#### **NOTICE**

#### Village of Roberts Plan Commission Meeting Thursday, March 3, 2022 7:00 PM

#### GoTo Meeting Information below for online access Agenda

The regularly scheduled Village of Roberts Plan Commission meeting and will begin at 7:00 PM on March 3, 2022 at the Roberts Village Hall.

#### Regular Plan Commission Agenda:

- 1. Call to order
- 2. Proper notification
- 3. Building Inspectors Report
- 4. Review/recommendation the impact of growth on the Clearas Wastewater capacity.
- 5. Review/recommend future Robert's growth approach.
- 6. Discussion/recommend with James Jermain from AT&T for potential broadband grant.
- 7. Review/recommend Ordinance #2022-02VB to amend Sec. 70-42 Accessory use and structure setback requirements.
- 8. Review/recommend Ordinance #2022-03VB to amend Sec 66-54(6)c to update the east sewer interceptor charges.
- 9. Discussion/recommendation for the annexation of 2.003 acres from Warren Township for Kwik Trip (formerly owned by James and Betty Hilpert).
- 10. Review/recommend Kwik Trip's site plan.
- 11. Discussion with Alex Miller on the proposed housing on Jennifer Rae Jct.
- 12. Review/recommend T-Buck/Trevor Bruce's residential development between Division St S. and Cherry Ln for private road proposal and number of annual units considered for the future development.
- 13. Discussion regarding the concept plan for Nature Energy for a site in the rail park.
- 14. Review/recommend the variance request for Nature Energy for the height of the silos
- 15. Review/recommend the Conditional Use Permit for Nature Energy
- 16. Update on needs assessment and Impact Fees.
- 17. Update on Joint Comprehensive Plan with Warren Township.
- 18. Items for future agenda.
- 19. Adjourn

Items on the agenda may not be presented in this order.

There may be a quorum of Village Board members present during the meeting

Agenda may change up to 24 hours before meeting

Megan Dull, Village Clerk

Please join my meeting from your computer, tablet or smartphone.

https://meet.goto.com/410861013

You can also dial in using your phone.

(For supported devices, tap a one-touch number below to join instantly.)

United States (Toll Free): 1877 309 2073

- One-touch: tel:+18773092073,,410861013#

United States: +1 (571) 317-3129

- One-touch: tel:+15713173129,,410861013#

Access Code: 410-861-013

**BUILDING PERMIT** 

**TOTALS** 

Printed: 2/28/2022 9:10 am

26

26

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Page 1 of 1

RESIDENTIAL CONSTRUCTION								
RESIDENTIAL RENOVATIONS								
Owner/Address	Description/Permit #	Est	imated Value					
NYENHUIS, RYAN	BASEMENT FINISH		30,000					
341 DAKOTA AVE 54023	B-22-220065							
TOTAL RESIDENTIAL RENOVATIONS	1		30,000					
TOTAL # OF BUILDING PERMITS / VALUE:		1	30,000					
CERTIFICATES OF OCCUPANCY								
DATE ISSUED ADDRESS		TYPE						
2/24/2022 412 SIERRA PL 54023		PERMANENT						
2/24/2022 410 SIERRA PL 54023		PERMANEI	T					
2/24/2022 408 SIERRA PL 54023		PERMANEN	NT					
TOTAL PERMIT & INSPECTION FEES COLLECTED:		460.00						
PROJECT CODE RECAP								
PERMITS BY TYPE	# OF PERMITS	ESTIM	ATED VALUE					
BASEMENT FINISH	1		30,000					
TOTALS	1		30,000					
INSPECTIONS BY TYPE								
PERMIT TYPE	# OF INSPECTIONS	RES	COMM					

26

26



#### **MEMORANDUM**

To: Roberts Plan Commission

From: Angi Goodwin

Date: March 1, 2022 Project No.: 23-0737.19

Re: Development and Wastewater Treatment Capacity

#### Wastewater Treatment Plant (WWTP) Capacity:

	Total Flow	Cost
Existing Flows	100,000 gpd	
Clearas Capacity	150,000 gpd	
Clearas Capacity with added Tubes	180,000 gpd	\$200,000
Clearas Capacity with added Greenhouse	330,000 gpd	\$3,800,000
SBR Capacity	300,000 gpd	
SBR Capacity with Modifications	465,000 gpd	\$TBD

#### **Development Considerations: (see spreadsheets)**

	Estimated Flow	Comments
Platted and Approved Lots – Residential	15,000 gpd	140 units, 380 ppl
Platted and Approved Lots – Comm and Ind	1,600 gpd	
Active Developments – Comm and Ind	2,700 gpd	
Total Platted and Approved and Active	19,000 gpd	
Total WWTP Flow	119,000 gpd	
Annual - Unplatted Residential at 10% Growth	7,600 gpd	70 units, 190 ppl
Annual - Commercial and Industrial Estimate	5,000 gpd	included in below numbers
Annual - Total Added WWTP Flow per Year	12,600 gpd	
Allow All Platted and 70 Annual Unplatted Res		
2022 YEAR END, includes all platted/approved	132,000 gpd	+ 210 res units, 570 ppl
2023 YEAR END	144,000 gpd	+ 70 res units, 190 ppl
2024 YEAR END	157,000 gpd	+ 70 res units, 190 ppl
2025 YEAR END	170,000 gpd	+ 70 res units, 190 ppl
2026 YEAR END	182,000 gpd	+ 70 res units, 190 ppl
		- I-I
25% Annual Platted and Total 10% Growth		
2022 YEAR END, includes 25% platted (35 units)	116,000 gpd	+ 70 res units, 190 ppl
2023 YEAR END, includes 25% platted (35 units)	129,000 gpd	+ 70 res units, 190 ppl
2024 YEAR END, includes 25% platted (35 units)	142,000 gpd	+ 70 res units, 190 ppl
2025 YEAR END, includes 25% platted (35 units)	155,000 gpd	+ 70 res units, 190 ppl
2026 YEAR END	167,000 gpd	+ 70 res units, 190 ppl
•		

Page 1 of 1



#### VACANT LOT AND DEVELOPMENT SUMMARY - ESTIMATED WASTEWATER DISCHARGE MARCH 2022 - ROBERTS, WISCONSIN

		Open Units		Gallons Per Day	
	Land Use	Feb 2022	Acres	(gpd)	Comments
Platted/Approved Lots					
Mobile Home Park	Residential	44	The state of the state of	4,800	110 gpd/unit; (6) of (44) recently pulled permits but not using water yet
Ash and Maple Street	Residential	5		600	110 gpd/unit; double lots could be subdivided
CTH TT/Cherry Lane Multi Family	Residential	4		400	110 gpd/unit; vacant lot
Newell and S. Meadow Lane	Residential	7		800	110 gpd/unit; vacant lots with S. Meadow Lane Extension
Sharondale Vacant Single Family	Residential	6	6501	700	110 gpd/unit; vacant lots
Sharondale Multi Family	Residential	40		4,400	110 gpd/unit; vacant lots
Rolling Meadows Sierra Place	Residential	10	Section 2	1,100	110 gpd/unit; Lots 410, 412, 416-423
Rolling Meadows Susan Lane	Residential	3	943 May 12 A	300	110 gpd/unit; vacant lots
Rolling Meadows 8th Addition	Residential	20	6827016	2,200	110 gpd/vnit; approved
Cherry Lane South Multi Family	Residential	8		1,400	110 gpd/unit; Ed's vacant lot east of senior housing
Main Street, 3 lots	Commercial		1	500	500 gpd/acre; old grocery store, Wilkins lot, Hancock lot
1880 Warehouse Expansion	Industrial		30	200	300 gbu/acre; old grocery store, wilkins for, Hancock for
	maustriai		30	200	based on existing use, 2/3 land available, warehouse expansion plus building site
Platted/Approved Lots- Wastewater Subtotal		147		17,400	cpo.
Transprippioned and production of the control of th	Marko and the Park	14/	CONTRACTOR OF THE PARTY OF	17,400	GPD
Platted/Approved Lots Outside of Current Utility Service Area	Charles A Debugger	MANUSCO CO.	Dayconstan	AND DESCRIPTIONS	
River States Trucking	Commercial	Marshaul .	60	3,000	500 and/arre calculates high Instead use 50 employees v.15 and/arrelaines v.2V even 4500 v.1.4500
US Minerals	Industrial	SECRETARIA PROPERTY.	19	1,400	500 gpd/acre calculates high, Instead use 50 employees x 15 gpd/employee x 2X area = 1500 gpd +1500 gpd detailing 75 gpd/acre
West of US Minerals	Industrial	Park Car Story	10	800	75 gpd/acre
County Materials	Industrial	100	140	3,800	
THE STREET WAS BUILDING TO SHEET WITH THE PARTY OF THE PA	masum		140	3,800	75 gpd/acre calculates high, instead use 250 employees x 15 gpd/employee = 3,800 gpd
Platted/Approved Lots Outside of Current Utility Service	Area - Wastewate	r Subtotal	No.	9,000	GPD
A STATE OF THE STA		Juniotal	- DOATES	5,000	
Active Developments in Village Limits					
Kwik Trip	Commercial	ON SHOW	18	2,500	Based on Kwlk Trip estimates and Flying J comparison
Nature Energy	Industrial		30	200	Based on 15 employees x 15gpd/employee = 225 gpd
	A Section of the Section		STATE OF STREET	200	Sace on as employees x 13gpa/employee = 223 gpu
Active in Village Limits - Wastewater Subtotal	AS ASSESSMENT OF THE PARTY.			2,700	GPD
				21.00	
Other Potential Developments in Village Limits			DEAL BRIDE	As constitution to the	
Rolling Meadows Remaining Sierra Place	Residential	88	11	9,680	8 units/acre x 110 gpd/unit
Rolling Meadows Northwest Area	Residential	23		2,500	110 gpd/unit
USH 12 North of Church	Residential	2.5	18	7,920	440 gpd/acre
Townsedge STH 65/CTH TT	Residential	117	10	12,900	
Townsedge STH 65/CTH TT	Commercial	11/	7	3,500	110 gpd/unit
South of 70th and West of Flying J	Comm/Ind		35		500 gpd/acre
West and North of Kwik Trip	Commercial		26	17,500	500 gpd/acre
Northeast STH 65 and 70th Avenue	Commercial			13,000	500 gpd/acre
Northeast IH 94 and STH 65		A CLIP COST & MUCH	135	67,500	500 gpd/acre
West of River States Trucking	Commercial	P. Yan Lindowski,	4	2,000	500 gpd/acre
Southeast IH 94 and STH 65	Commercial		45	22,500	500 gpd/acre
	Commercial	15 W S 7 15 15	6	3,000	500 gpd/acre
Rall Park - Remaining Lots less Nature Energy	Industrial		55	4,100	75 gpd/acre
Northwest of 70th and 130th	Industrial		130	9,800	75 gpd/acre
East of County Materials	Industrial		160	12,000	75 gpd/acre
Other in Village Limite, Microscope Cuber 1		e-g-12492			
Other in Village Limits - Wastewater Subtotal	W. M. Markey, N.	ALTERNATIVE AND A	A CONTRACTOR OF THE	187,900	GPD
Proposed Annexations				Horizonia e de la composición de la co	
T-Buck Residential - Phase I	Residential	257		28,300	110 and live
T-Buck Residential - Other Phases	Residential	771			110 gpd/unit
The state of the s	nesidential	//1		84,800	110 gpd/unit
Proposed Annexations - Water Use Subtotal		4 1 1 2 2 2		113,100	SDD SDD
				113,100	GPD
Existing WWTP Flow (February 2022)	202-362-963-	actional lines	Water last top	100,000	
Platted/Approved Lots in Current Utility Service Area				17,400	data well a second during the data of the
Platted/Approved Lots outside of Current Utility Service Area	ESCHOLIS CONTRACTOR	AND DESCRIPTION OF THE PERSON NAMED IN	ALEXANDER OF THE	9,000	determine percent development and timeframes
Active Developments in Village Limits					determine percent development and timeframes
Other Potential Developments in Village Limits		17 11 11 11 11		2,700	determine percent development and timeframes
Proposed Annexations			Harris San San San San	187,900	determine percent development and timeframes
Lichozen Villiexariolis				113,100	determine percent development and timeframes
Total Future WWTP Flow			arabid Maria III	100 100	
AND COLOR OF STREET, S			A CHARLES	430,100	
Clearas Existing Capacity	and the second second	PROPERTY AND ADDRESS OF THE PARTY AND ADDRESS		150 000	
Clearas with added tubes, \$200k, adds 30,000 gpd				150,000	
		and sold and	DOMESTIC OF	180,000	
Clearas also add greenhouse, \$3.8M, adds 150,000 gpd				330,000	
SBR Treatment Existing Capacity	A STATE OF THE STA		DE PAUL DE	300,000	
SBR Treatment Expanded Capacity, adds 165,000 gpd	Best Dr. Schill best like	SERVICE SERVICE		465,000	
			1		

NOTES: Residential Unit Water Use:

GPD/UNIT --- 2.7 people/unit x 40 gpd/person = USE 110 gpd/unit
UNITS/ACRE --- 4 units per acre average density, 110 gpd/unit x 4 acres/unit = USE 440 gpd/acre
Commmercial Water Use:

Commmercial Water Use:

EXAMPLES --- Flying J/McD's uses 7500 gpd/10 acres = 750 gpd/acre

Kwik Trip estimates 2500 gpd/18 acres = 140 gpd/acre

GPD/ACRE --- typical is 1,500 gpd/acre but per examples USE 500 gpd/acre

Industrial Water Use (no wet industry):

EXAMPLES --- typical use is 15 gpd/employee for dry industry

--- Phoenix Fixtures uses 111 gpd/18 acres = 6 gpd/acre

--- SOS Manufacturing uses 366 gpd/4 acres = 90 gpd/acre

has 50 employees, expect 50 x 15 gpd/employee = 750 gpd

---- B&H Machines uses 33 gpd/3 acres = 10 gpd/acre

---- Mallard estimates 13,400 gpd/98 acres = 136 gallons/acre

GPD/ACRE --- for dry industry: as average, USE 75 gpd/acre

#### VACANT LOT AND DEVELOPMENT SUMMARY - ESTIMATED WASTEWATER DISCHARGE MARCH 2022 - ROBERTS, WISCONSIN

	Land Use	Open Units Mar 2022	Acres	Gallons Per Day (gpd)	RES Percent Allowed	IDENTIAL Gallons Per Day (gpd)		AND INDUSTR Gallons Per Day (gpd)
Platted/Approved Lots		A CONSTRUCTION			SCHOOL SECTION SEC		EAST-COLORS	
Mobile Home Park	Residential	44		4,800				
Ash and Maple Street	Residential	5		600	MARKE		15/20/20/20	
CTH TT/Cherry Lane Multi Family	Residential	4		400		Selections		
Newell and S. Meadow Lane	Residential	7		800	51838JA		California.	
Sharondale Vacant Single Family	Residential	6		700			松公公司	
Sharondale Multi Family	Residential	40		4,400				
Rolling Meadows Sierra Place	Residential	10		1,100	<b>多数位置</b>		10 V-10	Marie Control
Rolling Meadows Susan Lane Rolling Meadows 8th Addition	Residential	3		300		San Paris da	E-16109	
Cherry Lane South Multi Family	Residential	20		2,200	W 1977000		de la	Mark Street
Main Street, 3 lots	Residential Commercial	8		1,400	DIM/SECTO		30,542	
1880 Warehouse Expansion	Industrial		1	500	10000000			
2000 Walchouse Expansion	industrial		30	200	William Toleran			MACCO STATE
Platted/Approved Lots- Wastewater Subtotal				17,400	90%	15,030	100%	700
Platted/Approved Lots Outside of Current Utility Service Area	A STANSON OF STREET	CONTRACTOR SPECIAL	11 TO 1 6 GO	DATE: 0.00 005045	SHOW	19-554 (000000)	THE PERSONS	CONTROL SUMMERS AND ADDRESS OF THE PARTY.
River States Trucking - 50 emp x 2 + detailing	Commercial	200 B	60	3,000	P. C. Carrier			
US Minerals	Industrial	ST #13-33/2	19	1,400		THE STATE OF THE STATE OF		
West of US Minerals	Industrial	E CONTRACTOR OF THE PARTY OF TH	10	800	THE RESERVE	CONTRACTOR AND A SECOND	No. of the	ACCOUNT OF THE PARTY OF
County Materials - 250 employees	Industrial	200250	140	3,800	CALL TO SE	PARTICIPATE OF THE PARTY OF THE	THE PERSON NAMED IN	Corporate to the second
	WAY THE REAL PROPERTY.	2557255		50000000000000000000000000000000000000	が設備を	STATE OF THE STATE	ESTABLE F	NO CONTRACTOR
Platted/Approved Lots Outside of Current Utility Service Ar	ea - Wastewater S	Subtotal	MONTH OF THE	9,000			10%	900
Active Developments in Village Limits								( ) ( ) ( ) ( ) ( ) ( )
Kwik Trip	Commercial	5/45/2015/01	18	2,500				
Nature Energy	Industrial		30	200		A.C.		
Active in Village Limits - Wastewater Subtotal	to yet			2,700			100%	2,700
Other Potential Developments in Village Limits	A law eye Physics and a	100 PM 100 PM	No. of Contract of	See Association Anni	Park like of the	special arresponded to the		80 FeB 20 Con 1 Co. 1990
Rolling Meadows Remaining Sierra Place	Residential	88	11	9,680				
Rolling Meadows Northwest Area	Residential	23	- Name I and the last	2,500				
USH 12 North of Church	Residential	dero de la	18	7,920		A STATE OF THE STATE OF		
Townsedge STH 65/CTH TT	Residential	117	r such your	12,900	11111207			
Townsedge STH 65/CTH TT	Commercial	The state of the s	7	3,500	1750 2/ HZ41			
South of 70th and West of Flying J	Comm/Ind	Contract to the	35	17,500				
West and North of Kwik Trip	Commercial	To the same of the	26	13,000	ak a de certes	STATE OF STREET		
Northeast STH 65 and 70th Avenue	Commercial	19-20-20-20-20-20-20-20-20-20-20-20-20-20-	135	67,500	Your barry			of Them see and
Northeast IH 94 and STH 65	Commercial	Carrier Land	4	2,000				
West of River States Trucking	Commercial		45	22,500	Bart State			
Southeast IH 94 and STH 65	Commercial		6	3,000	e proprietation		Refer v.56	
Rail Park - Remaining Lots less Nature Energy	Industrial	A Committee of the	55	4,100			A. S. S. S. S. A.	
Northwest of 70th and 130th	Industrial	St. British .	130	9,800	2-3-5-1		16-16-16-1	
East of County Materials	Industrial		160	12,000	Mark the	Marin Hoye and		A Secretary
Other in Village Limits - Wastewater Subtotal				187,900				
Proposed Annexations								
T-Buck Residential - Phase I	Residential	257		20.200				
T-Buck Residential - Other Phases	Residential	771		28,300				
, back residential Other (1836)	Residential	7/1		84,800				
Proposed Annexations - Water Use Subtotal				113,100				
Existing WWTP Flow (February 2022)		250200000	1.00	100,000		Variable State		43.7852 July 4502
Platted/Approved Lots in Current Utility Service Area		139		15,730		15,030		700
Platted/Approved Lots outside of Current Utility Service Area		And the Children's Park	<b>不可以的</b>	900	100 6400	0	40.00	900
Active Developments in Village Limits				2,700		0		2,700
TOTAL CURRENT COMMITMENTS FOR ADDED WASTEWATER DIS	CHARGE			19,330	Res.	15,030	Com/Ind	4,300
RUNNING TOTAL WITH CURRENT COMMITMENTS FOR WASTEW	ATER DISCHARGE			119,330				
Max. Unplatted Residential Annual at 10% Growth - 190 ppl/2.7 Estimated Annual Commercial and Industrial	ppl per unit = 70 u	inits		7,560 5,000	Res.	7,560	Com/Ind	5,000
ADDED ANNUAL WASTEWATER DISCHARGE			-	12,560			,	_,,,,,,
2022 YEAR END								
2023 YEAR END				131,890				
2024 YEAR END				144,450				
2025 YEAR END				157,010				
2026 YEAR END				169,570				
				182,130				· · · · · · · · · · · · · · · · · · ·
Clearas Existing Capacity Clearas With added tubes, \$200k, adds 30,000 gpd				150,000				
Clearas also add greenhouse, \$3.8M, adds 150,000 gpd				180,000 330,000				
SBR Treatment Existing Capacity			<b>Market</b>	300,000				
SBR Treatment Expanded Capacity, adds 165,000 gpd	Ave the second of the	<b>国际国际的</b>		465,000				

#### VILLAGE OF ROBERTS ST. CROIX COUNTY, WISCONSIN

#### ORDINANCE NO. 2022-02VB

### AN ORDINANCE AMENDING THE MUNICIPAL CODE FOR THE VILLAGE OF ROBERTS, WISCONSIN

The Village Board of the Village of Roberts, Wisconsin, hereby ordains Section 70-42(b) of the Municipal Code of the Village of Roberts, St. Croix County, Wisconsin, is hereby amended to read as follows:

#### Sec. 70-42. Accessory use and structure setback requirements.

(b) All detached accessory structures or uses shall not be closer than ten feet from any other structure on the property unless an approved fire separation is installed. All detached accessory structures and uses shall not exceed 15 feet in height in all Residential and Conservancy Districts. Accessory structures and uses may be up to 20 feet in height in all other Districts. The accessory building should be a minimum of five feet from the side yard and a minimum of five feet from the rear yard. When, in the judgment of the zoning administrator or plan commission, it is determined that, due to the configuration of the lot or principal of accessory structures on the lot, such accessory uses or structures are or may become a visual or audible nuisance, they shall require the owner of such accessory uses or structures to screen them by use of dense vegetation, aesthetic fencing, structural barriers, or a combination thereof based on a specific plan drawn to scale.

Adopted by the Village Board on	, 2022.
	VILLAGE OF ROBERTS
	By: Willard Moeri, President
	Attest: Megan Dull, Village Clerk
	Megan Dun, vinage Cierk
Published:, 2022	

#### VILLAGE OF ROBERTS ST. CROIX COUNTY, WISCONSIN

#### ORDINANCE NO. 2022-03VB

## AN ORDINANCE AMENDING THE MUNICIPAL CODE FOR THE VILLAGE OF ROBERTS, WISCONSIN

The Village Board of the Village of Roberts, Wisconsin, hereby ordains Section 66-54(6)c. of the Municipal Code of the Village of Roberts, St. Croix County, Wisconsin, is hereby amended to read as follows:

c. In addition, any property serviced by the east sewer interceptor will have an additional charge as follows:

Year	Area Developed	Hookup Cost for Interceptor
2011-2015	<.5 acres	\$720.00
	0.5 to 1.0 acres	\$1,440.00
	> 1.0 acre	\$1,440.00 per acre
2016-2020	<.5 acres	\$875.00
	0.5 to 1.0 acres	\$1,750.00
	> 1.0 acre	\$1,750.00 per acre
2021-2025	<.5 acres	\$1,035
	0.5 to 1.0 acres	\$1,700
	> 1.0 acre	\$1,700 per acre

Charges beyond the year 2025 will be determined in a similar manner, depending on actual inflation rates. The costs for each subsequent five-year period will be determined prior to the period (i.e., costs for the years 2026-2030 will be determined by the end of year 2025).

Adopted by the Village Board on			, 2022.
		VILLA	GE OF ROBERTS
		By:	
			Willard Moeri, President
		Attest:	
			Megan Dull, Village Clerk
Published:,	2022		



TONY EVERS
GOVERNOR
KATHY BLUMENFELD
SECRETARY

Municipal Boundary Review
PO Box 1645, Madison WI 53701
Voice (608) 264-6102 Fax (608) 264-6104
Email: wimunicipalboundaryreview@wi.gov
Web: http://doa.wi.gov/municipalboundaryreview

February 23, 2022

PETITION FILE NO. 14482

MEGAN DULL, CLERK VILLAGE OF ROBERTS 107 E MAPLE ST ROBERTS, WI 54023-9703 DEINA SHIRMER, CLERK TOWN OF WARREN 720 112TH ST ROBERTS, WI 54023

Subject: KWIK TRIP ANNEXATION

The proposed annexation submitted to our office on February 09, 2022, has been reviewed and found to be in the public interest. In determining whether an annexation is in the public interest, s. 66.0217 (6), Wis. Stats. requires the Department to examine "[t]he shape of the proposed annexation and the homogeneity of the territory with the annexing village or city...." so as, to ensure the resulting boundaries are rational and compact. The statute also requires the Department to consider whether the annexing city or village can provide needed municipal services to the territory. The subject petition is for territory that is reasonably shaped and contiguous to the VILLAGE OF ROBERTS, which is able to provide needed municipal services.

The Department reminds clerks of annexing municipalities of the requirements of s. 66.0217 (9)(a), Wis. Stats., which states:

"The clerk of a city or village which has annexed shall file immediately with the secretary of administration a certified copy of the ordinance, certificate and plat, and shall send one copy to each company that provides any utility service in the area that is annexed. The clerk shall record the ordinance with the register of deeds and file a signed copy of the ordinance with the clerk of any affected school district..."

State and federal aids based on population and equalized value may be significantly affected through failure to file with the Department of Administration. Please file a copy of your annexing ordinance, including a statement certifying the population of the annexed territory. Please include your MBR number 14482 with your ordinance. Ordinance filing checklist available at <a href="http://mds.wi.gov/">http://mds.wi.gov/</a>, click on "Help on How to Submit Municipal Records". Email scanned copy of required materials (color scan maps with color) to <a href="mailto:mds.wi.gov">mds.@wi.gov</a> or mail to: Wisconsin Department of Administration, Municipal Boundary Review, PO Box 1645, Madison WI 53701-1645.

The petition file is available for viewing at: <a href="http://mds.wi.gov/View/Petition?ID=2556">http://mds.wi.gov/View/Petition?ID=2556</a></a>
Please call me at (608) 264-6102, should you have any questions concerning this annexation review.

Sincerely,

Erich Schmidtke, Municipal Boundary Review

Gland Lee

cc: petitioner



#### **MEMORANDUM**

TO:

Nate Byom, Development Coordinator / Project Manager, Kwik Trip, Inc.

FROM:

Josh Woller, PE (Lic. WI, IL, IN, MI)

DATE:

February 21, 2022

RE:

Kwik Trip Store 1260 Traffic Impact Analysis

SEH No. 164910 14.00

Kwik Trip is proposing a new fuel station / convenience store plus truck stop in the northwest quadrant of STH 65 & 70<sup>th</sup> Avenue in the Village of Roberts. The proposed development site is a 21.6-acre site which is currently occupied by a farm field and a residential parcel. As part of the development and permitting process, the Village of Roberts has requested a traffic impact analysis to be conducted to determine the impacts the new development will have on the adjacent roadway network. Short Elliott Hendrickson, Inc (SEH) conducted a traffic impact analysis to identify existing traffic volumes on the adjacent street system, the traffic expected to be generated by the proposed development, and the operational impacts on the local roadway network.

As part of the development two separate access alternatives were reviewed.

Alternative 1 includes a new proposed village street connection on 70<sup>th</sup> Avenue that will connect between the existing truck entrance and exit driveways for the Flying J Travel Center. This is proposed to be a full access point. Under this scenario all site generated traffic will utilize 70<sup>th</sup> Avenue. The proposed site access driveways will be provided along this new north/south street connection.

Alternative 2 includes the full access connection on 70<sup>th</sup> Avenue (Alternative 1), but also includes a second access point that will be requested on STH 65 at the north end of the proposed site. This will also be a village street connection and will provide right-in/right out access only and create a village street loop around the site. To provide analysis results the proposed access at STH 65 the EB right turn was modeled under stop control conditions. The ultimate configuration will provide a free flow movement due to a lane add at the intersection. A project location map and the site plan are included with Attachment A to this memorandum.

This memorandum documents the procedures, findings, and conclusions of the traffic impact analysis.

#### Study Area / Data Collection

The traffic study area is along STH 65 and 70<sup>th</sup> Avenue. SEH completed AM and PM peak hour turning movement traffic counts, utilizing video camera equipment, at the following signalized intersections that are located adjacent to the proposed development:

STH 65 & 70<sup>th</sup> Avenue

The data that was collected was then utilized to determine AM and PM peak hour volumes at the Flying J truck entrance driveway and truck entrance driveway. The overall study analyzes five (5) intersections:

- Node #3 STH 65 & 70<sup>th</sup> Avenue
- Node #15 70<sup>th</sup> Avenue & Flying J Passenger Car Driveway (East)
- Node #9 70<sup>th</sup> Avenue & Flying J Truck Entrance Driveway (West)
- Node #11 70<sup>th</sup> Avenue & Flying J Truck Exit Driveway (Center)
- Node #7 70<sup>th</sup> Avenue & Proposed Village Street Connection (Proposed)
- Node #13 STH 65 & Proposed Village Street Connection Right-in/right-out (Proposed)

The study area intersections were analyzed for the AM and PM peak traffic periods. Based on traffic counts conducted by SEH on Wednesday, December 22, 2021, the weekday AM peak hour was identified as 7:00am to 8:00am and the weekday PM peak traffic hour was identified as 4:30 pm to 5:30 pm. The existing traffic volumes for the study area are included with Attachment B.

There is currently no pedestrian facilities or public transportation facilities within the vicinity of the project.

#### **Evaluation of Existing Conditions**

The study area intersections were analyzed using procedures set forth in the *Highway Capacity Manual* 6<sup>th</sup> *Edition (HCM)*. Level of service (LOS) is the metric by which roadway operations are defined based on the delay/congestion experienced by users of the facility. LOS ranges from LOS A, little to no delay/congestion, to LOS F, significant delay/congestion. WisDOT practice is to maintain LOS D or better, where practical, during peak hour operations. Descriptions of the various levels of service are as follows:

- LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized and unsignalized intersections, average delays are less than 10 seconds.
- LOS B represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.
- LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.
- LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays
  to approaching vehicles may be substantial during short peaks within the peak period, but
  periodic clearance of long lines occurs, thus preventing excessive backups. At signalized
  intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections,
  average delays are 25 to 35 seconds.
- LOS E represents the capacity of the intersection. At signalized intersections, average vehicle
  delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50
  seconds.
- LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

The existing traffic operations capacity analysis is based on the existing geometrics and existing traffic control. Table 1 summarizes the weekday AM and PM peak hour traffic operating conditions for the

existing background traffic. Table 2 summarizes the weekday AM and PM peak hour 95<sup>th</sup> percentile queues for the existing background traffic. Synchro/SimTraffic Version 11, HCM outputs are included in Attachment C.

Table 1
Existing Conditions LOS, by Movement

Existing Conditions 200, by Movement															
			Level of Service												
Intersection Traffi		Peak Hour	Eastbound			V	Vestbou	ınd	N	orthbou	nd	Southbound			
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
STH 65 & 70 <sup>th</sup>	Traffic	AM		D	D		D		Α	А	А	А	В	А	
Avenue	Signal Control	PM		D	D		D		Α	Α	Α	Α	Α	Α	
70 <sup>th</sup> Avenue &	, , , , , , , , , , , , , , , , , , ,		Α			Α			Α			***			
Flying J Car Driveway	Strop Control	PM		Α			Α			A					
=oth •	One-way	AM		Α		А		А							
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α			Α		A						
70 <sup>th</sup> Avenue &	One-way	AM	8 Trac	A			Α	8 8		Α					
Flying J Truck Entrance	Strop Control	PM		Α			Α	Α		Α					

All the intersection movements at the study area intersections operate acceptably with LOS D or better during the AM and PM peak hours.

Table 2
Existing Conditions 95<sup>th</sup> Percentile Queues, by Movement

	Existing Conditions 95. Fercentile Quedes, by Movement														
1, 17		Peak Hour	95 <sup>th</sup> Percentile Queues (Feet)												
Intersection	Traffic Control		Eastbound			Westbound			Northbound			Southbound			
5 5 5			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
STH 65 & 70 <sup>th</sup>	Traffic	AM	(	69			109		67	78	2	15	153	33	
Avenue*	Signal Control	PM	;	38	73		47		93	151	5	11	115	2	
70 <sup>th</sup> Avenue &	, Alvi		0			15			48						
Flying J Car Driveway	Strop Control	PM		0			34			54					
=oth 4	One-way	AM		0		0			96						
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		0			0		88						
70 <sup>th</sup> Avenue &	One-way	AM		0			13	,		0					
Flying J Truck Entrance	Strop Control	PM		0		12		0							

Existing queues are contained within existing storage areas. No blocking of intersections or driveways is shown. To determine the full extent of future queues the values reported in all the tables for STH 65 & 70<sup>th</sup> Avenue is from a model showing only the STH 65 & 70<sup>th</sup> intersection. The purpose of this was to eliminate all nodes that may limit the length of queues reported. All other queues are reported are part of the full project model.

#### Site Traffic Forecasting

To address any potential future traffic impacts at the study area intersections, it is necessary to identify the hourly volume of traffic generated by the anticipated development. The traffic volumes expected to be generated are based on the size and type of the proposed use and on trip rates as published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition.* 

#### **Trip Generation**

Expected peak hour trips were determined by using the *ITE Trip Generation Manual 10<sup>th</sup> Edition*. Based on the proposed development type land use code 950 – Truck Stop was utilized for the diesel fuel pumps and code 960 – Super Convenience Market/Gas Station (Midwest Filter) was used for regular fuel pumps.

During a typical weekday morning peak hour, the development is anticipated to generate 550 trips (270 entering / 280 exiting). Of those trips, 70 are expected to be pass-by trips (discussed below), resulting in 480 new trips during the weekday AM peak. During a typical weekday PM peak hour, the development is anticipated to generate 475 (240 entering / 235 exiting). Of those trips, 60 are expected to be pass-by trips, resulting in 415 new trips during the weekday PM peak.

Table 3
Kwik Trip Store 1260 Trip Generation

Land Use	ITE Code					In	AM Pea Out	ık Total	PM Peak In Out Total			
				Vehicle	<b>Daily</b> 1790	55	55	110	65	60	125	
Truck Stop	950	8	х	Fueling Positions	224.00	49%	51%	13.97	53%	47%	15.42	
Super Convenience Market/Gas				Vehicle Fueling	6080	215	225	440	175	175	350	
Station	960	20	х	Positions	304.00	50%	50%	22.05	50%	50%	17.56	
Subtotal				1812	7870	270	280	550	240	235	475	
Total Pass-by Trips (Minus)					945	35	35	70	30	30	60	
Total Linked Trips (Minus)					0	0	0	0	0	0	0	
Total New Trips					5422	235	245	480	210	205	415	

Notes: 12% of Proposed Trips assumed to be Pass-by Trips

#### Mode Split

The development area currently has no pedestrian accommodations and is in a rural area. Given this, no reduction in the number of vehicle trips to include walking and bicycle trips was applied.

#### Linked and Pass-by Trip Traffic

The proposed development does not have any linked (internal) trips because the site operates as a single land use "Super Convenience Market/Gas Station". However, the proposed site will include pass-by trips due to the surrounding industrial land uses and the site's proximity to STH 65. Pass-by trips occur when motorists already on the highway system stop at the development site prior to continuing their intended route. Based on the surrounding roadway network, it is assumed that approximately 12 percent of development trips are considered pass-by trips. This value corresponds to approximately 10 percent of the existing daily traffic for the adjacent roadway network. Furthermore, this value corresponds with the current ITE and WisDOT recommended practice of pass-by trips not exceeding 10 percent of adjacent roadway volumes.

In addition, there is a potential for diversion traffic. This would be traffic that is currently traveling to the Flying J Travel Center that will now utilize Kwik Trip. It is anticipated that there will be some diversion traffic however the worst-case modeling scenario is to maximize weaving traffic which would equate to leaving all Flying J traffic continuing to Flying J. As shown in the modeling results below each driveway has ample capacity to accept additional traffic.

#### **Trip Distribution**

Trip distribution was based on the existing traffic patterns, the proposed land use, and the location of population centers. Trips were assigned to the study area roadways in accordance with the following trip distribution:

- 77.5% to/from south on STH 65
- 17.5% to/from north on STH 65
- 5% to/from east on 70<sup>th</sup> Avenue

#### Trip Assignment

Traffic generated by the Kwik Trip development was assigned to the existing roadway system based on the trip generation and distribution above. New development trips and pass-by trips were assigned and reflect the above directional distributions accordingly by alternative. The new development trips and pass-by trips are shown in Attachment B. The existing traffic volumes, site generated traffic, and pass-by traffic were added together to generate the build total traffic volumes, which are also included in Attachment B.

#### **Evaluation of Proposed Conditions**

The total build traffic (including Kwik Trip generated traffic) peak hour operating, and queuing conditions based on the existing transportation system are summarized in Tables 4, 5, 6, and 7 below. The total traffic analysis was completed using existing intersection configurations and traffic control.

#### Alternative 1

Under the alternative 1 analysis all movements are expected to continue to operate with acceptable levels of service (LOS D or better) for the study area intersections.

A capacity analysis was also performed for the two new proposed village street connections located on 70<sup>th</sup> Avenue and STH 65. Traffic operations at the proposed driveways are anticipated to operate acceptably during weekday AM and PM peak hours (LOS B or higher). Synchro operational output reports are included in Attachment C.

Table 4
Existing Conditions (Build Traffic) LOS, by Movement – Alternative 1

L	Existing Conditions (Build Traine) 200, by Movement - Alternative 1														
			Level of Service												
Intersection Traffic Control		Peak Hour	Eastbound			Westbound			Northbound			Southbound			
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
OTILIOT O Both	Traffic	AM	(	С	D		D		С	Α	А	В	С	В	
Avenue	STH 65 & 70 <sup>th</sup> Signal		I	D	D		D		В	В	Α	В	В	В	
70 <sup>th</sup> Avenue &	One-way	AM		Α		Α		В							
Flying J Car Driveway	Strop Control	PM	Α			А			В						
Toth A	One-way	AM	А			Α			В			·			
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α		А			В						
70 <sup>th</sup> Avenue &	One-way	AM		Α		А					В				
Proposed Village Street				А			А						В		
70 <sup>th</sup> Avenue &	One-way	AM		Α	_	А			А						
Flying J Truck Entrance	Strop Control	PM		Α		А			А						

Table 5
Existing Conditions (Build Traffic) 95<sup>th</sup> Percentile Queues – Alternative 1

	mig communi	,				95 <sup>th</sup> P	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Eastbou	nd	V	Vestbou			orthbou		S	outhbou	ınd
			Left Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	Traffic	AM	150	140		118		217	187	14	57	318	116
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	154	124		59		216	284	48	22	217	36
70 <sup>th</sup> Avenue &	One-way	AM	59			92			54				
Flying J Car Driveway	Strop Control	PM	29			92			54				
	One-way	AM	33			12			89				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM	32			11			94				
70 <sup>th</sup> Avenue &	One-way	AM	14			21						108	
Proposed Village Street	Strop Control	PM	0			24						105	
70 <sup>th</sup> Avenue &	One-way	AM	0			12			0				
Flying J Truck Entrance	Strop Control	PM	0			16			0				

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated the NB left turn queues and the EB right turn queues at STH 65 & 70<sup>th</sup> Avenue will extend past the available storage. It should be noted that the average queues for these movements are expected to be contained within the available storage. All queues at the existing and proposed driveways are anticipated to be 110 feet or less. Note that the eastbound queues at the driveways are anticipated to spillover from STH 65 & 70<sup>th</sup> Avenue intersection.

#### Alternative 2

Under the alternative 2 analysis, all movements are expected to continue to operate with acceptable levels of service (LOS D or better) for the study area intersections.

A capacity analysis was also performed for the two new proposed village street connections located on 70<sup>th</sup> Avenue and STH 65. Traffic operations at the proposed driveways are anticipated to operate acceptably during weekday AM and PM peak hours (LOS B or higher). Synchro operational output reports are included in Attachment C.

Table 6
Existing Conditions (Build Traffic) LOS, by Movement – Alternative 2

EX	isting Condi	tions (bui	u Hailie)	LUS, D	y IVIO	/emen	II – AII	emau	vez				
							Level of	Servic	е			ĵa .	
Intersection	Traffic Control	Peak Hour	Eastbo	und	V	Vestbou	ınd	N	orthbou	ınd	S	outhbou	ınd
		j	Left Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTH OF A 70th	Traffic	AM	D	D		D		D	В	Α	В	С	В
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	D	D		D		В	В	Α	В	В	В
70 <sup>th</sup> Avenue &	One-way	AM	Α			Α			В				
Flying J Car Driveway	Strop Control	PM	А			Α		3%	В				
- oth	One-way	AM	А			Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM	А			Α		ľ	В				
70 <sup>th</sup> Avenue &	One-way	AM	А			Α						В	
Proposed Village Street	Strop Control	PM	А			Α		A				В	
70 <sup>th</sup> Avenue &	One-way	AM	Α	4.0		Α			Α				
Flying J Truck Entrance	Strop Control	PM	А			Α			Α				
STH 65 &	One-way	AM	С						Α			Α	
Proposed Village Street	Strop Control	PM	В						Α			Α	

Table 7
Existing Conditions (Build Traffic) 95<sup>th</sup> Percentile Queues, by Movement – Alternative 2

LAISTING COL	ומונוטווס (טם	na mamo	30 1 61661	TUIL G	ucuc	3, Dy	WIOVCII	TOTTE	7 11101	Hativo			
						95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Eastbour	nd	V	Vestbou	ınd	N	orthbou	nd	S	outhbou	nd
			Left Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
amilian a math	Traffic	AM	210	140		152		231	264	14	13	301	14
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	150	129		67		214	267	18	37	236	3
70 <sup>th</sup> Avenue &	One-way	AM	58			84			52				
Flying J Car Driveway	Strop Control	PM	40			81			61				
	One-way	AM	23			18			93				
70 <sup>th</sup> Avenue & Flying Truck Exit	Strop Control	PM	14			23			88				
70 <sup>th</sup> Avenue &	One-way	AM	0			18						79	
Proposed Village Street	Strop Control	PM	3			24						80	
70 <sup>th</sup> Avenue &	One-way	AM	0			8			0				
Flying J Truck Entrance	Strop Control	PM	0			15			0				
STH 65 &	One-way	AM	85						0			0	
Proposed Village Street	Strop Control	PM	43						0			0	

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated the NB left turn queues and the EB right turn queues at STH 65 & 70<sup>th</sup> Avenue will extend past the available storage. All queues at the existing and proposed driveways are anticipated to be 100 feet or less. Note that the eastbound queues at the driveways are anticipated to spillover from STH 65 & 70<sup>th</sup> Avenue intersection.

#### **Evaluation of Proposed Conditions with Improvements**

Based on unacceptable operations for the EB right turn movement at STH 65 & 70<sup>th</sup> Avenue under Build traffic an improvement analysis was also conducted. WisDOT has an improvement project planned for STH 65. Plans are currently being developed for the improvements, but the final construction timeline has not been determined. An improvement analysis was conducted using the current plans. In addition, WisDOT requested that the addition of dual NB left turn lanes at the STH 65 & 70<sup>th</sup> Avenue intersection be evaluated as well. Lastly, as noted above the final construction timeline for this project has not been determined. To determine the improvements needed to achieve acceptable operations until the WisDOT project is constructed an interim improvement scenario was also analyzed.

#### Kwik Trip Improvements

Under this scenario an EB right turn overlap phase was added and the signal timing for the intersection has been reoptimized utilizing Synchro. In addition, two WB lanes on 70<sup>th</sup> Avenue were included from STH 65 to just west of the proposed Kwik Trip Driveway.

#### Alternative 1

Under the alternative 1 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 8
Kwik Trip Improvements LOS, by Movement – Alternative 1

	TOWN THE	IIIIproveiii	lents LOS,	Jy IVIO	VEITTE	III – A	iterna	146 1					
							Level of	Servic	е	100			
Intersection	Traffic Control	Peak Hour	Eastbou	nd	V	Vestbou	ınd	N	lorthbou	nd	S	outhbou	ınd
		8	Left Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTILOG 8 70th	Traffic	AM	D	С		D		В	А	А	В	С	В
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	РМ	D	С		D		Α	А	А	Α	В	Α
70 <sup>th</sup> Avenue &	One-way	AM	А			Α			В				
Flying J Car Driveway	Strop Control	PM	А			Α			В				
70th A	One-way	AM	Α			Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM ·	А			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM	Α			Α						В	
Proposed Village Street	Strop Control	PM	А			Α						В	
70 <sup>th</sup> Avenue &	One-way	AM	А	)		Α			Α				
Flying J Truck Entrance	Strop Control	PM	А			Α			Α				

Table 9

Kwik Trip Improvements 95th Percentile Queues – Alternative 1

<u> </u>	KWIK HIP II	ilbioacilici	113 30 1 610	CHILIT	Que	ucs –	Aiteili	alive	1				
						95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Eastbour	nd	ν	Vestbou	ınd	N	orthbou	nd	S	outhbou	ınd
71			Left Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
STH 65 & 70 <sup>th</sup>	Traffic	AM	176	146		124		195	85	12	49	302	97
Avenue*	Signal Control	PM	141	118		59		211	157	7	32	197	46
70 <sup>th</sup> Avenue & Flying J Car	One-way Strop	AM	73			54			53				
Driveway	Control	PM	32			55			54				
70 <sup>th</sup> Avenue &	One-way	AM	33	-		8			88				
Flying J Truck Exit	Strop Control	PM	35			0			95				
70 <sup>th</sup> Avenue &	One-way	AM	16			17						107	
Proposed Village Street	Strop Control	PM	9			18						109	
70 <sup>th</sup> Avenue &	One-way	AM	0			8			0				
Flying J Truck Entrance	Strop Control	PM	0			15			0				

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated the NB left turn queues and the EB right turn queues at STH 65 & 70<sup>th</sup> Avenue will extend past the available storage. All queues at the existing and proposed driveways are anticipated to be 110 feet or less. It should be noted that the average queues are expected to be accommodated by the existing storage lanes.

#### Alternative 2

Under the alternative 2 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 10
Kwik Trip Improvements LOS, by Movement – Alternative 2

	Kwik Hip	IIIIbioseiii	ents LOS, t	y IVIO	CITIC	III – A	iternat	IVCZ					
							Level of	Service	е				
Intersection	Traffic Control	Peak Hour	Eastbour	nd	V	Vestbou	ind	N	orthbou	nd	Sc	outhbou	ınd
			Left Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTIL OF A 70th	Traffic	AM	D	С		D		D	В	Α	В	С	В
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	D	С		D		В	В	Α	В	В	В
70 <sup>th</sup> Avenue &	One-way	AM	А			Α			В				
Flying J Car Driveway	Strop Control	PM	А			Α			В				
Toth 4	One-way	AM	А			Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM	А			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM	А			Α						В	
Proposed Village Street	Strop Control	PM	А			Α						В	
70 <sup>th</sup> Avenue &	One-way	AM	А			Α			Α				
Flying J Truck Entrance	Strop Control	PM	А			Α			Α				
STH 65 &	One-way	AM	С						Α			Α	
Proposed Village Street	Strop Control	PM	В						Α			Α	

Table 11

Kwik Trip Improvements 95<sup>th</sup> Percentile Queues, by Movement – Alternative 2

KWIK II	th improver	Henris 35	rercentile	<u> </u>	s, by	INIOAG	illellt -	Aite	IIIauv	6 4			
						95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Eastbour	nd	V	Vestbou	ınd	N	orthbou	nd	S	outhbou	nd
			Left Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTHER S Both	Traffic	AM	214	137		149		234	165	10	34	318	62
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	150	116		65		227	152	10	27	242	8
70 <sup>th</sup> Avenue &	One-way	AM	85			53			57				
Flying J Car Driveway	Strop Control	PM	58			63			61				
	One-way	AM	22			0			94				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM	16			10			90				
70 <sup>th</sup> Avenue &	One-way	AM	10			5						83	
Proposed Village Street	Strop Control	PM	3			18						78	
70 <sup>th</sup> Avenue &	One-way	AM	0			12			0				
Flying J Truck Entrance	Strop Control	PM	0			15			0				
STH 65 &	One-way	AM	85						0			0	
Proposed Village Street	Strop Control	PM	44						0			0	

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated the NB left turn queues and the EB right turn queues at STH 65 & 70<sup>th</sup> Avenue will extend past the available storage. All queues at the existing and proposed driveways are anticipated to be 100 feet or less. It should be noted that the average queues are expected to be accommodated by the existing storage lanes.

#### WisDOT Improvements - Current Plans

Under this scenario the intersection of STH 65 & 70<sup>th</sup> Avenue will be fully reconstructed per WisDOT plans. The improvements include adding designated turn lanes to the EB and WB approaches and the extension of the NB and SB turn lanes as well as an additional through lane for NB/SB approaches. In addition, the traffic signal will be upgraded to 4-section flashing yellow arrow heads on all approaches, and the EB right turn lane will have an overlap phase. In addition, the second WB through lane on 70<sup>th</sup> Avenue, west of STH 65, was also included. Overall, this improvement has little impact on LOS.

#### Alternative 1

Under the alternative 1 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 12
WisDOT Improvements LOS, by Movement – Alternative 1

	WisDOT	mproveme	ents L	.OS, b	y Mov	emen	t - AI	ternati	ve 1					
	7 × 1							Level of	Service	е				
Intersection	Traffic Control	Peak Hour	E	Eastbou	nd	V	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTIL OF A Zoth	Traffic	AM	D	D	С	С	D	А	В	В	Α	Α	С	Α
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	D	D	С	С	D	A	В	А	Α	Α	В	Α
70 <sup>th</sup> Avenue & Flying J Car	One-way Strop	AM	A				Α			В				
Driveway	Control	PM	A A				Α			В				
70th Asserting 8	One-way	AM		Α			Α		1,	В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α			Α		150	В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α						В	
Proposed Village Street	Strop Control	PM		Α			A,						В	
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α			Α			Α				

Table 13
WisDOT Improvements 95<sup>th</sup> Percentile Queues – Alternative 1

	WISDO! IM	provemen	12 22	" Perc	entille	Queu	les - A	Aiterna	alive	1				
							95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Е	astbour	nd	V	/estbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
and a noth	Traffic	AM	96	107	58	81	39	0	189	44	0	30	187	21
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	91	71	35	34	26	0	205	74	1	13	151	15
70 <sup>th</sup> Avenue &	One-way	AM		20			50			49				
Flying J Car Driveway	Strop Control	PM		29			58			54				
moth 4	One-way	AM		27			7			91				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		27			0			95				
70 <sup>th</sup> Avenue &	One-way	AM		17			18						123	
Proposed Village Street	Strop Control	PM		15			7						117	
70 <sup>th</sup> Avenue &	One-way	AM		0			10			0				
Flying J Truck Entrance	Strop Control	PM		0			7			0				

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that all queues will be accommodated by the available storage. All queues at the existing and proposed driveways are anticipated to be 125 feet or less.

#### Alternative 2

Under the alternative 2 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 14
WisDOT Improvements LOS, by Movement – Alternative 2

	WISDOI	mproveme	,111G L	OO, 10	y IVIOV	CITICII		Ciliati	VC Z					
								Level of	Service	9				
Intersection	Traffic Control	Peak Hour	Е	astbou	nd	٧	Vestbou	nd	N	orthbou	ınd	S	outhbou	nd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	Traffic	AM	D	D	С	D	D	Α	В	А	Α	Α	С	Α
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	D	D	С	С	D	Α	В	Α	A	Α	В	А
70 <sup>th</sup> Avenue &	One-way	AM		Α			А			В				
Flying J Car Driveway	Strop Control	PM		Α			Α			В				
	One-way	AM	A A				Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α						В	
Proposed Village Street	Strop Control	PM		Α			Α						В	
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α			Α			Α				
STH 65 &	One-way	AM		С						Α			Α	
Proposed Village Street	Strop Control	PM		В						Α			А	

Table 15
WisDOT Improvements 95<sup>th</sup> Percentile Queues, by Movement – Alternative 2

WISDC	1 improven	ients 95" i	erce	iitile C	<u> </u>	s, by	MOAGI	Aitei	Hative	<del>2</del> ∠				
							95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	E	astbou	nd	V	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
STH 65 & 70 <sup>th</sup>	Traffic	AM	107	123	81	114	75	0	211	48	10	17	163	4
Avenue*	Signal Control	PM	98	82	43	33	47	0	174	72	7	14	128	0
70 <sup>th</sup> Avenue & Flying J Car	One-way	AM		26			49			51				
Driveway	Strop Control	PM		11			64			53	-			
70th Avenue 9	One-way	AM		23			8	11/2		94				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		15		1	0			87				
70 <sup>th</sup> Avenue &	One-way	AM		0			10						85	
Proposed Village Street	Strop Control	PM		0			13						82	
70 <sup>th</sup> Avenue &	One-way	AM		0			16			0				
Flying J Truck Entrance	Strop Control	PM	0				7			0				
STH 65 &	One-way	AM		61						0			0	
Proposed Village Street	Strop Control	PM		45						0			0	

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that all queues will be accommodated by the available storage. All queues at the existing and proposed driveways are anticipated to be 95 feet or less.

#### WisDOT Improvements - Current Plans with dual NB left turn lanes

Under this scenario all of the improvements identified in the current WisDOT plans will be implemented, but the NB left turn lane will be modified to become a dual left turn lane.

#### Alternative 1

Under the alternative 1 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 16
WisDOT Improvement (Dual NB Left) LOS, by Movement – Alternative 1

VVISI	JOT Improv	ement (Du	al ND	Leit)	LUG, I	by IVIC	Venic	III – A	ILCITIO	LIVE I				
								Level of	Service	е				
Intersection	Traffic Control	Peak Hour	Е	astbou	nd	V	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTIL OF A TOTA	Traffic	AM	С	D	С	С	D	А	D	В	А	Α	С	Α
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	С	D	C	С	D	А	D	Α	Α	Α	В	Α
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			В				
Flying J Car Driveway	Strop Control	PM		Α			Α			В				
Toth A	One-way	AM		Α			Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α						В	
Proposed Village Street	Strop Control	PM		Α			Α						В	
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α			Α			Α				

Table 17
WisDOT Improvements (Dual NB Left) 95<sup>th</sup> Percentile Queues – Alternative 1

	1 mprovon													
							95 <sup>th</sup> Pe	rcentile	Queues	s (Feet)				
Intersection	Traffic Control	Peak Hour	Е	astbou	nd	V	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTIL OF A Toth	Traffic	AM	92	94	43	77	37	0	229	43	4	24	190	22
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	94	100	36	28	23	0	238	69	2	10	145	16
70 <sup>th</sup> Avenue &	One-way	AM		9			55			52				
Flying J Car Driveway	Strop Control	PM		30			81			54				
Toth A	One-way	AM		36			6			91				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		30			15			92				
70 <sup>th</sup> Avenue &	One-way	AM		19			16						100	
Proposed Village Street	Strop Control	PM		14			30						106	
70 <sup>th</sup> Avenue &	One-way	AM		0			7			0				
Flying J Truck Entrance	Strop Control	PM		0			0			0				

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that all queues will be accommodated by the available storage. All queues at the existing and proposed driveways are anticipated to be 110 feet or less.

#### Alternative 2

Under the alternative 2 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 18
WisDOT Improvement (Dual NB Left) LOS, by Movement – Alternative 2

	DOT IIIIpiov	ome (Ba	41 110	Lore		Jy IIIC	VCIIIC	11t /	ittiid	LIVCZ				
*								Level of	Service	Э				
Intersection	Traffic Control	Peak Hour	E	astbou	nd	V	/estbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTILIOS A Zoth	Traffic	AM	D	D	С	D	D	Α	D	Α	Α	Α	С	Α
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	С	D	С	С	D	А	D	Α	Α	А	В	Α
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α	1 1 10		В				
Flying J Car Driveway	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			А			В				
Flying J Car Driveway	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α						В	
Proposed Village Street	Strop Control	PM		Α			Α						В	
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α			Α			Α				
STH 65 &	One-way	AM		С						Α			Α	
Proposed Village Street	Strop Control	PM		В						А			Α	

Table 19
WisDOT Improvements (Dual NB Left) 95<sup>th</sup> Percentile Queues, by Movement – Alternative 2

	277		11114					ercentile						
Intersection	Traffic Control	Peak Hour	E	astbour	nd	V	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
STH 65 & 70 <sup>th</sup>	Traffic	AM	105	144	62	106	67	0	228	45	12	17	154	9
Avenue*	Signal Control	PM	91	96	40	31	46	0	253	71	10	10	127	2
70 <sup>th</sup> Avenue &	One-way	AM		27			59			50				
Flying J Car Driveway	Strop Control	PM		0			78			57				
70 <sup>th</sup> Avenue &	One-way	AM		18			11			100				
Flying J Car Driveway	Strop Control	PM		14			18			90				
70 <sup>th</sup> Avenue &	One-way	AM		0			16						83	,
Proposed Village Street	Strop Control	PM		0			24						78	
70 <sup>th</sup> Avenue &	One-way	AM		0			7			0				
Flying J Truck Entrance	Strop Control	PM		0			13			0				
STH 65 &	One-way	AM		86						0			0	
Proposed Village Street	Strop Control	PM		45						0			0	

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that all queues will be accommodated by the available storage. All queues at the existing and proposed driveways are anticipated to be 100 feet or less.

#### **Evaluation of Proposed Conditions with Future Build Traffic**

In addition to analyzing the impacts of the proposed Kwik Trip, the impacts of future planned developments were also reviewed. Trip generation and distribution numbers for this analysis were provided by the Village of Roberts.

The anticipated development areas include three areas that will be provided access via 70<sup>th</sup> Avenue. Here is a summary of each area:

- Area 1 300,000 SF expansion of the recently completed 1880 warehouse. It is anticipated that this expansion will generate 60 AM peak trips and 60 PM peak trips.
- Area 2 30 acres just west of the Flying J. Based on land use planning it is anticipated this site will be occupied by a 200,000 SF Industrial building. The site will generate 140 AM peak trips and 65 PM peak trips.
- Area 3 13-acre commercial site northwest of the Kwik Trip site. It is anticipated that this site will generate 100 AM peak trips and 175 PM peak trips.

A complete summary of the trip generation is included in Attachment B.

The direction distribution assumed for these future developments is as follows:

- 72.5% to/from north on STH 65
- 22.5% to/from south on STH 65
- 5% to/from east on 70th Avenue

It is assumed that all WisDOT improvements will be in place prior to any of these future developments therefore only the WisDOT improvement scenarios were evaluated with these added volumes.

#### WisDOT Improvements

Under this scenario the geometry matches the WisDOT improvements described above.

#### Alternative 1

Under the alternative 1 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 20
WisDOT Improvements LOS, by Movement – Alternative 1

		Inprovent		,	J									
								Level of	Service	Э				
Intersection	Traffic Control	Peak Hour	Е	astbou	nd	V	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
orth or a roth	Traffic	AM	D	D	С	D	D	Α	В	В	А	Α	С	А
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	С	С	В	С	D	А	В	В	А	В	С	А
70 <sup>th</sup> Avenue &	One-way	AM		Α	,		Α			В				
Flying J Car Driveway	Strop Control	PM		Α			Α			В				
70th Assessed 0	One-way	AM		Α			Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α	-1					D	
Proposed Village Street	Strop Control	PM		Α			Α						С	
70 <sup>th</sup> Avenue &	One-way	AM	1	Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α			Α			Α				

Table 21
WisDOT Improvements 95<sup>th</sup> Percentile Queues – Alternative 1

	AAI2DOL IIII	provomon		. 0.0	0111110	quot	100 /	1100111	46110					
							95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Е	astbou	nd	V	√estbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTILIOF A Zoth	Traffic	AM	113	209	125	87	75	0	214	63	4	23	124	67
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	119	366	166	32	44	0	253	106	2	14	183	45
70 <sup>th</sup> Avenue &	One-way	AM		89			60			58				
Flying J Car Driveway	Strop Control	160		160			. 83			90				
70th A	One-way	AM		45			10			110				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		51			16			93				
70 <sup>th</sup> Avenue &	One-way	AM		44			65						167	
Proposed Village Street	Strop Control	PM		71			25						164	
70 <sup>th</sup> Avenue &	One-way	AM		0			26			0				
Flying J Truck Entrance	Strop Control	PM		0			42			0				

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that the EB queues at STH 65 & 70<sup>th</sup> Avenue will extend past the

Flying J eastern driveway All queues at the existing and proposed driveways are anticipated to be 170 feet or less.

#### Alternative 2

Under the alternative 2 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 22
WisDOT Improvements LOS, by Movement – Alternative 2

	WISDOI	mproveme	ents L	.U5, b	y wov	emen	t - All	ternati	ve z					
								Level of	Service	е				
Intersection	Traffic Control	Peak Hour	E	astbou	nd	V	Vestbou	nd	N	orthbou	nd	So	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTIL OF A Zoth	Traffic	AM	D	D	С	D	D	Α	В	Α	Α	Α	С	Α
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	D	С	С	С	D	Α	В	В	Α	В	С	Α
70 <sup>th</sup> Avenue & Flying J Car	One-way Strop	AM		Α			Α			В				
Driveway	Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α		2	В				
Flying J Truck Exit	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α						C	
Proposed Village Street	Strop Control	PM		Α			Α						С	
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α			Α			Α				
STH 65 &	One-way	AM		С						Α			Α	
Proposed Village Street	Strop Control	PM		С						Α			Α	

Table 23
WisDOT Improvements 95<sup>th</sup> Percentile Queues – Alternative 2

	WISDOT III	provemen	13 33	1 610	CITUIC	Quet	169 - 1	AILEITIG	ative A	4				
							95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	E	Eastbour	nd	V	Vestbou	nd	N	orthbou	nd	So	outhbou	ınd
	NOTE OF THE OF T		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTILIOS A Zoth	Traffic	AM	117	241	109	106	92	0	276	56	0	26	165	29
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	РМ	114	356	160	32	71	0	225	93	10.	11	163	8
70 <sup>th</sup> Avenue &	One-way	AM		86			65			55				
Flying J Car Driveway	Strop Control	PM		157			78			101				
Zoth A	One-way	AM	1	24			9			91				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		35			0			95				
70 <sup>th</sup> Avenue &	One-way	AM		8			24						115	
Proposed Village Street	Strop Control	PM		10	-	di	23						111	
70 <sup>th</sup> Avenue &	One-way	AM		0			31			0				
Flying J Truck Entrance	Strop Control	PM		0			49			0				
STH 65 &	One-way	AM	i =	221						0			0	
Proposed Village Street	Strop Control	PM		71						. 0		_	0	

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that the EB queues at STH 65 & 70<sup>th</sup> Avenue will extend past the Flying J All queues at the existing and proposed driveways are anticipated to be 125 feet or less.

#### WisDOT Improvements Dual NB Lefts

Under this scenario the geometry matches the WisDOT improvements described above.

#### Alternative 1

Under the alternative 1 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 24
WisDOT Improvements (Dual NB Lefts) LOS, by Movement – Alternative 1

AAISD	OT IIIIpiove	ments (Du	ai ND	LUILO	, 200,	Dy IV	OVCIII	CIIL /	TILCITI	ative				
								Level of	Service	Э				
Intersection	Traffic Control	Peak Hour	Е	astbou	nd	V	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTIL OF A 70th	Traffic	AM	D	D	С	С	D	Α	D	В	А	Α	С	Α
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	PM	С	С	С	С	D	Α	D	В	А	В	С	Α
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			В				
Flying J Car Driveway	Strop Control	PM		Α			Α			В				
Zoth A	One-way	AM		Α			Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α						D	
Proposed Village Street	Strop Control	PM		Α			Α						С	
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α		¥	Α			Α				

Table 25
WisDOT Improvements (Dual NB Lefts) 95<sup>th</sup> Percentile Queues – Alternative 1

	mprovem											_		
							95 <sup>th</sup> Pe	ercentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Е	astbou	nd	v	Vestbou	nd	N	orthbou	nd	S	outhbou	ınd
	900 701505000 67491	1000000	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTIL OF A 70th	Traffic	AM	109	160	90	88	81	0	275	98	0	23	204	70
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	117	317	141	37	41	0	250	104	2	11	174	30
70 <sup>th</sup> Avenue &	One-way Strop	AM		86			83			56				
Flying J Car Driveway	Control	PM		151			104			115				
70th A	One-way	AM		40			17			106				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		49			10			95				
70 <sup>th</sup> Avenue &	One-way	AM		39			69						166	
Proposed Village Street	Strop Control	PM		71			29						160	
70 <sup>th</sup> Avenue &	One-way	AM		0			22			0				
Flying J Truck Entrance	Strop Control	PM		5			40			0				

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that the EB queues at STH 65 & 70<sup>th</sup> Avenue will extend past the Flying J All queues at the existing and proposed driveways are anticipated to be 170 feet or less.

#### Alternative 2

Under the alternative 2 analysis all movements are expected to operate with acceptable levels of service (LOS D or better) for the study area intersections.

Table 26
WisDOT Improvements (Dual NB Lefts) LOS, by Movement – Alternative 2

	OT IIIIpiove	monto (Bu	41.110		,,	~y 111	OVOIL	01110 /	titoiii	ativo	<u>~</u>			
								Level of	Service	Э				
Intersection	Traffic Control	Peak Hour	E	astbou	nd	V	/estbou	nd	N	orthbou	nd	S	outhbou	ınd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTILOG & Zoth	Traffic	AM	D	D	С	С	D	Α	D	В	Α	Α	С	Α
STH 65 & 70 <sup>th</sup> Avenue	Signal Control	РМ	С	С	С	С	D	Α	D	В	Α	В	С	Α
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			В				
Flying J Car Driveway	Strop Control	PM		Α			Α			В				
Toth A	One-way	AM		Α			Α			В				
70 <sup>th</sup> Avenue & Flying J Truck Exit	Strop Control	PM		Α			Α			В				
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α						С	
Proposed Village Street	Strop Control	PM		Α			Α						С	
70 <sup>th</sup> Avenue &	One-way	AM		Α			Α			Α				
Flying J Truck Entrance	Strop Control	PM		Α			Α			Α				
STH 65 &	One-way	AM		С						Α			Α	
Proposed Village Street	Strop Control	PM	181	С						Α			Α	

Table 23
WisDOT Improvements (Dual NB Lefts) 95<sup>th</sup> Percentile Queues – Alternative 2

WIODO	i iiiibioveiii	ciito (Duai	110 -	orto, c	,0 10	TOCITE	ne da	cuco	Aite	HALIV	<u> </u>			
	9-9 200						95 <sup>th</sup> Pe	rcentile	Queue	s (Feet)				
Intersection	Traffic Control	Peak Hour	Е	astbour	nd	V	/estbou	nd	N	orthbou	nd	S	outhbou	nd
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
OTILIOS & Zoth	Traffic	AM	112	187	107	99	81	0	288	49	6	26	163	28
STH 65 & 70 <sup>th</sup> Avenue*	Signal Control	PM	111	346	143	32	73	0	286	126	1	11	159	5
70 <sup>th</sup> Avenue &	One-way Strop	AM		45			73			54			-	
Flying J Car Driveway	Control	PM		146			102			85				
70 <sup>th</sup> Avenue &	One-way	AM		26			15			95				
Flying J Truck Exit	Strop Control	PM	1	34			11			90				
70 <sup>th</sup> Avenue &	One-way	AM		0			62						112	
Proposed Village Street	Strop Control	PM		10		39	37						116	
70 <sup>th</sup> Avenue &	One-way	AM		0			25			0				
Flying J Truck Entrance	Strop Control	PM		0			42			0				
STH 65 &	One-way	AM		144	he					0			0	
Proposed Village Street	Strop Control	PM		67						0			0	

A queuing analysis was completed to determine if any potential blocking conditions would occur during the peak hour periods. It is anticipated that the EB queues at STH 65 & 70<sup>th</sup> Avenue will extend past the Flying J All queues at the existing and proposed driveways are anticipated to be 120 feet or less.

#### Conclusion

It should be noted that this study is a conservative analysis of the proposed development. In general land use Code 950 and 960 trip generation rates do not correspond well with actual operations of fuel centers in Wisconsin. As an example, if all traffic traveling on the west leg of 70<sup>th</sup> Street is assumed to be traveling to the existing Flying J Travel Center with a McDonald's that site would generate 195 trips during the AM peak and 245 trips during the PM peak. In comparison the trip generation numbers for the proposed Kwik Trip site are showing 550 total trips in the AM peak and 475 in the PM peak. In addition, this study is also assuming that all peak periods occur at the same point in time. Typically, the peak for trucks occurs at different times of the day than the passenger cars.

Based on the conservative analysis, anticipated new traffic from the proposed development improvements will be required at the intersection of STH 65 & 70<sup>th</sup> Avenue. The following is a summary of the improvements:

#### Kwik Trip Improvements

These improvements are needed if the proposed development is opened prior to the completion of the WisDOT improvement project along STH 65 (see Attachment 4):

- Construct driveway configurations shown in Alternate 2 by including a right-in / right-out driveway along STH 65 at the northern side of the property. Include a 150-foot SB right turn lane.
- Install a EB right turn overlap phase at STH 65 & 70<sup>th</sup> Avenue
- Update traffic signal timings
- Extend the NB left turn to 250 feet.
- Construct a second WB lane from STH 65 past the proposed Kwik Trip Driveway on 70<sup>th</sup> Avenue.
   This lane will act as a bypass lane in order to minimize WB queueing between the eastern most Flying J Driveway and the STH 65 & 70<sup>th</sup> Avenue intersection.

#### Future WisDOT Improvements

Based on the anticipated future build out it is recommended to construct the improvements as shown with the following additions:

- Construct a second NB left turn lane
- Extend the EB left turn lane to 125 feet
- Begin the second SB through lane at the STH 65 & proposed village street. Provide separation to allow for a free flow EB right turn movement.

These improvements will adequately serve all existing traffic and the proposed Kwik Trip traffic (see Attachment 4).

#### Future Full Build Improvements

In addition to the improvements described above it is recommended to add a second EB through lane along 70<sup>th</sup> Avenue from the Flying J western driveway to STH 65. The second lane should become the designated left turn lane. This will provide for vehicles existing the Flying J eastern driveway with the ability to make the SB right turn at STH 65 with minimal queue blocking.

In addition, it should be noted that with the addition of future build traffic Alternate 2 provides operational and queue relief along  $70^{th}$  Avenue.

All movements at the study area intersections are expected to operate in an efficient manner with the improvements identified within this traffic impact analysis.

jmw

Attachments

Attachment A – Project Location Map / Proposed Site Plan

Attachment B - Traffic Volume Exhibits

Attachment C – Synchro/SimTraffic Outputs

Attachment D - Proposed Improvement Overview Maps

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## Attachment A Project Location Map / Proposed Site plan

# SITE IMPROVEMENT PLANS FOR:

# KWIK TRIP #1260 ROBERTS, WI

# SITE LOCATION MAP:



# SITE AERIAL MAP:



DRAWING INDEX	NDEX
TI	TITLE SHEET
ALTA	ALTA SURVEY
SPO	SITE CIRCULATION PLAN
SPI	SITE DIMENSION PLAN
SPI.I	SITE KEYNOTE PLAN
SP1.2	SITE KEYNOTE PLAN
SP2	GRADE PLAN OVERALL
SP2.1.1	GRADE PLAN ENLARGED
SP2.1.2	GRADE PLAN ENLARGED
SP3.0	STORM SEWER PLAN SOUTH
SP3.1	STORM SEWER PLAN NORTH
SP3.2	STORM SEWER NOTES \$ DETAILS
SP4.0	UTILITY PLAN SOUTH
SP4.1	UTILITY PLAN NORTH
SP4.2	UTILITY NOTES
SP5	SITE PLAN DETAILS
SPG	SITE PLAN DETAILS
SP7	SITE PLAN DETAILS (WI DOT)
SWPI	EROSION CONTROL PLAN
SWP2	EROSION CONTROL NOTES
SWP3	EROSION CONTROL DETAILS
SWP4	EROSION CONTROL DETAILS
0.11	LANDSCAPE PLAN
1.11	LANDSCAPE PLAN ENLARGED
 L1.2	LANDSCAPE PLAN ENLARGED

OWNER:

KWIK TRIP INC.
1626 OAK STREET
LA CROSSE, WI 54602
NATE BYOM
608-791-7448
NByom@kwiktrip.com

SITE PLANNER:
NISTIES SITE PLANNING
3 | 3 | FERNBROOK LN N, SUITE 260
PLYMOUTH, MN 55447
BOB MUELLER
763-383-8400
Bob@insitesinc.net

CIVIL ENGINEER:
SUNDE ENGINEERING
10830 NESBITT AVE SOUTH
BLOOMINGTON, MN 55437
952-881-3344

ARCHITECT:
VANTAGE ARCHITECTS
750 3RD 5T N, SUITE F
LA CROSSE, WI 54601
608-784-2729

SURVEYOR:
REAL LAND SURVEYING, ILC
1360 INTERNATIONAL DRIVE SUITE 2
EAU CLAIRE, WI 54701
715-514-4116

DATE DESCRIPTION

12JAN22 SUBMITTAL

07FEB22 CITY COMMENTS GRAPHIC 21-126C GDEC21

TITLE SHEET

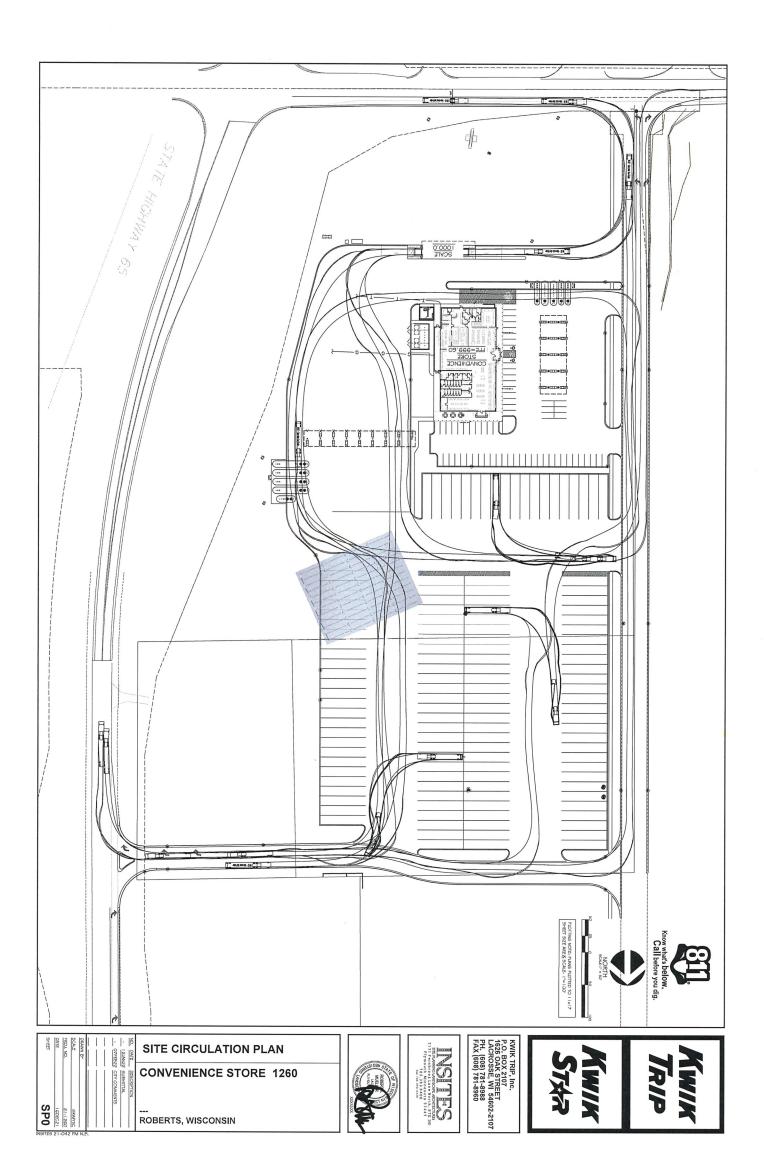
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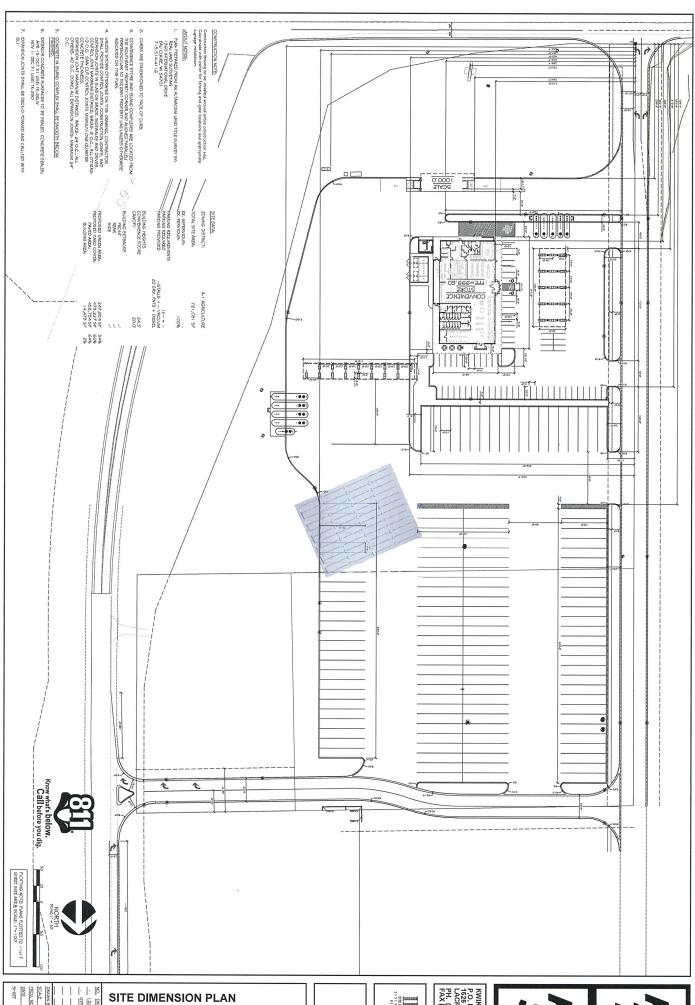
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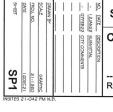
KWIK TRIP, Inc. P.O. BOX 2107 1626 OAK STREET LACROSSE, WI 54602-2107 PH. (608) 781-8988 FAX (608) 781-8960

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**CONVENIENCE STORE 1260** 

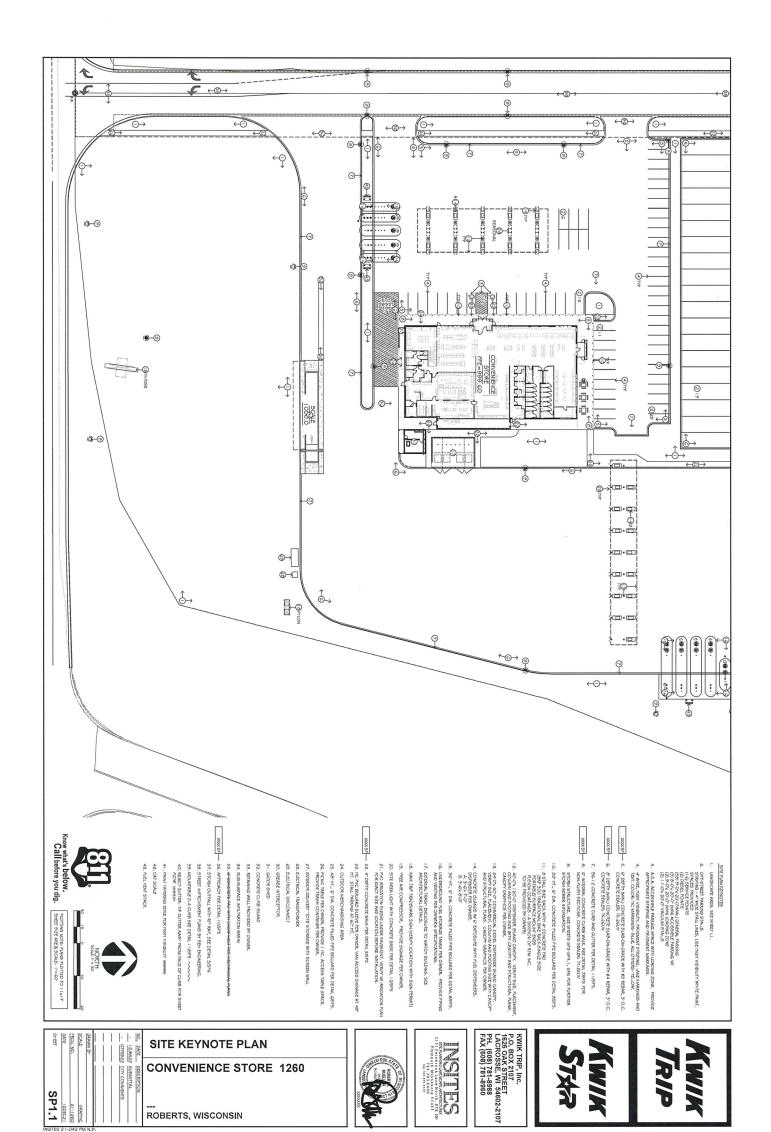
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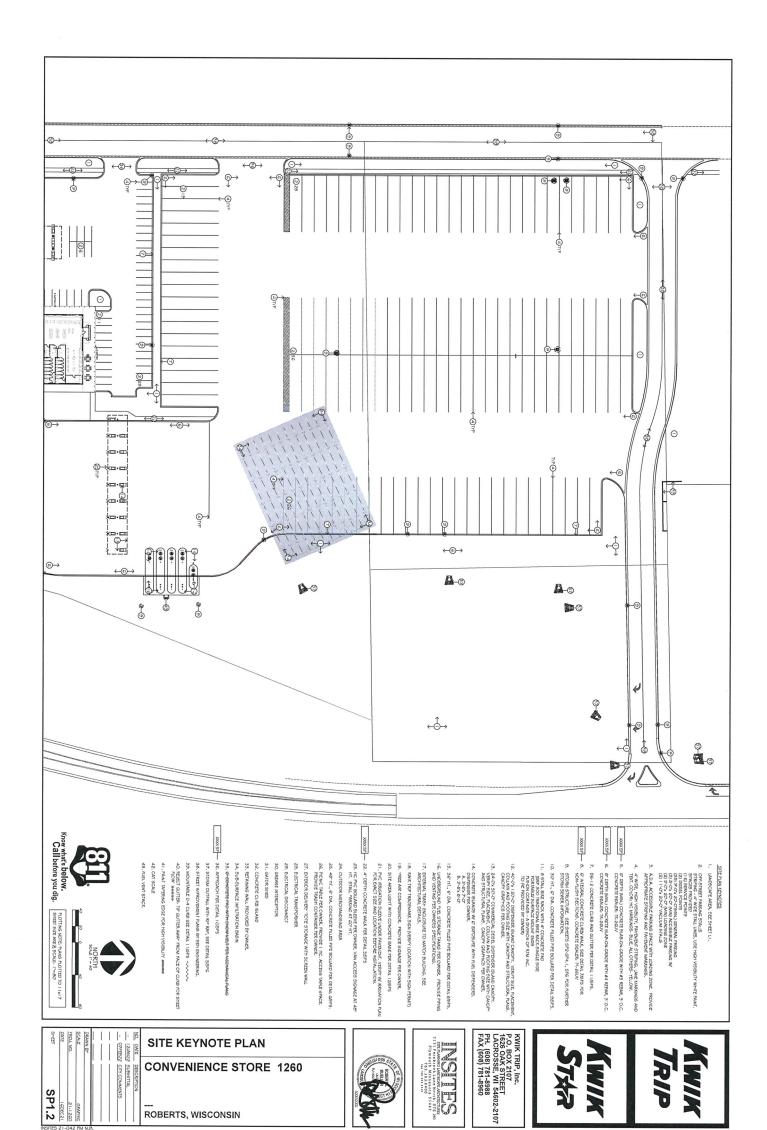


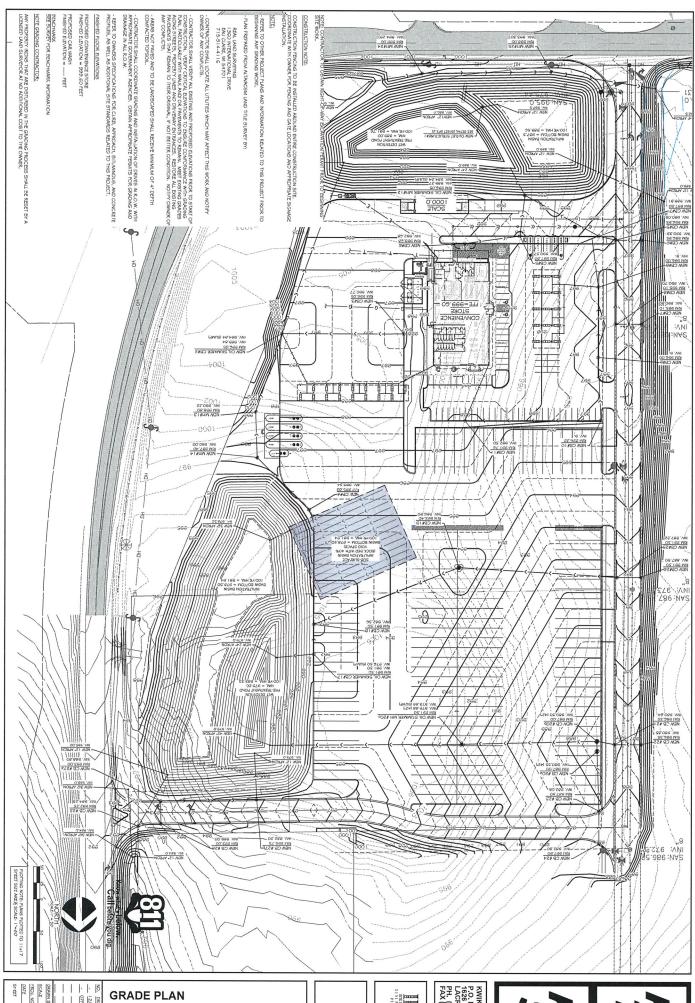












GRADE PLAN

GRADE PLAN

CONVENIENCE STORE 1260

SP2. 12000 20 00 00000015

PD2. 12000 20 0000015

ROBERTS, WISCONSIN

ROBERTS, WISCONSIN

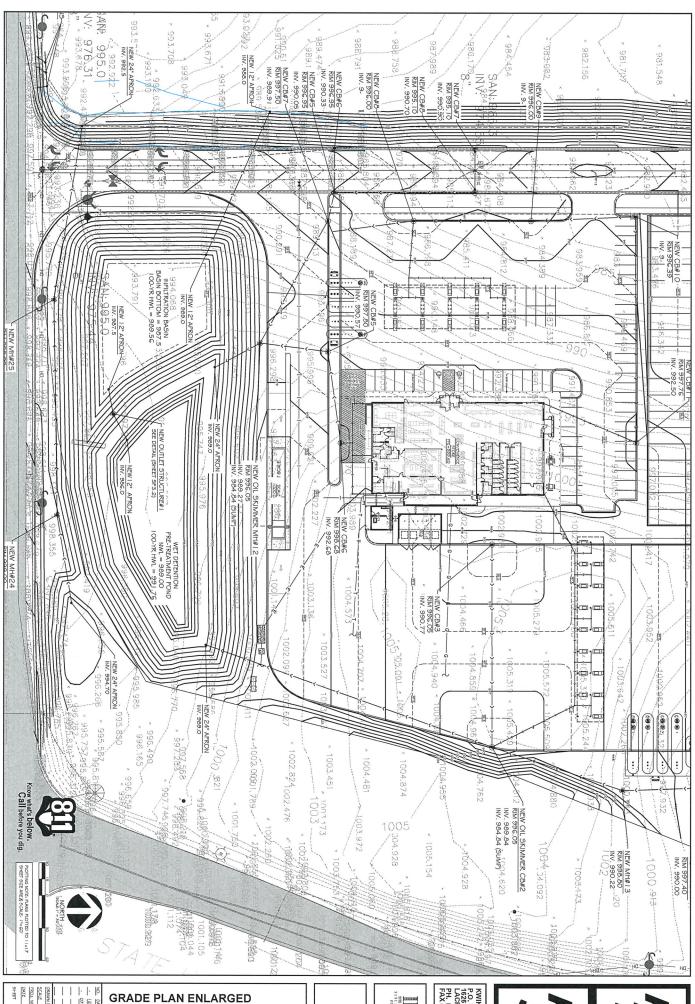














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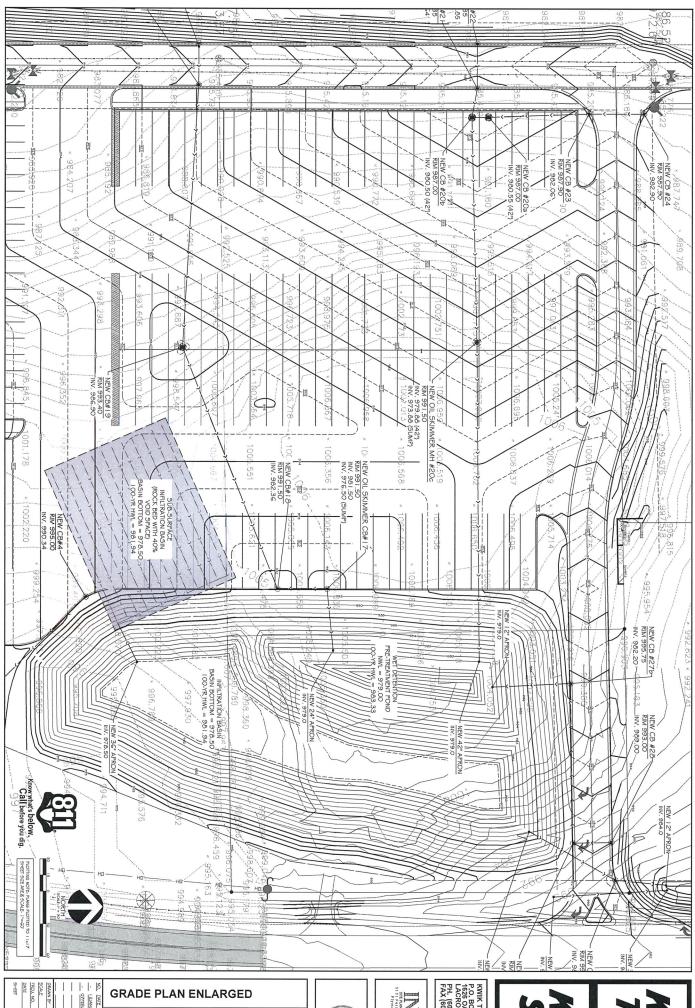
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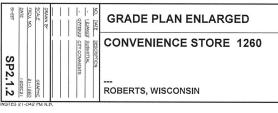










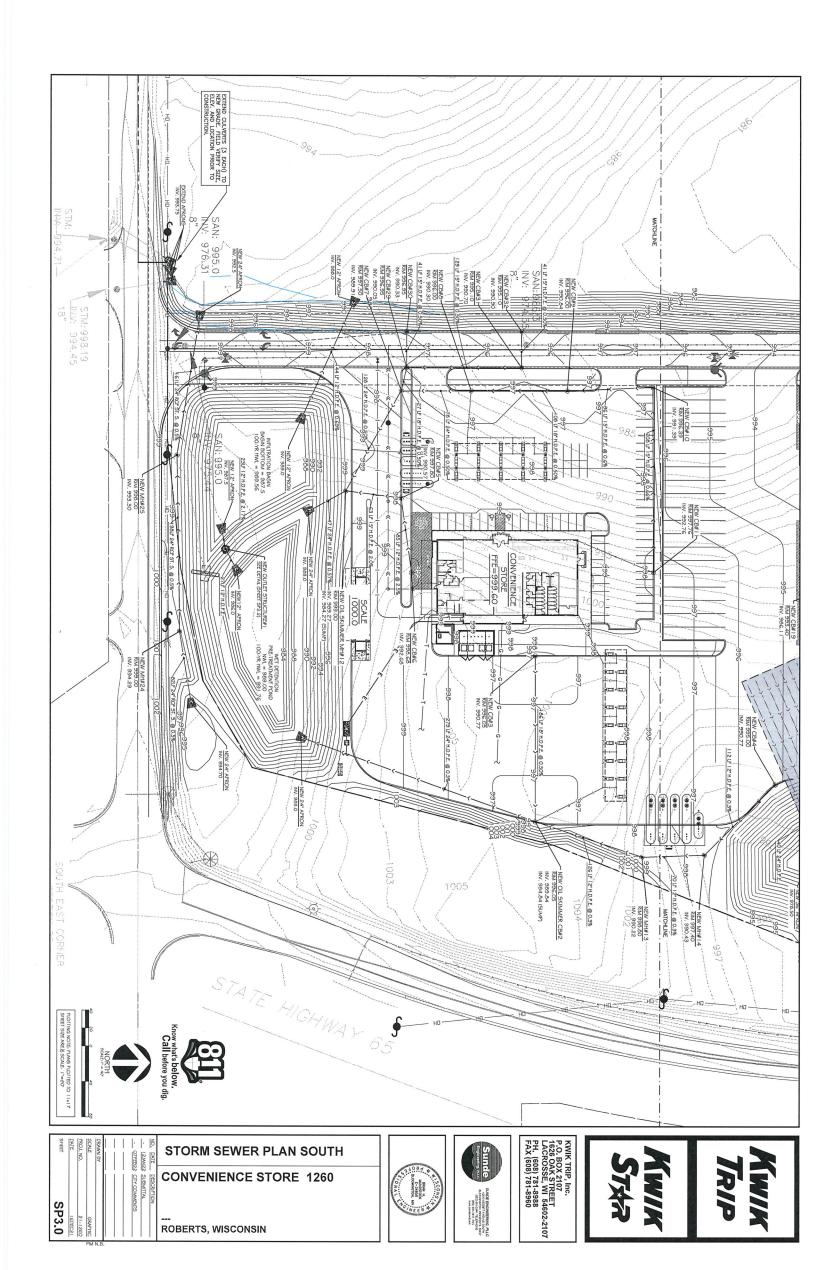


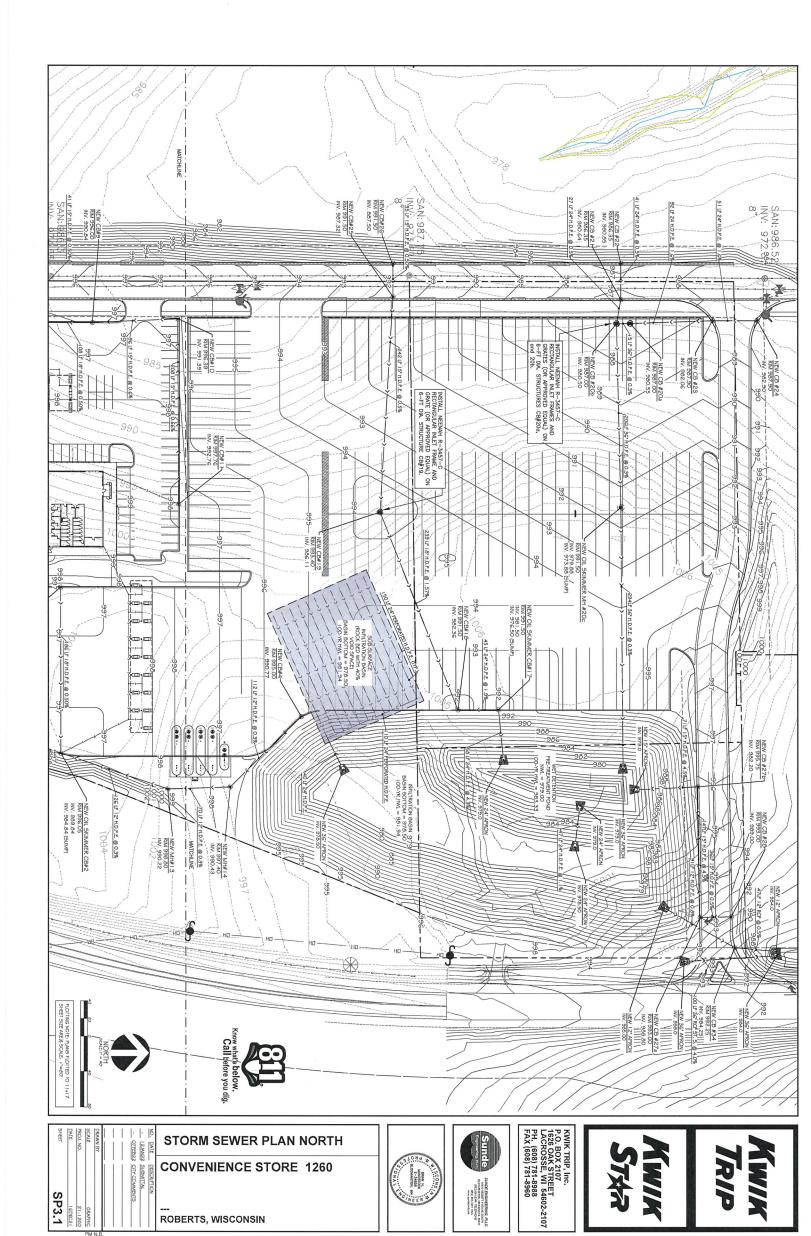












TORM DRAINAGE:

Unders otherwise indicated, are reinforced, present, concrete molitomores hoise and ecobolishin confirming to ASPL 0715, (unimited with water stop nobles postes and present bears, which concrete with ASPL CASA. These from an amount primate in absent to implicational and entimited in the artificiation in a present minimum and our operations with a confirming minimum and our observation to be present minimum and our operations. The inside some distinction and other inside on the last short of sometime had not be less than 48 inches. All joints and connections in the storm sever system shall be possight or velocityth, soints between concrete structures and piping shall be made with mediancial politic. Use approved resilient pubble seals or velocityth controllars of controllars are structured in controllars and controllars in controllars are structured in controllars and structured in controllars and structured and controllars and structured and structured in controllars and structured by the enhances with NSUN COST of an observation structured by the enhanced structured by the enhance nstall catchbasin castings with specified top elevation at the front rim. THE REAL PROPERTY.

DAX. Elea (Optidade ad that Balladar). Une seld-core, SSR-25, ASIN DOXA Polyring Choices (PK) Pipe for designated PC attern server services 4 to 15-a-leva in diseases coolside of the buildings as said-core, SSR-23, ASIN EFFF Polyring (Docide (PKC) pipe for designated PCC storm server the server period of the settlement polices to the control of the server period of the settlement polices. The server period control is diseased for server period to the settlement polices. Use of server period to the settlement police in PCC pipe must incide use of a primer which is of societies. Solvent coment joint in PCC pipe must incide use of a primer which is of societies with police and the settlement police in accordance with Uniform Familian Code (PCC). Settlement police is accordance with Uniform Semilian Code (PCC). Settlement police is accordance with Uniform Familian Code (PCC). Settlement police is accordance with Institution for the Code (PCC). Settlement police is accordance with Institution must comply with ASTM CODES. The building swerr starts 2 frest outside of the building. See Uniform Plumbing Code (UPC) port 71.5.1. Material installed within 2 feet of the building must be of materials approved for use inside of or within the building.

I AIPE pipe connections into all concrete structures must be made with water light materials suiting Myopats. Waterials Audpton, during with Press-Seed or Kor-N-Seed Waterialpi Connector, Cast-N-Seed Present Waterialpi Connector, or expressed speaks, where the subground promoter is expressed speaks, where the subground connector, or expressed speaks, Casteria OIII, wherefollow section, or expressed aqual sill only be allowed an opproved by the

Planting media and rock shall remain uncontaminated (not mixed with other sail) before and during installation.

Native soils in infiltration areas shall be de-compacted to a minimum depth of 18 inches prior to placing planting media or rack.

During construction, stormwater must be routed around infiltration areas until all construction activity has ceased and tributary surface are dearned of sediment.

Installation of infiltration practices shall be done during periods of dry weather and completed before the rainfall event. Placement of planting media or rock shall be on dry native soil only.

HDPE pipes must be listed and labeled.

HOPE pipe installation must be gener-trench on a continuous grounder bed per ASTM 02231 and continuous grounder installation instructions. All sections of the corrupcted MIPE pipe shall be coupled in order to provide water tight joints.

Cascadate install demonsts on all road drinks in accordance with S.P.S. 382.35 (S)(C)(1).
Censors with the installed det every very seep, and bend in the distance between demonsts in participated pipes should be exceed 100 read for pipes should one with a fibre. Descripts shall be represented by the shall be supported. Install a marter box forms and solid life (Newsonth R.1814-A. or approved execution over all circumst. Provide demonsts at the base of the road leader connections at the gas leader to the participation of the participation.

Tillians: Provide directional fittings for the storm piping serving the sca ident pump states will be compared in direction of flow in darin piping shall be made by the appropriet use of 450 mays, long or short seeep quarter bends, sixth, eighth, or sixteenth bends, or by a combination of these or other equivalent fittings.

S. Perform defection tests on all HEPE pipe either the sever limes have twen invatilled and bedeill has been in picter for at least 30 days. No pipe shall access o deflection of SS. If the test felas, make necessary spains and perform the test easis until acceptable. yearing and perform the test easis until acceptable deflection test is to be an unadio of adjul self or mosteria. It shall have a diameter search to SSX of the limited diameter of the pipe. The boil or mondrat shall be clearly stomped with the diameter. Perform the tests whoch methodiscola pulling devices.

12 Prior to construction, provide dupl-ring informative stating (STR)
2.2299) of the information alt in order to to with information of the action
area for the basin design. The state shall be participated in the
action for the basin design. The state shall be participated in the action
generational preferences. Do not being construction until basin type and
generational preferences. Do not being construction until basin type and
sufficient refe verification has been made. Perform a minimum of Z
2 designed test the every additional basines of section with
the number of tests with the spotechnical professional and the

12. Inspect all infiltration areas in order to ensure that no sediment from angoing construction activity is reaching the infiltration areas and that these areas are protected from compaction due to construction equipment driving across the infiltration areas.

. Use rigorous erosion prevention and sediment controls (e.g. diversion berms) during the construction of the infiltration system in order to keep sediment and runoff completely away from the infiltration area.

Coanse filter aggregate shall be a free draining mineral product, <u>sxcluding</u> crushed carbonate quarry rock, limestone, crushed concrete, and salvaged bituminous mixture.

SANDSTONE BEDROCK<sup>26</sup>:
ELEVATIONS VARIES, FIELD
VERIFY ELEV, AND
EXCAVATE TO PROVIDE
MIN. 5-FT SEPARATE
BETWEEN BASIN BOTTON
AND TOP OF SANDSTONE.

PROVIDE 2.5 FEET OF SANDY MATERIAL MIX. BLEND SAND WITH COMPOST (70% SAND AND 30% COMPOST).

OUTLET PIPE

TOLERANT OF
INUMDATION AND
DROUGHT, NATIVE
PLANTS RECOMMENDED
SEE LANDSCAPE PLAN.

Place all excavated materials downstream and away from the infiltration area during and after excavation.

After final grading, till the floor of the infiltration area to a depth of at least 18 inches in order to provide a well aerated, porous surface texture. Till in 6 inches of compost material if the soils become compacted.

BEEP Furnish ministered concrets gips (PSP) and fishings telepicated in a plant listed on the wiscensin Department of immegration, plantproved Product III (APL) consistent with the diameter indicated, before it is the regions consent of pips asked the in necondering with Microsofth COT Development Microsoft Congrets (1) Section 1, the minimum concrete pipe desire required based congrets 1) Section 1, the minimum concrete pipe desire required based congrets 1) Section 1, the minimum concrete pipe desire required based on depth to adopted a 10 of 2 Casas MCP. Depth to subspread 3 to 6 of 2 Casas MCP.

Ed. Account install a minimized occurrie apone with occurries tax well (act off well) on the first end of all divelophies. If the last three sections (landeding ports) of a decignitude (360 P storm sever with a minimum of the tis both (retained per joint. This value of the contract colvents, the applies to both upstream and downstream per infets and other, for correct colvents, the position. Then to be used only to load the jape sections tagether, not for pulling the sections tight that and washing we not required on this did of 50°S mm (27 Inds) or less did offender pipes. INTS\_NEASIONDNS\_Couts and MacCount (Figure I nated setly—treath grates on all horizontal intell\_couldst greater than 6 inches in dismeter. The grates shall be placed so that the note or bors are not more than 5 inches downstream of the indy-loutiet. Rada or bors shall be spaced so that the openings and once permit the passage of a 6—linch sphere.

Establish: "He all portions of statum server that one within 10 feet of buildings, within 10 feet of statum server, wells, or that the post through and or water identifies being contaminated in accordance with UPC part 1109.0. Text oil finable atorm server lines for orderication of the the server line to the throughout of the through the through the through the contamination of the contamination for the last of the through the contamination of th

. Use Neenoh R-3457-C rectangular inlet frame and grate, or approved equal, on CB #20a, #20b, and #19. Casting shall include the "NO DUMPING, DRAINS TO RIVER." environmental notice. <u>Draintile:</u> Perforated under-drains shall be slotted single wall corrugated HDPE. Install draintile with high permittivity circular knit polymeric filament filter sock per ASTM D6707-01.

PLACE FULL MORTAR BED BETWEEN RINGS, AND MORTAR INTERIOR AND — EXTERIOR OF RINGS.

CASTING

MINIMUM OF 2
REINFORCED CONCRETE
ADJUSTING RINGS

MAXIMUM 12 INCHES OF RINGS INCLUDING MORTAR

. Use Neenah Foundry Co. R-1642 casting with self-sealing, solid, type B lid, or approved equal, on all storm sewer maintenance holes. Covers shall bear the "Storm Sewer" label. 

In Intel<sup>®</sup> William (Certifien reprintments — a means to locale bunded underground statistic several/mobil metals he provided with tracer when order metals of notice to be tooletal in accord with the providents of the Wisconian's Statistics (18.0175(25) and the Wisconian Department of Stately and providents of the Wisconian's Statistics (18.0175(25)) and the Wisconian Department of Stately and providents of the Wisconian's Statistics (18.0175(25)) and the Wisconian Department of Stately and Providents (New Arrange Certifients) are considered as the Wisconian Color of the Certifients (18.015) and the Certifients (18.01

AS REQUIRED

INCET B-XINLET C

ANTI-SIPHON -

MORTAR JOINT OR USE PRE-FORMED JOINT FILLER

REINFORCED CON-CRETE COVER CONFORMING TO ASTM C478

SNOUT OIL-DEBRIS HOOD

REINFORCED CON-CRETE SECTIONS CONFORMING TO ASTM C478

OUTLET D

The minimum depth of cover for building and carriory road drain leaders without hauddon is 5 freet. Insultan and drain leaders at leadings where the apply of cover is ans than 5 feet. Provide a minimum insulcion biblioress of 2 indees. The insulcion must be at least 4 feet wide and entered on the pipe. Install the insulcion boards of inches above to the paper of the pipe and machinically compacted and leaded pipe building motified. Use 18th; density, closed call, rigid nearthing density density closed call, rigid motivated experience to DNP Syntomen R-Lap plants from insulations. Allackable Michalla Tapez: Install detectable undergrund semming tape directly observed indirectly and eight of 457 mm (18 forces) beliew finished godes unless otherwise molecules. Undergrund semming tape shall be 3-michate sides with a minimum 50 mil overall softeness of the company of the control of the company of the

loaded oil give with the ASTM identification numbers on the top (or inspection. Commence gipe loging at the forest point in the processed searer line. If the wirth tent there is positive denoted that of the order order of the order order of the order order of the order order of the order order

REINFORCED CONCRETE BASE SLAB CONFORMING TO ASTM C478

STRUCTURE #

Е PA7

MH#12 CB#2

NEENAH R-3067 DR/DL NEENAH R-3067 DR/DL

> 24" HDPE 18" HDPE В

12" HDPE

12" HDPE C

Clean sediment and debris from sewers, sumps and stormwater basins prior to final owner acceptance. Line wet detention basin with 2' thick impervious clay liner per detail.

28 Provide a fixed latern water monogeneat taport bits all serve to wrift that the intent of the opproved storm water monogeneat despire has been and. The report shall belief record drawings, measurements, and photographic sedence of the ar-build storm what monogenear offerm. The report shall substitution they all expected the original design have been obtaquately provided for by the construction of the project. . Televise all existing lines prior to connection.

9

SKIMMER STRUCTURE DETAIL

36" 36" 24" HDPE

36" "86 HDPE 24" HDPE 24" HDPE 0

DA. DA. ₽ oʻ

979.88 981.50 989.27 989.84 п

973.88 976.50 984.27 984.84 G HDPE REQUIREMENTS:

2 Doul-wall, smooth interior, corrupted high-density populations (1992) pipe shall sendom to the populations of ASSTO M252 for pipe sizes 4-rich to 10-rich diameter. Doul-well, smooth interior, corrupted high-density polyethylene (1905) pipe shall conform to the equivaments of ASSTO 25205 (Verjai PE moterior) for pipe sizes 12-rich to 60-rich diameter.

All fittings must comply with ASTM Standard D3212. Water-tight joints must be used at all connections including structures in conformance with ASTM F2510. The connection between HDPE and a different pipe material must be made by means of an approved transition coupling for the specific application.

 Install dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe at locations indicated on the plan. High-cansity polyethylene (HDPE) storm sewers must meet ASTM F714. INFILTRATION AREA CONSTRUCTION:

Protect the infiltration area from compaction and disturbance of existing soils. Report any signs of high water table or compaction of the in place sails to the Engineer.

Weter and maintain seeded areas on a timely day-to-day basis. In the event of a seeding failure, ressed and remulch the areas where the original seed has failed to gove and perform additional watering as necessary at no additional cast to the Owner.

Schedule the construction as that exceeding of the infiltration pytem to find grade occurs drift the confribing delinges once have been constructed and fully attailized. Exceeds the infiltration areas to within one foot of find grade infalloy. Daily front exceeding of the beain floor until all disturbed errest thickings to the beain are stabilized. Utilize through exceeding neuplanet floor has including light bearing pressures. We havey equipment is allowed on the infiltration areas since or after construction.

The bottom excavations surface of infiltration areas shall be level without dips or swales. Excavation of infiltration areas shall be completed using a backhoe with a toothed bucket. Delinate the location of infiltration areas (e.g. with flags, stakes, signs, silt fence, etc.) before work begins so that heavy construction equipment will not compact the soil in the proposed infiltration system.

Michitannac of Areas Planted Mith Nation Seeds: To reduce weed establishment, may 2 to 3 times (30 days pant) during the first year with the mower deck about 6" — 8" off the ground. More one time during the 2nd year before weeds at their seeds. Now once went to 5 years following the initial 2 years of maintenance in order to remove deed joint material and stimulette new seed.

It like Pricial Numry Deterition Statis Wet Profes Seet Mr. (Mr. \$50022), or deproved requel, in the vert once and on the filter of the bearing Use Pricial Numry Land Restoration Mr. For Medium Static (Mr. \$50047), or approved equal, on the super sides of the bearin, Apply seed in the Section Statis of the Section Se Stabilize the bottom and sideslopes of the infiltration area immediately following construction of the basin.

SEED AND MULCH SIDE SLOPES AS NECESSARY FOR EROSION CONTROL SEE LANDSCAPE PLAN.

PROPOSED INFILTRATION
BASIN BOTTOM:

NE BASIN ELEV. = 979.0
SW BASIN ELEV. = 987.5

BASIN 100-YR HWL = 982.0 BASIN 100-YR HWL = 989.6

De Endolish palitik seed mich in occordance ku promotecturen specification.
Seed endole misse with a nuties seed office of the plant seeder, or a
plant seeder of the objusted bulk application rate of each michan. Use
copable of mandelinging culturum michane of seede olding officing, but
and with oble furner operates out of pecker externally to compact the
compact the compact of the compact of the compact to the compact to

The appropriate dates for spring seeting are form April 13 through July 20. Fell seeting dates are from Spatienter 20 to Coldeber 20. Dommont seeting dates are from October 20 to November 15. Dommont seeding will only be closer if the mountain soil temperature at a depth of 1 finch dates not accessed 40 degrees F in order to prevent seminoloid. When the extent in the season of planting perphilal seeding of the permanent seed middrut, opply temporary seeding and midch and then upply permanent seeding at a later of date.

Perform a minimum of 2 tests at each infliction site (0.5-acre bottom area or less). Perform 2 additional tests for every additional 0.5-acre of bottom area. Verify the number of tests with the geotechnical professional and the governing authorities. After construction, provide deal-ring infiltrometer testing (ASN U-2X95) at the infiltration site in order to to varify the performance of the as-ball infiltration system. The tests shall be performed at the bettom elevation of the infiltration balan and shall be performed by a qualified generational professional. INFILTRATION AREA PERFORMANCE TESTING:

e sweeps of the measured infliretion rotes must meet or exceed the infliretion rote used for both clearly. If the measured infliretion rate does not meet or exceed the required rate Controctor about perform the necessary sail corrective and/or sail replacement work within the return of the Controctor's expense will the measured infliretion rate meets or exceeds the controctor's expense will the measured infliretion rate meets or exceeds in required trate. All or—embing shall be of the Controctor's expense.

HAND—PLACED, CL. III RIPRAP, 6 FT. OUT ON ALL SIDES (18 CU. YDS. MIN.) 1/4"x1" FLAT BAR (ROLLED TO PROVIDE — OUTER RING) 48" DIAMETER (I.D.)
PRE-CAST REINFORCED
CONCRETE MANHOLE
STRUCTURE 12" DISCHARGE PIPE-GRATE IN TWO SECTIONS, HOT-DIPPED GALVANIZED AFTER -FABRICATION (ASTM A153). 6.75" THK. TO FLAT BAR = 1"--FLOW FLOW 2"x6" KEYWAY CAST INTO WALL AT FACTORY 989.00 SIDE VIEW TOP VIEW 1/2" DIA. STAINLESS STEEL ANCHOR BOLTS AND HOLD— DOWN PLATES (4 REQUIRED) OUTLET CONTROL STRUCTURE -64"-6" DIAMETER
OPENING IN
RAFFLE WALL BOLTS MIN. 4" -1-1/4" 12" INLET PIPE -#5 SMOOTH BARS @ 4" O.C. EACH WAY OVERFLOW=991.50 NORMAL - WATER LEVEL 12 INLET PIPE CONCRETE BAFFLE WALL #1 NOTE: CORE-DRILL,
SAW-CUT, OR FORM
ALL OPENINGS FOR
SMOOTH SURFACES
AND SHARP LINES GROUT THE JOINTS
BETWEEN THE BAFFLE
WALL AND THE KEYWAY
WITH MORTAR TO
PROVIDE A WATERTIGHT
SEAL BAFFLE WALL ADDITIONAL #4'S X 4'-0" LONG

STORM SEWER NOTES AND DETAILS

**CONVENIENCE STORE 1260** 

ROBERTS, WISCONSIN

O7FEB22 CITY COMMENTS 2JAN22

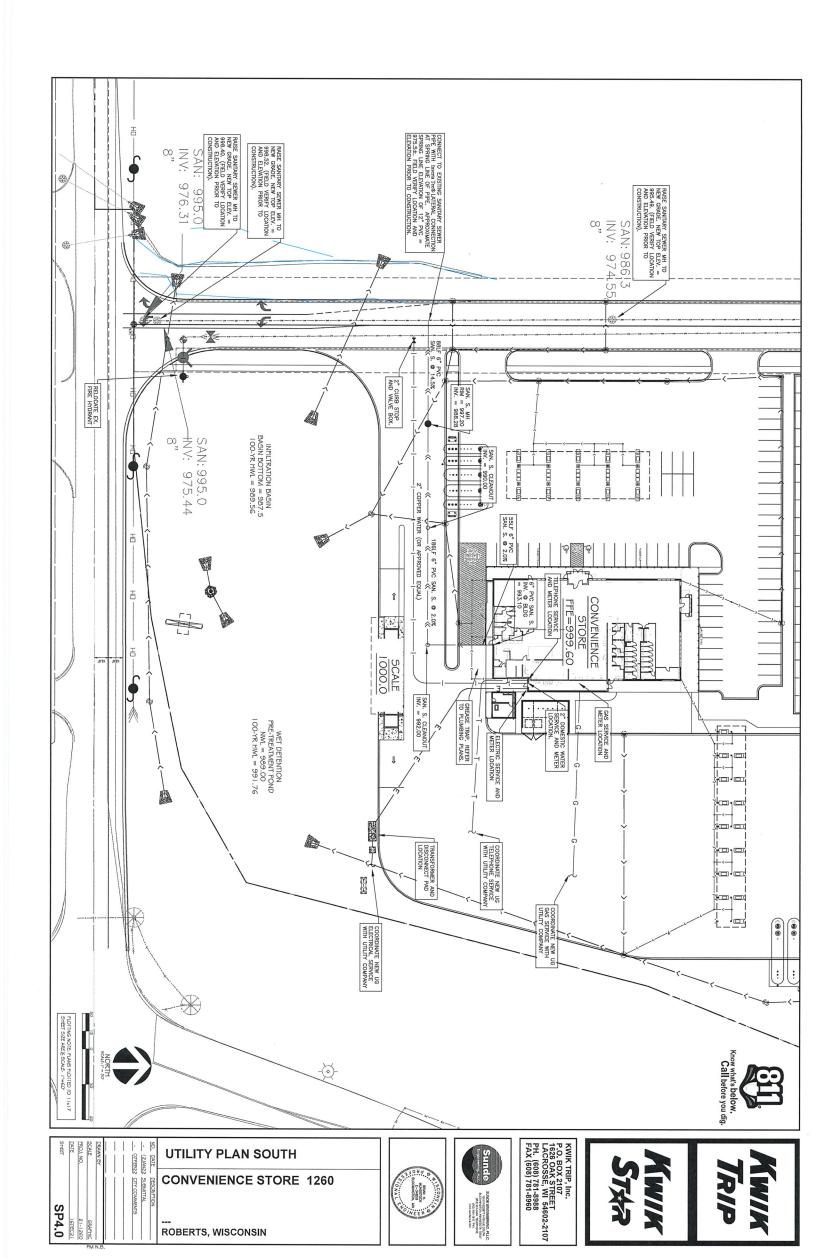


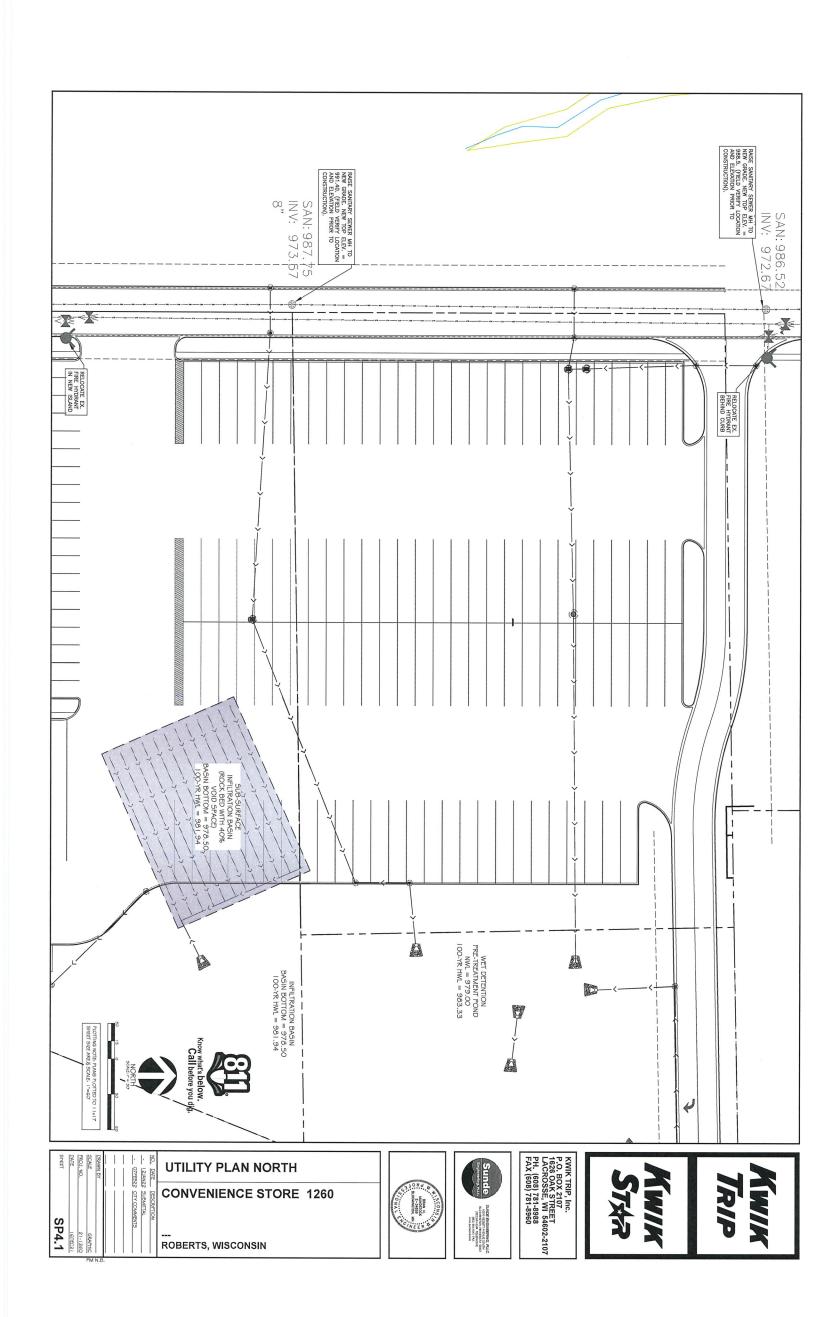


INFILTRATION BASIN DETAIL









## A licensed surveyor shall perform construction stoking. The Contractor shall provide and be responsible for the staking. Yelly all pion and detail dimensions plar to construction staking. Solas the limits of relations to the staking plant of the shall, and establish shall all shall be all plant shall be and maintenance and the staking plant of the shall plant shall be all the s Refer to the architectural plans for building and stoop dimensions, site layout and dimensions, pavement sections and details, striping, and other site features. Examine all local conditions at the site, and ensume responsibility as to the godes, constant, and the character of the earth, satisfary conditions, and other thems that may be encountered any exerction work closer or below the existing grades. Review the dereitigs, specifications, and geotechnical report covering this work and become it confirm with the articipated site conditions. Safely is safely the responsibility of the Contractor, who is also safely responsible for the construction means, methods, techniques, sequences or procedures, and for safety precautions and programs in connection with there. Work. Comply with all applicable local, statu, and feetent safely requisitions. Comply with the work safely practices specified by the Completional Sordey and Health Administration (ISSA). CSM posibles entry in its confined species, such as manihous and inlets (see 20 RF Section 1910.145), without undertaking settinin pecific practices and procedures. Barch or slope siderall in order to provide safe warking conditions and stability for the placement of engineered fill. Perform accordions with concentrate and stability for the placement of engineered fill. Perform accordions with care maning the "Completes Individual" of Republic Section 1918. Supply or benefiting for excordions with the requirements of CSLS CSLS (Septing or benefiting for excordions greater than 20 feet deep must be approved by a registered professional engineer (eva-absolup). Perform all construction work in accordance with State and The Engineer shell not hove control over, obtang of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for safety precolions and bycognam is consortion with the Work. The Engineer's review shell not constitute approved of safety personalizes or of any construction means, methods, exchinages, sequences, or procedures. topographic, and utility information 12/22/21. The Engineer is not re 32. Protect sub grades from damage by surface water runoff.

42. Refer to the geotechnical report by the Soils Engineer for dewatering requirements. Obtain permits from the City for work in the public right-of-way. Ballidia and Canazar Read Lifedi. Ledder Drobestian Provide frest, protection in accordance with Wisconshi Opportment of Seltry and Professional Services 1559 82.04(1)(6). The minimum depth of cover for building and covery roof drink leaders which, insulation is 5 feet, insulation roof and in leaders at locations where the explaint Grown is used loss of Services. The services of the covery in the control of the covery of the piper on restancing the covery of the covery of the piper on restancing the covery of the covery of the piper of the covery of the co

At Cacking utilities shown on this pion one located as occurriely as possible. However, the triplement does not approximate that of utilities are shown, or if shown our in the scoot possibles indicated on the pion. It is the Contractor's responsibility to creartion the final vertical and horizontal location of all estating utilities (manipul manipolay stater and severe fines and opperationates) and to noisify the convent of the utilities or minimum of 48 possible, of all utilities which may be effected by the construction.

de Detactoble Witchina Cloger Intendi detactoble underground swaring tops directly obsern all underground utilities et al death of 457 mm (il in Intend) before infinished greden, utilities et berniehe indicated. Underground swaring stars shall be 3-richetes wide with a minimum 3.0 mil overall thickness. Tops shall be manufectured using a close mil other vicini polygophere film, reverse printed and intended to a 0.35 mil adid antiminum (ed core, and then inministed to a 0.35 mil other vicini polygophere film, The administration besiding mickes underground casets easy to final dualing a mon-ferround second. Tops shall be printed using a closerophy beliefed steady for maximum shalling and must be 4-print closer of benefit colors of burief utilities. Use Fre-Lite Sciely Production are supradiseased-graun of beactoble methods upsa or opported experts.

12 Detectable Microiza Tases: Install detectable underground worming tops directly obers all underground utilities et a depth of 457 mm (18 Indees) beless finished greits, unless otherwise indicated. Underground worming tops shall be 3-indicate sides with a minimum 5.0 mil overall thickness. Tops shall be a 10.35 mil mound charles of 10.50 mil mound charles opprosphysis mil r, reverse principe duel believed to 0.035 mil become for the proposphysis mil r, reverse principe duel believed to 0.035 mil become micros underground carests say to find using a non-ferrous locator. Tops shall be printed using a desponsity printed adespit for maximum whitelity and mast the AFRA (100-C-)-code standard supplied and find using a find using a mount of the find using a description of buried using a find using a mount of the find using a mount of the final things of the find using a mount of the find using a description of the final things of things of the final things of things of the final things of the fin

Threaded hase connections including hase bibbs and hydrants must include a back flow prevention device in accordance with UPC part 603.0.

On Fire hydrolis shell be in occordance with the registements of the local municipality. Do not commot hydrolist definition solution stream severa. On one locate hydrolist within 10 feet of shallow severa or atom severa. When placing fire hydrolist in localists where the grandwater totale is less that it is a feet below the grandwaters, also the hydrolist which holes and equal by hydrolist with to larg stilling the need for pumping other use. Modeland o 3-host deer pages created he characterises of all fire hydrolists. All hydrolists harders shall not have a steel or pumping other use.

21 End bidgat Bissoph A fire legical cosmity consist of a betten fiers, a least bornt, an upper fire lybrait and a cap or mostle section. Cach fire lybrait may also have a usularly set view. At each fire lybrait marcral location, completely remove the entire fire lybrait assembly as will as the ensembled coulding deteroin.

22.20 not seemed the monutacturer's specifications for curvature of pipe and deflection ot pipe joints.
Securely close all open ends of pipe and filtings with wartigith, plage when work is not in progress.
Keap the interior of all pipes clean and ramove any dirt or debrie from joint surfaces after the pipes
have been lowered into the french. Install all views plumb and located according to the plans.

Provide positive drollings every from buildings of all times. Provide and maintain temporary desirage introvalated construction until the permanent demonstratement attractures are in place and operational install temporary dictature, points pumps, or other means are excessory in date of basers provide demonstrate of ultrace. Provide has points of building pods or rootways with positive outdist. Do not back draining for or direct access of chings to displace in provide.

I Protect all students and indexcepting not leaded for demolition from damage during construction. Provide protective consisting and endowers as messeary to prevent damage to establing with that it to maint. Debring work to remain may include items such as fress, shoths, brans, adecable, drivers, custs, utilizes, beliefsing and/or other structures are not edizoned to the side. Provided temporary treases and characters are also adding surveys and seament consistential in the continues are also adding surveys and seament consistential in the continues are seaments, are consistently and seament consistential in the continues are seaments. The continues are seaments are consistent and provided as a continues of the continues are seaments. The continues are seaments are continued to a condition equal to or better than the addition growth in the seament seaments.

33. Full design strength is not evailable in biturninous povernent areas until the final lift of capitalt is compacted into place. Protect povernent areas from everloading by delivery trucks, construction equipment, and other vehicles.

seeing or drilling concrete or mesonry, use sews that provide water to the blade. Do not allow the produced by this process to be tracked outside of the immediate work area or discharged into the system.

X. Adjust dil public ond private structures including curb steps, work beaus, molitorense hole cardioc, catabosis-cossileggi, elevand, covers, and milliosi firms to finished great. Comply with the requirements of each structure's center. Structures being reset in powed areas must meet the owner's requirements for traffic loadings.

Si Gedelig for all siderebla and occassible routes, including drivency creatings, shall conform to current State and Federal Americans with Dissibilities Ad (QA), requirements, in accordance with QAS Selection 403.3, alopes shall not occased secret ZX cross slope or 5% in the discision of troval. Sideralic access to external building down shall be AZD compliant. Accessible portions given shall not not exceed 2X slope in only direction.

. Curb ramps on accessible routes shall comply with sections 405 and 405 of the Americans with Disabilities Act Accessibility Guidelines (ADAG).

In install oil pipe with the ASTM identification numbers on the top for inspection. Commente pipe loigh of the Install engage that often identification properties are since it find with the three in positive denicepe of the often location (by the pipe with the bell end or meeting grown and of the pipe pointing upprobe. With connection or existing pipe, uncover the existing pipe in order to allow any objectments in the proposed less of pipe before loying any pipe. Do not loy pipes in water or when the trench conditions are unablable for such work.

So Octain and gay for all parmits, tests, inspections, etc., required by agancies that have jurisdation over the project including the MPEES parmit form the State, the Contractor is responsible for all bands, letters of oracit, or each survives related to the work. Execute and inspect work in accordance with all local and state codes, rules, conformers, or regulations perfaining to the particular bype of work invoked.

Provide all traffic carried required in order to construct the proposed improvements. Traffic carried elastic and seasociated generations deprends on the sequential type of the Controller Comply with local carried to carried the first sequential type of the Controller Control Devices for Streats and highways (MATCA), and the Wisconsin Marcal on Uniform Traffic Control Devices Supplement to the MATCA. If the temporary traffic control zone effects the movement of posterioran, provide desiquent temporary prefersion access and the control zone of the control zone

ect to existing scrittery sever Mrfs by correlating. Connect to existing storm sever Mrfs by either for the control of the co

Provide temporary fences, barricades, coverings, and ather protections in order to preserve existing items to remain, and to prevent injury or damage to person or property.

40. Measure pipe lengths from center-of-structure to center-of-structure, or to the end of aprons.

43. Test boring data shown on the plans were occumulated for designing and estimating purposes. Their appearance on the plan does not constitute a guarantee that conditions other than those indicated will not be encountered.

Completely remove soliding concrete and massiny structures that are located within the proposet building and future building sponsions mores. All other satisful power of externiar layers that are to devotationed stall other to removed, or completely filled with send or controlled low strength material (CLSM) also known a flowable concrete fill. Believed entitle of the pipe segment to be decommissioned with concrete. All other soliding sending sending years and strength sending sending sending sending sending, and the demonstrate of the sending sending sending, and the demonstrate of the sending sending sending, and the demonstrate fill sending sending sending, and the demonstrate fill sending sending, and the demonstrate fill sending sending, and the demonstrate fill sending sending, and the sending sen

Construct sanitary sewer, watermain, and storm sewer utilities in accordance with the Standard Specifications for Sewer and Water Construction in Wisconsin, Sixth Edition, or the latest revised edition.

These plans, prepared by Sanda Exploserting, PLLC., do not extend to or include systems perioding to the safety of the construction controctor or its employees, agents, or representatives in the periodinance of the safe. The said of Sanda Explosering's registered professional significant herical cost not extend to any short safety persons that may one or hereafter the incorporated into these places. The construction contractor shall prepare or delain the apprendict safety systems which may be required by U.S. Occupational Safety and health Aministration (OSAM) and/or local regulations.

J. Code, 18(c) Locality regiments — a meant to local brief underground earlie's sweet/mints must be provided thit becre with or other methods in order to be located in occord with the provisions of the Wisconsin Shutuss (18.0.175(2)) and the Wisconsin Deportment of Softly and Protessional Smiriess (26° 82.20(1))(b). Intellal beology sizes and all conductive and non-conductive storm sweet, sealing of the provided state of the provided st

7. The Contractor is solely responsible for all utility locations. Contect their contents of all public and private utilizes within the work war prior to beginning construction. Context Diggar's beliate at (414) 259-1181 in the illenature Metro Avez, or 1-500-242-2511 elsewhere in Wisconsin for secol colorions of earthful utilizes at lease 72 hours, frost inducing weareness and holdingly before beginning any construction. The vibration of the second colorions of the second colorions of the second colorions of the second colorions. The vibration is a first awards that locates municipal and utility lines in the second colorions are service and the second prior deather lines. We an independent booth service or other means in order to addition before prior willing lines. The an independent booth service or other means in order to addition before the second prior willing lines in the an independent booth service are of second to describe colorions. The contractions of priors willing lines in the an independent booth service are of second to describe colorions. The contractions of priors willing lines in the annual formation to underground electric coloris, telephone, TV, and the many prior lines in the second colorism to the second colorism to the second colorism to the second colorism to the annual colorism to the second colorism to the second colorism to the second colorism to the second colorism to the colorism to the second c

In he locations of eatisting utilities wheren on this plan are form record information. The Englater does not it guarantee that all existing utilities are shown or if shown, eath in the locations indicated on the plan. It was considered to a several the Contractor's responsibility to essential the final vertical and harizontal location of all estiting utilities in the Contractor's responsibility to essential the final vertical and harizontal location of all estiting utilities in the Contractor's essential that the contractor's essential

The subsurface utility information attem on this pion is utility Quality Level (D. This quality level was determined according to the guidelines of CJ/ASCS, 28–02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" by the FHA. Coordinate building utility commotion locations at 2 ft. cut from the proposet building with the interest Flumbing Controlled profit to construction. Worly water and serve survice locations, size, and developes with the Mechanical Engineer prior to construction. Coordinate construction and connections with the Mechanical Contractor. <u>Testing and Inspections</u>: Coordinate testing and inspection with the State Health Department and the City Publish Works Department. No drainage or plumbing work may be covered prior to completing the required tests and inspections.

It Exact. Was Leading requirements — a meant to locate build underground station steera/moins and the provided with tree or related in care metabods in certa to be located in second with the providence of the Wisconin Statutes (82.01742/s) and the Wisconin Department of Sorby and Professional Services SE (82.20(11)b). Intell booking wise an all condication of one-conducible statem sears, another search of the search of the conducible statem sears and the search of the searc

All may installed or replacement jobes, pipe filtings journing filtings and finders, including backfow preventer, thick or included on proble wetter options or options that one obtaiget the distribute water to publish use, or required to ment the Reduction of Lead to Drinking Water Act, which establishes a maximum lead content of 0.25 percent by weighted energy of the well-of surfaces. See UPC part 60.4.17.

A. Streight line coer-cit existing biuminous or concrete surficion of the perimeter of powerent known creat, Use some this provide water to the blook. Do not close the stury poduced by this process to be trusted outside of the immediate work ones or discharged into the sever system. Tack and match all connections to

Store and protect existing site features that need to be removed and replaced in connection with the Work. Replace damaged or stolen site features at no additional cost to the Owner.

S Provide on-Publis in occordance with City and Webenhed Didnick repolarments. Record on-Publis information Control of the Control of Control o

52. Place #4 x 2'−0" tie bar at 3' on center in all concrete curb and gutter.

51. Place #3 rebar at 3' on center in all 6" thick concrete povement locations. Place #4 rebar at 4' on center in all 8" thick concrete povement locations.

50. See architectural for building waterproofing and foundation drainage.

As in oder to document and welly acceptance for adequate atom water treatment provide a port-constitution can-ball survey in acceptance with Cap out Witershed Market requirements for all stem wester infrastructures. This ar-ball survey shall refusel, but is not limited to, location, top, and innert devotates of ministerance hotes, combination, adecorate all beninfy-well greates pile relate, unlet piece and structures armsprory constitution, collects, wells; pile steet challents exercision and structure pounds, family influence or filtration beams and on passessing start when their devotations.

Si finalde uitly lines et locations indicated on the joins. Provide a minimum insulation thickness of 4 inches. The amendrum male is put near 4 even des out cereation of the plays. Assist the mandation because the company of the plays are settly on the plays are settly on the plays are settly on the plays are settly one of a cereation of the plays are settly one of the plays of 55. Test reports required for project close—out include, but ore not limited to: density test reports, becterological state on the sater system, create tests on the sater system, leak tests on the saver system, deflection tests on all HDPE pipe, and infiltration testing at the shorm water infiltration site.

Elegandes Audelags. Herkings that or no longer opilicable for reading confidence or nethiclates and this registrates continued for the read user that he removed or obligated to be undestitable as a making as some a proteical. Persenett modeling obligations shall memore the non-applicable powerment medicing material, and as obligation and the obligation and obligation and the obligation and

Arroge for and secure satisfate disposal orace off-site. Dispose of all secess soil, seate material, educity, and all materials and secured secured as a second of the second of the secure of the construction operations. Debton the right to any seate one of the operation of the pions. All seems if indigential of section the secure of the pions are seen in disposal or section secure of the secure of the pions. All seems if the secure of the secure of the pions are confirmed to the section of the secure of pions of the secure of the secure of the section of the secure of t

françency jusped systems een the responsibility of the Controdict, who is does nobly responsible for the controdiction means, methods, betching-a requiresce or procedures, coff for earliefly prevaidions and programs in connection that the property supped systems. Temporery supped typisms include, but een not limited to being, shelfflight but the processing supper settle, derectional boring, outper jacking, soil stabilization, and other methods of protecting senting improvements.

When working near existing telephone or electric poles, brose the poles for support. When working cround existing undergound utilizes that become exposed, prode sufficient support in order to prevent excessive stress on the existing piping. The location and preservation of existing underground utilities is solely the responsibility of the Contractor. Where adding gas, electric, cabit, or leaphons utilities conflict with the Work, coordinate that booksoment, relocation, offest, or support of the artisting utilities with the appropriate local utility companies. Coordinate may gan mater and gas line intellation, electric mater and electric service intellation, cable service, and feephone service includation with the local utility companies. Pothole to verify the positions of existing underground facilities at a sufficient number of locations in order assure that no conflict with the proposed work exists and that sufficient clearance is available.

Relocate overfread power, telephone, and cable lines as required. Seal and report any existing unused an-site wells and septic systems.

 Out furf edges in order to allow for a uniform straight edge of locations where new sod meets existing furf.
 No jagged or unwern edges are allowed. Remove tapped as required of joints between existing and new turn in order to allow the surface of the new sod to be flush with the existing. Reconstruct driveways and potch street to motch existing powement section and grade. Sod right-of-way, fination is public right-of-way of temporary construction entrance locations. Replace any contrate care despited to the contraction of the

Document existing conditions (photographs, video, field survey, etc.) in order to enable restoration to match existing conditions and in order to ensure that restored areas have positive drainage similar to existing conditions.

23. Insulde the referroin of locations indicated on the plans. Provide a minimum insulation thickness of 4 bothers fine insulation than the set the provide a management of the plans to the plans of the plans of

 Bring all site utilities to 2' outside of the building line with the exception of the water service into the building and up to the flange for the water meter. service.

SES\_382.20(5)(c) biococcula Boack Dobas: The minimum pitch of hotocosts broach drains larger than Z inches in diameter soll be 1/8 inch per foot (J.02 Except).

4ll 3' to 6' sensing drains shall be installed with a minimum pitch of 1/8 inch per foot (J.03 Except).

Foot (J.05 Percent), 9' or larger may be installed at 1/16 inch per foot (J.53)

Percent) or per NR110.13.

IES. 325.40(10)(2) Location. If a private enter main or a enter series occess a satisfacy seem, the water piping within 5 test of the point of crassing shall be intelled in occasions with any of the following requirements: (c) The sater piping shall be installed at least 12 incides above the top of the seem; (b) The enter piping shall be installed at least 18 of these below the below the seem; (c) The enter piping shall be installed at least 18 of these below the below of the seem; (c) The enter piping shall be installed within a extension of seem piping shall be installed within a extension of these pipers and the pipers of the seem of the seem piping shall be installed within a extension of the seem pipers and the pipers of the seem pipers and the pipers of the seem pipers and the seem pipers are pipers and the pipers are pipers are pipers and the pipers are pipers are pipers are pipers and the pipers are pipers are pipers are pipers are pipers.

252.382.40(0)(b)(s) Secretica of Setur and Sessor. Private wher make and what services shall be installed at least 5 feet inductionally from any seating sever. Measure the separation obtained from the colour edge of the pipe to this outer edge of the contomination source (outer edge of structures, piping, etc.). Nest that this Department of Natural Resources has limitations for the apparation of water makes out arother severe.

Maternalia. Dealth: Monthin 7.35-feet of cover over the top of the veter lines to the finished goods. Verify elevation of proposed and earling veter lines of oil utility creatings, in tail the veter lines of self utility creatings, in Italia the veter of depths in order to clear storm severe, sonitory severe, or other utilities as required. Include costs to lower veter lines in the base bid.

<u>SES\_208\_4000002 indicating interfect</u> all completed externation in accordance with AWAN Standard CEAN.

If the sholet or confirmed near detailed one used, allieflest, using all his set that conclaims the least 20 mpm of conclaims the conclaims are consistent with the post 600.9. Do not use the ballet method on anomaly well of the continued of

. All water supply piping connected to municipal water main must have a 150 psi minimum pressure rating. Easilize Fressow test and serioral honderdological tests on all sector less under this squericide of the ON place West Deportment. Avoidy 16 of yet clear 2.5 webling hone price to only taking. Feature sets the sector period () recondence with the sector of the sectoristic of the sectoristic of the sectoristic of a pump connected to the pipe in a belief sector primary, not not ded sector to the sectoristic of a pump connected to the pipe in a belief sector primary to one ded sector that sectoristic in a reder to include the required primary advoig the sector main pressure statistic. The test section of pipe section testing the prior of main testing. The test section of pipe section testing the prior of mit testing the testing testing testing the section of the s

Copper water services must meet ASTM BBB and be type K soft temper or type L soft temper (see UPC part 604.0.)

(10 Polyethylens (PS) Billiding Water Services must comply with the requirements of AWWA Standard CSS11; pressure model for water (Seq IPP) part 604-03.) In paid incell PC water service pips under or which value in the complex state of the complex state of the complex state of the complex state of the complex state (PS). If the complex state (PS), PE taking ranges in size from y-144 in. (19 mm) through 2 in. (51 mm) and conforms to the OD dimensions of for pips size (PS). PE taking ranges in size from y-144 in. (19 mm) through 2 in. (51 mm) and conforms to the OD dimensions of corpor tube size (CTS). Polytoyl Charlet (PKC) ballding Wither Services must comply with ASTA 01785, ASTA 02241, or AWKA. CSD01, pressure rated for water (See UPC part 694.0.). Do <u>not</u> install PYC water service pipe under or within any ballding, structure, or part thereof.

Duelle from jiele (IEP) welste sweises must comply with AWMA (151/ASS AP1.51 or AWMA (115/ASS AP1.51 or AWMA (115/ASS AP1.51 or AWMA (115/ASS API.51 o

Bobbilds Chicade (PCL) Matermatic Use ARRA CSDD for all PVC wetermich furnished with integral discintanties best and supply clients minimum pressure Class 150, demension ratio not yearter than 18, laying length 20 feet. Use EBM kmm, law-", Seriest 2010 PV Mepalog," or approved squal for restriction on 2010 PVP wetermain. Use only ARB 304 estaintess steel bolts and note on all watermain fittings, volves, and before the contraction of the contraction of

13. Use methorical joint restraint devices for joint restraint on all watermain bends horing a varioud or horizontal deflection of 22-1/2 degrees or greater, all volves, atobs, estemions, tess, crosses, pipigs of hydront volves, and all hydronts in accordance with CSP requirements. Use "Street 1100 Medgang monufactured by EBA from Inc., Earliest, Tess, or approved equal, intelled in accordance with CSP and monufactured are commenciations for settlent of bucklet from Pipe. Restraining devices are to have poory opproved equal-water.

\_FES\_382\_400[cl(1)(h) and (i) Exetor Grouse Interceitors: Manhole risers for gress-interceptor tunds shall be provided with a substantiol, fileds, wettright, over of concrete, steel, cast iron or other opporved material. Manhole covers shall terminate at or above grade and shall have an approved locking decise. A minimum 456—inch permonent lobel shall be effected to the manhole cover, identifying the interceptor tank with the wards (4502.05 INTEXCEPTOR.)

Use Nemoth Foundry Co. R-1642 costing with self-seding, solid, type B lid, or opproved equal, on all sonitory sewer maintenance holes. Covers shall bear the "Sanitary Sewer" label.

incell flexible waterlight from Archimary seals on all scalings are moletomore broken in order to seal the outleted of the dimensy from the cost from forms dawn to the cone. The seal shall be a continuous seamines boat made of high quality EPDM (Ethylese Progriese Diese Manners) habes with a minimum thickness of SS mile. Use Internal/Internal Adapter Seal as manufactured by Adapter, for SS mile. Use Internal/Internal Adapter Seal as manufactured by Adapter, the Committed State of the Committed State

Cuch Victors and Bosses Use Mueller H-10324 extension type out box with Monespolis patient hose, or opproved equal, et al. Through Z and stop locations. Stationary or is required an ottom hose, or Use Mueller Company Mark II Orised No. H-13154H curb stop, or opproved equal, and statiless steel stem not. "Mitternation Mostate: All ell vivele locations which require a [12" or manifer vivele, initial gold wiveles which are of the comprehens resulted search search [15] byte. That American The content is state 2020 build incert familient Wedge citer (vivele, or oppreved equal. Celle wivers shall conform to MWM, COSI, Initial cost incert viveles boars conforming to ASTM Add at each vivele location. Vivele boars shall be the three-piece (yes, with 5-1/4" shafts. Use Tyler 6820-Q with No. 6 boars, or equivient. Vivele boars shall have at least 6" or displicantly shown and bloom families growth only convers or vivele boars shall be round and bear the world "MICIS" cost on the 600. Use Tyler 6820-Q "Strippl" convers or who bears shall be round and bear the world "MICIS" cost on the 600. Use Tyler 6820-Q "Strippl" convers with stateded shift, or which the converse which stateded shift, or

BEGIZERALLI INI. SES. 282 MC/MCIAID. and SES. 202.4(2016). Location
BEGIZERALLY among to locate barder underground action from results of the second action and selected so color and color actions and selected in second which the provided with trear wise of other metods on rooter to be located in second with the provided with trear wise of other metods on rooter to be located in second with the provided of these cold selected in care of the provided provided and the second several second second

Datachable Hamilia Tage: Invalid deptable undergrand earning the directly above a contractive of the contrac

Listal Education Provide first princision in accordance with Wiscomin Department of Softly and Professional Sources as 592 820(11)(d). This infiliation sould be count for something severe without insulation in a first, Insulate sentingly sever services et incordance where the solid but the insulation must be in accordance with riches 402.2027, but in no cent less than 4 feets take and contented on the pipe, Instell et insulation broads 6 inches above that tops of the pipes on mechanically just the country of the pipes o

I nettel all joby with the ACTM identification numbers on the top for interestion.

Commente pipe longs of the isower point in the proposed sewer line. Find of wifly
one, there is possible advantage of the control location. Cay the pipe with the self end of
pipe, uncomer the activity pipe in colorier to allow our polylenments in the promoted line
and grade before loging any pipe. Do not lay pipes in eather or when the trench
conditions are unsatisfied for soch work.

6. Terminote all new sewer stubs with a water-light gasketed cap properly braced of a deer to withstand the infiltration-existication text. Intail grade-invel/in-ground wire access boxes and drive—in magnesium grounding anodes at the end of all 5. All addle tee or wye fittings must provide an integrilly molded pipe stop in the brunch for positive protection against service pipe insertion beyond the inside of the sewer main pipe wall.

> O7FEB22 CITY COMMENTS 12JAN22 SUBMITTAL

**SP4.2** 

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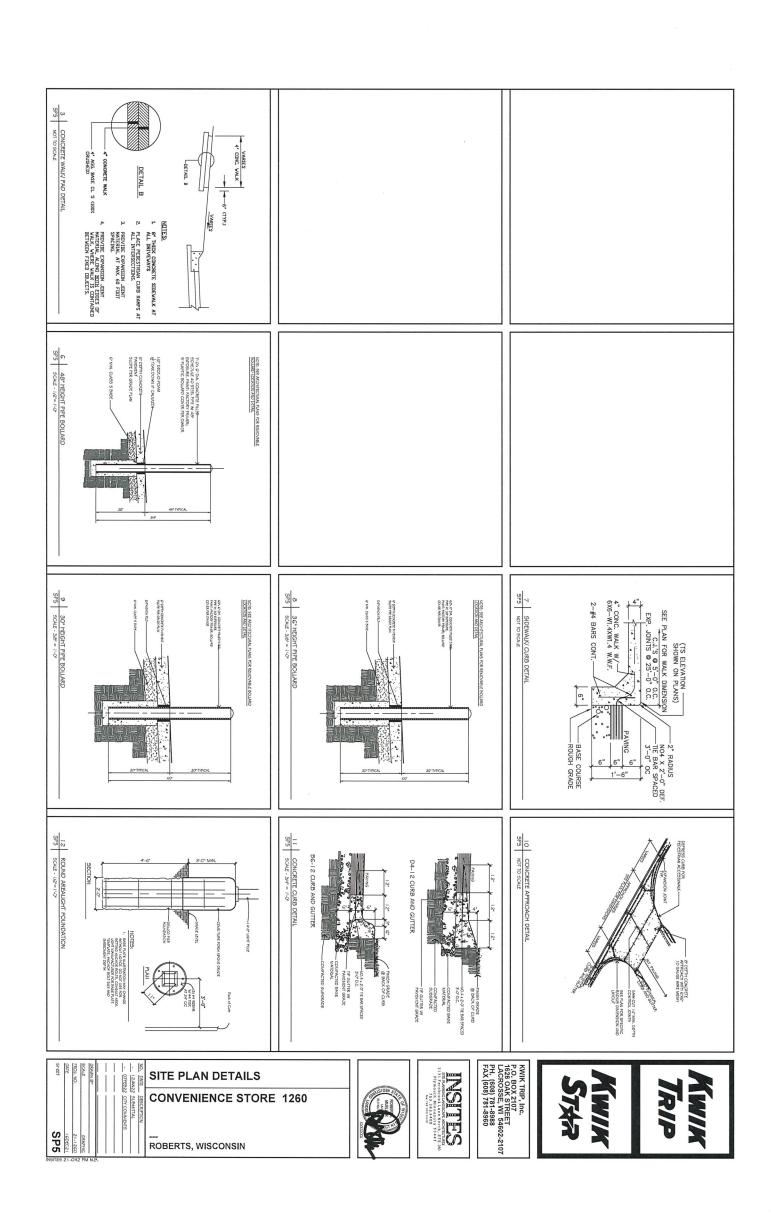
Issing: Pressure test all sanitary sewer lines in accordance with the UPC parts 712.0 and 723.0. Test all fleabile sanitary sewer lines for deflection ofter the sewer line has been intalled and backfill has been in place for at least 20 days. No pipe shall exceed a deflection of 5%. If the test falls, make necessary repairs and retest. KWIK TRIP, Inc. P.O. BOX 2107 1626 OAK STREET LACROSSE, WI 54602-2107 PH. (608) 781-8988 FAX (608) 781-8960

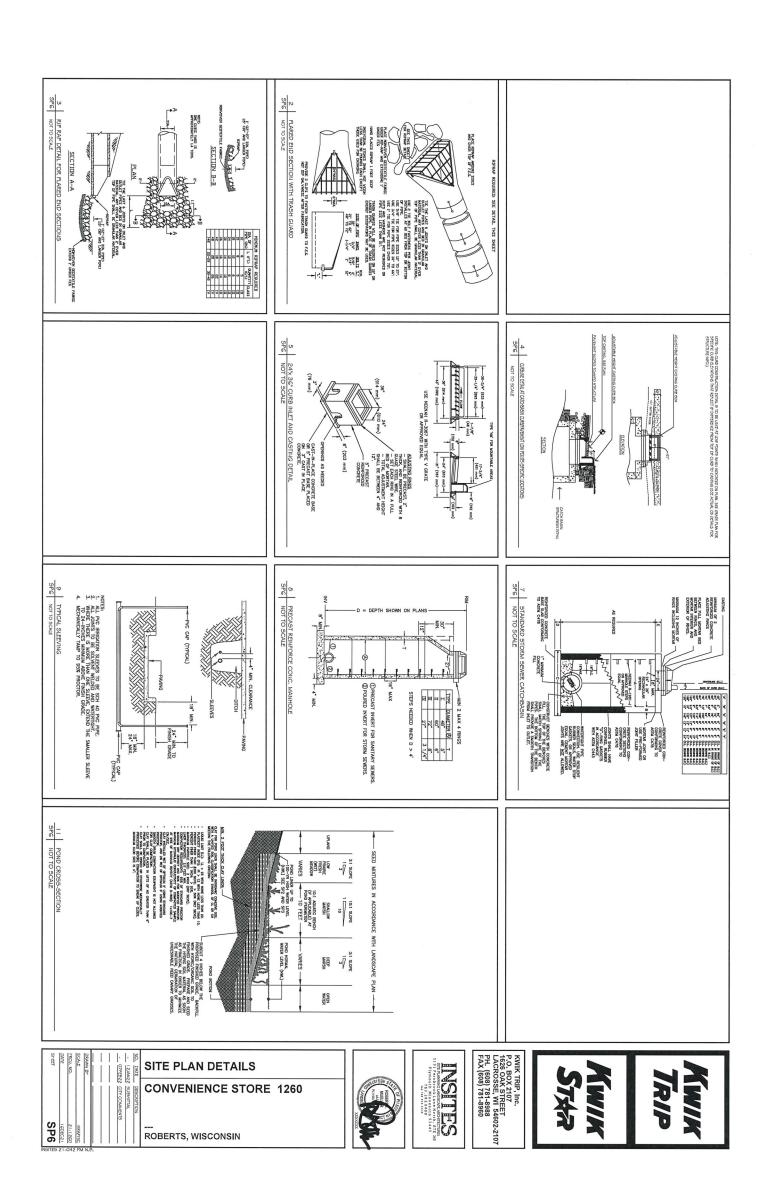
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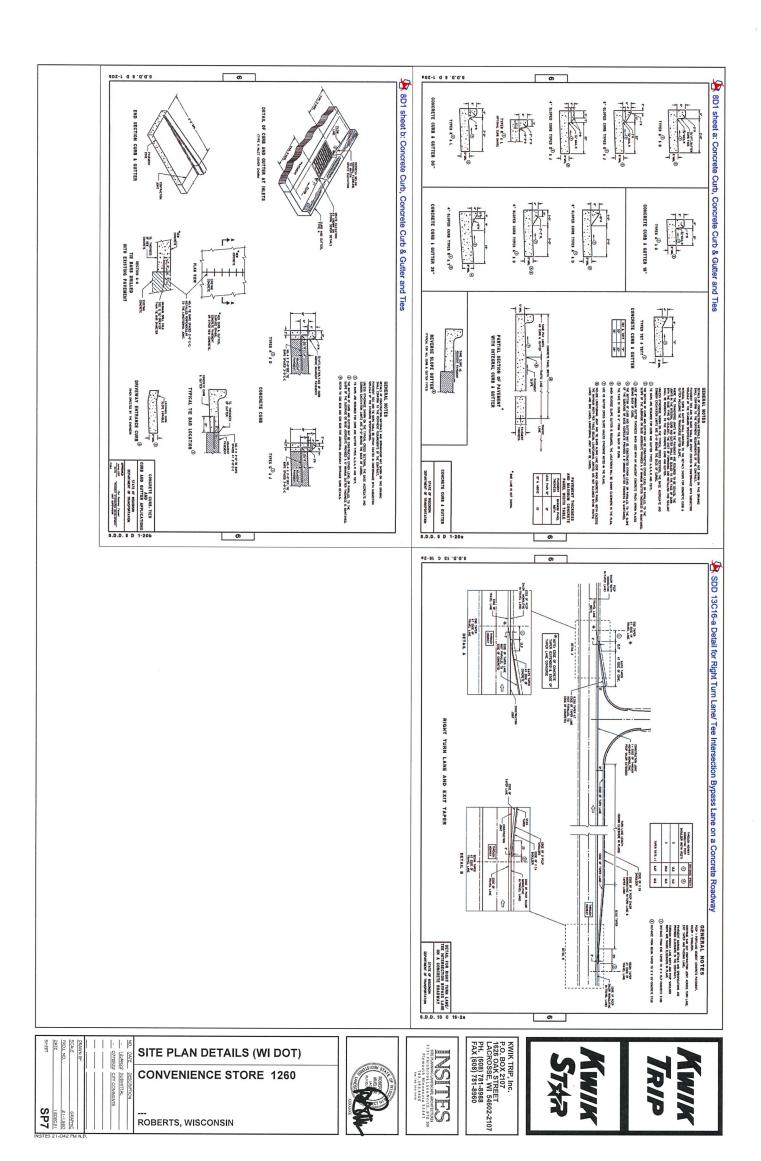
### **UTILITY NOTES**

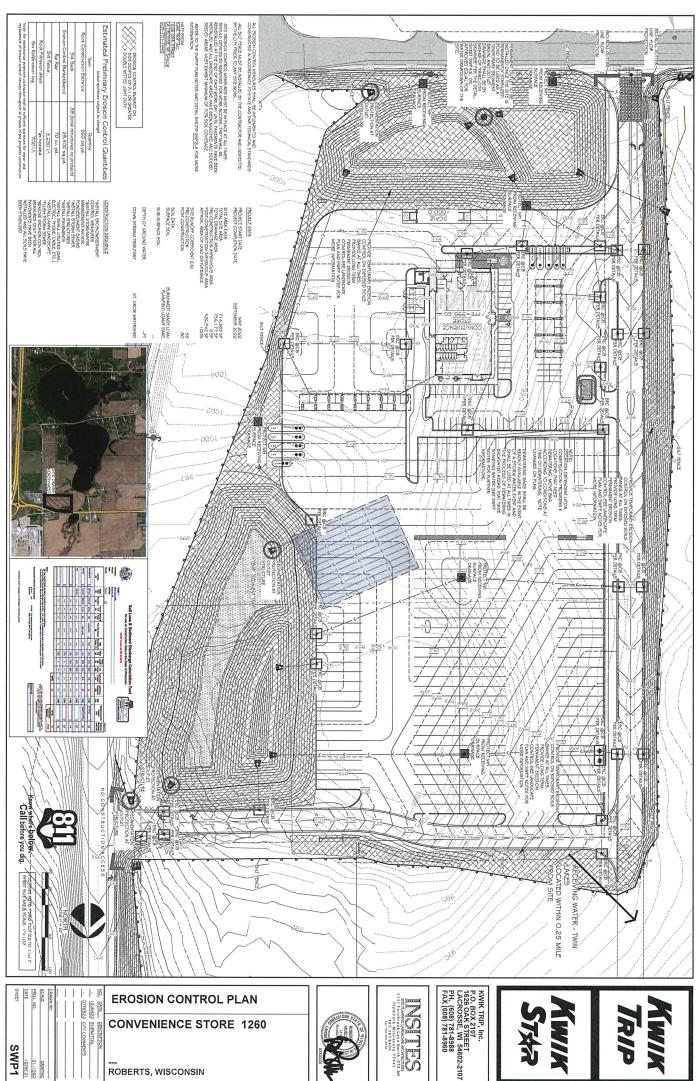
**CONVENIENCE STORE 1260** 

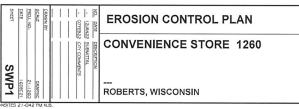
ROBERTS, WISCONSIN



















SENERAL STORMWATER POLLUTION PREVENTION

Sommater Relution Frenchic Rim (SMFPF): The SMFP notion the survive, The Shecks SPS, SPS, Last SPS, 2, and the Sommater Management Collaborate, Kore a copy of the SMFP; all shapes to, Last dispections and management records at the SMFP; all shapes to be available for all shapes performed by the contraction. Drong the controllation process the SMFP; all shapes to be available for all shapes performed by the controllation, the controllation and the same of the amortinests port to though make to the SMFP; All patter, providing the same of the amortinests and though management to the SMFP. All patter, and diagrams will have to be recorded and make available as part of the SMFP permit.

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The owner is responsible for identifying who will have introduced management systems. ind maintenance of the permanent

# SITE INVESTIGATION, INSTALLATION, IMPLIMENTATION:

- Prior to any work, contractor shall wast the site, document existing conditions as necessary(photos, notes, etc) and note existing drainage patterns on and off site that are related to the project. These notes shall be part of the SWPPP.
- I result all temporary economias dedeninat control measurem moluding all fereix, note construction estimated, a result of temporary economias control berms, more filtery and substitution berms, from filtery and incoming adents, result beams, adents, made account parties, from a deservation and account de size. All protections and preventative measures must be in place and imprecised gener to beginning size distancy garding for other land-adenting activity.
- From to beginning sits cleaning and galady, protectal alternatives middle that recover modificant destinate areas, in nodes to prevent sodiment from learning the destinate destinates the control of the
- Exitive beginning acceleration, settle 1 (1847)644/7 (COC (COS)TELLICITON INTRACEL at each point where whiche eat the commission in 40 Mart at all provide contracts and decayable only one case of the provided by the entering and entering the set. The notice in the entering which there to be improved daily and organized cross supplementary by the contract and the provided daily and organized cross supplementary and the contract and the provided daily and organized cross supplementary and the contract and the contract and the provided daily and organized the contract and the provided as such. Front Cost of the contract and the provided as such in contract and the provided as a such in contract and the provided as a such in the contract and the provided as a such in contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the provided as a such in the contract and the co
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- Receival Waterford: It is the contractors responsibly to respect the site distingly post as well advantage man by the receival bedy of waterford. It is the contractors responsibly to respect the site distinguishment work and done once if any differences or body of waterford. It is the term, etc.) or negative takes reflectly after each some work pad of any differences or designs in remain discharge and imaterial is teaming the construction site. If so it shill be decommended and removed immediately.

NOTE: ALL EROSION AND SEDIMENT CONTROL DEVICES WILL BE CHECKED BY THE CONTRACTOR AFTER EACH STORM EVENT AND BE MAINTANED, OR IMPROVED LIFON AFTER EVERY STORM EVENT TO ENSURE ADEQUATE PERFORMANCE.

# OLLUTION CONTROL:

# Designate a Concrete Wash-out and truck wash area: Make it visible in the field to vehicle operators and note this on the SWFP plan.

- When washouts occur on the site, concrete washout water must be contained in a leak-proof containment facility or impermeable liner. Liquid and solid wastes may not touch the ground and there must not be ninoff from the concrete washout consist one or easily.
- b. On sites where Concrete Washout areas are not leasible as shown on the Detail Sheet, above ground methods and/or off-site methods can be utilized as approved by Owner.
- Concrete watout my be provided off-set by Concrete Contractor or Concrete Supplier, at an approach atsolute deposal area, Concrete Supplier my provide Concrete Watouts feats on-board their transprint for deposal of-seta. Concrete Contractor shall verify with Supplier in regards to provided Concrete Watout areas on and off-site, as necessary.
- d. Limit externil vishing of Incids and other construction vehicles to a defined area preferably before the construction accessful point. With whiteles any or an area stabilized with store that drains into an approved sediment trapping device Contain runoff and properly dispose of weater. Engine degreesing a prohibited.
- Solid Waste: Properly dispose of collected sediment, asphalt and concrete milings, floating debns, paper, plastic, fabric, construction and demolition debns, and other wartes in compliance with State requirements.
- Itatradam Materials: Propriety dispose of all waste and mende building statemats (excluding gaths) and determine statem, oil, apperion, parts, wasternature to conscribe, and shared one statemats of the control of the statemats of the control by more in control of the control of the control by more in control of the control
- Machinery: and mechanized equipment that leaks waste shall have a pro-to contain the waste. Properly diapose of the wasze.

## EROSION CONTROL

Contractor shall utilize coarsely ground wood and tree mulches to cover exposed soils. Mulches shall be supplement and use in problem areas during all phases of the construction project.

Contractor shall uses star tack or other organi substances in situations to prevent soil from eroding away by wind or rain.

Wrenever possible contractor shall grade areas of soi to limit potential of erosion, to include tracking perpendicular to fall line of grades as well as diverting water flows from problematic areas on the site.

Seeding, fiber blankets, polyharps or cover milches, disked milches and compost can be used to cover temporanly exposed areas from wind and rain. Other methods by the contractor shall be documented in the SWPPP.

Islet Sediment Control Protection Devices: The following area approved falet Sediment Contr

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Excess Bushet:

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# Silt Fence: Install and maintain per WDNR Cons-

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install and analysis of MINIK Conversion France Standard of the emenute. Execute the conditionable existence at least 15 in 1,60 feet pilot on
ministration of the Conversion Conversion of the emenute. The existence of the existence of the emenute of the ements of the

Temporary Selament Beses:
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Constance.
Transferring in coopered and steep perigin are used, all primped violate must be declaraged through an errorent control last by transferring in cooperation to the control steep and the co

INSPECTIONS-MAINTENANCE-DAILY RECORD-AMEND THE SWPP PLAN

- All inspections and maintenance accurates must be recorded in writing DAILY in a detailed etc, and kept with the SWPPP by the contractor. Contration shall impetit all encount all seldment control devects, stabilized areas, and inflictation areas on a stable begg viral band-delixing statisty flow casted. Therefore, impetit all tests on a <u>weekly been</u> call singularity card on control devects, stabilized steeps, and whiteful read so within 22 hours after a mail all erent system than 30 a mail to a 24 hours. After a mail and casted at developed by the control and action and control devects are stabilized as the stabilized by the stabilized and the stabilized by the stabilized and control devects are control devects. Internal devects are control devects are control devects are control devects. The control devects are control devects are control devects. The control devects are control devects are control devects. The control devects are control devects are control devects. The control devects are control devects are control devects. The control devects are control devects are control devects are control devects. The control devects are control devects are control devects are control devects. The control devects are control devects are control devects are control devects. The control devects are control devects are control devects are control devects. The control devects are control devects are control devects are control devects. The control devects are control devects are control devects are control devects. The control devects are control devects are control devects are control devects. The control devects are control devects are control devects are control devects are control devects.
- Contractor shall remove all sois and sediments created or otherwise deposted onto adjusted property, personal treats, selecteds, streats, and large. Removal shall be not a day has an extraction of the construction and/or as diseases, selecteds, streats, and large. Removal shall be not adjusted to be not day seeps. If necessary, scrape pand surfaces in yit the City. Clean panel randways by provining or net-extension, to not day seeps. If necessary, scrape panel surfaces in order to loopen compared administ mature from the assequent, that sediment matural to a suitable disposal area. Street washing o allowed only after sediment has been removed by showing or sweeping.

TRIP

- Contractor shell mattars all temporary propose and adment cotton descess pipes mill the controbuting dramage area has been stabled to the controbuting dramage area has been stabled to their shell of the controbution. As well as the propose and the controbution of the controbution mendately following stableduction of the site. All soil havied from the site shall be accounted for and documented in the SWPPP by the contractor, its final destination and how the soil has been scored and stabilized.
- Contrazior shall clean estimetation benni, scom sever catch basino, dichies, aud ciner dinanga fabilities in regiund i roder to martani bere effectivenere. Temporary and permanet estembation basino mast he dinandi and the resembation terrores that diseast and the resembation romani bere diseast on the resembation romani bet administration of the resembation fabilities which depth of seatment collected in the basin resides (IZ of the scorage volume. Dianage and removal mat be completed within TZ orons, or as soon as sket conductors allow access.
- Contractor shall dispect infiltration areas to ensure that no sediment from ongoing construction sediment immediately ensuring subsoils are not compacted by machinery.
- Every which stall not track material offsite. Clean he wheels of construction wholes in order to remove sole before the vehicles leave the construction site. Wash vehicles only on an area stabilized with stone that draws into an approved stallment trapping device.

KWIK TRIP, Inc. P.O. BOX 2107 1626 OAK STREET LACROSSE, WI 54602-2107 PH. (608) 781-8980 FAX (608) 781-8960

STEPRING SANGERAL SANGERS

Plymouth Minnesota 55447 763.383.8400

Contrastor shall rendrose enroum control bisoless alreas were concentrated lieus occur (soch as seales, abdusts, and areas a forat of chects and earth bread by busing them with sown fives, were men's, or shift plates men's rendrosement and pavel, and unit establishment operations have been completed. Forats for the cenforcing force shall be 100 mm (a hold shareder wood posts, or shardwat steel offere posts weighting out tests than 0.52 by (1.01 Se) per local boxs, with a namumal length of 750 mm (20) motival plus hand depth. Space posts for the rendrosing flows as unknown of 3 m (1.01 feet) or less. Owner poots for the rendrosing flows at seas 60 km (2 best ) more the ground.

# GENERAL SOIL STABILIZATION: (SEE LANDSCAPE PLAN FOR MORE INFORMATION)

oted on the landscape plan

In enerce stabilisation of soils, resisting of sost where applicable, proper externing and mich mandemates selle or expended. Repect sessed on sociodal assess on a hingly day-out-bytess. In the require of 3 secteding share, resear and entails the areas where the coopied sevel this help to grow and perform additional watering an increasing as not additional cost to the Owners. Special mandemates proposed on the label for grow and perform additional watering an increasing an increasing and and all so do that when the country of the social for both the dependent of the social for both the dependent of the social for period watering and an accordance of the social for period watering and an accordance of the social for period watering and an accordance of the social for period watering and an accordance of the social formation and accordance of the social formation accordance of the social formation and accordance of the social formation and accordance of the social formation accordance of the social formation accordance of the social formation accordance of

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or esture subquiute asimmation of the seed the work will be performed as follows: Spring I man April I from John May 15, 10 and 15 and

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In areas where migation is to be invalided, contractor shall work in access to finely goide and install the system in access. Note-Crossen control diseases shall increase in piece and tech lives been stabilized with four of created access that entitle moment of the anningstature coverage. If still force has to be removed to rotall the migation system, it shall be creatalled at the end of each work day or use he noted to provide protection during the installation process will have areas have soot and/or plant bads are indirect.

In areas to be sodded, sit ience can be removed short term for measures shall be reinstalled at the end of each work day.

NOTE: THE PROJECTS JANGSCAFE FUAN IS PART OF THE SWEP FOR SOIL STABILIZATION. REFERENCES SHALL BE MADE TO THE APPROVED JANGSCAPE FUAN. AMENDMENTS TO THE JANGSCAPE FUAN SHALL BE APPROVED BY THE OWNER AND COCUMENTED AS PART OF THE SWEP

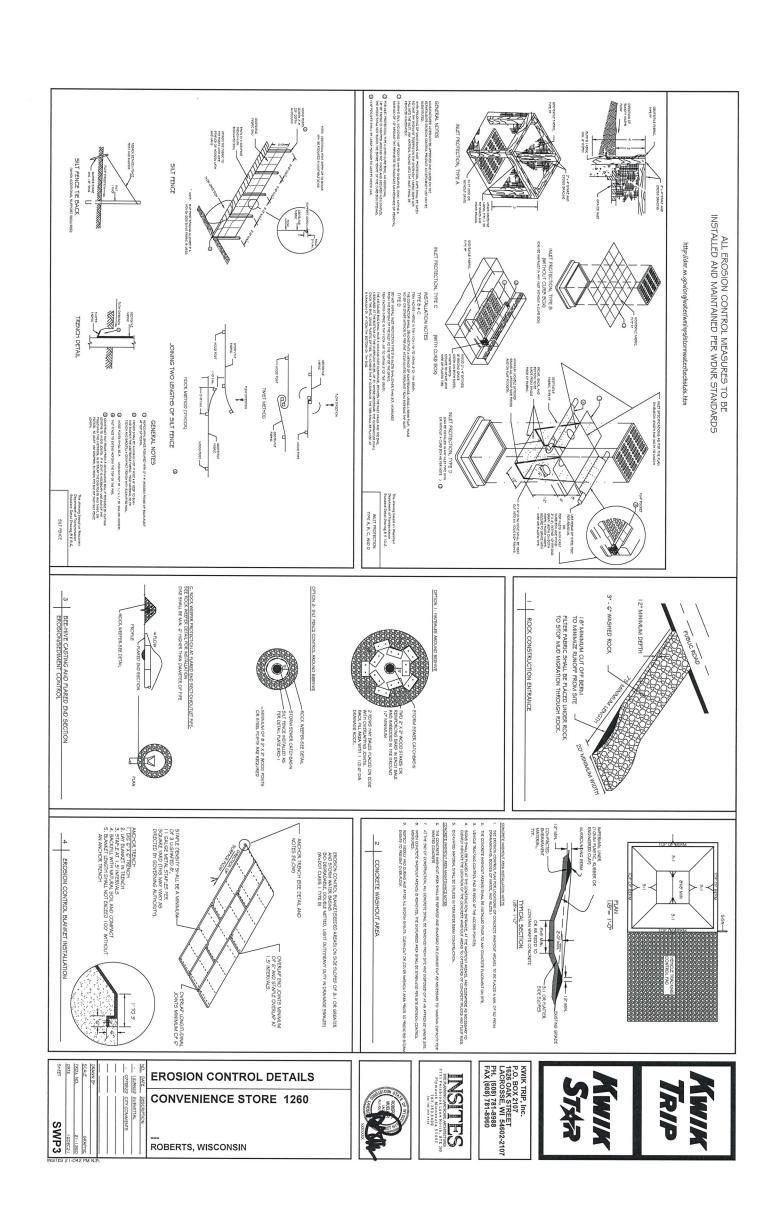
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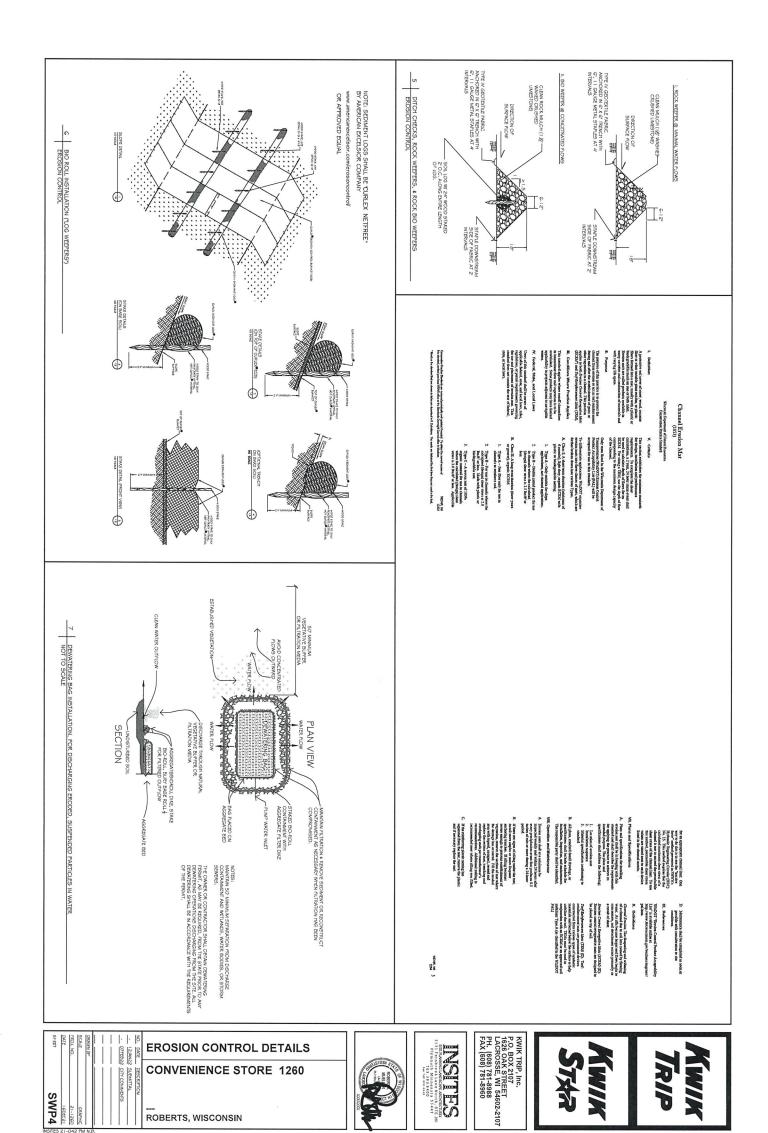
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ROBERTS, WISCONSIN

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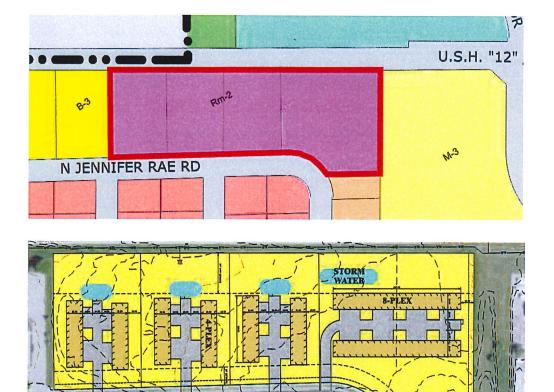
#### **MEMORANDUM**

То:	Roberts Plan Commission		
From:	Angi Goodwin		
Date:	March 3, 2022 Meeting	Project No.: 23-0737.19	
Re:	Concept Plan – Sharondale Multi Family (along STH 12) – Alex Miller		

#### ITEMS MODIFIED FROM FEBRUARY MEETING ARE HIGHLIGHTED IN YELLOW

#### **Concept Plan**

Proposed concept plan includes (6) 4-plex buildings and (2) 8-plex buildings, for a total of 40 units. Lots are 1-acre, 1-acre, and 2-acres. Developer may be combining two west 1-acre parcels to a single 2-acre parcel, as then setback variances would not be needed. Parcels are in Village limit, currently zoned Rm-2, Multi-Family Residential.



Page 1 of 2



Rm-2 allows 3-unit and 4-unit multiple family units not exceeding 9 dwelling units per net acre (net acre is without public roadway area so the actual lot area). 8-plex units are not allowed in Rm-2 district unless development is a PUD (Sharondale is not a PUD and this area is not large enough to create a PUD). Density on each lot is within allowed density of Rm-2. To develop as proposed, a variance for the 8-plex units would be required.

With combining two west parcels, site plan can meet the typical 24-foot drive lane between two 18-foot parking stalls, or 60-feet garage-to-garage distance required for turning movements.

#### **Storm Water Treatment**

- Storm water treatment is provided at regional pond in Sharondale subdivision, discharge allowed to street. Village requirements have increased so supplemental treatment likely required.
- Supplemental treatment, if provided in highway setback areas, would need to be relocated on-site
  if highway expands.

#### **Water System Impacts**

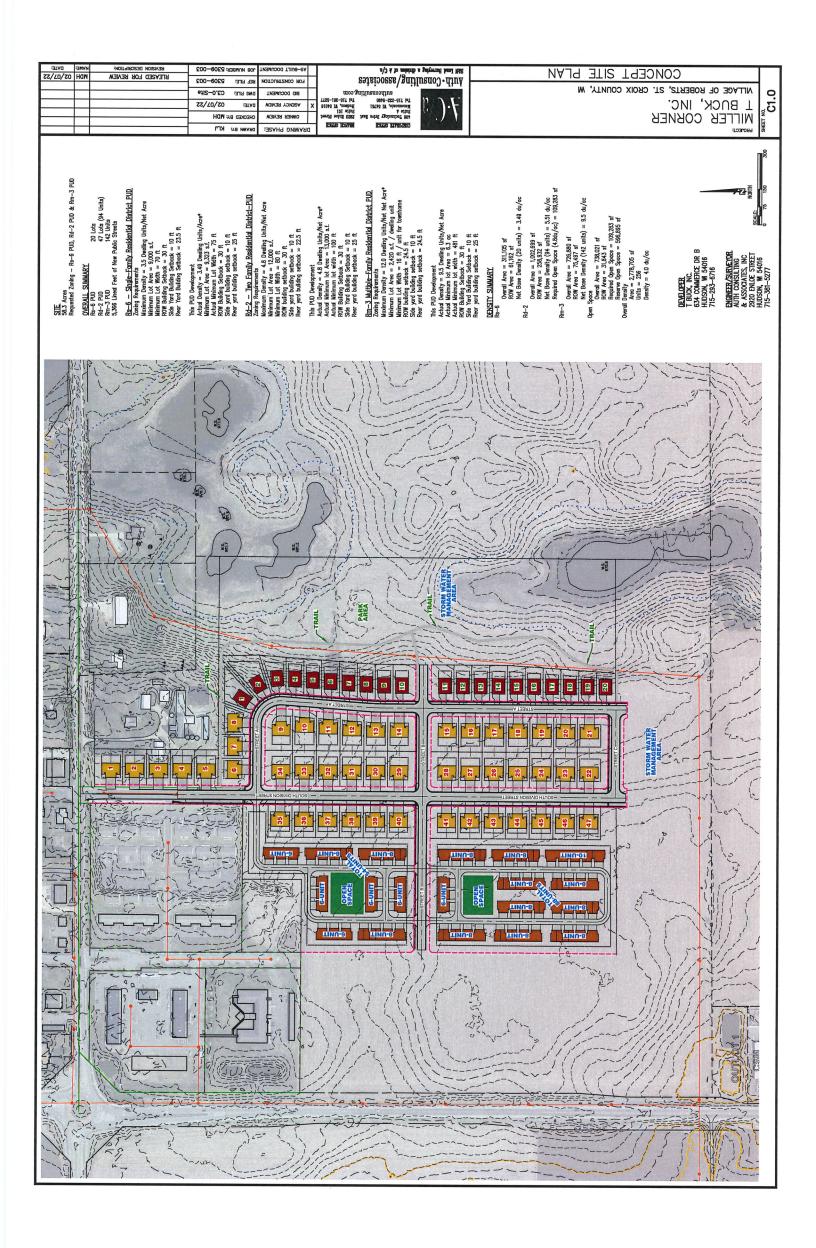
- Anticipated water use is 110 gallons per day per unit (40 gallons per person per day x 2.7 people per home), plus irrigation water. 40 units x 110 gpd/unit = 4,400 gpd plus irrigation water
- Current supply (well capacity) can serve approximately 460 equivalent residential homes, so after full development of proposed concept, 460-40 = approximately 420 units remaining

#### **Wastewater Discharge Impacts**

Current wastewater average flow is 100,000 gpd, anticipated discharge from 40 units is 4,400 gpd which is an additional approximate 4% of current average flow.

#### **Utility Services**

 Review how utility billing is anticipated, one meter per lot and one bill per lot is simplest, multiple billing should have multiple meters and public versus private needs to be discussed

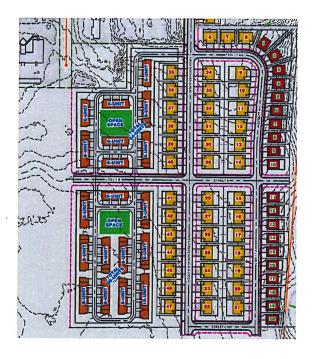




#### **MEMORANDUM**

То:	Roberts Plan Commission			
From:	Angi Goodwin			
Date:	March 3, 2022 Meeting	Project No.:	23-0737.19	
Re:	T-Buck Inc (east of STH 65) - Concept Plan Private versus Public Streets			

#### **Concept Plan**



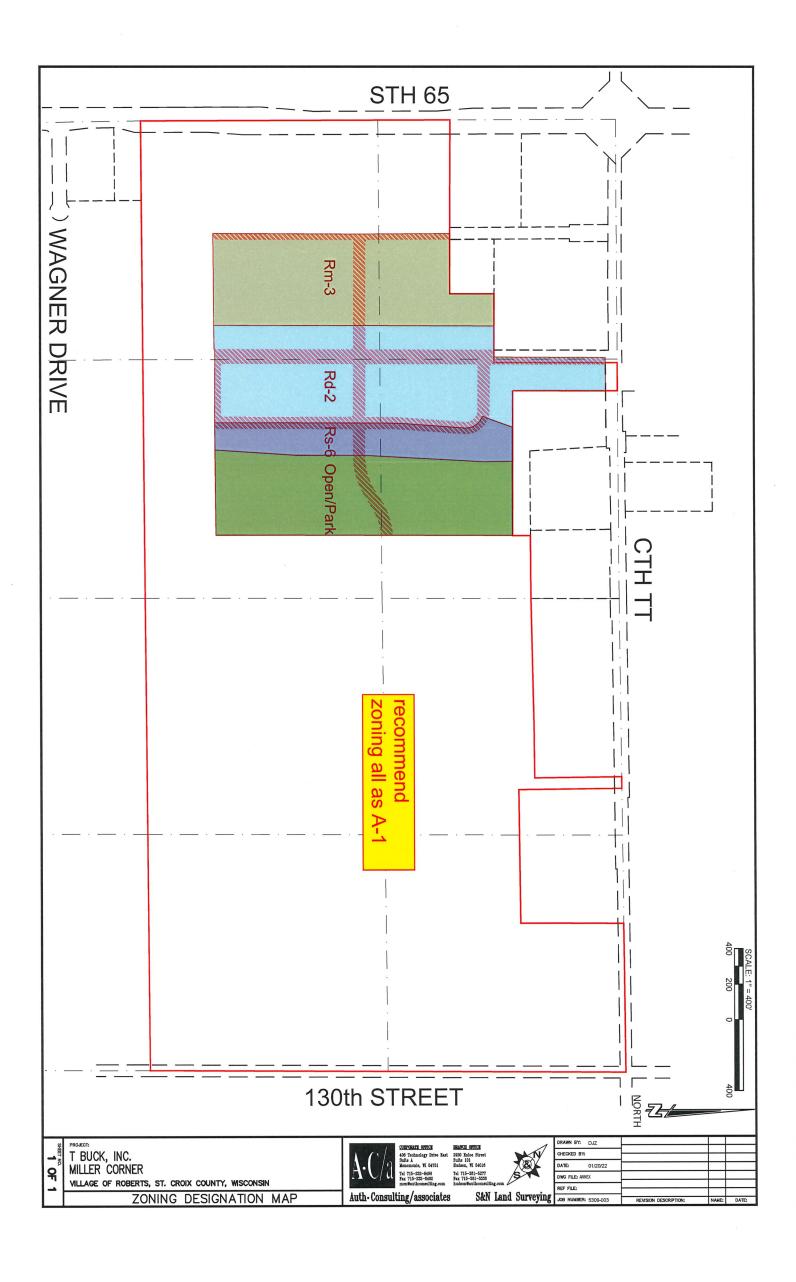
#### Private versus Public Streets:

Multi-Family Residential, Rm-3, is shown as one lot with 54-units and one lot with 88-units, with 24-foot-wide private streets. Developer has noted that would like option to subdivide to individual lots and extend public utilities through private streets.

- If public utilities and/or public water metering and/or separate lots are created for individual units/building, recommend that streets are 66-foot R/W public streets that front each lot.
- Fire Department Input (safety and access concerns, public vs private hydrant concerns)
- Police Department Input (safety concerns)

Page 1 of 1





#### Memo



**SUBJECT** 

Local Approvals Requested from Village of Roberts, WI for Nature Energy US Ventures 3, LLC Project

TO Megan Dull – Village Clerk

DATE

February 17, 2022

**OUR REF** 

Nature Energy - Roberts, WI

DEPARTMENT

Village of Robert Planning Department

ARCADIS PROJECT NUMBER

30112313

**COPIES TO** 

Louise Skott Kristensen, Nature Energy William Derrick, Crane I Holdings, LLC NAME

John Berrigan (612) 373-0221, John.Berrigan@arcadis.com

Nature Energy US Ventures 3, LLC, a Danish renewable natural gas company, is proposing to develop an anaerobic digester and nutrient recovery facility in Roberts, Wisconsin under the name "Nature Energy Roberts" (further: NER). The proposed facility would use anaerobic digestion to produce renewable natural gas, also referred to as biomethane, from turkey litter and dairy waste, food processing byproducts, and food waste. The renewable natural gas would be injected into the existing natural gas pipeline system. The anaerobic digester process results in nutrient-rich byproducts that would be recovered after digestion to produce three commercial fertilizer products: digestate directly from the anaerobic digester, nutrient water high in nutrients that are readily available for a growing crop, and a high-solids product rich in phosphorus and potassium. Attachment A shows the proposed Site Plan. Project contacts are listed below.

Applicant:

Nature Energy US Ventures 3, LLC

Engineer:

Arcadis U.S., Inc.

Louise Skott Kristensen

John Berrigan

2550 University Avenue #320s

123 N 3rd St #705

St. Paul, MN 55114

Minneapolis, MN 55401

Site Owner:

Crane I Holdings, LLC

Architect:

TBD

William M. Derrick

1505 Hwy 65, P.O. Box 445

Contractor:

**TBD** 

New Richmond, WI 54017

NER is requesting a conditional use permit as described in Section 70-131.A(3)a/b, Municipal Code of the Village of Roberts. An application for the Planning Commission Appeals Review is included as Attachment B. A preliminary Erosion and Sediment Control Plan for construction is included as Attachment C and a photo log of existing conditions is included in Attachment D. NER is also requesting a variance for Building Height, as described in <a href="Section 70-131.A(5)a">Section 70-131.A(5)a</a>, Municipal Code of the Village of Roberts. The Application for Variance is included as Attachment E. A summary of local approval requirements and the corresponding attachment is provided as Attachment F.

The proposed project site is described below.

Local Approvals Requested from Village of Roberts, WI for Nature Energy Roberts, LLC Project Nature Energy Roberts, LLC February 17, 2022

- Abbreviated Legal Description (metes and bounds): Portions of SEC 22 T29N R18W SE NE EXC CSM 30-6798 (Parcel No. 176-1070-30-001) and SEC 22 T29N R18W PT NE SE N OF RR EZ-U-1406/207 EZ-U-1540/265 FKA 042-1062-95 (Parcel No. 176-1070-40-000)
- Subject Site Address: TBD 130th Street, Roberts, WI 54023
- **Zoning district within which the subject site is located:** The NER site is currently zoned as M-7 Industrial Rail Park District (Sec. 70-131.A).
- Abutting property owners of record within 300 feet:
  - o Northern States Power Company, 874 130th St Roberts, WI 54023
  - Ambassador Steel Corporation, 1342 S Grandstaff Dr Auburn, IN 46706
  - Crane I Holdings LLC, 1505 Hwy 65 New Richmond, WI 54017
  - o Sharon M Rev Tr Stewart, 750 112th St Roberts, WI 54023
  - o Mark D Hamlin, 203 E Graham St Roberts, WI 54023
  - o Emily Viertel and Zach Hilgert, 826 130th St Roberts, WI 54023
  - o Earl F Pechuman, 1310 Cty Rd Tt Roberts, WI 54023
  - o Walter & Elsa Carpenter Family LMTD PT, 9011 High Point Cir Eden Prairie, MN 55347
- Minimal flood hazard, as determined by the Federal Emergency Management Agency (Attachment G).

#### **Proposed Operations**

The proposed use of the site is the production of renewable natural gas from locally sourced agricultural and food waste using anaerobic digestion. The general process is shown in Attachment H with a general layout illustrated in Attachment I. Details of anticipated operation is included below, and odor, noise, and traffic are discussed in subsequent sections.

- Proposed Operation of Site:
  - o Continuous monitoring and operations 24 hours, 7 days a week
  - o Deliveries occurring primarily Monday − Friday: 6 am to 6 pm; Saturday: 8 am − 2 pm
  - No deliveries on Sunday
- Number of Employees: 8-10 employees
- Proposed structures are shown in the Site Plan (Attachment A) and include a complete biogas plant with:
  - Administration Building
  - Workshop and storage of spare parts/chemicals
  - o Pre-storage and pre-treatment systems
  - Feeding systems for different biomasses
  - Digestion system
  - o Digestate separation, post storage tanks, and storage building for fiber fraction
  - o Gas cleaning, gas quality check, and odorization
  - o Pressurization/compressor station before grid connection
  - Two emergency anaerobic digestion flares
  - o Complete odor treatment and ventilation system
  - o Production of liquid CO<sub>2</sub>
  - o Natural gas-fired boiler for heat production
  - o Emergency gensets for power backup
- Anticipated biomass list and truck requirements:

Local Approvals Requested from Village of Roberts, WI for Nature Energy Roberts, LLC Project Nature Energy Roberts, LLC February 17, 2022

- Delivery of biomass to the site and transport of digestate and fiber away from the site will account for approximately 90-95 transport trucks per full working day and approximately 40-50 on Saturdays. No transport truck operation will occur on Sundays.
- o Biomass will contain various sources including slurry (dairy cattle), deep litter turkeys, food waste, dissolved air floatation, and water.

#### Odor

Although the raw materials are known to have odor, NER manages these materials indoors and the collected air is treated by the following means:

- Odor from receiving biomass will be minimized by delivering the material into an enclosed loading hall.
   Buildings with odorous air, such as the loading hall, will be ventilated to keep a small under pressure inside.
   Fresh heated ventilation air will be blown into the buildings in strategically chosen areas and polluted air will be extracted at the highest points in the buildings. Collected air will be treated with a biological biofilter treatment system.
- Tanks that store the anaerobic digestion byproducts will be ventilated to maintain a small under pressure inside the tanks. The air from the tanks will be treated in a pre-filter before entering the main biological treatment filter, where it will be blended with air extracted from the odorous buildings. This pre-filter will contain seashells for ammonia and hydrogen sulfide (H<sub>2</sub>S) removal.
- Treated air from the biological treatment system will be lifted into a 60 m (196.85 ft) high stack (diameter approximately 2.8 m or 9.2 ft) to aid dispersion as it is released to the environment.

The project is not anticipated to generate significant odors during construction.

#### Noise

Beyond the construction of the proposed facility, NER anticipates that regular operating hours will range from six hours per day on weekends to 12 hours per day during the week, primarily during daytime hours. The process equipment will be enclosed within the biomass plant, with unloading and loading activities in an enclosed loading hall. The process equipment may create daily, sustained noise at steady and continuous low levels.

The proposed facility's location is directly north of the Union Pacific railroad and directly south of Harris Rebar, located in the Roberts Business Park. The closest noise-sensitive receptor (residence) to the proposed facility is located south of the Union Pacific railroad, approximately 300 feet south of the proposed property line. There is an existing tree line buffer along both sides of the railroad. Additional residents are located west of the proposed facility at distances exceeding 1,000 feet. It is anticipated that the 1,000-foot distance between the western edge of the proposed facility and the residences will remain undeveloped. The existing ambient sound is representative of typical sounds from light industrial and rail use.

During construction, noise levels would increase in the area immediately surrounding the proposed facility. The use of equipment will be limited to primarily during daytime hours for the construction of the proposed facility to limit the impact of additional noise.

During operation, the process equipment would be the primary source of facility noise. The noise contribution from the proposed facility is expected to be marginal, considering existing ambient sounds and the tree line between the site and closest noise-sensitive receptor and based on a study conducted by NIRAS A/S for Nature Energy A/S for a similar facility located in Denmark. This study, dated November 23, 2021, calculated the external

Local Approvals Requested from Village of Roberts, WI for Nature Energy Roberts, LLC Project Nature Energy Roberts, LLC February 17, 2022

noise contributions to eight residential areas or calculation points ranging between 995 and 3,070 feet from the highest noise source within the facility (biofilter chimney, 198 feet high). The representative noise study is included in Attachment J.

Minor noise sources at the facility included pumps, fans, and air intakes. These sources are typically a lower source strength, placed at a low level, and often shielded from the surroundings. Therefore, these sources are not considered significant to the total noise contribution. The maximum noise contribution at night originated primarily from traffic entering and exiting the sites. The maximum was 50 dB (A) at all calculation points.

#### **Traffic**

Locally sourced biomass inputs for the anaerobic digesters will be delivered to NER on tank trucks. NER anticipates that trucks delivering liquid biomasses (dairy slurry and food waste) to the site would also take digestate or nutrient water away from the facility. NER estimates that at full production of the facility there will be approximately 90-95 transport trucks per full working day and approximately 40-50 on Saturdays. Transport trucks will not be in operation on Sundays.

NER will work to optimize the truck traffic patterns throughout the design phase to prevent off-site transport truck cueing that may present local traffic issues. It is anticipated that the transport trucks would remain at the facility for approximately 20 minutes, at which point they would deliver biomass to the facility and fill the trucks up with digestate before leaving the site.

NER will be conducting a further traffic study to identify any potential traffic implications from the facilities required. The study will account for the existing traffic in this region as well as the need to upgrade 130<sup>th</sup> Street from the traffic circle to the facility entrance. NER will provide this to the Village for consideration when completed.

#### **Enclosed**

Attachment A - Site Plan

Attachment B – Planning Commission Appeals Review Application

Attachment C - Erosion and Sediment Control Plan

Attachment D - Photo Log

Attachment E - Zoning Board of Appeals Application for Variance

Attachment F – Local Approval Requirements

Attachment G - FEMA Map

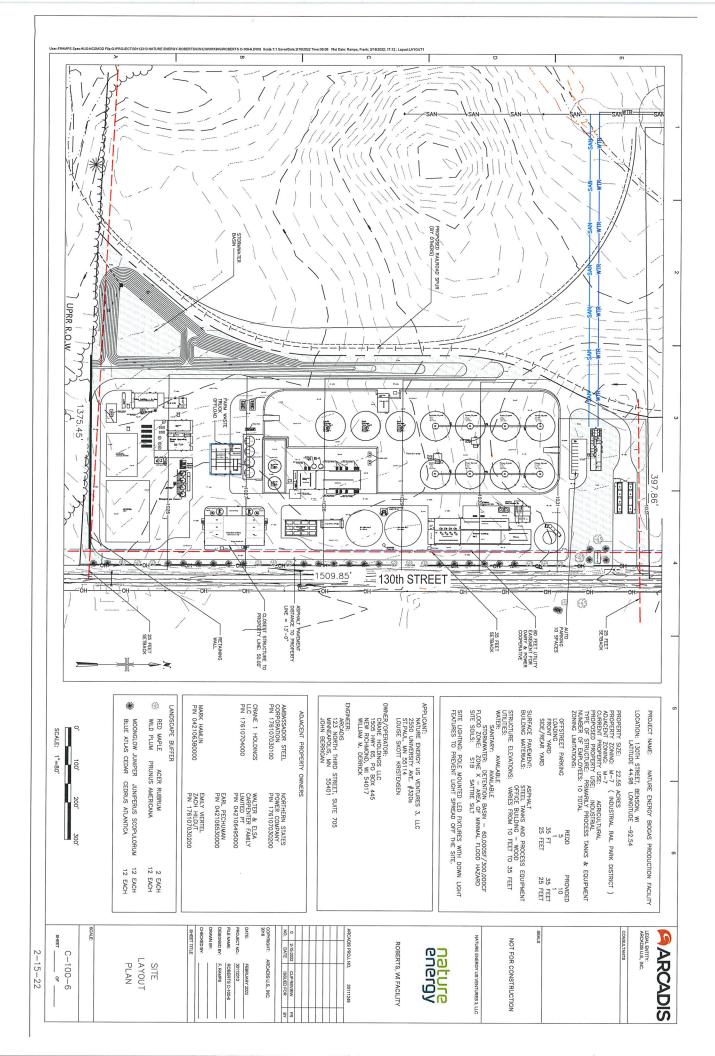
Attachment H - General Process Flow Diagram

Attachment I - General Process Layout

Attachment J – Representative Noise Study

### **Attachment A**

Site Plan



### **Attachment B**

**Planning Commission Appeals Review Application** 



submitted.

#### VILLAGE OF ROBERTS

Applicant's Name:	Nature Energy US, LLC Louise Skott Kristenser		Telephone No. (651) 319-2598		
Address:	Louise Skott Kristensen Fax No. NA 2550 University Avenue #160				
Address.	St. Paul, MN 55114		00		
Property Owner:	Crane I Holdings, LLC		Telephone No.		
	William M. Derrick		Fax No.		
Address:	1505 Hwy 65, P.O. Box				
	New Richmond, WI 54	017			
**Request for:					
Zoning District Ch	- '		tified Survey Map Approval (\$75)		
Special Use Permit		K Boa	ard of Appeals (\$100)		
X Conditional Use Pe		Oth	er		
Above may include a	dvertising costs.				
Status of Applicant:	A	<i>(</i> D			
Owner		( Buy			
	Industrial Rail Park Dist		Zoning Requested: NA		
Uses Proposed:	Development and opera		Acreage(s): 22.55 AC		
	of an anaerobic digester				
	nutrient recover facility				
	Street, Roberts, WI 5403				
Parcel I.D. Number			. 176-1070-30-001 and Parcel No.		
	176-1070-40-00	0			
Legal Description:	Portions of SEC	22 T	29N R18W SE NE EXC CSM 30-		
			9N R18W PT NE SE N OF RR EZ-U-		
			/265 FKA 042-1062-95		
T1					
			f, certifies that he/she is familiar with		
			he procedural requirements of the		
	ship, and all other applica	ition	Village ordinances.		
Signature of Applicar	il/Representative:				
(print) LOUISE Sko	W KRISTENSON		Date 17.02.2022		
(brun) FOOLDE OND	II VKIDIEIASEIA		Date 11.02.2022		
(signature)			Date 17.02.2022		
Application received	by:		Date		
Fees Paid and Date:					
Zoning District Chan			Date		
Special Use Permit	\$		Date		
Conditional Use Pern			Date		
Board of Appeals	\$		Date		
Other	\$		Date		
7/17/77 ** A II Cas = 1!-	tod about one sublest to	. e.c.	0 dayun		
incurred with this roa	uset. This will sover an	4 DOU	0 down payment to cover other fees		
incurred with this request. This will cover any publishing, legal and engineering fees					

### **Attachment C**

**Erosion and Sediment Control Plan** 



Nature Energy Biogas

# **Erosion and Sediment Control Plan**

Biogas Facility Project Roberts, Wisconsin

February 2022



#### **Erosion and Sediment Control Plan**

Biogas Facility Project Roberts, Wisconsin

February 2022

Prepared By:

Arcadis U.S., Inc.
123 North Third Street, Suite 705
Minneapolis
Minnesota 55401

Phone: 612 339 9434 Fax: 612 336 4538

Our Ref: 30112313

Prepared For:

Village of Roberts 107 E Maple Street Roberts, WI 54023 Erosions and Sedimentation Control Biogas Facility Project Roberts, Wisconsin

#### 1 Project Description

Nature Energy Biogas US Ventures 3, LLC, a Danish bio-fermentation company, is proposing to develop an anaerobic digester and nutrient recovery facility in Roberts, Wisconsin under the name "Nature Energy Roberts" (further: NER). The proposed facility would use anaerobic digestion to produce renewable natural gas, also referred to as biomethane, from turkey litter and dairy waste, food processing byproducts, and food waste. The renewable natural gas would be injected into the existing natural gas pipeline system. The anaerobic digester process results in nutrient-rich byproducts that would be recovered after digestion to produce three commercial fertilizer products: digestate directly from the anaerobic digester, nutrient water high in nutrients that are readily available for a growing crop, and a high-solids product rich in phosphorus and potassium.

Part of the local approvals requirements to develop, construct, and operate this facility include the preparation of an erosion and sediment control plan. A detailed discussion of the site-specific applicable standards and erosion and sediment control best management practices are discussed below.

#### 2 Performance Standards Applicable to Site

The outline for the organization of this Site Erosion and Sediment Control Plan follows the Wisconsin Department of Natural Resources (WDNR) requirements as described in NR 216.46 Erosion control plan requirements under subch. III of ch. NR 216, Wis. Adm. Code. A copy of the erosion control plan requirements is provided as an attachment (see Appendix A).

The following construction site erosion control plan meets the applicable performance standard in s. NR 151.11, Wis. Adm. Code for construction sites that are not transportation facilities.

#### 2.1 Proposed Project Site Description

#### 2.1.1 Site location

Nature Energy Roberts will be located within the Industrial Rail Park District in the Village of Roberts, WI. The site is borded by 130th street on the east, Union Pacific Rail Road (UPRR) on the south, empty land on the west, and developed sites on the north. Approximate latitude and longitudes is 44.984607, -92.538955 respectively.

## 2.1.2 Total area of the site and total area of the construction site that is expected to be disturbed by construction activities.

A map showing the location of the proposed project site and the limits of land disturbance on a USGS 7.5-minute series topographical map can be found in Appendix B. The total area of the site is approximately 23 acres. Due to the size of the proposed parcel, most of the project site will be disturbed.

#### 2.1.3 Surface Soil and Subsurface Soil Description

Soils characteristics were identified and retrieved using the U.S. Department of Agriculture, Natural Resource Conservation Service's (USDA NRCS's) Web Soil Survey. This is an online resource providing soil data and

Erosions and Sedimentation Control Biogas Facility Project Roberts, Wisconsin

information produced by the National Cooperative Soil Survey. Additionally, the most recent published soils surveys by the USDA NRCS for St. Croix County, Wisconsin were consulted.

The proposed project site consists of six different mapped soil series, described below.

- The Arland series consists of moderately deep, well drained soils formed in 50 to 100 centimeters of till
  underlain by sandstone bedrock. These soils are on knolls, ridge tops, and side slopes of glaciated
  bedrock-controlled uplands. Slope ranges from 6 to 12%.
- The Jewett series consists of well drained soils that are moderately deep to a densic contact with till. These
  soils formed in a mantle of wind or water laid loamy deposits in the underlying reddish dense loamy glacial
  till on ground moraines. Permeability is moderate in the silty and loamy mantle, slow or moderately slow in
  the till subsoil, and slow in the substratum. Slopes range from 2 to 6%.
- The Nickin series consists of very deep, well drained soils that are moderately deep to siliceous sandy pedisediment or residuum. These soils formed in a mantle of wind or water-laid loamy deposits; in loamy till; and in the underlying siliceous sandy pedisediment or residuum on hills. Permeability is moderate in the loamy mantle and in the till; moderately rapid or rapid in the sandy part of the subsoil; and rapid or very rapid in the substratum. Slopes range from 2 to 6%.
- The Onamia-Antigo series consists of very deep, well drained soils formed in 50 to 100 centimeters of loess or silty alluvium and in loamy alluvium and in the underlying stratified sandy outwash. These soils are on outwash plains, stream terraces, eskers, kames, glacial lake plains, and moraines. Slope ranges from 6 to 12%.
- The Saprists and aquents series consists of very poorly drained soils consisting of organic material and drift as parent material. These soils are on depressions of flood plains, and drainageways on flood plains. Slope ranges from 0 to 2%.
- The Sattre series consists of very deep, well drained soils that formed in 50 to 100 centimeters of loamy alluvium and the underlying sandy and gravelly sediments. These soils are on outwash areas and on treads and risers on stream terraces in river valleys. Slope ranges from 2 to 6%.

A review of the U.S. Geological Survey (USGS) <u>Mineral Resource Online Spatial Data</u> identified that the Project is located on a carbonate karst as part of the Ancell Group from the Ordovician period. Topographically, elevations above mean sea level across the project site range from approximately 1,020 feet to 1,040 feet.

#### 2.1.4 Land Disturbance and Sequence of Construction Activities

The project will be completed in a manner that minimizes the potential for erosion and sedimentation during the proposed construction and allows for effective restoration of disturbed areas. A site map with property lines, disturbed limits, drainage patterns, and limits of land disturbance is included in Appendix C.

Construction activities will begin upon approval of the required permits and construction is anticipated to consist of the following general sequence/activities:

- Clearing and Grading: a contractor will be selected to complete the installation of stormwater best
  management practices prior to any ground disturbing activities. Construction will commence with removing
  obstacles if needed (large rocks, tree branches, brush, and logs) and grading the disturbance area to
  smooth any abrupt changes in ground contour as needed.
- **Excavation/Rip Rap Placement**: excavation of the trench to install pipelines, excavation to create the stormwater pond. This step will also involve the construction of the rip rap culvert pipe ditch check.

Erosions and Sedimentation Control Biogas Facility Project Roberts, Wisconsin

- Construction of the Biogas Plant
- Backfilling and Grade Restoration: repair and replacement of spoils within excavated trenches and removal of extra spoils from the workspaces.
- Cleanup and Restoration: disturbed areas will be graded, and debris will be properly disposed of.

Construction equipment will consist of standard construction equipment (e.g., backhoe) and local and commercially available construction materials (e.g., Wisconsin Department of Transportation (WDOT) sized heavy rip rap).

## 2.1.5 Name of immediate named receiving water from the United States geological service 7.5-minute series topographic maps

The nearest receiving water for the Roberts site is an Unnamed open water feature to the southwest of the site. The distance from the southwest corner of the site to the "unnamed open water feature" is approximately 1500 feet. The nearest named receiving water are the Twin Lakes, approximately 7250 feet southwest of the proposed project site.

#### 2.2 Erosion and Sediment Control Plan

#### 2.2.1 Erosion Control Plan Site Map

The Construction Site Erosion Control Plan Site Map, shown in Appendix C, includes the following:

- i. Existing topography and drainage patterns, roads and surface waters.
- ii. Boundaries of the construction site.
- iii. Drainage patterns and approximate slopes anticipated after major grading activities.
- iv. Areas of soil disturbance.
- v. Location of major structural and non-structural controls identified in the construction site erosion control plan.
- vi. Location of areas where stabilization practices will be employed.
- vii. Areas that will be vegetated following land disturbing construction activities.
- viii. Area and location of wetland acreage on the construction site and locations where storm water is discharged to a surface water or wetland within one-quarter mile downstream of the construction site.
- ix. Areas used for infiltration of post-construction storm water runoff.
- x. An alphanumeric or equivalent coordinate system for the entire construction site.

#### 2.2.2 Erosion and Sediment Control Best Management Practices

The construction site erosion control plan includes descriptions below of appropriate erosion and sediment control BMPs that will be installed and maintained at the construction site to prevent pollutants from reaching waters of the State of Wisconsin. Erosion and sediment control BMPs will be implemented in accordance with s. NR 151.11, Wis. Adm. Code, for construction sites that are not transportation facilities.

Erosions and Sedimentation Control Biogas Facility Project Roberts, Wisconsin

Contractor shall install appropriate erosion control measures as the first construction activity and these measures shall include:

- Adjust or add silt fence as needed to prevent sediments from leaving the construction site.
- Install silt fence as needed around any temporary soil storage piles.
- Install a stone tracking pad to ensure vehicles that drive over exposed soil exit along the full length of the
  pad. Use hard, durable, angular stone or recycled concrete meeting the gradation in WI Standard
  Specification, Section 312, Select Crushed Material. Use material substantially free from dirt, debris, steel,
  vegetable matter, and other deleterious material.
- Remove and replace aggregates when voids become filled with sediment or if surface openings become plugged so that tracking area does not function.
- All waste and unused building material shall be removed from the site and disposed of and not allowed to be carried off by stormwater runoff.
- Stormwater pond may be used as sediment basin during construction. Any accumulated sediment shall be removed before final pond restoration. The entrance of the stormwater pond shall be protected from further sedimentation after the restoration of stormwater ponds has been completed.
- Riprap and ditch check shall be placed at discharge locations to serve as velocity dissipation devices and to provide a non-erosive flow from the structure to a watercourse.
- Install Inlet protection where they occur.
- Supply erosion control mat as per WI DOT Product Acceptability List (PAL) requirements. Install erosion control mat as per manufacturer's specifications.
- All disturbed areas left for more than 14 days shall be stabilized with seed and mulch for prevent erosion.
- Topsoil shall be supplied and installed in accordance with WI DOT standard specifications for highway and structure construction, section 625.
- Seed, mulch, and fertilize all disturbed areas over 5 inches of topsoil.
- Seeding shall be seed mixture No. 40 as per Wisconsin Department of Transportation (WI DOT) standard specifications for highway and structure construction, latest edition.
- Seed shall be sown in accordance with WI DOT standard specifications for highway and structure construction, section 630.3 either method A or B.
- Seed mulch shall be in accordance with WI DOT standard specifications for highway and structure construction, section 627.2.
- Seed mulch shall be applied in accordance with WI DOT standard specifications for highway and structure construction, section 627.3.2, method B or C.
- The contractor shall follow all practices as defined in the WI DNR Technical standards for Construction Site Erosion and Sediment Control Standards.

Erosions and Sedimentation Control Biogas Facility Project Roberts, Wisconsin

### 2.2.3 Inspections

Qualified inspectors will provide inspection to ensure compliance with the Erosion and Sediment Control Plan. Inspection will occur weekly, and within 24 hours following a rainfall of 0.5 inches or greater. Written documentation of each inspection will be maintained at the construction site and will include the time, date and location of inspection, the phase of land disturbance at the construction site, person conducting the inspection, assessment of control practices, and a description of any erosion or sediment control measure installation or maintenance performed in response to the inspection.

# **Appendix A**

Wisconsin Department of Natural Resources, NR 216.46 Erosion control plan requirements

road shoulder grading, the activity is not regulated under this sub-chapter.

- (8) ROUTINE MAINTENANCE. Routine maintenance for project sites that involve under 5 acres of land disturbance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility is not regulated under this subchapter.
- (10) OIL AND GAS INDUSTRY. Storm water discharges from construction sites that disturb from one to 5 acres of land and that are associated with construction activity at oil and gas exploration, production, processing or treatment operations or transmission facilities are exempt from this subchapter until March 10, 2005.
- (11) QUARTER MILE SEPARATION. Where discrete construction projects within a larger common plan of development or sale are located at least 1/4 mile apart and the area between the projects is not being disturbed, each individual project may be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

History: CR 03–028: cr. Register July 2004 No. 583, eff. 8–1–04; correction in (4), (9) made under s. 13.92 (4) (b) 6, 7., Stats., Register December 2011 No. 672; CR 19–053: r. (4), (5), (9) Register January 2020 No. 769, eff. 2–1–20.

NR 216.43 Notice of intent requirements. (1) FORMS. The landowner shall submit a notice of intent to the department on forms available from the department. Data submitted in the notice of intent forms shall be used as a basis for conferring coverage under a WPDES storm water permit.

Note: The notice of intent form is available from the department website at http://dnr.wi.gov/topic/Stormwater/construction/forms.html or by contacting the storm water program in the bureau of watershed management at (608) 267–7694.

(2) APPLICATION FEE. A storm water construction site application fee defined by Table 5 shall be submitted to the department with the notice of intent.

Table 5

Tubic 5				
Acres of Land Disturbance	Application Fee			
Less than 5	\$140			
5 or more and less than 25	\$235			
25 or greater	\$350			

- (3) SIGNATURE REQUIREMENTS. The notice of intent form shall be signed by the landowner as follows:
- (a) In the case of a corporation, by a principal executive officer of at least the level of vice president or by the officer's authorized representative having overall responsibility for the operation of the site for which a permit is sought.
- (b) In the case of a limited liability company, by a member or manager.
  - (c) In the case of a partnership, by a general partner.
  - (d) In the case of a sole proprietorship, by the proprietor.
- (e) For a unit of government, by a principal executive officer, ranking elected official or other duly authorized representative. **History:** CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.44 Notice of intent deadline. (1) Except as provided under sub. (3), a landowner required to obtain WPDES permit coverage for storm water discharges from a construction site shall submit a completed notice of intent, via certified or registered mail, in accordance with the requirements of this subchapter. The notice of intent shall be submitted so that it is received by the department at least 14 working days prior to the commencement of any land disturbing construction activities. Unless notified by the department to the contrary, a landowner who has submitted a notice of intent in accordance with the provisions of this subchapter is authorized to discharge storm water from a construction site under the terms and conditions of the general construction site storm water discharge permit 14 working days after the date that the department receives the notice of intent or upon receipt of noti-

fication from the department that the construction site is covered under the general construction site discharge permit. The landowner becomes the permittee once the construction site is authorized permit coverage.

(2) A site—specific erosion control and storm water management plan pursuant to ss. NR 216.46 and 216.47 shall be completed by the landowner prior to submitting the notice of intent to the department under sub. (1) and shall be updated as appropriate pursuant to s. NR 216.50. The erosion control and storm water management plans shall be submitted to the department upon request so that it may evaluate whether the plans comply with ss. NR 216.46 and 216.47. The department may withhold permit coverage as necessary until it verifies that the plans comply with ss. NR 216.46 and 216.47.

**Note:** The department encourages landowners and their representatives to consult with the department's regional storm water staff prior to local plan approval on the conceptual plans for erosion control and storm water management. Contact information for department regional storm water staff is available from the department website at <a href="http://dnr.wi.gov/topic/stormwater/contacts.html">http://dnr.wi.gov/topic/stormwater/contacts.html</a> or by contacting the storm water program in the bureau of watershed management at (608) 267–7694.

(3) If the construction site is located in an area regulated by an authorized local program pursuant to s. NR 216.415, the land-owner shall apply for storm water discharge approval to the authorized local program.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

- NR 216.45 Incomplete notice of intent and time limit for department decision. (1) Within 14 working days after the date the department receives the notice of intent, the department may require an applicant to submit data that the department has identified as being necessary to complete any deficient notice of intent or may require the applicant to submit a complete new notice of intent when the deficiencies are extensive or the appropriate form has not been used.
- (2) The department shall refund to the applicant the stormwater construction site storm water discharge permit application fee paid under s. NR 216.43 (2) if the department does not make a determination on the permit application within 45 business days of receipt of the information required under sub. (1). In this subsection, "business day" means any day except Saturday, Sunday and state holidays as designated in s. 230.35 (4) (a), Stats. This subsection does not apply to permit applications related to mining, as defined in s. 293.01 (9), Stats., prospecting, as defined in s. 293.01 (18), Stats., or nonmetallic mining, as defined in s. 295.11 (3), Stats.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

- NR 216.455 Proof of permit coverage. (1) A copy of the notice of intent or other documentation that storm water discharges from the site are covered under a construction site storm water discharge permit shall be kept with building plans on the construction site and with the landowner.
- (2) The permittee shall post a permit certificate in a conspicuous place on the construction site. The department shall make a permit certificate available. An authorized local program under s. NR 216.415 may make its own permit certificate or equivalent notice for posting.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

**NR 216.456 Responsible parties. (1)** The permittee or landowner required to submit a notice of intent under this subchapter is responsible for complying with this subchapter.

(2) An operator shall comply with this subchapter where the operator has a contract or other agreement with the landowner to meet the requirement.

**Note:** General contractors, landscape architects, project designers and inspectors are responsible for the particular services that they provide to a landowner to comply with the requirements of this subchapter.

History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.46 Erosion control plan requirements. (1) SITE-SPECIFIC PLAN. The permittee or landowner required to submit a notice of intent under this subchapter shall develop a

site—specific erosion control plan for each construction site regulated by this subchapter. The permittee or landowner required to submit a notice of intent under this subchapter, or their representative, shall implement and maintain as appropriate all best management practices specified in the erosion control plan from the start of land disturbing construction activities until final stabilization of the construction site.

(2) Performance Standards. The construction site erosion control plan shall meet the applicable performance standards in either s. NR 151.11 for construction sites that are not transportation facilities or s. NR 151.23 for transportation facility construction sites.

Note: Pursuant to s. NR 151.32 (2), the department maintains a list of technical standards that it has determined adequate and effective for designing best management practices to control erosion and sediment runoff. Contact the department storm water program in the Bureau of Watershed Management at (608) 267–7694 to obtain a copy of this list. Transportation facilities regulated under ch. Trans 401 generally have a 2–step plan development process of an erosion control plan (ECP) that contains design requirements and then development of an erosion control implementation plan (ECIP) that includes implementation details. This subchapter requires an erosion control plan that is equivalent to the ch. Trans 401 ECP and ECIP plans put together.

- (3) PLAN COMPLETION. The erosion control plan shall be completed prior to the submittal of a notice of intent to the department and shall be updated as appropriate pursuant to s. NR 216.50.
- (4) REQUIRED INFORMATION. The construction site erosion control plan shall include, at a minimum, the following items:
- (a) Description of the construction site and the nature of the land disturbing construction activity, including representation of the limits of land disturbance on a USGS 7.5-minute series topographical map.
- (b) Description of the intended sequence of major land disturbing construction activities for major portions of the construction site, such as grubbing, excavation or grading.
- (c) Estimates of the total area of the construction site and the total area of the construction site that is expected to be disturbed by land disturbing construction activities.
- (d) Available data describing the surface soil as well as subsoils.
- (e) Wherever permanent infiltration devices will be employed or were evaluated, the depth to the nearest seasonal high groundwater elevation or top of bedrock shall be identified as outlined in s. NR 216.47 (3).
- (f) Name of immediate named receiving water from the United States geological service 7.5-minute series topographic maps.
- **(5)** SITE MAP REQUIREMENTS. Each construction site map shall include all of the following:
- (a) Existing topography and drainage patterns, roads and surface waters.
  - (b) Boundaries of the construction site.
- (c) Drainage patterns and approximate slopes anticipated after major grading activities.
  - (d) Areas of soil disturbance.
- (e) Location of major structural and non-structural controls identified in the erosion control plan.
- (f) Location of areas where stabilization practices will be employed.
- (g) Areas that will be vegetated following land disturbing construction activities.
- (h) Area and location of wetland acreage on the construction site and locations where storm water is discharged to a surface water or wetland within one–quarter mile downstream of the construction site.
- Areas used for infiltration of post-construction storm water runoff.
- (j) An alphanumeric or equivalent grid overlying the entire construction site.

- (6) EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. The erosion control plan shall include a description of appropriate erosion and sediment control best management practices that will be installed and maintained at the construction site to prevent pollutants from reaching waters of the state. The erosion control plan shall clearly describe the appropriate erosion and sediment control best management practices for each major land disturbing construction activity and the timing during the period of land disturbing construction activity that the erosion and sediment control best management practices will be implemented. The description of erosion and sediment control best management practices shall include the following requirements:
- (a) Description of any interim and permanent stabilization practices, including a schedule for implementing the practices. The erosion control plan shall ensure that existing vegetation is preserved where attainable and that disturbed portions of the construction site are stabilized.
- (b) Description of any structural practices to divert flow away from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from the construction site. Unless otherwise specifically approved in writing, structural measures shall be installed on upland soils.
- (c) Management of overland flow at all areas of the construction site, unless otherwise controlled by outfall controls.
  - (d) Trapping of sediment in channelized flow.
- (e) Staging land disturbing construction activities to limit exposed soil areas subject to erosion.
  - (f) Protection of downslope drainage inlets where they occur.
- (g) Minimization of tracking at all vehicle and equipment entry and exit locations of the construction site.
  - (h) Clean up of off-site sediment deposits.
  - (i) Proper disposal of building and waste material.
  - (j) Stabilization of drainage ways.
- (k) Installation of permanent stabilization practices as soon as possible after final grading.
  - (L) Minimization of dust to the maximum extent practicable.
- (7) MATERIAL. No solid materials, including building materials, may be discharged in violation of ch. 30 or 31, Stats., or 33 USC 1344 or an U.S. army corps of engineers section 404 permit issued under 33 USC 1344.
- (8) Non-Erosive FLow. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive flow from the structure to a watercourse so that the natural physical and biological characteristics and functions are maintained and protected.
- (9) Inspections. The landowner, or the landowner's representative, shall inspect erosion and sediment control practices weekly, and within 24 hours following a rainfall of 0.5 inches or greater. Written documentation of each inspection shall be maintained at the construction site and shall include the time, date and location of inspection, the phase of land disturbance at the construction site, person conducting the inspection, assessment of control practices, and a description of any erosion or sediment control measure installation or maintenance performed in response to the inspection.

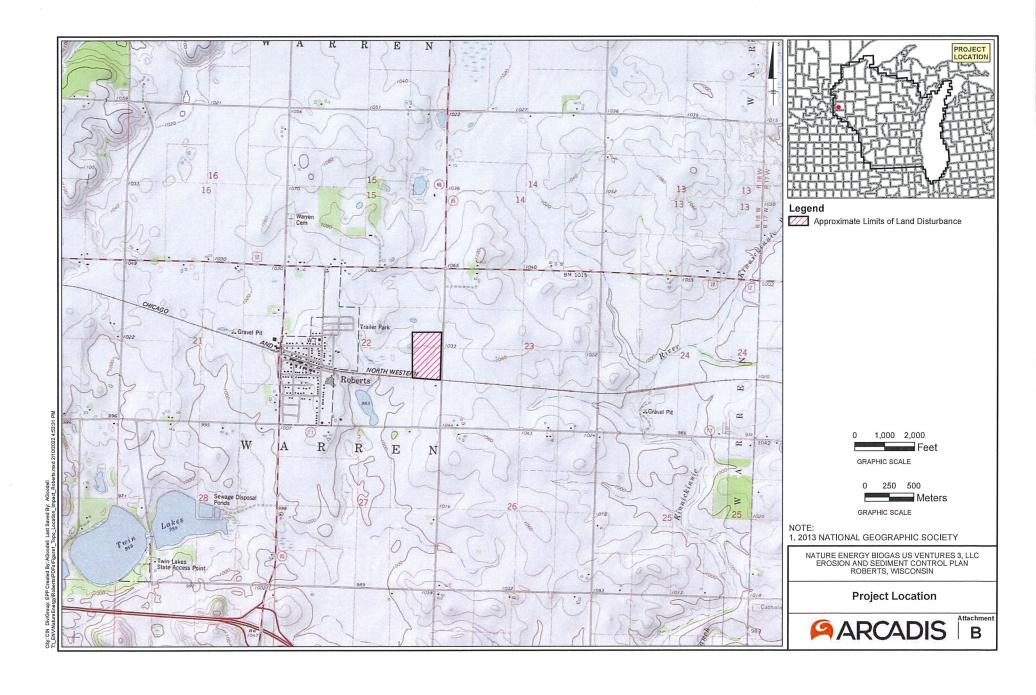
History: CR 03-028: cr. Register July 2004 No. 583, eff. 8-1-04.

NR 216.47 Storm water management plan requirements. Pollution caused by storm water discharges from the construction site after construction is completed, including rooftops, parking lots, roadways and the maintenance of grassed areas, shall be addressed by a storm water management plan. A storm water management plan shall be developed prior to submitting a notice of intent to the department and shall comply with all of the following:

(1) PERFORMANCE STANDARDS. The storm water management plan shall meet the applicable performance standards in either s.

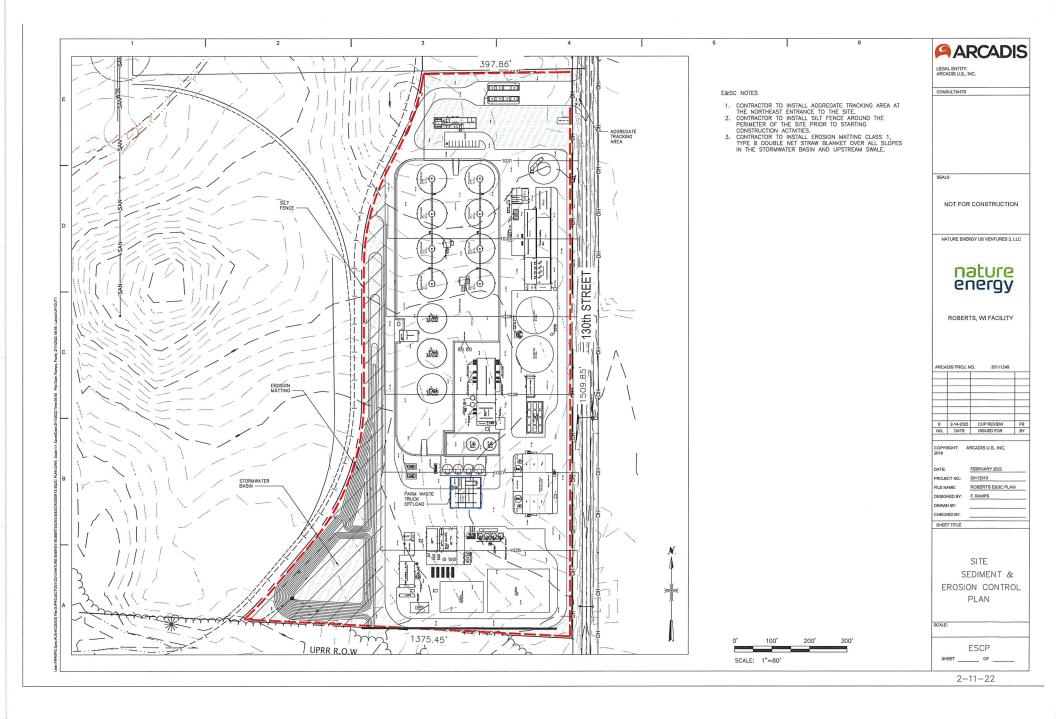
# **Appendix B**

**Project Location** 



# **Appendix C**

Site Plan



Arcadis U.S., Inc. 123 North Third Street, Suite 705 Minneapolis Minnesota 55401 Phone: 612 339 9434

Fax: 612 336 4538 www.arcadis.com

## **Attachment D**

**Photo Log** 

### **Photograph Log**

Nature Energy Roberts - Proposed Site





Photograph 1: Nature Energy Site Photo 2 2022 18 Jan Photograph 2: Nature Energy Site Photo 2 2021 13 Sep







Photograph 3: Nature Energy Site Photo 1 2022 18 Jan Photograph 4: Nature Energy Site Photo 1 2021 13 Sep

## **Attachment E**

**Zoning Board of Appeals Application for Variance** 

Date Draft Submitted
Date Application Submitted
Fee Paid

### **Application for Variance**

Owner (must be the applicant) Nature Energy US Ventures 3, LLC, Louise Skott Kristensen

Parcel Address TBD 130<sup>th</sup> Street, Roberts, WI 54023

Parcel Number Portions of Parcel Nos. 176-1070-30-001 and 176-1070-40-000

Owner Address 2550 University Avenue #160, St. Paul, MN 55114

Daytime Phone (651) 319-2598

Present Use of the Property Vacant

Zoning Classification M-7 Industrial Park District

The following items must be submitted with each application. Additional site plan information as described in Section 70-325 may be required by the Zoning Administrator (Ordinance section referenced in this application are available upon request):

### (1) Map of the property showing the following:

Entire property

All lot dimensions

Existing structures with dimensions to property lines (buildings, fences, walls etc) Proposed structures with written dimensions to property lines

Existing paved surfaces (driveways, walks, decks, etc)

Proposed paved surfaces with dimensions to property lines

Written dimensions to buildings on adjoining properties if setback variance is requested

Zoning of adjacent parcels

Street(s) which are adjacent to the parcel

Graphic scale and north arrow

Changes in land use intensity due to the variance (additional dwelling units, more customers, more parking, outside lighting, outside storage, etc)

(2) Written description of proposed variance answering the following questions: Village of Roberts Ordinance Section #70-131.A cannot be entirely satisfied because: Some operational components of the anaerobic digester and nutrient recovery facility, including some buildings, tanks, and stacks will exceed the maximum structure height identified within the M-7 Industrial Park District (35 feet) to efficiently operate and maintain compliance with state and federal air regulations. The stack heights will be designed at a height that will ensure that the facility meets National Ambient Air

Quality Standards (NAAQS) established in the Clean Air Act by the United States

Environmental Protection Agency (USEPA) (40 CFR part 50) and contained in Chapter

NR 404.04 (Ambient Air Quality) of the Wisconsin Administrative Code.

Additionally, the stack heights will also be designed to meet ambient concentrations for

noncriteria pollutants criteria as referenced in Chapter NR 445, Wis. Adm. Code. In

addition, industry standardized sizes associated with equipment within the buildings

and the digesters themselves dictate the heights of said equipment and digesters.

In lieu of complying with the ordinance, the following alternative is proposed (please describe the proposal in detail):

Nature Energy is proposing to install the following items associated with the renewable natural gas production facility which exceed the 35-foot maximum structure height:

- 1. <u>Five buildings with an anticipated maximum height ranging from approximately 36-feet to approximately 51-feet.</u>
- 2. <u>Six primary and two secondary digesters with an anticipated maximum height of approximately 85-feet.</u>
- 3. Three storage tanks with an anticipated maximum height of approximately 47-feet.
- 4. Three process stacks with anticipated maximum heights of: approximately 66-100 feet (two stacks) and 197 feet (one stack). Actual stack heights are dependent upon air dispersion modeling which will be conducted during future design activities.

Please see Conditional Use Permit Attachment A, Site Plan, for additional information.

(3) Written justification of the requested variance with reasons why the Applicant believes the proposed variance is appropriate. Before the Zoning Board of Appeals can grant a variance, they must find that the following criteria have been satisfied. Describe how your request meets the following criteria: (section 70-327)

What exceptional or extraordinary circumstances or special factors are present which apply only to the subject property? The response to this question shall clearly indicate how the subject property contains factors that are not present on other properties in the same zoning district.

The Village of Roberts currently does not have a renewable natural gas production facility within the Village limits. To allow for this facility to operate efficiently and in

accordance with applicable state and federal rules and regulations, select buildings, digesters, and stacks must exceed the zoning height restriction of 35 feet. The stack heights will be designed at a height that will ensure that the facility meets NAAQS for criteria pollutants established in the Clean Air Act by the USEPA (40 CFR part 50) and contained in Chapter NR 404.04 (Ambient Air Quality) of the Wisconsin Administrative Code. Additionally, the stack heights will also be designed to meet ambient concentrations for noncriteria pollutants criteria as referenced in Chapter NR 445, Wis. Adm. Code. In addition, industry standardized sizes associated with equipment within the buildings and the digesters themselves dictate the heights of said equipment and digesters.

- The hardship or difficulty shall be peculiar to the subject property and different from that of other properties and not one that affects all properties similarly. Such a hardship or difficulty shall have arisen because of the unusual shape of the original acreage parcel; unusual topography or elevation; or because the property was created before the passage of the current, applicable zoning regulations, or will not accommodate a structure of reasonable design for a permitted use if all area, yard, green space, and setback requirements are observed;
- Loss of profit or pecuniary hardship shall not, in and of itself, be grounds for a variance;
- Self-imposed hardship shall not be grounds for a variance. Reductions resulting from the sale of portions of a property reducing the remainder of said property below buildable size or cutting-off existing access to a public right-of-way or deed restrictions imposed by the owner's predecessor in title are considered to be such self-imposed hardships;
- Violations by, or variances granted to, neighboring properties shall not justify a variance;
- The alleged hardship shall not be one that would have existed in the absence of a zoning ordinance. (For example, if a lot were unbuildable because of topography in the absence of any or all setback requirements.)

In what manner do the factors identified in 1., above, prohibit the development of the subject property in a manner similar to that of other properties under the same zoning district? The response to this question shall clearly indicate how the requested variance is essential to make the subject property developable so that property rights enjoyed by the owners of similar properties can be enjoyed by the owners of the subject property.

To the Applicant's knowledge, several other properties including Harris Rebar and Northern States Power Company have been developed within the M-7 zoning district. To allow for the renewable natural gas production to operate efficiently and in accordance with applicable

state and federal rules and regulations, select buildings, digesters, and stacks must exceed the zoning height restriction of 35 feet. In addition, industry standardized sizes associated with equipment within the buildings and the digesters themselves dictate the heights of said equipment and digesters.

Would the granting of the proposed variance be of substantial detriment to adjacent properties? The response to this question shall clearly indicate how the proposed variance will have no substantial impact on adjacent properties.

The proposed variance would not be of substantial detriment to adjacent properties. Properties to the north are zoned M-7 and M-3, Industrial, and are of a similar industrial nature as the proposed site activities. Adjacent properties to the northwest are zoned RM-2, Multiple-Family Residential, and P-1, Park and Recreation; however, the western half of the property for the renewable natural gas production facility will be vacant and provide a buffer between sites activities and these properties. The adjacent property to the southwest is currently vacant and contains a waterbody. The site is bordered on the south by a Union Pacific Railroad right-of-way and on the west by 130<sup>th</sup> Street and across 130<sup>th</sup> Street by vacant/agricultural lands.

Would the granting of the proposed variance as depicted on the required site plan, result in a substantial or undue adverse impact on the character of the neighborhood, environmental factors, traffic factors, parking, public improvements, public property or rights-of-way, or other matters affecting the public health, safety, or general welfare, either as they now exist or as they may in the future be developed as a result of the implementation of the intent, provisions, and policies of this Chapter, the Master Plan, or any other plan, program, map, or ordinance adopted or under consideration pursuant to official notice by the Village or other governmental agency having jurisdiction to guide growth and development? The response to this question shall clearly indicate how the proposed variance will have no substantial impact on such long-range planning matters.

The proposed variance will have no substantial impact on the long-range planning matters identified above. The facility will operate in an area with other industrial activities and utilize similar truck routes as these facilities. Parking will be available onsite for visitors and employees. Details associated with odor, noise, and traffic are provided in the Conditional Use Permit memo, which this variance request was submitted as part of.

Have the factors causing the variance request been created by the act of the applicant or previous property owner or their agent (for example: previous development decisions such as building placement, floor plan, or orientation, lotting pattern, or grading) after the effective date of this Chapter. The response to this question shall clearly indicate that such factors existed prior to the effective date of this Chapter and were not created by action of the Applicant, a previous property owner, or their agent.

The factors causing the variance request are associated with the operation of a renewable natural gas production facility. Industry standardized sizes for equipment within buildings and the digesters themselves dictates the heights of said items. In turn, the equipment sizes dictate the building heights. As indicated above, state and federal rules and regulations dictate stacks sizes.

erification by applicant: I, 10010 5	KOTT KRISTENSEN , owner for which relief is
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ought, certify that the application and by ability.  pplicant Signature	the above information is truthful and accurate to the best of the
y ability. pplicant Signature	the above information is truthful and accurate to the best of the later of the best of the
y ability.	Date 17.02.2021

Revised date 8/1 1/2009

## **Attachment F**

**Local Approval Requirements** 



### **Roberts Local Approvals**

This table includes the requirements for a Variance Application and Conditional Use Permit Application, as described in the <u>Municipal Code of the Village of Roberts</u>. For convenience, the requirements of Site, Building, and Operations Plans are also listed. The final column describes the location of the information (Memo or Attachment), and notes if this information is preliminary or provided in a future submittal.

	Application for Variance	Conditional Use Permit	Site, Building and Operations Plan	Included in Memo or Attachment, and Notes
Planning Commission Appeals Review Application	X	X		Attachment B
Application for Variance	Χ			Attachment E
Legal Description		X		Memo
Project Name and Date of Plan Submittal			X	Memo
Names and addresses of the applicant, owner of the site, architect, professional engineer, and contractor		X	X	Memo
Lot, block, and recorded subdivision or by metes and bounds		X		Memo
Address of the subject site		Χ		Memo
Type of structure		X		Memo
Proposed operation or use of the structure or site		X		Memo
Number of employees		Χ		Memo
Zoning district within which the subject site is located		Χ		Memo
Map / Site Plan (Showing entire property with graphic scale and north arrow)	X	X	X	Attachment A
All lot dimensions	X	X	X	Attachment A
Existing structures with size, location, and spatial arrangement, and dimensions to property lines (buildings, fences, walls etc)	X	X		Attachment A

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Proposed structures with size, location, and spatial arrangement, and written dimensions to property lines	X	Χ	X	Attachment A
Existing paved surfaces (driveways, walks, decks, etc)	Χ	Χ		Attachment A
Proposed paved surfaces with dimensions to property lines	Χ	Χ		Attachment A
Street(s) which are adjacent to the parcel	Χ	Χ		Attachment A
Written dimensions to buildings on adjoining properties if setback variance is requested	X			N/A
Zoning of adjacent parcels	X			Attachment A
Changes in land use intensity due to the variance (additional dwelling units, more customers, more parking, outside lighting, outside storage, etc)	X			Attachment E
Elevations or contours of the ground at wo-foot intervals		Χ	X	Attachment A
Proposed changes in topography			X	Attachment A
Characteristics of soils related to contemplated uses			Χ	Attachment C
Fill or storage elevations		Χ		Attachment A
First-floor elevations of structures		Χ		Attachment A
Size, location, and spatial arrangement of all existing and proposed structures on the site		X		Attachment A
Location and elevation of streets, water supply, and sanitary facilities		Χ		Attachment A
Photographs showing existing land uses and vegetation upstream and downstream		X		Attachment D
Mean and historic high-water lines and floodlands on or within 40 feet of the subject premises and existing and proposed landscaping		X		Attachment G

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Existing and proposed easements,	X		Attachment A
streets, and other public ways			
Existing and proposed off-street parking, loading areas, and driveways	X	Χ	Attachment A
Storage areas		Χ	Attachment A
Existing and proposed street, side, and rear yards	X		Attachment A
Locations, elevations, and uses of any abutting lands and their structures within 40 feet of the subject site	X		Memo & Attachment A
Erosion control and grading plan as may be required by state, county, or village regulation	Χ		Attachment C
Primary building materials used in construction of all structures		X	Attachment A
Height of building		X	Attachment A & Attachment E
Location and size of existing and proposed sanitary sewers, septic tanks and disposal fields, holding tanks, storm sewers, and water mains		X	Attachment A (Preliminary)
Location, size and capacity of proposed stormwater detention/retention areas		X	Attachment A (Preliminary)
Location of proposed solid waste refuse) storage area.		X	Locations will be identified during Building Permit Process
ocation of pedestrian sidewalks and valkways.		Х	Locations will be identified during Building Permit Process
Existing and proposed public right-of- way widths.		X	Attachment A
Existing and proposed street names.		X	Attachment A
Location, type, height and intensity of proposed lighting.		X	Attachment A - Locations will be identified during

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		Building Permit Process
Location of existing trees and extent, and type of proposed plantings including type and extent of erosion control.	X	Attachment A & Attachment C - Locations will be finalized during Building Permit Process
A graphic delineation of any planned development staging.	X	Staging will be identified during Building Permit Process
Architectural plans, elevations, and perspective drawings and sketches illustrating the design and character of proposed structures.	X	Attachment F
Any other site or use information, such as 100-year internal flood lines, which will assist the plan commission in making a determination and recommendation on the proposal.	X	Attachment G
Operational Plan	X	Formal plan will be identified during Building Permit Process
Specific use of site and buildings.	X	Memo
Hours of operations.	X	Memo
Number of full- and part-time employees.	X	Memo & Attachment A
Estimate of daily truck and auto trips to the site.	X	Memo
Type of materials and equipment to be stored on-site.	X	Memo
Method of handling solid and liquid waste disposal.	X	Method will be identified during Building Permit Process
Method of exterior maintenance (site and buildings).	X	Method will be identified during

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		Building Permit Process
Method of site and building security other than local police.	X	Method will be identified during Building Permit Process
Copies of all special use permits issued by state or county agencies.	X	Copies will be provided when received

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## **Attachment G**

Federal Emergency Management Agency Map

halmage sources of small size. The community map repository should be expected for possible updated or additional flood (second information.

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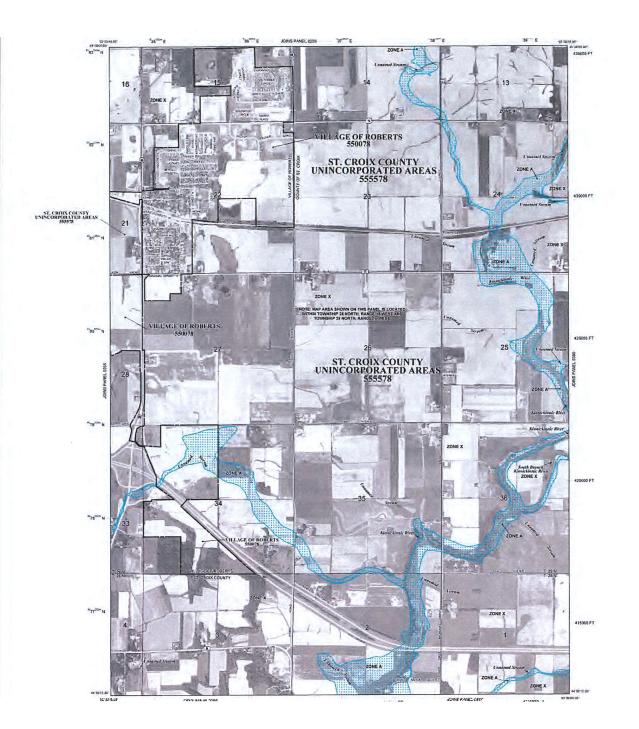
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Boundaries of the floodways were computed at cross sections and release natures cross sections. The floodways write based on hydraulic constitution with regard to requerement of the National Flood insurance Propund initiate and other personnel floodway data are provided in the Flood Insulative private for the provided in flood regard to the provided in

The projection used or the preparation of this map was Universal Transverse Mercator (UTM) zone 15. The horizontal datum was NACOS, CRS1950 (Projected Difference in datum, replected, projection of UTM zones used at a difference in critical projection of UTM zones used at differences in map behinds across jurisdiction boundaries. Those differences out of sifety the accusant of the FIRM,

Contact the FEMA Map Service Center at 1-800-355-9616 for information on swallable products associated with 866-FRMA. Available products may include previously could Leiter of Man Change, a Production would be producted and the state of Man Change. A Production of Social Femal Production and the Change of Social Production of Social Versions of this map. The FEMA Map Service Center may also be readed by Fax of 1-600-356-9500 and its weeked at Mithplewmentachima.gov/.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call I- 877- FEMA MAP (1- 877- 336-2627 or visit the FEMA website at hits flower living owl





MAP NUMBER

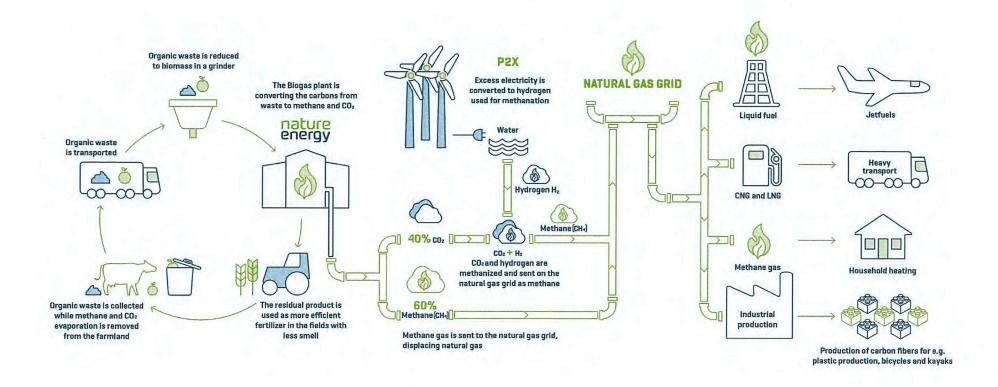
EFFECTIVE DATE

## **Attachment H**

**General Process Flow Diagram** 

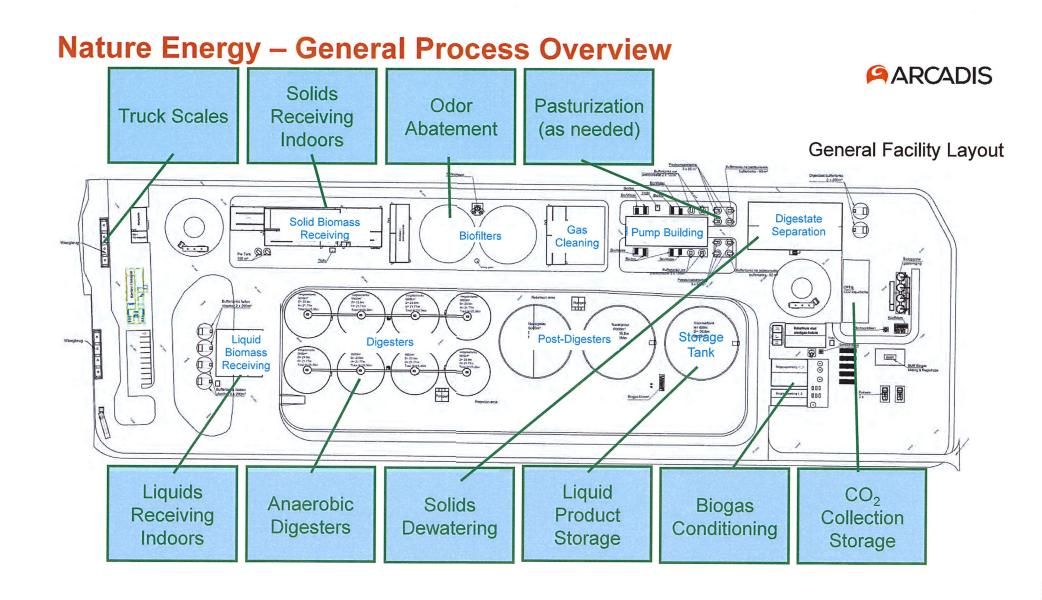


### Nature Energy General Process Flow Diagram



## **Attachment I**

**General Process Layout** 



## **Attachment J**

**Noise Study** 





Environmental measurement

External noise

Report no. 21.74 Nature Energy Kværs

NATURE ENERGY CRUSH

NOVEMBER 23, 2021

## Contents

1	Introduction		
2	Noise conditions		
_	Existing relationship		
3	The company		
3.1	Calculation points		
3.2 3.3	Existing noise conditions		
4	Certification		
	Germication	·	
	The operating phase	10	
5	Noise sources	1	
5.1	Measurement and calculation methods	1:	
5.2	Sound propagation conditions	1.	
5.3	Tones and impulses	1	
5.4 5.5	Results	1.	
6	Conclusion	15	
Appendix	1: Situation plan	10	
Appendix 2: Situation plan for model			
Appendix 3: External noise - operation during the day period			
Appendix 4: External noise - operation in the evening period			
Appendix 5:	External noise - operation during the night period	20	
Appendix	6: SoundPLAN printout	21	

Nature Energy Cross	November 23, 2021	www.niras.dk

### Summary

#### Client

Nature Energy A / S Ørbækvej 260 5220 Odense SØ

#### Measurement site

Nature Energy Kværs A / S Felstedvej 35C Cross 6300 Gråsten

Measuring company

NIRAS A / S Ceres Allé 3 8000 Aarhus C

Report Date: December 6, 2021

Report No. 21.74

### Result summary

Nature Energy A / S has asked NIRAS to calculate the external noise contribution from a new biogas plant south of Kværs.

This report deals with updated calculations for the operational phase. In relation to report no. 21.59 of 6 June 2021, adjustments have been made to the course of the access road as well as adjustments to the traffic during the night period.

The main results, expressed by the resulting equivalent corrected sound pressure level Lr [dB (A) re. 20  $\mu$ Pa], is intended for (compared to the noise conditions in the company's environmental approval):

Nature Energy Cross November 23, 2021 www.niras.dk

Table 1.1: Calculated noise contribution Lr in dB (A). The maximum noise contribution in the night period is indicated in parentheses and the noise limit for this in the night period.

	Address		Resulting Noise contributi	on, Lr	Terms	Expand it
Calculation point				[dB (A)]		
		Day	Evening N	light (Lmax) Day /	Evening / Night (Lmax	<b>(</b> )
1	Avntoftvej 2	38	38	37 (39) 55/4	5/40 (55)	
2	Limbækvej 1	29	28	27 (34)	55/45/40 (55)	
3	Avntoftvej 9	40	39	38 (47)	55/45/40 (55)	
4	Avntoftvej 5	33	33	30 (39)	55/45/40 (55)	3/3/3
5	Avntoftvej 3	35	34	31 (40)	55/45/40 (55)	3/3/3
6	Avntoftvej 1	34	33	30 (36)	55/45/40 (55)	
7	Felstedvej 35	41	40	36 (50)	55/45/40 (55)	
8	Snurom 26	40	39	35 (50)	45/40/35 (50)	

The uncertainty of the calculations is estimated at 3 dB.

However, the uncertainty has not been used in the assessments of whether the noise limits can be complied with, as this is a planning situation, and it is normal practice in such situations that the noise limits must be complied with without the uncertainty being deducted.

No noise contribution is stated for Saturdays, as well as Sundays and public holidays.

The noise contribution during the weekend period is less than the noise contribution on weekdays, as the same amount of driving does not occur. Saturday until 14 there may be the same amount of driving as on weekdays. As the noise contribution in the day period on weekdays is less than the noise limit value for the day period in the weekend (45 dB (A)), the noise limits can therefore also be complied with in the weekend.

The maximum noise contribution at night (Lmax) originates primarily from traffic and is calculated net to max. 50 dB (A) at all calculation points. The noise limit for maximum contribution during the night period of 50 or 55 dB (A) is thus complied with. The maximum noise contribution comes from the truck, as it enters the site via the access road.

### Conclusion

The company complies with the noise limits at all calculation points.

Hans Drejer
hkd@niras.dk
Tel. 20 32 90 37

A. Emil M. Schrøder aes@niras.dk Tel: 27 61 88 49

lature Energy Cross	November 23, 2021	www.niras.dk

Project no .: 10403522 Version 1.0 Revision 2

Prepared by AES / HKD Controlled by HKD Approved by LWE

### 1. Introduction

This report is an update of report no. 21.59 of 6 June 2021 and deals with the noise contribution from the operation of the biogas plant Nature Energy Kværs. The calculation must document compliance with the noise limit values at neighbors at maximum operation at the detailed projected system.

In relation to report 21.59, there have been adjustments to the alignment of the access road in relation to what was previously planned. The access road was basically located within the boundaries of the local plan area with a alignment distributed on the 2 possible land registers. As part of a possible expropriation, it has been investigated whether it is possible to obtain a voluntary agreement on the transfer of land to the access road. This investigation has resulted in owner-A, who owns the southern cadastre, having entered into an agreement to cede land for the location of the access road, where owner-B, who owns the northern cadastre, has not wanted to sell area for the access road.

As it has not been possible to reach a voluntary agreement with both owners, a new detailed design of the access road has been made, so that this is exclusively located on the area belonging to owner-A. The detailed design shows that it is possible to place the access road so that it is kept on the southern land register and within the boundaries of the local plan area. It is therefore not a necessity to expropriate parts of the northern equal cadastre belonging to owner-B.

This report thus deals with the calculation of the external noise contribution from operation of the company after the plant is completed with the new detailed design of the access road, ie. where the line source for noise from transport on the access road is changed. In addition, an adjustment has been made to the number of vehicles during the night period, cf. section 5.1.

The changed access route is shown in Appendix 1: Situation plan and Appendix 2: Situation plan for model.

### 2 Noise conditions

The noise condition is cf. the company's environmental approval of 30 September 2021:

#### 6. STØJ

- 6.1. Virksomhedens eksterne støjbelastning må ikke overstige nedenstående værdier. De angivne værdier for støjbelastningen er de ækvivalente, korrigerede lydniveauer i dB(A).
  - I. Ved enkeltboliger i det åbne land.
  - II. Ved boligområde i Kværs (kommuneplanens rammeområde 7.4.011B), samt ved beboelse uden landbrugspligt i Snur-Om.

	KI.	Reference- tidsrum (ti- mer)	I dB(A)	II dB(A)
Mandag-fredag	07-18	8	55	45
Lørdag	07-14	7	55	45
Lørdag	14-18	4	45	40
Søn- og helligdage	07-18	8	45	40
Alle dage	18-22	1	45	40
Alle dage	22-07	0,5	40	35
Spidsværdi	22-07	1	55	50

I landzone skal støjgrænserne overholdes ved boligen eller på udendørs opholdsarealer i op til 15 meters afstand fra boligen. Hvor skelgrænsen er nærmere end 15 meter fra boligen, skal støjgrænserne overholdes i skel.

8 calculation points have been selected, which represent the most noisy points on the surrounding properties (housing in the open country and Snur-Om).

Calculation point	Address	Area type	Terms dB (A) Day / evening / night
1	Avntoftvej 2	3	55/45/40
2	Limbækvej 1	3	55/45/40
3	Avntoftvej 9	3	55/45/40
4	Avntoftvej 5	3	55/45/40
5	Avntoftvej 3	3	55/45/40
6	Avntoftvej 1	3	55/45/40
7	Felstedvej 35	3	55/45/40
8	Snurom 26	5	45/40/35

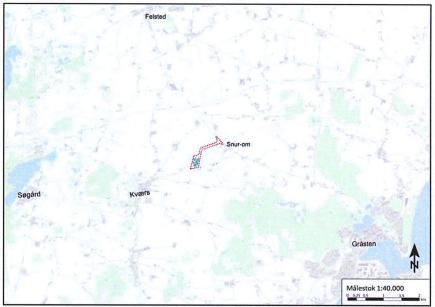
The points are located 1.5 m above ground in outdoor living areas. The location of the selected reference points is shown in **Appendix 2: Situation plan for model.** 

## 3 Existing conditions

#### 3.1 The company

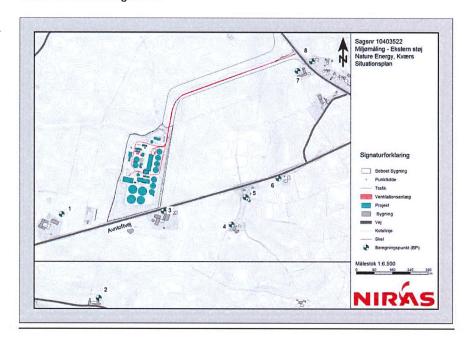
The project area is located approx. 1,250 m east of Kværs and approx. 850 m southwest of the village Snur-Om, in the southeastern part of Southern Jutland (Figure 3.1).

Figure 3.1: Shows the location of the planned facility (red dotted line) in the local area.



There is currently no completed facility on the site (Figure 3.2). The final location of the road access is shown in Figure 3.3.

Figure 3.2: Shows the cadastre with the project area, indicated by a red dotted line.



Nature Energy Cross November 23, 2021

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The company is planned to receive up to 800,000 tonnes of biomass per year. Year. The biogas produced is upgraded to natural gas quality and sold to the natural gas network.

Figure 3.3: Shows the final location of the road access.



The company receives livestock manure and cultivated biomass from the local area as well as organic biomass residue fractions from various industries.

The detailed planned facility consists of i.a. of:

- · Office and crew facilities
- Receiving tanks for residual products and liquid livestock manure
- Loading / unloading hall with laundry hall liquid biomasses •

Reception hall for solid biomasses incl. pre-treatment hall, sanitation facilities - height for tipping <15 m

- · Indoor storage for cultivated biomass. Up
- to 7 process tanks height <26 m
- · After-storage tanks for degassed biomass and liquid fraction from separation
- Gas storage <3,500 m3
- Building for boiler plant with chimney (process heat)
- · Biofilter with chimney
- Div. small technical facilities (workshop, torch, exchanger equipment, pumps and bladder sere)
- Possibly. separation plant with storage units for fiber fraction
- Upgrade plant with air purification plant and chimney
- · Road bridge
- Measurement and regulator station at the biogas plant (BMR station)
   Gas pipeline to Dansk Gasdistribution's connection station

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A situation plan of the planned facility can be seen in Figure 5.1 and Appendix 1: Situation plan.

Liquid raw materials in the form of manure are received by tankers and unloaded in a closed loading hall. Delivery of degassed biomass takes place at the same place, and takes place in the same process as well as to the same tanker as used for the delivery of manure. Thus, as a general rule, empty driving with own tankers is avoided.

The solid biomass and the liquid industrial biomass are fed into vehicles that cannot be used to export degassed biomass. There is therefore a need for extra clay with the delivery of degassed biomass. These will be as empty runs.

#### Definition: 1 transport = 1 exit and 1 entrance.

From a computational point of view, one transport (route) may well have been divided into several sub-sources (sub-routes). In these calculations, the delivery of manure is thus divided into two separate ones sources, which overall represent a transport route on the site's area - ie one for the entrance to the loading hall and one from the loading hall for the exit. Where the other transport routes are gathered in one source starting from driveway to exit.

In addition, there will be an average transport of 10 passenger cars per day. day.

#### 3.2 Calculation points

8 points have been selected for the nearest neighboring dwellings in the open country and for the nearest dwelling in Snur-Om, where the noise contribution has been calculated. The location of the calculation points is shown in the overview plan in **Appendix 2: Situation plan for model**, numbered 1-8. The points are located 1.5 m above local terrain and 15 m from facades when living in dwellings in open country, cf. normal practice and at boundaries for dwellings in Snur.

#### 3.3 Existing noise conditions

Noise sources in open rural areas mainly include traffic, including transport to and from agricultural properties and the associated application areas. The operation of agricultural properties can also give rise to noise of a local nature in connection with the daily work and driving on the individual property.

## **4 Certification**

NIRAS A / S is approved by the Danish Environmental Protection Agency to perform "ENVIRONMENTAL MEASUREMENT - EXTERNAL NOISE"

Measurements and calculations have been carried out in accordance with the Danish Environmental Protection Agency's guideline no. 5/1984 on external noise from companies and no. 5/1993 on calculation of external noise from companies.

When interpreting whether noise conditions have been complied with, the point calculations must be used, as the noise maps are only informative and used in connection with the location of the reference points. Noise maps are not covered by the certified measurement, as they have been obtained by interpolation between calculation points in a grid of 5 \* 5 m.

November 23, 2021

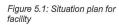
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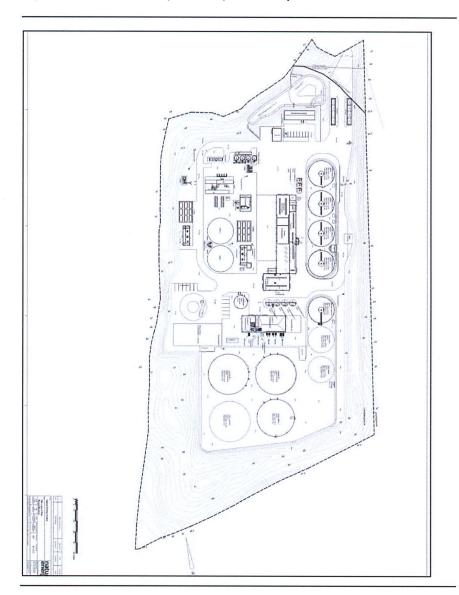
## 5 Operating phase

## 5.1 Noise sources

The calculations are based on noise measurements on noise sources made at other of Nature Energy's plants as well as experience figures from similar plants. Source strengths from these measurements have been used in the calculations of the expected noise from the planned plant, as these are the same noise sources / components used on the various biogas plants belonging to Nature Energy.

Figure 5.1 shows the situation plan for the planned facility.





**Figure 5.2** shows the model of the planned system, seen from the south, as it looks in SoundPLAN. Noise sources are indicated by red stars, lines and surfaces.

Figure 5.2: Shows the SoundPLAN model above the system, including sources marked in red stars, surface areas and lines for point sources, area sources (ventilation) and drive seals with trucks (lines), respectively.



The following source strengths have been used in the calculations:

Table 5.1: Source strengths statio near noise sources

Noise source	Source strength LWA [dB (A)]	Height [m]
Closed gates - unloading / technical installations etc. (8 pcs.)	81.6	3.0
Stirrer, process tanks (7 pcs.)	83.7	25.5
Gas upgrade system (3 pcs.)	85.7 / 78.2 / 78.2	2.5 / 3.0 / 3.0
Chimney biofilter (1 pc.)	90.0	60.5 (top of Shoe stone + 0.5 m)
Chimney gas upgrade (1 pc.)	90.0	20.5 (top of Shoe stone + 0.5 m)
Boiler chimney (1 pc.)	80.0	16.5 (top of Shoe stone + 0.5 m)
Fan before the boiler chimney (1 pc.)	83.1	1.5
Fan before biofilter (2 pcs.)	80.6	0.5
Refrigeration system (2 pcs.)	97.0	1.5
Gas blower	80.9	0.5

All stationary noise sources can be in operation around the clock.

There will also be a number of minor noise sources on the plant (pumps, fans, air intakes, etc.). These sources typically have a lower source strength, place is quite low and often shielded from the surroundings. These sources are therefore considered to be of no significance for the total noise contribution.

The location of the noise sources is shown in Figure 5.2 and Appendix 2: Situation plan for mo share.

For the associated traffic, standard truck data from the Noise Data Port has been used. The following source strengths have been used:

Table 5.2: Source forces drive clothing

Source	Source strength LWA [dB (A)]	Source type	Kildedi opinions	Corrected source strength L'W [dB (A)]	Remark			
Truck, idle - bridge weight	90.8	Point	REACH	REACH	Truck, Noise Data Book			
Reading, outdoors	95.8		KEAGI	REACH	Truck forced empty aisle, Noise data book			
			Delivery of slurry - 900 m	74.8 (ind), 73.6 (out)	Truck, Noise Data Book Manure delivery has two			
Driving with a carriage	100.7	Line	Delivery of Plantebio lot - 1.366 m	69.3	corrected source strengths as it is divided into two separate line sources, in and out. All Trucks run with 4 m / s (approx. 15 km / h)			

There will be most traffic during the day on weekdays, but there will also be activity in the evening and night and on weekends. Here the intensity will be less, cf. below.

There will be an average traffic of approx. 96 vehicles per days at full expansion of the plant, corresponding to approx. 7 pr. hour on average in the normal opening hours from kl. 6 - 20. (1 transport equals 1 approach and 1 exit). The transport varies over the year and around the clock, to and from the facility. The noise calculations have therefore been made on the basis of a worst case situation, where several vehicles may arrive in a few days or periods.

To ensure a certain degree of spaciousness, including variations in traffic from day to day, the following traffic on weekdays has been taken into account in the calculations:

Delivery of pumpable outdoors Delivery of non-pumpable Pickup from screw press	Number of transports per hour							
	Day (07-18)	Evening (18-22)	Night (22-07)					
Delivery of slurry	7-8	8	3 *					
Delivery of pumpable outdoors	1	0	0					
Delivery of non-pumpable	3	0	0					
Pickup from screw press	1	0	0					
Total	12-13	8	3					

<sup>\*</sup> Adjusted from 6 to 3 pcs. transporter. (3 transports provide space for 3 entrances and 3 exits every hour = 6 exits on the access road).

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The following remarks must be made to the above:

During the day period (7-18) there can be up to approx. 100 (8  $^{*}$  12-13) transports within a reference period for the day period of 8 hours, 8 per. hour. Within the reference period of 1 hour in the evening period (18-22) and 3 transports per. hour during the night period corresponding to 1.5 transports (3 runs on the access road) in the reference time space of  $\frac{1}{2}$  hour during the night period (22-07), provided that the 3 transports

comes evenly distributed over 1 hour. Please note that each transport counts for both an inbound and outbound journey so that the number of journeys on the access road is double the number of transports.

All cars can idle on the bridge weight for 1 minute. Both entry and exit have been taken into account.

Delivery of manure is recorded as 2 routes per. transport. One for drive to port (full), and one subsequent drive out of port (empty). Delivery of pumpable outdoors and non-pumpable indoors is calculated as the entire route, ie from entrance to exit (approach and exit = 1 transport). The figures for bridge weight indicate the total number of entrances and exits (weigh-in and weighout). Unloading of pumpable biomass outdoors takes approx. 30 minutes per. lorry.

The number of cars with slurry is adjusted from 6 pcs. for 3 pcs. transports in the night period per. hour compared to the previous calculation.

1 Transport = 1 driveway + 1 exit.

When, for example, there are 3 transports per. hour, this means that there can be 3 entrances and 3 exits per. hour, but it can also be 6 entrances or 6 exits, it simply means that the number of exits on the access road regardless of direction must be a maximum of 6 per hour. hour.

Noise during the night period is calculated as an average over ½ hour, which is why the specified number of transports per. hour at night must be evenly distributed so that eg 3 transports per. hour, which is 6 runs on the access road must be distributed with 3 runs per. ½ time.

The company's operations can be adapted to the conditions used for driving during the night period, where there is a maximum of 6 journeys on the access road, trucks leave every morning after filling, after which it takes a relatively long time before they return, which is why 6 runs on the access road per. hour in the noise calculation is considered to be adequate for maximum traffic during the night period.

Traffic with passenger cars is assessed to be of no significance in relation to the external noise contribution.

#### 5.2 Measurement and calculation methods

The calculations performed have been performed in accordance with the Danish Environmental Protection Agency's guideline 5/93 using the General Prediction Method 2019.

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The program SoundPLAN v. 8.2 has been used for the calculations. Update: 22-03-2021, where maps with scale conditions, buildings, screens, reflective objects, terrain, reference points and source data are entered / digitized, after which SoundPLAN calculates the noise in the selected points in accordance with the common Nordic calculation method for industrial noise.

Elevation conditions etc. for the area are retrieved in digital form, from Kortforsyningen's home page, and included in SoundPLAN.

The elevation conditions have been adjusted around the plant to reflect the future elevations for the plant.

### 5.3 Sound propagation conditions

The project area is primarily acoustically hard.

The area outside the project area is primarily acoustically porous.

Buildings will to a certain extent act as noise shielding for certain noise sources in the various calculation points.

### 5.4 Tones and impulses

No clearly audible tones or impulses are expected from any of the noise sources (subjective assessment based on experience from similar systems). Thus, no basis is considered for providing surcharges for either impulses or clearly audible tones in the noise.

#### 5.5 Results

The following equivalent corrected noise contribution from the plant has been calculated [dB (A)]. Lmax is indicated in parentheses, which is the maximum noise contribution during the night period (not corrected for operating time) and the noise limit for this during the night period:

			esulting ise contribu	tion, Lr	Terms	Extended uncertainty					
Calculation poir	Address nt	[dB (A)]									
	Title and	Day	Of ten	Nat (Lmax)	Day / Evening	/ Night (Lmax)					
1	Avntoftvej 2	38	38	37 (39) 55/45	5/40 (55)						
2	Limbækvej 1	29	28	27 (34) 55/45	5/40 (55)						
3	Avntoftvej 9	40	39	38 (47) 55/45	5/40 (55)						
4	Avntoftvej 5	33	33	30 (39) 55/45	5/40 (55)	3/3/3					
5	Avntoftvej 3	35	34	31 (40) 55/45	5/40 (55)	3/3/3					
6	Avntoftvej 1	34	33	30 (36) 55/45	5/40 (55)						
7	Felstedvej 35	41	40	36 (50) 55/45	5/40 (55)						
8	Snurom 26	40	39	35 (50) 45/40	)/35 (50)						

Noise maps for the operating phase during the day, evening and night period can be seen in Appendix 3: External noise - operation during the day period, Appendix 4: External noise - operation during the evening period and Appendix 5: External noise - operation during the night period. The noise maps are not covered by the certified measurement, as they were obtained by interpolation by point calculations in a grid of 5 \* 5 m.

Table 5.3: Calculated noise contribution Lr in dB (A)

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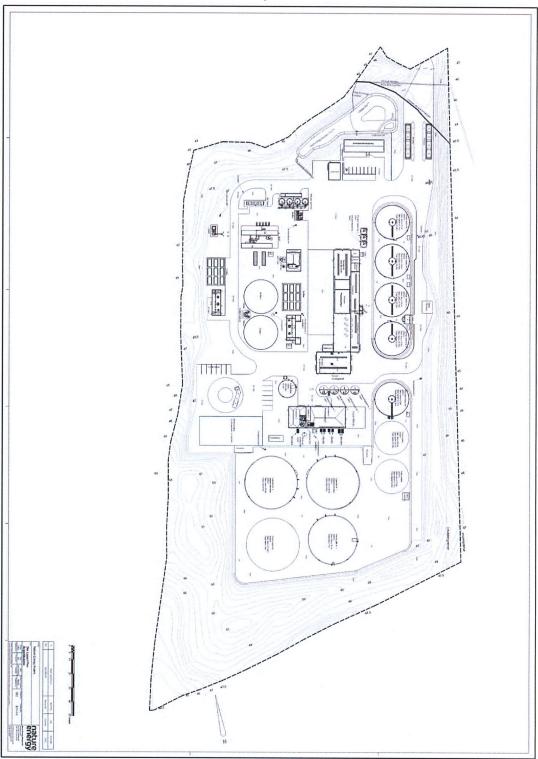
The maximum noise contribution at night (Lmax) originates primarily from traffic and is calculated net to max. 50 dB (A) at all calculation points. The noise limit for maximum contribution of 50 - or 55 dB (A) is thus complied with. The maximum noise contribution comes primarily from truck, as it enters the plot along the access road at the homes closest to the driveway. In other points, it also originates primarily from driving on the plot at the point that is closest to the individual home.

## **6 Conclusion**

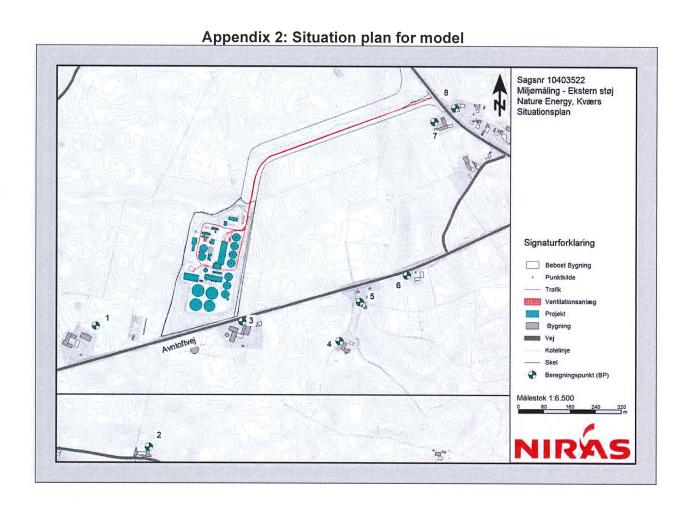
The company complies with the Danish Environmental Protection Agency's indicative noise limits in all calculation points for the applied design and operation.

The uncertainty is not included in the assessments, as it is normal for the company to be able to comply with the noise limits in planning situations without deducting the uncertainty. Appendix 6 contains calculation results from SoundPLAN, where the individual noise source's noise contribution i.a. appears.

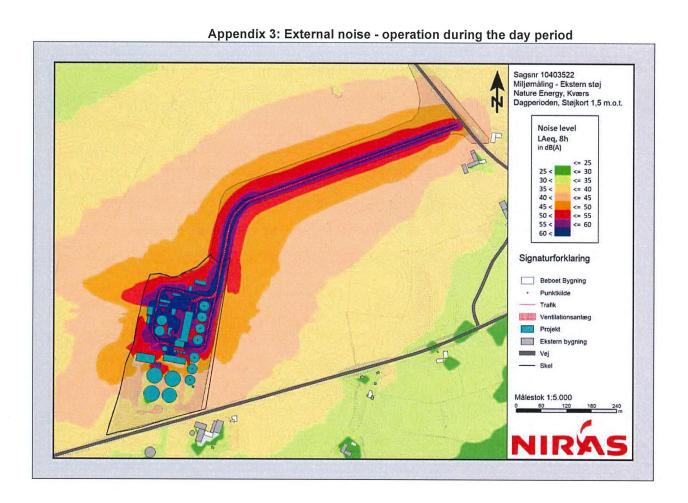
Appendix 1: Situation plan

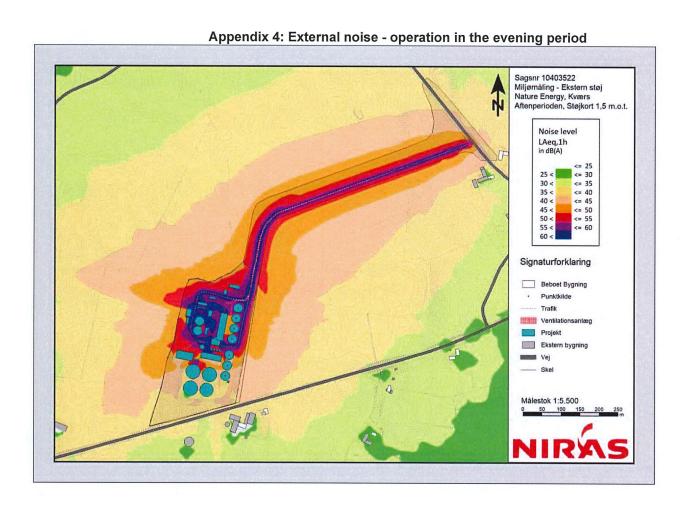


November 23, 2021

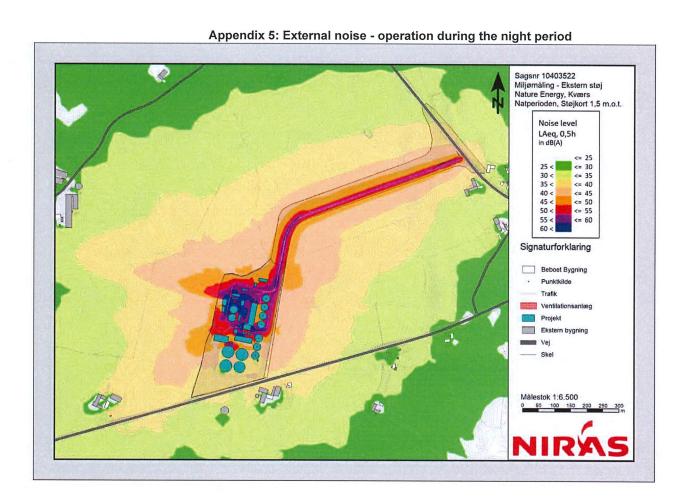


November 23, 2021





November 23, 2021



November 23, 2021

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# Appendix 6: SoundPLAN printout

Kilde	Kildetype	Lw	Lw pr. m,m2	Kilde str.	Afstand til modtager	Afstandskorr	Terrænkorr.	Skærmvirkning	Luftabsorp.	Reflektionsbidra	Stejbidrag (Ls)	LAeq, 8h	LAeg,1h	_Aeq, 0,5t
			dB(A)	dB(A)	m,mª	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB(A)
Receiver BP01 - Avntoffvej 2 LAeq, 8h 3	8,0 dB(A) LAs	q,1h 37,8	dB(A) LAeq. (	5h 37.4 dB	(A) Lmax 39.0 dB(A)					Secretary Secretary				
Afhentning af gyle fra Skruepresse	Line	100,7	67,2	2195,5	615,7	-66,8	0,1	-3,7	-3,0	1,0	28,3	11.3	-	
Brovægt	Point	90,8	90,8		572,3	-66,1	1,1	0,0	-2.7	0.0	23,1	18.7	17.4	11,5
Gasblæser	Point	80,9	80,9		354,2	-62,0	0,4	-9,4	-1,4	0,0	11,5	11,5	11,5	11,5
Gasopgradering	Point	78,2	78,2		438,6	-53,8	-0,9	-18,4	-1,4	6.2	2,8	2,8	2,8	2,8
Gasopgradering	Point	78,2	78,2		455,4	-64,2	-0.4	-14.9	-0.9	10,7	11,5	11.5	11,5	11,5
Gasopgradering - Åben port	Point	85,7	85,7		446.1	-64,0	0,0	-19.6	-2,6	0,0	2,4	2,4	2,4	2,4
Gasrenser - Afkast	Point	80,0	80,0		482,0	-64,7	-0.2	0.0	-5.3	0.0	9,8	9.8	9.8	9,8
Indpumpning	Point	95,8	95,8		496,0	-64,9	0,8	-15,5	-1.4	7.2	22,1	19,1	2 4 12 12	10 min 10
Kedelskorsten	Point	90,0	90,0		439,5	-63,9	-0.4	0,0	-4.9	0,0	20.8	20,8	20.8	20,8
Keleanlæg	Area	97,0	83,3	23,3	430,2	-63,7	0,3	-0.3	-2,0	1,9	33,1	33,1	33,1	33.1
Køleaniæg	Area	97,0	83,3	23,6	433,4	-63,7	0,3	-0.2	-2,0	2,5	33.9	33,9	33,9	33,9
levering at gylle - ind	Line	100,7	70,1	1126,0	611,5	-66,7	0.0	-3,0	-2.9	1,1	29.1	26 B	27,0	21.2
levering af gylle - ud	Line	100,7	70,8	959,8	709,2	-68,0	0,3	-3.6	-3,6	0,3	26,0	23.0	23.2	20,3
Levering of ikke-pumpbart udendors	Line	100.7	68,3	1740,2	759.9	-68.6	0.0	-2.1	-3.5	0.4	26.8	21,6	0.27.0	4
Levering of pumpbart - udendors	Line	100,7	88.2	1744.0	780.4	-68.6	0.0	-2.1	-3.6	8.0	27.2	18.0	90	
Omrører	Point	83,7	83,7		440,2	-63,9	0,1	0,0	-4.2	0,0	15.8	15.8	15.8	15,8
Omrarer	Point	83,7	83,7		427,0	-63,6	0.1	0.0	-4,1	0.0	16.2	16,2	16.2	16,2
Omrører	Point	83,7	83,7		414,8	-63,3	0,1	0.0	-4.0	0.0	16.5	16.5	16.5	16,5
Omrører	Point	83,7	83,7		480,6	-64,6	0,2	0.0	-4.5	0.0	14,9	14.9	14,9	14,9
Omrører	Point	83,7	83.7		516.5	-65.3	0,2	0.0	-4.8	0,0	14.0	14.0	14,0	14.0
Omrører.	Point	83,7	83,7		498,2	-64,9	0,3	0.0	-4,6	0,0	14.4	14.4	14,4	14.4
Omrører	Point	83,7	83,7		463.9	-64.3	0.1	0.0	-4.4	0.0	15,2	15.2	15,2	15,2
Port	Point	81,6	81,6		478,9	-64,6	0,0	-19,7	-2.8	16.7	14,2	14,2	14,2	14,2
Port	Point	81,6	81,6		431,6	-63,7	-0.1	-19,7	-2,6	6,9	5,4	5,4	5,4	5,4
Port	Point	81,6	81,6		383,5	-62,7	-0.7	-19,5	-2,3	0.0	-3.5	-3,5	-3,5	-3,5
Port	Point	81,6	81,6		393,4	-62,9	-0,4	-19,5	-2,3	0,0	-3,5	-3,5	-3.5	-3,5
Port	Point	81,6	81,6		427,3	-63,6	-0,2	-19,7	-2,6	0,0	-1,4	-1,4	-1,4	-1,4
Port	Point.	81,6	81.6		408,0	-63,2	-0,1	-8.7	-1,9	0,2	10,9	10,9	10,9	10,9
Port	Point	6,18	81,6		474,8	-64,5	-0,1	-19,7	-2.8	13.8	11,3	11,3	11.3	11,3
Port	Point	81,6	81,6		412,8	-63,3	-0.1	-6,1	-2,4	0,0	12,7	12.7	12.7	12,7
Ventilationsafkast	Point	90,0	90,0		400.6	-63,0	-0,5	0,0	-4.6	0,0	21,9	21,9	21,9	21,9
Ventilatoer for kedelskorsten	Paint	83,1	83.1		438,5	-63.8	1,1	-18,8	-3,3	16,2	14,5	14,5	14.5	14,5
Ventilator for biofiter	Point	80.6	80.6		395.3	-62.9	0.4	0.0	-3.0	2.1	17.3	17,3	17,3	17.3

g, 8h LAeg,1h	_Aeg. 0.5h
(A) dB(A)	dB(A)
-4,3 -4,3	-4,3
6,3	
-0,7 -2,1	-8,0
-1,3 -1,3	
-5.8 -5.8	
-4,8 -4,8	
-3.8	
5,2 5,2	
21.0	0,2
18,7 18,7	18,7
19.1 19.1	
19.6 19.6	
22.2 22.4	
18.0 18.3	
17,4	10,0
13.6	
12,2 12,2	12,2
12,7 12,7	
13,3 13,3	
10,9 10,9	
10.0 10.0	
10.5 10.5	
11,4 11,4	
-5,4 -5,4	
-4,3 -4,3	
9,5 9,5	
-2.7 -2.7	
-4,2 -4,2	
5,2 5,2	5,2
-5,1 -5,1	
7.1 7.1	
	5,2 16,2 0,0 0,0

November 23, 2021

Kilde	Kildetype	Lw	Lw pr. m,m2	Kilde str.	Afstand til modtager	Afstandslorr.	Terrænkorr,	Skærmvirkning	Luftabsorp.	Reflektionsbidra	Stejbidrag (Ls)	LAeg, 8h	LAeg.1h	Aeq. 0,51
		dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dS(A)	dB(A)
Ventilator for biofilter	Point	80,6	30,6		625,8	-66,9	0,9	-19,7	-3,9	3,0	-6,1	+6,1	-6,1	-6,1
Ventilator før biofilter	Point	80,6	80,6		629,2	-67,0	0,7	-20,0	-4.1	2,0	-7.7	-7.7	-7.7	-7.7
Receiver BP03 - Avntoffvej 9 LAeq, 8h 3	9,6 d8(A) LAe	q.1h 39,2	dB(A) LAeq.	,5h 38,0 dB	(A) Lmax 46.6 dB(A)								A STREET, CO.	
Afhentning af gyle fra Skruepresse	Line	100,7	67,2	2195,5	354,3	-62,0	0,5	-4,0	-1,7	0,8	34.2	17.2	1	3.2
Brovægt	Point	90,8	8.00		315,6	-61,0	0.2	0,0	-1.6	2.1	30.6	26,2	24,9	19.0
Gasblæser	Point	80,9	80.9		179,0	-56,1	0.9	-16,5	-0.6	2,7	14,3	14,3	14,3	14,3
Gasopgradering	Paint	78,2	78,2		303,6	-60,6	1,5	-22,5	-0.7	0.0	-1.2	-1,2	-1,2	-1,2
Gasopgradering	Point	78,2	78,2		289,6	-60,2	1.5	-17,2	-0.5	0.0	4.8	4.8	4,8	4,8
Gasopgradering - Aben port	Point	85,7	85,7		302,3	-60,6	1.5	-25.0	-1.8	0.0	2,8	2,8	2,8	2,8
Gasrenser - Afkast	Point	80.0	80,0		297,8	-50,5	0.9	-14,9	-1.3	0.0	4.1	4.1	4.1	4.1
Indpumpning	Point	95,8	95,8		259.5	-59,3	1,1	-23,0	-0.7	0.0	13,9	10,9		100
Kedelskorsten	Point	90,0	90,0		286,5	-59,5	1.0	-16,4	-1.3	0.0	13.8	13,8	13.8	13,8
Keleanizeg	Area	97.0	83,3	23.3	281.8	-60.0	1,5	-22.6	-0.9	4.0	19,1	19,1	19,1	19,1
Kaleanlæg	Area	97.0	83.3	23.6	278,5	-59,9	1,5	-21.1	-0.8	1.6	18.3	18,3	18,3	18,3
levering af gylle - ind	Line	100.7	70.1	1126.0	378.4	-62,6	0.8	-5,6	-2.2	0,6	31.7	29.4	29.6	23,8
levering at gylle - ud	Line	100.7	70.8	959.6	365.6	-62.3	-0.2	-1,0	-1.6	1.0	36.6	33,6	33.8	30.9
Levering af ikke-pumpbart udendørs	Line	100.7	68.3	1740.2	471.2	-64.5	-0.2	-1.8	-2,2	0.5	32.5	27.2	35,0	30,3
Levering af pumpbart - udenders	Line	100.7	68.2	1744.0	468,9	-64.4	-0,2	-1,8	-2,2	0.6	32.5	23.3		16"
Omrører	Point	83,7	83.7		147.1	-54,3	0.2	0.0	-1.8	0.0	27.8	27.8	27.8	27,8
Omrører	Point	83.7	83.7		124.4	-52.9	0.2	0.0	-1.5	0.0	29.5	29,5	29,5	29.5
Omrører	Point	83.7	83.7		102,7	-51,2	0.2	0.0	-1.3	0.0	31.4	31.4	31.4	31.4
Omrører	Point	83.7	83,7		211.9	-57,5	0.2	0.0	-2.4	0.0	24.1	24.1	24.1	24.1
Omrarer	Point	83.7	83.7		264.6	-59.4	0.3	0,0	-2.9	0.0	21.7	21.7	21.7	21.7
Omrarer	Point	83.7	83.7		238.1	-58.5	0.3	0.0	-2.6	0,0	22.8	22,8	22,8	22.8
Omrører	Point	83.7	83.7		186.0	-56,4	0.2	0.0	-2.2	0.0	25,4	25,4	25,4	25,4
Port	Point	81.6	81,6		255.4	-59.1	1.0	-24.8	-1,3	1,9	2,3	2,3	2,3	2,3
Port	Point	81.6	81.6		185,8	-58.4	1,5	-22,7	-0.6	1.4	7.8	7.8	7,8	7.8
Port	Point	81.6	81,6		180.8	-56,1	1.5	-25.0	-1.0	3.2	4.2	4.2	4,2	4,2
Port	Point	81.6	81.6		172.4	-55.7	1,5	-25.0	-0.9	0.3	1.8	1,8	1,8	1.8
Port	Point	81,6	81.6		179.6	-56,1	1,5	-18.6	-0.4	0.0	11.0	11.0	11,0	11,0
Port	Point	81.6	81,6		193.9	-56.7	1,5	-25.0	-1.0	0.0	3,3	3,3	3,3	3,3
Port	Point	B1,6	81.6		257.7	-59.2	1.4	-24.8	-1.3	0.0	0.7	0.7	0,7	0,7
Port	Point	81.6	81,6		200.0	-57.0	1.5	-25.0	-1.1	0,0	3,0	3,0	3,0	3,0
Ventilationsafkast	Point	90.0	90,0		261.7	-59.3	0.8	-0.1	-3.2	0.0	27.9	27,9	27.9	27.9

Kilde	Kildetype	Lw	Lw pr. m.m²	Kilde str.	Afstand til modtager	Afstandskorr.	Terrænkorr.	Skærmvirkning	Luftabsorp.	Reflektionsbidrag	Steibidreg (Ls)	LAeq, 8h	LAeq.1h	Aeg. 0.5t
		dB(A)	dB(A)	m,mª	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB(A)	dB(A)
Ventilatoer før kedelskorsten	Point	83,1	83,1		266,7	-59,5	1,5	-22.4	-2.2	0.0	0.5	0,5	0.5	0,5
Ventilator for biofilter	Point	80,6	80,6		253,3	-59.1	1.5	-25,0	-1.6	2,4	-1.2	-1.2	-1.2	-1.2
Ventilator for biofilter	Point	80,6	80,6		255,7	-59,1	1,5	-25.0	-1.7	1.7	-2.0	-2.0	-2.0	-2.0
Receiver BP04 - Avntoffvej 5 LAeq, 8h 33	,3 dB(A) LAe	q, th 32,5 c	B(A) LAsq.	),5h 30,2 dB	(A) Lmax 38,7 dB(A)							ALC: ALC: A		ALL CALLS
Afhentning at gyle fra Skruepresse	Line	100,7	67,2	2195,5	565,8	-56,0	-0,5	-2,2	-2,8	0,7	29.8	12,8	You Allow	
Brovægt	Point	90,8	90,8		474.5	-64.5	-1.4	0.0	-2.4	0.0	22.5	18,2	16,9	11,0
Gasblæser	Point	80,9	80,9		470,0	-64.4	1.3	-20.1	-1.9	1.4	0,2	0,2	0,2	0,2
Gasopgradering	Point	78,2	78,2		545,5	-85,7	1.4	-21.6	-1.3	0.0	-5.9	-5.9	-5.9	-5.9
Gasopgradering	Point	78,2	78,2		522.6	-65.4	1,3	-19.2	-1.8	0.0	-3.9	-3.9	-3.9	-3.9
Gasopgradering - Åben port	Point	85,7	85,7		540,5	-65.6	1.6	-24.9	-2.9	0.0	-3.1	-3.1	-3.1	-3,1
Gasrenser - Afkast	Point	0,08	80,0		518.3	-65.3	-0,3	-8.6	-4.2	0.0	1.7	1.7	1.7	1.7
Indpumpning	Point	95,8	95,8		466.4	-84.4	0.8	-20,1	-2.0	0.0	10.1	7.0		
Kedelskorsten	Point	90,0	90,0		507.7	-65,1	0.1	-5.3	-4.7	0.2	15.3	15,3	15.3	15,3
Køleanlæg	Area	97.0	83.3	23,3	527,7	-65,4	1,3	-19.9	-1.8	5,1	16.3	16.3	16.3	16,3
Køleanlæg	Area	97.0	83.3	23.6	522,4	-65,4	1,3	-18.4	-1.7	3.4	16,3	16,3	16,3	16,3
levering of gylle - ind	Line	100.7	70,1	1126.0	577.8	-66,2	-0.2	-3.1	-3.0	0,5	28.6	26.4	26.6	20,7
levering af gylle - ud	Line	100.7	70.8	959.6	561.9	-66.0	-1.4	-0.2	-2.8	1,1	31.5	28,5	28.7	25.8
Levering af ikke-pumpbart udenders	Line	100.7	68,3	1740.2	599.5	-66,5	-1,1	-0.8	-3,0	0.4	29.6	24.3	20,1	25,0
Levering af pumpbart - udenders	Line	100.7	68.2	1744.0	597.9	-86.5	-1.1	-0.9	-3.0	0,3	29.5	20,3	i gui	
Omrører	Point	83.7	83.7		400,1	-63.0	-0.2	0.0	-3.9	0.0	16.6	16.6	16,6	16,6
Omrarer	Point	83.7	83,7		392.2	-62,9	-0.2	0.0	-3.9	0.0	16.8	16,8	16,8	16.8
Omrører	Point	83.7	83,7		385,5	-62.7	-0.2	0.0	-3.8	0.0	17.0	17.0	17.0	17.0
Omrører	Point	83.7	83,7		428.7	-63,6	-0.2	0.0	-4.1	0.0	15.8	15,8	15.8	15.8
Omrører	Point	83.7	83,7		457.4	-64.2	-0,2	0.0	-4.3	0.0	15.0	15,0	15,0	15,0
Omrarer	Point	83.7	83,7		442.4	-63,9	-0.2	0.0	-4.2	0.0	15.4	15,4	15,4	15,4
Omrører	Point	83.7	83.7		416.3	-63.4	-0.2	0.0	-4.0	0.0	16.1	16.1	16,1	16,1
Port	Point	81.6	81,6		473,5	-64,5	0.3	-22.2	-2.4	0.0	-4,2	-4.2	-4.2	-4,2
Port	Point	81.6	81.6		437.3	-63,8	-0.9	0.0	-3.0	0.0	17.0	17.0	17.0	17.0
Port	Point	81,6	81.6		458,8	-64.2	1.0	-24.0	-1.9	0.0	-7,5	-7,5	-7.5	-7,5
Port	Point	81.6	81,6		447.4	-64.0	0.7	-23.3	-1.9	1.9	-5.0	-5.0	-5.0	-5.0
Port	Point	81.6	81.6		434.7	-63.8	0.4	-20.1	-2.3	0.0	-1.2	-1.2	-1.2	-1.2
Port	Point	81.6	81.6		457.4	-64,2	0.8	-24,2	-2.1	3.1	-2,0	-2.0	-1.2	-1,2
Port	Point	81.6	81.6		478,5	-64.6	0,7	-24.2	-2,1	0,0	-5.6	-5,6	-5,6	-5,6
Port	Point	81,6	81,6		460.1	-64,2	0.9	-24.5	-2.1	0.0	-5,3	-5,6	-5,6	-5,8

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Kilde	Kildetype	Lw	Lw pr m,m1	Kilde str.	Afstand til modtager	Afstandskorr,	Terrænkorr.	Skærmvirkning	Luftabsorp	Reflektionsbidrag	Stejbidrag (Ls)	LAeg, 8h	LAeg.1h	Aeg. 0.5t
		dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB(A)	dB(A)
Ventilationsafkast	Point	90,0	90,0		521,2	-65,3	-0.2	0.0	-5.7	0.0	18.8	18,8	18,8	18,8
Ventilatøer før kedelskorsten	Point	83,1	83,1		508,4	-65,1	1.4	-24,9	-4.7	2.2	-8,1	-8.1	-8,1	
Ventilator for biofilter	Point	80,6	80,6		516,2	-65,2	1,0	-20,0	-3.5	0.0	-7.1	-7.1	-7,1	
Ventilator for biofilter	Point	80,6	80,6		517,3	-65,3	1,0	-19,8	-3,4	1,9	-5,0	-5.0	-5,0	
Receiver BP05 - Avritoftvel 3 LAeq. 8h 3	5,2 dB(A) LAB	a.1h 33,8 c	B(A) LAeq.	0,5h 31,0 dB	(A) Lmax 40,1 dB(A)									
Afhentning af gyle fra Skruepresse	Line	100,7	67,2	2195,5	511,6	-65,2	-0,8	-1,2	-2.5	0,6	31,7	14,7		
Brovægt	Point	90,8	8,00		434,5	-63,8	-1,2	0,0	-2.1	2,3	26,1	21,7	20.4	14,5
Gasblæser	Point	80,9	80,9		498,7	-84,9	1,5	-24.9	-2.0	6,1	-0.4	-0,4	-0,4	-0,4
Gasopgradering	Point	78.2	78,2		536,7	-65,6	1,3	-19,0	-1,8	0,0	-3,8	-3,8	-3,8	
Gasopgradering	Paint	78,2	78,2		511,3	-65,2	1.1	-19,3	-1.8	0,0	-4,0	-4,0	-4,0	
Gasopgradering - Aben port	Point	85,7	85.7		530,2	-65,5	1,6	-24,9	-2.8	0.0	-3,0	-3,0	-3,0	
Gasrenser - Afkast	Point	E0,0	0,08		498,6	-64,9	-0,3	-8,5	-3,9	0,0	2,4	2,4	2,4	
Indpumpning	Point	95,8	95,8		449,5	-64,0	-1,1	0,0	-2,2	0,0	28,6	25,6		
Kedelskorsten	Point	90,0	90,0		502,4	-65,0	-0,1	-11,6	-2,8	0,0	10,6	10,6	10,6	10,6
Keleanlæg	Area	97,0	83,3	23,3	522,8	-65,4	1,2	-16,3	-1,7	1,1	16,0	16,0	16,0	16,0
Koleanlæg	Area	97.0	83,3	23,6	517,0	-65,3	1,2	-15,5	-1.6	1,1	16,9	16,9	16,9	16,9
levering af gylle - ind	Line	100,7	70.1	1126,0	521,0	-65,3	-0.6	-2,1	-2,6	0.5	30,6	28,3	28,5	22,6
levering af gylle - ud	Line	100,7	70,8	959,6	500,0	-65,0	-1,4	-0,1	-2,5	1.4	32,8	29,8	30,0	27,1
Levering af ikke-pumpbart udendørs	Line	100,7	68,3	1740,2	520,7	-65,3	-1,2	-0,6	-2,6	0,3	31,3	26,1		
Levering af pumpbart - udenders	Line	100,7	68,2	1744,0	519,6	-65,3	-1,2	-0,6	-2,6	0,4	31,4	22,2	3 000	1 m
Omrører	Point	83,7	83,7		416,7	-63,4	-0,2	0.0	-4,0	0,0	16,1	16,1	16,1	16,1
Omrører	Point	83,7	83,7		417,6	-63,4	-0,2	0.0	-4.0	0,0	16,1	16,1	16,1	16,1
Omrører	Point	83,7	83,7		420,1	-63,5	-0,2	0,0	-4.1	0,0	16,0	16,0	16,0	16,0
Omrører	Point	83,7	83.7		422,6	-63,5	-0,2	0,0	-4,1	0,0	16,0	16,0	16,0	16,0
Omrarer	Point	83,7	83,7		435,4	-63,8	-0,2	0.0	-4.2	0,0	15,6	15,6	15,6	15,6
Omrører	Point	B3,7	83,7		428,2	-63,6	-0,2	0,0	-4,1	0.0	15,8	15,8	15.8	15,8
Omrarer	Point	83,7	83,7		418,9	-63,4	-0,2	0.0	-4,0	0,0	16,0	16,0	16,0	16,0
Port	Point	81,6	81.6		460,8	-64,3	0,0	-21,9	-2.4	0.0	-3,9	-3,9	-3,9	-3,9
Port	Point	B1,6	81,6		446,4	-64,0	-0,9	0.0	-3,0	0,0	16,7	16,7	16,7	
Port	Point	81,6	81,6		479,9	-64,6	1.1	-20,0	-2.4	0,0	-4,3	-4,3	-4,3	
Port	Point	81,6	81,6		467,9	-64,4	0,0	-20.1	-2.4	4.2	-1.1	-1,1	-1,1	
Port	Point	81,6	81,6		446,0	-64,0	-0,9	0,0	-3,0	0,0	16,7	16,7	16,7	
Port	Point	81,6	81,6		470,1	-64,4	-0,5	-19,6	-2,8	0,0	-2,7	-2,7	-2,7	-2,7
Port	Point	81.6	81.6		466.4	-84.4	0.2	-22.4	-23	0.0	-4.3	-4,3	-4,3	

Kilde	Kildetype	Lw	Lw pr. m,m²	Kilde str	Afstand til modtager	Afstandskorr.	Terrænkorr.	Skærmvirkning	Luftabsorp.	Reflektionsbidrag	Stajbidrag (Ls)	LAeq. 8h	LAeq,1h	Aeq. 0,51
		dB(A)	dB(A)	m,m*	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB(A)	dB(A)
Port	Point	81,6	81,6	hip Ha	470,5	-64,4	-0,5	-19,6	-2,8	1,0	-1.7	-1.7	-1,7	-1,7
Ventilationsafkast	Point	90,0	90,0		526,6	-65,4	-0.2	0,0	-5.7	0.0	18.7	18.7	18.7	18,7
Ventilatoer for kedelskorsten	Point	83,1	83,1		503.2	-65.0	1,3	-24.9	-4.6	0.0	-10.0	-10,0	-10.0	-10.0
Ventilator for biofiter	Point	80,6	80,6		522,2	-65,3	1,8	-25.0	-3.0	0.9	-10.0	-10.0	-10.0	-10,0
Ventilator for biofilter	Point	80,6	80,6		522,4	-65,4	1,5	-20,0	-3,0	0.9	-5,4	-5,4	-5,4	-5,4
Receiver BP06 - Avntofivej 1 LAeg, 8h :	3,9 dB(A) LAe	q,1h 32,9 d	B(A) LAeg, I	3,5h 29,8 dB	(A) Lmax 36,4 dB(A)							PARTIES I		
Afhentning af gyle fra Skruepresse	Line	100.7	67,2	2195,5	543,6	-65,7	-1,0	-0,6	-2,6	0,5	31,2	14,2	1, 70, 70, 2	
Brovægt	Point	90,8	90,8		527,2	-65.4	-1.3	0.0	-2,5	2,0	23.7	19,3	18,0	12,1
Gasblæser	Point	80.9	80,9		641.0	-67.1	0.4	-13,3	-2.1	0,1	1.8	1,8	1,8	1,8
Gasopgradering	Point	78,2	78,2		651,4	-67,3	1,2	-8,9	-1,8	0,0	4.5	4,5	4,5	4,5
Gasopgradering	Point	78,2	78,2		625,3	-86,9	0,0	-10,4	-1,5	0.0	2.4	2.4	2,4	2,4
Gasopgradering - Aben port	Point	85,7	85,7		644,0	-67.2	1,5	-22,6	-2,1	0.0	-1.7	-1.7	-1,7	-1,7
Gasrenser - Afkast	Point	80,0	0,08		607,6	-66,7	-0.4	-0.1	-6,6	0.0	6.3	6,3	6,3	6,3
Indpumpning	Point	95.8	95,8		562.3	-66.0	-0.4	-10.3	-1.7	0,0	17.4	14,4		1
Kedels korsten	Point	90,0	90,0		621,5	-68.9	-0.2	-14,5	-3.0	2.0	7.4	7,4	7,4	7,4
Keleanlæg	Area	97,0	83.3	23.3	641.2	-67.1	1,3	-13.3	-1,5	0.6	17.0	17.0	17.0	17.0
Køleanlæg	Area	97.0	83,3	23,6	635,4	-67,1	1,3	-13.5	-1,5	2.7	19.0	19.0	19.0	19.0
levering af gylle - ind	Line	100,7	70,1	1126,0	549,6	-65,8	-0.7	-1.1	-2.6	0.2	30.7	28,4	28,6	22,7
levering af gylle - ud	Line	100.7	70.8	959.6	526.5	-65.4	-1.4	0.0	-2.6	0.7	31.8	28.8	29.1	26,1
Levering af ikke-pumpbart udendars	Line	100,7	68,3	1740,2	528,9	-65,5	-1.3	-0.4	-2.6	0.2	31.2	25,9	Section 1	1 2 2 3
Levering af pumpbart - udendørs	Line	100.7	68.2	1744.0	528.5	-65.5	-1.3	-0.3	-2.6	0.2	31.3	22,1		11 15
Omrører	Point	83,7	83,7		555,1	-65,9	-0,3	0,0	-5,0	0,0	12,6	12,6	12.6	12.6
Omrarer	Point	83,7	83,7		561,0	-66,0	-0,3	0.0	-5.0	0,0	12.5	12.5	12.5	12,5
Omrører	Point	83,7	83,7		568,2	-66,1	-0.3	0,0	-5.1	0.0	12.3	12.3	12,3	12,3
Omrører	Point	83,7	83,7		545,7	-65.7	-0,2	0.0	-4.9	0,0	12.8	12,8	12,8	12,8
Omrører	Point	83,7	83,7		544,8	-65,7	-0.2	0,0	-4.9	0.0	12.9	12,9	12.9	12.9
Omrører	Point	83,7	83,7		544,5	-65,7	-0,2	0,0	-4,9	0,0	12,9	12,9	12.9	12,9
Omrører	Point	83,7	83,7		548,3	-65,8	-0.2	0,0	-5,0	0.0	12.8	12,8	12,8	12,8
Port	Point	81,6	81,6		576.4	-66.2	-0.6	-14.0	-1.5	0.0	2,2	2,2	2,2	2,2
Port	Point	81,6	81,6		578,8	-66.2	-0.7	-11,1	-1.7	0.0	4.9	4,9	4,9	4,9
Port	Point	81,6	81,6		618,3	-66.8	0.9	-12,9	-1.6	0.7	2.0	2.0	2,0	2,0
Port	Point	81,6	81,6		606,5	-66,6	-0,4	-15,1	-1,5	1,0	-1,1	-1.1	-1.1	-1,1
Port	Point	81,6	81,6		579,9	-66,3	-1,6	0,0	-3.7	0,0	13.1	13,1	13,1	13,1
Port	Point	81.6	81.6		603.7	-66.6	-1.6	-19.2	-3.0	0.0	-5.8	-5,8	-5,8	-5,8

November 23, 2021

Kilde	Kildetype	LW	LW pr. m.m²	Kilde str.	Afstand til modtager	Afstandskorr	Terrænkorr.	Skærmvirkning	Luftabsorp.	Reflektionsbidrag	Steibidrag (Ls)	LAeg 8h	LAeg, th	_Aeq, 0,5t
		dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB(A)	dB(A)
Port	Point	81,6	81,6	1 1 1 1 1	582,2	-66,3	-0,6	-13,4	-1,5	0.0	2,9	2,9	2,9	2,9
Port	Point	81,6	81.6		602,7	-66,6	-0,4	-22.4	-2.1	2.0	-4.9	-4,9	-4.9	
Ventilationsafkast	Point	90.0	90.0		651,9	-67,3	-0.3	0.0	-8.7	0.0	15.7	15.7	15.7	15.7
Ventilatoer far kedelskorsten	Point	83,1	83,1		622,4	-66.9	1.3	-24.1	-4.5	0.0	-11.0	-11.0	-11.0	
Ventilator for biofiter	Point	80,6	80,6		648.9	-67.2	1.8	-23.8	-2,8	2.5	-9.0	-9,0	-9.0	-9,0
Ventilator for biofiter	Point	80,6	80,6		648,4	-67,2	1.8	-24,5	-3.1	0.0	-12.4	-12.4	-12.4	-12.4
Receiver BP07 - Felstedvej 35 LAeq. 8h 4	1,4 dB(A) LA	eq.1h 40.0	dB(A) LAeq	, 0,5h 36,2 d	B(A) Lmax 50,0 dB(A	)								
Afhentning af gyle fra Skruepresse	Line	100,7	67.2	2195,5	214,5	-57,6	-1,5	-1,9	8,0-	0,0	38.9	21,9	-	7
Brovægt	Point	90,8	90,8		659,1	-67.4	-1,4	0.0	-3.2	0,0	18,9	14.6	13,2	7,4
Gastleser	Point	80,9	80,9		879,8	-69,9	1,5	-24.7	-3.2	0,0	-12,4	-12,4	-12,4	-12.4
Gasopgradering	Point	78.2	78.2		801,1	-69,1	0,5	-13.9	-1.7	0.0	-2,9	-2,9	-2,9	-2.9
Gasopgradering	Point	78,2	78,2		779,9	-68,8	0,4	0.0	-3.6	0.4	9.6	9,6	9,6	9.6
Gasopgradering - Aben port	Paint	85,7	85,7		792,9	-69.0	0.8	-14.1	-3.1	0.0	3,3	3,3	3,3	3,3
Gasrenser - Afkast	Point	80,0	80.0		754.1	-68,5	8.0	0,0	-7.5	0.0	4.7	4.7	4.7	4.7
Indpumpning	Point	95.8	95,8		733.4	-68.3	0.7	-20.0	-3.1	0,0	5.1	2,1	70	7,1
Kedelskorsten	Point	90.0	90.0		792.6	-69.0	1.3	0.0	-7.7	0.0	14.6	14.6	14,6	14.6
Køleanlæg	Area	97.0	83,3	23,3	804.9	-69.1	0.6	-4,6	-3.2	1,9	22.6	22,6	22,6	22.6
Køleanlæg	Area	97.0	83.3	23.6	800,4	-69,1	0.6	-1,1	-3.3	0.0	24.0	24.0	24.0	24.0
levering af gylle - ind	Line	100.7	70.1	1126,0	216.7	-57.7	-1,5	-1,9	-0.8	0,0	38.8	36,5	36.7	30.8
levering af gylle - ud	Line	100,7	70,8	959,6	200,9	-57.1	-1.5	-1.8	-0.8	0.0	39.5	38.5	36.8	33.8
Levering at ikke-pumpbart udenders	Line	100,7	68.3	1740.2	191.7	-56.6	-1.5	-1,8	-0.8	0.0	39.9	34.6	30,0	35,5
Levering at pumpbart - udendors	Line	100,7	68,2	1744,0	192,5	-56.7	-1.5	-1.6	-0.8	0.0	39.9	30,7	pyme fi	
Omrarer	Point	83.7	83,7		802.0	-69.1	-0.2	0.0	-6.6	0.0	7,9	7.9	7,9	7,9
Omrører	Point	83.7	83.7		822,1	-69.3	-0.2	0.0	-6.7	0.0	7,5	7,5	7.5	7,5
Omrarer	Point	83,7	83.7		843.3	-69.5	-0.2	0.0	-6.8	0.0	7,2	7,2	7,5 7,2	7,2
Omrører	Paint	83.7	83.7		750.8	-68.5	-0.2	0.0	-6.3	0.0	8,7	8.7	8.7	8.7
Omrarer	Point	83.7	83.7		713,5	-68.1	-0.2	0.0	-6.0	0.0	9,4	9.4	9,4	9,4
Omrører	Point	83.7	83,7		731,9	-68.3	-0.2	0.0	-6.1	0.0	9,1	9.1	9.1	9,1
Omrarer	Point	83.7	83.7		770.5	-68.7	-0.2	0.0	-6.4	0.0	8.4	8.4	8.4	8.4
Port	Paint	81,6	81,6		750.6	-68.5	0.5	-20.0	-3.7	0.0	-7.1	-7.1	-7.1	-7.1
Port	Point	81,6	81,6		800.4	-69,1	0.3	-20.0	-3.9	0.0	-8.0	-8,0	-8.0	-8,0
Port	Point	81.6	81,6		849.0	-69.6	0.9	-19.5	-3.4	2,5	-7.5	-7,5	-7,5	-7,5
Port	Point	81,6	81,6		840,5	-69,5	0.8	-19.7	-3.6	2.5	-7,8	-7,8	-7,8	-7,8
Port	Point	81.6	81.6		805.6	-69.1	0.4	-20.0	-3.9	0.0	-8.0	-8.0	-3.0	-8.0

Kilde	Kildetype	Lw	Lw pr. m,m1	Kilde str.	Afstand til modtager	Afstandskorr.	Terrænkorr.	Skærmvirkning	Luftabsorp.	Reflektionsbidrag	Stejbidrag (Ls)	LAeg, Sh	LAeg. Th	_Aeg. 0.51
		dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB(A)	dB(A)
Port	Point	81,6	81,6	1	822,6	-69,3	0,9	-23,8	-2,9	2,3	-8,2	-8.2	-8,2	-8,2
Port	Point	81,6	81,6		755,0	-68,6	0,6	-20,0	-3.7	0.0	-6.9	-6,9	-6,9	-6,9
Port	Point	61,6	81,6		817,3	-69.2	0.7	-22,9	-3.1	0,0	-9,9	-9.9	-9,9	-9,9
Ventilationsafkast	Point	90,0	90,0		836,7	-69.4	-0.3	0.0	-8.0	0.0	12,2	12.2	12,2	12,2
Ventilatoer for kedelskorsten	Point	83,1	83,1		793.3	-69.0	1.2	-16.9	-3.8	0.0	-5.3	-5.3	-5,3	-5.3
Ventilator for biofitter	Point	80,6	80,6		835,2	-69.4	1.0	-19.9	-5,1	0.0	-12,8	-12,8	-12,8	-12,8
Ventilator for biofiter	Point	80,6	80,6		832,9	-69,4	8.0	-20.0	-5.2	18.6	5.4	5.4	5.4	5.4
Receiver BP08 - Snurom 26 LAeq, 8h 40	0,0 dB(A) LAeq	th 38,6 d	B(A) LAsq. 0	5h 34,8 dB(	A) Lmax 49,9 dB(A)									
Afhentning af gyle fra Skruepresse	Line	100.7	67,2	2195,5	288,5	-60,2	-1,3	-0,6	-1,0	0,0	37,5	20,5	THE RESERVE OF THE PARTY OF THE	
Brovægt	Point	90,8	90,8		736,8	-68,3	-1.4	0.0	-3,5	0,0	17.7	13,3	12.0	6.1
Gasblæser	Point	80,9	80,9		957,8	-70.6	1.5	-24.5	-3.4	0.0	-13,2	-13,2	-13,2	-13,2
Gasopgradering	Point	78,2	78,2		878.4	-69,9	0,5	-13.9	-1.8	0.0	-3.9	-3,9	-3,9	-3,9
Gasopgradering	Point	78,2	78,2		857.4	-69.7	0.4	0.0	-3.9	0.0	8.0	8,0	3,0	8,0
Gasopgradering - Åben port	Point	85.7	85,7		870.2	-69.8	8.0	-14.0	-3.4	0.0	2,3	2,3	2,3	2,3
Gasrenser - Afkast	Point	0,08	80.0		831.5	-69.4	-0.3	0.0	-8.0	0.0	2.3	2,3	2.3	2,3
Indpumpning	Point	95.8	95.8		811,2	-69.2	0.7	-20.0	-3.4	0.0	3,9	0,9	-,-	-,-
Kedelskorsten	Point	90,0	90.0		870.3	-69.8	-0.2	0.0	-8.2	0,0	11.8	11.8	11,8	11.8
Kaleanlæg	Area	97.0	83,3	23,3	882.4	-69.9	0.5	-4.8	-3.4	2,2	21,6	21.6	21,6	21.6
Køleaniæg	Area	97.0	83,3	23.6	878.0	-69.9	0.5	-1.2	-3,6	0.0	22,9	22,9	22.9	22,9
levering af gylle - ind	Line	100,7	70,1	1126,0	291.6	-60.3	-1.3	-0.7	-1.0	0.0	37.4	35.1	35,3	29,4
levering af gylle - ud	Line	100,7	70,8	959,6	270,8	-59.6	-1.4	-0.6	-1.0	0.0	38.1	35.1	35.3	32.4
Levering af ikke-pumpbart udenders	Line	100.7	68,3	1740,2	259,1	-59,3	-1,4	-0.6	-1,0	0.0	38.5	33.2	45,5	32.4
Levering af pumpbart - udenders	Line	100,7	68,2	1744,0	260,2	-59.3	-1.4	-0.5	-1.0	0.0	38,5	29.3		P 1 1
Omrører	Point	83.7	83,7		879.8	-69,9	-0.3	0.0	-7.1	0.0	6,5	6,5	6,5	6,5
Omrører	Point	83,7	83,7		899.7	-70.1	-0,3	0.0	-7.3	0.0	6.1	5,1	6,1	6,1
Omrører	Point	83.7	83.7		920,9	-70.3	-0.3	0.0	-7.4	0.0	5.8	5,8	5,8	5,8
Omrarer	Point	83,7	83,7		828,8	-69.4	-0,3	0.0	-6,7	0.0	7.4	7.4	7,4	7.4
Omrører	Point	83,7	83,7		791,4	-69.0	-0.2	0.0	-6.5	0.0	8.0	8.0	8.0	8,0
Omrarer	Point	83,7	83,7		809.8	-69.2	-0.2	0.0	-6.6	0.0	7.7	7,7	7,7	7,7
Omrarer	Point	83,7	83,7		848,4	-69.6	-0.2	0.0	-8.8	0.0	7.1	7,1	7,1	7,1
Port	Point	81,6	81.6		828.4	-69.4	0.4	-20.0	-4.0	0,0	-8.3	-8,3	-8,3	-8,3
Port	Point	81,6	81,6		878,4	-69,9	-0,1	-20,0	-4.2	0.0	-9.6	-9.6	-9,6	-9.6
Port	Point	81,6	81,6		927.1	-70,3	0.8	-19,5	-3,6	2,5	-8.5	-8,5	-8,5	-8,5
Port	Point	81.6	81,6		918.5	-70.3	0.8	-19.7	-3.3	2.5	-8.8	-3.8	-8.8	-8.8

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Cilde	Kildetype	Lw	Lw pr. m,m1	Kilde str.	Afstand til modtager	Afstandskorr.	Terrænkorr.	Skærmvirkning	Luftabsorp.	Reflektionsbidrag	Stelbidrag (Ls)	LAeq. 8h	LAeq,1h	_Aeq, 0,51
		dB(A)	dB(A)	m,mª	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB(A)	dB(A)
Port.	Point	81,6	81,6		883,6	-69,9	0,4	-20,0	-4,2	0,0	-9,1	-9,1	-9,1	-9,1
ort	Point	81,6	81,6		900,6	-70,1	0,8	-23,5	-3,1	0,6	-10,7	-10,7		
Port	Point	81,6	81,6		832.8	-69,4	0,6	-19,9	-4,0	0,0	-8,1	-8,1		
Port	Point	81,6	81,6		895,3	-70,0	0,7	-22,6	-3,4	0,0	-10,7	-10,7		
/entilationsafkast	Point	90.0	90,0		914,2	-70,2	-0,3	0,0	-8.5	0,0	11,0	11.0		
entilatoer for kedelskorsten	Point	83,1	83,1		871,0	-69,8	1,2	-16,8	-4.1	0,0	-6,3	-6,3	-6,3	
entilator for biofiter	Point	80.6	80,6		913,1	-70,2	0,8	-19,9	-5,5	0,3	-13,8			
/entilator for biofilter	Point	80,6	80,6		910,7	-70,2	0,8	-20,0	-5,6	18,5	4,2	-13,8 4,2		

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## **Proposed Roberts Digestor Project**

Tim Stieber, St. Croix County Resource Management Administrator

The County is neither for or against the Roberts Digestor proposal. No application has been reviewed or position developed. However, the large amount of nitrogen and phosphorus drawn together from a multi-county area is a concern because nitrogen and phosphorus are the #1 groundwater and the #1 surface water pollutants in WI and in SCC.

The digestor will rely heavily on animal manures for methane generation and therefore the digestors would be classified as an animal waste storage facility by WI DNR and require a County Land Use Permit as outlined in Chapter 11 of SCC Land Use Ordinance.

Chapter 11, the Animal Waste and Storage Facility Ordinance requires evidence of compliance with state statutes ATCP 51, NR 151, and USDA Practice Standards 590, 313, and others.

I do not expect anyone here to know much about these listed standards so I will summarize:

- 1) Nutrients staying in SCC would be required to be applied under a Nutrient Management Plan for each farm utilizing digestor by-products:
  - a. Each Farm NMP's are renewed annually each spring and the plans involve all the acres involved in the farm in question. Each plan is updated with actual nutrient applications made from all sources from previous year records.
  - b. Each Farm NMP must submit a Checklist signed off by a Certified Crop Advisor and the landowner verifying compliance with NR151 and USDA NRCS 590 standards.
  - c. Each Farm NMP would designate byproduct storage areas in the plan to allow evaluation of these areas for meeting appropriate standards.
  - d. Each Farm NMP would require field soil sampling on a 5 acre grid every 4 years

There are ways to avoid these Nutrient Management Plan requirements. This would need to be demonstrated at the time of Animal Waste and Storage Facility permit application:

- a. Export all by-products from the County.
- b. Obtain a DNR WPDES permit for all by-products (5 year NMP required)
- c. Process all by-products further to create DATCP licensed fertilizer which is then shipped and marketed.

## **Proposed Bio-digestor For Roberts WI**

A bio-digestor is being proposed for the Village of Roberts. Digestors have long been proposed as a means of dealing with animal and food waste. They are not competitive for energy generation without green credits and tax breaks which are now in place. The facilities also require solid maintenance and monitoring to stay functional as many of the on-farm designs have failed over the years. The Roberts facility would use an established company to manage the facility and rely on carbon credits from California dairy producers to help offset costs.

Exact size of the facility has not been made available but based on materials submitted to WI-DNR the facility will bring in 610,000 tons of organic material to the digestor plant to be used to generate natural gas which will then be put into the pipeline located in Roberts. The breakdown of organic material is proposed to be as follows:

100,000 tons of turkey litter

450,000 tons of dairy manure

30,000 tons food industry by-products

30,000 tons floatation solids from Jennie O slaughter facility

610,000 tons total

The total tonnage can be used to estimate the nutrient content of the by-products that will be produced using calculations that were made when a 183,000 ton facility was proposed for the nearby town of Pleasant Valley. The Roberts facility will be 3.3 times larger. A conservative 3X more nutrients was used to estimate the pounds nutrients that will be generated in the by products.

	Annual Tonnage Delivered To Plant	Composition	Source	Available N in By- Products Ibs/year	Available P in By- Products lbs / year
Pleasant Valley Proposal	183,000 tons	Turkey and Dairy Manure	71% out of County 29% within County	5,994,800 lbs N/year	4,190,600 lbs P/year
Roberts Location Proposal	610,000 tons 3.3X more delivered	Listed above	Not known but likely greater out of county contribution	17,984,000 lbs N/year	12,588,000 lbs P/year

Digestors "cook down" organic materials into plant available nitrogen and phosphorous and also kill almost all harmful bacteria during the process. Nutrients that come into the facility are concentrated in by products which then are generally land applied for fertilizer onto cropland. By-products have significant nutrient content, but are still bulkier, and more intensive to land apply than fertilizer. Generally by-products are land applied within 25 to 30 miles of the plant due to costs of shipping.

The need for 17.9 million pounds of available N and 12.6 million pounds of P becomes paramount in determining feasibility of the proposed project location.

## **Proposed Bio-Digestor Project in Roberts Wisconsin**

The project will bring in 610,000 tons of organic material in the Village of Roberts annually. This amount of organic material is equivalent in nutrients to a 46,000 Animal Unit Confined Animal Feeding Opertion.

The biodigestors are often sold as green technology but it is unknow if truck traffic is considered? Truck traffic based on a 36 ton load would be 16,944 semi trucks averaging 6 miles per gallon fuel rating to haul organic material to the plant to produce natural gas that costs more to produce than natural gas currently available. Carbon credits from California will be used to offset the high cost of production.

By-products are estimated to contain 17.9 million pounds of available nitrogen and 12.6 million pounds of available phosphorous. These amounts are a concern because nitrogen and phosphorus are our most common pollutants we are working on in WI and SCC.

About 10% of private domestic wells in WI exceed the 10 ppm nitrate-N standard. In St Croix County 12% of the 16,000 domestic wells exceed 10 ppm for nitrate-N (1,920 domestic wells). Replacing these wells would cost residents \$16 million. St Croix County research indicates groundwater nitrate levels are still increasing in some areas of the county. The 17 million pounds of nitrogen – if evenly applied to every corn grain and silage field in the County would meet the entire nitrogen need. There is real potential for an additional 17 million pounds of N contained in the by- products to impact groundwater as these materials would be distributed and applied by the same agricultural system that caused the existing nitrate problems.

Wisconsin is rich in surface water resources. Elevated phosphorous (P) levels in surface water is the most widespread threat to Wisconsin and St. Croix County's surface water resources. Forty-nine percent of the surface water impairments are attributed to phosphorous. In St Croix County, 82% of the County is covered by a Total Maximum Daily Load (TMDL) which mandates that P losses to surface water be reduced. Annual reductions from city wastewater plants, County conservation efforts, etc. are tracked to show reductions. The by-products will contain 12 million pounds of P which is adequate to meet the entire P need for corn grain and silage for all St Croix County acres leaving 4.8 million pounds left over.

Soils from St Croix County were submitted to DATCP from 1995 – 2014 (69,126 samples). This provides a definitive data base to analyze the need for P in County soils. Based on the data between 25 to 50% of soils in St. Croix County will have no response to P fertilizer application. A soil test over 30 ppm P for corn grain or 35 ppm P for corn silage is considered an excessive level of P. The county average P in the DATCP data base is 41.6 ppm. As soil P levels rise runoff from those fields will carry increasing levels of dissolved phosphorous off the fields and into our surface waters.

One option for the digestor operation is to extract the N and P from the by-products and create fertilizer products that are sold in the conventional manner. This also reduces volume so these materials can be shipped to areas of greater nutrient need. This option is being tested at the Brown County digestor facility where water is being cleaned to allow direct discharge back into surface water. This level of nutrient extraction would make the proposed digestor acceptable.

						Sei	nsitive Areas					
ID	Township	CGMP	TNC	UWSP	Num. Samples	Average Nitrate	Total Wells Per Grid	Nitrate < 1 mg/L	Nitrate 1.1 - 5 mg/L	Nitrate 5.1 - 10 mg/L	Nitrate > 10 mg/L	Tier Type
2815	Cady	8	5	40	53	3.9	207	17.0%	62.3%	17.0%	3.8%	Below Standard
2818	Kinnikinic	6	0	164	170	3.9	496	14.7%	55.3%	27.6%	2.4%	Below Standard
2819	Troy	16	19	372	407	5.4	1526	11.94%	41.39%	35.28%	11.39%	Tier 1 Town
2917	Hammond	5	7	116	128	8.9	728	0%	25%	39.8%	35.2%	Tier 1 Town
2918	Warren	8	7	266	281	7.3	386	9.6%	27.8%	38.4%	24.2%	Tier 1 Town
3017	Erin Prairie	12	2	69	83	7.3	156	3.6%	28.9%	44.6%	22.9%	Tier 1 Town
3018	Richmond	10	5	209	224	6.3	1152	12.1%	27.4%	43.5%	17.0%	Tier 1 Town
3117	Stanton	12	3	88	103	6.1	203	8.8%	44.1%	33.3%	13.7%	Tier 1 Town
2817	Rush River & Pleasant Valley	8	1	118	127	4.6	253	15.7%	49.6%	27.6%	7.1%	Tier 2 Town
2915	Springfield	8	7	37	52	3.9	260	32.7%	38.5%	15.4%	13.5%	Tier 2 Town
3015	Glenwood	7	3	24	34	4.3	188	23.5%	50.0%	14.7%	11.8%	Tier 2 Town