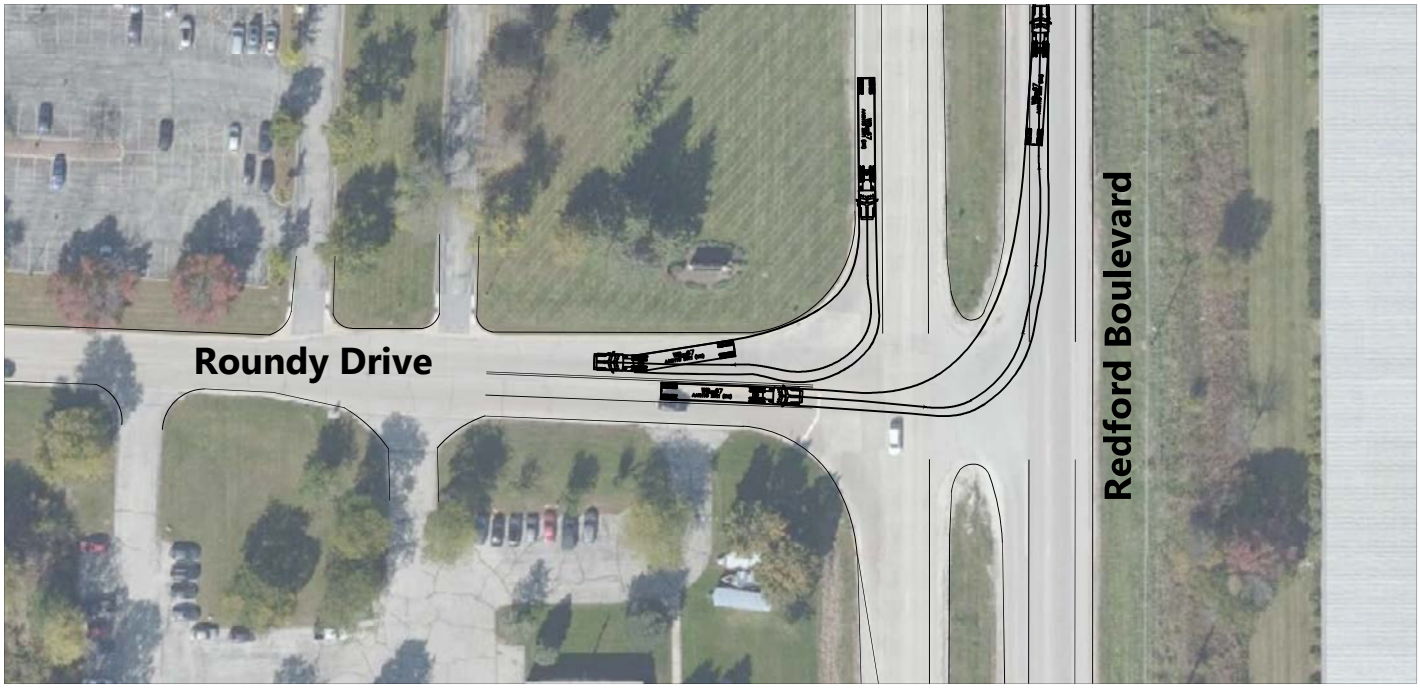
*Overall intersection delay for unsignalized intersections is shown as the highest movement delay

Intersection	Traffic Control	Peak Hour	Parameter	Operations by Movement												Overall Intersection	
				Eastbound			Westbound			Northbound			Southbound				
				L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
Roundy Circle E & West Access	OWSC	Site AM	Delay (S/Veh)	7.2	-	-	-	-	-	-	-	-	-	-	8.5	8.5	A*
			LOS	A	-	-	-	-	-	-	-	-	-	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	-	-	0.00		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	-	-	0		
		Network AM	Delay (S/Veh)	7.2	-	-	-	-	-	-	-	-	-	-	8.6	8.6	A*
			LOS	A	-	-	-	-	-	-	-	-	-	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	-	-	0.02		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	-	-	3		
		Site/ Network PM	Delay (S/Veh)	7.2	-	-	-	-	-	-	-	-	-	-	8.6	8.6	A*
			LOS	A	-	-	-	-	-	-	-	-	-	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	-	-	0.03		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	-	-	3		
Roundy Circle E & East Access	OWSC	Site AM	Delay (S/Veh)	7.5	-	-	-	-	-	-	-	-	-	-	9.6	9.6	A*
			LOS	A	-	-	-	-	-	-	-	-	-	-	A		
			V/C Ratio	0.01	-	-	-	-	-	-	-	-	-	-	0.15		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	-	-	13		
		Network AM	Delay (S/Veh)	7.3	-	-	-	-	-	-	-	-	-	-	8.8	8.8	A*
			LOS	A	-	-	-	-	-	-	-	-	-	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	-	-	0.04		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	-	-	3		
		Site/ Network PM	Delay (S/Veh)	7.3	-	-	-	-	-	-	-	-	-	-	9.1	9.1	A*
			LOS	A	-	-	-	-	-	-	-	-	-	-	A		
			V/C Ratio	0.00	-	-	-	-	-	-	-	-	-	-	0.07		
			95th % Queue (ft)	0	-	-	-	-	-	-	-	-	-	-	5		

*Overall intersection delay for unsignalized intersections is shown as the highest movement delay

Intersection	Traffic Control	Approach	Movement	Existing Storage Length	95th Percentile Queue Lengths (ft)			Recommended Storage Length
					Site AM Peak Hour	Network AM Peak Hour	Site/Network PM Peak Hour	
Redford Boulevard & Roundy Drive	OWSC	EB	LT	-	0	10	58	
			RT	240	3	5	25	
		NB	LT	150	10	35	3	
			TH	-	0	0	0	
		SB	TH	-	0	0	0	
			RT	250	0	0	0	
Roundy Drive & Roundy Circle E	OWSC	EB	LT/TH	-	0	0	0	
		WB	TH/RT	-	0	0	0	
		SB	LT	-	3	3	3	
			RT	130	0	0	0	
Roundy Drive & Roundy Circle W	OWSC	EB	LT/TH	-	3	0	0	
		WB	TH/RT	-	0	0	0	
		SB	LT	-	3	0	5	
			RT	120	0	0	3	

Intersection	Traffic Control	Approach	Movement	Existing Storage Length	95th Percentile Queue Lengths			Recommended Storage Length
					Site AM Peak Hour	Network AM Peak Hour	Site/Network PM Peak Hour	
Redford Boulevard & Roundy Drive	OWSC	EB	LT	-	28	30	105	
			RT	240	23	13	48	
		NB	LT	150	33	43	8	
			TH	-	0	0	0	
		SB	TH	-	0	0	0	
			RT	250	0	0	0	
Roundy Drive & Roundy Circle E	OWSC	EB	LT/TH	-	0	0	0	
		WB	TH/RT	-	0	0	0	
		SB	LT	-	23	8	20	
			RT	130	0	0	0	
Roundy Drive & Roundy Circle W	OWSC	EB	LT/TH	-	5	3	0	
		WB	TH/RT	-	0	0	0	
		SB	LT	-	3	0	5	
			RT	120	3	0	3	
Roundy Circle E & West Access	OWSC	EB	LT/TH	-	0	0	0	
		WB	TH/RT	-	0	0	0	
		SB	LT/RT	130	0	3	3	
Roundy Circle E & East Access	OWSC	EB	LT/TH	-	0	0	0	
		WB	TH/RT	-	0	0	0	
		SB	LT/RT	120	13	3	5	



WB-67 Southbound Right & Eastbound Left Turning Movements

NORTH

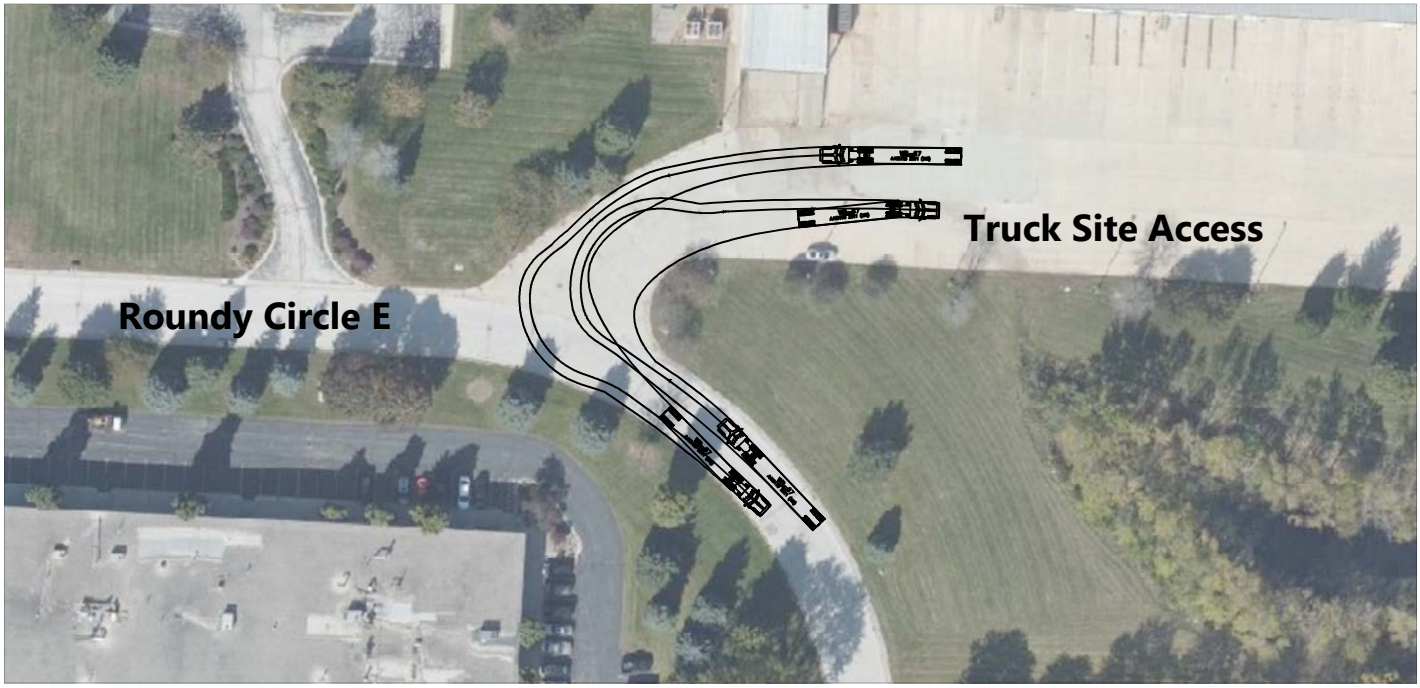
GRAPHIC SCALE IN FEET
0 25 50 100



WB-67 Eastbound Right & Northbound Left Turning Movements

NORTH

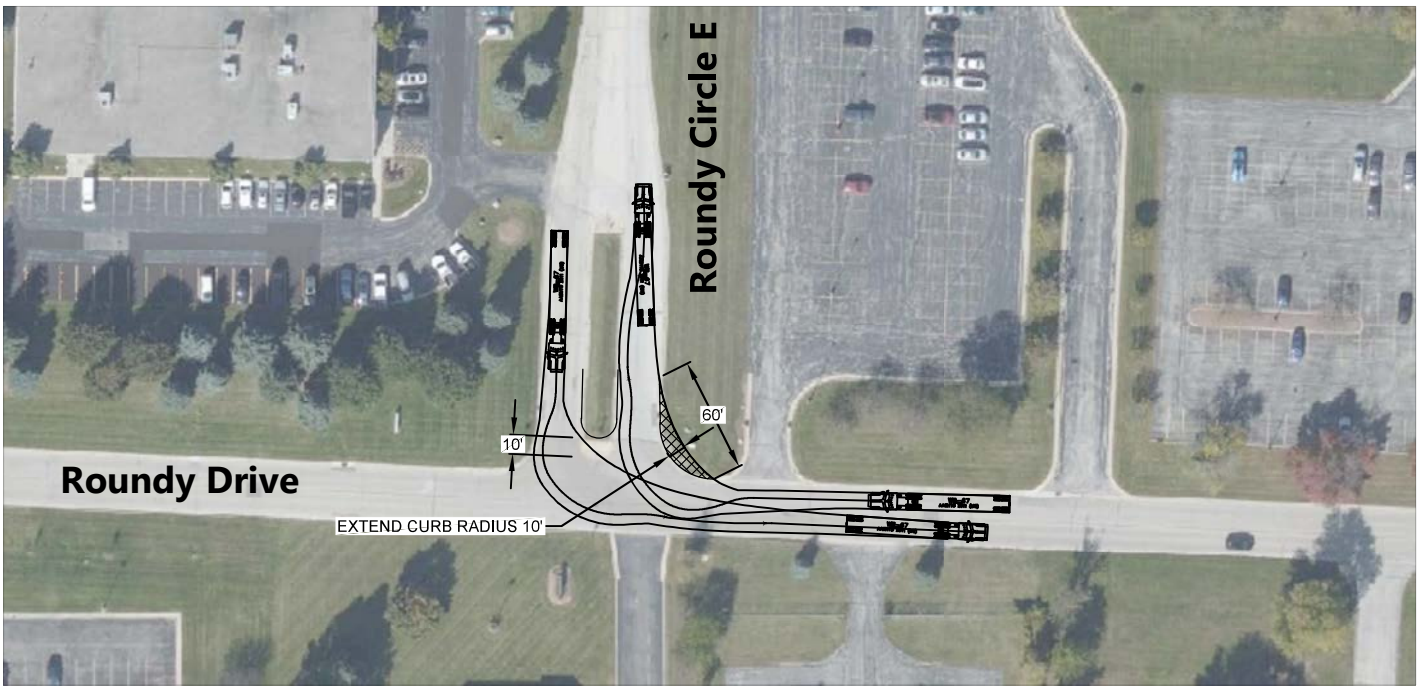
GRAPHIC SCALE IN FEET
0 25 50 100



WB-67 Turning Movements at the Site Access

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100



WB-67 Turning Movements at Roundy Drive & Roundy Circle E

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

Kimley»Horn

EXHIBIT 5-28B

LAST-MILE WAREHOUSE FACILITY
PEWAUKEE, WISCONSIN

INTERSECTION TRUCK TURNING TEMPLATE

6. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

This TIA provides a detailed examination of the operating conditions on roadways and intersections in the vicinity of the last-mile warehouse facility in Pewaukee, Wisconsin under existing/base year (2021) conditions with and without the proposed development for the Site AM, Network AM, and Site/Network PM peak analysis periods.

The intersections of Roundy Drive & Roundy Circle E and Roundy Drive & Roundy Circle W are anticipated to continue to operate at LOS B with the proposed site traffic, which had minimal impacts on delay and LOS. There were no queuing issues at these two intersections during any analysis scenarios.

In the Existing/Base Year (2021) scenario, the eastbound left-turn at Redford Boulevard & Roundy Drive operates at LOS D in the Site AM peak hour and LOS E in the Network AM and Site/Network PM peak hours. Longer delays are not uncommon for side street stop-controlled movements on higher volume corridors such as Redford Boulevard. Operational analysis results were consistent with observed operations at Redford Boulevard & Roundy Drive. In the Existing/Base Year (2021) scenario, no queues extend beyond the provided storage bay.

With the addition of the proposed site traffic, the eastbound left-turn at Redford Boulevard & Roundy Drive is anticipated to degrade from LOS D to LOS E during the Site AM peak hour. In the Network AM and Site/Network PM peak hours, this movement is anticipated to degrade from LOS E to LOS F. All 95th percentile queues are anticipated to be within their respective storage bay length. A signal warrant analysis was conducted, and a signal is not warranted at this time with anticipated site traffic. The intersection is shown to meet Warrant 3; however, Warrant 3 alone is not sufficient justification for the installation of a traffic signal. While the eastbound left-turn is expected to operate at LOS F with an average delay of approximately 69.5 seconds per vehicle, the intersection does not meet signal warrants and is expected to continue to operate at LOS F. The installation of a traffic signal would improve the side street operations if deemed necessary in the future.

Based on the results of the truck turning movement analysis, geometric changes are recommended at Roundy Circle E & Roundy Drive intersection.

B. RECOMMENDATIONS

Based on the results of the analyses, the following improvements are recommended at study area intersections. Note that improvements are recommended to the City of Pewaukee for consideration and are not legally binding. City of Pewaukee reserves the right to determine alternative solutions.

<u>Redford Boulevard & Roundy Drive intersection:</u>

- Install pavement markings on the eastbound approach to delineate separate left- and right-turn lanes.
- Monitor future traffic volumes and operations and reevaluate traffic signal warrants in the future if needed.

<u>Roundy Circle E & Roundy Drive intersection:</u>

- To accommodate westbound right truck turning traffic, the north east corner of the intersection should provide a 60-foot-long and 10-foot-wide truck apron.

- To accommodate southbound left truck turning traffic, the center island on the north leg should be shortened by 10 feet.

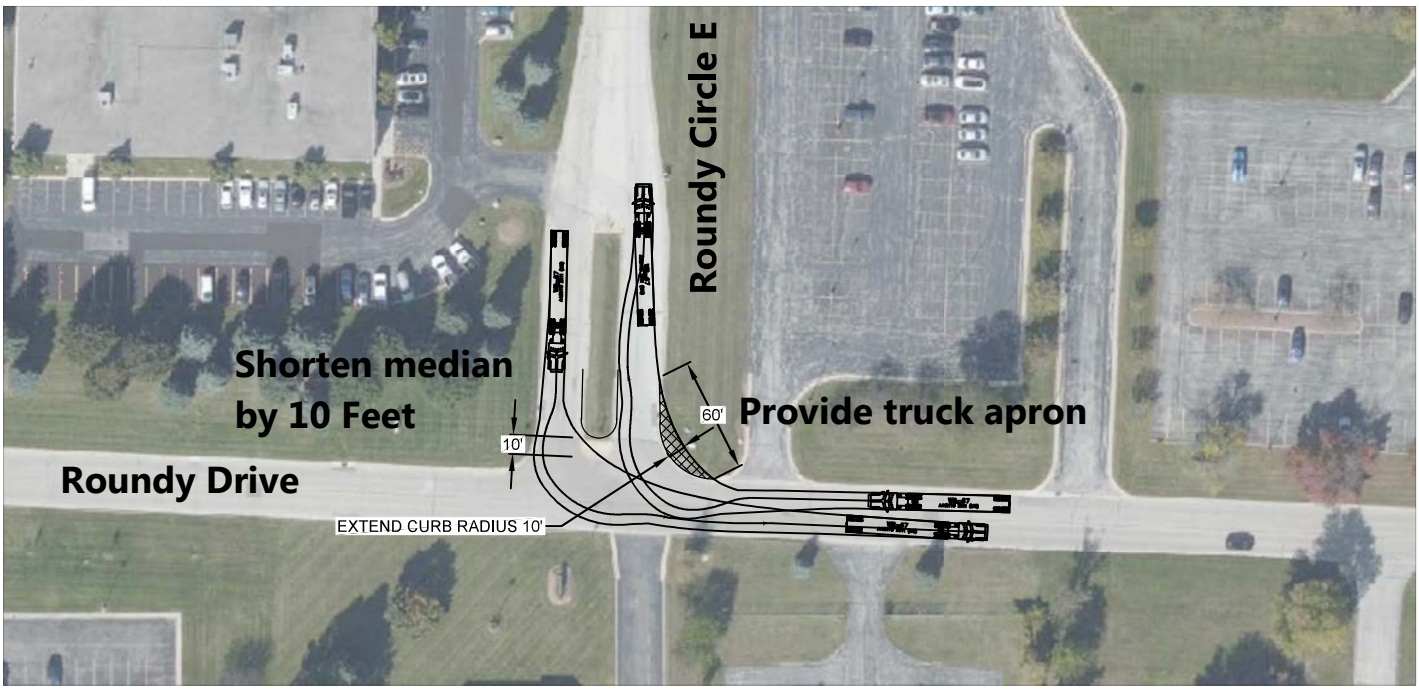
Exhibit 6-1 shows the conceptual recommendations for Redford Boulevard & Roundy Drive and Roundy Circle E & Roundy Drive.



Roundy Drive & Redford Boulevard

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100



Roundy Drive & Roundy Circle E

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

APPENDIX

A. Traffic

B. Existing Transportation System with Background Traffic Operational Analysis

D. Existing Transportation System with Total Traffic Operational Analysis

G. Transportation System Improvements with Total Traffic Operational Analysis

I. Warrant Analysis for Intersection Traffic Control

A. Traffic

Peak Hour Factor & Heavy Vehicle Percentage

Intersection	Peak Hour	Peak Hour Factor	Operations by Movement											
			Eastbound			Westbound			Northbound			Southbound		
			L	T	R	L	T	R	L	T	R	L	T	R
Redford Boulevard & Roundy Drive	Site AM	0.85		2%			-			3%			2%	
	Network AM	0.92		2%			-			3%			2%	
	Site/Network PM	0.94		2%			-			3%			2%	
Roundy Drive & Roundy Circle E	Site AM	0.78		1%			1%			-			4%	
	Network AM	0.92		1%			1%			-			4%	
	Site/Network PM	0.58		1%			1%			-			4%	
Roundy Drive & Roundy Circle W	Site AM	0.74		5%			3%			-			4%	
	Network AM	0.93		5%			3%			-			4%	
	Site/Network PM	0.7		5%			3%			-			4%	

Redford Boulevard & Roundy Drive - TMC

Tue Mar 2, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 816541, Location: 43.06937, -88.205783

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

Leg Direction	Roundy Eastbound					Redford Northbound					Redford Southbound					
Time	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	Int
2021-03-02 12:00AM	0	4	0	**4**	0	1	28	0	**29**	0	17	0	0	**17**	0	**50**
12:15AM	2	0	0	**2**	0	0	28	0	**28**	0	23	1	0	**24**	0	**54**
12:30AM	0	1	0	**1**	0	1	14	0	**15**	0	17	1	0	**18**	0	**34**
12:45AM	0	1	0	**1**	0	0	12	0	**12**	0	19	0	0	**19**	0	**32**
Hourly Total	2	6	0	**8**	0	2	82	0	**84**	0	76	2	0	**78**	0	**170**
1:00AM	1	1	0	**2**	0	1	7	0	**8**	0	6	0	0	**6**	0	**16**
1:15AM	0	1	0	**1**	0	0	12	0	**12**	0	9	0	0	**9**	0	**22**
1:30AM	0	1	0	**1**	0	0	6	1	**7**	0	3	0	0	**3**	0	**11**
1:45AM	0	0	0	**0**	0	0	6	0	**6**	0	5	0	0	**5**	0	**11**
Hourly Total	1	3	0	**4**	0	1	31	1	**33**	0	23	0	0	**23**	0	**60**
2:00AM	0	0	0	**0**	0	0	11	0	**11**	0	5	1	0	**6**	0	**17**
2:15AM	0	0	0	**0**	0	0	13	0	**13**	0	5	0	0	**5**	0	**18**
2:30AM	0	0	0	**0**	0	0	6	0	**6**	0	6	0	0	**6**	0	**12**
2:45AM	0	0	0	**0**	0	0	9	0	**9**	0	4	0	0	**4**	0	**13**
Hourly Total	0	0	0	**0**	0	0	39	0	**39**	0	20	1	0	**21**	0	**60**
3:00AM	0	0	0	**0**	0	1	7	0	**8**	0	6	0	0	**6**	0	**14**
3:15AM	0	1	0	**1**	0	0	4	0	**4**	0	9	0	0	**9**	0	**14**
3:30AM	0	1	0	**1**	0	0	6	0	**6**	0	10	0	0	**10**	0	**17**
3:45AM	0	1	0	**1**	0	0	8	0	**8**	0	11	0	0	**11**	0	**20**
Hourly Total	0	3	0	**3**	0	1	25	0	**26**	0	36	0	0	**36**	0	**65**
4:00AM	0	2	0	**2**	0	1	3	0	**4**	0	9	0	0	**9**	0	**15**
4:15AM	0	1	0	**1**	0	0	11	0	**11**	0	9	0	0	**9**	0	**21**
4:30AM	0	0	0	**0**	0	3	8	0	**11**	0	9	0	0	**9**	0	**20**
4:45AM	0	0	0	**0**	0	3	15	0	**18**	0	12	1	0	**13**	0	**31**
Hourly Total	0	3	0	**3**	0	7	37	0	**44**	0	39	1	0	**40**	0	**87**
5:00AM	1	3	0	**4**	0	1	16	0	**17**	0	18	1	0	**19**	0	**40**
5:15AM	0	0	0	**0**	0	2	20	0	**22**	0	25	1	0	**26**	0	**48**
5:30AM	0	2	0	**2**	0	0	63	0	**63**	0	36	2	0	**38**	0	**103**
5:45AM	0	0	0	**0**	0	2	49	0	**51**	0	39	2	0	**41**	0	**92**
Hourly Total	1	5	0	**6**	0	5	148	0	**153**	0	118	6	0	**124**	0	**283**
6:00AM	0	2	0	**2**	0	3	59	0	**62**	0	41	2	0	**43**	0	**107**
6:15AM	0	2	0	**2**	0	4	111	0	**115**	0	69	2	0	**71**	0	**188**
6:30AM	2	1	0	**3**	0	9	149	0	**158**	0	112	3	0	**115**	0	**276**
6:45AM	0	2	0	**2**	0	16	175	1	**192**	0	109	7	0	**116**	0	**310**
Hourly Total	2	7	0	**9**	0	32	494	1	**527**	0	331	14	0	**345**	0	**881**
7:00AM	0	5	0	**5**	0	11	146	0	**157**	0	123	5	0	**128**	0	**290**
7:15AM	0	5	0	**5**	0	21	215	0	**236**	0	189	10	0	**199**	0	**440**
7:30AM	0	0	0	**0**	0	9	252	0	**261**	0	230	7	0	**237**	0	**498**
7:45AM	2	4	0	**6**	0	13	215	0	**228**	0	269	12	0	**281**	0	**515**
Hourly Total	2	14	0	**16**	0	54	828	0	**882**	0	811	34	0	**845**	0	**1743**
8:00AM	1	2	0	**3**	0	18	209	0	**227**	0	257	12	0	**269**	0	**499**
8:15AM	0	6	0	**6**	0	34	233	1	**268**	0	287	18	0	**305**	0	**579**
8:30AM	4	3	0	**7**	0	23	295	0	**318**	0	288	11	0	**299**	0	**624**
8:45AM	2	8	0	**10**	0	35	246	0	**281**	0	294	20	0	**314**	0	**605**
Hourly Total	7	19	0	**26**	0	110	983	1	**1094**	0	1126	61	0	**1187**	0	**2307**
9:00AM	0	14	0	**14**	0	15	164	0	**179**	0	210	14	0	**224**	0	**417**
9:15AM	4	7	0	**11**	0	19	189	0	**208**	0	205	12	0	**217**	0	**436**
9:30AM	4	2	0	**6**	0	17	151	0	**168**	0	190	9	0	**199**	0	**373**
9:45AM	3	8	0	**11**	0	14	161	0	**175**	0	170	11	0	**181**	0	**367**
Hourly Total	11	31	0	**42**	0	65	665	0	**730**	0	775	46	0	**821**	0	**1593**
10:00AM	4	6	0	**10**	0	9	113	0	**122**	0	137	5	0	**142**	0	**274**
10:15AM	2	6	0	**8**	0	10	90	3	**103**	0	108	5	0	**113**	0	**224**
10:30AM	1	10	0	**11**	0	7	86	1	**94**	0	150	6	0	**156**	0	**261**

Leg	Roundy					Redford					Redford					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
10:45AM	6	9	0	**15**	0	10	107	0	**117**	0	131	5	0	**136**	0	**268**
Hourly Total	13	31	0	**44**	0	36	396	4	**436**	0	526	21	0	**547**	0	**1027**
11:00AM	0	11	0	**11**	0	4	82	0	**86**	0	115	5	0	**120**	0	**217**
11:15AM	5	6	0	**11**	0	3	90	0	**93**	0	111	11	0	**122**	0	**226**
11:30AM	4	7	0	**11**	0	7	105	0	**112**	0	134	1	0	**135**	0	**258**
11:45AM	7	9	0	**16**	0	9	85	0	**94**	0	115	11	0	**126**	0	**236**
Hourly Total	16	33	0	**49**	0	23	362	0	**385**	0	475	28	0	**503**	0	**937**
12:00PM	6	10	0	**16**	0	7	138	0	**145**	0	111	8	0	**119**	0	**280**
12:15PM	5	12	0	**17**	0	8	128	0	**136**	0	121	5	0	**126**	0	**279**
12:30PM	4	6	0	**10**	0	5	123	0	**128**	0	140	4	0	**144**	0	**282**
12:45PM	3	11	0	**14**	0	7	132	1	**140**	0	119	7	0	**126**	0	**280**
Hourly Total	18	39	0	**57**	0	27	521	1	**549**	0	491	24	0	**515**	0	**1121**
1:00PM	10	20	0	**30**	0	12	142	0	**154**	0	112	4	0	**116**	0	**300**
1:15PM	4	10	0	**14**	0	8	116	0	**124**	0	127	3	0	**130**	0	**268**
1:30PM	2	9	0	**11**	0	9	160	0	**169**	0	144	6	1	**151**	0	**331**
1:45PM	2	10	0	**12**	0	12	131	1	**144**	0	136	10	0	**146**	0	**302**
Hourly Total	18	49	0	**67**	0	41	549	1	**591**	0	519	23	1	**543**	0	**1201**
2:00PM	6	8	0	**14**	0	8	129	0	**137**	0	125	3	0	**128**	0	**279**
2:15PM	2	8	0	**10**	0	11	161	1	**173**	0	136	6	0	**142**	0	**325**
2:30PM	2	16	0	**18**	0	10	145	0	**155**	0	132	4	1	**137**	0	**310**
2:45PM	6	18	0	**24**	0	14	139	2	**155**	0	145	3	0	**148**	0	**327**
Hourly Total	16	50	0	**66**	0	43	574	3	**620**	0	538	16	1	**555**	0	**1241**
3:00PM	6	9	0	**15**	0	8	169	0	**177**	0	169	4	0	**173**	0	**365**
3:15PM	5	8	0	**13**	0	7	171	0	**178**	0	192	4	0	**196**	0	**387**
3:30PM	11	19	0	**30**	0	8	158	0	**166**	0	209	3	0	**212**	0	**408**
3:45PM	2	11	0	**13**	0	7	201	1	**209**	0	171	5	0	**176**	0	**398**
Hourly Total	24	47	0	**71**	0	30	699	1	**730**	0	741	16	0	**757**	0	**1558**
4:00PM	18	17	0	**35**	0	6	237	0	**243**	0	175	2	0	**177**	0	**455**
4:15PM	7	8	0	**15**	0	6	225	0	**231**	0	187	4	0	**191**	0	**437**
4:30PM	8	24	0	**32**	0	11	246	0	**257**	0	243	4	0	**247**	0	**536**
4:45PM	9	19	0	**28**	0	10	248	1	**259**	0	231	4	0	**235**	0	**522**
Hourly Total	42	68	0	**110**	0	33	956	1	**990**	0	836	14	0	**850**	0	**1950**
5:00PM	20	32	0	**52**	0	0	216	1	**217**	0	229	6	0	**235**	0	**504**
5:15PM	12	14	0	**26**	0	5	261	1	**267**	0	233	2	0	**235**	0	**528**
5:30PM	26	26	0	**52**	0	7	241	0	**248**	0	257	4	0	**261**	0	**561**
5:45PM	11	24	0	**35**	0	2	228	0	**230**	0	244	1	0	**245**	0	**510**
Hourly Total	69	96	0	**165**	0	14	946	2	**962**	0	963	13	0	**976**	0	**2103**
6:00PM	15	29	0	**44**	0	6	279	0	**285**	0	191	0	0	**191**	0	**520**
6:15PM	7	22	0	**29**	0	0	280	0	**280**	0	231	2	0	**233**	0	**542**
6:30PM	2	13	0	**15**	0	2	235	0	**237**	0	198	1	0	**199**	0	**451**
6:45PM	7	7	0	**14**	0	1	170	0	**171**	0	172	2	0	**174**	0	**359**
Hourly Total	31	71	0	**102**	0	9	964	0	**973**	0	792	5	0	**797**	0	**1872**
7:00PM	4	6	0	**10**	0	2	187	1	**190**	0	165	3	0	**168**	0	**368**
7:15PM	2	5	0	**7**	0	0	162	0	**162**	0	125	1	0	**126**	0	**295**
7:30PM	1	9	0	**10**	0	1	185	0	**186**	0	104	0	0	**104**	0	**300**
7:45PM	2	4	0	**6**	0	1	132	0	**133**	0	101	0	0	**101**	0	**240**
Hourly Total	9	24	0	**33**	0	4	666	1	**671**	0	495	4	0	**499**	0	**1203**
8:00PM	0	3	0	**3**	0	0	94	0	**94**	0	126	1	0	**127**	0	**224**
8:15PM	1	3	0	**4**	0	0	78	0	**78**	0	92	1	0	**93**	0	**175**
8:30PM	4	3	0	**7**	0	1	76	0	**77**	0	66	0	0	**66**	0	**150**
8:45PM	0	2	0	**2**	0	2	72	0	**74**	0	50	2	0	**52**	0	**128**
Hourly Total	5	11	0	**16**	0	3	320	0	**323**	0	334	4	0	**338**	0	**677**
9:00PM	0	3	0	**3**	0	3	86	0	**89**	0	68	1	0	**69**	0	**161**
9:15PM	1	2	0	**3**	0	3	69	0	**72**	0	63	0	0	**63**	0	**138**
9:30PM	0	0	0	**0**	0	1	67	0	**68**	0	51	0	0	**51**	0	**119**
9:45PM	0	0	0	**0**	0	0	48	0	**48**	0	46	1	0	**47**	0	**95**
Hourly Total	1	5	0	**6**	0	7	270	0	**277**	0	228	2	0	**230**	0	**513**
10:00PM	0	1	0	**1**	0	0	51	0	**51**	0	33	0	0	**33**	0	**85**
10:15PM	0	1	0	**1**	0	0	47	0	**47**	0	50	0	0	**50**	0	**98**
10:30PM	0	2	0	**2**	0	1	38	0	**39**	0	26	0	0	**26**	0	**67**

Leg	Roundy					Redford					Redford					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
10:45PM	0	2	0	**2**	0	1	30	0	**31**	0	38	0	0	**38**	0	**71**
Hourly Total	0	6	0	**6**	0	2	166	0	**168**	0	147	0	0	**147**	0	**321**
11:00PM	0	5	0	**5**	0	3	31	0	**34**	0	25	0	0	**25**	0	**64**
11:15PM	1	0	0	**1**	0	0	35	0	**35**	0	31	0	0	**31**	0	**67**
11:30PM	1	1	0	**2**	0	1	31	0	**32**	0	31	0	0	**31**	0	**65**
11:45PM	0	0	0	**0**	0	0	27	0	**27**	0	16	1	0	**17**	0	**44**
Hourly Total	2	6	0	**8**	0	4	124	0	**128**	0	103	1	0	**104**	0	**240**
Total	290	627	0	**917**	0	553	10845	17	**11415**	0	10543	336	2	**10881**	0	**23213**
% Approach	31.6%	68.4%	0%	**-**	-	4.8%	95.0%	0.1%	**-**	-	96.9%	3.1%	0%	**-**	-	-
% Total	1.2%	2.7%	0%	**4.0%**	-	2.4%	46.7%	0.1%	**49.2%**	-	45.4%	1.4%	0%	**46.9%**	-	-
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	275	572	0	**847**	-	511	10098	15	**10624**	-	9857	315	2	**10174**	-	21645
% Lights	94.8%	91.2%	0%	**92.4%**	-	92.4%	93.1%	88.2%	**93.1%**	-	93.5%	93.8%	100%	**93.5%**	-	93.2%
Single-Unit Trucks	11	38	0	**49**	-	26	431	1	**458**	-	436	14	0	**450**	-	957
% Single-Unit Trucks	3.8%	6.1%	0%	**5.3%**	-	4.7%	4.0%	5.9%	**4.0%**	-	4.1%	4.2%	0%	**4.1%**	-	4.1%
Articulated Trucks	4	17	0	**21**	-	16	309	1	**326**	-	246	7	0	**253**	-	600
% Articulated Trucks	1.4%	2.7%	0%	**2.3%**	-	2.9%	2.8%	5.9%	**2.9%**	-	2.3%	2.1%	0%	**2.3%**	-	2.6%
Buses	0	0	0	**0**	-	0	6	0	**6**	-	4	0	0	**4**	-	10
% Buses	0%	0%	0%	**0%**	-	0%	0.1%	0%	**0.1%**	-	0%	0%	0%	**0%**	-	0%
Bicycles on Road	0	0	0	**0**	-	0	1	0	**1**	-	0	0	0	**0**	-	1
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Roundy Drive & Roundy Circle E - TMC

Tue Mar 2, 2021
Full Length (6 AM-9 AM, 3 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 816540, Location: 43.069488, -88.208958

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

Leg	Roundy						Roundy						Access						Roundy Cir						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-03-02 6:00AM	1	2	0	0	**3**	0	0	12	2	0	**14**	0	0	0	0	0	**0**	0	3	0	0	0	**3**	0	**20**
6:15AM	0	3	0	0	**3**	0	0	20	6	0	**26**	0	0	0	0	0	**0**	0	2	0	0	0	**2**	0	**31**
6:30AM	0	2	0	0	**2**	0	0	9	7	0	**16**	0	1	0	0	0	**1**	0	1	1	2	0	**4**	0	**23**
6:45AM	4	1	0	0	**5**	0	0	16	5	0	**21**	0	0	0	0	0	**0**	0	4	0	1	0	**5**	0	**31**
Hourly Total	5	8	0	0	**13**	0	0	57	20	0	**77**	0	1	0	0	0	**1**	0	10	1	3	0	**14**	0	**105**
7:00AM	0	2	0	0	**2**	0	0	23	6	0	**29**	0	0	0	0	0	**0**	0	1	0	0	0	**1**	0	**32**
7:15AM	0	2	0	0	**2**	0	0	39	6	0	**45**	0	0	0	0	0	**0**	0	4	0	0	0	**4**	0	**51**
7:30AM	2	8	0	0	**10**	0	0	23	4	0	**27**	0	0	0	0	0	**0**	0	1	0	0	0	**1**	0	**38**
7:45AM	2	4	0	0	**6**	0	0	34	13	0	**47**	0	0	0	0	0	**0**	0	4	0	0	0	**4**	0	**57**
Hourly Total	4	16	0	0	**20**	0	0	119	29	0	**148**	0	0	0	0	0	**0**	0	10	0	0	0	**10**	0	**178**
8:00AM	0	7	0	0	**7**	0	0	17	3	0	**20**	0	0	0	0	0	**0**	0	4	0	1	0	**5**	0	**32**
8:15AM	0	8	0	0	**8**	0	1	13	5	0	**19**	0	0	0	0	0	**0**	0	7	0	0	0	**7**	0	**34**
8:30AM	0	6	0	0	**6**	0	0	14	5	0	**19**	0	0	0	0	0	**0**	0	1	0	0	0	**1**	0	**26**
8:45AM	2	9	0	0	**11**	0	0	14	4	0	**18**	0	0	0	0	0	**0**	0	3	0	0	1	**4**	0	**33**
Hourly Total	2	30	0	0	**32**	0	1	58	17	0	**76**	0	0	0	0	0	**0**	0	15	0	1	1	**17**	0	**125**
3:00PM	0	17	0	0	**17**	0	0	6	1	0	**7**	0	0	0	0	0	**0**	0	8	0	0	0	**8**	0	**32**
3:15PM	0	10	0	0	**10**	0	0	7	0	0	**7**	0	0	0	1	0	**1**	0	6	0	0	0	**6**	0	**24**
3:30PM	2	19	0	0	**21**	0	0	10	6	0	**16**	0	0	0	0	0	**0**	0	2	0	0	0	**2**	0	**39**
3:45PM	0	21	0	0	**21**	0	1	4	4	0	**9**	0	0	0	0	0	**0**	0	4	0	0	0	**4**	0	**34**
Hourly Total	2	67	0	0	**69**	0	1	27	11	0	**39**	0	0	0	1	0	**1**	0	20	0	0	0	**20**	0	**129**
4:00PM	1	24	0	0	**25**	0	0	4	2	0	**6**	0	0	0	0	0	**0**	0	19	0	4	0	**23**	0	**54**
4:15PM	0	21	0	0	**21**	0	0	7	1	0	**8**	0	1	0	0	0	**1**	0	3	0	0	0	**3**	0	**33**
4:30PM	0	37	0	0	**37**	0	0	6	0	0	**6**	0	0	0	0	0	**0**	0	8	0	1	0	**9**	0	**52**
4:45PM	0	21	0	0	**21**	0	0	2	1	0	**3**	0	0	0	0	0	**0**	0	7	0	3	0	**10**	0	**34**
Hourly Total	1	103	0	0	**104**	0	0	19	4	0	**23**	0	1	0	0	0	**1**	0	37	0	8	0	**45**	0	**173**
5:00PM	0	24	0	0	**24**	0	0	6	2	0	**8**	0	0	0	1	0	**1**	0	4	0	2	0	**6**	0	**39**
5:15PM	0	14	0	0	**14**	0	0	2	0	0	**2**	0	0	0	0	0	**0**	0	6	0	0	0	**6**	0	**22**
5:30PM	0	15	0	0	**15**	0	0	1	1	0	**2**	0	0	0	0	0	**0**	0	1	0	0	0	**1**	0	**18**
5:45PM	0	6	0	0	**6**	0	0	2	1	0	**3**	0	0	0	0	0	**0**	0	2	0	0	0	**2**	0	**11**
Hourly Total	0	59	0	0	**59**	0	0	11	4	0	**15**	0	0	0	1	0	**1**	0	13	0	2	0	**15**	0	**90**
Total	14	283	0	0	**297**	0	2	291	85	0	**378**	0	2	0	2	0	**4**	0	105	1	14	1	**121**	0	**800**
% Approach	4.7%	95.3%	0%	0%	**-**	-	0.5%	77.0%	22.5%	0%	**-**	-	50.0%	0%	50.0%	0%	**-**	-	86.8%	0.8%	11.6%	0.8%	**-**	-	-
% Total	1.8%	35.4%	0%	0%	**37.1%**	-	0.3%	36.4%	10.6%	0%	**47.3%**	-	0.3%	0%	0.3%	0%	**0.5%**	-	13.1%	0.1%	1.8%	0.1%	**15.1%**	-	-
Motorcycles	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Lights	13	271	0	0	**284**	-	2	278	76	0	**356**	-	1	0	2	0	**3**	-	94	0	11	1	**106**	-	749
% Lights	92.9%	95.8%	0%	0%	**95.6%**	-	100%	95.5%	89.4%	0%	**94.2%**	-	50.0%	0%	100%	0%	**75.0%**	-	89.5%	0%	78.6%	100%	**87.6%**	-	93.6%
Single-Unit Trucks	1	9	0	0	**10**	-	0	8	9	0	**17**	-	1	0	0	0	**1**	-	7	1	2	0	**10**	-	38
% Single-Unit Trucks	7.1%	3.2%	0%	0%	**3.4%**	-	0%	2.7%	10.6%	0%	**4.5%**	-	50.0%	0%	0%	0%	**25.0%**	-	6.7%	100%	14.3%	0%	**8.3%**	-	4.8%
Articulated Trucks	0	3	0	0	**3**	-	0	5	0	0	**5**	-	0	0	0	0	**0**	-	4	0	1	0	**5**	-	13
% Articulated Trucks	0%	1.1%	0%	0%	**1.0%**	-	0%	1.7%	0%	0%	**1.3%**	-	0%	0%	0%	0%	**0%**	-	3.8%	0%	7.1%	0%	**4.1%**	-	1.6%
Buses	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Buses	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Roundy Drive & Roundy Circle W - TMC

Tue Mar 2, 2021
Full Length (6 AM-9 AM, 3 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 816539, Location: 43.069566, -88.212274

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

Leg	Roundy						Roundy						South						Roundy Cir W						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-03-02 6:00AM	1	2	0	0	**3**	0	2	1	4	0	**7**	0	0	0	2	0	**2**	0	0	0	1	0	**1**	0	**13**
6:15AM	0	3	0	0	**3**	0	1	7	9	0	**17**	0	0	0	1	0	**1**	0	0	0	0	0	**0**	0	**21**
6:30AM	5	2	1	0	**8**	0	0	8	2	0	**10**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**18**
6:45AM	6	11	1	0	**18**	0	0	5	9	0	**14**	0	0	0	0	0	**0**	0	0	0	1	0	**1**	0	**33**
Hourly Total	12	18	2	0	**32**	0	3	21	24	0	**48**	0	0	0	3	0	**3**	0	0	0	2	0	**2**	0	**85**
7:00AM	8	2	0	0	**10**	0	0	9	6	0	**15**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**25**
7:15AM	16	2	0	0	**18**	0	1	9	25	0	**35**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**53**
7:30AM	9	6	0	0	**15**	0	0	5	10	0	**15**	0	1	0	0	0	**1**	0	4	0	2	0	**6**	0	**37**
7:45AM	8	7	0	0	**15**	0	0	8	14	0	**22**	0	0	0	0	0	**0**	0	3	0	1	0	**4**	0	**41**
Hourly Total	41	17	0	0	**58**	0	1	31	55	0	**87**	0	1	0	0	0	**1**	0	7	0	3	0	**10**	0	**156**
8:00AM	5	5	1	0	**11**	0	0	7	9	0	**16**	0	0	0	0	0	**0**	0	3	0	0	0	**3**	0	**30**
8:15AM	3	9	2	0	**14**	0	0	5	8	0	**13**	0	0	0	0	0	**0**	0	2	0	0	0	**2**	0	**29**
8:30AM	5	5	0	0	**10**	0	1	6	7	0	**14**	0	1	0	1	0	**2**	0	1	0	0	0	**1**	0	**27**
8:45AM	3	8	0	0	**11**	0	2	4	6	0	**12**	0	0	0	0	0	**0**	0	3	0	0	0	**3**	0	**26**
Hourly Total	16	27	3	0	**46**	0	3	22	30	0	**55**	0	1	0	1	0	**2**	0	9	0	0	0	**9**	0	**112**
3:00PM	2	10	0	0	**12**	0	0	6	2	0	**8**	0	0	0	2	0	**2**	0	1	0	2	0	**3**	0	**25**
3:15PM	4	3	0	0	**7**	0	1	1	2	0	**4**	0	1	0	0	0	**1**	0	4	0	2	0	**6**	0	**18**
3:30PM	0	6	2	0	**8**	0	1	6	2	0	**9**	0	0	0	1	0	**1**	0	7	0	8	0	**15**	0	**33**
3:45PM	4	4	1	0	**9**	0	1	2	2	1	**6**	0	1	0	3	0	**4**	0	6	0	5	0	**11**	0	**30**
Hourly Total	10	23	3	0	**36**	0	3	15	8	1	**27**	0	2	0	6	0	**8**	0	18	0	17	0	**35**	0	**106**
4:00PM	1	10	0	0	**11**	0	1	11	0	0	**12**	0	1	0	0	0	**1**	0	9	0	6	0	**15**	0	**39**
4:15PM	3	7	0	0	**10**	0	0	6	2	0	**8**	0	1	0	0	0	**1**	0	9	0	9	0	**18**	0	**37**
4:30PM	3	8	1	0	**12**	0	0	10	2	0	**12**	0	0	0	1	0	**1**	0	18	0	8	0	**26**	0	**51**
4:45PM	2	7	1	0	**10**	0	1	3	1	0	**5**	0	0	0	2	0	**2**	0	9	0	8	0	**17**	0	**34**
Hourly Total	9	32	2	0	**43**	0	2	30	5	0	**37**	0	2	0	3	0	**5**	0	45	0	31	0	**76**	0	**161**
5:00PM	0	7	1	0	**8**	0	0	6	3	0	**9**	0	2	1	0	0	**3**	0	11	0	2	0	**13**	0	**33**
5:15PM	2	1	1	0	**4**	0	0	3	0	0	**3**	0	1	0	2	0	**3**	0	8	0	7	0	**15**	0	**25**
5:30PM	0	2	0	0	**2**	0	0	3	0	0	**3**	0	0	0	2	0	**2**	0	9	0	6	0	**15**	0	**22**
5:45PM	1	1	0	0	**2**	0	2	1	0	0	**3**	0	0	0	0	0	**0**	0	2	0	5	0	**7**	0	**12**
Hourly Total	3	11	2	0	**16**	0	2	13	3	0	**18**	0	3	1	4	0	**8**	0	30	0	20	0	**50**	0	**92**
Total	91	128	12	0	**231**	0	14	132	125	1	**272**	0	9	1	17	0	**27**	0	109	0	73	0	**182**	0	**712**
% Approach	39.4%	55.4%	5.2%	0%	**-**	-	5.1%	48.5%	46.0%	0.4%	**-**	-	33.3%	3.7%	63.0%	0%	**-**	-	59.9%	0%	40.1%	0%	**-**	-	-
% Total	12.8%	18.0%	1.7%	0%	**32.4%**	-	2.0%	18.5%	17.6%	0.1%	**38.2%**	-	1.3%	0.1%	2.4%	0%	**3.8%**	-	15.3%	0%	10.3%	0%	**25.6%**	-	-
Motorcycles	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Lights	76	123	8	0	**207**	-	14	122	119	1	**256**	-	9	0	13	0	**22**	-	106	0	61	0	**167**	-	652
% Lights	83.5%	96.1%	66.7%	0%	**89.6%**	-	100%	92.4%	95.2%	100%	**94.1%**	-	100%	0%	76.5%	0%	**81.5%**	-	97.2%	0%	83.6%	0%	**91.8%**	-	91.6%
Single-Unit Trucks	5	4	4	0	**13**	-	0	5	4	0	**9**	-	0	1	4	0	**5**	-	1	0	6	0	**7**	-	34
% Single-Unit Trucks	5.5%	3.1%	33.3%	0%	**5.6%**	-	0%	3.8%	3.2%	0%	**3.3%**	-	0%	100%	23.5%	0%	**18.5%**	-	0.9%	0%	8.2%	0%	**3.8%**	-	4.8%
Articulated Trucks	10	1	0	0	**11**	-	0	5	2	0	**7**	-	0	0	0	0	**0**	-	2	0	6	0	**8**	-	26
% Articulated Trucks	11.0%	0.8%	0%	0%	**4.8%**	-	0%	3.8%	1.6%	0%	**2.6%**	-	0%	0%	0%	0%	**0%**	-	1.8%	0%	8.2%	0%	**4.4%**	-	3.7%
Buses	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Buses	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

B. Existing Transportation System with Background Traffic Operational Analysis



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	15	65	970	950	40
Future Volume (vph)	1	15	65	970	950	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			1439	1221	
Travel Time (s)	23.1			17.8	15.1	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	1	18	76	1141	1118	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	18	76	1141	1118	47
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			36	36	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.2%		ICU Level of Service A	
Analysis Period (min) 15			
Description: Redford Boulevard & Roundy Drive			

