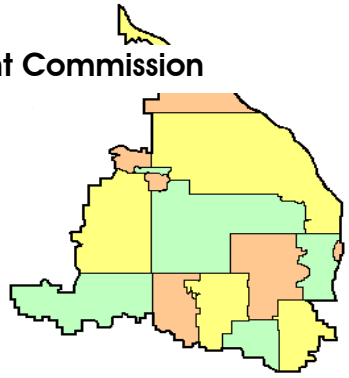
Shingle Creek Watershed Management Commission

West Mississippi Watershed Management Commission

3235 Fernbrook Lane N • Plymouth, MN 55447
Tel: 763.553.1144 • Fax: 763.553.9326
Email: judie@jass.biz • Website: www.shinglecreek.org



A meeting of the joint Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions is scheduled for 8:30 a.m., Thursday, January 24, 2019, at Crystal City Hall, 4141 Douglas Drive North, Crystal, MN. **We will meet in the upstairs conference room.**

A G E N D A

Meeting docs (*) will be posted on the website at
http://www.shinglecreek.org/tac-meetings.html

1. Approve agenda*

2. Approve Minutes of December13, 2018 meeting*

3. Chloride Pilot Presentation/Discussion – Barr Engineering.

4. Partnership Cost-Share Application – New Hope Speed-Thru Carwash.*

5. CIP and Annual Levy Limits* – Discussion.

6. Policies for Using City Cost Share Funds.*

7. Other business.

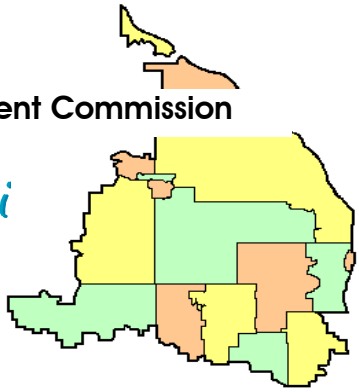
8 Next meeting _____

Z:\Shingle Creek\TAC\2019 TAC\TAC Agenda 01-24-19.doc

*in meeting packet ** available at the meeting

Shingle Creek Watershed Management Commission
West Mississippi Watershed Management Commission

3235 Fernbrook Lane N • Plymouth, MN 55447
Tel: 763.553.1144 • Fax: 763.553.9326
Email: judie@jass.biz • Website: www.shinglecreek.org



MINUTES
December 13, 2018

A meeting of the Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions was called to order by Chairman Richard McCoy at 11:05 a.m., Thursday, December 13, 2018, at the Clubhouse at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN.

Present were: Andrew Hogg, Brooklyn Center; Todd Tuominen, Champlin; Mark Ray, Crystal; Derek Asche, Maple Grove; Ben Scharenbroich, Plymouth; Richard McCoy and Marta Roser, Robbinsdale; Ed Matthiesen and Diane Spector, Wenck Associates, Inc.; Judie Anderson, JASS; and Laura Cummings, WSB Associates.

Not represented: Brooklyn Park, Minneapolis, New Hope, and Osseo.

Also present were: Harold E. Johnson, Osseo; and Andy Polzin, Plymouth.

I. Motion by Ray, second by Hogg to **approve the agenda*** as revised. *Motion carried unanimously.*

II. Motion by Ray, second by Scharenbroich to **approve the minutes** of the October 25, 2018 meeting.* *Motion carried unanimously.*

III. Twin Lake/Ryan Creek Flood Analysis.*

Wenck Associates has submitted a proposal to survey and investigate the channel and hydraulic capacity of Ryan Creek from upstream of the weir outlet of Lower Twin Lake to its outfall at Shingle Creek. Wenck will survey the creek, creating a hydrologic and hydraulic (H&H) model for the areas identified in the overview accompanying the proposal. It is assumed the city of Minneapolis will televise the 49th Avenue storm sewer. The proposal estimates the cost of this work will total $18,000. The generalized scope is as follows:

A. Survey and assess the overall condition of Ryan Creek including channel profile.

B. Update hydrology by using existing Twin Lake H&H models.

C. Create a HEC-RAS Model for Ryan Creek, from Lower Twin Lake to Shingle Creek.

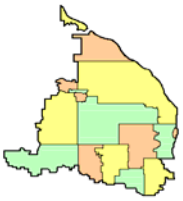
D. Create figures outlining the high-water levels (HWLs) and hydraulic capacity along Ryan Creek for various storm events (1-, 5-, 10-, 50-, and 100-yr).

E. Create memo detailing the overall condition of the creek and its hydraulic capacity.

Motion by Ray, second by Scharenbroich to approve this proposal. Fifty-percent of the cost of the project will be borne by the Shingle Creek Commission, with the balance to be paid by the cites of Brooklyn Center, Crystal, Robbinsdale, and possibly Minneapolis, dependent on the latter's willingness to participate financially beyond the cost of the televising. *Motion carried unanimously.*

IV. Cost Share Projects.

A. Brooklyn Center* is requesting cost sharing by the Shingle Creek Commission to bring road salt brining equipment in-house. They currently go to Brooklyn Park to get their brine, which has many disadvantages.



The estimated project cost is $100,000. Members discussed the eligibility of cost-sharing equipment vs. projects and agreed that the resultant reduction of chloride runoff to waterbodies in the watershed is well in line with the Commission's goal of more effective and reduced use of chloride. Motion by Ray, second by Asche to approve a cost-share expenditure of 50%, not to exceed $50,000. *Motion carried unanimously.*

B. Crystal* is also requesting cost sharing by the Shingle Creek Commission in the amount of $50,000 to offset a portion of the design costs of the Becker Park Stormwater Infiltration Project. Members discussed the possible duplication of Commission funding on this project, but it was agreed that the cost-share funds were not duplicative of the CIP funding awarded in 2018 for installation of underground storage to treat runoff from the site. Motion by Asche, second by Tuominen to approve the request from the City of Crystal. *Motion carried unanimously.*

C. Champlin* is requesting cost-sharing for the Mississippi Crossing Underground Infiltration System and Storm System Outlet to the Mississippi River to support new and existing uses at Mississippi Point Park. The system will treat stormwater prior to discharging into the river, reducing the rate of flows as well as the amount of total phosphorus and total suspended solids discharged. The City is requesting $196,690 from the Cost-Share program of the West Mississippi Commission for this $393,375 project. Motion by Ray, second by McCoy to table action on this project. It appears to consist of multiple projects and may be eligible as a Capital Project. *Motion carried unanimously.*

The total available city cost-share funds are: Shingle Creek - $240,000, and West Mississippi - $235,000. Applications are accepted until funds are encumbered.

D. Related topics, future TAC meetings.

1. Policy clarifying the use of cost-share funds for street sweeper upgrades or other "non-capital" projects;

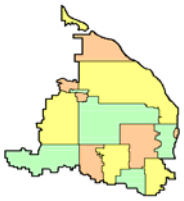
2. Clarification of CIP vs. cost share, is it one or the other; and

3. Consideration of increasing the per project cap from $250,000 and the self-imposed levy cap of $500K/year.

V. Crystal Lake Management Plan.*

Staff's December 7, 2018 memo describes the scope and budget for this potential project. The Crystal Lake Nutrient TMDL Five Year Review has been completed and provided a review of progress toward meeting the load reductions identified in the TMDL. The Shingle Creek Commission and stakeholders (Hennepin County, cities of Robbinsdale and Minneapolis, property owners) have implemented several actions to improve the biological integrity in the lake. Two actions have not yet been completed – aquatic vegetation management and fish community management. New data will be required to enhance an internal load reduction project.

The City of Robbinsdale is interested in pursuing a wholistic lake management approach that would provide both ongoing internal phosphorus removal and management of invasive fish and aquatic vegetation species. This approach would include a whole-lake alum treatment to seal the sediments and reduce release into the hypolimnion while continuing the withdrawal and treatment of water from both the bottom and surface layers to maximize the efficiency of the P removal and extend the life of the alum treatment. Since a recent fish survey found carp levels approaching the nuisance threshold; the proposed lake management plan would also include rough fish management.



At present there is limited aquatic vegetation present in the lake, but there is the potential for a bloom of invasive species as water clarity improves. Aquatic vegetation management should also be considered in the plan.

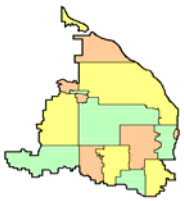
A. Internal loading, sediment release. The current internal load reduction project was designed as a flocculation treatment facility that withdraws and treats nutrient-rich hypolimnetic (deep-lake) water from Crystal Lake. After being withdrawn from the lake, water is treated using aluminum sulfate (alum) to remove phosphorus (P), and the treated water is discharged back to the lake. While treating water from the hypolimnion has shown effectiveness (70 percent of required load reductions achieved), the treatment facility tends to produce unpleasant odors that have prompted complaints from residents who use the park where the facility is located, which limits the amount of time the facility can withdraw water from the hypolimnion. The field of sediment chemistry has evolved over the years and the current, more refined approach holds the potential to reduce treatment costs by thousands of dollars.

Staff's memo describes Wenck's process in calculating the most effective alum dosing determination for Crystal Lake. The information provided by the data collection will not only enable an alum dose appropriate for the conditions found in Crystal Lake, but also allow for a more accurate cost estimate that will include alum application, follow-up sediment coring to determine the effectiveness of the first treatment, a second alum application, and a final sediment coring that will show the final effectiveness of the overall treatment. Additional water quality monitoring and observation will also be required. Estimated cost for feasibility studies and data collection = $12,920. Estimated cost for internal loading implementation and execution = $165,440-$194,840.

B. Fish Community Management. A fish survey conducted in September 2018 indicates that the carp population is at the critical impairment threshold, but it is not past the threshold, suggesting that while carp are certainly contributing to the water quality issues in Crystal Lake, they are not the sole reason. The carp identified in the survey were relatively small in size, suggesting that the carp issues in the lake are likely to worsen with time as the fish grow. Because conducting a carp population survey in September is not the most ideal time, a follow-up survey is recommended for the summer of 2019 to refine the density calculation and to determine a recommended course of action. Options could vary from no action to active removal of carp. Costs for the fish management portion of the project are estimated to be $50,540.

C. Aquatic Vegetation Management. Aquatic vegetation surveys carried out in 2013 and 2018 yielded similar results in the extreme lack of submerged aquatic vegetation, confirming the lake does not currently support native pondweed species common in healthy shallow and deep lakes throughout Minnesota. Upon completion of the alum treatments and fish management practices (if required), water clarity would be improved, and a positive vegetative response would be anticipated. Exactly what that response would look like is unknown. A desirable outcome would be one in which a diverse system of native vegetation becomes established, out-competing aquatic invasive species (AIS) but remaining below nuisance levels.

Because small amounts of AIS have been observed in the lake during the recent surveys (curly-leaf pondweed and Eurasian milfoil) and anecdotal evidence suggests these species used to be at nuisance levels along the northwest shore, the possibility exists that AIS begin to establish themselves, requiring active management. Because a vegetation survey took place in 2018 and major changes to the vegetation population would not be anticipated prior to the alum treatments, aquatic vegetation management is not proposed to commence until following the alum treatments and assumed carp removal.



An estimate of the aquatic plan management program, assuming that some herbicide spot treatments will be required to control AIS, is $13,400.

Project management for the overall project totals $4,000. The timeline for these tasks ranges from February 2019 to August 2020.

D. Funding Sources. The Commission's CIP includes generic "Lake Internal Load Improvement Projects," which could include rough fish removal and installation of fish barriers, chemical treatment such as alum, drawdowns, whole-lake aquatic vegetation treatment, etc. The Crystal Lake Management Plan could, with a Minor Plan Amendment, fall under that project which would be funded 100% by the Commission through the county tax levy to be certified in 2019 and collected in 2020. The Commission and Robbinsdale could also consider applying for a Clean Water Fund grant to fund a portion of the costs.

1. The Commission and City could begin this project in spring 2019 if the City was willing to up front costs incurred prior to the receipt of tax levy proceeds approximately July 2020. In this scenario the Commission probably would not apply for a CWF grant for implementation since a significant share of the cost would have already been incurred by the time a grant agreement was executed, and those costs would not be eligible to match grant funds. McCoy indicated that funding for this project is not included in the City's 2019 budget.

2. If the Commission and the City decide to wait until 2020 to start, the Commission could undertake a Minor Plan Amendment and certify a levy as well as apply for a Clean Water Fund grant in 2019. The timeline noted above would then be pushed back a year.