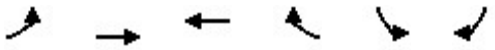
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	15	65	970	950	40
Future Vol, veh/h	1	15	65	970	950	40
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	240	150	-	-	250
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	1	18	76	1141	1118	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1841	559	1165	0	-	0
Stage 1	1118	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	67	472	590	-	-	-
Stage 1	274	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	58	472	590	-	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	590	-	165	472	-	-
HCM Lane V/C Ratio	0.13	-	0.007	0.037	-	-
HCM Control Delay (s)	12	-	27	12.9	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0	0.1	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	20	140	35	10	1
Future Volume (vph)	5	20	140	35	10	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	130
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected		0.991			0.950	
Satd. Flow (prot)	0	1864	1830	0	1736	1553
Flt Permitted		0.991			0.950	
Satd. Flow (perm)	0	1864	1830	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		902	846		263	
Travel Time (s)		24.6	23.1		7.2	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	1%	1%	1%	1%	4%	4%
Adj. Flow (vph)	6	26	179	45	13	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	32	224	0	13	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

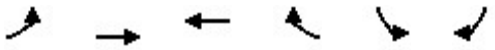
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	20	140	35	10	1
Future Vol, veh/h	5	20	140	35	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	130
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	1	1	1	1	4	4
Mvmt Flow	6	26	179	45	13	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	224	0	-	0	240	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	4.11	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.209	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1351	-	-	-	744	834
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1351	-	-	-	740	834
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1351	-	-	-	740	834
HCM Lane V/C Ratio	0.005	-	-	-	0.017	0.002
HCM Control Delay (s)	7.7	0	-	-	10	9.3
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	50	20	35	65	10	5
Future Volume (vph)	50	20	35	65	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	120
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.912			0.850
Flt Protected		0.965			0.950	
Satd. Flow (prot)	0	1746	1682	0	1736	1553
Flt Permitted		0.965			0.950	
Satd. Flow (perm)	0	1746	1682	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		322	902		266	
Travel Time (s)		8.8	24.6		7.3	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	5%	5%	3%	3%	4%	4%
Adj. Flow (vph)	68	27	47	88	14	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	95	135	0	14	7
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	20	35	65	10	5
Future Vol, veh/h	50	20	35	65	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	120
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	5	5	3	3	4	4
Mvmt Flow	68	27	47	88	14	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	135	0	-	0	254	91
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	4.15	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.245	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1431	-	-	-	730	961
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1431	-	-	-	695	961
Mov Cap-2 Maneuver	-	-	-	-	695	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1431	-	-	-	695	961
HCM Lane V/C Ratio	0.047	-	-	-	0.019	0.007
HCM Control Delay (s)	7.6	0	-	-	10.3	8.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	20	130	1150	1315	75
Future Volume (vph)	10	20	130	1150	1315	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			1432	1221	
Travel Time (s)	23.1			17.8	15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	11	22	141	1250	1429	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	22	141	1250	1429	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			36	36	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			

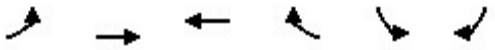
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	20	130	1150	1315	75
Future Vol, veh/h	10	20	130	1150	1315	75
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	240	150	-	-	250
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	11	22	141	1250	1429	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2336	715	1511	0	-	0
Stage 1	1429	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	31	373	434	-	-	-
Stage 1	187	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	21	373	434	-	-	-
Mov Cap-2 Maneuver	92	-	-	-	-	-
Stage 1	126	-	-	-	-	-
Stage 2	354	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.6	1.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	434	-	92	373	-	-
HCM Lane V/C Ratio	0.326	-	0.118	0.058	-	-
HCM Control Delay (s)	17.2	-	49.3	15.2	-	-
HCM Lane LOS	C	-	E	C	-	-
HCM 95th %tile Q(veh)	1.4	-	0.4	0.2	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	35	70	20	20	1
Future Volume (vph)	0	35	70	20	20	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	130
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1881	1825	0	1736	1553
Flt Permitted					0.950	
Satd. Flow (perm)	0	1881	1825	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		902	846		263	
Travel Time (s)		24.6	23.1		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	4%	4%
Adj. Flow (vph)	0	38	76	22	22	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	38	98	0	22	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

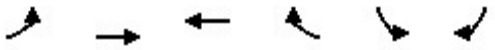
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	35	70	20	20	1
Future Vol, veh/h	0	35	70	20	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	130
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	4	4
Mvmt Flow	0	38	76	22	22	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	98	0	-	0	125	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	4.11	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.209	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1501	-	-	-	865	966
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1501	-	-	-	865	966
Mov Cap-2 Maneuver	-	-	-	-	865	-
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1501	-	-	-	865	966
HCM Lane V/C Ratio	-	-	-	-	0.025	0.001
HCM Control Delay (s)	0	-	-	-	9.3	8.7
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	30	25	35	10	1
Future Volume (vph)	20	30	25	35	10	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	120
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.921			0.850
Flt Protected		0.980			0.950	
Satd. Flow (prot)	0	1773	1699	0	1736	1553
Flt Permitted		0.980			0.950	
Satd. Flow (perm)	0	1773	1699	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		322	902		266	
Travel Time (s)		8.8	24.6		7.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	5%	3%	3%	4%	4%
Adj. Flow (vph)	22	32	27	38	11	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	65	0	11	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	30	25	35	10	1
Future Vol, veh/h	20	30	25	35	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	120
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	3	3	4	4
Mvmt Flow	22	32	27	38	11	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	65	0	-	0	122	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	4.15	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.245	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1518	-	-	-	868	1018
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	942	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1518	-	-	-	855	1018
Mov Cap-2 Maneuver	-	-	-	-	855	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	942	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1518	-	-	-	855	1018
HCM Lane V/C Ratio	0.014	-	-	-	0.013	0.001
HCM Control Delay (s)	7.4	0	-	-	9.3	8.5
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	110	15	1105	1125	15
Future Volume (vph)	80	110	15	1105	1125	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			1448	1221	
Travel Time (s)	23.1			18.0	15.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	85	117	16	1176	1197	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	117	16	1176	1197	16
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			36	36	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.2

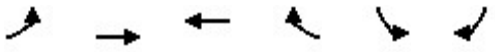
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	110	15	1105	1125	15
Future Vol, veh/h	80	110	15	1105	1125	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	240	150	-	-	250
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	85	117	16	1176	1197	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1817	599	1213	0	-	0
Stage 1	1197	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	~ 69	445	565	-	-	-
Stage 1	249	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 67	445	565	-	-	-
Mov Cap-2 Maneuver	175	-	-	-	-	-
Stage 1	242	-	-	-	-	-
Stage 2	499	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.6	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	565	-	175	445	-	-
HCM Lane V/C Ratio	0.028	-	0.486	0.263	-	-
HCM Control Delay (s)	11.6	-	43.6	16	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.3	1	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	70	15	5	15	1
Future Volume (vph)	1	70	15	5	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	130
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.965			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1879	1815	0	1736	1553
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1879	1815	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		902	846		263	
Travel Time (s)		24.6	23.1		7.2	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles (%)	1%	1%	1%	1%	4%	4%
Adj. Flow (vph)	2	121	26	9	26	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	35	0	26	2
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.5%	ICU Level of Service	A
Analysis Period (min)	15		

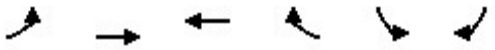
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	70	15	5	15	1
Future Vol, veh/h	1	70	15	5	15	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	130
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	1	1	1	1	4	4
Mvmt Flow	2	121	26	9	26	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	35	0	-	0	156	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	4.11	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.209	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1583	-	-	-	831	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1583	-	-	-	830	1037
Mov Cap-2 Maneuver	-	-	-	-	830	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	896	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1583	-	-	-	830	1037
HCM Lane V/C Ratio	0.001	-	-	-	0.031	0.002
HCM Control Delay (s)	7.3	0	-	-	9.5	8.5
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	15	15	5	35	25
Future Volume (vph)	5	15	15	5	35	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	120
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.966			0.850
Flt Protected		0.988			0.950	
Satd. Flow (prot)	0	1788	1782	0	1736	1553
Flt Permitted		0.988			0.950	
Satd. Flow (perm)	0	1788	1782	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		322	902		266	
Travel Time (s)		8.8	24.6		7.3	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	5%	5%	3%	3%	4%	4%
Adj. Flow (vph)	7	21	21	7	50	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	28	28	0	50	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	15	5	35	25
Future Vol, veh/h	5	15	15	5	35	25
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	120
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	5	5	3	3	4	4
Mvmt Flow	7	21	21	7	50	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	28	0	-	0	60	25
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	4.15	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.245	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1566	-	-	-	942	1045
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1566	-	-	-	937	1045
Mov Cap-2 Maneuver	-	-	-	-	937	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1566	-	-	-	937	1045
HCM Lane V/C Ratio	0.005	-	-	-	0.053	0.034
HCM Control Delay (s)	7.3	0	-	-	9.1	8.6
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1

D. Existing Transportation System with Total Traffic Operational Analysis



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	95	150	970	950	70
Future Volume (vph)	30	95	150	970	950	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1711	1531	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			1439	1221	
Travel Time (s)	23.1			17.8	15.1	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	35	112	176	1141	1118	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	112	176	1141	1118	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			36	36	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

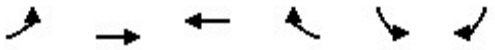
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	95	150	970	950	70
Future Vol, veh/h	30	95	150	970	950	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	240	150	-	-	250
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	35	112	176	1141	1118	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2041	559	1200	0	-	0
Stage 1	1118	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	49	472	572	-	-	-
Stage 1	274	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 34	472	572	-	-	-
Mov Cap-2 Maneuver	126	-	-	-	-	-
Stage 1	190	-	-	-	-	-
Stage 2	347	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	572	-	126	472	-	-
HCM Lane V/C Ratio	0.309	-	0.28	0.237	-	-
HCM Control Delay (s)	14.1	-	44.3	15	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	1.3	-	1.1	0.9	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	20	140	150	120	1
Future Volume (vph)	5	20	140	150	120	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	130
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.930			0.850
Flt Protected		0.991			0.950	
Satd. Flow (prot)	0	1864	1750	0	1736	1553
Flt Permitted		0.991			0.950	
Satd. Flow (perm)	0	1864	1750	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		902	846		263	
Travel Time (s)		24.6	23.1		7.2	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	1%	1%	1%	1%	4%	4%
Adj. Flow (vph)	6	26	179	192	154	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	32	371	0	154	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.9%		ICU Level of Service A	
Analysis Period (min) 15			

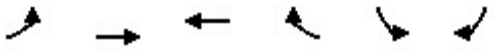
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	20	140	150	120	1
Future Vol, veh/h	5	20	140	150	120	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	130
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	1	1	1	1	4	4
Mvmt Flow	6	26	179	192	154	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	371	0	-	0	313	275
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	4.11	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.209	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1193	-	-	-	676	759
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1193	-	-	-	673	759
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1193	-	-	-	673	759
HCM Lane V/C Ratio	0.005	-	-	-	0.229	0.002
HCM Control Delay (s)	8	0	-	-	11.9	9.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.9	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	65	20	35	65	10	20
Future Volume (vph)	65	20	35	65	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	120
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.912			0.850
Flt Protected		0.963			0.950	
Satd. Flow (prot)	0	1743	1682	0	1736	1553
Flt Permitted		0.963			0.950	
Satd. Flow (perm)	0	1743	1682	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		322	902		266	
Travel Time (s)		8.8	24.6		7.3	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	5%	5%	3%	3%	4%	4%
Adj. Flow (vph)	88	27	47	88	14	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	115	135	0	14	27
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.3%		ICU Level of Service A	
Analysis Period (min) 15			

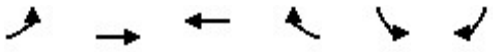
Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	20	35	65	10	20
Future Vol, veh/h	65	20	35	65	10	20
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	120
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	5	5	3	3	4	4
Mvmt Flow	88	27	47	88	14	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	135	0	-	0	294	91
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	203	-
Critical Hdwy	4.15	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.245	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1431	-	-	-	693	961
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	826	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1431	-	-	-	650	961
Mov Cap-2 Maneuver	-	-	-	-	650	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	826	-

Approach	EB	WB	SB
HCM Control Delay, s	5.9	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1431	-	-	-	650	961
HCM Lane V/C Ratio	0.061	-	-	-	0.021	0.028
HCM Control Delay (s)	7.7	0	-	-	10.7	8.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	15	15	1	1	1
Future Volume (vph)	1	15	15	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.932	
Flt Protected		0.997			0.976	
Satd. Flow (prot)	0	1859	1850	0	1728	0
Flt Permitted		0.997			0.976	
Satd. Flow (perm)	0	1859	1850	0	1728	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		497	138		264	
Travel Time (s)		13.6	3.8		7.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	1	16	16	1	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	17	17	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

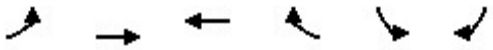
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	15	15	1	1	1
Future Vol, veh/h	1	15	15	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	1	16	16	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	17	0	-	0	35	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1613	-	-	-	983	1068
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1010	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1613	-	-	-	982	1068
Mov Cap-2 Maneuver	-	-	-	-	982	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1613	-	-	-	1023
HCM Lane V/C Ratio	0.001	-	-	-	0.002
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	1	1	115	110	15
Future Volume (vph)	15	1	1	115	110	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.866		0.984	
Flt Protected		0.955			0.958	
Satd. Flow (prot)	0	1812	1629	0	1791	0
Flt Permitted		0.955			0.958	
Satd. Flow (perm)	0	1812	1629	0	1791	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		138	325		205	
Travel Time (s)		3.8	8.9		5.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	2%	1%	0%	0%
Adj. Flow (vph)	16	1	1	122	117	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	17	123	0	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1	1	115	110	15
Future Vol, veh/h	15	1	1	115	110	15
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	94	94	94	94	94	94
Heavy Vehicles, %	0	2	2	1	0	0
Mvmt Flow	16	1	1	122	117	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	123	0	-	0	95	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	33	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1477	-	-	-	909	1009
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	995	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	899	1009
Mov Cap-2 Maneuver	-	-	-	-	899	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	995	-

Approach	EB	WB	SB
HCM Control Delay, s	7	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1477	-	-	-	911
HCM Lane V/C Ratio	0.011	-	-	-	0.146
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	50	150	1150	1315	85
Future Volume (vph)	25	50	150	1150	1315	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1711	1531	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			1432	1221	
Travel Time (s)	23.1			17.8	15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	27	54	163	1250	1429	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	54	163	1250	1429	92
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			36	36	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.9

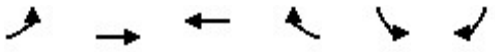
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	50	150	1150	1315	85
Future Vol, veh/h	25	50	150	1150	1315	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	240	150	-	-	250
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	27	54	163	1250	1429	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2380	715	1521	0	-	0
Stage 1	1429	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	29	373	430	-	-	-
Stage 1	187	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 18	373	430	-	-	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	116	-	-	-	-	-
Stage 2	336	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.9	2.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	430	-	85	373	-	-
HCM Lane V/C Ratio	0.379	-	0.32	0.146	-	-
HCM Control Delay (s)	18.4	-	66.1	16.3	-	-
HCM Lane LOS	C	-	F	C	-	-
HCM 95th %tile Q(veh)	1.7	-	1.2	0.5	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	35	70	50	65	1
Future Volume (vph)	1	35	70	50	65	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	130
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.944			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1879	1776	0	1736	1553
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1879	1776	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		902	846		263	
Travel Time (s)		24.6	23.1		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	4%	4%
Adj. Flow (vph)	1	38	76	54	71	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	39	130	0	71	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

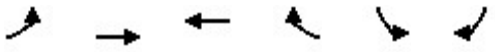
Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	35	70	50	65	1
Future Vol, veh/h	1	35	70	50	65	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	130
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	4	4
Mvmt Flow	1	38	76	54	71	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	130	0	-	0	143	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	4.11	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.209	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1462	-	-	-	845	946
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	844	946
Mov Cap-2 Maneuver	-	-	-	-	844	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	977	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1462	-	-	-	844	946
HCM Lane V/C Ratio	0.001	-	-	-	0.084	0.001
HCM Control Delay (s)	7.5	0	-	-	9.7	8.8
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	30	25	35	10	5
Future Volume (vph)	25	30	25	35	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	120
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.921			0.850
Flt Protected		0.978			0.950	
Satd. Flow (prot)	0	1770	1699	0	1736	1553
Flt Permitted		0.978			0.950	
Satd. Flow (perm)	0	1770	1699	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		322	902		266	
Travel Time (s)		8.8	24.6		7.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	5%	3%	3%	4%	4%
Adj. Flow (vph)	27	32	27	38	11	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	65	0	11	5
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

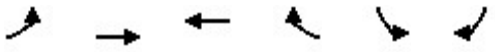
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	30	25	35	10	5
Future Vol, veh/h	25	30	25	35	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	120
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	3	3	4	4
Mvmt Flow	27	32	27	38	11	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	65	0	-	0	132	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	86	-
Critical Hdwy	4.15	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.245	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1518	-	-	-	857	1018
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1518	-	-	-	842	1018
Mov Cap-2 Maneuver	-	-	-	-	842	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	932	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1518	-	-	-	842	1018
HCM Lane V/C Ratio	0.018	-	-	-	0.013	0.005
HCM Control Delay (s)	7.4	0	-	-	9.3	8.6
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	5	1	15	1
Future Volume (vph)	1	5	5	1	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.977		0.992	
Flt Protected		0.992			0.955	
Satd. Flow (prot)	0	1854	1826	0	1800	0
Flt Permitted		0.992			0.955	
Satd. Flow (perm)	0	1854	1826	0	1800	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		497	138		264	
Travel Time (s)		13.6	3.8		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	1	5	5	1	16	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	6	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

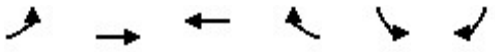
Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	5	1	15	1
Future Vol, veh/h	1	5	5	1	15	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	1	5	5	1	16	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	6	0	-	0	13	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1628	-	-	-	1011	1083
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1628	-	-	-	1010	1083
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1021	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1628	-	-	-	1014
HCM Lane V/C Ratio	0.001	-	-	-	0.017
HCM Control Delay (s)	7.2	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	15	1	30	30	5
Future Volume (vph)	5	15	1	30	30	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.869		0.982	
Flt Protected		0.988			0.958	
Satd. Flow (prot)	0	1849	1650	0	1787	0
Flt Permitted		0.988			0.958	
Satd. Flow (perm)	0	1849	1650	0	1787	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		138	325		205	
Travel Time (s)		3.8	8.9		5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	5	16	1	33	33	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	34	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	1	30	30	5
Future Vol, veh/h	5	15	1	30	30	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	5	16	1	33	33	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	34	0	-	0	44	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1591	-	-	-	972	1066
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1002	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1591	-	-	-	969	1066
Mov Cap-2 Maneuver	-	-	-	-	969	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	1002	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1591	-	-	-	982
HCM Lane V/C Ratio	0.003	-	-	-	0.039
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	105	165	55	1105	1125	30
Future Volume (vph)	105	165	55	1105	1125	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1711	1531	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			1448	1221	
Travel Time (s)	23.1			18.0	15.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	112	176	59	1176	1197	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	176	59	1176	1197	32
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			36	36	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.3

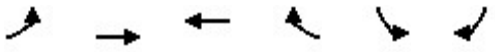
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	105	165	55	1105	1125	30
Future Vol, veh/h	105	165	55	1105	1125	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	240	150	-	-	250
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	112	176	59	1176	1197	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1903	599	1229	0	-	0
Stage 1	1197	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	~ 61	445	557	-	-	-
Stage 1	249	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 55	445	557	-	-	-
Mov Cap-2 Maneuver	158	-	-	-	-	-
Stage 1	223	-	-	-	-	-
Stage 2	450	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.2	0.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	557	-	158	445	-	-
HCM Lane V/C Ratio	0.105	-	0.707	0.394	-	-
HCM Control Delay (s)	12.2	-	69.5	18.3	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.3	-	4.2	1.9	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	70	15	60	95	1
Future Volume (vph)	1	70	15	60	95	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	130
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.892			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1879	1678	0	1736	1553
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1879	1678	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		902	846		263	
Travel Time (s)		24.6	23.1		7.2	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles (%)	1%	1%	1%	1%	4%	4%
Adj. Flow (vph)	2	121	26	103	164	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	129	0	164	2
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A
Analysis Period (min)	15		

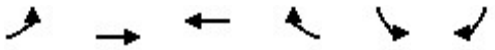
Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	70	15	60	95	1
Future Vol, veh/h	1	70	15	60	95	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	130
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	1	1	1	1	4	4
Mvmt Flow	2	121	26	103	164	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	129	0	-	0	203	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	4.11	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.209	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1463	-	-	-	781	977
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1463	-	-	-	780	977
Mov Cap-2 Maneuver	-	-	-	-	780	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	896	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1463	-	-	-	780	977
HCM Lane V/C Ratio	0.001	-	-	-	0.21	0.002
HCM Control Delay (s)	7.5	0	-	-	10.8	8.7
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	15	15	5	35	35
Future Volume (vph)	10	15	15	5	35	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	120
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.966			0.850
Flt Protected		0.980			0.950	
Satd. Flow (prot)	0	1773	1782	0	1736	1553
Flt Permitted		0.980			0.950	
Satd. Flow (perm)	0	1773	1782	0	1736	1553
Link Speed (mph)		25	25		25	
Link Distance (ft)		322	902		266	
Travel Time (s)		8.8	24.6		7.3	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	5%	5%	3%	3%	4%	4%
Adj. Flow (vph)	14	21	21	7	50	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	35	28	0	50	50
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

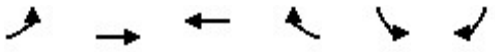
Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	15	15	5	35	35
Future Vol, veh/h	10	15	15	5	35	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	120
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	5	5	3	3	4	4
Mvmt Flow	14	21	21	7	50	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	28	0	-	0	74	25
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	49	-
Critical Hdwy	4.15	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.245	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1566	-	-	-	925	1045
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1566	-	-	-	917	1045
Mov Cap-2 Maneuver	-	-	-	-	917	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	968	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1566	-	-	-	917	1045
HCM Lane V/C Ratio	0.009	-	-	-	0.055	0.048
HCM Control Delay (s)	7.3	0	-	-	9.2	8.6
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	5	1	25	5
Future Volume (vph)	1	5	5	1	25	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.977		0.979	
Flt Protected		0.992			0.960	
Satd. Flow (prot)	0	1854	1826	0	1786	0
Flt Permitted		0.992			0.960	
Satd. Flow (perm)	0	1854	1826	0	1786	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		497	138		264	
Travel Time (s)		13.6	3.8		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	1	5	5	1	27	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	6	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

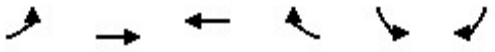
Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	5	1	25	5
Future Vol, veh/h	1	5	5	1	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	1	5	5	1	27	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	6	0	-	0	13	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1628	-	-	-	1011	1083
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1628	-	-	-	1010	1083
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1021	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1628	-	-	-	1021
HCM Lane V/C Ratio	0.001	-	-	-	0.032
HCM Control Delay (s)	7.2	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	25	1	55	55	5
Future Volume (vph)	5	25	1	55	55	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.867		0.990	
Flt Protected		0.992			0.956	
Satd. Flow (prot)	0	1854	1647	0	1766	0
Flt Permitted		0.992			0.956	
Satd. Flow (perm)	0	1854	1647	0	1766	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		138	325		205	
Travel Time (s)		3.8	8.9		5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%
Adj. Flow (vph)	5	27	1	60	60	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	32	61	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	25	1	55	55	5
Future Vol, veh/h	5	25	1	55	55	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	0
Mvmt Flow	5	27	1	60	60	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	61	0	-	0	68	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	37	-
Critical Hdwy	4.1	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1555	-	-	-	937	1049
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	934	1049
Mov Cap-2 Maneuver	-	-	-	-	934	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1555	-	-	-	943
HCM Lane V/C Ratio	0.003	-	-	-	0.069
HCM Control Delay (s)	7.3	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

I. Warrant Analysis for Intersection Traffic Control

Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Redford Boulevard & Roundy Drive
County: Waukesha
City: Pewaukee

Major Street: Redford Boulevard
Critical Approach Speed: 55 mph
Lanes: 2 or more lanes

Minor Street: Roundy Drive
Critical Approach Speed: 25 mph
Lanes: 1 lane

% Right Turns Included
From North (SB) 0%
From East (WB) 0%
From South (NB) 0%
From West (EB) 0%

In built-up area of isolated community of < 10,000 population? No
Total number of approaches at intersection? 3
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level?

Analysis based on EXISTING volume data.

Date	Day of the Week	Time (HH:MM)			
		From	AM / PM	To	AM / PM
3/2/2021	Tuesday	12:00	AM	11:59	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	**N/A**
Warrant 8: Roadway Network	**N/A**
Warrant 9: Intersection Near a Grade Crossing	**N/A**

Warrant Analysis Conducted By:

Name:
Agency: Kimley-Horn and Associates, Inc.
Date: 3/25/2021

Warrant 1: Eight - Hour Vehicular Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? No** **Manually Set To:**

Condition A : Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	0	1

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	3	4

Satisfied? No

Condition C: Combination of A & B at 56%

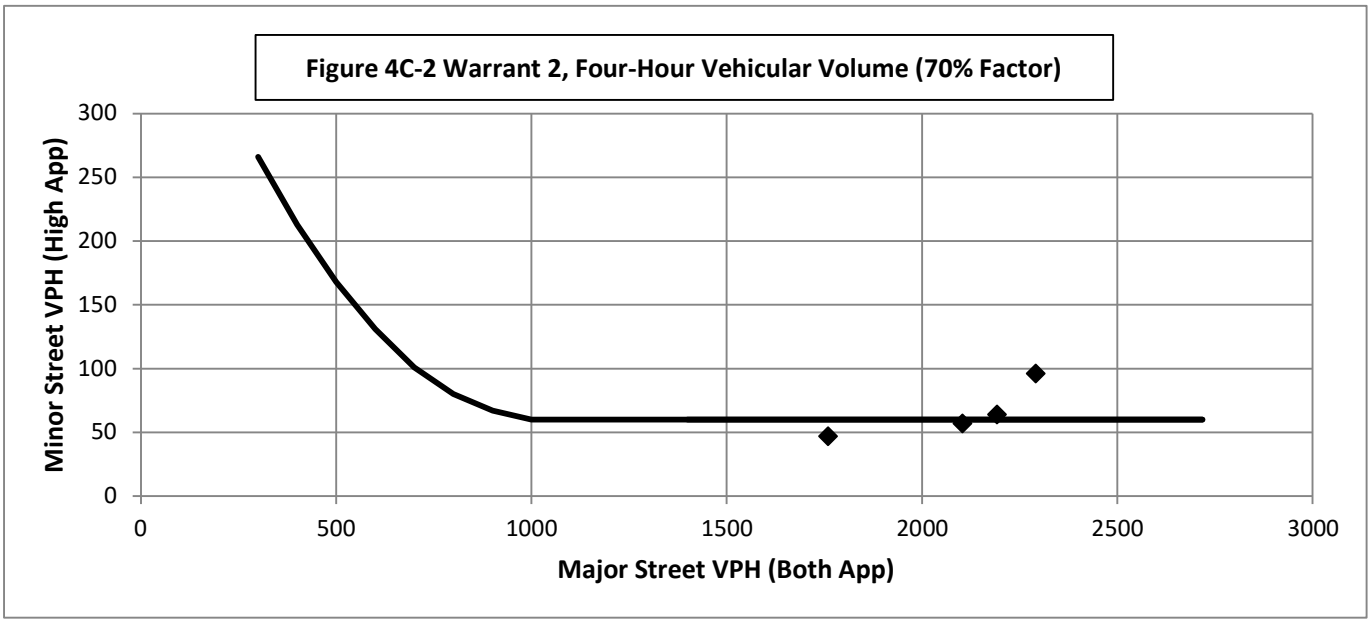
Satisfied? No

6:00 AM	Enter Start Time (Military Time) (HH:MM)				
Time Period	**From**	**To**	**Major Road: Both App. (VPH)**	**Minor Road: High App. (VPH)**	**Total**
1	6:00	7:00	1119	34	1153
2	7:00	8:00	2064	34	2098
3	8:00	9:00	2618	20	2638
4	9:00	10:00	1794	22	1816
5	10:00	11:00	1146	23	1169
6	11:00	12:00	1022	38	1060
7	12:00	13:00	1252	35	1287
8	13:00	14:00	1350	35	1385
9	14:00	15:00	1390	33	1423
10	15:00	16:00	1759	47	1806
11	16:00	17:00	2192	64	2256
12	17:00	18:00	2291	96	2387
13	18:00	19:00	2103	57	2160
14	19:00	20:00	1374	16	1390
15	20:00	21:00	769	6	775
16	21:00	22:00	591	1	592

Warrant 2: Four-Hour Volume 70%

Warrant Evaluated? Yes
Warrant Satisfied? No
Manually Set To:

Hour Start	17:00	16:00	18:00	15:00
Major Road Vol.	2291	2192	2103	1759
Minor Road Vol.	96	64	57	47



Warrant 3: Peak Hour Volume 70%

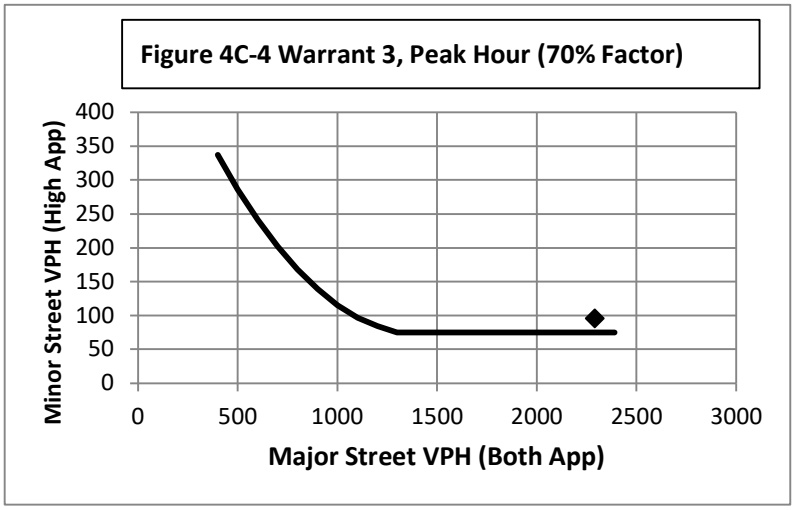
Warrant Evaluated? Yes **Warrant Satisfied? Yes** **Manually Set To:**

Condition justifying use of warrant:

Criteria		Met?
Delay on Minor Approach	4	No
Volume on Minor Approach	100	No
Total Entering Volume (veh/h)	650	

Manually Set Peak Hour? Yes

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
17:00	2291	96
17:00	2291	96



Warrant 4: Pedestrian Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

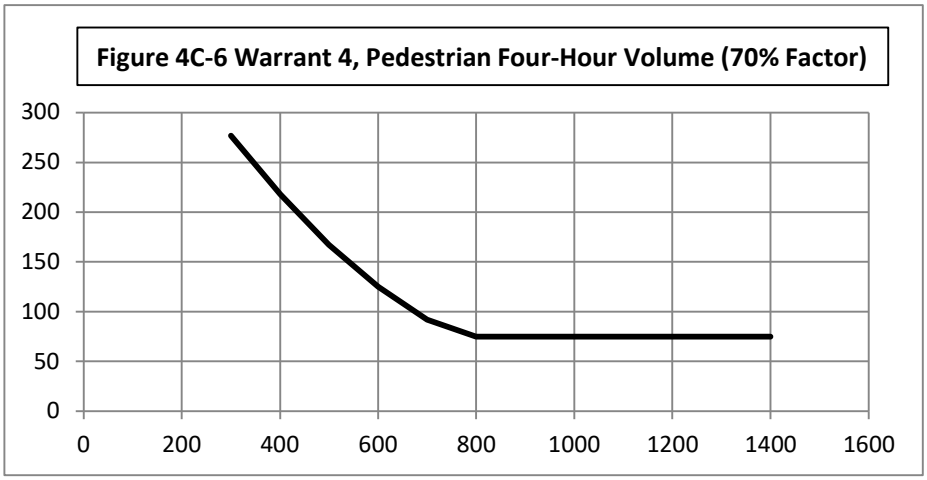
Criterion A: Four Hour

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?

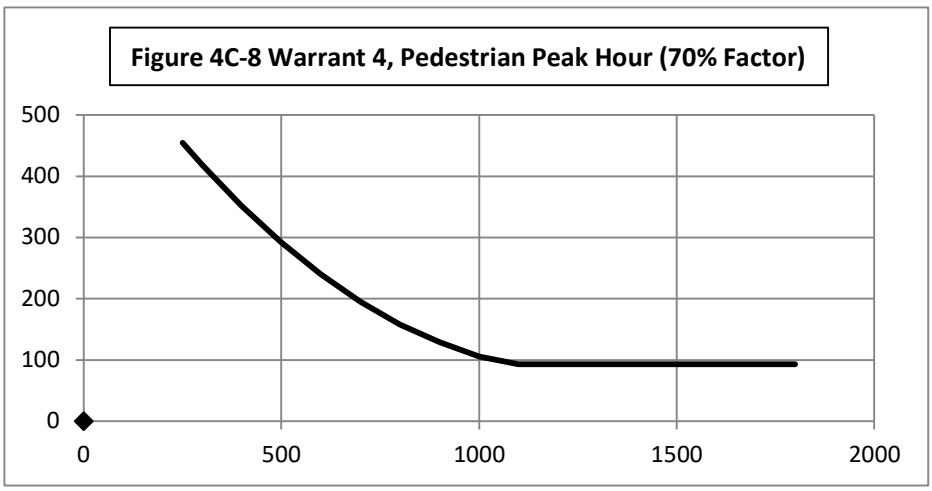
Criterion A Satisfied?



Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

Criterion B Satisfied?



Warrant 5: School Crossing 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

	Criteria		Met?	Fulfilled?
1	Adequate trial of other remedial measures has failed to reduce crash frequency.			
	Measures Tried:			
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		
3	Warrant 1, Condition A (80%)		No	No
	Warrant 1, Condition B (80%)		No	
	Warrant 4, Criterion A (80%)		No	
	Warrant 4, Criterion B (80%)		No	

Warrant 8: Roadway Network 70%

Warrant Evaluated? No **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				2387	Yes	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 70%

Warrant Evaluated? No **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	17:00	2291	96	32.16

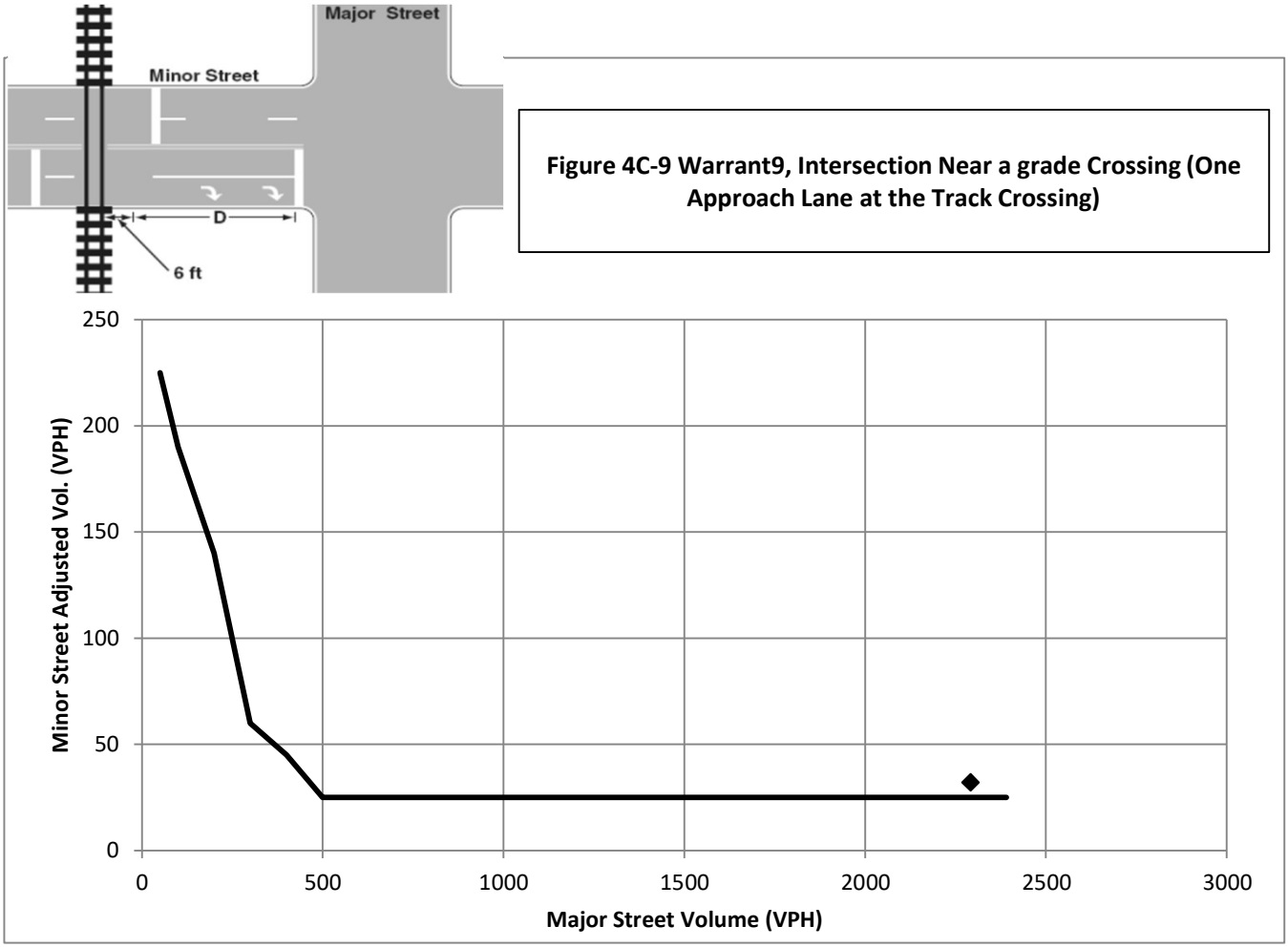


Figure 4C-9 Warrant9, Intersection Near a grade Crossing (One Approach Lane at the Track Crossing)

Conclusions/Comments:

Updated: 12/6/2017

Technical Memorandum

Date: April 12, 2021

To: Nick Fuchs
City of Pewaukee

From: John Bieberitz, P.E., PTOE
Traffic Analysis & Design, Inc.

Subject: Review of the "Last-Mile Warehouse Facility" TIA dated April 2021
W232 N2950 Roundy Circle E
Pewaukee, Wisconsin

A TIA, dated April 2021, was submitted by Kimley Horn and Associates, Inc. for the proposed Last-Mile Warehouse Facility proposed to occupy the existing warehouse building at W232 N2950 Roundy Circle E.

Per City request, TADI reviewed the April TIA. This technical memorandum summarizes the results of the review and provides recommendations to the City regarding modifications necessary to accommodate the development.

Review Comments

The comments provided and changes suggested in the TADI review of the TIA Initial Review, dated March 24th, were addressed in the TIA with the following exception.

- Seasonal variation is typical for a last-mile warehouse facility, especially during the months of November and December as well as mid-July. A trip generation, distribution, and assignment for the seasonal variation ("peak season") was requested but not provided in the TIA. *TADI assumed that, if a peak season variation would occur, the variation would include a 50% increase in development trip generation for the purposes of this TIA review.*

TADI reviewed the April TIA and provides the following review comments.

Comments on Capacity Analysis

- The median along Redford Boulevard is greater than 30-feet. In accordance with WisDOT TIA practice, medians of 30-feet or greater width should be analyzed with two-vehicle storage in the median. The TIA analyzed the Redford & Roundy intersection with one-vehicle storage. *TADI ran the capacity analysis at Redford & Roundy with two-vehicle storage. Though modest reductions in delays and*

queues are expected, the eastbound left-turn movement from Roundy to Redford is still expected to operate undesirably at LOS E/F conditions during select peak hours (Network AM Peak = LOS E under "background" (without Last Mile) volumes and LOS F under "build" (with Last Mile) volumes; PM Peak = LOS E under "build" volumes). TADI anticipates that these operations will further deteriorate if there are peak season traffic variations with the Last-Mile Warehouse Facility.

Comments on Traffic Signal Warrant Analysis

- The traffic volumes used in the traffic signal warrant analysis were slightly lower than expected. The 2021 existing volumes should have been increased by 17% to approximate 2021 background ("pre pandemic") volumes, and then the development volumes added to the result to estimate Year 2021 build (with Last Mile) traffic volumes. *TADI utilized the existing count data, increased it by 17%, and then layered on the development volumes for each hour from 6:00am to 7:00pm. TADI then compared the volumes to Warrant 1, Eight-Hour Vehicular Volume and Warrant 2, Four-Hour Vehicular Volume as identified in the Manual on Uniform Traffic Control Devices (MUTCD).*
    - *Traffic signal warrants are not met under background (without Last Mile) traffic volumes and are not met under build (with Last Mile) traffic volumes with the assumption that the eastbound left-turn movement is the minor street approach. These results are similar to those identified in the TIA. Note that these results do not include peak season traffic volume variations that may occur with the Last Mile Warehouse Facility.*
    - *The traffic signal warrants were also checked assuming the northbound left-turn movement is the minor street approach, as permitted in the MUTCD guidance. Traffic signal warrants are not met under background (without Last Mile) traffic volumes and **are met** under build (with Last Mile) traffic volumes with the assumption that the northbound left-turn movement is the minor street approach. Note that these results do not include peak season traffic volume variations that may occur with the Last Mile Warehouse Facility.*

Comments on Report Recommendations

- Redford Boulevard is a Waukesha County highway (CTH F). As indicated in the review of the TIA Initial Review in March, any analysis and/or modifications to this intersection must be reviewed and approved by the Waukesha County Highway Department. The applicant will need to engage the Waukesha County Highway Department for its review and approval of the TIA. *Meeting traffic signal warrants is not a legal requirement for traffic signal installation. If the County requires traffic signal installation, TADI recommends the installation include northbound-to-westbound left-turn protected-permitted indications and flashing yellow arrows. Based on an analysis performed by TADI, traffic signal installation is expected to result in desirably LOS C or better operations for all*

movements. Desirable operations are also expected with the installation of a traffic signal if there are peak season traffic variations with the Last-Mile Warehouse Facility.

Recommendations

As identified in the TIA:

- At Redford Boulevard & Roundy Drive, install pavement markings on the eastbound approach to delineate separate left-turn and right-turn lanes. The final TIA and pavement marking plans will require Waukesha County Highway Department review and approval.
- Modify the center island on Roundy Circle-East at Roundy Drive, as well as the northeast corner of the same intersection, to accommodate truck turning movements. The final intersection plans will require City of Pewaukee review and approval.

Additionally:

- Traffic signal warrants are expected to be met at Redford Boulevard & Roundy Drive with the completion of the Last Mile Warehouse Facility. The Waukesha County Highway Department will need to determine if the installation of traffic signals will be required. If the Waukesha County Highway Department requires traffic signals, the County will likely require the expense for design and construction to be borne by the City and/or Last-Mile Warehouse Facility project.

The revised intersection analyses and traffic signal warrant results for Redford Boulevard & Roundy Drive are attached to this memorandum.

Should any questions or comments arise, please feel free to contact me at 262-377-1845 or jbieberitz@tadi-us.com.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	15	65	970	950	40
Future Volume (vph)	1	15	65	970	950	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			719	1221	
Travel Time (s)	23.1			8.9	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1	18	76	1141	1118	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	18	76	1141	1118	47
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	15	65	970	950	40
Future Vol, veh/h	1	15	65	970	950	40
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	240	150	-	-	250
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	1	18	76	1141	1118	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1841	559	1165	0	-	0
Stage 1	1118	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	67	472	590	-	-	-
Stage 1	274	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	58	472	590	-	-	-
Mov Cap-2 Maneuver	204	-	-	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	590	-	204	472	-	-
HCM Lane V/C Ratio	0.13	-	0.006	0.037	-	-
HCM Control Delay (s)	12	-	22.7	12.9	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0	0.1	-	-

Lanes, Volumes, Timings
1: Redford Boulevard & Roundy Drive 04/12/2021

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	20	130	1150	1315	75
Future Volume (vph)	10	20	130	1150	1315	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			716	1221	
Travel Time (s)	23.1			8.9	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	11	22	141	1250	1429	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	22	141	1250	1429	82
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM 6th TWSC
1: Redford Boulevard & Roundy Drive 04/12/2021

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	20	130	1150	1315	75
Future Vol, veh/h	10	20	130	1150	1315	75
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	240	150	-	-	250
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	11	22	141	1250	1429	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2336	715	1511	0	-	0
Stage 1	1429	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	31	373	434	-	-	-
Stage 1	187	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	21	373	434	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	126	-	-	-	-	-
Stage 2	354	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.5	1.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	434	-	113	373	-	-
HCM Lane V/C Ratio	0.326	-	0.096	0.058	-	-
HCM Control Delay (s)	17.2	-	40.2	15.2	-	-
HCM Lane LOS	C	-	E	C	-	-
HCM 95th %tile Q(veh)	1.4	-	0.3	0.2	-	-

Lanes, Volumes, Timings
1: Redford Boulevard & Roundy Drive 04/12/2021

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	110	15	1105	1125	15
Future Volume (vph)	80	110	15	1105	1125	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			724	1221	
Travel Time (s)	23.1			9.0	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	85	117	16	1176	1197	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	117	16	1176	1197	16
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM 6th TWSC
1: Redford Boulevard & Roundy Drive 04/12/2021

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	110	15	1105	1125	15
Future Vol, veh/h	80	110	15	1105	1125	15
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	240	150	-	-	250
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	85	117	16	1176	1197	16

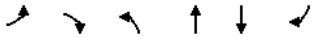
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1817	599	1213	0	-	0
Stage 1	1197	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	~ 69	445	565	-	-	-
Stage 1	249	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 67	445	565	-	-	-
Mov Cap-2 Maneuver	212	-	-	-	-	-
Stage 1	242	-	-	-	-	-
Stage 2	499	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	565	-	212	445	-	-
HCM Lane V/C Ratio	0.028	-	0.401	0.263	-	-
HCM Control Delay (s)	11.6	-	32.9	16	-	-
HCM Lane LOS	B	-	D	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.8	1	-	-

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

Lanes, Volumes, Timings
1: Redford Boulevard & Roundy Drive 04/12/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	95	150	970	950	70
Future Volume (vph)	30	95	150	970	950	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1711	1531	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			719	1221	
Travel Time (s)	23.1			8.9	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	35	112	176	1141	1118	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	112	176	1141	1118	82
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM 6th TWSC
1: Redford Boulevard & Roundy Drive 04/12/2021

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	95	150	970	950	70
Future Vol, veh/h	30	95	150	970	950	70
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	240	150	-	-	250
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	35	112	176	1141	1118	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2041	559	1200	0	-	0
Stage 1	1118	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	49	472	572	-	-	-
Stage 1	274	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 34	472	572	-	-	-
Mov Cap-2 Maneuver	159	-	-	-	-	-
Stage 1	190	-	-	-	-	-
Stage 2	347	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	572	-	159	472	-	-
HCM Lane V/C Ratio	0.309	-	0.222	0.237	-	-
HCM Control Delay (s)	14.1	-	34	15	-	-
HCM Lane LOS	B	-	D	C	-	-
HCM 95th %tile Q(veh)	1.3	-	0.8	0.9	-	-

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

Lanes, Volumes, Timings
1: Redford Boulevard & Roundy Drive 04/12/2021

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	50	150	1150	1315	85
Future Volume (vph)	25	50	150	1150	1315	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1711	1531	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			716	1221	
Travel Time (s)	23.1			8.9	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	27	54	163	1250	1429	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	54	163	1250	1429	92
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM 6th TWSC
1: Redford Boulevard & Roundy Drive 04/12/2021

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	50	150	1150	1315	85
Future Vol, veh/h	25	50	150	1150	1315	85
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	240	150	-	-	250
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	27	54	163	1250	1429	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2380	715	1521	0	-	0
Stage 1	1429	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	29	373	430	-	-	-
Stage 1	187	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 18	373	430	-	-	-
Mov Cap-2 Maneuver	104	-	-	-	-	-
Stage 1	116	-	-	-	-	-
Stage 2	336	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28	2.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	430	-	104	373	-	-
HCM Lane V/C Ratio	0.379	-	0.261	0.146	-	-
HCM Control Delay (s)	18.4	-	51.4	16.3	-	-
HCM Lane LOS	C	-	F	C	-	-
HCM 95th %tile Q(veh)	1.7	-	1	0.5	-	-

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

Lanes, Volumes, Timings
1: Redford Boulevard & Roundy Drive 04/12/2021

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	105	165	55	1105	1125	30
Future Volume (vph)	105	165	55	1105	1125	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1711	1531	1752	3505	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			724	1221	
Travel Time (s)	23.1			9.0	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	112	176	59	1176	1197	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	176	59	1176	1197	32
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM 6th TWSC
1: Redford Boulevard & Roundy Drive 04/12/2021

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	105	165	55	1105	1125	30
Future Vol, veh/h	105	165	55	1105	1125	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	240	150	-	-	250
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	112	176	59	1176	1197	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1903	599	1229	0	-	0
Stage 1	1197	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.16	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	~ 61	445	557	-	-	-
Stage 1	249	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 55	445	557	-	-	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	223	-	-	-	-	-
Stage 2	450	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.1	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	557	-	194	445	-	-
HCM Lane V/C Ratio	0.105	-	0.576	0.394	-	-
HCM Control Delay (s)	12.2	-	46.1	18.3	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.3	-	3.1	1.9	-	-

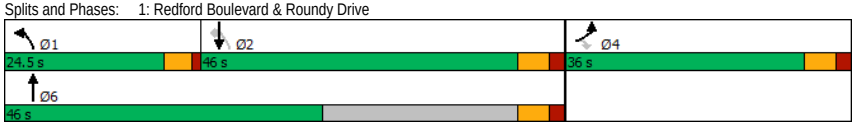
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	95	150	970	950	70
Future Volume (vph)	30	95	150	970	950	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.183			
Satd. Flow (perm)	1711	1531	338	3505	3539	1583
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			719	1221	
Travel Time (s)	23.1			8.9	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	62%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	35	69	176	1141	1118	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	69	176	1141	1118	51
Turn Type	Prot	Perm	D.P+P	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	2			2
Detector Phase	4	4	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	15.0	15.0	15.0
Minimum Split (s)	16.0	16.0	10.5	21.0	21.0	21.0
Total Split (s)	36.0	36.0	24.5	46.0	46.0	46.0
Total Split (%)	33.8%	33.8%	23.0%	43.2%	43.2%	43.2%
Maximum Green (s)	30.0	30.0	20.0	40.0	40.0	40.0
Yellow Time (s)	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0	5.0	5.0	5.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0	0.0	15.0	15.0	15.0
Recall Mode	None	None	None	Min	Min	Min
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.13	0.28	0.44	0.44	0.60	0.06
Control Delay	29.5	31.9	7.3	5.2	14.0	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	31.9	7.3	5.2	14.0	9.9
90th %ile Green (s)	11.5	11.5	12.5	56.8	39.8	39.8
90th %ile Term Code	Gap	Gap	Gap	Hold	Gap	Gap
70th %ile Green (s)	10.0	10.0	9.2	50.2	36.5	36.5
70th %ile Term Code	Min	Min	Gap	Hold	Gap	Gap
50th %ile Green (s)	10.0	10.0	7.3	47.4	35.6	35.6
50th %ile Term Code	Min	Min	Gap	Hold	Gap	Gap
30th %ile Green (s)	10.0	10.0	6.2	40.4	29.7	29.7
30th %ile Term Code	Min	Min	Gap	Hold	Gap	Gap
10th %ile Green (s)	0.0	0.0	6.0	38.9	28.4	28.4
10th %ile Term Code	Skip	Skip	Min	Dwell	Dwell	Dwell
Queue Length 50th (ft)	13	27	20	99	166	10
Queue Length 95th (ft)	39	65	36	130	247	29
Internal Link Dist (ft)	766			639	1141	
Turn Bay Length (ft)		240	150			250
Base Capacity (vph)	811	725	698	3243	2236	1000
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.10	0.25	0.35	0.50	0.05

Intersection Summary	
Area Type:	Other
Cycle Length: 106.5	
Actuated Cycle Length: 65.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 80.3	
70th %ile Actuated Cycle: 72.2	
50th %ile Actuated Cycle: 69.4	
30th %ile Actuated Cycle: 62.4	
10th %ile Actuated Cycle: 44.9	

Splits and Phases: 1: Redford Boulevard & Roundy Drive



HCM 6th Signalized Intersection Summary
1: Redford Boulevard & Roundy Drive

04/12/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	95	150	970	950	70
Future Volume (veh/h)	30	95	150	970	950	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1870	1870
Adj Flow Rate, veh/h	35	69	176	1141	1118	51
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	3	3	2	2
Cap, veh/h	244	217	411	2339	1756	783
Arrive On Green	0.14	0.14	0.09	0.66	0.49	0.49
Sat Flow, veh/h	1781	1585	1767	3618	3647	1585
Grp Volume(v), veh/h	35	69	176	1141	1118	51
Grp Sat Flow(s),veh/h/ln	1781	1585	1767	1763	1777	1585
Q Serve(g_s), s	1.0	2.4	2.7	9.7	14.0	1.0
Cycle Q Clear(g_c), s	1.0	2.4	2.7	9.7	14.0	1.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	244	217	411	2339	1756	783
V/C Ratio(X)	0.14	0.32	0.43	0.49	0.64	0.07
Avail Cap(c_a), veh/h	889	791	832	2345	2364	1054
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	22.8	23.4	8.2	5.0	11.2	8.0
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.3	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.9	0.6	1.5	3.8	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.9	23.7	8.5	5.4	12.1	8.0
LnGrp LOS	C	C	A	A	B	A
Approach Vol, veh/h	104			1317	1169	
Approach Delay, s/veh	23.5			5.8	11.9	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	35.7		14.2		45.9
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	20.0	40.0		30.0		40.0
Max Q Clear Time (g_c+I1), s	4.7	16.0		4.4		11.7
Green Ext Time (p_c), s	0.2	13.8		0.1		15.1

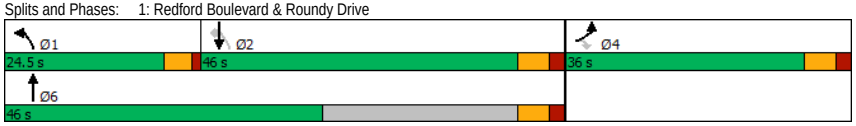
Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	50	150	1150	1315	85
Future Volume (vph)	25	50	150	1150	1315	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.120			
Satd. Flow (perm)	1711	1531	221	3505	3539	1583
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			716	1221	
Travel Time (s)	23.1			8.9	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	62%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	27	34	163	1250	1429	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	34	163	1250	1429	57
Turn Type	Prot	Perm	D.P+P	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	2			2
Detector Phase	4	4	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	15.0	15.0	15.0
Minimum Split (s)	16.0	16.0	10.5	21.0	21.0	21.0
Total Split (s)	36.0	36.0	24.5	46.0	46.0	46.0
Total Split (%)	33.8%	33.8%	23.0%	43.2%	43.2%	43.2%
Maximum Green (s)	30.0	30.0	20.0	40.0	40.0	40.0
Yellow Time (s)	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0	5.0	5.0	5.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0	0.0	15.0	15.0	15.0
Recall Mode	None	None	None	Min	Min	Min
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.11	0.16	0.49	0.43	0.66	0.06
Control Delay	30.2	30.9	11.7	4.1	13.0	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	30.9	11.7	4.1	13.0	8.6
90th %ile Green (s)	10.0	10.0	11.3	55.8	40.0	40.0
90th %ile Term Code	Min	Min	Gap	Hold	Max	Max
70th %ile Green (s)	10.0	10.0	8.5	53.0	40.0	40.0
70th %ile Term Code	Min	Min	Gap	Hold	Max	Max
50th %ile Green (s)	10.0	10.0	6.7	51.2	40.0	40.0
50th %ile Term Code	Min	Min	Gap	Hold	Max	Max
30th %ile Green (s)	0.0	0.0	6.0	49.7	39.2	39.2
30th %ile Term Code	Skip	Skip	Min	Hold	Gap	Gap
10th %ile Green (s)	0.0	0.0	6.0	65.5	55.0	55.0
10th %ile Term Code	Skip	Skip	Min	Dwell	Dwell	Dwell
Queue Length 50th (ft)	11	14	18	113	238	11
Queue Length 95th (ft)	35	41	62	150	366	31
Internal Link Dist (ft)	766			636	1141	
Turn Bay Length (ft)		240	150			250
Base Capacity (vph)	736	659	618	3203	2180	975
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.05	0.26	0.39	0.66	0.06

Intersection Summary	
Area Type:	Other
Cycle Length: 106.5	
Actuated Cycle Length: 70.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 77.8	
70th %ile Actuated Cycle: 75	
50th %ile Actuated Cycle: 73.2	
30th %ile Actuated Cycle: 55.7	
10th %ile Actuated Cycle: 71.5	

Splits and Phases: 1: Redford Boulevard & Roundy Drive



HCM 6th Signalized Intersection Summary
1: Redford Boulevard & Roundy Drive

04/12/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	50	150	1150	1315	85
Future Volume (veh/h)	25	50	150	1150	1315	85
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1870	1870
Adj Flow Rate, veh/h	27	34	163	1250	1429	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3	3	2	2
Cap, veh/h	184	164	356	2505	1963	876
Arrive On Green	0.10	0.10	0.09	0.71	0.55	0.55
Sat Flow, veh/h	1781	1585	1767	3618	3647	1585
Grp Volume(v), veh/h	27	34	163	1250	1429	57
Grp Sat Flow(s),veh/h/ln	1781	1585	1767	1763	1777	1585
Q Serve(g_s), s	0.9	1.3	2.4	10.2	19.4	1.1
Cycle Q Clear(g_c), s	0.9	1.3	2.4	10.2	19.4	1.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	184	164	356	2505	1963	876
V/C Ratio(X)	0.15	0.21	0.46	0.50	0.73	0.07
Avail Cap(c_a), veh/h	830	739	749	2505	2208	985
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	26.3	26.5	10.0	4.2	10.8	6.7
Incr Delay (d2), s/veh	0.1	0.2	0.3	0.3	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.5	1.2	5.2	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.4	26.7	10.4	4.5	12.3	6.8
LnGrp LOS	C	C	B	A	B	A
Approach Vol, veh/h	61			1413	1486	
Approach Delay, s/veh	26.6			5.2	12.1	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	41.6		12.6		51.7
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	20.0	40.0		30.0		40.0
Max Q Clear Time (g_c+I1), s	4.4	21.4		3.3		12.2
Green Ext Time (p_c), s	0.2	14.2		0.1		16.5
Intersection Summary						
HCM 6th Ctrl Delay			9.1			
HCM 6th LOS			A			

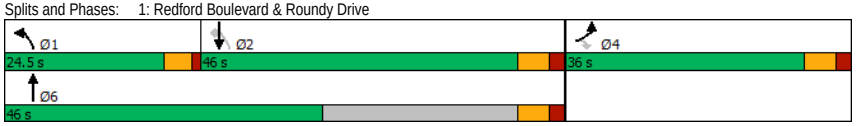
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	105	165	55	1105	1125	30
Future Volume (vph)	105	165	55	1105	1125	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	240	150			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		130			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1711	1531	1752	3505	3539	1583
Flt Permitted	0.950		0.167			
Satd. Flow (perm)	1711	1531	308	3505	3539	1583
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			55	55	
Link Distance (ft)	846			724	1221	
Travel Time (s)	23.1			9.0	15.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	62%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	112	109	59	1176	1197	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	109	59	1176	1197	20
Turn Type	Prot	Perm	D.P+P	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	2			2
Detector Phase	4	4	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	15.0	15.0	15.0
Minimum Split (s)	16.0	16.0	10.5	21.0	21.0	21.0
Total Split (s)	36.0	36.0	24.5	46.0	46.0	46.0
Total Split (%)	33.8%	33.8%	23.0%	43.2%	43.2%	43.2%
Maximum Green (s)	30.0	30.0	20.0	40.0	40.0	40.0
Yellow Time (s)	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0	5.0	5.0	5.0

Lanes, Volumes, Timings
1: Redford Boulevard & Roundy Drive 04/12/2021

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0	0.0	15.0	15.0	15.0
Recall Mode	None	None	None	Min	Min	Min
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.39	0.43	0.18	0.52	0.61	0.02
Control Delay	30.4	31.8	5.2	7.1	12.4	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	31.8	5.2	7.1	12.4	8.7
90th %ile Green (s)	13.7	13.7	6.3	50.4	39.6	39.6
90th %ile Term Code	Gap	Gap	Gap	Hold	Gap	Gap
70th %ile Green (s)	11.1	11.1	6.0	43.5	33.0	33.0
70th %ile Term Code	Gap	Gap	Min	Hold	Gap	Gap
50th %ile Green (s)	10.0	10.0	6.0	48.6	38.1	38.1
50th %ile Term Code	Min	Min	Min	Hold	Gap	Gap
30th %ile Green (s)	10.0	10.0	0.0	32.5	32.5	32.5
30th %ile Term Code	Min	Min	Skip	Hold	Gap	Gap
10th %ile Green (s)	10.0	10.0	0.0	38.7	38.7	38.7
10th %ile Term Code	Min	Min	Skip	Dwell	Dwell	Dwell
Queue Length 50th (ft)	45	44	6	103	175	4
Queue Length 95th (ft)	93	92	18	169	267	14
Internal Link Dist (ft)	766			644	1141	
Turn Bay Length (ft)		240	150			250
Base Capacity (vph)	791	708	652	3315	2184	976
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.15	0.09	0.35	0.55	0.02

Intersection Summary	
Area Type:	Other
Cycle Length: 106.5	
Actuated Cycle Length: 65.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 76.1	
70th %ile Actuated Cycle: 66.6	
50th %ile Actuated Cycle: 70.6	
30th %ile Actuated Cycle: 54.5	
10th %ile Actuated Cycle: 60.7	

Splits and Phases: 1: Redford Boulevard & Roundy Drive



Scenario 1 Last-Mile Warehouse Facility, Pewaukee, MN 02/26/2021 Base Year (2021) Build Site/Network PM Peak Hour Synchro 11 Report
WITH SIGNAL Page 2

HCM 6th Signalized Intersection Summary
1: Redford Boulevard & Roundy Drive

04/12/2021

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	165	55	1105	1125	30
Future Volume (veh/h)	105	165	55	1105	1125	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1870	1870
Adj Flow Rate, veh/h	112	109	59	1176	1197	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	3	3	2	2
Cap, veh/h	284	253	346	2274	1811	808
Arrive On Green	0.16	0.16	0.06	0.64	0.51	0.51
Sat Flow, veh/h	1781	1585	1767	3618	3647	1585
Grp Volume(v), veh/h	112	109	59	1176	1197	20
Grp Sat Flow(s),veh/h/ln	1781	1585	1767	1763	1777	1585
Q Serve(g_s), s	3.5	3.8	0.9	10.9	15.3	0.4
Cycle Q Clear(g_c), s	3.5	3.8	0.9	10.9	15.3	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	284	253	346	2274	1811	808
V/C Ratio(X)	0.39	0.43	0.17	0.52	0.66	0.02
Avail Cap(c_a), veh/h	872	776	812	2300	2318	1034
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	23.1	23.3	8.0	5.8	11.1	7.5
Incr Delay (d2), s/veh	0.3	0.4	0.1	0.4	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.4	0.2	1.9	4.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.5	23.7	8.1	6.2	12.0	7.5
LnGrp LOS	C	C	A	A	B	A
Approach Vol, veh/h	221			1235	1217	
Approach Delay, s/veh	23.6			6.3	12.0	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.3	37.2		15.8		45.5
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	20.0	40.0		30.0		40.0
Max Q Clear Time (g_c+I1), s	2.9	17.3		5.8		12.9
Green Ext Time (p_c), s	0.0	14.0		0.3		15.2
Intersection Summary						
HCM 6th Ctrl Delay			10.3			
HCM 6th LOS			B			

SIGNAL WARRANT: Redford Boulevard(CTH F) & Roundy Drive

2021 EXISTING TRAFFIC VOLUMES (PANDEMIC)

	EB					WB						NB					SB					
Start Time	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total
6-7a	7		2	2	9				0	0	9		494	32	526	526	14	331		331	345	871
7-8a	14		2	2	16				0	0	16		828	54	882	882	34	811		811	845	1727
8-9a	19		7	7	26				0	0	26		983	110	1093	1093	61	1126		1126	1187	2280
9-10a	31		10	10	41				0	0	41		665	65	730	730	46	775		775	821	1551
10-11a	31		13	13	44				0	0	44		396	36	432	432	21	526		526	547	979
11-12p	33		16	16	49				0	0	49		362	23	385	385	28	475		475	503	888
12-1p	39		18	18	57				0	0	57		521	27	548	548	24	491		491	515	1063
1-2p	49		18	18	67				0	0	67		549	41	590	590	23	519		519	542	1132
2-3p	50		16	16	66				0	0	66		574	43	617	617	16	538		538	554	1171
3-4p	47		24	24	71				0	0	71		699	30	729	729	16	741		741	757	1486
4-5p	68		42	42	110				0	0	110		956	33	989	989	14	836		836	850	1839
5-6p	96		69	69	165				0	0	165		946	14	960	960	13	963		963	976	1936
6-7p	71		31	31	102				0	0	102		964	9	973	973	5	792		792	797	1770

17.00%
1

2021 BACKGROUND TRAFFIC VOLUMES (PANDEMIC ADJUSTED)

	EB					WB						NB					SB					
Start Time	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total
6-7a	10	0	5	5	15	0	0	0	0	0	15	0	580	35	615	615	15	385	0	385	400	1015
7-8a	15	0	5	5	20	0	0	0	0	0	20	0	970	65	1035	1035	40	950	0	950	990	2025
8-9a	20	0	10	10	30	0	0	0	0	0	30	0	1150	130	1280	1280	70	1315	0	1315	1385	2665
9-10a	35	0	10	10	45	0	0	0	0	0	45	0	780	75	855	855	55	905	0	905	960	1815
10-11a	35	0	15	15	50	0	0	0	0	0	50	0	465	40	505	505	25	615	0	615	640	1145
11-12p	40	0	20	20	60	0	0	0	0	0	60	0	425	25	450	450	35	555	0	555	590	1040
12-1p	45	0	20	20	65	0	0	0	0	0	65	0	610	30	640	640	30	575	0	575	605	1245
1-2p	55	0	20	20	75	0	0	0	0	0	75	0	640	50	690	690	25	605	0	605	630	1320
2-3p	60	0	20	20	80	0	0	0	0	0	80	0	670	50	720	720	20	630	0	630	650	1370
3-4p	55	0	30	30	85	0	0	0	0	0	85	0	820	35	855	855	20	865	0	865	885	1740
4-5p	80	0	50	50	130	0	0	0	0	0	130	0	1120	40	1160	1160	15	980	0	980	995	2155
5-6p	110	0	80	80	190	0	0	0	0	0	190	0	1105	15	1120	1120	15	1125	0	1125	1140	2260
6-7p	85	0	35	35	120	0	0	0	0	0	120	0	1130	10	1140	1140	5	925	0	925	930	2070

*Per TIA, existing volumes increased by 17% and then rounded to nearest 5 vph to reflect pre-pandemic volumes.

Last Mile Site (trucks per hour are minor and are added to the employee & delivery vehicle volumes reflected here)

	EB					WB						NB					SB							
Start Time	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total	IN	OUT
6-7a	85		30	30	115				0	0	115			115	115	115	45			0	45	160	177	127
7-8a	80		30	30	110				0	0	110			85	85	85	30			0	30	115	127	126
8-9a	30		10	10	40				0	0	40			20	20	20	10			0	10	30	32	47
9-10a	20		10	10	30				0	0	30			35	35	35	15			0	15	50	51	34
10-11a	20		10	10	30				0	0	30			20	20	20	10			0	10	30	33	33
11-12p	50		20	20	70				0	0	70			15	15	15	5			0	5	20	25	75
12-1p	35		15	15	50				0	0	50			35	35	35	15			0	15	50	55	54
1-2p	35		15	15	50				0	0	50			50	50	50	20			0	20	70	80	55
2-3p	35		15	15	50				0	0	50			35	35	35	15			0	15	50	55	55
3-4p	50		20	20	70				0	0	70			40	40	40	15			0	15	55	59	76
4-5p	40		15	15	55				0	0	55			55	55	55	20			0	20	75	86	58
5-6p	40		15	15	55				0	0	55			40	40	40	15			0	15	55	58	60
6-7p	55		20	20	75				0	0	75			40	40	40	15						58	85
	65% Out		25% Out											65% In			25% In							

ANTICIPATED YEAR 2021 BUILD TRAFFIC (WITH LAST MILE FACILITY)

	EB					WB						NB					SB					
Start Time	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total	Rt	Th	Lt	Lt + Th	ALL	Rt	Th	Lt	Lt + Th	ALL	Total
6-7a	95	0	35	35	130	0	0	0	0	0	130	0	580	150	730	730	60	385	0	385	445	1175
7-8a	95	0	35	35	130	0	0	0	0	0	130	0	970	150	1120	1120	70	950	0	950	1020	2140
8-9a	50	0	20	20	70	0	0	0	0	0	70	0	1150	150	1300	1300	80	1315	0	1315	1395	2695
9-10a	55	0	20	20	75	0	0	0	0	0	75	0	780	110	890	890	70	905	0	905	975	1865
10-11a	55	0	25	25	80	0	0	0	0	0	80	0	465	60	525	525	35	615	0	615	650	1175
11-12p	90	0	40	40	130	0	0	0	0	0	130	0	425	40	465	465	40	555	0	555	595	1060
12-1p	80	0	35	35	115	0	0	0	0	0	115	0	610	65	675	675	45	575	0	575	620	1295
1-2p	90	0	35	35	125	0	0	0	0	0	125	0	640	100	740	740	45	605	0	605	650	1390
2-3p	95	0	35	35	130	0	0	0	0	0	130	0	670	85	755	755	35	630	0	630	665	1420
3-4p	105	0	50	50	155	0	0	0	0	0	155	0	820	75	895	895	35	865	0	865	900	1795
4-5p	120	0	65	65	185	0	0	0	0	0	185	0	1120	95	1215	1215	35	980	0	980	1015	2230
5-6p	150	0	95	95	245	0	0	0	0	0	245	0	1105	55	1160	1160	30	1125	0	1125	1155	2315
6-7p	140	0	55	55	195	0	0	0	0	0	195	0	1130	50	1180	1180	20	925	0	925	945	2125

Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Redford Boulevard (CTH F) & Roundy Drive
County: Wauesha
City: Pewaukee

Major Street: Redford Boulevard (CTH F)
Critical Approach Speed: 55 mph
Lanes: 2 or more lanes

Minor Street: Roundy Drive EBL
Critical Approach Speed: 25 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? 3
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level? No

Analysis based on PROJECTED volume data.

Forecast Year	Within 5 Years of Construction?	Time (HH:MM)			
		From	AM / PM	To	AM / PM
Year 2021 Background (NO Last Mile)	Yes	6:00	AM	19:00	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	**N/A**
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	**N/A**
Warrant 8: Roadway Network	**N/A**
Warrant 9: Intersection Near a Grade Crossing	**N/A**

Warrant Analysis Conducted By:

Name: John Bieberitz, P.E. PTOE
Agency: TADI
Date: 4/12/2021

Warrant 1: Eight - Hour Vehicular Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? No** **Manually Set To:**

Condition A : Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	0	0

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	1	2

Satisfied? No

Condition C: Combination of A & B at 56%

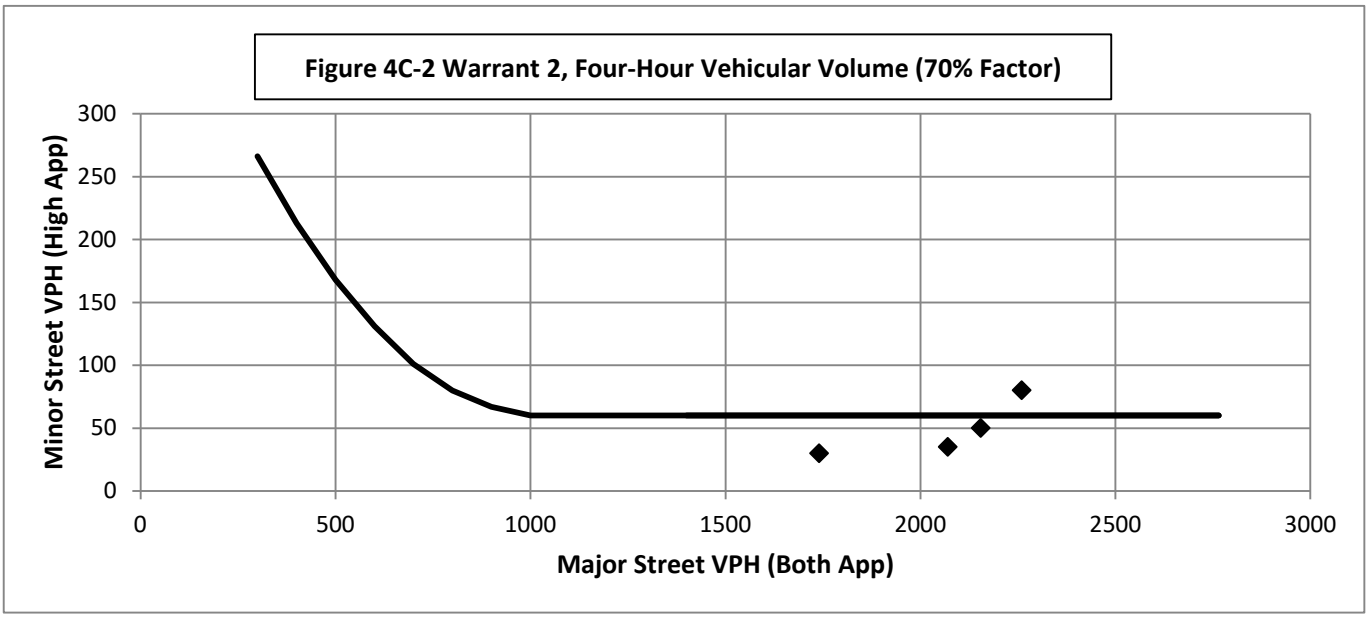
Satisfied? No

6:00 AM	Enter Start Time (Military Time) (HH:MM)				
Time Period	**From**	**To**	**Major Road: Both App. (VPH)**	**Minor Road: High App. (VPH)**	**Total**
1	6:00	7:00	1015	5	1020
2	7:00	8:00	2025	5	2030
3	8:00	9:00	2665	10	2675
4	9:00	10:00	1815	10	1825
5	10:00	11:00	1145	15	1160
6	11:00	12:00	1040	20	1060
7	12:00	13:00	1245	20	1265
8	13:00	14:00	1320	20	1340
9	14:00	15:00	1370	20	1390
10	15:00	16:00	1740	30	1770
11	16:00	17:00	2155	50	2205
12	17:00	18:00	2260	80	2340
13	18:00	19:00	2070	35	2105
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 70%

Warrant Evaluated? Yes
Warrant Satisfied? No
Manually Set To:

Hour Start	17:00	16:00	18:00	15:00
Major Road Vol.	2260	2155	2070	1740
Minor Road Vol.	80	50	35	30



Warrant 3: Peak Hour Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Condition justifying use of warrant:

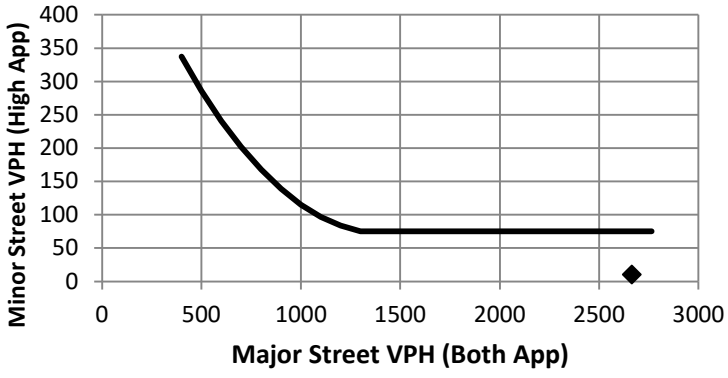
None. The criterion listed in the MUTCD are not met.

Criteria		Met?
Delay on Minor Approach	4	
Volume on Minor Approach	100	
Total Entering Volume (veh/h)	650	

Manually Set Peak Hour?

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
8:00	2665	10

Figure 4C-4 Warrant 3, Peak Hour (70% Factor)



Warrant 4: Pedestrian Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criterion A: Four Hour

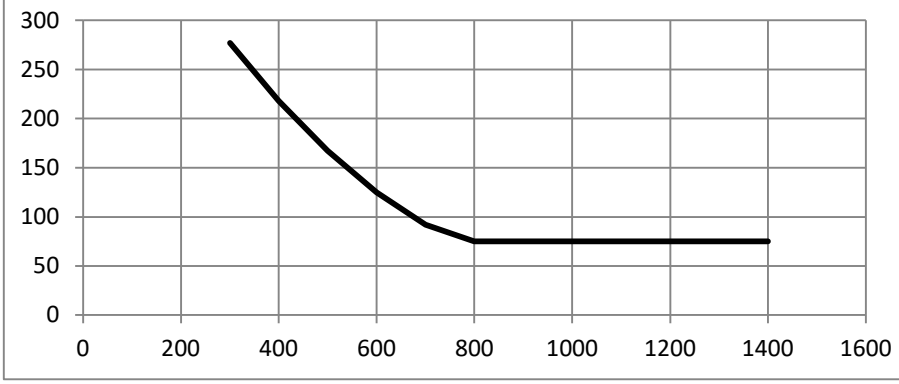
Hour (Start)	Pedestrian Volume	Major Road Vol.
		0
		0
		0
		0

Manually Set Major Rd Vol?

Avg. walk speed less than 3.5 ft/s?

Criterion A Satisfied?

Figure 4C-6 Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

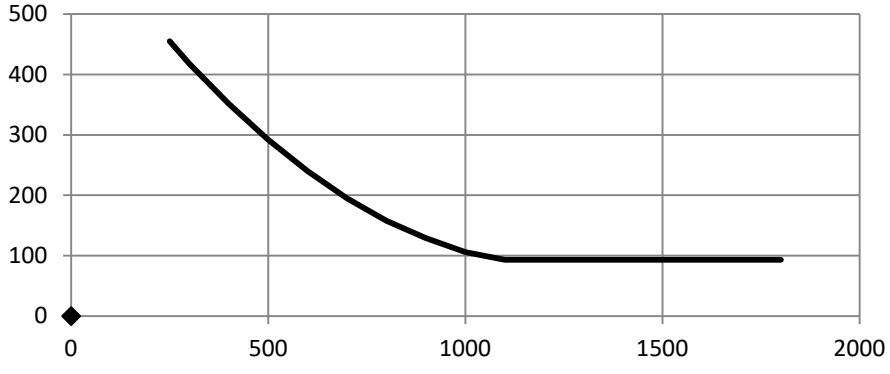


Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

Criterion B Satisfied?

Figure 4C-8 Warrant 4, Pedestrian Peak Hour (70% Factor)



Warrant 5: School Crossing 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criteria			Met?	Fulfilled?
1	Adequate trial of other remedial measures has failed to reduce crash frequency.			
	Measures Tried:			
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		
3	Warrant 1, Condition A (80%)		No	No
	Warrant 1, Condition B (80%)		No	
	Warrant 4, Criterion A (80%)		No	
	Warrant 4, Criterion B (80%)		No	

Warrant 8: Roadway Network 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

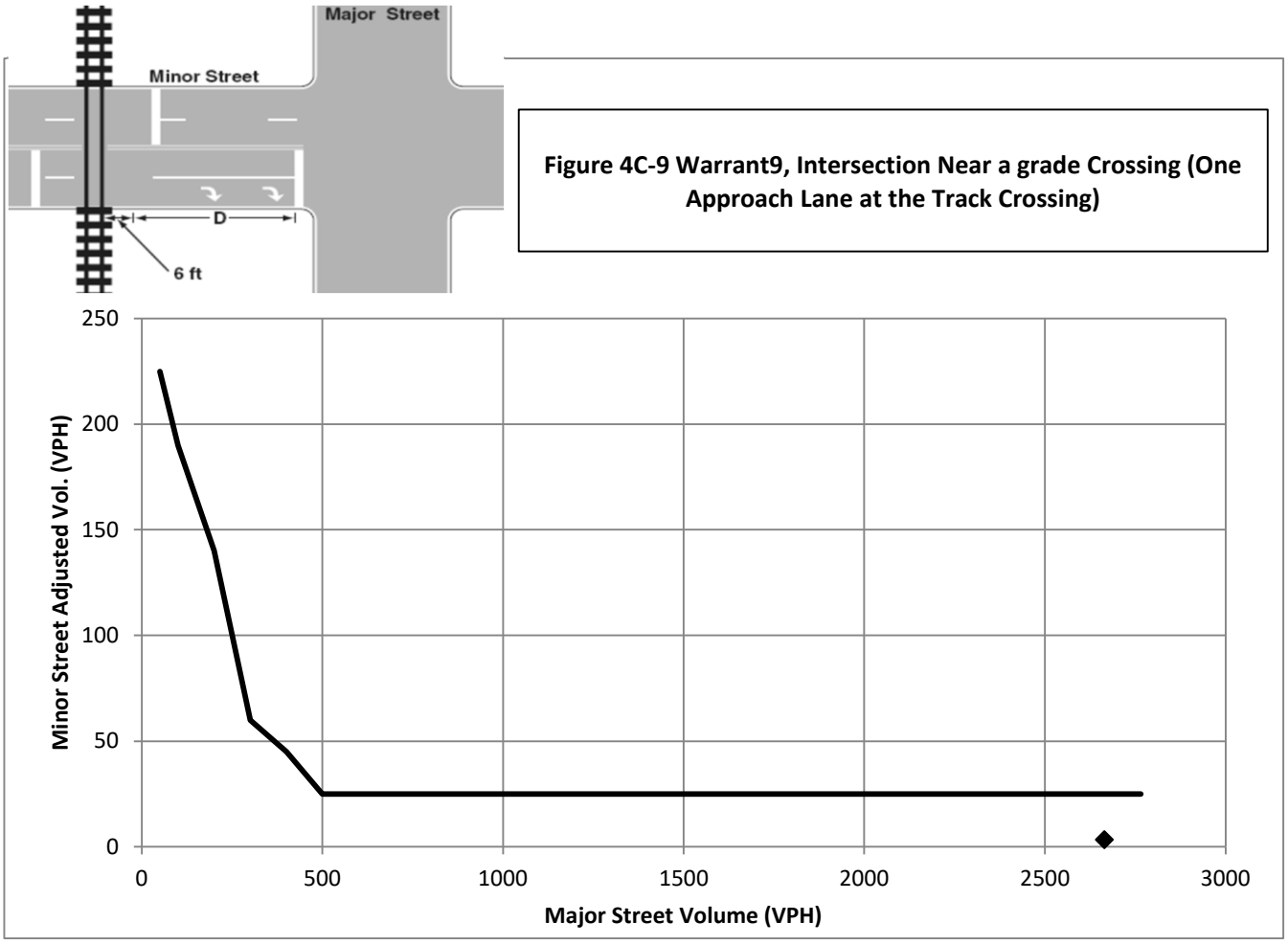
Criteria						Met?	Fulfilled?
1	Total entering volume of at least 1,000 veh/h during typical weekday peak hour				2675	Yes	No
	Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.					No	
2	Total entering vol. of at least 1,000 veh/h for each of any 5 hrs of non-normal business 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 70%

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	8:00	2665	10	3.35



Conclusions/Comments:

Signal warrants ARE NOT expected to be met based on use of EB left-turn volume from Roundy as the "minor street". This analysis is based on background (without Last Mile) traffic volumes.

Meeting signal warrants is not a legal requirement for their installation.

Updated: 12/6/2017

Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Redford Boulevard (CTH F) & Roundy Drive
County: Wauesha
City: Pewaukee

Major Street: Redford Boulevard (CTH F)
Critical Approach Speed: 55 mph
Lanes: 2 or more lanes

Minor Street: Roundy Drive EBL
Critical Approach Speed: 25 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? 3
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level? No

Analysis based on PROJECTED volume data.

Forecast Year	Within 5 Years of Construction?	Time (HH:MM)			
		From	AM / PM	To	AM / PM
Year 2021 Bld (WITH Last Mile)	Yes	6:00	AM	19:00	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	**N/A**
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	**N/A**
Warrant 8: Roadway Network	**N/A**
Warrant 9: Intersection Near a Grade Crossing	**N/A**

Warrant Analysis Conducted By:

Name: John Bieberitz, P.E. PTOE
Agency: TADI
Date: 4/12/2021

Warrant 1: Eight - Hour Vehicular Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? No** **Manually Set To:**

Condition A : Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	0	1

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	3	4

Satisfied? No

Condition C: Combination of A & B at 56%

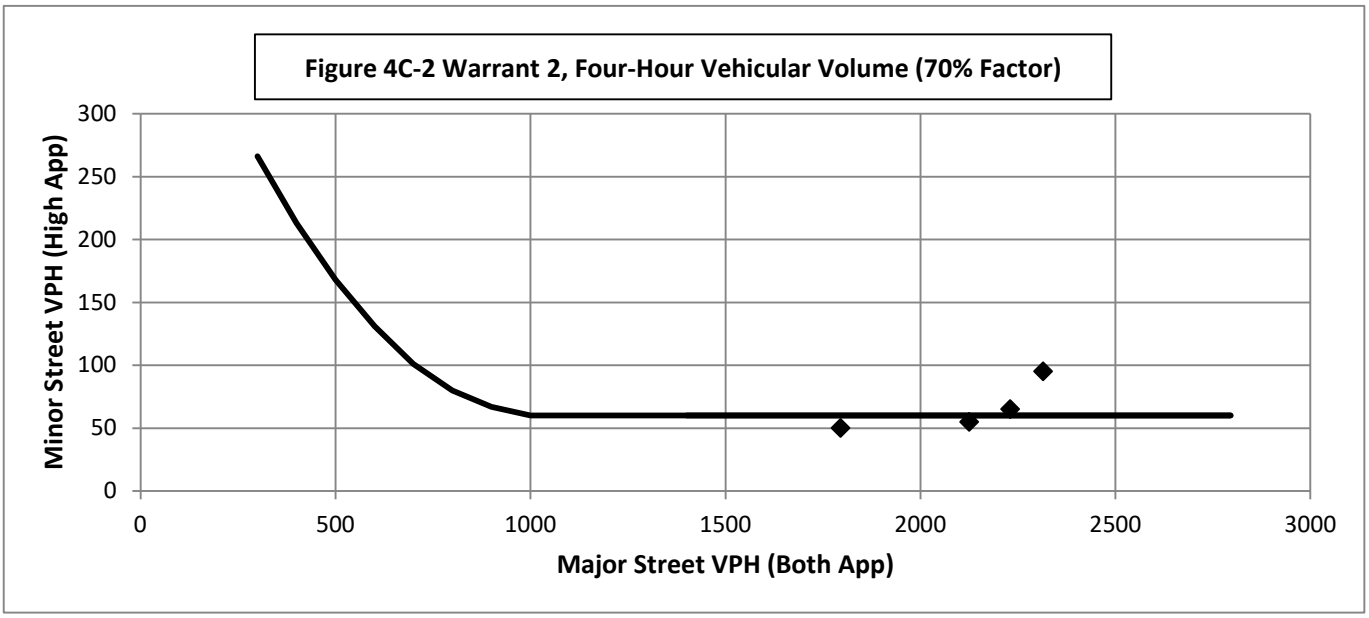
Satisfied? No

6:00 AM		Enter Start Time (Military Time) (HH:MM)			
Time Period	**From**	**To**	**Major Road: Both App. (VPH)**	**Minor Road: High App. (VPH)**	**Total**
1	6:00	7:00	1175	35	1210
2	7:00	8:00	2140	35	2175
3	8:00	9:00	2695	20	2715
4	9:00	10:00	1865	20	1885
5	10:00	11:00	1175	25	1200
6	11:00	12:00	1060	40	1100
7	12:00	13:00	1295	35	1330
8	13:00	14:00	1390	35	1425
9	14:00	15:00	1420	35	1455
10	15:00	16:00	1795	50	1845
11	16:00	17:00	2230	65	2295
12	17:00	18:00	2315	95	2410
13	18:00	19:00	2125	55	2180
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 70%

Warrant Evaluated? Yes
Warrant Satisfied? No
Manually Set To:

Hour Start	17:00	16:00	18:00	15:00
Major Road Vol.	2315	2230	2125	1795
Minor Road Vol.	95	65	55	50



Warrant 3: Peak Hour Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

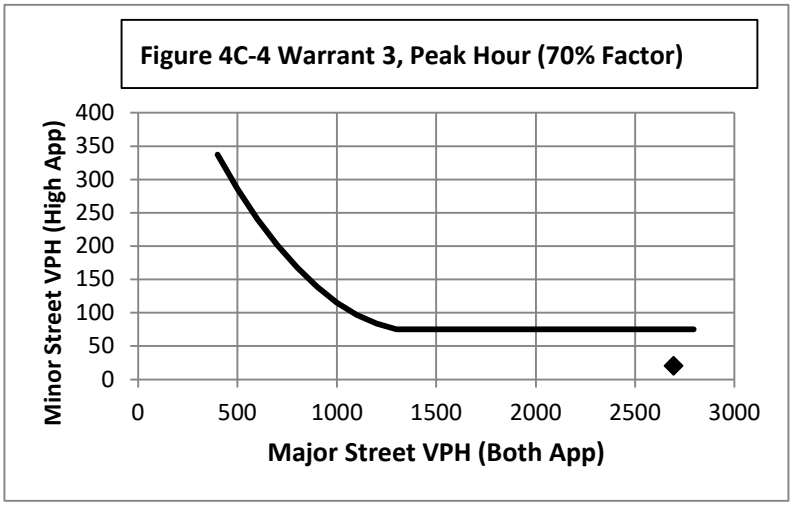
Condition justifying use of warrant:

None. The criterion listed in the MUTCD are not met.

Criteria		Met?
Delay on Minor Approach	4	
Volume on Minor Approach	100	
Total Entering Volume (veh/h)	650	

Manually Set Peak Hour?

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
8:00	2695	20



Warrant 4: Pedestrian Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

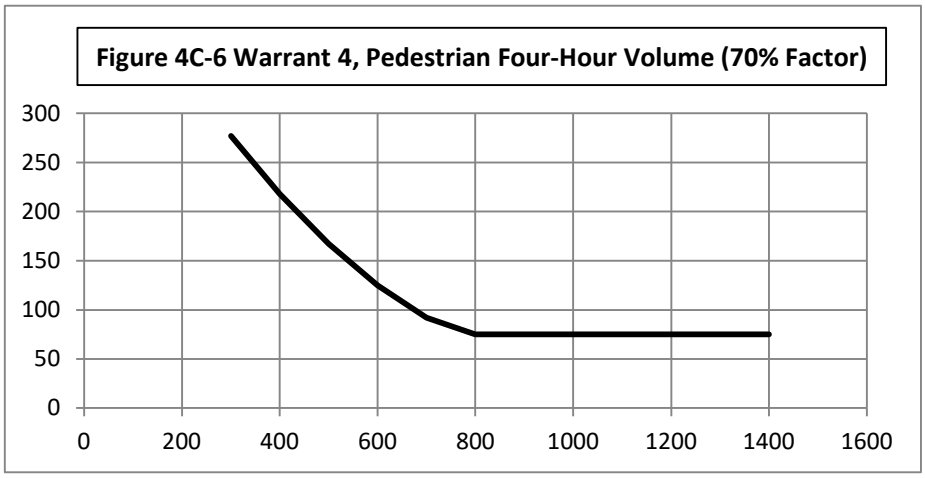
Criterion A: Four Hour

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?

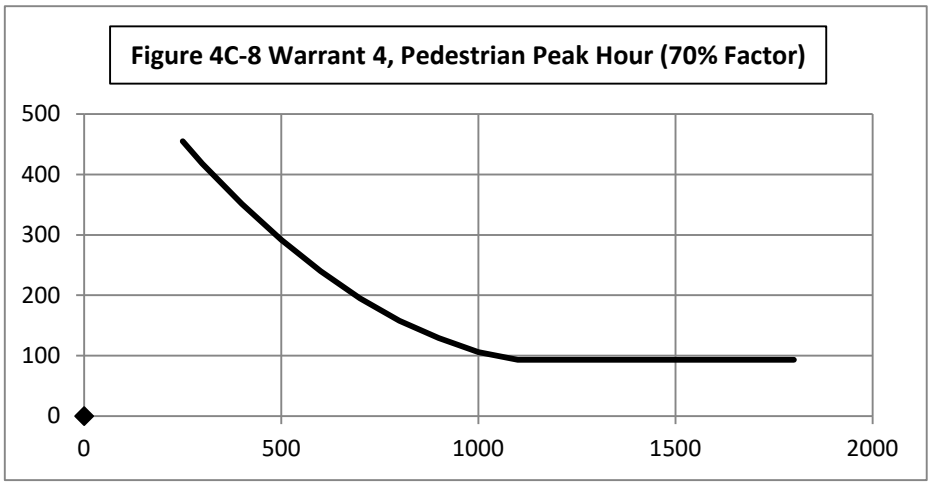
Criterion A Satisfied?



Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

Criterion B Satisfied?



Warrant 5: School Crossing 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criteria			Met?	Fulfilled?
1	Adequate trial of other remedial measures has failed to reduce crash frequency.			
	Measures Tried:			
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		
3	Warrant 1, Condition A (80%)		No	No
	Warrant 1, Condition B (80%)		No	
	Warrant 4, Criterion A (80%)		No	
	Warrant 4, Criterion B (80%)		No	

Warrant 8: Roadway Network 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

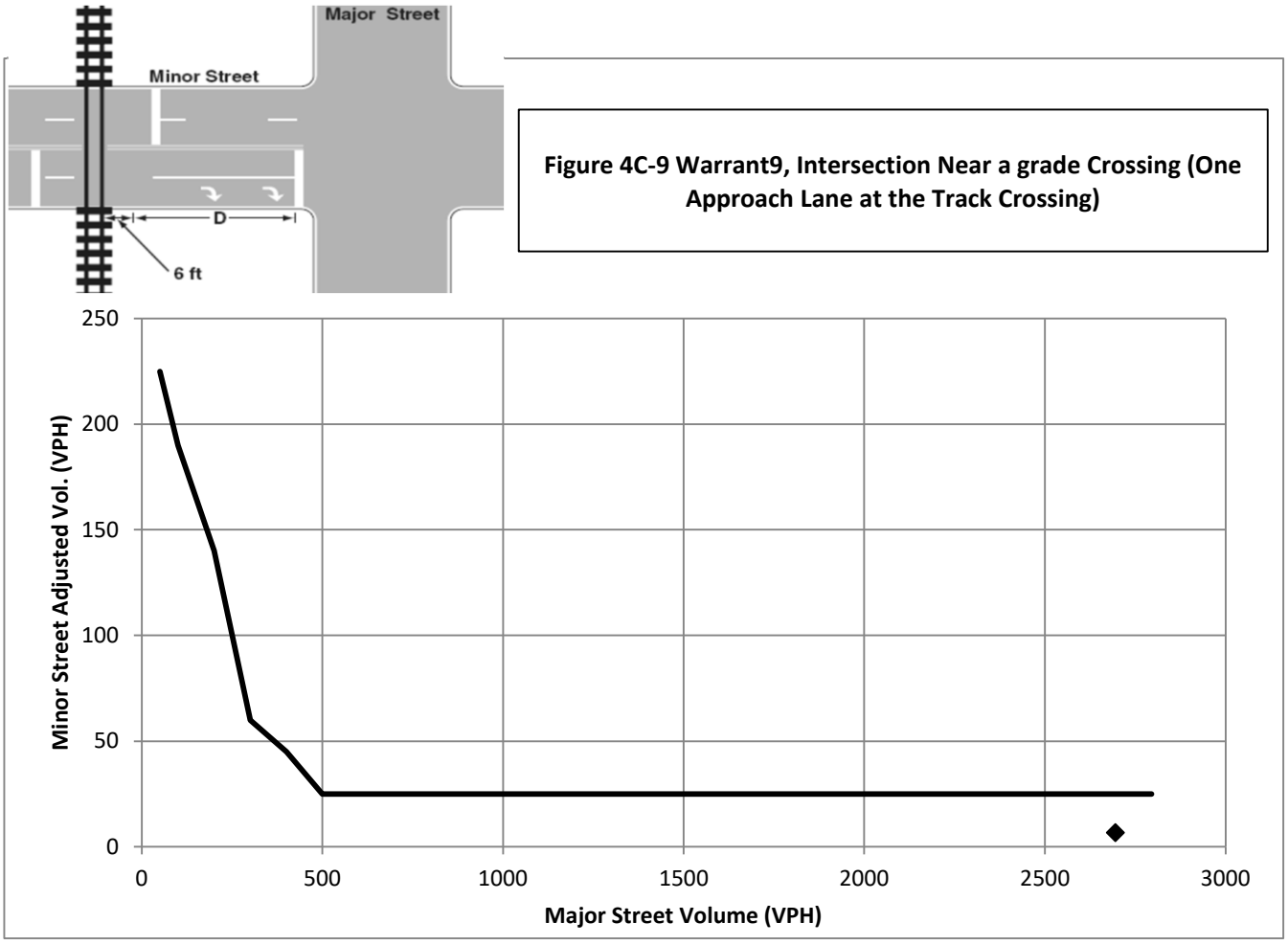
Criteria						Met?	Fulfilled?
1	Total entering volume of at least 1,000 veh/h during typical weekday peak hour				2715	Yes	No
	Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.					No	
2	Total entering vol. of at least 1,000 veh/h for each of any 5 hrs of non-normal business 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 70%

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	8:00	2695	20	6.7



Conclusions/Comments:

Signal warrants ARE NOT expected to be met based on use of EB left-turn volume from Roundy as the "minor street". This analysis is based on build (WITH Last Mile) traffic volumes. Note that Warrant 2 is close to being met and may be met within the next five years.

Meeting signal warrants is not a legal requirement for their installation.

Updated: 12/6/2017

Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Redford Boulevard (CTH F) & Roundy Drive
County: Wauesha
City: Pewaukee

Major Street: Redford Boulevard (CTH F) SB Approach
Critical Approach Speed: 55 mph
Lanes: 2 or more lanes

Minor Street: Redford Boulevard NB LEFT
Critical Approach Speed: 55 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? 3
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level? No

Analysis based on PROJECTED volume data.

Forecast Year	Within 5 Years of Construction?	Time (HH:MM)			
		From	AM / PM	To	AM / PM
Year 2021 Background (NO Last Mile)	Yes	6:00	AM	19:00	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	**N/A**
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	**N/A**
Warrant 8: Roadway Network	**N/A**
Warrant 9: Intersection Near a Grade Crossing	**N/A**

Warrant Analysis Conducted By:

Name: John Bieberitz, P.E. PTOE
Agency: TADI
Date: 4/12/2021

Warrant 1: Eight - Hour Vehicular Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? No** **Manually Set To:**

Condition A : Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	1	1

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	3	5

Satisfied? No

Condition C: Combination of A & B at 56%

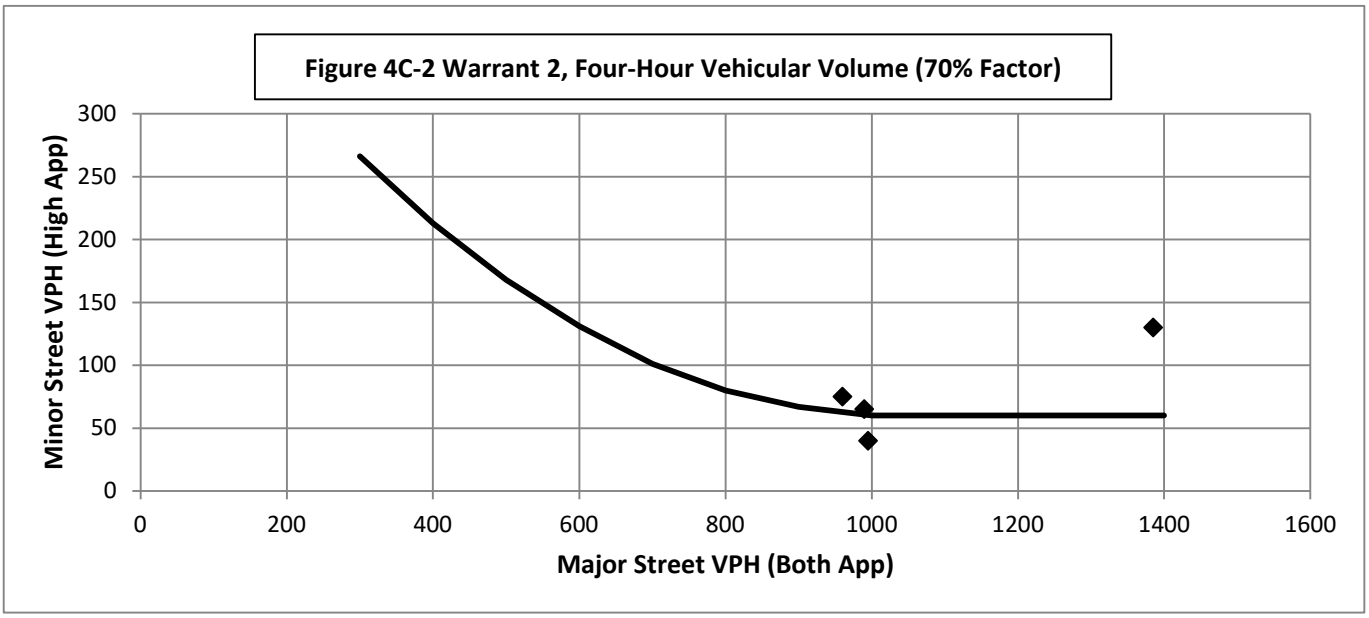
Satisfied? No

6:00 AM		Enter Start Time (Military Time) (HH:MM)			
Time Period	**From**	**To**	**Major Road: Both App. (VPH)**	**Minor Road: High App. (VPH)**	**Total**
1	6:00	7:00	400	35	435
2	7:00	8:00	990	65	1055
3	8:00	9:00	1385	130	1515
4	9:00	10:00	960	75	1035
5	10:00	11:00	640	40	680
6	11:00	12:00	590	25	615
7	12:00	13:00	605	30	635
8	13:00	14:00	630	50	680
9	14:00	15:00	650	50	700
10	15:00	16:00	885	35	920
11	16:00	17:00	995	40	1035
12	17:00	18:00	1140	15	1155
13	18:00	19:00	930	10	940
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 70%

Warrant Evaluated? Yes
Warrant Satisfied? No
Manually Set To:

Hour Start	8:00	7:00	9:00	16:00
Major Road Vol.	1385	990	960	995
Minor Road Vol.	130	65	75	40



Warrant 3: Peak Hour Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Condition justifying use of warrant:

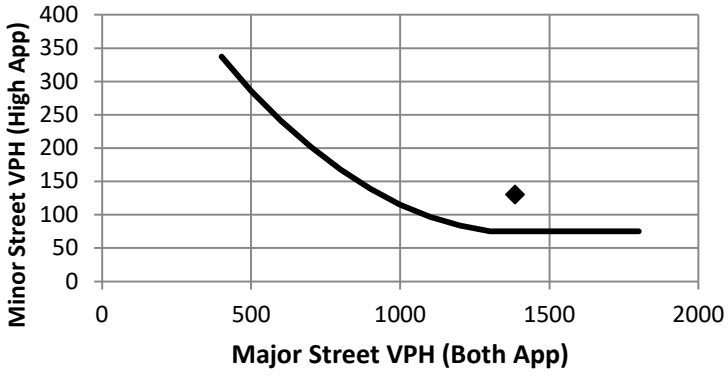
None. The criterion listed in the MUTCD are not met.