Motion by Ray, second by Hogg to proceed under scenario 2. above. *Motion carried unanimously.*

VI. Minneapolis Subwatershed Assessment Update.*

The Shingle Creek Commission received a Clean Water Fund Accelerated implementation grant to complete a subwatershed assessment for that part of Minneapolis that is in the Shingle Creek watershed, about 2,046 acres. Modeling of the three sub-basins (tributary to Crystal Lake, tributary to Ryan Lake, tributary to Shingle Creek) has been completed and Staff have met with the city to strategize potential BMP locations. Attached to Staff's December 7, 2018 memo are figures showing the results of pollutant export modeling in terms of pounds of TP and TSS per year. Most of the focus will be on the areas contributing at higher rates. They are also looking at what can be accomplished on Park Board land, opportunities for a regional pond, and tree trenching on county roadways. The process will also include outreach to the public.

VII. Other Business.

A. The **next meeting** of the Technical Advisory Committee is scheduled for 8:30 a.m., Thursday, January 24, 2019, at Crystal City Hall.

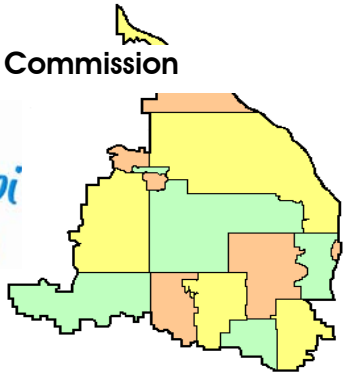
B. The meeting was adjourned at 12:18 p.m.

Respectfully submitted,

Judie A. Anderson
Recording Secretary

Z:\Shingle Creek\TAC\2018 TAC\12-13-18 minutes__.docx

Shingle Creek Watershed Management Commission
West Mississippi Watershed Management Commission
3235 Fernbrook Lane N • Plymouth, MN 55447
Tel: 763.553.1144 • Fax: 763.553.9326
Email: judie@jass.biz • Website: www.shinglecreek.org



Shingle Creek and West Mississippi
Watershed Management Commissions
Cost-Share Program Guidelines

The Shingle Creek and West Mississippi Watershed Management Commissions will from time to time make funds available to its member cities to help fund the cost of Best Management Practices (BMPs) projects that cost less than $100,000. The following are the guidelines for the award of cost-share grants from this program:

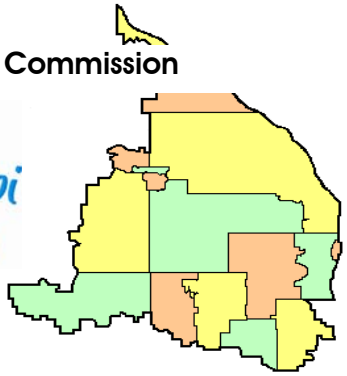
1. Projects must be for water quality improvement, and must be for improvement above and beyond what would be required to meet Commission rules. Only the cost of "upsizing" a BMP above and beyond is eligible.
2. Priority is given to projects identified in a subwatershed assessment or TMDL.
3. Projects should cost less than $100,000; projects costing more than $100,000 should be submitted to the CIP. Projects cannot receive funding from both the CIP and the Cost-Share Program.
4. Commission will share in funding projects on a 1:1 basis.
5. The cost of land acquisition may be included as City match.
6. The minimum cost-share per project is $10,000 and the maximum is $50,000.
7. Projects must be reviewed by the Technical Advisory Committee (TAC) and recommended to the Commissions for funding.
8. The Commissions will call for projects in December of each year, with potential projects reviewed by the TAC at its end of January meeting.
9. Cost-share is on a reimbursable basis following completion of project.
10. The TAC has discretion on a case-by-case basis to consider and recommend to the Commissions projects that do not meet the letter of these guidelines, including projects submitted mid-year.
11. Unallocated funds will carry over from year to year and be maintained in a designated fund account.
12. The standard Commission/Member Cooperative Agreement will executed prior to project construction.

Adopted February 2015

Shingle Creek Watershed Management Commission

West Mississippi Watershed Management Commission

3235 Fernbrook Lane N • Plymouth, MN 55447
Tel: 763.553.1144 • Fax: 763.553.9326
Email: judie@jass.biz • Website: www.shinglecreek.org



Shingle Creek and West Mississippi
Watershed Management Commissions
Cost-Share Program Application

City:	
Contact Name:	
Contact Phone:	
Contact Email:	
Project Name:	
Year of Construction:	
Total Project Cost:	
Amount Requested:	
Project Location:	

1. Describe the BMP(s) proposed in your project. Describe the current condition and how the BMP(s) will reduce pollutant loading and/or runoff volume. Note the estimated annual load and volume reduction by parameter, if known, and how they were calculated. Attach figures showing project location and BMP details including drainage area to the BMP(s).

2. If this request is for cost share in "upsizing" a BMP, explain how the upsize cost and benefit were computed.

3. Show total project cost, amount of cost share requested, and the amount and source of matching funds.

4. What is the project schedule, when will work on the BMP(s) commence and when will work be complete?

Technical Memo

WENCK ASSOCIATES

Responsive partner.
Exceptional outcomes.

To: Shingle Creek/West Mississippi TAC

From: Ed Matthiesen, P.E.
Diane Spector

Date: January 18, 2019

Subject: Discussion of CIP and Annual Levy Limits

Recommended Commission Action	Discuss and provide recommendation to the Commissions.

In May 2007 the Commissions adopted a Major Plan Amendment to the Second Generation Watershed Management Plan. That amendment established the Cost Share Policy for Commission participation in capital improvement projects up to a maximum of 25% of the actual project cost up to $250,000. The policy also voluntarily limited the maximum annual levy request to $500,000 for each Commission. In 2011, as the Commissions were developing the Third Generation Plan, this policy was reviewed by City Managers, who were satisfied with the policy as is and recommended no changes.

At the last Technical Advisory Committee (TAC) meeting, there was a brief discussion about reconsidering the self-imposed limits on Commission cost participation in CIP projects, and in the maximum amount of the annual levy. The Commissions have discussed these topics at their January meeting, and have *requested the TAC review and discuss each of these issues and provide a recommendation for further discussion with the cities.* Any changes to this policy must be completed by Minor Plan Amendment.