Criteria		Met?
Delay on Minor Approach	4	
Volume on Minor Approach	100	
Total Entering Volume (veh/h)	650	

Manually Set Peak Hour?

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
8:00	1385	130

Figure 4C-4 Warrant 3, Peak Hour (70% Factor)



Warrant 4: Pedestrian Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criterion A: Four Hour

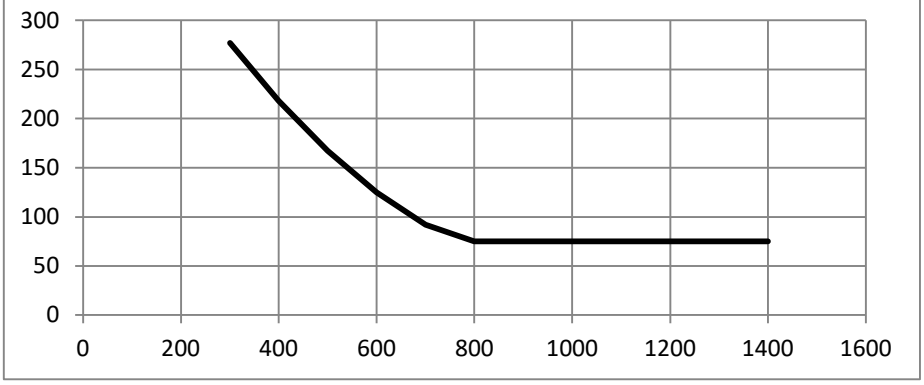
Hour (Start)	Pedestrian Volume	Major Road Vol.
		0
		0
		0
		0

Manually Set Major Rd Vol?

Avg. walk speed less than 3.5 ft/s?

Criterion A Satisfied?

Figure 4C-6 Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

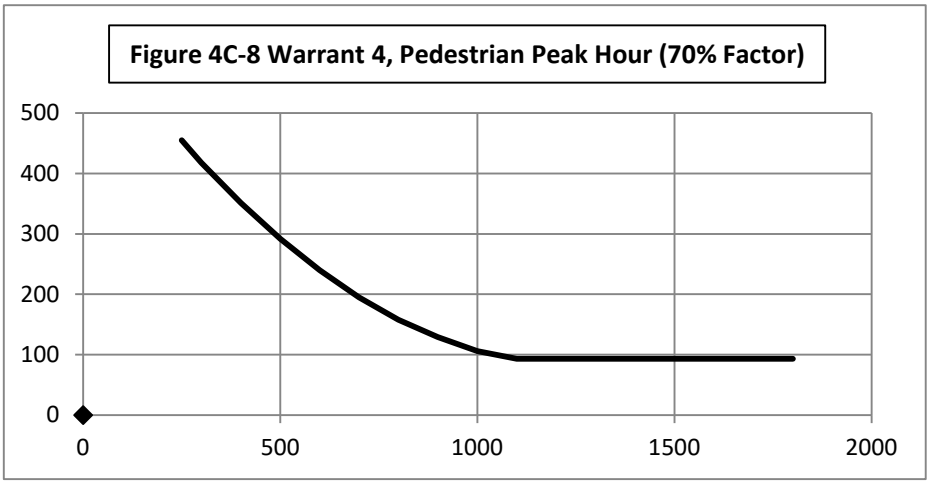


Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

Criterion B Satisfied?

Figure 4C-8 Warrant 4, Pedestrian Peak Hour (70% Factor)



Warrant 5: School Crossing 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criteria			Met?	Fulfilled?
1	Adequate trial of other remedial measures has failed to reduce crash frequency.			
	Measures Tried:			
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		
3	Warrant 1, Condition A (80%)		No	No
	Warrant 1, Condition B (80%)		No	
	Warrant 4, Criterion A (80%)		No	
	Warrant 4, Criterion B (80%)		No	

Warrant 8: Roadway Network 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

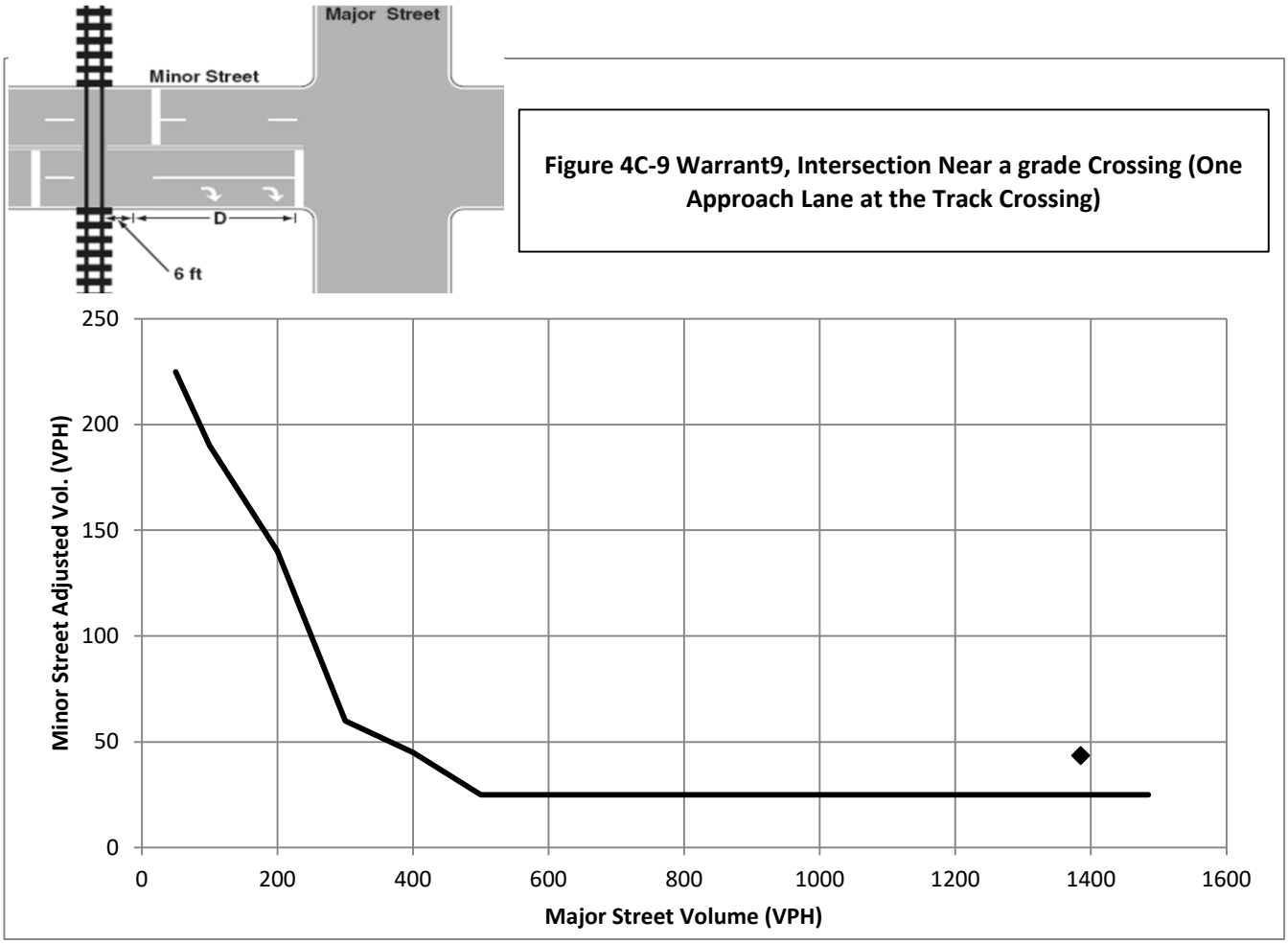
Criteria						Met?	Fulfilled?
1	Total entering volume of at least 1,000 veh/h during typical weekday peak hour				1515	Yes	No
	Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.					No	
2	Total entering vol. of at least 1,000 veh/h for each of any 5 hrs of non-normal business 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 70%

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	8:00	1385	130	43.55



Conclusions/Comments:

Signal warrants ARE NOT expected to be met based on use of NB left-turn volume from Redford as the "minor street" as is allowed per the MUTCD. This analysis is based on background (without Last Mile) traffic volumes.

Meeting signal warrants is not a legal requirement for their installation.

Updated: 12/6/2017

Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Redford Boulevard (CTH F) & Roundy Drive
County: Wauesha
City: Pewaukee

Major Street: Redford Boulevard (CTH F) SB Approach
Critical Approach Speed: 55 mph
Lanes: 2 or more lanes

Minor Street: Redford Boulevard NB LEFT
Critical Approach Speed: 55 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? 3
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level? No

Analysis based on PROJECTED volume data.

Forecast Year	Within 5 Years of Construction?	Time (HH:MM)			
		From	AM / PM	To	AM / PM
Year 2021 Bld (WITH Last Mile)	Yes	6:00	AM	19:00	PM

Warrant Evaluation Summary	Warrant Met:
Warrant 1: Eight - Hour Vehicular Volume	**Yes**
Condition A: Minimum Vehicular Volume	No
Condition B: Interruption of Continuous Traffic	Yes
Condition C: Combination: 80% of A and B	No
Warrant 2: Four-Hour Volume	**Yes**
Warrant 3: Peak Hour Volume	**N/A**
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	**N/A**
Warrant 8: Roadway Network	**N/A**
Warrant 9: Intersection Near a Grade Crossing	**N/A**

Warrant Analysis Conducted By:

Name: John Bieberitz, P.E. PTOE
Agency: TADI
Date: 4/12/2021

Warrant 1: Eight - Hour Vehicular Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? Yes** **Manually Set To:**

Condition A : Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	4	7

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	9	11

Satisfied? Yes

Condition C: Combination of A & B at 56%

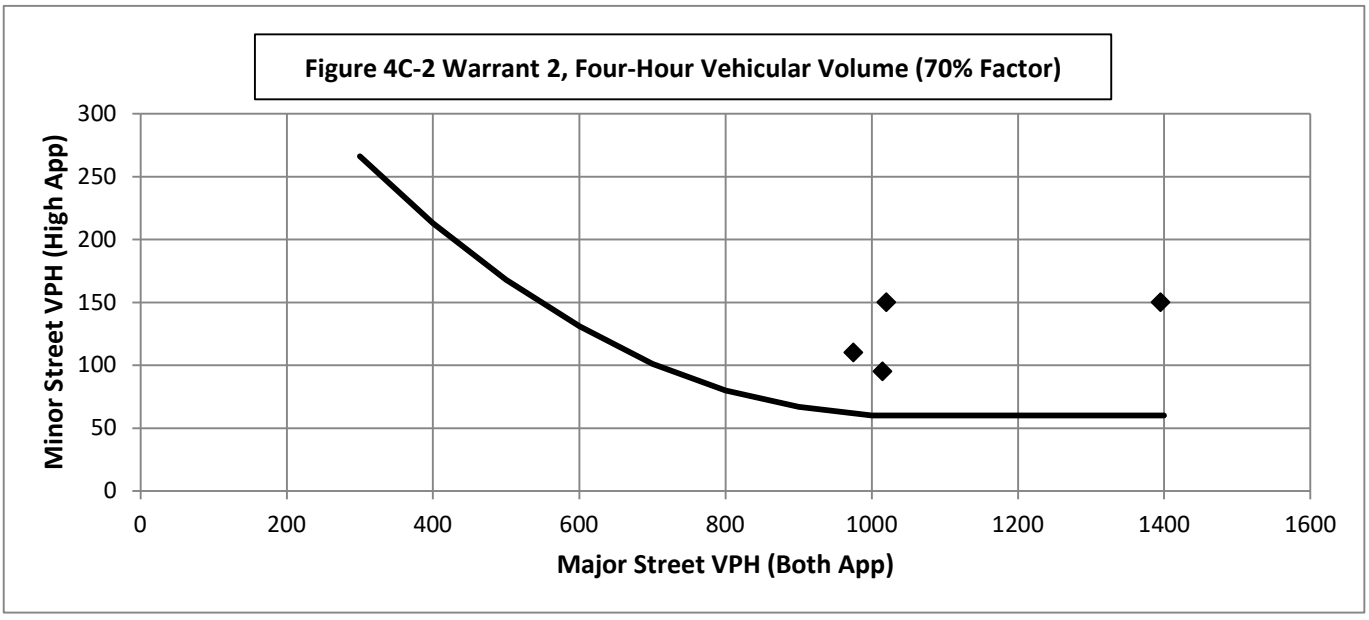
Satisfied? No

6:00 AM	Enter Start Time (Military Time) (HH:MM)				
Time Period	**From**	**To**	**Major Road: Both App. (VPH)**	**Minor Road: High App. (VPH)**	**Total**
1	6:00	7:00	445	150	595
2	7:00	8:00	1020	150	1170
3	8:00	9:00	1395	150	1545
4	9:00	10:00	975	110	1085
5	10:00	11:00	650	60	710
6	11:00	12:00	595	40	635
7	12:00	13:00	620	65	685
8	13:00	14:00	650	100	750
9	14:00	15:00	665	85	750
10	15:00	16:00	900	75	975
11	16:00	17:00	1015	95	1110
12	17:00	18:00	1155	55	1210
13	18:00	19:00	945	50	995
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 70%

Warrant Evaluated? Yes
Warrant Satisfied? Yes
Manually Set To:

Hour Start	8:00	7:00	16:00	9:00
Major Road Vol.	1395	1020	1015	975
Minor Road Vol.	150	150	95	110



Warrant 3: Peak Hour Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

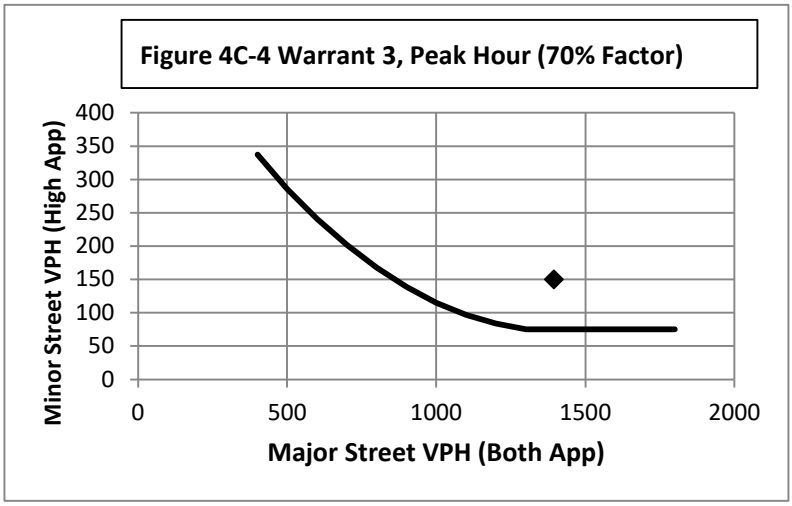
Condition justifying use of warrant:

None. The criterion listed in the MUTCD are not met.

Criteria		Met?
Delay on Minor Approach	4	
Volume on Minor Approach	100	
Total Entering Volume (veh/h)	650	

Manually Set Peak Hour?

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
8:00	1395	150



Warrant 4: Pedestrian Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

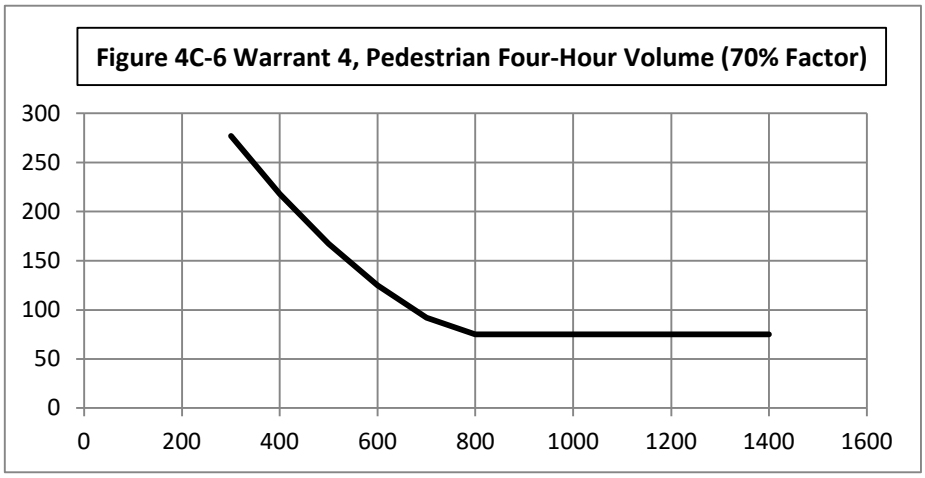
Criterion A: Four Hour

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?

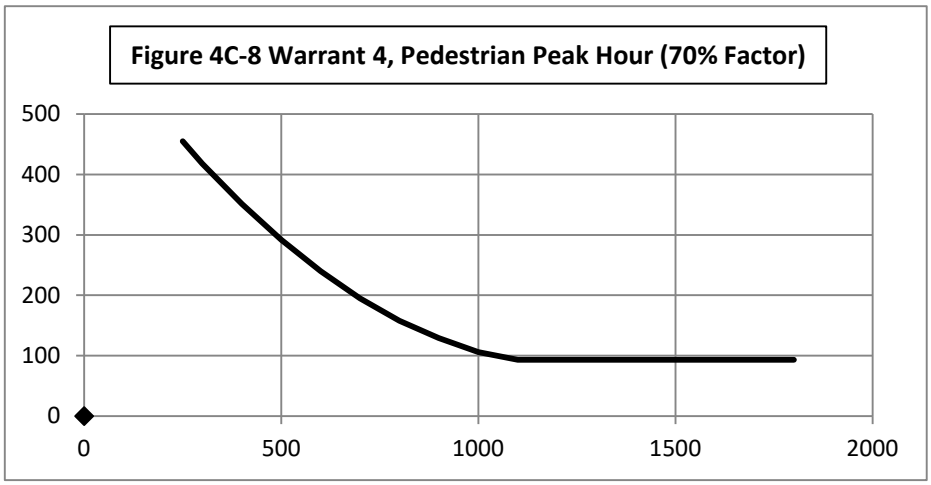
Criterion A Satisfied?



Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

Criterion B Satisfied?



Warrant 5: School Crossing 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **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 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criteria			Met?	Fulfilled?
1	Adequate trial of other remedial measures has failed to reduce crash frequency.			
	Measures Tried:			
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		
3	Warrant 1, Condition A (80%)		No	Yes
	Warrant 1, Condition B (80%)		Yes	
	Warrant 4, Criterion A (80%)		No	
	Warrant 4, Criterion B (80%)		No	

Warrant 8: Roadway Network 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

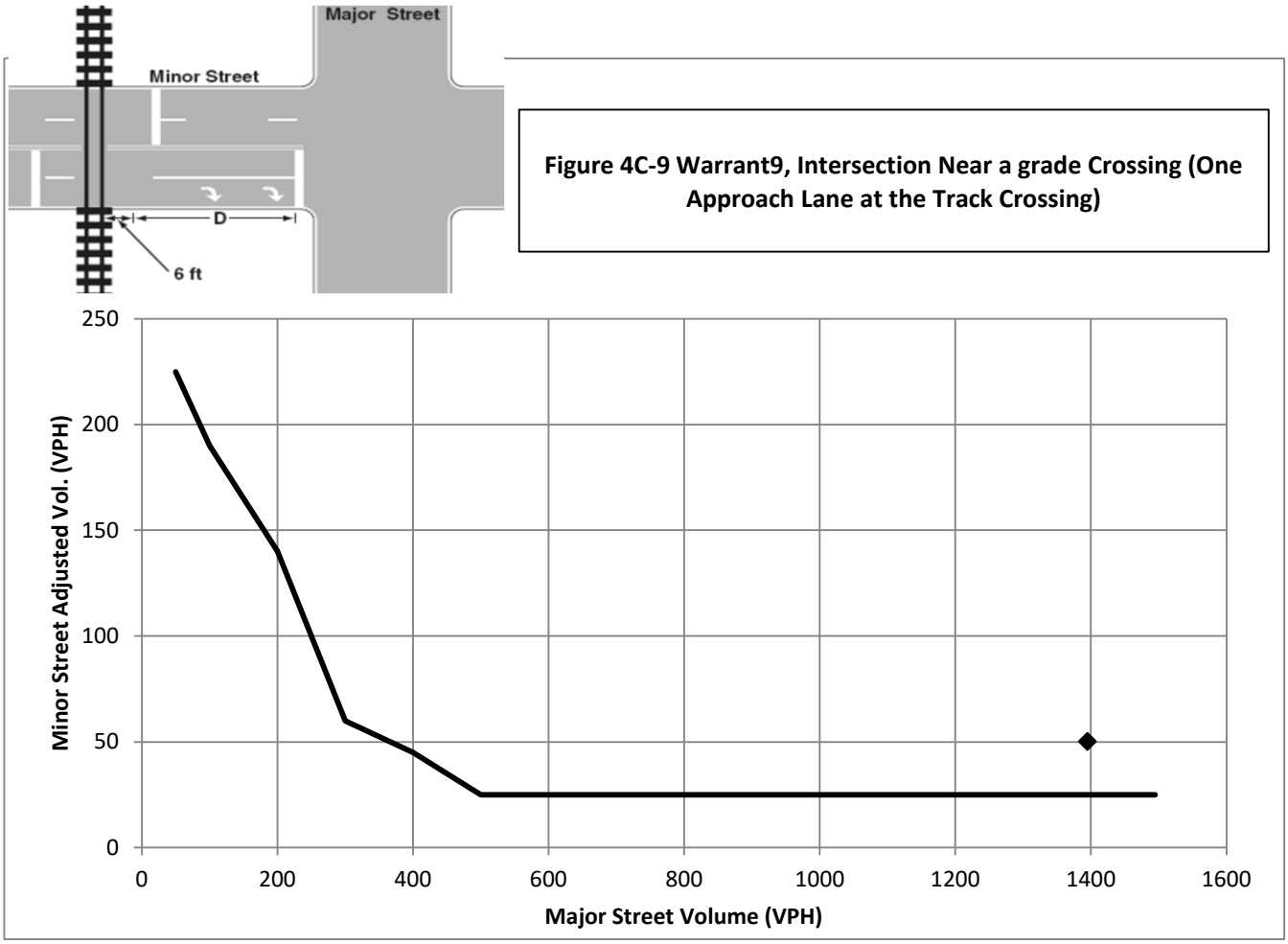
Criteria						Met?	Fulfilled?
1	Total entering volume of at least 1,000 veh/h during typical weekday peak hour				1545	Yes	No
	Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.					No	
2	Total entering vol. of at least 1,000 veh/h for each of any 5 hrs of non-normal business 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 70%

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	8:00	1395	150	50.25



Conclusions/Comments:

Signal warrants ARE expected to be met based on use of NB left-turn volume from Redford as the "minor street" as is allowed per the MUTCD. This analysis is based on build (WITH Last Mile) traffic volumes.

Meeting signal warrants is not a legal requirement for their installation.

Updated: 12/6/2017

Technical Memorandum

Date: March 24, 2021

To: Nick Fuchs
City of Pewaukee

From: John Bieberitz, P.E., PTOE
Traffic Analysis & Design, Inc.

Subject: Review of the "Last-Mile Warehouse Facility" TIA Initial Review, March 2021
W232 N2950 Roundy Circle E
Pewaukee, Wisconsin

A TIA Initial Review, dated March 2021, was submitted by Kimley Horn and Associates, Inc. for the proposed Last-Mile Warehouse Facility proposed to occupy the existing warehouse building at W232 N2950 Roundy Circle E.

Per City request, TADI reviewed the TIA Initial Review and provides the following comments. TADI recommends that these comments be addressed by the applicant either prior to or with the preparation of the TIA.

Site Operations & Proposed Site Plan

- The proposed facility will take goods that are delivered to the site via trucks and distribute them to customers via delivery vans or employee-owned passenger vehicles. Truck loading is proposed along the south side of the facility, van parking is proposed to the east of the building, and employee parking is proposed to the west of the building. Will customers have the option to pick-up or return items at the building? If so, please indicate where customers will park and include a customer trip estimate in the TIA.

Site Accessibility

- It is stated on page 4 of the TIA Initial Review that the Roundy Drive approach to Redford Boulevard is 22-feet wide and operates as a two-lane approach. The width of the approach from the marked centerline to the edge of the gutter pan is approximately 20-feet. 20-feet is a width that can accommodate two 10-foot-wide exiting lanes. If the assumption in the TIA is that the approach can be operated as two exiting lanes, please analyze as a two lane exit and verify that truck turning templates are adequately accommodated with the existing design. If not adequately accommodate with the existing design, indicate the modifications necessary to accommodate trucks.

Traffic Volumes

- The peak hour assumptions and COVID-adjustments are reasonable for use in the TIA. When analyzing volumes in the TIA, be sure to model at least one vehicle per hour for all movements that have been rounded to zero.

On-Site Development Traffic Forecasting

- There is an error in Table 4.1 – Peak Hour Trip Generation. The Network AM Peak Hour (8:00-9:00AM) total trips do not reflect the data provided in Exhibit 4-3: Site Specific Trip Generation. Please verify that the data provided in Exhibit 4-3 is correct and accurately reflected in Table 4.1.
- Seasonal variation is typical for a last-mile warehouse facility, especially during the months of November and December as well as mid-July. Please include a trip generation, distribution, and assignment for the seasonal variation as an additional traffic analysis with the peak season scenario.
- What is the expected service area for the proposed facility? The service area may impact the trip distribution for delivery vans. The trip distributions for employees and trucks are reasonable as presented.
- Please revise the trip assignment (Exhibit 4-5) to show traffic balancing between the study intersections. Currently, the outbound trips from the development driveways do not match the outbound trips from the study area.

General

- No intersection capacity analysis was provided. By inspection, TADI does not anticipate modifications will be necessary to accommodate traffic operations at the Roundy Drive & Roundy Circle West intersection, Roundy Drive & Roundy Circle East intersection, or either of the warehouse driveways along Roundy Circle. Ensure that traffic turning templates for delivery trucks are accommodated for all intersections between the highway network and the development site.
- A traffic analysis of the Redford Boulevard & Roundy Drive intersection is required. Note that Redford Boulevard is a Waukesha County highway (CTH F). As such, any analysis and/or modifications to this intersection will also need to be reviewed and approved by the Waukesha County Highway Department. The applicant is encouraged to engage the Waukesha County Highway Department before preparation of the TIA to obtain and incorporate their review comments, if any, in the TIA.

Should any questions or comments arise, please feel free to contact me at 262-377-1845 or jbieberitz@tadi-us.com.

DATE: April 19, 2021

DEPARTMENT: Planning

PROVIDED BY: Nick Fuchs

SUBJECT:

Discussion and Possible Action Regarding Re-Approval of the Preliminary Plat for the Cardinal Meadows Subdivision, Now Known as Greenland Subdivision (PWC 0928-980), Originally Approved by Plan Commission on January 17th, 2019 and Common Council on January 21st, 2019 [Fuchs]

BACKGROUND:

At their April 15. 2021 meeting, the Plan Commission unanimously recommended approval of the re-approval of the Greenland subdivision preliminary plat, subject to Waukesha County approval of the proposed access and conditions as originally approved by the Plan Commission and Common Council.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

A motion to approve the Greenland subdivision preliminary plat, subject to Waukesha County approval of the proposed access and conditions as originally approved by the Plan Commission and Common Council.

ATTACHMENTS:

Description

Greenland Subdivision Staff Report
Greenland Subdivision Preliminary Plat
Greenland Subdivision Evaluation Summary
Cardinal Meadows Preliminary Plat 2019

Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770 Fax (262) 691-1798
fuchs@pewaukee.wi.us

REPORT TO THE PLAN COMMISSION

Meeting of April 15, 2021

Date: April 7, 2021

Project Name: Greenland (formerly Cardinal Meadow) Preliminary Plat

Project Address/Tax Key No.: Not Assigned/PWC 0928980

Applicant: Bielinski Homes Inc.

Property Owner: Bielinski Homes Inc.

Current Zoning: Rs-6 Single-Family Residential District

2050 Land Use Map Designation: Medium Density Residential

Use of Surrounding Properties: Single-family residential to the north, south and east and State Highway 16 to the west

Project Description

The applicant, Bielinski Homes, previously received approval of a Rezoning and Preliminary Plat for the development of a 24-lot single-family residential subdivision upon property located between Bluemound Road and State Highway 16, across from Valleyview Lane.

Section 18.0302k. of the City's Land Division ordinance states that the approval of a preliminary plat expires within 12 months. The last approval related to the preliminary plat was at the February 6, 2019 Common Council meeting. As such, the preliminary plat is being forwarded to the Plan Commission and Common Council for re-approval.

The only revisions to the plat that staff is aware of is the name change to Greenland and including the street name, Valleyview Circle.

The expiration ordinance language and a summary of the approval history of this subdivision are below for review.

> 18.0302k. Approval or Conditional Approval of a proposed Preliminary Plat shall not constitute approval of the Final Plat, but rather shall be deemed an expression of approval or conditional approval of the layout submitted as a guide to the preparation of detail street, storm water management, grading and utility plans and the Final Plat which will be subject to further consideration by the City Plan Commission and Common Council at the time of their submission. If, however, the Final Plat or a phase thereof is submitted within twelve (12) months of Preliminary Plat approval and conforms substantially to the approved Preliminary Plat layout, the Final Plat shall be entitled to approval with respect to such layout. **Approval or conditional approval of a Preliminary Plat will, however, expire twelve (12) months after the last required Preliminary Plat approval is granted unless a Final Plat of at least one**

phase of the approved Preliminary Plat is submitted within such twelve (12) month period; or unless substantial physical work has been accomplished on development of the subdivision, as determined by the City Engineer; or unless the time is extended in writing by the City. In addition, with respect to a phased Final Plat, said twelve (12) month period shall be renewed and measured from approval of the last preceding Final Plat phase. After expiration of said twelve (12) month period the developer has the option of resubmitting the original Preliminary Plat for approval or submitting a newly designed Preliminary Plat in accordance with this subsection and subsection 18.0303.

Meeting Date	Motion
June 21, 2018 Plan Commission	A motion was made and seconded (C. Wunder, T. Janka) to approve the conceptual prepreliminary plat. Motion Passed: 5-For, 0-Against.
December 20, 2018 Plan Commission	A motion was made and seconded (B. Bergman, D. Linsmeier) to approve the rezoning from A-2 to Rs-6 for Cardinal Meadow. Motion Passed: 5-For, 0-Against.
	A motion was made and seconded (B. Bergman, D. Linsmeier) to recommend approval of the Preliminary Plat for the proposed 24-lot Cardinal Meadow subdivision development, subject to the conditions noted in the staff report dated December 12, 2018 and subject to the following: amending Condition No. 2 to require Plan Commission approval; sign plans must be approved by the Plan Commission; the plat shall require minimum 15 foot side yard setbacks; and amending Condition No. 5 to strike Cardinal Circle and replace with Valleyview Circle. Motion Passed: 5-For, 0-Against
January 17, 2019 Plan Commission	A motion was made and seconded (K. Salituro, S. Sullivan) to approve the preliminary plat with the change to the 12 foot setbacks Motion Passed: 6-For, 0-Against
January 21, 2019 Common Council	Concur with the Plan Commission (12/20/2018) and Approve Ordinance 19-05 (Second Reading) to Rezone the Property Located on Bluemound Road (PWC 0928-980) From A-2 Agricultural to Rs-6 Single-Family Residential for the Purpose of Creating a 24 Lot Single-Family Development Known as Cardinal Meadow at the Request of Pauline S. Hurst
	Concur with the Plan Commission (12/20/2018) and Approve the Preliminary Plat for the Proposed 24 Lot Single-Family Subdivision Known as Cardinal Meadow Located on Bluemound Road (PWC 0928-980)
February 6, 2019 Common Council	A motion was made and seconded, (B. Dziwulski, R. Grosch) to approve the preliminary plat for the proposed 24 lot single family subdivision with the 12-foot side yard setbacks. Motion Passed: 4-For, 0-Against.

Recommendation

A motion recommending the re-approval of a Preliminary Plat for the proposed 24-lot Greenland subdivision development, subject to the original conditions as approved by the Plan Commission and Common Council.

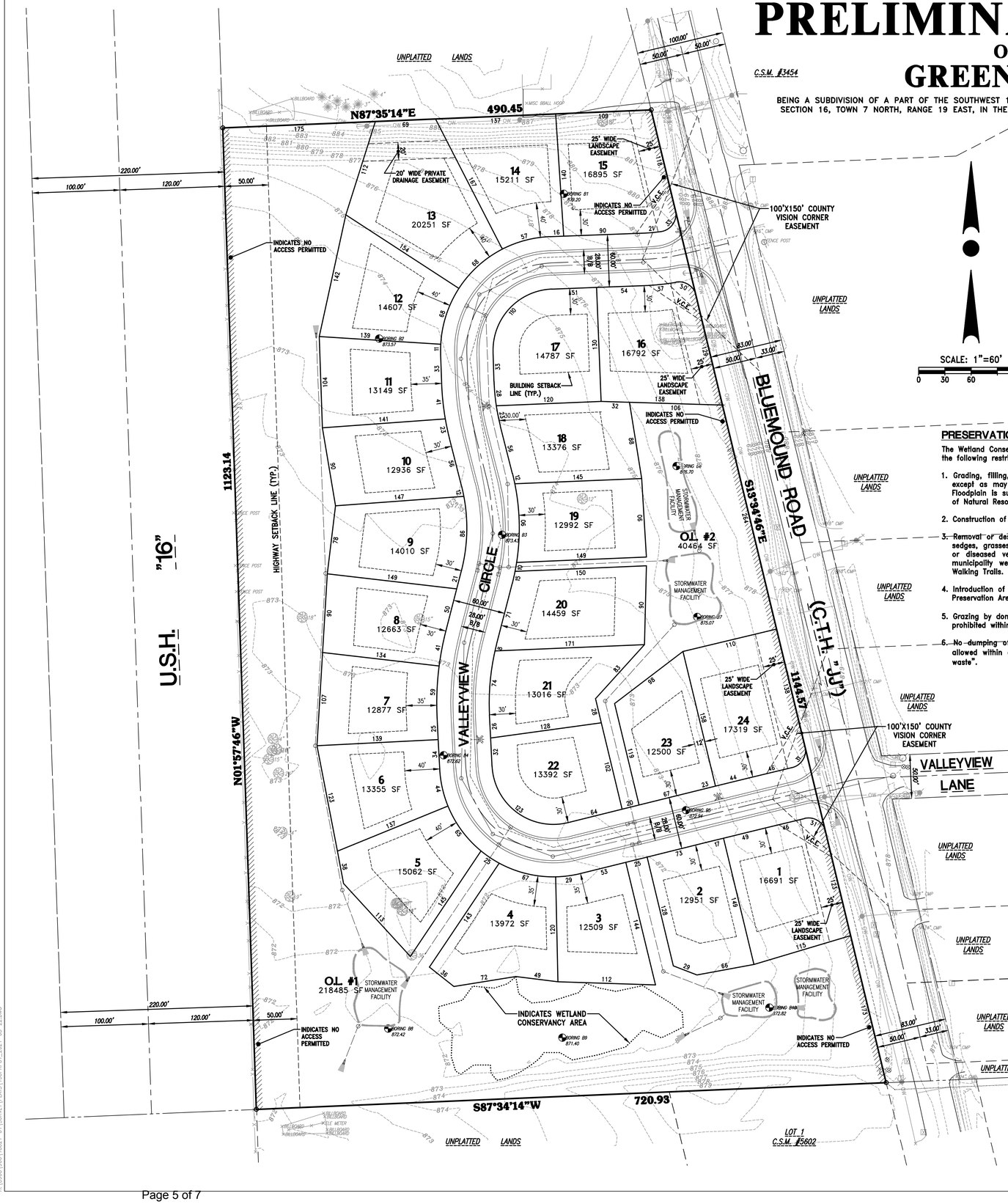
Note that conditions are listed within the Plan Commission motion approving the Preliminary Plat at their December 20, 2018 meeting. Below are the conditions as written in the staff report dated December 12, 2018.

1. Grading, erosion control and storm water plans shall be submitted to the Engineering Department for review and approval prior to any land disturbance activities.
2. Berm details as well as a landscape plan for buffer areas shall be submitted for review and approval prior to land disturbance activities.
3. Draft subdivision documents shall be submitted to the City Planner for review prior to the recording of the Final Plat.
4. The plat shall be revised to include a note describing the restriction of the 25-foot Landscape Easement. The note shall restrict this area for the planting of trees and shrubs only and prohibit the building of any structures.
5. The plat shall be revised to include a proposed street name for "Street A." The applicant has noted that the street will be named Cardinal Circle.
6. The applicant shall add "as may be approved by the WDNR" following "Trails" in item No. 3 of the Preservation Restrictions notes on the plat.

PRELIMINARY PLAT
OF
GREENLAND

C.S.M. #3454

BEING A SUBDIVISION OF A PART OF THE SOUTHWEST 1/4 AND SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 16, TOWN 7 NORTH, RANGE 19 EAST, IN THE CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN.



SCALE: 1"=60'
0 30 60 120



LOCALITY MAP:
S.E. 1/4, SEC. 16
T. 7 N., R. 19 E.
SCALE: 1"=1000'

PRESERVATION RESTRICTIONS:

The Wetland Conservancy Areas shown on Outlot 1 of this Plat shall be subject to the following restrictions:

1. Grading, filling, and excavation shall be prohibited in said Preservation Area, except as may be required for Nature Walking Trails. Filling of Wetlands and Floodplain is subject to approval by the City of Pewaukee and the Department of Natural Resources.
2. Construction of structures within said Preservation Area shall be prohibited.
3. Removal or destruction of any vegetative cover, i.e., trees, shrubs, wildflowers, sedges, grasses, and the like, shall be prohibited with the exception of dead or diseased vegetation removal and noxious weeds as defined in the City municipality weed control ordinance, except as may be required for Nature Walking Trails.
4. Introduction of plant material not indigenous to the existing environment of the Preservation Area shall be prohibited in the Preservation Area.
5. Grazing by domesticated animals (e.g., horses, pigs, sheep and cows) shall be prohibited within said Preservation Area.
6. No dumping of solid or liquid waste or driving of motorized vehicles will be allowed within any Outlot or Open Space Area. Vegetative debris is also "solid waste".

LEGEND

⊕	INDICATES SOIL BORING LOCATION
W W	INDICATES EXISTING WATERMAIN
	INDICATES PROPOSED WATERMAIN
SAN	INDICATES EXISTING SANITARY SEWER
	INDICATES PROPOSED SANITARY SEWER
ST	INDICATES EXISTING STORM SEWER
	INDICATES PROPOSED STORM SEWER
800	INDICATES EXISTING CONTOUR

SITE DATA SUMMARY

Parcel Area: 15.6 acres

Proposed Development: RS-6 Single Family
Lot Characteristics:
Lot Size: 12,500 s.f. (min)
Lot Width: 90' (min) at front setback
Setbacks*: Front = 30'; Side = 12'; Rear = 35'
*Minimum zoning setbacks

ACCESS RESTRICTION CLAUSE (S.T.H. "74") PER s. TRANS 233.05 (1):

As owner I hereby restrict all lots and blocks, in that no owner, possessor, user, nor licensee, nor other person shall have any right of direct vehicular ingress or egress with U.S.H. "16" as shown on this Plat; it being expressly intended that this restriction shall constitute a restriction for the benefit of the public according to s.236.293, Stats., and shall be enforceable by the Department of Transportation.

HIGHWAY TRANS. 233.08 SETBACK RESTRICTIONS:

There shall be no improvements (including trees and shrubs) or structures placed between the highway and the highway setback line.

NOISE LEVEL RESTRICTION PER s. TRANS 233.105 (1):

The lots of this land division may experience noise at levels exceeding the levels in s. Trans 405.04, Table I. These levels are based on federal standards. The Department of Transportation is not responsible for abating noise from existing state trunk highways or connecting highways, in the absence of any increase by the Department to the highway's through-lane capacity.

S. LINE, S.E. 1/4, SEC. 16-7-19 (N87°34'14"E 2676.00)
S87°34'14"W 680.76

S.E. CORNER, SEC. 16-7-19
WIS. STATE PLANE COORD. SYSTEM – SOUTH ZONE
CONC. MON. W/ BRASS CAP
N-391,754.44 E-2,468,870.90

ENGINEER / SURVEYOR:

TRIO ENGINEERING, LLC
12660 W. NORTH AVENUE, BLDG D
BROOKFIELD, WISCONSIN 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481

DEVELOPER:

BIELINSKI HOMES, INC.
1830 MEADOW LN. SUITE A
PEWAUKEE, WISCONSIN 53072
PHONE: (262) 548-5570

DEVELOPMENT SUMMARY:

1. Subdivision contains approximately 15.6154 Acres.
2. Subdivision contains 24 Lots and 2 Outlots.
3. All lots to be served by Public Sanitary Sewer and Watermain.
4. Public Streets to have Concrete Curb and Gutter, Metal Catch Basins, Underground Storm Sewer and Asphalt Pavement.
5. All lots to have Underground Telephone, Electric, Cable and Gas Service.
6. Proposed Zoning = "RS-6" (Single-Family Residential District).
7. Outlot 1 contains a Wetland Conservancy Area, Stormwater Management Facilities and Open Space to be Owned and maintained by the Owners of all Lots within this Subdivision.
8. Outlot 2 contains Stormwater Management Facilities and Open Space to be Owned and maintained by the Owners of all Lots within this Subdivision.
9. The Owners of all Lots within this Subdivision shall each own an equal undivided fractional interest in Outlots 1 and 2 of this Subdivision. Waukesha County shall not be liable for fees or special charges in the event they become the owner of any Lot or Outlot in the Subdivision by reason of tax delinquency.
10. Stormwater Management Facilities are located on Outlots 1 and 2 of this Subdivision. The Owners of all Lots within this Subdivision shall each be liable for an equal undivided fractional share of the cost to repair, maintain or restore said Stormwater Management Facilities. Said repairs, maintenance and restoration shall be performed by the Subdivision Master Association.
11. There shall be no direct vehicular ingress or egress to U.S.H. "16" and Bluemound Road (C.T.H. "JJ") from any Lot or Outlot within this Subdivision. It being expressly intended that this restriction shall constitute a restriction for the benefit of the public according to s.236.293 of the Wisconsin Statutes and shall be enforced by the Wisconsin Department of Transportation and Waukesha County.

VISION CORNER EASEMENT: (V.C.E.)

Lots 1, 15, 16 and 24 are subject to a Vision Corner Easement as shown on this Plat in that the height of all plantings, berms, fences, signs or other structures within the Vision Corner Easement is limited to 24 inches above the elevation of the center of the intersection. No access to any roadway shall be permitted within the Vision Corner Easement.

WETLAND / P.E.C DELINEATION NOTE:

Wetland boundaries shown hereon were field delineated by Wetland & Waterway Consulting, LLC (Dave Meyer) on July 12, 2018 and field located by Trio Engineering, LLC on July 26, 2018.

HORIZONTAL DATUM PLANE:

All bearings are referenced to Grid North of the Wisconsin State Plane Coordinate System, South Zone (NAD-27), in which the South line of the S.E. 1/4 of Section 16, Town 7 North, Range 19 East, bears North 87°34'14" East.

VERTICAL DATUM PLANE:

All elevations are referenced to the National Geodetic Vertical Datum of 1929. Contours/Elevations shown on this Preliminary Plat are per Waukesha County records.

AGENCIES HAVING THE AUTHORITY TO OBJECT:

- State of Wisconsin, Department of Administration
- State of Wisconsin, Department of Transportation
- Waukesha County, Department of Parks and Land Use

APPROVING AUTHORITY:

- City of Pewaukee

SURVEYOR'S CERTIFICATE:

I hereby certify that this Preliminary Plat is a correct representative of all existing land divisions and features and that I have fully complied with the provisions of the Subdivision and Platting Code of the City of Pewaukee.

Date: 11-20-18
Revised: 01-04-19
Revised: 03-22-21

WISCONSIN GRADY L. GOSSER S-2972 MENOMONEE FALLS, WI LAND SURVEYOR

Grady L. Gosser, P.L.S.
Professional Land Surveyor S-2972

WISCONSIN GRADY L. GOSSER S-2972 MENOMONEE FALLS, WI LAND SURVEYOR

TRIO DESIGN • LAND SURVEYING CIVIL ENGINEERING
12660 W. NORTH AVENUE, BLDG. "D"
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: ggosser@trioeng.com

PROJECT: GREENLAND
SINGLE FAMILY RESIDENTIAL SUBDIVISION
CITY OF PEWAUKEE, WISCONSIN
BY: BIELINSKI HOMES, INC.
1830 MEADOW LANE, SUITE A
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
11/20/2018	INITIAL SUBMITTAL
01/07/2019	SITE DATA-SETBACK CORRECTION
03/22/2021	SUBDIVISION NAME

DATE: MARCH 22, 2021

JOB NUMBER: 18-021-966-01

DESCRIPTION: PRELIMINARY PLAT

SHEET 1 OF 1

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BIELINSKI HOMES

Preliminary Plat Extension
A Bielinski Planned Residential Development
Greenland Subdivision
RS-6 Single-Family
City of Pewaukee, WI

DEVELOPMENT SUMMARY

Proposed Development:	**Final Phase**
Proposed Zoning:	RS-6 Single Family
Parcel Acreage Area:	15.6
Number of Lots (Units)	24
Lot Area:	12,500 S. F. (min.)
Zoning Standards:	
Building Height:	Max. 35' -2 1/2 Story
Minimum Zoning Setback:	
Front Yard:	30'
Side Yard:	12'
Rear Yard:	35"
Lot Width (at front setback)	90'
Density	1.54 Units Per Acre
Lot & Home Assessed Value	$500,000
Total Number of Homes	24
Estimated Project Value	**$12,000,000.00**
Annual Tax Revenue	

Summary:

Bielinski Homes is very excited about the future opportunity of constructing more single family home sites with enhanced landscape features, woods & ponds to provide more greenspace/buffer in the City of Pewaukee.

The information contained herein is non-binding and should not be used to create any legal obligations and is subject to change at any time by the submitter.



SITE DATA SUMMARY	
Parcel Area:	15.6 acres
Proposed Development:	RS-6 Single Family
Lot Characteristics:	
Lot Size: 12,500 s.f. (min)	
Lot Width: 90' (min) at front setback	
Setbacks*: Front = 30'; Side = 12'; Rear = 35'	
*Minimum zoning setbacks	

DEVELOPMENT DATA	
Total Lots:	24 lots
Net Density:	1.57 units/acre
Total Road Length:	1,252.3 l.f. (52 l.f. per lot)

0 25 50 100
SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

CONTRACTOR IS REQUIRED TO CONTACT DIGGERS HOTLINE TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND UTILITIES PRIOR TO COMMENCING THE WORK. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.
CALL DIGGERS HOTLINE 1-800-242-8511

NOTE:
EXISTING UNDERGROUND UTILITY INFORMATION WAS OBTAINED FROM AVAILABLE RECORDS. THE ENGINEER MAKES NO GUARANTEE AS TO THE ACCURACY OF THIS INFORMATION. VERIFICATION TO THE SATISFACTION OF THE CONTRACTOR OF ALL UNDERGROUND UTILITIES, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE ASSUMED AS A CONDITION OF THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN LOCATION OF UTILITIES IN THE FIELD AND LOCATIONS SHOWN ON THE PLANS.

H:\C900\966\18021-01\PRELIMINARY\CARDINAL MEADOW-PRELIMINARY-SITE PLAN.DWG

WISCONSIN
JOSHUA D. PUDELKO
E-39420
WAUWATOSA, WI
PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING
12660 W. NORTH AVE.
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
CARDINAL MEADOW
SINGLE FAMILY RESIDENTIAL SUBDIVISION
CITY OF PEWAUKEE, WISCONSIN
BY: BIELINSKI HOMES
1830 MEADOW LN, SUITE A
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
11/20/2018	PRELIMINARY SUBMITTAL
01/07/2019	SITE DATA-SETBACK CORRECTION

DATE:
JANUARY 07, 2019

JOB NUMBER:
18021

DESCRIPTION:
PROPOSED SITE PLAN

SHEET
C1.1

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 10.

DATE: April 19, 2021

DEPARTMENT: Planning

PROVIDED BY: Nick Fuchs

SUBJECT:

Discussion and Possible Action Regarding a Certified Survey Map for the City of Pewaukee Engineering Department for Property Located at W223 N3251 Shady Lane (PWC 0912-982)for the Purpose of Dividing the Property Into Two Separate Lots and Installing a Dry Pond [Fuchs]

BACKGROUND:

At their April 15. 2021 meeting, the Plan Commission unanimously recommended approval of the 2 Lot Certified Survey Map submitted by the Engineering Department of the City of Pewaukee, subject to staff's recommended conditions of approval.

The conditions are below for review. These are all minor technical corrections.

1. The I-2 District setbacks shall be noted on Sheet 1 of the CSM in accordance with Section 18.0603b.
2. The applicant shall add "and dedication accepted" following "approved" on Sheet 4 under Common Council Resolution.
3. The Plan Commission Secretary signature line on Sheet 4 shall be revised to Brandon Bergman.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

A motion to approve the Certified Survey Map, subject to staff's recommended conditions of approval.

ATTACHMENTS:

Description

Shady Lane CSM Staff Report

Shady Lane CSM

Shady Lane CSM Narrative & Application

Office of the Planning & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770 Fax (262) 691-1798
fuchs@pewaukee.wi.us

REPORT TO THE PLAN COMMISSION

Meeting of April 15, 2021

Date: April 7, 2021

Project Name: Shady Lane Certified Survey Map

Project Address/Tax Key No.: W223N3251 Shady Lane/PWC 0912982

Applicant: City of Pewaukee

Property Owner(s): Harold C. Lardinois, Martin W. Laufer Sr. and Marlene J. Laufer

Current Zoning: I-2 Rural Institutional District

Proposed Zoning: I-2 Rural Institutional District

2050 Land Use Map Designation: Low-Medium Density Residential, Medium Density Residential and Floodplains, Lowland & Upland Conservancy and Other Natural Areas

Use of Surrounding Properties: Capitol Drive to the north, commercial/industrial to the south, single-family residential to the east and the Canadian National Railroad to the west

Project Description

The Engineering Department is forwarding a proposed certified survey map related to the purchase of a portion of a property located at W223N3251 Shady Lane.

The subject property is about 23.6 acres and contains an existing home, multiple accessory buildings and a communication tower. These structures are located on the southern portion of the property and the majority of the property is vacant.

The CSM will divide the existing property into two separate lots. Lot 1 has an area of 9.97 acres and will be retained by the current owner. Lot 2 has an area of approximately 13.22 acres and will be purchased by the City. The attached narrative provides additional information regarding the purchase and future use of Lot 2 by the City.

Both lots are in conformance with the I-2 minimum lot size of 2-acres and minimum lot width at the setback line of 220-feet. Note Lot 2 abuts the City owned property at N33W22268 Hill N Dale Circle (Tax Key No. 0912034), which may provide access in the future.

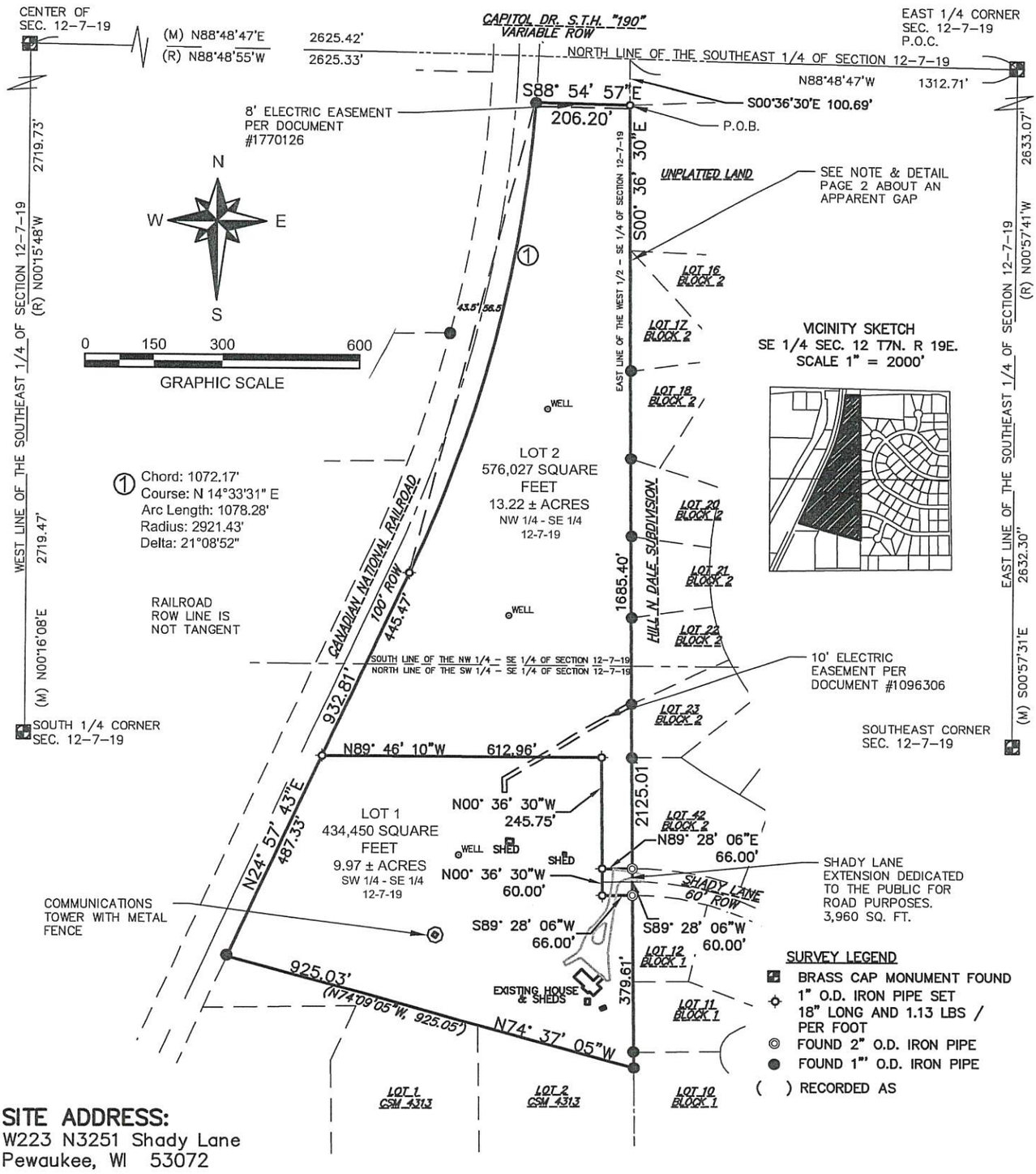
Recommendation

A motion recommending approval of a 2 Lot Certified Survey Map for property located at W223N3251 Shady Lane bearing Tax Key No. 0912982, subject to the following conditions:

1. *The I-2 District setbacks shall be noted on Sheet 1 of the CSM in accordance with Section 18.0603b.*
2. *The applicant shall add "and dedication accepted" following "approved" on Sheet 4 under Common Council Resolution.*
3. *The Plan Commission Secretary signature line on Sheet 4 shall be revised to Brandon Bergman.*

CERTIFIED SURVEY MAP - _____

BEING A PART THE NORTHWEST 1/4 AND THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 12, TOWNSHIP 7 NORTH, RANGE 19 EAST, CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN



SITE ADDRESS:
W223 N3251 Shady Lane
Pewaukee, WI 53072

OWNER(S):
Martin W. & Marlene J. Laufer Revocable Trust, the Lardinois 1996 Joint Revocable Trust, and L & L Partnership

SUBDIVIDER:
City of Pewaukee
W240 N3065 Pewaukee Rd.
Pewaukee, WI 53072

BEARINGS ARE REFERENCED TO THE WISCONSIN COORDINATE REFERENCE SYSTEM, SOUTH ZONE (NAD 83), THE NORTH LINE OF THE SE 1/4 OF SECTION 12-7-19 MEASURED TO BEAR N88°48'47"W.

PREPARED BY:
Ruekert & Mielke, Inc.
W233 N2080 Ridgeview Pkwy.
Waukesha, WI 53188
262-547-5733

DRAFT

Chris Ruetten, P.L.S. 2942

Dated this 16th day of February, 2021

Ruekert • Mielke
www.ruekertmielke.com

THIS INSTRUMENT WAS DRAFTED BY JOHN M. SCHULZ
CHECKED BY: CHRIS RUETTEN, PLS (02/04/21)

SHEET 1 OF 4

G:\C3D_2018\26_City of Pewaukee\10130 Shady Lane CSM\dwg\CSM\20210216 CSM.dwg

CERTIFIED SURVEY MAP - _____

BEING A PART THE NORTHWEST 1/4 AND THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 12, TOWNSHIP 7 NORTH, RANGE 19 EAST, CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN

SURVEYOR'S CERTIFICATE

SS

STATE OF WISCONSIN }
COUNTY OF WAUKESHA }

I, Chris Ruetten, Ruekert & Mielke, Inc., Professional Land Surveyor, do hereby certify that at the direction of the City of Pewaukee, that I have surveyed, divided and mapped part of the Northwest 1/4 and the Southwest 1/4 of the Southeast 1/4 of Section 12, in Township 7 North, Range 19 East, City of Pewaukee, Waukesha County, Wisconsin, bounded and described as follows:

Commencing at Northeast corner of the aforesaid Southeast 1/4 of Section 12; thence N88°48'47"W along the North line of said Southeast 1/4 of Section 12, 1312.71 feet to the East line of the West 1/2 of said Southeast 1/4 of Section 12; thence S00°36'30"E along said line, a distance of 100.69 feet to the POINT OF BEGINNING (POB); thence S00°36'30E along said line, a distance of 2125.01 feet to the North Line of Lot 2 of CSM 4313; thence N74°37'05"W along said line and its Westerly extension, a distance of 925.03 feet to the Easterly Railroad Right-of-Way (ROW) of the Canadian National Railroad; thence N24°57'43"E along said line, a distance of 932.81 feet to a non-tangent curve; thence 1078.28 feet along the arc of a curve to the left, whose radius is 2921.43 feet, and whose chord bear N14°33'31"E, 1072.17 feet to the Southerly ROW line of S.T.H. "190" (Capitol Drive); thence S88°54'57"E along said line, a distance of 206.20 feet to the point of beginning. Containing 23.29 acres (1,014,437 Sq. Ft.) more or less of land. Subject to covenants, conditions, restrictions and easements of record.

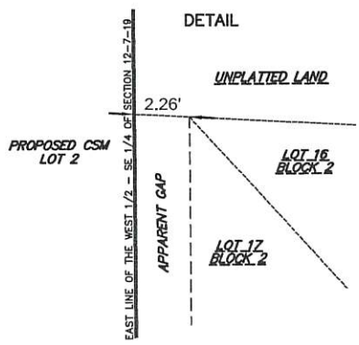
That I have made this survey, land division and map by the direction of the City of Pewaukee, Subdivider of said land.

That such map is a correct representation of all the exterior boundaries of the land surveyed and the division thereof made.

That I have fully complied with the provisions of Chapter 236 or the Wisconsin Statutes and the City of Pewaukee ordinances in surveying, dividing and mapping of same.

GENERAL NOTES:

1. There is an apparent gap that exists between the proposed Eastern property line of the CSM and the existing Western boundary of Hill N Dale Subdivision.



SITE ADDRESS:
W223 N3251 Shady Lane
Pewaukee, WI 53072

OWNER(S):
Martin W. & Marlene J. Laufer Revocable Trust, the Lardinois 1996 Joint Revocable Trust, and L & L Partnership

SUBDIVIDER:
City of Pewaukee
W240 N3065 Pewaukee Rd.
Pewaukee, WI 53072

PREPARED BY:
Ruekert & Mielke, Inc.
W233 N2080 Ridgeview Pkwy.
Waukesha, WI 53188
262-547-5733

DRAFT

Chris Ruetten, P.L.S. 2942

Dated this 16th day of February, 2021

Ruekert • Mielke
www.ruekertmielke.com

THIS INSTRUMENT WAS DRAFTED BY JOHN M. SCHULZ
CHECKED BY: CHRIS RUETTEN, PLS (02/04/21)

SHEET 2 OF 4

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CERTIFIED SURVEY MAP - _____

BEING A PART THE NORTHWEST 1/4 AND THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 12, TOWNSHIP 7 NORTH, RANGE 19 EAST, CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN

OWNER'S CERTIFICATE

As owner(s), Martin W. and Marlene J. Laufer Revocable Trust, the Lardinois 1996 Joint Revocable Trust and the L & L Partnership do hereby certify that we caused the land on this map to be surveyed, divided and mapped and dedicated as represented on this map. As owner(s), also certify that this Certified Survey Map must be submitted to the following for approval or objection:
(City of Pewaukee)
WITNESS the hand and seal of said owner(s) this _____ day of _____ , 20 __ .

In the presence of:

_____ _____
Owner Seal

_____ _____ _____
Owner Seal

_____ _____
Martin Laufer Seal

_____ _____
Marlene Laufer Seal

STATE OF WISCONSIN }
COUNTY OF WAUKESHA } SS

Personally came before me this _____ day of _____, 20 __ ,

the above named _____, and_____ to me known to be the person(s) who

executed the foregoing instrument and acknowledged the same.

_____

Notary Public _____ County, Wisconsin.

My commission expires _____

SITE ADDRESS:
W223 N3251 Shady Lane
Pewaukee, WI 53072

OWNER(S):
Martin W. & Marlene J. Laufer
Revocable Trust, the Lardinois
1996 Joint Revocable Trust, and
L & L Partnership

SUBDIVIDER:
City of Pewaukee
W240 N3065 Pewaukee Rd.
Pewaukee, WI 53072

PREPARED BY:
Ruekert & Mielke, Inc.
W233 N2080 Ridgeview Pkwy.
Waukesha, WI 53188
262-547-5733

DRAFT
Chris Ruetten, P.L.S. 2942

Dated this 16th day of February, 2021

Ruekert • Mielke
www.ruekertmielke.com

THIS INSTRUMENT WAS DRAFTED BY JOHN M. SCHULZ
CHECKED BY: CHRIS RUETTEN, PLS (02/04/21)

SHEET 3 OF 4

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CERTIFIED SURVEY MAP - _____

BEING A PART THE NORTHWEST 1/4 AND THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 12, TOWNSHIP 7 NORTH, RANGE 19 EAST, CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN

PLAN COMMISSION APPROVAL

Approved, that this Certified Survey Map, in the City of Pewaukee, is hereby approved by the Plan Commission.

_____ _____

Date Steve Bierce, Mayor

I hereby certify that the foregoing is a copy of a resolution adopted by the Plan Commission of the City of Pewaukee.

_____ _____

Date Ami Hurd, Secretary

COMMON COUNCIL RESOLUTION

Resolved, that this Certified Survey Map, in the City of Pewaukee, is hereby approved by the Common Council.

_____ _____

Date Steve Bierce, Mayor

I hereby certify that the foregoing is a copy of a resolution adopted by the Common Council of the City of Pewaukee.

_____ _____

Date Kelly Tarczewski, City Clerk

SITE ADDRESS:
W223 N3251 Shady Lane
Pewaukee, WI 53072

OWNER(S):
Martin W. & Marlene J. Laufer
Revocable Trust, the Lardinois
1996 Joint Revocable Trust, and
L & L Partnership

SUBDIVIDER:
City of Pewaukee
W240 N3065 Pewaukee Rd.
Pewaukee, WI 53072

PREPARED BY:
Ruekert & Mielke, Inc.
W233 N2080 Ridgeview Pkwy.
Waukesha, WI 53188
262-547-5733

DRAFT

Chris Ruetten, P.L.S. 2942

Dated this 16th day of February, 2021

Ruekert • Mielke
www.ruekertmielke.com

THIS INSTRUMENT WAS DRAFTED BY JOHN M. SCHULZ
CHECKED BY: CHRIS RUETTEN, PLS (02/04/21)

SHEET 4 OF 4

G:\C3D_2018\26_City of Pewaukee\10130 Shady Lane CSM\dwg\CSM\20210216 CSM.dwg

Department of Public Works
Engineering Division
W240N3065 Pewaukee Road
Pewaukee, WI 53072
(262) 691-0804Fax: (262) 691-5720

Memorandum

To: **Plan Commission**

From: **Magdelene J. Wagner, P.E.**

Subject: **Hill-n-Dale CSM**

Date: **April 5, 2021**

Background: Hill N Dale Subdivision has experienced surface flooding for more than a decade on a regular basis, typically in spring. We have had many reports of property damage due to this flooding. Historically, this area has had extensive groundwater issues that have been alleviated by the installation of sanitary sewer in the subdivision in the early 90's.

On 2014, Staff purchased the property at N33W22268 Hill N Dale Circle which was for sale in support of a conveyance outlet for a future dry pond on lands adjacent to this property.

For the past several years, the City has been attempting to acquire an easement on the adjacent lands (Larnois/Laufer Parcel) which access from Shady Lane to install a dry pond to alleviate the spring flooding and an easement for sanitary sewer and water main installations which would eliminate a lift station at the end of Shady Lane. Over many discussions with the owner, it has been determined, and the Common Council agreed, that it is in the best interest of all parties to acquire the land. As such, we have moved forward with creating a certified survey map which splits the parcel. The City will purchase approximately 13 acres leaving approximately 10 acres with the existing property owners. They have agreed to sell the Utility this land and a purchase price has been negotiated.

Approving the CSM will support the purchase. The City will be able to move forward with the flood mitigation project and sanitary sewer and water extensions in the Shady Lane neighborhood.

Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770
Fax (262) 691-1798
fuchs@pewaukee.wi.us

APPLICATION FOR MINOR LAND DIVISION/CERTIFIED SURVEY MAP

TO THE HONORABLE MAYOR AND COMMON COUNCIL OF THE CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN

The undersigned hereby petitions the Common Council of the City of Pewaukee, Waukesha County, Wisconsin for Certified Survey Map review and approval to allow for: Split property to sell a portion to the City of Pewaukee Storm Water Utility for Storm Mitigation purposes and sanitary sewer and water utility extensions.

Legal description of property to be rezoned – Please attach.

Common property description or name: _____

Property Address: W223N3251 Shady Lane **Tax Key Number(s):** PWC 0912982

Property owner(s) (Full Legal Name): Harold Lardnois & Martin Laufer SR & Marlene Laufer

Owner's Address: 21490 W Cleveland Ave **City/State/Zip:** New Berlin, WI 53146

Phone: _____ **Email:** _____

Applicant (Full Legal Name):

Name: Magdelene Wagner
Company: City of Pewaukee
Address: W240N3065 Pewaukee Road
City/State/Zip: Pewaukee, WI 53072
Phone: 262-691-0804
Email: wagner@pewaukee.wi.us

Contact Person (Full Legal Name):

Name: Magdelene Wagner
Company: City of Pewaukee
Address: W240N3065 Pewaukee Road
City/State/Zip: Pewaukee WI 53072
Phone: 262-691-0804
Email: wagner@pewaukee.wi.us

Certified Survey Map submittals must include and be accompanied by the following:

- ☒ This Application form accurately completed with original signatures.
- ☐ NA Application Filing Fee, payable to the City of Pewaukee:
  - $200.00, plus $10.00 for each lot or outlot created with no public facilities
  - $350.00, plus $10.00 for each lot or outlot created with public facilities
- ☒ Five (5) complete collated sets of Application materials to include:
  - A written project narrative detailing the request and reason for the proposed land division or combination.
  - A draft certified survey map in compliance with Section 18.0601, 18.0602, 18.0603 and any other applicable regulation of Chapter 18 of the City's Municipal Code.
  - A map of protected natural resource features onsite.
- ☒ All application materials provided in a digital format (Adobe PDF). Materials may be submitted on a USB Flash Drive or emailed to hurd@pewaukee.wi.us.
- ☒ Note twelve (12) additional sets of plans will be required for Plan Commission following staff review of the initial submittal. These plans should be revised in response to staff comments as may be necessary.

Office of the Planner & Community Development Director
W240 N3065 Pewaukee Road
Pewaukee, Wisconsin 53072
Phone (262) 691-0770
Fax (262) 691-1798
fuchs@pewaukee.wi.us

The applicant and property owner(s) hereby certify that:

1) all statements and other information submitted as part of this application are true and correct to the best of applicant's and property owner(s)' knowledge;
2) the applicant and property owner(s) has/have read and understand all information in this application; and
3) the applicant and property owner(s) agree that any approvals based on representations made by them in this Application and its submittal, and any subsequently issued building permits or other type of permits, may be revoked without notice if there is a breach of such representation(s) or any condition(s) of approval.

By execution of this application, the property owner(s) authorize the City of Pewaukee and/or its agents to enter upon the subject property(ies) between the hours of 7:00 a.m. and 7:00 p.m. daily for the purpose of inspection while the application is under review. The property owner(s) grant this authorization even if the property has been posted against trespassing pursuant to Wis. Stat. §943.13.

(The applicant's signature must be from a Managing Member if the business is an LLC, or from the President or Vice President if the business is a corporation. A signed applicant's authorization letter may be provided in lieu of the applicant's signature below, and a signed property owner's authorization letter may be provided in lieu of the property owner's signature[s] below. If more than one, all of the owners of the property must sign this Application).

PETITIONER'S/APPLICANT'S SIGNATURE: _____

NAME & TITLE (PRINT): Magdelene Wagner, Director of Public Works/City Engineer

SIGN AND DATED this 5th **day of** April, 2021.

PROPERTY OWNER'S SIGNATURE: _____

NAME & TITLE (PRINT): _____

SIGN AND DATED this _____ **day of** _____, _____.

PROPERTY OWNER'S SIGNATURE: _____

NAME & TITLE (PRINT): _____

SIGN AND DATED this _____ **day of** _____, _____.

City Staff-

RECEIVED at City Hall by: _____ on _____

Fee paid: $_____. Date: _____.

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 11.

DATE: April 19, 2021

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner/Richard Wirtz

SUBJECT:

Discussion and Possible Action Regarding the 2020 Annual MS4 Permit [Wagner]

BACKGROUND:

Please see the attached memo and report.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

2020 Annual MS4 Report Memo

2020 Annual MS4 Report

Department of Public Works
Engineering Division
W240N3065 Pewaukee Road
Pewaukee, WI 53072
(262) 691-0804 Fax: (262) 691-5720

Memorandum

To: **Magdelene Wagner, P.E.**

From: **Richard J. Wirtz, P.E., CFM**

Subject: **City of Pewaukee Annual MS4 Report for 2020**

Date: **March 31, 2021**

The Wisconsin Department of Natural Resources changed the format of the annual report to an electronic filing process as of 2017. The eReporting system provides the DNR a standardized method and form for receiving reports from permitted communities whom must report on specific program components and the measureable goals of their permit. However, this standardized method of reporting may not provide enough information to interested residents or elected officials of the City who are unfamiliar with the programs and processes required by the City's MS4 permit. As in the previous three reporting cycles, we are providing a brief summary report to be posted on the City's website and provided to members of the Common Council which briefly describes the major components of the City's permit, the measurable goals of these components, the results achieved during the reporting year and any recommended changes to the programs. This summary report as well as the information provided in Items B, C, D and E were submitted to the DNR along with the City's eReport. A copy of the 2020 eReport filed with the DNR is attached at the end of the report as Item A.

CITY OF PEWAUKEE

ANNUAL REPORT TO

THE DEPARTMENT OF NATURAL RESOURCES

IN ACCORDANCE WITH

NR216 PERMIT REQUIREMENTS

SUBMITTED MARCH 31, 2021

Illicit Discharge Detection and Elimination/Spills Response Program

Description of Program

The purpose of the Illicit Discharge Detection and Elimination program as well as the Spills Response program is to prevent harmful substances from entering the City's Municipal Separate Storm Sewer System (MS4) and being discharged to waters of the state. The Illicit Discharge Detection and Elimination program incorporates field screening procedures of 20 major outfalls for the purpose of detecting, investigating and eliminating discharges to the MS4 system which are not entirely composed of storm water. The Spills Response program is a procedure for responding to, investigating and remediating material spills which could enter the City's MS4 system.

Measurable Goals

Perform field screening of the City's major outfalls to determine if illicit discharges are occurring and document the findings. The measurable goal of the Spills Response program is to document and report on the spills reported to the City.

Results Achieved

City staff performed biannual field screening of the 20 major outfalls identified in its plan. There were no illicit discharges detected during the field screening program.

The City of Pewaukee Fire Department (PFD) responded to a diesel fuel leak on August 31, 2020. Approximately 50 gallons of fuel had spread over a 150 square foot area of pavement on Spring Hill Drive. The fuel did not enter into the City's MS4 system or enter any waterways. Ten 5 gallon bags of oil dry was used to mitigate the spill along with additional oil dry provided by the contractor. The Department of Natural Resources (DNR) and the City Department of Public Works were both contacted. The contractor was responsible for cleanup of the oil absorbent products applied to the roadway which was verified by the PFD later that day. Follow up conversations were conducted with the DNR and additional evaluations were made by the PFD to evaluate staining of the roadway and any remaining odor.

City Staff responded to a potential illicit discharge to the road side ditch system along Lexington Drive. A resident was complaining of a sewage odor coming from the water in the ditch line. The complaint was initially investigated by the City's Water and Sewer Utility Staff before forwarding to Engineering Staff. The discharge originated in the City of Waukesha and was being investigated by their Staff. At the time City of Pewaukee Engineering Staff conducted their field evaluation, there was no odor present within the ditch lines and all remaining water was clear. The City of Pewaukee was later informed by the City of Waukesha that the discharge was pool water from a multi-family development in the City of Waukesha.

Describe Any Planned Changes to the Program

City staff have been unable to complete a re-evaluation of the outfalls selected for field screening in 2020. The City's MS4 map needs to be adjusted based upon inventory data collected on the City's storm sewer system between 2014 and 2016. Staff anticipate updating the City's MS4 map and re-evaluating the program in conjunction with the preparation of a comprehensive storm water management plan to be conducted in 2021/2022. Any program re-evaluation will be consistent with the recommendations provided in DNR program guidance document 3800-2012-01.

Construction Site Pollutant Control

Description of Program

The City regulates land disturbing activity according to Chapters 14 and 19 of the Municipal code. Chapter 14 of the Municipal Code pertains to the design, construction, alteration, demolition and moving of buildings and structures within the City and associated land disturbing construction activities. The requirements of this chapter are regulated and enforced by the City's Building Inspection Department. Chapter 19 of the Municipal Code pertains to construction site erosion control, post construction site storm water management and illicit discharges. Regulation and enforcement of the requirements of this chapter are conducted by the City's Engineering Department. The construction site erosion control requirements of the ordinance are consistent with the provisions of NR 216 and the performance standards of NR 151 of the Administrative Code.

Measurable Goals

The Engineering Department reviews proposed development for conformance with the erosion control requirements of Chapter 19 of the Municipal Code and issues a Certificate of Permit Coverage for development plans meeting the requirements of the ordinance. The Department and its consultants also conduct weekly and post 0.5-inch rainfall event compliance inspections of permitted construction sites for the purpose of maintaining compliance with Chapter 19 of the Municipal Code. A report is generated for each inspection performed and provided to the owner/designated representatives of the permitted site. The inspection reports detail any maintenance to be performed, deficiencies noted and/or additional BMP's required to maintain compliance. Sites which are out of compliance are subject to enforcement which can include issuing Notices of Noncompliance, Notices of Violations, issuing fines, posting stop work orders and revoking permits.

The Building Inspection Department issues erosion control permits for land disturbing construction activities associated with buildings and structures. Inspections of the erosion control best management practices are performed on sites with disturbances less than 1 acre in area. Inspections are performed each time the Building Inspector is on a site having an erosion control permit.

Results achieved

The Engineering Department issued 4 erosion control permits for new development and conducted approximately 389 compliance inspections in 2020. Eight Notices of Noncompliance, four Notices of Violation, one Enforcement Conference and $8500.00 in Recommendations for Fines were issued during the reporting year.

The Building Inspection Department conducted approximately 209 erosion bond and 108 erosion control inspections in 2020.

Describe Any Planned Changes to the Program

None at this time.

Post-Construction Site Storm Water Management

Description of Program

The City regulates post-construction site storm water management according to Chapter 19 of the Municipal code. The post-construction storm water management requirements are compliant with the applicable provisions of NR 216 and the performance standards contained in NR 151 of the Administrative Code regarding infiltration and TSS reductions. However, the City's ordinance is more restrictive than the performance standards contained in NR 151 in terms of the pre- and post-developed discharge rates from the site. The City's ordinance generally requires the discharge from the 1, 2, 10 and 100-year storm events from the post developed site be at or below the discharge rates from the site under pre-settlement conditions. Post construction site storm water management practices are required to be maintained and the City requires a maintenance agreement be executed and recorded at Waukesha County Register of Deeds for the perpetual maintenance of the practices.

Measurable Goals

The City reviews proposed development plans for conformance with the post-construction site storm water management requirements of Chapter 19 of the Municipal Code and issues a Certificate of Permit Coverage for development plans meeting the requirements of the ordinance.

Results Achieved

The City issued 2 permits for post-construction site discharges from new development in 2020. City Staff and consultants have conducted reviews of submittals for 6 different proposed developments for compliance with the post-construction site storm water management requirements of the Municipal Code during the reporting year.

Describe Any Planned Changes to the Program

The City is in the process of documenting its storm water management program and formalizing procedures for inspection and tracking of existing storm water management facilities built to comply with Chapter 19 of the Municipal Code and NR 216 and NR 151 of the State Statutes. This work has generally been delayed by the review, permitting and enforcement of the City's construction site erosion control and post-construction site storm water management ordinance. To date the bulk of the program has been documented and forms have been created for the inspection of various storm water management practices. Remaining work items include: drafting the procedures for the inspection of the existing storm water management facilities; and a program for the tracking of inspections, maintenance and violations of the post-construction site BMP's. City Staff continue to locate and compile available data on the existing storm water management facilities that have been constructed over the years. This data will aid in the inspection of these facilities and determine what agreements are in place for the maintenance of these facilities. A copy of the draft program is included as Item B along with copies of the inspection forms created thus far.

Pollution Prevention

The City is required to implement a number of programs under the Pollution Prevention criteria identified within its WPDES permit. These programs are:

1. Inspection, maintenance and inventory of post-construction site storm water management facilities.
2. Catch basin cleaning program.
3. Street sweeping program.
4. Winter road management program.
5. Leaf management program.
6. SWPPP for municipal facilities.
7. Nutrient management plan for municipal properties with pervious surfaces over 5 acres.
8. Management procedures for unplanned water main discharges.
9. Other Reportable Results.

The following will provide a brief summary of each of the above programs, identify the measurable goals (if any), the results achieved and any planned program changes or improvements.

Inspection, Maintenance and Inventory of Post-Construction Site Storm Water Management Facilities

Description of Program

The program consists of an inventory of the existing storm water management facilities and ensuring the facilities are properly maintained to perform according to the performance standards used for the design of the facility. The City owns 8 municipal facilities between Wagner Park, the City Hall Campus and the newly constructed Pewaukee Sports Complex.

Measurable Goals

In 2010 the City identified through aerial photographs approximately 192 facilities within the municipal boundaries that were potential storm water BMP's implemented to control post-developed discharges and/or provide for TSS reduction. A significant amount of information still needs to be collected from available City records in order to complete the inventory and adequately conduct inspections of the facilities.

The inventory includes such items as the location, general condition, age and ownership of each facility; whether a long term maintenance agreement exists for the facility; the general design of the facility; results of any previous inspections; and completion of any previously recommended maintenance and repairs.

The two municipal facilities located in Wagner Park are inspected annually by City Staff. Five of the remaining six facilities (4 facilities at the Pewaukee Sports Complex, 1 bioretention facility at Wagner Park and 1 bioretention facility at the City Hall Campus site) were inspected in 2020, the exception being the bioretention facility at Wagner Park. Asbuilt surveys of the Sports Complex ponds, the City Hall biofiltration device and the Wagner Park biofiltration device were not completed during the reporting year.

Results achieved

As indicated previously, City Staff have begun and continue to locate and compile available data on the existing storm water management facilities that have been constructed over the years. To date, approximately 28 pond asbuilts, 30 maintenance agreements and 92 storm water management plans have been located and scanned into the City's network.

Inspections of the 2 wet ponds at Wagner Park, 1 wet pond at the Pewaukee Sports Complex and the City Hall biofiltration device show the facilities are in need of maintenance activities. City Staff also conducted 2 inspections of privately owned storm water management ponds and received an additional 6 inspection reports from private facility owners.

Describe Any Planned Changes to the Program

The completion of the inventory is still lagging due to the time requirements of other permit programs. As time allows staff will work on the completion of the inventory, preparation of inspection forms and the development of procedures for conducting and tracking inspections. This work element shares many of the components which are in process of being prepared as a part of the Post Construction Site Storm Water Management Program.

Catch Basin Cleaning Program

Description of Program

The City identified 12 catch basins along Peterson Drive in 2005 to be inspected and cleaned annually when the program proposal was initially created. This list has been expanded to include 69 catch basins along Green Road which were installed as a part of a road construction project in 2013. This program has also been expanded to include the maintenance and repair of the City's existing storm sewer structures

Measurable Goals

To ensure the continued function of the MS4 system and to remove sediment deposits from the system.

Results achieved

Approximately 26 tons of solids were removed as a result of catch basin cleanings in 2020. Additionally, 13 storm sewer structures were repaired by the Highway Department in 2020. The City released a contract in late 2020 for the repair or replacement of approximately 228 storm sewer structures. As of the end of 2020, approximately 48 storm sewer structures had been repaired or replaced.

Describe Any Planned Changes to the Program

The program needs to be updated to include the catch basins installed along Green Road and to include the maintenance and repairs of the storm inlets and manholes that has been occurring annually over the last several years. Previously storm sewer structures were repaired in conjunction with road reconstruction and road maintenance projects as a part of the City's road program. Due to the number of structures requiring immediate attention, maintenance efforts have been accelerated. From 2015 to 2019 over 446 storm sewer structures have been repaired or replaced.

Street Sweeping Program

Description of Program

The City Highway Department is responsible for the sweeping of the City Streets. The current program consists of sweeping all City streets once in the spring (as soon as the snow melts) and sweeping once in the fall all City streets with a curb and gutter cross-section. Additionally, City crews sweep arterial streets once per week for 1.5 months in the spring (as soon as the snow cover permits).

Measurable Goals

To remove sediment and debris from the road surface and gutter line prior to being transported by runoff into the City's MS4 system.

Results Achieved

Approximately 96 hours were spent sweeping 804 miles of streets in 2020. This effort removed approximately 68.2 tons of solids prior to entering into the City's MS4 system.

Describe Any Planned Changes to the Program

None at this time.

Winter Road Management Program

Description of Program

The winter road management program prescribes the methodologies and guidelines for the removal and control of snow and ice buildup on the City's streets. The City Highway Department is responsible for establishing the procedures, methods, equipment and labor to implement the program. Details of the program evolve coincident with the evolution of technology and experience within the department regarding snow and ice removal.

Measurable Goals

The goal of the program is to maintain the roadway in a safe driving condition within the limitations of resources, climactic conditions, preservation of the driving surface and environmental concerns. In balancing these concerns, the department is recommended to strive for "passable roadway" conditions on the driving lanes during the storm event. A "passable roadway" is defined as a roadway surface that is free from drifts, snow ridges and as much ice and snowpack as is practical and can be traveled safely at reasonable speeds.

Secondary to maintaining safe driving conditions is the reduction of the amount of salts used during a winter storm event. To this extent the City has invested in equipment which allows for the use of a salt brine for pre-wetting of salt or as a stand-alone pre-treatment of the pavement surface. As a stand-alone treatment, salt brine helps to prevent ice/snow from bonding to the pavement surface thereby providing for easier removal during plowing operations. When used to pre-wet dry salt prior to application to a pavement surface, the brine helps to maintain the salt on the pavement surface rather than be displaced into the ditch or curb line. In either case the salt brine is anticipated to reduce the amount of dry salt required to achieve a "passable roadway."

The equipment utilized by the Highway Department is calibrated annually. Salt applications are set based upon the ground speed of the vehicle and the temperature of the pavement. The brine solution used for pre-wetting the salt is set not to exceed 10 gallons per ton with 8 gallons per ton being typical.

City Staff from the Highway Department attend training periodically regarding winter management operations. The last training event was held in 2016 (Smart Salting Level 1) with seven members of the Highway Department attending. One City Staff member from the Engineering Department attended the Wisconsin Salt Wise training over the winter in 2021 and received certification as an applicator.

Results Achieved

The Highway Department maintains records of each event during the winter season which includes the amount of product used, pertinent weather data, hours worked, number of trucks in service and other measurable data. These records are maintained for the purpose of evaluating the program on a yearly basis. Snowfall totals used in this evaluation are taken from the weather station at Milwaukee International Airport.

The amount of salt used for a given event or season is highly variable and dependent on a number of conditions such as but not limited to: air temperature, pavement temperature, type of precipitation, intensity of storm, the miles of road to be maintained and the number of events in a given year. It is therefore difficult to evaluate whether or not the City's salt application is reduced through the use of salt brines for pre-wetting or as a stand-alone pre-treatment from year to year. Table 1 below summarizes the City's salt use for the winter seasons beginning with the 2010-2011 winter season. A typical salt brine solution is composed of 23.3 % salt which yields approximately 2.5 pounds of salt per gallon of brine.

The City implemented the use of salt brines with the 2011-2012 winter season. Prior to that combinations of salt and salt/sand were used in conjunction with plowing for removal of ice and snow from the municipal streets. As can be seen in Table 1, overall salt use in terms of tons/lane mile of roadway has generally been less since initiating the use of salt brines. However, this simplistic evaluation is a little misleading as it does not consider the severity of the winter season or the effort required by road crews to maintain a "passable roadway".

Table 1. City of Pewaukee Salt Use for Winter Road Management.

Winter Season	Tons of Salt	Gallons of Salt Brine	Total Tons of Salt	Lane Miles of Roads	Tons of Salt/lane mile
2010-2011	3203*		3203*	176.4	18.2
2011-2012	1540	14200	1558	176.6	8.8
2012-2013	3520	22679	3548	177.0	20.0
2013-2014	3160	11490	3174	176.8	18.0
2014-2015	2390	4800	2396	179.4	13.4
2015-2016	1865	5100	1871	183.0	10.2
2016-2017	2900	11225	2914	183.0	15.9
2017-2018	3365	5650	3372	184.3	18.3
2018-2019	3365	9070	3376	184.3	18.3
2019-2020	2450	7750	2460	184.3	13.4
2020-2021	2240	7819	2250	185.2	12.2

*Total includes salt and salt/sand mixture.

The Wisconsin DOT has created a Winter Severity Index (WSI) which it utilizes in evaluating the severity of the winter season in relation to its winter management program. The index considers factors such as number of snow events, amount of snow, number of freezing rain events, storm durations, and number of incidents (frost runs, drifting and clean up). The State DOT developed the WSI in 1995. Prior to the 2013-2014 winter season, index values ranged from 0 to 100. Therefore, the higher the index value, the more severe the winter season and the lower the index value the milder the winter season. The State DOT revised the WSI in the 2013-2014 winter season to provide results which are scaled and compared to the average of the 5 previous winters; the value of which is set as 100. Therefore, values in excess of 100 indicate a severer than average winter and values less than 100 indicate a milder than average winter.

The statewide average WSI is shown in Table 2 for each winter season. Included in Table 2 are values for the WSI for Waukesha County as well. Previously, values for the Waukesha County WSI from 2010 to 2013 were only given in the previous index (weighted from 0 to 100) with the remainder provided in the revised index. The values shown for Waukesha County in Table 2 for those years before the revised index were extrapolated based upon the statewide average values which were available in both versions of the index.

The approximate total snowfall per season and the number of measurable snow events are taken from the Mitchell International weather station in Milwaukee. The average snowfall is based upon the total snowfall for the season divided by the number of measurable events shown.

Figure 1 compares the Winter Severity Index for the statewide average and Waukesha County versus the salt usage for the City of Pewaukee and Waukesha County in tons of salt per lane mile. Overall, the WSI generally coincides with the amount of salt utilized per lane mile to maintain the City's streets in a passable condition for a winter season. The WSI for the 2020-2021 winter season will not be available until the State publishes its Annual Winter Maintenance Report, usually at the end of the year.

As of the writing of this report, the salt use for the 2020-2021 winter season is calculated to be 210 tons lower than the previous season with approximately 2250 total tons of salt used. This translates to approximately 12.2 tons per lane mile of salt applied to City Streets which is 1.2 tons per lane mile lower than the previous year. By comparison, Waukesha County was reported to have utilized approximately 13.7 tons of salt/lane mile for the 2019-2020 winter season which was 0.3 tons per lane mile higher than the City of Pewaukee's application over the same period. The average application for the City of Pewaukee since beginning the use of salt brines in the 2011-2012 winter season to 2020-2021 winter season is approximately 14.9 tons per lane mile. The winter management summary tables for each year of the program are attached to this report as Item C.

Describe Any Planned Changes to the Program

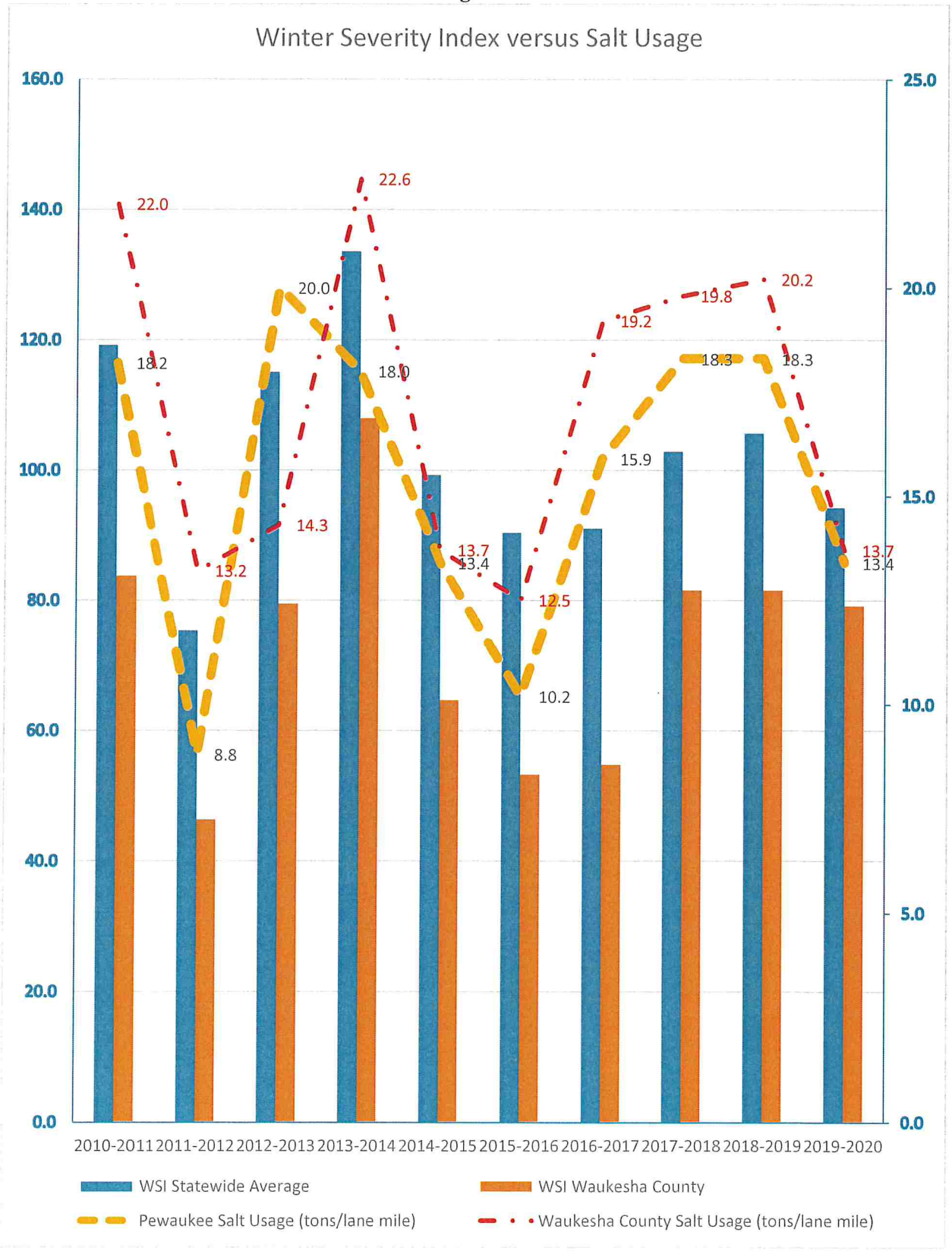
None at this time.

Table 2. Comparison of Winter Seasons and City of Pewaukee Salt Use.

Winter Season	**2010 - 2011**	**2011-2012**	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**	**2016-2017**	**2017 - 2018**	**2018-2019**	**2019-2020**	**2020-2021**
Approx. Total Snowfall (inches)	61.9	29.6	45.0	63.4	43.0	39.1	37.6	46.7	55.8	36.7	47.0
Number of Measurable Events	45	26	31	52	38	25	23	36	40	31	28
Average Snowfall per event (inches)	1.4	1.1	1.5	1.2	1.1	1.6	1.6	1.3	1.4	1.2	1.7
Total Tons of Salt	3203*	1558	3548	3174	2396	1881	2914	3372	3376	2460	2250
Total Hours Worked	NA	596	1272	1863	903	812	1171	1215	1564	1213	1230
Tons of Salt per lane mile of Road	**18.2**	**8.8**	**20.0**	**18.0**	**13.4**	**10.2**	**15.9**	**18.3**	**18.3**	**13.4**	**12.2**
Average Pavement Temp. (degrees F)	NA	NA	NA	20.1	20.9	26.7	25.3	23.1	26.4	28.3	16.8
WisDOT Statewide WSI	**119.2**	**75.4**	**115.1**	**133.6**	**99.3**	**90.4**	**91.1**	**102.9**	**105.7**	**94.3**	**
WSI for Waukesha County	**83.7[a]**	**46.3[a]**	**79.4[a]**	**107.9**	**64.6**	**53.2**	**54.7**	**81.5[b]**	**81.5[b]**	**79.1**	**
Waukesha County Tons of Salt per Lane mile	**22.0**	**13.2**	**14.3**	**22.6**	**13.7**	**12.5**	**19.2**	**19.8**	**20.2**	**13.7**	**

*Total includes salt and salt/sand mixture. **Not determined at the time of reporting. [a]Extrapolated values to statewide index. [b]Corrected WSI from previous report.

Figure 1


Winter Severity Index versus Salt Usage
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
25.0
20.0
15.0
10.0
5.0
0.0
22.0
13.2
8.8
14.3
20.0
22.6
18.0
13.7
13.4
12.5
10.2
19.2
15.9
19.8
18.3
20.2
18.3
13.7
13.4
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018
2018-2019
2019-2020
WSI Statewide Average
WSI Waukesha County
Pewaukee Salt Usage (tons/lane mile)
Waukesha County Salt Usage (tons/lane mile)

Leaf Management Program

Description of Program

The City accepts leaves and grass clippings at the City Recycling Center drop off site located on the lower level of the Pewaukee City Hall campus. Material collected at the site is taken to a facility in Menomonee Falls for composting. The City's waste hauler will also pickup leaves and grass clippings for a fee.

Measurable Goals

To provide an alternative means of disposing of leaves and grass clippings for the City residents as opposed to burning or dumping the debris into the City's right-of-way or ditches.

Results Achieved

In previous years yard waste was broken down into categories to determine the mass of leaves taken to the yard waste site. Similar to last year's reporting by Waukesha County the mass of leaves collected is included in the total yard waste collected which was 931 tons of material. The City's waste hauler reported collecting approximately 6.3 tons of yard waste in 2020.

Describe Any Planned Changes to the Program

None at this time.

SWPPP for Municipal Facilities

Description of Program

The City had prepared an update to its Evaluation of Public Works Yard in 2011. The goal of the evaluation was to identify potential sources of non-point pollution and provide recommendations to mitigate these sources. The City provided additional information in the 2015 annual report regarding planned projects to occur within the City "campus" site which would impact operations on site as well as potentially how storm water is handled. These planned projects included the construction of a new water tower, the construction of a new salt storage facility and repairs to the City Hall and highway garage. To date the new water tower and the repairs to City Hall and highway garage have been completed.

Measurable Goals

The goal of the program is to reduce non-point pollutant loadings from the City "campus" site.

Results achieved

An inspection of the Public Works Yard was performed in 2020.

Describe Any Planned Changes to the Program

A facility plan of the Public Works Highway Department was prepared for the City in 2020 to evaluate options for upgrading the existing facility and improvements to operations. To date, it is anticipated to construct a new highway garage at an offsite location. The offsite location would also include provisions for recycling operations, salt brine and salt storage, cold storage and a refueling station. The relocation of the facility and repurposing of the current City Hall Campus site will necessitate the preparation of a new SWPPP.

Nutrient Management Plan for Municipal Properties with Pervious Surfaces over 5 acres

Description of Program

The City has 5 parks with pervious areas over 5 acres: Balmer Park, Wagner Park, South Park, Nettesheim Park and the Pewaukee Sports Complex. A formal nutrient management plan was prepared for the Pewaukee Sports Complex while it was under construction. The remaining parks do not have a formal plan as of yet.

The current practice for maintaining the turf areas in the City's park system is to contract with a company specializing in turf maintenance to assess the condition of the fields and to apply treatments as recommended. Treatments are typically composed of one or more of the following products: Dimension 2EW (a post emergence herbicide); a Urea Nitrogen-Potash fertilizer 25-0-5; a Urea Nitrogen-Potash fertilizer 17-0-5; Trupower 3 (a selective post emergence herbicide); and Cool Power (a selective post emergence herbicide). In addition, the infields of existing baseball fields receive a non-phosphorous fertilizer treatment (composed of a 33-0-5 NPK ratio) three times a year. Mowing of the established turf areas occurs on a weekly rotation with mowing of the baseball infields occurring up to three times a week if necessary.

Measurable Goals

The goal of the program is to reduce the amount of nutrients (namely phosphorous) applied to the turf areas and to apply only what is required to maintain a vigorous growth of vegetation.

Results Achieved

The City's current practices and ordinance bans the use of fertilizers containing phosphorous except for the establishment of new turf areas or if soil tests confirm phosphorous is required.

Describe Any Planned Changes to the Program

Formal plans for the remaining 4 parks need to be developed.

Management Procedures for Unplanned Water Main Discharges

Description of Program

The City is required by permit to develop a program to mitigate discharges of sediment to its MS4 system from unplanned water main discharges otherwise known as "water main breaks." The program was developed for Water and Sewer Utility staff who may be responding to such incidents. The priority for staff responding to a water main break is to locate the source of the discharge and to isolate it, or in layman's terms to "shut it off" as quickly as possible. Temporary erosion control measures, if required, can then be employed to prevent sediment from entering the MS4 system or Waters of the State. The program identifies potential erosion control measures that can be employed to contain/limit the discharge of sediment from a water main break.

Measurable Goals

The goal of the program is to reduce the amount of sediment entering the City's MS4 system or a Water of the State from an unplanned water main discharge.

Results Achieved

The City had 4 unplanned water main discharges last year resulting in an estimated, combined discharge of approximately 575,000 gallons of municipal water.

Describe Any Planned Changes to the Program

None at this time.

Other Reportable Results

Roadways within the City are comprised of a combination of rural cross sections and urban cross sections. Rural cross sections include roadside ditches to collect storm water runoff along with gravel shoulders and paved travel lanes. Urban cross sections include storm sewers and curb and gutter to collect storm water runoff and paved travel lanes. The City of Pewaukee contains approximately 92.6 lineal miles of roads with almost 45 miles of roads having a rural cross-section. Roadside swales need to be periodically cleaned of accumulated sediment to function properly. Each year the City's Highway Department cleans a number of its roadside swales of sediment. Last year the Highway Department cleaned approximately 3632 feet of roadside swales which netted roughly 729 tons of soil.

Worksheets for the Fiscal Analysis required as a part of the City's annual report are included in Item D.

Members of the City's Engineering Staff attended multiple erosion control and storm water management workshops during 2020. These included:

- 2020 Waukesha County Storm Water Management Workshop, May 5-7, 2020 (2 attendees)
- NASECA Construction Site Erosion Control and Storm Water Permit Compliance Training, Dec. 10-11, 2020 (1 attendee)
- Ruekert-Mielke, Inc. webinar, Erosion and Sediment Control Best Management Practices, Apr. 22, 2020 (1 attendee)
- Ruekert-Mielke, Inc. webinar, The MS4 Da Vinci Code, May 20, 2020 (2 attendees)
- NASECA-WI's 17th Annual Conference and Trade Show, Feb. 5-6, 2020 (1 attendee)

Public Education and Outreach and Public Involvement and Participation Programs

Description of Program

The City of Pewaukee along with other members of the Upper Fox River Watershed Group contract with Waukesha County to implement the public education and outreach and public involvement and participation programs as required by Group WPDES permit. The County organizes the plan based upon a target audience. For each target audience a set of activities and goals are defined.

Item E contains the County's 2020 Activity Summary Report identifying the key components of last year's plan, the measurable goals and the results achieved. Also included is the County's 2020-2024 MS4 Public Education and Outreach Plan.

City Staff work with our elected and Municipal officials regarding the City's municipal storm water discharge permit through discussions regarding: the function and need of the City's Storm Water Utility; budget hearings and discussions; discussion regarding potential changes to the City's MS4 permit; changes to the City's post construction site storm water management and construction site erosion control ordinance; discussions related to capital improvement projects that impact storm water discharges; and discussions regarding enforcement of the City's post construction site storm water management and construction site erosion control ordinance.