$250,000 Maximum Contribution. The $250,000 maximum cost participation cap has not been increased since 2007, and the Consumer Price Index has increased just under 20% since that time. Actual construction cost inflation has likely been greater than 20% as it is influenced by the volatile petroleum, steel, and other construction materials markets. In addition, as the "low hanging fruit" projects have already been completed, projects are now typically more complex and expensive. Since 2007, the Commission has participated financially in four projects that were subject to the cap, ranging from just over $1,000,000 in total cost to $3,000,000. Some options for consideration would be:

1. Increase the cap to $300,000 to account for inflation;
2. Lift the dollar cap altogether and simply proceeding with a policy of 25% match;
3. Keep the 25% match but raising the dollar cap to $1,000,000;
4. Keep the policy as it is; or
5. Something else.

Projects of that size don't come along very often, but often times they are very cost effective, for example, the Becker Park Infiltration Project is a very expensive but very cost-effective project in terms of cost per pound of phosphorus removed.

25% Commission Match. When the City Cost Share Program was adopted, an inadvertent disincentive was created for CIP projects. The policy states that projects costing less than $100,000 should be funded through the Cost Share Program, while projects over $100,000 should go through the CIP. The disincentive is that Cost Share provides a 50% match, while CIP provides a 25% match. A $99,999 project could receive $49,999 from the Commission, but a $101,000 project would be eligible for only $25,250. Some options to consider may include;

1. Increase the match to 50% for CIP projects between $100,000 and $200,000, keep the match at 25% for projects greater than $200,000;
2. Increase the match for all CIP projects to 50%;
3. Keep the policy as it is; or
4. Something else.

$500,000 Maximum Capital Levy. When the Commissions first voluntarily established the $500,000 maximum annual levy, it was primarily a "gut feel" decision, and was not based on any assessment of the range or size of potential future projects. For the most part, the annual levy has averaged $200,000-300,000, but in some years it has been near or greater than $500,000. In 2018, the Shingle Creek levy was $479,000 and in 2010 the levy was $610,000; in 2010 the levy exceeded the maximum because some 2009 projects were pushed back to 2010.

Since the $500,000 maximum was established, the Shingle Creek Commission established an annual levy of $100,000 for city cost-share projects and $50,000 for partnership cost-share projects, taking up $150,000 of that $500,000 annually. Anything more than one or two additional projects proposed for a given year would likely result in a total levy request exceeding $500,000. In addition, if the $250,000 cap on larger projects is increased or lifted, in years when there are large projects proposed the levy would likely exceed $500,000.

Some options to consider may include:

1. Increase the maximum levy to $1,000,000 or some other figure;
2. More clearly setting forth criteria for when the maximum may be exceeded, such as the case in 2010 above;
3. Keep the policy as it is; or
4. Something else.

Just for perspective on the relationship between the total levied and the amount that actually shows up on a typical property tax bill, the Shingle Creek 2017 certified levy was just under $160,000. That resulted in a property tax of $2.03 on Diane's house in Minneapolis, compared to taxes for other special districts such as the Minneapolis Institute for the Arts of $18.38, the Metropolitan Mosquito Control District at $11.77, or the Hennepin County Library System at $98.34. If Diane's house was in the Bassett Creek watershed, the tax year 2018 property tax for the Bassett Creek Commission levy of about $1.35 million would have been about $22.60.

Technical Memo

WENCK ASSOCIATES

Responsive partner.
Exceptional outcomes.

To: Shingle Creek/West Mississippi TAC

From: Ed Matthiesen, P.E.
Diane Spector

Date: January 18, 2019

Subject: Policies for Using City Cost Share Funds

Recommended Commission Action	Discuss and provide recommendations to the Commissions.

Two questions regarding the use of City Cost Share funds have arisen recently. This discussion is regarding whether the policies for use of those funds should be amended or clarified.

Equipment

Should the purchase of maintenance equipment be eligible for cost share, and to what extent? The practice of enhanced, more frequent street sweeping with a regenerative air sweeper has been shown to be an effective BMP, especially in developed areas where there are limited opportunities for structural BMPs. Can a City apply for cost share to help fund the upcost of replacing a broom sweeper with a regenerative air? What about funding a new sweeper? Any other types of equipment? You had previously had a discussion regarding an application to fund brine tanks.

Cost Share v. CIP

You had previously had a discussion about whether projects could be eligible for both CIP participation and City Cost Share, and had agreed that it should be one or the other. Attached are the current guidelines with proposed revised language.

Shingle Creek Watershed Management Commission

3235 Fernbrook Lane N • Plymouth, MN 55447
Phone (763) 553-1144 • Fax (763) 553-9326

www.shinglecreek.org

Shingle Creek
Watershed Management Commissions
Partnership Cost-Share Program Guidelines

The Shingle Creek Watershed Management Commission will from time to time make funds available to its member cities to help fund the cost of Best Management Practices (BMPs) partnership projects with private landowners. The following are the guidelines for the award of cost-share grants from this program:

1. Projects on private property must be for water quality improvement, and must be for improvement above and beyond what would be required to meet Commission rules. Only the incremental cost of "upsizing" a BMP above and beyond is eligible.
2. Priority is given to projects in a priority area identified in a subwatershed assessment or TMDL.
3. Commission funds may reimburse up to 100% of the cost of the qualifying BMP.
4. The minimum cost-share per project is $10,000 and the maximum is $50,000.
5. Projects must be reviewed by the Technical Advisory Committee (TAC) and recommended to the Commissions for funding.
6. Cost-share is on a reimbursable basis following completion of project.
7. The TAC has discretion on a case-by-case basis to consider and recommend to the Commissions projects that do not meet the letter of these guidelines.
8. Unallocated funds will carry over from year to year and be maintained in a designated fund account. Any balance in said account in excess of $100,000 will be transferred to the City Cost Share Program Account.
9. The property owner must dedicate a public easement or equivalent sufficient to install and maintain the BMP.
10. The Member City must obtain a recordable maintenance agreement from the property owner that specifies maintenance requirements and schedule; authorizes the City to inspect the BMP and order maintenance and improvement; and authorizes the City to undertake ordered maintenance and improvement not completed by the property owner, and assess the cost that work to the property.
11. The standard Commission/Member Cooperative Agreement will executed prior to project construction.