City Staff knowledgeable of the MS4 permit requirements disseminate this knowledge internally as well as to the public through answering general questions regarding the operations and maintenance of storm water BMP's; questions regarding what storm water utility fees are used for; answering drainage concerns; and discussions regarding how permit requirements impact internal job functions and the burden of reporting requirements.

City Engineering Staff have ongoing discussions educating contractors, developers and engineers regarding: the requirements of the City's construction site erosion control and post construction site storm water management ordinance; the City's Technical Standards; WDNR guidance documents, permit conditions and Technical Standards; and enforcement of erosion control.

Item A

WDNR eReporting System Annual Report

Submittal of Annual Reports and Other Compliance Documents for Municipal Separate Storm Sewer System (MS4) Permits

NOTE: Missing or incomplete fields are highlighted at the bottom of each page. You may save, close and return to your draft permit as often as necessary to complete your application. After 120 days your draft is **deleted.**

Reporting Information

Will you be completing the Annual Report or other submittal type? ◉ **Annual Report** ○ **Other**

Project Name:	2020 City of Pewaukee Annual Report
County:	Waukesha
Municipality:	Pewaukee, City
Permit Number:	S050105
Facility Number:	30726
Reporting Year:	2020

Is this submittal also satisfying an Urban Nonpoint Source Grant funded deliverable? ○ **Yes** ◉ **No**

Required Attachments and Supplemental Information

Please complete the contents of each tab to submit your MS4 permit compliance document. The information included in this checklist is necessary for a complete submittal. A complete and detailed submittal will help us review about your MS4 permit document. To help us make a decision in the shortest amount of time possible, the following information must be submitted:

Annual Report

- Review related web site and instructions for Municipal storm water permit eReporting [Exit Form]
- Complete all required fields on the annual report form and upload required attachments
- Attach the following other supporting documents as appropriate using the attachments tab above
  - Public Education and Outreach Annual Report Summary
  - Public Involvement and Participation Annual Report Summary
  - Illicit Discharge Detection and Elimination Annual Report Summary
  - Construction Site Pollution Control Annual Report Summary
  - Post-Construction Storm Water Management Annual Report Summary
  - Pollution Prevention Annual Report Summary
    - Leaf and Yard Waste Management
    - Municipal Facility (BMP) Inspection Report
    - Municipal Property SWPPP
    - Municipally Property Inspection Report
    - Winter Road Maintenance
  - Storm Sewer Map Annual Report Attachment
  - Storm Water Quality Management Annual Report Attachment
  - TMDL Attachment
  - Storm Water Consortium/Group Report

- Municipal Cooperation Attachment
- Other Annual Report Attachment

- Attach the following permit compliance documents as appropriate using the attachments tab above

  - Storm Water Management Program *(S050075-03 General Permit and S058416-04 Madison Area Group Permit shall have a written storm water management program that describes in detail how the permittee intends to comply with the permit requirements for each minimum control measure. Updated programs are due to the department by March 31, 2021.)*
    - Public Education and Outreach Program
    - Public Involvement and Participation Program
    - Illicit Discharge Detection and Elimination Program
    - Construction Site Pollutant Control Program
    - Post-Construction Storm Water Management Program
    - Pollution Prevention Program
      - Municipal Storm Water Management Facility (BMP) Inventory *(S050075-03 General Permit and S058416-04 Madison Area Group Permit 2.6.1 - inventory due to the department by March 31, 2021.)*
      - Municipal Storm Water Management Facility (BMP) Inspection and Maintenance Plan *(S050075-03 General Permit and S058416-04 Madison Area Group Permit 2.6.2 – document due to the department by March 31, 2021.)*
  - Total Maximum Daily Load documents *(*If applicable, see permit for due dates.)*
    - TMDL Mapping*
    - TMDL Modeling*
    - TMDL Implementation Plan*
    - Fecal Coliform Screening Parameter *
    - Fecal Coliform Inventory and Map *(S050075-03 general permittees Appendix B B.5.2 – document due to the department by March 31, 2022)*
    - Fecal Coliform Source Elimination Plan *(S050075-03 general permittees Appendix B - document due to the department by October 31,2023)*

- Sign and Submit form

Municipal Contact Information- Complete

Notice: Pursuant to s. NR 216.07(8), Wis. Adm. Code, an owner or operator of a Municipal Separate Storm Sewer System (MS4) is required to submit an annual report to the Department of Natural Resources (Department) by March 31 of each year to report on activities for the previous calendar year ("reporting year"). This form is being provided by the Department for the user's convenience for reporting on activities undertaken in each reporting year of the permit term. Personal information collected will be used for administrative purposes and may be provided to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].
Note: Compliance items must be submitted using the Attachments tab.

Municipality Information

Name of Municipality	Pewaukee, City
Facility ID # or (FIN):	30726
Updated Information:	☐ Check to update mailing address information
Mailing Address:	W240 N3065 Pewaukee Road
Mailing Address 2:	
City:	Pewaukee
State:	Wisconsin
Zip Code:	53072 xxxxx or xxxxx-xxxx

Primary Municipal Contact Person (Authorized Representative for MS4 Permit)

The "Authorized Representative" or "Authorized Municipal Contact" includes the municipal official that was charged with compliance and oversight of the permit conditions, and has signature authority for submitting permit documents to the Department (i.e., Mayor, Municipal Administrator, Director of Public Works, City Engineer).

☐ Select to ***create new*** primary contact

First Name:	Magdelene
Last Name:	Wagner

☑ Select to ***update*** current contact information

Title:	Director of Public Works
Mailing Address:	W240 N3065 Pewaukee Road
Mailing Address 2:	
City:	Pewaukee
State:	WI
Zip Code:	53072-4044 xxxxx or xxxxx-xxxx
Phone Number:	262-691-0804 Ext: xxx-xxx-xxxx
Email:	wagner@pewaukee.wi.us

Additional Contacts Information (Optional)

☐ I&E Program
☑ IDDE Program
☐ IDDE Personnel Procedure Manual

Individual with responsibility for: (Check all that apply)	☑ Municipal-wide Water Quality Plan ☑ Ordinances ☑ Pollution Prevention Program ☑ Post-Construction Program ☐ Winter roadway maintenance

First Name:	Richard
Last Name:	Wirtz
Title:	Chief Engineer-Utili
Mailing Address:	W240 N3065 Pewaukee Road
Mailing Address 2:	
City:	Pewaukee
State:	WI
Zip Code:	53072 xxxxx or xxxxx-xxxx
Phone Number:	262-691-0804 Ext: xxx-xxx-xxxx
Email:	wirtz@pewaukee.wi.us

1. Does the municipality rely on another entity to satisfy some of the permit requirements?

◉ Yes ○ No

☑ Public Education and Outreach Waukesha County

☑ Public Involvement and Participation Waukesha County

☐ Illicit Discharge Detection and Elimination

☐ Construction Site Pollutant Control

☐ Post-Construction Storm Water Management

☐ Pollution Prevention

2. Has there been any changes to the municipality's participation in group efforts towards permit compliances (i.e., the municipality has added or dropped consortium membership)?

○ Yes ◉ No

Minimum Control Measures- Section 1 : Complete

1. Public Education and Outreach

a. Complete the following information on Public Education and Outreach Activities related to storm water. Select the Delivery Mechanism that best describes how the topics were conveyed to your population. Use the Add Event to add additional entries.

Event Start Date	1/1/2020
Project/Event Name	See Waukesha County Education Group Spreadsheet for regional effort
Delivery Mechanism	Other *Active

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
☑ Illicit discharge detection and elimination ☑ Household hazardous waste disposal/pet waste management/vehicle washing ☑ Yard waste management/pesticide and fertilizer application ☑ Stream and shoreline management ☑ Residential infiltration ☑ Construction sites and post-construction storm water management ☑ Pollution prevention ☑ Green infrastructure/low impact development ☐ Other:	☑ General Public ☐ Public Employees ☐ Residents ☑ Businesses ☑ Contractors ☑ Developers ☐ Industries ☐ Other	101 +	◉ Yes ○ No

b. Brief explanation on Public Education and Outreach reporting. *Limit response to 250 characters and/or attach supplemental information on the attachments page.*

see attached Waukesha County Education Group Spreadsheet for regional effort

Minimum Control Measures - Section 2 : Complete

2. Public Involvement and Participation

a. Permit Activities. Complete the following information on Public Involvement and Participation Activities related to storm water. Select the Delivery Mechanism that best describes how the permit activities were conveyed to your population. Use the Add Event to add additional entries.

Event Start Date	1/1/2020
Project/Event Name	Ongoing discussions regarding City storm water and erosion control requir...
Delivery Mechanism	Other

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)

☐ MS4 Annual Report ☐ Storm Water Management Program ☑ Storm Water related ordinance ☐ Other:	☐ General Public ☐ Public Employees ☐ Residents ☐ Businesses ☑ Contractors ☑ Developers ☐ Industries ☑ Other	11-50	○ Yes ◉ No

b. Volunteer Activities. Complete the following information on Public Involvement and Participation Activities related to storm water. Select the Delivery Mechanism that best describes how volunteer activities were conveyed to your population. Use the Add Event to add additional entries.

Event Start Date	5/1/2020
Project/Event Name	WAV
Delivery Mechanism	Stream monitoring

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	☑ General Public ☐ Public Employees ☐ Residents ☐ Businesses ☐ Contractors ☐ Developers ☐ Industries ☐ Other	11-50	◉ Yes ○ No

Event Start Date	7/1/2020
Project/Event Name	Adopt A Drain
Delivery Mechanism	Storm drain stenciling

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	☑ General Public ☐ Public Employees ☐ Residents ☐ Businesses ☐ Contractors ☐ Developers ☐ Industries ☐ Other	51-100	◉ Yes ○ No

Event Start Date	3/1/2020
Project/Event Name	Green Home Make Over
Delivery Mechanism	Public Workshop

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	☑ General Public ☐ Public Employees ☐ Residents ☐ Businesses ☐ Contractors ☐ Developers ☐ Industries ☐ Other	51-100	◉ Yes ○ No

Event Start Date	5/5/2020
Project/Event Name	Storm Water Workshop
Delivery Mechanism	Presentation of Storm Water Information

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	☐ General Public ☐ Public Employees ☐ Residents ☐ Businesses ☑ Contractors ☑ Developers ☐ Industries ☐ Other	101 +	◉ Yes ○ No

c. Brief explanation on Public Involvement and Participation reporting. *Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report and 2020-2024 Waukesha County Summary Report

Minimum Control Measures - Section 3 : Complete

3. Illicit Discharge Detection and Elimination

a.	How many total outfalls does the municipality have?	126	☐ Unsure
b.	How many outfalls did the municipality evaluate as part of their routine ongoing field screening program?	20	☐ Unsure
c.	From the municipality's routine screening, how many were confirmed illicit discharges?	0	☐ Unsure
d.	How many illicit discharge complaints did the municipality receive?	1	☐ Unsure
e.	From the complaints received, how many were confirmed illicit discharges?	0	☐ Unsure
f.			☐ Unsure

How many of the identified illicit discharges did the municipality eliminate in the reporting year (from both routine screening and complaints)? 0

(If the sum of 3.c. and 3.e. does not equal 3.f., please explain below.)

g. How many of the following enforcement mechanisms did the municipality use to enforce its illicit discharge ordinance? Check all that apply and enter the number of each used in the reporting year. ☐ Unsure

- ☑ Verbal Warning 0
- ☑ Written Warning (including email) 0
- ☑ Notice of Violation 0
- ☑ Civil Penalty/ Citation 0

Additional Information:

h. Brief explanation on Illicit Discharge Detection and Elimination reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Minimum Control Measures - Section 4 : Complete

4. Construction Site Pollutant Control

a. How many total construction sites with one acre or more of land disturbing construction activity were active at any point in the reporting year? 11 ☐ Unsure

b. How many construction sites with one acre or more of land disturbing construction activity did the municipality issue permits for in the reporting year? 4 ☐ Unsure

c. How many erosion control inspections did the municipality complete in the reporting year? 389 ☐ Unsure

d. What types of enforcement actions does the municipality have available to compel compliance with the regulatory mechanism? Check all that apply and enter the number of each used in the reporting year. ☐ Unsure

- ☐ No Authority
- ☐ Verbal Warning
- ☑ Written Warning (including email) 8
- ☑ Notice of Violation 4
- ☑ Civil Penalty/ Citation 2
- ☑ Stop Work Order 0
- ☐ Forfeiture of Deposit
- ☑ Other - Describe below 1

Enforcement Conference

e. Brief explanation on Construction Site Pollutant Control reporting . *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*.

See attached City of Pewaukee Annual Report

Minimum Control Measures - Section 5 : Complete

5. Post-Construction Storm Water Management

a. How many sites with new structural storm water management facilities* have received local approval ? 2 ☐ Unsure

*Engineered and constructed systems that are designed to provide storm water quality control such as wet detention ponds, constructed wetlands, infiltration basins, grassed swales, permeable pavement, catch basin sumps, etc.

b. Does the municipality utilize privately owned storm water management facilities in its pollutant reduction analysis? ○ Yes ◉ No ☐ Unsure

c. If Yes, How many privately owned storm water management facilities were inspected in the reporting year ? 8 ☐ Unsure

Inspections completed by private land owners should be included in the reported number.

d. What types of enforcement actions does the municipality have available to compel compliance with the regulatory mechanism? Check all that apply and enter the number of each used in the reporting year. ☐ Unsure

☐ No Authority	
☐ Verbal Warning	
☑ Written Warning (including email)	0
☑ Notice of Violation	0
☑ Civil Penalty/ Citation	0
☐ Forfeiture of Deposit	
☑ Complete Maintenance	0
☑ Bill Responsible Party	0
☐ Other - Describe below	

e. Brief explanation on Post-Construction Storm Water Management reporting . *If marked 'Unsure' on any questions above, justify your reasoning. Limit your response to 250 characters and/or attach supplemental information on the attachments page*.

The City's latest WinSLAMM analysis showed that road side swales alone provided a 31 percent reduction in TSS. If all of the wet detention facilities within the City were included the TSS reduction would be 59 percent.

Minimum Control Measures - Section 6 : Complete

6. Pollution Prevention

Storm Water Management Facility Inspections ☐ Not Applicable

a. Enter the total number of municipally owned or operated structural storm water management facilities ? 8 ☐ Unsure

b. How many new municipally owned storm water management facilities were installed in the reporting year ? 0 ☐ Unsure

c. How many municipally owned storm water management facilities were inspected in the reporting year? 7 ☐ Unsure

d. What elements are looked at during inspections (250 character limit)?

Embankments, outlets, vegetaion status, erosion, pretreatment, accumulated trash and debris, etc.

e. How many of these facilities required maintenance? 4 ☐ Unsure

f. Brief explanation on Storm Water Management Facility inspection reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*.

See attached City of Pewaukee Annual Report.

Public Works Yards & Other Municipally Owned Properties (SWPPP Plan Review) ☐ Not Applicable

g. How many municipal properties require a SWPPP? 1 ☐ Unsure

h. How many inspections of municipal properties have been conducted in the reporting year? 1 ☐ Unsure

i. Have amendments to the SWPPPs been made?
○ Yes ◉ No ○ Unsure

j. If yes, describe what changes have been made. Limit response to 250 characters and/or attach supplemental information on the attachment page:

k. Brief explanation on Storm Water Pollution Prevention Plan reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Collection Services - *Street Sweeping / Cleaning Program* ☐ Not Applicable

l. Did the municipality conduct street sweeping/cleaning during the reporting year?
◉ Yes ○ No ○ Unsure

m. If known, how many tons of material was removed? 68 ☐ Unsure

n. Does the municipality have a low hazard exemption for this material? ○ Yes ◉ No

o. If street cleaning is identified as a storm water best management practice in the pollutant loading analysis, was street cleaning completed at the assumed frequency?

○ Yes - Explain frequency _____

○ No - Explain _____

◉ Not Applicable

Collection Services - *Catch Basin Sump Cleaning Program* ☐ Not Applicable

p. Did the municipality conduct catch basin sump cleaning during the reporting year? ◉ Yes ○ No ○ Unsure

q. How many catch basin sumps were cleaned in the reporting year? ☑ Unsure

r. If known, how many tons of material was collected? 26 ☐ Unsure

s. Does the municipality have a low hazard exemption for this material? ○ Yes ◉ No

t. If catch basin sump cleaning is identified as a storm water best management practice in the pollutant loading analysis, was cleaning completed at the assumed frequency?

○ Yes- Explain frequency _____

○ No - Explain _____

◉ Not Applicable

Collection Services - *Leaf Collection Program* ☑ Not Applicable

Winter Road Management ☐ Not Applicable

*Note: We are requesting information that goes beyond the reporting year, answer the best you can.

aa. How many lane-miles of roadway is the municipality responsible for doing snow and ice control? 185 ☐ Unsure

ab. Provide amount of de-icing products used by month last winter season?

Solids (tons) (ex. sand, or salt-sand)

Product	Oct	Nov	Dec	Jan	Feb	Mar
Salt	0	0	440	1000	800	0

Liquids (gallons) (ex. brine)

	Oct	Nov	Dec	Jan	Feb	Mar
Brine	0	0	2268	4751	800	0

ac. Was salt applying machinery calibrated in the reporting year? ◉ Yes ○ No ○ Unsure

ad. Have municipal personnel attended salt reduction strategy training in the reporting year? ○ Yes ◉ No ○ Unsure

Training Date	Training Name	# Attendance

ae. Brief explanation on Winter Road Management reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*

See attached City of Pewaukee Annual Report

Internal (Staff) Education & Communication

af. Has training or education been held for municipal or other personnel involved in implementing each of the pollution prevention program elements ? ◉ Yes ○ No ○ Unsure

If yes, describe what training was provided (250 character limit):

City engineering staff attended the Waukesha County Storm Water Workshop, NASECA Annual Conference, NASECA Construction Site Erosion Control Training and consultant sponsored MS4 seminars.

When: various times in 2020

How many attended: 3

ag. Describe how the municipality has kept the following local officials and municipal staff aware of the municipal storm water discharge permit programs and its requirements.

Elected Officials

See Attached City of Pewaukee Annual Report

Municipal Officials

See Attached City of Pewaukee Annual Report

Appropriate Staff (such as operators, Department heads, and those that interact with public)

See attached City of Pewaukee Annual Report

ah. Brief explanation on Internal Education reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See Attached City of Pewaukee Annual Report

Minimum Control Measures - Section 7 : Complete

7. Storm Sewer System Map

a. Did the municipality update their storm sewer map this year?

○ Yes ◉ No ○ Unsure

If yes, check the areas the map items that got updated or changed:

- ☐ Storm water treatment facilities
- ☐ Storm pipes
- ☐ Vegetated swales
- ☐ Outfalls
- ☐ Other - Describe below

b. Brief explanation on Storm Sewer System Map reporting. *If you marked Unsure for an question for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*.

See attached City of Pewaukee Annual Report

Final Evaluation - Complete

Fiscal Analysis

Complete the fiscal analysis table provided below. For municipalities that do not break out funding into permit program elements, please enter the monetary amount to your best estimate of what funding may be going towards these programs.

Annual Expenditure Reporting Year	**Budget** Reporting Year	**Budget** Upcoming Year	**Source of Funds**
Element: Public Education and Outreach			
1466	1500	1500	Storm water utility
Element: Public Involvement and Participation			
1466	1500	1500	Storm water utility
Element: Illicit Discharge Detection and Elimination			
2610	1370	1430	Storm water utility
Element: Construction Site Pollutant Control			
75790	25161	36575	Other
Element: Post-Construction Storm Water Management			
30290	33161	44575	Other
Element: Pollution Prevention			
639761	729226	824101	Storm water utility
Other (describe)			
			Select...

Please provide a justification for a "0" entered in the Fiscal Analysis. *Limit response to 250 characters*.

Water Quality

a: Were there any known water quality improvements in the receiving waters to which the municipality's storm sewer system directly discharges to?

◉ Yes ○ No ○ Unsure If Yes, explain below:

Pewaukee River below the Village Dam was delisted (WBIC 771700)

b : Were there any known water quality degradation in the receiving waters to which the municipality's storm sewer system directly discharges to?

◉ Yes ○ No ○ Unsure If Yes, explain below:

Pewaukee River above the Village Dam was 303d listed (WBIC 771800)

c: Have any of the receiving waters that the municipality discharges to been added to the impaired waters list during the reporting year?

◉ Yes ○ No ○ Unsure

d: Has the municipality evaluated their storm water practices to reduce the pollutants of concern?

◉ Yes ○ No ○ Unsure

Storm Water Quality Management

a. Has the municipality completed or updated modeling in the reporting year (relating to developed urban area performance standards of s. NR 151.13(2)(b)1., Wis. Adm. Code)? ○ Yes ◉ No

b. If yes, enter percent reduction in the annual average mass discharging from the entire MS4 to surface waters of the state as compared to implementing no storm water management controls:

Total suspended solids (TSS)

Total phosphorus (TP)

Additional Information

Based on the municipality's storm water program evaluation, describe any proposed changes to the municipality's storm water program. *If your response exceeds the 250 character limit, attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Requests for Assistance on Understanding Permit Programs

Would the municipality like the Department to contact them about providing more information on understanding any of the Municipal Separate Storm Sewer Permit programs?

Please select all that apply:

- ☐ Public Education and Outreach
- ☐ Public Involvement and Participation
- ☐ Illicit Discharge Detection and Elimination
- ☐ Construction Site Pollutant Control
- ☐ Post-Construction Storm Water Management
- ☐ Pollution Prevention
- ☐ Storm Water Quality Management
- ☐ Storm Sewer System Map
- ☐ Water Quality Concerns
- ☐ Compliance Schedule Items Due
- ☐ MS4 Program Evaluation

Required Attachments and Supplemental Information

Any other MS4 program information for inclusion in the Annual Report may be attached on here. Use the Add Additional Attachments to add multiple documents.

Upload Required Attachments (15 MB per file limit) - Help reduce file size and trouble shoot file uploads
*Required Item

Note: To replace an existing file, use the 'Click here to attach file ' link or press the to delete an item.

Attach - Other Supporting Documents

AR_EO

File Attachment — 2020-ms4-reporting.xlsx

AR_IP

File Attachment — 2020-2024MS4PublicEducationandOutreachPlan.pdf

AR_Other

File Attachment — 20210331_CityofPewaukeeAnnualReportfor2020.pdf

(To remove items, use your cursor to hover over the attachment section. When the drop down arrow appears, select remove item)

Attach - Permit Compliance Documents

(To remove items, use your cursor to hover over the attachment section. When the drop down arrow appears, select remove item)

Sign and Submit Your Application

Steps to Complete the signature process

1. Read and Accept the Terms and Conditions
2. Press the Submit and Send to the DNR button

NOTE: For security purposes all email correspondence will be sent to the address you used when registering your WAMS ID. This may be a different email than that provided in the application. For information on your WAMS account click HERE .

Terms and Conditions

Certification: I hereby certify that I am an authorized representative of the municipality covered under Pewaukee, City MS4 Permit for which this annual report or other compliance document is being submitted, and that the information contained in this submittal and all attachments were gathered and prepared under my direction or supervision. Based on my inquiry of the person or persons under my direction or supervision involved in the preparation of this document, to the best of my knowledge, the information is true, accurate, and complete. I further certify that the municipality's governing body or delegated representatives have reviewed or been apprised of the contents of this annual report. I understand that Wisconsin law provides severe penalties for submitting false information.

Signee (must check current role prior to accepting terms and conditions)

- (•) Authorized municipal contact using WAMS ID.
- ( ) Delegation of Signature Authority (Form 3400-220) for agent signing on the behalf of the authorized municipal contact.
- ( ) Agent seeking to share this item with authorized municipal contact (authorized municipal contact must get WAMS id and complete signature).

Name:	Magdelene Wagner
Title:	Director of Public Works/City Engineer

Authorized Signature.

☑ I accept the above terms and conditions.

Signed by : i:0#.f|wamsmembership|cityofpewaukee on 2021-03-31T15:39:01

You have already signed and submitted this application to the DNR. Please contact the Wisconsin DNR for assistance.

After providing the final authorized signature, the system will send an email to the authorized party and any agents. This email will include a copy to the final read only version of this application.

Item B

Draft Post-Construction Site Storm Water Management Program and Inspection Forms

City of Pewaukee Post-Construction Storm Water Management Program

Introduction

The City of Pewaukee is required under its WPDES permit to continue to implement and enforce its program to control the quantity and quality of discharges from areas of new development and redevelopment. The City is also required to establish measurable goals for its post construction storm water management program. More specifically, the City's program at a minimum is required to:

- Enforce the applicability and jurisdiction of Chapter 19 of the Municipal Code.
- Enforce the design criteria, standards and specifications for the design and implementation of post-construction storm water management control practices which meet or exceed the criteria of those approved by the Department of Natural Resources.
- Review and approve plans that meet or exceed the City's Post Construction Storm Water Management Ordinance (Chapter 19 of the Municipal Code), the City of Pewaukee Technical Standards and the Conservation Practice Standards approved by the Department of Natural Resources.
- Update and enforce the City's Post Construction Storm Water Management Ordinance to meet or exceed the requirements of NR 151.121-NR 151.128 and 151.241-NR 151.249 of the Wisconsin Administrative Code.
- Enforce storm water management plan requirements which meet or exceed those contained in NR 216.47 of the Wisconsin Administrative Code.
- Enforce the permitting requirements, procedures and fees established in Chapter 19 of the Municipal Code.
- Establish written procedures to track and enforce the long-term maintenance of storm water management facilities implemented to meet the applicable post-construction performance standards of NR 216 and NR 151 of the Wisconsin Administrative Code and Chapter 19 of the Municipal Code.

The purpose of this document is to memorialize the aspects, procedures, forms and records of the City's program to ensure adequate and consistent regulation, inspection and enforcement of the City's ordinance in compliance with the City's WPDES permit.

Ordinance

The City is granted authority to adopt a post-construction storm water management ordinance under §62.234 Wis. Stats. The City Engineer or designee is granted the authority by the Common Council to administer and enforce the provisions of the ordinance. Portions of the ordinance have been revised from time to time to comply with the applicable provisions of NR 216 and NR 151 as required under the City's WPDES permit.

The purpose and intent of the post-construction storm water management ordinance is to establish requirements for post-construction runoff that will minimize the amount of sediment and other pollutants carried by runoff to waters of the state and that will diminish the threats to public health, safety, welfare and the aquatic environment. Specific purposes of the ordinance are to:

- Further the maintenance of safe and healthful conditions

- Prevent and control water pollution.
- Prevent and control the adverse effects of storm water.
- Control the exceedance of the safe capacity of existing drainage facilities and receiving water bodies.
- Prevent undue channel erosion and control increases in the scouring and transportation of particulate matter.
- Minimize the amount of pollutants discharged from the municipal separate storm sewer system to protect waters of the state.
- Prevent conditions that endanger downstream property.

The ordinance applies to any post-construction site after final stabilization that had one or more acres of land disturbing construction activity. The post-construction storm water management ordinance does not apply to:

- A post-construction site with less than 10 percent connected imperviousness based on the area of land disturbance, provided the cumulative area of all impervious surfaces is less than one acre. However, the exemption in this paragraph does not include an exemption from the protective area standard in s. NR 151.125 Wis. Adm. Code and this ordinance.
- Agricultural facilities and practices.
- Underground utility construction but not including the construction of above ground structures associated with utility construction.

Any person or entity subject to the post-construction storm water management requirements of the City's ordinance must submit an application for a permit accompanied by a storm water management plan and maintenance agreement. The storm water management plan shall be prepared to meet the requirements of Section 19.09 and 19.12 of the City's Municipal Code. The maintenance plan shall be prepared to meet the requirements of Section 19.13 of the City's Municipal Code. A copy of the of the permit application is contained in Appendix A and a copy of the Chapter 19 of the Municipal Code (Construction Site Erosion Control, Post-Construction Storm Water Management, and Illicit Discharge Ordinance) is contained in Appendix B.

Plan Review

The storm water management plan, maintenance plan and associated grading plans and details are subject to review by the City's Engineering Staff or Engineering Consultant. Best Management Practices (BMP's) incorporated into the plans are reviewed for conformance with the design criteria, standards and specifications of:

- The design guidance and technical standards identified or developed by the Wisconsin Department of Natural Resources under subchapter V of NR 151, Wis. Administrative Code.
- Other such standards approved by the City Engineer or designee.
- The City of Pewaukee Technical Standards (contained in Appendix C).

Storm water management plans and practices shall comply with the performance standards identified in Section 19.09 of the Municipal Code. In general storm water management plans will: employ practices designed, installed and maintained to control total suspended solids in runoff from the post-construction site; to maintain or reduce the peak rate of runoff from the post-developed site as compared to pre-settlement conditions; design, install and maintain practices to infiltrate runoff to the maximum extent practicable; enforce wetland protective areas; and require BMP's for fueling and vehicle maintenance areas. The

minimum plan requirements are identified in Section 19.12 and the minimum maintenance agreement requirements are identified in Section 19.13 of the Municipal Code. The City has a standard storm water management practices maintenance agreement to be used as a template. Approved agreements are to be signed by both the developer and the City and recorded at the Waukesha County Register of Deeds. A copy of the recorded agreement should be provided to the City for its files.

The Waukesha County Register of Deeds requires documents submitted for recording be legible and reproducible. The maximum page size of the documents is to be either 8.5x11 or 8.5x14 inches. The clarity of full-size drawings which are reduced to fit on the page sizes acceptable to the County is often poor. Should the County reject the recording the agreement for not being legible or reproducible, the City can provide a certification to the County stating the City has legible copies of all figures within the agreement (generally full-size documents). Care must be taken when providing the certification that any full-size figures provided are exact copies of those in the agreement. All copies of the agreements and associated figures shall be kept in a central and easily accessible location and must be maintained for the life of the practices. Currently, that location is within the office of the Chief Engineer-Utilities.

Submitted storm water management plans and maintenance agreements which do meet the minimum plan requirements, performance standards or technical and design criteria shall not be accepted. Plans and maintenance agreements which are not accepted will be temporarily retained until such time as the development has met the requirements of the City. A letter documenting the plan deficiencies (see sample letter in Appendix D) will be provided to the applicant and their engineer. Plans and maintenance agreements meeting the requirements of the Municipal Code will be accepted and a post construction storm water permit and letter issued to the applicant (see sample letter and permit in Appendix E). Only accepted plans and maintenance agreements will be retained for City files. Previously submitted plans and agreements will be disposed of once the permits have been issued.

Permitting

Post construction storm water management permits require the permittee or responsible party to generally: design and install the storm water management measures in accordance with the accepted plans; notify the City Engineer before commencing work in conjunction with the storm water management plan and after completion of the practices; complete the storm water management practice installations; provide a certified as-built by a licensed professional engineer documenting the completed installations are in accordance with the accepted plans and pass an inspection by the City Engineer; Notify the City Engineer of any significant modifications intended to be made to the accepted storm water management plan; and to maintain all installed storm water management practices consistent with the terms of the maintenance agreement. Permits for post construction site storm water management are valid from the date of issuance through the date the City Engineer notifies the permittee that all practices have passed a final inspection.

Long Term Maintenance and Inspection of Permitted Facilities

Enforcement

Filing, Records Retention and Database

City of Pewaukee Public Works Bioretention Pond Inspection Report

Facility ID: Location:
Facility/Site Contact Person:
Mailing Address:
Email Address:
Phone Number:

Name of Person Conducting the Inspection:	Inspection Date:
Tempertaure:_____°F	Inspection Time:_____ ☐AM ☐PM
Weather Conditions: ☐Sunny ☐Partly Sunny ☐Partly Cloudy ☐Cloudy ☐Rain ☐Freezing Rain or Sleet ☐Snow ☐Windy ☐Other:_____	
Rain in Last 48 Hours ☐ Yes ☐ No ☐ N/A If yes:	Amount in inches:_____ and timing:_____
	Standing water present: ☐ Yes ☐ No ☐ N/A If yes, describe color, odor, and sheen: _____ _____ _____
Pretreatment: ☐ Vegetated Filter Strip ☐ Swale ☐ Forebay ☐ None ☐ Other:_____	
Plan Available: ☐ As-Built ☐ Site ☐ No plan available	
Other Site Conditions:	

Pretreatment

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Bypassing flow	☐ Yes ☐ No ☐ N/A

Embankments

1. Visible cracks or sinkholes	☐ Yes ☐ No ☐ N/A
2. Unwanted trees or woody vegetation	☐ Yes ☐ No ☐ N/A
3. Animal burrows	☐ Yes ☐ No ☐ N/A
4. Vegetation inadequately maintained	☐ Yes ☐ No ☐ N/A
5. Unhealthy vegetative cover	☐ Yes ☐ No ☐ N/A
6. Seepage	☐ Yes ☐ No ☐ N/A
7. Sinkholes	☐ Yes ☐ No ☐ N/A

Inlets

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Poor structural condition	☐ Yes ☐ No ☐ N/A

Vegetation

1. Undesirable vegetation	☐ Yes ☐ No ☐ N/A
2. Desired vegetation is dying or receding due to climate, competition or disease	☐ Yes ☐ No ☐ N/A

Bioretention Area

1. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
2. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
3. Erosion/undercutting	☐ Yes ☐ No ☐ N/A
4. Animal burrows or sinkholes are present	☐ Yes ☐ No ☐ N/A
5. Topsoil is covered with sediment	☐ Yes ☐ No ☐ N/A
6. Mulch is compacted	☐ Yes ☐ No ☐ N/A

Outlets and Overflow Structures

1. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
2. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
3. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
4. Poor structural condition	☐ Yes ☐ No ☐ N/A
5. Visible leaks/joint failure	☐ Yes ☐ No ☐ N/A
6. Insufficient depth for pond to function correctly	☐ Yes ☐ No ☐ N/A

Emergency Spillway

1. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
2. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
3. Spillway obstructed	☐ Yes ☐ No ☐ N/A

Miscellaneous Feature

1. Restricted access	☐ Yes ☐ No ☐ N/A
2. Lack of maintenance	☐ Yes ☐ No ☐ N/A
3. Issues with additional features	☐ Yes ☐ No ☐ N/A
4. Unapproved modification	☐ Yes ☐ No ☐ N/A

Additional Notes

Attached Pictures or Sketches:

Inspection Results:

☐ Pass

The dry pond is operating without observed issues.

☐ Pass with conditions

The dry pond is operating as intended. Issues exist and should be addressed; however they do not currently prevent the pond from operating as intended.

☐ Fail

Issues exist and are preventing the dry pond from operating as intended.

Inspector certifies accuracy of information:

Inspector Signature: _____

Date of Inspection: _____

City of Pewaukee Public Works Dry Pond Inspection Report

Facility ID: Location:
Facility/Site Contact Person:
Mailing Address:
Email Address:
Phone Number:

Name of Person Conducting the Inspection:	Inspection Date:
Tempertaure:_____°F	Inspection Time:_____ ☐AM ☐PM
Weather Conditions: ☐Sunny ☐Partly Sunny ☐Partly Cloudy ☐Cloudy ☐Rain ☐Freezing Rain or Sleet ☐Snow ☐Windy ☐Other:_____	
Rain in Last 48 Hours ☐ Yes ☐ No ☐ N/A	If yes, amount in inches:_____ and timing:_____
Pretreatment: ☐ Vegetated Filter Strip ☐ Swale ☐ Forebay ☐ None ☐ Other:_____	
Plan Available: ☐ As-Built ☐ Site ☐ No plan available	
Other Site Conditions:	

Pretreatment

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Bypassing flow	☐ Yes ☐ No ☐ N/A

Embankments

1. Visible cracks or sinkholes	☐ Yes ☐ No ☐ N/A
2. Unwanted trees or woody vegetation	☐ Yes ☐ No ☐ N/A
3. Animal burrows	☐ Yes ☐ No ☐ N/A
4. Vegetation inadequately maintained	☐ Yes ☐ No ☐ N/A
5. Unhealthy vegetative cover	☐ Yes ☐ No ☐ N/A
6. Seepage	☐ Yes ☐ No ☐ N/A

Inlets

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Displacement of filter fabric	☐ Yes ☐ No ☐ N/A
6. Poor structural condition	☐ Yes ☐ No ☐ N/A

Basin or Bowl Area

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Animal burrows or sinkholes	☐ Yes ☐ No ☐ N/A
6. Standing water (at least five days after most recent storm)	☐ Yes ☐ No ☐ N/A

Outlets and Overflow Structures

1. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
2. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
3. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
4. Poor structural condition	☐ Yes ☐ No ☐ N/A
5. Visible leaks/joint failure	☐ Yes ☐ No ☐ N/A
6. Displacement of filter fabric	☐ Yes ☐ No ☐ N/A

Emergency Spillway

1. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
2. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
3. Spillway obstructed	☐ Yes ☐ No ☐ N/A

Miscellaneous Feature

1. Restricted access	☐ Yes ☐ No ☐ N/A
2. Lack of maintenance	☐ Yes ☐ No ☐ N/A
3. Issues with additional features	☐ Yes ☐ No ☐ N/A
4. Unapproved modification	☐ Yes ☐ No ☐ N/A

Additional Notes

Attached Pictures or Sketches:

Inspection Results:

☐ Pass

The dry pond is operating without observed issues.

☐ Pass with conditions

The dry pond is operating as intended. Issues exist and should be addressed; however they do not currently prevent the pond from operating as intended.

☐ Fail

Issues exist and are preventing the dry pond from operating as intended.

Inspector certifies accuracy of information:

Inspector Signature: _____

Date of Inspection: _____

City of Pewaukee Public Works Infiltration Pond Inspection Report

Facility ID: Location:
Facility/Site Contact Person:
Mailing Address:
Email Address:
Phone Number:

Name of Person Conducting the Inspection:	Inspection Date:
Tempertaure:_____°F	Inspection Time:_____ ☐AM ☐PM
Weather Conditions: ☐Sunny ☐Partly Sunny ☐Partly Cloudy ☐Cloudy ☐Rain ☐Freezing Rain or Sleet ☐Snow ☐Windy ☐Other:_____	
Rain in Last 48 Hours ☐ Yes ☐ No ☐ N/A If yes:	Amount in inches:_____ and timing:_____
	Standing water present: ☐ Yes ☐ No ☐ N/A If yes, describe color, odor, and sheen: _____ _____ _____
Pretreatment: ☐ Vegetated Filter Strip ☐ Swale ☐ Forebay ☐ None ☐ Other:_____	
Plan Available: ☐ As-Built ☐ Site ☐ No plan available	
Other Site Conditions:	

Pretreatment

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Bypassing flow	☐ Yes ☐ No ☐ N/A

Embankments

1. Visible cracks or sinkholes	☐ Yes ☐ No ☐ N/A
2. Unwanted trees or woody vegetation	☐ Yes ☐ No ☐ N/A
3. Animal burrows	☐ Yes ☐ No ☐ N/A
4. Vegetation inadequately maintained	☐ Yes ☐ No ☐ N/A
5. Unhealthy vegetative cover	☐ Yes ☐ No ☐ N/A
6. Seepage	☐ Yes ☐ No ☐ N/A
7. Sinkholes	☐ Yes ☐ No ☐ N/A

Inlets

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Poor structural condition	☐ Yes ☐ No ☐ N/A

Vegetative Basin

1. Undesirable non-native vegetation	☐ Yes ☐ No ☐ N/A
2. Desired vegetation is dying or receding	☐ Yes ☐ No ☐ N/A
3. Debris/Pollution/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Shoreline erosion	☐ Yes ☐ No ☐ N/A
5. Outfall erosion	☐ Yes ☐ No ☐ N/A
6. Pond walls in poor condition	☐ Yes ☐ No ☐ N/A
7. Encroachment into easement or pond area by other activities	☐ Yes ☐ No ☐ N/A

Outlets and Overflow Structures

1. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
2. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
3. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
4. Poor structural condition	☐ Yes ☐ No ☐ N/A
5. Visible leaks/joint failure	☐ Yes ☐ No ☐ N/A
6. Inappropriate depth for pond to function correctly	☐ Yes ☐ No ☐ N/A

Emergency Spillway

1. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
2. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
3. Spillway obstructed	☐ Yes ☐ No ☐ N/A

Miscellaneous Feature

1. Restricted access	☐ Yes ☐ No ☐ N/A
2. Lack of maintenance	☐ Yes ☐ No ☐ N/A
3. Issues with additional features	☐ Yes ☐ No ☐ N/A
4. Unapproved modification	☐ Yes ☐ No ☐ N/A
5. Invasive species	☐ Yes ☐ No ☐ N/A

Additional Notes

Attached Pictures or Sketches:

Inspection Results:

☐ Pass

The dry pond is operating without observed issues.

☐ Pass with conditions

The dry pond is operating as intended. Issues exist and should be addressed; however they do not currently prevent the pond from operating as intended.

☐ Fail

Issues exist and are preventing the dry pond from operating as intended.

Inspector certifies accuracy of information:

Inspector Signature: _____

Date of Inspection: _____

City of Pewaukee Public Works Wet Pond Inspection Report

Facility ID: Location:
Facility/Site Contact Person:
Mailing Address:
Email Address:
Phone Number:

Name of Person Conducting the Inspection:	Inspection Date:
Tempertaure:_____°F	Inspection Time:_____ ☐AM ☐PM
Weather Conditions: ☐Sunny ☐Partly Sunny ☐Partly Cloudy ☐Cloudy ☐Rain ☐Freezing Rain or Sleet ☐Snow ☐Windy ☐Other:_____	
Rain in Last 48 Hours ☐ Yes ☐ No ☐ N/A	If yes, amount in inches:_____ and timing:_____
Pretreatment: ☐ Vegetated Filter Strip ☐ Swale ☐ Forebay ☐ None ☐ Other:_____	
Plan Available: ☐ As-Built ☐ Site ☐ No plan available	
Other Site Conditions:	

Pretreatment

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Bypassing flow	☐ Yes ☐ No ☐ N/A

Embankments

1. Visible cracks or sinkholes	☐ Yes ☐ No ☐ N/A
2. Unwanted trees or woody vegetation	☐ Yes ☐ No ☐ N/A
3. Animal burrows	☐ Yes ☐ No ☐ N/A
4. Vegetation inadequately maintained	☐ Yes ☐ No ☐ N/A
5. Unhealthy vegetative cover	☐ Yes ☐ No ☐ N/A
6. Seepage	☐ Yes ☐ No ☐ N/A

Inlets

1. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
5. Displacement of filter fabric	☐ Yes ☐ No ☐ N/A
6. Poor structural condition	☐ Yes ☐ No ☐ N/A

Permanent Pool

1. Undesirable vegetation	☐ Yes ☐ No ☐ N/A
2. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
3. Debris/Pollution/Trash has accumulated	☐ Yes ☐ No ☐ N/A
4. Shoreline erosion	☐ Yes ☐ No ☐ N/A
5. Outfall erosion	☐ Yes ☐ No ☐ N/A
6. Pond walls in poor condition	☐ Yes ☐ No ☐ N/A
7. Encroachment into easement or pond area by other activities	☐ Yes ☐ No ☐ N/A

Outlets and Overflow Structures

1. Sediment has accumulated	☐ Yes ☐ No ☐ N/A
2. Debris/Trash has accumulated	☐ Yes ☐ No ☐ N/A
3. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
4. Poor structural condition	☐ Yes ☐ No ☐ N/A
5. Visible leaks/joint failure	☐ Yes ☐ No ☐ N/A
6. Displacement of filter fabric	☐ Yes ☐ No ☐ N/A

Emergency Spillway

1. Erosion/Undercutting	☐ Yes ☐ No ☐ N/A
2. Vegetation has accumulated	☐ Yes ☐ No ☐ N/A
3. Spillway obstructed	☐ Yes ☐ No ☐ N/A

Miscellaneous Feature

1. Restricted access	☐ Yes ☐ No ☐ N/A
2. Lack of maintenance	☐ Yes ☐ No ☐ N/A
3. Issues with additional features	☐ Yes ☐ No ☐ N/A
4. Unapproved modification	☐ Yes ☐ No ☐ N/A

Additional Notes

Attached Pictures or Sketches:

Inspection Results:

☐ Pass

The dry pond is operating without observed issues.

☐ Pass with conditions

The dry pond is operating as intended. Issues exist and should be addressed; however they do not currently prevent the pond from operating as intended.

☐ Fail

Issues exist and are preventing the dry pond from operating as intended.

Inspector certifies accuracy of information:

Inspector Signature: _____

Date of Inspection: _____

Item C

Winter Road Management Summary Tables

Road Salt / Deicers Usage
City of Pewaukee
2011-2012

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
17-Dec-11	Plow	450	Salt	80	23 to28		1	28	7	0	*Started at 2 am ended 7 am*
29-Dec-11	Salting Only	450	Salt	80	28 to 30		Ice	32	8	0	*Rain at 4:30 am ended 7:30 am*
1-Jan-12	Plow	450	Salt	80	30 to 32		1	30	8	0	*Rain @ 4:00 am switched to snow 1"*
2-Jan-12	Plow	450	Salt	90	19		1	32	8	0	*1" overnight with 40 mph winds*
12-Jan-12	Plow	1200	Salt	220	32 to 15		6	52	8	24	*10:00 am start 6" total Ended 3:00 am o the 13th*
17-Jan-12	Plow	1000	Salt	160	29 to 23		4	64	8	12	*5:30am start snow @6:00am done @ noon*
20-Jan-12	Plow	800	Salt	120	15 to 20		3	90	8	0	*3"Started @ noon ended @ 7 PM*
22-Jan-12	Salting Only	400	Salt	60	32		Ice	24	8	0	*Freezing Rain started @4:30 PM*
23-Jan-12	Salting Only	500	Salt	60	32		Ice	24	8	0	*Freezing rain throught the the night*
28-Jan-12	Plow	450	Salt	80	26		1	32	8	0	*10 PM start ended 3AM 1"*
[illegible]-Feb-12	Pre-Wetting	1100									*Pre- storm Pre- Wet*
10-Feb-12	Plow	450	Salt	120	32 to 18		3	64	8	0	*11 AM start 5PM*
[illegible]-Feb-12	Pre-Wetting	1050									*Pre- storm Pre- Wet*
[illegible]-Feb-12	Plow	500	Salt	70	29		1	32	8	0	*3 PM start 1 AM ended*
[illegible]-Feb-12	Plow	450	Salt	80	31		2	31	8	0	*5AM start 8Am ended 2"*
[illegible]-Feb-12	Pre-Wetting	1425									*Pre- storm Pre- Wet*
24-Feb-12	Plow	925	Salt	120	30		4	32	8	24	*Started 8PM ended 6 Am on 24th*
[illegible]-Mar-12	Pre-Wetting	1450									*Pre- storm Pre- Wet*
[illegible]-Mar-12	Plow	700	Salt	120	30		5	29	8	0	*Started at 2 pm and ended at 6 pm*
	Total Brine Used (gal)	*14200*	*Total Salt Used (tons)*	*1540*			*Total event hours worked*	*596*	*Number of Entries*	*18*	

Road Salt / Deicers Usage
City of Pewaukee
2012-2013

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
7-Dec-12	Pre-Wetting	1200									*Pre- storm Pre- Wet*
18-Dec-12	Pre-Wetting	1375									*Pre- storm Pre- Wet*
18-Dec-12	Plow	500	Salt	140	32 to 34		2	45	9	0	*Started at 2 pm and ended at 6 pm*
19-Dec-12	Pre-Wetting	650									*Pre- storm Pre- Wet*
20-Dec-12	Plow	600	Salt	120	32 to 36		6	100	9	0	*1 am started with 3 inches by morning; switched to rain 1.30 inches…..*
21-Dec-12	Plow	500	Salt	120	28		3	36	9	0	*Clean up from night before*
28-Dec-12	Plow	500	Salt	100	29		1	27	9	0	*7 am start 1 inch*
29-Dec-12	Plow	500	Salt	110	27		1	32	8	0	*5:30 start 1 inch*
29-Dec-12	Plow	600	Salt	110	26		1	27	8	0	*All day snow 1 inch*
5-Jan-13	Salting Only	400	Salt	120	31		0.5	24	7	0	*4 pm start 0.5 inch salt run*
13-Jan-13	Plow	500	Salt	110	23		1	30	8	0	*1 inch overnight*
23-Jan-13	Plow	350	Salt	90	16		0	32	8	0	*Had to re-plow and salt; roads wouldn't melt*
23-Jan-13	Salting Only	350	Salt	90	14		0.5	20	7	0	*Light dusting; temperatures dropping*
27-Jan-13	Plow	450	Salt	140	28		1	28	8	0	*1 inch of snow turned to rain*
28-Jan-13	Salting Only	500	Salt	150	32		Ice	32	8	0	*Roads refroze with rain turning to ice*
30-Jan-13	Salting Only	500	Salt	150	33		Ice	16	8	0	*Rain changing to ice; no accumulation*
30-Jan-13	Plow	500	Salt	120	33		2	32	8	0	*Snow, 2 inches by mid-morning*
30-Jan-13	Plow	400	Salt	100	28		1	32	8	0	*1 inch of additional snow with full clean-up*
31-Jan-13	Plow	250	Salt	120	16		0.5	24	8	0	*Light dusting with temperatures dropping and high winds*
2-Feb-13	Plow	0	Salt	100	13		2	36	8	0	*10 pm snow began; snow ends at 5 am*
4-Feb-13	Plow	0	Salt	100	10		2	36	9	0	*3 am start*
4-Feb-13	Plow	0	Salt	80	8					0	*Clean up from morning run*
5-Feb-13	Plow	500	Salt	80	17		2	36	8	0	*Started at 11 am and ended at 1 pm*
7-Feb-13	Plow	700	Salt	150	28		7	36	9	0	*Snow started at 11 am and ended at 11 pm*
8-Feb-13	Plow	500	Salt	80	20			54	9	0	*Clean up from 2/7*
13-Feb-13	Plow	672	Salt	60	22		3	27	9	0	*Pre-storm Pre-wet/3 inches of snow*
14-Feb-13	Plow	500	Salt	60	33		Ice	24	9	0	*Light rain turning to ice*
15-Feb-13	Salting Only	450	Salt	70	13		0.5	24	7	0	*Light snow overnight*
19-Feb-13	Plow	500	Salt	90	16		2	36	9	0	*0.5 inch rain changed over to snow*
19-Feb-13	Plow	400	Salt	90	16			40	9	0	*Second run for storm slush and ice.*
22-Feb-13	Plow	500	Salt	90	30		5	36	9	0	*2 am start with 5 inches ending be 6 am*
22-Feb-13	Plow	40	Salt	60	32			24	8	0	*Clean up from storm*
25-Feb-13	Pre-Wetting	1497	Salt								*Pre-storm Pre-wet*
26-Feb-13	Plow	500	Salt	60	31		7	27	9	0	*Start of Storm*
27-Feb-13	Plow	500	Salt	36	32			36	9	0	*Beginning of clean up*
27-Feb-13	Plow	500	Salt	45	32			48	9	0	*Finished clean up*
28-Feb-13	Salting Only	500	Salt	40	32		0.5	20	8	0	*Dusting overnight*
5-Mar-13	Plow	500	Salt	50	30		3	36	9	0	*9 am snow started; out until rush hour*

Road Salt / Deicers Usage
City of Pewaukee
2012-2013

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
6-Mar-13	Plow	500	Salt	70	30		3	36	9	0	*3 am start total cleanup*
6-Mar-13	Plow	500	Salt	40	32		0	24	8	0	*Slush run*
12-Mar-13	Salting Only	500	Salt	54	28		0.5	24	9	0	*Rain chaging to ice; no accumulation*
15-Mar-13	Pre-Wetting	695	Salt								*Pre-storm Pre-wet*
16-Mar-13	Salting Only	500	Salt	45	30		0.5	24	9	0	*Light dusting*
18-Mar-13	Plow	400	Salt	50	31		2	27	9	0	*Started at 8 am and done at 5 pm*
19-Mar-13	Salting Only	200	Salt	30	12		0	24	9	0	*Temps dropped overnight; spotty ice*
	Total Brine Used (gal)	*22679*	*Total Salt Used (tons)*	*3520*			*Total event hours worked*	*1272*	*Number of Entries*	*44*	

Road Salt / Deicers Usage
City of Pewaukee
2013-2014

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
25-Nov-13	Salting Only	250	Salt	70	30	30	2	60	8	0	*2" started at 6:30 am and ended at 11:00 am*
8-Dec-13	Plow	400	Salt	60	23	21	2	38	9	0	*2" started at 10:00 am*
9-Dec-13	Plow	300	Salt	70	16	16	3	45	9	0	*Snowed throughout the night; 3:00 am start*
9-Dec-13	Plow	200	Salt	60	23	25	0			27	
10-Dec-13	Plow	0	Salt	60	5	7	Drifting	28	7	0	*30 mph wind from the West*
10-Dec-13	Plow	0	Salt	80	5	7	Drifting	12	4	0	*30 mph wind from the West*
11-Dec-13	Plow	0	Salt	60	7	9	1	27	9	0	*1" started at 3:00 am*
11-Dec-13	Plow	0	Salt	60	8	17	Drifting	15	5	0	*25 mph wind from the Northwest*
14-Dec-13	Plow	450	Salt	70	22	25	2	36	9	0	*2" started at 2:00 am with another 2" during the day*
14-Dec-13	Plow	450	Salt	70	26	28	2	40	9	0	
[illegible]-Dec-13	Plow	0	Salt	70	12	17	0.5	27	9	0	*0.5" started at 2:00 am*
16-Dec-13	Plow	450	Salt	70	15	18	2	27	9	0	*2" Clipper started @ 3:30 and ended at 7:30*
17-Dec-13	Plow	450	Salt	70	21	20	0.5	27	9	0	*0.5" from 5:00 am to 7:00 am*
19-Dec-13	Plow	0	Salt	70	29	31	Ice	20	9	0	*Rain with freezing rain*
[illegible]-Dec-13	Plow	0	Salt	90	26	22	Ice	32	9	0	*Freezing rain*
20-Dec-13	Plow	0	Salt	80	28	28	Ice	27	9	0	*Freezing rain*
21-Dec-13	Plow	0	Salt	70	26	28	Ice	18	9	0	*Freezing rain*
22-Dec-13	Plow	900	Salt	120	29	31	9	99	9	0	*9" started at 3:00 am*
[illegible]-Dec-13	Plow	200	Salt	60	22	24	0.5	18	7	0	*0.5" overnight*
24-Dec-13	Plow	0	Salt	60	0	4	1	27	9	0	*1" overnight*
25-Dec-13	Plow	200	Salt	60	17	19	2	32	9	0	*2" overnight*
26-Dec-13	Plow	200	Salt	60	18	19	0.5	36	8	0	*0.5" overnight*
31-Dec-13	Plow	0	Salt	60	2	8	1	27	9	0	*1" overnight*
31-Dec-13	Plow	0	Salt	80	7	13	1	24	9	0	*1" started at 3:00 pm*
1-Jan-14	Plow	200	Salt	60	15	21	2	32	9	0	*2" started at 7:00 am*
2-Jan-14	Plow	300	Salt	60	18	22	2	27	9	0	*2" started at 5:00 am*
4-Jan-14	Plow	400	Salt	60	29	30	1	27	9	0	*30 mph winds from Southwest and 1" of snow*
10-Jan-14	Plow	400	Salt	30	35	34	Ice	27	9	0	*Heavy freezing rain*
10-Jan-14	Plow	200	Salt	40	36	35	Ice	27	9	0	*Heavy freezing rain with 0.5" of ice*
11-Jan-14	Plow	400	Salt	40	33	32	Ice	27	9	0	*Roads refroze overnight*
14-Jan-14	Plow	0	Salt	50	25	24	3	27	9	0	*Still snowing back at 3:00 am*
15-Jan-14	Plow	0	Salt	50	12	14	0	42	9	0	*Total clean-up*
16-Jan-14	Plow	300	Salt	40	27	25	0.5	25	9	0	*Light dusting*
17-Jan-14	Plow	400	Salt	50	18	15	1	30	9	0	*1" all day snow*
18-Jan-14	Plow	400	Salt	50	15	19	1	24	8	0	*1" all day snow*
20-Jan-14	Plow	0	Salt	40	13	15	1	25	9	0	*1" all day snow*
22-Jan-14	Plow	0	Salt	50	13	18	0.5	27	9	0	*Light dusting*
25-Jan-14	Plow	200	Salt	60	16	12	2	38	9	0	*2" with a 40 mph wind and heavy drifting*

Road Salt / Deicers Usage
City of Pewaukee
2013-2014

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
26-Jan-14	Plow	0	Salt	60	15	12	3	45	9	0	*3" started at 3:00 am*
27-Jan-14	Plow	0	Salt	50	0	2	Drifting	72	9	0	*40 mph wind out of the Northwest*
30-Jan-14	Plow	400	Salt	50	26	28	1	30	9	0	*1" from fast moving system*
1-Feb-14	Plow	500	Salt	60	15	18	2	74	9	0	*All day snow*
5-Feb-14	Plow	40	Salt	50	20	23	2	30	9	0	*2" overnight*
8-Feb-14	Plow	100	Salt	40	15	12	1	32	9	0	*1" from fast moving system*
12-Feb-14	Salting Only	400	Salt	50	20	18	0.5	27	9	0	*0.5" in 4 hours*
13-Feb-14	Plow	400	Salt	40	26	28	2	36	9	0	*2" from fast moving system*
17-Feb-14	Plow	500	Salt	70	25	26	6	96	9	0	*6" all day snow*
20-Feb-14	Plow	200	Salt	30	32	31	1	36	9	0	*freezing rain turning to snow*
21-Feb-14	Salting Only	200	Salt	30	26	26	0	18	9	0	*1" of rain with temps drapping*
27-Feb-14	Plow	0	Salt	40	0	1	0.5	27	9	0	*Light dusting of snow*
1-Mar-14	Plow	400	Salt	40	15	16	2	30	9	0	*2" overnight*
2-Mar-14	Plow	0	Salt	50	6	8	2	42	9	0	*2" overnight*
4-Mar-14	Plow	200	Salt	50	13	15	3	64	9	0	*3" from fast moving system*
5-Mar-14	Plow	200	Salt	50	16	18	0.5	27	9	0	*Light dusting of snow*
25-Mar-14	Plow	300	Salt	40	18	22	1	30	9	0	*1" overnight*
	Total Brine Used (gal)	*11490*	*Total Salt Used (tons)*	*3160*	*Average Air Temp per Entry (deg F)*	*18.7*	*Average Pavement Temp. per Entry (deg F)*	*20.13*	*Number of Entries*	*54*	
							Total event hours worked	*1863*			

Road Salt / Deicers Usage
City of Pewaukee
2014-2015

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
15-Nov-14	Plow	400	Salt	80	24	27	2	27	9	0	*2" of snow; very icy*
16-Nov-14	Salting Only	300	Salt	60	27	29	1	27	9	0	*1" overnight*
19-Nov-14	Salting Only	300	Salt	70	18	21	1	24	8	0	*1" of snow: 7:00 am run*
22-Nov-14	Salting Only	400	Salt	40	30	32	Ice	22	6	0	*Light iceing*
24-Nov-14	Plow	400	Salt	80	28	30	3	36	8	0	*3" total precip; rain changing to snow*
25-Nov-14	Plow	300	Salt	80	25	28	2	45	9	0	*2" overnight*
28-Nov-14	Salting Only	300	Salt	60	29	28	Ice	18	9	0	*Light iceing*
2-Dec-14	Plow	300	Salt	80	28	27	1	36	9	0	*1" overnight; fast moving system*
8-Dec-14	Salting Only	200	Salt	60	34	31	Ice	22	8	0	*Light iceing*
18-Dec-14	Plow	200	Salt	60	31	30	Ice	24	8	0	*Light iceing*
-Jan-15	Plow	300	Salt	120	32	29	3	36	9	0	*3" changing to freezing rain*
4-Jan-15	Plow	0	Salt	80	10	13	2	96	9	0	*2" of blowing snow*
6-Jan-15	Plow	0	Salt	80	0	4	2	45	9	0	*2" of blowing snow*
8-Jan-15	Plow	0	Salt	120	0	3	3	27	9	0	*3" of snow with high winds*
-Jan-15	Plow	0	Salt	80	-2	0	1	30	9	0	*1" during rush hour*
-Jan-15	Plow	0	Salt	80	6	8	2	30	9	0	*2" overnight*
9-Jan-15	Plow	0	Salt	80	8	12	0	21	7	0	*Drifting and slush run*
21-Jan-15	Plow	300	Salt	90	27	28	2	24	9	0	*2" overnight*
25-Jan-15	Salting Only	300	Salt	60	27	26	0.5	21	9	0	*Light dusting of snow*
26-Jan-15	Plow	400	Salt	70	24	26	1	24	9	0	*1" overnight; fast moving system*
29-Jan-15	Salting Only	100	Salt	50	34	31	Ice	18	9	0	*Light iceing*
1-Feb-15	Plow	0	Salt	120	10	14		40	9	0	*Beginning of storm*
1-Feb-15	Plow	0	Salt	120	10	14		40	9	0	
2-Feb-15	Plow	0	Salt	150	8	10	9	54	9	0	*9" total accumulation with high winds*
3-Feb-15	Plow	0	Salt	100	13	15	2	30	9	0	*2" from fast moving system*
18-Feb-15	Salting Only	0	Salt	100	3	5	1	30	9	0	*Light dusting of snow*
25-Feb-15	Plow	0	Salt	100	12	16	1	20	9	0	*1" from fast moving system*
3-Mar-15	Plow	300	Salt	120	30	27	2	36	9	0	*2" from fast moving system*

	Total Brine Used (gal)	*4800*	*Total Salt Used (tons)*	*2390*	*Average Air Temp per Entry (deg F)*	*19.48*	*Average Pavement Temp. per Entry (deg F)*	*20.89*	*Number of Entries*	*27*
							Total Event hours worked	*903*		

Road Salt / Deicers Usage
City of Pewaukee
2015-2016

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
21-Nov-15	Plow	500	Salt	110	32	32	4	60	7		
21-Dec-15	Plow	500	Salt	150	30	30			9		
22-Dec-15	Plow	0	Salt	90	35	35	10	100	9		*Very Heavy.*
7-Jan-16	Salt	200	Salt	60	32	32	1	32	8		
9-Jan-16	Plow	350	Salt	80	29	28	2	27	9		
10-Jan-16	Plow	0	Salt	100	13	13	1	36	9		
12-Jan-16	Plow	0	Salt	175	4	6	2	75	9		*High wind followed by a slush run and a lot of drifting.*
25-Jan-16	Plow	350	Salt	75	32	33	1	24	9		
26-Jan-16	Plow	200	Salt	75	31	32	0.5	24	8		
1-Feb-16	Salt	200	Salt	75	26	24	Ice	24	8		*Rain froze over night.*
7-Feb-16	Salt	300	Salt	75	35	31	slush	24	8		*Rain /slush mix.*
8-Feb-16	Plow	300	Salt	80	30	28	1+4	26	8		*One inch with areas of 4 inches.*
9-Feb-16	Plow	0	Salt	80	14	16	1	36	9		*One inch overnight with high winds.*
10-Feb-16	Plow	0	Salt	80	12	15	1	36	9		*One inch overnight.*
14-Feb-16	Plow	0	Salt	80	22	18	1	27	9		*One inch - very dry.*
15-Feb-16	Plow	300	Salt	100	21	18	1	36	9		*One inch overnight.*
1-Mar-16	Plow	800	Salt	160	28	28	4	90	9		*One inch overnight. Three inches during the day.*
3-Mar-16	Plow	300	Salt	60	32	31	2	27	9		*Two inches overnight.*
24-Mar-16	Plow/Salt	500	Salt	200	31	31	Ice/3 inches	76	8		*Light icing to 3 inches of wet snow.*
2-Apr-16	Plow	300	Salt	50	29	30	2	32	9		*Two inches fast mover*

Total Brine Used (gal) 5100 | *Total Salt Used (tons)* 1955 | *Average Air Temp per Entry (deg F)* 27.26 | *Average Pavement Temp. per Entry (deg F)* 26.89 | *Number of Entries* 19

Total Event Hours Worked 812

Road Salt / Deicers Usage
City of Pewaukee
2016-2017

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
4-Dec-16	Plow	850	Salt	160	31	29	2	27	9		*Long storm start 8:00am and end 8:00pm. Clean up included.*
9-Dec-16	Pre-storm	750		0							*Pre-storm treatments.*
10-Dec-16	Plow	400	Salt	80	24	22	4	50	10		*Start 7:00pm on the 10th.*
11-Dec-16	Plow	300	Salt	80	28	27	5	55	10		*End 8pm on the 11th.*
14-Dec-16	Plow	0	Salt	60	6	6	0	16	6		*30mph winds - drift run.*
15-Dec-16	Plow	0	Salt	80	8	10	0	16	4		*Drift run.*
16-Dec-16	Plow	0	Salt	140	10	11	7	64	8 to 10		*Light dusting followed by long duration storm starting at 2:00pm.*
17-Dec-16	Plow	0	Salt	170	16	18	6	88	10 to 9		*Still snowing.*
18-Dec-16	Plow	0	Salt	80	8	9	2	50	9		*Storm ends.*
19-Dec-16	Plow	0	Salt	60	12	14	0	36	9	50	
20-Dec-16	Plow	100	Salt	60	26	30	0	36	9	50	
23-Dec-16	Plow	300	Salt	80	31	30	4	50	9		*Fast moving storm.*
3-Jan-17	Salt	100	Salt	90	34	34	ice	32	8		*Light icing.*
9-Jan-17	Salt	200	Salt	60	34	31	1	24	9		*Pre-storm salting.*
0-Jan-17	Plow/salt	400	Salt	260	34	31	1	84	9		*1 inch snowfall overnight followed by freezing rain.*
1-Jan-17	Salt	400	Salt	120	28	26	ice	27	9		*Freezing rain.*
16-Jan-17	Salt	900	Salt	260	34	32	ice	76	9		*Freezing rain.*
17-Jan-17	Salt	300	Salt	80	34	32	ice	27	9		*Freezing rain.*
18-Jan-17	Salt	100	Salt	40	32	32	ice	15	5		*Freezing rain.*
25-Jan-17	Salt	300	Salt	60	32	32	0.5	36	9		*Light snow.*
26-Jan-17	Plow	300	Salt	80	27	29	1	36	9		*1 inch overnight.*
30-Jan-17	Plow	1400	Salt	70	27	29	1	18	9		*Pre-storm treatments followed by a salt run.*
31-Jan-17	Plow	300	Salt	80	29	29	2	36	9		*2 inches overnight.*
3-Feb-17	Pre-storm	1390		0							
12-Feb-17	Salt	300	Salt	60	31	32	ice	22	8		*Light freezing rain.*
24-Feb-17	Salt	400	Salt	140	30	31	ice	36	9 to 8		*Light freezing rain.*
25-Feb-17	Plow	200	Salt	100	23	25	1	30	9		*1 inch overnight.*
1-Mar-17	Plow	400	Salt	120	32	28	2	47	9		*1 inch in morning followed by light snow all day.*
13-Mar-17	Plow	400	Salt	130	22	25		81	9		*Start storm with 3 inches and continues to snow.*
14-Mar-17	Plow	200	Salt	50	18	19	6	32	9		*Storm wraps up with 6 inch total.*
16-Mar-17	Pre-storm	335									
17-Mar-17	Salt	200	Salt	50	32	31	ice	24	8		*Light freezing rain.*

	Total Brine Used (gal)	*11225*	*Total Salt Used (tons)*	*2900*	*Average Air Temp per Entry (deg F)*	*28.19*	*Average Pavement Temp. per Entry (deg F)*	*28.23*	*Number of Entries*	*29*
						Total Event Hours Worked	*1171*			

Road Salt / Deicers Usage
City of Pewaukee
2017-2018

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
9-Dec-17	Plow	500	Salt	100	26	24	2	64	9		*All night snow*
11-Dec-17	Salt	300	Salt	80	26	22	1	27	9		*Fast moving storm - 1 inch*
13-Dec-17	Salt	300	Salt	60	22	19	0.5	24	9		*Light Dusting*
13-Dec-17	Salt	300	Salt	50	32	30	2	24	9		*2" north part of City/dusting south part of City*
13-Dec-17	Plow	500	Salt	50	28	26	1.5	27	9		*Flurries predicted - 1.5 inches*
14-Dec-17	Plow	100	Salt	50	28	25	0.5	24	9		*Light Dusting*
24-Dec-17	Plow	350	Salt	80	22	22	2	36	9		*Fast moving storm -2 inches*
25-Dec-17	Plow	200	Salt	60	16	18	1	27	9		*Fast moving storm -1 inch*
28-Dec-17	Plow	0	Salt	80	14	14	1	22	9		*Fast moving storm - 1 inch*
29-Dec-17	Plow	0	Salt	80	15	15	1	22	8		*Fast moving storm -1 inch*
[illegible]-Dec-17	Plow	0	Salt	80	8	10	1	24	8		*1 inch overnight.*
3-Jan-18	Plow	0	Salt	80	15	15	1	27	9		*1 inch overnight.*
11-Jan-18	Salt	0	Salt	80	34	32	ice	36	9		*Rain to ice*
15-Jan-18	Plow	300	Salt	120	28	24	3	56	9		*3 inches overnight - slow mover*
16-Jan-18	Plow	200	Salt	80	24	22	3	36	9		*3 inches - same storm lake effect*
16-Jan-18	Plow	200	Salt	50	24	28	0	24	9	24	*Slush run*
23-Jan-18	Plow	400	Salt	160	28	28	4	72	9		*Heavy rain changing to snow turning to hardpack*
28-Jan-18	Salt	400	Salt	60	28	28	1	20	9		*Fast moving storm - 1 inch*
3-Feb-17	Plow	400	Salt	160	29	29	1	27	9		*1 inch beginning of storm*
4-Feb-18	Plow	400	Salt	240	16	18	7	108	9		*7 inches of snow - total storm was 8 inches*
5-Feb-18	Plow	0	Salt	120	8	8	1	27	9		*1 inch - still snowing*
6-Feb-18	Plow	0	Salt	120	6	6	1	36	9		*1 inch overnight.*
9-Feb-18	Plow	0	Salt	180	14	16	4	72	9		*4 inches - 12 hour storm*
17-Feb-18	Salt	400	Salt	100	28	28	0.5	18	9		*Light Dusting*
4-Mar-18	Plow	400	Salt	100	31	31	3	36	9		*Fast moving storm - 3 inches*
4-Apr-18	Plow	0	Salt	100	21	22	2	36	9		*Rain changing to snow*
4-Apr-18	Plow	0	Salt	100	24	26	0	0	9		*Hard pack ice*
14-Apr-18	Plow	0	Salt	100	28	28	ice	20	9		*Light icing*
15-Apr-18	Plow	0	Salt	250	30	30	4	108	9		*Rain with heavy snow*
16-Apr-18	Plow	0	Salt	180	28	28	1	36	9		*1 inch - slow mover*
18-Apr-18	Plow	0	Salt	140	32	32	2	63	9		*2 inches - still snowing*
19-Apr-18	Plow	0	Salt	75	34	34	3	36	9		*5 inches total from storm -wet and heavy*

	Total Brine Used (gal)	*5650*	*Total Salt Used (tons)*	*3365*	*Average Air Temp per Entry (deg F)*	*23.34*	*Average Pavement Temp. per Entry (deg F)*	*23.06*	*Number of Entries*	*32*
						Total Event Hours Worked	*1215*			

Road Salt / Deicers Usage
City of Pewaukee
2018-2019

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
9-Nov-18	Salt	200	Salt	40	31	32	1	22	6	0	*Light Dusting*
10-Nov-18	Plow	200	Salt	60	31	32	2	27	6	0	*2 inches - fast mover*
16-Nov-18	Plow	200	Salt	40	29	30	1	27	5	0	*Light Dusting*
17-Nov-18	Salt	300	Salt	50	28	30	1.5	24	5	0	*Slower moving storm - lingering snow showers*
26-Nov-18	Salt	200	Salt	15	30	30	0.05	12	3	0	*Blizzard to the south - worked 3 routes south of I-94*
29-Nov-18	Plow	200	Salt	70	30	29	1	32	9	0	*1 inch overnight - slow mover*
2-Dec-18	Salt	300	Salt	70	31	32	Ice	24	8	0	*Light icing*
12-Dec-18	Plow	200	Salt	70	33	31	0.05	24	8	0	*Light Dusting*
25-Dec-18	Plow	100	Salt	80	28	30	1	30	9	0	*1 inch - fast mover*
28-Dec-18	Salt	200	Salt	80	32	32	0.05	22	9	0	*Light Dusting*
[illegible]-Dec-18	Salt	200	Salt	80	32	32	0	27	9	0	*Ice - very slippery*
[illegible]1-Dec-18	Plow	200	Salt	80	30	30	2	45	9	0	*All day - changed to snow*
[illegible]2-Jan-19	Salt	200	Salt	70	32	31	Ice	32	9	0	*Melt off and re-freeze*
[illegible]2-Jan-19	Salt	150	Salt	80	32	32	0.05	27	9	0	*Light Dusting*
[illegible]-Jan-19	Pre-wet	700	Brine	0				8	1	0	*Pre-wet run*
[illegible]8-Jan-19	Plow	200	Salt	100	22	21	1	30	9	0	*Beginning of storm - 6 inches expected*
[illegible]9-Jan-19	Plow	0	Salt	160	22	21	5	80	9	0	*Snow all night - total clean up*
[illegible]2-Jan-19	Plow	200	Salt	80	21	21	1	27	9	0	*Beginning of storm - 5 inches expected*
[illegible]5-Jan-19	Plow	200	Salt	240	22	21	6	96	9	0	*Total snow 7 inches*
26-Jan-19	Salt	0	Salt	80	4	4	0.05	22	9	0	*Light Dusting*
28-Jan-19	Plow	0	Salt	400	19	21	11	180	9	0	*Started at 3 am and snowed all day*
5-Feb-19	Pre-wet	500	Brine	0	27	26		21	9	0	*Pre-wet/pre-salt runs - ice expected*
6-Feb-19	Plow	400	Salt	240	31	30	1	140	10	0	*1 inch of sleet then rain then freezing*
7-Feb-19	Plow	500	Salt	180	33	32	Ice	60	10	0	*Freezing rain*
7-Feb-19	Salt	200	Salt	80	25	31	Ice	30	10	0	*Heavy rain turned to ice*
10-Feb-19	Plow	300	Salt	60	29	28	1	24	10	0	*Fast moving storm*
12-Feb-19	Plow	400	Salt	100	31	30	9	110	10	0	*Wet - heavy snow*
13-Feb-19	Plow	200	Salt	80	24	22	1	50	10	0	*1 inch overnight followed by lots of drifting*
17-Feb-19	Plow	200	Salt	100	28	26	2	32	10	0	*6 inches of expected snow*
18-Feb-19	Plow	200	Salt	100	26	24	2	40	10	0	*End of storm - 7 inches*
20-Feb-19	Plow	300	Salt	140	31	28	1	60	10	0	*1 inch snow with freezing rain*
22-Feb-19	Pre-wet	820	Brine	0							

Road Salt / Deicers Usage
City of Pewaukee
2018-2019

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
23-Feb-19	Salt	400	Salt	80	32	31	Ice	30	10	0	*Ice with rain to follow*
24-Feb-19	Salt	100	Salt	80	31	29	Ice	24	10	0	*Heavy rain over night that turned to ice with 60 mph wind*
27-Feb-19	Plow	100	Salt	80	25	24	1	40	10	0	*1 inch over night*
2-Mar-19	Plow	0	Salt	80	13	11	2	30	9	0	*2 inches from fast moving over night storm*
5-Mar-19	Plow	0	Salt	10	6	4	0.05	25	10	0	*Light Dusting*
10-Mar-19	Plow	300	Salt	10	32	31	1	30	10	0	

	Total Brine Used (gal)	*9070*	*Total Salt Used (tons)*	*3365*	*Average Air Temp per Entry (deg F)*	*29.18*	*Average Pavement Temp. per Entry (deg F)*	*28.76*	*Number of Entries*	*36*
						Total Event Hours Worked	*1564*			

	Salt	Brine
October	0	0
November	275	1300
December	460	1200
January	1210	1650
February	1320	4620
March	100	300

Road Salt / Deicers Usage
City of Pewaukee
2019-2020

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
31-Oct-19	Plow	300	Salt	140	28	29	7	96	8		*Happy Halloween Slow mover; 2- RUNS*
6-Nov-19	Plow	300	Salt	70	30	28	2	32	8		*2" Started @ 3AM done @ 9AM*
6-Nov-19	Plow	300	Salt	70	30	27	1	24	8		*1" continuation of storm*
11-Nov-19	Plow	400	Salt	160	22	23	3	96	9		*2 " Very slippery; 2- Runs*
14-Nov-19	Plow	300	Salt	60	28	27	1	24	7		*1" fast mover*
12-Dec-19	Pre-wet	850									
14-Dec-19	Salt	500	Salt	80	31	29	Ice	30	9		*Light mist turned to Ice*
16-Dec-19	Plow	300	Salt	80	21	23	1	27	9		*1" overnight*
31-Dec-19	Plow	300	Salt	150	26	24	4	80	10		*5" overnight super slippery; 2- Runs*
10-Jan-20	Salt	0	Salt	50	32	34	0	27	9		*Pre- Salt prior to Storm10" inches expected*
11-Jan-20	Salt	0	Salt	100	28	27	ICE	30	10		*ICE Temperature Dropped 6 Degrees in 30 Minutes*
11-Jan-20	Salt	300	Salt	80	26	27	1"	30	10		*Beginning of Strom*
11-Jan-20	Salt	300	Salt	120	24	25	3"	50	10		*End of Strom*
13-Jan-20	Salt	300	Salt	80	32	30	2"	30	10		*2" overnight*
17-Jan-20	Salt	0	Salt	50	32	31	0	27	9		*Pre salt Run*
17-Jan-20	Plow	300	Salt	80	32	31	3	30	10		*Beginning of Storm*
18-Jan-20	Plow	300	Salt	140	32	31	3	80	10		*6" Total from storm High Winds coming; 2- Runs*
23-Jan-20	Plow	300	Salt	80	32	31	2	40	10		*Overnight Beginning of long drawn out storm*
24-Jan-20	Plow	300	Salt	100	34	33	1	40	10		*Storm continuing*
24-Jan-20	Plow	300	Salt	80	36	32	2	40	10		*Still Snowing*
25-Jan-20	Plow	300	Salt	80	34	32	1	50	10		*Still Snowing*
25-Jan-20	Plow	300	Salt	60	36	32	2	50	10		*End of Storm8" Total*
9-Feb-20	Plow	300	Salt	100	32	31	2	30	10		*Start of storm 5" perdicted.*
9-Feb-20	Plow	300	Salt	100	30	28	5	50	10		*Total storm 8" Fast mover*
13-Feb-20	Plow	0	Salt	180	12	10	4	120	10		*Quick mover Cold Blast to follow; 2- Runs*
17-Feb-20	Plow	300	Salt	80	32	30	2	40	10		*Beginning of storm*
18-Feb-20	Plow	300	Salt	80	32	30	2	40	10		*Fast mover 4 " total*

Total Brine Used (gal) 7750 | *Total Salt Used (tons)* 2450 | *Average Air Temp per Entry (deg F)* 30.56 | *Average Pavement Temp. per Entry (deg F)* 29.4 | *Number of Entries* 26

Total Event Hours Worked 1213

Road Salt / Deicers Usage
City of Pewaukee
2019-2020

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
	Salt	Brine									
October	300	140									
November	360	1300									
December	310	1950									
January	1100	3000									
February	540	1200									
March	0	0									

Road Salt / Deicers Usage
City of Pewaukee
2020-2021

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
12-Dec-20	Plow	600	Salt	180	32	31	2	86	10		*Heavey snow all day long; 2 runs*
27-Dec-20	Plow	400	Salt	100	31	30	1	32	10		*Light snow but very icy*
29-Dec-20	Pre-wet	768									*Pre-wet application prior to event*
30-Dec-20	Plow	500	Salt	160	33	31	7	90	10		*Heavy wet snow, fast mover; 2 runs*
1-Jan-21	Plow	400	Salt	160	32	30	4	100	11		*1 inch of snow predicted, received 4 inches; 2 runs*
15-Jan-21	Plow	300	Salt	100	34	32	2	36	10		*Overnight storm, fast mover*
16-Jan-21	Plow	300	Salt	100	32	31	1	36	10		*Overnight storm, fast mover*
19-Jan-21	Plow	300	Salt	100	26	25	1	30	10		*Snowfall not originally forcasted, still received 1 inch*
13-Jan-21	Pre-wet	951									*Pre-wet application prior to event*
24-Jan-21	Plow	500	Salt	150	24	26	3	70	10		*Light and fluffy snow*
25-Jan-21	Plow	800	Salt	210	26	25	8	120	10		*2 inches of snow predicted, received 8 inches with high winds; 3 runs*
[illegible]-Jan-21	Pre-wet	600									*Pre-wet application prior to event*
[illegible]1-Jan-21	Plow	600	Salt	180	28	26	8	100	10		*8 inches of heavy wet snow; 2 runs*
[illegible]-Feb-21	Salt	200	Salt	40	20	18	trace	14	7		*Light dusting overnight*
[illegible]4-Feb-21	Plow	300	Salt	120	32	26	3	80	10		*Temperatures falling with high winds; 2 runs*
[illegible]-Feb-21	Plow	0	Salt	100	10	11	2	120	10		*Packed snow/ice with high winds, lots of drifting; 3 runs*
[illegible]-Feb-21	Plow	0	Salt	150	6	10	2	80	10		*2 inches of snow overnight; 2 runs*
13-Feb-21	Plow	0	Salt	150	0	4	3	100	10		*3 inches of snow and cold temperatures; 2 runs*
[illegible]-Feb-21	Plow	0	Salt	160	4	5	2	64	10		*2 inches of snow overnight; 2 runs*
[illegible]-Feb-21	Plow	300	Salt	80	31	26	4	72	10		*4 inches of snow overnight, fast mover; 2 runs*

Total Brine Used (gal) 7819 *Total Salt Used (tons)* 2240 *Average Air Temp per Entry (deg F)* 17.43 *Average Pavement Temp. per Entry (deg F)* 16.83 *Number of Entries* 26

Total Event Hours Worked 1230

Road Salt / Deicers Usage
City of Pewaukee
2020-2021

Date(s) of Event	Activity	Salt Brine Used (gal)	Produet Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
	Brine	Salt									
October	0	0									
November	0	0									
December	2268	440									
January	4751	1000									
February	800	800									
March	0	0									

Item D

Fiscal Analysis Worksheets

Spreadsheet for Fiscal Analysis Portion of City of Pewaukee's 2020 MS4 Annual Report

	Budget for Reporting Year	Annual Expenditures for Reporting year	Budget for Upcoming Year
Public Education and Outreach	$1,500.00	$1,465.50	$1,500.00
Public Involvement and Participation	$1,500.00	$1,465.50	$1,500.00
Illicit Discharge Detection and Ellimination	$1,370.00	$2,610.00	$1,430.00
Construction Site Pollution Control	$25,161.00	$75,790.00	$36,575.00
Post-Construction Storm Water Management	$33,161.00	$30,290.00	$44,575.00
Pollution Prevention	$729,226.00	$639,760.56	$824,101.10
Storm Water Quality Management	$350,000.00	$0.00	$350,000.00
Storm Sewer System Map	$5,000.00	$6,999.90	$5,000.00
Totals	**$1,146,918.00**	**$758,381.46**	**$1,264,681.10**

Public Information and Outreach

Budget for Reporting Year	$1,500.00
Expenditures for Reporting Year	$1,465.50
Budget for Upcoming year	$1,500.00

Budget item for reporting purposes is identified as Permit Compliance-Information and Education and includes contracted amount to Waukesha County. This dollar figure is half of the reported/budgeted number as the Public Involvement and Participation program is included in here as well.

Note: for upcoming year budget, dollars are estimated for reporting purposes and may not necessarily correspond to the City's Budget summary. DNR catagories do not correspond to City Budget Accounting Fields.

Public Involvement and Participation

Budget for Reporting Year	$1,500.00
Expenditures for Reporting Year	$1,465.50
Budget for Upcoming year	$1,500.00

Budget item for reporting purposes is identified as Permit Compliance-Information and Education and includes contracted amount to Waukesha County. This dollar figure is half of the reported/budgeted number as the Public Education and Outreach program is included in here as well.

Note: for upcoming year budget, dollars are estimated for reporting purposes and may not necessarily correspond to the City's Budget summary. DNR catagories do not correspond to City Budget Accounting Fields.

Illicit Discharge Detection and Ellimination Program

Budget item for reporting purposes is an estimation of Engineering Tecnicians time and Civil Engineers time to inspect identified MS4 outfalls and review reports. Costs will include estimates of time spent persuing spills/dumping complaints by Engineering Staff and by City Fire Services.

Note: for upcoming year budget, dollars are estimated for reporting purposes and may not necessarily correspond to the City's Budget summary. DNR catagories do not correspond to City Budget Accounting Fields. Fire Dept. projections are not included for budget purposes as Fire is a 24/7 service and is a required service regardless of whether or not a spill occurs.

	Budget for Reporting Year				**Annual Expenditures for Rporting Year**				**Budget Upcoming Year**			
Engineering Staff	**Hourly Wage**	**Hours**	**Cost**		**Hourly Wage**	**Hours**	**Cost**		**Hourly Wage**	**Hours**	**Cost**	
Engineering Technician	$37.59	20.00	$751.80		$37.59	40.00	$1,503.60		$38.91	20.00	$778.20	
Senior Engineering Technician	$41.18	4.00	$164.72		$41.18	0.00	$0.00		$42.42	4.00	$169.68	
Civil Engineer	$41.10	6.00	$246.60		$41.10	0.00	$0.00		$42.12	6.00	$252.72	
Chief Engineer-Utilities	$56.32	2.00	$112.64		$56.32	3.50	$197.12		$59.62	2.00	$119.24	
DPW Director	$67.34	1.00	$67.34		$67.34	0.00	$0.00		$77.34	1.00	$77.34	
Mileage costs			$26.75				$16.05				$27.25	
			$1,369.85	Subtotal			$1,716.77	Subtotal			$1,424.43	Subtotal
Fire Department Staff												
Fire Paid on Premise Division Chief	$35.00	0.00	0.00		$35.00	0.67	$23.45		$35.00	0.00	$0.00	
Fire Paid on Premise Driver/Paramedic	$25.56	0.00	0.00		$25.56	1.33	$33.99		$28.40	0.00	$0.00	
Fire Paid on Premise Fire Fighter	$17.04	0.00	0.00		$17.04	1.33	$22.66		$17.75	0.00	$0.00	
Paramedic	$21.30	0.00	0.00		$21.30	0.00	$0.00		$24.14	0.00	$0.00	
Engine Cost	$650.00	0.00	0.00		$650.00	0.67	$435.50		$650.00	0.00	$0.00	
Ambulance	$500.00	0.00	0.00		$500.00	0.67	$335.00		$500.00	0.00	$0.00	
Command Vehicle	$62.00	0.00	0.00		$62.00	0.67	$41.54		$62.00	0.00	$0.00	
			0.00	Subtotal			$892.15	Subtotal			$0.00	Subtotal
			1,369.85	Total			**$2,608.92**	**Total**			$1,424.43	Total
			1,370.00	**Use**			**2,610.00**	**Use**			**$1,430.00**	**Use**

Engine cost assumed based on apparatus cost of 650,000 with 10 year life cycle and 100 hours of use per year.
Command Vehicle assumed based on cost of 49,613 with 8 year life cycle and 100 hours of use per year.
ALS Unit assumed based on cost of 350,000 with 7 year life cyle and 100 hours of use per year.
Mileage costs based on vehicle distance of 30 miles (expenditures) and 50 miles (budget) at mileage rate of 53.5 cents for 2017 and 54.5 cents for 2018.
Wages based upon hourly rate multiplied by 1.42 to account for benefits, etc.

Construction Site Pollutant Control Program

Note: The City's Construction Site Pollution Control Program includes compliance inspections, enforcement, erosion control plan review and permitting. The financial estimates contained in this spreadsheet are for construction sites over an acre only and do not include estimates of Building Inspection costs. Developer driven expenditures are generally billed back to the Developer. Budget dollars are taken from line items under "Permit Compliance" in the Storm Water Utility Budget (one half of Numbers 230-53656-51290 and 230-53656-51950 and all of 230-53656-53530).

Budget for Reporting Year $25,161.00 **Budget for Upcoming Year** $36,575.00

Annual Expenditures for Reporting Year $75,790.00

Project	Briohn Bldrs-Angulus Bldg Springdale Rd	Wages	Hours	Total		
	R/M Bills			$6,033.01		
	AECOM Bills			$0.00		
	Engineer Tech	$37.59	0.00	$0.00		
	Sr. Engineer Tech	$41.18	0.00	$0.00		
	Civil Engineer	$41.10	0.00	$0.00		
	Chief Engineer-Utilities	$56.32	10.25	$577.28		
	DPW Director	$67.34	0.00	$0.00		
					Total	$6,610.29
	Rainbow Childcare					
	R/M Bills			$7,513.08		
	AECOM Bills			$0.00		
	Engineer Tech	$37.59	0.00	$0.00		
	Sr. Engineer Tech	$41.18	0.00	$0.00		
	Civil Engineer	$41.10	3.75	$154.13		
	Chief Engineer-Utilities	$56.32	20.25	$1,140.48		
	DPW Director	$67.34	0.00	$0.00		
					Total	$8,807.69
	Briohn Builders Northmound Bldg					
	R/M Bills			$5,745.62		
	AECOM Bills			$0.00		
	Engineer Tech	$37.59	0.00	$0.00		
	Sr. Engineer Tech	$41.18	0.50	$20.59		
	Civil Engineer	$41.10	0.00	$0.00		
	Chief Engineer-Utilities	$56.32	11.00	$619.52		
	DPW Director	$67.34	0.00	$0.00		
					Total	$6,385.73
	Christ Evangelical Lutherine Church					
	R/M Bills			$5,974.79		
	AECOM Bills			$0.00		
	Engineer Tech	$37.59	0.00	$0.00		
	Sr. Engineer Tech	$41.18	0.00	$0.00		
	Civil Engineer	$41.10	0.00	$0.00		
	Chief Engineer-Utilities	$56.32	13.50	$760.32		
	DPW Director	$67.34	0.00	$0.00		
					Total	$6,735.11
	Swan View Farms Ph. 1					
	R/M Bills			$9,100.24		
	AECOM Bills			$4,001.20		
	Engineer Tech	$37.59	0.00	$0.00		
	Sr. Engineer Tech	$41.18	0.00	$0.00		

Civil Engineer	$41.10	0.00	$0.00		
Chief Engineer-Utilities	$56.32	56.00	$3,153.92		
DPW Director	$67.34	0.00	$0.00		
				Total	$16,255.36

Swan View Farms Ph. 2

R/M Bills			$0.00		
AECOM Bills			$1,314.73		
Engineer Tech	$37.59	0.00	$0.00		
Sr. Engineer Tech	$41.18	0.00	$0.00		
Civil Engineer	$41.10	0.00	$0.00		
Chief Engineer-Utilities	$56.32	1.75	$98.56		
DPW Director	$67.34	0.00	$0.00		
				Total	$1,413.29

Woodleaf Reserve Phase 3

R/M Bills			$2,778.43		
AECOM Bills			$0.00		
Engineer Tech	$37.59	0.00	$0.00		
Sr. Engineer Tech	$41.18	0.00	$0.00		
Civil Engineer	$41.10	0.00	$0.00		
Chief Engineer-Utilities	$56.32	5.50	$309.76		
DPW Director	$67.34	0.00	$0.00		
				Total	$3,088.19

Glen of Parkway Ridge

R/M Bills			$4,231.95		
AECOM Bills			$598.29		
Engineer Tech	$37.59	0.00	$0.00		
Sr. Engineer Tech	$41.18	0.00	$0.00		
Civil Engineer	$41.10	2.00	$82.20		
Chief Engineer-Utilities	$56.32	18.00	$1,013.76		
DPW Director	$67.34	0.00	$0.00		
				Total	$5,926.20

James Craig Builders-Swan Road

R/M Bills			$0.00		
AECOM Bills			$0.00		
Engineer Tech	$37.59	0.00	$0.00		
Sr. Engineer Tech	$41.18	0.50	$20.59		
Civil Engineer	$41.10	0.00	$0.00		
Chief Engineer-Utilities	$56.32	1.25	$70.40		
DPW Director	$67.34	0.00	$0.00		
				Total	$90.99

Baenen_Northview Road

R/M Bills			$0.00		
AECOM Bills			$0.00		
Engineer Tech	$37.59	0.00	$0.00		
Sr. Engineer Tech	$41.18	0.00	$0.00		
Civil Engineer	$41.10	0.00	$0.00		
Chief Engineer-Utilities	$56.32	7.75	$436.48		
DPW Director	$67.34	0.50	$33.67		
				Total	$470.15

Klein Dickert Glass

R/M Bills			$7,475.15		
AECOM Bills			$0.00		
Engineer Tech	$37.59	0.00	$0.00		
Sr. Engineer Tech	$41.18	0.00	$0.00		
Civil Engineer	$41.10	0.00	$0.00		
Chief Engineer-Utilities	$56.32	16.00	$901.12		
DPW Director	$67.34	0.00	$0.00		

			Total	$8,376.27

Oak and Peninsula Road Project and Water Main

R/M Bills			$4,441.45	
AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	22.75	$1,281.28	
DPW Director	$67.34	0.00	$0.00	
			Total	$5,722.73

Green Acres LLC Office Building

R/M Bills			$0.00	
AECOM Bills			$359.70	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	3.75	$211.20	
DPW Director	$67.34	0.00	$0.00	
			Total	$570.90

Pewaukee Industrial South

R/M Bills			$0.00	
AECOM Bills			$962.20	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	1.00	$41.10	
Chief Engineer-Utilities	$56.32	3.50	$197.12	
DPW Director	$67.34	0.00	$0.00	
			Total	$1,200.42

Waters Senior Living

R/M Bills			$0.00	
AECOM Bills			$971.57	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	3.00	$123.30	
Chief Engineer-Utilities	$56.32	5.75	$323.84	
DPW Director	$67.34	0.00	$0.00	
			Total	$1,418.71

Woodleaf Reserve Phase 4

R/M Bills			$0.00	
AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	2.25	$92.48	
Chief Engineer-Utilities	$56.32	7.50	$422.40	
DPW Director	$67.34	0.00	$0.00	
			Total	$514.88

Emerald Acres Flood Mitigation

R/M Bills			$0.00	
AECOM Bills				
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	34.00	$1,400.12	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	9.50	$535.04	
DPW Director	$67.34	0.00	$0.00	
			Total	$1,935.16

Zignego Repair Building

R/M Bills			$0.00	
AECOM Bills				
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	2.25	$126.72	
DPW Director	$67.34	2.00	$134.68	
			Total	$261.40

R/M Bills			$0.00	
AECOM Bills				
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$0.00

R/M Bills			$0.00	
AECOM Bills				
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$0.00

R/M Bills			$0.00	
AECOM Bills				
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$0.00

R/M Bills			$0.00	
AECOM Bills				
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$0.00

Post Construction Storm Water Management

Note: The City's Post Construction Site Storm Water Management Program Program includes pond inspections, review of maintenance agreements, plan review and permitting. Estimates are provided for Engineer Tech's review of Wagner Park Ponds and Civil Engineer's review of the Green Road Pond, the Pewaukee Sports Complex Ponds, City Hall Bio-infiltration device and the Rockwood Drive Pond. Developer driven expenditures are generally billed back to the Developer. Budget dollars are taken from line items under "Permit Compliance" in the Storm Water Utility Budget (one half of Numbers 230-53656-51290 and 230-53656-51950 and all of numbers 230-53656-52150 and 230-53656-53510).

Budget for Reporting Year $33,161.00 **Budget for Upcoming Year** $44,575.00

Annual Expenditures for Reporting Year $30,290.00

Project		Building	Wages	Hours	Total		
	Green Acres LLC Office	AECOM Bills			$1,078.50		
		Engineer Tech	$37.59	0.00	$0.00		
		Sr. Engineer Tech	$41.18	0.00	$0.00		
		Civil Engineer	$41.10	0.00	$0.00		
		Chief Engineer-Utilities	$56.32	4.50	$253.44		
		DPW Director	$67.34	0.00	$0.00		
						Total	$1,331.94
	Pewaukee Industrial South	AECOM Bills			$2,886.59		
		Engineer Tech	$37.59	0.00	$0.00		
		Sr. Engineer Tech	$41.18	0.00	$0.00		
		Civil Engineer	$41.10	1.00	$41.10		
		Chief Engineer-Utilities	$56.32	3.50	$197.12		
		DPW Director	$67.34	0.00	$0.00		
						Total	$3,124.81
	Glen at Parkway Ridge	AECOM Bills			$1,794.87		
		Engineer Tech	$37.59	0.00	$0.00		
		Sr. Engineer Tech	$41.18	0.00	$0.00		
		Civil Engineer	$41.10	2.25	$92.48		
		Chief Engineer-Utilities	$56.32	14.00	$788.48		
		DPW Director	$67.34	0.00	$0.00		
						Total	$2,675.83
	Swan View Farms Ph 1	AECOM Bills			$12,003.59		
		Engineer Tech	$37.59	0.00	$0.00		
		Sr. Engineer Tech	$41.18	0.00	$0.00		
		Civil Engineer	$41.10	0.00	$0.00		
		Chief Engineer-Utilities	$56.32	56.25	$3,168.00		
		DPW Director	$67.34	0.00	$0.00		
						Total	$15,171.59
	Swan View Farms Ph 2	AECOM Bills			$1,314.74		
		Engineer Tech	$37.59	0.00	$0.00		
		Sr. Engineer Tech	$41.18	0.00	$0.00		
		Civil Engineer	$41.10	2.25	$92.48		
		Chief Engineer-Utilities	$56.32	0.00	$0.00		

DPW Director	$67.34	0.00	$0.00	
			Total	$1,407.22

Klein Dickert Glass

AECOM Bills			$1,143.24	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	7.75	$436.48	
DPW Director	$67.34	0.00	$0.00	
			Total	$1,579.72

Green Road Pond Inspection

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	1.50	$61.65	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$61.65

Christ Evangelical Church

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	2.75	$154.88	
DPW Director	$67.34	0.00	$0.00	
			Total	$154.88

Waters Senior Living

AECOM Bills			$2,914.72	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	3.25	$133.58	
Chief Engineer-Utilities	$56.32	6.25	$352.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$3,400.30

Rainbow Childcare

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	3.75	$154.13	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$154.13

Woodleaf Reserve Phase 4

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	2.25	$92.48	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$92.48

City Hall Biofiltration Device

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	

Civil Engineer	$41.10	1.50	$61.65	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$61.65

Baenen_Northview Road

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	8.25	$464.64	
DPW Director	$67.34	0.75	$50.51	
			Total	$515.15

Briohn Builders Northmound Bldg

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	4.00	$164.40	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$164.40

Sports Complex Pond Inspections

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	7.00	$287.70	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$287.70

Rockwood Drive Pond Inspection

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$0.00

Wagner Park Pond Inspections

AECOM Bills			$0.00	
Engineer Tech	$37.59	2.75	$103.37	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$103.37

AECOM Bills			$0.00	
Engineer Tech	$37.59	0.00	$0.00	
Sr. Engineer Tech	$41.18	0.00	$0.00	
Civil Engineer	$41.10	0.00	$0.00	
Chief Engineer-Utilities	$56.32	0.00	$0.00	
DPW Director	$67.34	0.00	$0.00	
			Total	$0.00

Pollution Prevention

	2020 Budgeted	2020 Expenditure	2021 Budgeted
Catch Basin Cleaning and Maintenance	$20,636.00	$29,131.00	$45,000.00
Storm Inlets and Catch Basins	$250,000.00	$192,954.94	$250,000.00
Street Sweeping	$20,286.00	$17,288.79	$20,286.00
Ditch and Culvert Maintenance	$225,026.00	$254,628.72	$272,796.00
Storm Sewer Maintenance	$113,287.00	$54,643.66	$133,518.00
Yard Maintenance	$10,000.00	$0.00	$10,000.00
Yard Waste Recycling	$89,991.00	$91,113.45	$92,501.10
Totals	**$729,226.00**	**$639,760.56**	**$824,101.10**

Items reported here were typically broken out in the budget. Yard Maintenance used to be found under Permit Compliance. Storm Inlets and Catch Basins was found under Storm Water Projects. Ditch and culvert maintenance excludes any improvements associated with the Oak and Peninsula Project. Yard Waste Recycling was taken as a fraction of the budgeted and actual expenditures from Refuse Collection and Recycling (10.307% of totals).

Storm Water Quality Management

Budget for Reporting Year	$350,000.00
Expenditures for Reporting Year	$0.00
Budget for Upcoming year	$350,000.00

Storm Water Quality Management within the permit is the maintenance of the City's pollution reduction total at the time the law was changed to negate the 40% requirement. As there is no budget line item for this, I have included the budgeted costs for a new Storm Water Management Plan found under Projects. This would include a complete remodel for water quality purposes.

Storm Sewer System Mapping

Budget for Reporting Year	$5,000.00
Expenditures for Reporting Year	$6,999.90
Budget for Upcoming year	$5,000.00

Storm Sewer System Mapping is lumped within Storm Sewer Maintenance budget category. There is not breakout for this Asbuilt And Mapping in the 2020 Budget listing. Carried over the previous year budget amount for reporting purposes.