Adopted November 2015
Revised February 2017

Shingle Creek Watershed Management Commission

3235 Fernbrook Lane N • Plymouth, MN 55447
Phone (763) 553-1144 • Fax (763) 553-9326

www.shinglecreek.org

Shingle Creek Watershed Management Commissions
Partnership Cost-Share Program Application

City:	New Hope
Contact Name:	Chris Long
Contact Phone:	651-604-4808
Contact Email:	Chris.Long@stantec.com
Project Name:	Speed Thru Carwash
Total Project Cost:	$309,971
Amount Requested:	$50,000
Project Location:	7201 Bass Lake Road, New Hope MN 55428
Owner:	LAMA Holdings LLC – Chris Robbins
Address:	7201 Bass lake Road
City, State, Zip:	New Hope MN 55428
Phone:	763-913-5482
Email:	Chris@speedthrucarwash.com

1. Describe the BMP(s) proposed in your project. Describe the current condition and how the BMP(s) will reduce pollutant loading and/or runoff volume. Note the estimated annual load and volume reduction by parameter, if known, and how they were calculated. Attach figures showing project location and BMP details including drainage area to the BMP(s).

This system will use (5) – 20,000 gallon tanks to collect and store storm water from the site. The storage tanks will be treated by aerobic bacteria. All petroleum-based products will be consumed, and the only byproducts are C02 and Water. After bacteria treatment the water will be further purified using a reverse osmosis system before being dispensed in the car wash tunnel.

The current site does not use any onsite retention or purification. All storm water is directed to Shingle Creek. The new system will collect 727,300 gallons annually compared to 0 gallons currently and all petroleum products will be removed from the water.

2. If this request is for cost share in "upsizing" a BMP, explain how the upsize cost and benefit were computed.

The site will consist of 1.33 Acres (57,934 sq. ft.) of impervious surfaces when finished. Minimum requirements are for 75,314 gallons of retention (1.3 x 57,934). The installed system will have 100,000 gallons total capacity. This project is 32.7% larger than required. The total cost is $309,971. A 32.7% cost share would equal $101,360, but the grant is limited to $50,000.

Shingle Creek Watershed Management Commission

3235 Fernbrook Lane N • Plymouth, MN 55447
Phone (763) 553-1144 • Fax (763) 553-9326

www.shinglecreek.org

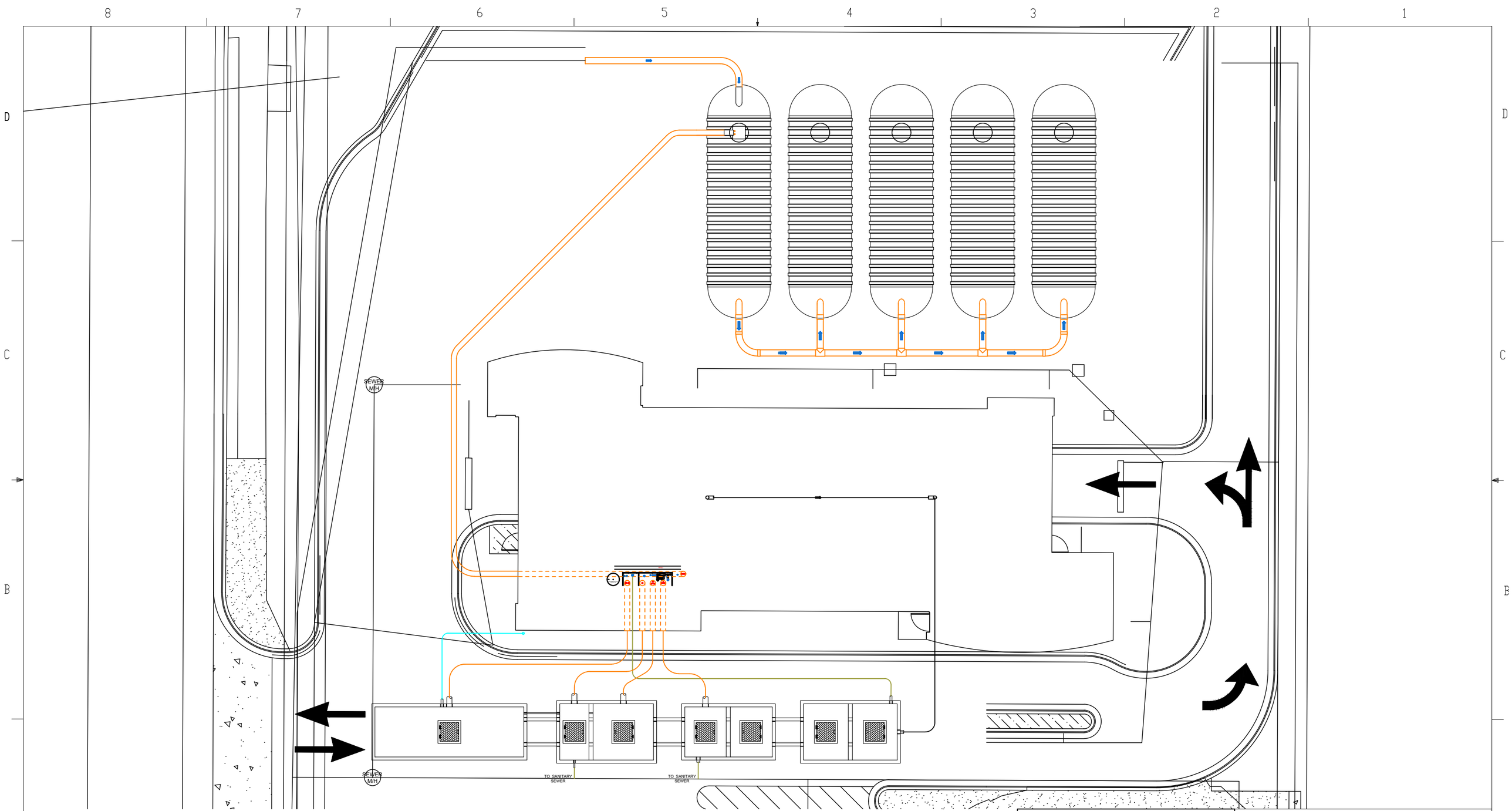
3. Show total project cost and the amount of cost share requested.

- Storage Tanks (Including Freight) $29,227
- Tank Fabrication $40,850
- Aerobic Bacteria treatment system $32,500
- Tank Installation $179,744
- Reverse Osmosis System $27,650

4. What is the project schedule, when will work on the BMP(s) commence and when will work be complete?

Project to start Mid July 2018 – Projected completion expected in April 2019

The member City must verify that a public easement (or equivalent) is dedicated and that an Operations and Maintenance Agreement has been executed and recorded prior to release of any funds.



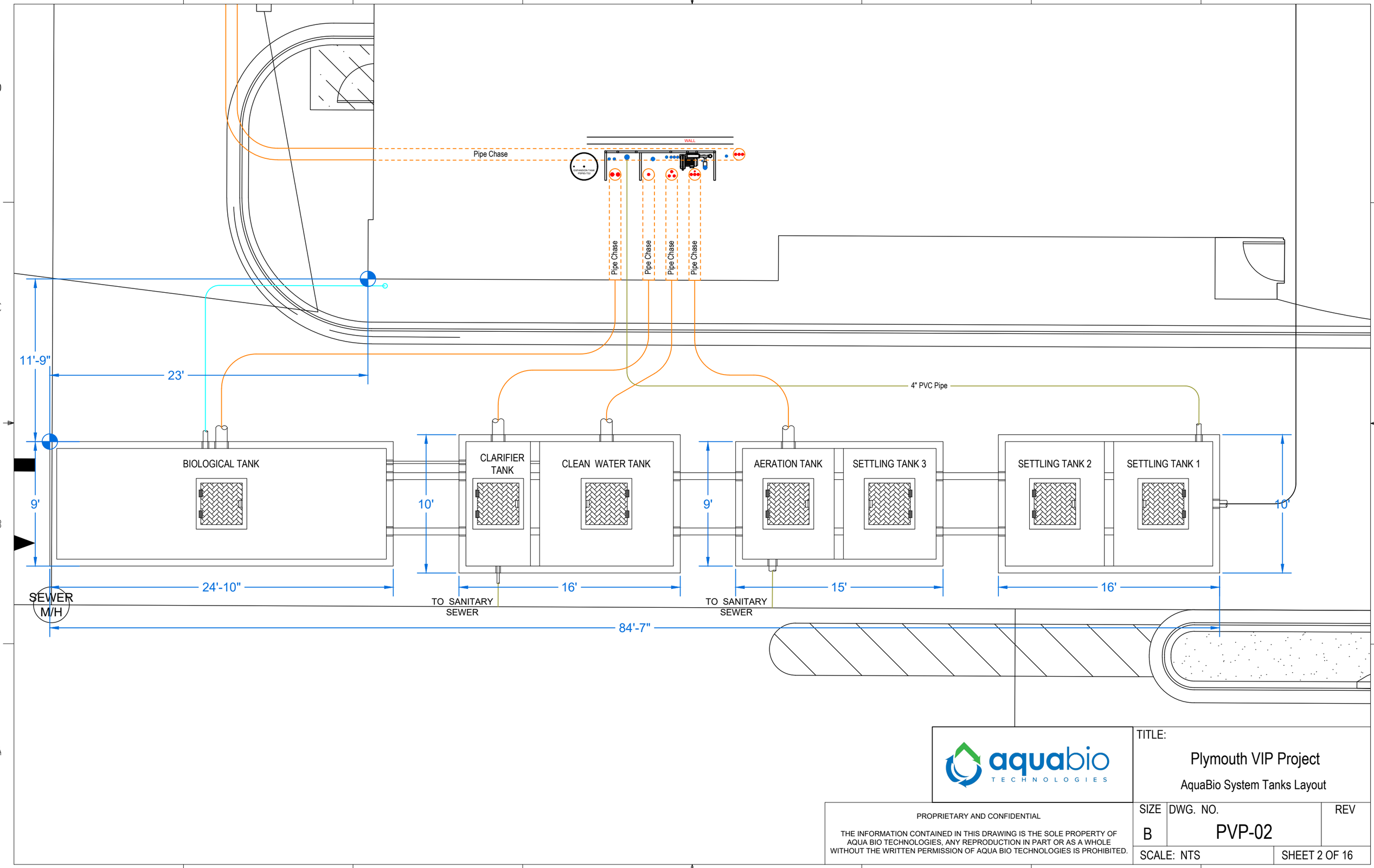
aquabio TECHNOLOGIES

TITLE:

Plymouth VIP Project

Overall Project Layout

SIZE	DWG. NO.	REV
B	PVP-01	
SCALE: NTS		SHEET 1 OF 16



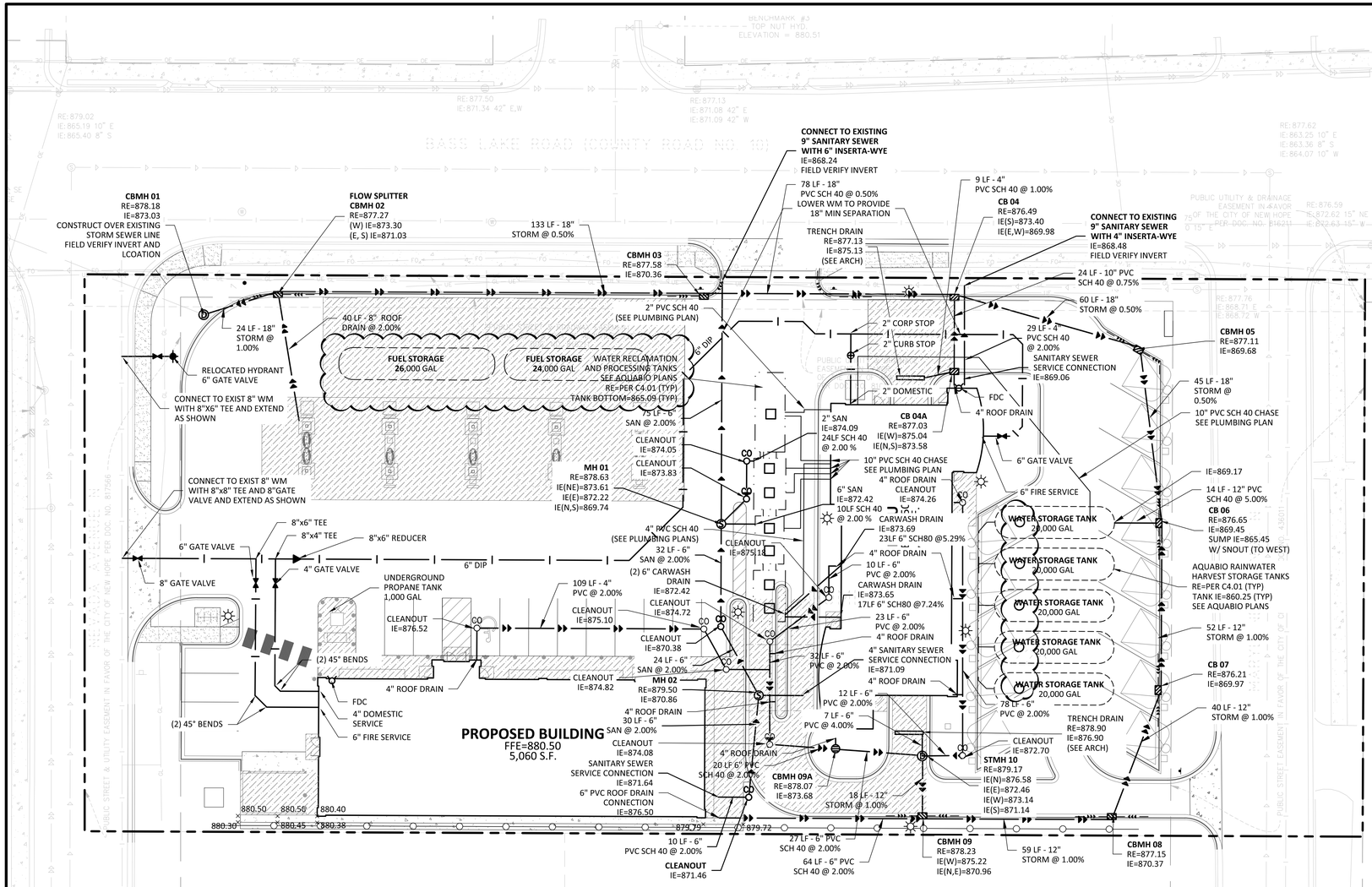
aquabio TECHNOLOGIES

TITLE:

Plymouth VIP Project

AquaBio System Tanks Layout

SIZE	DWG. NO.	REV
B	PVP-02	
SCALE: NTS		SHEET 2 OF 16



NORTH

0 20 40

SCALE IN FEET

THE SUBSURFACE UTILITY INFORMATION SHOWN ON THESE PLANS IS A UTILITY QUALITY LEVEL . THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF ASCE/CI 38-02, TITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, BY CONTACTING THE NOTIFICATION CENTER (GOPHER STATE ONE FOR MINNESOTA). THE CONTRACTOR AND/OR SUBCONTRACTOR AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OVERHEAD).

IF THE CONTRACTOR ENCOUNTERS ANY DRAIN TILE WITHIN THE SITE, HE OR SHE SHALL NOTIFY THE ENGINEER WITH THE LOCATION, SIZE, INVERT AND IF THE TILE LINE IS ACTIVE. NO DRAIN TILE SHALL BE BACKFILLED WITHOUT APPROVAL FROM THE PROJECT ENGINEER.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

STORM SEWER STRUCTURE SCHEDULE

NUMBER	TYPE	CASTING*
CBMH 01	SOLID	R-1642
CBMH 02	GRATE	R-3067
CBMH 03	GRATE	R-3067
CBMH 04	GRATE	R-3067
CBMH 04A	GRATE	R-3067
CBMH 05	GRATE	R-3067
CBMH 06	GRATE	R-3067
CBMH 07	GRATE	R-3067
CBMH 08	GRATE	R-3067
CBMH 09	GRATE	R-3067
CBMH 09A	GRATE	R-4353
STMH 10	SOLID	R-1642
*INDICATES NEENAH FOUNDRY CASTING NO., OR APPROVED EQUAL		
NOTE: CONTRACTOR AND THEIR SUPPLIER SHALL DETERMINE THE MINIMUM DIAMETER REQUIRED FOR EACH STORM SEWER STRUCTURE.		

LEGEND

	PROPOSED	EXISTING
CURB & GUTTER	D	D
STORM SEWER	S	S
SANITARY SEWER	S	S
FORCEMAIN (SAN.)	LS FM S	S
WATERMAIN	W	W
EASEMENT		
DRAINTILE		
GAS LINE	GL	GL
ELECTRIC	UE	UE
TELEPHONE	UT	UT
UNDERGROUND STORAGE TANK		

UTILITY CONSTRUCTION NOTES

1. THE UTILITY IMPROVEMENTS FOR THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "STANDARD UTILITIES SPECIFICATIONS" AS PUBLISHED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM), EXCEPT AS MODIFIED HEREIN. CONTRACTOR SHALL OBTAIN A COPY OF THESE SPECIFICATIONS.
   - 1.1. ALL UTILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY REQUIREMENTS.
   - 1.2. CONTRACTOR SHALL NOT OPEN, TURN OFF, INTERFERE WITH, OR ATTACH ANY PIPE OR HOSE TO OR TAP WATERMAIN BELONGING TO THE CITY UNLESS DULY AUTHORIZED TO DO SO BY THE CITY. ANY ADVERSE CONSEQUENCES OF ANY SCHEDULED OR UNSCHEDULED DISRUPTIONS OF SERVICE TO THE PUBLIC ARE THE LIABILITY OF CONTRACTOR.
   - 1.3. A MINIMUM VERTICAL SEPARATION OF 18 INCHES AND HORIZONTAL SEPARATION OF 10-FEET BETWEEN OUTSIDE PIPE DIAMETERS IS REQUIRED AT ALL WATERMAIN AND SEWER MAIN (BUILDING, STORM AND SANITARY) CROSSINGS.
2. ALL MATERIALS SHALL BE AS SPECIFIED IN CEAM SPECIFICATIONS EXCEPT AS MODIFIED HEREIN.
   - 2.1. ALL MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY.
   - 2.2. ALL SANITARY SEWER TO BE PVC SDR-35, UNLESS NOTED OTHERWISE.
     - 2.2.1. ALL SANITARY SEWER SERVICES TO BUILDING SHALL BE PVC SCH 40 CONFORMING TO ASTM D2665.
   - 2.3. ALL WATERMAIN TO BE DUCTILE IRON - CLASS 52, UNLESS NOTED OTHERWISE.
     - 2.3.1. ALL WATERMAIN TO HAVE 7.5-FEET OF COVER OVER TOP OF WATERMAIN.
     - 2.3.2. PROVIDE THRUST BLOCKING AND MECHANICAL JOINT RESTRAINTS ON ALL WATERMAIN JOINTS PER CITY STANDARDS.
   - 2.4. ALL STORM SEWER PIPE TO BE SMOOTH INTERIOR DUAL WALL HDPE PIPE WITH WATER TIGHT GASKETS, UNLESS NOTED OTHERWISE.
     - 2.4.1. ALL STORM SEWER PIPE FOR ROOF DRAIN SERVICES TO BUILDING SHALL BE PVC SCH 40 CONFORMING TO ASTM D2665.
   - 2.5. RIP RAP SHALL BE Mn/DOT CLASS 3.
3. COORDINATE ALL BUILDING SERVICE CONNECTION LOCATIONS AND INVERT ELEVATIONS WITH MECHANICAL CONTRACTOR PRIOR TO CONSTRUCTION.
4. ALL BUILDING SERVICE CONNECTIONS (STORM, SANITARY, WATER) WITH FIVE FEET OR LESS COVER ARE TO BE INSULATED FROM BUILDING TO POINT WHERE 5-FEET OF COVER IS ACHIEVED.
5. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
6. SAFETY NOTICE TO CONTRACTORS: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE ENGINEER OR THE DEVELOPER TO CONDUCT CONSTRUCTION REVIEW OF CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF CONTRACTOR'S SAFETY MEASURES IN, ON OR NEAR THE CONSTRUCTION SITE.
7. ALL AREAS OUTSIDE THE PROPERTY BOUNDARIES THAT ARE DISTURBED BY UTILITY CONSTRUCTION SHALL BE RESTORED IN KIND. SODDED AREAS SHALL BE RESTORED WITH 6 INCHES OF TOPSOIL PLACED BENEATH THE SOD.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, FLAGMEN AND LIGHTS TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. TRAFFIC CONTROL DEVICES SHALL CONFORM TO APPROPRIATE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARDS.
9. ALL SOILS TESTING SHALL BE COMPLETED BY AN INDEPENDENT SOILS ENGINEER. EXCAVATION FOR THE PURPOSE OF REMOVING UNSTABLE OR UNSUITABLE SOILS SHALL BE COMPLETED AS REQUIRED BY THE SOILS ENGINEER. THE UTILITY BACKFILL CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE SOILS ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED SOILS TESTS AND SOIL INSPECTIONS WITH THE SOILS ENGINEER.

   A GEOTECHNICAL ENGINEERING REPORT HAS BEEN COMPLETED BY:

   COMPANY: TERRACON CONSULTANTS, INC.
   ADDRESS: 13400 15TH AVENUE PLYMOUTH,MN 55441
   PHONE: 763-489-3100
   DATED: 1-9-2018

   CONTRACTOR SHALL OBTAIN A COPY OF THIS SOILS REPORT.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR MANHOLE AND CATCH BASIN STRUCTURES TO ENGINEER. CONTRACTOR SHALL ALLOW 5 WORKING DAYS FOR SHOP DRAWING REVIEW.
11. CONTRACTOR AND MATERIAL SUPPLIER SHALL DETERMINE THE MINIMUM DIAMETER REQUIRED FOR EACH STORM SEWER STRUCTURE.
12. THE UNDERGROUND STORMWATER SYSTEM SHOWN ON THE UTILITY PLAN AND THE DETAIL SHEETS IS FOR INFORMATIONAL PURPOSES ONLY AND DEPICTS THE MINIMUM STORAGE REQUIREMENTS AND THE SYSTEM ELEVATIONS. THE CONTRACTOR (WITH THEIR SUPPLIER OR DESIGNER) SHALL SUBMIT DESIGN DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. THE DESIGN DRAWINGS SHALL DEPICT THE FINAL LAYOUT AND DETAILS FOR CONSTRUCTION. THE DRAWINGS SHALL BE CERTIFIED BY A LICENSED ENGINEER FOR THE STATE IN WHICH THE PROJECT IS CONSTRUCTED. THE SUBMITTAL SHALL INCLUDE ALL NECESSARY PRODUCT INFORMATION, DESIGN CALCULATIONS AND BEDDING REQUIREMENTS FOR THE PROPOSED STORMWATER SYSTEM. FOLLOWING CONSTRUCTION, THE CERTIFYING ENGINEER SHALL SUBMIT A LETTER TO THE OWNER AND ENGINEER INDICATING THEY OBSERVED THE INSTALLATION AND THE INSTALLATION OF THE STORMWATER SYSTEM WAS IN CONFORMANCE WITH THE CERTIFIED DRAWINGS.

Sambatek
www.sambatek.com
12800 Whitewater Drive, Suite 300
Minnetonka, MN 55343
763.476.6010 telephone
763.476.8532 facsimile
Engineering | Surveying | Planning | Environmental

Client
LAMA HOLDINGS, LLC

7201 BASS LAKE ROAD
NEW HOPE, MN 55428

Project
NEW HOPE GAS AND CONVENIENCE

Location
NEW HOPE, MN

Certification

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed professional ENGINEER under the laws of the state of Minnesota.

Eric A. Vogel
Registration No. 54914 Date: 9/19/2018

If applicable, contact us for a wet signed copy of this plan which is available upon request at Sambatek's, Minnetonka, MN office.

Summary

Designed: Drawn: EAV
Approved: BDB Book / Page:
Phase: FINAL Initial Issue:

Revision History

No.	Date	By	Submittal / Revision
	9/19/2018		ISSUED FOR CONSTRUCTION
	9/21/2018		UTILITY PLAN UPDATE
	9/28/2018		UTILITY PLAN UPDATE
	10/15/2018		SITE AND UTILITY UPDATE
	10/25/2018		REVISED FUEL TANKS

Sheet Title
UTILITY PLAN

Sheet No. Revision
C6.01 D

Project No. 20725