Item E

Waukesha County Contracted Program Summary Report & 2020-2024 Public Education and Outreach Plan

Target Audience	Topic #	Topic #	Topic #	Program Title	Activity/Event	Month	Year	Date	Location	# People see footnote	Description
Teachers and Students	2	3	5	soil/water	Presentation	Jan	2020	1-3-20	Oconomowoc	25	soil and water program for earth science class
Teachers and Students	2	3	5	soil/water	Presentation	Jan	2020	1-3-20	Oconomowoc	18	soil and water program for earth science class
Teachers and Students	2	3	5	career	Presentation	Jan	2020	1-10-20	New Berlin	60	career day at Orchard Lane Elementary
Teachers and Students	5			groundwater	Presentation	Jan	2020	1-29-29	Retzer	24	groundwater program for Kettle Moraine students
Teachers and Students	8	6			Presentation	Feb	2020	2-5-20	WCTC	6	presentation for sustainable building class
Teachers and Students	8	6			Presentation	Feb	2020	2-6-20	WCTC	12	presentation for sustainable building class
Teachers and Students	2	3	5	career	Presentation	Feb	2020	2-7-20	New Berlin	79	Elmwood Elementary Career Day
General Public	2	3	5		Displays and handouts	Feb	2020	2-8-20	Retzer	500	Wild Winter night event
Teachers and Students	7	5			Green Schools	Feb	2020	2-10-20	Prairie Hill Waldorf	1	provided rain barrel and diverter for use at the school
Teachers and Students	3	5		healthy soils	Presentation	Feb	2020	2-19-20	Waukesha	20	Banting Elementary 2nd grade
Teachers and Students	3	5		healthy soils	Presentation	Feb	2020	2-19-20	Waukesha	20	Banting Elementary 2nd grade
Teachers and Students	3	5		healthy soils	Presentation	Feb	2020	2-19-20	Waukesha	20	Banting Elementary 2nd grade
Teachers and Students	2	3	5	career	Presentation	Feb	2020	2-28-20	New Berlin	25	Poplar Creek Elementary Career Day
Teachers and Students	3	5		healthy soils	Presentation	Mar	2020	3-4-20	Retzer	24	Kettle Moraine School Disrict
General Public	3	5		home composting	Presentation	Mar	2020	3-5-20	Waukesha	16	Waukesha Wellness Center Lunch n Learn
General Public	9				Stream Monitoring	Mar	2020	3-7-20	Retzer	32	volunteer appreciation event
General Public	2	3	5	green home	Presentation	Mar	2020	3-9-20	Muskego	64	lunch n learn at Inpro
General Public	3	5		home composting	Presentation	Mar	2020	3-10-20	Waukesha	11	Waukesha Wellness Center Lunch n Learn
General Public	2	3	5	green home	Presentation	Mar	2020	3-14-20	Retzer	COV	spring workshops
General Public	3	5		home composting	Presentation	Mar	2020	3-14-20	Retzer	COV	spring workshops
Contractors, Dev. & Consul	1	6	8	stormwater wkshop	Presentation	Mar	2020	3-17-20	UW-Waukesha	154	annual stormwater workshop moved to virtual and was held in May
Busninesses	7	1	2	green masters	presentation	Mar	2020	3-18-20	Retzer	COV	stormwater infromation for businesses through Green Masters program
General Public	1	2	3		Displays and handouts	Mar	2020	3-18-20	Waukesha	COV	employee health and wellness fair
Teachers and Students	2	3	5	career	presentation	Mar	2020	3-19-20	New Berlin	COV	Ronald Reagan Elementary career day
Teachers and Students	5				presentation	Mar	2020	3-24-20	Retzer	COV	grade 2/3 workshop
General Public	2	3	5	green home	presentation	Mar	2020	3-31-20	Eagle	COV	program at Eagle library
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-14-20	Oconomowoc	COV	Silver Lake Intermediate School
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-14-20	Oconomowoc	COV	Silver Lake Intermediate School
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-14-20	Oconomowoc	COV	Silver Lake Intermediate School
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-15-20	Oconomowoc	COV	Silver Lake Intermediate School
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-15-20	Oconomowoc	COV	Silver Lake Intermediate School
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-15-20	Oconomowoc	COV	Silver Lake Intermediate School
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-17-20	Brookfield	COV	Brookfield Elementary
Teachers and Students	3	5		healthy soils	presentation	Apr	2020	4-17-20	Brookfield	COV	Brookfield Elementary
General Public	3	5		social media	social media	Apr	2020	4-19-20		1	composting message to kick off virtual earth week celebration
General Public	2	3	5	green home	presentaton	Apr	2020	4-20-20	Retzer	COV	Earth Day Event
Teachers and Students	3	5		soils	presentation	Apr	2020	4-21-20	Retzer	COV	Middle school
Teachers and Students	2	3	5	career	presentation	Apr	2020	4-22-20	Muskego	COV	Muskego HS career day
General Public	2			household elf	presentation	Apr	2020	4-23-20	Retzer	COV	girl scout night
Teachers and Students	2	3	5	career	presentation	Apr	2020	4-24-20	Mukwonago	800	Parkview middle school virtual career day-recorded program available to all students
General Public	2	3				Apr	2020	4-25-20	Retzer	COV	Earth day event
Teachers and Students	2	3	5	water resources	presentation	Apr	2020	4-28-20	Pewaukee	COV	5th grade
General Public	2	3	5	green home	presentation	Apr	2020	4-28-20	Pewaukee	COV	program at Pewaukee Library
General Public	5			social media	social media	May	2020	5-4-20		1	May the 4th composting and healthy soil message
General Public	5			social media	social media	May	2020	5-5-20		1	Revenge of the 5th--turn your soil to the dark side....with compost!
Contractors, Dev. & Consul	6	8			workshop	May	2020	5-5-20	statewide	149	online stormwater workshop- BMP maintenance and inspection and dewatering
Contractors, Dev. & Consul	6	8			workshop	May	2020	5-6-20	statewide	142	online stormwater workshop - artificial wetlands, green infrastructure and wetlands
Contractors, Dev. & Consul	6	8	3		workshop	May	2020	5-7-20	statewide	135	online stormwater workshop - constructed wetlands, leaf management
General Public	5	1		rain gardens and bar	presentation	May	2020	5-12-20	Muskego	20	online rain garden and rain barrel class for Inpro
General Public	2			social media	social media	May	2020	5-18-20		1	Green cleaners
Teachers and Students	5			green schools	green schools	May	2020	5-19-20	Menomonee Falls	1	rain garden plants for St. Mary's Menomonee Falls
General Public	2			social media	social media	May	2020	5-25-20		1	how to properly dispose of hazardous waste while spring cleaning
General Public	9			benchmark	Stream Monitoring	May	2020	5-26-20	Sussex	1	benchmark on Sussex Creek
General Public	9			benchmark	Stream Monitoring	May	2020	5-29-20	Waukesha	2	benchmark on Pewaukee River at the junction with the Fox
General Public	9			benchmark	Stream Monitoring	May	2020	5-28-20	Eagle	1	benchmark on Scuppernong river @Hwy Z
General Public	9			benchmark	Stream Monitoring	May	2020	5-29-20	Mukwonago	1	benchmark on Mukwonago River
General Public	9			benchmark	Stream Monitoring	May	2020	5-30-20	Waukesha	1	benchmark for level 2 on Pebble Creek at TT
General Public	9			benchmark	stream monitoring	Jun	2020	6-8-20	Oconomowoc	2	benchmark on Rosenow Creek
General Public	2			social media	social media	Jun	2020	6-8-20		1	storm drain education for world ocean day
General Public	2	3	5	green home	presentation	Jun	2020	6-16-20	Sussex	3	virtual Green home program through Sussex Library
General Public	9			benchmark	Stream Monitoring	Jun	2020	6-18-20	Waukesha	2	biotic index on Pewaukee River
General Public	9			benchmark	stream monitoring	Jun	2020	6-22-20	Genesee	2	benchmark monitoring on Genesee Creek and Spring Brook
General Public	9			benchmark	Stream Monitoring	Jun	2020	6-25-20	Mukwonago	2	benchmark on Mukwonago river at Rainbow Springs.
General Public	4	9		Asian Clam	Asian Clam survey	Jul	2020	7-7-20	Pewaukee	14	Asian Clan survey on Pewaukee River
General Public	3	5	6	Soil and Water	Soil and Water merit badg	Jul	2020	7-15-20	Retzer	19	Soil and Water merit badge workshop

General Public	1	2		Sustainability	Sustainability merit badge	Jul	2020	7-16-20	Retzer	19	Sustainability merit badge workshop
General Public	2			social media	social media	Jul	2020	7-20-20		1	proper disposal of household hazardous waste
General Public	1			social media	social media	Jul	2020	7-25-20		1	adopt a drain promo
General Public	1				news releases/articles	Jul	2020	7-27-20		1	adopt a drain press release
General Public	1			social media	social media	Jul	2020	7-27-20		1	proper disposal of used motor oil
General Public	1			social media	social media	Jul	2020	7-28-20		1	adopt a drain promo
General Public	1			morning blend	news releases/articles	Jul	2020	7-28-20			Adopt a drain segment on Morning Blend TV show
General Public	2			outreach	displays and handouts	Jul	2020	7-29-20		250	pick up after your pet message on coloring sheet for Hartland Kids Fest
General Public	2			social media	social media	Jul	2020	7-31-20		1	pet waste message for talk in an elevator day
General Public	1				Storm Drain Stenciling	Jul	2020		Menomonee Falls	1	volunteer contacted us and received 60 storm drain markers
General Public	1				Storm Drain Stenciling	Aug	2020		Brookfield	1	volunteer contacted us and received 20 storm drain markers
General Public	2			social media	social media	Aug	2020	8-3'20		1	pet waste message for work like a dog day
General Public	3			social media	social media	Aug	2020	8-8-20		1	composting message for sneak some zucchini on your neighbors porch day
General Public	1			social media	social media	Aug	2020	8-9-20		1	post on books--All the Way to the Ocean
General Public	3			social media	social media	Aug	2020	;8-10-20		1	post on lawn care for national lazy day
Teachers and Students	9			workshop	teacher workshop	Aug	2020	;8-11-20	Retzer	9	Citizen Science in the Classroom workshop
General Public	9			benchmark	Stream Monitoring	Aug	2020	8-13-20	Sussex	1	benchmark flow at Sussex Creek
General Public	1			morning blend	news releases/articles	Aug	2020	8-17-20		1	repeat of Adopt a drain segment on Morning Blend TV show
Teachers and Students	3	5		healthy soils	presentaition	Aug	2020	8-19-20	Retzer	30	virtual healthy soils for Sussex Day Camp
General Public	7				social media	Sep	2020	9-1-20		1	social media post on salt use
General Public	1			adopt a drain	Newsletters/articles	Sep	2020	9-3-20		79	newsletter for adopt a drain participants
General Public	4				social media	Sep	2020	9-4-20		1	social media post on lawn care
General Public	5				social media	Sep	2020	9-6-20		1	social media post on books--Handful of dirt
Contractors, Dev. & Consul	7			smart salting	training	Sep	2020	9-8-20		26	Smart salting for roads virtual workshop
Teachers and Students	3	5		healthy soils	Presentation	Sep	2020	9-9-20	Waukesha	23	healthy soils program for Prairie Elementary
Teachers and Students	3	5		healthy soils	presentation	Sep	2020	9-17-20	Waukesha	57	virtual healthy soils program for 3 classes at Rose Glen
Teachers and Students	3	5		healthy soils	presentation	Sep	2020	9-17-20	Oconomowoc	#	virtual healthy soils program for St. Jerome's-technical issues cancelled program
General Public	2				social media	Sep	2020	9-19-20		1	social media about pet waste
Contractors, Dev. & Consul	7			smart salting	training	Sep	2020	9-22-20		19	Smart Salting Parking lots virtual workshop
Teachers and Students	3	5		healthy soils	Presentation	Oct	2020	10-1-20	Muskego	72	program for Lakeview Elementary in Muskego Norway district
General Public	2				social media	Sep	2020	9-26-20		1	social media post about green cleaning
Teachers and Students	1				Presentaiton	Oct	2020	10-1-20	Retzer	14	stream life workshop at Retzer for school kids
Teachers and Students	1				Presentation	Oct	2020	10-1-20	Retzer	8	stream life workshop at Retzer for school kids
General Public	1				social media	Oct	2020	10-2-20		1	World smile day about adopting a storm drain
General Public	2	3		outreach	Displays and handouts	Oct	2020	10-6-20	Oconomowoc	125	National night out event
General Public	3	5			social media	Oct	2020	10-12-20		1	national farmer day post about testing soils before fertilization
General Public	1	3	5		social media	Oct	2020	10-13-20		1	national train your brain day crossword puzzle
Teachers and Students	3	5		healthy soils	Presentation	Oct	2020	10-15-20	Waukesha	35	healthy soils for Hadfield Elementary
Teachers and Students					Presentation	Oct	2020	10-15-20	Retzer	12	stream life workshop at Retzer for school kids
General Public	3	5		healthy soils	Presentaiton	Oct	2020	10-17-20		3	virtual program for science fest
General Public	3	5		soils	Presentaiton	Oct	2020	10-15-20		*	virtual program for soils and basement wetness for adults as part of science fest
General Public	2				social media	Oct	2020	10-24-20		1	post includes picking up pet waste for national make a difference day
Teachers and Students	1				Presentation	Oct	2020	10-27-20	Retzer	10	stream life workshop at Retzer for school kids
Teachers and Students	1				Presentation	Oct	2020	10-27-20	Retzer	7	stream life workshop at Retzer for school kids
General Public	2				social media	Nov	2020	11-1-20		1	social media post about using vinegar for green cleaning
General Public	3	5		healthy soils	presentation	Nov	2020	11-3-20	Retzer	4	outdoor classroom on soils
General Public	3	5		healthy soils	presentation	Nov	2020	11-3-20	Retzer	3	outdoor classroom on soils
General Public	3	5		healthy soils	presentation	Nov	2020	11-4-20	Retzer	12	outdoor classroom on soils
General Public	3	5		healthy soils	presentation	Nov	2020	11-4-20	Retzer	4	outdoor classroom on soils
Teachers and Students	2	3	5	water resources	presentation	Nov	2020	11-5-20	Waukesha	30	virtual program for school district of waukesha
General Public	3	5			social media	Nov	2020	11-8-20		1	social media post about soil health
General Public					social media	Nov	2020	11-17-20		1	social media post to get people to see exhibits at Retzer
General Public	3	5		healthy soils	presentation	Nov	2020	11-19-20	Retzer	10	outdoor classroom on soils
General Public	3	5		healthy soils	presentation	Nov	2020	11-19-20	Retzer	10	outdoor classroom on soils
General Public	7				social media	Dec	2020	12-8-20		1	social media post about salt use
Teachers and Students	1	3	5		presentation	Dec	2020	12-17-20	Sussex	18	water testing with biology students
General Public	1	3	5		social media	Dec	2020	12-21-20		1	social media post with crossword puzzle
Teachers and Students	1	3	5		presentation	Dec	2020	12-22-20	Sussex	14	water testing with AP students
Teachers and Students	1	3	5		presentation	Dec	2020	12-22-20	Sussex	21	water testing with AP students

COV indicates that program was cancelled due to COVID
* indicates that there were no participants
\# technical issues prevented program from happening

MS4 Public Education and Outreach Plan for Waukesha County Partner Communities 2020 to 2024

Permit Topic Areas	I&E Programs	Audience	Municipal I&E Plan Program Descriptions	2020	2021	2022	2023	2024	Municipal Activities (describe)	Passive or Active P/A
1. Illicit Discharge and Elimination	Storm Drain Stenciling	Teachers/Students, General Public	Continue to promote Storm Drain Stenciling (markers) especially as service learning project	X	X	X	X	X		A
	Adopt a Storm Drain	General Public, Businesses	Launch Adopt a Storm Drain Program with press release associated with World Water Day Set goal for # of adopters/year.	X	X	X	X	X		A
	social media	general public	media posts to help with launch of storm drain program	X	X	X	X	X		P
2. Household Hazardous Waste Disposal/Pet Waste Management/Vehicle Washing	HHW Collections	General Public	Partner with communities to host HHW collection events, website to help residents know how to dispose of items	X	X	X	X	X		A
	Watershed educational programs	Teachers/Students , general public	educational programs that cover pet waste and car washing	X	X	X	X	X		A
	Home Makeover: Green Edition program	General Public	program that covers pet waste, car washing and more	X	X	X	X	X		A
	Green Cleaning and Household Elf programs	General Public	program that covers toxic cleaners and safer alternatives	X	X	X	X	X		
	Displays and Handouts	General Public	Display that covers pet waste and car washing	X	X	X	X	X		P
	social media	General Public	timely posts on seasonal topics	X	X	X	X	X		P
3. Yard Waste Management/Pesticide and Fertilizer Application	Watershed educational programs	Teachers/Students , general public	educational programs that cover leaf management and fertilizers	X	X	X	X	X		A
	Home Makeover: Green Edition program	General Public	program that covers leaf management and fertilizer use	X	X	X	X	X		A
	Healthy Soils through Composting program	Teachers/Students	program that covers composting leaves and other yard waste	X	X	X	X	X		A

	Home Composting for Healthy Soils program	General Public	program that covers composting leaves and other yard waste	X	X	X	X	X		A
	Displays and Handouts	General Public	display with handouts that covers yard waste management and fertilizer use	X	X	X	X	X		P
	yard waste collection/processing	municipalities	work with municipalities to provide processing of yard wastes in partnership with Johnson Nursery	X	X	X	X	X		A
	social media	General public	timely posts on seasonal topics	X	X	X	X	X		P
4. Stream and Shoreline Management	Displays and Handouts	General Public	display with handouts that covers native plantings for shorelines	X	X	X	X	X		P
	Healthy Lakes Conference	Lakeshore property owners	Conference that covers shoreline restoration		X		X			A
5. Residential Infiltration	Rain Barrels/rain gardens workshop	General Public	program covering installation and use of rain gardens and rain barrels		X		X			A
	Displays and Handouts	General Public	Display that covers rain gardens and rain barrels as well as native plants	X	X	X	X	X		P
	Composting for Healthy Soils workshop	General Public	program that covers using compost to increase infiltration and water holding capacity of soils	X	X	X	X	X		A
	social media	General Public	timely posts on seasonal topics	X	X	X	X	X		
6. Construction Sites/Post-Construction Stormwater Management	Annual Stormwater Workshop	Developers. Builders, Contractors, Municipal Staff	workshop that covers a variety of topics regarding constructions sites and BMP management and maintenance	X	X	X	X	X		A
	Homeowners Assocation BMP maintenance workshop	Homeowners Associations	workshop that covers management and maintenance for BMP's	X	X	X	X	X		A
7. Pollution Prevention	Salt Management for Parking Lots Workshop	Businesses, Municipal staff, school facility staff	workshop that covers salting best management practices for sidewalks and parking lots	X			X			A

	Adopt a Storm Drain	Businesses	Launch Adopt a Storm Drain Program with press release associated with World Water Day Set goal for # of adopters/year.	X	X	X	X	X		A
	business resource webpage	businesses	launch website with resources specific to businesses	X	X	X	X	X		
8. Green Infrastructure/Low Impact Development	Green Infrastructure class	WCTC students	teach session in WCTC class on planning and development/building	X	X	X	X	X		A
	Annual Stormwater Workshop	Developers. Builders, Contractors, Municipal Staff	workshop that covers a variety of topics regarding constructions sites and BMP management and maintenance	X	X	X	X	X		A
Miscellaneous	Citizen Stream Monitoring	General Public	citizens trained to collect water quality data on local streams	X	X	X	X	X		A
	Municipal board/council meeting	General Public, elected officials	present annual workplan and report to public	X	X	X	X	X		A
	web page	General public	up to date information on pollution prevention and available programs	X	X	X	X	X		P

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 12.

DATE: April 19, 2021

DEPARTMENT: Public Works

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and Possible Action Regarding the First Amendment to the Developer's Agreement for Waters of Pewaukee [Wagner]

BACKGROUND:

The Waters of Pewaukee development has asked for the attached amendment to the Developer's Agreement which will allow the development to close on the property and secure the final funding for the project. The Amendment allows for the execution of the Developers Agreement, but does not allow for the construction to begin until plans are approved by the City.

FINANCIAL IMPACT:

NA

RECOMMENDED MOTION:

Common Council to approve the First Amendment to the Developer's Agreement for Waters of Pewaukee contingent on City Engineer and City Attorney comments.

ATTACHMENTS:

Description

First Amendment to the Developers Agreement

FIRST AMENDMENT TO
DEVELOPER'S AGREEMENT
FOR
WATERS OF PEWAUKEE
CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN

THIS FIRST AMENDMENT TO DEVELOPER'S AGREEMENT, made and entered into this _____ day of _____, 2021, by and between The Waters Senior Living Management, LLC, a Delaware limited liability company, hereinafter collectively and individually called the "Developer," and the CITY OF PEWAUKEE, a Wisconsin municipal corporation of the State of Wisconsin, hereinafter called the "City."

WITNESSETH:

WHEREAS, the DEVELOPER and CITY entered into DEVELOPER'S AGREEMENT FOR WATERS OF PEWAUKEE CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN ("Developers Agreement") on the ___ day of _____, 2021, attached hereto and incorporated herein, hereinafter called "SUBJECT LANDS"; and

WHEREAS, pursuant to Section I. A. 1. of the Developers Agreement, it is provided:

> Prior to the start of construction of public street improvements, the DEVELOPER shall provide to the CITY written certification from the DEVELOPER'S Engineer or Surveyor that all public street plans are in conformance with all federal, state, county and CITY specifications, regulations and ordinances, and written proof from the CITY Engineer evidencing review and approval of said plans; and

WHEREAS, pursuant to Section I. B. 1. of the Developers Agreement, it is provided:

> Prior to the start of construction of sanitary sewer improvements, DEVELOPER shall provide to the CITY written certification from the DEVELOPER's Engineer that the sanitary sewer plans are in conformance with all Federal, State and CITY specifications, regulations, ordinances and guidelines and written proof that the CITY Engineer has approved said plans; and

WHEREAS, pursuant to Section I. C. 1. of the Developers Agreement, it is provided:

> Prior to the start of construction of water improvements, DEVELOPER shall provide to the CITY written certification from the DEVELOPER's Engineer that the water system plans are in conformance with all Federal, State and CITY specifications, regulations, ordinances and guidelines and written proof that the CITY Engineer has approved said plans; and

WHEREAS, pursuant to Section I. D. 1. of the Developers Agreement, it is provided:

> Prior to the start of construction of surface and storm water facilities, the DEVELOPER shall provide to the CITY written certification from the DEVELOPER'S Engineer or Surveyor that all surface and storm water drainage facilities plans are in conformance with all federal, state, county and CITY regulations, guidelines, specifications, laws and ordinances; and

WHEREAS, DEVELOPER has not yet provided to the CITY written certification from the DEVELOPER'S Engineer or Surveyor that all of the street, sanitary sewer, water and surface and storm waters plans are in conformance with all federal, state, county and CITY regulations, guidelines, specifications, laws and ordinances, but nonetheless wishes to acquire the SUBJECT LANDS and begin to grade the SUBJECT LANDS under terms of a Grading and Stockpiling of Fill Material Agreement that has been executed between the Parties; and

WHEREAS, the DEVELOPER and CITY wish to clarify the terms of the Developers Agreement pertaining to commencement of construction of development of the SUBJECT LANDS.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Parties agree that no construction shall be permitted nor commenced, except for grading work permitted under the Grading and Stockpiling of Fill Material Agreement, until the City Engineer issues written confirmation that DEVELOPER has provided to the CITY plans and specifications for the street, sanitary sewer, water and surface and storm waters plans conforming with all federal, state, county and CITY regulations, guidelines, specifications, laws and ordinances.

All other terms and conditions of the Developers Agreement shall remain in full force and effect.

The Waters Senior Living Management, LLC

By:_____
Authorized Signatory

STATE OF WISCONSIN)
)ss.
COUNTY OF WAUKESHA)

Personally came before me this _____ day of _____, 2021, the above named _____, Authorized Signatory of The Waters Senior Living Management, LLC, to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____
NOTARY PUBLIC, STATE OF WI
My commission expires:_____

CITY OF PEWAUKEE

_____
Steve Bierce, Mayor

_____
Kelly Tarczewski, Clerk

STATE OF WISCONSIN)
)ss.
COUNTY OF WAUKESHA)

Personally came before me this _____ day of _____, 2021, the above-named Steve Bierce, Mayor, and Kelly Tarczewski, Clerk, of the above-named municipal corporation, to me known to be the persons who executed the foregoing instrument and to me known to be such Mayor and Clerk of said municipal corporation and acknowledged that they executed the foregoing instrument as such officers as the deed of said municipal corporation by its authority and pursuant to the authorization by the CITY Common Council from their meeting on the _____ day of _____, 2021.

_____
NOTARY PUBLIC, STATE OF WI
My commission expires:_____

APPROVED AS TO FORM:

_____
CITY Attorney

EXHIBIT A

Subject Lands

Part of the Southwest Quarter of Section 14, Township 7 North, Range 19 East, in the City of Pewaukee, Waukesha County, Wisconsin, bounded and described as follows:

Beginning at a point on the West line of the Southwest Quarter of Section 14, said point being due South of and 1022.57 feet distant from the West Quarter corner of said Section; thence continuing due South along said West line, 175.00 feet; thence due East, 278.58 feet; thence due North, 175.00 feet; thence due West 278.58 feet to the place of beginning.

Excepting Therefrom the West 50 feet for highway purposes.
Further Excepting Therefrom those lands conveyed in Warranty Deed filed February 25, 2003, as Document No. 2939466.

Tax Key Number: PWC 0919.991

Parcel 1:

That part of the Southwest Quarter (1/4) of the Southwest Quarter (1/4) of Section Fourteen (14), Township Seven (7) North of Range Nineteen (19) East, bounded and described as follows: to wit:

Beginning at the Northwest corner of the Southwest Quarter of the Southwest Quarter aforesaid, on the West line of said Section; thence East on Subdivision line of said Section, Twenty (20) chains to a post; thence South six (6) chains and twenty- five (25) links to a post on the division line; thence West twenty (20) chains to a post on the section line, thence North on said Section line six (6) chains and twenty-five (25) links to the place of beginning.

Pewaukee County, Wisconsin

Parcel 2:

That part of the Northwest Quarter (1/4) of the Southwest Quarter (1/4) of Section Fourteen (14), Township Seven (7) North, Range Nineteen (19) East bounded and described as follows: to wit:

Commencing at a point eighteen (18) rods and ten and one-half (10 1/2) links North on the Section line from the Southwest corner of said Northwest Quarter (1/4) of the Southwest Quarter (1/4) of said Section Fourteen (14), running thence South eighteen (18) rods and ten and one-half (10 1/2) links to the last mentioned corner; thence East eighty (80) rods to the one-eighth (1/8th) line; thence North on the one-eighth (1/8th) line five (5) chains and ninety (90) links to the center of Old Plank Road; thence in a Northwesterly direction along the center of said Plank Road, nine (9) chains to a stake; thence South and parallel with the West line of said Section twenty-four (24) rods and four (4) links to a stake; thence West fifty (50) rods to the place of beginning. Excepting that parcel conveyed to Libby M. Hagedorn by Quit Claim Deed filed May 1, 1968, as Document Nos. 711495 and 711496 being bounded and described as follows: Beginning at a point on the West line of the Southwest 1/4 of Section 14, said point being due South and 1,022.57 feet distant from the West 1/4 corner of said Section; thence continuing due South along said West line, 175.00 feet; thence due East 278.58 feet; thence due North 175.00 feet; thence due West 278.58 feet to the place of beginning. Excepting the West 50 feet thereof for highway purposes. Also excepting the land conveyed to Waukesha County by Warranty Deed filed June 25, 2003, as Document 3013002.

LESS AND EXCEPT that part of the Southwest Quarter of Section 14, Township 7 North, Range 19 East, more particularly described as follows:

Beginning at a point on the West line of said Section 14 that is 1197.57 feet South 0 degrees 10 minutes 12 seconds East of the West Quarter corner of said section; thence continuing South 0 degrees 10 minutes 12 seconds East 541.87 feet along said West line to a point on the owners Southerly property line; thence South 89 degrees 19 minutes 42 seconds East 50.01 feet along said Southerly property line to a point; thence North 0 degrees 10 minutes 12 seconds West 542.61 feet to a point on the South line of those lands described in Volume 1120 of Deeds, Page 580 of Waukesha County Records; thence South 89 degrees 49 minutes 48 seconds West 50.00 feet along said property line to the point of beginning.

Also all those lands described on Reel 177 of Records, as Image 454, Waukesha County Records, that lie between the following described centerline of relocated C.T.H. "SS" and a line 50.00 feet Southwesterly of said centerline as measured normal to it. Said centerline is described as follows: Commencing at the East Quarter corner of Section 15, Township 7 North, Range 19 East, Town of Pewaukee; thence South 0 degrees 10 minutes 12 seconds East 71.08 feet to a point; thence North 56 degrees 7 minutes 12 seconds West 429.46 feet to the point of beginning of said centerline; thence South 61 degrees 36 minutes 16 seconds East 613.55 feet to a point of curve; thence along the arc of a 3 degrees 0 minutes 0 seconds curve 370.30 feet to a point, said curve having a center lying to the Southwest, a radius of 1909.86 feet and a long chord of 369.72 feet bearing South 55 degrees 03 minutes 00 seconds East; thence South 50 degrees 29 minutes 43 seconds East 399.43 feet to a point of curve; thence along the arc of a 3 degrees 0 minute 0 seconds curve 203.93 feet to a point, said curve having a center lying to the northeast, a radius of 1909.86 feet, and a long chord of 203.84 feet bearing South 53 degrees 33 minutes 15 seconds East; thence South 56 degrees 36 minutes 48 seconds East 600 feet to a point; said point being the end of said relocated centerline of C.T.H. "SS".

Pewaukee County, Wisconsin

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 13.

DATE: April 19, 2021

DEPARTMENT: PW - Water/Sewer

PROVIDED BY: Magdelene Wagner/Jane Mueller

SUBJECT:

Discussion and Possible Action Regarding the Award of the Bid for the Well No. 5 HMO Treatment Facility & Building Modification to the Lowest Qualified Bidder, J. H. Hassinger, Inc., in the amount of $2,613,667.00 [Wagner / Muller].

BACKGROUND:

Since 2014, Well No. 5 has had on and off violations for gross alpha and/or combined radium. In January 2020, the Department of Natural Resources (DNR) issued a notice of violation for the exceedance of combined radium and enforcement conference was held in February 2020. The City received the final Consent Order from the DNR in September 2020 requiring construction of the corrective actions by May 31, 2022 and full compliance with the regulations by May 31, 2023.

The Utility had completed testing of an HMO Treatment System on this well in response to the first DNR violation in 2014. Upon receipt of the Consent Order in 2020, the Utility commenced the design of the HMO Treatment System and associated building.

The project was bid recently and had two bidders which J. H. Hassinger, Inc. was the lowest bidder.

FINANCIAL IMPACT:

The 2021 Water Capital budget included $3,400,000 for the Well No. 5 HMO Treatment Facility & Building Modification.

The estimated contract award is $2,613,667 and with a 25% engineering, administration, and contingencies, the contract is expected to total $3,267,084 which is less than the budgeted amount.

The Water Utility will be borrowing for these funds.

RECOMMENDED MOTION:

Common Council award the Well No. 5 HMO Treatment Facility & Building Modification contract to the lowest qualified bidder, J. H. Hassinger, Inc., in the amount of $2,613,667.00.

ATTACHMENTS:

Description

Recommendation of Award

Consent Order

April 9, 2021

Magdelene J. Wagner, P.E.
Director of Public Works
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

RE: Well Station No. 5 HMO Treatment Facility & Building Modifications – Recommendation of Award

Dear Magdelene:

Bids for the above project were opened on March 22, 2021 at 10:00 a.m. at City Hall and were as listed on the attached bid tabulation.

We reviewed the documentation submitted by the apparent low bidder and found that:

1. The Bid Form has been appropriately completed.

2. We have no objections to the low bidder, nor to the proposed major subcontractors' suppliers.

3. Low bidder has successfully completed similar projects over the last three years according to our direct experience with them.

On these bases, we recommend that J.H. Hassinger, Inc. be awarded the Well Station No. 5 HMO Treatment Facility & Building Modifications contract, approval of project in the amount of $ 2,613,667.00. This amount includes the Base Bid and Alternate 3A. This amount is based on the bid unit prices and estimated quantities. Actual quantities, and therefore the final contract price, may vary. On all construction projects, unpredictable factors may increase the final contract amount. For this reason, we recommend that the City of Pewaukee include a 10 percent contingency when preparing the financial plan for this work.

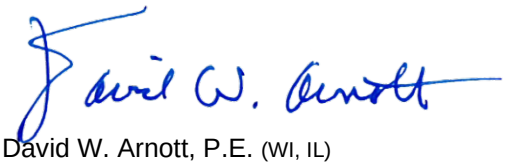
Our review did not include an evaluation of bidder's current financial condition nor of their permanent safety program.

Should you decide to accept our recommendation, we have prepared the enclosed Notice of Award for your use. Please have the appropriate official sign where indicated and forward all three signed copies of the Notice of Award to our office. We will then fill in the date at the top of page one and forward it, with contracts for execution, to the Contractor. One fully completed Notice of Award will be returned to you for your records.

Bids remain subject to acceptance until May 20, 2021, unless Bidder agrees to an extension. Please advise us of your award decision or call if there are any questions.

Respectfully,

RUEKERT & MIELKE, INC.



David W. Arnott, P.E. (WI, IL)
Team Leader/Senior Project Manager
darnott@ruekert-mielke.com

DWA:acl
Encl: Notice of Award
Bid Tabulation

cc: Jane Mueller, City of Pewaukee
Donald J. Heikkila, P.E., Ruekert & Mielke, Inc.
Kenneth R. Ward, P.E., Ruekert & Mielke, Inc.

Ruekert • Mielke
W233 N2080 Ridgeview Parkway

Waukesha, WI 53188-1020

COST COMPARISON OF BIDDERS

OWNER: City of Pewaukee
PROJECT: Well Station No. 5 HMO Treatment Facility and Building Modifications
BID OPENING DATE: March 22, 2021

BASE BID				J. H. Hassinger, Inc.		Staab Construction	
ITEM #	ITEM DESCRIPTION	UNIT	QTY.	UNIT $	TOTAL	UNIT $	TOTAL
1	HMO treatment system	LS	1	$806,194.00	$806,194.00	$693,000.00	$693,000.00
2	Well station modifications	LS	1	$272,008.00	$272,008.00	$532,000.00	$532,000.00
3	Reservoir rehabilitation	LS	1	$194,000.00	$194,000.00	$108,000.00	$108,000.00
4	Garage addition	LS	1	$699,945.00	$699,945.00	$600,000.00	$600,000.00
5	Well pump replacement	LS	1	$422,030.00	$422,030.00	$64,000.00	$64,000.00
6	All other work	LS	1	$128,893.00	$128,893.00	$631,000.00	$631,000.00
7	Allowances	LS	1	$35,000.00	$35,000.00	$35,000.00	$35,000.00
TOTAL OF ALL ESTIMATED PRICES (ITEMS 1 - 7)					**$2,558,070.00**		**$2,663,000.00**
MANDATORY ALTERNATE A							
3A.	Reservoir and clearwell piping replacement	LS	1	$55,597.00	$55,597.00	$45,000.00	$45,000.00
TOTAL OF ALL MANDATORY ALTERNATE A ESTIMATED PRICES					$55,597.00		$45,000.00
TOTAL OF ALL ESTIMATED PRICES					**$2,613,667.00**		**$2,708,000.00**

NOTICE OF AWARD

		Date of Issuance:	_____
		Owner:	City of Pewaukee
Contract:	Well Station No. 5 HMO Treatment Facility and Building Modifications	Owner's Contract No.:	WU – 21-12817
Bidder:	J.H. Hassinger, Inc.	Engineer:	Ruekert & Mielke, Inc.
Address:	N60 W16289 Kohler Lane	Engineer's Project No.:	26-10103.200
	Menomonee Falls, WI 53051		

TO BIDDER:

You are notified that your Bid dated March 22, 2021 for the above Contract has been accepted by Owner and you are the Successful Bidder and are awarded a Contract for:

Base Bid and Alternate 3A

The Contract Price of your Contract is: $ 2,613,667.00

3 copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award, or have been transmitted or made available to Bidder electronically.

5 sets of the Drawings will be delivered separately, or otherwise made available to Bidder electronically.

Bidder must comply with the following conditions precedent within 15 days of the date of issuance of this Notice of Award:

1. Deliver to Engineer 2 fully executed counterparts of the Contract Documents.
2. Deliver with the executed Agreement the Bid security as specified in the Instructions to Bidders (Article 21), General Conditions (Paragraph 6.01), and Supplementary Conditions (Paragraph SC-6.01).
3. Deliver with the executed Agreement certificates and other evidence of insurance as specified in the General Conditions (Article 6) and the Supplementary Conditions modifying Article 6 of the General Conditions.

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Engineer will return to you one fully executed counterpart of the Agreement.

Owner**:** City of Pewaukee

Signature: _____
Authorized Signature

Title: _____

Date: _____

Copy: Engineer

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

September 30, 2020

Steve Bierce, Mayor
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

PWSID #26802149
Waukesha County

Subject: Final Consent Order

Dear Mayor Bierce:

Attached is an original signed copy of the Consent Order which requires the City of Pewaukee (Pewaukee) to come into compliance with the drinking water radium Maximum Contaminant Level requirements at Entry Point 5.

The Consent Order is now in effect and enforceable. The Department looks forward to working with you to meet the compliance commitments established in this agreement.

If you have any questions on this Consent Order, please contact Sadie Derouin, Environmental Enforcement Specialist, at (608) 622-8247. Please direct any technical questions to Tony Ratarasarn, Drinking Water Engineer, at (262) 574-2134.

Sincerely,

Shaun C. Deeney

Shaun C. Deeney, Section Chief
Investigations and Environmental Enforcement
Bureau of Law Enforcement

cc: Sadie Derouin
Tony Ratarasarn
Jesse Jensen
Beth Goldowitz
Adam DeWeese
Steve Elmore
Diane Milligan

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

In the Matter of the Exceedance of the Combined Radium Maximum Contaminant Level	)	PWSID #26802149
in the Public Water Supply in the City of Pewaukee, Waukesha County, Wisconsin	))	2019-SEEE-City of Pewaukee EP5

FINDINGS OF FACT, CONCLUSIONS OF LAW AND CONSENT ORDER

FINDINGS OF FACT

1. The City of Pewaukee, whose mailing address is W240 N3065 Pewaukee Road, City of Pewaukee, Waukesha County, Wisconsin, owns and operates a public water system (Pewaukee). Pewaukee is a community water system, as defined in s. NR 809.04(5), Wisconsin Administrative Code (Wis. Adm. Code, because it has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. It is a municipal water system, as defined in s. NR 811.02(41), Wis. Adm. Code, because it is a community water system owned by a city. Pewaukee Well 5, Wisconsin Unique Well Number (WUWN) FN814, a.k.a. Entry Point 5 or EP5, located at W226 N930 Northmound Drive, City of Pewaukee, Wisconsin, is part of the public water system.

2. Pewaukee is a groundwater system that is supplied with water by 12 wells with the following Wisconsin Unique Well Numbers (WUWN):

Well 1, WUWN BH442	Well 7, WUWN TO501
Well 2, WUWN BH443	Well 8, WUWN WO067
Well 3, WUWN KW576	Well 9, WUWN BO775
Well 4, WUWN AY366	Well 10, WUWN AX416
Well 5, WUWN FN814	Well 11, WUWN KW578
Well 6, WUWN LK033	Well 12, WUWN WP351

3. In the interest of protecting public health and safety, the federal Safe Drinking Water Act (SDWA) and ch. NR 809, Wis. Adm. Code, require community water systems such as Pewaukee to submit routine drinking water compliance samples for various chemical parameters, including radionuclides.

4. Section NR 809.04(51), Wis. Adm. Code, defines the maximum contaminant level (MCL) as the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

5. The MCL for combined radium-226 and radium-228 is 5 picocuries per liter (pCi/L), per s. NR 809.50(1)(a), Wis. Adm. Code. The MCL for gross alpha particle activity is 15 pCi/L, per s. NR 809.50(1)(b), Wis. Adm. Code.

6. For community water systems monitored more frequently than annually, compliance with the radionuclide MCLs is determined by a running annual average for each sampling point, per s. NR 809.53(3)(c)1., Wis. Adm. Code. Pewaukee monitors quarterly at EP5.

7. On January 23, 2014, Pewaukee exceeded the MCL for gross alpha particle activity at EP5, which is 15 pCi/l, with a running annual average of 16.26 pCi/L. The Department of Natural Resources (department) issued a Notice of Non-compliance dated January 15, 2014, a Notice of Violation

dated August 6, 2014, and an Enforcement Conference was held on August 18, 2014. Pewaukee and the department entered into consent order #2014-SEEE-015 on December 3, 2014 which was later extended on September 17, 2015. By April 2016, without installing treatment, Pewaukee achieved 4 consecutive quarterly samples at EP5 that were compliant with the gross alpha MCL. The 2014 consent order was closed on August 3, 2016.

8. Based on running annual average sample results from EP5 during 2018 and 2019, Pewaukee exceeded the MCL for combined radium, which is 5 pCi/L, with an average of 5.75 pCi/L:

City of Pewaukee – EP5			
Monitoring Date	Sample ID	Combined Radium Result (pCi/L)	Running Annual Average (pCi/L)
December 5, 2018	1095456	5.203	4.71
January 22, 2019	1102265	5.59	5.00
April 22, 2019	1116618	6.38	5.35
July 16, 2019	1134927	5.84	5.75

9. In a Notice of Violation/Notice of Claim dated January 17, 2020, the department sent written notification to Pewaukee that its results for combined radium exceeded the drinking water standard at EP5 and required that Pewaukee must return to compliance as provided by the SDWA and s. NR 809.53(3)(c), Wis. Adm. Code.

10. The department held an enforcement conference with Pewaukee on February 5, 2020 to discuss Pewaukee's corrective action options.

11. The department sent an Amended Notice of Violation to Pewaukee on May 7, 2020 correcting inaccurate data shown on the sampling table in the January 17, 2020 NOV.

CONCLUSIONS OF LAW

1. The department has the authority under s. 281.17(8), Wis. Stats., to establish and administer a Safe Drinking Water Program, including issuance of rules. Such rules are contained in ch. NR 809, Wis. Adm. Code.

2. Community water systems are required to comply with the MCL for radionuclides listed in s. NR 809.50 (1), Wis. Adm. Code.

3. Community systems monitored more than once per year shall collect and analyze quarterly samples and are deemed to be in compliance if the calculated running annual average at each of their sampling points does not exceed the MCL as outlined in s. NR 809.53(3)(c)(1), Wis. Adm. Code.

4. A community water system that is out of compliance with the radionuclide MCLs and that must treat to reduce radionuclide levels below the MCLs specified in s. NR 809.50 (1), Wis. Adm. Code, is required to achieve compliance using one of the best available technologies listed in Table J, K or L under s. NR 809.50, Wis. Adm. Code.

5. Section 281.98 (1), Wis. Stats., establishes that any person who violates an order issued pursuant to ch. 281, Wis. Stats., may be required to forfeit not less than $10 nor more than $5,000 for each violation. Each day of continued violation is a separate offense.

6. The department has authority under ss. 281.19(2) and 280.13(1)(c), Wis. Stats., to issue this order.

7. This consent order is reasonable and necessary to accomplish the purposes set forth in ch. 281, Wis. Stats., and is enforceable under ss. 299.95 and 299.97, Wis. Stats.

CONSENT ORDER

The department orders and Pewaukee agrees to meet the following schedule of action:

1. Pewaukee shall provide quarterly public notification of the violation of the combined radium MCL, under s. NR 809.952, Wis. Adm. Code, until compliance with the combined radium standard is achieved at EP5. Pewaukee shall repeat the notice every three months and notify department water supply engineer Tony Ratarasarn on a quarterly basis that the public notice is in place or has been redistributed.

2. Pewaukee shall take corrective action to reduce combined radium in the water supply and return to compliance with the MCL. Corrective action options include permanently removing Well 5 from service, reconstructing the existing well, constructing a new well, blending with water from uncontaminated well(s) or installing and operating treatment in accordance with the Best Available Technologies (BATs) set forth in s. NR 809.50(3), Wis. Adm. Code.

3. Pewaukee shall, by no later than October 30, 2020, submit to the department complete plans and specifications for reducing combined radium at EP5. Plans and specifications shall be sent to the attention of the Wisconsin Department of Natural Resources, Public Water Engineering Section Chief, PO Box 7921, Madison, Wisconsin 53707. The department may require an engineering report and pilot study, depending on the type of corrective action proposed.

4. The department shall review any plans and specifications, and approve the plans and specifications, with or without modifications, or reject the plans and specifications and make suggestions for any necessary revisions within 90 days of receipt.

5. After obtaining department approval, Pewaukee shall complete construction of the corrective actions and any required water quality monitoring at EP5 by May 31, 2022.

6. After construction of corrective actions has been completed and prior to startup, Pewaukee shall contact Water Supply Engineer, Tony Ratarasarn, to arrange an inspection. The inspection shall be completed and, per NR 810.26(1), Wis. Adm. Code, written authorization from the department is required before placing the corrective action into service.

7. No later than 7 days after system startup following implementation of the corrective action, Pewaukee shall collect its first quarterly entry point compliance sample from EP5 and have it analyzed for radionuclides at a Safe Drinking Water Act Certified laboratory.

8. Pewaukee shall collect three additional consecutive quarterly entry point compliance samples from EP5 and have them analyzed for radionuclides at a Safe Drinking Water Act Certified laboratory. Per ss. NR 809.04(71) and 809.53, Wis. Adm. Code, compliance shall be determined by the running annual average of four consecutive quarterly samples.

9. Pewaukee shall return to compliance with the combined radium MCL by May 31, 2023.

10. Pewaukee may not implement any corrective actions without first obtaining department approval.

11. Pewaukee shall comply with all terms and conditions provided in any department approval.

12. The department shall determine the effectiveness of the corrective actions taken and establish a routine monitoring schedule thereafter.

13. The department may seek penalties for failing to comply with the terms of this consent order, pursuant to ss. 281.98(1), 299.95 and 299.97, Wis. Stats.

14. This consent order may be amended in writing upon mutual agreement of both parties.

WAIVER AND STIPULATION

The City of Pewaukee stipulates to the issuance of this consent order and hereby waives further notice and statutory rights to demand a hearing before the Department of Natural Resources regarding the foregoing Findings of Fact, Conclusions of Law and Consent Order under ss. 227.42, 281.19(8), Wis. Stats., or under any other provision of law and waives its rights to challenge this consent order in circuit court under ss. 227.52 and 227.53, Wis. Stats., or any other provision of law. The City of Pewaukee further stipulates and agrees that the consent order is effective and enforceable after being signed by the parties and may be enforced in accordance with ss. 299.95 and 299.97, Wis. Stats.

The undersigned certify that they are authorized to execute such consent order, waiver, and stipulation.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

BY: _____ Date: Sept. 30, 2020

Steve Sisbach, Section Chief
Environmental Enforcement & Emergency Management
Bureau of Law Enforcement

For the City of Pewaukee

BY: _____ Date: 9/28/2020

Steve Bierce, Mayor

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 14.

DATE: April 19, 2021

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Discussion and Possible Action Regarding Affordable and Multi-Family Housing [Mayor Bierce]

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 15.

DATE: April 19, 2021

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Discussion and Possible Action to Appoint Anne Golombowski to the Board of Review [Mayor Bierce]

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

Golombowski Resume

ANN GOLOMBOWSKI

N25W27031 Lauren Ct.
Pewaukee, WI 53072

262-309-3119
ladycop59@wi.rr.com

PROFILE:

I am retired from the Oak Creek Police Department where I served for 30 years; 15 as a patrol officer and 15 as a detective. Prior to joining the Oak Creek Police Department, I worked for the Milwaukee Police Department for 13 months as a patrol officer.

Since retiring I have worked in customer service at Westwood Health and Fitness, as a delivery driver for Amazon and as a Fraud Analyst for BMO Harris Bank.

Since 2017, I have been working on obtaining my Real Estate Appraisal License. I have completed my education through WCTC and McKissock. I have approximately 1500 hours of appraisal experience and am familiar with using MLS and Total (al a mode). I also take continuing education classes through McKissock along with webinars to keep my up to date on appraisal procedures.

EMPLOYMENT EXPERIENCE:

Fraud Analyst, BMO Harris Bank

Uncovering and investigating deposits made using fraudulent checks, ATM deposits, and illegal transfers. Account takeovers, governmental income fraud (unemployment, stimulus checks, SBA loans).

Service Desk Employee, Westwood Health and Fitness - 2019 - 2020

Greet members, check them in and assign them a locker, answer phone and direct calls to correct location, clean

locker room, wash and fold towels and any other assignment that was needed from me.

Detective, Oak Creek Police Department — 2005 - 2019

Investigate all form of crime including homicide, other death investigations, property crimes, financial crimes, including fraud, theft, identity theft, and computer generated fraud; sexual and physical abuse/assault complaints (child and adult), and computer generated crimes against children. Interview victims, suspects and witnesses.

Do forensic investigation of financial records as well as all types of financial documents. Prepare search warrants, affidavits and reports. Prepare reports, including word documents as well as spreadsheets. During my time as a detective, I belonged to Internet Crimes Against Children (ICAC), the Wisconsin Association of Homicide Investigators, for which I held numerous offices, including vice president and president. I also belonged to the International Association of Homicide Investigators, the Wisconsin Association of Financial Investigators and the Wisconsin Association of Identification.

Patrol Officer, Oak Creek Police Department — 1989 – 2005

Conduct traffic enforcement. Investigate reported crimes.

Crime Prevention Officer for 6 years and as such interact with the citizens of Oak Creek to educate them on self security and home security. Work with businesses to assist them in lessening their losses due to crime.

Court Officer for three years. Prepare all files for charging at the Milwaukee County District Attorney's Office. Create a policy for the Milwaukee County DA's Office to streamline the process for the suburban police departments.

Patrol Officer, Milwaukee Police Department - 1988 - 1989

Law Enforcement responsibilities for the City of Milwaukee.

Legal Secretary, Henry A. Tessmer & Associates Law Offices — 1977 – 1988

All secretarial duties including preparation of documents, transcribing dictation, preparation of files, billing, reception, scheduling.

EDUCATION

Bay View High School — Graduated, 1976

UW-Milwaukee, majoring in Medical Technology, 1976 - 1977

Milwaukee Area Technical College - Adult Vocational School - 1981-1982

Waukesha County Technical College - 2017-2018

McKissock Learning - Appraisal Licensing - 2017 - Present.

On going trainings and certifications as a police officer and detective - 1989 - 2019.

SKILLS:

I am highly organized, self-motivated and use my time very efficiently. I can type approximately 75 words per minute. I am articulate and am very detailed in my work.I work well under pressure and can multi task with proficiency.

As a legal secretary I was a Notary Public and know the responsibilities of this position.

I am proficient in Microsoft Office, Pages and Excel for preparation of documents and spreadsheets.

I am computer literate and am familiar with the use of fax machines, photocopy, shredding, scanning and all other office type of equipment.

Through my employment both in law enforcement and as a service desk employee I know how to handle any situation that should arise in dealing with the public.

OBJECTIVE:

To utilize the skills I learned as a detective as well as my training in the field of real estate appraisal to become a certified real estate appraiser.

REFERENCES:

Professional:

Captain Michael Bolender, Oak Creek Police Department, 301 W. Ryan Road, Oak Creek, WI 53154, 414-766-7606.

Lieutenant David Ashenhurst, Oak Creek Police Department, 301 W. Ryan Road, Oak Creek, WI 53154, 414-766-7631.

Personal:

Roberto and Cyndi Lozano, 2525 S. Shore Dr., 14C, Milwaukee, WI 53207, Roberto – 414-745-3979 - Cyndi – 414-324-1459 (Retired Law Enforcement Officers)

Andrea Fendry – 5732 Clover Lane, Greendale, WI 53129, 414-758-9300 (Attorney and Real Estate Appraiser)

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 16.

DATE: April 19, 2021

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Attorney Riffle to Swear In Aldermen Bergman, Clark and Wamser

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM •

DATE: April 19, 2021

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

§19.85(1)(e): Deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session, specifically for the consideration to acquire additional land for the Department of Public Works facilities at Green Road / Duplainville Road.

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION: