

CITY OF ST. FRANCIS
CITY COUNCIL AGENDA
June 4, 2018
ISD #15 CENTRAL SERVICE CENTER
4115 Ambassador Blvd NW
6:00 pm

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE
2. ROLL CALL
3. APPROVAL OF AGENDA
4. CONSENT AGENDA - *All matters listed within the Consent Agenda are considered routine items to be enacted upon by one motion by the City Council. Items on the Consent Agenda are reviewed in total by the City Council and may be approved through one motion with no further discussion by the Council. Any item may be removed by any Council Member, staff member or person from the public for separate consideration.*
 - A. City Council Minutes –May 21, 2018
 - B. SFACOC – Pioneer Days Parade Permit June 9, 2018
 - C. Payment of Claims
5. MEETING OPEN TO THE PUBLIC
6. SPECIAL BUSINESS
 - A. Roers Development: Presentation on Assisted Living/Letter of Interest
7. PUBLIC HEARINGS
8. OLD BUSINESS
9. NEW BUSINESS
 - A. Ordinance 240, Second Series – Rivers Edge Rezoning to Planned Unit Development -2nd Rdg
 - B. Rivers Edge –
 - (1) Final Plat Approval – Resolution 2018-20
 - (2) Pre-Approval Grading Agreement
 - (3) Development Agreement
 - C. Meridian – Conditional Use Permit - Resolution 2018-21
 - D. Requesting Funds from Anoka County HRA/EDA – Resolution 2018-22
 - E. Public Works – Streets:
 - (1) Pothole Patching
 - (2) Dust Control
 - F. Nixle Communications
10. MEETING OPEN TO THE PUBLIC
11. REPORTS
 - A. Councilmember Reports -
 - B. Upcoming Events –

May 22-June 5	Filings for Local Races; Mayor and Two Councilmembers
June 8-10	Pioneer Days Weekend
June 18	City Council Meeting @ ISD #15 Central Services Center 6 pm
June 20	Planning Commission Meeting - CANCELLED
12. ADJOURNMENT

CITY OF ST. FRANCIS
ST. FRANCIS MN
ANOKA COUNTY

CITY COUNCIL MINUTES
May 21, 2018

1. **CALL TO ORDER/PLEDGE OF ALLEGIANCE**

The regular City Council meeting was called to order at 6:00 pm by Mayor Steve Feldman.

2. **ROLL CALL**

Members present: Mayor Steve Feldman, Councilmembers Jerry Tveit, Joe Muehlbauer, and Rich Skordahl

Members absent: Robert Bauer

Also present: Assistant City Attorney Dave Schaps (Barna, Guzy & Steffen), City Engineer Craig Jochum (Hakanson Anderson), City Administrator Joe Kohlmann, Community Development Department Kate Thunstrom, Police Chief Todd Schwieger, Public Works Director Paul Teicher, Liquor Store Manager John Schmidt, Finance Director Darcy Mulvihill, and Acct Tech/Deputy Clerk Lori Streich

3. **APPROVAL OF AGENDA**

MOTION TO APPROVE AGENDA BY MUEHLBAUER, SECONDED BY SKORDAHL; ALL IN FAVOR, MOTION PASSES.

4. **CONSENT AGENDA** - All matters listed within the Consent Agenda are considered routine items to be enacted upon by one motion by the City Council. Items on the Consent Agenda are reviewed in total by the City Council and may be approved through one motion with no further discussion by the Council. Any item may be removed by any Council Member, staff member or person from the public for separate consideration.

A. City Council Minutes –May 7, 2018

B. Receipt of Donations for "Winning with Cops" program: Chops Inc. \$300, St. Francis Lions Club \$250 and Gary Zimmerman \$40

C. Hire Andrea Schauer as Liquor Store Part Time Employee

D. ISD #15 Vehicle Maintenance Contract Extension

E. St. Francis Fire Relief Donation Request

F. Payment of Claims - \$382,550.76 (ACH #227E - #228E) \$136,431.96; (CHECK #74177 - #74249) \$246,118.80.

MOTION TO APPROVE CONSENT AGENDA BY TVEIT, SECONDED BY MUEHLBAUER; ALL IN FAVOR, MOTION PASSES.

5. **MEETING OPEN TO THE PUBLIC** Maximum time of five minutes per person*

Robert Holen is not a resident of St. Francis, but owns a building in St. Francis. He received a letter from the Community Development Department regarding a complaint made against his building regarding a crack in the wall. Holen provided a copy of the letter along with an Engineer's report.

Holen has a couple issues with this letter. The first being that the letter says it's from the Community Development Department, but there's no signature. He feels this needs to be addressed.

In the letter, it's stated that there's an issue from a concerned citizen. When asked who made the complaint, he found that the laws state that the information cannot be disclosed on who made the complaint because of privacy issues. He doesn't think this concerned citizen even exists.

In 1976, when they first moved into that building, the crack was there. There was no issue at that time. Over the years there have been several remodels and updates on the building. They put a new roof on it, the crack was there, but because it was on a non-bearing wall, there was no issue. They were told by the Building Inspector at that time to go ahead. That was 17 years ago.

It hasn't been an issue for the last 40 some years and now we have a citizen that has an issue with it. This building has served the community over the years, has brought a lot of business to this area, and still is.

Classic Construction will take the job on and it will get fixed.

Mayor Feldman said that he's a contractor by trade, and has seen the crack. There's a footing below that block wall, he would hope.

Holen said that he doesn't know that for sure since the building is 100 years old.

Feldman stated that the block wall is separating and there is a problem with the footing and therefore that roof attached to that wall is more of a liability issue. The city is not out to hurt or damage you, we are just trying to tell you that the crack is getting worse and worse and something needs to be corrected. Everything comes down to the footing in the ground. Here you have a footing, a block wall on top of that, a roofline on top of that & trusses, and everything bears to the footing. What is happening is that the block wall is separating beyond the tolerance and we notified you for that. This could be an issue and liability to the public in general. He apologized that it didn't go the way Holen had hoped it would, and Feldman doesn't know who the concerned citizen is, but he has also seen it himself and was amazed that it hasn't fallen. It was brought to the city's attention for correction. It's your building. Should we wait until it falls down and then you would ask us why we didn't say something? Anyone driving by can see the crack. That's why it was brought to Mr. Holen's attention.

Feldman said that he will make sure the documents get to the right people.

6. **SPECIAL BUSINESS**

A. Abdo Eick & Meyers – 2017 Annual Financial Audit Report

Abdo presented to Council in detail a power point presentation outlining the 2017 Annual Financial Audit Report, as shown in the agenda packet.

Feldman asked to look at the water fund cash flows and the storm water fund cash flows. These graphs tell him that back in 2014, the city was spending more money than they were bringing in. When he and other council members ran for office, there was a 45/85 hike here because this city was hemorrhaging from debt load.

He understands that documents can be difficult to understand, but If you are bringing in \$500 a month, and you are spending \$1000 a month, you are \$500 in the hole. The city came into fruition around the 2008-2009 time frame. That cost the city a lot of burden to the public in general. Instead of suturing the hemorrhaging, and take the time to do it right, it let the hemorrhaging continue until the rates and debt load got so bad that they had no choice but to 45% water hikes, 85% sewer hikes, and spread it over two years, and we still came out at the low end of it. Now we are kind of streamlining that through our development. He can only emphasize this enough that the only way to get our user rates and situation corrected is through extending our utility user base through long term, reputable developments.

Feldman's point is that when he looks at these graphs, even his grandkids could see that we are spending more than we are bringing in. It wasn't until the rate hikes in 2016 & 2017 that we started stabilizing, burdening the people with 45/85% rate hikes when cost of living were lucky to go up 2% over the past years. His point is what are graphs good for if you don't understand what you are reading, or ask questions and do your due diligence? Back when the population was growing from 1990-2010, we grew by 2538 people. At that time we should have gradually raised rates and prepared the public for increasing the rates gradually, so we simulate that into the budget. It's total lack of responsibility in governing the fact of more money going out than coming in and nobody did anything until the hemorrhaging got so bad that there back was to the wall and they were forced to do this.

There are three things in Feldman's opinion that this city can never allow to happen again. The first is a 45/85% rate hike, second is transfer funds from a wastewater treatment facility fund to buy land in Isanti County 11 years later which has profited us today in no form or in any way, paid three times the going rate, and given us no benefit at all for development that never panned out, and lastly we can never give out TIF money to anything but long term reputable development companies. Those are three things he will live by as long as he's Mayor of this city. We can never burden our public with this irresponsibility.

Abdo has done a great job for us. They provide the information for Council and staff to make an informed decision.

Muehlbauer agrees with everything and appreciates that the packet is easy to understand.

Tveit agrees that it's a good clean report. No big findings and that tells him that the Finance department is doing a good job recording the data.

Skordahl asked Abdo who defines the peer group when they are doing the ratios? Is it cities of similar size? He likes the report. One finding is that we have a small staff, but there's nothing they can do about that.

Abdo said they work with over 100 cities. They request data for cities with similar population.

MOTION TO ACCEPT THE 2017 ANNUAL FINANCIAL AUDIT REPORT BY MUEHLBAUER, SECONDED BY SKORDAHL; ALL IN FAVOR, MOTION PASSES.

B. Fire Department Badge Pinning Ceremony – Zachary Goers, Jason Hughes, Brent Wentworth

Chief Schmidt recognized the 3 newest firefighters. Tonight's ceremony signifies that they have completed their first year of employment with the City of St. Francis Fire Department. It also signifies that they've completed countless hours of training and instruction. Some of those include Firefighter 1 course through the Academy which totaled 110 hours, Firefighter 2 course through the Academy which totaled 60 hours, a Hazardous Materials Course which totaled 40 hours, and Emergency Medical Technician Course which totaled another 110 hours. They also completed their firefighter probationary manual inside the department, all while still attending calls and going to department trainings. If you total all that together, just with their classroom training, that's 330 hours these men spent training for the fire department. That equivalent to 8 weeks of full time employment. That's time away from their full time jobs, family and friends.

Not only should we take time to honor these firefighters for the completion of their probationary process tonight, we want to thank their family and friends for supporting them through this process.

7. **PUBLIC HEARINGS**
NOTHING

8. **OLD BUSINESS**
NOTHING

9. **NEW BUSINESS**

A. Ordinance 240, Second Series – Rivers Edge Rezoning to Planned Unit Development -1st Rdg

Thunstrom, of the Community Development Department explained the River's Edge Rezoning as described in the agenda packet.

No questions from Council.

MOTION TO ACCEPT ORDINANCE 240, SECOND SERIES-RIVERS EDGE REZONING TO PLANNED UNIT DEVELOPMENT – 1ST RDG BY TVEIT, SECONDED BY SKORDAHL; ALL IN FAVOR, MOTION PASSES.

ROLL CALL AYES: FELDMAN, TVEIT, MUEHLBAUER, SKORDAHL
NAYES: NONE

B. 2040 Comp Plan – HKGI: Extension Request (If needed) Resolution 2018-19

Thunstrom explained that the Resolution before them is a formality that Met Council requires if the city feels it may not meet its submission deadline. It is their plan to have the 2040 Comp Plan to City Council on June 4th, and what it does at that time is release it for that 6 month comment period. If there are any delays or setbacks from that comment period, we would be at risk of a delay in getting it to Met Council since it still has to go through a public hearing with Planning & Zoning and back through Council again.

What this extension will do is allow us that extra cushion at the end of the year into 2019 in case a delay comes up. It's more of a formality if needed.

No questions from Council.

MOTION FOR EXTENSION REQUEST (IF NEEDED) RESOLUTION 2018-19, 2040 COMP PLAN-HKGI BY SKORDAHL, SECONDED BY MUEHLBAUER; ALL IN FAVOR, MOTION PASSES.

C. Woodhaven 6 – Development Agreement

Kohlmann explained that staff is looking for approval of this agreement. There are two things still in negotiation with the developer right now. One is the percentage of the letter of credit. Right now this says 150% - #17 in the Development Agreement, and that's the percentage on the dollar amount for the construction costs. The other point of negotiation is the cash due requirements. There are certain fees that the city has set by ordinance, when would that money be due, can it be spread out per building permit, would it be due before we even sign this agreement. Those are some things we are still working on with the developer. They are looking for some latitude to make those adjustments as needed if this agreement gets approved tonight.

Feldman wanted to bring to council's attention that the problem with development is that you have so much money going out, and it's kind of like a one way road, where you have money going out but nothing coming in. We don't ever want to turn away development. This company has worked well with us in the past and present. Feldman agrees with Kohlmann that if we could do this by permit and set that fee onto it, the developer is going to see money going out, but he will also see money coming in which will buffer that cost.

We want to make sure that we aren't so hard and so rigid that we turn away development. We will get our money, it's just how it will happen – in a lump sum or over a period of time.

Tveit isn't opposed to working with developers, he's a business owner himself and it's always nice when cities work with them. On the flip side he doesn't want to be subsidizing a developer and having our citizens foot the bill. With any money going out, water gets run, sewer gets run, that's all money that the city has paid out. The longer that money sits out there, the more we end up having to pay interest on it. As long as it's going to come sooner than later, he's not opposed.

Muehlbauer doesn't see any issue with this particular agreement as long as we understand that we are not setting a precedence. He doesn't see any problems with doing it by permit and giving staff the latitude to negotiate.

Skordahl agreed to let staff work out the details.

MOTION TO APPROVE WOODHAVEN 6 – DEVELOPMENT AGREEMENT BY TVEIT, SECONDED BY MUEHLBAUER; ALL IN FAVOR, MOTION PASSES.

D. Fire Department – Building Security Updates

Chief Schmidt has a request to update the secure access system into the Fire Department. Over the course of the last year, as they continue to audit the fire department operations and facilities, one of the things they have discovered is over the course of history the fire house has transitioned through a couple different secure access systems. Through these transitions, he has no tracking, history, or record keeping of who was ever given responsibility of keys, key codes or key fobs. With the nature of the business, and the sensitivity of what the fire department does, and the investment that the city makes with the fire department, he doesn't believe we can continue to manage this organization without knowing how secure our facilities are.

Chief Schmidt has worked with the Public Works Director and had a few companies come out and submit quotes to update the system. With Council's approval, they would like to move forward with this.

Mayor Feldman asked if this would put them in sync with Public Works and the Police Department.

Chief Schmidt answered that it will also build some redundancy. One of these things that was identified in the recently adopted Emergency Operations Plan for the city is the Fire Department is the secondary EOC site, so if a tornado or large event came through and the Police and Public Works Building was rendered not operational, all of our operations would move over to the Fire Department. This security system will create the redundancy to ensure that the right people have access to the building at any given time.

Mayor Feldman commented that this is long overdue.

Skordahl agrees it's long overdue, and asked if employees go through some sort of exit interview process where they turn over keys and such.

Kohlmann said yes, keys would be turned in. As far as the fire department in the past, he doesn't think it was ever documented over at that facility. Whereas at City Hall, keys are collected.

Tveit agrees and said that he has never worked at a place that you didn't have to badge in and badge out. He doesn't know why we wouldn't have that here. One question he has is if there would be a designated person to manage the badges.

Chief Schmidt said that they will be working on that.

Muehlbauer has nothing to add and agrees.

MOTION TO APPROVE THE FIRE DEPARTMENT – BUILDING SECURITY UPDATES BY MUEHLBAUER, SECONDED BY SKORDAHL; ALL IN FAVOR, MOTION PASSES.

10. **MEETING OPEN TO THE PUBLIC**
NOTHING

11. **REPORTS**
A. Public Works Departments – Monthly Report

Public Works Director Teicher explained the water and sewer monthly report as outlined in the agenda packet.

Skordahl mentioned that he is astounded with how much salt we put down. 7 tons seems like a lot.

Teicher said that MNDOT views it as life safety. There are some communities that may have a different opinion. Our policies and public have demanded this through complaints or calls that traffic needs to move.

Tveit said that society as a whole has changed. We don't like anything to hold us back, including weather. He remembers when there was a snowstorm everyone stayed in. Now it's incumbent on Public Works to make the streets safe so we can get out there and do what we need to do.

Muehlbauer appreciates them and said they are doing a great job. He asked Teicher about when dust control and grading is scheduled.

Teicher answered that their plan is to do it on June 20th

B. Councilmember Reports -

Tveit didn't have anything to report, but wanted to remind everyone that the motorcycles are out and please watch for them. Before changing lanes, look over your shoulder, watch out for pedestrians. Kids are staying out later now, so watch out for them, etc. Trouble makers are also out, and please if you see something, say something.

Muehlbauer did not have anything to add.

Skordahl had nothing this week.

Mayor Feldman said that he's been working on a project for quite a while, with the help of Public Works Director Teicher, Parish Barten of Public Works, along with several people from the MPCA and Craig Johnson from the League of Minnesota Cities. We spent over 21.982 million dollars on our Waste Water Treatment Facility. Something that we were approached about is a look back provision. This look back provision was to grandfather us in because we spent a lot of money for a town of 7400 people so that for the next 16 years we are grandfathered in from any requirements from the MPCA. We built this plant there more than we needed to but now we've come full circle to protect ourselves so that any requirements down the road for the next 16 years, we are grandfathered in.

The document from Craig Johnson of the League of Minnesota Cities reads:

"Mayor Feldman-As you may have noticed over the weekend, the Governor signed Chapter 148 into law on Saturday. It places the 16-year permit certainty allowance in statute, retroactive to August 1, 2017, which was done to make sure St. Francis was included. Thanks for your efforts-Craig"

Feldman continued saying that they wrote letters to these people to let them know the amount of burden that was being put on the public by the amount of debt load and cost of the wastewater treatment facility. This is going to make a hard situation better, and we won't be blindsided by costs.

Teicher said this is investment protection.

Feldman thanked Teicher and Barten for working with him on this and wanted everyone to know to please be careful over this Memorial Weekend Holiday and it's important to remember our veterans. Enjoy the holiday and do it safely.

D. Upcoming Events –

May 29 2nd Annual Bike Rodeo @ Police/Public Works Facility 5 pm
June 4 City Council Meeting @ ISD #15 Central Services Center 6 pm
Jun 8-10 PIONEER DAYS WEEKEND

C..Attorney's Report - Closed meeting to Discuss Union Negotiation Strategy Pursuant to Minn. State Statute 13D.03

MOTION TO ADJOURN THE PUBLIC SEGMENT OF THE MEETING PURSUANT TO STATUTE 13D.03 AT 7:10 PM BY SKORDAHL, SECONDED BY TVEIT; ALL IN FAVOR, MOTION PASSES.

CLOSED MEETING TO DISCUSS UNION NEGOTIATION STRATEGY PURSUANT TO MINN. STATE STATUTE 13D.03 OPENED BY MAYOR FELDMAN AT 7:14 PM.

ROLL CALL:

Members present: Mayor Steve Feldman, Councilmembers Jerry Tveit, Joe Muehlbauer, and Rich Skordahl.

Also present: Assistant City Attorney Dave Schaps (Barna, Guzy & Steffen), and City Administrator Joe Kohlmann

MOTION TO RE-OPEN THE MEETING BY MUEHLBAUER, SECONDED BY TVEIT; ALL IN FAVOR, MOTION PASSES.

Assistant City Attorney Schaps explained the Police Sergeant's Union Contract.

MOTION TO APPROVE THE UNION NEGOTIATION STRATEGY PURSUANT TO MINN. STATE STATUTE 13D.03 BY MUEHLBAUER, SECONDED BY TVEIT; ALL IN FAVOR, MOTION PASSES.

12. **ADJOURNMENT**

MOTION TO ADJOURN THE CLOSED MEETING TO DISCUSS UNION NEGOTIATION STRATEGY PURSUANT TO MINN. STATE STATUTE 13D.03 AT 7:23 PM BY MUEHLBAUER, SECONDED BY FELDMAN; ALL IN FAVOR, MOTION PASSES.

Respectfully Submitted by:

Lori Streich, Acct Tech / Deputy Clerk



**CITY COUNCIL
AGENDA REPORT**
Agenda Item #:
4 B

TO: Joe Kohlmann, City Administrator
FROM: Barb Held, City Clerk
SUBJECT: St. Francis Area Chamber of Commerce Parade Permit
DATE: June 4, 2018

OVERVIEW:

The St. Francis Area Chamber of Commerce (SFACOC) has submitted an application for a parade permit. The parade is part of the Pioneer Day's celebration. SFACOC already submitted to Anoka County the permit needed to use and shut down the county roads. The parade is Saturday, June 9th and starts at 1:00 pm.

ACTION TO BE CONSIDERED:

Consideration to approve the parade permit for the SFACOC on June 9, 2018.

BUDGET IMPLICATION:

none

Attachments: Permit Application
Anoka County Permit
Parade Route



PARADE / BIKE-SNOWMOBILE RIDE / TRIATHLON PERMIT

APPLICATION

Please complete the following form for: (Circle one) Parade-Bike/Snowmobile Ride-Triathlon:

Name of Organization St. Francis Area Chamber of Commerce

Contact Person Lindsey Johnson Date of Event June 9, 2018 Pioneer Days

Address 23212 St. Francis Blvd. St. Francis MN 55070
(Street) (City) (State & Zip)

Phone () 763-753-8804 Email address pd.parade@stfrancischamber.org

Number of Estimated Participants 500-1000 Starting/Ending Time of Event Line up-Noon Parade 1:00 pm

***Provide a map of the route and description of the event:

Parade line up starts at noon, parade begins at 1:00 pm including a variety of floats for businesses, royalty, non-profit and entertainment.

Parade route map and Anoka County approval are included.

(ORGANIZATION MUST PROVIDE CERTIFICATE OF INSURANCE WITH THE CITY OF ST. FRANCIS NAMED AS THE CERTIFICATE HOLDER)

Please contact the St. Francis Police Department at 763-753-1264 regarding number of officers needed for this event.

CITY OF ST. FRANCIS
23340 Cree Street NW
ST. FRANCIS, MN 55070
Fax 763-753-9881
city@stfrancismn.org



ANOKA COUNTY HIGHWAY DEPARTMENT
1440 BUNKER LAKE BLVD. N.W.
ANDOVER, MN 55304
PHONE (763) 763-324-3176

PERMIT NUMBER

S18-036

Filing Fee: \$50.00

SPECIAL EVENT PERMIT

NAME OF APPLICANT:		St. Francis Pioneer Days Parade	
ADDRESS: 23212 St. Francis Blvd, #400 St. Francis, MN 55070		TELEPHONE: 763-753-2630	
GROUP SPONSORING EVENT:		St. Francis Pioneer Days Committee	
DATE OF EVENT: Saturday June 9, 2018		HOURS OF EVENT: 11:30 a.m. - 3:00 p.m.	
NATURE OF EVENT:		Parade	
CITY OR TOWNSHIP:		St. Francis	
LOCATION:		CSAH 28 (Ambassador Blvd) & CSAH 24 (Bridge St)	
ROADS IMPACTED BY EVENT:		CSAH 28&24 CR	
CITY OR TOWNSHIP PERMIT REQUIRED?		YES	NO
OBTAINED?		YES	NO
ANOKA COUNTY SHERIFF'S OFFICE:	APPROVAL		SUPPORT
	YES	NO	N/A
LOCAL LAW ENFORCEMENT AGENCY: St. Francis P.D	APPROVAL		SUPPORT
	YES	NO	N/A
TRAFFIC CONTROL APPROVAL?		YES	NO
RESTRICTIONS: See Attached		N/A	
I, We, the undersigned, herewith accept the terms and conditions of the regulations as laid down by the County of Anoka and agree to fully comply therewith to the satisfaction of the Anoka County Highway Department. The County of Anoka, its officials and employees shall be held harmless, by the permittee, from any demands, claims or suits arising out of granting of the permit. Date <u>4 / 28 / 2018</u> Applicant's Signature <u>Rindsey Johnson</u>			

AUTHORIZATION OF PERMIT

In consideration of the applicant's agreement to comply in all respects with the regulations of the ACHD covering such operations, permission is hereby granted for this special event as described in the above application. Said event will be held in accordance with the conditions listed above.

ANOKA COUNTY HIGHWAY DEPARTMENT

Approved By _____ Issued By _____ Date ____/____/____



ANOKA COUNTY HIGHWAY DEPARTMENT
1440 BUNKER LAKE BLVD. N.W.
ANDOVER, MN 55304
PHONE (763)324-3176

PERMIT NUMBER

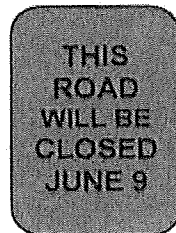
S18-036

SPECIAL PROVISIONS

(ST. FRANCIS PIONEER DAYS PARADE)

Traffic control will be managed by both the City of St. Francis Police Department and the St. Francis Fire Department. Traffic will be directed around the parade route by police officers and fire fighters stationed at locations shown on the attached map.

Advance notice signs are to be installed on the 10 days prior to the event (May 30th, 2018) to notify motorists that the road will be closed on June 9. One sign facing southbound traffic is to be placed just east of TH 47 on CSAH 28 (Ambassador Blvd.) and one sign facing northbound traffic is to be placed just north of 229th Ave. on CSAH 24 (Ambassador Blvd.). Sign format for these advance notice signs shall be as shown below.



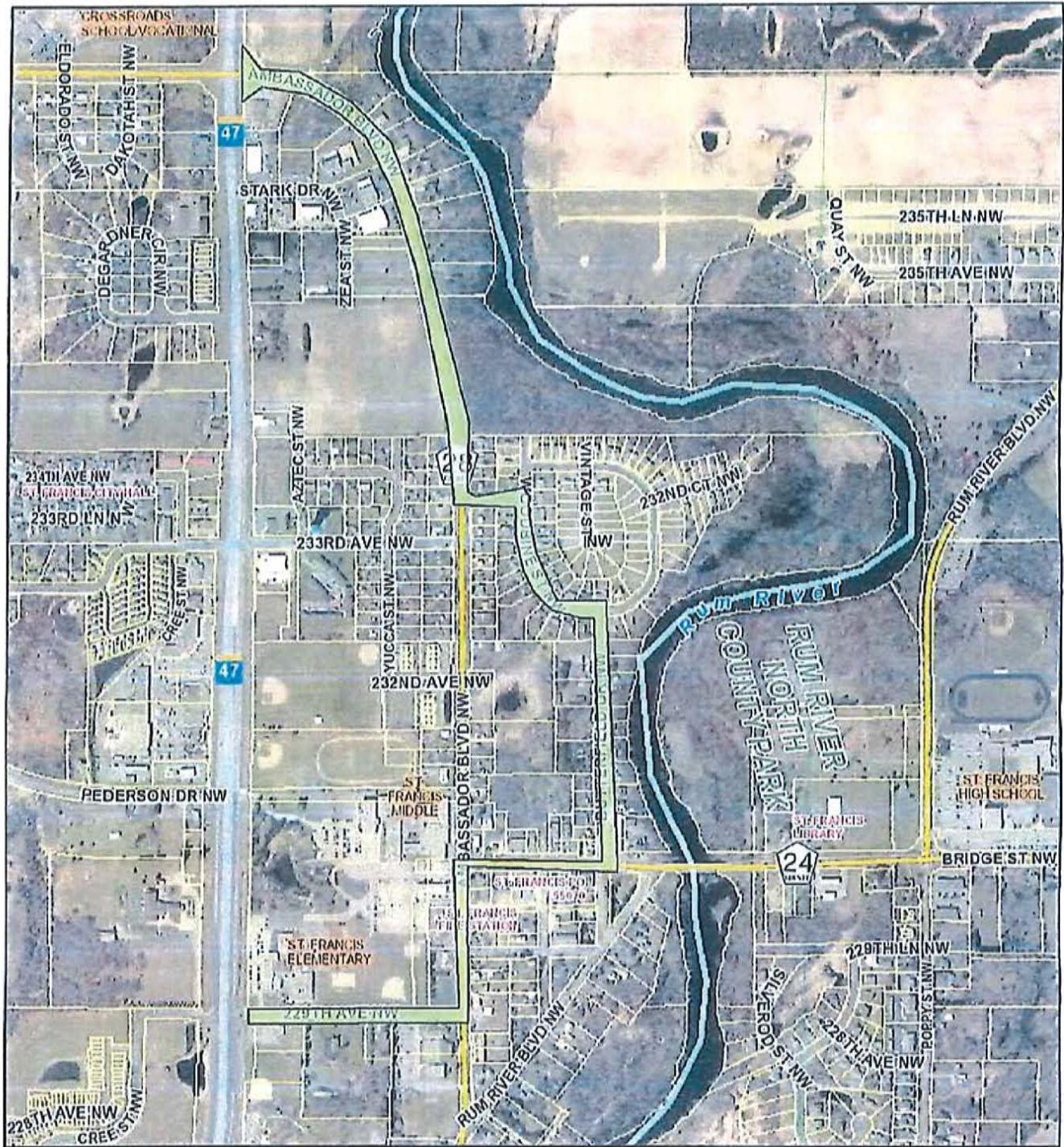
ALL police, fire and ambulance services for this area are to be notified at least 48 hours prior to the parade. Police, fire and ambulance services shall have a plan in place for emergencies.

Staging of parade units along CSAH 28 (Ambassador Blvd.) shall be accomplished on shoulder areas only. If parade units occupy any portion of a through traffic lane, flag persons shall be used to direct traffic around parade units. Other traffic control measures deemed necessary by the St. Francis Police Department for the staging of parade units may be implemented at the direction of the Chief of Police.

Post temp no parking signs both sides of 227th Ave on Friday, Saturday, Sunday of Pioneer Days.

Event organizers shall be held responsible for clean up of litter along parade route.

Pioneer Days Parade Route



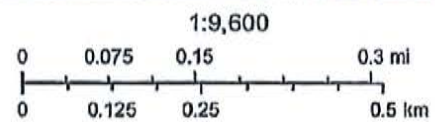
May 19, 2015

103 CR, 103

CR, 104

CR, 105

CR, 106



ACHD
ACHD



**CITY COUNCIL
AGENDA REPORT**

Agenda Item #:

4 C

TO: Joe Kohlmann, City Administrator
FROM: Darcy Mulvihill, Finance Director
SUBJECT: Bill List to be considered by Council
DATE: 05/30/2018

OVERVIEW:

Attached are the bills received since the last council meeting. Total checks to be written are \$126,426.44 plus any additional bills that are handed out on Monday night. Also to be approved are the May Manual Check of \$1,174.55.

ACTION TO BE CONSIDERED:

Approved under consent agenda to allow Finance Director to draft checks or ACH withdrawals for the attached bill list. Please note additional bills may be handed out at the council meeting.

BUDGET IMPLICATION:

City bills

Attachments:

- 06-04-2018 Packet List
- 06-04-2018 Other Checks

Checks cut since last Council Meeting

Payee	Description	Amount
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TOTAL	0.00
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Disbursements via Debits to Checking Account

[illegible]



05/30/2018 3:38 pm

PAYMENT BATCH AP 06-04-18

ALWAYS BRIGHT LIGHTS LTD

05/18/2018	724	E 101-45230-311	Contract	INSTALLED PIONEER DAYS BAN	250.00
					<u>\$250.00</u>

ARTISAN BEER COMPANY

05/16/2018	3262573	E 609-49751-252	Beer For Resale	BEER	105.50
					<u>\$105.50</u>

ASPEN MILLS

05/23/2018	217127	E 101-42210-437	Uniform Allowance	UNIFORMS	194.55
					<u>\$194.55</u>

BAUER BUILT INC.

04/16/2018	0940050119	E 101-42110-221	Vehicle Repair & Maintenance	TIRES	258.20
					<u>\$258.20</u>

BELLBOY CORPORATION

05/22/2018	64277100	E 609-49751-206	Freight and Fuel Charges	FREIGHT	23.25
05/22/2018	64277100	E 609-49751-251	Liquor For Resale	LIQUOR	1,875.85
05/22/2018	97640200	E 609-49750-210	Operating Supplies	FREIGHT	4.65
05/22/2018	97640200	E 609-49750-210	Operating Supplies	OPERATING	64.52
05/22/2018	97640200	E 609-49751-254	Miscellaneous Merchandise	MISC	72.00
					<u>\$2,040.27</u>

BERNICK COMPANIES, THE

05/18/2018	427046	E 609-49751-254	Miscellaneous Merchandise	MISC	14.00
05/18/2018	427047	E 609-49751-252	Beer For Resale	BEER	458.00
05/25/2018	428580	E 609-49751-252	Beer For Resale	BEER	318.10
					<u>\$790.10</u>

BREAKTHRU BEVERAGE

05/17/2018	1080801956	E 609-49751-206	Freight and Fuel Charges	FREIGHT	18.84
05/17/2018	1080801956	E 609-49751-251	Liquor For Resale	LIQUOR	923.21
05/17/2018	1080801956	E 609-49751-253	Wine For Resale	WINE	225.99
05/17/2018	1080801957	E 609-49751-252	Beer For Resale	BEER	246.00
05/17/2018	1080801958	E 609-49751-206	Freight and Fuel Charges	FREIGHT	2.06
05/17/2018	1080801958	E 609-49751-251	Liquor For Resale	LIQUOR	124.00
05/24/2018	1080805174	E 609-49751-206	Freight and Fuel Charges	FREIGHT	38.23
05/24/2018	1080805174	E 609-49751-251	Liquor For Resale	LIQUOR	1,468.67
05/24/2018	1080805174	E 609-49751-253	Wine For Resale	WINE	336.00
05/24/2018	1080805174	E 609-49751-254	Miscellaneous Merchandise	MISC	176.00
					<u>\$3,559.00</u>

CENTERPOINT ENERGY

05/16/2018	5944643-5	E 101-41940-383	Gas Utilities	CITY HALL #1	23.56
05/16/2018	5944643-5	E 101-41940-383	Gas Utilities	CITY HALL #2	29.77
05/16/2018	5944643-5	E 101-41940-383	Gas Utilities	CITY HALL #4	23.84
05/16/2018	5944643-5	E 101-41940-383	Gas Utilities	CITY HALL #3	26.67
05/16/2018	5944643-5	E 101-42110-383	Gas Utilities	POLICE/PW	433.48
05/16/2018	5944643-5	E 101-42210-383	Gas Utilities	FIRE GENERATOR	68.16
05/16/2018	5944643-5	E 101-42210-383	Gas Utilities	FIRE	323.03
05/16/2018	5944643-5	E 101-43100-383	Gas Utilities	POLICE/PW	108.37
05/16/2018	5944643-5	E 101-45200-383	Gas Utilities	WARMING HOUSE	77.67
05/16/2018	5944643-5	E 101-45200-383	Gas Utilities	POLICE/PW	108.37
05/16/2018	5944643-5	E 601-49440-383	Gas Utilities	WATER PLANT	573.17
05/16/2018	5944643-5	E 601-49440-383	Gas Utilities	POLICE/PW	108.37
05/16/2018	5944643-5	E 601-49440-383	Gas Utilities	PUBLIC WORKS (4020 ST FRAN	36.74

05/16/2018	5944643-5	E 602-49490-383	Gas Utilities	WWTP	24.77
05/16/2018	5944643-5	E 602-49490-383	Gas Utilities	POLICE/PW	108.36
05/16/2018	5944643-5	E 602-49490-383	Gas Utilities	WWTP	574.42
05/16/2018	5944643-5	E 602-49490-383	Gas Utilities	PUBLIC WORKS (4020 ST FRAN	36.74
05/16/2018	5944643-5	E 602-49490-383	Gas Utilities	LIFT (23699 AMBASSADOR)	22.32
05/16/2018	5944643-5	E 609-49750-383	Gas Utilities	LIQUOR	102.93
					<u>\$2,810.74</u>

CHOICE HOMES

04/20/2018	052318	G 601-22200	Deferred Revenues	REF ACCT #5228	55.99
					<u>\$55.99</u>

CINTAS

05/15/2018	4005923958	E 609-49750-219	Rug Maintenance	RUG MAINT	11.26
05/22/2018	4006083610	E 601-49440-417	Uniform Clothing & PPE	UNIFORMS	4.65
05/22/2018	4006083610	E 602-49490-417	Uniform Clothing & PPE	UNIFORMS	4.66
					<u>\$20.57</u>

CITY EMPLOYEES UNION, LOCAL #3

05/23/2018	052318	G 101-21707	Union Dues	MAINT UNION DUES JUNE, 2018	211.50
					<u>\$211.50</u>

COLONIAL INSURANCE

05/25/2018	7129661-06053	G 101-21712	Colonial Insurance	INSURANCE	371.24
					<u>\$371.24</u>

CONNEXUS ENERGY

05/21/2018	.0518	E 101-41940-381	Electric Utilities	SIGN	84.27
05/21/2018	.0518	E 101-41940-381	Electric Utilities	CITY HALL	282.28
05/21/2018	.0518	E 101-42110-381	Electric Utilities	POLICE/PW	898.11
05/21/2018	.0518	E 101-42110-381	Electric Utilities	SIREN	5.00
05/21/2018	.0518	E 101-42110-381	Electric Utilities	SIREN	5.00
05/21/2018	.0518	E 101-42210-381	Electric Utilities	FIRE	360.43
05/21/2018	.0518	E 101-43100-381	Electric Utilities	POLICE/PW	224.53
05/21/2018	.0518	E 101-43100-386	Street Lighting	STREET LIGHTS	2,473.98
05/21/2018	.0518	E 101-45200-381	Electric Utilities	POLICE/PW	224.53
05/21/2018	.0518	E 101-45200-381	Electric Utilities	PARKS	223.58
05/21/2018	.0518	E 601-49440-380	Electric-System	WATER	4,107.59
05/21/2018	.0518	E 601-49440-381	Electric Utilities	POLICE/PW	224.53
05/21/2018	.0518	E 602-49490-381	Electric Utilities	LIFT STATIONS	739.43
05/21/2018	.0518	E 602-49490-381	Electric Utilities	WWTP	6,964.95
05/21/2018	.0518	E 602-49490-381	Electric Utilities	POLICE/PW	224.52
05/21/2018	.0518	E 609-49750-381	Electric Utilities	LIQUOR STORE	904.89
					<u>\$17,947.62</u>

COUNTY MARKET - CITY ACCOUNT

04/30/2018	052418	E 101-42210-212	Motor Fuels	FUEL	249.87
					<u>\$249.87</u>

CROWLEY, NANCY

04/20/2018	052318	G 601-22200	Deferred Revenues	REF ACCT #2720	88.73
					<u>\$88.73</u>

CRYSTAL SPRINGS ICE

05/15/2018	003.B006464	E 609-49751-254	Miscellaneous Merchandise	MISC	123.64
05/21/2018	003.B006527	E 609-49751-254	Miscellaneous Merchandise	MISC	147.20
05/26/2018	003.B006625	E 609-49751-254	Miscellaneous Merchandise	MISC	166.14
					<u>\$436.98</u>

D & G RECYCLE

05/21/2018	2359	E 101-43210-439	Recycling Days	TIRES	134.00
					<u>\$134.00</u>

DAHLHEIMER DIST. CO. INC.

05/16/2018	176436	E 609-49751-252	Beer For Resale	BEER	7,050.75
05/23/2018	1347097	E 609-49751-252	Beer For Resale	BEER	13,912.20
05/23/2018	1347097	E 609-49751-255	N/A Products	NA	43.65

					\$21,006.60
DELTA DENTAL					
05/15/2018	7290794	G 101-21711	Dental Insurance	JUNE PREMIUM	1,156.95
					\$1,156.95
DILLS, NICOLE & NICHOLAS					
04/20/2018	052318	G 601-22200	Deferred Revenues	REF ACCT #4258	221.14
					\$221.14
EAGLE GARAGE DOOR CO.					
05/14/2018	4977	E 101-42110-401	Repairs/Maint Buildings	DOOR REPAIR	62.00
05/14/2018	4977	E 101-43100-401	Repairs/Maint Buildings	DOOR REPAIR	62.00
05/14/2018	4977	E 101-45200-401	Repairs/Maint Buildings	DOOR REPAIR	62.00
05/14/2018	4977	E 601-49440-401	Repairs/Maint Buildings	DOOR REPAIR	62.00
05/14/2018	4977	E 602-49490-401	Repairs/Maint Buildings	DOOR REPAIR	62.00
					\$310.00
ECM PUBLISHERS, INC.					
05/11/2018	597863	E 101-41400-351	Legal Notices Publishing	CANDIDATE FILING	64.50
05/11/2018	597864	E 101-41400-351	Legal Notices Publishing	ORDINANCE NO 239 SS	139.75
					\$204.25
EMERGENCY MEDICAL PRODUCTS					
05/16/2018	1987849	E 101-42210-217	Other Operating Supplies	OPIOID OVERDOSE KIT	66.26
					\$66.26
FREEMAN, ANDREW & TRICIA					
04/20/2018	052318	G 601-22200	Deferred Revenues	REF ACCT #3959	83.01
					\$83.01
GRANITE CITY JOBBING CO.					
05/15/2018	90756	E 609-49750-210	Operating Supplies	OPERATING	95.42
05/15/2018	90756	E 609-49751-206	Freight and Fuel Charges	FUEL	6.33
05/15/2018	90756	E 609-49751-254	Miscellaneous Merchandise	MISC	164.38
05/15/2018	90756	E 609-49751-256	Tobacco Products For Resale	TOBACCO	1,654.69
					\$1,920.82
HAKANSON ANDERSON ASSOC., INC.					
04/30/2018	39867	G 803-22155	BJORKLUND WETLAND ESCROW	BJORKLUND WETLAND	336.00
04/30/2018	39868	G 803-22154	ALS-WOODHAVEN COND USE	SF240 WOODHAVEN 6TH	3,007.25
04/30/2018	39869	G 803-22043	Esc-River s Edge/Siwex	SF241 RIVERS EDGE	84.00
04/30/2018	39870	E 101-43100-303	Engineering Fees	MUNICIPAL STATE AID	162.05
04/30/2018	39871	E 101-43100-303	Engineering Fees	GEN ENGINEERING	420.00
04/30/2018	39871	G 803-22158	ESC-BROOKSIDE-241ST DRIVE	GEN ENGINEERING	196.00
04/30/2018	39872	E 101-41910-303	Engineering Fees	ROUTINE SERVICES	133.30
04/30/2018	39872	E 101-43100-303	Engineering Fees	ROUTINE SERVICES	133.34
04/30/2018	39872	E 101-45200-303	Engineering Fees	ROUTINE SERVICES	133.34
04/30/2018	39872	E 601-49440-303	Engineering Fees	ROUTINE SERVICES	133.34
04/30/2018	39872	E 602-49490-303	Engineering Fees	ROUTINE SERVICES	133.34
04/30/2018	39872	E 603-49490-303	Engineering Fees	ROUTINE SERVICES	133.34
					\$5,005.30
HOBBS, MICHAEL & SHANTEL					
05/10/2018	052318	G 601-22200	Deferred Revenues	REF ACCT #3133	96.53
					\$96.53
HOLLINGSWORTH, JEREMY & HAYLEY					
04/20/2018	052318	G 601-22200	Deferred Revenues	REF ACCT #3214	89.34
					\$89.34
INNOVATIVE OFFICE SOLUTIONS, L					
05/17/2018	IN2051279	E 101-43100-240	Office Equip	CALCULATOR, DSKTP	21.62
05/22/2018	IN2056000	E 101-42110-200	Office Supplies	OFFICE SUPPLIES	87.77
					\$109.39
INTERSTATE TESTING					
05/18/2018	13305	E 101-42210-218	Equipment Repair & Maintenance	ANNUAL BACK FLOW TEST	250.00

05/18/2018	13305	E 101-43100-218	Equipment Repair & Maintenance	ANNUAL BACK FLOW TEST	250.00
05/18/2018	13305	E 601-49440-229	Project Repair & Maintenance	ANNUAL BACK FLOW TEST	250.00
					<u>\$750.00</u>

ISD #15					
05/21/2018	3763	E 101-43100-221	Vehicle Repair & Maintenance	TIRE REPAIR	20.98
05/24/2018	3764	E 101-42110-221	Vehicle Repair & Maintenance	2013 DODGE CHARGER	43.24
05/29/2018	3767	E 101-42110-221	Vehicle Repair & Maintenance	2014 DODGE CHARGER	201.28
					<u>\$265.50</u>

JJ TAYLOR DISTRIBUTING					
05/23/2018	2846046	E 609-49751-206	Freight and Fuel Charges	FREIGHT	3.00
05/23/2018	2846046	E 609-49751-252	Beer For Resale	BEER	2,093.30
					<u>\$2,096.30</u>

JOHNSON BROS WHLSE LIQUOR					
04/30/2018	677391	E 609-49751-251	Liquor For Resale	LIQUOR	(81.00)
05/11/2018	679407	E 609-49751-206	Freight and Fuel Charges	FREIGHT	(1.57)
05/11/2018	679407	E 609-49751-251	Liquor For Resale	LIQUOR	(96.00)
05/16/2018	1009528	E 609-49751-206	Freight and Fuel Charges	FREIGHT	14.13
05/16/2018	1009528	E 609-49751-251	Liquor For Resale	LIQUOR	959.83
05/16/2018	1009529	E 609-49751-206	Freight and Fuel Charges	FREIGHT	15.70
05/16/2018	1009529	E 609-49751-253	Wine For Resale	WINE	505.35
05/16/2018	1009530	E 609-49751-253	Wine For Resale	WINE	45.98
05/16/2018	1009531	E 609-49751-206	Freight and Fuel Charges	FREIGHT	9.42
05/16/2018	1009531	E 609-49751-254	Miscellaneous Merchandise	MISC	249.25
05/23/2018	1015438	E 609-49751-206	Freight and Fuel Charges	FREIGHT	49.97
05/23/2018	1015438	E 609-49751-251	Liquor For Resale	LIQUOR	5,057.05
05/23/2018	1015439	E 609-49751-206	Freight and Fuel Charges	FREIGHT	36.11
05/23/2018	1015439	E 609-49751-253	Wine For Resale	WINE	1,159.45
05/23/2018	1015440	E 609-49751-252	Beer For Resale	BEER	123.00
05/23/2018	1015441	E 609-49751-206	Freight and Fuel Charges	FREIGHT	9.42
					<u>\$8,056.09</u>

K. Benjamin Skurdal Trust					
04/20/2018	052318	G 601-22200	Deferred Revenues	REFUND ACCT #5296	136.87
					<u>\$136.87</u>

KIMS KLEANING					
05/29/2018	5126	E 101-41940-402	Janitorial Service	CITY HALL	120.00
05/29/2018	5127	E 101-45000-402	Janitorial Service	COMMUNITY CENTER	80.00
05/29/2018	5128	E 101-43100-402	Janitorial Service	PUBLIC WORKS	181.25
05/29/2018	5128	E 101-45200-402	Janitorial Service	PUBLIC WORKS	181.25
05/29/2018	5128	E 601-49440-402	Janitorial Service	PUBLIC WORKS	181.25
05/29/2018	5128	E 602-49490-402	Janitorial Service	PUBLIC WORKS	181.25
05/29/2018	5129	E 601-49440-402	Janitorial Service	WATER PLANT	160.00
05/29/2018	5130	E 101-42110-402	Janitorial Service	POLICE	900.00
05/29/2018	5131	E 602-49490-402	Janitorial Service	WASTEWATER PLANT	275.00
05/29/2018	5132	E 101-45200-402	Janitorial Service	CONCESSION AND WARMING	125.00
					<u>\$2,385.00</u>

LAW ENFORCEMENT LABOR SVCS.					
05/23/2018	052318	G 101-21707	Union Dues	OFFICERS-JUNE 2018	392.00
05/23/2018	052318	G 101-21707	Union Dues	SARGENTS-JUNE 2018	83.71
					<u>\$475.71</u>

MCDONALD DIST CO.					
05/15/2018	446418	E 609-49751-252	Beer For Resale	BEER	6,779.10
05/15/2018	446418	E 609-49751-255	N/A Products	N/A	107.10
05/22/2018	112-0315	E 609-49751-252	Beer For Resale	BEER	(15.95)
05/22/2018	447294	E 609-49751-252	Beer For Resale	BEER	14,059.15
05/22/2018	447294	E 609-49751-255	N/A Products	N/A	107.10
					<u>\$21,036.50</u>

MHSRC/RANGE					
05/22/2018	629430-6397	E 101-42210-208	Training and Instruction	EVOC LAW ENFORCEMENT CLA	830.00
					<u>\$830.00</u>

MINUTEMAN PRESS

05/29/2018	977989	E 101-41110-344	Newsletter	NEWSLETTER	125.60
05/29/2018	977989	E 101-41400-441	Miscellaneous	NEWSLETTER	125.60
05/29/2018	977989	E 101-42110-441	Miscellaneous	NEWSLETTER	125.60
05/29/2018	977989	E 101-42210-441	Miscellaneous	NEWSLETTER	125.60
05/29/2018	977989	E 101-42400-352	General Notices and Pub Info	NEWSLETTER	125.60
05/29/2018	977989	E 101-43100-441	Miscellaneous	NEWSLETTER	125.60
05/29/2018	977989	E 101-43210-439	Recycling Days	NEWSLETTER	266.49
05/29/2018	977989	E 101-45200-441	Miscellaneous	NEWSLETTER	125.61
05/29/2018	977989	E 601-49440-441	Miscellaneous	NEWSLETTER	125.60
05/29/2018	977989	E 602-49490-441	Miscellaneous	NEWSLETTER	125.60
05/29/2018	977989	E 609-49750-441	Miscellaneous	NEWSLETTER	125.60
					\$1,522.50

MN DEPT OF HEALTH

05/16/2018	052318	E 601-49440-313	Sample Testing	SVC CONNECTION FEE	2,665.00
					\$2,665.00

NORTHERN AIR CORPORATION

05/24/2018	149354	E 101-41940-401	Repairs/Maint Buildings	CITY HALL AC UNIT 2	1,227.70
					\$1,227.70

PACE ANALYTICAL SERVICES

05/15/2018	181293480	E 602-49490-313	Sample Testing	SAMPLE TESTING	153.00
05/16/2018	181293510	E 602-49490-313	Sample Testing	SAMPLE TESTING	108.00
					\$261.00

PAUSTIS WINE COMPANY

05/14/2018	10963	E 609-49751-206	Freight and Fuel Charges	FREIGHT	5.25
05/14/2018	10963	E 609-49751-253	Wine For Resale	WINE	317.13
					\$322.38

PHILLIPS WINE & SPIRITS CO.

05/16/2018	2357987	E 609-49751-206	Freight and Fuel Charges	FREIGHT	61.23
05/16/2018	2357987	E 609-49751-251	Liquor For Resale	LIQUOR	3,067.40
05/16/2018	2357988	E 609-49751-206	Freight and Fuel Charges	FREIGHT	3.14
05/16/2018	2357988	E 609-49751-253	Wine For Resale	WINE	93.25
05/16/2018	2357989	E 609-49751-206	Freight and Fuel Charges	FREIGHT	4.71
05/16/2018	2357989	E 609-49751-254	Miscellaneous Merchandise	MISC	112.50
05/23/2018	2362036	E 609-49751-206	Freight and Fuel Charges	FREIGHT	24.33
05/23/2018	2362036	E 609-49751-251	Liquor For Resale	LIQUOR	2,735.35
05/23/2018	2362037	E 609-49751-206	Freight and Fuel Charges	FREIGHT	43.96
05/23/2018	2362037	E 609-49751-253	Wine For Resale	WINE	1,262.00
					\$7,407.87

ROSEVILLE, CITY OF

05/23/2018	0224544	E 101-41110-310	Computer Consulting Fees	IT SERVICES	291.98
05/23/2018	0224544	E 101-41400-310	Computer Consulting Fees	IT SERVICES	948.95
05/23/2018	0224544	E 101-41910-310	Computer Consulting Fees	IT SERVICES	146.06
05/23/2018	0224544	E 101-42110-310	Computer Consulting Fees	IT SERVICES	3,357.85
05/23/2018	0224544	E 101-42210-310	Computer Consulting Fees	IT SERVICES	540.17
05/23/2018	0224544	E 101-42400-310	Computer Consulting Fees	IT SERVICES	270.08
05/23/2018	0224544	E 101-43100-310	Computer Consulting Fees	IT SERVICES	291.98
05/23/2018	0224544	E 101-45200-310	Computer Consulting Fees	IT SERVICES	291.98
05/23/2018	0224544	E 601-49440-310	Computer Consulting Fees	IT SERVICES	291.98
05/23/2018	0224544	E 602-49490-310	Computer Consulting Fees	IT SERVICES	291.98
05/23/2018	0224544	E 609-49750-310	Computer Consulting Fees	IT SERVICES	145.99
05/23/2018	0224585	E 101-41940-321	Telephone	PHONE	83.79
05/23/2018	0224585	E 101-42110-321	Telephone	PHONE	83.79
05/23/2018	0224585	E 101-42210-321	Telephone	PHONE	83.79
05/23/2018	0224585	E 101-43100-321	Telephone	PHONE	83.79
05/23/2018	0224585	E 101-45200-321	Telephone	PHONE	83.79
05/23/2018	0224585	E 601-49440-321	Telephone	PHONE	83.79
05/23/2018	0224585	E 602-49490-321	Telephone	PHONE	83.79
05/23/2018	0224585	E 609-49750-321	Telephone	PHONE	83.82
					\$7,539.35

ROYAL SUPPLY

05/24/2018	23501	E 101-41940-210	Operating Supplies	COFFEE	12.92
05/24/2018	23501	E 101-42110-217	Other Operating Supplies	COFFEE	51.69
05/24/2018	23501	E 101-43100-217	Other Operating Supplies	COFFEE	25.84
05/24/2018	23501	E 101-45200-217	Other Operating Supplies	COFFEE	25.84
05/24/2018	23501	E 601-49440-217	Other Operating Supplies	COFFEE	25.84
05/24/2018	23501	E 602-49490-217	Other Operating Supplies	COFFEE	25.87
					\$168.00

SOUTHERN GLAZERS OF MN

05/17/2018	1683630	E 609-49751-206	Freight and Fuel Charges	FREIGHT	23.04
05/17/2018	1683630	E 609-49751-251	Liquor For Resale	LIQUOR	1,624.45
05/24/2018	1686234	E 609-49751-206	Freight and Fuel Charges	FREIGHT	6.40
05/24/2018	1686234	E 609-49751-253	Wine For Resale	WINE	210.00
05/24/2018	1686235	E 609-49751-206	Freight and Fuel Charges	FREIGHT	14.63
05/24/2018	1686235	E 609-49751-251	Liquor For Resale	LIQUOR	2,171.21
					\$4,049.73

SPOT ON

05/22/2018	8004	E 101-45230-311	Contract	PIONEER DAYS BANNERS DATE	115.00
					\$115.00

SUN LIFE FINANCIAL

06/30/2018	99357	E 101-41400-130	Employer Paid Insurance	INSURANCE	202.03
06/30/2018	99357	E 101-41500-130	Employer Paid Insurance	INSURANCE	132.13
06/30/2018	99357	E 101-41910-130	Employer Paid Insurance	INSURANCE	135.59
06/30/2018	99357	E 101-42110-130	Employer Paid Insurance	INSURANCE	865.33
06/30/2018	99357	E 101-42400-130	Employer Paid Insurance	INSURANCE	67.95
06/30/2018	99357	E 101-43100-130	Employer Paid Insurance	INSURANCE	189.18
06/30/2018	99357	E 101-43210-130	Employer Paid Insurance	INSURANCE	42.04
06/30/2018	99357	E 101-45200-130	Employer Paid Insurance	INSURANCE	189.18
06/30/2018	99357	E 601-49440-130	Employer Paid Insurance	INSURANCE	60.24
06/30/2018	99357	E 602-49490-130	Employer Paid Insurance	INSURANCE	60.23
06/30/2018	99357	E 609-49750-130	Employer Paid Insurance	INSURANCE	128.10
					\$2,072.00

SUPERIOR MARKETING CONCEPTS

05/17/2018	FMR	E 609-49750-340	Advertising	ADVERTISING	250.00
					\$250.00

THE AMERICAN BOTTLING COMPANY

05/17/2018	3562803128	E 609-49751-254	Miscellaneous Merchandise	MISC	463.52
					\$463.52

TJ ASSOCIATES

03/13/2018	226507	E 101-43210-439	Recycling Days	SPRING NEWSLETTER 2018	1,311.75
05/15/2018	227117	E 101-42110-308	Community Education	REPL STICKERS FOR SIGNS	30.00
05/18/2018	227166	E 101-42110-308	Community Education	SIGNS	143.80
05/23/2018	227214	E 101-42110-308	Community Education	SAFETY GREEN TSHIRTS	73.70
					\$1,559.25

VINOCOPIA, INC.

05/18/2018	0207123-IN	E 609-49751-206	Freight and Fuel Charges	FREIGHT	9.00
05/18/2018	0207123-IN	E 609-49751-253	Wine For Resale	WINE	560.00
					\$569.00

WHALEN, KEITH & JENNIFER

04/20/2018	052318	G 601-22200	Deferred Revenues	REF ACCT #3609	407.72
					\$407.72

FUND SUMMARY

101 GENERAL FUND	\$26,582.95
601 WATER FUND	\$10,273.42
602 SEWER FUND	\$10,200.23

603 STORM WATER	\$133.34
609 MUNICIPAL LIQUOR FUND	\$75,613.25
803 ESCROW	\$3,623.25
Total	<u>126,426.44</u>

Community Events Postings

Website & Facebook Postings

City Hall – that I (Jen) did or helped with before Mike C. was hired:

- Easter Bingo 2018
- Easter Egg Hunt 2018
- The Top Secret Project – SFHS 2018
- Santa on the Fire Truck 2017
- Casino Night – St. Francis Chamber Post 2018
- Community Tree Lighting 2017
- (2) Reminders to express opinion on 2040 Comp Plan 2017
- Breakfast with Santa – SF American Legion 2017
- SF American Legion A Gathering of Friends post 2017
- Community Tree Light Ceremony – 2017
- Fall Back – Daylight Saving time Reminder – 2017
- Dracula The Musical SFHS
- Chicken Permits – Notification 2017
- 1st Annual Community Saints Night SFHS 2017
- Tatorfest SF Lions 2017
- Movies in the Park 2017
- Alexandria House – Walk for Hope 2017
- SF Chamber Golf Tournament 2017
- Bottle Shop Open Sundays giveaway 2017
- City-Wide Garage Sale 2017
- Fire Prevention Week – Open House 2017
- Fall Newsletter 2017

Public Works – Jen Gulbrandson:

- Spring Recycling Day 2017 & 2018 – PW
- Holiday Lights & Cell Phone Collection 2017
- (3) Fall Recycling Events Post 2017
- Fall Street Sweeping 2017
- Shred Event (Recycling)
- Pioneer Days 2017
- Septic Smart Week 2017
- Summer Recycling Event 2017
- Drinking Water Week 2017 & 2018
-

Police Events – Lori Roberts

- PD Food Drive 2017
- PD Toy Drive 2017
- National Drug Take Back Day (Spring/Fall) 2017 & 2018
- Pet Clinic 2017 & 2018
- Bike Rodeo 2017 & 2018
- Come Visit Santa 2017
- National Night Out/Night to Unite 2017
- Eddie Eagle 2017

All Departments have posted this:

- Winter Parking Reminders – 2017 (All Depts. do this, I think)
- All Holiday Closing Notices 2017/2018

Facebook Only Posts

City Hall – that I (Jen) did or helped with before Mike C. was hired:

- Demolition of the old Food & Fuel 2017
- Granny's Closet Donations 2017
- Small Business Saturday 2017
- Happy Thanksgiving Post 2017
- New City Website Post – Come check it out! 2017
- Don't Forget to Vote, ISD15 – 2017
- Fire Dept. Live House Fire Notice – 2017
- Hiring Reserves Notice 2017
- Lost Dog – ULAF 2017
- Winter Driving Tips – 2017
- Construction Update (CR 24) 2017
-

Public Works – Jen Gulbrandson:

- Frozen Pipes 2018
- Sledding Hill – Usage Reminder, Have Fun! 2018
- Ice Rink opening – 2017
- Wooden Lath Reminders for plows
- Recycling Survey

Police – Lori Roberts or Dan Allen:

- Winning with Cops (PD)
- Jake Rehling remembrance post – 2017

- Other Agency Alerts 2017/2018
- Wanted/Missing Persons 2017/2018
- DWI Task Force
- National Weather Service – Winter Storm Possible 2018

Website Only Posts –

Public Works – Jen Gulbrandson

- Hydrant Flushing 2018
- Spring Street Sweeping 2018
-

**CITY COUNCIL
AGENDA REPORT**

Agenda Item #:

6A

TO: Mayor & City Council
FROM: Joe Kohlmann, City Administrator
SUBJECT: **Roers Investments Letter of Interest**
DATE: June 4th, 2018

OVERVIEW:

The City has received a Letter of Interest from Roers Investments, LLC. The Letter of Interest is regarding City owned property on Bridge Street.

Paul Keenan from Roers Investments will be in attendance for a presentation.

Action to be considered:

Motion to execute the Letter of Interest.

Date: May 17th, 2018

To: Mayor Steve Feldman
City of Saint Francis
23340 Cree Street NW St. Francis, MN 55070

Mayor Feldman,

ROERS INVESTMENTS, LLC, a Minnesota limited liability company (or its affiliated assignee) (the "Purchaser"), submits this Letter of Intent ("LOI") to The City of Saint Francis, Minnesota (the "Seller") with respect to the acquisition and development of certain property further described below and located in the city of St. Francis, MN (the "Property"). Subject to the execution of a definitive and mutually acceptable agreement of purchase and sale ("Purchase Agreement"), which Seller and Purchaser shall pursue with good faith and due diligence upon the execution hereof (the "Contract Negotiation Period"), the undersigned offers to purchase the subject property in accordance with the following terms and conditions:

1. Property. The Property at 3518 Bridge St NW, St. Francis, MN 55070 (the "Property"). Together with the real property, Purchaser is also purchasing all of Seller's rights, title and interest in all of the fixtures, improvements, leases, maps, reports, plans, and other such material is having to do with the Property including all land use entitlements, governmental permits and allocations, and other such governmental and agency approvals as may exist concerning the Property.
2. Purchase Price. The purchase price for the Property shall be One Hundred Fifty Thousand and NO/100 U.S. Dollars (\$150,000.00) less deposits and subject to customary adjustments and pro-rations (the "Purchase Price").
3. Inspection Period. The Purchaser shall have an inspection period of two hundred and seventy days (270 days) following execution and delivery of a purchase and sale contract (the "Contract") and delivery of the last of the due diligence items (the "Inspection Period"), during which time Purchaser may cancel the Contract at Purchaser's absolute discretion by written notice to Seller. A detailed list of due diligence items will be provided for in the Contract. Example items to be provided by the Seller include, but are not limited to: ALTA survey, Topographic Survey, Geotechnical survey, Phase I Environmental, etc. Seller shall deliver all of said items in its possession and control.
4. Deposits. All deposits shall be applicable to the Purchase Price at Closing and delivered as follows: a. Within five (5) business days of execution of the Contract, Purchaser will deliver to First American Title Insurance Co (the "Title Company"; Attn: Marissa Ulstad, Closing Officer, Phone: (612) 305-2008, Email: mulstad@firstam.com, the "Escrow Agent") an *Earnest Money*

Deposit in the sum of Fifty Thousand and NO/100 Dollars (\$25,000.00). The Earnest Money Deposit shall be fully refundable prior to the close of the Inspection Period.

5. Closing. The closing under the Contract shall occur thirty (60) days after the Inspection Period, unless Purchaser waives this condition in writing. Purchaser, at its election, may extend the closing for one (1) period of sixty (60) days by (i) providing written notice to Seller, and (ii) increasing the Earnest Money held in escrow by depositing an additional \$50,000 with the Escrow Agent in consideration for such extension (“Closing Extension Deposit”), both prior to the end of the Inspection Period subject to extension(s) thereof. The Closing Extension Deposit shall be non-refundable, credited to Purchaser and applied to the Purchase Price at Closing.

6. Cooperation. Seller will fully cooperate with and assist Purchaser in securing all necessary due diligence documents and approvals for Purchaser’s Project including any negotiations with the city and execution of reasonable applications for the Final Approvals. Purchaser will be responsible for all costs associated with the Final Approvals except for Seller’s attorney’s fees and any professionals engaged by Seller to review Purchaser’s submissions. Purchaser will be responsible for all costs associated with the design of Purchaser’s Project.

7. Exclusivity. Seller agrees not to market or solicit or accept any offers with respect to the Property throughout the Inspection Period (the “Exclusivity Period”). Purchaser and Seller may extend the Exclusivity Period by mutual written agreement.

8. Expiration of Offer. This letter of intent shall constitute and open offer until June 20th, 2018.

9. Broker Fee. There are no broker’s fees associated with this transaction.

10. Confidentiality. Both parties will hold in confidence and will not disclose to any third party (except for its lenders with a security interest in the Property) the existence of this Letter or the substance of the matters contained herein prior to termination of the Contract or Closing.

11. Assignment. This Letter of Intent may not be assigned by Purchaser without the express written consent of the Seller.

If the above outline of terms and conditions are acceptable, please indicate by signing below. All parties to these transactions intend that this proposal be superseded by the Purchase Agreement. In the meantime, all parties agree to proceed in accordance with terms and conditions outlined in this Letter of Intent. Seller understands the purpose of this Letter of Intent is to allow further investigation by both parties into the feasibility of entering into a formal agreement. This Letter of Intent is only binding on the parties during the Contract Negotiation period of 25 business days. If the Purchase Agreement is not mutually executed within the Contract Negotiation Period for any reason whatsoever or no reason at all, this Letter of Intent shall expire and no party shall have any further rights or duties hereunder. Seller shall not solicit other offers during the Contract Negotiation Period.



If the terms of this LOI are acceptable to you, please indicate your agreement by signing in the space provided below and returning the signed LOI via email.

Sincerely,

PURCHASER

ROERS INVESTMENTS LLC

A handwritten signature in blue ink, appearing to read "B Roers", written over a horizontal line.

By: _____

Name: Brian Roers

Its: Manager/Owner

Accepted and Agreed to:

SELLER:

By: _____

Name: _____

Its: _____

City of St Francis City Council Agenda Item
Executive Summary

Title of Item: **Rivers Edge REZONING to Planned Unit Development:** An ordinance to officially denote Rivers Edge as a Planned Unit Development on the City's official zoning map

Meeting Date: **6-4-18**

Staff Reporting: **Ben Gozola, City Planner**

Summary: | This item is the 2nd reading of an ordinance to officially change the zoning of Rivers Edge 1st Addition to planned unit development in conjunction with approval of the Final Plat at this same meeting.

Recommendations: |

- **Council has already given preliminary approval to this development. This ordinance is a procedural requirement for completion of the next step.**
- **Approval of the 1st reading was given in May, and approval at this point would authorize the zoning change.**

List of Attachments: | A) *Ordinance 240, Second Series*

**CITY OF ST. FRANCIS
ST. FRANCIS MN
ANOKA COUNTY**

ORDINANCE 240, SECOND SERIES

**AN ORDINANCE TO REZONE LAND FROM R-2 (SINGLE FAMILY RESIDENTIAL)
TO PLANNED UNIT DEVELOPMENT IN ASSOCIATION WITH THE
RIVERS EDGE 1ST ADDITION FINAL PLAT**

SUMMARY OF SECTIONS AMENDED:

– 10-50-3 Zoning Map

THE CITY OF SAINT FRANCIS ORDAINS:

Section 1. Zoning Change Approved.

The City Council of the City of St. Francis hereby approves the rezoning of the following described property from R-2, Single Family Residential, to PUD, Planned Unit Development (see Exhibit A):

The North 660 feet of the Northeast Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota.

Section 2. Map Update.

The City Clerk is hereby directed to reflect the subject property as "Rivers Edge PUD" on the official zoning map to reflect this ordinance.

Section 3. Effective Date.

This Ordinance shall take effect 30 days after its publication after approval of the Rivers Edge 1st Addition Final Plat.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF ST. FRANCIS
THIS 4th DAY OF JUNE, 2018.

APPROVED:

Steven D. Feldman
Mayor of St. Francis

ATTEST:

Barbara I. Held
City Clerk

City of St Francis City Council Agenda Item
Executive Summary

Title of Item: **FINAL PLAT: Rivers Edge Planned Unit Development.** A resolution to approve the Final Plat and Final Plan for the Rivers Edge Planned Unit Development.

Meeting Date: **6-4-18**

Staff Reporting: **Ben Gozola, City Planner**
Craig Jochum, City Engineer
David Schaps, City Attorney

Summary: Staff, Engineering, and Legal have reviewed the final plat/plan application for the Rivers Edge Planned Unit Development (1st Addition) and find the documents to be complete, substantially conforming to the PUD Development Plan, and ready for approval. Specific issues of note include:

- The 1st Addition will involve the creation of 23 lots from the approved development plan. Residential traffic will ultimately enter this addition from Quay Street NW, while construction traffic will enter from the east utilizing a construction entrance from the existing cul-de-sac off of CR 72.
- The 23 lots chosen for final platting will provide the developer with additional time to work with Engineering on roadway curves and other technical aspects with future additions.
- David Schaps, Craig Jochum, Joe Kohlman along with other City staff members collaborated to create and edit a final developer's agreement for this addition. All parties feel the proposed language before Council is ready for approval and implementation. All letter of credit and associated warranty issues are in order, and required park dedication fees for the first addition are spelled out.
- Proposed conditions of approval are spelled out in the draft resolution provided for Council approval.

Recommendations: Based on the aforementioned, staff is recommending that the City Council approve the Rivers Edge Final Plat via the following motion:

“Move to adopt Resolution 2018-20 approving the Final Plat and Final Plans for the Rivers Edge planned unit development.”

List of Attachments:

- A) Resolution 2018-20
- B) Final Plat – Rivers Edge
- C) Rivers Edge Development Plan
- D) Developers Agreement
- E) Opinion of Probable Costs

**CITY OF ST. FRANCIS
ST. FRANCIS, MN
ANOKA COUNTY**

RESOLUTION 2018 - 20

**A RESOLUTION APPROVING THE FINAL PLAT AND FINAL PLANS FOR THE
RIVERS EDGE PLANNED UNIT DEVELOPMENT**

Pursuant to due call and notice thereof, a regular meeting of the City Council of the City of St. Francis, Minnesota was held on the 6th day of June, 2018. The following members were present: Mayor Steve Feldman; Council Members Robert Bauer, Joe Muehlbauer, Rich Skordahl, and Jerry Tveit.

Council Member _____ introduced the following resolution and moved its adoption:

WHEREAS, the City of St. Francis is a municipal corporation, organized and existing under the laws of the State of Minnesota; and,

WHEREAS, the City Council of the City of St. Francis has adopted a comprehensive plan and corresponding zoning regulations to promote orderly development and utilization of land within the city; and,

WHEREAS, Laketown Homes LLC (“Applicant”) is owner of unaddressed property lying west of County Road 72 and north of the Rum River Bluffs Subdivision (the “Property”) which is legally described as follows:

The North 660 feet of the Northeast Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota

WHEREAS, the City Council on June 6, 2018, has considered the Final Plat and Final Plan documentation submitted by the Applicant, recommendations of Staff, the contents of the executive summary, and other evidence available to the Council.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of St. Francis hereby approves the Final Plat, Final PUD Plan, and associated documents for the Rivers Edge Planned Unit Development based on the following findings of fact:

- 1) The proposed plans for the 1st addition are in substantial compliance with the approved PUD development stage plan;

- 2) A developers agreement has been drafted by the City and negotiated with the developer to ensure completion of the development in accordance with City standards;
- 3) The developer will be providing letters of credit to ensure the completion of both site grading and ultimate build out of the first addition;
- 4) The developer has secured preliminary authorization from the County for the required construction access off of County Road 72;

BE IT FURTHER RESOLVED that approval of the Final Plat and Final Planned Unit Development Plan for Rivers Edge shall be subject to the following conditions:

- 1) Build out of the River Edge Planned Unit Development shall be in accordance with all applicable conditions of PUD Development Plan approval.
- 2) All changes required by the City Engineer in their memo dated 03/13/2018 shall be addressed to the satisfaction of the City Engineer prior to approval of future additions of the PUD. Rearrangement of pads, if necessary to address engineering issues, may be administratively permitted provided the new pad arrangement still meets minimum code standards for area, width, etc.
- 3) Future Final PUD plans submitted for consideration and approval shall adhere to the applicable conditions of PUD Development Plan approval.
- 4) All necessary permits (MPCA, NPDES, MDH, etc.) as may be applicable must be provided to the City before activity begins and/or before building permits are issued for individual lots.
- 5) Prior to initiation of work, the Developer shall:
 - a. Submit and receive approval from the City Engineer for the final utility plans, final grading and storm water plans and plans for the construction of temporary access to County Road 72 / Rum River Boulevard NW at 236th Avenue; and for the construction of access to Quay Street and Marigold Street;
 - b. Obtain all necessary permits required by Anoka County for the construction of temporary access to County Road 72/Rum River Blvd. NW;
 - c. Execute applicable developers agreements for grading and/or construction;
 - d. Supply to the City all required securities as outlined in the developer agreements;
 - e. Provide evidence of full fee title in the property to the satisfaction of the City Attorney;
 - f. Pay all outstanding tax and special assessment obligations if any; and
 - g. Comply with the Agreement and Waiver Regarding Pre-Approval Grading of Plat known as Rivers Edge.

- 6) The applicant shall be responsible for all fees related to the review of this application (including but not limited to planning, legal, engineering, wetland, environmental consultants, or other such experts as required by this application).

The motion for adoption of the foregoing resolution was duly seconded by Council Member _____ and, upon vote being taken thereon, the following voted in favor thereof: _____. The following voted against or abstained: _____.

Whereupon the resolution was declared duly passed and adopted the 6th day of June, 2018.

Steven D. Feldman

ATTEST:

Barbara I. Held, City Clerk

Dated

The undersigned Applicants have read, understand and hereby agree to the terms of this resolution and on behalf of himself/herself, his/her heirs, successors and assigns, hereby agree to the conditions set forth above, and to the recording of this resolution and attachments in the chain of title of the property.

Dated _____

Laketown Homes LLC Authorized Representative

Subscribed and sworn to before me this _____ day of _____, 2018.

Notary Public

City of St. Francis
County of Anoka
Sec. 29 & 32, Twp. 34, Rng. 24

SHEET 1 OF 3 SHEETS

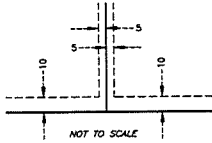
City of St. Francis
County of Anoka
Sec. 29 & 32, Twp. 34, Rng. 24



RIVERS EDGE INSET

City of St. Francis
County of Anoka
Sec. 29 & 32, Twp. 34, Rng. 24

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



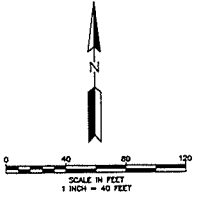
BEING 5 FEET IN WIDTH AND ADJOINING SIDE LINES
AND BEING 10 FEET IN WIDTH AND ADJOINING
FRONT AND REAR LOT LINES.

BEARING ORIENTATION NOTE:

THE NORTH LINE OF THE NE QUARTER OF
SECTION 32, TOWNSHIP 34, RANGE 24, IS
ASSUMED TO BEAR S89°55'41"E.

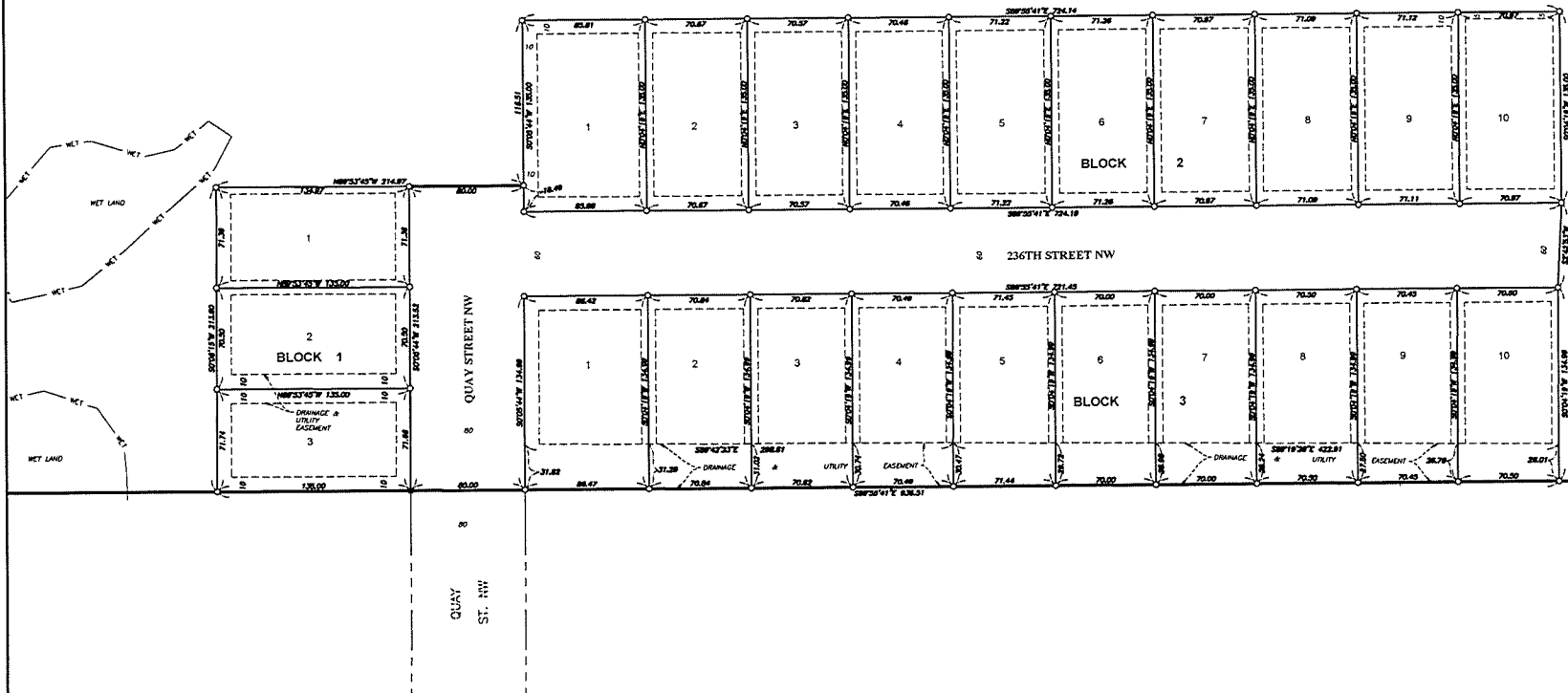
LEGEND

- DENOTES IRON MONUMENT FOUND
- DENOTES 1/2 INCH X 14 INCH IRON MONUMENT
SET WITH PLASTIC CAP MARKED RLS NO. 43055

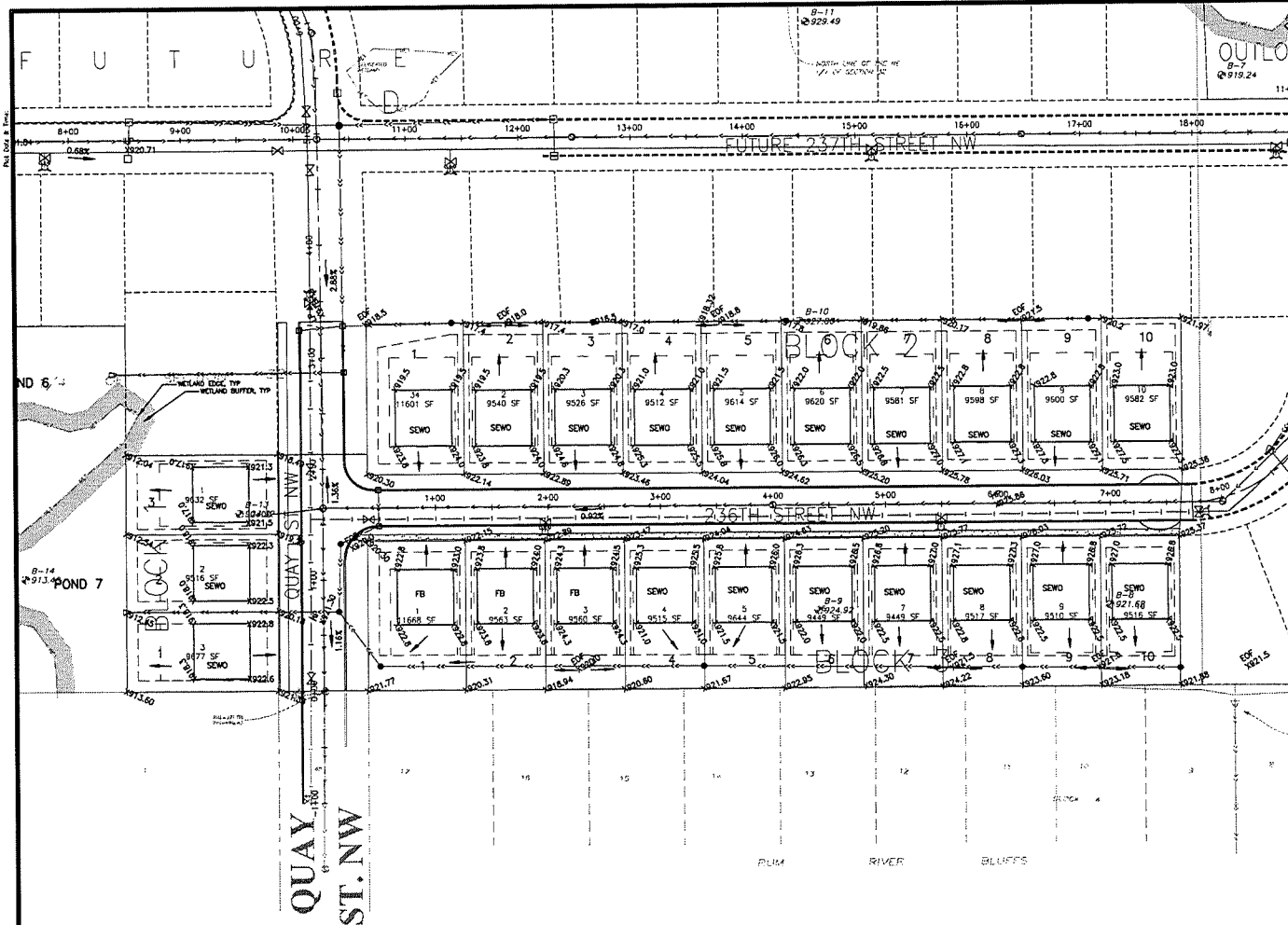


OUTLOT A

OUTLOT A



WENCK
ASSOCIATES

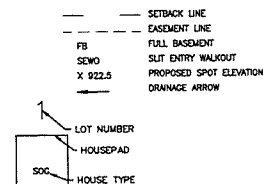


RIVERS EDGE PHASE ONE LOT DATA
April 20, 2018

BLOCK	LOT	CAPAC	TOP OF FOUNDATION	LOW FLOOR	LOW OPENING	EOF	DRIVEWAY SLOPE (%)	CENTERLINE ELEV
1	1	921.5	921.8	917.5	917.5	912.1*	5.2	920.0
1	2	922.5	922.8	918.5	918.5	912.1*	5.2	921.0
1	3	922.8	923.1	918.8	918.8	912.1*	6.4	923.0
2	1	924.0	924.3	920.0	920.0	918.2	9.2	923.5
2	2	924.0	924.3	920.0	920.0	918.2	5.1	923.5
2	3	924.8	925.1	920.8	920.8	918.2	6.2	923.1
2	4	925.5	925.8	921.5	921.5	918.2	6.6	923.6
2	5	926.0	926.3	922.0	922.0	918.2	6.4	924.2
2	6	926.5	926.8	922.5	922.5	918.8	6.0	924.8
2	7	927.0	927.3	923.0	923.0	918.8	5.6	925.4
2	8	927.3	927.6	923.3	923.3	918.8	5.1	925.8
2	9	927.3	927.6	923.3	923.3	921.5	5.6	925.7
2	10	927.5	927.8	923.5	923.5	920.0	7.9	926.3
3	1	923.0	923.3	915.0	923.8	920.0	5.2	921.5
3	2	924.0	924.3	916.0	924.8	920.0	5.1	922.5
3	3	924.5	924.8	916.5	925.1	920.0	5.0	923.1
3	4	925.5	925.8	921.5	921.5	920.0	6.6	923.6
3	5	926.0	926.3	922.0	922.0	920.0	6.4	924.2
3	6	926.5	926.8	922.5	922.5	920.0	6.0	924.8
3	7	927.0	927.3	923.0	923.0	921.5	5.6	925.4
3	8	927.3	927.6	923.3	923.3	921.5	5.1	925.8
3	9	927.0	927.3	923.0	923.0	921.5	4.4	925.7
3	10	927.0	927.3	923.0	923.0	921.5	5.9	925.3

* EOF IS TOP OF CURB ELEVATION ON 237TH STREET AT LOW POINT

LEGEND



TYPICAL LOT & HOUSE PAD

BENCHMARK
SE CORNER OF THE EAST 1/2
OF THE SW 1/4 OF SECTION 29
(SOUTH 1/4 CORNER OF SECTION 32)
TOWNSHIP 34, RANGE 24
CAST IRON MONUMENT
BENCHMARK: TOP OF MONUMENT
ELEVATION = 921.97 (NGVD 29)



NO. DATE DESCRIPTION REVISIONS		CAMPION ENGINEERING SERVICES, INC.	• Civil Engineering • Land Planning 1800 Pioneer Creek Center, P.O. Box 248 Maple Plain, MN 55359 Phone: 763-479-5172 Fax: 763-479-4242 E-Mail: mcampion@campioneng.com	I hereby certify that this plan, specification or report has been 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. <i>Martin P. Campion</i> 05/15/2018 Martin P. Campion - Lic. # 19901 Date:	RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN	DEVELOPMENT PLAN	PROJECT NO: 17-037
				SHEET NO. 1 OF 1 SHEETS		DATE: 05/15/2018	

OPINION OF PROBABLE COSTS
RIVERS EDGE - PHASE ONE 23 LOTS
 LAKETOWN HOMES
 CES PROJECT NO. 17-037
 MAY 15, 2018

SCHEDULE A - SANITARY SEWER CONTRACT ITEM	UNITS	EST QUANT	UNIT PRICE	TOTAL
8" PVC Pipe Sewer SDR 35; With Sand Bedding	LF	780	\$ 26.00	\$ 20,280.00
8" DIP Pipe Sewer ; With Sand Bedding (at outside drop)	LF	20	\$ 50.00	\$ 1,000.00
10" PVC Pipe Sewer SDR 26; With Sand Bedding	LF	360	\$ 70.00	\$ 25,200.00
48" Sanitary Sewer MH (0-12')	EACH	3	\$ 4,100.00	\$ 12,300.00
48" Diameter MH Excess Depth Over 12'	LF	13	\$ 100.00	\$ 1,300.00
8" x 4" PVC WYE	EACH	21	\$ 115.00	\$ 2,415.00
10" x 4" PVC WYE	EACH	5	\$ 200.00	\$ 1,000.00
4" PVC Pipe Sewer Schedule 40 Service Pipe With Tracer Wire and Sand Bedding	LF	1020	\$ 11.00	\$ 11,220.00
4" PVC Pipe Sewer Schedule 40 Riser Pipe With Tracer Wire and Sand Bedding	LF	30	\$ 15.00	\$ 450.00
Outside Drop	LF	12.5	\$ 130.00	\$ 1,625.00
Televising	LF	1160	\$ 1.50	\$ 1,740.00
Connect to Existing	EACH	1	\$ 2,500.00	\$ 2,500.00
SUBTOTAL SCHEDULE A - SANITARY SEWER				\$ 81,030.00

SCHEDULE B - WATERMAIN CONTRACT ITEM	UNITS	EST QUANT	UNIT PRICE	TOTAL
6" Duct. Iron Cl 52 Hydrant Leads	LF	35	\$ 28.00	\$ 980.00
8" PVC C-900 Watermain With Tracer Wire	LF	775	\$ 25.00	\$ 19,375.00
12" DIP CL 52 Watermain	LF	350	\$ 37.00	\$ 12,950.00
8" Gate Valve	EACH	1	\$ 1,800.00	\$ 1,800.00
12" Gate Valve	EACH	2	\$ 2,800.00	\$ 5,600.00
Fire Hydrant w/6" Gate Valve and Box	EACH	4	\$ 4,900.00	\$ 19,600.00
1" Corporation Stop	EACH	25	\$ 200.00	\$ 5,000.00
1" Curb Stop and Box With Extension Rod	EACH	25	\$ 230.00	\$ 5,750.00
1" HDPE DR 11	LF	1080	\$ 11.00	\$ 11,880.00
Connect to Existing 12" DIP Watermain	EACH	1	\$ 1,500.00	\$ 1,500.00
SUBTOTAL SCHEDULE B - WATERMAIN				\$ 84,435.00

SCHEDULE C- STORM SEWER CONTRACT ITEM	UNITS	EST QUANT	UNIT PRICE	TOTAL
12" RCP Storm Sewer Cl. 5	LF	72	\$ 30.00	\$ 2,160.00
15" RCP Storm Sewer Cl. 5	LF	163	\$ 32.00	\$ 5,216.00
21" RCP Storm Sewer Cl. 3	LF	187	\$ 36.00	\$ 6,732.00
27" RCP Storm Sewer Cl. 3	LF	247	\$ 45.00	\$ 11,115.00
12" HDPE Storm Sewer	LF	1216	\$ 23.00	\$ 27,968.00

OPINION OF PROBABLE COSTS
RIVERS EDGE - PHASE ONE 23 LOTS
 LAKETOWN HOMES
 CES PROJECT NO. 17-037
 MAY 15, 2018

15" HDPE Storm Sewer	LF	585	\$ 25.00	\$ 14,625.00
18" HDPE Storm Sewer	LF	97	\$ 27.00	\$ 2,619.00
Catchbasin 27" DIA .	EACH	4	\$ 1,600.00	\$ 6,400.00
48" Dia. Catchbasin MH	EACH	8	\$ 2,500.00	\$ 20,000.00
66" Dia. Catchbasin MH	EACH	1	\$ 3,000.00	\$ 3,000.00
48" Dia. Storm MH	EACH	3	\$ 2,500.00	\$ 7,500.00
Outlet Control Structure	EACH	3	\$ 3,500.00	\$ 10,500.00
12" HDPE FES With Trash Guard and Granite Riprap	EACH	3	\$ 900.00	\$ 2,700.00
21" RCP FES With Trash Guard and Granite Riprap	EACH	1	\$ 1,850.00	\$ 1,850.00
27" RCP FES With Trash Guard and Granite Riprap	EACH	1	\$ 2,100.00	\$ 2,100.00
SUBTOTAL SCHEDULE C - STORM SEWER				\$ 124,485.00

SCHEDULE D - STREET CONSTRUCTION				
CONTRACT ITEM	UNITS	EST QUANT	UNIT PRICE	TOTAL
Subgrade Preparation (1' Depth)	STA	11	\$ 250.00	\$ 2,750.00
8" Cl. 5 Aggregate Base, In Place, Includes 1' Behind Curb (100% Crushed Quarry Stone) (Incl Temp CDS)	SY	4720	\$ 7.50	\$ 35,400.00
1 1/2" Bituminous Wear Course	SY	3830	\$ 6.20	\$ 23,746.00
2" Bituminous Base Course (Incl Temp CDS)	SY	3900	\$ 7.30	\$ 28,470.00
Tack Coat	GAL	270	\$ 3.35	\$ 904.50
Surmountable Concrete Curb and Gutter	LF	2215	\$ 11.40	\$ 25,251.00
Pedestrian Ramp - Per Detail	EACH	2	\$ 975.00	\$ 1,950.00
5' Concrete Sidewalk	SF	3780	\$ 5.00	\$ 18,900.00
Silt Fence Behind Curb	LF	2215	\$ 1.25	\$ 2,768.75
8' Bituminous Trail	SY	295	\$ 29.00	\$ 8,555.00
Street Signs	EACH	1	\$ 250.00	\$ 250.00
Traffic Signs	EACH	1	\$ 250.00	\$ 250.00
4" PVC Conduit Crossing - Utility	LF	140	\$ 6.00	\$ 840.00
"Future Through Street" Barricade	EACH	2	\$ 375.00	\$ 750.00
Restoration	ACRE	2	\$ 650.00	\$ 1,300.00
CB Inlet Protection - In Street	EACH	5	\$ 100.00	\$ 500.00
CB Inlet Protection - In Lawn Area	EACH	8	\$ 150.00	\$ 1,200.00
Inlet Protection Cleaning	EACH	33	\$ 50.00	\$ 1,650.00
Street Sweeping	HR	4	\$ 125.00	\$ 500.00
SUBTOTAL SCHEDULE D - STREET CONSTRUCTION				\$ 155,935.25

OPINION OF PROBABLE COSTS
RIVERS EDGE - PHASE ONE 23 LOTS
 LAKETOWN HOMES
 CES PROJECT NO. 17-037
 MAY 15, 2018

SCHEDULE E - GRADING CONTRACT ITEM	UNITS	EST QUANT	UNIT PRICE	TOTAL
Common Excavation (Includes Grading, Hold-downs Plan Quantity)	CY	30000	\$ 1.80	\$ 54,000.00
Subgrade Correction - Includes Removal and Replacement (Below Top 1.5', To Be Field Verified)	CY	1000	\$ 1.80	\$ 1,800.00
Onsite Borrow - Includes Excavation and Placement	CY	1000	\$ 1.80	\$ 1,800.00
Topsoil Respread	CY	2450	\$ 1.80	\$ 4,410.00
Silt Fence	LF	1300	\$ 1.30	\$ 1,690.00
Rock Construction Entrance	EACH	1	\$ 1,500.00	\$ 1,500.00
Site Restoration - Seed and Mulch	ACRE	4.5	\$ 575.00	\$ 2,587.50
Clearing and Grubbing	LS	1	\$3,000.00	\$3,000.00
SUBTOTAL SCHEDULE E - GRADING				\$ 70,787.50

SUMMARY	
SCHEDULE A - SANITARY SEWER	\$ 81,030.00
SCHEDULE B - WATERMAIN	\$ 84,435.00
SCHEDULE C- STORM SEWER	\$ 124,485.00
SCHEDULE D - STREET CONSTRUCTION	\$ 155,935.25
SCHEDULE E - GRADING	\$ 70,787.50
TOTAL	\$ 516,672.75

(RESERVED FOR RECORDING INFORMATION)

**CITY OF ST. FRANCIS
COUNTY OF ANOKA
STATE OF MINNESOTA**

**AGREEMENT AND WAIVER REGARDING PRE-APPROVAL GRADING OF
THAT PLAT KNOWN AS RIVERS EDGE**

WHEREAS, the applicant, Laketown Homes, LLC, developer of the property (“Developer”) legally described in *Exhibit A* to this Agreement has applied for and received an approved preliminary plat and final plat for the property designated as RIVERS EDGE (hereinafter the “Plat” or “Site” or “Property”); and

WHEREAS, on April 2, 2018, the St. Francis City Council approved the Rivers Edge PUD Development Stage and preliminary plat subject to conditions; and

WHEREAS, on _____, 2018, the St. Francis City Council adopted findings and decision approving the final plat; and

WHEREAS, the applicant has requested early grading of the Site and adjacent easement areas prior to executing the Development Agreement, in order to allow possible construction within the plat this year and the Council has determined that they would allow limited dirt work on site subject to Developer executing this Agreement and providing security as established by the City Engineer.

NOW THEREFORE, IT IS AGREED BETWEEN THE PARTIES AS FOLLOWS:

1. Conditions: Developer may commence limited grading of the site for Rivers Edge only to the extent approved by the City Engineer subject to conditions as determined by the City engineer. No work will be undertaken until Developer has, at a minimum, completed the following (which can be amended by the City Engineer):

- a. Provide corrections to the final plat acceptable to City staff.
- b. Developer submits all plan sets which affect grading and erosion control and then updates and revises same for final approval of the City Engineer all prior to grading being authorized prior to the execution of the Development Agreement for this plat.

- c. Resolving with the City Engineer any and all areas where grading will not be permitted pending final resolution of any wetland issues. No impacts to wetlands will be authorized until/unless the City Engineer has confirmed that all applicable approvals have been obtained from all agencies with jurisdiction.
- d. Resolve any outstanding drainage and erosion control issues to the satisfaction of the City Engineer.
- e. Transport of equipment to the development site shall adhere to all applicable road restrictions.

2. Acceptance of Risk. All work undertaken prior to full compliance with City ordinances including, but not limited to, execution of the Development Agreement and posting of all required security, is solely at the risk of Developer.

3. Indemnification. Developer shall indemnify and hold harmless the City from any and all claims or causes of action of whatever nature related to the grading and preparation of the site as set forth in this Agreement. Further, Developer shall indemnify and hold harmless the City from any and all claims or causes of action of whatever nature related to grading and other work done off of the site upon existing utility and drainage easements. Said indemnity and agreement to hold the City harmless includes payment of any and all attorney's fees, engineering fees, witness fees or any other costs and disbursements related to this Agreement, including any City fees or costs expended to enforce the terms and conditions of this Agreement.

4. Security. In order to ensure compliance with this Agreement, or to assure completion or restoration of the site and any work performed or to be performed on easements outside of the site, Developer shall post an Irrevocable Standby Letter of Credit or other security acceptable to the City in the amount of \$ _____ (125% of the amount determined by the City Engineer to ensure all work is completed) in favor of the City. Said Letter of Credit or other security shall remain in place until all work set forth in this Agreement and attached *Exhibit B* (Grading and Erosion control Plans) has been completed and approved by the City Engineer. If this Letter of Credit remains in place at the time of any final plat approval and at the time of execution of a Development Agreement, the Letter of Credit, or a portion thereof as determined by the City Engineer, may be extended as security for the Development Agreement.

5. Work Outside Property. In the event the Developer does any work outside the Property owned by Developer, Developer shall submit and have approved by the City Engineer satisfactory plans for work done within easement areas dedicated to the City. Such work must be done solely within the easement area and within the parameters of the rights granted to the City by the easement. The work done shall consist of grading and restoration as per directions of the City Engineer, as well as restoration of any specific property improvements on individual lots disturbed by the activity. The work shall be done in conformance with the directions of the City Engineer. Any necessary right of entry and right to construct on the property must be received from individual property owners. Obtaining any said right of entry and/or right to construct is the sole

responsibility of the Developer as is an obligation to inform the property owner of what work will occur upon the easement area and when it will happen. In undertaking this construction activity within the defined easements, Developer is not acting as an agent of the City. Restoration of the easement areas shall be completed as directed by the City Engineer.

6. Wetlands. Developer shall not conduct work in any wetland areas for which Developer has not obtained necessary permits and approvals from appropriate governmental entities.

Dated: _____

CITY OF ST. FRANCIS

Steven D. Feldman, Mayor

Barbara I. Held, City Clerk

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

The foregoing instrument was acknowledged before me this ____ day of April, 2018, by Steven D. Feldman and Barbara I. Held, respectively Mayor and City Clerk of the City of St. Francis, a Minnesota municipal corporation, on behalf of the corporation and pursuant to the authority granted by its City Council.

Notary Public

Dated: _____

DEVELOPER

LAKETOWN HOMES, LLC

By _____
Its _____

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

The foregoing instrument was acknowledged before me this ____ day of April, 2018, by _____, the _____, of Laketown Homes, LLC, a Minnesota limited liability company, on behalf of the company.

Notary Public

THIS INSTRUMENT DRAFTED BY:

BARNA, GUZY & STEFFEN, LTD.
400 Northtown Financial Plaza
200 Coon Rapids Boulevard
Coon Rapids, Minnesota 55433
Telephone (763) 780-8500 (CMS)

741498-v1

EXHIBIT A

LEGAL DESCRIPTION

The North 660 feet of the Northeast Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota,

and

That part of the West 400 feet of the Northwest Quarter of the Northwest Quarter of Section 33, Township 34, Range 24, Anoka County, Minnesota, lying Northwesterly of the right-of-way of County Road 72 (Rum River Blvd.)

EXHIBIT B

GRADING, DRAINAGE AND EROSION CONTROL PLANS



**ENGINEERING REVIEW
for the City of St. Francis
by
Hakanson Anderson**

Review No. 2

Submitted to: Dale Willenbring, Laketown Homes
Marty Campion, Campion Engineering Services, Inc

cc: Joe Kohlmann, City Administrator
Paul Teicher, Public Work Director
Kate Thunstrom, Community Development Director
Benjamin Gozola, City Planner
Craig Jochum, City Engineer

Reviewed by: Shane Nelson, Assistant City Engineer

Date: May 25, 2018

Proposed Project: Rivers Edge

Street Location: N 660 FT OF NE1/4 OF SEC 32 T34 R24, EX RD, SUBJ TO EASE OF REC

Applicant: Laketown Homes

Owners of Record: St Francis Land Development LLC

Jurisdictional Agencies: City of St. Francis, MPCA, Anoka County, MDH
(but not limited to)

Permits Required: City Approval, NPDES Construction Permit, MPCA
(but not limited to) Sanitary Sewer Extension Permit, MDH Water Extension,
DNR Appropriation Permit

INFORMATION AVAILABLE

Stormwater Management Plan for Rivers Edge, dated 5/3/18, prepared by Civil Methods, Inc.

Final Plat for Rivers Edge, 3 Sheets total, dated 5/17/18, prepared by Wenck Associates

Rivers Edge Utility Plans, dated 5/15/2018, prepared by Campion Engineering Services, Inc.

Rivers Edge Phase One Grading Plans, dated 5/15/2018, prepared by Campion Engineering Services, Inc.

Rivers Edge Project Manual, dated 5/2/2018 prepared by Campion Engineering Services, Inc.

Wetland Delineation Report for River's Edge, dated November 27, 2017, prepared by Minnesota Natural Resources

SITE ACCESS / VEHICULAR TRAFFIC

1. It is proposed that a construction access will be constructed from Rum River Boulevard (CR 72) from the existing cul-de-sac at approximately 236th Avenue. The construction access shall be clearly depicted on the plans and shall be the primary access for construction traffic.
2. The temporary cul-de-sac at the end of 236th Avenue shall be shifted to the east to allow for the final construction of the driveways on Lot 10, Block 2 and Lot 10 Block 3.
3. A signage plan / exhibit shall be submitted to show the necessary traffic control devices and street signs.

SEWER AND WATER UTILITIES

1. A call out shall be added at the connection of any tracer wire for non-conductive water main to a conductive watermain at their respective connections. There is a connection of PVC to DIP watermain at the intersection of 236th and Quay Street.
2. Details for the sanitary sewer cleanout, trench details for the different utilities and material types, concrete thrust blocks, DIP push on joint, city utility marker post, and sign post installation shall be included in the plans.
3. Extend the watermain and temporary hydrant on the end of 236th Avenue further east to allow for the construction of a temporary cul-de-sac to the east of lot 10 block 2 and lot 10 block 3.

STORM SEWER DESIGN

1. STMH 1 and STMH 2 are located within the drive lane, which is not desirable. If the storm sewer configuration is to remain as shown, shift the storm sewer to the curb line to make it more accessible and out of the drive lane.
2. Consider rerouting the stormwater such that the run from CBMH 1 to FES 1 is eliminated and instead pipe the stormwater to CBMH 5.

3. The drainage and utility easement on Lot 1 Block 3 does not appear to provide 10 feet of space between the pipe and the edge of the easement. Please revise pipe configuration or revise final plat.
4. Outlet control structures 2, 6, and 12 are shown on the details but locations for the structures are not in the plans. Please clearly depict on the plans.
5. HDPE storm pipe is not allowed per the private development standards adopted by the City. Please revise to RCP.

GRADING, DRAINAGE AND EROSION CONTROL

1. As per Storm Sewer Design comment #1, consider rerouting the storm sewer such that the pond 7 forebay can be eliminated. Connect pond 6 to pond 7 with a pipe or drainage swale.
2. Emergency overflows shall be provided for all areas of ponding water to ensure flood protection to the new homes. Please incorporate into the design and/or clearly label.
 - a. Label EOF from Quay Street to pond 6.
 - b. Include EOF labels for wetland 7 to the south, near 235th Lane.
3. Label the NWL and HWL on all wetlands.
4. Page 9 note 8 calls out a seed mix that does not meet city development standards. Mixtures formerly 240/250/260 or 25-121, 24-141, 25-131 shall be used at rates specified in their respective MnDOT standards.
5. Rip rap overflows or pipe conveyances are required for the forebays.
6. Access must be provided to all storm structures, flared end sections, rip rap overflows, pipes and ponds. Accesses must be at least 10 feet wide, contained within an easement, and have gradients that do not exceed 8%. Clearly label the access routes on the plans.
7. Wetland buffers shall have signs installed to delineate the edge. Include sign locations and details in signage plan.

FINAL PLAT

1. Provide a minimum of 10' of easement for the storm sewer pipe that crosses the southwest corner of Lot 1, Block 3.
2. The drainage & utility easement detail on page 3 needs to be revised to "5 feet in width and adjoining all side property lines and being 10 feet in width and adjoining public ways and rear property lines,".
3. Please provide drainage & utility easements over Outlot A for all wetlands, ponding areas, and utilities constructed with the Phase 1 Grading Plan and Phase 1 Utility Plan, or alternately provide a "blanket" D&U easement over all of Outlot A that can be vacated with future platting phases as additional lots are final platted.
4. The area of a pond/Infiltration basin's HWL plus 1 foot of freeboard must entirely be contained within a city owned lot or a drainage and utility easement. The wetland buffer must also be within a drainage and utility easement. Revise the final plat accordingly.
5. 236th street is labeled street on all sheets. East west streets shall be labeled Avenue or Lane.

6. The Developer's Agreement states that the developer will dedicate 2.46 acres of usable park land with the first phase of the plat. The Final Plat must be revised to include the park.

STORMWATER CALCULATIONS

1. Use wetlands have a maximum bounce between the NWL and the HWL of 2 feet per St. Francis city code. Please revise.
2. Some labels in the proposed watershed map do not match the hydrocad model. Please correct.
3. Table 1 in the stormwater management plan does not account for the flows generated from R7. Please revise.
4. The contributing area to existing wetland 7 needs to be included in the model to determine an accurate HWL for determining tailwater impacts on the proposed stormwater system. Wetland 7's outfall to the south of 235th Lane shall be included in the model to determine that there is adequate capacity to convey the additional stormwater.
5. Table 2 must account for all new impervious area in the development not just the impervious area that flows towards the listed ponds. Provided new impervious areas vary through out the report and the stormwater model. Revise such that impervious areas are consistent throughout.
6. As designed pond 3 is a landlocked basin and shall be sized to handle back-to-back 100-year SCS twenty-four (24) hour rainfall events, the ten (10) inch SCS twenty-four (24) hour rainfall event or the 100-year, 10- day snowmelt snow melt event, whichever produces the higher peak pond elevation (Landlocked high water level). The lowest building floor elevation around landlocked basins shall be two (2) feet above the Landlocked high water level. The proposed outfall, not included in phase 1, outflows to another landlocked basin. Both basins are considered landlocked and modeling would need to be completed on each to determine the HWL using the previously mentioned methods.
7. Set the HWL on all low areas and wetlands that are adjacent to the plat (i.e. north of 237th Street). The HWL for all wetlands and low areas that are off the property cannot be increased unless they remain within an existing drainage and utility easement.

OTHER ITEMS

1. The infiltration basis shall be field tested to verify infiltration rates after construction is complete. Please include this in the project specifications.
2. Provide details for pedestrian curb ramps to verify compliance with ADA.

SUMMARY AND/OR RECOMMENDATION

Revise and resubmit for approval.

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COORDINATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT Gopher State One Call AT 800-486-0000 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATION OF ALL UNDERGROUND LINES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG

GOPHER STATE ONE CALL

THE CITY OF ST. FRANCIS, MO
TOLL FREE 1-800-253-1188

RIVERS EDGE ST FRANCIS, MN

PROJECT LOCATION

**PROJECT DIRECTORY**

OWNER
LAKETOWN HOMES, LLC
1000 POND CREEK BLVD
MADISON, WI 53703
PH: 608.715.5518
EMAIL: info@laketownhomes.com

ENGINEER
CAMPION ENGINEERING SERVICES, INC.
1800 POND CREEK CENTER
WAUKESHA, WI 53090
PH: 760.478.8183
EMAIL: info@campioneng.com

PLANNING
WISCONSIN ASSOCIATES
1800 POND CREEK CENTER
WAUKESHA, WI 53090
PH: 760.478.8183
EMAIL: info@wisconsinassoc.com

WETLAND CONSULTANT
MIDWEST RURAL RESOURCES, INC.
1000 WEST BROADWAY STREET
ST. PAUL, MN 55102
PH: 651.281.8001
EMAIL: info@mrresources.com

GOVERNING SPECIFICATIONS

1. THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" LATEST EDITION & SUPPLEMENTS.
2. CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD UTILITIES SPECIFICATIONS (LATEST EDITION)
3. ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCE WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.
4. CITY OF ST. FRANCIS STANDARD SPECIFICATIONS & DETAILS.

INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS
3	CONCRETE UTILITY PLAN
4	SANITARY SEWER & WATERMAIN - QUAY ST. NW
5	SANITARY SEWER & WATERMAIN - JUDITH STREET NW
6	STREET & STORM SEWER PLAN - QUAY ST. NW
7	STREET & STORM SEWER PLAN - JUDITH STREET NW
8	STORM SEWER PLAN - REAR YARDS
9	STORM WATER POLLUTION PREVENTION PLAN
10	DETAILS
11	DETAILS
12	DETAILS
13	DETAILS
14	DETAILS
15	DETAILS

BENCHMARK

NE CORNER OF THE EAST 1/4
OF THE 18 1/4 OF SECTION 28
(SOUTH 1/4 CORNER OF SECTION 30)
TOWNSHIP 24, RANGE 24
COUNTY RICHMOND
ELEVATION = 811.87 (NGVD 29)



CAMPION ENGINEERING SERVICES, INC. 1800 POND CREEK BLVD WAUKESHA, WI 53090 PHONE: 760.478.8183 FAX: 760.478.8183 E-MAIL: info@campioneng.com		RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN		COVER SHEET PROJECT NO. 17-037 SHEET NO. 1 OF 15 SHEETS DATE 05/15/2018	
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LEGAL DESCRIPTION OF PROPERTY

(That part of the East Half of the Southeast Quarter (E 1/2 of SW 1/4) of Section 29, Township 24, Range 28, Anoka County, Minnesota described as follows:

Commencing at the Southwest corner of said East half of the Southeast Quarter and proceeding North to the East line of said East Half of the Southwest Quarter to the center of the line from there a radius of 60 feet to the South and thence following the arc of such circle to the West line of said East Half of the Southeast Quarter; thence proceeding South on said West line to the Southwest corner of said East Half of the Southeast Quarter; thence proceeding East on the South line of said East Half of the Southeast Quarter to the point of commencement.

The north 800 feet of the Orchard Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota

The North ESD East of the Northwest Quarter of Section 33, Township 34, Range 74, Anoka County, Minnesota, 5/14 East of the Rum River.

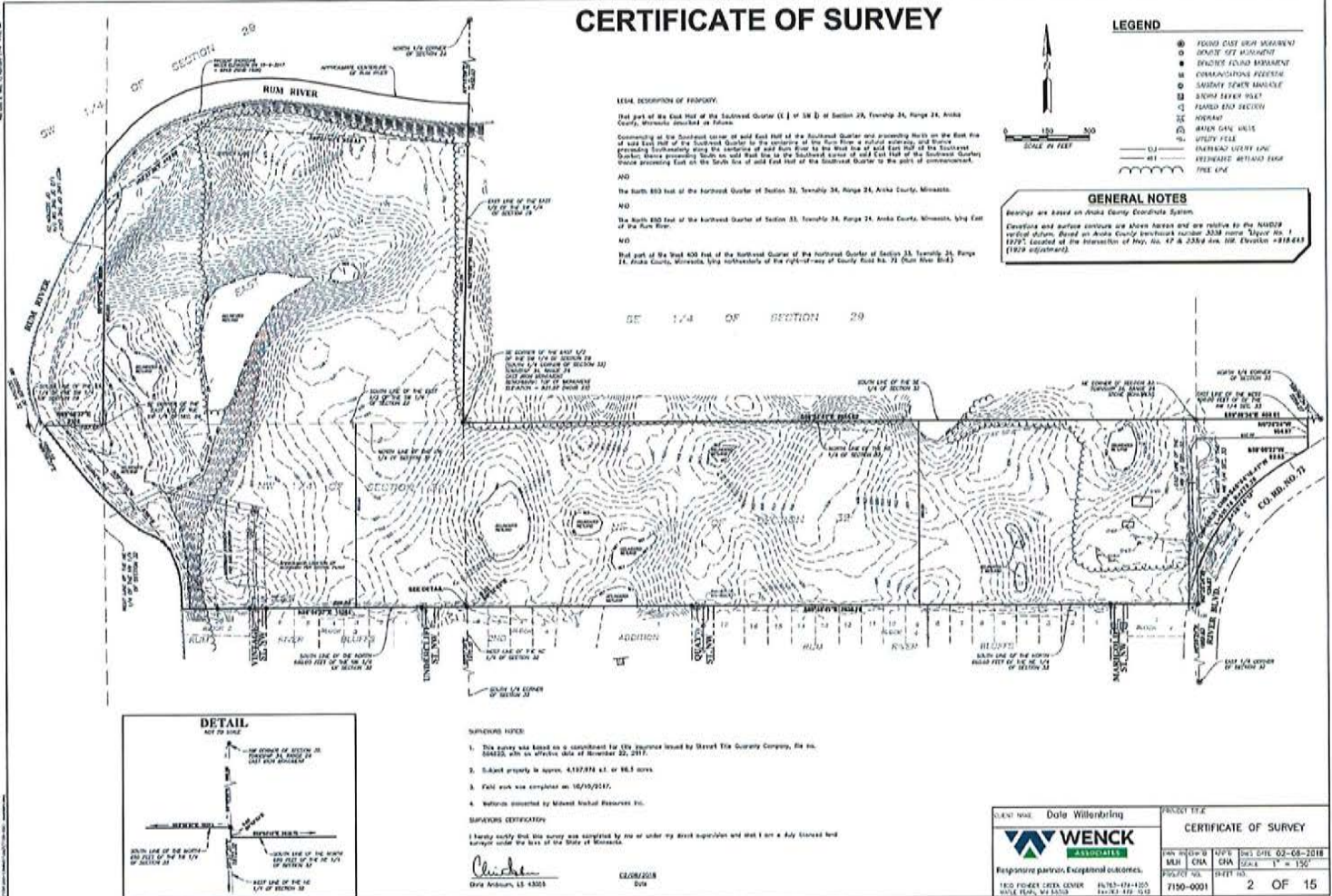
55 1/4 OF SECTION 29

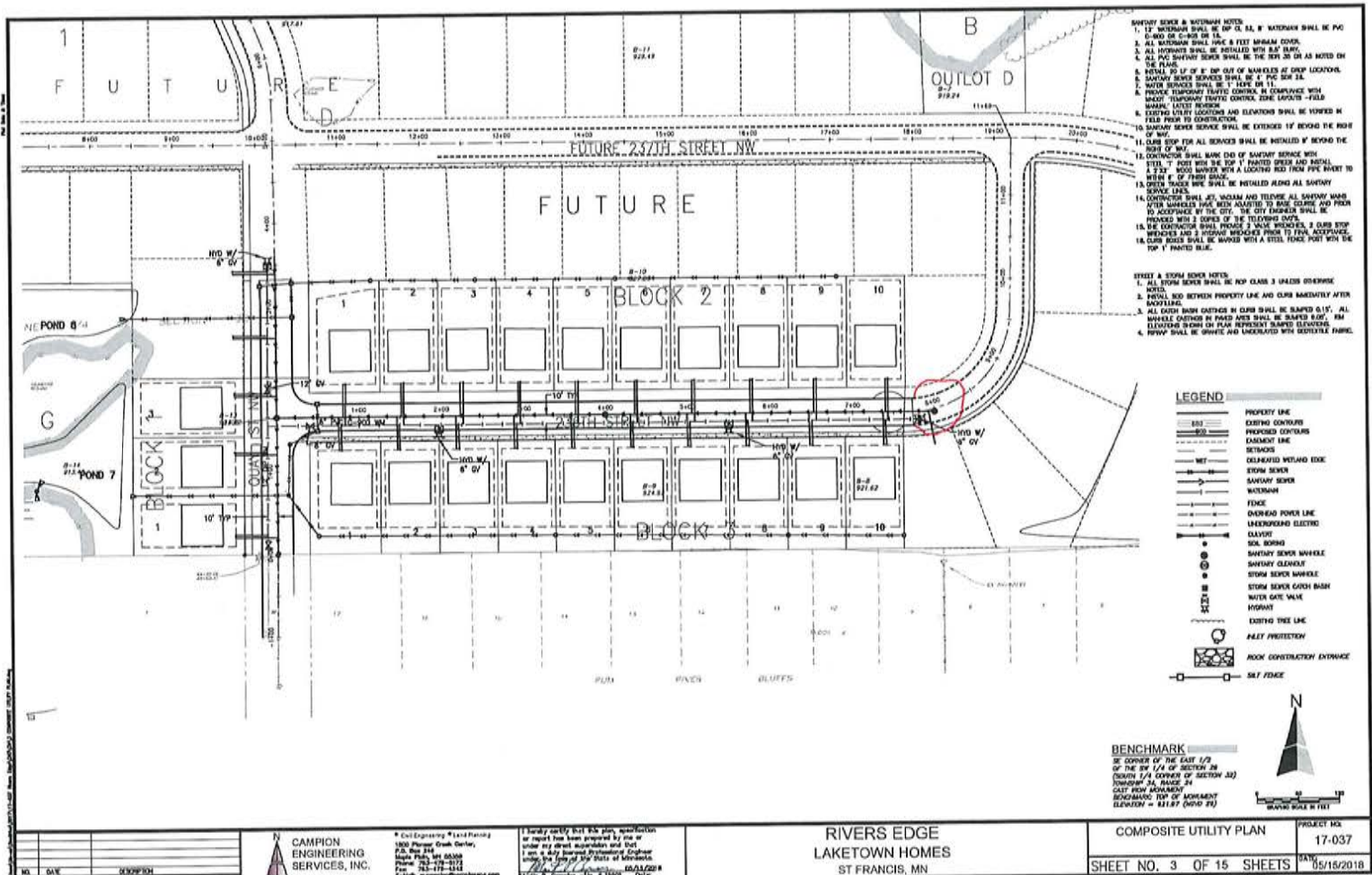
LEGEND

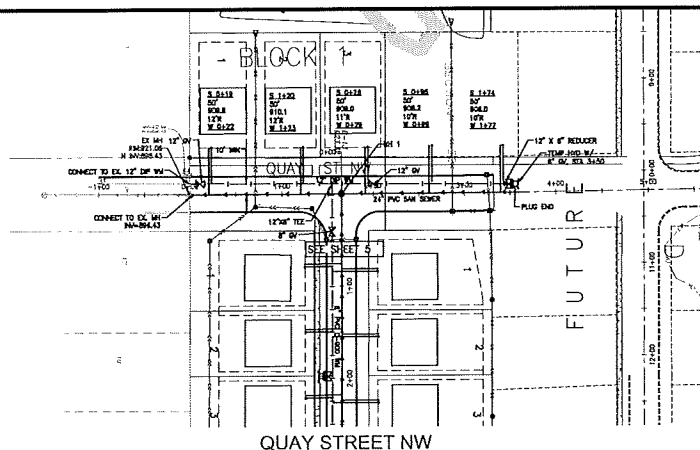
- ① FOUND EAST WIND MOVEMENT
- ② DENSITY OFF MOVEMENT
- ③ DENSITY FOUND MOVEMENT
- ④ COMMUNICATIONS FEEDBACK
- ⑤ SENSITIVITY DENSITY MANIPULATE
- ⑥ DENSITY DENSITY WIND
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GENERAL NOTES

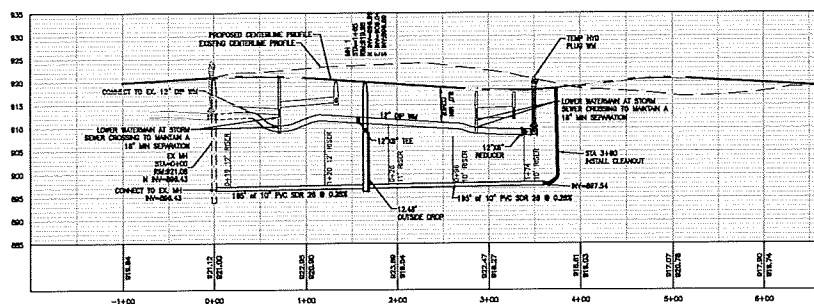
Bearings are based on Anoka County Coordinate System.
 Elevations and surface contours are shown hereon and are relative to the NAD83 vertical datum. Based on Anoka County benchmark number 3334 near "Upper No. 1 1279", located at the intersection of Hwy. No. 47 & 253rd Ave. NW. Elevation = 818.443 (1920 adjustment).







- LEGEND**
- PROPERTY LINE
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EASEMENT LINE
 - NETWORK
 - Delineated Wetland Edge
 - STORM SEWER
 - SANITARY SEWER
 - WATERMAIN
 - FENCE
 - OVERHEAD POWER LINE
 - UNDERGROUND ELECTRIC
 - CULVERT
 - SOIL BORING
 - SANITARY SEWER MANHOLE
 - SANITARY CLEAFOUT
 - STORM SEWER MANHOLE
 - STORM SEWER CATCH BASIN
 - WATER GATE VALVE
 - HYDRANT
 - EXISTING TREE LINE
 - PALET PROTECTION
 - ROCK CONSTRUCTION ENTRANCE
 - SFT FENCE
- S. 0+27.2 = DISTANCE OF SAN. SERVICE WYE FROM DOWNSTREAM MH
 S. 0+33.0 = SERVICE LENGTH
 S. 0+33.0 = SEWER SERVICE AT 10' PAST PROPERTY LINE
 2'N = RISE HEIGHT, TYP.
 W. 0+23.0 = DISTANCE OF WATER SERVICE FROM DOWNSTREAM MH

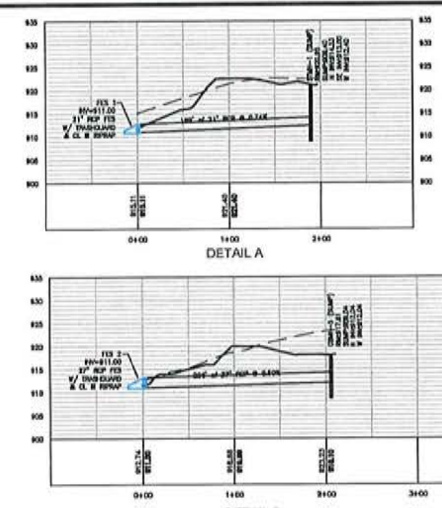
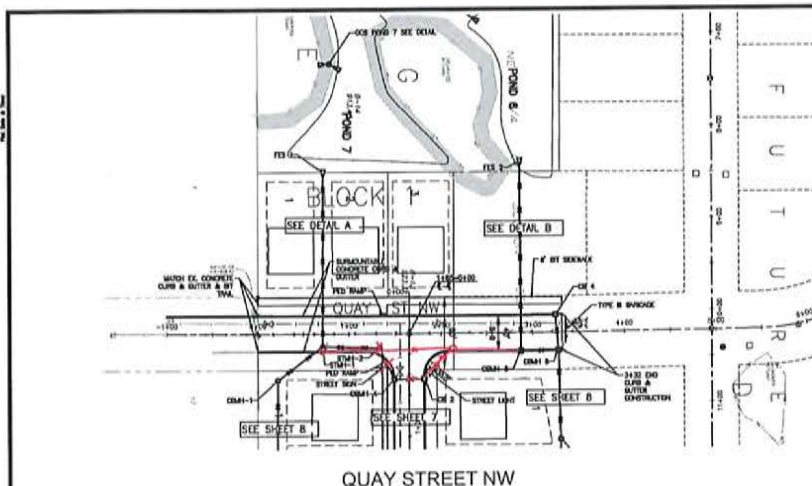


BENCHMARK
 SE CORNER OF THE EAST 1/2
 OF THE SW 1/4 OF SECTION 35
 TOWNSHIP 34, RANGE 34
 EAST 10th MERIDIAN
 BENCHMARK TOP OF MONUMENT
 ELEVATION = 821.37 (RDG 34)

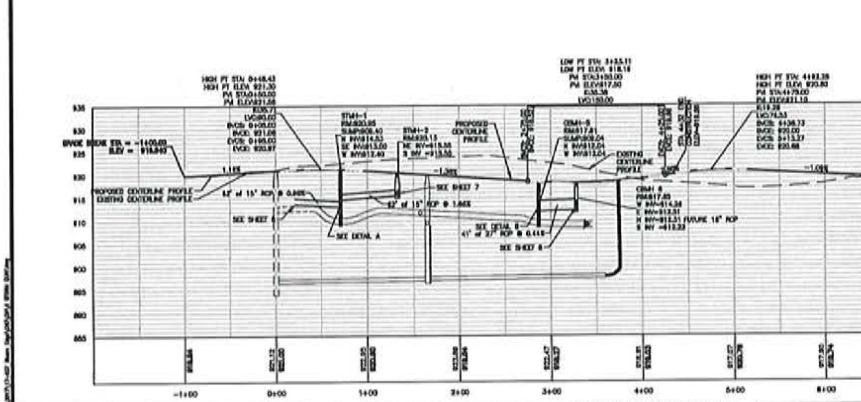


SEE SHEET 3 FOR SANITARY SEWER NOTES

			CAMPION ENGINEERING SERVICES, INC.		1. I hereby certify that this plan, specification or report has been 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.  Date: 05/15/2018 Martin P. Campion - Lic. # 19603	RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN	SANITARY SEWER & WATERMAIN PLAN-QUAY STREET NW	PROJECT NO. 17-037
NO.	DATE	DESCRIPTION					DATE 05/15/2018	



- LEGEND**
- PROPERTY LINE
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EXISTING LINE
 - PROPOSED LINE
 - SEWER LINE
 - STORM SEWER
 - SAFETY SEWER
 - WATERMAIN
 - OVERHEAD POWER LINE
 - UNDERGROUND ELECTRIC
 - UTILITY
 - SOIL BORING
 - SAFETY SEWER WHORL
 - SAFETY CLEANOUT
 - STORM SEWER MANHOLE
 - STORM SEWER CATCH BASIN
 - WATER GATE VALVE
 - HYDRANT
 - EXISTING TREE LINE
 - PLANT PROTECTION
 - ROCK CONSTRUCTION ENTRANCE
 - STREET LIGHT
 - PROPOSED STREET LIGHT LOCATION
 - PROPOSED STREET NAME SIGN
 - TYPE B BARRICADE



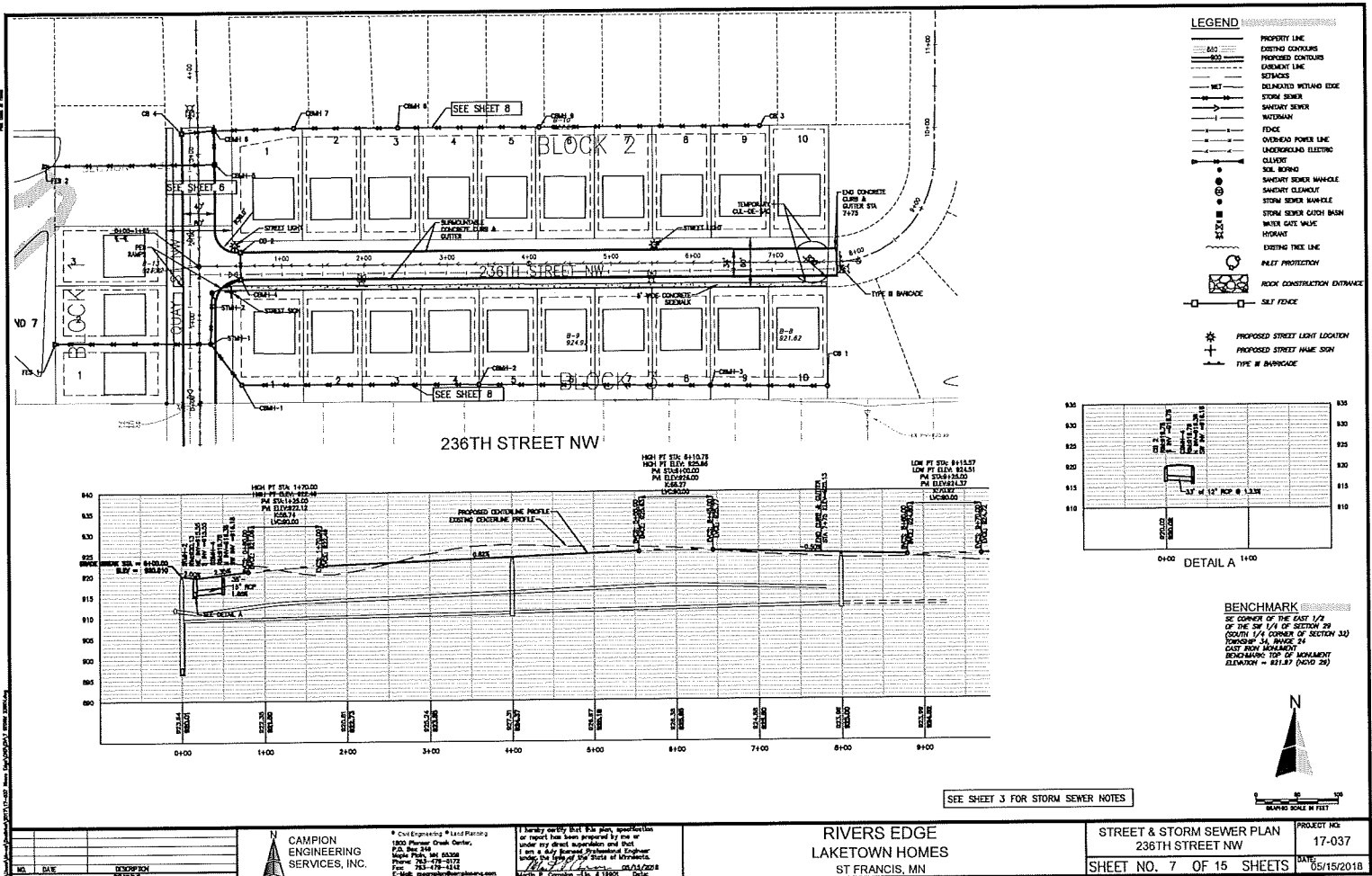
STRUCTURE SCHEDULE

NO.	STRUCTURE	CASTING
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CR 2	36" DIA	ALCONAR-4342
CR 3	36" DIA	ALCONAR-4342
CR 4	36" DIA	ALCONAR-4342
CR 5	48"	ALCONAR-4342
CR 6	48"	ALCONAR-4342
CR 7	48"	ALCONAR-4342
CR 8	48"	ALCONAR-4342
CR 9	48"	ALCONAR-4342
ST 1	48"	ALCONAR-4342
ST 2	48"	ALCONAR-4342
ST 3	48"	ALCONAR-4342

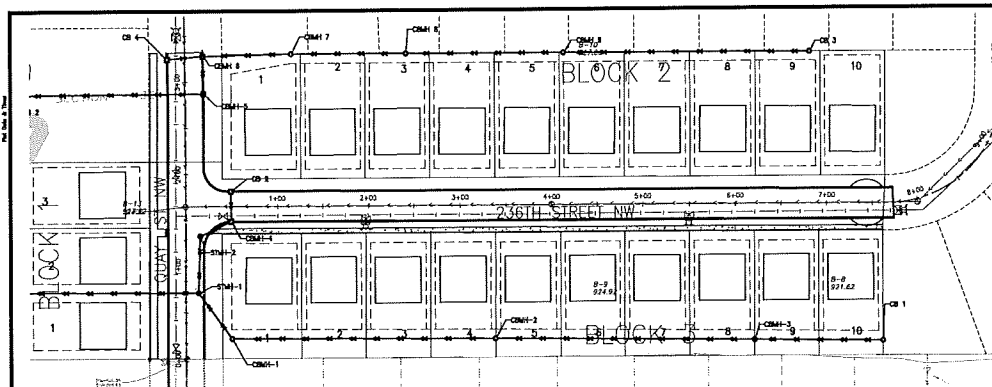
*Labeled "STORMSEWER"

BENCHMARK
 AT CORNER OF THE EAST 1/2
 OF THE SW 1/4 OF SECTION 28
 TOWNSHIP 24, RANGE 24
 EAST FROM MONUMENT
 BENCHMARK TOP OF MONUMENT
 ELEVATION = 821.87 (NGVD 29)

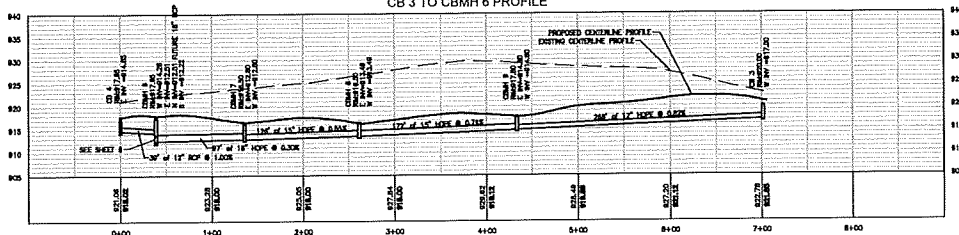




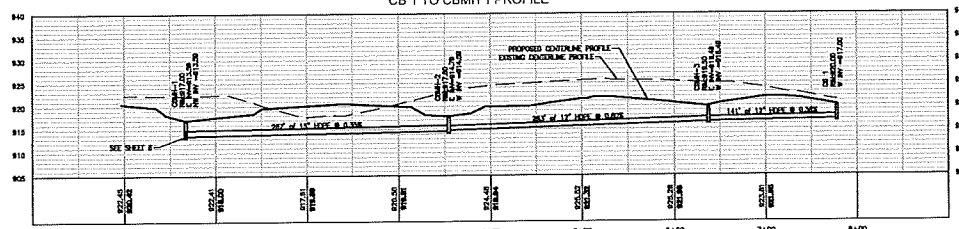
NO. DATE REVISION	CAMPION ENGINEERING SERVICES, INC. Civil Engineering & Land Planning 1800 Pioneer Creek Center P.O. Box 245 Maple Park, MN 55058 Phone: 763-478-2102 Fax: 763-478-2102 E-Mail: campion@campion-engineering.com	I hereby certify that the data, specifications or report has been prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the State of Minnesota. Martin P. Campion - Lic. # 18001 Date:	RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN	STREET & STORM SEWER PLAN 236TH STREET NW SHEET NO. 7 OF 15 SHEETS PROJECT NO. 17-037 DATE 05/15/2018
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CB 3 TO CBMH 6 PROFILE



CB 1 TO CBMH 1 PROFILE



LEGEND

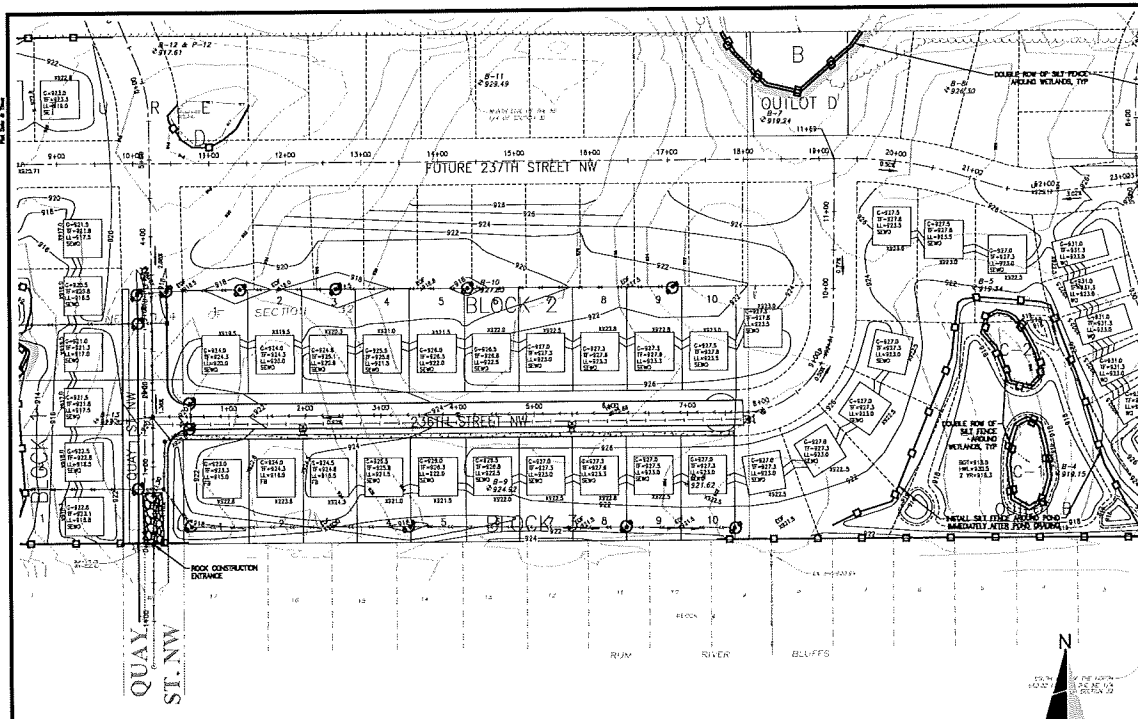
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EASEMENT LINE
- SETBACKS
- DELINEATED WETLAND EDGE
- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- FENCE
- OVERHEAD POWER LINE
- UNDERGROUND ELECTRIC
- CULVERT
- SOIL BORING
- SANITARY SEWER MANHOLE
- SANITARY CATCH BASIN
- STORM SEWER MANHOLE
- STORM SEWER CATCH BASIN
- WATER GATE VALVE
- HYDRANT
- EXISTING TREE LINE
- PALET PROTECTION
- ROCK CONSTRUCTION ENTRANCE
- SILT FENCE

BENCHMARK
SE CORNER OF THE EAST 1/4 OF THE SW 1/4 OF SECTION 28
(SOUTH 1/4 CORNER OF SECTION 28)
TOWNSHIP 24, RANGE 24
COUNTY OF HENNEBEAU
ELEVATION = 821.97 (GDS 29)



SEE SHEET 3 FOR STORM SEWER NOTES

NO.			DATE			DESCRIPTION			CAMPION ENGINEERING SERVICES, INC.			RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN			STORM SEWER PLAN - REAR YARDS			PROJECT NO. 17-037		
									• Civil Engineering • Land Planning 1820 Pioneer Drive, Suite 200 P.O. Box 216 Mille Lacs, MN 56256 Phone: 763-778-4112 Fax: 763-778-4113 E-mail: info@campionengineering.com			I hereby certify that this plan, specification or report has been 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. North P. Carlson, EIT # 13801 Date: 05/13/2018								
															SHEET NO. 8 OF 15 SHEETS			DATE: 05/15/2018		



1. ALL EROSION CONTROL AND SEDIMENT CONTROL MEASURES SHALL COMPLY WITH MINNESOTA'S BEST MANAGEMENT PRACTICES MANUAL AND REGULATIONS OF THE CITY.
2. THE CONTRACTOR SHALL BE FAMILIAR WITH AND FOLLOW ALL REQUIREMENTS OF THE MPWA WHICH PHASE I REPORT FOR CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO: WEDDLY EROSION CONTROL INSPECTIONS, INSPECTION AFTER 45% RAINFALL OR MORE AND DOCUMENTATION OF ALL CORRECTIVE MEASURES. BY BEGINNING CONSTRUCTION, THE CONTRACTOR ACKNOWLEDGES THE TOWN OF ST. FRANCIS AND AGREES TO ABIDE BY THEM. THE CONTRACTOR SHALL PERFORM ANY CORRECTIVE MEASURES ORDERED BY THE CITY ON THE MPWA WITHIN 24 HOURS OF RECEIPT. ALSO, ADDITIONAL EROSION CONTROL MEASURES DEEMED NECESSARY BY EITHER THE CITY OR THE MPWA SHALL BE INSTALLED WITHIN 24 HOURS OF RECEIPT.
3. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT, IN TEMPORARY SEDIMENTATION BASINS OR IN EXISTING STORM SEWERS OR DRAINAGE SHALL BE REMOVED AFTER EACH RAIN AND AFTER EACH CLEANING. PROHIBIT FROM EXISTING PAVEMENTS SHALL BE COMPLETED BY SLEEPING.
4. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SEDIMENT INCLUDING BUT NOT LIMITED TO ROCK DITCHES AND/OR SILT FENCES. CONTROL SHALL COMMENCE WITH GRADING AND CONTINUE THROUGHOUT THE PROJECT SITE. ACCEPTANCE OF THE WORK BY THE OWNER, THE CONTRACTOR'S RESPONSIBILITY INCLUDES ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE EXPORTING OF SILT. THE OWNER MAY, AT HIS/HER OPTION, DIRECT THE CONTRACTOR IN WRITTEN NOTICES AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS.
5. ANY DEPOSITING OF SILT IN DRAINAGE OR EXISTING STORM SEWERS SHALL BE REMOVED AFTER EACH RAIN AND AFTER EACH CLEANING TO THE SATISFACTION OF THE OWNER, ALL AT THE EXPENSE OF THE CONTRACTOR. THE SILT FENCES SHALL BE REMOVED AND THE SILT REMOVED FROM THE PONDING AREAS BY THE CONTRACTOR AFTER THE TEMP IS ESTABLISHED.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH AND THE MONITORING REQUIREMENTS OF THE MPWA.
7. ALL DISTURBED AREAS, EXCEPT ROADWAYS, BUILDING AREAS AND SIDEWALKS, SHALL BE RESTORED WITH A MINIMUM 4 INCHES TOPSOIL, SEEDING AND MULCHED (TYPE D). SEEDING SHALL BE IN ACCORDANCE WITH MINNAPLANT SPECIFICATIONS, SEED MAT 25-111 @ 40 LBS/Acre (OR APPROVED EQUAL). THE FERTILIZATION SHALL BE SEEDING WITH SEED MAT 25-111. GRASSING SEEDING AREAS SHALL BE SEEDING AND MULCHED IN ACCORDANCE WITH MINNAPLANT SPECIFICATIONS, SEED MAT 25-111. FERTILIZER (10-10-20) SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE (ONE) IN LAKELAND AREAS IF UNCOVERED SEEDING IS DONE CONCURRENTLY. MUDST MAT 21-113 APPLIED AT A RATE OF 110 LBS/Acre SHALL BE USED FOR TEMPORARY SEEDING P P MULCHES.
8. CONSTRUCTION SHALL PROCEED IN THE FOLLOWING SEQUENCE:
- a. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CITY.
- b. INITIAL EROSION CONTROL MEASURES AND ROCK CONSTRUCTION INSTALLATION.
- c. MAXIMUM EROSION MEASURES, I.E. SILT FENCE, ROCK CONSTRUCTION DITCHES.
- d. MAXIMUM ALL SEDIMENTATION PONDING, COMPLETE SITE GRADING TOULANDING.
- e. INITIAL SEED AND MULCH ON AREAS THAT ARE NOT TO BE HAD SURFACES.
- f. SLOPE PROTECTION AND EROSION CONTROL SHALL BE DONE IN ACCORDANCE WITH SECTION 10.0 SLOPE PROTECTION, EROSION CONTROL AND STORM WATER POLLUTION PREVENTION PLAN OF THE PROJECT MANUAL.
9. ALL STORM SEWER INLETS AND FLARED END SECTIONS SHALL BE ADEQUATELY PROTECTED BEFORE AND AFTER PAVEMENT CONSTRUCTION UNTIL ALL DISTURBED AREAS ARE STABILIZED. CONTRACTOR SHALL PLACE BARRI FABRIC AND GRASS OVER ALL OPEN BURN DRIVE INLETS UNTIL PAVING SURFACES ARE FROD AND THE LANDSCAPING IS COMPLETED.
10. STORM SEWER AND PAVEMENT BEHIND ON THE SITE FOR MORE THAN SEVEN DAYS SHALL BE SEEDING, MULCHES, AND SURROUNDED BY SILT FENCE.
11. NO LOSS SHALL BE INSTALLED AT PIPE ELITE AND GUTTERS UNTIL PAVEMENT IS INSTALLED. PERMANENT DITCH DISSEMINATION SHALL BE INSTALLED WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.
12. EROSION AND SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE UNTIL THE SITE SOILS HAVE BEEN PERMANENTLY STABILIZED AND SHALL BE REMOVED WITHIN 30 DAYS THEREAFTER.
13. ALL STOCKPILES OF SOIL OR OTHER MATERIALS SUBJECT TO EROSION BY WIND OR WATER SHALL BE COVERED, VEGETATED, ENCLOSED, FENCED ON THE DOWN GRADIENT SIDE OR OTHERWISE EFFECTIVELY PROTECTED FROM EROSION IN ACCORDANCE WITH THE MEASURES OF THE NATIONAL WILL BE ON SITE AND THE MANNER OF ITS PROPOSED USE.
14. LOCATION OF CONCRETE WALKWAYS AND HAZARDOUS MATERIALS STORAGE SHALL BE DETERMINED PRIOR TO START OF CONSTRUCTION. THE SWPPP WILL BE UPDATED AND LOCATIONS ADDED AT THAT TIME.
15. TEMPORARY OR PERMANENT STABILIZATION SHALL BE INITIATED IMMEDIATELY TO LIMIT SOIL EROSION AND SHALL BE COMPLETED NOT LATER THAN SEVEN DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE AND TEMPORARY OR PERMANENTLY COVERED. INITIATED IMMEDIATELY MEANS TAKING AN ACTION TO COORDINATE STABILIZATION AS SOON AS PRACTICABLE, BUT NO LATER THAN THE END OF THE WORK DAY, FOLLOWING THE DAY WHEN THE EROSION-CAUSING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. INITIATED STABILIZATION IS DEFINED AS COMPLETING ONE (OR MORE) OF THE FOLLOWING: SOIL PROTECTION FOR VEGETATION, MULCHING (OR OTHER NON-VEGETATIVE MEASURES), SEEDING/PLANTING, OR SEDIMENTATION STABILIZATION MEASURES TO BE FULLY INSTALLED AND COMPLETED WITHIN THE 7 DAY TIMEFRAME.
16. THE CONTRACTOR SHALL PROVIDE AND INSTALL A SWPPP MANUAL (CHECKBOOK).

OWNER/DEVELOPER:
LAKETOWN HOMES, L.L.C.
ATTN: DALE WILLENBRING
1538 BEACHCOURT BLVD
WACO, TX 76707
P: 817.715.2928
EMAIL: DALE@LAKETOWNHOMES.COM

DESIGNER:
CAMPION ENGINEERING SERVICES, INC.
1800 PIONEER CREEK CENTER
WAPLE PLAIN, MN 55359
P: 763.479.3172
EMAIL: JACAMPION@CAMPIONENG.COM

EROSION CONTROL INSTALLER:
NAME: _____
CONTACT: _____
ADDRESS: _____
PHONE: _____

CONTRACTOR:
NAME: _____
CONTACT: _____
ADDRESS: _____
PHONE: _____

LEGEND

PROPERTY LINE	SOIL BORING
EXISTING CONTOURS	SEDIMENTATION BASIN
PROPOSED CONTOURS	STORM SEWER MANHOLE
EXISTENT LINE	STORM SEWER MANHOLE
SETBACKS	STORM SEWER CATCH BASIN
WET	WATER GATE VALVE
DEGRADED WETLAND EDGE	INTAKENT
STORM SEWER	EXISTING TREE LINE
SEDIMENTATION POND	INLET PROTECTION
WETLAND	ROCK CONSTRUCTION ENTRANCE
FENCE	SILT FENCE
OVERHEAD POWER LINE	
UNDERGROUND ELEVATION	
CLUST	

EROSION CONTROL QUANTITIES:

SITE RESTORATION = 25 AC
SILT FENCE = 6500 LF
INLET PROTECTION = 1 EA
ROCK CONSTRUCTION ENTRANCE = 1 EA

BENCHMARK
SE CORNER OF THE EAST 1/4 OF THE SW 1/4 OF SECTION 28
TOWNSHIP 34, RANGE 24
COUNTY OF RAMSEY, MINN.
ELEVATION = 811.87 (MAY 79)

**RIVERS EDGE
LAKETOWN HOMES
ST FRANCIS, MN**

EROSION CONTROL BLANKET REQUIREMENTS

1. TEMPORARY EROSION BLANKET SHALL BE NONDECOMPOSABLE POLYESTER NET STAM (NORTH AMERICAN ORDER #150 OR APPROVED EQUAL) AND EROSION MATS SHALL HAVE A MINIMUM FUNCTIONAL LONGEVITY OF 10 MONTHS.

2. EROSION BLANKET PLACED ON SLOPES 3:1 OR GREATER SHALL BE ROLLED DOWN SLOPE AND WITH 4" MINIMUM LAP AND SEALED AT 1" G.C.

3. CONTRACTOR SHALL INSTALL EROSION BLANKET 2' BEYOND CHEST AND TOE OF SLOPE. STABLE EROSION BLANKET IN TRENCH AT 1' G.C.

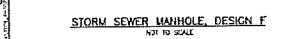
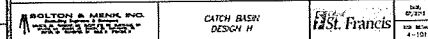
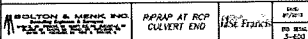
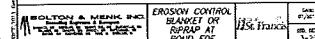
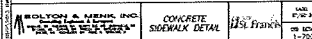
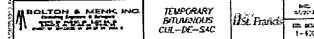
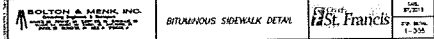
STORM WATER POLLUTION PREVENTION PLAN - SHEETS

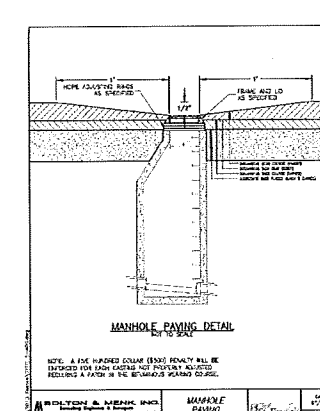
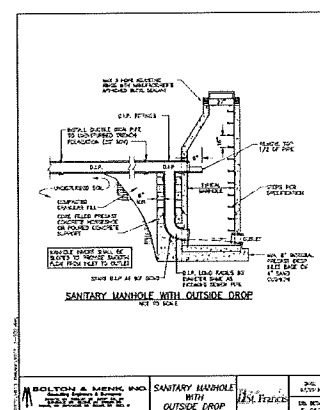
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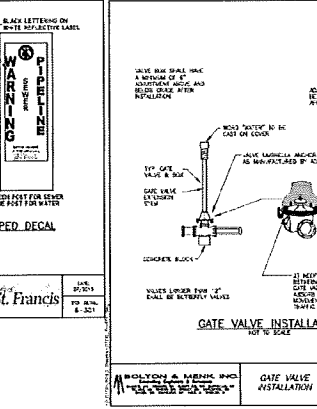
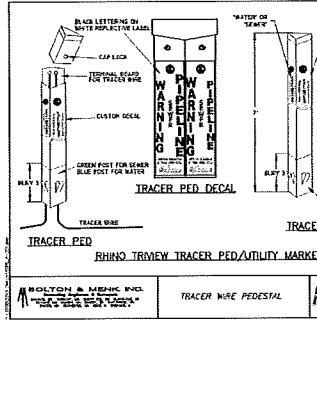
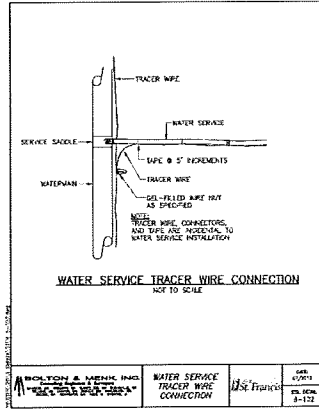
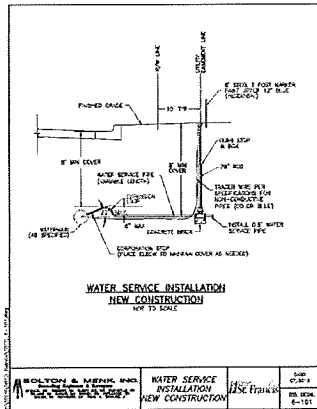
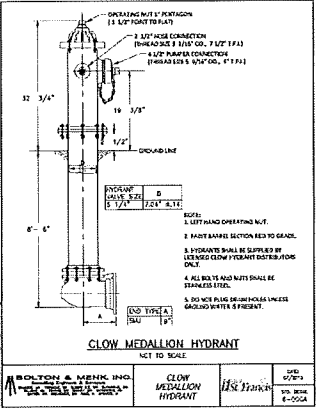
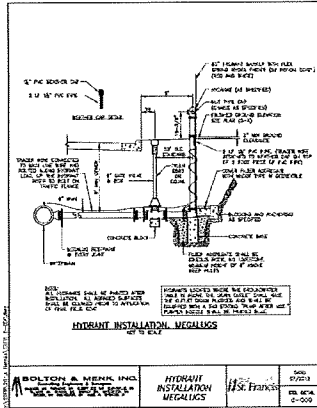
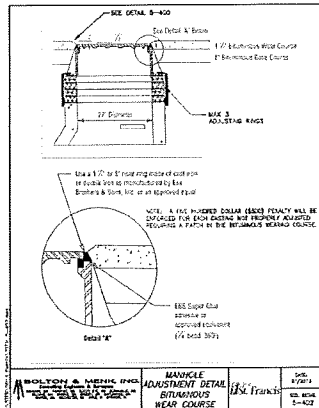
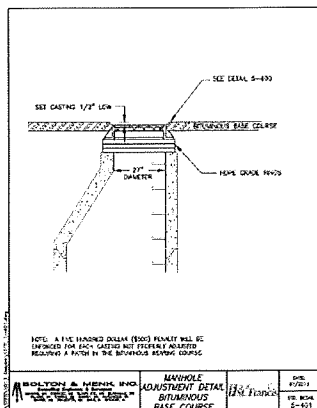
PROJECT NO. 17-037

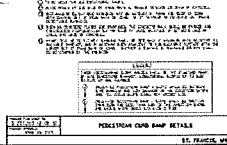
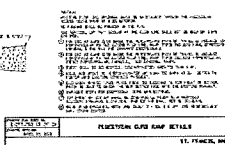
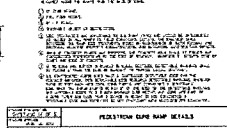
DATE: 05/15/2018

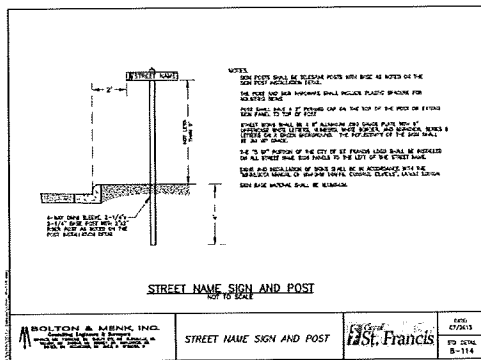
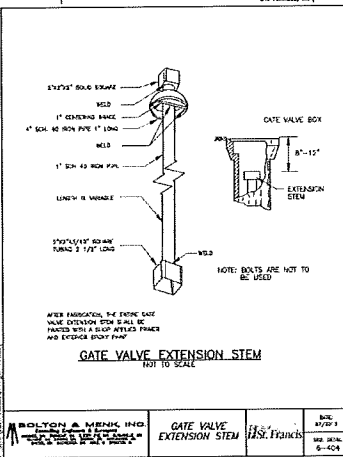
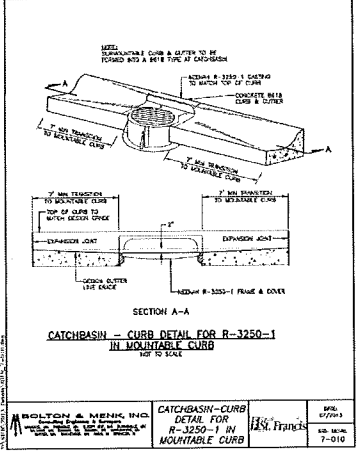
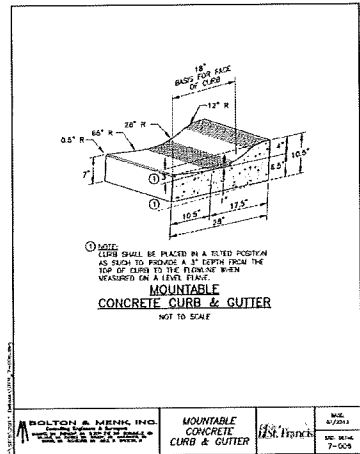
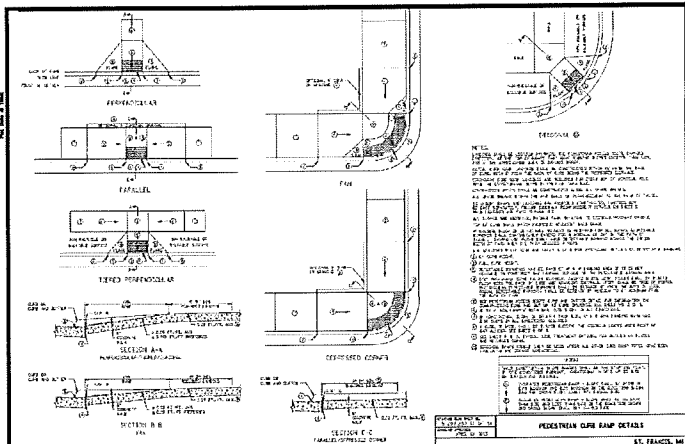
		CAMPION ENGINEERING SERVICES, INC.		* Civil Engineering Seal Number 1920 Phlegmum Road, Portland P.O. Box 246, Portland ME 04106 Phone: 763-476-2172 Fax: 763-476-2173 E-Mail: campion@campioneng.com		I hereby certify that this plan, specification or report has been prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.  Date: 06/15/2018 Mark P. Campion - Civil E. 19801 Date:		RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN		DETAILS 17-037	
NO DATE		DESCRIPTION						SHEET NO. 10 OF 15 SHEETS		DATE 05/15/2018	











WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT Gopher State One Call AT 800-424-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND LINES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN CHARGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG
GOPHER STATE ONE CALL
TOLL FREE 1-800-233-1166

RIVERS EDGE - PHASE ONE GRADING ST FRANCIS, MN

PROJECT LOCATION



PROJECT DIRECTORY

DESIGNER
LAKETOWN HOMES, LLC
ATTN: JIM VILKOWSKI
1500 POWER CREEK CENTER
MAPLE PLAIN, MN 55359
TEL: 763.711.7918
EMAIL: JIM.VILKOWSKI@LAKETOWNHOMES.COM

ENGINEER
CAMPION ENGINEERING SERVICES, INC.
ATTN: JIM CAMPION
1500 POWER CREEK CENTER
MAPLE PLAIN, MN 55359
TEL: 763.711.7918
EMAIL: JIM.CAMPION@CAMPIONENGINEERING.COM

SURVEYOR
STEWART ASSOCIATES
ATTN: JIM STEWART
1500 POWER CREEK CENTER
MAPLE PLAIN, MN 55359
TEL: 763.711.7918
EMAIL: JIM.STEWART@STEWARTASSOCIATES.COM

UTILITY CONSULTANT
MINISTAR UTILITIES, INC.
ATTN: JIM MINISTAR
1500 WEST SEVENTH STREET
ST. PAUL, MN 55108
TEL: 651.788.0841
EMAIL: JIM.MINISTAR@MINISTAR.COM

GOVERNING SPECIFICATIONS:

1. THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" LATEST EDITION & SUPPLEMENTS.
2. CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD UTILITIES SPECIFICATIONS (LATEST EDITION)
3. ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCE WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.
4. CITY OF ST FRANCIS STANDARD SPECIFICATIONS & DETAILS.

INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS
3	GRADING - EAST
4	GRADING - WEST
5	STORM WATER POLLUTION PREVENTION PLAN - EAST
6	STORM WATER POLLUTION PREVENTION PLAN - WEST
7	DETAILS
8	GRADING & SHEET NOTES

BENCHMARK

AT CORNER OF THE EAST 1/2 OF THE SW 1/4 OF SECTION 28 (NORTH 1/2 CORNER OF SECTION 30) CORNER 14, RANGE 24 EAST FOUR BENCHMARK BENCHMARK TOP OF MONUMENT ELEVATION = 81.87 (MVD 28)

N



CAMPION ENGINEERING SERVICES, INC.

* Civil Engineering * Land Planning
1800 Phoenix Creek Center,
P.O. Box 308
Maple Plain, MN 55359
Phone: 763-711-7918
Fax: 763-711-7919
E-Mail: cengineering@campioneng.com

I hereby certify that this plan, specification or report has been 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.
Jim Campion 04/01/2014
North P. Campion - Civil & Land Planning

**RIVERS EDGE
LAKETOWN HOMES
ST FRANCIS, MN**

COVER SHEET

PROJECT NO. 17-037

SHEET NO. 1 OF 8 SHEETS DATE: 04/17/2018

CERTIFICATE OF SURVEY

LEGAL DESCRIPTION OF PROPERTY

That part of the East half of the Southwest Quarter (SE 1/4 of SW 1/4) of Section 19, Township 34, Range 24, Anoka County, Minnesota described as follows:

Commencing at the Southwest corner of said East half of the Southwest Quarter and proceeding North on the East line of said East half of the Southwest Quarter to the junction of the Rum River, a natural stream, and thence proceeding Southwesterly along the junction of said Rum River to the East line of said East half of the Southwest Quarter, thence proceeding South on said East half of the Southwest Quarter to the point of commencement.

The North 1/2 of the Northeast Quarter of Section 33, Township 34, Range 24, Anoka County, Minnesota.

AND

The South 1/2 of the Northeast Quarter of Section 33, Township 34, Range 24, Anoka County, Minnesota, lying East of the Rum River.

AND

That part of the West 1/2 of the Northeast Quarter of the Northeast Quarter of Section 33, Township 34, Range 24, Anoka County, Minnesota, lying northwesterly of the right-of-way of County Road No. 72 (Rum River Road).

LEGEND

- FOUND GATE WITH MONUMENT
- FOUND TIE MONUMENT
- MONUMENT FOUND MONUMENT
- COMMUNICATIONS PRESENT
- SAWNEY BOWER MONUMENT
- STORM DRAIN ALLEY
- FENCED END SECTION
- ADJACENT
- WATER MAIN
- UTILITY MAIN
- CONVEYANCE LINE
- COLLOCATED WATER MAIN
- TREE LINE

GENERAL NOTES

Boundaries are based on Anoka County Coordinate System.
Elevations and surface contours are shown herein and are relative to the NAD83 vertical datum. Based on Anoka County benchmark number 3318 near Station No. 1 1979' located at the intersection of Map No. 47 & 2152 Ad. NW. Elevation = 216.64' (1979 adjustment).

SE 1/4 OF SECTION 33

DETAIL



SURVEY NOTES

1. This survey was based on a commitment for the survey issued by Street Use Company, Inc. No. 24400, with an effective date of November 15, 2017.
2. Subject property is approx. 4,187,876 sq. ft. or 95.3 acres.
3. This work was completed on 10/12/2017.
4. Records maintained by Midwest Survey Resources Inc.

SURVEYOR'S CERTIFICATION

I hereby certify that this survey was completed by me or under my direct supervision and that I am a duly licensed land surveyor under the laws of the State of Minnesota.

Chris
Chris Anderson, LS 42053

02/08/2018
Date

Survey Name: Date: Willembrink

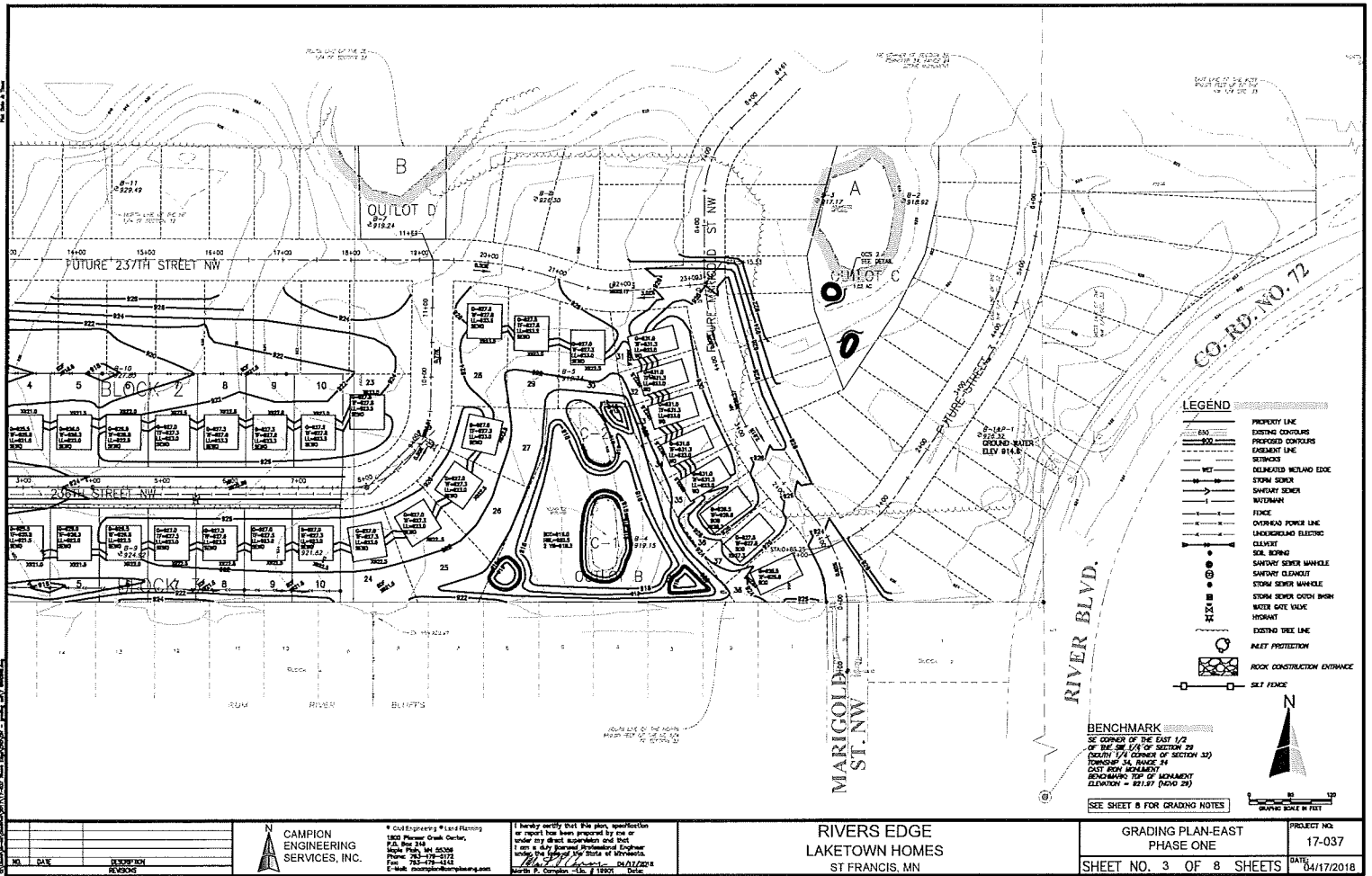
WENCK ASSOCIATES

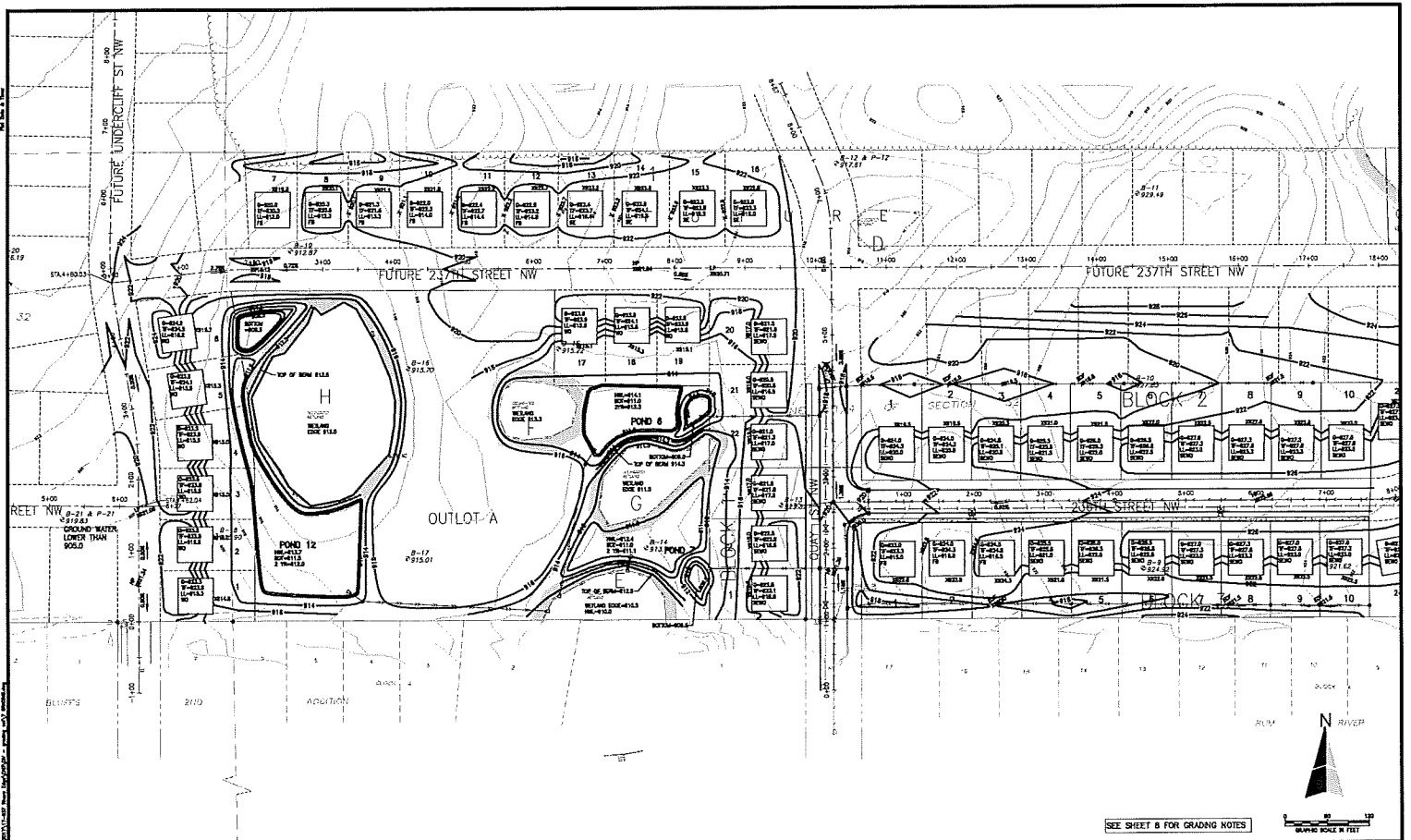
Responsive partner. Exceptional outcomes.
3600 PUEBLO CIRCLE
MINNEAPOLIS, MN 55412
763-752-4120
FAX: 763-752-4121

PROJECT TITLE

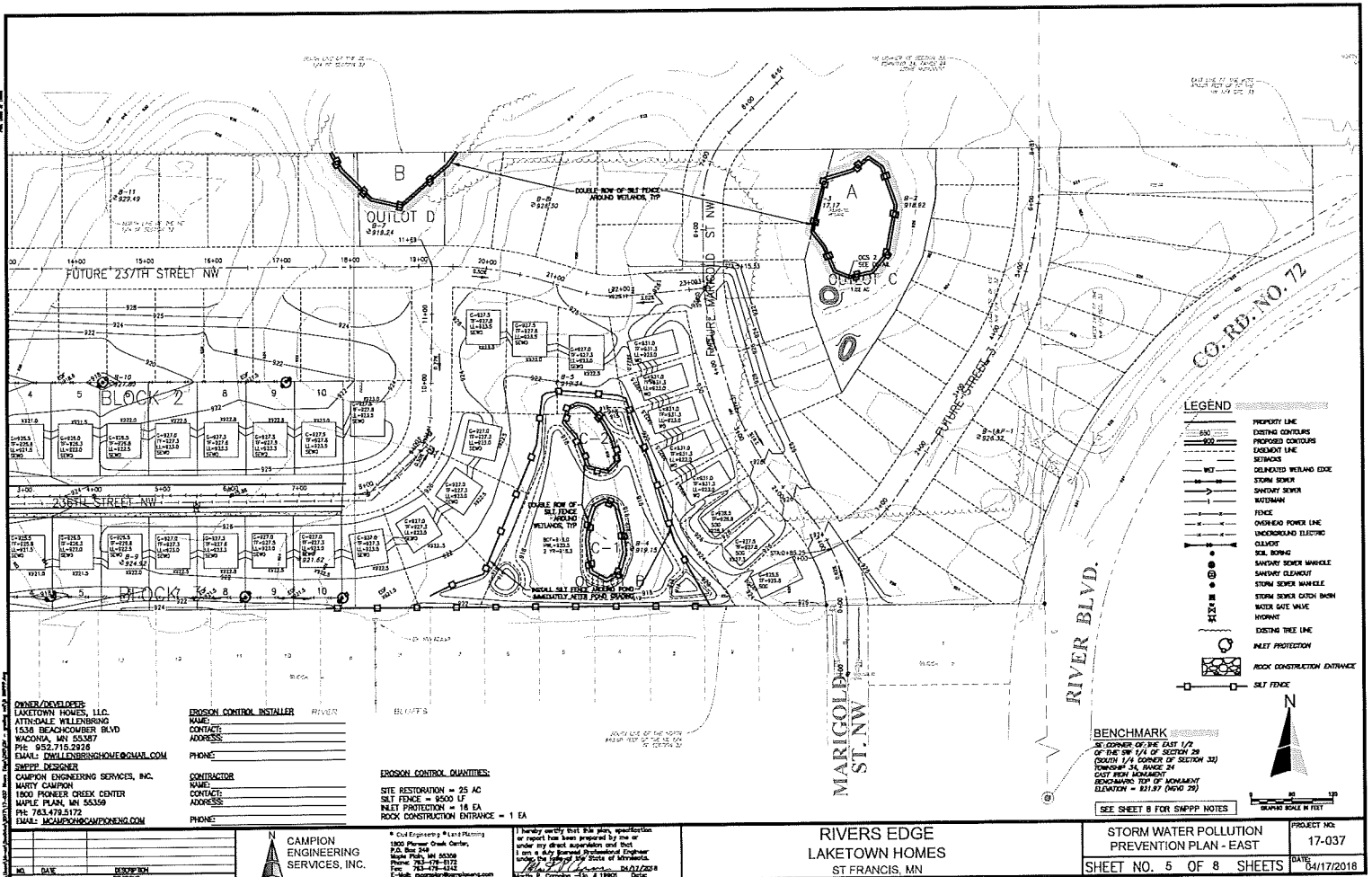
CERTIFICATE OF SURVEY

DATE: 02-08-2018	DATE: 02-08-2018
NAME: CHA	NAME: CHA
SCALE: 1" = 150'	SCALE: 1" = 150'
SHEET: 2	SHEET: 8





</		
--	--	--



OWNER/DEVELOPER
LAKETOWN HOMES, LLC
ATTORNEY: WILLENBERG
1530 BEAUCHAMBER BLVD
WACONIA, MN 55387
PHONE: 952.715.2928
EMAIL: DWILLENBERG@LAKETOWNHOMES.COM

SWPPP DESIGNER
CAMPIO ENGINEERING SERVICES, INC.
MARTY CAMPIO
1800 PIONEER CREEK CENTER
MAPLE PLAIN, MN 55359
PHONE: 763.479.5172
EMAIL: MCAMPIO@CAMPIOENGINE.COM

EROSION CONTROL INSTALLER
NAME: _____
CONTACT: _____
ADDRESS: _____
PHONE: _____

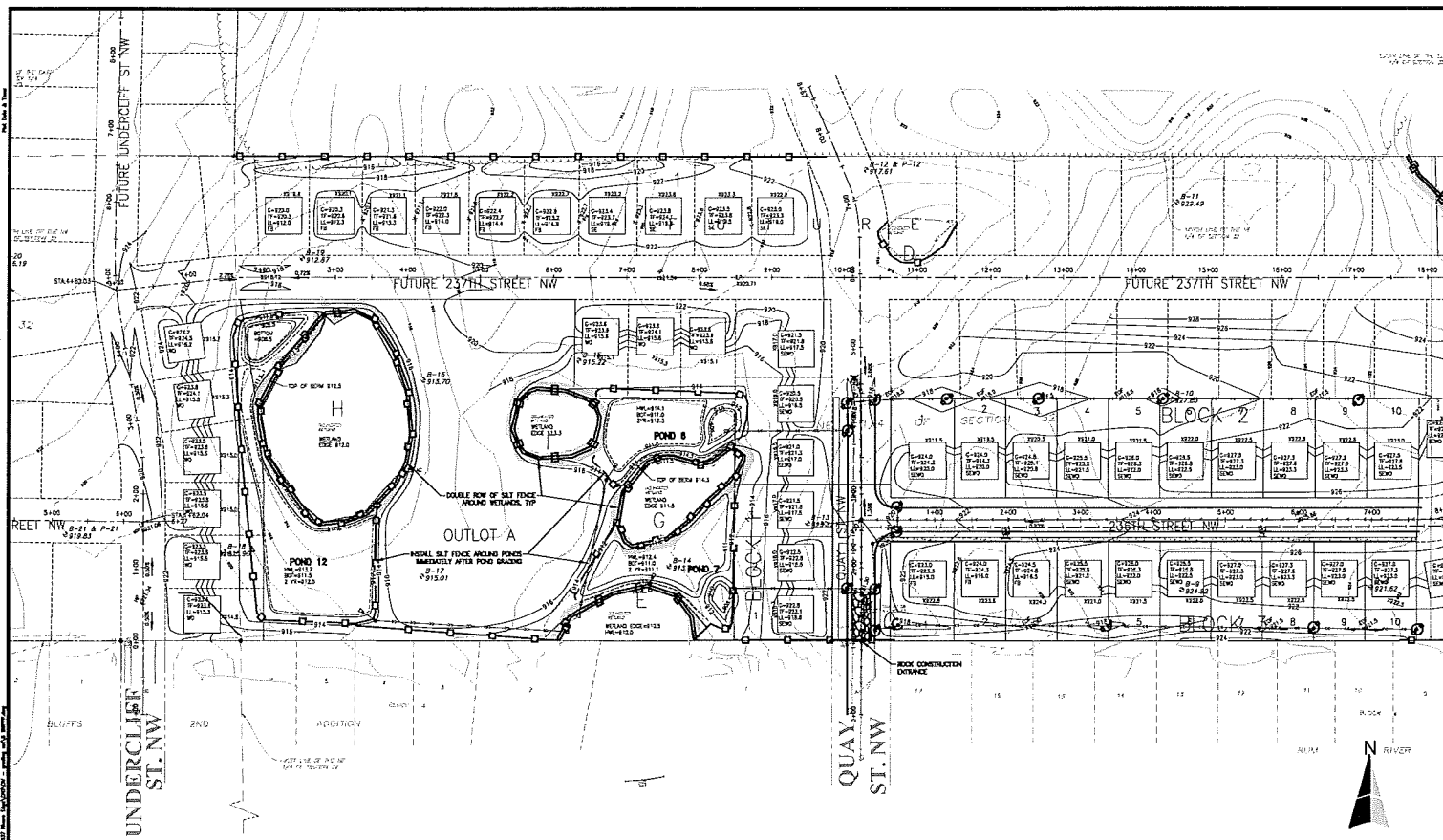
CONTRACTOR
NAME: _____
CONTACT: _____
ADDRESS: _____
PHONE: _____

EROSION CONTROL QUANTITIES:
SITE RESTORATION = 25 AC
SILT FENCE = 9500 LF
INLET PROTECTION = 18 EA
ROCK CONSTRUCTION ENTRANCE = 1 EA

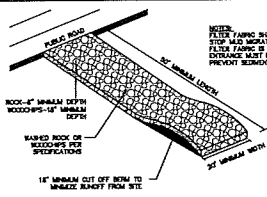
I hereby certify that this plan, specification or report has been prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
MARTY CAMPIO, P.E.
04/17/2018

RIVERS EDGE
LAKETOWN HOMES
ST FRANCIS, MN

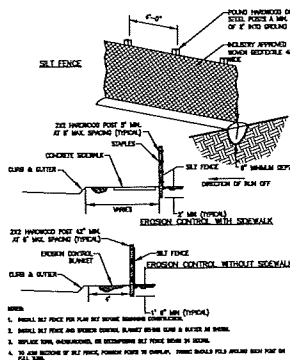
STORM WATER POLLUTION
PREVENTION PLAN - EAST
SHEET NO. 5 OF 8 SHEETS
PROJECT NO. 17-037
DATE: 04/17/2018



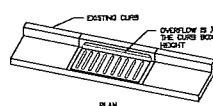
SEE SHEET 8 FOR SWPPP NOTES 1" = 40' GRAPHIC SCALE IN FEET		



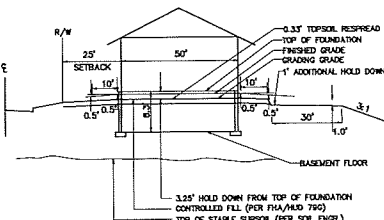
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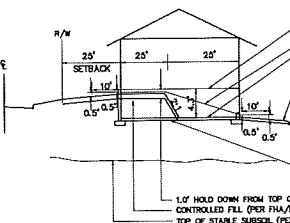
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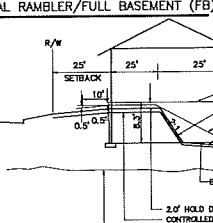
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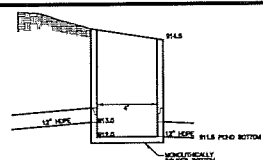
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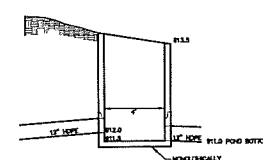
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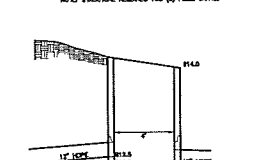
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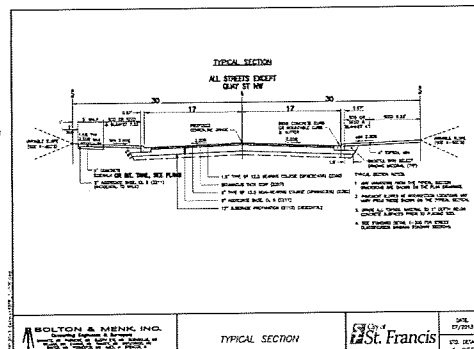
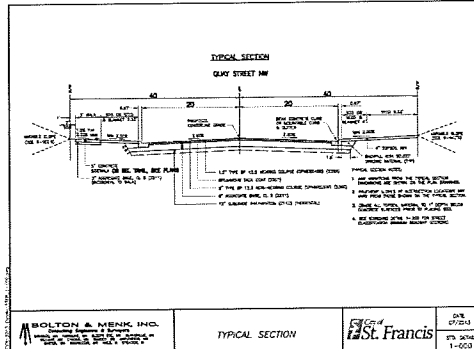
OUTLET CONTROL STRUCTURE (POND 6)



OUTLET CONTROL STRUCTURE (POND 7)



OUTLET CONTROL STRUCTURE (POND 12)



DATE: 04/17/20

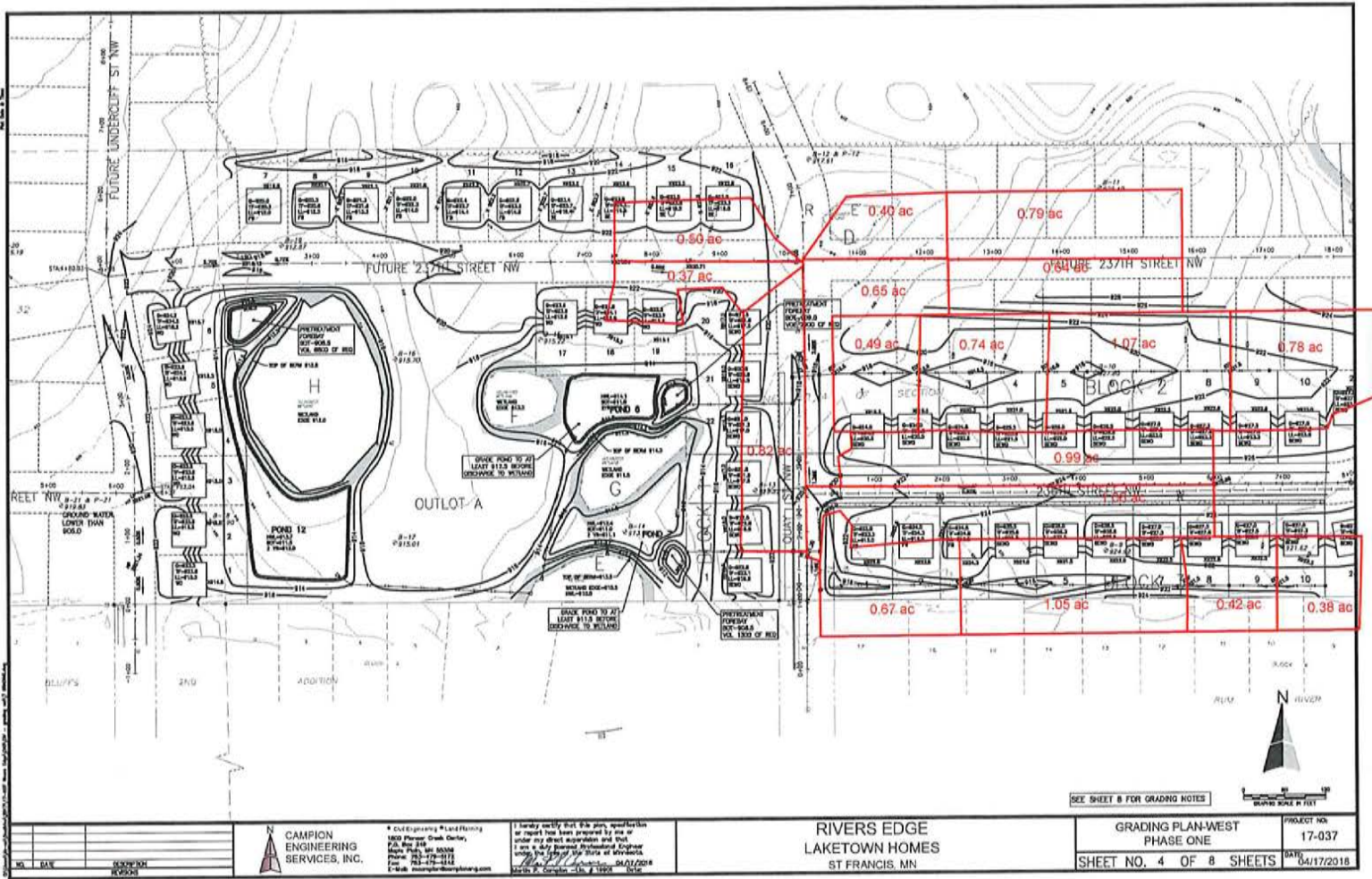
STORM SEWER DESIGN

RIVERS EDGE
MAY 10, 2018
CES PROJECT NO. 17-037

DESIGNED BY: MPC
YEAR STORM: 10
MANNINGS "N": 0.013 RCP
0.01 SMOOTH WALL HDPE

STRUCTURE NO.		LENGTH	AREA (ACRES)		TIME OF CONC.		"C" OF	NEW	"I"	RUNOFF	SLOPE	PIPE	DESIGN VALUES		UPSTREAM STRUCT.		DOWNSTREAM STRUCT.	
UPSTRM	DWNSTRM	(FEET)	INCR.	TOTAL	TO INLET	IN PIPE	INCREASE	"C"	(IN/HR)	(CFS)	(%)	DIA. (IN)	Q (CFS)	V (FT/SEC)	RIM	INVERT	RIM	INVERT
CB1	CBMH 3	141	0.38	0.38	10	0.7	0.58	0.58	5.6	1.23	0.36	12	2.78	3.54	920	917.00	919.5	916.49
CBMH 3	CBMH 2	283	0.42	0.8	10.7	1	0.49	0.53	5.5	2.33	0.6	12	3.58	4.57	919.5	916.49	917.8	914.79
CBMH 2	CBMH 1	287	1.05	1.85	11.7	1.2	0.48	0.5	5.3	4.90	0.35	15	4.96	4.05	917.8	914.59	917	913.59
CBMH 1	STMH 1	63	0.67	2.52	12.9		0.43	0.48	5.1	6.17	0.93	15	6.22	5.07	917	913.59	920.95	913.00
CB 2	CBMH 4	33	0.99	0.99	10	0.1	0.69	0.69	5.6	3.83	1.2	12	3.90	4.97	919.78	916.78	919.78	916.38
CBMH 4	STMH 2	38	1.06	2.05	10.1	0.1	0.71	0.7	5.6	8.04	1.65	15	8.29	6.76	919.78	916.18	920.13	915.55
STMH 2	STMH 1	62		2.05	10.2	0.2		0.7	5.6	8.04	1.65	15	8.29	6.76	920.13	915.55	920.95	914.53
STMH 1	FES	187		4.57	12.9			0.58	5.1	13.52	0.75	21	13.71	5.70	920.95	912.40		911.00
CB 3	CBMH 9	268	0.78	0.78	10	0.9	0.46	0.46	5.6	2.01	0.82	12	4.19	5.34	920	917.00	917.8	914.80
CBMH 9	CBMH 8	172	1.07	1.85	10.9	0.5	0.46	0.46	5.4	4.60	0.76	15	7.31	5.96	917.8	914.80	916.5	913.49
CBMH 8	CBMH 7	126	0.74	2.59	11.4	0.4	0.44	0.45	5.3	6.18	0.55	15	6.22	5.07	916.5	913.49	916.5	912.80
CBMH 7	CBMH 6	97	0.49	3.08	11.8	0.4	0.47	0.46	5.2	7.37	0.3	18	7.47	4.23	916.5	912.80	917.65	912.51
CB 4	CBMH 6	39	0.36	0.36	10		0.68	0.68	5.6	1.37	1	12	3.56	4.53	917.65	914.65	917.65	914.26
CB 5	CBMH 10	33	0.79	0.79	10	0.1	0.68	0.68	5.6	3.01	0.8	12	3.18	4.06	920.69	917.95	920.69	917.69
CBMH 10	STMH 3	191	0.79	1.58	10.1	0.7	0.59	0.64	5.6	5.66	0.78	15	5.70	4.65	920.69	917.49	920.22	916.00
CB 6	STMH 3	47	0.4	0.4	10		0.59	0.59	5.6	1.32	1.62	12	4.53	5.77	919.96	916.96	920.22	916.20
CB 7	CBMH 11	33	0.37	0.37	10	0.2	0.67	0.67	5.6	1.39	0.5	12	2.52	3.21	920.87	917.87	920.87	917.71
CBMH 11	STMH 3	188	0.5	0.87	10.2	0.8	0.59	0.62	5.6	3.02	0.8	12	3.18	4.06	920.87	917.71	920.22	916.21
STMH 3	CBMH 6	171		2.85	11	0.3		0.63	5.4	9.70	1.93	18	14.58	8.26	920.22	915.81	917.65	912.51
CBMH 6	CBMH 5	41	0.65	6.94	12.2	0.1	0.65	0.55	5.2	19.85	0.45	27	20.76	5.22	917.65	912.22	917.65	912.04
CBMH 5	FES	206	0.46	7.4	12.3	0.1	0.68	0.56	5.2	21.55	0.5	27	21.88	5.51	917.65	912.04		911.01

FUTURE STORM SEWER



CAMPION ENGINEERING SERVICES, INC.	* Consulting & Planning 1800 Pioneer Creek Center, P.O. Box 248 St. Francis, MN 55069 Phone: 763-478-2272 Fax: 763-478-2244 E-Mail: info@campionengineering.com	I hereby certify that this plan, specification or report has been 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. <i>Mark P. Campion</i> 04/17/2018 Mark P. Campion - Lic. # 10029 State	RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN	GRADING PLAN-WEST PHASE ONE SHEET NO. 4 OF 8 SHEETS	PROJECT NO. 17-037 DATE 04/17/2018
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STORMWATER MANAGEMENT PLAN

**Rivers Edge
St. Francis, MN**

*LAKETOWN HOMES
CMI PROJECT No.: 0384
REPORT DATE: MAY 3, 2018*

PREPARED FOR:

Campion Engineering Services, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359

PREPARED BY:

Civil Methods, Inc.
1551 Livingston Avenue, Ste. 104
West St. Paul, MN 55118

ENGINEER 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.

Name: Kent Brander, PE

Signed: 

Date: May 3, 2018

Registration: MN PE No. 44578

CIVIL METHODS, INC.
PROFESSIONAL ENGINEERS
LAND | WATER | INFRASTRUCTURE

Table of Contents

1. INTRODUCTION	1
2. EXISTING SITE CONDITIONS	1
3. PROPOSED SITE CONDITIONS	2
3.1 DRAINAGE CHARACTERISTICS.....	2
3.2 RUNOFF RATE CONTROL.....	2
3.3 VOLUME CONTROL	3
4. HIGH WATER LEVELS & FREEBOARD REQUIREMENTS.....	4

APPENDIX A – SOILS INFORMATION: BORING MAP AND TYPICAL BORING

APPENDIX B – DRAINAGE DIAGRAM

APPENDIX C – HYDROCAD OUTPUT

1. INTRODUCTION

The St. Francis Rivers Edge development is proposed to be located on the eastern half of the approximately 96-acre parcel west of Rum River Blvd NW and north of 235th Ln NW, just east of the Rum River in St. Francis, MN. The first phase of the development covers approximately 51 acres and will include 120 single-family homes as well as associated streets, utilities, sidewalks, open space, and stormwater management features. The property will be graded to provide overland drainage to new stormwater management areas, controlling runoff rate and volume discharging offsite.

The project construction site will include the addition of 11.4 acres of new impervious area. The development must meet the storm water management standards of the City of St. Francis (City Code Ch. 10 Sec. 93), the Upper Rum River Watershed Management Organization (URRWMO), and the Minnesota Pollution Control Agency (MPCA) NPDES General Stormwater Permit. This report summarizes the design calculations completed to meet those requirements.

2. EXISTING SITE CONDITIONS

The existing property has been used primarily as cropland, and it includes numerous significant depressions, some of which are designated as wetlands. Site soils were investigated in a geotechnical report in which borings indicated that the entire site is underlain by a thick layer of sand. Rather than include the whole report, the map of the borings and a representative boring report are included as Appendix A. The entire site is classified as Hydrologic Soil Group (HSG A), indicating a very high infiltration capacity. Figure 1 shows the site existing conditions as well as the drainage subcatchments and patterns.

Due to the presence of sandy soils as well as the significant amount of available storage volume on site, little runoff leaves the site under existing conditions. There are currently 6 locations where runoff could potentially discharge from the site: (1) East and then north along Rum River Blvd, (2) North to the wetland complex encompassing Wetlands A and B (see Figure 1), (3) North from the central portion of the site to the large offsite wetland, (4) South from the western portion of the site, to Wetland E and subsequently toward the Rum River, (5) North from the northwestern corner of the site, to the smaller offsite wetland, and (6) South from the southern central portion of the site, via an existing culvert directed to an existing offsite basin. These locations are denoted as R1, R2, R3, R4, R5, and R6 in the Figures and hydrologic modeling.

A HydroCAD model using SCS TR-20 methodology and the local NOAA Atlas-14 rainfall totals for the area has been developed to analyze the runoff condition of the site. Land cover, slopes, soils, and wetland storage have been accounted for in the analysis. Also, per City Code, a maximum Curve Number (CN) of 55 was used for the Existing Conditions subcatchments.

3. PROPOSED SITE CONDITIONS

3.1 DRAINAGE CHARACTERISTICS

Figure 2 shows the drainage subcatchments and flow directions under Proposed Conditions. Site drainage patterns will generally be maintained, with stormwater continuing to be largely retained on site, directed to the locations described above as R1-R6. At all those locations, runoff discharge rates will be maintained or reduced. A very small area in the southeast corner of the site (Subcatchment 13P) discharges separately into the existing roadway.

The highly permeable nature of the soils throughout the site makes infiltration highly feasible and desirable. Runoff from new impervious areas will be directed into infiltration basins located throughout the site. The vast majority of runoff will be infiltrated in these areas, with any remaining discharge being directed to the wetlands currently receiving runoff from the site.

The HydroCAD model used for the existing conditions analysis was modified to simulate proposed conditions. Given that numerous borings were collected at the site, and that land cover conditions under Proposed Conditions are known, the SCS method for determining runoff parameters based on actual site data was used for the analysis.

3.2 RUNOFF RATE CONTROL

The runoff rate control standards (maintain or reduce peak flow rates for the 2-, 10-, and 100-year storms) will be achieved with the 5 proposed infiltration areas distributed throughout the development. The sandy soil makes a significant level of infiltration possible, and it is the preferred management strategy for control of both rate and volume of runoff. The following table summarizes the runoff flow rate comparison for the design events (additional model output is included in Appendix F).

Table 1: Flow Rate Comparison

Node, ID	2-Year Storm		10-Year Storm		100-Year Storm	
	Existing (cfs)	Proposed (cfs)	Existing (cfs)	Proposed (cfs)	Existing (cfs)	Proposed (cfs)
R1	0.09	0.01	1.44	0.39	8.79	4.13
R2	0.14	0.04	1.33	0.72	6.13	4.31
R3	0.03	0.01	0.27	0.17	1.42	1.39
R4	0	0	0	0	0	0
R5	0	NA	0	NA	0	NA
R6	0	0	0	0	0.85	0.22

As indicated, the proposed stormwater management system reduces site discharge rates for the critical design storm events, thereby meeting stipulated rate control standards.

3.3 VOLUME CONTROL

Under Proposed Conditions, volume control measures must be included that can infiltrate the volume of the 2-year storm over the site, with the MPCA requiring a minimum of 1" of infiltration over the new impervious area of a site. The infiltration basins to be installed (P2P, P3P, P6P, P7P, and P12P) site meet or exceed the volume control requirements for the site.

Infiltration basins will be designed according to applicable standards from the MPCA, the URRWMO, and the City of St. Francis. Pretreatment will be provided for all runoff prior to discharge to infiltration areas, with pretreatment forebays installed at each inlet. Pretreatment forebay volume was designed to be at least 25% of the MPCA Water Quality Volume. The required infiltration volume is provided prior to any discharge to adjacent wetlands.

Table 2: Infiltration Volume Tabulation Per Basin

Basin ID	Impervious Area (acre)	2-Year Vol In (acre-ft)	Min Inf Vol per MPCA (acre-ft)	Avail. Storage Before Discharge to WL (acre-ft)	Pre-Treatment Req (25% WQV) (acre-ft)	Pre-Treatment Provided (acre-ft)	Check Volume Req's Met
P2P	2.03	0.12	0.17	0.17	0.043	0.053	OK
P3P	2.42	0.35	0.20	0.65	0.050	0.072	OK
P6P	3.20	0.17	0.26	0.28	0.065	0.076	OK
P7P	1.40	0.03	0.12	0.14	0.030	0.031	OK
P12P	6.10*	0.51	0.51	0.62	0.128	0.181	OK

**Includes projected future impervious within the drainage area.*

Overall, the runoff volume discharging from the site is significantly reduced in Proposed Conditions. On a per-reach basis, the runoff volumes discharged per storm event are shown in the following table.

Table 3: Runoff Volume Overall

Node, ID	2-Year Storm		10-Year Storm		100-Year Storm	
	Existing (acre-ft)	Proposed (acre-ft)	Existing (acre-ft)	Proposed (acre-ft)	Existing (acre-ft)	Proposed (acre-ft)
R1	0.03	0.006	0.156	0.066	0.619	0.328
R2	0.026	0.013	0.104	0.066	0.658	0.640
R3	0.006	0.003	0.024	0.022	0.083	0.097
R4	0	0	0	0	0	0
R5	0	NA	0	NA	0	NA
R6 (+R7)	0	0.003	0	0.013	0.382	0.051

4. HIGH WATER LEVELS & FREEBOARD REQUIREMENTS

The 100-year high water levels (HWLs) and freeboard requirements are achieved for the site. Figures 1 and 2 show the HWL for each wetland and basin throughout the site. Pond HWLs are provided in Table 4. The ponds were designed to ensure that 1 foot of freeboard exists between the HWL and the lowest floor of adjacent parcels. HWL elevations were determined by setting the starting water level within the basin at the outlet elevation. In some cases, wetland HWLs increased under proposed conditions, but in all cases the increase was less than 1 foot.

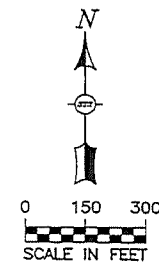
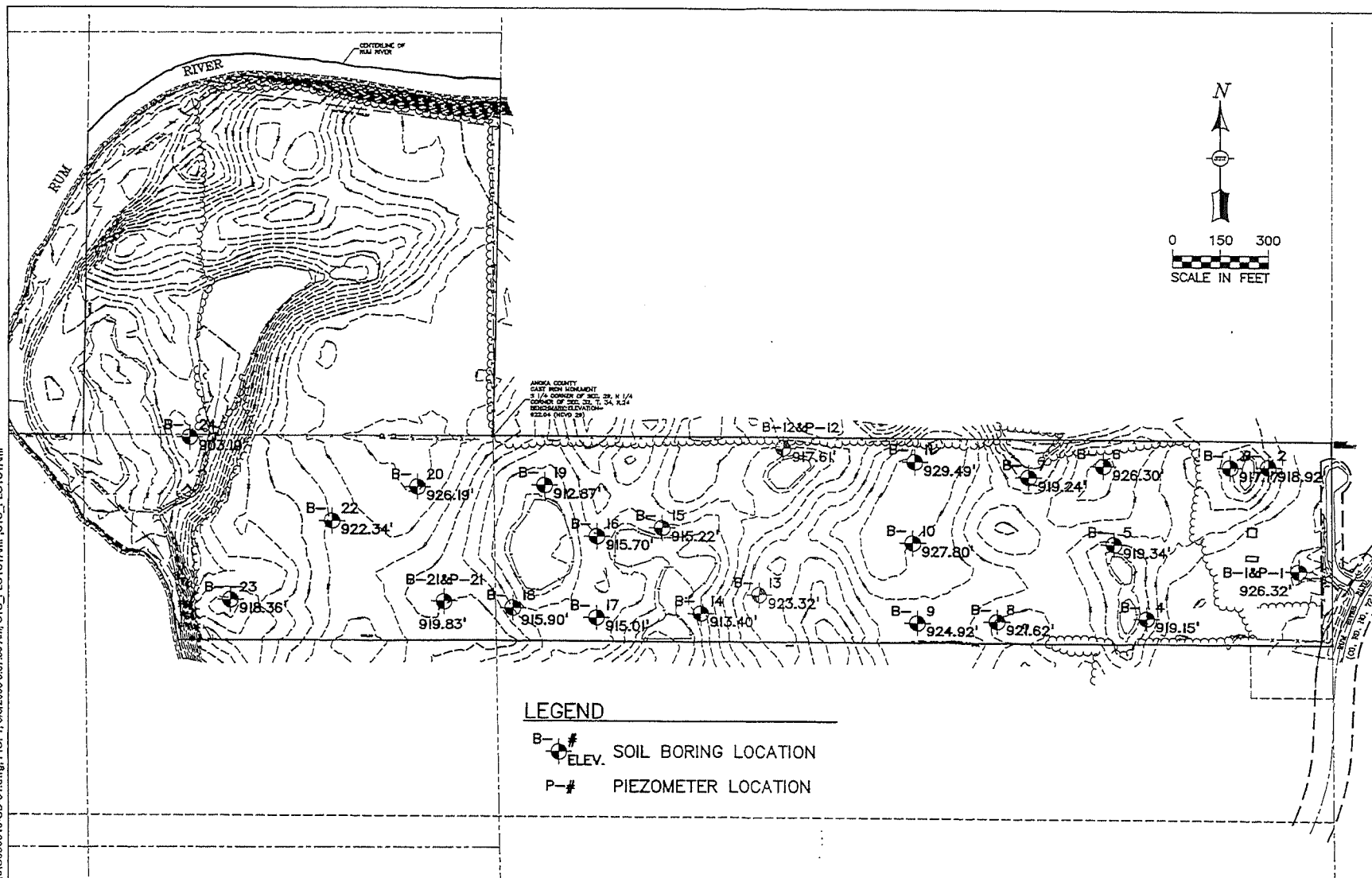
Table 4: Basin HWLs

Basin ID	100-year HWL
P2P	920.4
P3P	920.5
P6P	914.1
P7P	912.4
P12P	913.7

Appendix A – Soils Information: Boring Map and Typical Boring

REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL DETAIL

X:\PROJECTS\699819\699819_SB-01.dwg, FIG. 1, 3/3/2005 8:57:55 AM, STS_PLOTSTAMP.STS_PLOTSTAMP



STS CONSULTANTS
 10900 73rd Ave. N., Suite 150
 Maple Grove, MN 55369
 763-315-6300
 www.stsconsultants.com
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SOIL BORING LOCATION DIAGRAM
 RIVERS EDGE HOUSING SUBDIVISION
 ST. FRANCIS, MINNESOTA
 FOR: CREATIVE REAL ESTATE DEVELOPMENT CORP.

NOTE: BORING LOCATION DIAGRAM BASED ON SITE PLAN PROVIDED BY JOHN OLIVER AND ASSOCIATES.

Drawn:	TAK	2/22/2005
Checked:	MM	2/22/2005
Approved:	BN	2/22/2005
PROJECT NUMBER	699819	
FIGURE NUMBER	1	



STS Consultants Ltd.

OWNER

Creative Real Estate Development Corp.

LOG OF BORING NUMBER

B-10

PROJECT NAME

River's Edge Housing Development

ARCHITECT-ENGINEER

John Oliver & Associates, Inc.

SITE LOCATION

Rum River Blvd. NW & 237th Ave. NW, St. Francis, MN

DEPTH(FT) ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT. ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT. ²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT.
					SURFACE ELEVATION +927.8 NGVD						
	1	AS		1.3	Silty fine to medium sand, trace roots and organics - dark brown - moist - (SM)						
2.5		HS			Fine to medium sand, trace silt - brown - damp to saturated - loose to medium dense - (SP)						
	2	SS									
5.0		HS									
	3	SS									
7.5		HS									
	4	SS									
10.0		HS									
	5	SS									
12.5		HS									
	6	SS									
15.0				15.0							
					End of boring at 15.0 ft. Boring backfilled with cuttings.						

UNCONFINED COMPRESSIVE STRENGTH
TONS/FT.²

PLASTIC LIMIT % WATER CONTENT % LIQUID LIMIT %

10 20 30 40 50

STANDARD PENETRATION BLOWS/FT.

10 20 30 40 50

25 SOIL FROZEN

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	14.5 ft. WS	BORING STARTED	2/23/05	STS OFFICE	Minneapolis Area - 06
WL		BORING COMPLETED	2/23/05	ENTERED BY	DN
WL		RIG/FOREMAN	CME-45/TM	APP'D BY	MM
				SHEET NO.	1 OF 1
				STS JOB NO.	99819

BORING LOG 99819.GPJ STS.GDT 3/9/05

Appendix B – Drainage Diagrams

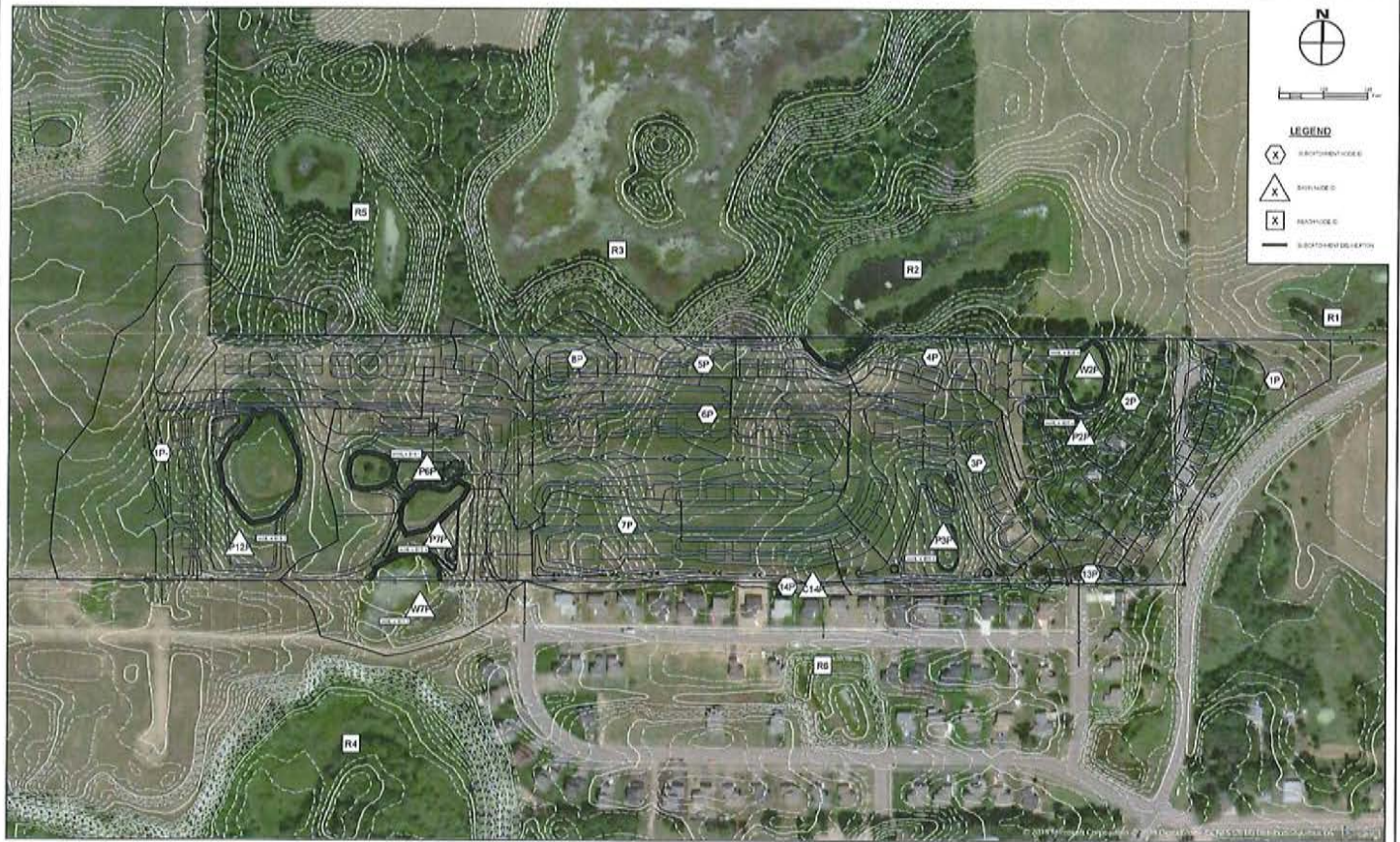


CIVIL METHODS, INC.
 1551 Livingston Avenue, Suite 104
 West St. Paul, MN 55114
 ☎ 763.210.5713 | www.civilmethods.com

LAKETOWN HOMES

EXISTING DRAINAGE DIAGRAM
 RIVERS EDGE
 ST. FRANCIS, MN

FIG1



CIVIL METHODS, INC.
 1551 Livingston Avenue, Suite 104
 West St. Paul, MN 55118
 612.210.5713 | www.civilmethods.com

DATE:

LAKETOWN HOMES

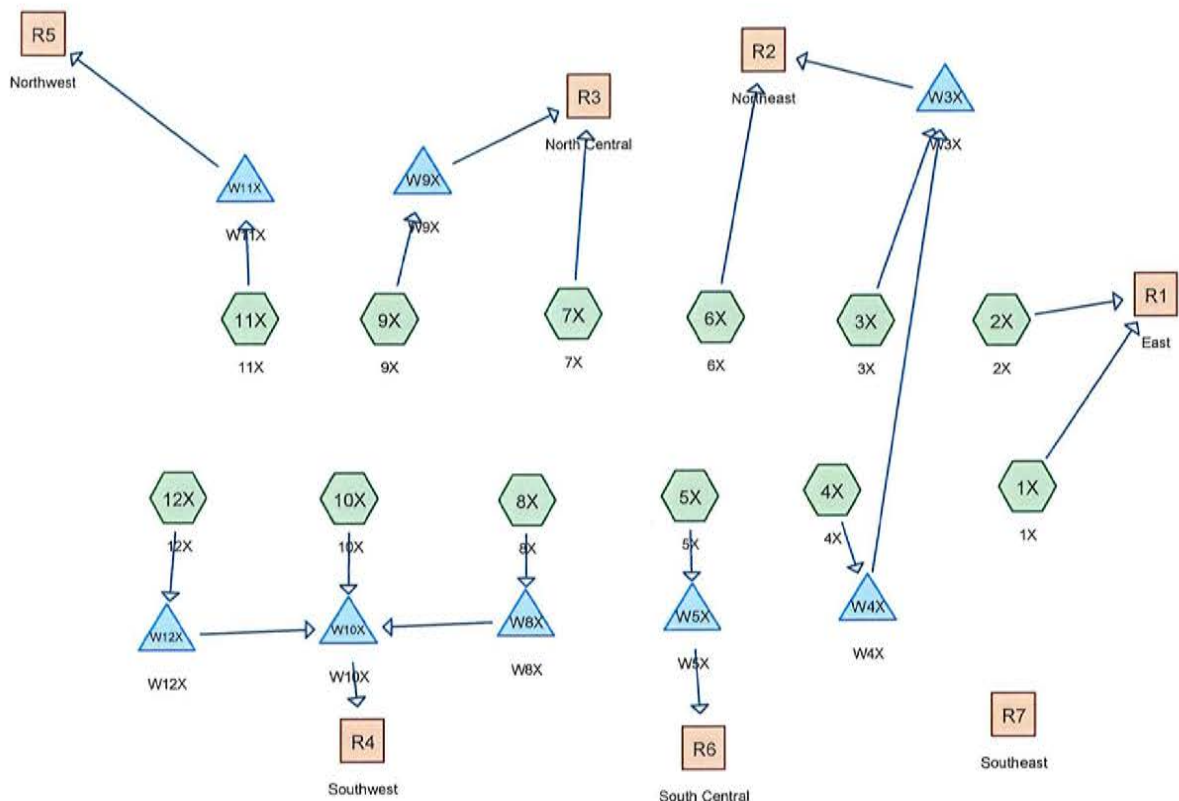
FILE:

PROPOSED DRAINAGE DIAGRAM
 RIVERS EDGE
 ST. FRANCIS, MN

SHEET NO:

FIG2

Appendix C – HydroCAD Output



Routing Diagram for 0384_Existing_180221

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
34.820	55	(5X, 6X, 7X, 8X, 9X, 10X, 11X, 12X)
7.110	55	Existing (4X)
0.420	98	Impervious (1X, 2X, 3X)
5.050	65	Row crops, contoured, Good, HSG A (1X, 2X, 3X)
5.060	32	Woods/grass comb., Good, HSG A (1X, 2X, 3X)
52.460	54	TOTAL AREA

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Page 3

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1X: 1X	Runoff Area=2.800 ac 4.64% Impervious Runoff Depth=0.08" Flow Length=915' Tc=15.1 min CN=51 Runoff=0.05 cfs 0.018 af
Subcatchment 2X: 2X	Runoff Area=1.220 ac 7.38% Impervious Runoff Depth=0.11" Flow Length=386' Tc=15.1 min CN=53 Runoff=0.04 cfs 0.011 af
Subcatchment 3X: 3X	Runoff Area=6.510 ac 3.07% Impervious Runoff Depth=0.06" Flow Length=500' Slope=0.0300 '/ Tc=11.3 min CN=50 Runoff=0.09 cfs 0.035 af
Subcatchment 4X: 4X	Runoff Area=7.110 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=930' Tc=25.9 min CN=55 Runoff=0.39 cfs 0.090 af
Subcatchment 5X: 5X	Runoff Area=3.060 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=610' Tc=16.8 min CN=55 Runoff=0.19 cfs 0.039 af
Subcatchment 6X: 6X	Runoff Area=2.030 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=216' Tc=11.6 min CN=55 Runoff=0.14 cfs 0.026 af
Subcatchment 7X: 7X	Runoff Area=0.460 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=177' Tc=11.2 min CN=55 Runoff=0.03 cfs 0.006 af
Subcatchment 8X: 8X	Runoff Area=3.530 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=327' Tc=11.6 min CN=55 Runoff=0.24 cfs 0.045 af
Subcatchment 9X: 9X	Runoff Area=4.690 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=564' Tc=14.1 min CN=55 Runoff=0.30 cfs 0.059 af
Subcatchment 10X: 10X	Runoff Area=8.040 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=728' Tc=14.0 min CN=55 Runoff=0.52 cfs 0.102 af
Subcatchment 11X: 11X	Runoff Area=1.300 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=292' Slope=0.0250 '/ Tc=10.8 min CN=55 Runoff=0.09 cfs 0.016 af
Subcatchment 12X: 12X	Runoff Area=11.710 ac 0.00% Impervious Runoff Depth=0.15" Flow Length=700' Tc=17.1 min CN=55 Runoff=0.73 cfs 0.148 af
Reach R1: East	Inflow=0.09 cfs 0.030 af Outflow=0.09 cfs 0.030 af
Reach R2: Northeast	Inflow=0.14 cfs 0.026 af Outflow=0.14 cfs 0.026 af
Reach R3: North Central	Inflow=0.03 cfs 0.006 af Outflow=0.03 cfs 0.006 af
Reach R4: Southwest	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

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Page 4

Reach R5: Northwest

Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Reach R6: South Central

Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Reach R7: Southeast

Outflow=0.00 cfs 0.000 af

Pond W10X: W10X

Peak Elev=908.46' Storage=4,435 cf Inflow=0.52 cfs 0.102 af

Outflow=0.00 cfs 0.000 af

Pond W11X: W11X

Peak Elev=914.40' Storage=717 cf Inflow=0.09 cfs 0.016 af

Outflow=0.00 cfs 0.000 af

Pond W12X: W12X

Peak Elev=910.33' Storage=6,460 cf Inflow=0.73 cfs 0.148 af

Outflow=0.00 cfs 0.000 af

Pond W3X: W3X

Peak Elev=916.23' Storage=1,503 cf Inflow=0.09 cfs 0.035 af

Outflow=0.00 cfs 0.000 af

Pond W4X: W4X

Peak Elev=918.35' Storage=3,922 cf Inflow=0.39 cfs 0.090 af

Outflow=0.00 cfs 0.000 af

Pond W5X: W5X

Peak Elev=920.35' Storage=1,688 cf Inflow=0.19 cfs 0.039 af

15.0" Round Culvert n=0.012 L=133.0' S=0.0200 '/' Outflow=0.00 cfs 0.000 af

Pond W8X: W8X

Peak Elev=918.30' Storage=1,947 cf Inflow=0.24 cfs 0.045 af

Outflow=0.00 cfs 0.000 af

Pond W9X: W9X

Peak Elev=915.81' Storage=2,587 cf Inflow=0.30 cfs 0.059 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 52.460 ac Runoff Volume = 0.595 af Average Runoff Depth = 0.14"**99.20% Pervious = 52.040 ac 0.80% Impervious = 0.420 ac**

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Page 5

Summary for Subcatchment 1X: 1X

Runoff = 0.05 cfs @ 13.14 hrs, Volume= 0.018 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.130	98	Impervious
1.370	65	Row crops, contoured, Good, HSG A
1.300	32	Woods/grass comb., Good, HSG A
2.800	51	Weighted Average
2.670	49	95.36% Pervious Area
0.130	98	4.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.6	215	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
3.1	600	0.0050	3.22	32.21	Channel Flow, Area= 10.0 sf Perim= 9.0' r= 1.11' n= 0.035
15.1	915	Total			

Summary for Subcatchment 2X: 2X

Runoff = 0.04 cfs @ 12.57 hrs, Volume= 0.011 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.090	98	Impervious
0.580	65	Row crops, contoured, Good, HSG A
0.550	32	Woods/grass comb., Good, HSG A
1.220	53	Weighted Average
1.130	49	92.62% Pervious Area
0.090	98	7.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	200	0.0400	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.4	186	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
15.1	386	Total			

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Page 6

Summary for Subcatchment 3X: 3X

Runoff = 0.09 cfs @ 13.20 hrs, Volume= 0.035 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.200	98	Impervious
3.100	65	Row crops, contoured, Good, HSG A
3.210	32	Woods/grass comb., Good, HSG A
6.510	50	Weighted Average
6.310	48	96.93% Pervious Area
0.200	98	3.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0300	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.4	400	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.3	500	Total			

Summary for Subcatchment 4X: 4X

Runoff = 0.39 cfs @ 12.66 hrs, Volume= 0.090 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 7.110	55	Existing
7.110	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
12.2	830	0.0050	1.14		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
25.9	930	Total			

Summary for Subcatchment 5X: 5X

Runoff = 0.19 cfs @ 12.52 hrs, Volume= 0.039 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

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Page 7

Area (ac)	CN	Description
* 3.060	55	
3.060	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0125	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.2	510	0.0160	2.04		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
16.8	610	Total			

Summary for Subcatchment 6X: 6X

Runoff = 0.14 cfs @ 12.43 hrs, Volume= 0.026 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 2.030	55	
2.030	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.2	116	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.6	216	Total			

Summary for Subcatchment 7X: 7X

Runoff = 0.03 cfs @ 12.41 hrs, Volume= 0.006 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.460	55	
0.460	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
0.8	77	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	177	Total			

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Page 8

Summary for Subcatchment 8X: 8X

Runoff = 0.24 cfs @ 12.43 hrs, Volume= 0.045 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 3.530	55	
3.530	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.2	227	0.0400	3.22		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.6	327	Total			

Summary for Subcatchment 9X: 9X

Runoff = 0.30 cfs @ 12.48 hrs, Volume= 0.059 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 4.690	55	
4.690	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.4	464	0.0400	3.22		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.1	564	Total			

Summary for Subcatchment 10X: 10X

Runoff = 0.52 cfs @ 12.47 hrs, Volume= 0.102 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 8.040	55	
8.040	55	100.00% Pervious Area

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Page 9

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0300	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
5.1	628	0.0160	2.04		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.0	728	Total			

Summary for Subcatchment 11X: 11X

Runoff = 0.09 cfs @ 12.42 hrs, Volume= 0.016 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 1.300	55	
1.300	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.3	192	0.0250	2.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.8	292	Total			

Summary for Subcatchment 12X: 12X

Runoff = 0.73 cfs @ 12.52 hrs, Volume= 0.148 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 11.710	55	
11.710	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.7	225	0.0250	0.79		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	375	0.0180	2.16		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.1	700	Total			

Summary for Reach R1: East

Inflow Area = 4.020 ac, 5.47% Impervious, Inflow Depth = 0.09" for 2-Year event
Inflow = 0.09 cfs @ 12.64 hrs, Volume= 0.030 af
Outflow = 0.09 cfs @ 12.64 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R2: Northeast

Inflow Area = 15.650 ac, 1.28% Impervious, Inflow Depth = 0.02" for 2-Year event
Inflow = 0.14 cfs @ 12.43 hrs, Volume= 0.026 af
Outflow = 0.14 cfs @ 12.43 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R3: North Central

Inflow Area = 5.150 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.03 cfs @ 12.41 hrs, Volume= 0.006 af
Outflow = 0.03 cfs @ 12.41 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R4: Southwest

Inflow Area = 23.280 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R5: Northwest

Inflow Area = 1.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R6: South Central

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R7: Southeast**Summary for Pond W10X: W10X**

Inflow Area = 23.280 ac, 0.00% Impervious, Inflow Depth = 0.05" for 2-Year event
 Inflow = 0.52 cfs @ 12.47 hrs, Volume= 0.102 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 908.46' @ 24.81 hrs Surf.Area= 10,895 sf Storage= 4,435 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	908.00'	666,318 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
908.00	8,407	0	0
909.00	13,822	11,115	11,115
910.00	49,331	31,577	42,691
911.00	75,289	62,310	105,001
912.00	99,885	87,587	192,588
913.00	136,605	118,245	310,833
914.00	174,134	155,370	466,203
915.00	226,097	200,116	666,318

Device	Routing	Invert	Outlet Devices
#1	Primary	911.51'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=908.00' TW=0.00' (Dynamic Tailwater)
 ↑1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond W11X: W11X

Inflow Area = 1.300 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-Year event
 Inflow = 0.09 cfs @ 12.42 hrs, Volume= 0.016 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 914.40' @ 24.61 hrs Surf.Area= 2,628 sf Storage= 717 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

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Page 12

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	28,790 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	935	0	0
915.00	5,139	3,037	3,037
916.00	13,859	9,499	12,536
917.00	18,649	16,254	28,790

Device	Routing	Invert	Outlet Devices
#1	Primary	916.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 8.00 20.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=914.00' TW=0.00' (Dynamic Tailwater)↑**1=Custom Weir/Orifice** (Controls 0.00 cfs)**Summary for Pond W12X: W12X**

Inflow Area = 11.710 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-Year event
 Inflow = 0.73 cfs @ 12.52 hrs, Volume= 0.148 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 910.33' @ 24.98 hrs Surf.Area= 21,695 sf Storage= 6,460 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	492,175 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	17,704	0	0
911.00	29,876	23,790	23,790
912.00	48,576	39,226	63,016
913.00	71,905	60,241	123,257
914.00	104,103	88,004	211,261
915.00	140,593	122,348	333,609
916.00	176,540	158,567	492,175

Device	Routing	Invert	Outlet Devices
#1	Primary	915.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 5.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' TW=908.00' (Dynamic Tailwater)↑**1=Custom Weir/Orifice** (Controls 0.00 cfs)

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MSE 24-hr 3 2-Year Rainfall=2.83"

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Page 13

Summary for Pond W3X: W3X

Inflow Area = 13.620 ac, 1.47% Impervious, Inflow Depth = 0.03" for 2-Year event
 Inflow = 0.09 cfs @ 13.20 hrs, Volume= 0.035 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 916.23' @ 24.64 hrs Surf.Area= 7,206 sf Storage= 1,503 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	103,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	5,691	0	0
917.00	12,190	8,941	8,941
918.00	22,143	17,167	26,107
919.00	38,309	30,226	56,333
920.00	56,097	47,203	103,536

Device	Routing	Invert	Outlet Devices
#1	Primary	918.06'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.10 0.50 Width (feet) 20.00 40.00 80.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=916.00' TW=0.00' (Dynamic Tailwater)
 ↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond W4X: W4X

Inflow Area = 7.110 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-Year event
 Inflow = 0.39 cfs @ 12.66 hrs, Volume= 0.090 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 918.35' @ 25.45 hrs Surf.Area= 13,972 sf Storage= 3,922 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	162,315 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 14

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	8,521	0	0
919.00	24,150	16,336	16,336
920.00	39,230	31,690	48,026
921.00	55,989	47,610	95,635
922.00	77,371	66,680	162,315

Device	Routing	Invert	Outlet Devices
#1	Primary	921.80'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.20 Width (feet) 20.00 75.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=918.00' TW=916.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond W5X: W5X

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-Year event
 Inflow = 0.19 cfs @ 12.52 hrs, Volume= 0.039 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 920.35' @ 24.95 hrs Surf.Area= 6,205 sf Storage= 1,688 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	920.00'	25,501 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
920.00	3,391	0	0
921.00	11,390	7,391	7,391
922.00	24,831	18,111	25,501

Device	Routing	Invert	Outlet Devices
#1	Primary	920.99'	15.0" Round Culvert L= 133.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 920.99' / 918.33' S= 0.0200 ' /' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=920.00' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Controls 0.00 cfs)

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Page 15

Summary for Pond W8X: W8X

Inflow Area = 3.530 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-Year event
 Inflow = 0.24 cfs @ 12.43 hrs, Volume= 0.045 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 918.30' @ 24.68 hrs Surf.Area= 7,495 sf Storage= 1,947 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	64,971 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	5,609	0	0
919.00	11,956	8,783	8,783
920.00	26,151	19,054	27,836
921.00	48,118	37,135	64,971

Device	Routing	Invert	Outlet Devices
#1	Primary	920.20'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.80 Width (feet) 2.00 10.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=918.00' TW=908.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond W9X: W9X

Inflow Area = 4.690 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-Year event
 Inflow = 0.30 cfs @ 12.48 hrs, Volume= 0.059 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 915.81' @ 24.79 hrs Surf.Area= 5,942 sf Storage= 2,587 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	915.00'	79,563 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 16

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
915.00	409	0	0
916.00	7,199	3,804	3,804
917.00	16,061	11,630	15,434
918.00	29,393	22,727	38,161
919.00	53,410	41,402	79,563

Device	Routing	Invert	Outlet Devices
#1	Primary	918.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.40 Width (feet) 10.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=915.00' TW=0.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

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Page 17

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1X: 1X	Runoff Area=2.800 ac 4.64% Impervious Runoff Depth=0.44" Flow Length=915' Tc=15.1 min CN=51 Runoff=0.91 cfs 0.103 af
Subcatchment 2X: 2X	Runoff Area=1.220 ac 7.38% Impervious Runoff Depth=0.53" Flow Length=386' Tc=15.1 min CN=53 Runoff=0.54 cfs 0.053 af
Subcatchment 3X: 3X	Runoff Area=6.510 ac 3.07% Impervious Runoff Depth=0.40" Flow Length=500' Slope=0.0300 '/' Tc=11.3 min CN=50 Runoff=1.98 cfs 0.217 af
Subcatchment 4X: 4X	Runoff Area=7.110 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=930' Tc=25.9 min CN=55 Runoff=3.08 cfs 0.365 af
Subcatchment 5X: 5X	Runoff Area=3.060 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=610' Tc=16.8 min CN=55 Runoff=1.66 cfs 0.157 af
Subcatchment 6X: 6X	Runoff Area=2.030 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=216' Tc=11.6 min CN=55 Runoff=1.33 cfs 0.104 af
Subcatchment 7X: 7X	Runoff Area=0.460 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=177' Tc=11.2 min CN=55 Runoff=0.31 cfs 0.024 af
Subcatchment 8X: 8X	Runoff Area=3.530 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=327' Tc=11.6 min CN=55 Runoff=2.32 cfs 0.181 af
Subcatchment 9X: 9X	Runoff Area=4.690 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=564' Tc=14.1 min CN=55 Runoff=2.79 cfs 0.241 af
Subcatchment 10X: 10X	Runoff Area=8.040 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=728' Tc=14.0 min CN=55 Runoff=4.80 cfs 0.413 af
Subcatchment 11X: 11X	Runoff Area=1.300 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=292' Slope=0.0250 '/' Tc=10.8 min CN=55 Runoff=0.89 cfs 0.067 af
Subcatchment 12X: 12X	Runoff Area=11.710 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=700' Tc=17.1 min CN=55 Runoff=6.30 cfs 0.601 af
Reach R1: East	Inflow=1.44 cfs 0.156 af Outflow=1.44 cfs 0.156 af
Reach R2: Northeast	Inflow=1.33 cfs 0.104 af Outflow=1.33 cfs 0.104 af
Reach R3: North Central	Inflow=0.31 cfs 0.024 af Outflow=0.31 cfs 0.024 af
Reach R4: Southwest	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

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Page 18

Reach R5: Northwest

Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Reach R6: South Central

Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Reach R7: Southeast

Outflow=0.00 cfs 0.000 af

Pond W10X: W10X

Peak Elev=909.34' Storage=17,973 cf Inflow=4.80 cfs 0.413 af

Outflow=0.00 cfs 0.000 af

Pond W11X: W11X

Peak Elev=914.97' Storage=2,906 cf Inflow=0.89 cfs 0.067 af

Outflow=0.00 cfs 0.000 af

Pond W12X: W12X

Peak Elev=911.08' Storage=26,178 cf Inflow=6.30 cfs 0.601 af

Outflow=0.00 cfs 0.000 af

Pond W3X: W3X

Peak Elev=917.04' Storage=9,453 cf Inflow=1.98 cfs 0.217 af

Outflow=0.00 cfs 0.000 af

Pond W4X: W4X

Peak Elev=918.98' Storage=15,894 cf Inflow=3.08 cfs 0.365 af

Outflow=0.00 cfs 0.000 af

Pond W5X: W5X

Peak Elev=920.95' Storage=6,841 cf Inflow=1.66 cfs 0.157 af

15.0" Round Culvert n=0.012 L=133.0' S=0.0200 '/' Outflow=0.00 cfs 0.000 af

Pond W8X: W8X

Peak Elev=918.92' Storage=7,891 cf Inflow=2.32 cfs 0.181 af

Outflow=0.00 cfs 0.000 af

Pond W9X: W9X

Peak Elev=916.66' Storage=10,484 cf Inflow=2.79 cfs 0.241 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 52.460 ac Runoff Volume = 2.525 af Average Runoff Depth = 0.58"**99.20% Pervious = 52.040 ac 0.80% Impervious = 0.420 ac**

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Page 19

Summary for Subcatchment 1X: 1X

Runoff = 0.91 cfs @ 12.32 hrs, Volume= 0.103 af, Depth= 0.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.130	98	Impervious
1.370	65	Row crops, contoured, Good, HSG A
1.300	32	Woods/grass comb., Good, HSG A
2.800	51	Weighted Average
2.670	49	95.36% Pervious Area
0.130	98	4.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.6	215	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
3.1	600	0.0050	3.22	32.21	Channel Flow, Area= 10.0 sf Perim= 9.0' r= 1.11' n= 0.035
15.1	915	Total			

Summary for Subcatchment 2X: 2X

Runoff = 0.54 cfs @ 12.30 hrs, Volume= 0.053 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.090	98	Impervious
0.580	65	Row crops, contoured, Good, HSG A
0.550	32	Woods/grass comb., Good, HSG A
1.220	53	Weighted Average
1.130	49	92.62% Pervious Area
0.090	98	7.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	200	0.0400	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.4	186	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
15.1	386	Total			

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Page 20

Summary for Subcatchment 3X: 3X

Runoff = 1.98 cfs @ 12.26 hrs, Volume= 0.217 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.200	98	Impervious
3.100	65	Row crops, contoured, Good, HSG A
3.210	32	Woods/grass comb., Good, HSG A
6.510	50	Weighted Average
6.310	48	96.93% Pervious Area
0.200	98	3.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0300	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.4	400	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.3	500	Total			

Summary for Subcatchment 4X: 4X

Runoff = 3.08 cfs @ 12.46 hrs, Volume= 0.365 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 7.110	55	Existing
7.110	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
12.2	830	0.0050	1.14		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
25.9	930	Total			

Summary for Subcatchment 5X: 5X

Runoff = 1.66 cfs @ 12.31 hrs, Volume= 0.157 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

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MSE 24-hr 3 10-Year Rainfall=4.21"

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Page 21

Area (ac)	CN	Description
* 3.060	55	
3.060	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0125	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.2	510	0.0160	2.04		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
16.8	610	Total			

Summary for Subcatchment 6X: 6X

Runoff = 1.33 cfs @ 12.23 hrs, Volume= 0.104 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 2.030	55	
2.030	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.2	116	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.6	216	Total			

Summary for Subcatchment 7X: 7X

Runoff = 0.31 cfs @ 12.22 hrs, Volume= 0.024 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.460	55	
0.460	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
0.8	77	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	177	Total			

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Page 22

Summary for Subcatchment 8X: 8X

Runoff = 2.32 cfs @ 12.23 hrs, Volume= 0.181 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 3.530	55	
3.530	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.2	227	0.0400	3.22		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.6	327	Total			

Summary for Subcatchment 9X: 9X

Runoff = 2.79 cfs @ 12.27 hrs, Volume= 0.241 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 4.690	55	
4.690	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.4	464	0.0400	3.22		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.1	564	Total			

Summary for Subcatchment 10X: 10X

Runoff = 4.80 cfs @ 12.27 hrs, Volume= 0.413 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 8.040	55	
8.040	55	100.00% Pervious Area

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MSE 24-hr 3 10-Year Rainfall=4.21"

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Page 23

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0300	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
5.1	628	0.0160	2.04		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.0	728	Total			

Summary for Subcatchment 11X: 11X

Runoff = 0.89 cfs @ 12.21 hrs, Volume= 0.067 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 1.300	55	
1.300	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.3	192	0.0250	2.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.8	292	Total			

Summary for Subcatchment 12X: 12X

Runoff = 6.30 cfs @ 12.32 hrs, Volume= 0.601 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 11.710	55	
11.710	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.7	225	0.0250	0.79		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	375	0.0180	2.16		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.1	700	Total			

Summary for Reach R1: East

Inflow Area = 4.020 ac, 5.47% Impervious, Inflow Depth = 0.47" for 10-Year event
Inflow = 1.44 cfs @ 12.31 hrs, Volume= 0.156 af
Outflow = 1.44 cfs @ 12.31 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R2: Northeast

Inflow Area = 15.650 ac, 1.28% Impervious, Inflow Depth = 0.08" for 10-Year event
Inflow = 1.33 cfs @ 12.23 hrs, Volume= 0.104 af
Outflow = 1.33 cfs @ 12.23 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R3: North Central

Inflow Area = 5.150 ac, 0.00% Impervious, Inflow Depth = 0.06" for 10-Year event
Inflow = 0.31 cfs @ 12.22 hrs, Volume= 0.024 af
Outflow = 0.31 cfs @ 12.22 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R4: Southwest

Inflow Area = 23.280 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R5: Northwest

Inflow Area = 1.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R6: South Central

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R7: Southeast**Summary for Pond W10X: W10X**

Inflow Area = 23.280 ac, 0.00% Impervious, Inflow Depth = 0.21" for 10-Year event
 Inflow = 4.80 cfs @ 12.27 hrs, Volume= 0.413 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 909.34' @ 24.81 hrs Surf.Area= 26,041 sf Storage= 17,973 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	908.00'	666,318 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
908.00	8,407	0	0
909.00	13,822	11,115	11,115
910.00	49,331	31,577	42,691
911.00	75,289	62,310	105,001
912.00	99,885	87,587	192,588
913.00	136,605	118,245	310,833
914.00	174,134	155,370	466,203
915.00	226,097	200,116	666,318

Device	Routing	Invert	Outlet Devices
#1	Primary	911.51'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=908.00' TW=0.00' (Dynamic Tailwater)

↑1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond W11X: W11X

Inflow Area = 1.300 ac, 0.00% Impervious, Inflow Depth = 0.62" for 10-Year event
 Inflow = 0.89 cfs @ 12.21 hrs, Volume= 0.067 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 914.97' @ 24.61 hrs Surf.Area= 5,031 sf Storage= 2,906 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

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Page 26

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	28,790 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	935	0	0
915.00	5,139	3,037	3,037
916.00	13,859	9,499	12,536
917.00	18,649	16,254	28,790

Device	Routing	Invert	Outlet Devices
#1	Primary	916.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 8.00 20.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=914.00' TW=0.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond W12X: W12X

Inflow Area = 11.710 ac, 0.00% Impervious, Inflow Depth = 0.62" for 10-Year event
 Inflow = 6.30 cfs @ 12.32 hrs, Volume= 0.601 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 911.08' @ 24.98 hrs Surf.Area= 31,335 sf Storage= 26,178 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	492,175 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	17,704	0	0
911.00	29,876	23,790	23,790
912.00	48,576	39,226	63,016
913.00	71,905	60,241	123,257
914.00	104,103	88,004	211,261
915.00	140,593	122,348	333,609
916.00	176,540	158,567	492,175

Device	Routing	Invert	Outlet Devices
#1	Primary	915.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 5.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' TW=908.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

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Page 27

Summary for Pond W3X: W3X

Inflow Area = 13.620 ac, 1.47% Impervious, Inflow Depth = 0.19" for 10-Year event
 Inflow = 1.98 cfs @ 12.26 hrs, Volume= 0.217 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 917.04' @ 24.64 hrs Surf.Area= 12,601 sf Storage= 9,453 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	103,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	5,691	0	0
917.00	12,190	8,941	8,941
918.00	22,143	17,167	26,107
919.00	38,309	30,226	56,333
920.00	56,097	47,203	103,536

Device	Routing	Invert	Outlet Devices
#1	Primary	918.06'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.10 0.50 Width (feet) 20.00 40.00 80.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=916.00' TW=0.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond W4X: W4X

Inflow Area = 7.110 ac, 0.00% Impervious, Inflow Depth = 0.62" for 10-Year event
 Inflow = 3.08 cfs @ 12.46 hrs, Volume= 0.365 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 918.98' @ 25.45 hrs Surf.Area= 23,863 sf Storage= 15,894 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	162,315 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 28

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	8,521	0	0
919.00	24,150	16,336	16,336
920.00	39,230	31,690	48,026
921.00	55,989	47,610	95,635
922.00	77,371	66,680	162,315

Device	Routing	Invert	Outlet Devices
#1	Primary	921.80'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.20 Width (feet) 20.00 75.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=918.00' TW=916.00' (Dynamic Tailwater)↑**1=Custom Weir/Orifice** (Controls 0.00 cfs)**Summary for Pond W5X: W5X**

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth = 0.62" for 10-Year event
 Inflow = 1.66 cfs @ 12.31 hrs, Volume= 0.157 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 920.95' @ 24.95 hrs Surf.Area= 10,997 sf Storage= 6,841 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	920.00'	25,501 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
920.00	3,391	0	0
921.00	11,390	7,391	7,391
922.00	24,831	18,111	25,501

Device	Routing	Invert	Outlet Devices
#1	Primary	920.99'	15.0" Round Culvert L= 133.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 920.99' / 918.33' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=920.00' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)

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Page 29

Summary for Pond W8X: W8X

Inflow Area = 3.530 ac, 0.00% Impervious, Inflow Depth = 0.62" for 10-Year event
 Inflow = 2.32 cfs @ 12.23 hrs, Volume= 0.181 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 918.92' @ 24.68 hrs Surf.Area= 11,473 sf Storage= 7,891 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	64,971 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	5,609	0	0
919.00	11,956	8,783	8,783
920.00	26,151	19,054	27,836
921.00	48,118	37,135	64,971

Device	Routing	Invert	Outlet Devices
#1	Primary	920.20'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.80 Width (feet) 2.00 10.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=918.00' TW=908.00' (Dynamic Tailwater)
 ↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond W9X: W9X

Inflow Area = 4.690 ac, 0.00% Impervious, Inflow Depth = 0.62" for 10-Year event
 Inflow = 2.79 cfs @ 12.27 hrs, Volume= 0.241 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 916.66' @ 24.79 hrs Surf.Area= 13,047 sf Storage= 10,484 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	915.00'	79,563 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 30

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
915.00	409	0	0
916.00	7,199	3,804	3,804
917.00	16,061	11,630	15,434
918.00	29,393	22,727	38,161
919.00	53,410	41,402	79,563

Device	Routing	Invert	Outlet Devices
#1	Primary	918.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.40 Width (feet) 10.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=915.00' TW=0.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

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Page 31

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1X: 1X	Runoff Area=2.800 ac 4.64% Impervious Runoff Depth=1.79" Flow Length=915' Tc=15.1 min CN=51 Runoff=5.89 cfs 0.418 af
Subcatchment 2X: 2X	Runoff Area=1.220 ac 7.38% Impervious Runoff Depth=1.97" Flow Length=386' Tc=15.1 min CN=53 Runoff=2.90 cfs 0.201 af
Subcatchment 3X: 3X	Runoff Area=6.510 ac 3.07% Impervious Runoff Depth=1.70" Flow Length=500' Slope=0.0300 '/' Tc=11.3 min CN=50 Runoff=14.92 cfs 0.922 af
Subcatchment 4X: 4X	Runoff Area=7.110 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=930' Tc=25.9 min CN=55 Runoff=14.08 cfs 1.281 af
Subcatchment 5X: 5X	Runoff Area=3.060 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=610' Tc=16.8 min CN=55 Runoff=7.68 cfs 0.551 af
Subcatchment 6X: 6X	Runoff Area=2.030 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=216' Tc=11.6 min CN=55 Runoff=6.13 cfs 0.366 af
Subcatchment 7X: 7X	Runoff Area=0.460 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=177' Tc=11.2 min CN=55 Runoff=1.42 cfs 0.083 af
Subcatchment 8X: 8X	Runoff Area=3.530 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=327' Tc=11.6 min CN=55 Runoff=10.67 cfs 0.636 af
Subcatchment 9X: 9X	Runoff Area=4.690 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=564' Tc=14.1 min CN=55 Runoff=12.92 cfs 0.845 af
Subcatchment 10X: 10X	Runoff Area=8.040 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=728' Tc=14.0 min CN=55 Runoff=22.25 cfs 1.449 af
Subcatchment 11X: 11X	Runoff Area=1.300 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=292' Slope=0.0250 '/' Tc=10.8 min CN=55 Runoff=4.08 cfs 0.234 af
Subcatchment 12X: 12X	Runoff Area=11.710 ac 0.00% Impervious Runoff Depth=2.16" Flow Length=700' Tc=17.1 min CN=55 Runoff=29.06 cfs 2.110 af
Reach R1: East	Inflow=8.79 cfs 0.619 af Outflow=8.79 cfs 0.619 af
Reach R2: Northeast	Inflow=6.13 cfs 0.658 af Outflow=6.13 cfs 0.658 af
Reach R3: North Central	Inflow=1.42 cfs 0.083 af Outflow=1.42 cfs 0.083 af
Reach R4: Southwest	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

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Page 32

Reach R5: NorthwestInflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af**Reach R6: South Central**Inflow=0.85 cfs 0.382 af
Outflow=0.85 cfs 0.382 af**Reach R7: Southeast**

Outflow=0.00 cfs 0.000 af

Pond W10X: W10XPeak Elev=910.38' Storage=63,100 cf Inflow=22.25 cfs 1.449 af
Outflow=0.00 cfs 0.000 af**Pond W11X: W11X**Peak Elev=915.82' Storage=10,203 cf Inflow=4.08 cfs 0.234 af
Outflow=0.00 cfs 0.000 af**Pond W12X: W12X**Peak Elev=912.53' Storage=91,903 cf Inflow=29.06 cfs 2.110 af
Outflow=0.00 cfs 0.000 af**Pond W3X: W3X**Peak Elev=918.11' Storage=28,551 cf Inflow=14.92 cfs 0.922 af
Outflow=0.77 cfs 0.292 af**Pond W4X: W4X**Peak Elev=920.19' Storage=55,801 cf Inflow=14.08 cfs 1.281 af
Outflow=0.00 cfs 0.000 af**Pond W5X: W5X**Peak Elev=921.42' Storage=13,413 cf Inflow=7.68 cfs 0.551 af
15.0" Round Culvert n=0.012 L=133.0' S=0.0200 ' Outflow=0.85 cfs 0.382 af**Pond W8X: W8X**Peak Elev=919.99' Storage=27,704 cf Inflow=10.67 cfs 0.636 af
Outflow=0.00 cfs 0.000 af**Pond W9X: W9X**Peak Elev=917.95' Storage=36,808 cf Inflow=12.92 cfs 0.845 af
Outflow=0.00 cfs 0.000 af**Total Runoff Area = 52.460 ac Runoff Volume = 9.095 af Average Runoff Depth = 2.08"**
99.20% Pervious = 52.040 ac 0.80% Impervious = 0.420 ac

Summary for Subcatchment 1X: 1X

Runoff = 5.89 cfs @ 12.26 hrs, Volume= 0.418 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.130	98	Impervious
1.370	65	Row crops, contoured, Good, HSG A
1.300	32	Woods/grass comb., Good, HSG A
2.800	51	Weighted Average
2.670	49	95.36% Pervious Area
0.130	98	4.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.6	215	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
3.1	600	0.0050	3.22	32.21	Channel Flow, Area= 10.0 sf Perim= 9.0' r= 1.11' n= 0.035
15.1	915	Total			

Summary for Subcatchment 2X: 2X

Runoff = 2.90 cfs @ 12.26 hrs, Volume= 0.201 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.090	98	Impervious
0.580	65	Row crops, contoured, Good, HSG A
0.550	32	Woods/grass comb., Good, HSG A
1.220	53	Weighted Average
1.130	49	92.62% Pervious Area
0.090	98	7.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	200	0.0400	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.4	186	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
15.1	386	Total			

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Page 34

Summary for Subcatchment 3X: 3X

Runoff = 14.92 cfs @ 12.21 hrs, Volume= 0.922 af, Depth= 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.200	98	Impervious
3.100	65	Row crops, contoured, Good, HSG A
3.210	32	Woods/grass comb., Good, HSG A
6.510	50	Weighted Average
6.310	48	96.93% Pervious Area
0.200	98	3.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0300	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.4	400	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.3	500	Total			

Summary for Subcatchment 4X: 4X

Runoff = 14.08 cfs @ 12.40 hrs, Volume= 1.281 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 7.110	55	Existing
7.110	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
12.2	830	0.0050	1.14		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
25.9	930	Total			

Summary for Subcatchment 5X: 5X

Runoff = 7.68 cfs @ 12.27 hrs, Volume= 0.551 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

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MSE 24-hr 3 100-Year Rainfall=7.06"

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Page 35

Area (ac)	CN	Description
* 3.060	55	
3.060	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0125	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.2	510	0.0160	2.04		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
16.8	610	Total			

Summary for Subcatchment 6X: 6X

Runoff = 6.13 cfs @ 12.20 hrs, Volume= 0.366 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 2.030	55	
2.030	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.2	116	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.6	216	Total			

Summary for Subcatchment 7X: 7X

Runoff = 1.42 cfs @ 12.20 hrs, Volume= 0.083 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.460	55	
0.460	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
0.8	77	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	177	Total			

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Page 36

Summary for Subcatchment 8X: 8X

Runoff = 10.67 cfs @ 12.20 hrs, Volume= 0.636 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 3.530	55	
3.530	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.2	227	0.0400	3.22		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.6	327	Total			

Summary for Subcatchment 9X: 9X

Runoff = 12.92 cfs @ 12.24 hrs, Volume= 0.845 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 4.690	55	
4.690	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.4	464	0.0400	3.22		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.1	564	Total			

Summary for Subcatchment 10X: 10X

Runoff = 22.25 cfs @ 12.24 hrs, Volume= 1.449 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 8.040	55	
8.040	55	100.00% Pervious Area

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Page 37

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0300	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
5.1	628	0.0160	2.04		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.0	728	Total			

Summary for Subcatchment 11X: 11X

Runoff = 4.08 cfs @ 12.19 hrs, Volume= 0.234 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 1.300	55	
1.300	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.3	192	0.0250	2.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.8	292	Total			

Summary for Subcatchment 12X: 12X

Runoff = 29.06 cfs @ 12.28 hrs, Volume= 2.110 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 11.710	55	
11.710	55	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.7	225	0.0250	0.79		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	375	0.0180	2.16		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.1	700	Total			

Summary for Reach R1: East

Inflow Area = 4.020 ac, 5.47% Impervious, Inflow Depth = 1.85" for 100-Year event
Inflow = 8.79 cfs @ 12.26 hrs, Volume= 0.619 af
Outflow = 8.79 cfs @ 12.26 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R2: Northeast

Inflow Area = 15.650 ac, 1.28% Impervious, Inflow Depth = 0.50" for 100-Year event
Inflow = 6.13 cfs @ 12.20 hrs, Volume= 0.658 af
Outflow = 6.13 cfs @ 12.20 hrs, Volume= 0.658 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R3: North Central

Inflow Area = 5.150 ac, 0.00% Impervious, Inflow Depth = 0.19" for 100-Year event
Inflow = 1.42 cfs @ 12.20 hrs, Volume= 0.083 af
Outflow = 1.42 cfs @ 12.20 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R4: Southwest

Inflow Area = 23.280 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R5: Northwest

Inflow Area = 1.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R6: South Central

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth > 1.50" for 100-Year event
Inflow = 0.85 cfs @ 13.56 hrs, Volume= 0.382 af
Outflow = 0.85 cfs @ 13.56 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R7: Southeast**Summary for Pond W10X: W10X**

Inflow Area = 23.280 ac, 0.00% Impervious, Inflow Depth = 0.75" for 100-Year event
 Inflow = 22.25 cfs @ 12.24 hrs, Volume= 1.449 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 910.38' @ 24.81 hrs Surf.Area= 59,103 sf Storage= 63,100 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	908.00'	666,318 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
908.00	8,407	0	0
909.00	13,822	11,115	11,115
910.00	49,331	31,577	42,691
911.00	75,289	62,310	105,001
912.00	99,885	87,587	192,588
913.00	136,605	118,245	310,833
914.00	174,134	155,370	466,203
915.00	226,097	200,116	666,318

Device	Routing	Invert	Outlet Devices
#1	Primary	911.51'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=908.00' TW=0.00' (Dynamic Tailwater)
 1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond W11X: W11X

Inflow Area = 1.300 ac, 0.00% Impervious, Inflow Depth = 2.16" for 100-Year event
 Inflow = 4.08 cfs @ 12.19 hrs, Volume= 0.234 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 915.82' @ 24.61 hrs Surf.Area= 12,304 sf Storage= 10,203 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

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Page 40

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	28,790 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	935	0	0
915.00	5,139	3,037	3,037
916.00	13,859	9,499	12,536
917.00	18,649	16,254	28,790

Device	Routing	Invert	Outlet Devices
#1	Primary	916.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 8.00 20.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=914.00' TW=0.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond W12X: W12X

Inflow Area = 11.710 ac, 0.00% Impervious, Inflow Depth = 2.16" for 100-Year event
 Inflow = 29.06 cfs @ 12.28 hrs, Volume= 2.110 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 912.53' @ 24.98 hrs Surf.Area= 60,889 sf Storage= 91,903 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	492,175 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	17,704	0	0
911.00	29,876	23,790	23,790
912.00	48,576	39,226	63,016
913.00	71,905	60,241	123,257
914.00	104,103	88,004	211,261
915.00	140,593	122,348	333,609
916.00	176,540	158,567	492,175

Device	Routing	Invert	Outlet Devices
#1	Primary	915.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 5.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' TW=908.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)

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Page 41

Summary for Pond W3X: W3X

Inflow Area = 13.620 ac, 1.47% Impervious, Inflow Depth = 0.81" for 100-Year event
 Inflow = 14.92 cfs @ 12.21 hrs, Volume= 0.922 af
 Outflow = 0.77 cfs @ 15.04 hrs, Volume= 0.292 af, Atten= 95%, Lag= 170.2 min
 Primary = 0.77 cfs @ 15.04 hrs, Volume= 0.292 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 918.11' @ 15.04 hrs Surf.Area= 23,860 sf Storage= 28,551 cf

Plug-Flow detention time= 349.1 min calculated for 0.292 af (32% of inflow)
 Center-of-Mass det. time= 234.0 min (1,080.8 - 846.9)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	103,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	5,691	0	0
917.00	12,190	8,941	8,941
918.00	22,143	17,167	26,107
919.00	38,309	30,226	56,333
920.00	56,097	47,203	103,536

Device	Routing	Invert	Outlet Devices
#1	Primary	918.06'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.10 0.50 Width (feet) 20.00 40.00 80.00

Primary OutFlow Max=0.77 cfs @ 15.04 hrs HW=918.11' TW=0.00' (Dynamic Tailwater)
 ↑1=Custom Weir/Orifice (Weir Controls 0.77 cfs @ 0.68 fps)

Summary for Pond W4X: W4X

Inflow Area = 7.110 ac, 0.00% Impervious, Inflow Depth = 2.16" for 100-Year event
 Inflow = 14.08 cfs @ 12.40 hrs, Volume= 1.281 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 920.19' @ 25.45 hrs Surf.Area= 42,422 sf Storage= 55,801 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	162,315 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 42

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	8,521	0	0
919.00	24,150	16,336	16,336
920.00	39,230	31,690	48,026
921.00	55,989	47,610	95,635
922.00	77,371	66,680	162,315

Device	Routing	Invert	Outlet Devices
#1	Primary	921.80'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.20 Width (feet) 20.00 75.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=918.00' TW=916.00' (Dynamic Tailwater)↑**1=Custom Weir/Orifice** (Controls 0.00 cfs)**Summary for Pond W5X: W5X**

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth = 2.16" for 100-Year event
 Inflow = 7.68 cfs @ 12.27 hrs, Volume= 0.551 af
 Outflow = 0.85 cfs @ 13.56 hrs, Volume= 0.382 af, Atten= 89%, Lag= 77.4 min
 Primary = 0.85 cfs @ 13.56 hrs, Volume= 0.382 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 921.42' @ 13.56 hrs Surf.Area= 17,077 sf Storage= 13,413 cf

Plug-Flow detention time= 331.6 min calculated for 0.382 af (69% of inflow)
 Center-of-Mass det. time= 244.1 min (1,085.0 - 841.0)

Volume	Invert	Avail.Storage	Storage Description
#1	920.00'	25,501 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
920.00	3,391	0	0
921.00	11,390	7,391	7,391
922.00	24,831	18,111	25,501

Device	Routing	Invert	Outlet Devices
#1	Primary	920.99'	15.0" Round Culvert L= 133.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 920.99' / 918.33' S= 0.0200 ' /' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.85 cfs @ 13.56 hrs HW=921.42' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.85 cfs @ 2.24 fps)

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Page 43

Summary for Pond W8X: W8X

Inflow Area = 3.530 ac, 0.00% Impervious, Inflow Depth = 2.16" for 100-Year event
 Inflow = 10.67 cfs @ 12.20 hrs, Volume= 0.636 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 919.99' @ 24.68 hrs Surf.Area= 26,079 sf Storage= 27,704 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	64,971 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	5,609	0	0
919.00	11,956	8,783	8,783
920.00	26,151	19,054	27,836
921.00	48,118	37,135	64,971

Device	Routing	Invert	Outlet Devices
#1	Primary	920.20'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.80 Width (feet) 2.00 10.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=918.00' TW=908.00' (Dynamic Tailwater)

↑**1=Custom Weir/Orifice** (Controls 0.00 cfs)

Summary for Pond W9X: W9X

Inflow Area = 4.690 ac, 0.00% Impervious, Inflow Depth = 2.16" for 100-Year event
 Inflow = 12.92 cfs @ 12.24 hrs, Volume= 0.845 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 917.95' @ 24.79 hrs Surf.Area= 28,773 sf Storage= 36,808 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	915.00'	79,563 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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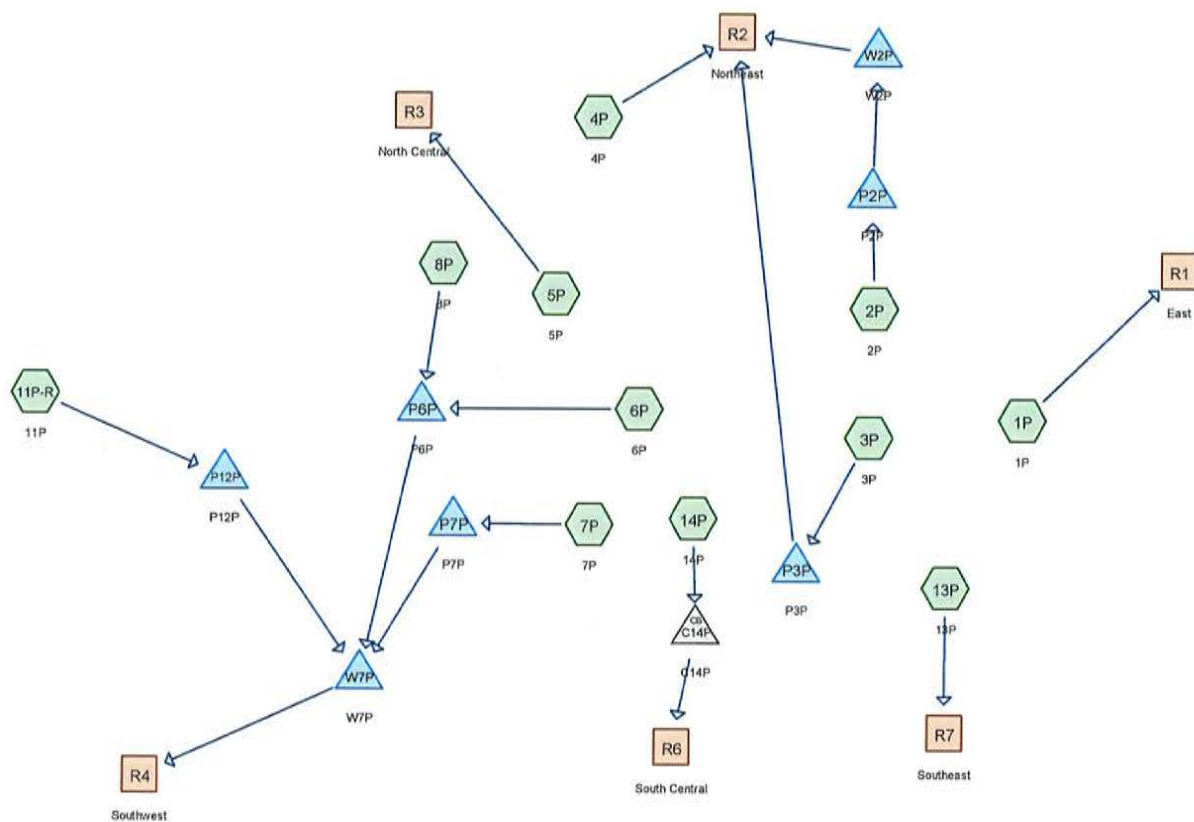
Page 44

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
915.00	409	0	0
916.00	7,199	3,804	3,804
917.00	16,061	11,630	15,434
918.00	29,393	22,727	38,161
919.00	53,410	41,402	79,563

Device	Routing	Invert	Outlet Devices
#1	Primary	918.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.40 Width (feet) 10.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=915.00' TW=0.00' (Dynamic Tailwater)

↑1=Custom Weir/Orifice (Controls 0.00 cfs)



Routing Diagram for 0384_Proposed_180503

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
34.200	39	>75% Grass cover, Good, HSG A (1P, 2P, 3P, 4P, 5P, 6P, 7P, 8P, 11P-R, 13P, 14P)
2.420	98	Impervious (3P)
13.645	98	Impervious (1P, 2P, 4P, 5P, 6P, 7P, 8P, 11P-R, 13P)
2.100	85	Wetland (3P)
52.365	59	TOTAL AREA

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MSE 24-hr 3 2-Year Rainfall=2.83"

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Page 3

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1P: 1P	Runoff Area=2.740 ac 13.50% Impervious Runoff Depth=0.03" Flow Length=730' Tc=16.3 min CN=47 Runoff=0.01 cfs 0.006 af
Subcatchment 2P: 2P	Runoff Area=5.890 ac 34.47% Impervious Runoff Depth=0.25" Flow Length=600' Tc=8.3 min CN=59 Runoff=1.15 cfs 0.121 af
Subcatchment 3P: 3P	Runoff Area=9.000 ac 26.89% Impervious Runoff Depth=0.47" Flow Length=293' Tc=13.1 min CN=66 Runoff=4.50 cfs 0.349 af
Subcatchment 4P: 4P	Runoff Area=1.650 ac 21.82% Impervious Runoff Depth=0.09" Flow Length=380' Tc=11.2 min CN=52 Runoff=0.04 cfs 0.013 af
Subcatchment 5P: 5P	Runoff Area=0.725 ac 17.24% Impervious Runoff Depth=0.05" Flow Length=450' Tc=14.0 min CN=49 Runoff=0.01 cfs 0.003 af
Subcatchment 6P: 6P	Runoff Area=9.500 ac 30.42% Impervious Runoff Depth=0.20" Flow Length=1,075' Tc=21.1 min CN=57 Runoff=0.87 cfs 0.156 af
Subcatchment 7P: 7P	Runoff Area=8.030 ac 17.43% Impervious Runoff Depth=0.05" Flow Length=1,000' Tc=10.7 min CN=49 Runoff=0.08 cfs 0.034 af
Subcatchment 8P: 8P	Runoff Area=1.320 ac 23.48% Impervious Runoff Depth=0.11" Flow Length=175' Tc=6.7 min CN=53 Runoff=0.05 cfs 0.012 af
Subcatchment 11P-R: 11P	Runoff Area=13.130 ac 46.46% Impervious Runoff Depth=0.47" Tc=14.8 min CN=66 Runoff=6.16 cfs 0.510 af
Subcatchment 13P: 13P	Runoff Area=0.200 ac 30.00% Impervious Runoff Depth=0.20" Flow Length=55' Slope=0.0200 '/ Tc=0.3 min CN=57 Runoff=0.06 cfs 0.003 af
Subcatchment 14P: 14P	Runoff Area=0.180 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=28' Slope=0.0250 '/ Tc=3.4 min CN=39 Runoff=0.00 cfs 0.000 af
Reach R1: East	Inflow=0.01 cfs 0.006 af Outflow=0.01 cfs 0.006 af
Reach R2: Northeast	Inflow=0.04 cfs 0.013 af Outflow=0.04 cfs 0.013 af
Reach R3: North Central	Inflow=0.01 cfs 0.003 af Outflow=0.01 cfs 0.003 af
Reach R4: Southwest	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Reach R6: South Central	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

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Page 4

Reach R7: Southeast

Inflow=0.06 cfs 0.003 af

Outflow=0.06 cfs 0.003 af

Pond C14P: C14P

Peak Elev=920.99' Inflow=0.00 cfs 0.000 af

15.0" Round Culvert n=0.013 L=133.0' S=0.0200 ' Outflow=0.00 cfs 0.000 af

Pond P12P: P12P

Peak Elev=912.50' Storage=26,885 cf Inflow=6.16 cfs 0.510 af

Discarded=0.58 cfs 1.127 af Primary=0.00 cfs 0.000 af Outflow=0.58 cfs 1.127 af

Pond P2P: P2P

Peak Elev=918.20' Storage=7,271 cf Inflow=1.15 cfs 0.121 af

Discarded=0.08 cfs 0.288 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.288 af

Pond P3P: P3P

Peak Elev=920.00' Storage=75,770 cf Inflow=4.50 cfs 0.349 af

Discarded=1.10 cfs 2.089 af Primary=0.00 cfs 0.000 af Outflow=1.10 cfs 2.089 af

Pond P6P: P6P

Peak Elev=913.00' Storage=20,881 cf Inflow=0.92 cfs 0.168 af

Discarded=0.43 cfs 0.648 af Primary=0.00 cfs 0.000 af Outflow=0.43 cfs 0.648 af

Pond P7P: P7P

Peak Elev=912.00' Storage=16,970 cf Inflow=0.08 cfs 0.034 af

Discarded=0.56 cfs 0.423 af Primary=0.00 cfs 0.000 af Outflow=0.56 cfs 0.423 af

Pond W2P: W2P

Peak Elev=916.00' Storage=0 cf Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Pond W7P: W7P

Peak Elev=908.00' Storage=0 cf Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 52.365 ac Runoff Volume = 1.208 af Average Runoff Depth = 0.28"**69.32% Pervious = 36.300 ac 30.68% Impervious = 16.065 ac**

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Page 5

Summary for Subcatchment 1P: 1P

Runoff = 0.01 cfs @ 15.05 hrs, Volume= 0.006 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.370	98	Impervious
2.370	39	>75% Grass cover, Good, HSG A
2.740	47	Weighted Average
2.370	39	86.50% Pervious Area
0.370	98	13.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.6	630	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
16.3	730	Total			

Summary for Subcatchment 2P: 2P

Runoff = 1.15 cfs @ 12.20 hrs, Volume= 0.121 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 2.030	98	Impervious
3.860	39	>75% Grass cover, Good, HSG A
5.890	59	Weighted Average
3.860	39	65.53% Pervious Area
2.030	98	34.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0200	0.24		Sheet Flow, n= 0.090 P2= 2.83"
0.8	163	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	337	0.0200	8.80	10.80	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
8.3	600	Total			

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Page 6

Summary for Subcatchment 3P: 3P

Runoff = 4.50 cfs @ 12.24 hrs, Volume= 0.349 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 2.420	98	Impervious
4.480	39	>75% Grass cover, Good, HSG A
* 2.100	85	Wetland
9.000	66	Weighted Average
6.580	54	73.11% Pervious Area
2.420	98	26.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.4	193	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
13.1	293	Total			

Summary for Subcatchment 4P: 4P

Runoff = 0.04 cfs @ 12.56 hrs, Volume= 0.013 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.360	98	Impervious
1.290	39	>75% Grass cover, Good, HSG A
1.650	52	Weighted Average
1.290	39	78.18% Pervious Area
0.360	98	21.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.7	280	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	380	Total			

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Page 7

Summary for Subcatchment 5P: 5P

Runoff = 0.01 cfs @ 13.36 hrs, Volume= 0.003 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.125	98	Impervious
0.600	39	>75% Grass cover, Good, HSG A
0.725	49	Weighted Average
0.600	39	82.76% Pervious Area
0.125	98	17.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
3.6	350	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.0	450	Total			

Summary for Subcatchment 6P: 6P

Runoff = 0.87 cfs @ 12.52 hrs, Volume= 0.156 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 2.890	98	Impervious
6.610	39	>75% Grass cover, Good, HSG A
9.500	57	Weighted Average
6.610	39	69.58% Pervious Area
2.890	98	30.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	185	0.0160	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.5	890	0.0100	5.94	10.50	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
21.1	1,075	Total			

Summary for Subcatchment 7P: 7P

Runoff = 0.08 cfs @ 13.30 hrs, Volume= 0.034 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 1.400	98	Impervious
6.630	39	>75% Grass cover, Good, HSG A
8.030	49	Weighted Average
6.630	39	82.57% Pervious Area
1.400	98	17.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	100	0.0400	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.8	900	0.0100	5.26	6.46	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
10.7	1,000	Total			

Summary for Subcatchment 8P: 8P

Runoff = 0.05 cfs @ 12.45 hrs, Volume= 0.012 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.310	98	Impervious
1.010	39	>75% Grass cover, Good, HSG A
1.320	53	Weighted Average
1.010	39	76.52% Pervious Area
0.310	98	23.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.0200	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
0.7	125	0.0320	2.88		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
6.7	175	Total			

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Page 9

Summary for Subcatchment 11P-R: 11P

Runoff = 6.16 cfs @ 12.27 hrs, Volume= 0.510 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 6.100	98	Impervious
7.030	39	>75% Grass cover, Good, HSG A
13.130	66	Weighted Average
7.030	39	53.54% Pervious Area
6.100	98	46.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.8					Direct Entry,

Summary for Subcatchment 13P: 13P

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 0.003 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.060	98	Impervious
0.140	39	>75% Grass cover, Good, HSG A
0.200	57	Weighted Average
0.140	39	70.00% Pervious Area
0.060	98	30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	55	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps

Summary for Subcatchment 14P: 14P

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.83"

Area (ac)	CN	Description
* 0.000	98	Impervious
0.180	39	>75% Grass cover, Good, HSG A
0.180	39	Weighted Average
0.180	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	28	0.0250	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"

Summary for Reach R1: East

Inflow Area = 2.740 ac, 13.50% Impervious, Inflow Depth = 0.03" for 2-Year event
 Inflow = 0.01 cfs @ 15.05 hrs, Volume= 0.006 af
 Outflow = 0.01 cfs @ 15.05 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R2: Northeast

Inflow Area = 16.540 ac, 29.08% Impervious, Inflow Depth = 0.01" for 2-Year event
 Inflow = 0.04 cfs @ 12.56 hrs, Volume= 0.013 af
 Outflow = 0.04 cfs @ 12.56 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R3: North Central

Inflow Area = 0.725 ac, 17.24% Impervious, Inflow Depth = 0.05" for 2-Year event
 Inflow = 0.01 cfs @ 13.36 hrs, Volume= 0.003 af
 Outflow = 0.01 cfs @ 13.36 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R4: Southwest

Inflow Area = 31.980 ac, 33.46% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R6: South Central

Inflow Area = 0.180 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R7: Southeast

Inflow Area = 0.200 ac, 30.00% Impervious, Inflow Depth = 0.20" for 2-Year event
 Inflow = 0.06 cfs @ 12.10 hrs, Volume= 0.003 af
 Outflow = 0.06 cfs @ 12.10 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Pond C14P: C14P

Inflow Area = 0.180 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Peak Elev= 920.99' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	920.99'	15.0" Round Culvert L= 133.0' Ke= 0.500 Inlet / Outlet Invert= 920.99' / 918.33' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=920.99' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Controls 0.00 cfs)

Summary for Pond P12P: P12P

Inflow Area = 13.130 ac, 46.46% Impervious, Inflow Depth = 0.47" for 2-Year event
 Inflow = 6.16 cfs @ 12.27 hrs, Volume= 0.510 af
 Outflow = 0.58 cfs @ 0.00 hrs, Volume= 1.127 af, Atten= 91%, Lag= 0.0 min
 Discarded = 0.58 cfs @ 0.00 hrs, Volume= 1.127 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 912.50' Surf.Area= 31,115 sf Storage= 26,885 cf

Peak Elev= 912.50' @ 0.00 hrs Surf.Area= 31,115 sf Storage= 26,885 cf

Plug-Flow detention time= 337.6 min calculated for 0.510 af (100% of inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	911.50'	118,508 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.50	17,802	0	0
912.00	29,312	11,779	11,779
912.50	31,115	15,107	26,885
914.00	91,048	91,622	118,508

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Page 12

Device	Routing	Invert	Outlet Devices
#1	Primary	912.50'	12.0" Round Culvert L= 300.0' Ke= 0.500 Inlet / Outlet Invert= 912.50' / 910.50' S= 0.0067 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.50'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.58 cfs @ 0.00 hrs HW=912.50' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.58 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=912.50' TW=908.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)**Summary for Pond P2P: P2P**

Inflow Area = 5.890 ac, 34.47% Impervious, Inflow Depth = 0.25" for 2-Year event
 Inflow = 1.15 cfs @ 12.20 hrs, Volume= 0.121 af
 Outflow = 0.08 cfs @ 0.00 hrs, Volume= 0.288 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.08 cfs @ 0.00 hrs, Volume= 0.288 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 918.20' Surf.Area= 4,332 sf Storage= 7,271 cf

Peak Elev= 918.20' @ 0.00 hrs Surf.Area= 4,332 sf Storage= 7,271 cf

Plug-Flow detention time= 1,507.1 min calculated for 0.121 af (100% of inflow)

Center-of-Mass det. time= 604.5 min (1,501.1 - 896.5)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	42,306 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	2,586	0	0
918.00	3,865	6,451	6,451
918.20	4,332	820	7,271
920.00	9,434	12,389	19,660
922.00	13,212	22,646	42,306

Device	Routing	Invert	Outlet Devices
#1	Primary	918.20'	15.0" Round Culvert L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 918.20' / 918.00' S= 0.0067 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Discarded	916.00'	0.800 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.08 cfs @ 0.00 hrs HW=918.20' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.08 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=918.20' TW=916.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)

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Page 13

Summary for Pond P3P: P3P

Inflow Area = 9.000 ac, 26.89% Impervious, Inflow Depth = 0.47" for 2-Year event
 Inflow = 4.50 cfs @ 12.24 hrs, Volume= 0.349 af
 Outflow = 1.10 cfs @ 0.00 hrs, Volume= 2.089 af, Atten= 76%, Lag= 0.0 min
 Discarded = 1.10 cfs @ 0.00 hrs, Volume= 2.089 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Starting Elev= 920.00' Surf.Area= 59,202 sf Storage= 75,770 cf
 Peak Elev= 920.00' @ 0.00 hrs Surf.Area= 59,202 sf Storage= 75,770 cf

Plug-Flow detention time= 999.0 min calculated for 0.349 af (100% of inflow)
 Center-of-Mass det. time= 37.3 min (904.0 - 866.7)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	224,972 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	23,715	0	0
919.00	32,480	28,098	28,098
919.10	38,816	3,565	31,662
920.00	59,202	44,108	75,770
922.00	90,000	149,202	224,972

Device	Routing	Invert	Outlet Devices
#1	Primary	920.00'	15.0" Round Culvert L= 442.0' Ke= 0.500 Inlet / Outlet Invert= 920.00' / 917.00' S= 0.0068 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Discarded	918.00'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=1.10 cfs @ 0.00 hrs HW=920.00' (Free Discharge)
 ↗**2=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=920.00' TW=0.00' (Dynamic Tailwater)
 ↗**1=Culvert** (Controls 0.00 cfs)

Summary for Pond P6P: P6P

Inflow Area = 10.820 ac, 29.57% Impervious, Inflow Depth = 0.19" for 2-Year event
 Inflow = 0.92 cfs @ 12.52 hrs, Volume= 0.168 af
 Outflow = 0.43 cfs @ 0.00 hrs, Volume= 0.648 af, Atten= 54%, Lag= 0.0 min
 Discarded = 0.43 cfs @ 0.00 hrs, Volume= 0.648 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Starting Elev= 913.00' Surf.Area= 23,062 sf Storage= 20,881 cf
 Peak Elev= 913.00' @ 0.00 hrs Surf.Area= 23,062 sf Storage= 20,881 cf

Plug-Flow detention time= 1,035.7 min calculated for 0.168 af (100% of inflow)

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Page 14

Center-of-Mass det. time= 66.6 min (990.8 - 924.2)

Volume	Invert	Avail.Storage	Storage Description
#1	911.00'	67,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.00	6,547	0	0
911.50	7,097	3,411	3,411
912.00	8,246	3,836	7,247
912.50	11,615	4,965	12,212
913.00	23,062	8,669	20,881
913.30	25,610	7,301	28,182
914.00	31,776	20,085	48,267
914.60	32,000	19,133	67,400

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Round Culvert L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 913.00' / 910.50' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.00'	0.800 in/hr Exfiltration over Surface area
#3	Primary	914.10'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 100.00 200.00

Discarded OutFlow Max=0.43 cfs @ 0.00 hrs HW=913.00' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.43 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=913.00' TW=908.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)↑**3=Custom Weir/Orifice** (Controls 0.00 cfs)**Summary for Pond P7P: P7P**

Inflow Area = 8.030 ac, 17.43% Impervious, Inflow Depth = 0.05" for 2-Year event
 Inflow = 0.08 cfs @ 13.30 hrs, Volume= 0.034 af
 Outflow = 0.56 cfs @ 0.00 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.56 cfs @ 0.00 hrs, Volume= 0.423 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Starting Elev= 912.00' Surf.Area= 30,109 sf Storage= 16,970 cf
 Peak Elev= 912.00' @ 0.00 hrs Surf.Area= 30,109 sf Storage= 16,970 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	911.00'	91,079 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 15

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.00	11,908	0	0
911.50	12,932	6,210	6,210
912.00	30,109	10,760	16,970
914.00	44,000	74,109	91,079

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Round Culvert L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 912.00' / 910.50' S= 0.0500 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.00'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.56 cfs @ 0.00 hrs HW=912.00' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.56 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=912.00' TW=908.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)**Summary for Pond W2P: W2P**

Inflow Area = 5.890 ac, 34.47% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 916.00' @ 0.00 hrs Surf.Area= 5,691 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	56,315 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	5,691	0	0
917.00	9,445	7,568	7,568
918.00	13,959	11,702	19,270
919.00	18,350	16,155	35,425
920.00	23,430	20,890	56,315

Device	Routing	Invert	Outlet Devices
#1	Primary	918.20'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.80 Width (feet) 5.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=916.00' TW=0.00' (Dynamic Tailwater)↑**1=Custom Weir/Orifice** (Controls 0.00 cfs)

Summary for Pond W7P: W7P

Inflow Area = 31.980 ac, 33.46% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 908.00' @ 0.00 hrs Surf.Area= 8,407 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	908.00'	469,246 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
908.00	8,407	0	0
909.00	13,822	11,115	11,115
910.00	49,331	31,577	42,691
912.00	120,039	169,370	212,061
914.00	137,146	257,185	469,246

Device	Routing	Invert	Outlet Devices
#1	Primary	911.51'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=908.00' TW=0.00' (Dynamic Tailwater)

↑1=Orifice/Grate (Controls 0.00 cfs)

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Page 17

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1P: 1P	Runoff Area=2.740 ac 13.50% Impervious Runoff Depth=0.29" Flow Length=730' Tc=16.3 min CN=47 Runoff=0.39 cfs 0.066 af
Subcatchment 2P: 2P	Runoff Area=5.890 ac 34.47% Impervious Runoff Depth=0.81" Flow Length=600' Tc=8.3 min CN=59 Runoff=6.99 cfs 0.400 af
Subcatchment 3P: 3P	Runoff Area=9.000 ac 26.89% Impervious Runoff Depth=1.21" Flow Length=293' Tc=13.1 min CN=66 Runoff=14.23 cfs 0.910 af
Subcatchment 4P: 4P	Runoff Area=1.650 ac 21.82% Impervious Runoff Depth=0.48" Flow Length=380' Tc=11.2 min CN=52 Runoff=0.72 cfs 0.066 af
Subcatchment 5P: 5P	Runoff Area=0.725 ac 17.24% Impervious Runoff Depth=0.36" Flow Length=450' Tc=14.0 min CN=49 Runoff=0.17 cfs 0.022 af
Subcatchment 6P: 6P	Runoff Area=9.500 ac 30.42% Impervious Runoff Depth=0.71" Flow Length=1,075' Tc=21.1 min CN=57 Runoff=5.71 cfs 0.564 af
Subcatchment 7P: 7P	Runoff Area=8.030 ac 17.43% Impervious Runoff Depth=0.36" Flow Length=1,000' Tc=10.7 min CN=49 Runoff=2.03 cfs 0.242 af
Subcatchment 8P: 8P	Runoff Area=1.320 ac 23.48% Impervious Runoff Depth=0.53" Flow Length=175' Tc=6.7 min CN=53 Runoff=0.87 cfs 0.058 af
Subcatchment 11P-R: 11P	Runoff Area=13.130 ac 46.46% Impervious Runoff Depth=1.21" Tc=14.8 min CN=66 Runoff=19.60 cfs 1.328 af
Subcatchment 13P: 13P	Runoff Area=0.200 ac 30.00% Impervious Runoff Depth=0.71" Flow Length=55' Slope=0.0200 '/' Tc=0.3 min CN=57 Runoff=0.32 cfs 0.012 af
Subcatchment 14P: 14P	Runoff Area=0.180 ac 0.00% Impervious Runoff Depth=0.07" Flow Length=28' Slope=0.0250 '/' Tc=3.4 min CN=39 Runoff=0.00 cfs 0.001 af
Reach R1: East	Inflow=0.39 cfs 0.066 af Outflow=0.39 cfs 0.066 af
Reach R2: Northeast	Inflow=0.72 cfs 0.066 af Outflow=0.72 cfs 0.066 af
Reach R3: North Central	Inflow=0.17 cfs 0.022 af Outflow=0.17 cfs 0.022 af
Reach R4: Southwest	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Reach R6: South Central	Inflow=0.00 cfs 0.001 af Outflow=0.00 cfs 0.001 af

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Page 18

Reach R7: Southeast

Inflow=0.32 cfs 0.012 af

Outflow=0.32 cfs 0.012 af

Pond C14P: C14P

Peak Elev=921.01' Inflow=0.00 cfs 0.001 af

15.0" Round Culvert n=0.013 L=133.0' S=0.0200 ' Outflow=0.00 cfs 0.001 af

Pond P12P: P12P

Peak Elev=912.81' Storage=38,474 cf Inflow=19.60 cfs 1.328 af

Discarded=0.81 cfs 1.809 af Primary=0.34 cfs 0.137 af Outflow=1.15 cfs 1.945 af

Pond P2P: P2P

Peak Elev=918.81' Storage=10,467 cf Inflow=6.99 cfs 0.400 af

Discarded=0.11 cfs 0.330 af Primary=1.26 cfs 0.237 af Outflow=1.37 cfs 0.567 af

Pond P3P: P3P

Peak Elev=920.00' Storage=75,770 cf Inflow=14.23 cfs 0.910 af

Discarded=1.10 cfs 2.650 af Primary=0.00 cfs 0.000 af Outflow=1.10 cfs 2.650 af

Pond P6P: P6P

Peak Elev=913.12' Storage=23,770 cf Inflow=6.12 cfs 0.622 af

Discarded=0.45 cfs 1.083 af Primary=0.07 cfs 0.018 af Outflow=0.51 cfs 1.101 af

Pond P7P: P7P

Peak Elev=912.00' Storage=16,970 cf Inflow=2.03 cfs 0.242 af

Discarded=0.56 cfs 0.632 af Primary=0.00 cfs 0.000 af Outflow=0.56 cfs 0.632 af

Pond W2P: W2P

Peak Elev=917.27' Storage=10,309 cf Inflow=1.26 cfs 0.237 af

Outflow=0.00 cfs 0.000 af

Pond W7P: W7P

Peak Elev=908.66' Storage=6,723 cf Inflow=0.40 cfs 0.154 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 52.365 ac Runoff Volume = 3.668 af Average Runoff Depth = 0.84"**69.32% Pervious = 36.300 ac 30.68% Impervious = 16.065 ac**

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Page 19

Summary for Subcatchment 1P: 1P

Runoff = 0.39 cfs @ 12.44 hrs, Volume= 0.066 af, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.370	98	Impervious
2.370	39	>75% Grass cover, Good, HSG A
2.740	47	Weighted Average
2.370	39	86.50% Pervious Area
0.370	98	13.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.6	630	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
16.3	730	Total			

Summary for Subcatchment 2P: 2P

Runoff = 6.99 cfs @ 12.17 hrs, Volume= 0.400 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 2.030	98	Impervious
3.860	39	>75% Grass cover, Good, HSG A
5.890	59	Weighted Average
3.860	39	65.53% Pervious Area
2.030	98	34.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0200	0.24		Sheet Flow, n= 0.090 P2= 2.83"
0.8	163	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	337	0.0200	8.80	10.80	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
8.3	600	Total			

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Page 20

Summary for Subcatchment 3P: 3P

Runoff = 14.23 cfs @ 12.23 hrs, Volume= 0.910 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 2.420	98	Impervious
4.480	39	>75% Grass cover, Good, HSG A
* 2.100	85	Wetland
9.000	66	Weighted Average
6.580	54	73.11% Pervious Area
2.420	98	26.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.4	193	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
13.1	293	Total			

Summary for Subcatchment 4P: 4P

Runoff = 0.72 cfs @ 12.24 hrs, Volume= 0.066 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.360	98	Impervious
1.290	39	>75% Grass cover, Good, HSG A
1.650	52	Weighted Average
1.290	39	78.18% Pervious Area
0.360	98	21.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.7	280	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	380	Total			

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Page 21

Summary for Subcatchment 5P: 5P

Runoff = 0.17 cfs @ 12.32 hrs, Volume= 0.022 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.125	98	Impervious
0.600	39	>75% Grass cover, Good, HSG A
0.725	49	Weighted Average
0.600	39	82.76% Pervious Area
0.125	98	17.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
3.6	350	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.0	450	Total			

Summary for Subcatchment 6P: 6P

Runoff = 5.71 cfs @ 12.36 hrs, Volume= 0.564 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 2.890	98	Impervious
6.610	39	>75% Grass cover, Good, HSG A
9.500	57	Weighted Average
6.610	39	69.58% Pervious Area
2.890	98	30.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	185	0.0160	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.5	890	0.0100	5.94	10.50	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
21.1	1,075	Total			

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Page 22

Summary for Subcatchment 7P: 7P

Runoff = 2.03 cfs @ 12.26 hrs, Volume= 0.242 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 1.400	98	Impervious
6.630	39	>75% Grass cover, Good, HSG A
8.030	49	Weighted Average
6.630	39	82.57% Pervious Area
1.400	98	17.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	100	0.0400	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.8	900	0.0100	5.26	6.46	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
10.7	1,000	Total			

Summary for Subcatchment 8P: 8P

Runoff = 0.87 cfs @ 12.16 hrs, Volume= 0.058 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.310	98	Impervious
1.010	39	>75% Grass cover, Good, HSG A
1.320	53	Weighted Average
1.010	39	76.52% Pervious Area
0.310	98	23.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.0200	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
0.7	125	0.0320	2.88		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
6.7	175	Total			

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Page 23

Summary for Subcatchment 11P-R: 11P

Runoff = 19.60 cfs @ 12.25 hrs, Volume= 1.328 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 6.100	98	Impervious
7.030	39	>75% Grass cover, Good, HSG A
13.130	66	Weighted Average
7.030	39	53.54% Pervious Area
6.100	98	46.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.8					Direct Entry,

Summary for Subcatchment 13P: 13P

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.060	98	Impervious
0.140	39	>75% Grass cover, Good, HSG A
0.200	57	Weighted Average
0.140	39	70.00% Pervious Area
0.060	98	30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	55	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps

Summary for Subcatchment 14P: 14P

Runoff = 0.00 cfs @ 13.22 hrs, Volume= 0.001 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=4.21"

Area (ac)	CN	Description
* 0.000	98	Impervious
0.180	39	>75% Grass cover, Good, HSG A
0.180	39	Weighted Average
0.180	39	100.00% Pervious Area

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MSE 24-hr 3 10-Year Rainfall=4.21"

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Page 24

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	28	0.0250	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"

Summary for Reach R1: East

Inflow Area = 2.740 ac, 13.50% Impervious, Inflow Depth = 0.29" for 10-Year event
 Inflow = 0.39 cfs @ 12.44 hrs, Volume= 0.066 af
 Outflow = 0.39 cfs @ 12.44 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R2: Northeast

Inflow Area = 16.540 ac, 29.08% Impervious, Inflow Depth = 0.05" for 10-Year event
 Inflow = 0.72 cfs @ 12.24 hrs, Volume= 0.066 af
 Outflow = 0.72 cfs @ 12.24 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R3: North Central

Inflow Area = 0.725 ac, 17.24% Impervious, Inflow Depth = 0.36" for 10-Year event
 Inflow = 0.17 cfs @ 12.32 hrs, Volume= 0.022 af
 Outflow = 0.17 cfs @ 12.32 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R4: Southwest

Inflow Area = 31.980 ac, 33.46% Impervious, Inflow Depth = 0.00" for 10-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R6: South Central

Inflow Area = 0.180 ac, 0.00% Impervious, Inflow Depth = 0.07" for 10-Year event
 Inflow = 0.00 cfs @ 13.22 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 13.22 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

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Page 25

Summary for Reach R7: Southeast

Inflow Area = 0.200 ac, 30.00% Impervious, Inflow Depth = 0.71" for 10-Year event
 Inflow = 0.32 cfs @ 12.09 hrs, Volume= 0.012 af
 Outflow = 0.32 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Pond C14P: C14P

Inflow Area = 0.180 ac, 0.00% Impervious, Inflow Depth = 0.07" for 10-Year event
 Inflow = 0.00 cfs @ 13.22 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 13.22 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 13.22 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Peak Elev= 921.01' @ 13.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	920.99'	15.0" Round Culvert L= 133.0' Ke= 0.500 Inlet / Outlet Invert= 920.99' / 918.33' S= 0.0200 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 13.22 hrs HW=921.01' TW=0.00' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.00 cfs @ 0.51 fps)

Summary for Pond P12P: P12P

Inflow Area = 13.130 ac, 46.46% Impervious, Inflow Depth = 1.21" for 10-Year event
 Inflow = 19.60 cfs @ 12.25 hrs, Volume= 1.328 af
 Outflow = 1.15 cfs @ 14.20 hrs, Volume= 1.945 af, Atten= 94%, Lag= 117.0 min
 Discarded = 0.81 cfs @ 14.20 hrs, Volume= 1.809 af
 Primary = 0.34 cfs @ 14.20 hrs, Volume= 0.137 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 912.50' Surf.Area= 31,115 sf Storage= 26,885 cf

Peak Elev= 912.81' @ 14.20 hrs Surf.Area= 43,522 sf Storage= 38,474 cf (11,589 cf above start)

Plug-Flow detention time= 576.1 min calculated for 1.328 af (100% of inflow)

Center-of-Mass det. time= 255.5 min (1,097.4 - 841.9)

Volume	Invert	Avail.Storage	Storage Description
#1	911.50'	118,508 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.50	17,802	0	0
912.00	29,312	11,779	11,779
912.50	31,115	15,107	26,885
914.00	91,048	91,622	118,508

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Page 26

Device	Routing	Invert	Outlet Devices
#1	Primary	912.50'	12.0" Round Culvert L= 300.0' Ke= 0.500 Inlet / Outlet Invert= 912.50' / 910.50' S= 0.0067 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.50'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.81 cfs @ 14.20 hrs HW=912.81' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.81 cfs)**Primary OutFlow** Max=0.34 cfs @ 14.20 hrs HW=912.81' TW=908.17' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 0.34 cfs @ 2.45 fps)**Summary for Pond P2P: P2P**

Inflow Area = 5.890 ac, 34.47% Impervious, Inflow Depth = 0.81" for 10-Year event
 Inflow = 6.99 cfs @ 12.17 hrs, Volume= 0.400 af
 Outflow = 1.37 cfs @ 12.64 hrs, Volume= 0.567 af, Atten= 80%, Lag= 28.1 min
 Discarded = 0.11 cfs @ 12.64 hrs, Volume= 0.330 af
 Primary = 1.26 cfs @ 12.64 hrs, Volume= 0.237 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 918.20' Surf.Area= 4,332 sf Storage= 7,271 cf

Peak Elev= 918.81' @ 12.64 hrs Surf.Area= 6,073 sf Storage= 10,467 cf (3,196 cf above start)

Plug-Flow detention time= 724.0 min calculated for 0.400 af (100% of inflow)

Center-of-Mass det. time= 433.7 min (1,288.1 - 854.4)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	42,306 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	2,586	0	0
918.00	3,865	6,451	6,451
918.20	4,332	820	7,271
920.00	9,434	12,389	19,660
922.00	13,212	22,646	42,306

Device	Routing	Invert	Outlet Devices
#1	Primary	918.20'	15.0" Round Culvert L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 918.20' / 918.00' S= 0.0067 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Discarded	916.00'	0.800 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.11 cfs @ 12.64 hrs HW=918.81' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.11 cfs)**Primary OutFlow** Max=1.26 cfs @ 12.64 hrs HW=918.81' TW=916.21' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 1.26 cfs @ 3.06 fps)

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Page 27

Summary for Pond P3P: P3P

Inflow Area = 9.000 ac, 26.89% Impervious, Inflow Depth = 1.21" for 10-Year event
 Inflow = 14.23 cfs @ 12.23 hrs, Volume= 0.910 af
 Outflow = 1.10 cfs @ 0.00 hrs, Volume= 2.650 af, Atten= 92%, Lag= 0.0 min
 Discarded = 1.10 cfs @ 0.00 hrs, Volume= 2.650 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Starting Elev= 920.00' Surf.Area= 59,202 sf Storage= 75,770 cf
 Peak Elev= 920.00' @ 0.00 hrs Surf.Area= 59,202 sf Storage= 75,770 cf

Plug-Flow detention time= 1,072.0 min calculated for 0.910 af (100% of inflow)
 Center-of-Mass det. time= 256.9 min (1,097.3 - 840.3)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	224,972 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	23,715	0	0
919.00	32,480	28,098	28,098
919.10	38,816	3,565	31,662
920.00	59,202	44,108	75,770
922.00	90,000	149,202	224,972

Device	Routing	Invert	Outlet Devices
#1	Primary	920.00'	15.0" Round Culvert L= 442.0' Ke= 0.500 Inlet / Outlet Invert= 920.00' / 917.00' S= 0.0068 ' / Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Discarded	918.00'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=1.10 cfs @ 0.00 hrs HW=920.00' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=920.00' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Culvert** (Controls 0.00 cfs)

Summary for Pond P6P: P6P

Inflow Area = 10.820 ac, 29.57% Impervious, Inflow Depth = 0.69" for 10-Year event
 Inflow = 6.12 cfs @ 12.36 hrs, Volume= 0.622 af
 Outflow = 0.51 cfs @ 15.24 hrs, Volume= 1.101 af, Atten= 92%, Lag= 172.7 min
 Discarded = 0.45 cfs @ 15.24 hrs, Volume= 1.083 af
 Primary = 0.07 cfs @ 15.24 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Starting Elev= 913.00' Surf.Area= 23,062 sf Storage= 20,881 cf
 Peak Elev= 913.12' @ 15.24 hrs Surf.Area= 24,102 sf Storage= 23,770 cf (2,889 cf above start)

Plug-Flow detention time= 936.0 min calculated for 0.622 af (100% of inflow)

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Page 28

Center-of-Mass det. time= 392.5 min (1,265.5 - 872.9)

Volume	Invert	Avail.Storage	Storage Description
#1	911.00'	67,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.00	6,547	0	0
911.50	7,097	3,411	3,411
912.00	8,246	3,836	7,247
912.50	11,615	4,965	12,212
913.00	23,062	8,669	20,881
913.30	25,610	7,301	28,182
914.00	31,776	20,085	48,267
914.60	32,000	19,133	67,400

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Round Culvert L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 913.00' / 910.50' S= 0.0125 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.00'	0.800 in/hr Exfiltration over Surface area
#3	Primary	914.10'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 100.00 200.00

Discarded OutFlow Max=0.45 cfs @ 15.24 hrs HW=913.12' (Free Discharge)↑ **2=Exfiltration** (Exfiltration Controls 0.45 cfs)**Primary OutFlow** Max=0.07 cfs @ 15.24 hrs HW=913.12' TW=908.32' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.19 fps)↑ **3=Custom Weir/Orifice** (Controls 0.00 cfs)**Summary for Pond P7P: P7P**

Inflow Area = 8.030 ac, 17.43% Impervious, Inflow Depth = 0.36" for 10-Year event
 Inflow = 2.03 cfs @ 12.26 hrs, Volume= 0.242 af
 Outflow = 0.56 cfs @ 0.00 hrs, Volume= 0.632 af, Atten= 73%, Lag= 0.0 min
 Discarded = 0.56 cfs @ 0.00 hrs, Volume= 0.632 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 912.00' Surf.Area= 30,109 sf Storage= 16,970 cf

Peak Elev= 912.00' @ 0.00 hrs Surf.Area= 30,109 sf Storage= 16,970 cf

Plug-Flow detention time= 354.3 min calculated for 0.242 af (100% of inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	911.00'	91,079 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 29

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.00	11,908	0	0
911.50	12,932	6,210	6,210
912.00	30,109	10,760	16,970
914.00	44,000	74,109	91,079

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Round Culvert L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 912.00' / 910.50' S= 0.0500 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.00'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.56 cfs @ 0.00 hrs HW=912.00' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.56 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=912.00' TW=908.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)**Summary for Pond W2P: W2P**

Inflow Area = 5.890 ac, 34.47% Impervious, Inflow Depth = 0.48" for 10-Year event
 Inflow = 1.26 cfs @ 12.64 hrs, Volume= 0.237 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 917.27' @ 24.48 hrs Surf.Area= 10,675 sf Storage= 10,309 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	56,315 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	5,691	0	0
917.00	9,445	7,568	7,568
918.00	13,959	11,702	19,270
919.00	18,350	16,155	35,425
920.00	23,430	20,890	56,315

Device	Routing	Invert	Outlet Devices
#1	Primary	918.20'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.80 Width (feet) 5.00 50.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=916.00' TW=0.00' (Dynamic Tailwater)↑**1=Custom Weir/Orifice** (Controls 0.00 cfs)

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Page 30

Summary for Pond W7P: W7P

Inflow Area = 31.980 ac, 33.46% Impervious, Inflow Depth = 0.06" for 10-Year event
 Inflow = 0.40 cfs @ 15.02 hrs, Volume= 0.154 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 908.66' @ 23.26 hrs Surf.Area= 11,979 sf Storage= 6,723 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	908.00'	469,246 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
908.00	8,407	0	0
909.00	13,822	11,115	11,115
910.00	49,331	31,577	42,691
912.00	120,039	169,370	212,061
914.00	137,146	257,185	469,246

Device	Routing	Invert	Outlet Devices
#1	Primary	911.51'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=908.00' TW=0.00' (Dynamic Tailwater)
 ↑1=Orifice/Grate (Controls 0.00 cfs)

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Page 31

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1P: 1P	Runoff Area=2.740 ac 13.50% Impervious Runoff Depth=1.44" Flow Length=730' Tc=16.3 min CN=47 Runoff=4.13 cfs 0.328 af
Subcatchment 2P: 2P	Runoff Area=5.890 ac 34.47% Impervious Runoff Depth=2.55" Flow Length=600' Tc=8.3 min CN=59 Runoff=25.01 cfs 1.251 af
Subcatchment 3P: 3P	Runoff Area=9.000 ac 26.89% Impervious Runoff Depth=3.25" Flow Length=293' Tc=13.1 min CN=66 Runoff=40.36 cfs 2.439 af
Subcatchment 4P: 4P	Runoff Area=1.650 ac 21.82% Impervious Runoff Depth=1.88" Flow Length=380' Tc=11.2 min CN=52 Runoff=4.31 cfs 0.259 af
Subcatchment 5P: 5P	Runoff Area=0.725 ac 17.24% Impervious Runoff Depth=1.61" Flow Length=450' Tc=14.0 min CN=49 Runoff=1.39 cfs 0.097 af
Subcatchment 6P: 6P	Runoff Area=9.500 ac 30.42% Impervious Runoff Depth=2.35" Flow Length=1,075' Tc=21.1 min CN=57 Runoff=23.34 cfs 1.863 af
Subcatchment 7P: 7P	Runoff Area=8.030 ac 17.43% Impervious Runoff Depth=1.61" Flow Length=1,000' Tc=10.7 min CN=49 Runoff=17.62 cfs 1.078 af
Subcatchment 8P: 8P	Runoff Area=1.320 ac 23.48% Impervious Runoff Depth=1.97" Flow Length=175' Tc=6.7 min CN=53 Runoff=4.54 cfs 0.217 af
Subcatchment 11P-R: 11P	Runoff Area=13.130 ac 46.46% Impervious Runoff Depth=3.25" Tc=14.8 min CN=66 Runoff=55.63 cfs 3.558 af
Subcatchment 13P: 13P	Runoff Area=0.200 ac 30.00% Impervious Runoff Depth=2.35" Flow Length=55' Slope=0.0200 '/' Tc=0.3 min CN=57 Runoff=1.09 cfs 0.039 af
Subcatchment 14P: 14P	Runoff Area=0.180 ac 0.00% Impervious Runoff Depth=0.79" Flow Length=28' Slope=0.0250 '/' Tc=3.4 min CN=39 Runoff=0.22 cfs 0.012 af
Reach R1: East	Inflow=4.13 cfs 0.328 af Outflow=4.13 cfs 0.328 af
Reach R2: Northeast	Inflow=4.31 cfs 1.162 af Outflow=4.31 cfs 1.162 af
Reach R3: North Central	Inflow=1.39 cfs 0.097 af Outflow=1.39 cfs 0.097 af
Reach R4: Southwest	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Reach R6: South Central	Inflow=0.22 cfs 0.012 af Outflow=0.22 cfs 0.012 af

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Page 32

Reach R7: Southeast

Inflow=1.09 cfs 0.039 af

Outflow=1.09 cfs 0.039 af

Pond C14P: C14PPeak Elev=921.20' Inflow=0.22 cfs 0.012 af
15.0" Round Culvert n=0.013 L=133.0' S=0.0200 ' Outflow=0.22 cfs 0.012 af**Pond P12P: P12P**Peak Elev=913.73' Storage=95,555 cf Inflow=55.63 cfs 3.558 af
Discarded=1.49 cfs 2.492 af Primary=3.06 cfs 1.684 af Outflow=4.55 cfs 4.175 af**Pond P2P: P2P**Peak Elev=920.35' Storage=23,107 cf Inflow=25.01 cfs 1.251 af
Discarded=0.19 cfs 0.356 af Primary=6.97 cfs 1.062 af Outflow=7.16 cfs 1.417 af**Pond P3P: P3P**Peak Elev=920.45' Storage=104,277 cf Inflow=40.36 cfs 2.439 af
Discarded=1.23 cfs 3.828 af Primary=0.85 cfs 0.350 af Outflow=2.07 cfs 4.179 af**Pond P6P: P6P**Peak Elev=914.13' Storage=52,506 cf Inflow=25.04 cfs 2.080 af
Discarded=0.59 cfs 1.330 af Primary=5.05 cfs 1.229 af Outflow=5.64 cfs 2.560 af**Pond P7P: P7P**Peak Elev=912.36' Storage=28,285 cf Inflow=17.62 cfs 1.078 af
Discarded=0.60 cfs 1.267 af Primary=0.52 cfs 0.200 af Outflow=1.13 cfs 1.468 af**Pond W2P: W2P**Peak Elev=918.41' Storage=25,365 cf Inflow=6.97 cfs 1.062 af
Outflow=3.07 cfs 0.553 af**Pond W7P: W7P**Peak Elev=911.29' Storage=135,624 cf Inflow=8.41 cfs 3.113 af
Outflow=0.00 cfs 0.000 af**Total Runoff Area = 52.365 ac Runoff Volume = 11.140 af Average Runoff Depth = 2.55"**
69.32% Pervious = 36.300 ac 30.68% Impervious = 16.065 ac

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MSE 24-hr 3 100-Year Rainfall=7.06"

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Page 33

Summary for Subcatchment 1P: 1P

Runoff = 4.13 cfs @ 12.28 hrs, Volume= 0.328 af, Depth= 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.370	98	Impervious
2.370	39	>75% Grass cover, Good, HSG A
2.740	47	Weighted Average
2.370	39	86.50% Pervious Area
0.370	98	13.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
4.6	630	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
16.3	730	Total			

Summary for Subcatchment 2P: 2P

Runoff = 25.01 cfs @ 12.16 hrs, Volume= 1.251 af, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 2.030	98	Impervious
3.860	39	>75% Grass cover, Good, HSG A
5.890	59	Weighted Average
3.860	39	65.53% Pervious Area
2.030	98	34.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0200	0.24		Sheet Flow, n= 0.090 P2= 2.83"
0.8	163	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	337	0.0200	8.80	10.80	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
8.3	600	Total			

Summary for Subcatchment 3P: 3P

Runoff = 40.36 cfs @ 12.21 hrs, Volume= 2.439 af, Depth= 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 2.420	98	Impervious
4.480	39	>75% Grass cover, Good, HSG A
* 2.100	85	Wetland
9.000	66	Weighted Average
6.580	54	73.11% Pervious Area
2.420	98	26.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0150	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.4	193	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
13.1	293	Total			

Summary for Subcatchment 4P: 4P

Runoff = 4.31 cfs @ 12.20 hrs, Volume= 0.259 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.360	98	Impervious
1.290	39	>75% Grass cover, Good, HSG A
1.650	52	Weighted Average
1.290	39	78.18% Pervious Area
0.360	98	21.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0250	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
1.7	280	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	380	Total			

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Page 35

Summary for Subcatchment 5P: 5P

Runoff = 1.39 cfs @ 12.24 hrs, Volume= 0.097 af, Depth= 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.125	98	Impervious
0.600	39	>75% Grass cover, Good, HSG A
0.725	49	Weighted Average
0.600	39	82.76% Pervious Area
0.125	98	17.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
3.6	350	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.0	450	Total			

Summary for Subcatchment 6P: 6P

Runoff = 23.34 cfs @ 12.33 hrs, Volume= 1.863 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 2.890	98	Impervious
6.610	39	>75% Grass cover, Good, HSG A
9.500	57	Weighted Average
6.610	39	69.58% Pervious Area
2.890	98	30.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	185	0.0160	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.5	890	0.0100	5.94	10.50	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
21.1	1,075	Total			

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Page 36

Summary for Subcatchment 7P: 7P

Runoff = 17.62 cfs @ 12.20 hrs, Volume= 1.078 af, Depth= 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 1.400	98	Impervious
6.630	39	>75% Grass cover, Good, HSG A
8.030	49	Weighted Average
6.630	39	82.57% Pervious Area
1.400	98	17.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	100	0.0400	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
2.8	900	0.0100	5.26	6.46	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
10.7	1,000	Total			

Summary for Subcatchment 8P: 8P

Runoff = 4.54 cfs @ 12.15 hrs, Volume= 0.217 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.310	98	Impervious
1.010	39	>75% Grass cover, Good, HSG A
1.320	53	Weighted Average
1.010	39	76.52% Pervious Area
0.310	98	23.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.0200	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"
0.7	125	0.0320	2.88		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
6.7	175	Total			

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Page 37

Summary for Subcatchment 11P-R: 11P

Runoff = 55.63 cfs @ 12.24 hrs, Volume= 3.558 af, Depth= 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 6.100	98	Impervious
7.030	39	>75% Grass cover, Good, HSG A
13.130	66	Weighted Average
7.030	39	53.54% Pervious Area
6.100	98	46.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.8					Direct Entry,

Summary for Subcatchment 13P: 13P

Runoff = 1.09 cfs @ 12.09 hrs, Volume= 0.039 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.060	98	Impervious
0.140	39	>75% Grass cover, Good, HSG A
0.200	57	Weighted Average
0.140	39	70.00% Pervious Area
0.060	98	30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	55	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps

Summary for Subcatchment 14P: 14P

Runoff = 0.22 cfs @ 12.12 hrs, Volume= 0.012 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=7.06"

Area (ac)	CN	Description
* 0.000	98	Impervious
0.180	39	>75% Grass cover, Good, HSG A
0.180	39	Weighted Average
0.180	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	28	0.0250	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.83"

Summary for Reach R1: East

Inflow Area = 2.740 ac, 13.50% Impervious, Inflow Depth = 1.44" for 100-Year event
 Inflow = 4.13 cfs @ 12.28 hrs, Volume= 0.328 af
 Outflow = 4.13 cfs @ 12.28 hrs, Volume= 0.328 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R2: Northeast

Inflow Area = 16.540 ac, 29.08% Impervious, Inflow Depth = 0.84" for 100-Year event
 Inflow = 4.31 cfs @ 12.20 hrs, Volume= 1.162 af
 Outflow = 4.31 cfs @ 12.20 hrs, Volume= 1.162 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R3: North Central

Inflow Area = 0.725 ac, 17.24% Impervious, Inflow Depth = 1.61" for 100-Year event
 Inflow = 1.39 cfs @ 12.24 hrs, Volume= 0.097 af
 Outflow = 1.39 cfs @ 12.24 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R4: Southwest

Inflow Area = 31.980 ac, 33.46% Impervious, Inflow Depth = 0.00" for 100-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Reach R6: South Central

Inflow Area = 0.180 ac, 0.00% Impervious, Inflow Depth = 0.79" for 100-Year event
 Inflow = 0.22 cfs @ 12.12 hrs, Volume= 0.012 af
 Outflow = 0.22 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

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Page 39

Summary for Reach R7: Southeast

Inflow Area = 0.200 ac, 30.00% Impervious, Inflow Depth = 2.35" for 100-Year event
 Inflow = 1.09 cfs @ 12.09 hrs, Volume= 0.039 af
 Outflow = 1.09 cfs @ 12.09 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Summary for Pond C14P: C14P

Inflow Area = 0.180 ac, 0.00% Impervious, Inflow Depth = 0.79" for 100-Year event
 Inflow = 0.22 cfs @ 12.12 hrs, Volume= 0.012 af
 Outflow = 0.22 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.22 cfs @ 12.12 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Peak Elev= 921.20' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	920.99'	15.0" Round Culvert L= 133.0' Ke= 0.500 Inlet / Outlet Invert= 920.99' / 918.33' S= 0.0200 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.22 cfs @ 12.12 hrs HW=921.20' TW=0.00' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.22 cfs @ 1.57 fps)

Summary for Pond P12P: P12P

Inflow Area = 13.130 ac, 46.46% Impervious, Inflow Depth = 3.25" for 100-Year event
 Inflow = 55.63 cfs @ 12.24 hrs, Volume= 3.558 af
 Outflow = 4.55 cfs @ 13.56 hrs, Volume= 4.175 af, Atten= 92%, Lag= 79.5 min
 Discarded = 1.49 cfs @ 13.56 hrs, Volume= 2.492 af
 Primary = 3.06 cfs @ 13.56 hrs, Volume= 1.684 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 912.50' Surf.Area= 31,115 sf Storage= 26,885 cf

Peak Elev= 913.73' @ 13.56 hrs Surf.Area= 80,347 sf Storage= 95,555 cf (68,669 cf above start)

Plug-Flow detention time= 415.8 min calculated for 3.558 af (100% of inflow)

Center-of-Mass det. time= 292.7 min (1,112.7 - 820.0)

Volume	Invert	Avail.Storage	Storage Description
#1	911.50'	118,508 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.50	17,802	0	0
912.00	29,312	11,779	11,779
912.50	31,115	15,107	26,885
914.00	91,048	91,622	118,508

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Page 40

Device	Routing	Invert	Outlet Devices
#1	Primary	912.50'	12.0" Round Culvert L= 300.0' Ke= 0.500 Inlet / Outlet Invert= 912.50' / 910.50' S= 0.0067 ' S= 0.0067 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.50'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=1.49 cfs @ 13.56 hrs HW=913.73' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 1.49 cfs)**Primary OutFlow** Max=3.06 cfs @ 13.56 hrs HW=913.73' TW=909.70' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 3.06 cfs @ 4.04 fps)**Summary for Pond P2P: P2P**

Inflow Area = 5.890 ac, 34.47% Impervious, Inflow Depth = 2.55" for 100-Year event
 Inflow = 25.01 cfs @ 12.16 hrs, Volume= 1.251 af
 Outflow = 7.16 cfs @ 12.43 hrs, Volume= 1.417 af, Atten= 71%, Lag= 15.9 min
 Discarded = 0.19 cfs @ 12.43 hrs, Volume= 0.356 af
 Primary = 6.97 cfs @ 12.43 hrs, Volume= 1.062 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 918.20' Surf.Area= 4,332 sf Storage= 7,271 cf

Peak Elev= 920.35' @ 12.43 hrs Surf.Area= 10,101 sf Storage= 23,107 cf (15,836 cf above start)

Plug-Flow detention time= 271.9 min calculated for 1.250 af (100% of inflow)

Center-of-Mass det. time= 210.2 min (1,035.8 - 825.6)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	42,306 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	2,586	0	0
918.00	3,865	6,451	6,451
918.20	4,332	820	7,271
920.00	9,434	12,389	19,660
922.00	13,212	22,646	42,306

Device	Routing	Invert	Outlet Devices
#1	Primary	918.20'	15.0" Round Culvert L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 918.20' / 918.00' S= 0.0067 ' S= 0.0067 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Discarded	916.00'	0.800 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.19 cfs @ 12.43 hrs HW=920.35' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.19 cfs)**Primary OutFlow** Max=6.97 cfs @ 12.43 hrs HW=920.35' TW=916.95' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 6.97 cfs @ 5.68 fps)

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Page 41

Summary for Pond P3P: P3P

Inflow Area = 9.000 ac, 26.89% Impervious, Inflow Depth = 3.25" for 100-Year event
 Inflow = 40.36 cfs @ 12.21 hrs, Volume= 2.439 af
 Outflow = 2.07 cfs @ 13.75 hrs, Volume= 4.179 af, Atten= 95%, Lag= 92.4 min
 Discarded = 1.23 cfs @ 13.75 hrs, Volume= 3.828 af
 Primary = 0.85 cfs @ 13.75 hrs, Volume= 0.350 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Starting Elev= 920.00' Surf.Area= 59,202 sf Storage= 75,770 cf
 Peak Elev= 920.45' @ 13.75 hrs Surf.Area= 66,203 sf Storage= 104,277 cf (28,506 cf above start)

Plug-Flow detention time= 1,102.9 min calculated for 2.439 af (100% of inflow)
 Center-of-Mass det. time= 551.8 min (1,370.2 - 818.4)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	224,972 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	23,715	0	0
919.00	32,480	28,098	28,098
919.10	38,816	3,565	31,662
920.00	59,202	44,108	75,770
922.00	90,000	149,202	224,972

Device	Routing	Invert	Outlet Devices
#1	Primary	920.00'	15.0" Round Culvert L= 442.0' Ke= 0.500 Inlet / Outlet Invert= 920.00' / 917.00' S= 0.0068 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Discarded	918.00'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=1.23 cfs @ 13.75 hrs HW=920.45' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 1.23 cfs)

Primary OutFlow Max=0.85 cfs @ 13.75 hrs HW=920.45' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 0.85 cfs @ 3.13 fps)

Summary for Pond P6P: P6P

Inflow Area = 10.820 ac, 29.57% Impervious, Inflow Depth = 2.31" for 100-Year event
 Inflow = 25.04 cfs @ 12.31 hrs, Volume= 2.080 af
 Outflow = 5.64 cfs @ 12.99 hrs, Volume= 2.560 af, Atten= 77%, Lag= 40.4 min
 Discarded = 0.59 cfs @ 12.99 hrs, Volume= 1.330 af
 Primary = 5.05 cfs @ 12.99 hrs, Volume= 1.229 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Starting Elev= 913.00' Surf.Area= 23,062 sf Storage= 20,881 cf
 Peak Elev= 914.13' @ 12.99 hrs Surf.Area= 31,826 sf Storage= 52,506 cf (31,625 cf above start)

Plug-Flow detention time= 464.7 min calculated for 2.080 af (100% of inflow)

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Page 42

Center-of-Mass det. time= 314.3 min (1,154.9 - 840.6)

Volume	Invert	Avail.Storage	Storage Description
#1	911.00'	67,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.00	6,547	0	0
911.50	7,097	3,411	3,411
912.00	8,246	3,836	7,247
912.50	11,615	4,965	12,212
913.00	23,062	8,669	20,881
913.30	25,610	7,301	28,182
914.00	31,776	20,085	48,267
914.60	32,000	19,133	67,400

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Round Culvert L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 913.00' / 910.50' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.00'	0.800 in/hr Exfiltration over Surface area
#3	Primary	914.10'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 Width (feet) 100.00 200.00

Discarded OutFlow Max=0.59 cfs @ 12.99 hrs HW=914.13' (Free Discharge)↑ **2=Exfiltration** (Exfiltration Controls 0.59 cfs)**Primary OutFlow** Max=5.05 cfs @ 12.99 hrs HW=914.13' TW=909.16' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 3.01 cfs @ 3.83 fps)↑ **3=Custom Weir/Orifice** (Weir Controls 2.04 cfs @ 0.59 fps)**Summary for Pond P7P: P7P**

Inflow Area = 8.030 ac, 17.43% Impervious, Inflow Depth = 1.61" for 100-Year event
 Inflow = 17.62 cfs @ 12.20 hrs, Volume= 1.078 af
 Outflow = 1.13 cfs @ 13.74 hrs, Volume= 1.468 af, Atten= 94%, Lag= 92.2 min
 Discarded = 0.60 cfs @ 13.74 hrs, Volume= 1.267 af
 Primary = 0.52 cfs @ 13.74 hrs, Volume= 0.200 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Starting Elev= 912.00' Surf.Area= 30,109 sf Storage= 16,970 cf

Peak Elev= 912.36' @ 13.74 hrs Surf.Area= 32,615 sf Storage= 28,285 cf (11,315 cf above start)

Plug-Flow detention time= 463.6 min calculated for 1.078 af (100% of inflow)

Center-of-Mass det. time= 211.5 min (1,060.3 - 848.8)

Volume	Invert	Avail.Storage	Storage Description
#1	911.00'	91,079 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

0384_Proposed_180503

MSE 24-hr 3 100-Year Rainfall=7.06"

Prepared by {enter your company name here}

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Page 43

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
911.00	11,908	0	0
911.50	12,932	6,210	6,210
912.00	30,109	10,760	16,970
914.00	44,000	74,109	91,079

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Round Culvert L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 912.00' / 910.50' S= 0.0500 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	911.00'	0.800 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.60 cfs @ 13.74 hrs HW=912.36' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.60 cfs)**Primary OutFlow** Max=0.52 cfs @ 13.74 hrs HW=912.36' TW=909.80' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.52 cfs @ 2.05 fps)**Summary for Pond W2P: W2P**

Inflow Area = 5.890 ac, 34.47% Impervious, Inflow Depth = 2.16" for 100-Year event
 Inflow = 6.97 cfs @ 12.43 hrs, Volume= 1.062 af
 Outflow = 3.07 cfs @ 13.56 hrs, Volume= 0.553 af, Atten= 56%, Lag= 68.0 min
 Primary = 3.07 cfs @ 13.56 hrs, Volume= 0.553 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 918.41' @ 13.56 hrs Surf.Area= 15,760 sf Storage= 25,365 cf

Plug-Flow detention time= 208.7 min calculated for 0.553 af (52% of inflow)
 Center-of-Mass det. time= 119.6 min (967.9 - 848.3)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	56,315 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	5,691	0	0
917.00	9,445	7,568	7,568
918.00	13,959	11,702	19,270
919.00	18,350	16,155	35,425
920.00	23,430	20,890	56,315

Device	Routing	Invert	Outlet Devices
#1	Primary	918.20'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.80 Width (feet) 5.00 50.00

Primary OutFlow Max=3.07 cfs @ 13.56 hrs HW=918.41' TW=0.00' (Dynamic Tailwater)↑**1=Custom Weir/Orifice** (Weir Controls 3.07 cfs @ 1.34 fps)

Summary for Pond W7P: W7P

Inflow Area = 31.980 ac, 33.46% Impervious, Inflow Depth = 1.17" for 100-Year event
 Inflow = 8.41 cfs @ 12.99 hrs, Volume= 3.113 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 911.29' @ 27.96 hrs Surf.Area= 94,893 sf Storage= 135,624 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	908.00'	469,246 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
908.00	8,407	0	0
909.00	13,822	11,115	11,115
910.00	49,331	31,577	42,691
912.00	120,039	169,370	212,061
914.00	137,146	257,185	469,246

Device	Routing	Invert	Outlet Devices
#1	Primary	911.51'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=908.00' TW=0.00' (Dynamic Tailwater)

↑1=Orifice/Grate (Controls 0.00 cfs)

**DEVELOPMENT AGREEMENT
RIVERS EDGE ADDITION**

This Development Agreement ("Agreement") is made and entered into this ____ day of _____, 2018, by and between the City of St. Francis, a Minnesota municipal corporation ("City") and St. Francis Land Development, LLC, a Minnesota Limited Liability Company ("Developer").

WITNESSETH:

WHEREAS, the City approved the final plat and final plan PUD of RIVERS EDGE on _____, 2018, said plat legally described in **Exhibit A** attached hereto and made a part hereof ("Property") contingent upon the conditions recited therein and on the execution of this Development Agreement by the Developer and City; and

WHEREAS, the City approved twenty-three (23) of an expected one hundred twelve (112) Single Family Residential lots; and

WHEREAS, the proposed plat contemplates the dedication of certain streets and roads to be constructed in accordance with applicable ordinances and standards, and with the plans and specifications prepared by the Developer's Engineer as provided herein as **Exhibit B**, which the Developer has reviewed and agrees to be bound by, which is made a part hereof; and

WHEREAS, the proposed plat contemplates the construction of a sanitary sewer, water service and drainage facilities by the Developer within the Property, and with the plans and specifications as provided herein as Exhibit C, which the Developer has reviewed and agrees to be bound by, which is made a part hereof; and

WHEREAS, the City requires that the water, and sewer and drainage facilities constructed upon the Property meet the City's quality standards; and

WHEREAS, pursuant to negotiations between the City and a prior owner of the Property, the prior owner requested and the city agreed to and the City constructed a water main and sanitary sewer in, under and across the Property and deferred the connection fee against the Property for said water and sanitary sewer until development of the Property. The value of the water main and sanitary sewer improvements to the Property is \$389,040.43; and

WHEREAS, the Developer will pay a portion of the \$389,040.43 as part of the approvals for this part of the Property; and

WHEREAS, the Developer desires that after it completes the construction, the City will accept and maintain said streets, roads, sidewalk, trails, water and sewer and drainage facilities that serve said plat; and

WHEREAS, the City requires certain security hereunder to guaranty the proper construction of said streets and road, trails, water and sewer, and drainage facilities and the payment of all costs for labor and materials incurred in connection therewith; and

WHEREAS, the Developer has fee simple title to the property legally described in Exhibit A; and

WHEREAS, the Developer agrees to be fully bound by the terms and conditions of this Development Agreement (hereinafter referred to as "Development Agreement" or "Agreement").

NOW, THEREFORE, in consideration of the mutual promises of the parties made herein, it is agreed by and between the parties hereto, that the Developer will provide all labor and materials and construct streets, roads, sidewalk, trails, water and sewer and drainage facilities to adequately serve the plat of RIVERS EDGE and take all other actions in accordance with this Development Agreement at its own expense except as hereinafter provided.

IT IS ALSO AGREED:

1. **Request for Plat Approval.** The Developer is the fee owner of the lands in the City of St. Francis legally described on Exhibit A and has asked the City to approve the plat of RIVERS EDGE and the plans for the installation of public and private improvements within the plat of RIVERS EDGE (hereinafter referred to as the "plat"). The land within the plat is legally described in Exhibit A.

2. **Conditions of Plat Approval.** The City hereby approves the plat and the installation of public improvements on the condition that the Developer complies with all conditions outlined in the _____, 2018, final plat approval (including references to requirements of the preliminary plat) city ordinances and compliance with this Agreement. The City hereby further conditions this approval upon the requirement that the Developer submit and receive approval from the City Engineer for the final utility plans, final grading and storm water plans and plans for the temporary access to County Road 72 / Rum River Boulevard NW at 236th Avenue and for the construction of access to Quay Street and Marigold Street. The City further conditions its approval on the Developer entering into this Agreement and furnishing the security required by it. The Developer is also required to secure sewer extension permits, an NPDES Phase II permit, provide evidence of full fee title in the property and pay all outstanding tax and special assessment obligations if any, as a condition of plat approval telephone, electric and gas utility lines are to be placed underground in accordance with applicable City ordinances; driveways should be located so as to preserve as many trees as possible; addresses for each individual home shall be posted at each driveway entrance; street signs shall be required at all intersections at Developer's expense; the Developer shall comply with the Agreement and Waiver Regarding Pre-Approval Grading of Plat known as Rivers Edge; all as a condition of plat approval. The Developer is required to obtain all necessary permits required by Anoka County for the construction of temporary access to County Road 72/Rum River Blvd. NW as a condition of plat approval.

3. **Right to Proceed.** Within the plat or land to be platted, the Developer may not grade or otherwise disturb the earth, except as may be allowed by that Pre-Approval Grading Permit dated _____, 2018, remove trees, construct sewer lines, water lines, streets, utilities, public or private improvements, or any buildings until the following conditions have been satisfied: 1) this Agreement has been fully executed by both parties and filed with the City Clerk; 2) the Developer has submitted a title insurance policy to the City establishing that good and marketable title to the real property within the plat is in the name of the Developer; 3) the necessary security has been received by the City; 4) the plat and this Agreement have been filed by the Developer with the Anoka County Recorder; 5) Developer has obtained all necessary permits from all federal, state and local governmental units; 6) final engineering and construction plans and Storm Water Pollution Prevention Plan have been delivered by Developer to City engineer and the engineer has approved; and 7) the City's administrator has issued a letter that conditions 1, 2, 3, 4, 5 and 6 herein have been satisfied and that the Developer shall proceed. The City has previously authorized Developer to grade the site pursuant to that Agreement and Waiver Regarding Pre-Approval Grading of the Plat known as Rivers Edge (the "Grading Agreement"). In the event of breach of the Grading Agreement by Developer, the City may discontinue other phases of the work for this plat.

4. **Phased Development.** The Developer will submit a phasing plan, if any, to the City for review and a determination by the City as to whether the phasing plan will be approved. In the event that the phased development plan is not acceptable to the City, the Developer shall comply with City instructions and resubmit the phasing plan for City review and a determination by the City as to whether the phasing plan will be approved. The City may refuse to approve final plats of subsequent Phases if the Developer has breached this Agreement and the breach has not been remedied.

5. **Development Plans.** The Developer intends to develop the Rivers Edge Planned Unit Development in two or more phases. The City may refuse to approve final plats of subsequent phases if the Developer has breached this Agreement and the breach has not been remedied. The plat shall be developed according to plans submitted to and approved by the City. The plans shall not be attached to this Agreement. With the exception of Plan A, the plans may be revised, subject to reasonable City approval, after entering the Agreement, but before commencement of any work in the plat. The erosion control plan must also be approved by the _____. If the plans vary from the written terms of this Agreement, the written terms shall control.

The plans are:

- | | |
|---------|---|
| Plan A: | Plat/Staging Plan |
| Plan B: | Grading Plan
House Pad Locations and Elevations |
| Plan C: | Gravity sanitary sewer service, water service and drainage facilities
Plan |
| Plan D: | Soil Erosion Control Plan and Schedule |

6. **Improvements.** The Developer shall install and pay for the following public and private improvements (collectively the "Improvements") as required to be built in accordance with the approved plans:

- A. Site Grading and Ponding and all temporary and permanent erosion control measures
- B. Bituminous Streets
- C. Street Signs
- D. Street Lights
- E. Setting of Lot and Block Monuments
- F. Surveying and Staking
- G. Storm Sewer System, including all necessary culverts, catch basins, ponds, inlets and other appurtenances
- H. Water System*
- I. Sanitary Sewer System*
- J. Concrete Curb and Gutter
- K. Concrete Sidewalk
- L. Underground Utilities
- M. Landscaping
- N. Connection to municipal water and sewer facilities, sewage disposal constructed in accordance with the laws of the State of Minnesota, the regulations of the State Health Department and the City code provisions and the requirements of the City and the Minnesota Pollution Control Agency
- O. Bituminous Trails

The improvements shall be installed in accordance with City standards, ordinances, and plans and specifications which have been prepared by an Engineer registered in the State of Minnesota and reviewed and approved by the City Engineer. The Developer shall obtain all necessary permits from the Minnesota Pollution Control Agency (MPCA), Minnesota Department of Health, Anoka County Highway Department and other agencies before proceeding with construction. The City, at the Developer's expense as set out in Section 17(e), shall have one or more City inspectors and a soil engineer inspect the work on a full or part-time basis. The Developer's Engineer shall schedule a preconstruction meeting at a mutually agreeable time at the City offices with all parties concerned, including the City staff, to review the program for the construction work. A complete set of reproducible "As Built" utility and grading plans shall be prepared for the City Engineer. The Developer shall provide electronic AutoCAD files to the City Engineer for preparation of the "As Built" plans. A complete set of "As Built" grading plans shall be prepared by the Developer's Engineer. The cost of preparing these plans shall be paid for by the Developer.

* The City has constructed the water and sanitary sewer within the Property. The Developer has benefitted from the water and sanitary sewer improvements constructed by the City on the Property. The prior City Engineer has calculated the benefit received by the Developer for these water and sanitary sewer improvements at \$389,040.43. Based on same, the City shall require that the Developer pay a connection charge of \$389,040.43, and Developer agrees to pay this amount.

The connection charge shall be paid in accordance with the formula as listed in Section 8 of this Agreement.

The Developer also agrees to design all streets and roadways to meet thirty (30) miles per hour design standards and acknowledges and agrees that a minimum of a three hundred (300) foot radius or approved super elevated curve is required to meet this standard. The Developer will submit thickness design calculations to verify that the proposed pavement thickness is acceptable to the City. The Developer shall obtain all necessary approvals from Anoka County for construction traffic off of County Road 72.

The Developer will also submit a signage plan for review and determination of sufficiency by the City.

The Developer will submit a lighting plan for review and determination of sufficiency by the City.

All construction traffic to and from the Property must access the designated construction access at approximately 236th Street.

7. **Security.** To guaranty the compliance with the requirements, provisions, limitations and terms set forth in this agreement, and the installation and construction of improvements in a good and workmanlike manner, pursuant to the plans and specifications and the requirements of the City Engineer, and payment of the costs of all improvements, the Developer shall furnish and deliver to the City a letter of credit, in the form attached hereto (or as deemed acceptable by the City) from an FDIC insured bank ("security") prior to beginning any construction within the plat. The letter of credit shall renew automatically until released by the City. The amount of the security includes all the security requirements set forth in this Agreement and was calculated as follows:

CONSTRUCTION COSTS:

Sanitary Sewer	\$	_____
Water Main	\$	_____
Storm Sewer	\$	_____
Streets	\$	_____
Sidewalk	\$	_____
Trails	\$	_____
CONSTRUCTION TOTAL	\$	_____
150% of Construction Total	\$	_____

This breakdown is for historical reference; it is not a restriction on the use of the security. The bank shall be subject to the reasonable approval of the City Administrator. The Letter of Credit

shall allow the City to draw upon the instrument, in whole or in part, in order to complete construction of any or all of the improvements or to satisfy the claims of Contractors or suppliers which have not been satisfied by Developer and to pay any fees or costs due to the City by the Developer. The City may draw down the security, upon ten (10) business days' prior written notice to the Developer for any violation of the terms of this Agreement. Amounts drawn shall not exceed the amounts necessary to cure to the default. If the required public improvements are not completed at least thirty (30) days prior to the expiration of the security, the City may also draw it down. If the security is drawn down, the proceeds shall be used to cure the default. The Developer may apply to the City Council of the City for a reduction of the security once per month commencing 30 days after the permit for the Sanitary Sewer is issued. The City Council shall respond to this request within 30 days of receipt of the Application for Reduction of Security. Upon receipt of proof satisfactory to the City that work has been completed to the quality as required by the City, and that the Developer has taken all steps necessary to ensure that no liens will attach to the plat, and financial obligations to the City have been satisfied, with City approval the security may be reduced from time to time up to ninety percent (90%) of the financial obligations that have been satisfied, as determined by the City in its sole discretion. Ten percent (10%) of the amounts certified by the Developer's engineer shall be retained as security until all improvements have been completed, all financial obligations to the City satisfied, the required "as constructed" plans have been received by the City, a warranty security is provided, and the public improvements are accepted by the City Council. Reductions in the security will be based on the actual work completed based on the bids submitted to the City.

8. Payment of Connection Charges. The Developer and City acknowledge the \$389,040.43 in water and sewer connection charges will be paid off as each individual lot on the Property is sold. The total portion of the water and sewer connection charges paid under this Agreement shall be \$40,672.41.

9. Summary of Cash Requirements. The following is a summary of the cash deposit under this Agreement which must be furnished to the City at the time of final plat approval and execution of this Agreement by the City:

Section 22 Escrow (Engineering, City Administration, Legal Expenses)	\$20,000	plus
charges already on record and incurred by the City_		
Park Dedication	\$ 21,804	
Connection Charge	\$40,672.41	
TOTAL CASH REQUIREMENTS	\$82,476.41	Plus
<u>charges already on record and incurred by the City</u>		

The City will utilize the Section 22 Escrow to pay all bills associated with this project. If said fees are less than estimated, the City shall reimburse the Developer within thirty (30) days of completion of all project warranty periods. If it appears that the actual costs incurred will exceed

the estimate, Developer and City shall review the costs required to complete the project and Developer shall deposit additional sums with the City.

10. Responsibility for Costs.

A. Except as otherwise specified herein, the Developer shall pay all costs incurred by it or the City in conjunction with the development of the plat, including but not limited to Soil and Water Conservation District charges, legal, planning, engineering and inspection expenses incurred in connection with approval and acceptance of the plat, the preparation of this Agreement, review of construction plans and documents, and all costs and expenses incurred by the City in monitoring and inspecting development of the plat, as well as preparation of record drawings.

B. The Developer shall hold the City and its officers, employees, and agents harmless from claims made by itself and third parties for damages sustained or costs incurred resulting from plat approval and development. The Developer shall indemnify the City and its officers, employees, and agents for all costs, damages, or expenses which the City may pay or incur in consequence of such claims, including attorneys' fees and costs.

C. The Developer shall reimburse the City for reasonable costs incurred in the enforcement of this Agreement, including engineering and attorneys' fees.

D. The Developer shall pay, or cause to be paid when due, and in any event before any penalty is attached, all special assessments, as outlined in Sections 7, 8, 19, 20 and 21 herein, referred to in this Agreement. This is an obligation of the Developer and shall continue in full force and effect even if the Developer sells one or more lots, the entire plat, or any part of it.

E. The Developer shall pay in full all bills submitted to it by the City for obligations incurred under this Agreement within thirty (30) days after receipt. If the bills are not paid on time, the City may halt plat development and construction until the bills are paid in full. Bills not paid within thirty (30) days shall accrue interest at the rate of twelve percent (12%) per year.

F. In addition to the charges herein and special assessments referred to the herein, other charges as required by City ordinance may be imposed such as but not limited to sewer access charges ("SAC"), City water access charges ("WAC"), park dedication fees, and building permit fees.

11. **Erosion Control.** Before the site is graded and before any utility construction is commenced or building permits are issued, the erosion control plan shall be implemented by the Developer and inspected and approved by the City. All areas disturbed by the excavation and backfilling operations shall be reseeded forthwith after the completion of the work in the area. Except as otherwise provided in the erosion control plan, seed shall be certified oat seed to provide temporary ground cover as rapidly as possible. All seeded areas shall be fertilized, mulched, and disc anchored as necessary for seed retention. The parties recognize that time is of the essence in controlling erosion. If the Developer does not timely comply with the erosion control plan and schedule or supplementary instructions received by the City, the City may take such action as it

deems appropriate to control erosion. The City will endeavor to notify the Developer in advance of any proposed action, but failure of the City to do so will not effect the Developer's obligations or City's right hereunder. If the Developer does not reimburse the City for any cost the City incurred for such within thirty (30) days, the City may draw down the letter of credit (referred to in Section 7) to pay any costs. No development will be allowed and no building permits or occupancy certificates will be issued unless the plat is in full compliance with the erosion control requirements.

The Developer further agrees to provide a 30-foot drainage and utility easement around all delineated wetlands. The erosion control measures specified in the Plans shall be binding on the Developer.

12. **Clean Up.** The Developer (and Home Builders) will keep the premises free from accumulation of waste materials, rubbish, and other debris resulting from work. The Developer shall promptly clean dirt and debris from streets resulting from construction work by the Developer, its agents, assigns or purchasers of lots in the plat. If the streets are not cleaned within five (5) calendar days after notice to the developer, the City will undertake the cleaning of the streets and charge the cost of the street cleaning back to the developer.

At the completion of the work, the Developer (and Home Builders) will remove all waste materials, rubbish and debris from and about the premises as well as all tools, construction equipment, machinery, and surplus materials, and will leave the site clean. The Developer (and Home Builders) will restore to their original conditions (including topsoil and seed), those portions of the site not designated for alteration by the Agreement Plans.

13. **Time of Performance.** The Developer shall install all required public improvements except the final wear course in accordance with the approved Plans for the first Phase by October 15th, 2018. The final wear course on streets shall be installed between August 15 and September 15 the first summer after the base layer of asphalt has been in place for one freeze thaw cycle. The Developer may, however, request in writing an extension of time from the City. If an extension is granted, it shall be conditioned upon updating the security posted by the Developer to reflect cost increases and the extended completion date. Final wear course placement must have the written approval of the City Engineer and shall be completed by September 15th, 2019, unless an extension is granted. The final wear course may be delayed or scheduled at any time of the year based upon existing site conditions at the discretion of the City Engineer. Requests that are not in writing will have no effect on Developer's time of performance. Work on the Improvements to the Property shall be performed between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday.

14. **Title of Plat.** The Developer hereby warrants that it is the full fee owner of the development as of the time of the filing of the final plat for the development, and that any encumbrances will be junior to this Agreement. The Developer agrees to obtain a consent to plat and dedication of streets to City from all mortgagees on the property before the plat will be executed by the City.

15. **Ownership of Improvements.** The acceptance by the City of the work and construction required by this Agreement and the improvements lying within public easements shall operate to transfer such property to the City without further notice or action this transfer shall be effective at the time of acceptance even if such improvements were accepted before the entry into this Agreement.

16. **Claims.** In the event that the City receives claims from labor or materialmen that work required by this Agreement has been performed, the sums due them have not been paid, and the laborers or materialmen are seeking payment out of the financial guarantees posted within the City, the Developer hereby authorizes the City to commence an Interpleader action pursuant to Rule 22, Minnesota Rules of Civil Procedure for the District Courts, to draw upon the letters of credit in an amount up to 150% of the claim(s) and deposit the funds in compliance with the Rule, and upon such deposit, the Developer shall release, discharge, and dismiss the City from any further proceedings as it pertains to the funds deposited with the District Court, except that the Court shall retain jurisdiction to determine attorney's fees pursuant to this Agreement. The City will endeavor to notify the Developer of its intention to draw down the letter of credit. The City will give the Developer five (5) days notice, unless the security will expire within thirty (30) days, to deposit with the court an equal amount of cash in lieu of the City drawing down the letter of credit.

17. **Park and Trail Dedication and Improvements.** The Developer agrees to comply with all recommendations by the City Parks Commission related to this development. The Developer shall be providing both land and cash to satisfy its park dedication requirement for the first phase (Rivers Edge). Developer shall dedicate 6.21% of the required 10% park dedication requirement by providing land for a park; the Developer agrees to dedicate 2.64 acres of land in the first phase and pay \$948/unit for each lot in the first phase. Specifically, for this first phase, in addition to the dedication of 2.64 acres as park, Developer shall pay \$948 x 23 lots or \$21,804. Developer shall also be required to satisfy its park dedication requirement for all subsequent phases of this development at the time it plats that property. The Developer shall pay all park dedication fees in advance of filing of the plat. The Developer will also install a five (5) foot sidewalk on at least one side of every street in RIVERS EDGE as approved by the City Engineer. Developer shall also install an eight (8) foot bituminous trail along the west side of Quay Street (which continues this trail from Rum River Bluffs). The sidewalk and trail do not satisfy any portion of the park dedication requirement.

18. **Landscaping.** The Developer or Builder shall plant two trees on every lot in the plat. The tree shall be selected from among the following species: The Developer or Builder shall provide landscaping and ground cover consistent with Section 10-20-4 of the City's Zoning Ordinance, all in accordance with the Landscape Plan submitted by Developer and approved by City.

Maples (including Norway, "Schwedler and Sugar")
Linden, American (Basswood)
Linden, Littleleaf (and varieties "Greenspire" and "Redmond")
Green Ash (and varieties "Marshalls" and "Summit")

Honeylocust (and varieties "Imparital", "Skyline" and "Sunburst")
Hackberry
Oak

The minimum tree size shall be two inches caliper, either bare root in season or balled and burlapped. The trees shall not be planted in the boulevard. The Developer shall assure that the front and side yards of each lot are properly graded, four inches of topsoil added, sod laid to complete front yard (including right-of-way) (seeding will be allowed in front yard if a sprinkler system is also installed), and seeding or sod to remainder of disturbed area of lot. Weather permitting, the trees, sod, and seed shall be planted before Certificates of Occupancy are issued for a lot. All required trees and sodding/seeding shall be provided within ninety (90) days after completion of the home/building construction or before a Certificate of Occupancy is issued for a house, whichever comes first. In the event that weather conditions prohibit the planting of trees and sodding/seeding, the Developer or Builder shall provide proof of escrow or financial security in the amount of \$300.00 per tree and \$2,000.00 for sodding/seeding of the property. All required trees and sodding/seeding shall be provided no later than October 1 of every year, unless an extension is granted by the City. Once the required trees have been planted, the City will release the security.

A plan showing the location and proposed style of mailboxes to be used in the plat shall be submitted to the City for approval. Individual mailboxes on each lot will not be acceptable. Groupings of mailboxes will be required. The Developer should review mailbox placement with the U.S. Postal Service for its comments regarding same.

19. **Warranty.** The Developer warrants all work required to be performed by it against poor material and faulty workmanship. The warranty period for streets is one year. The warranty period for underground utilities is two years. The one-year warranty period on streets shall commence after the final wear course has been installed, the Final Project Punchlist has been completed, and the Development has been accepted by the City Council as documented in official City minutes. The two-year warranty period for underground utilities shall commence after all required testing has been completed and the bituminous base course pavement has been installed. Additionally, all trees grass and sod, shall be warranted to be alive, of good quality and disease free for twelve (12) months after planting. Any replacements shall be warranted for twelve (12) months from the time of planting. The Developer shall deliver a letter of credit (the "Warranty Letter of Credit") or other security acceptable to the City in the amount of twenty-five (25%) of final certified construction costs to secure the warranties once the wear course has been installed. The City shall retain twenty-five percent (25%) of the security previously delivered by the Developer (the letter of credit provided pursuant to paragraph 7 above) until the Warranty Letter of Credit is furnished to the City or until the warranty period expires, whichever first occurs. The retainage may be used to pay for warranty work. The security shall not be released until the expiration of the warranty period, and if any claims shall be made within the warranty period, the security shall not be released until such claims have been resolved.

20. **Construction of Model Homes.** The Developer shall be permitted to construct two (2) model homes (Lots 1 and 2, Block 1) on the Property. Developer may commence

construction of these two model homes only after the requirements of paragraph 3 above has been complied with and the streets have been completed except for the asphalt (a gravel street is in place). The Certificate of Occupancy for the two model homes will not be issued by the City until the Developer has completed the installation of the first lift of asphalt on the streets within this first phase of the Property and all other improvements are complete and accepted by the City.

21. **Developers Default.** In the event of default by the Developer as to any of the work to be performed by it hereunder, the City may, at its option, perform the work and the Developer shall promptly reimburse the City for any expense incurred by the City, provided the Developer is first given notice of the work in default, not less than 48 hours in advance, unless this agreement provides for greater notice. This Agreement is a license for the City to act, and it shall not be necessary for the City to seek a Court order for permission to enter the land. When the City does any such work, the City may, in addition to its other remedies, assess the cost in whole or in part upon the Property to recover the costs. For this purpose, the Developer expressly waives any procedural and substantive objections to the special assessments, including, but not limited to, hearing requirements and any claim that the assessments exceed the benefit to the property as provided herewith.

22. **City Engineering Administration and Construction Observation.** Developer will undertake and finish the required staking. The Developer shall pay a fee for engineering, administration and legal costs incurred by the City. City engineering and administration will include monitoring of construction, plat review, plan review, consultation with Developer and his engineer on status or problems regarding the project, coordination for final inspection and acceptance, project monitoring during the warranty period, and processing requests for reduction in security. Fees for this service shall be at standard hourly rates. Developer will provide a \$20,000.00 escrow plus payment of charges already on record incurred by the City, which is separate and in addition to any other escrow funds for this developer/development. The Developer shall pay for construction observation by the City's consulting engineer. Construction observation shall include part or full time inspection of proposed public utilities and street construction and will be billed on standard hourly rates. Upon final inspection, if the inspector is satisfied that the work has been completed and the Developer has fulfilled all of its obligations under the plans and specifications, the inspector will review the seeding and drainage facilities, and report to the City regarding the acceptance of such improvements. (Some seeding may be required under Paragraph 11 for erosion control prior to final inspection.) Legal fees shall include drafting of this Development Agreement and other associated documents for this Development title review and advice and counseling with the City Engineer, City Administrator and City staff. In the event that work is performed on the Property by a consultant of the City, the City shall provide to Developer itemized billing statements showing the time spent, name of company performing the work, and a general description of the work performed.

23. **Miscellaneous.**

A. The Developer represents to the City that the plat complies with all City, County, Metropolitan, State and Federal laws and regulations, including but not limited to:

subdivision ordinances, zoning ordinances, and environmental regulations. The Developer represents that all lots meet the minimum standards of the City's zoning ordinances unless otherwise stated in the variance granted with the preliminary plat approval. The Developer further represents to the City that all construction will be in accordance with City standards or applicable ordinances, regulations and policies. If the City determines that the plat does not comply, the City may, at its option, refuse to allow construction or development work in the plat until the Developer does comply. Upon the City's demand, the Developer shall cease work until there is compliance.

B. Third parties shall have no recourse against the City under this Agreement.

C. Breach of the terms of this Agreement or the conditions of the Resolution approving Final Plat by the Developer shall be grounds for denial of building permits, including lots sold to third parties.

D. If any portion, section, subsection, sentence, clause, paragraph or phrase of this Agreement is not for any reason held invalid, such decision shall not affect the validity of the remaining portion of this Agreement.

E. The City will not issue any building permits prior to the first lift of bituminous base pavement on the streets, concrete sidewalk, bituminous trail, and underground utility installation; except the City will allow up to three (3) building permits to be issued for model homes after installation of utilities (including testing and a determination that the utilities are operational), but before pavement of the streets with bituminous surface.

If building permits are issued for a model home prior to the completion and acceptance of public improvements, the Developer assumes all liability and costs resulting in delays in completion of public improvements and damage to public improvements caused by the City, Developer, its Contractors, subcontractors, materialmen, employees, agents, or third parties. The Developer will be responsible for maintenance of the streets, including but not limited to winter plowing, until they are paved.

F. The action or inaction of the City shall not constitute a waiver or amendment to the provisions of this Agreement. To be binding, amendments or waivers shall be in writing, signed by the parties and approved by written resolution of the City Council. The City's failure to promptly take legal action to enforce this Agreement shall not be a waiver or release.

G. The Developer represents to the City to the best of its knowledge that the plat is not of "metropolitan significance" and that an environmental impact statement is not required. If the City or another governmental entity or agency determines that such a review is needed, however, the Developer shall prepare it in compliance with legal requirements so issued from the agency. The Developer shall reimburse the City for all expenses, including staff time and attorney's fees, the City incurs in assisting in preparation of the review.

H. This Agreement shall run with the land and shall be recorded against the title to the property. The Developer covenants with the City, its successors and assigns, that

Developer is well seized in fee title of the property being final platted and/or has obtained consents to this Agreement, in the form attached hereto, from all parties who have an interest in the property; that there are no unrecorded interest in the property being final platted; and that the Developer will indemnify and hold the City harmless for any breach of the foregoing covenants.

I. Developer shall take out and maintain until six (6) months after the City has accepted the public improvements, public liability and property damage insurance covering personal injury, including death, and claims for the property damage which may arise out of Developer's work or the work of its subcontractors or by one directly or indirectly employed by any of them. Limits for bodily injury and death shall be not less than \$1,000,000 for one person and \$2,000,000 for each occurrence; limits for property damage shall be not less than \$250,000 for each occurrence; or a combination single limit policy of \$1,000,000 or more. The City and consulting engineer shall be named as an additional insured on the policy, and the Developer shall file with the City a certificate evidencing coverage prior to the City signing the plat. The certificate shall provide that the City must be given ten (10) days advance written notice of the cancellation of the insurance. The certificate may not contain any disclaimer for failure to give the required notice.

J. Each right, power or remedy herein conferred upon the City is cumulative and in addition to every other right, power or remedy, express or implied, now or hereafter arising, available to City, at law or in equity, or under any other agreement, and each and every right, power and remedy herein set forth or otherwise so existing may be exercised from time to time as often and in such order as may be deemed expedient by the City and shall not be waiver of the right to exercise at any time thereafter any other right, power or remedy.

K. The Developer may not assign this Agreement without the prior written permission of the City Council, which permission shall not be unreasonably withheld. The Developer's obligation hereunder shall continue in full force and effect even if the Developer sells one or more lots, the entire plat, or any part of it.

L. The Developer shall clean and televise all sanitary mains and manholes along with all storm mains and storm water structures prior to acceptance by the City. The Developer shall provide electronic files of videos and logs of PACP certified inspections of sanitary and storm water infrastructure.

N. The Developer shall supply a copy of this Development Agreement to all Home Builders and persons who purchase lots from the Developer. The Developer will point out to purchasers their obligations regarding Erosion Control, Clean Up, and Landscaping described in paragraphs 8, 9 and 15 above. The terms and provisions of this Development Agreement, with the exception of Erosion Control, Clean Up and Landscaping described in paragraphs 8, 9 and 15 above shall not be binding upon the owners of an individual unit and shall not be deemed to run with the title of the individual unit of the development. This provision does not release any future developer or the developer's successors or assigns from the terms and provisions of this Development Agreement.

O. The Developer shall remove all debris from the development prior to the issuance of the first building permit.

P. The Developer will comply with all issues and directions of the City Engineer.

24. **Notices.** Required notices to the Developer shall be in writing, and shall be either hand delivered to the Developer, its employees or agents, or mailed to the Developer by registered mail at the following address:

St. Francis Land Development, LLC

Notices to the City shall be in writing and shall be either hand delivered to the City Administrator, or mailed to the City by registered mail in care of the City Administrator at the following address:

St. Francis City Hall
23340 Cree Street N.W.
P.O. Box 730
St. Francis, MN 55070
ATTN: City Administrator

25. **Completion.** The Developer shall notify the City when the construction of the Improvements has been completed. If the City determines in its sole and absolute discretion that (i) the improvements have been constructed in substantial conformity with the approved plans, (ii) the improvements are complete for purposes of issuing a certificate of occupancy, and (iii) all applicable warranty periods have expired, the City shall, in accordance with this Agreement, return all remaining deposits or securities held relating to the project. Upon the request of the Developer the City shall furnish to the Developer a Certificate of Completion certifying the completion of the project. Such Certificate of Completion shall be in recordable form. Developer shall reimburse City for the expense of legal and professional services in preparing the Certificate of Completion.

26. **Indemnification.** The Developer hereby agrees to indemnify and hold the City and its officials, employees, Contractors and agents harmless from claims made by itself and third parties for damages sustained or costs incurred resulting from any defect in the Subdivision. The Developer hereby agrees to indemnify and hold the City and its officials, employees, Contractors and agents harmless for all costs, damages, or expenses which the City may pay or incur in consequence of such claims, including attorneys' fees, except matters involving intentional acts of misconduct or acts of gross negligence by the City. This indemnification shall survive the execution of any Certificate of Completion.

[Signatures appear on following page.]

IN WITNESS WHEREOF, the parties have signed this Development Agreement on the day and year above written.

CITY:

CITY OF ST. FRANCIS

By: _____
Steven D. Feldman
Its: Mayor

By: _____
Barbara I. Held
Its: City Clerk

STATE OF MINNESOTA)
) ss.
COUNTY OF ANOKA)

The foregoing instrument was acknowledged before me this _____ day of _____, 2018 by Steven D. Feldman and Barbara I. Held, the Mayor and City Clerk, respectively, of the City of St. Francis, a municipal corporation under the laws of Minnesota, on behalf of the corporation and pursuant to the authority of the City Council.

Notary Public

1770649v4

DEVELOPER:

ST. FRANCIS LAND DEVELOPMENT, LLC

By: _____

Its: _____

STATE OF MINNESOTA)
) ss.
COUNTY OF ANOKA)

The foregoing instrument has been acknowledged before me this _____ day of _____, 2018, by _____, the Officer of St. Francis Land Development LLC, a Minnesota Limited Liability Company, on behalf of the company.

Notary Public

DOCUMENT DRAFTED BY:
BARNA, GUZY & STEFFEN, LTD.
400 Northtown Financial Plaza
200 Coon Rapids Boulevard
Coon Rapids, MN 55433
(763) 780-8500 (CMS)

1770649v4

EXHIBIT A
LEGAL DESCRIPTION

That part of the East Half of the Southwest Quarter of Section 29, Township 34, Range 24, Anoka County, Minnesota described as follows:

Commencing at the Southeast corner of said East Half of the Southwest Quarter and proceeding North on the East line of said East Half of the Southwest Quarter to the centerline of the Rum River a natural waterway, and thence proceeding Southwesterly along the centerline of said Rum River to the West line of said East Half of the Southwest Quarter; thence proceeding South on said West line to the Southwest corner of said East Half of the Southwest Quarter; thence proceeding East on the south line of said East Half of the Southwest Quarter to the point of commencement.

AND

The North 660 feet of the Northeast Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota.

AND

The North 660 feet of the Northwest Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota, lying East of the Rum River.

EXHIBIT B

**PLANS AND SPECIFICATIONS
FOR STREETS WITHIN PLAT OF
RUM RIVER BLUFFS**

EXHIBIT C

**GRAVITY SANITARY SEWER SERVICE, WATER SERVICE
AND DRAINAGE FACILITIES PLAN**

EXHIBIT D

SOIL EROSION CONTROL PLAN AND SCHEDULE

EXHIBIT E
LOCATION OF CONSTRUCTION ACCESS



**ENGINEERING REVIEW
for the City of St. Francis
by
Hakanson Anderson**

Review No. 2

Submitted to: Dale Willenbring, Laketown Homes
Marty Campion, Campion Engineering Services, Inc

cc: Joe Kohlmann, City Administrator
Paul Teicher, Public Work Director
Kate Thunstrom, Community Development Director
Benjamin Gozola, City Planner
Craig Jochum, City Engineer

Reviewed by: Shane Nelson, Assistant City Engineer

Date: May 25, 2018

**Proposed
Project:** Rivers Edge

Street Location: N 660 FT OF NE1/4 OF SEC 32 T34 R24, EX RD, SUBJ TO
EASE OF REC

Applicant: Laketown Homes

Owners of Record: St Francis Land Development LLC

Jurisdictional Agencies: City of St. Francis, MPCA, Anoka County, MDH
(but not limited to)

Permits Required: City Approval, NPDES Construction Permit, MPCA
(but not limited to) Sanitary Sewer Extension Permit, MDH Water Extension,
DNR Appropriation Permit

INFORMATION AVAILABLE

Stormwater Management Plan for Rivers Edge, dated 5/3/18, prepared by Civil Methods, Inc.

Final Plat for Rivers Edge, 3 Sheets total, dated 5/17/18, prepared by Wenck Associates

Rivers Edge Utility Plans, dated 5/15/2018, prepared by Campion Engineering Services, Inc.

Rivers Edge Phase One Grading Plans, dated 5/15/2018, prepared by Campion Engineering Services, Inc.

Rivers Edge Project Manual, dated 5/2/2018 prepared by Campion Engineering Services, Inc.

Wetland Delineation Report for River's Edge, dated November 27, 2017, prepared by Minnesota Natural Resources

SITE ACCESS / VEHICULAR TRAFFIC

1. It is proposed that a construction access will be constructed from Rum River Boulevard (CR 72) from the existing cul-de-sac at approximately 236th Avenue. The construction access shall be clearly depicted on the plans and shall be the primary access for construction traffic.
2. The temporary cul-de-sac at the end of 236th Avenue shall be shifted to the east to allow for the final construction of the driveways on Lot 10, Block 2 and Lot 10 Block 3.
3. A signage plan / exhibit shall be submitted to show the necessary traffic control devices and street signs.

SEWER AND WATER UTILITIES

1. A call out shall be added at the connection of any tracer wire for non-conductive water main to a conductive watermain at their respective connections. There is a connection of PVC to DIP watermain at the intersection of 236th and Quay Street.
2. Details for the sanitary sewer cleanout, trench details for the different utilities and material types, concrete thrust blocks, DIP push on joint, city utility marker post, and sign post installation shall be included in the plans.
3. Extend the watermain and temporary hydrant on the end of 236th Avenue further east to allow for the construction of a temporary cul-de-sac to the east of lot 10 block 2 and lot 10 block 3.

STORM SEWER DESIGN

1. STMH 1 and STMH 2 are located within the drive lane, which is not desirable. If the storm sewer configuration is to remain as shown, shift the storm sewer to the curb line to make it more accessible and out of the drive lane.
2. Consider rerouting the stormwater such that the run from CBMH 1 to FES 1 is eliminated and instead pipe the stormwater to CBMH 5.

3. The drainage and utility easement on Lot 1 Block 3 does not appear to provide 10 feet of space between the pipe and the edge of the easement. Please revise pipe configuration or revise final plat.
4. Outlet control structures 2, 6, and 12 are shown on the details but locations for the structures are not in the plans. Please clearly depict on the plans.
5. HDPE storm pipe is not allowed per the private development standards adopted by the City. Please revise to RCP.

GRADING, DRAINAGE AND EROSION CONTROL

1. As per Storm Sewer Design comment #1, consider rerouting the storm sewer such that the pond 7 forebay can be eliminated. Connect pond 6 to pond 7 with a pipe or drainage swale.
2. Emergency overflows shall be provided for all areas of ponding water to ensure flood protection to the new homes. Please incorporate into the design and/or clearly label.
 - a. Label EOF from Quay Street to pond 6.
 - b. Include EOF labels for wetland 7 to the south, near 235th Lane.
3. Label the NWL and HWL on all wetlands.
4. Page 9 note 8 calls out a seed mix that does not meet city development standards. Mixtures formerly 240/250/260 or 25-121, 24-141, 25-131 shall be used at rates specified in their respective MnDOT standards.
5. Rip rap overflows or pipe conveyances are required for the forebays.
6. Access must be provided to all storm structures, flared end sections, rip rap overflows, pipes and ponds. Accesses must be at least 10 feet wide, contained within an easement, and have gradients that do not exceed 8%. Clearly label the access routes on the plans.
7. Wetland buffers shall have signs installed to delineate the edge. Include sign locations and details in signage plan.

FINAL PLAT

1. Provide a minimum of 10' of easement for the storm sewer pipe that crosses the southwest corner of Lot 1, Block 3.
2. The drainage & utility easement detail on page 3 needs to be revised to "5 feet in width and adjoining all side property lines and being 10 feet in width and adjoining public ways and rear property lines,".
3. Please provide drainage & utility easements over Outlot A for all wetlands, ponding areas, and utilities constructed with the Phase 1 Grading Plan and Phase 1 Utility Plan, or alternately provide a "blanket" D&U easement over all of Outlot A that can be vacated with future platting phases as additional lots are final platting.
4. The area of a pond/Infiltration basin's HWL plus 1 foot of freeboard must entirely be contained within a city owned lot or a drainage and utility easement. The wetland buffer must also be within a drainage and utility easement. Revise the final plat accordingly.
5. 236th street is labeled street on all sheets. East west streets shall be labeled Avenue or Lane.

6. The Developer's Agreement states that the developer will dedicate 2.46 acres of usable park land with the first phase of the plat. The Final Plat must be revised to include the park.

STORMWATER CALCULATIONS

1. Use wetlands have a maximum bounce between the NWL and the HWL of 2 feet per St. Francis city code. Please revise.
2. Some labels in the proposed watershed map do not match the hydrocad model. Please correct.
3. Table 1 in the stormwater management plan does not account for the flows generated from R7. Please revise.
4. The contributing area to existing wetland 7 needs to be included in the model to determine an accurate HWL for determining tailwater impacts on the proposed stormwater system. Wetland 7's outfall to the south of 235th Lane shall be included in the model to determine that there is adequate capacity to convey the additional stormwater.
5. Table 2 must account for all new impervious area in the development not just the impervious area that flows towards the listed ponds. Provided new impervious areas vary through out the report and the stormwater model. Revise such that impervious areas are consistent throughout.
6. As designed pond 3 is a landlocked basin and shall be sized to handle back-to-back 100-year SCS twenty-four (24) hour rainfall events, the ten (10) inch SCS twenty-four (24) hour rainfall event or the 100-year, 10- day snowmelt snow melt event, whichever produces the higher peak pond elevation (Landlocked high water level). The lowest building floor elevation around landlocked basins shall be two (2) feet above the Landlocked high water level. The proposed outfall, not included in phase 1, outflows to another landlocked basin. Both basins are considered landlocked and modeling would need to be completed on each to determine the HWL using the previously mentioned methods.
7. Set the HWL on all low areas and wetlands that are adjacent to the plat (i.e. north of 237th Street). The HWL for all wetlands and low areas that are off the property cannot be increased unless they remain within an existing drainage and utility easement.

OTHER ITEMS

1. The infiltration basis shall be field tested to verify infiltration rates after construction is complete. Please include this in the project specifications.
2. Provide details for pedestrian curb ramps to verify compliance with ADA.

SUMMARY AND/OR RECOMMENDATION

Revise and resubmit for approval.

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-434-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WELLS, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG

GOPHER STATE ONE CALL

TWIN CITY AREA: 651-434-0002
TOLL FREE: 1-800-254-1164

RIVERS EDGE ST FRANCIS, MN

PROJECT LOCATION

**PROJECT DIRECTORY**

DEVELOPER
LAKETOWN HOMES, LLC
ATTN: J. KLEINBERG
1500 PIONEER CREEK CENTER
WACONA, MN 55057
TEL: 651-715-9128
EMAIL: JKL@LAKETOWNHOMES.COM

DRAWN
CAMPHOR ENGINEERING SERVICES, INC.
ATTN: J. CAMPHOR
1500 PIONEER CREEK CENTER
WACONA, MN 55057
TEL: 651-715-9128
EMAIL: JKL@CAMPHORENGINEERING.COM

SURVEYOR
WILLIAMSON ASSOCIATES
ATTN: J. WILLIAMSON
1500 PIONEER CREEK CENTER
WACONA, MN 55057
TEL: 651-715-9128
EMAIL: JKL@WILLIAMSONASSOCIATES.COM

WETLAND CONSULTING
WETLAND CONSULTING
1500 PIONEER CREEK CENTER
WACONA, MN 55057
TEL: 651-715-9128
EMAIL: JKL@WETLANDCONSULTING.COM

GOVERNING SPECIFICATIONS:

1. THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" LATEST EDITION & SUPPLEMENTS.
2. CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD UTILITIES SPECIFICATIONS, (LATEST EDITION)
3. ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCE WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.
4. CITY OF ST FRANCIS STANDARD SPECIFICATIONS & DETAILS.

INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS
3	CONCEPTUAL UTILITY PLAN
4	SANITARY SEWER & WATERMAIN - QUAY ST NW
5	SANITARY SEWER & WATERMAIN - 24TH STREET NW
6	STREET & STORM SEWER PLAN - QUAY ST NW
7	STREET & STORM SEWER PLAN - 24TH STREET NW
8	STORM SEWER PLAN - BEAR YARD
9	STORM WATER POLLUTION PREVENTION PLAN
10	DETAILS
11	DETAILS
12	DETAILS
13	DETAILS
14	DETAILS
15	DETAILS
16	DETAILS

BENCHMARK

SE CORNER OF THE EAST 1/2
OF THE SW 1/4 OF SECTION 28
TOWNSHIP 34, RANGE 24
COUNTY OF HENNEPIN
BENCHMARK TOP OF MONUMENT
ELEVATION = 511.57 (NGD 28)



**CAMPION
ENGINEERING
SERVICES, INC.**

1800 Pioneer Creek Center,
P.O. Box 244,
Waconia, MN 55057
Phone: 651-715-9128
Fax: 651-715-9129
E-Mail: info@campioneng.com

I hereby certify that this plan, specification
or report has been 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.
[Signature]
J. KLEINBERG, P.E.
State of Minnesota, License No. 11102

**RIVERS EDGE
LAKETOWN HOMES
ST FRANCIS, MN**

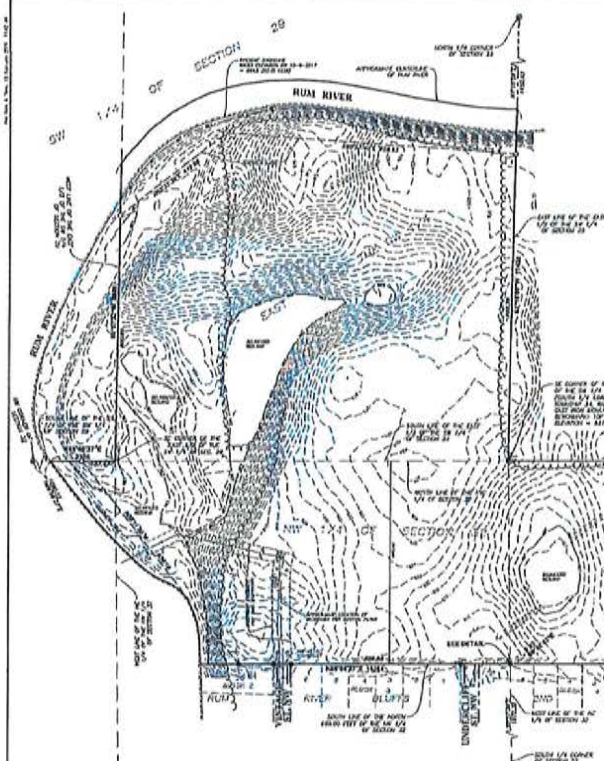
COVER SHEET

PROJECT NO.
17-037

SHEET NO. 1 OF 15 SHEETS

DATE:
05/15/2018

CERTIFICATE OF SURVEY



LEGAL DESCRIPTION OF PROPERTY

That part of the East Half of the Southwest Quarter (E 1/2 of SW 1/4) of Section 29, Township 24, Range 24, Anoka County, Minnesota, described as follows:

Beginning at the Southwest corner of said East Half of the Southwest Quarter and proceeding North on the East line of said East Half of the Southwest Quarter to the corner of the Run River a corner survey, and thence generally southeasterly along the corner of said Run River to the East line of said East Half of the Southwest Quarter, thence generally South on said East line to the Southwest corner of said East Half of the Southwest Quarter, thence generally East on the South line of said East Half of the Southwest Quarter to the point of commencement.

AND

The North 500 feet of the Northeast Quarter of Section 29, Township 24, Range 24, Anoka County, Minnesota.

AND

The North 500 feet of the Southwest Quarter of Section 29, Township 24, Range 24, Anoka County, Minnesota, lying East of the Run River.

AND

That part of the West 400 feet of the Northeast Quarter of the Northeast Quarter of Section 29, Township 24, Range 24, Anoka County, Minnesota, lying easterly of the right-of-way of County Road No. 71 (Run River Road).

BE 1/4 OF SECTION 29

LEGEND

- ① FOUND CAST IRON MONUMENT
- ② MONUMENT SET
- ③ EXISTING FOUND MONUMENT
- ④ CONVENTIONAL FENCE LINE
- ⑤ SMOOT'S FENCE MONUMENT
- ⑥ STREAM FENCE MONUMENT
- ⑦ FENCED INO SECTION
- ⑧ HIGHWAY
- ⑨ OPEN GATE MONUMENT
- ⑩ UTILITY POLE
- ⑪ CHURCH UTILITY LINE
- ⑫ UNFENCED UTILITY CASE
- ⑬ FENCE LINE

GENERAL NOTES

Readings are based on Anoka County Coordinate System.

Elevations and surface contours are shown herein and are relative to the NAD83 datum datum. Based on Anoka County benchmark number 2333 corner, Marker No. 1 1977, located at the intersection of Hwy. No. 47 & 238th Ave. NE, Elevation = 818.443 (1929 adjustment).

DETAIL



SURVEYOR'S NOTES

- This survey was based on a computation for 12% insurance issued by Great The Security Company, Inc. as 204455, with an effective date of November 20, 2017.
- Subject property is approx. 4,107,078 sq. ft. or 93.3 acres.
- Field work was completed on 10/16/2018.
- Witness collected by Michael Robert Resources Inc.

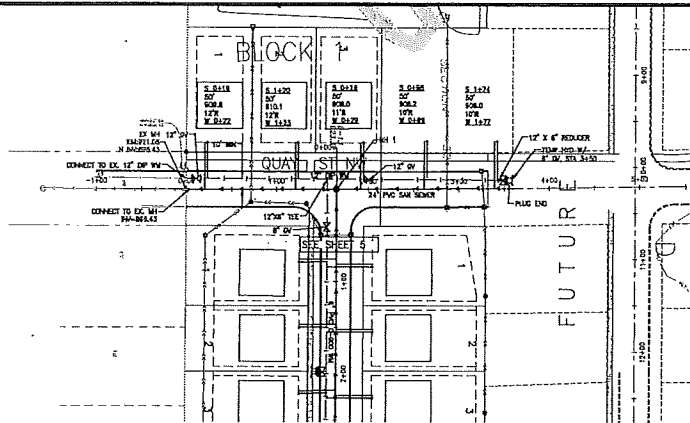
SURVEYOR'S CERTIFICATION

I hereby certify that this survey was completed by me or under my direct supervision and that I am a duly licensed land surveyor within the State of Minnesota.

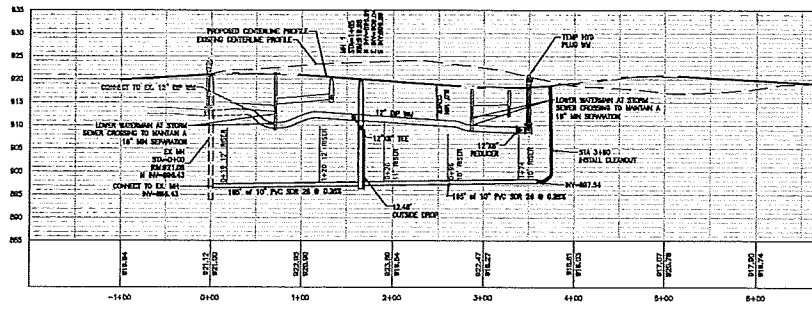
Chris
Chris Ambrose, LS 13055

DATE 10/16/2018

CLIENT NAME	Date Willenbring	PROJECT FILE
		CERTIFICATE OF SURVEY
RECIPIENT PARTNER. EXCEPTIONAL CUSTOMER.	CAN 6/10/18 MUN 6/10/18 PROJECT NO. 7190-0001	DWN 02-08-2018 CHA 1/1/18 SHEET NO. 2 OF 15



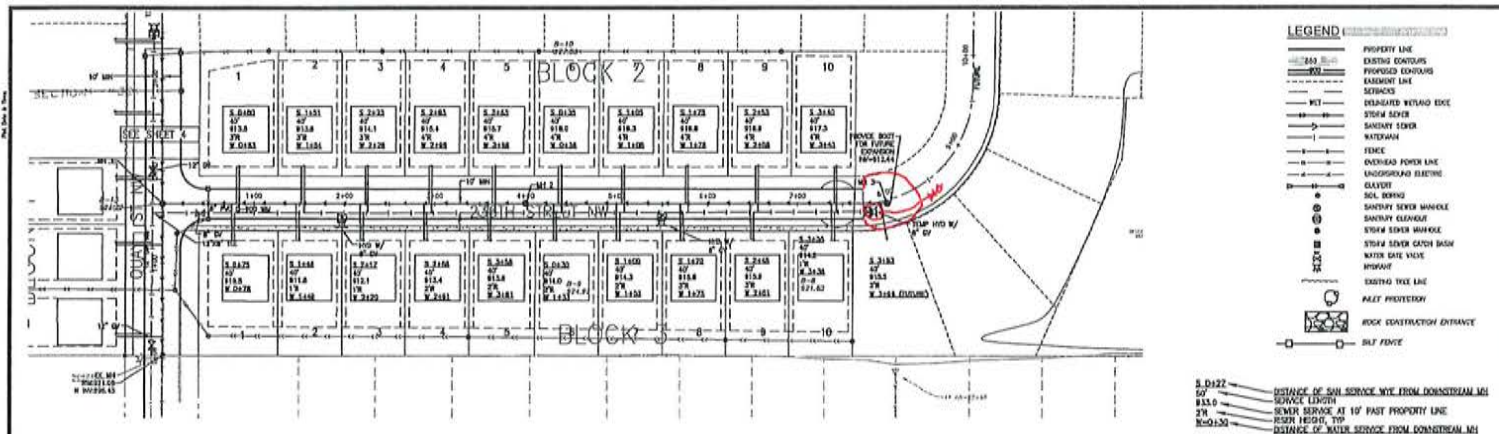
- LEGEND**
- PROPERTY LINE
 - EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXISTING LINE
 - SEWER
 - WATERMAIN
 - SEWER CLEANOUT
 - WATERMAIN CLEANOUT
 - WATER SATE VALVE
 - WATER SATE VALVE
 - EXISTING TREE LINE
 - INLET PROTECTION
 - ROCK CONSTRUCTION ENTRANCE
 - SELF FENCE
 - S. 0122 DISTANCE OF SAN SERVICE WYE FROM DOWNSTREAM MH
 - S. 0122 SERVICE LENGTH
 - S. 0122 SEWER SERVICE AT 10' PAST PROPERTY LINE
 - S. 0122 Riser Height, TOP
 - S. 0122 DISTANCE OF WATER SERVICE FROM DOWNSTREAM MH



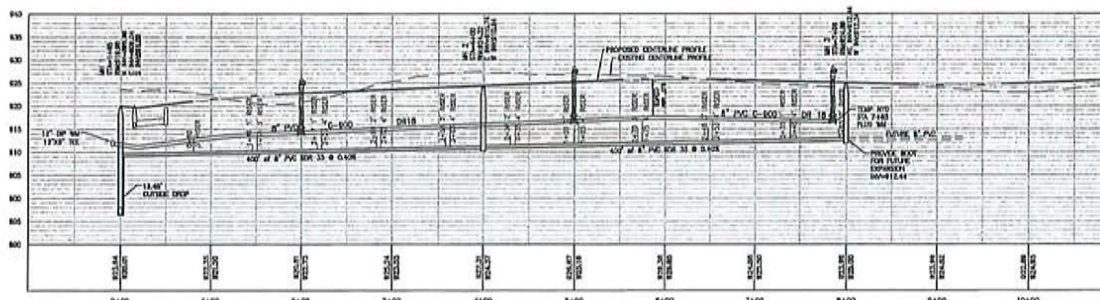
BENCHMARK
 SE CORNER OF THE EAST 1/4
 OF THE SW 1/4 OF SECTION 29
 QUAY 1/4 CORNER OF SECTION 29
 TOWNSHIP 34 N. RANGE 24
 OLD BROW CROWN
 BENCHMARK TOP OF MONUMENT
 ELEVATION = 881.87 (NGD 29)



SEE SHEET 3 FOR SANITARY SEWER NOTES



236TH STREET NW



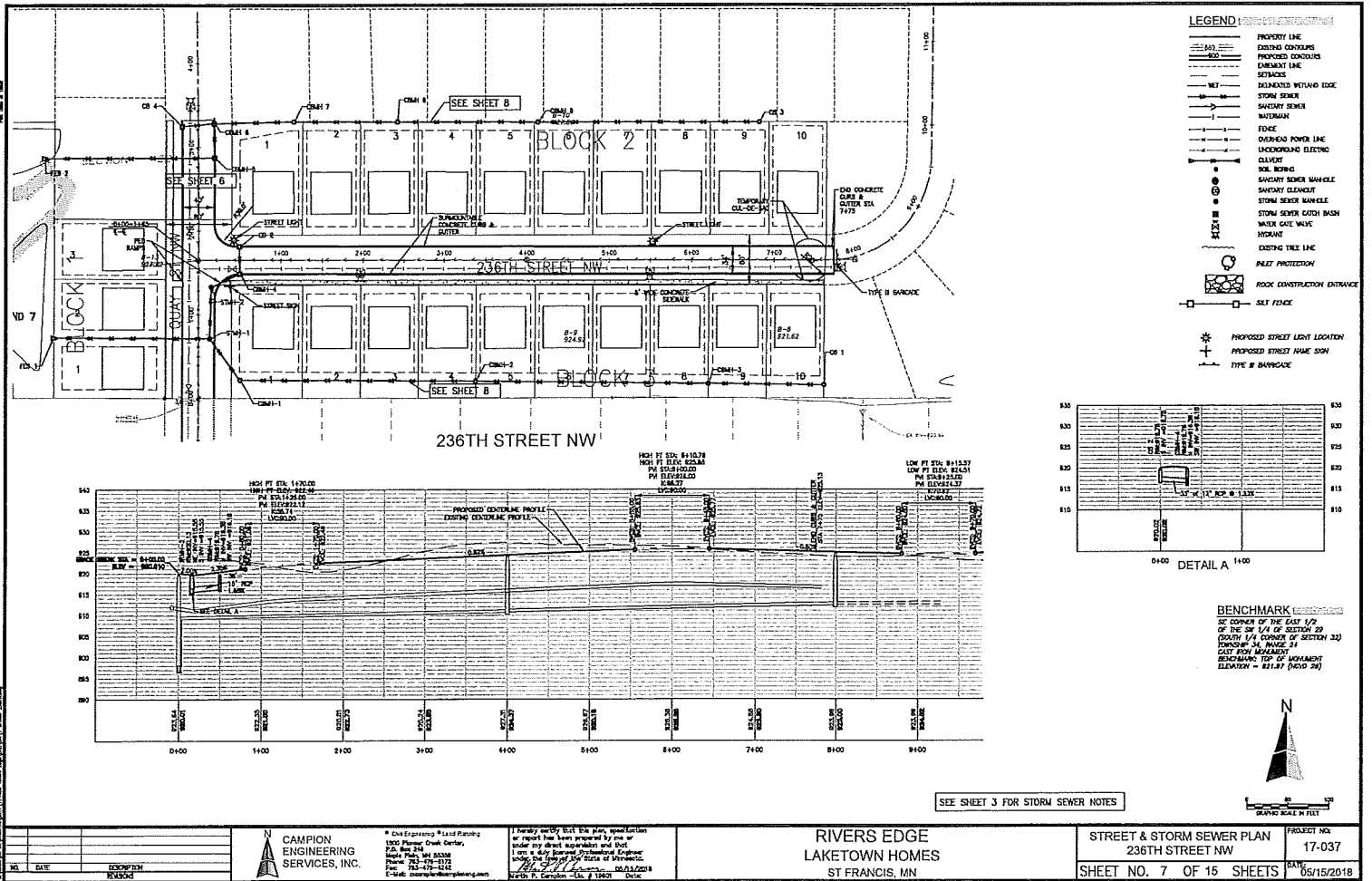
BENCHMARK
SE CORNER OF THE EAST 1/2
OF THE SW 1/4 OF SECTION 29
(NORTH 1/4 CORNER OF SECTION 30)
TOWNSHIP 34, RANGE 24
COUNTY OF HENNEPIN, MN
BENCHMARK TOP OF REBAR
ELEVATION = 811.87 (ELEV 2018)

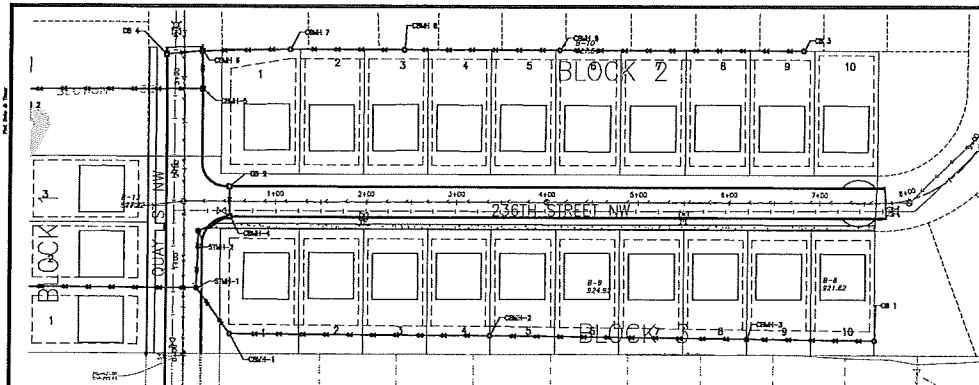


SEE SHEET 3 FOR SANITARY SEWER NOTES

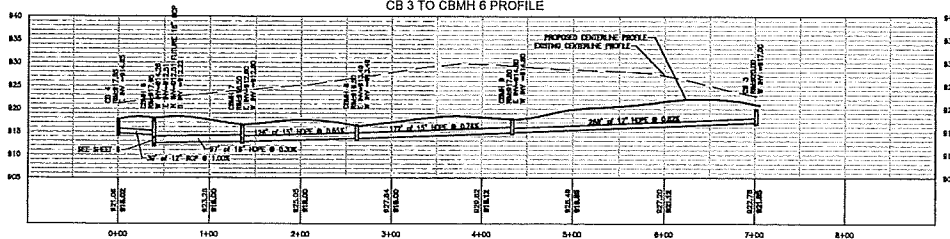
NO. DATE CAMPAIGN ENGINEERING SERVICES, INC.	* Civil Engineering * Land Planning 1800 Pioneer Creek Center, P.O. Box 318 St. Paul, MN 55108 Phone: 612-439-1171 Fax: 612-439-1172 E-Mail: info@campaignengineering.com	I hereby certify that this plan, specification or report has been prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. <i>[Signature]</i> 05/15/2018 MINN. P. ENGINEER - Lic. # 11901 - J. J. J.	RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN	SANITARY SEWER & WATERMAIN PLAN - 236TH STREET NW SHEET NO. 5 OF 15 SHEETS PROJECT NO. 17-037 DATE 05/15/2018
--	---	---	--	--



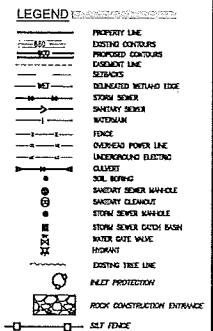
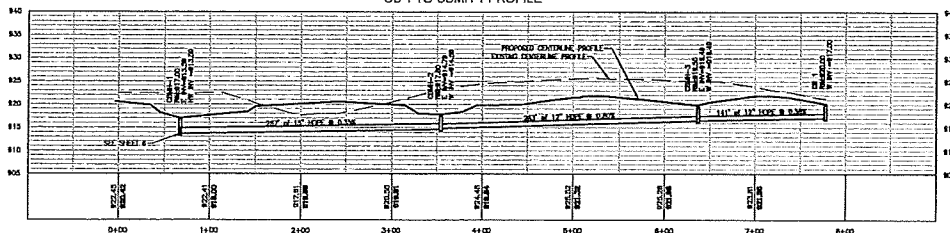




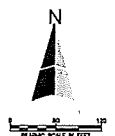
CB 3 TO CBM 6 PROFILE



CB 1 TO CBM 1 PROFILE



BENCHMARK
SE CORNER OF THE EAST 1/4
OF THE SW 1/4 OF SECTION 28
(SOUTH 1/4 CORNER OF SECTION 32)
TOWNSHIP 34, RANGE 34
COUNTY OF ANNEAPOLE
REMARK: TYPICAL OF ADJACENT
ELEVATION = 121.87 (MVD 24)



SEE SHEET 3 FOR STORM SEWER NOTES

NO.	DATE	DESCRIPTION
1	05/15/2016	ISSUED FOR PERMIT

**CAMPION
ENGINEERING
SERVICES, INC.**

3000 Pioneer Creek Center,
P.O. Box 248
Maple Plain, MN 55106
Phone: 763-779-1122
Fax: 763-779-1123
E-Mail: info@campion-engineering.com

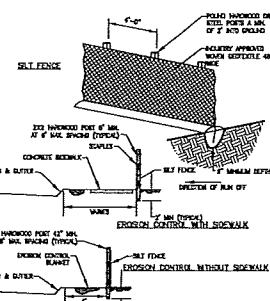
I hereby certify that the plan, specification
or report has been prepared by me or
under my direct supervision and that
I am a duly Licensed Professional Engineer
under the laws of the State of Minnesota.
[Signature] 05/15/2016
Date: 5/15/2016

**RIVERS EDGE
LAKETOWN HOMES**
ST FRANCIS, MN

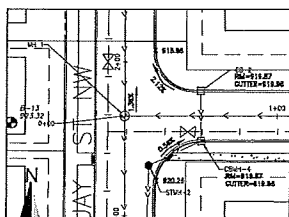
**STORM SEWER PLAN - REAR
YARDS**
SHEET NO. 8 OF 15 SHEETS

PROJECT NO.
17-037
DATE
05/15/2016

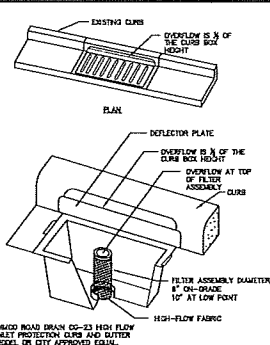
ROCK CONSTRUCTION ENTRANCE



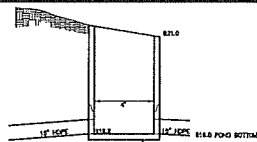
PREFABRICATED SILT FENCE



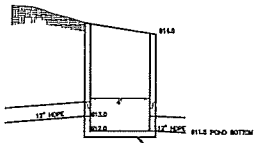
QUAY STREET NW & 236TH STREET NW
(ALL ELEVATIONS ARE AT GUTTER)



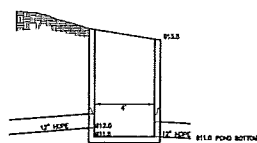
INLET PROTECTION



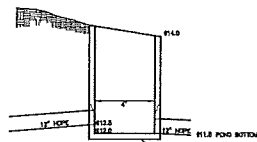
OUTLET CONTROL STRUCTURE (POND 2)



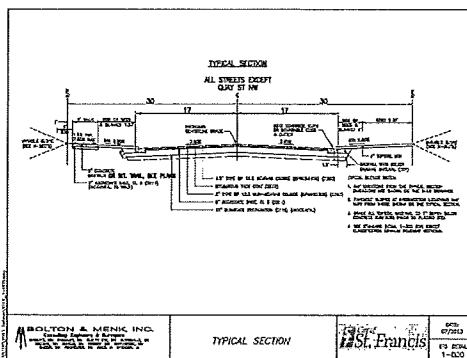
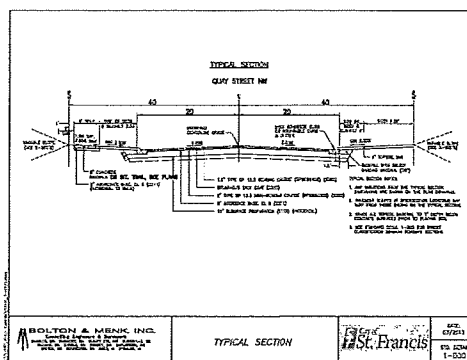
OUTLET CONTROL STRUCTURE (POND 6)

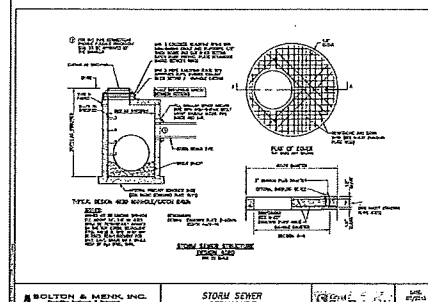
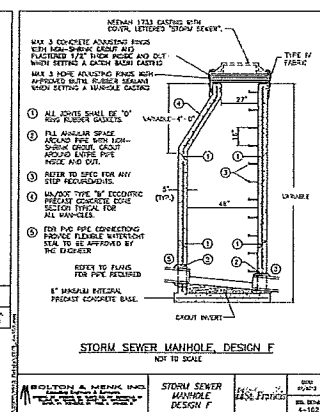
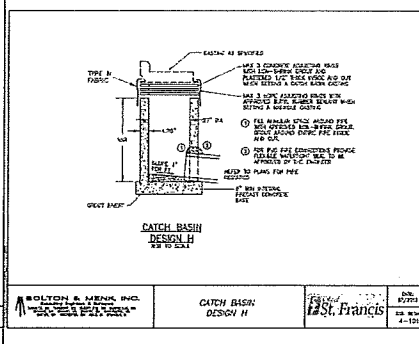
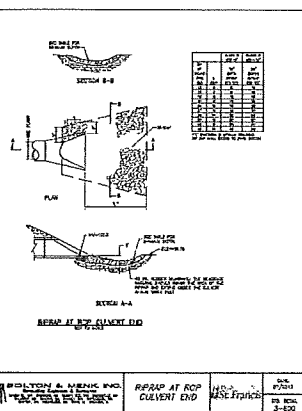
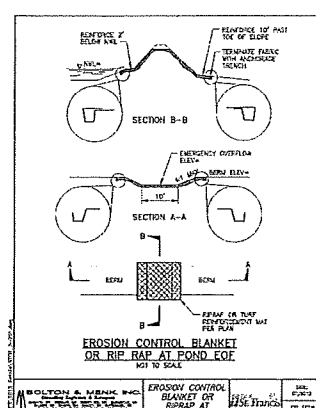
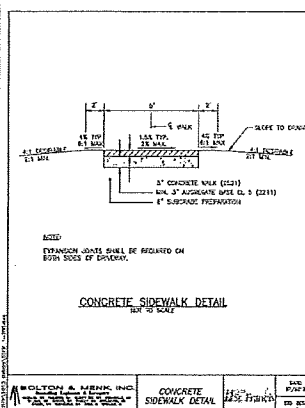
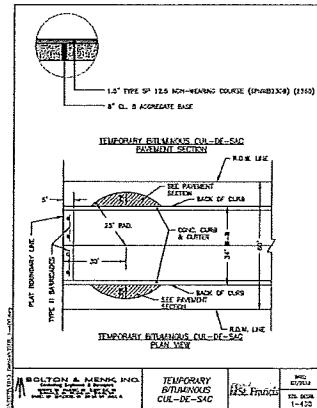
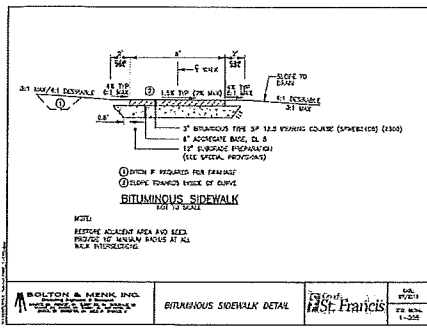


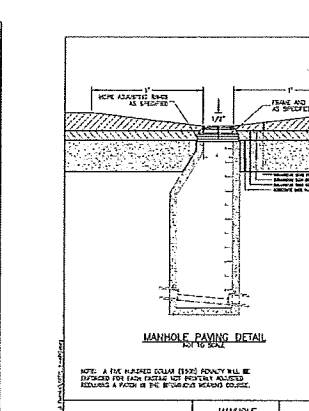
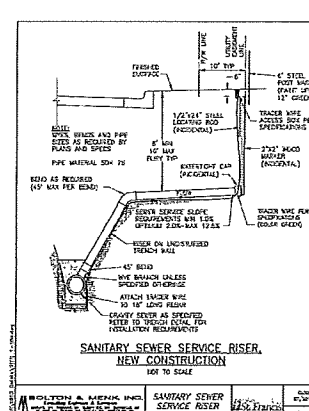
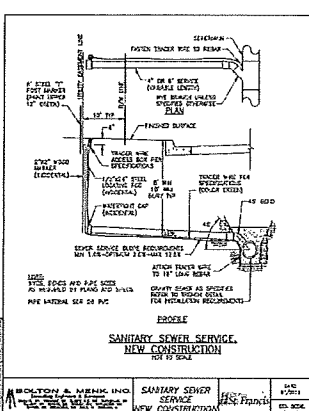
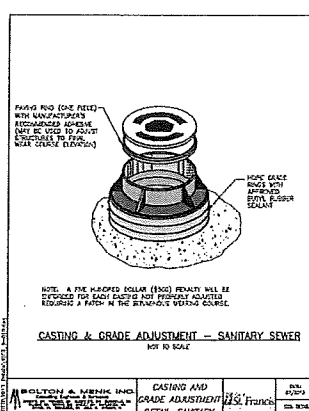
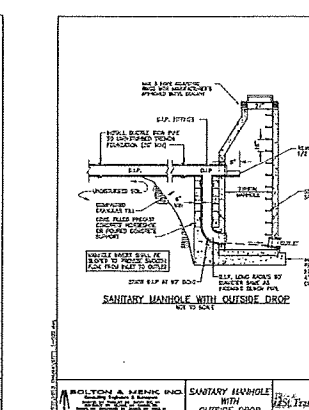
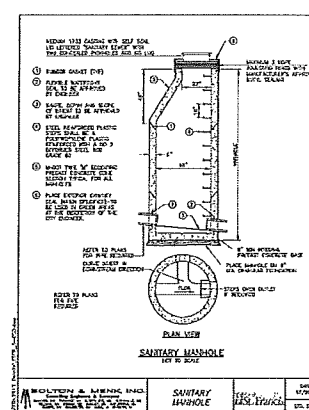
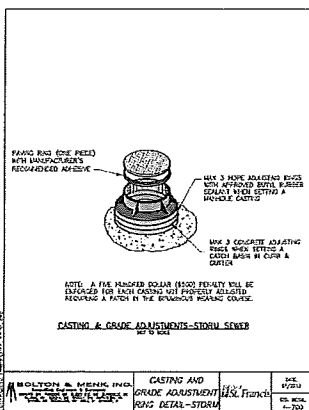
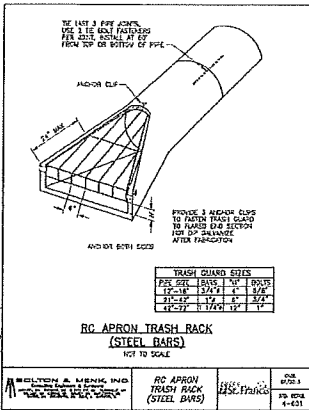
OUTLET CONTROL STRUCTURE (POND 7)

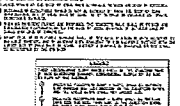
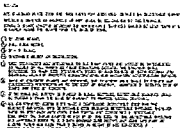
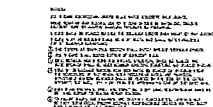


OUTLET CONTROL STRUCTURE (POND 12)









RIVERS EDGE

City of St. Francis
County of Anoka
Sec. 29 & 32, Twp. 34, Rng. 24

KNOW ALL PERSONS BY THESE PRESENTS, That Patricia S. Murray and Michael S. Murray, wife and husband, and David J. Swack and Lisa M. Swack husband and wife, the parties to St. Francis Land Development, LLC, a Minnesota limited liability company, certain purchase of the following described property:

That part of the East Half of the South-east Quarter of Section 28, Township 34, Range 24, Anoka County, Minnesota described as follows:

Commencing at the Southwest corner of said East Half of the Southwest Quarter and proceeding North on the East line of said East Half of the Southwest Quarter to the centerline of said Run River and thence proceeding Southwesterly along the centerline of said Run River to the West line of said East Half of the Southwest Quarter thence proceeding South on said West line to the Southwest corner of said East Half of the Southwest Quarter thence proceeding East on the South line of said East Half of the Southwest Quarter to the point of commencement.

AND

The North 652 feet of the North-east Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota.

AND

The North 652 feet of the North-west Quarter of Section 32, Township 34, Range 24, Anoka County, Minnesota, lying East of the Run River.

Have caused the same to be surveyed and plotted as RIVERS EDGE and do hereby dedicate to the public for public use the public ways and the easements and utility easements as shown by the plat.

In witness whereof said St. Francis Land Development, LLC, a Minnesota limited liability company, has caused this instrument to be signed by its proper officer this _____ day of _____, 20____.

(Signature)

(Name Printed)

President

STATE OF _____
COUNTY OF _____

This instrument was acknowledged before me on _____ by _____

_____, President of St. Francis Land Development, LLC, a Minnesota limited liability company.

(Signature)

(Name Printed)

Notary Public _____ County _____

My Commission Expires _____

In witness whereof said Patricia S. Murray and Michael S. Murray, wife and husband, have hereunto set their hands this _____ day of _____, 20____.

(Signature)

(Name Printed)

STATE OF _____
COUNTY OF _____

This instrument was acknowledged before me on _____ by Patricia S. Murray and Michael S. Murray, wife and husband.

(Signature)

(Name Printed)

Notary Public _____ County _____

My Commission Expires _____

In witness whereof said David J. Swack and Lisa M. Swack, husband and wife, have hereunto set their hands this _____ day of _____, 20____.

(Signature)

(Name Printed)

STATE OF _____
COUNTY OF _____

This instrument was acknowledged before me on _____ by David J. Swack and Lisa M. Swack.

(Signature)

(Name Printed)

Notary Public _____ County _____

My Commission Expires _____

SURVEYOR'S CERTIFICATION

I, Chris Ambrose, do hereby certify that this plat was prepared by me or under my direct supervision, that I am a duly Licensed Land Surveyor in the State of Minnesota, that this plat is a correct representation of the boundary survey that all measurements were correctly designated on this plat, that all measurements designated on this plat have been, or will be, correctly set within one year, that all water boundaries and wetlands, as defined by Minnesota Statutes, Section 555.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat, and all public ways are shown and labeled on this plat.

Dated this _____ day of _____, 20____.

Chris Ambrose, Licensed Land Surveyor
Minnesota License No. 42551

STATE OF MINNESOTA
COUNTY OF _____

This instrument was acknowledged before me on this _____ day of _____, 20____, by Chris Ambrose.

(Signature)

(Name Printed)

Notary Public _____ County, Minnesota

My Commission Expires _____

CITY COUNCIL, CITY OF ST. FRANCIS, MINNESOTA

Mayor _____ Clerk _____

COUNTY SURVEYOR

I hereby certify that in accordance with Minnesota Statutes, Section 555.01, Subd. 11, this plat has been reviewed and approved this _____ day of _____, 20____.

By _____

Charles F. Olson
Anoka County Surveyor

COUNTY AUDITOR/TREASURER

Pursuant to Minnesota Statutes, Section 555.01, Subd. 8, taxes payable in the year 20____ on the land hereinafter described have been paid. Also, pursuant to Minnesota Statutes, Section 272.12, there were no delinquent taxes and transfer entered this _____ day of _____, 20____.

Property Tax Administrator _____

By _____ Deputy

COUNTY RECORDER/REGISTRAR OF TITLES

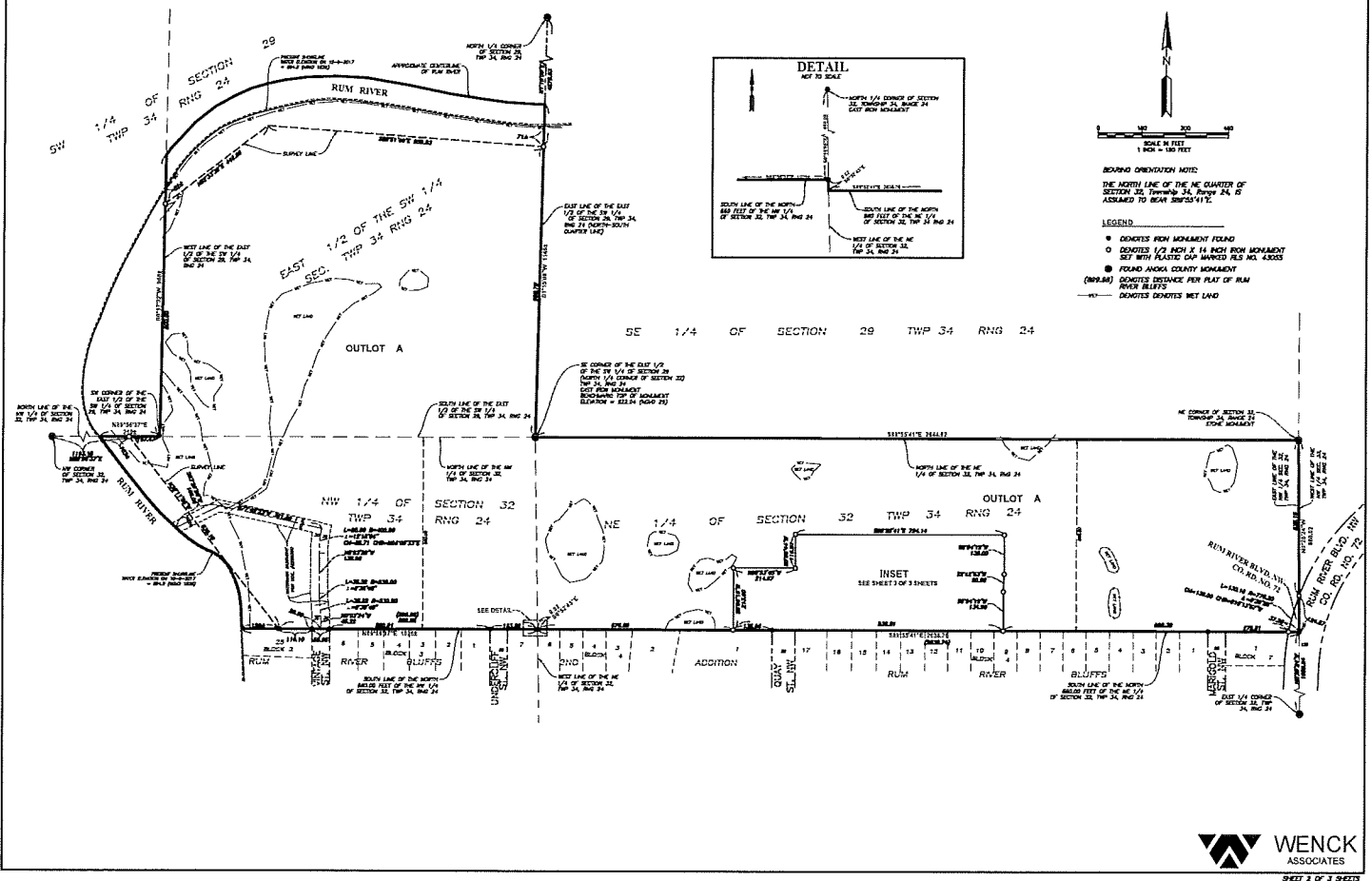
County of Anoka, State of Minnesota

I hereby certify that this plat of RIVERS EDGE was filed in the office of the County Recorder/Registrar of Titles for public record on this _____ day of _____, 20____, at _____ o'clock _____ M., and was duly recorded as Document Number _____.

County Recorder/Registrar of Titles

By _____ Deputy

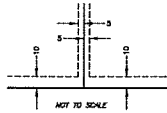
City of St. Francis
County of Anoka
Sec. 29 & 32, Twp. 34, Rng. 24



RIVERS EDGE INSET

City of St. Francis
County of Anoka
Sec. 29 & 32, Twp. 34, Rng. 24

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THERE



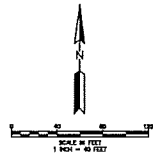
BEING 8 FEET IN WIDTH AND ADJOINING SIDE LINES
AND BEING 10 FEET IN WIDTH AND ADJOINING
FRONT AND REAR LOT LINES.

BEARING ORIENTATION NOTE:

THE NORTH LINE OF THE NE QUARTER OF
SECTION 35, TOWNSHIP 34, RANGE 24, IS
ASSUMED TO BEAR S89°55'41"E.

LEGEND:

- DENOTES IRON MONUMENT FOUND
- DENOTES 1/2 INCH X 14 INCH IRON MONUMENT
SET WITH PLASTER CAP MARKED PLS. NO. 43055



OUTLOT A



WENCK
ASSOCIATES

SHEET 3 OF 3 SHEETS

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 800-454-0003 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATION OF ALL UNDERGROUND WELLS, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG

GOPHER STATE ONE CALL

TWIN CITY AREA: 800-454-0003

TOLL FREE: 1-800-282-1198

RIVERS EDGE ST FRANCIS, MN

PROJECT LOCATION

**PROJECT DIRECTORY**

DESIGNER
JOYCE & SONS, LLC
11700 WILLOWBROOK
1500 BRADSHAW ROAD
WADSWORTH, MN 55397
PH: 763-715-2008
EMAIL: JDESIGN@JOYCEANDSONS.COM

OWNER
CAPTION ENGINEERING SERVICES, INC.
ATTN: HARTY CAMPION
1800 POWER CREEK CENTER
MAPLE PLAIN, MN 55359
PH: 763-773-8177
EMAIL: HARTY@CAPTIONENGINEERING.COM

ENGINEER
CAMPION ENGINEERING
ATTN: HARTY CAMPION
1800 POWER CREEK CENTER
MAPLE PLAIN, MN 55359
PH: 763-773-8177
EMAIL: HARTY@CAPTIONENGINEERING.COM

GEOTECHNICAL ENGINEER
MINNETT NATURAL RESOURCES, INC.
ATTN: JAMES ARNETT
1632 WEST SEVENTH STREET
ST. PAUL, MN 55102
PH: 651-708-0841
EMAIL: JARNETT@MINNETT.COM

GOVERNING SPECIFICATIONS:

1. THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" LATEST EDITION & SUPPLEMENTS.
2. CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD UTILITIES SPECIFICATIONS (LATEST EDITION).
3. ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.
4. CITY OF ST FRANCIS STANDARD SPECIFICATIONS & DETAILS.

INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS
3	COMPOSITE UTILITY PLAN
4	SANITARY SEWER & WATERMAIN - QUAY ST. NW
5	SANITARY SEWER & WATERMAIN - 250TH STREET NW
6	STREET & STORM SEWER PLAN - QUAY ST. NW
7	STREET & STORM SEWER PLAN - 250TH STREET NW
8	STORM SEWER PLAN - REAR YARDS
9	STORM WATER POLLUTION PREVENTION PLAN
10	DETAILS
11	DETAILS
12	DETAILS
13	DETAILS
14	DETAILS
15	DETAILS

BENCHMARK

SE CORNER OF THE EAST 1/2
OF THE NW 1/4 OF SECTION 34
TOWNSHIP 1N, RANGE 3E
EAST FROM MONUMENT
ELEVATION = 521.97 (GVD 29)



CAMPION
ENGINEERING
SERVICES, INC.

* Civil Engineering * Land Planning
1800 Power Creek Center
P.O. Box 24
Maple Plain, MN 55359
Phone: 763-773-8177
Fax: 763-773-8178
E-mail: campion@campioneng.com

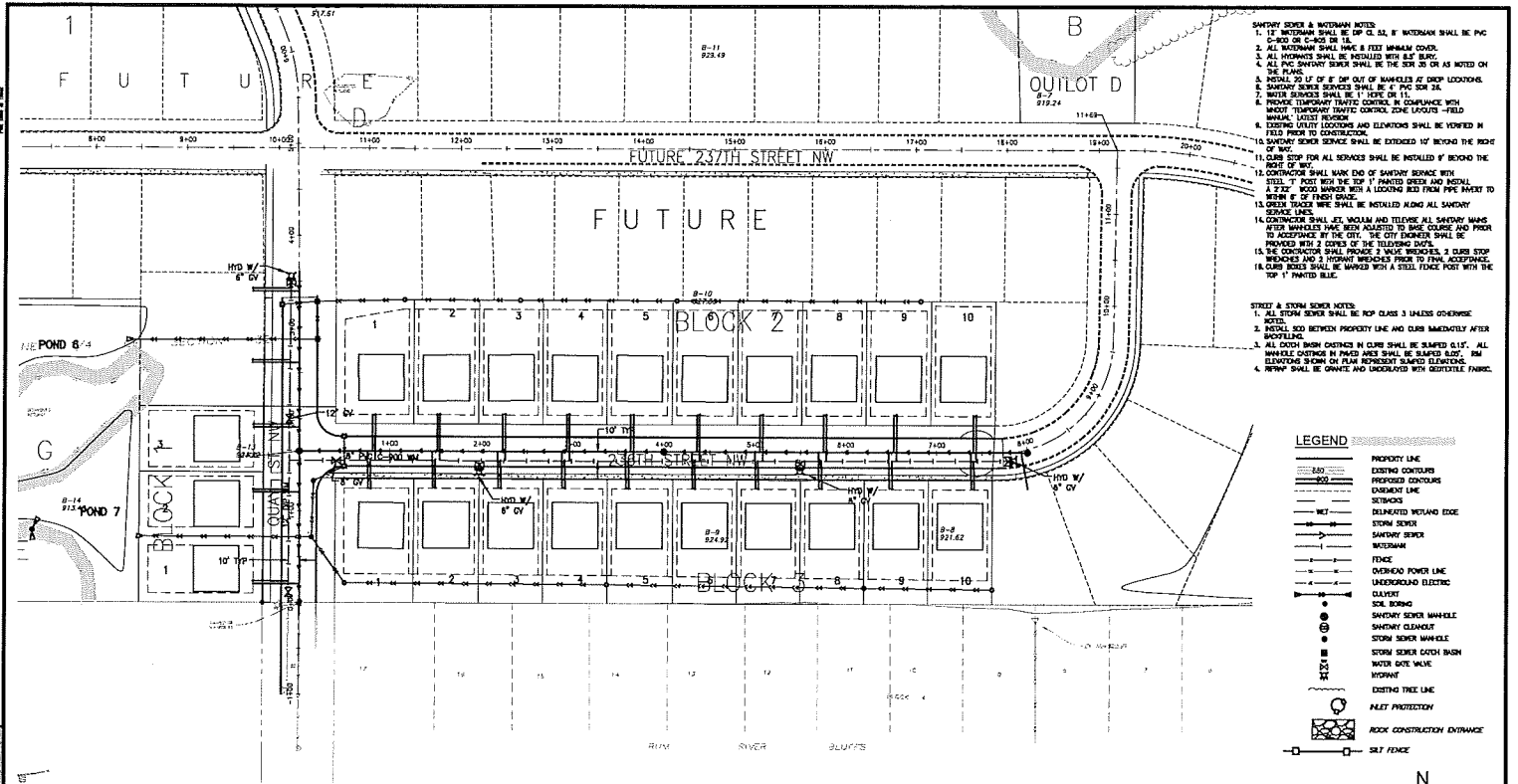
I hereby certify that this plan, specification
or report has been prepared by me or
under my direct supervision and that
I am a duly Licensed Professional Engineer
under the laws of the State of Minnesota.
James P. Campion - Lic. # 19001 Date: 05/15/2018

RIVERS EDGE
LAKETOWN HOMES
ST FRANCIS, MN

COVER SHEET

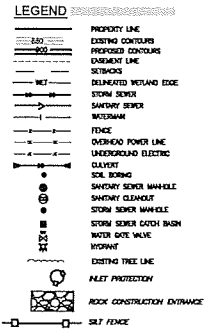
PROJECT NO:
17-037

SHEET NO. 1 OF 15 SHEETS DATE: 05/15/2018

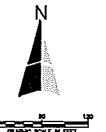


- SANITARY SEWER & WATERMAN NOTES:**
1. IF WATERMAN SHALL BE OF CL. 42, IF WATERMAN SHALL BE PVC, C-400 OR C-400 OR 18".
 2. ALL WATERMAN SHALL HAVE A 1" MINIMUM COVER.
 3. ALL INVERTS SHALL BE INSTALLED WITH 1" LIFT BURN.
 4. ALL PVC SANITARY SEWER SHALL BE THE SIZE OR AS NOTED ON THE PLAN.
 5. INVERTS 20' UP OF E OF OUT OF MANHOLE AT DEEP LOCATIONS.
 6. SANITARY SEWER SERVICES SHALL BE 4" PVC SIZE 24".
 7. WATER SERVICES SHALL BE 1" PIPE OR 11".
 8. PROVIDE TEMPORARY TRAFFIC CONTROL IN COMPLIANCE WITH MOST TEMPORARY TRAFFIC CONTROL, ONE LOCATED - FIELD MANUAL, LATEST EDITION.
 9. EXISTING UTILITY LOCATIONS AND ELEVATIONS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.
 10. SANITARY SEWER SERVICE SHALL BE EXTENDED 10' BEYOND THE RIGHT OF WAY.
 11. CURB STOP FOR ALL SERVICES SHALL BE INSTALLED 1' BEYOND THE RIGHT OF WAY.
 12. CONTAINERS SHALL MARK END OF SANITARY SERVICE WITH STEEL "T" POST WITH THE TOP 1" PAINTED GREEN AND METAL 2" X 2" POST WITH THE TOP 1" PAINTED RED FROM PIPE INVERT TO WHEN E OF FIRST VALVE.
 13. CURB TRUCKS WERE SHALL BE INSTALLED ALONG ALL SANITARY SERVICE LINES.
 14. CONTAINERS SHALL SET, VOLUME AND TELETYPE ALL SANITARY MANHOLES AFTER MANHOLES HAVE BEEN ADJUSTED TO SAME COURSE AND PRIOR TO ACCEPTANCE BY THE CITY. THE CITY ENGINEER SHALL BE PROVIDED WITH 2 COPIES OF THE TELETYPE DATA.
 15. THE CONVEYOR SHALL PROVIDE 3" WAVE RIBBED 3" CURB STOP BRIDGES AND 3" TYPICAL BRIDGES PRIOR TO FINAL ACCEPTANCE.
 16. CURB JOINTS SHALL BE WIPED WITH A STEEL TONGUE POST WITH THE TOP 1" PAINTED BLUE.

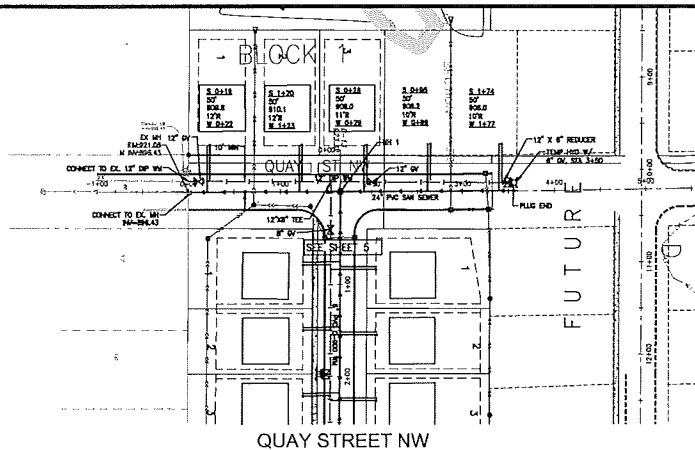
- STREET & STORM SEWER NOTES:**
1. ALL STORM SEWER SHALL BE RCP CLASS 3 UNLESS OTHERWISE NOTED.
 2. INSTALL SDO BETWEEN PROPERTY LINE AND CURB IMMEDIATELY AFTER SDO.
 3. ALL CATCH BASIN OUTLET IN CURB SHALL BE SLOPED 0.1%.
 4. ELEVATIONS SHOWN ON PLAN REPRESENT FINISHED ELEVATIONS.
 5. REPAIR SHALL BE GRADUATE AND UNCLIPPED WITH GRADUATE FINISH.



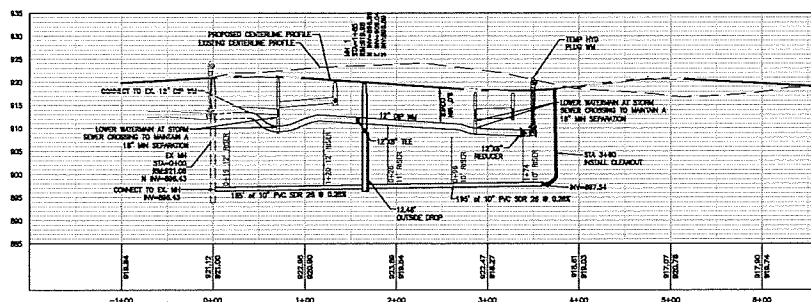
BENCHMARK
 SE CORNER OF THE EAST 1/2
 OF THE SW 1/4 OF SECTION 24
 (SOUTH 1/4 CORNER OF SECTION 32)
 TOWNSHIP 34, RANGE 24
 EAST FROM ADJACENT
 BENCHMARK TOP OF MONUMENT
 ELEVATION = 821.87 (MVD 20)



<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></t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- LEGEND**
- PROPERTY LINE
 - EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EASEMENT LINE
 - SETBACKS
 - EXISTING WETLAND EDGE
 - STORM SEWER
 - SANITARY SEWER
 - WATERMAIN
 - FENCE
 - OVERHEAD POWER LINE
 - UNDERGROUND ELECTRIC
 - CULVERT
 - SOIL BORING
 - SANITARY SEWER MANHOLE
 - SANITARY CLEANOUT
 - STORM SEWER MANHOLE
 - STORM SEWER CATCH BASIN
 - WATER GATE VALVE
 - PRESSURE
 - EXISTING TREE LINE
 - INLET PROTECTION
 - ROCK CONSTRUCTION ENTRANCE
 - SILT FENCE
 - DISTANCE OF SAN SERVICE WYE FROM DOWNSTREAM MH
 - SERVICE LENGTH
 - SEWER SERVICE AT 10' PAST PROPERTY LINE
 - RISER HEIGHT, TYP
 - DISTANCE OF WATER SERVICE FROM DOWNSTREAM MH



BENCHMARK
SE CORNER OF THE EAST 1/2
OF THE SW 1/4 OF SECTION 34
(SOUTH 1/4 CORNER OF SECTION 32)
TOWNSHIP 54, RANGE 34
EAST FROM MONUMENT
BENCHMARK TOP OF MONUMENT
ELEVATION = 811.87 (NGVD 29)



SEE SHEET 3 FOR SANITARY SEWER NOTES

NO.	DATE	DESCRIPTION

**CAMPION
ENGINEERING
SERVICES, INC.**

* Civil Engineering * Land Planning
1800 Phares Creek Center,
P.O. Box 244
Mankato, MN 56001
Phone 781-779-8172
Fax 781-779-8244
E-Mail: riversedge@campioneng.com

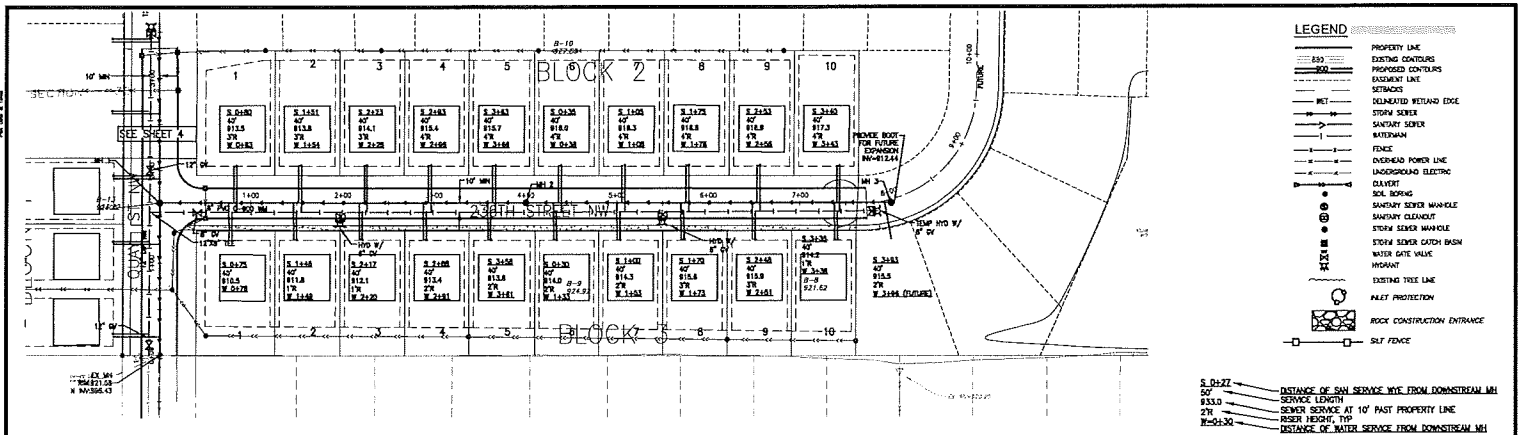
I hereby verify that this plan, specification
or report has been prepared by me, or
under my direct supervision and that
I am a duly Licensed Professional Engineer
under the laws of the State of Minnesota.
Mark P. Campion - Lic. # 19907 Date: 05/15/2018

**RIVERS EDGE
LAKETOWN HOMES**
ST FRANCIS, MN

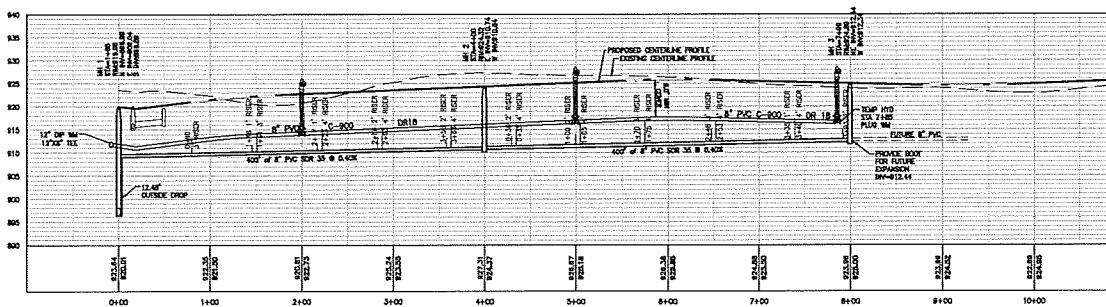
**SANITARY SEWER & WATERMAIN
PLAN-QUAY STREET NW**

PROJECT NO:
17-037
DATE:
05/15/2018

SHEET NO. 4 OF 15 SHEETS



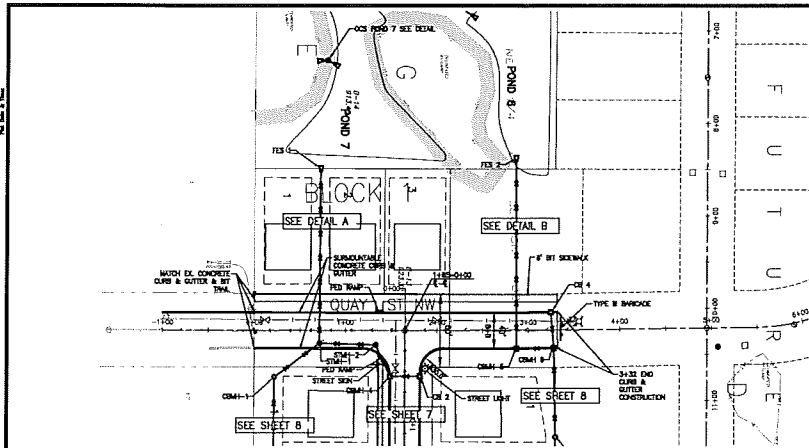
236TH STREET NW



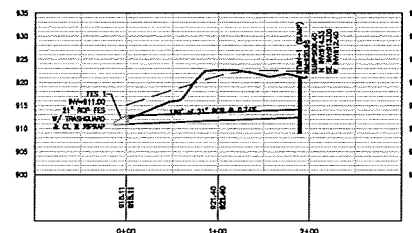
BENCHMARK
SE CORNER OF THE EAST 1/2
OF THE SW 1/4 OF SECTION 29
(SOUTH 1/4 CORNER OF SECTION 29)
TOWNSHIP 34, RANGE 24
COUNTY OF HENNEPIN
BENCHMARK TOP OF MONUMENT
ELEVATION = 811.17 (NGVD 29)

SEE SHEET 3 FOR SANITARY SEWER NOTES

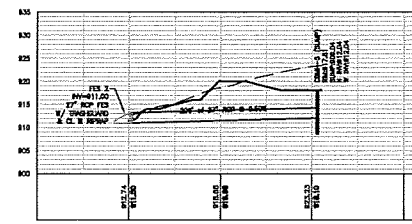
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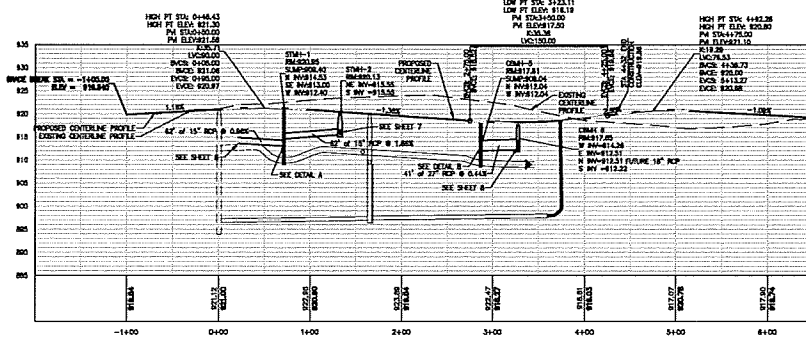
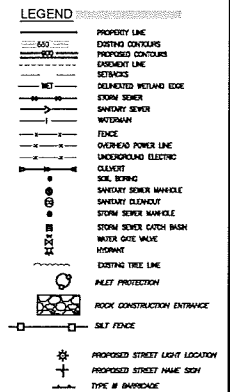
QUAY STREET NW



DETAIL A



DETAIL B



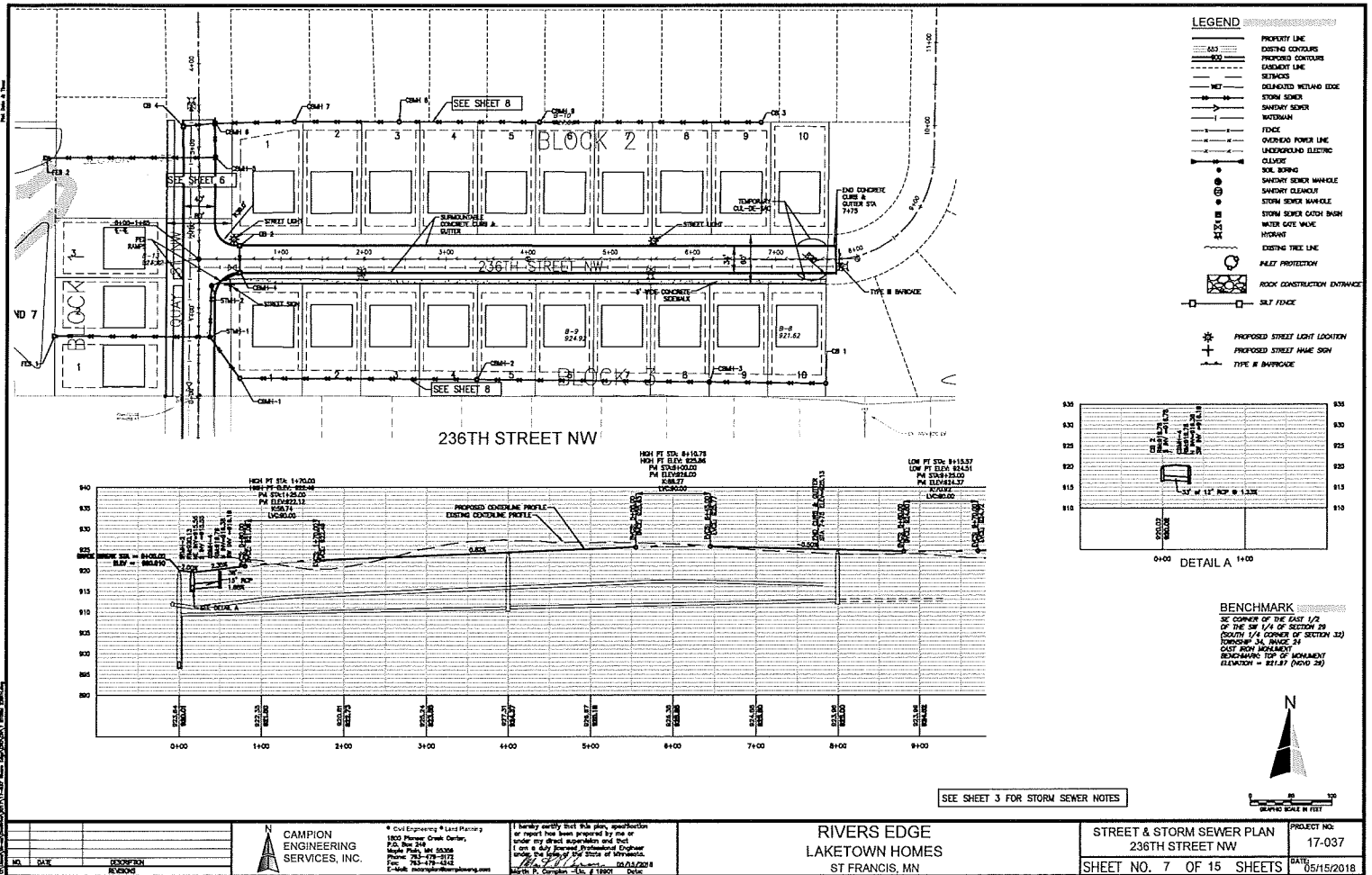
STRUCTURE SCHEDULE		
STRUCTURE NO.	STRUCTURE	CASTINGS
CB 1	27" DIA	NEENAH R-4342
CB 2	27" DIA	NEENAH R-3250-1
CB 3	27" DIA	NEENAH R-4342
CB 4	27" DIA	NEENAH R-3250-1
CBVH 1	48"	NEENAH R-4342
CBVH 2	48"	NEENAH R-4342
CBVH 3	48"	NEENAH R-4342
CBVH 4	48"	NEENAH R-3250-1
CBVH 5	66"	NEENAH R-3250-1
CBVH 6	48"	NEENAH R-3250-1
CBVH 7	48"	NEENAH R-4342
CBVH 8	48"	NEENAH R-4342
CBVH 9	48"	NEENAH R-4342
STVH 1	48"	NEENAH R-1733*
STVH 2	48"	NEENAH R-1733*
STVH 3	48"	NEENAH R-1733*

BENCHMARK
SE CORNER OF THE EAST 1/2
OF THE SW 1/4 OF SECTION 28
(SECTION 34, RANGE 24
COUNTY FROM ADJACENT
BENCHMARK TOP OF MONUMENT
ELEVATION = 811.87 (DND 29)



GRAPH SCALE IN FEET

SEE SHEET 3 FOR STORM SEWER NOTES



NO.	DATE	DESCRIPTION

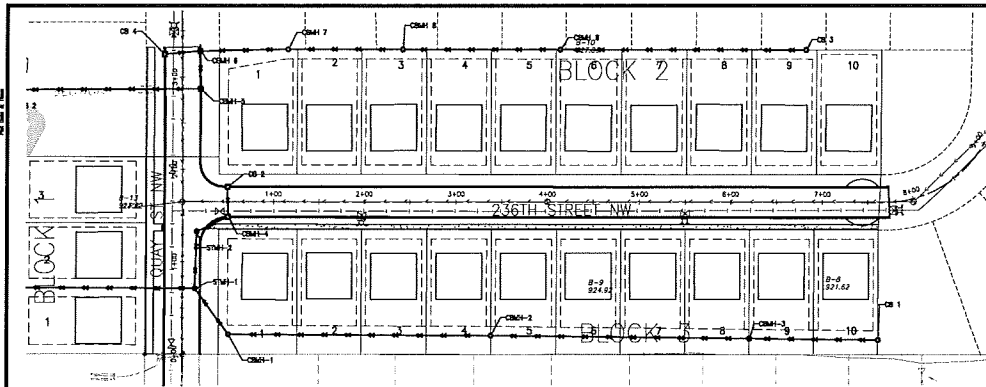

**CAMPION
ENGINEERING
SERVICES, INC.**

* Civil Engineering * Land Planning
 1800 Pioneer Creek Center
 P.O. Box 344
 Maple Park, MN 55369
 Phone: 763-478-8172
 Fax: 763-478-8246
 E-Mail: info@campionengineering.com

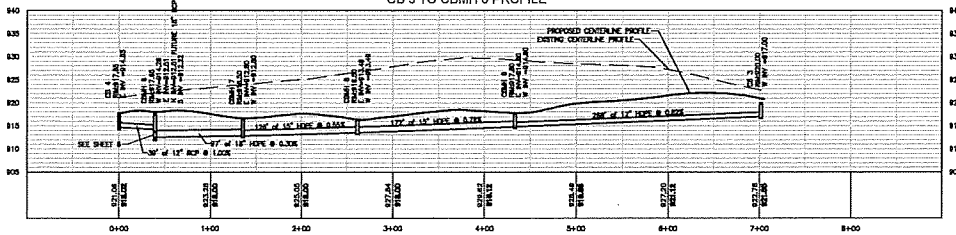
I hereby certify that this plan, specification
 or report has been prepared by me or
 under my direct supervision and that
 I am a duly Licensed Professional Engineer
 under the laws of the State of Minnesota.
 Date: 05/15/2018
 Mark P. Campbell - Lic. # 18901

**RIVERS EDGE
LAKETOWN HOMES**
 ST FRANCIS, MN

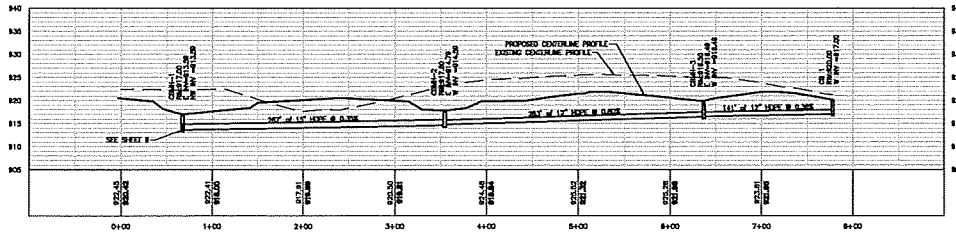
STREET & STORM SEWER PLAN 236TH STREET NW	PROJECT NO: 17-037
SHEET NO. 7 OF 15 SHEETS	DATE: 05/15/2018



CB 3 TO CBM 6 PROFILE



CB 1 TO CBM 1 PROFILE



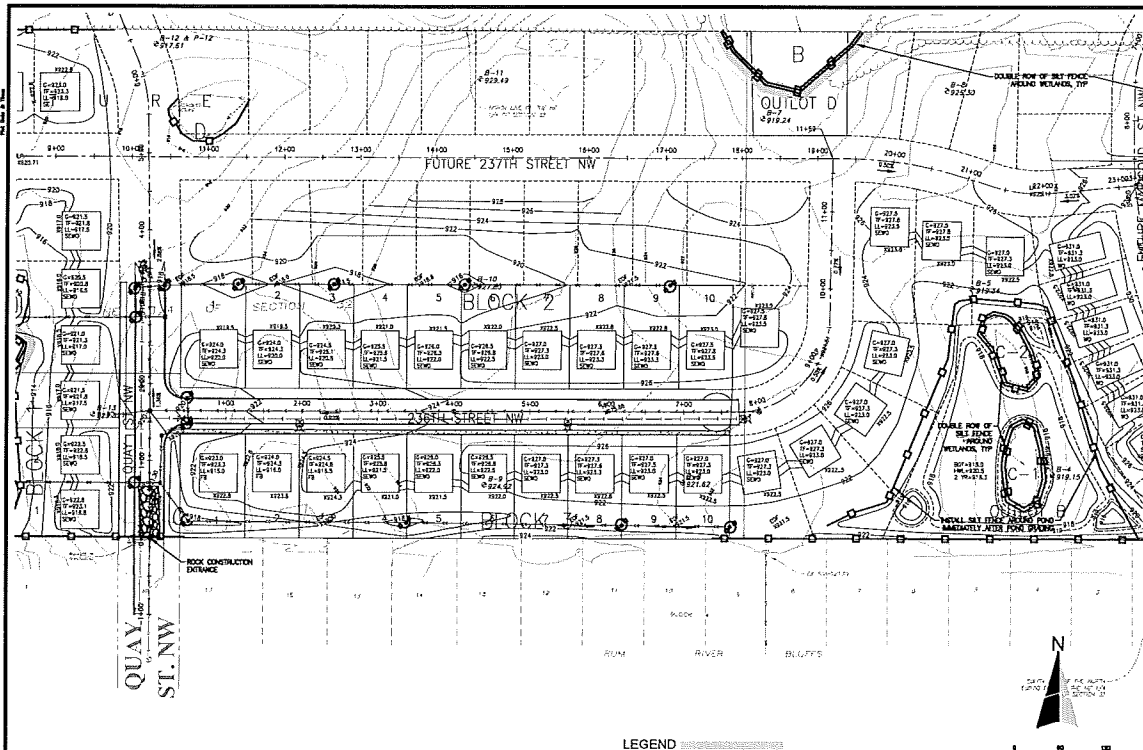
- LEGEND**
- PROPERTY LINE
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EASEMENT LINE
 - SETBACKS
 - Delineated Wetland Edge
 - STORM SEWER
 - SANITARY SEWER
 - WATERMAIN
 - FENCE
 - OVERHEAD POWER LINE
 - UNDERGROUND ELECTRIC
 - CULVERT
 - SOIL BORING
 - SANITARY SEWER MANHOLE
 - SANITARY CULVERT
 - STORM SEWER MANHOLE
 - STORM SEWER CATCH BASIN
 - WATER GATE VALVE
 - HYDRANT
 - EXISTING TREE LINE
 - INLET PROTECTION
 - ROCK CONSTRUCTION ENTRANCE
 - SALT FENCE

BENCHMARK
SE CORNER OF THE EAST 1/4
OF THE SW 1/4 OF SECTION 24
(SOUTH 1/4 CORNER OF SECTION 32)
COMPOUND 14, RANGE 34
GALT ROCK MONUMENT
REMARKING TOP OF MONUMENT
ELEVATION = 921.87 (NGVD 29)

SEE SHEET J FOR STORM SEWER NOTES



				CAMPION ENGINEERING SERVICES, INC.	Civil Engineering & Land Planning 1820 Phoenix Creek Center P.O. Box 244 Maple Park, MN 56558 Phone: 763-478-0172 Fax: 763-478-0444 E-Mail: campion@campioneng.com	I hereby certify that this plan, specification or report has been prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the State of Minnesota. Mark P. Campion - Lic. # 19901 Date: 05/15/2018	RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN	STORM SEWER PLAN - REAR YARDS SHEET NO. 8 OF 15 SHEETS	PROJECT NO. 17-037 DATE: 05/15/2018
NO.	DATE	DESCRIPTION							



- STORM WATER CONTROL**
1. ALL EROSION CONTROL AND SEDIMENT CONTROL WILL COMPLY WITH MINIMUM BEST MANAGEMENT PRACTICES (BMP) AND REGULATIONS OF THE CITY.
 2. THE CONTRACTOR SHALL BE FURNISH WITH AND FOLLOW ALL REQUIREMENTS OF THE MPCA IMPROVEMENTS FOR CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO: NITROGEN EROSION CONTROL, NITROGEN INSPECTION AFTER ALL PAVING OR MORE AND DOCUMENTATION OF ALL CORRECTIVE MEASURES. BY BEGINNING CONSTRUCTION, THE CONTRACTOR ACKNOWLEDGES THE STATE OF THE PROJECT AND APPLICABLE TO THEM.
 3. THE CONTRACTOR SHALL FURNISH ANY CORRECTIVE MEASURES ORDERED BY THE CITY OR THE MPCA WITHIN 24 HOURS OF NOTIFICATION. ALSO, ADDITIONAL EROSION CONTROL MEASURES DEEMED NECESSARY BY EITHER THE CITY OR THE MPCA SHALL BE INSTALLED WITHIN 24 HOURS OF NOTIFICATION.
 4. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT, IN TEMPORARY SEDIMENTATION BASINS, OR IN EXISTING STORM SEWERS OR DITCHES SHALL BE REMOVED AFTER EACH RAIN AND AFTERED AREAS CLEANED. REASON: FROM EXISTING PAVEMENTS SHALL BE ACCOMPLISHED BY BRUSHING.
 5. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONSIDERING ALL SEDIMENTATION, BUT NOT LIMITED TO ROCK OVERLAYS AND/OR SILT FENCES. CONTROL SHALL COMPLY WITH CITY AND STATE REQUIREMENTS THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR'S RESPONSIBILITY INCLUDES ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE OWNER MAY, AT HIS/HER OPTION, DIRECT THE CONTRACTOR IN HOW/WHEN METHODS AS DEEMED FIT TO PREVENT PROPERTY AND IMPROVEMENTS.
 6. ANY DEPOSITING OF SILT IN DITCHES OR EXISTING STORM SEWERS SHALL BE REMOVED AFTER EACH RAIN AND AFTERED AREAS CLEANED TO THE SATISFACTION OF THE OWNER. ALL AT THE EXPENSE OF THE CONTRACTOR. THE SILT FENCES SHALL BE REMOVED AND THE SILT REMOVED FROM THE PAVING AREAS BY THE CONTRACTOR AFTER THE SILENCE IS ESTABLISHED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL THE WORKING REQUIREMENTS OF THE MPCA PERMIT.
 7. ALL DISTURBED AREAS, EXCEPT FERTILIZERS, MULCHING, AND SEEDING, SHALL BE RESTORED WITHIN A MINIMUM 4 HOURS TOPSOIL, SEEDING AND MULCHING (TYPE D). SEEDING SHALL BE IN ACCORDANCE WITH MPCA SPECIFICATION 207A, SEED MIX 25-111 @ 40 LBS/Acre (ON APPROVED EQUALS). THE FERTILIZER MIXTURE SHALL BE SEEDING WITH SEED MIX 20-241. COMPOST SEEDING MIXTURE SHALL BE SEEDING AND MULCHING IN ACCORDANCE WITH MPCA SPECIFICATION 207A. MULCHING QUANTITY SHALL BE TWO TONS PER Acre. FERTILIZER (10-10-10) SHALL BE APPLIED AT A RATE OF 200 POUNDS PER Acre (ON) BE LIMITED TO UNPAVED AREAS IF UNPAVED AREAS IF SORE CONCENTRATIONS. UNPAVED SEED MIX 25-111 APPLIED AT A RATE OF 110 LBS/Acre SHALL BE USED FOR TEMPORARY SEEDING IF NEEDED.
 8. CONSTRUCTION SHALL PROCEED IN THE FOLLOWING SEQUENCE:
 - a. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CITY.
 - b. INITIAL EROSION CONTROL MEASURES AND ROCK CONSTRUCTION INTERVIEW.
 - c. CONTACT CITY FOR APPROVAL OF EROSION CONTROL, INSTALLATION.
 - d. MAINTAIN EROSION MEASURES, I.E. SILT FENCE, ROCK CONSTRUCTION INTERVIEW.
 - e. MAINTAIN ALL SEDIMENTATION FENCES, CONSULT SITE ENGINEER TELEPHONE.
 - f. INITIAL SEED AND MULCH ON AREAS THAT ARE NOT TO BE PAVED SURFACES.
 9. SLOPE PROTECTION AND EROSION CONTROL SHALL BE DONE IN ACCORDANCE WITH SECTION 207A SLOPE PROTECTION, EROSION CONTROL AND STORM WATER POLLUTION PREVENTION PLAN OF THE PROJECT MANUAL.
 10. ALL STORM SEWER INLETS AND FLOWED DRAINAGE SECTIONS SHALL BE ADEQUATELY PROTECTED BEFORE AND AFTER PAVEMENT CONSTRUCTION UNITS. ALL DISTURBED AREAS ARE STABILIZED. CONTRACTOR SHALL PLACE WITHIN FENCE AND SHALL HAVE ALL DRAIN BASIN COVER IN PLACE. PAVING SURFACES ARE PROTECTED AND THE LANDSCAPING IS COMPLETED.
 11. EXISTING AREAS WHICH BEHOLD ON THE SITE FOR MORE THAN SEVEN DAYS SHALL BE SEEDING, MULCHING, AND SURROUNDED BY SILT FENCE.
 12. NO LOGS SHALL BE INSTALLED AT FIVE FEET AND OUTLETS UNTIL REPAIR IS INSTALLED. PERMANENT DRAINAGE DISCHARGES SHALL BE INSTALLED WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.
 13. EROSION AND SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE UNTIL THE SITE SOILS HAVE BEEN PERMANENTLY STABILIZED AND SHALL BE REMOVED WITHIN 30 DAYS THEREAFTER. ALL EXPOSED SOIL OR OTHER MATERIALS SUBJECT TO EROSION BY WIND OR WATER SHALL BE COVERED, MULCHED, OR COVERED, FENCED ON THE DOWN GRADIENT SIDE OF EXISTING EXISTING PROTECTED FROM EROSION IN ACCORDANCE WITH THE AMOUNT OF THE THE MATERIAL WILL BE ON SITE AND THE NUMBER OF ITS PROPOSED USE.
 14. LOCATION OF CONCRETE MATERIALS AND MATERIALS STORAGE SHALL BE DETERMINED PRIOR TO START OF CONSTRUCTION. THE SHIPPER WILL BE UNPAID AND LOCATIONS ADDED AT THAT TIME.
 15. TEMPORARY OR PERMANENT SEDIMENTATION SHALL BE INSTALLED IMMEDIATELY TO LIMIT SOIL EROSION AND SHALL BE COMPLETED NOT LATER THAN SEVEN DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. INSTALLED IMMEDIATELY WITHIN 24 HOURS AFTER CONSTRUCTION AS SOON AS PRACTICABLE, BUT NO LATER THAN THE DAY OF THE WORK DAY. FOLLOWING THE DAY WHEN THE EARTH-RESTORING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, INSTALLED STABILIZATION IS DEFINED AS COMPLETING ONE (OR MORE) OF THE FOLLOWING:
 - SOIL PREPARATION FOR VEGETATION, MULCHING (OR OTHER NON-VEGETATIVE BMP).
 - SEEDING/PLANTING, OR SOIL/VEGETATION STABILIZATION MEASURES TO BE FULLY INSTALLED AND COMPLETED WITHIN THE 7 DAY TIMEFRAME.
 16. THE CONTRACTOR SHALL PROVIDE AND INSTALL A SHIPPER WALKER (HODGKINS).

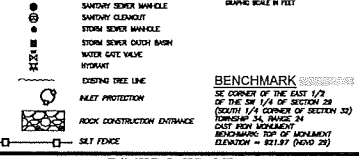
OWNER/DEVELOPER
LAKETOWN HOMES, LLC
ATTHOLE WILDERING
1506 BEACHCOMBER BLVD
WACONIA, MN 55387
PH: 652.715.2926
EMAIL: DRELLER@LAKETOWNHOMES.COM

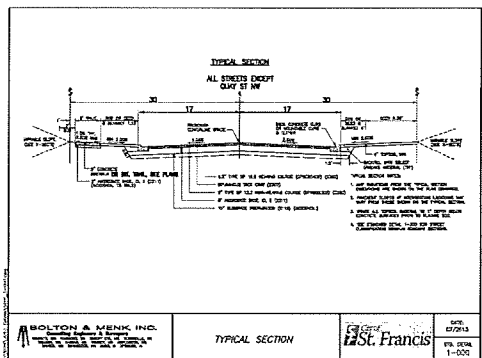
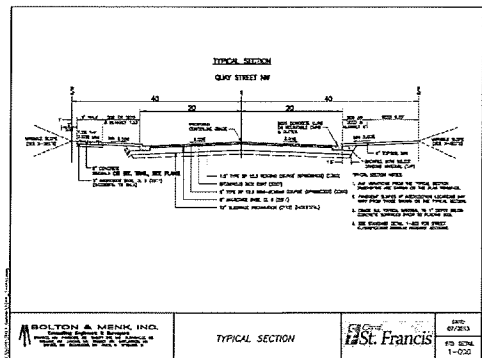
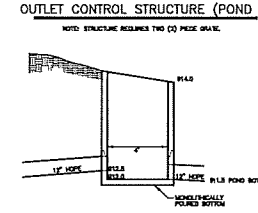
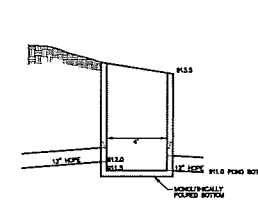
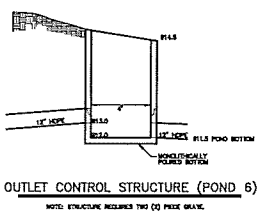
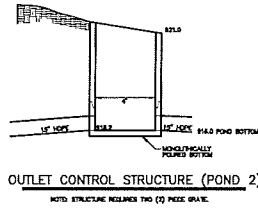
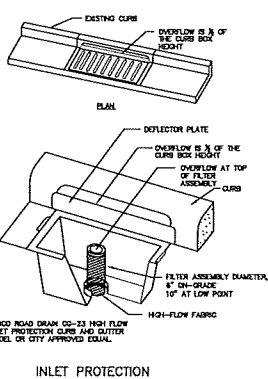
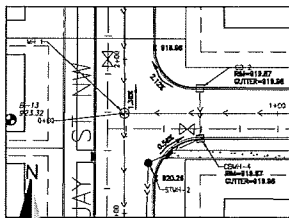
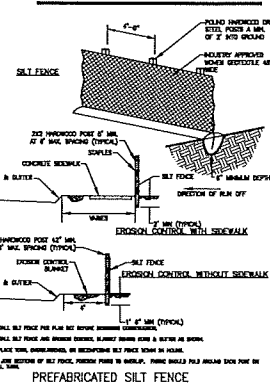
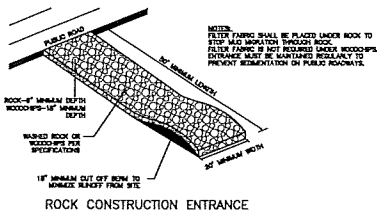
DESIGNER
CAMPION ENGINEERING SERVICES, INC.
WARTY CAMPION
1800 PIONEER CREEK CENTER
WACONIA, MN 55389
PH: 763.479.5172
EMAIL: MCAMPION@CAMPIONENG.COM

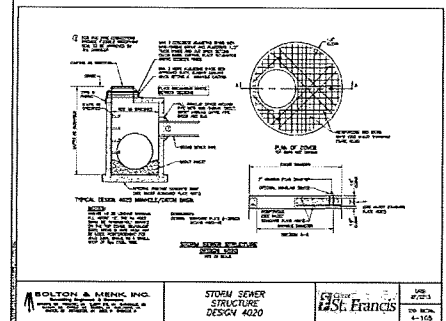
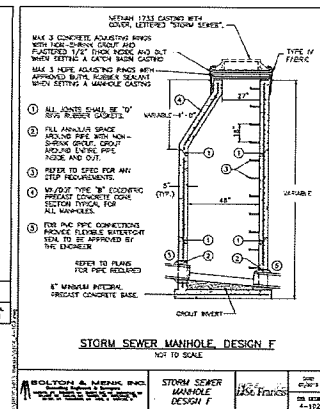
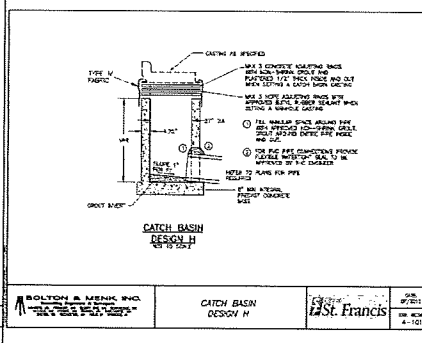
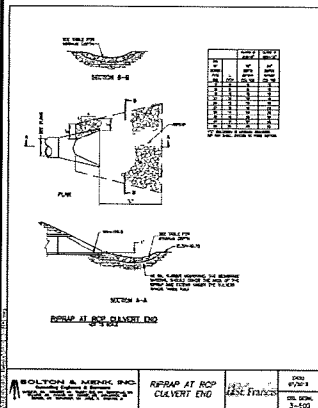
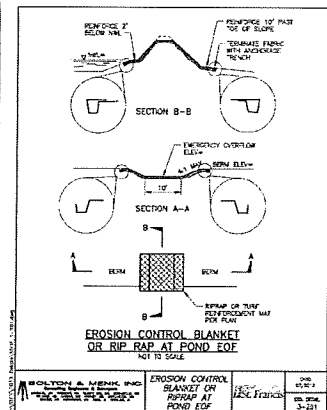
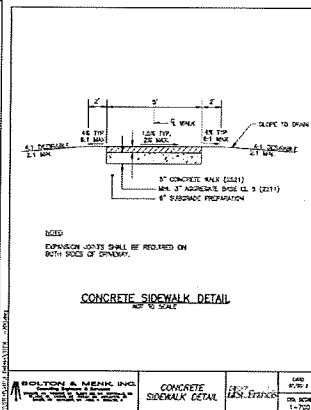
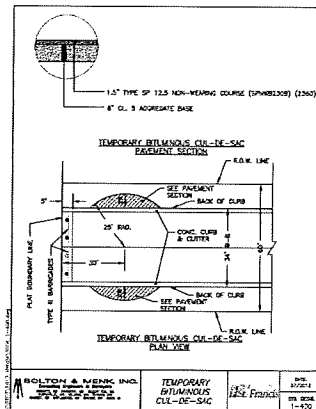
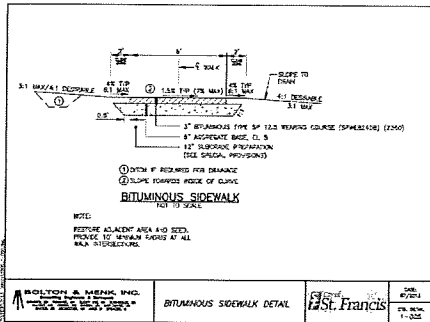
EROSION CONTROL INSTALLER
NAME: _____
CONTACT: _____
ADDRESS: _____
PHONE: _____

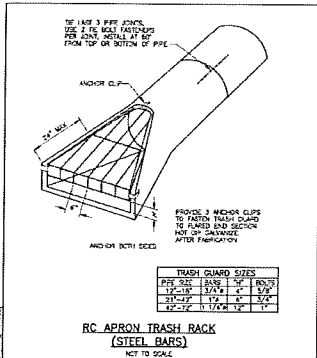
CONTRACTOR
NAME: _____
CONTACT: _____
ADDRESS: _____
PHONE: _____

- EROSION CONTROL QUANTITIES:**
SITE RESTORATION = 25 AC
SILT FENCE = 8500 LF
INLET PROTECTION = 13 EA
ROCK CONSTRUCTION ENTRANCE = 1 EA
- LEGEND**
- 100 --- PROPERTY LINE
 - 200 --- EXISTING CONTOUR
 - 300 --- PROPOSED CONTOUR
 - 400 --- EXISTING LINE
 - 500 --- SEDIMENT
 - 600 --- DELINEATED WETLAND EDGE
 - 700 --- STORM SEWER
 - 800 --- SHEDDING SEWER
 - 900 --- WETLAND
 - 1000 --- FENCE
 - 1100 --- OVERHEAD POWER LINE
 - 1200 --- UNDERGROUND ELEVATION
 - 1300 --- CULVERT
- SOIL BORING**
--- 1400 --- SANITARY SEWER MANHOLE
--- 1500 --- SANITARY CULVERT
--- 1600 --- STORM SEWER MANHOLE
--- 1700 --- STORM SEWER CULVERT
--- 1800 --- WATER GATE VALVE
--- 1900 --- INLET PROTECTION
--- 2000 --- EXISTING TREE LINE
--- 2100 --- ROCK CONSTRUCTION ENTRANCE
--- 2200 --- SILT FENCE



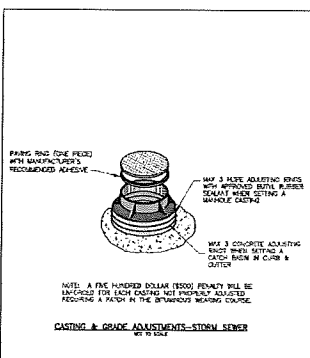






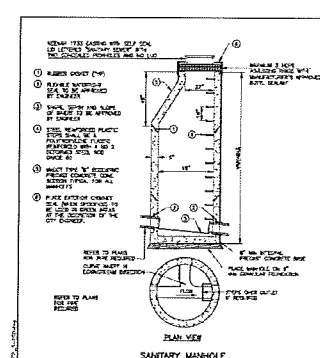
RC APRON TRASH RACK (STEEL BARS)
NOT TO SCALE

BOLTON & MENK, INC. 1000 Pioneer Drive, St. Francis, MN 55070-1000
TEL: 763-478-1111 FAX: 763-478-1112



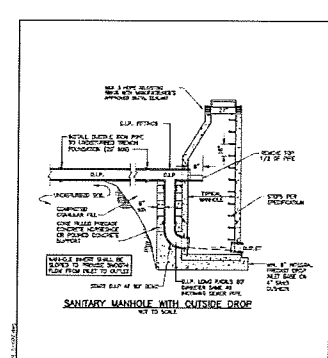
CASTING & GRADE ADJUSTMENT - STORM SEWER
NOT TO SCALE

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TEL: 763-478-1111 FAX: 763-478-1112



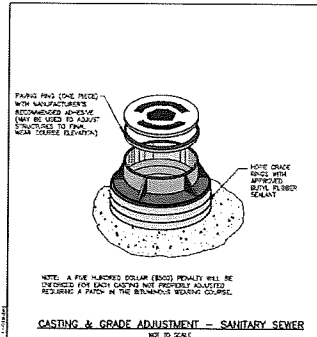
SANITARY MANHOLE
NOT TO SCALE

BOLTON & MENK, INC. 1000 Pioneer Drive, St. Francis, MN 55070-1000
TEL: 763-478-1111 FAX: 763-478-1112



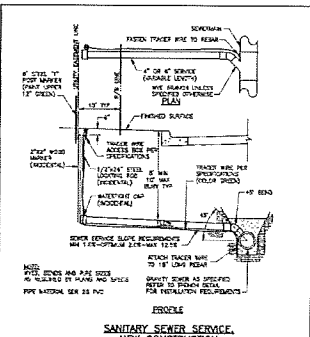
SANITARY MANHOLE WITH OUTSIDE DROP
NOT TO SCALE

BOLTON & MENK, INC. 1000 Pioneer Drive, St. Francis, MN 55070-1000
TEL: 763-478-1111 FAX: 763-478-1112



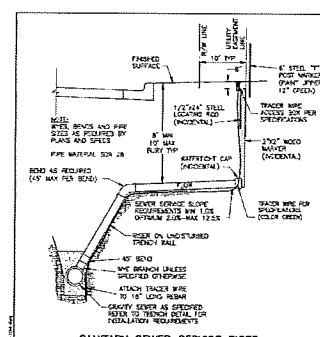
CASTING & GRADE ADJUSTMENT - SANITARY SEWER
NOT TO SCALE

BOLTON & MENK, INC. 1000 Pioneer Drive, St. Francis, MN 55070-1000
TEL: 763-478-1111 FAX: 763-478-1112



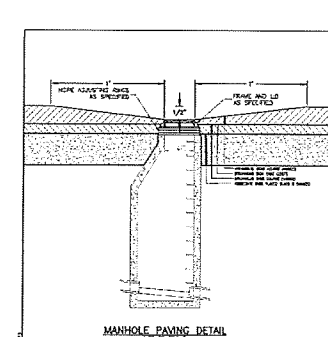
SANITARY SEWER SERVICE, NEW CONSTRUCTION
NOT TO SCALE

BOLTON & MENK, INC. 1000 Pioneer Drive, St. Francis, MN 55070-1000
TEL: 763-478-1111 FAX: 763-478-1112



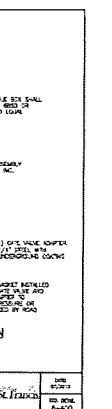
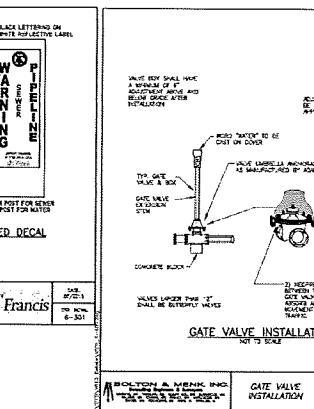
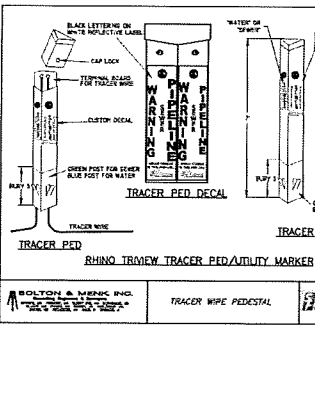
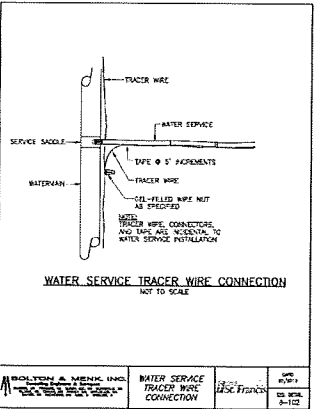
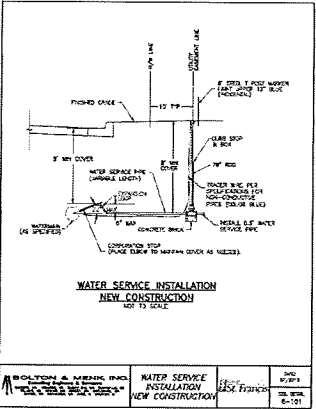
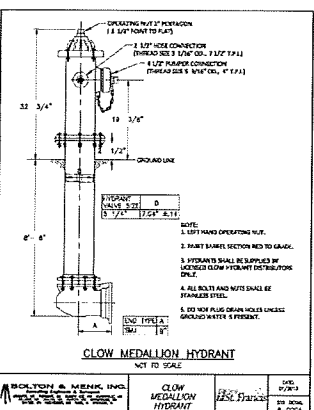
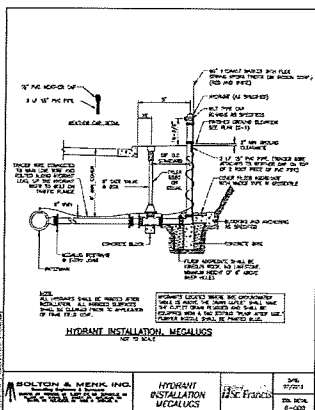
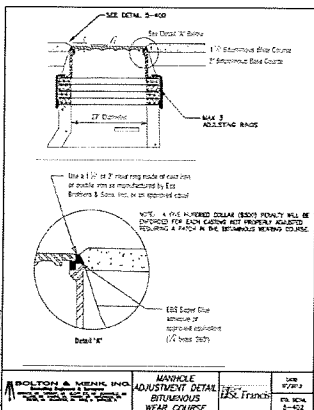
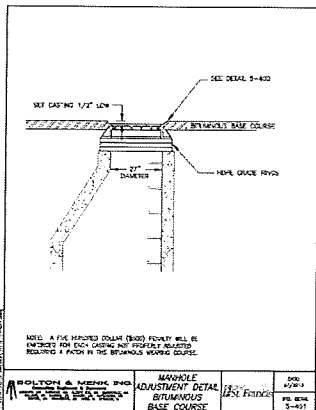
SANITARY SEWER SERVICE RISER, NEW CONSTRUCTION
NOT TO SCALE

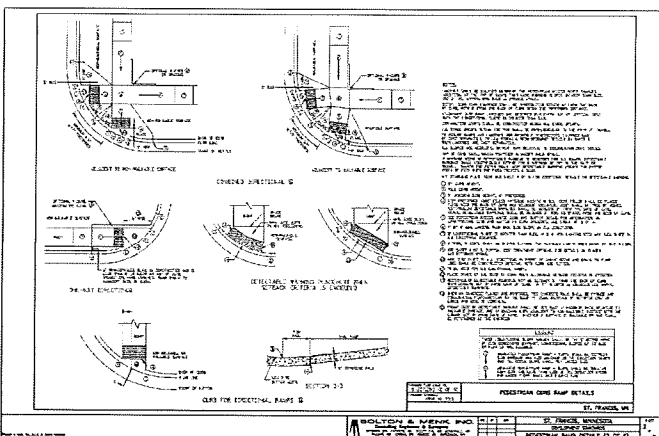
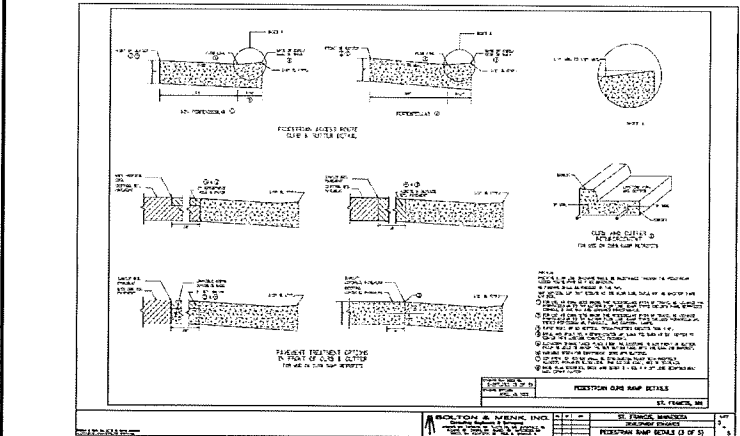
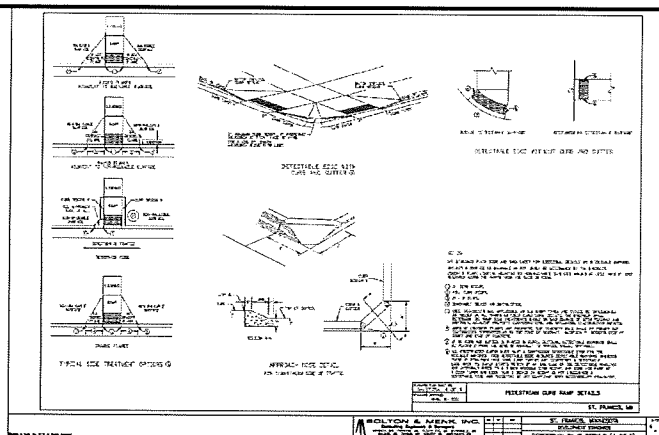
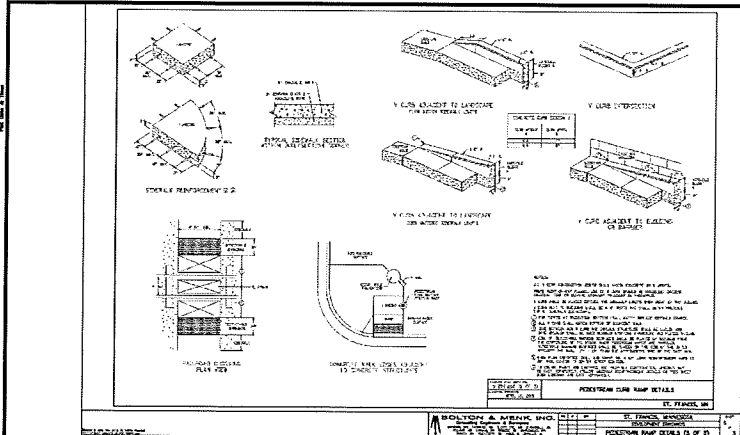
BOLTON & MENK, INC. 1000 Pioneer Drive, St. Francis, MN 55070-1000
TEL: 763-478-1111 FAX: 763-478-1112



MANHOLE PAVING DETAIL
NOT TO SCALE

BOLTON & MENK, INC. 1000 Pioneer Drive, St. Francis, MN 55070-1000
TEL: 763-478-1111 FAX: 763-478-1112





NO.	DATE	DESCRIPTION
1	05/15/2018	ISSUED FOR PERMIT

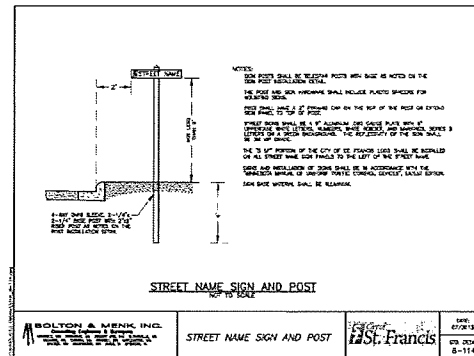
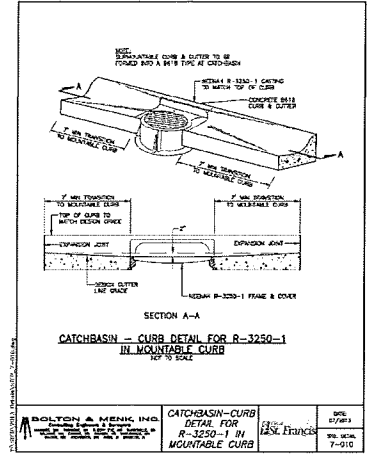
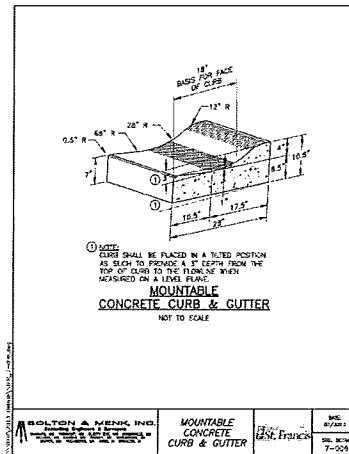
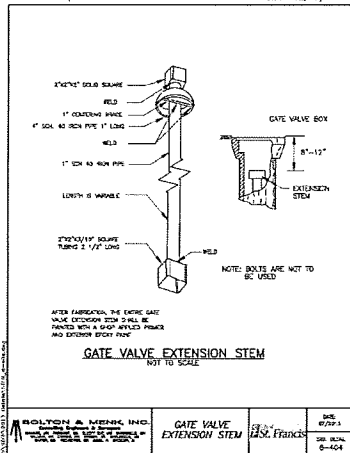
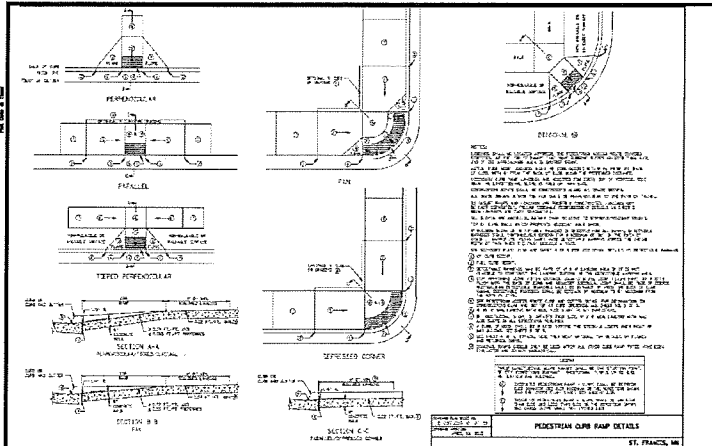
CAMPION ENGINEERING SERVICES, INC.

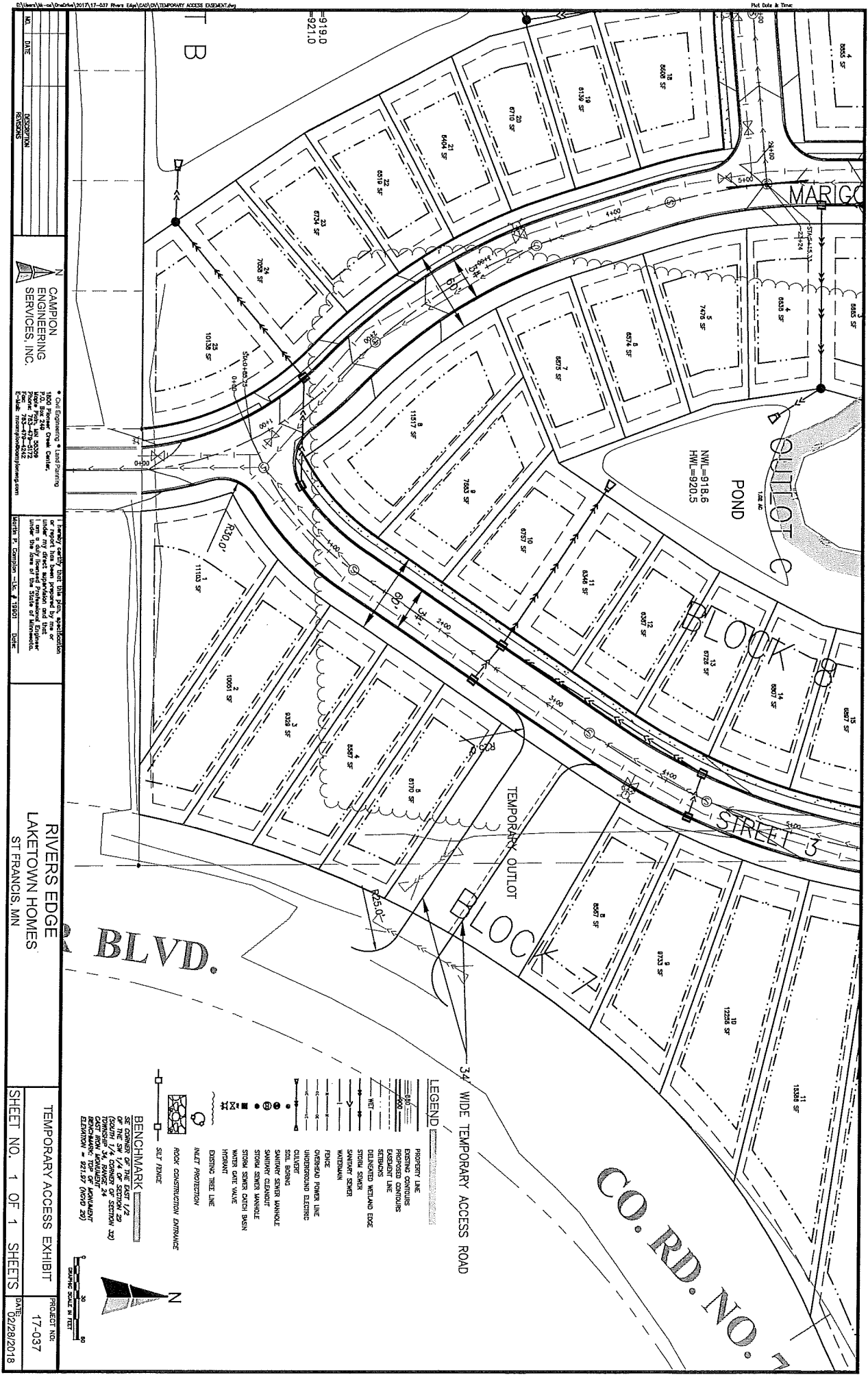
• Civil Engineering • Land Planning
1800 Pioneer Drive, Suite 200
St. Francis, MN 55076
Phone: 763-278-0172
Fax: 763-278-0173
E-Mail: info@campionengineering.com

I hereby certify that this plan, specification or report has been 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.
North P. O'Connell - U.S. # 10001 Date

RIVERS EDGE LAKETOWN HOMES
ST. FRANCIS, MN

DETAILS
PROJECT NO. 17-037
SHEET NO. 14 OF 15 SHEETS
DATE: 05/15/2018





PROJECT NO. 17-037 DATE 02/28/2018		SHEET NO. 1 OF 1 SHEETS	
PROJECT NAME TEMPORARY ACCESS EXHIBIT		SHEET NO. 1 OF 1 SHEETS	
PROJECT LOCATION RIVERS EDGE LAKETOWN HOMES ST FRANCIS, MN		SHEET NO. 1 OF 1 SHEETS	
PROJECT DESCRIPTION TEMPORARY ACCESS EXHIBIT		SHEET NO. 1 OF 1 SHEETS	
PROJECT ENGINEER CAMPION ENGINEERING SERVICES, INC.		SHEET NO. 1 OF 1 SHEETS	
PROJECT DATE 02/28/2018		SHEET NO. 1 OF 1 SHEETS	

City of St Francis City Council Agenda Item
Executive Summary

Title of Item: **CONDITIONAL USE PERMIT:** A request from Meridian Behavioral health, LLC, to construct a new in-patient chemical dependency treatment center on Lot 1, Block 1, Meadows of St. Francis 2nd Addition – PID 06-33-24-11-0084. This request is very similar to the facility that was previously approved in May 2013, but was never constructed.

Meeting Date: **6-4-18**

Staff Reporting: **Ben Gozola, City Planner**

Summary: Meridian Behavioral Health is seeking re-approval of a conditional use permit for an in-patient chemical treatment facility on Lot 1, Block 1, Meadows of St. Francis 2nd Addition.

In May of 2013, the City approved both a rezoning of the subject property and a conditional use permit (CUP) to allow construction of a new Meridian Behavioral Health facility within the City of St. Francis. While the rezoning of the land was successfully completed, economic considerations forced the applicant to delay construction of the project until the present time. This new CUP application is needed to re-establish the previous approval, and is seeking to authorize updates to the site plan to address updated storm water and building operation requirements that have come into play since the previous approval.

Recommendations:

- **Both staff and the Planning Commission believe the CUP can be approved with conditions.**
- **Template motions, recommended findings, and suggested conditions can be found on pages 15 through 17.**

List of Attachments:

- A) *Staff Report*
- B) *Engineering Memo*
- C) *Applicant's submittals*

**CITY OF ST. FRANCIS
ST. FRANCIS, MN
ANOKA COUNTY**

RESOLUTION 2018 - 21

**A RESOLUTION APPROVING A CONDITIONAL USE PERMIT TO ALLOW AN
IN-PATIENT CHEMICAL TREATMENT FACILITY ON LOT 1, BLOCK 1,
MEADOWS OF ST. FRANCIS 2ND ADDITION**

Pursuant to due call and notice thereof, a regular meeting of the City Council of the City of St. Francis, Minnesota was held on the 6th day of June, 2018. The following members were present: Mayor Steve Feldman; Council Members Robert Bauer, Joe Muehlbauer, Rich Skordahl, and Jerry Tveit.

Council Member _____ introduced the following resolution and moved its adoption:

WHEREAS, the City of St. Francis is a municipal corporation, organized and existing under the laws of the State of Minnesota; and,

WHEREAS, the City Council of the City of St. Francis has adopted a comprehensive plan and corresponding zoning regulations to promote orderly development and utilization of land within the city; and,

WHEREAS, Meridian Behavioral Health (“Applicant”) is owner of property which is legally described as follows:

Lot 1, Block 1, Meadows of St. Francis 2nd Addition

WHEREAS, the Property is zoned R-4 which allows in-patient chemical treatment facilities as a conditionally permitted use; and

WHEREAS, the applicant has made application to secure a conditional use permit to construct and operate an in-patient chemical treatment facility on the Property; and

WHEREAS, approval of a conditional use permit for an in-patient chemical treatment facility requires compliance to general performance standards listed in Chapter 10, Section 6 of City Code; and

WHEREAS, staff fully reviewed the request and prepared a report complete with findings and recommendations for both Planning Commission and City Council consideration; and

WHEREAS, the Planning Commission on December 20, 2017, opened and closed a duly noticed public hearing on the Conditional Use Permit and considered the applicant's submission, the contents of the staff report, public testimony, and other evidence available to the Commission; and recommended approval of the request at that time; and

WHEREAS, the application was subsequently withdrawn as the applicant wished to change the proposed footprint of the building; and

WHEREAS, the revised application was submitted to the City on April 16, 2018, and the Planning Commission; on May 16, 2018; again opened and closed a duly noticed public hearing on the Conditional Use Permit and considered the applicant's submission, the contents of the staff report, public testimony, and other evidence available to the Commission; and again recommended approval of the request; and

WHEREAS, the City Council subsequently considered on June 6, 2018, the recommendations of Staff and the Planning Commission, the Applicant's submissions, the contents of the staff report, public testimony, and other evidence available to the Council;

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of St. Francis hereby approves a Conditional Use Permit to allow an in-patient chemical treatment facility on the Property as proposed in plan sets dated 4/16/18, based on the following findings of fact:

- (1) The subject site is guided for residential use, and in-patient chemical dependency treatment centers are a conditionally permitted use within the R-4 zoning district.
- (2) The proposed separation distance between the facility and nearby residential uses coupled with proposed landscaping will ensure this permitted use will continue to be compatible with surrounding lands.
- (3) The proposed direct connection to 229th Avenue NW will ensure traffic is not an issue and is consistent with anticipated traffic levels for this site.
- (4) Proposed parking has been deemed to be adequate for the use and is consistent with the City's minimum parking standards.
- (5) All proposed buildings and parking spaces meet required setbacks.
- (6) Proposed landscaping materials are acceptable, and the proposed planting plan is in conformance with City standards.
- (7) Proposed lighting will not cast glare onto the public right-of-way or adjacent property in a manner that is inconsistent with code or that cannot be managed.
- (8) The proposed building materials to be used are of high quality and are consistent with City standards for residential structures.

- (9) Stormwater plans will be in conformity with local standards once all engineering issues are addressed, and post-development runoff rates will be less than existing run-off rates once the project is complete.
- (10) The proposed use can be adequately served by the City's sewer and water infrastructure, and will not be a burden on city services.

BE IT FURTHER RESOLVED that approval of the Conditional Use Permit shall be subject to the following conditions:

- (1) Construction shall be consistent with all plans approved as part of this conditional use permit except as required to be updated by City Staff to conform to conditions of approval.
- (2) All changes requested by the City Engineer in their review memo dated 5/8/18 shall be implemented on the final plans prior to permits being issued.
- (3) Minor updates to the approved plans as may be needed to avoid encroachment(s) into final drainage and utility easements, meet required setbacks, or to improve the site design shall be worked out with City Staff (i.e. final sign placements) during the permitting process.
- (4) An NPDES Construction Permit from the MPCA shall be obtained by the applicant.
- (5) All exterior lighting shall include cut-offs to direct light at an angle of 90 degrees or less downward, and each free-standing fixture shall not exceed 25' in height.
- (6) Additional shielding or other appropriate measures shall be provided on lights in the NE corner of the property to ensure spillover light is compliant at the northern property line.
- (7) The use shall be in compliance with all Federal, State, or County laws and regulations that are applicable, and all related permits shall be obtained and documented to the City.
- (8) The property owner shall adhere to all applicable governmental regulations, secure all necessary licenses, and shall obtain all necessary permits to authorize construction, establishment, and continued operation of the proposed use.
- (9) The applicant shall enter into a development agreement with the city specifying the responsibilities, securities, and timeline for project completion.
- (10) A financial security (or securities), shall be provided to the city to ensure the installation of proposed site improvements including but not limited to; landscaping, lighting, grading, and stormwater management.
- (11) The applicant shall recognize that modifications or expansion to conditions for public safety or public betterment may be considered by Council at a future date.

The motion for adoption of the foregoing resolution was duly seconded by Council Member _____ and, upon vote being taken thereon, the following voted in favor thereof: _____. The following voted against or abstained: _____.

Whereupon the resolution was declared duly passed and adopted the 6th day of June, 2018.

Steven D. Feldman, Mayor

ATTEST:

Barbara I. Held, City Clerk

Dated

The undersigned Applicants have read, understand and hereby agree to the terms of this resolution and on behalf of himself/herself, his/her heirs, successors and assigns, hereby agree to the conditions set forth above, and to the recording of this resolution and attachments in the chain of title of the property.

Dated _____

Meridian Behavioral Health Authorized Representative

Subscribed and sworn to before me this _____ day of _____, 2018.

Notary Public

City of St. Francis Planning Department
CUP Report

To: **City Council**

From: Ben Gozola, City Planner

Meeting Date: **6-4-18**

Applicant: **Meridian Behavioral Health, LLC**

Property Owner: (same)

Location: Lot 1, Block 1, Meadows of St. Francis 2nd Addition

Zoning: **R-4**

Introductory Information

Project: Meridian Behavioral Health is seeking re-approval of a conditional use permit for an in-patient chemical treatment facility on Lot 1, Block 1, Meadows of St. Francis 2nd Addition.

History: In May of 2013, the City approved both a rezoning of the subject property and a conditional use permit (CUP) to allow construction of a new Meridian Behavioral Health facility within the City of St. Francis. While the rezoning of the land was successfully implemented, economic considerations forced the applicant to delay construction of the project until the present time.

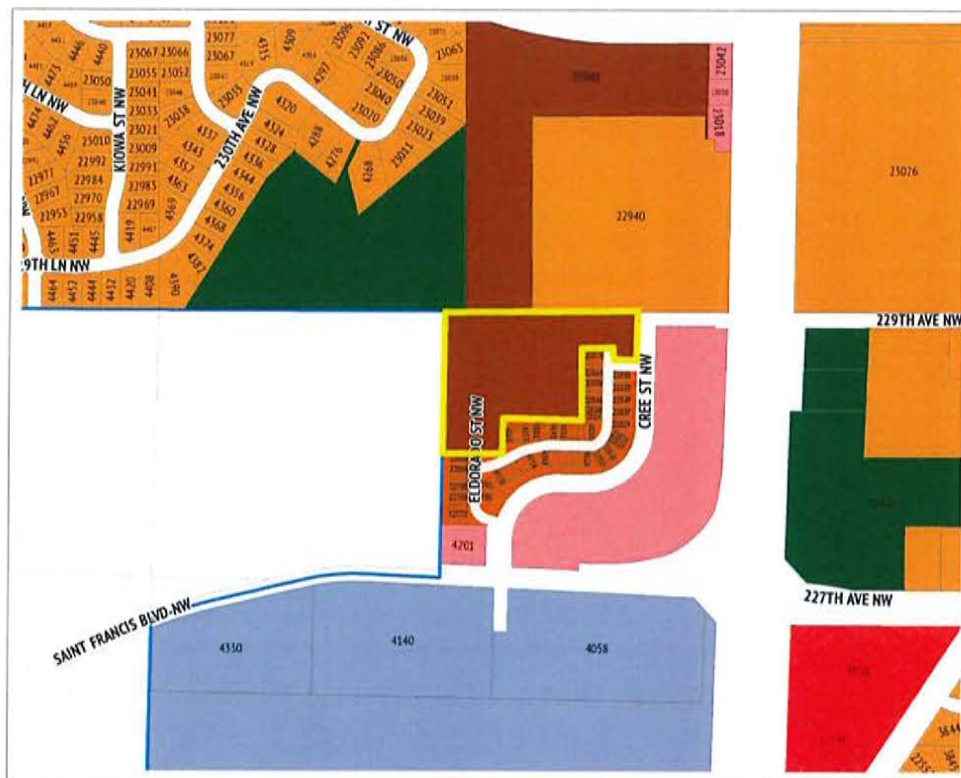
Because the use was not established within one year of the CUP approval, the previous CUP is now void and must be reestablished. An application to do so was submitted in late 2017 which included site plan updates to address new storm water and building requirements that came into play since 2013. While the application made it through Planning Commission with a recommendation of approval, it was subsequently withdrawn as the applicants determined that a change to the building footprint was needed. The new plans are finally complete, and the revised application was submitted for consideration. The new site plan is largely the same with the building increasing in size from 20,454 square feet to 26,165 square feet (a 5711 sq ft increase). No new feedback or concerns were expressed at the public hearing.

CUP Request(s):

- The application is requesting a Conditional Use Permit to establish, construct, and maintain an "In-patient chemical dependency treatment center."
- This use is conditionally permitted in the R-4 zoning district which means the use is permitted provided all code provisions are met.

Findings

- | | |
|----------------------------|--|
| Site Data: | <ul style="list-style-type: none"> ▪ Lot Size $\approx$ 8.21 acres (357,621 sq ft) ▪ Existing Use – open space ▪ Existing Zoning – R-4 ▪ Property Identification Number (PID): 06-33-24-11-0084 |
| Comp Plan Guidance: | <ul style="list-style-type: none"> ▪ The comprehensive plan guides this property for high-density residential. The proposed use under R-4 zoning is therefore appropriate. |



Lot 1, Block 1, Meadows of St Francis 2nd Addition



Location within the City of St Francis



SITE IDENTIFICATION MAP



Application Review:

Applicable Code Definitions:

CHEMICAL DEPENDENCY TREATMENT CENTER: A facility required to be licensed by the state or county that provides one or more persons with twenty-four (24) hour per day care, food, lodging, training, education, supervision, habilitation, rehabilitation, or treatment outside a person's own home for the purposes of relieving chemical dependency. Facilities are limited to those licensed and/or regulated by the Department of Human Services and the Department of Health.

CONDITIONAL USE: A use which, because of special problems of control the use presents, requires reasonable, but special, unusual and extraordinary limitations peculiar to the use for the protection of the public welfare and the integrity of the City Comprehensive Plan.

CONDITIONAL USE PERMIT: A permit issued by the City Council in accordance with procedures specified in this Ordinance, as a flexibility device to enable the City Council to assign dimensions to a proposed use or conditions surrounding it after consideration of adjacent uses and their functions and the special problems which the proposed use presents.

RESIDENTIAL CARE FACILITY, STATE LICENSED: Any program, defined by Minnesota Statutes section 245A.02, subdivision 14, that provides twenty four (24) hour a day care, supervision, food, lodging, rehabilitation, training, education, habilitation, or treatment outside a person's own home, including a nursing home or hospital that receives public funds, administered by the commissioner of the Department of Human Services to provide services for five (5) or more persons whose primary diagnosis is mental retardation or a related condition or mental illness and who do not have a significant physical or medical problem that necessitates nursing home care; a program in an intermediate care facility for four (4) or more persons with mental retardation or a related condition; a nursing home or hospital that was licensed by the commissioner of the Department of Human Services on July 1, 1987, to provide a program for persons with a physical handicap that is not the result of the normal aging process and considered to be a chronic condition; and chemical dependency or chemical abuse programs that are located in a hospital or nursing home and receive public funds for providing chemical abuse or chemical dependency treatment services under Minnesota Statutes 254B. Residential programs include home and community-based services for persons with mental retardation or a related condition that are provided in or outside of a person's own home.

Applicable Codes:

- **Chapter 10, Section 6: Conditional Use Permits**
Outlines the general standards required of all conditionally permitted uses within the City of St. Francis.
- **Chapter 10, Section 59: R-4 High Density Residential District**
Outlines allowed uses within the R-4 zoning district. Chemical dependency treatment centers are conditionally permitted in this district.

***Applicant's
Narrative:***

Background

The proposed Meridian Behavioral Health project is an in-patient dependency treatment center with 60 beds. The project legal description is Lot 1 Block 1 Meadows of St. Francis 2nd Addition located west of the intersection of Cree St. NW and 229th Ave. NW. The proposed building will be a single-story structure, at 27,403 GSF, with a separate accessory 700 GSF garage for storage. This facility will be opened 24 hours for in patient chemical dependency. The project site is currently zoned R4- High Density Residential and allows for an in-patient chemical dependency treatment center with a conditional use permit. The comprehensive plan has this area shown to be high density residential, which the proposed use is compatible.

Building

The proposed building will be a one-story wood frame construction over a concrete slab-on-grade. The exterior finishes include a brick masonry base with an architectural precast concrete sill. Above the base will be two types of cementitious siding, 7" lap side and 4" lap siding. The asphalt roof will be primarily Hip roof with three Gable roof areas, one designating the front entrance. The roof truss bearing will be 10' above finish floor. The roof ridge will be at 24'-0" above finished floor elevation. The facility will house 60 residents in 30 shared bedrooms (each room will be double occupancy) at each end with supporting Large & Small Group Rooms, Toilets and Offices. The central area will accommodate the controlled entrance, reception, medical, offices, fitness and dining services. Trash / recycling enclosure and storage garage will be located on the back side of the building. All entrances and exits will be controlled and monitored.

Signage

A signage package for the development will be forthcoming for separate approval. The building will have wall mounted signage in addition to a monument sign near the main entrance at intersection of Cree St. NW and 229th Ave. NW. All signage will adhere to City Code.

Site

The site is approximately 8.21 acres and is currently vacant and un-developed, with existing stormwater pond that will serve our proposed project along with surrounding residential development. The site is currently zoned as a R-4 High Density Residential, and is designed to meet zoning standards. Setbacks for the property are per the table below. The proposed facility will meet the required setbacks, with the exception of the first 125 feet of driveway entrance, which encroaches 7 feet into the side yard setback. This encroachment is due to the orientation of the adjoining 229th Ave NW. The proposed driveway is aligned center-to-center with 229th and begins a gradual sweep south to enter the site. This sweep is designed with traffic safety in mind entering the facility. To avoid the side yard encroachment, either the entrance drive would be installed off center from 229th, or a severe turn immediately after entering the site would be required, which would increase risk for traffic entering and exiting the facility.

(cont.)

	Building Setback		Pavement Setback	
	<i>Required</i>	<i>Proposed</i>	<i>Required</i>	<i>Proposed</i>
Front Yard B-2 & R-3 (East)	60 Feet	60 Feet	30 Feet	30 Feet
Side Yard R-1 & R-4 (North)	50 Feet	110 Feet	25 Feet	25 Feet
Side Yard R-3 (South)	25 Feet	130 Feet	25 Feet	35 Feet
Rear Yard (West) 30 Feet from delineated wetland	30 Feet	60 Feet	30 Feet	30 Feet

Within the R-4 District, the total allowable impervious surface is limited to 50% of the site area. The proposed development has approximately 93,345 SF of impervious area, which includes the building footprint. The proposed impervious area is approximately 26% of the total site area.

Access and Parking

Site access is provided at the northeast corner of the site, off intersection of Cree St. NW and 229th Ave. NW. Entrance drive is 24' wide and runs south west leading to two parking areas.

Parking area in front of the building is for ADA accessibility and visitor parking. The second parking area south of the building is employee and overflow parking for visitors. A vehicular drop-off is located in front of the main entrance. The number of stalls provided has been sized to accommodate the largest number of employees per shift, 1 stall per every 6 beds provided in the facility, and additional visitor and overflow parking.

Deliveries to the building will follow the ring road around to the west side of the building at a dedicated delivery access. Delivery vehicles will load and unload externally from the building. The building trash enclosure is located on the west side of the building adjacent to the delivery drive. This ring road also serves as fire access for the facility.

Landscaping and Tree Preservation

Landscaping is designed to provide site character and blend into the surrounding existing tree canopy. We plan to preserve existing trees that fall outside of the grading limits and provide screening from abutting residential properties. The project has proposed a planting schedule which provides ample landscaping and screening for the site. The types (species) of new trees and minimum size specified meets the City ordinance. The proposed trees in addition to the existing trees that plan to be saved we are near the required percentages. An existing tree survey has not been completed, but after reviewing existing site aerial images the assumption is that there are sufficient trees preserved and that they are of a reasonable size and species to meet the total required caliper inches and complement percentages.

(cont.)

Grading and Drainage

Proposed site grades are generally between 1.2% and 4.0% within drive aisles and parking areas. The northwest side of site has a retaining wall and serves as a natural separation from the wetland. The parking lot and drive aisles will be bounded with curb and gutter to collect stormwater runoff and direct it to the onsite stormwater infiltration basins. Overall grades within greenspace areas are typically kept at 5:1, though some areas may steepen to a maximum of 3:1.

Stormwater Treatment

The City of St. Francis requires stormwater treatment to be provided for all new development. The site has an existing wet stormwater pond with a normal water level of 904' in the southeast corner. This pond serves the adjacent residential development and was designed to accommodate additional runoff from future residential on the site. The proposed development will install three infiltration basins in the northeast and southwest areas of the property. These basins will provide treatment for the runoff generated and will infiltrate the instantaneous runoff volume of one inch over the new impervious surfaces on site. The southwest basin is split into two sub basins in order to avoid stormwater encroachment over the utilities running to the south. Both infiltration basins will discharge to the existing pond which will be utilized for rate control. The existing outlet for the pond will be re-aligned to avoid conflicts with the proposed building. Discharge rates will be less than existing runoff rates for all design storms through the existing pond and proposed outlet control structures.

Per the Minnesota Pollution Control Agency, infiltration basins provide 100% removal efficiency of all pollutants within the infiltrated stormwater volume. The City of St. Francis requires no increase in the amount of total suspended solids and total phosphorous from the site. A P8 model showing the average annual net reduction of pollutant loading from the site has been included in the Stormwater Memo. The proposed infiltration basins provide an overall reduction of pollutants within the stormwater runoff via infiltration of the required water quality volume. Though soils are typically type A throughout the site, type B was used for conservative modeling purposes.

Utilities

The proposed facility will connect to existing City sanitary and water lines within the public utility easement along Eldorado Street NW to the south. The existing lines have capacity to serve the proposed development.

The 8" PVC watermain will be looped to the existing 8" watermain within the public utility easement on the northeast corner of the property. The proposed 6" combined water service will tee off of the proposed watermain. The water service will split internally for domestic potable and fire service flows. The building will be sprinklered. One new hydrant is proposed on the northeast corner of the building, which provides full building coverage and fire access. An existing hydrant in the northeast corner of the site will be relocated adjacent to the proposed entrance drive.

(cont.) The existing sanitary stubs to the site are within a public utility easement. The proposed sanitary is an 8" PVC main that will connect to and extend the public sanitary main that serves the adjacent residential properties. This main will be extended to the front of the proposed building and terminated with a manhole. The proposed sanitary service for the facility will be a 6" PVC service to this manhole.

Both the proposed 8" watermain and 8" sanitary main are within a proposed public utility easement per the section below.

Site lighting will be provided via pole mounted fixtures around the perimeter of the parking lot and site entrance. Pole height will be limited to 25 feet. Additional decorative pole mounted fixtures at the building entrance and wall mounted fixtures around the building will be added as necessary as design progresses.

Easements

The site currently has easements that were platted to serve the proposed development from the initial rezoning during May of 2013. These easements include a 30' wide Public Utility and City Utility Easement (Doc. No. 532481.002) that overlaid the proposed public watermain and sanitary, a 24' wide Access Easement (Doc. No. 53248.002) that provided access to the existing stormwater pond, and a 20' wide Public Drainage and Utility Easement that overlaid the proposed outlet from the existing stormwater pond to the wetland.

All three of these easements were platted with the original design from 2013. The new building layout and site orientation is not conducive to the reuse of these existing easements. For the proposed design, all three easements are to be vacated and new easements are proposed. The proposed easements serve the same purpose as the existing easements, simply with slightly different alignments to serve the new facility. An easement vacation exhibit and new legal descriptions of the proposed easements are included with this submittal.

St. Francis Meridian Behavioral Health Development Schedule

- April 2018 – CUP Application to the City of St. Francis
- Summer 2018 – Building Permit Application
- Fall 2018 – Begin Construction
- Spring 2019 – Building occupancy
- Spring, 2019 – Building occupancy

Chemical Dependency Treatment Center Standards:

- There are no specific CUP standards listed in code for this type of conditionally permitted use in the R-4 district. All general CUP standards will therefore be the City's guiding review criteria.

CUP Standards
Review:

Issuance of a CUP requires an analysis of the proposed use against the specific review criteria established in code. Staff has reviewed the City's criteria for conditionally permitted uses, and we offer the following analysis for consideration:

General review Criteria (Section 10-6-3):

1. *The proposed action has been considered in relation to the specific policies and provisions of and has been found to be consistent with the Official City Comprehensive Plan.*

Staff Comment: The city's Comprehensive Plan guides this property for high-density residential, and the corresponding zoning district for this land use classification is R-4. Per the zoning ordinance, Chemical Dependency Treatment Centers are a conditionally permitted use in this zoning district, so the proposed use is consistent with the City's Comprehensive Plan. **Criteria met.**

2. *The proposed use is or will be compatible with present and future land uses of the area.*

Staff Comment: The site is adjacent to the Meadows of St. Francis Townhome Development which is only partially developed to the south of the subject site. Proposed parking on this site will come within 80 feet of one existing residence, and the proposed building will be a full 250 feet from the nearest residence. These distances combined with the proposed landscaping along the southern property boarder should provide adequate separation between the two land uses. **Criteria met.**

3. *The proposed use conforms with all performance standards contained in this Ordinance.*

Staff Comment: The following is a summary of the various performance standards listed in code (see section 10-6-4):

- a) *The use and the site in question shall be served by a street of sufficient capacity to accommodate the type and volume of traffic which would be generated and adequate right of way shall be provided.*

Staff Comment: In 2013, previous staff completed an analysis to compare the proposed use to the townhomes that were previously contemplated for this area. It was determined that the treatment center would generate approximately 327 trips/day for a 50 employee as compared to the 375 trips per day that were anticipated if townhomes were constructed. Even with the slight uptick in employees as proposed by the new plan, the traffic numbers will still be very similar to the originally anticipated use for this site. **Criteria met.**

(cont.)

- b) *The site design for access and parking shall minimize internal as well as external traffic conflicts and shall be in compliance with Chapter 19 of this Ordinance.*

Staff Comment:

- Site Access – The proposed site access off the intersection of Cree Avenue NW & 229th Ave NW in the northwestern corner of the Meadows Development will keep most traffic to and from this site away from the existing townhomes to the south as traffic will naturally come directly from the highway. Dead-ending Eldorado St NW within the existing townhome development will also push entering and exiting traffic to 229th.
- Internal Traffic Flow & Conflicts – The City Engineer has reviewed the plans and did not find any issues of note regarding internal traffic flows and/or conflicts. It was requested that all existing & proposed traffic controls (i.e. stop signs) be shown on future plans for review and approval.
- Parking – The City previously determined in 2013 that the applicable requirement for this use is one (1) space per six (6) patient beds, plus one (1) space per employee on the largest work shift; so we are holding this revised proposal to the same standard. There are sixty-eight (66) spaces proposed on site, and a total of approximately 55 employees working at the facility. Even if the largest shift included $\frac{3}{4}$ of the employees, the proposed number of spaces would still be sufficient.
- Parking Setbacks – All proposed parking is well inland to the site, so staff has no concerns about setbacks.

Criteria met with conditions.

- c) *If applicable, a pedestrian circulation system shall be clearly defined and appropriate provisions made to protect such areas from encroachment by parked or moving vehicles.*

Staff Comment: A pedestrian circulation system/plan is unnecessary with this application. In general, there does not appear to be anything out of the ordinary with the parking lot design, and a walkway is being provided adjacent to the building to provide direct access to all parking areas. **Criteria met.**

- d) *Adequate off-street parking and off-street loading shall be provided in compliance with Chapter 19 of this Ordinance.*

Staff Comment: As previously noted, the site meets parking requirements as designed. No off-street loading docks are required by code. A drive up area leading to a standard door is being provided for deliveries. **Criteria met.**

(cont.)

- e) *Loading areas and drive-up facilities shall be positioned so as to minimize internal site access problems and maneuvering conflicts, to avoid visual or noise impacts on any adjacent residential use or district, and provided in compliance with Chapter 19 of this Ordinance.*

Staff Comment: The drive-up/unloading point is well screened from adjacent properties, so staff sees no problem with the design. We do not anticipate any problems with site access, on-site maneuvering, or nuisances as a result of the site plan layout. **Criteria met.**

- f) *Whenever a non-residential use is adjacent to a residential use or district, a buffer area with screening and landscaping shall be provided in compliance with Chapter 20 of this Ordinance.*
- g) *General site screening and landscaping shall be provided in compliance with Chapter 20 of this Ordinance.*

Staff Comments:

- Per section 10-20-4(B)(5)(b)(1), the required number of trees is equal to the gross square footage of the building divided by 320. Based on a 26,165 square foot building, the required number of trees is 82. Per the proposed planting plan, 85 trees (or 170 caliper inches of tree) are proposed to be planted around the site periphery which meets the City's minimum requirements.
- Regarding the mix of trees and shrubs, the planting plan is also conforming to code as 37.5% of the plantings are proposed to be deciduous (minimum 25% required), 44.2% are proposed to be coniferous (minimum 25% required), and 18.3% are proposed to be ornamental (minimum 10% required).
- Multiple species of deciduous and evergreen trees are proposed as required.
- Spacing/opacity requirements appear to be met.
- As a condition of approval, all open areas of the site not occupied by the building, parking, or other improvements shall be either seeded or sodded as may be approved by the City Engineer.

Both criteria met.

(cont.)

- h) *All exterior lighting shall be so directed so as not to cast glare toward or onto the public right of way or neighboring residential uses or districts, and shall be in compliance with Section 10-16-8 of this Ordinance.*

Staff Comment: The revised photometric plan that shows that proposed lighting is substantially in compliance with City standards as it does not exceed 0.4 foot candles on adjacent residential property at the shared property line. A minor concern exists in the projects NE corner where light is right at or over the threshold near the property line. To ensure there are no future issues, lights in this area will be required to include additional controls to mitigate glare to the north.

Regarding the proposed fixtures, all must contain a cut-off to direct light at an angle of 90 degrees or less downward, and each free-standing fixture shall not exceed 25' in height. **Criteria met with conditions.**

- i) *Potential exterior noise generated by the use shall be identified and mitigation measures, as may be necessary, shall be imposed to ensure compliance with Section 10-16-12 of this Ordinance.*

Staff Comment: Staff does not anticipate any problems with exterior noise as a result of the proposed use. **Criteria met.**

- j) *The site drainage system shall be subject to the review and approval of the City Engineer.*

The City Engineers have reviewed the proposed storm water management plan provided by the applicant, and their initial analysis it outlined in the attached Engineer's memo. Revisions and changes as outlined in the memo for all engineering items should be a condition of any approval recommendation.

Criteria met with conditions.

- k) *The architectural appearance and functional design of the building and site shall not be so dissimilar to the existing or potential buildings and area so as to cause a blighting influence. All sides of the principal and accessory structures are to have essentially the same or coordinated, harmonious exterior finish materials and treatment.*

Staff Comment: The proposed building incorporates high-quality materials throughout in conformance with the requirements of code. All faces of the building are also treated consistently. **Criteria met.**

(cont.)



Color rendering

- l) All signs and informational or visual communication devices shall be in compliance with Chapter 23 of this Ordinance.*

Staff Comment: The applicants have identified the location for an entrance monument near the entrance at 229th Avenue NW. Per section 10-23-8(D), one permanent area identification sign is allowed not to exceed sixty (60) square feet in sign area and ten (10) feet in height. A future sign permit application will need to show conformity to this and all other applicable code standards. If desired, one business wall sign of up to two square feet can also be permitted on the structure. **Criteria met.**

- m) The use and site shall be in compliance with any Federal, State or County law or regulation that is applicable and any related permits shall be obtained and documented to the City.*

Staff Comment: Staff would recommend that any approval of this CUP be conditioned on successfully adherence to all applicable governmental regulations and obtaining of all necessary permits to authorize construction and establishment of the use. **Criteria met.**

- n) Any applicable business licenses mandated by the City Code are approved and obtained.*

Staff Comment: Staff would recommend that any approval of this CUP be conditioned on successful acquisition of any needed business licenses mandated by City Code. **Criteria met.**

(cont.)

- o) The hours of operation may be restricted when there is judged to be an incompatibility with a residential use or district.*

Staff Comment: The nature of this use dictates that it will be a 24-hour a day, 7-day a week facility, and the use has already been deemed conditionally permitted in this zoning district. Provided all other requirements are met or can be met with conditions, there will be no incompatibility. **Criteria met.**

- p) The use complies with all applicable performance standards of the zoning district in which it is located and where applicable, any non-conformities shall be eliminated.*

Staff Comment: All proposed structures (and the use itself) will be conforming to R-4 performance standards; and all setbacks, height, and impervious surface standards are being met. Subject to all engineering requirements, this **criteria is met.**

- q) All additional conditions pertaining to a specific site are subject to change when the Council, upon investigation in relation to a formal request, finds that the general welfare and public betterment can be served as well or better by modifying or expanding the conditions set forth herein.*

Staff Comment: As a condition of approval, the applicant shall be put on notice that modifications or expansion to conditions for public safety or public betterment may be considered by Council at a future date. **Criteria met.**

- 4. *The proposed use can be accommodated with existing public services and will not overburden the City's service capacity.***

Staff Comment: The City Engineers fully reviewed the sewer and water system serving this site, and their initial analysis it outlined in the attached Engineer's memo. Revisions and changes as outlined in the memo for all engineering items should be a condition of any approval recommendation. **Criteria met with conditions.**

- 5. *Traffic generation by the proposed use is within capabilities of streets serving the property.***

Staff Comment: There is no evidence to suggest that anticipated traffic to and from the site cannot be accommodated by the existing road network. As previously indicated, traffic for the previously anticipated townhomes was estimated to be 375 trips per day as compared to the 327 trips per day for the proposed use at 50 employees. Even with the slight uptick in employees proposed with this plan, traffic numbers should still be very similar. **Criteria met.**

***Additional
Information:***

- Even though the project does not directly front on Highway 47, MnDOT was provided with the development plans and was asked to provide if desired. No feedback was offered.
- The existing access and drainage & utility easements previously created to accommodate the 2013 plan have already been vacated subject to approval of this CUP and replacement with new easements.

***Engineering
Review:***

- An Engineering review memo of the proposed plans was penned by Hakanson Anderson and is attached to this report.

***Public
Comment:***

- Staff has not received any feedback from surrounding property owners as of 5/9/18.
- The Planning Commission held a public hearing on this matter at their meeting on December 20, 2017, and the following is a summary of the public comments received:
 - Further traffic increases on Highway 47 will eventually require that an overpass be provided for kids to get to school. Is that being examined?
 - One resident applauded the number of trees that were being planted, but expressed concern about how the use is run (i.e. is this a day-treatment facility or are these full-time residents?). The applicant clarified that the facility will house full-time residents who are there voluntarily, and there are procedures in place for both the intake of new patients, and the departure of existing patients.
 - Two residents expressed concern about the clients and asked if patients get out, will they harm people? One was also concerned that a family member may return to town if they could get help in St. Francis.
 - One resident stated support for the facility and indicated more treatment centers are needed in society today.
 - One resident expressed concern about lighting, but was satisfied when told the plans showed conforming light levels at the property lines.
- There was no new feedback offered up at the second public hearing held on 6/15/18.

***Planning
Commission
Rec:***

- The Planning Commission is recommending approval of the requested CUP based on the findings of fact listed in the report subject to the recommended conditions.

Conclusion:

The application is requesting a Conditional Use Permit to establish, construct, and maintain an "In-patient chemical dependency treatment center" on Lot 1, Block 1, Meadows of St. Francis 2nd Addition.

Staff & PC Recommendation: APPROVAL with conditions

**Commission
Options:**

The City Council has the following options:

- A) APPROVAL OF THE REQUEST based on the applicant's submittals and findings of fact.
- B) DENIAL OF THE REQUEST based on the applicant's submittals and findings of fact.
- C) TABLE THE ITEM and request additional information.
- Based on an application date of 4/16/18, the 60-day review period for this application expires on 6/15/2018. This deadline can be extended an additional 60 days if more time is necessary.

**Template Denial
Motion:**

(not recommended)

- "I move that we deny the requested conditional use permit based on the following findings of fact:"
 - *(provide findings to support your conclusion)*

**Template Approval
Motion:**

RECOMMENDED

- "I move we approve the requested conditional use permit based on the findings of fact listed on pages 15 & 16 of the report subject to the conditions listed on pages 16 & 17 as may have been amended here tonight."

**Suggested Findings
of Fact:**

1. The subject site is guided for residential use, and in-patient chemical dependency treatment centers are a conditionally permitted use within the R-4 zoning district.
2. The proposed separation distance between the facility and nearby residential uses coupled with proposed landscaping will ensure this permitted use will continue to be compatible with surrounding lands.
3. The proposed direct connection to 229th Avenue NW will ensure traffic is not an issue and is consistent with anticipated traffic levels for this site.

- (cont.)
4. Proposed parking has been deemed to be adequate for the use and is consistent with the City's minimum parking standards.
 5. All proposed buildings and parking spaces meet required setbacks.
 6. Proposed landscaping materials are acceptable, and the proposed planting plan is in conformance with City standards.
 7. Proposed lighting will not cast glare onto the public right-of-way or adjacent property in a manner that is inconsistent with code or that cannot be managed.
 8. The proposed building materials to be used are of high quality and are consistent with City standards for residential structures.
 9. Stormwater plans will be in conformity with local standards once all engineering issues are addressed, and post-development runoff rates will be less than existing run-off rates once the project is complete.
 10. The proposed use can be adequately served by the City's sewer and water infrastructure, and will not be a burden on city services.

***Recommended
Conditions:***

1. Construction shall be consistent with all plans approved as part of this conditional use permit except as required to be updated by City Staff to conform to conditions of approval.
2. All changes requested by the City Engineer in their review memo dated 5/8/18 shall be implemented on the final plans prior to permits being issued.
3. Minor updates to the approved plans as may be needed to avoid encroachment(s) into final drainage and utility easements, meet required setbacks, or to improve the site design shall be worked out with City Staff (i.e. final sign placements) during the permitting process.
4. An NPDES Construction Permit from the MPCA shall be obtained by the applicant.
5. All exterior lighting shall include cut-offs to direct light at an angle of 90 degrees or less downward, and each free-standing fixture shall not exceed 25' in height.
6. Additional shielding or other appropriate measures shall be provided on lights in the NE corner of the property to ensure spillover light is compliant at the northern property line.
7. The use shall be in compliance with all Federal, State, or County laws and regulations that are applicable, and all related permits shall be obtained and documented to the City.

- (cont.)
8. The property owner shall adhere to all applicable governmental regulations, secure all necessary licenses, and shall obtain all necessary permits to authorize construction, establishment, and continued operation of the proposed use.
 9. The applicant shall enter into a development agreement with the city specifying the responsibilities, securities, and timeline for project completion.
 10. A financial security (or securities), shall be provided to the city to ensure the installation of proposed site improvements including but not limited to; landscaping, lighting, grading, and stormwater management.
 11. The applicant shall recognize that modifications or expansion to conditions for public safety or public betterment may be considered by Council at a future date.

cc: Kevin Pfeiffer, Wenck



**ENGINEERING REVIEW
for the City of St. Francis
by
Hakanson Anderson**

Review No. 2

Submitted to: City of St. Francis

cc: Joe Kohlmann, City Administrator
Benjamin Gozola, City Planner
Kate Thunstrom, Community Development Director
Paul Teicher, Public Works Director
Craig Jochum, City Engineer

Reviewed by: Shane Nelson, Assistant City Engineer

Date: May 8, 2018

Proposed Project: Meridian Behavioral Health

Street Location: Lot 1, Block 1 Meadows of St Francis 2nd Addition

Applicant: Jolene Hoysler, Meridian Behavioral Health

Owners of Record: Anoka Property Holdings, LLC

Purpose: Residential Treatment Center

Jurisdictional Agencies: City of St. Francis, MPCA, MDH
(but not limited to)

Permits Required: City Approval, NPDES Construction Permit, MPCA Sanitary
(but not limited to) Sewer Extension, MDH Water Extension

INFORMATION AVAILABLE

Meridian Behavioral Health Submittal Stage Plans, dated 11/16/17, Revised 4/16/18, prepared by Wenck Associates and Pope Architects

Meridian Behavioral Health Stormwater Management Calculations, dated 4/16/18, prepared by Wenck Associates

Conditional Use Permit application, dated 4/16/18

Easement Documentation, dated 4/16/18, prepared by Wenck Associates

City Comment Response, dated 4/16/18, prepared by Wenck Associates

SITE ACCESS / VEHICULAR TRAFFIC

1. The site is proposed to gain access from 229th Avenue and Cree Street, which are public streets.
2. The access road is aligned center-line to center-line with 229th Avenue, which is encouraged. Applicant shall depict existing traffic controls (i.e. stop signs) so it can be determined if any changes are necessary.

SEWER AND WATER UTILITIES

1. Sanitary sewer to the site is available at Eldorado Street, as shown.
2. The extension of the sanitary sewer within the subject property will be considered a private service and it will be the applicant's responsibility to ensure long term operation and maintenance.
3. There is an existing sanitary sewer that is in-line with a northerly extension of Dakota Street. The change in use for this property necessitates that this manhole and sewer pipe be addressed. All manholes must be accessible by maintenance equipment via a paved surface. Consider removing approximately 100' of sewer pipe and constructing a new manhole to the south if the existing sewer line will not be utilized for this development.
4. Domestic water is available to the site at Eldorado Street and the northerly extension of Dakota Street, as depicted in the plans.
5. A watermain loop is proposed through the site, which will be publicly maintained after acceptance. The remaining watermain, including the new hydrant on the north side of the building, will be a private utility and it will be the applicant's responsibility to ensure long term operation and maintenance.

GRADING, DRAINAGE AND EROSION CONTROL

1. The storm sewer between STMH-2 and STMH-1 is at an approximate invert elevation of 905 fifty feet east of STMH-2, and the ground elevation is also at an approximate elevation of 905. Therefore, the pipe will have no cover in its current proposed location. Please revise.

2. The Landscape Plan depicts trees directly over the storm sewer pipe from STMH-2 to STMH-1. Consider shifting pipe to avoid conflict or revising Landscape Plan.
3. The plans shall be revised to label the access route to the outlet structure for the existing pond.
4. The limits of the silt fence and landscaping area shall be extended on the south side of the existing Pond A approximately 160' east to include the disturbance associated with the proposed storm sewer.
5. It appears that the elevations for Detail 1, Sheet C-800 were not updated to reflect the revised pond designs. Please revise.

STORMWATER MANAGEMENT

1. The infiltration basins and internal storm sewer system, once constructed, will be a private system. The property owner will be required to enter into a maintenance agreement to ensure the long term operation and maintenance.
2. The storm sewer outlet for existing Pond A that is proposed to be relocated is a public utility and must be accessible for maintenance within the easements. Given the 15' depth, the proposed 20' wide easement is not sufficient to allow future maintenance and/or replacement of this pipe. Revise the easement to a 40' width, offset on the pipe (25'-pipe-15') to allow a 1:1 slope on the north and east side and sufficient space for a 1:1 slope plus soil stockpile on the south and west side.

OTHER ITEMS

1. The plans are not certified and are labeled "Not for Construction". Final Plans must be certified and submitted for review.

SUMMARY AND/OR RECOMMENDATION

1. We recommend approval subject to the conditions as listed herein.

CITY OF ST. FRANCIS
ST. FRANCIS, MN
PLANNING COMMISSION MINUTES
December 20, 2017

1. **Call to Order:** The Planning Commission meeting was called to order at 7:00 pm by Chairman Steinke.
2. **Roll Call:** Present were Ray Steinke, Todd Gardner, Joel Olson, Greg Zutz, Julie Morin and William Murray. Absent: Brittney Berndt. Others in attendance: Councilman Rich Skordahl, Kate Thunstrom Community Development Director, Ben Gozola Sambatek/City Planner
3. **Adopt Agenda:** Motion by Zutz second by Olson to approve the agenda. Motion carried 6-0.
4. **Approve Minutes:** Motion by Olson second by Gardner to approve the November 17, 2017 minutes. Motion carried 6-0.
5. **Public Comment:** None received
6. **Public Hearing:**

a. **Planned Unit Development (PUD) Senior Living Facility**

- Additional handout provided to Commission, Hakanson Anderson Engineering Comments and Wenck project narrative.
- Gozola reviewed packet. Identified that historical was not reviewed and is dependent on first approvals review. Approval by a 4/5th vote is required by Council. Based on items identified, Staff recommends approval to forward recommendation to Council.
- Public Hearing Opened at 7:10, nobody came forward for comment, Closed at 7:11 p.m.
- No further question or discussion from Commission

Olson made a motion to recommend the City Council approve the requested planned unit development amendment based on the findings of fact in the staff report, and subject to the conditions listed on pages 10 and 11 of the existing staff report. No amendments made.
Second by Steinke, Motion Passed 6-0

→ b. **Conditional Use Permit - Meridian Behavioral Health**

- Gozola reviewed project. This had been previously approved in 2013. A simple majority vote by Council is required to pass. Onus is on the City to prove not supported by existing Code as it is approved within the zoning district as a Conditional Use. CUP standards have been met or can be met with conditions.
- MNDOT has chosen not to provide feedback on the project. A request for an opinion had been forwarded to them even though the facility is not directly located on the State Hwy.
- Public Hearing Opened 7:24 p.m.
 - Chris Vee 4106 DeGardner Circle, comments: concerns with crosswalk at Pederson and traffic increase
Councilman Skordahl identified that the Mayor and Staff are working with the State to address crossing and traffic concerns at Pederson
 - Liz Fairbanks 24360 Yukon St, comments: Hwy 47 is being looked at but is a state hwy, applaud with the number of trees being added. Question on the type of treatment facility and individuals being served.
 - John Seymore with Meridan: this is a voluntary treatment center, Rule 31 facility, serving adults. Traffic will be family and staff. Estimate 50 employees but they will be in shifts as the facility is 24 hour operation. Residents are transported and not coming and going.

People are supervised. People leave with a discharge plan. Facility is secure to provide privacy to the individuals seeking treatment.

- o Jim Hollerbach 24476 St. Francis Blvd, comments: concerned clients will bring harm to the community and that the taxpayers are paying for all the growth.
- o Wanita Walker 4357 241st, comments: that with this clientele will come problems, Anoka County should be working on this not the City, does not want this brought to our backyard.
- o Joe Muhlbauer 3459 229th, comments: anyone can be a danger to the community on or off drugs, appreciates the public comments and feedback, disagrees on comments against the project as these facilities are needed.
- o Meridian Architect, comments: works on these projects for Meridian, existing facility in Pine City, these people are already in the community and being drug dependent does not identify mental health concerns and vice versa.
- o Fern Wahlquist, Townhome Development, question on lighting and signage on the new development.

Ben, the project has submitted a lighting plan and it is not exceeding the threshold identified in code. The sign will be one at the entrance of the facility.

- Public Hearing Closed 7:38 p.m.

- Zutz requested information on the program relying on the police department services.
 - Meridian, the facility will have staff that supervises full time, police department will be called based on protocol if necessary.
- Morin addressed public that if they still have issues to address with the City to reach out to the City Council.

Olson, thanked the public for providing comment. Based on information provided by Staff, recommended approval of the request based on the applicant's submittals and findings of fact.

Second by Gardner, motion passed 6-0

- c. Conditional Use Permit – Woodhaven

- Gozola reviewed the packet. Additional handout provided: MNDOT letter. Unique lot with east side ROW. Two units are affected by the ROW and could be reviewed as a variance. MNDOT will not allow access to Hwy 47.
- Steinke questioned storage:
 - o Mike Schrader, ALS Properties, comments: phase 1 was purchased in 1992 and the last phase was completed by 1999. Storage is provided in two ways. There is a storage area in which all residents can utilize for access storage and each unit is designed and provided a garage. Garages are shared garages allowing 12X22 with a combined lot line. All boats and other items are expected to be in the garage and not allowed to be stored in the driveway.
- Morin requested information on the life expectancy of these types of units.
 - o Schrader, depends on how the product was built. Units are replaced regularly, some have 30 year mortgages showing lenders expect a life of the unit beyond that. These are lifecycle housing and not trailers. If they become depleted they are removed. Units are built to federal standards.
- Schrader identified that maintenance staff live on site and units are well managed. Homes that will be brought in for the new section are multi-sectional and priced between \$75k and \$100k.
- Murry asked about the need for a storm shelter
 - o Schrader, yes they will be building one on this plan to accommodate this area specifically.

- Public Hearing Opened 8:03 p.m.

- o Liz Fairbanks, 24360 Yukon St, want businesses on a main street. Fine with this idea as the city needs the people to bring the water down. Hwy 47 should be commercial.
- o Jim Hollerbach 24476 St. Francis Blvd, is not aware of Comp Plan and mapping, fear of water and sewer.



BUILDING CLINIC PERSPECTIVE



**Meridian Behavioral Health
St. Francis Facility**

ST. FRANCIS, MN



MERIDIAN
BEHAVIORAL HEALTH



Responsive partner. Exceptional outcomes.

Application Date:	04/16/2018
Fee: N/A	Escrow: N/A

PERMIT APPLICATION

PERMIT YOU ARE REQUESTING:

☒ **CONDITIONAL USE**

☐ **INTERIM USE**

PROPERTY INFORMATION If multiple properties, attach separate sheet	PARCEL ID #: 06-33-24-11-0084		COMP PLAN FUTURE LAND USE: (HD) Apartments	
	LEGAL DESCRIPTION: Lot 1, Block 1, Meadows of St. Francis 2nd Addition		ZONING DISTRICT: R4 - High Density Residential	
	PROJECT ADDRESS: N/A		LOT SIZE: 8.2 Acres	
OWNER INFORMATION	NAME: Jolene Hoysler - Meridian Behavioral Health, LLC			
	ADDRESS: 550 Main Street Suite 280			
	CITY: New Brighton		STATE: MN	ZIP: 55112
	PHONE: 763-670-9396		EMAIL: jolene.hoysler@meridianprograms.com	
APPLICANT If different than owner	NAME:		PHONE:	
DESCRIPTION OF REQUEST	Approval of a conditional use permit allowing Meridian Behavioral Health to build a facility as detailed in the attached submittal package.			
REASON FOR REQUEST	The proposed use of an in-patient chemical dependency treatment center is an approved conditional use within the R-4 District.			
ORDINANCE REQUIREMENT	R-4, High Density Residential District, 10-59-4: Conditional Uses			

Submittal Materials

The following materials must be submitted with your application in order to be considered complete. A complete application must be made by the application deadline for the Planning Commission meeting for which you wish to be heard. If you have any questions or concerns regarding the necessary materials, please contact the Community Development Department.

APPLICATION SUBMISSION MATERIALS

Survey, site plan, and development plans. Three (3) sets of large scale drawings; one legible set of 8 1/2" x 11" or 11" x 17" reductions. Additional sizes and copies may be requested and required by the City for application completion. The following information must be included:

- ☒ Map or plat showing the lands proposed for the conditional use permit and all land within 350 feet of the boundaries of the property.
- ☒ Survey of the property showing all property lines, topography, existing and proposed structures (including dimensions and distances to property lines and other buildings), existing streets, alley, private roads, and fire lanes and easements.
- ☒ Access points, driveways, and parking areas including striping and number of spaces.
- ☒ Landscaping and ground cover including existing to be retained, existing to be removed, and proposed -- all identified by size, type species, and quantity.
- ☒ Grading, drainage, and stormwater plans with existing and proposed topography prepared by a professional civil engineer registered in the state and adopted.
- ☒ Utility plans prescribing locations for city water, sewer, fire hydrants, manholes, power, telephone, and cable lines, natural gas mains, and other service facilities prepared by a professional civil engineer registered in the state and adopted.
- ☒ General floor plans and elevations for all existing and proposed structures.
- ☒ Proposed signage.
- ☒ Site lighting.
- ☒ A legend identifying the legal description, size of parcel, use(s) and square footage, number of units and density of residential, building height, floor area ratio, ground floor area ratio, impervious surface ratio, setbacks on all sides, graphic scale, north point, and usable open space.

Statement acknowledging that you have contacted the other governmental agencies such as Watershed Districts, County Departments, State Agencies, or others that may have authority over your property for approvals and necessary permits.

Names, addresses, and signatures of all owner(s), and any other person having legal interest, of the property.

Permit application form completed, including questionnaire answers.

Permit Request Supplement

Paid application fee and escrow

MATERIALS THAT MAY BE REQUIRED UPON THE REQUEST OF THE CITY

Survey of the property: An official survey, by a licensed surveyor, must be submitted with the application. The survey shall be scalable and in an 11" x 17" or 8 1/2" x 11" format.

Electronic copy of all submittal documents

Any other materials as deemed necessary to help in the review of the application

Application fees and expenses: by signing this application form, the applicant agrees that all fees and expenses incurred by the City for the processing of this application, including costs for professional services, are the responsibility of the property owner to be paid immediately upon receipt or the City may approve a special assessment for which the property owner specifically agrees to be assessed for 100 percent per annum and waives any and all appeals under Minnesota Statutes 429.081 as amended. All fees and expenses are due whether the application is approved or denied or withdrawn. Escrow fees collected at the time of application may not cover actual expenses, any additional fees will be billed.

I, the undersigned, hereby apply for the considerations described above and declare that the information and materials submitted in support of this application are in compliance with adopted City policy and ordinance requirements are complete to the best of my knowledge. I further understand that the IUP application will be processed in accordance with the established City review procedures and Minnesota Statutes 15.99 as amended, at such times as it is determined to be complete. Pursuant to Minnesota Statutes 15.99, the City will notify the applicant within fifteen (15) business days from the filing date of any incomplete or other information necessary to complete the application. Failure on my part to supply all necessary information as required by the City may be cause for denying this application.

This application must be signed by all owners of the subject property or an explanation given why this is not the case. *We, the undersigned, have read and understand the above.*

Signature of Applicant

Date

4/10/2018

Signature of Applicant

Date

Signature of Owner (if different than Applicant)

Date



April 16, 2018

Shane Nelson

Assistant City Engineer
23340 Cree Street NW
St. Francis, MN 55070

RE: Response to Meridian Behavioral Health Engineering Review
Emailed Comments for Planning Commission Dated December 12, 2017

Dear Shane:

This provides a response to review comments received December 12, 2017 on the Preliminary Civil Design Plans and application documents for the Meridian Behavioral Health Project proposed in St. Francis, MN.

For convenience, the received comments are provided in **bold** with our response provided below in *italics*.

Site Access / Vehicular Traffic

1. The Site is proposed to gain access from 229th Avenue and Cree Street, which are public streets.

Response:

Noted.

2. The access road is aligned center-line to center-line with 229th Avenue, which is encouraged. Applicant shall depict existing traffic controls (i.e. stop signs) so it can be determined if any changes are necessary.

Response:

There does not appear to be any existing traffic controls at the corner of Cree St NW and 229th Ave. A stop sign is proposed for outbound traffic from the project site. The approach of 229th Ave and St. Francis BLVD NW is controlled via a stop sign.

Sewer and Water Utilities

1. Sanitary sewer to the site is available at Eldorado Street, as shown.

Response:

Noted.

Shane Nelson
St. Francis – Assistant City Engineer
April 16, 2018



2. There is an existing sanitary sewer that is in-line with a northerly extension of Dakota Street. The grading plan depicts a berm in this area directly over the sewer manhole. All manholes must be accessible by maintenance equipment via a paved surface. Consider removing approximately 100' of sewer pipe and constructing a new manhole to the south if the existing sewer line will not be utilized for this development.

Response:

Removing the sewer pipe stubbed north from Dakota Street NW was not included in this project. Because the manhole and pipe are located in greenspace south of the entrance drive, it can be removed in the future without detrimental impacts to the site. Proposed grading limits have been revised to leave the greenspace around the manhole undisturbed.

3. Domestic water is available to the site at Eldorado Street and the northerly extension of Dakota Street, as depicted in the plans. A watermain loop is proposed through the site.

Response:

Noted.

4. Please add notes to "Tie into existing tracer wire" at water main connections.

Response

Notes to tie into existing tracer wire have been added on Sheet C-401 and C-402 where the proposed watermain connects to existing.

5. On Sheet C-401 – Note 20. Per City standards rod extensions are always required on gate valves. Please revise note.

Response:

Note 20 has been revised to require rod extensions per City standards.

Grading, Drainage, and Erosion Control

1. A 15' wetland buffer is required adjacent to the wetland in the northwest corner of the site. Please depict on the plans, including signage.

Response:

The limits of the wetland buffer have been shown on all plan sheets. Signage per City requirements has been added to the plans as shown on Sheet C-103, keynote "F".

2. The silt fence is depicted within the wetland buffer. Permanent restoration of the buffer is required. Please provide a site-specific restoration plan inclusive of seed mix and timing.

Response:

Shane Nelson
St. Francis – Assistant City Engineer
April 16, 2018



The silt fence has been removed from being within the wetland buffer. A small portion of the storm sewer will impact the wetland buffer. Wetland restoration plan including seed mix and timing has been added to the Landscape Plan on Sheet L-100 for the affected area.

3. Grading is proposed near Cree Street and 228th Avenue. Erosion Control (i.e. silt fence will be required in this area.

Response:

Erosion control has been added as necessary for the revised limits of grading on Sheet C-102.

4. The 2-Yr, 10-Yr, and 100-Yr HWL elevations shall be labeled on all ponds and wetlands on the Site.

Response:

The HWL information for Pond A has been added to all proposed sheets. The HWL information for the wetland is not included as the majority of the wetland is outside of the project limits. The proposed stormwater discharge rates to the wetland is less than existing for all design storms, therefore the HWL of the wetland will not exceed existing conditions.

5. The HWL shall be labeled on the infiltration basins.

Response:

The HWL for each basin has been added to all proposed design sheets.

6. Pond A outlet and outlet control structure must be accessible for inspection and maintenance. Access routes shall be a minimum of 10' wide, shall be clearly labeled on the plans and within an easement, and shall have a longitudinal gradient of 8% or less.

Response:

An access route has been provided from the west off of the project drive, as shown on Sheet C-103. Longitudinal gradient along the access route has been minimized to the extent practical. Existing grades to the existing structure exceed 4:1.

7. The infiltration basins do not appear to have 3' separation to groundwater, which is required. Please provide additional information and/or revise the design.

Response:

The infiltration basins have been raised to achieve a 3' separation from groundwater with a bottom elevation of 909'.

Stormwater Management

1. The infiltration basins and internal storm sewer system, will be a private system. The property owner will be required to enter into a maintenance agreement to ensure the long-term operation and maintenance.

Shane Nelson
St. Francis – Assistant City Engineer
April 16, 2018



Response:

Acknowledged. An operation and maintenance agreement will be coordinated with the City prior to finalizing construction documents.

2. Provide double ring infiltrometer tests to verify infiltration rates meet or exceed the designed rate.

Response:

Note 4 on Sheet C-800 has been added to dictate the infiltration testing requirement.

3. As noted, the infiltration basins shall not be constructed until the contributing area is stabilized and after constructed shall be tested to ensure infiltration rates are greater than or equal to stated design parameters.

Response:

Note 8 on Sheet C-800 details the timing requirement of the infiltration basins excavation.

4. Outlet structure OCS-4 requires 12" of water covering the inlet to provide sufficient skimming.

Response:

Outlet structure OCS-4 has been renamed to OCS-3. The inlet has been lowered to provide 12" of depth above the top of the inlet to provide sufficient skimming.

5. Detail 3-C800 does not match city standard skimmer detail. Please revise.

Response:

Previous detail 3-C800 skimmer grate has been removed and replaced with the City skimmer detail.

6. Riprap thickness (on detail 4-C800) must be at minimum equal to the largest rock size.

Response:

Detail 4-C800 has been revised to Class II riprap and 12" thickness.

7. It is unclear why two outlet structures are proposed for the southeast infiltration basin. Please explain.

Response:

The outlet control structure castings for the infiltration basins have been revised to the standard 48" skimmer and removed the need for additional inlet capacity for the southeastern basin. The design has been revised to show only one outlet structure.

Shane Nelson
St. Francis – Assistant City Engineer
April 16, 2018



8. Figure 3 – Proposed watershed map does not match grading plans provided in the civil set. Please revise.

Response:

Figure 3 – Proposed watershed map has been revised to match proposed grading plan.

9. Watersheds P1, P6, P3, and P4 do not match proposed grading as provided in the civil plans. Please revise.

Response:

Figure 3 – Proposed watershed map has been revised to match proposed grading plan.

10. FES 3 is too close to FES 7 and will result in short circuiting. Per City standards, separation is required to be 50% of the pond length.

Response:

FES 3 has been shifted east to achieve the required separation from FES 7.

11. Details for OCS-5 is mislabeled on the stormwater details.

Response:

Detail 2-C800 has been revised to match the plans and is now labelled OCS-3.

12. Stormwater table values for the proposed 10 year do not agree with the model calculations.

Response:

The revised SWMP has included the correct values for all design storms.

13. Provide water quality calculations and summarize in the narrative. The MIDS Calculator or P8 are acceptable methods.

Response:

A P8 model comparing existing and proposed conditions for water quality calculations has been conducted and is included in the SWMP.

Other Items

1. Final Plans must be certified.

Response:

Noted. Final plans will be certified prior to application for Building Permit.

Shane Nelson
St. Francis – Assistant City Engineer
April 16, 2018



2. Scale is not complete on existing conditions plan.

Response:

Existing conditions has been revised to include appropriate scale.

3. Cree Street is mislabeled on all sheets.

Response:

Cree Street has been revised on all sheets.

Should you have any questions, or need clarification of anything, please do not hesitate to call me at 763-479-4237.

Sincerely,

Wenck Enterprises, Inc.

A handwritten signature in black ink, appearing to read 'Steven Hegland'.

Steven Hegland, PE
Wenck Associates, Inc.
Project Engineer/Associate



April 16, 2018

Ms. Kate Thunstrom
Community Development Director
City of St. Francis, MN
23340 Cree Street NW
St. Francis, MN 55070

RE: Conditional Use Permit – Meridian Behavioral Health

Dear Ms. Thunstrom:

We are pleased to submit this application for a Conditional Use Permit for a chemical dependency treatment center located west of the intersection of Cree St. NW and 229th Ave. NW.

We applied for Site Plan approval for a similar building in November 2017 but did not go to City Council due to a building design change. We have maintained much of the approved building and site, although modifications have been made to meet updated stormwater and building operation requirements.

As discussed application fee and escrow required with submittal will be paid with existing escrow balance held by the city.

We are excited to bring this project to St. Francis and look forward to working with you to make it a success. If you have any questions about this package, please call Kevin Pfeiffer at 763-479-4253.

Sincerely,

Wenck Associates, Inc.

Kevin Pfeiffer, RLA
Landscape Architect

enc: project narrative, civil and architectural drawings

CC: Jolene Hoysler, Brian Sowada

April 16th, 2018

City of St. Francis
Kate Thunstrom
23340 Cree Street NW
St. Francis, MN 55070

Meridian Behavioral Health – Project Narrative

Background

The proposed Meridian Behavioral Health project is an in-patient dependency treatment center with 60 beds. The project legal description is Lot 1 Block 1 Meadows of St. Francis 2nd Addition located west of the intersection of Cree St. NW and 229th Ave. NW. The proposed building will be a single-story structure, at 27,403 GSF, with a separate accessory 700 GSF garage for storage. This facility will be opened 24 hours for in patient chemical dependency. The project site is currently zoned R4- High Density Residential and allows for an in-patient chemical dependency treatment center with a conditional use permit. The comprehensive plan has this area shown to be high density residential, which the proposed use is compatible.

Building

The proposed building will be a one-story wood frame construction over a concrete slab-on-grade. The exterior finishes include a brick masonry base with an architectural precast concrete sill. Above the base will be two types of cementitious siding, 7" lap side and 4" lap siding. The asphalt roof will be primarily Hip roof with three Gable roof areas, one designating the front entrance. The roof truss bearing will be 10' above finish floor. The roof ridge will be at 24'-0" above finished floor elevation. The facility will house 60 residents in 30 shared bedrooms (each room will be double occupancy) at each end with supporting Large & Small Group Rooms, Toilets and Offices. The central area will accommodate the controlled entrance, reception, medical, offices, fitness and dining services. Trash / recycling enclosure and storage garage will be located on the back side of the building. All entrances and exits will be controlled and monitored.

Signage

A signage package for the development will be forthcoming for separate approval. The building will have wall mounted signage in addition to a monument sign near the main entrance at intersection of Cree St. NW and 229th Ave. NW. All signage will adhere to City Code.

Site

The site is approximately 8.21 acres and is currently vacant and un-developed, with existing stormwater pond that will serve our proposed project along with surrounding residential development. The site is currently zoned as a R-4 High Density Residential, and is designed to meet zoning standards. Setbacks for the property are per the table below. The proposed facility will meet the required setbacks, with the exception of the first 125 feet of driveway entrance, which encroaches 7 feet into the side yard setback. This encroachment is due to the orientation of the adjoining 229th Ave NW. The proposed driveway is aligned center-to-center with 229th and

begins a gradual sweep south to enter the site. This sweep is designed with traffic safety in mind entering the facility. To avoid the side yard encroachment, either the entrance drive would be installed off center from 229th, or a severe turn immediately after entering the site would be required, which would increase risk for traffic entering and exiting the facility.

	Building Setback		Pavement Setback	
	Required	Proposed	Required	Proposed
Front Yard B-2 & R-3 (East)	60 Feet	60 Feet	30 Feet	30 Feet
Side Yard R-1 & R-4 (North)	50 Feet	110 Feet	25 Feet	25 Feet
Side Yard R-3 (South)	25 Feet	130 Feet	25 Feet	35 Feet
Rear Yard (West) 30 Feet from delineated wetland edge	30 Feet	60 Feet	30 Feet	30 Feet

Within the R-4 District, the total allowable impervious surface is limited to 50% of the site area. The proposed development has approximately 93,345 SF of impervious area, which includes the building footprint. The proposed impervious area is approximately 26% of the total site area.

Access and Parking

Site access is provided at the northeast corner of the site, off intersection of Cree St. NW and 229th Ave. NW. Entrance drive is 24' wide and runs south west leading to two parking areas.

Parking area in front of the building is for ADA accessibility and visitor parking. The second parking area south of the building is employee and overflow parking for visitors. A vehicular drop-off is located in front of the main entrance. The number of stalls provided has been sized to accommodate the largest number of employees per shift, 1 stall per every 6 beds provided in the facility, and additional visitor and overflow parking.

Deliveries to the building will follow the ring road around to the west side of the building at a dedicated delivery access. Delivery vehicles will load and unload externally from the building. The building trash enclosure is located on the west side of the building adjacent to the delivery drive. This ring road also serves as fire access for the facility.

Landscaping and Tree Preservation

Landscaping is designed to provide site character and blend into the surrounding existing tree canopy. We plan to preserve existing trees that fall outside of the grading limits and provide screening from abutting residential properties. The project has proposed a planting schedule which provides ample landscaping and screening for the site. The types (species) of new trees and minimum size specified meets the City ordinance. The proposed trees in addition to the existing trees that plan to be saved we are near the required percentages. An existing tree survey has not been completed, but after reviewing existing site aerial images the assumption is

that there are sufficient trees preserved and that they are of a reasonable size and species to meet the total required caliper inches and complement percentages.

Grading and Drainage

Proposed site grades are generally between 1.2% and 4.0% within drive aisles and parking areas. The northwest side of site has a retaining wall and serves as a natural separation from the wetland. The parking lot and drive aisles will be bounded with curb and gutter to collect stormwater runoff and direct it to the onsite stormwater infiltration basins. Overall grades within greenspace areas are typically kept at 5:1, though some areas may steepen to a maximum of 3:1.

Stormwater Treatment

The City of St. Francis requires stormwater treatment to be provided for all new development. The site has an existing wet stormwater pond with a normal water level of 904' in the southeast corner. This pond serves the adjacent residential development and was designed to accommodate additional runoff from future residential on the site. The proposed development will install three infiltration basins in the northeast and southwest areas of the property. These basins will provide treatment for the runoff generated and will infiltrate the instantaneous runoff volume of one inch over the new impervious surfaces on site. The southwest basin is split into two sub basins in order to avoid stormwater encroachment over the utilities running to the south. Both infiltration basins will discharge to the existing pond which will be utilized for rate control. The existing outlet for the pond will be re-aligned to avoid conflicts with the proposed building. Discharge rates will be less than existing runoff rates for all design storms through the existing pond and proposed outlet control structures.

Per the Minnesota Pollution Control Agency, infiltration basins provide 100% removal efficiency of all pollutants within the infiltrated stormwater volume. The City of St. Francis requires no increase in the amount of total suspended solids and total phosphorous from the site. A P8 model showing the average annual net reduction of pollutant loading from the site has been included in the Stormwater Memo. The proposed infiltration basins provide an overall reduction of pollutants within the stormwater runoff via infiltration of the required water quality volume. Though soils are typically type A throughout the site, type B was used for conservative modeling purposes.

Utilities

The proposed facility will connect to existing City sanitary and water lines within the public utility easement along Eldorado Street NW to the south. The existing lines have capacity to serve the proposed development.

The 8" PVC watermain will be looped to the existing 8" watermain within the public utility easement on the northeast corner of the property. The proposed 6" combined water service will tee off of the proposed watermain. The water service will split internally for domestic potable and fire service flows. The building will be sprinklered. One new hydrant is proposed on the northeast corner of the building, which provides full building coverage and fire access. An

existing hydrant in the northeast corner of the site will be relocated adjacent to the proposed entrance drive.

The existing sanitary stubs to the site are within a public utility easement. The proposed sanitary is an 8" PVC main that will connect to and extend the public sanitary main that serves the adjacent residential properties. This main will be extended to the front of the proposed building and terminated with a manhole. The proposed sanitary service for the facility will be a 6" PVC service to this manhole.

Both the proposed 8" watermain and 8" sanitary main are within a proposed public utility easement per the section below.

Site lighting will be provided via pole mounted fixtures around the perimeter of the parking lot and site entrance. Pole height will be limited to 25 feet. Additional decorative pole mounted fixtures at the building entrance and wall mounted fixtures around the building will be added as necessary as design progresses.

Easements

The site currently has easements that were platted to serve the proposed development from the initial rezoning during May of 2013. These easements include a 30' wide Public Utility and City Utility Easement (Doc. No. 532481.002) that overlaid the proposed public watermain and sanitary, a 24' wide Access Easement (Doc. No. 53248.002) that provided access to the existing stormwater pond, and a 20' wide Public Drainage and Utility Easement that overlaid the proposed outlet from the existing stormwater pond to the welland.

All three of these easements were platted with the original design from 2013. The new building layout and site orientation is not conducive to the reuse of these existing easements. For the proposed design, all three easements are to be vacated and new easements are proposed. The proposed easements serve the same purpose as the existing easements, simply with slightly different alignments to serve the new facility. An easement vacation exhibit and new legal descriptions of the proposed easements are included with this submittal.

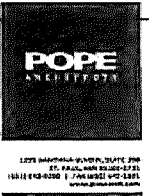
St. Francis Meridian Behavioral Health Development Schedule

April, 2018 – CUP Application to the City of St. Francis

Summer, 2018 – Building Permit Application

Fall, 2018 – Begin Construction

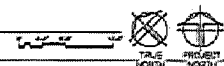
Spring, 2019 – Building occupancy

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 FACILITY
 ST FRANCIS, MN

FEDERAL BUREAU OF INVESTIGATION	
1. BIRTH NAME	SMITH, JOHN
2. CURRENT NAME	SMITH, JOHN
3. BIRTH DATE	01/01/1945

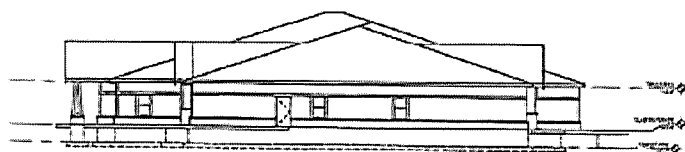
OVERALL FLOOR PLAN
3/32" = 1'-0"



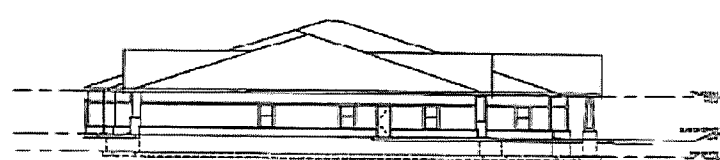
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EXTERIOR MATERIAL FINISH SCHEDULE											
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FEW-5	CONCRETE WALL, 1ST FLOOR	ACF	FEW-6	CONCRETE WALL, 1ST FLOOR	ACF	FEW-7	CONCRETE WALL, 1ST FLOOR	ACF	FEW-8	CONCRETE WALL, 1ST FLOOR	ACF
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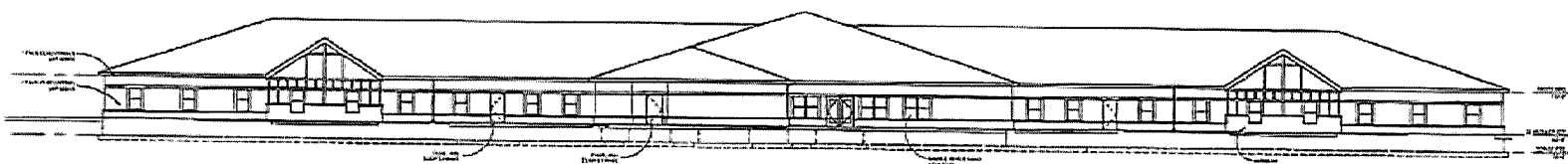
NOTE:
THE "SCHEDULE OF MATERIALS" FOR THE PROJECT ARE LISTED ON THE SCHEDULE ABOVE. SEE
SPECIFICATIONS FOR ADDITIONAL MATERIAL INFORMATION AND OTHER APPLICABLE SUBSTITUTIONS.



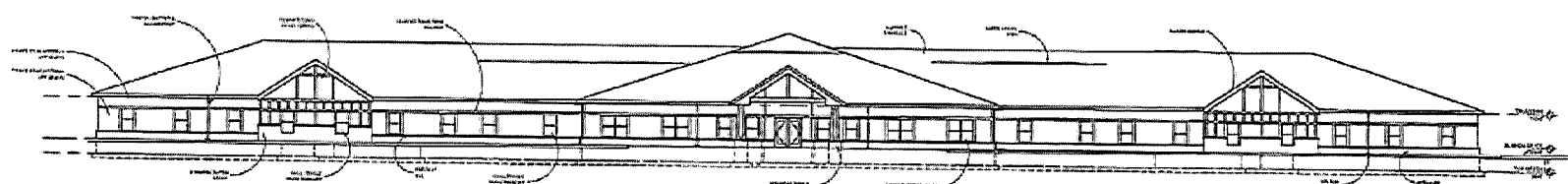
4 EAST ELEVATION
3/32" = 1'-0"



5 WEST ELEVATION
3/32" = 1'-0"



6 NORTH ELEVATION
3/32" = 1'-0"



7 SOUTH ELEVATION
3/32" = 1'-0"



8 NORTH EL STORAGE GARAGE
3/32" = 1'-0"



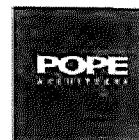
9 SOUTH EL STORAGE GARAGE
3/32" = 1'-0"



10 WEST EL STORAGE GARAGE
3/32" = 1'-0"



11 EAST EL STORAGE GARAGE
3/32" = 1'-0"



1000 BANGOR BLVD N, SUITE 200
ST. PAUL, MINNESOTA 55108
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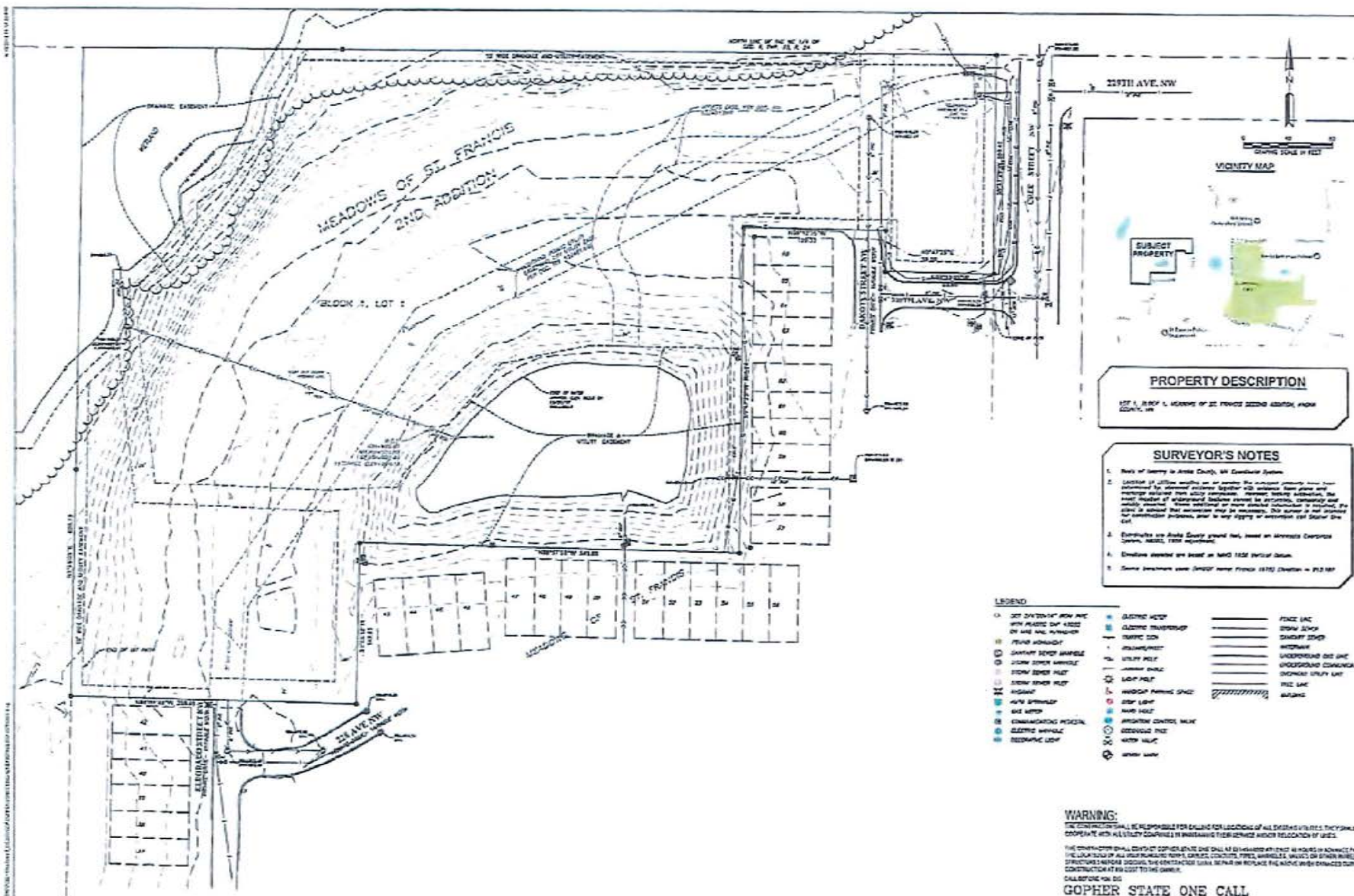
EXTERIOR ELEVATIONS

1. EXTERIOR ELEVATIONS
2. CITY SUBMITTAL
3. CITY SUBMITTAL

DATE: 10/1/11
DRAWN BY: JLM
CHECKED BY: JLM
SCALE: AS SHOWN

A3.1

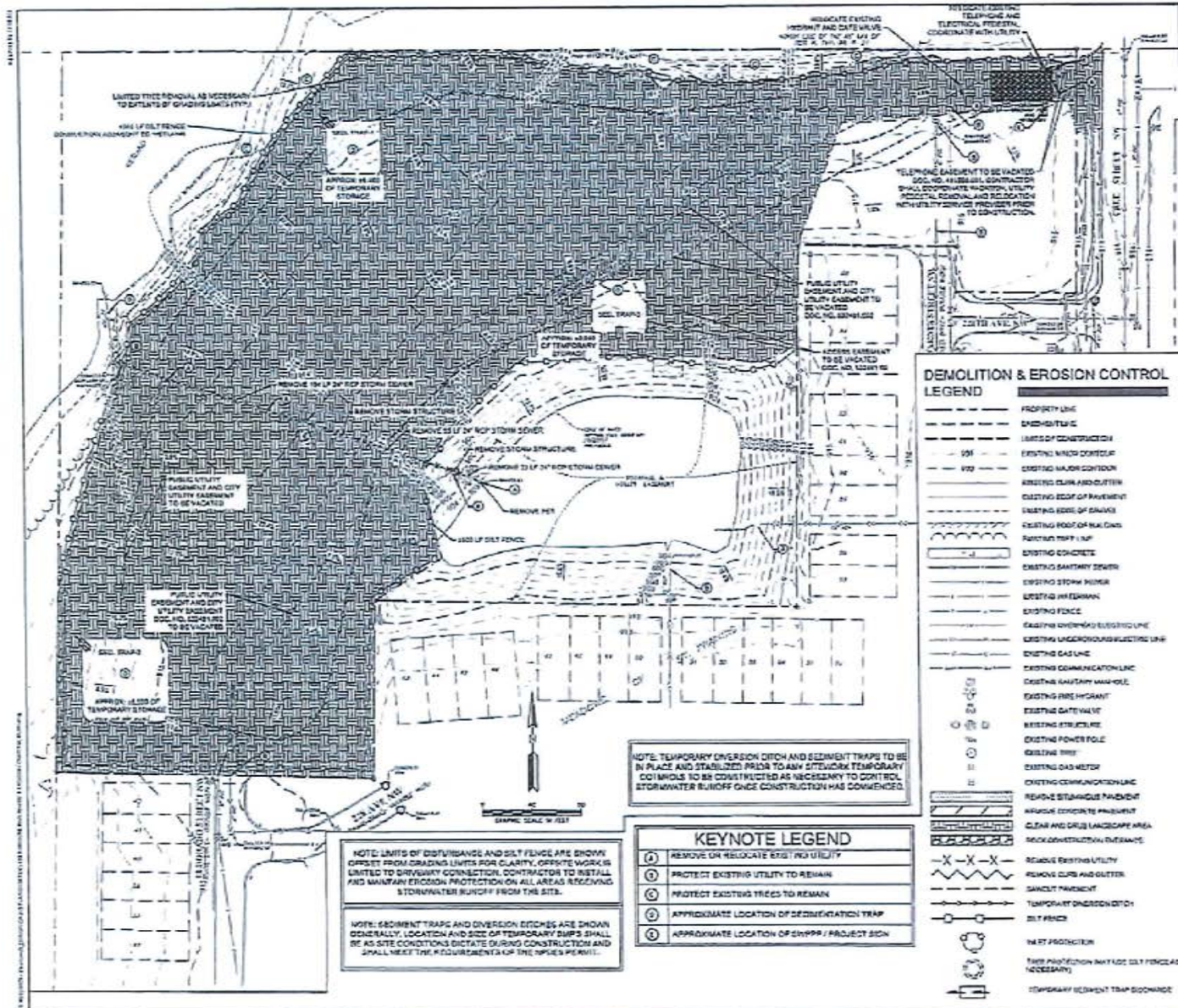
Project #	4345-001
Drawn by	JL
Issue Date	22/4/04
Issue of	
Sheet #	G-101
Sheet Title	CONVERT SHEET



MERIDIAN BEHAVIORAL HEALTH
ST. FRANCIS, MINNESOTA

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[illegible]



DEMOLITION & EROSION CONTROL LEGEND

- PROPERTY LINE
- EXISTING UTILITY
- LIMITS OF CONSTRUCTION
- EXISTING WIND CORREL
- EXISTING MAJOR CORREL
- EXISTING CLIM AND OUTLET
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF DRIVEWAY
- EXISTING FOOT OF RAILROAD
- EXISTING SANITARY SEWER
- EXISTING STORM DRAIN
- EXISTING FENCE
- EXISTING HYDROLOGICAL LINE
- EXISTING LAKESIDE/SHORELINE
- EXISTING GAS LINE
- EXISTING COMMUNICATION LINE
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING POWER POLE
- EXISTING TREE
- EXISTING GAS METER
- EXISTING COMMUNICATION LINE
- REMOVE STORMWATER PAVEMENT
- REMOVE CONCRETE PAVEMENT
- REMOVE GRASS LANDSCAPE AREA
- REMOVE DRIVEWAY ENTRANCE
- REMOVE EXISTING UTILITY
- REMOVE CURB AND GUTTER
- REMOVE PAVEMENT
- TEMPORARY DIVERSION DITCH
- SILT FENCE
- INLET PROTECTION
- TEMP PROTECTION MAY USE SILT FENCE (SEE NOTE)
- TEMPORARY SEDIMENT TRAP SIGNAGE

KEYNOTE LEGEND

- 1 REMOVE OR RELOCATE EXISTING UTILITY
- 2 PROTECT EXISTING UTILITY TO REMAIN
- 3 PROTECT EXISTING TREES TO REMAIN
- 4 APPROXIMATE LOCATION OF DEMOLITION TRAP
- 5 APPROXIMATE LOCATION OF SWPPP / PROJECT SIGN

DEMOLITION NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) ALL STRUCTURES, PAVS, WALKS, FENCES, FOUNDATIONS, DRIVEWAYS, DRIVEWAY STRUCTURES, UTILITIES, ETC. SUCH THAT THE IMPROVEMENTS ON THE PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERGOING TO BE REMOVED AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REMAINING ALL OPENED FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
- THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES TO ADJACENT PROPERTIES AT ALL TIMES. UTILITY SERVICES SHALL NOT BE INTERRUPTED WITHOUT APPROVAL FROM THE CONSTRUCTION MANAGER AND COORDINATION WITH THE ADJACENT PROPERTIES AND/OR THE CITY.
- THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
- THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL IDENTIFY THE UTILITY COMPANIES FOR LOCATIONS OF EXISTING UTILITIES WITHIN ALL AREAS OF PROPOSED WORK.
- ALL EXISTING SEWERS, TYPING AND UTILITIES SHOWN ARE NOT TO BE INTERFERED AS THE EXACT LOCATION, DEPTH, AND EXISTING CONDITIONS AND PROCEED WITH CAUTION REGARDING ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DEMOLITION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
- ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC, AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE APPLICABLE UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICES.
- CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC. (AND OTHER APPROPRIATE BEST MANAGEMENT PRACTICES) AS APPROVED BY THE CONSTRUCTION MANAGER.
- CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
- PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
- CONTRACTOR MAY LIMIT DRIVEWAY AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR OR REPLACED TO BETTER THAN EXISTING CONDITIONS.
- DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED TO NEW CONDITION AT CONTRACTOR'S EXPENSE.
- REFER TO SURVEY FOR ALL EXISTING INVERT AND RIM ELEVATIONS.
- ALL UTILITIES SHOWN ARE EXISTING UTILITIES.
- IN THE EVENT THAT UNLAWFUL CONTAINERS OR TANKS ARE ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE DEC IMMEDIATELY. ALL CONTAINERS SHALL BE DISPOSED OF AT A PERMITTED LANDFILL AND PER THE PROJECT DOCUMENTS.

EROSION CONTROL NOTES

- ALL PERIMETER SILT FENCE AND ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL INSTALL CATCH BASIN SEDIMENT CONTROL MEASURES PRIOR TO ANY CONSTRUCTION ACTIVITIES.
- ALL DISTURBED AREAS SHALL BE STABILIZED WITH SOIL OR ROCK BASE STABILIZATION MUST BE INITIATED IMMEDIATELY UPON FINISHING SITE GRADING AND COMPLETED WITHIN ONE WEEK (7 DAYS). REFER TO LANDSCAPE PLANS FOR MATERIALS.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CITY AND STATE PERMITS.
- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION. SEDIMENT SHALL BE REMOVED AT REGULAR INTERVALS. SEDIMENT BUILD UP SHALL BE REMOVED WHEN IT REACHES THE HEIGHT OF THE SILT FENCE ABOVE GRADE ELEVATION.
- ANY EXCESS SEDIMENT ACCUMULATED ON SITE SHALL BE REMOVED BY THE CONTRACTOR.
- REMOVE ALL EROSION CONTROL MEASURES AFTER SITE HAS BEEN STABILIZED AND VEGETATION IS ESTABLISHED.
- CONTRACTOR SHALL REMOVE ALL RAIL AND NEIGHBORHOOD TRAIL ONTO EXISTING DRIVEWAYS AND PAVED AREAS.
- IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS.
- SWEEP ADJACENT STREET IN ACCORDANCE WITH CITY REQUIREMENTS.



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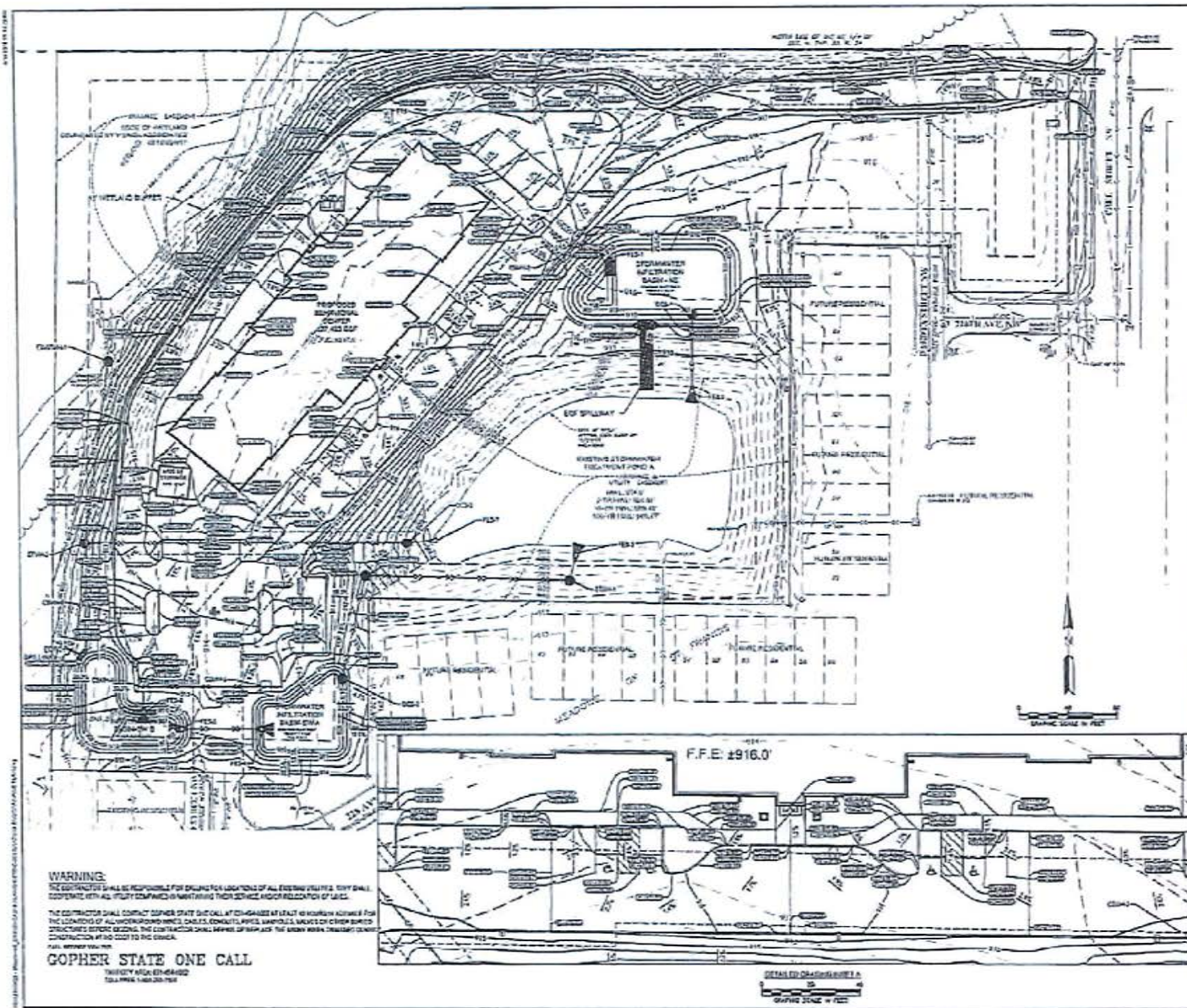
MERIDIAN BEHAVIORAL HEALTH
ST. FRANCIS, MINNESOTA

MERIDIAN PROGRAMS
300 MAIN STREET, SUITE 200
NEW BRUNSWICK, NJ 08912

Rev	By	Date	Description
1	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
2	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
3	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
4	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
5	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
6	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
7	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
8	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
9	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS
10	W. R. K. K. K.	10/10/2020	ISSUED FOR PERMITS

C-102

REMOVAL AND EROSION CONTROL PLAN



GRADING LEGEND

- PROPERTY LINE
- STORMWATER INFILTRATION BASIN
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM SEWER
- PROPOSED DRAIN BASIN
- PROPOSED MANHOLE
- PROPOSED SPOT ELEVATION
- PROPOSED GRADE
- PROPOSED SLOPE
- EXISTING STORM STRUCTURE
- EXISTING STORM SEWER

NOTE: SEE C-301 STORM SEWER PLAN FOR STORM SEWER STRUCTURE DETAILS

GRADING NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF ST. FRANCIS SPECIFICATIONS AND PERMIT REQUIREMENTS.
- CONTRACTOR TO CALL Gopher State ONE CALL AT 1-800-551-1881 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION / CONSTRUCTION FOR UTILITY LOCATIONS.
- CONTRACTOR TO FIELD VERIFY THE LOCATIONS AND ELEVATIONS FOR EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF SITE GRADING. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.
- SURFACE EXCAVATIONS SHALL BE RADIAL / FILL IMMEDIATELY AFTER EXCAVATION TO HELP PREVENT ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROPERLY TO AVOID UNDERMINING OF EXISTING PAVEMENT.
- ALL EXCESS MATERIAL, STURMIOUS SURFACING, CONCRETE ITEMS, ANY ABANDONED UTILITY ITEMS, AND OTHER UNSUITABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
- REFERENCE C-301 STORM SEWER PLAN FOR STORM SEWER MAIN, LAYOUT, ELEVATIONS, CASTINGS, AND STRUCTURES.
- REFERENCE C-401 UTILITY PLAN FOR SANITARY SEWER MAIN, WATER MAIN, SERVICE LAYOUT, ELEVATIONS, CASTINGS, AND STRUCTURES.
- CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF PAVEMENTS AND CURBS AND GUTTER WITH SMOOTH, UNIFORM SLOPES TO PROVIDE POSITIVE DRAINAGE.
- INSTALL A MINIMUM OF 1" CLASS 6 AGGREGATE BASE UNDER CURBS AND GUTTER.
- UPON COMPLETION OF EXCAVATION AND FILLING, CONTRACTOR SHALL RESTORE ALL STREETS AND DISTURBED AREAS ON SITE. ALL DISTURBED AREAS SHALL BE RE-VEGETATED WITH A MINIMUM OF 4" OF TOPSOIL.
- ALL SPOT ELEVATIONS / CONTOURS ARE TO FURNISH / FINISHED GRADE UNLESS OTHERWISE NOTED.
- GRADING FOR ALL STORMWATER AND ACCESSIBLE ROUTES INCLUDING CROSSING DRAINAGES SHALL CONFORM TO CURRENT ADA STATE NATIONAL STANDARDS. SLOPES SHALL NOT EXCEED 5% LONGITUDINALLY OR EXCEED 2% CROSS SLOPES. ACCESSIBLE ACCESS TO EXTERNAL BUILDING DOORS SHALL BE ADA COMPLIANT. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ADA CRITERIA CANNOT BE MET IN ANY LOCATION.
- MAINTAIN A MINIMUM OF 0.5% BUTTER SLOPE TOWARDS LOW POINTS.

WARNING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND PROTECTION OF LINES.
THE CONTRACTOR SHALL CONTACT Gopher State ONE CALL AT 1-800-551-1881 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION / CONSTRUCTION FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.
CALL Gopher State ONE CALL AT 1-800-551-1881

GOPHER STATE ONE CALL
THIRTY-NINE EIGHT ZERO
TOLL FREE 1-800-551-1881

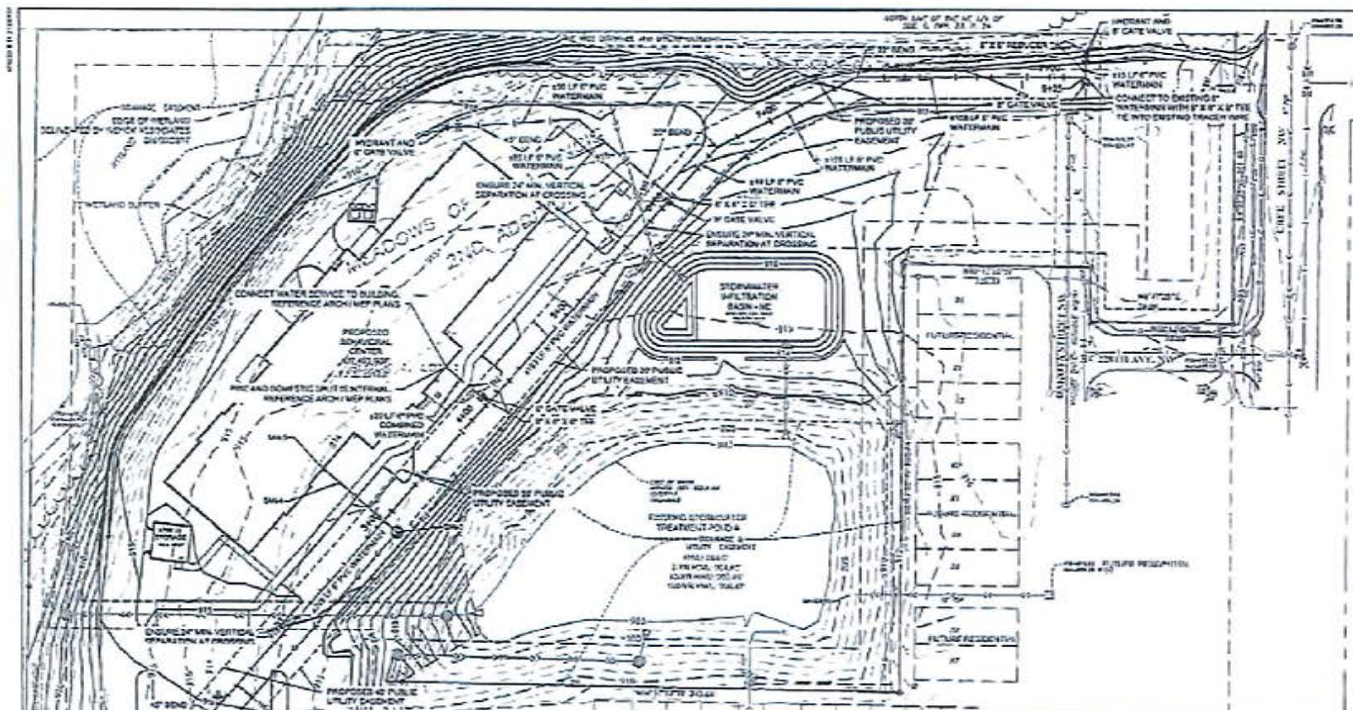
DETAILED OR SURFACE A
GRAPHIC SCALE IN FEET

WENCK
Engineering & Construction

MERIDIAN BEHAVIORAL HEALTH
ST. FRANCIS, MINNESOTA

PROJECT NO. **C-301**
DATE: 01/11/2018
DRAWN BY: JSA
CHECKED BY: JSA
DATE: 01/11/2018

PROJECT NO. **C-301**
DATE: 01/11/2018
DRAWN BY: JSA
CHECKED BY: JSA
DATE: 01/11/2018



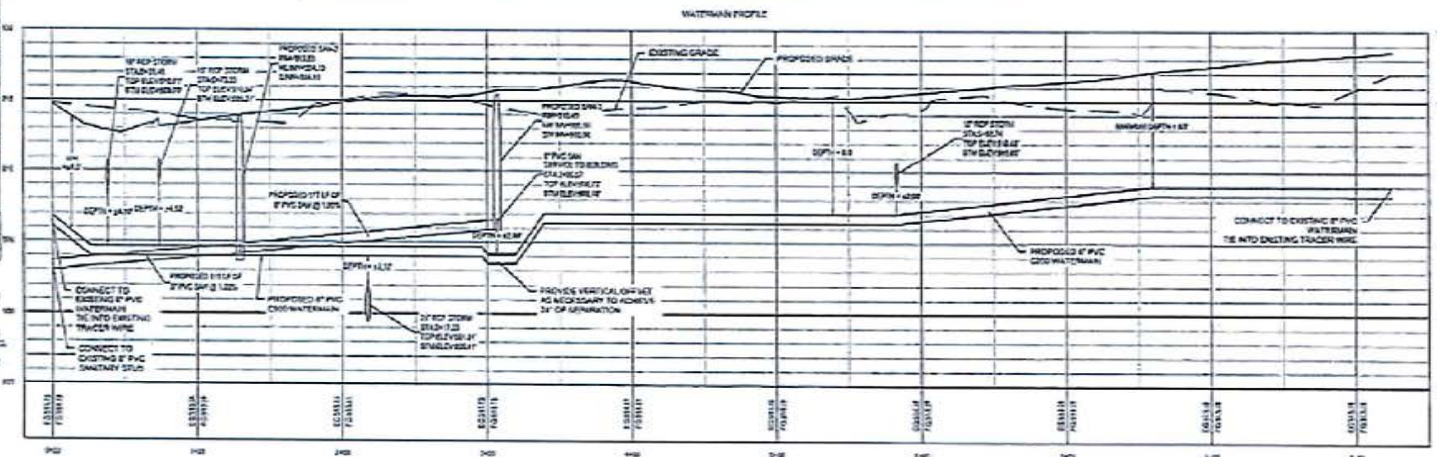
UTILITY LEGEND

- PROPERTY LINE
- SECTION LINE
- EASEMENT LINE
- EXISTING SANITARY SEWER
- EXISTING / PROPOSED STORM SEWER
- EXISTING WATERMAIN
- EXISTING / PROPOSED SANITARY STRUCTURE
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN

GRAPHIC SCALE IN FEET

WATERMAIN STATEMENT OF ESTIMATED QUANTITIES

ITEM	QUANTITY	UNIT
8" C900 PVC	229	LF
8" C900 PVC	107	LF
8" GATE VALVE	3	EACH
8" GATE VALVE	3	EACH
REDUCER	4	EACH
REDUCER	1	EACH
TEE	3	EACH



WARNING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATION OF ALL EXISTING UTILITIES. THEY SHALL COORDINATE WITH ALL UTILITY COMPANIES & LANDOWNERS BEFORE SERVICE LOCATIONS BE DETERMINED.
THE CONTRACTOR SHALL CONFIRM Gopher State Call at least 48 hours in advance for the locations of all underground utilities. Gopher State Call will be used for the locations of all underground utilities. The contractor shall repair or replace the asset when damaged during construction at no cost to the owner.

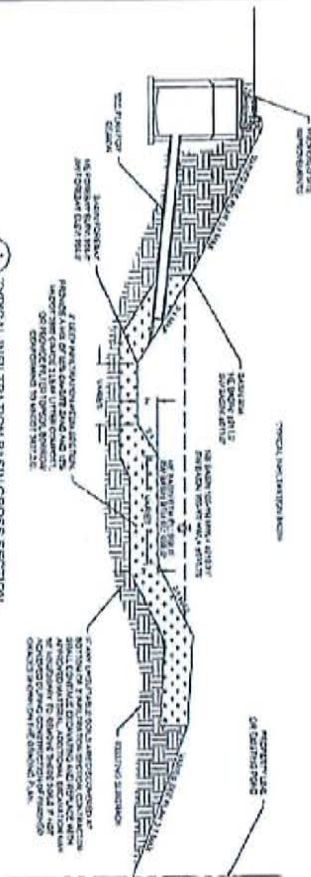
GOPHER STATE ONE CALL
TOLL FREE 1-800-455-1111

WENCK
CONSULTANTS

MERIDIAN BEHAVIORAL HEALTH
ST. FRANCIS, MINNESOTA

MERIDIAN PROGRAMS
2000 W. WASHINGTON AVE. SUITE 200
ST. PAUL, MN 55102

Project: MERIDIAN BEHAVIORAL HEALTH
Drawing: C-402
Date: 07/15/15
Scale: AS SHOWN

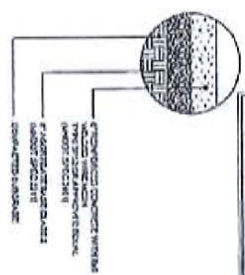


1 TYPICAL INFILTRATION BASIN CROSS SECTION
NOT TO SCALE
C-50

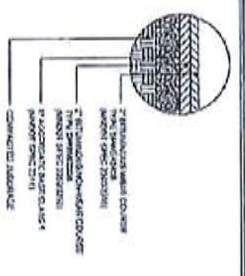
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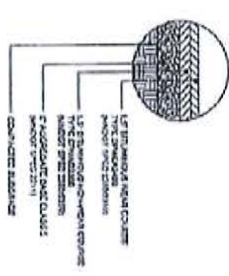
4 EMERGENCY OVERFLOW SPILLWAY
C-200 NOT TO SCALE



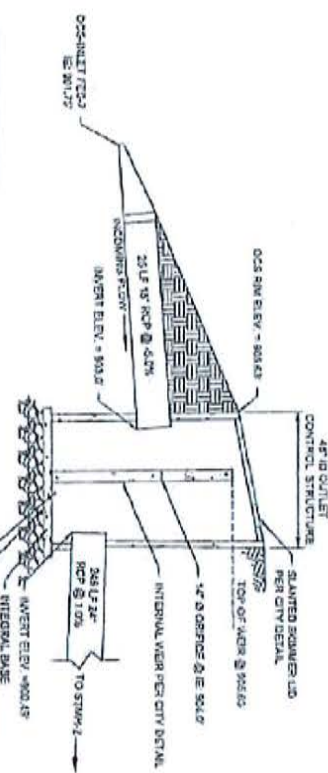
1
2000
DETAIL: CONCRETE PAVEMENT FULL DEPTH
CUT & FILL



6 DETAIL HEAVY DUTY CONTINUOUS PAVEMENT FULL DEPTH
COT TO BOLD

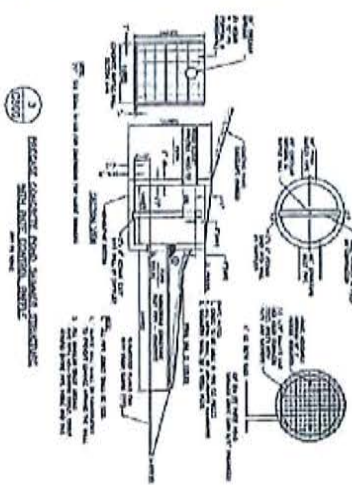


DETAIL: STANDARD CURT BITUMINOUS PAVEMENT FULL DEPTH
-07.15 (2024)



2 CCS-3 OUTLET CONTROL STRUCTURE (45°) DETAIL
(2000) NOT TO SCALE

1. **IDENTIFY THE PROBLEM**
2. **CONSIDER THE PROBLEM IN THE CONTEXT OF THE ORGANIZATION'S MISSION AND VALUES**
3. **ANALYZE THE PROBLEM**
4. **GENERATE SOLUTIONS**
5. **EVALUATE THE SOLUTIONS**
6. **IMPLEMENT THE SOLUTION**
7. **EVALUATE THE RESULTS**



3
2000

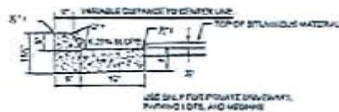
PERIODIC CHECKS FOR SAFETY STRUCTURE
AND FUEL CONTROL SYSTEM
SEE PG 20002

	MOLSON & MENK LTD P.O. BOX 100 ST. JOHN'S, Nfld. A1B 1X1		
	FALCON BRAND PRECAST CONCRETE FOUR SPINNER STRUCTURE W/MATE CONTROL BUTTLE	1st Floor	Suite 100 St John's 4-433

[illegible]

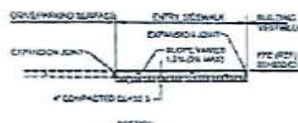
MERIDIAN BEHAVIORAL HEALTH
ST. FRANCIS, MINNESOTA
Hyattsville
MERIDIAN PROGRAMS
350 MAJ. STREET, SUITE 200
NEW BRIGHTON, MN 55112



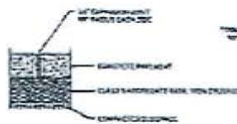


WASTE 2017 CONCRETE CURB AND GUTTER

DETAIL: CURB AND GUTTER



3 DETAIL ZERO ENTRANCE CURB & GUTTER



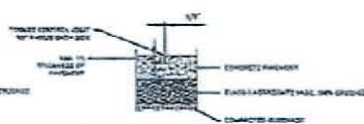
DETAIL: CONCRETE EXPANSION JOINT



DETAIL: OUTFLOW CONCRETE CURB AND GUTTER

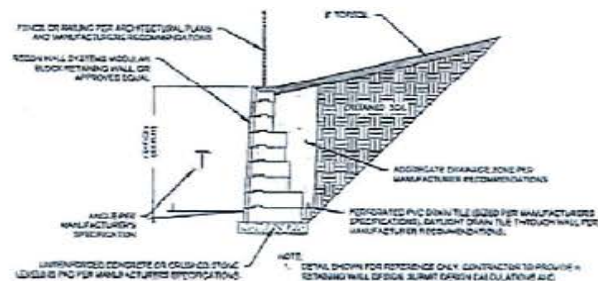


4 DETAIL: SIDEWALK - STOOP INTERFACE

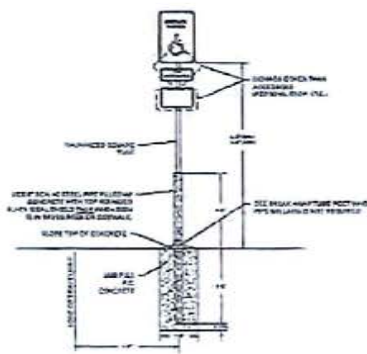


DETAIL: CONCRETE CONTROL JOINT

- [illegible]

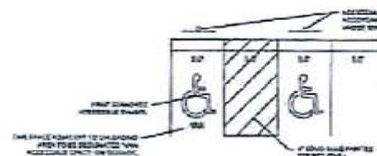


DETAIL: RETAINING WALL
C-329 NOT TO SCALE



- [illegible]

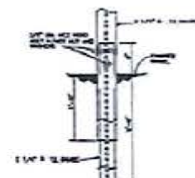
1 DETAIL: SIGN POST
CARTON PULP CASE



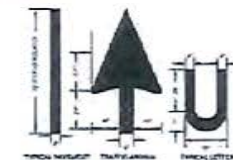
12 DETAIL: ACCESSIBLE PARKING LAYOUT



DETAIL: STANDARD PARKING LOT SIGNS

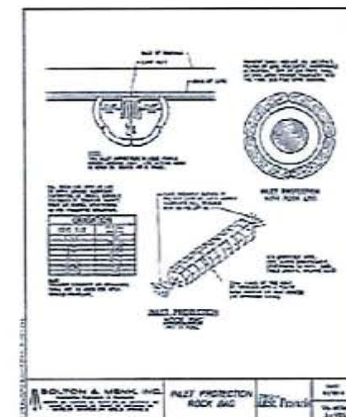
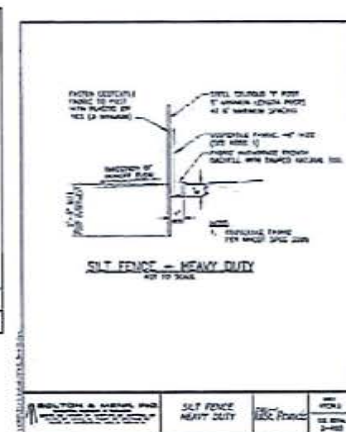
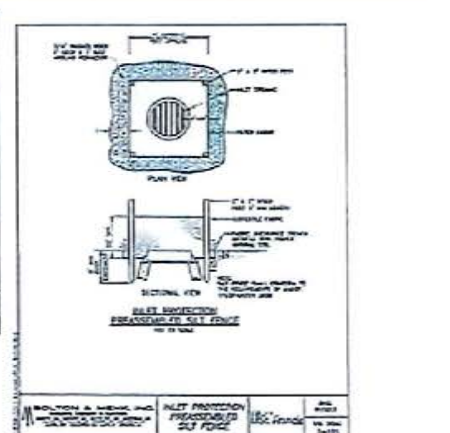
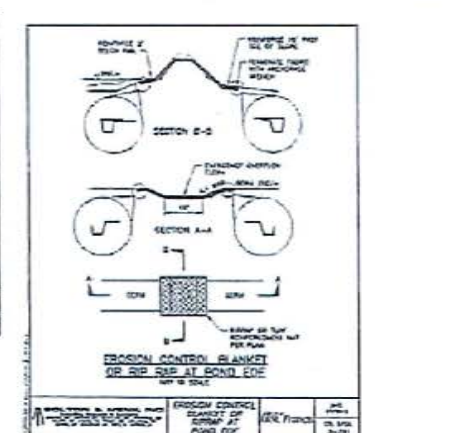
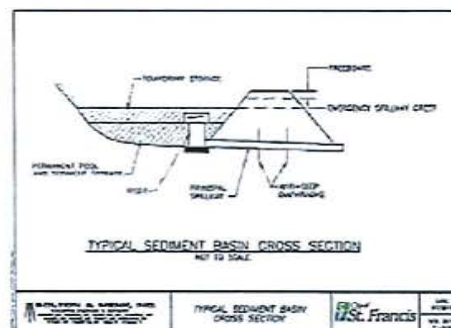


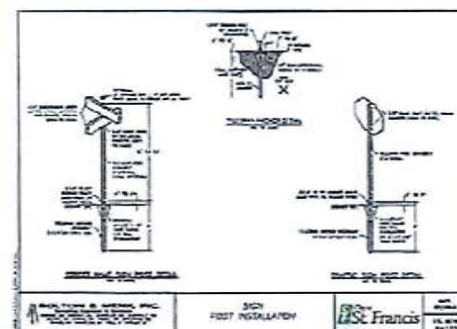
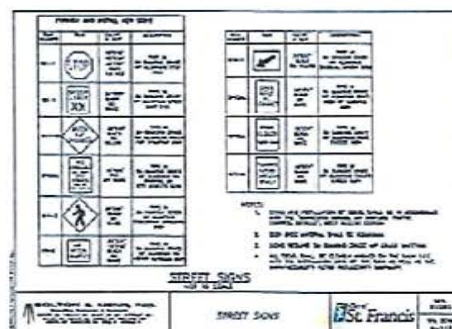
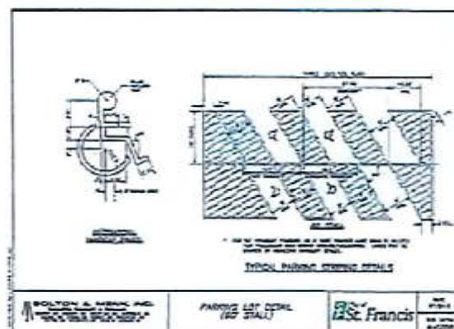
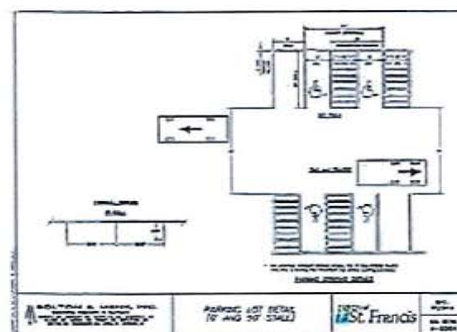
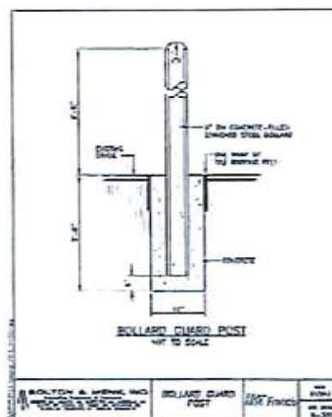
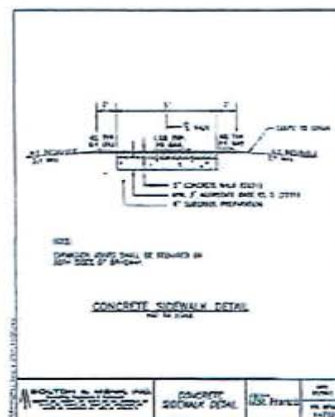
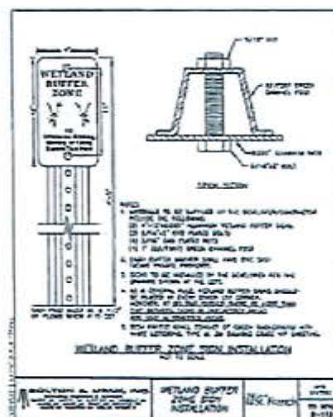
DETAIL: BREAK AWAY SIGN POST
SEE TO SCALE



NOTE:
1. TEST SHOULD BE APPROXIMATELY 20% BELOW 100% OF 100%
2. TEST SHOULD BE APPROXIMATELY 20% BELOW 100% OF 100%
3. TEST SHOULD BE APPROXIMATELY 20% BELOW 100% OF 100%

12 DETAIL-TYPICAL PAVEMENT MARKINGS





Rev	Description	Date
1	ISSUED FOR CONSTRUCTION	01/11/2016

Drawn by	CHG/CHG
Checked by	JPA
Date	2016/06/16
Sheet	7
Project	C-805
Detail	DETAILS

NOT TO SCALE
40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE

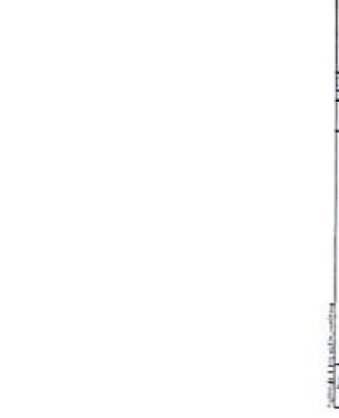
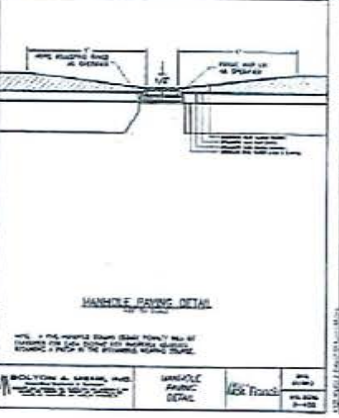
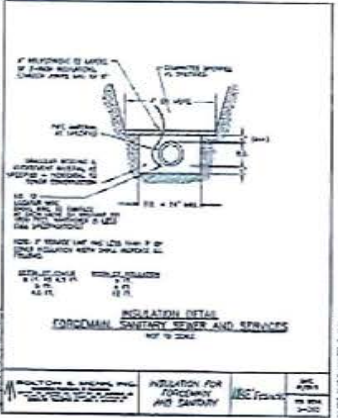
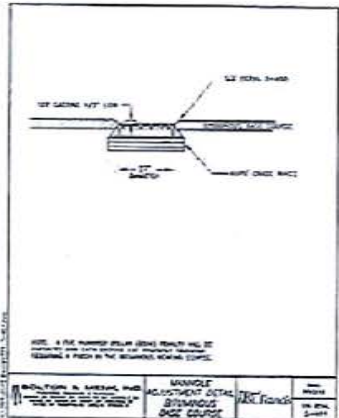
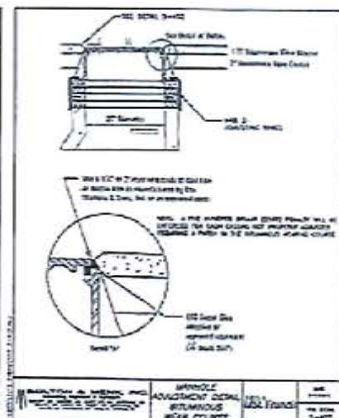
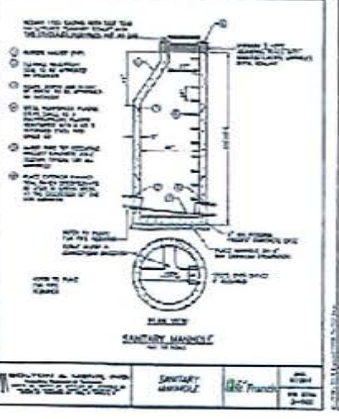
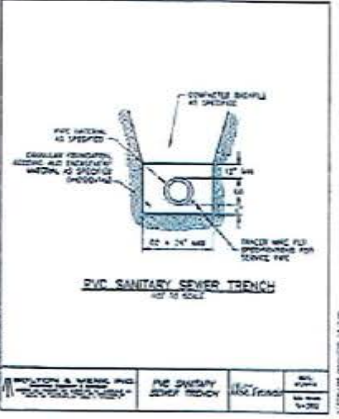
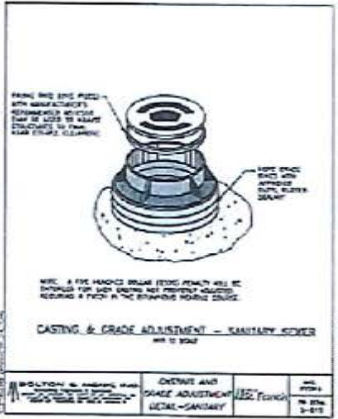
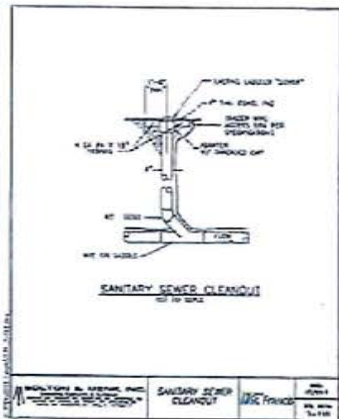
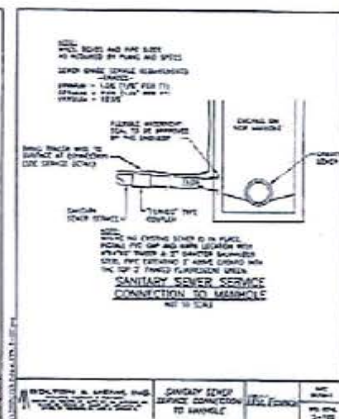
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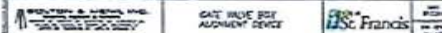
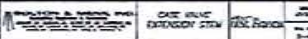
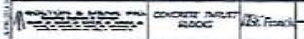
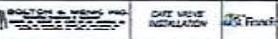
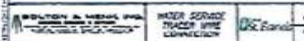
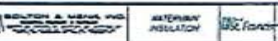
40'-0" DIA. CIRCUMFERENCE

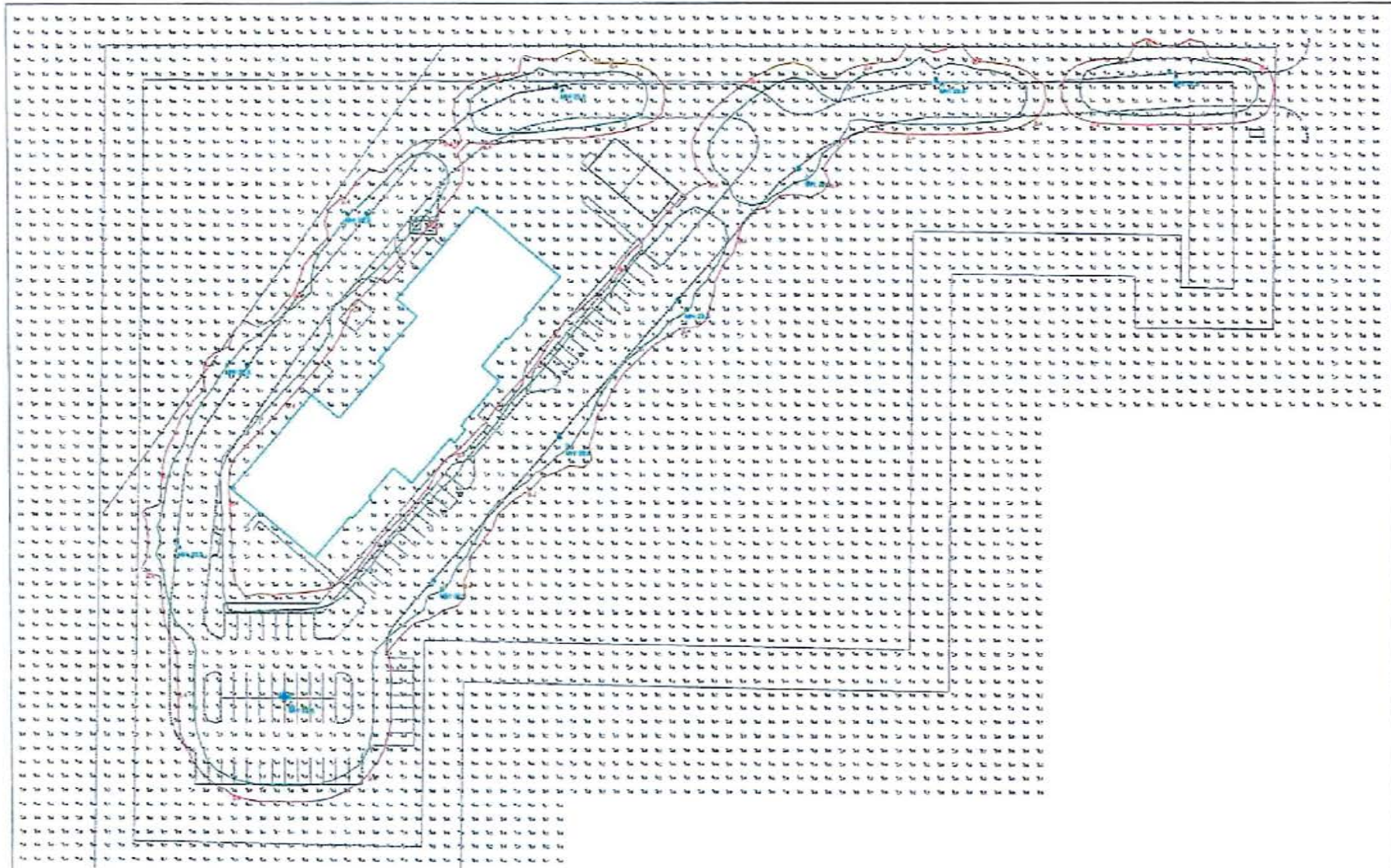
40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE

40'-0" DIA. CIRCUMFERENCE







1. Standard Reflectance of 80/50/20 unless noted otherwise
2. Note a Construction Document, for Design purposes only
3. Standard indoor calc points @ 30" A.F.F. unless noted otherwise
4. Standard outdoor calc points @ Grade unless noted otherwise
5. Mazgari Associates assumes no responsibility for installed light levels due to field conditions, etc.

Calculation Summary						
Label	Calc Type	Units	Avg	Max	Min	Amplitude
1	Illuminance	Fc	9.99	13.1	0.0	N.A.

Luminaire Schedule							
Symbol	Qty	Label	Description	Arrangement	Total Lumens	Lum. Lumens	Lum. Watts
1	6	A	VPL-64L-135-4K7-2	SINGLE	N.A.	17761	127.5
2	3	B	VPL-64L-135-4K7-3	SINGLE	N.A.	17761	127.5
3	1	D	VPL-64L-135-4K7-4	4 @ 90 DEGREES	N.A.	17366	127.5
4	1	D	VPL-64L-135-4K7-4	SINGLE	N.A.	17366	127.5

MAZGAR ASSOCIATES
10310 VISION DR.
SUITE 104
EDEN PRAIRIE, MN 55344
(952) 941-0000
WWW.MAZGAR.COM



Revisions	Date	Comments

MLAA Project #:	
Drawn By: BS	
Date: 4/2/2013	
Scale: 1" = 30'	

SITE PLAN
ST. FRANCIS SITE PLAN

SSS-B SERIES POLES
(2004/01/01/2005)

GENERAL INFORMATION

TECHNICAL SPECIFICATIONS

OPTIONAL ACCESSORIES

INSTALLATION INSTRUCTIONS

MAINTENANCE

WARRANTY

10% DISCOUNT

10% discount on all orders over \$1000

Use code: **10OFF10**

Valid until 31/12/2023

NEW PRODUCT

Introducing our latest innovation in sustainable packaging solutions.

Our new **Biodegradable Packaging** is designed to reduce your carbon footprint while maintaining the highest quality standards.

Key features include:

- 100% Compostable
- Reduces waste by up to 50%
- Meets all international food safety standards

Contact us today to learn more and request a sample.

Product Catalog

Product Name	Material	Dimensions (mm)	Weight (g)	Lead Time (days)
Biodegradable Bag (Small)	PLA	200 x 300	150	5-7
Biodegradable Bag (Medium)	PLA	300 x 400	250	5-7
Biodegradable Bag (Large)	PLA	400 x 500	350	5-7
Biodegradable Box (Small)	PLA	100 x 100 x 50	80	5-7
Biodegradable Box (Medium)	PLA	150 x 150 x 75	120	5-7
Biodegradable Box (Large)	PLA	200 x 200 x 100	180	5-7

Technical Specifications

Material: Polylactic Acid (PLA)

Properties: Biodegradable, Compostable, Food Safe

Standards: ASTM D6400, EN 13432

Applications: Food packaging, Retail bags, Industrial containers

Ordering Information

Minimum Order Quantity (MOQ): 1000 units

Lead Time: 7-10 business days

Shipping: Free shipping within the EU

Contact: sales@ecopack.com

Company Profile

ECOPACK LTD. is a leading manufacturer of sustainable packaging solutions, based in the UK. We are committed to reducing environmental impact through our innovative products and processes.

Our products are certified by the following organizations:

- ISO 9001:2015
- ISO 14001:2015
- SEDA (Sustainable Packaging Association)

Product Comparison

Feature	Biodegradable Packaging	Traditional Packaging
Material	PLA (Compostable)	PE (Non-biodegradable)
Lead Time	7-10 days	5-7 days
Cost	Higher (initially)	Lower
Environmental Impact	Low	High

Customer Testimonials

"We have been using Ecopack's Biodegradable Packaging for 6 months now. Our customers love the eco-friendly approach, and our carbon footprint has significantly decreased." - **Green Solutions Ltd.**

"The quality of the packaging is excellent, and the lead times are very consistent. Highly recommended!" - **Nature's Choice**

Contact Us

Address: 123 Eco Lane, London, UK

Phone: +44 (0)20 1234 5678

Email: info@ecopack.com

Website: www.ecopack.com

SPECKLE INFORMATION Card										
Product Name	Material	Color	Size (mm)	Weight (g)	Volume (ml)	Length (mm)	Width (mm)	Height (mm)	Thickness (mm)	Notes
Speckle 1000	PS	White	1.0	0.15	0.15	1.0	1.0	1.0	0.1	
Speckle 2000	PS	White	2.0	0.30	0.30	2.0	2.0	2.0	0.2	
Speckle 3000	PS	White	3.0	0.45	0.45	3.0	3.0	3.0	0.3	
Speckle 4000	PS	White	4.0	0.60	0.60	4.0	4.0	4.0	0.4	
Speckle 5000	PS	White	5.0	0.75	0.75	5.0	5.0	5.0	0.5	
Speckle 6000	PS	White	6.0	0.90	0.90	6.0	6.0	6.0	0.6	
Speckle 7000	PS	White	7.0	1.05	1.05	7.0	7.0	7.0	0.7	
Speckle 8000	PS	White	8.0	1.20	1.20	8.0	8.0	8.0	0.8	
Speckle 9000	PS	White	9.0	1.35	1.35	9.0	9.0	9.0	0.9	
Speckle 10000	PS	White	10.0	1.50	1.50	10.0	10.0	10.0	1.0	
Speckle 11000	PS	White	11.0	1.65	1.65	11.0	11.0	11.0	1.1	
Speckle 12000	PS	White	12.0	1.80	1.80	12.0	12.0	12.0	1.2	
Speckle 13000	PS	White	13.0	1.95	1.95	13.0	13.0	13.0	1.3	
Speckle 14000	PS	White	14.0	2.10	2.10	14.0	14.0	14.0	1.4	
Speckle 15000	PS	White	15.0	2.25	2.25	15.0	15.0	15.0	1.5	
Speckle 16000	PS	White	16.0	2.40	2.40	16.0	16.0	16.0	1.6	
Speckle 17000	PS	White	17.0	2.55	2.55	17.0	17.0	17.0	1.7	
Speckle 18000	PS	White	18.0	2.70	2.70	18.0	18.0	18.0	1.8	
Speckle 19000	PS	White	19.0	2.85	2.85	19.0	19.0	19.0	1.9	
Speckle 20000	PS	White	20.0	3.00	3.00	20.0	20.0	20.0	2.0	
Speckle 21000	PS	White	21.0	3.15	3.15	21.0	21.0	21.0	2.1	
Speckle 22000	PS	White	22.0	3.30	3.30	22.0	22.0	22.0	2.2	
Speckle 23000	PS	White	23.0	3.45	3.45	23.0	23.0	23.0	2.3	
Speckle 24000	PS	White	24.0	3.60	3.60	24.0	24.0	24.0	2.4	
Speckle 25000	PS	White	25.0	3.75	3.75	25.0	25.0	25.0	2.5	
Speckle 26000	PS	White	26.0	3.90	3.90	26.0	26.0	26.0	2.6	
Speckle 27000	PS	White	27.0	4.05	4.05	27.0	27.0	27.0	2.7	
Speckle 28000	PS	White	28.0	4.20	4.20	28.0	28.0	28.0	2.8	
Speckle 29000	PS	White	29.0	4.35	4.35	29.0	29.0	29.0	2.9	
Speckle 30000	PS	White	30.0	4.50	4.50	30.0	30.0	30.0	3.0	
Speckle 31000	PS	White	31.0	4.65	4.65	31.0	31.0	31.0	3.1	
Speckle 32000	PS	White	32.0	4.80	4.80	32.0	32.0	32.0	3.2	
Speckle 33000	PS	White	33.0	4.95	4.95	33.0	33.0	33.0	3.3	
Speckle 34000	PS	White	34.0	5.10	5.10	34.0	34.0	34.0	3.4	
Speckle 35000	PS	White	35.0	5.25	5.25	35.0	35.0	35.0	3.5	
Speckle 36000	PS	White	36.0	5.40	5.40	36.0	36.0	36.0	3.6	
Speckle 37000	PS	White	37.0	5.55	5.55	37.0	37.0	37.0	3.7	
Speckle 38000	PS	White	38.0	5.70	5.70	38.0	38.0	38.0	3.8	
Speckle 39000	PS	White	39.0	5.85	5.85	39.0	39.0	39.0	3.9	
Speckle 40000	PS	White	40.0	6.00	6.00	40.0	40.0	40.0	4.0	

[illegible][illegible]

Figure 10.10 *Comparison of the four types of probability distributions that are commonly used in simulation modeling.*

Figure 10.10a *Normal distribution*

Figure 10.10b *Lognormal distribution*

Figure 10.10c *Uniform distribution*

Figure 10.10d *Triangular distribution*

Figure 10.10e *PERT distribution*

Figure 10.10f *Empirical distribution*

Figure 10.10g *Logistic distribution*

Figure 10.10h *Exponential distribution*

Figure 10.10i *Gamma distribution*

Figure 10.10j *Weibull distribution*

Figure 10.10k *Logistic distribution*

Figure 10.10l *Exponential distribution*

Figure 10.10m *Gamma distribution*

Figure 10.10n *Weibull distribution*

Figure 10.10o *Logistic distribution*

Figure 10.10p *Exponential distribution*

Figure 10.10q *Gamma distribution*

Figure 10.10r *Weibull distribution*

Figure 10.10s *Logistic distribution*

Figure 10.10t *Exponential distribution*

Figure 10.10u *Gamma distribution*

Figure 10.10v *Weibull distribution*

Figure 10.10w *Logistic distribution*

Figure 10.10x *Exponential distribution*

Figure 10.10y *Gamma distribution*

Figure 10.10z *Weibull distribution*

Figure 10.10aa *Logistic distribution*

Figure 10.10ab *Exponential distribution*

Figure 10.10ac *Gamma distribution*

Figure 10.10ad *Weibull distribution*

Figure 10.10ae *Logistic distribution*

Figure 10.10af *Exponential distribution*

Figure 10.10ag *Gamma distribution*

Figure 10.10ah *Weibull distribution*

Figure 10.10ai *Logistic distribution*

Figure 10.10aj *Exponential distribution*

Figure 10.10ak *Gamma distribution*

Figure 10.10al *Weibull distribution*

Figure 10.10am *Logistic distribution*

Figure 10.10an *Exponential distribution*

Figure 10.10ao *Gamma distribution*

Figure 10.10ap *Weibull distribution*

Figure 10.10aq *Logistic distribution*

Figure 10.10ar *Exponential distribution*

Figure 10.10as *Gamma distribution*

Figure 10.10at *Weibull distribution*

Figure 10.10au *Logistic distribution*

Figure 10.10av *Exponential distribution*

Figure 10.10aw *Gamma distribution*

Figure 10.10ax *Weibull distribution*

Figure 10.10ay *Logistic distribution*

Figure 10.10az *Exponential distribution*

Figure 10.10ba *Gamma distribution*

Figure 10.10bb *Weibull distribution*

Figure 10.10bc *Logistic distribution*

Figure 10.10bd *Exponential distribution*

Figure 10.10be *Gamma distribution*

Figure 10.10bf *Weibull distribution*

Figure 10.10bg *Logistic distribution*</

VIPER L STRIKE

DESCRIPTION

Overview: The Viper L Strike is a compact and powerful handgun designed for law enforcement and military use. It features a polymer frame, a stainless steel slide, and a 4.5-inch barrel. The handgun is chambered in 9mm Luger and is capable of firing 15 rounds per magazine. It is a semi-automatic handgun with a manual safety and a slide lock. The Viper L Strike is a reliable and accurate handgun that is easy to handle and shoot.

Specifications:

- Caliber: 9mm Luger
- Barrel Length: 4.5 inches
- Magazine Capacity: 15 rounds
- Weight: 2.2 pounds (unloaded)
- Height: 5.5 inches
- Width: 1.5 inches
- Depth: 1.5 inches

Features:

- Manual safety
- Slide lock
- Drop safety
- Striker-fired action
- Stainless steel slide
- Polymer frame
- 4.5-inch barrel
- 15-round magazine
- 9mm Luger caliber

Accessories:

- Magazines (2 included)
- Handgun (1 included)
- Owner's manual (1 included)
- Warranty card (1 included)



Dimensions:

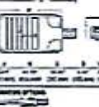
Overall Length: 7.5 inches
 Slide Length: 4.5 inches
 Barrel Length: 4.5 inches
 Magazine Length: 3.5 inches
 Height: 5.5 inches
 Width: 1.5 inches
 Depth: 1.5 inches

Accessories:

Magazines (2 included)
 Handgun (1 included)
 Owner's manual (1 included)
 Warranty card (1 included)

WARNING: This handgun is a powerful weapon and should be handled with care. It is not to be used as a toy or for any other purpose. The user should read the owner's manual carefully and follow all safety instructions. The handgun should be stored in a secure container when not in use. The user should be aware of the laws and regulations regarding the use of firearms in their area.

CAUTION: The handgun should be handled with care. It is not to be used as a toy or for any other purpose. The user should read the owner's manual carefully and follow all safety instructions. The handgun should be stored in a secure container when not in use. The user should be aware of the laws and regulations regarding the use of firearms in their area.



Dimensions:

Overall Length: 7.5 inches
 Slide Length: 4.5 inches
 Barrel Length: 4.5 inches
 Magazine Length: 3.5 inches
 Height: 5.5 inches
 Width: 1.5 inches
 Depth: 1.5 inches

Accessories:

Magazines (2 included)
 Handgun (1 included)
 Owner's manual (1 included)
 Warranty card (1 included)

WARNING: This handgun is a powerful weapon and should be handled with care. It is not to be used as a toy or for any other purpose. The user should read the owner's manual carefully and follow all safety instructions. The handgun should be stored in a secure container when not in use. The user should be aware of the laws and regulations regarding the use of firearms in their area.

CAUTION: The handgun should be handled with care. It is not to be used as a toy or for any other purpose. The user should read the owner's manual carefully and follow all safety instructions. The handgun should be stored in a secure container when not in use. The user should be aware of the laws and regulations regarding the use of firearms in their area.



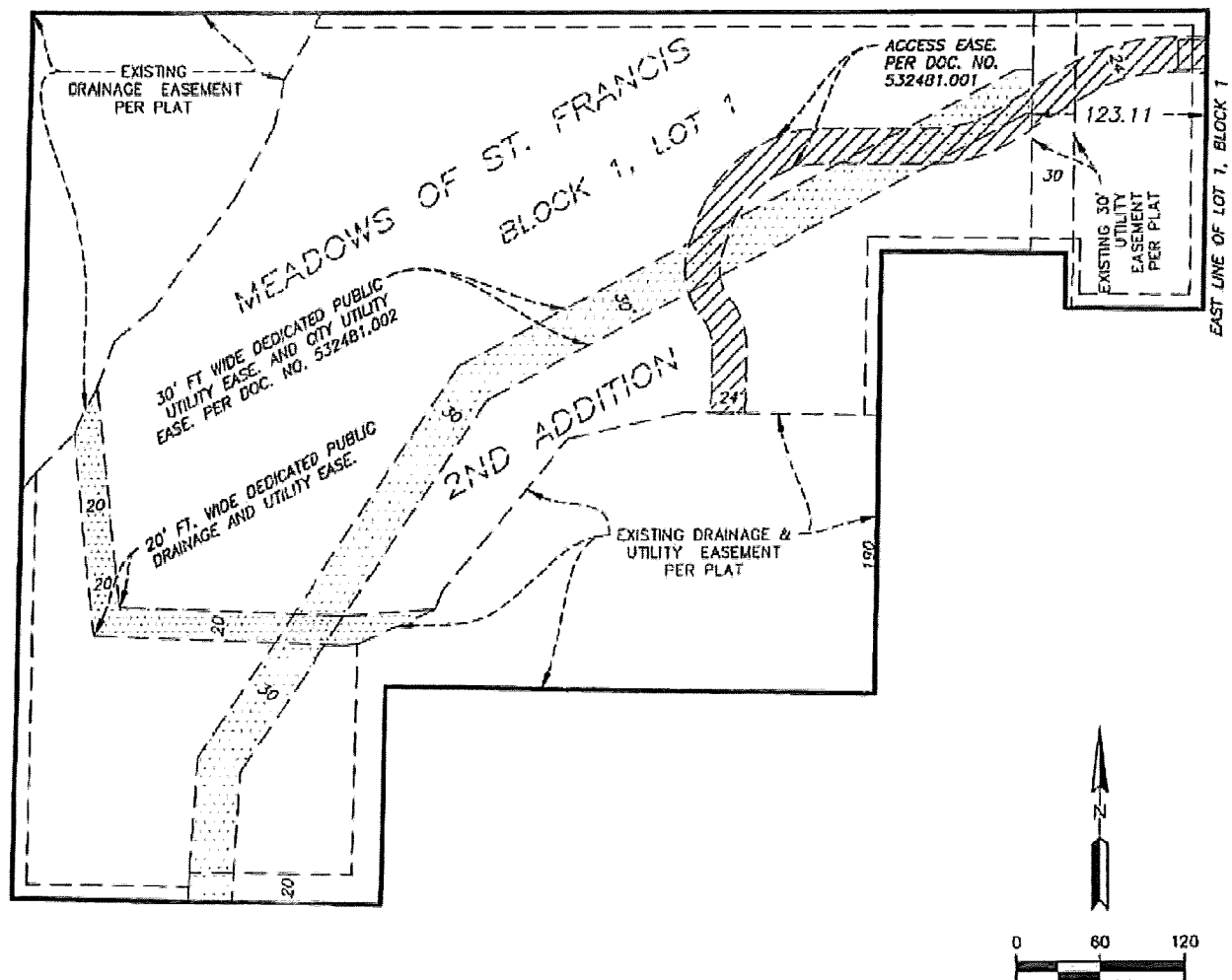
Dimensions:

Overall Length: 7.5 inches
 Slide Length: 4.5 inches
 Barrel Length: 4.5 inches
 Magazine Length: 3.5 inches
 Height: 5.5 inches
 Width: 1.5 inches
 Depth: 1.5 inches

Accessories:

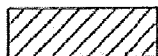
Magazines (2 included)
 Handgun (1 included)
 Owner's manual (1 included)
 Warranty card (1 included)

[illegible][illegible]



LEGAL DESCRIPTION OF EASEMENTS TO BE VACATED

- 1) All of the 24-foot-wide access easement in favor of the City of St. Francis, dated July 24, 2015, filed August 5, 2015 as Document No. 532481.001 Torrens, Anoka County, Minnesota.
- 2) That part of the 30-foot-wide utility easement in favor of the City of St. Francis, dated July 22, 2015, filed August 8, 2015 as Document No. 532481.002 Torrens, Anoka County, Minnesota, and the public 30-foot-wide utility easement as dedicated on the plat of MEADOWS OF ST. FRANCIS SECOND ADDITION, filed as Document No. 532721.001 Torrens, Anoka County Minnesota, which lies westerly of a line 123.11 feet west of and parallel with the east line of Lot 1, Block 1 of said plat; Together with the public 20-foot wide drainage and utility easement dedicated on said plat.



(1) ACCESS EASEMENT TO BE VACATED



(2) DRAINAGE AND UTILITY EASEMENT TO BE VACATED



1880 Pioneer Creek Cir.
Maple Plain, MN 55359
Ph: 763-479-4200
Fax:

Responsive partner. Exceptional outcomes.

CLIENT NAME

MERIDIAN BEHAVIORAL HEALTH

PROJECT TITLE

EASEMENT VACATION EXHIBIT

DWN BY: GJB CHK'D: XXX APP'D: XXX DWG DATE: 10-APR-18

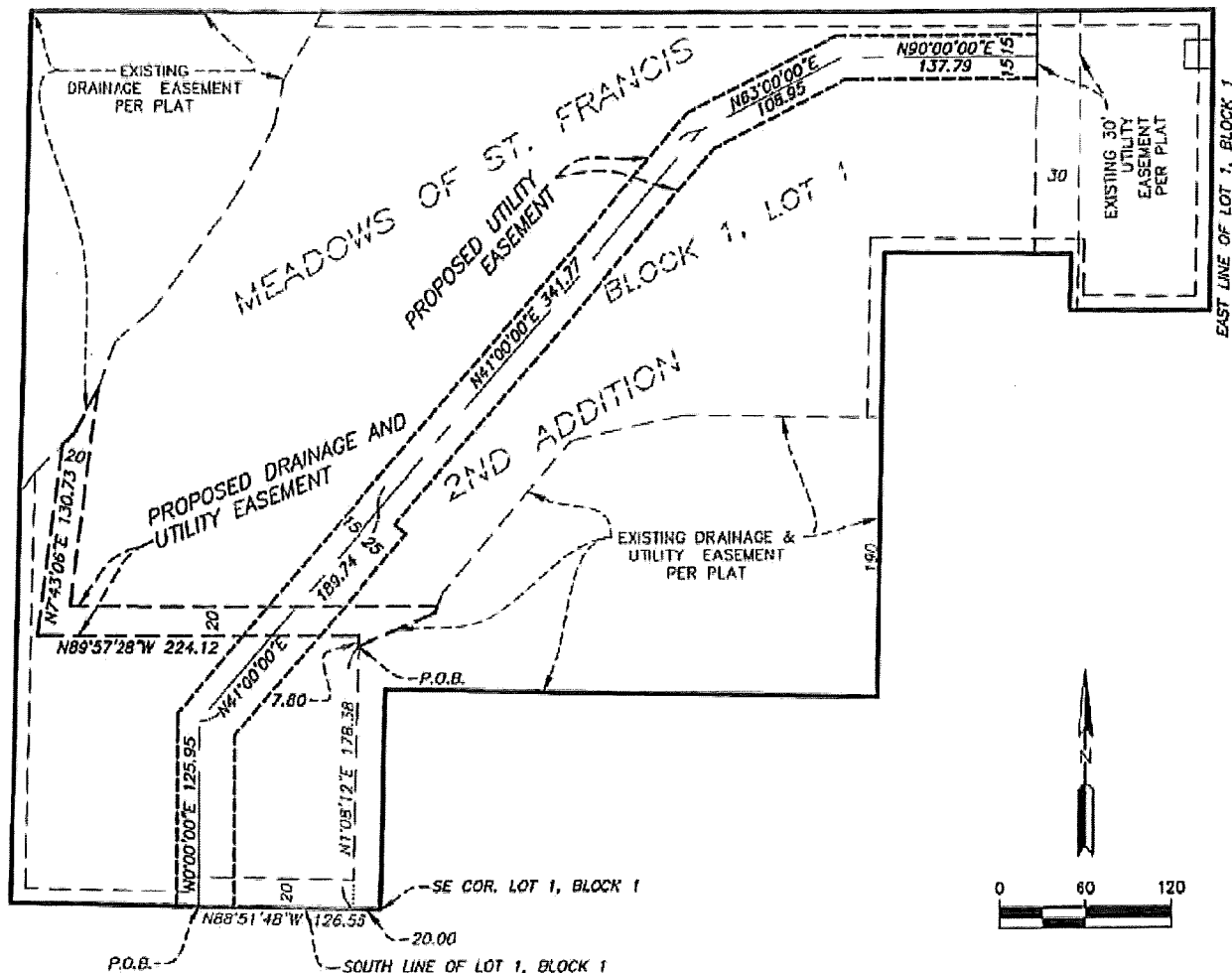
SCALE: 1" = 120'

PROJECT NO.

4340-0022

SHEET NO.

1 OF 1



PROPOSED DRAINAGE AND UTILITY EASEMENTS:

A 40 foot wide public easement for utility purposes, over, under and across Lot 1, Block 1, MEADOWS OF ST. FRANCIS 2ND ADDITION, Anoka County, Minnesota lying 15 feet left and 25 feet right of the following described line:

Commencing at the southeast corner of said Lot 1, Block 1; thence North 88 degrees 51 minutes 48 seconds West 126.55 feet along the south line of said Lot 1 to the point of beginning for said line; thence North 00 degrees 00 minutes 00 seconds East 125.95 feet; thence North 41 degrees 00 minutes 00 seconds East 189.74 feet; and there said line terminating.

Together with a 30 foot wide public easement for utility purposes, over, under and across the above described property, the center line is described as follows:

Beginning at the terminus of the above described line; thence continuing North 41 degrees 00 minutes 00 seconds East 341.77 feet; thence North 63 degrees 00 minutes 00 seconds East 108.95 feet; thence North 90 degrees 00 minutes 00 seconds East 137.79 feet and center line there terminating

The sidelines of said easement are intended to be prolonged or shortened to meet the west line of the existing dedicated 30' utility easement and the southerly line of said Lot 1.

And a public easement for drainage and utility purposes, over, under and across said Lot 1, Block 1 which lies parallel with and 20 feet north and east of the following described line:

Commencing at the southeast corner of said Lot 1, Block 1; thence North 88 degrees 51 minutes 48 seconds West 20.00 feet along the south line of said Lot 1; thence North 01 degrees 08 minutes 12 seconds East 178.38 feet to the point of beginning for said line; thence continuing North 01 degrees 08 minutes 12 seconds East 7.80 feet; thence North 89 degrees 57 minutes 28 seconds West 224.12 feet; thence North 07 degrees 43 minutes 06 seconds East 130.73 feet and there said line terminating.

The sidelines of said easement are intended to be prolonged or shortened to meet the existing dedicated drainage and utility easements. And the northerly sideline of said easement is to be extended easterly to meet the existing dedicated drainage and utility easement.

 Responsive partner. Exceptional outcomes.		1800 Pioneer Creek Cir. Maple Plain, MN 55359 Ph: 763-478-4200 Fax:		PROJECT TITLE DRAINAGE AND UTILITY EASEMENT EXHIBIT	
		CLIENT NAME MERIDIAN BEHAVIORAL HEALTH		DRAWN BY GJB	APP'D XXX
				PROJECT NO. 4340-0022	SHEET NO. 1 OF 1



**CITY COUNCIL
AGENDA REPORT**

Agenda Item #:

9 D

TO: Joe Kohlmann, City Administrator
FROM: Kate Thunstrom, Community Development Director
SUBJECT: Request for Anoka County HRA/EDA Funding
DATE: 06/04/2018

OVERVIEW:

The City of St. Francis participates with the Anoka County HRA/EDA. As a participating city, funds are available for qualified HRA/EDA projects and activities. Per Statute, HRA/EDA funds may be used for acquisition and redevelopment projects. The city has utilized ACHRA funds in the past for site acquisitions, plans and studies. Funds accumulate on an annual basis.

In preparation of tonight's EDA meeting, to move forward only if EDA deems necessary, a Resolution was created for the request of Anoka County HRA/EDA funds. If acquisition and demolition is approved, it is anticipated that this is the appropriate funding to complete the redevelopment project. The property will be purchased through a voluntary sale.

The proposed budget for the 3765 Bridge Street acquisition and demolition is \$225,000. This amount includes the costs associated with the acquisition, closing, pre-demolition assessment and the demolition and site work.

This proposed budget is consistent with the two other EDA redevelopment projects that are in process.

1. 3757 Bridge Street, utilized ACHRA funds, budget \$200,000
2. 3731 Bridge Street, utilized Liquor funds, budget \$225,000

ACTION TO BE CONSIDERED:

Staff is requesting approval of the attached resolution to request \$225,000 of Anoka County HRA/EDA funds for the St. Francis EDA acquisition of real property located on Bridge Street for redevelopment purposes

BUDGET IMPLICATION:

Utilized ACHRA/EDA funds

Attachments:

Resolution 2018-22 Requesting Funds from the Anoka County HRA/EDA for the Completion of Real Property Acquisition and Demolition.

**CITY OF ST. FRANCIS
ST. FRANCIS, MN
ANOKA COUNTY**

RESOLUTION 2018-22

**A RESOLUTION REQUESTING FUNDS FROM THE ANOKA COUNTY HRA/EDA
FOR THE COMPLETION OF A REAL PROPERTY ACQUISITION AND DEMOLITION
FOR REDEVELOPMENT**

WHEREAS, the City of St. Francis is an existing participant of Anoka County Housing and Redevelopment Authority and Economic Development Authority; and

WHEREAS, the City of St. Francis is reviewing opportunities for redevelopment of properties; and

WHEREAS, the Anoka County Housing and Redevelopment Authority ("the HRA") and Anoka County EDA Authority has funds available that may be used for the development and implementation of a redevelopment project including real property acquisition and demolition for economic development purposes; and

WHEREAS, the City Council is seeking \$225,000 from the HRA/ EDA to complete redevelopment at the property located at 3765 Bridge Street. HRA/EDA. Funds will be used on the anticipated acquisition cost of the property, legal and title and demolition of the existing structure; and

WHEREAS, the City is aware this request exceeds it 2017 balance and includes funds to be collected within the 2018 budget year; and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of St. Francis hereby requests \$225,000 from the Anoka County HRA/EDA in order to complete acquisition for redevelopment.

ADOPTED BY THE CITY COUNCIL OF THE CITY OF ST. FRANCIS THIS 6th DAY OF JUNE 2018.

APPROVED

Steven D. Feldman, Mayor

Attest:

Barbara I. Held, City Clerk



**CITY COUNCIL
AGENDA REPORT**
Agenda Item #:
9 E (1)

TO: Joe Kohlmann, City Administrator
FROM: Paul Teicher, Public Works Director
SUBJECT: Information on routine street maintenance activities.
DATE: 6/04/2018

OVERVIEW:

The street system strategy plan was introduced to the City Council on May 22nd 2017. This plan identifies a systematic approach to routine road maintenance throughout the city. We are in starting in district 2 in 2018. The Street Consortium activities will typically include quick mobile construction work like; crack filling, chip sealing, fog sealing and pavement markings. This work has already been approved by Council on 4-16-2018 and is moving forward.

There are some activities performed outside the street consortium like, infrared patching, skin patching, cut out patching and Replay application. Infrared patching is typically used on deeper potholes or situations where a snowplow might catch an edge and further damage the road or property. Skin patching is used where there are too many smaller holes of varying depth where infrared patching is cost prohibitive. Cut out patching usually occurs around some type of utility structure that may have moved or needed to be adjusted. Because these activities are not offered through the consortium, staff has obtained 2 quotes for infrared patching, with the low quote from Bargaen Inc. in the amount of \$20,180.00. Infrared Patching will occur on ALL city streets in need, not just streets located in district 2. Along with the infrared patching, skin patching will also happen in these areas, this is just a throw and go type of patch and is difficult to give a total cost on. Bargaen Inc. has offered to do this work at a rate of \$975.00 per ton, not to exceed \$4,750.00. There has also been a need for some extra crack filling identified in district 2 this work will also be performed by Bargaen Inc. in the amount of \$4940.00, as the contractor hired by the consortium to do crack filling did not want to take on any additional work at this time. These are all routine and budgeted for activities.

ACTION TO BE CONSIDERED:

Consider accepting all of the quotes as identified for routine street maintenance.

BUDGET IMPLICATION:

This is a budgeted for item in the 2018 streets operation and maintenance budget.

Attachments:

1. Quotes from Bargaen Inc.
2. Quote from M&R Paving

BARGEN

INCORPORATED

606 County Road 1
Phone (507) 427-2924
Mountain Lake, MN 56159

May 14, 2018

City of St. Francis
Attn: Jeremy
4085 St. Francis Blvd. NW
St. Francis, MN 55070

Jeremy,

Thank you for the opportunity to explain the asphalt pavement maintenance services our firm offers and to provide you with a quote for your city streets. I am confident that you will find the services beneficial for your roads. I would like to explain the procedures our service crew uses.

Asphalt Rubber Crack Repair (Rout & Seal)

Our service crew will:

- A. rout out cracks 1" wide by 1" deep for cracks that are 40 feet apart and closer
- B. rout out cracks 1 1/4" wide by 1" deep for cracks that are 45 – 80 feet apart
- C. If the cracks are wider, they will be routed accordingly
- D. the cracks will then be cleaned with high volume blowers
- E. as a second cleaning procedure, a heat lance will be used to clean out any remaining debris and/or moisture
- F. cracks will be filled three-quarters to full
- G. after a cooling period, the cracks are filled a second time using a banding applicator
- H. this does not include any alleged areas
- I. the debris will be blown to the side of the curb, where it will be the City's responsibility to sweep up

Sealant Material

The sealant that we will use meets and exceeds the Minnesota State Spec. #3723.2 and Iowa ASTM-D3405 and ASTM-D6690 type II Spec. with the following modifications:

- 100% elongation at -20°F

Recently OSHA implemented new exposure levels for the Respirable Crystalline Silica law. We as a company are taking this serious and we want to protect our workers as well as avoid any fines that might be incurred by not following OSHA regulations.

The OSHA standard (29 CFR 1926.1153) requires employers to limit worker exposures to respirable crystalline silica and to take other steps to protect workers. In keeping with the spirit of the law, we are doing everything we can to reduce our employee's exposure to Silica. This includes working towards a solution to suppress the dust at the point of creation, as well as using a Vacuum sweeper truck with a water system in the holding tank to suck the debris from the cracks.

Project Prices - Our price includes all materials, applicable taxes and labor to complete the project as explained.

Please note: The Customer is responsible for notifying the public that we will be working in your area. Pavement maintenance can be extremely dusty and dirty work and we strongly encourage the public to keep their Personal property at a strong distance away from our work zone. This will avoid any possible concerns for dust, debris or damage. A recommended distance would be 75 – 150 feet away from the work zone. An Insurance Certificate is available upon request.

Rout & Seal cracks on Pederson Drive from Ambassador south to Hwy 47
Price is \$4,940.00.

TERMS: Owner agrees that all payments required under this Contract shall be due and payable within 30 days of date of invoice. Owner further agrees that Bargaen Inc. may charge interest at the annual rate of eighteen percent (18%), unless a lesser percentage is required by law on any sum due under this Contract which is not paid within 30 days of invoice date. If payments are not made when due, interest, costs incidental to collection and attorney's fees (if any attorney is retained for collection) shall be added to the unpaid balance. Bargaen Inc. reserves the right, without penalty from Owner, to stop work on the project if Owner does not make payments to Bargaen Inc. when due.

This Proposal/Contract may be withdrawn by Bargaen Inc. if not accepted within 30 days, or at anytime, subject to increases related to material prices as noted above.

Acceptance of proposal – The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. This proposal may be withdrawn if not accepted within 30 days.

Date of acceptance 5/16/18 Purchase Order # _____

Signature [Signature] Signature _____

Thank you for the opportunity to provide you with information on the asphalt pavement maintenance needs in your community. I am confident that you will find the products used and the workmanship of our crew of the highest quality. I look forward to working with you in the near future.

Sincerely,

[Signature]
Jerry Van Dyke
BARGEN, INC.
JVD/lh

Project for City of St. Francis – Crack Repair

Our Mission

Bargaen, Inc. is committed to excellence and, because of this, we take pride in our team of professional craftsmen. Our primary purpose is to provide knowledgeable recommendations, quality workmanship and exceptional service. Our goal is satisfied customers who have received the most value for their investment.

Website: www.bargeninc.com
Email: bargen@bargeninc.com

BARGEN

INCORPORATED

606 County Road 1
Phone (507) 427-2924
Mountain Lake, MN 56159

May 14, 2018

City of St. Francis
Attn: Jeremy
4085 St. Francis Blvd. NW
St. Francis, MN 55070

Jeremy,

Thank you for the opportunity to explain the asphalt pavement maintenance services our firm offers and to provide you with a quote for your city streets. I am confident that you will find the services beneficial for your roads. I would like to explain the procedures our service crew uses.

Skin Patching

Area to be skin patched will be blown clean and prepped with tack oil. New virgin mix asphalt will be installed and rolled to a smooth surface.

Project Prices - Our price includes all materials, applicable taxes and labor to complete the project as explained.

Please note: The Customer is responsible for notifying the public that we will be working in your area.

Pavement maintenance can be extremely dusty and dirty work and we strongly encourage the public to keep their Personal property at a strong distance away from our work zone. This will avoid any possible concerns for dust, debris or damage. A recommended distance would be 75 – 150 feet away from the work zone. An Insurance Certificate is available upon request.

Skin Patch the following areas:

1. 241st and Roanoke from Ambassador to house #5214
2. 231st and Javario St. NW
3. Yucca
4. 233rd Lane, 232rd Lane, Butterfield
5. 229th Lane NW
6. Dalillia, Arrowhead and Eideweiss St.

The price for Skin Patching is at \$975.00 per ton. The total project price is subject to the tonnage installed.

TERMS: Owner agrees that all payments required under this Contract shall be due and payable within 30 days of date of invoice. Owner further agrees that Bargaen Inc. may charge interest at the annual rate of eighteen percent (18%), unless a lesser percentage is required by law on any sum due under this Contract which is not paid within 30 days of invoice date. If payments are not made when due, interest, costs incidental to collection and attorney's fees (if any attorney is retained for collection) shall be added to the unpaid balance. Bargaen Inc. reserves the right, without penalty from Owner, to stop work on the project if Owner does not make payments to Bargaen Inc. when due.

This Proposal/Contract may be withdrawn by Bargaen Inc. if not accepted within 30 days, or at anytime, subject to increases related to material prices as noted above.

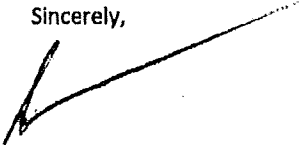
Acceptance of proposal – The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. This proposal may be withdrawn if not accepted within 30 days.

Date of acceptance 5/16/18 Purchase Order # _____

Signature [Signature] Signature _____

Thank you for the opportunity to provide you with information on the asphalt pavement maintenance needs in your community. I am confident that you will find the products used and the workmanship of our crew of the highest quality. I look forward to working with you in the near future.

Sincerely,



Jerry Van Dyke
BARGEN, INC.
JVD/lh

Project for City of St. Francis – Skin Patching

Our Mission

Bargaen, Inc. is committed to excellence and, because of this, we take pride in our team of professional craftsmen. Our primary purpose is to provide knowledgeable recommendations, quality workmanship and exceptional service. Our goal is satisfied customers who have received the most value for their investment.

Website: www.bargeninc.com
Email: bargen@bargeninc.com

BARGEN

INCORPORATED

606 County Road 1
Phone (507) 427-2924
Mountain Lake, MN 56159

May 14, 2018

City of St. Francis
Attn: Jeremy
4085 St. Francis Blvd. NW
St. Francis, MN 55070

Jeremy,

Thank you for the opportunity to explain the asphalt pavement maintenance services our firm offers and to provide you with a quote for your city streets. I am confident that you will find the services beneficial for your roads. I would like to explain the procedures our service crew uses.

Infrared Patching

The Infrared machine leaves a seamless patch, by heating up an entire 5x7 (truck) or 2 ½' x 12' (trailer) area. The existing asphalt is raked in to the low areas and new virgin mix asphalt is added on the top surface. The final step is to roll the area to a smooth surface and left to cool.

Project Prices - Our price includes all materials, applicable taxes and labor to complete the project as explained.

Please note: The Customer is responsible for notifying the public that we will be working in your area.

Pavement maintenance can be extremely dusty and dirty work and we strongly encourage the public to keep their Personal property at a strong distance away from our work zone. This will avoid any possible concerns for dust, debris or damage. A recommended distance would be 75 – 150 feet away from the work zone. An Insurance Certificate is available upon request.

Infrared Patching

1. Cree & 228th Lane NW – 2 heats for \$420.00
2. 233rd & Oneida – 1 heat for \$225.00
3. 233rd & Oneida – 3 heats for \$630.00
4. Ronoake & 241st Ave. NW – 4 heats for \$800.00
5. Neon Street NW – 3 heats across the road for \$630.00
6. 232nd Ave. Navaho, 200 ft. back from Navaho – 1 heat for \$225.00
7. 232nd Lane & Navoho St. NW – 4 heats for \$800.00
8. Lackawanna & 236th Lane – 16 heats for \$2,880.00
9. Mohican St. NW – 3 heats for \$630.00
10. Kanabec St. NW – 4 heats & 2 holes for \$420.00
11. Degardner Circle NW – 7 heats & 2 holes for \$1,400.00
12. Fox Street – 14 heats & 5 holes for \$2,660.00
13. 245th – 11 heats for \$2,145.00
14. 233rd – 11 heats for \$2,145.00

15. 232nd & Yucca – 1 manhole for \$200.00
1 water valve for \$200.00
16. 232nd – 3 heats for \$630.00
17. Fire Station – 8 heats for \$1,520.00
18. 229th Lane NW & Quay – 1 heat for \$225.00
19. 228th Ave. NW & Quay – 1 heat for \$225.00
20. 229th Ave. – 6 heats for \$1,170.00

The total project price is subject to the work chosen to be completed.

TERMS: Owner agrees that all payments required under this Contract shall be due and payable within 30 days of date of invoice. Owner further agrees that Bargaen Inc. may charge interest at the annual rate of eighteen percent (18%), unless a lesser percentage is required by law on any sum due under this Contract which is not paid within 30 days of invoice date. If payments are not made when due, interest, costs incidental to collection and attorney's fees (if any attorney is retained for collection) shall be added to the unpaid balance. Bargaen Inc. reserves the right, without penalty from Owner, to stop work on the project if Owner does not make payments to Bargaen Inc. when due.

This Proposal/Contract may be withdrawn by Bargaen Inc. if not accepted within 30 days, or at anytime, subject to increases related to material prices as noted above.

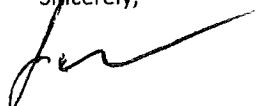
Acceptance of proposal – The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. This proposal may be withdrawn if not accepted within 30 days.

Date of acceptance _____ Purchase Order # _____

Signature _____ Signature _____

Thank you for the opportunity to provide you with information on the asphalt pavement maintenance needs in your community. I am confident that you will find the products used and the workmanship of our crew of the highest quality. I look forward to working with you in the near future.

Sincerely,



Jerry Van Dyke
BARGEN, INC.
JVD/lh

Project for City of St. Francis – Infrared Patching

Our Mission

Bargaen, Inc. is committed to excellence and, because of this, we take pride in our team of professional craftsmen. Our primary purpose is to provide knowledgeable recommendations, quality workmanship and exceptional service. Our goal is satisfied customers who have received the most value for their investment.

Website: www.bargeninc.com
Email: bargen@bargeninc.com

M.R.

PAVING & EXCAVATING, INC.

2020 North Spring Street
P.O. Box 787

Phone (507) 354-4171

New Ulm, MN. 56073

Fax (507) 359-4156

May 30, 2018

City of St. Francis
Attn: Jeremy Shook
4068 St. Francis Blvd NW
St. Francis, MN 55070

Infrared Patching Procedures:

The infrared machine leaves a seamless patch, by heating up an entire 5' x 7' (truck) or 2 ½' x 12' (trailer) area. The existing asphalt is raked in to the low areas and new virgin mix asphalt is added on the top surface. The final step is to roll the area to a smooth surface and left to cool.

Project prices – Our price includes all materials, applicable taxes and labor to complete the project as explained.

We will complete the infrared patching project on the following areas:

1. Cree & 228th Lane NW – 2 heats for \$470.00
2. 233rd & Oneida – 1 heat for \$250.00
3. 233rd & Oneida – 3 heats for \$700.00
4. Ronoake & 241st Ave. NW – 4 heats for \$890.00
5. Neon Street NW – 3 heats across the road for \$700.00
6. 232nd Ave. Navajo, 200 ft. back from Navajo – 1 heat for \$250.00
7. 232nd Lane & Navajo St. NW – 4 heats for \$890.00
8. Lackawanna & 236th Lane – 16 heats for \$3,200.00
9. Mohican St. NW – 2 heats for \$700.00
10. Kanabec St. NW – 4 heats & 2 holes for \$470.00
11. Degardner Circle NW – 7 heats & 2 holes for \$1,600.00
12. Fox Street – 14 heats & 5 holes for \$2,970.00
13. 245th – 11 heats for \$2,400.00
14. 233rd – 11 heats for \$2,400.00
15. 232nd & Yucca – 1 manhole for \$225.00
1 water valve for \$225.00
16. 232nd – 3 heats for \$700.00
17. Fire Station – 8 heats for \$1,700.00
18. 229th Lane NW & Quay – 1 heat for \$250.00
19. 228th Ave. NW & Quay – 1 heat for \$250.00
20. 229th Ave. – 6 heats for \$1,300.00

The total project price is subject to the work chosen to be completed.

** Please note that if any bonds are needed for this project that will need to be added as an additional cost to the price listed above.

** This price is subject to change if not accepted within 30 days.

Acceptance of Proposal:

Date of acceptance: _____ PO # _____

Customer Signature: _____

M.R. Paving Signature: _____ / _____

Thank you for the opportunity to provide you with a quote for your community project.

Respectfully Submitted,

Brian D. Rahe

Brian D. Rahe, Sales Mgr.
M.R. Paving & Excavating, Inc.



**CITY COUNCIL
AGENDA REPORT**
Agenda Item #:
9 E (2)

TO: Joe Kohlmann, City Administrator
FROM: Paul Teicher, Public Works Director
SUBJECT: Information on routine street maintenance, Dust Control
DATE: 6/4/2018

OVERVIEW:

In March of 2010, the City identified high volume, high traffic gravel roads within the city. Since then, the City has hired a contractor every year to apply dust control chemical to these roads. By doing so, the city has seen a significant reduction in the amount of time needed to grade and maintain these roads during the summer months. The condition of the gravel itself remains of higher quality and the need for it to be replaced or added to has been reduced. Normally, this work takes place in early spring before Pioneer Days. Due to the late winter, this work has been scheduled to occur June 20th depending on the weather.

Every year the City has requested quotes for dust control application. This year the low quote was received from Northern Salt Inc. for 0.91 cents per gallon. Staff estimates a total of approximately 17,800 gallons will be used. This is approximately \$16,016.00 but final costs will be based on actual gallons used to perform the application. Dust control is a routine and budgeted for activity.

ACTION TO BE CONSIDERED:

Consider accepting the quotes as identified for routine street maintenance, dust control.

BUDGET IMPLICATION:

This is a budgeted for item in the 2018 streets operation and maintenance budget.

Attachments:

1. Quote from Tri City Paving
2. Quote from NSI Inc.
3. Map of treated areas
4. Contractor request letter

Quotes for Dust Control – 2018

The City of St. Francis will accept quotes for the furnishing and application of materials for dust control until April 11, 2017. All quotes must be submitted on this document and shall be signed and dated.

The City anticipates the use of approximately 17,600 gallons of chloride solution, City wide. Someone from the City will ride with each applicator truck to facilitate the application. Application widths will be approximately 18 to 20 feet.

The City of St. Francis will require the work to be completed by May 25, 2017, weather permitting.

The following identifies the required concentration of materials and application rates:

- For Calcium Chloride: 38% calcium chloride concentration applied.
 - Required application rate of 0.30 gallons per square yard.
- For Magnesium Chloride: 32% magnesium chloride concentration applied.
 - Required application rate of 0.30 gallons per square yard.

A final quantity of material has not been determined. Please provide a unit cost for each of the 2 Tiers associated with the material and the corresponding quantities listed below. Unit costs provided below shall include all costs associated with delivery and application of product as well as any applicable sales tax. City residents occasionally request that chloride solution be applied in front of their properties. City residents must be able to contact your company for chloride applications while you are completing the work within the City and the same unit prices would apply.

Please quote the cost of materials furnished and applied:

ESTIMATED COST:

ITEM	QUANTITY	UNIT COST
Tier I. Calcium Chloride	0 – 10,000 gal	_____
Tier II. Calcium Chloride	10,000 + gal	_____
Tier I. Magnesium Chloride	0 – 10,000 gal	_____
Tier II. Magnesium Chloride	10,000 + gal	_____

Name of Company _____

Address _____

Phone Number _____

Signature _____ Date _____

Quotes for Dust Control – 2018

The City of St. Francis will accept quotes for the furnishing and application of materials for dust control until April 9th, 2018. All quotes must be submitted on this document and shall be signed and dated.

The City anticipates the use of approximately 18,500 gallons of chloride solution, City wide. Someone from the City will ride with each applicator truck to facilitate the application. Application widths will be approximately 18 to 20 feet.

The City of St. Francis will require the work to be completed by May 22, 2018, weather permitting.

The following identifies the required concentration of materials and application rates:

- For Calcium Chloride: 38% calcium chloride concentration applied.
 - Required application rate of 0.30 gallons per square yard.
- For Magnesium Chloride: 32% magnesium chloride concentration applied.
 - Required application rate of 0.30 gallons per square yard.

A final quantity of material has not been determined. Please provide a unit cost for each of the 2 Tiers associated with the material and the corresponding quantities listed below. Unit costs provided below shall include all costs associated with delivery and application of product as well as any applicable sales tax. City residents occasionally request that chloride solution be applied in front of their properties. City residents must be able to contact your company for chloride applications while you are completing the work within the City and the same unit prices would apply.

Please quote the cost of materials furnished and applied:

ESTIMATED COST:

ITEM	QUANTITY	UNIT COST
Tier I. Calcium Chloride	0 – 10,000 gal	<u>0.988</u>
Tier II. Calcium Chloride	10,000 + gal	<u>0.988</u>
Tier I. Magnesium Chloride	0 – 10,000 gal	_____
Tier II. Magnesium Chloride	10,000 + gal	_____

Name of Company TRI-CITY PAVING, INC.
P.O. BOX 326
Address LITTLE FALLS, MN 56345

Phone Number 320-632-5135

Signature John Summa

Date 4/9/2018

Quotes for Dust Control – 2018

The City of St. Francis will accept quotes for the furnishing and application of materials for dust control until April 9th, 2018. All quotes must be submitted on this document and shall be signed and dated.

The City anticipates the use of approximately 18,500 gallons of chloride solution, City wide. Someone from the City will ride with each applicator truck to facilitate the application. Application widths will be approximately 18 to 20 feet.

The City of St. Francis will require the work to be completed by May 22, 2018, weather permitting.

The following identifies the required concentration of materials and application rates:

- For Calcium Chloride: 38% calcium chloride concentration applied.
 - Required application rate of 0.30 gallons per square yard.
- For Magnesium Chloride: 32% magnesium chloride concentration applied.
 - Required application rate of 0.30 gallons per square yard.

A final quantity of material has not been determined. Please provide a unit cost for each of the 2 Tiers associated with the material and the corresponding quantities listed below. Unit costs provided below shall include all costs associated with delivery and application of product as well as any applicable sales tax. City residents occasionally request that chloride solution be applied in front of their properties. **City residents must be able to contact your company for chloride applications while you are completing the work within the City and the same unit prices would apply.**

Please quote the cost of materials furnished and applied:

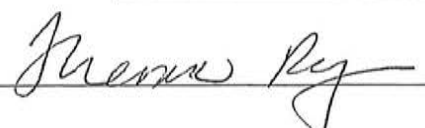
ESTIMATED COST:

ITEM	QUANTITY	UNIT COST
Tier I. Calcium Chloride	0 – 10,000 gal	<u>0.91</u>
Tier II. Calcium Chloride	10,000 + gal	<u>0.91</u>
Tier I. Magnesium Chloride	0 – 10,000 gal	_____
Tier II. Magnesium Chloride	10,000 + gal	_____

Name of Company Northern Salt Inc.

Address 20920 Forest Rd N
Forest Lake MN 55025

Phone Number 651-209-3148

Signature  Date 4-2-9

March 20, 2018

Contractor:

RE: Dust Control
St. Francis, MN 55070

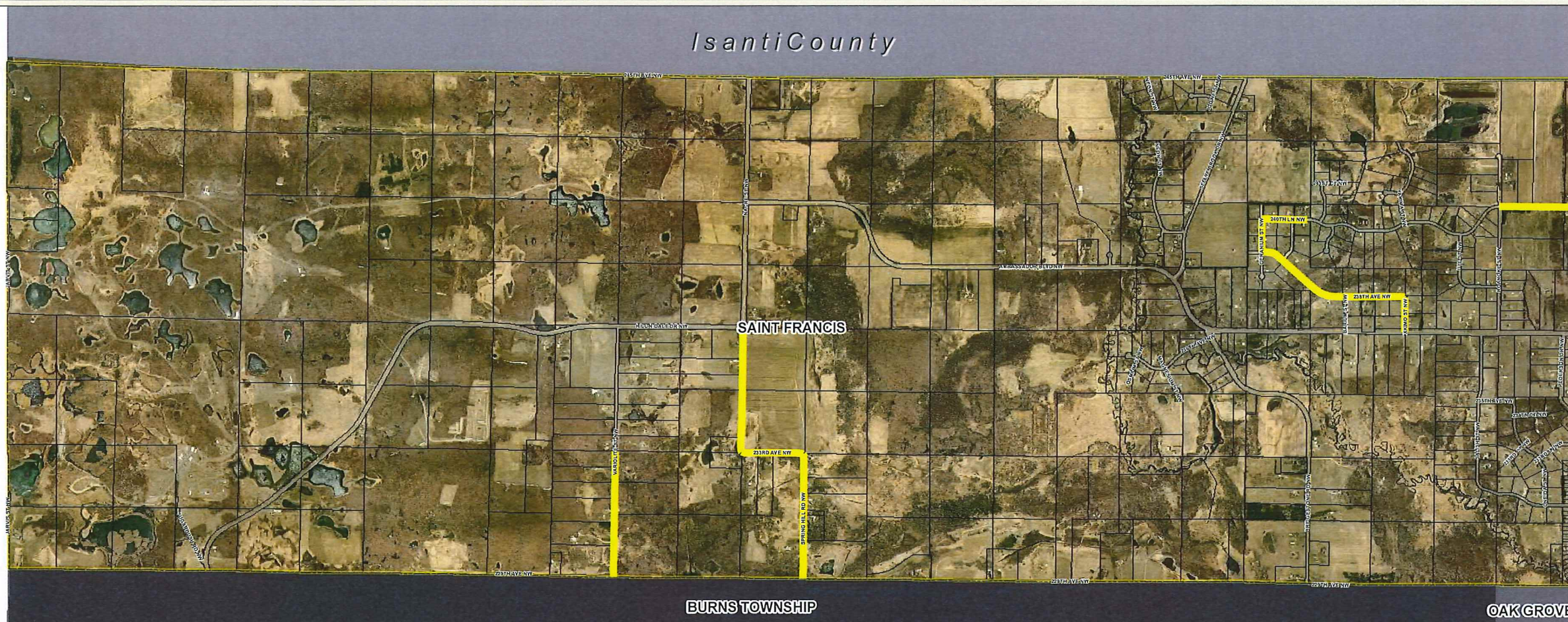
Dear :

The City of St. Francis is accepting quotes for the furnishing and application of calcium chloride or magnesium chloride solution for dust control until April 6, 2018. A proposal and the City of St. Francis' specification regarding the application of calcium chloride or magnesium chloride have been enclosed for your information. If you are interested in submitting a quote for dust control in the City of St. Francis, please submit the quote no later than April 6, 2018, to the attention of Jeremy Shook, 4058 St. Francis Blvd. NW, St. Francis, MN 55070.

If you have any questions regarding the proposed project, please contact me at 763-233-5201.

Sincerely,

Jeremy Shook
Streets & Parks Supervisor
City of St. Francis, Public Works Department



Legend

- High Volume Rural Roadways
- Parcels
- St. Francis City Limits



Source: Anoka County, TLG



0 0.5
Miles

High Volume Rural Roadways

March, 2010



**CITY COUNCIL
AGENDA REPORT**

Agenda Item #:

9F

TO: Mayor & City Council
FROM: Joe Kohlmann, City Administrator
SUBJECT: Nixle Communication Tool
DATE: June 4th, 2018

OVERVIEW:

Last year, a neighboring city experienced a situation where their water became nonpotable. Taking note of the situation, our Emergency Management Director (Police Chief) reviewed several services for mass notifications. The City entered into an agreement with Nixle. This provided the City with the ability for mass notifications through Reverse 911. Essentially, all of the landline numbers have been downloaded for an automated phone call in case of an emergency.

Staff is looking to renew the subscription with Nixle and extend the capabilities. As you know, landlines are decreasing substantially and being replaced with cell phones. Nixle allows "Alert" and "Advisory" text messages to be sent out. In addition, the City can utilize the Nixle portal on our website for residents to sign up for "Community" notifications – which would only be sent via email (as we currently do). We have less than 20 subscribers on our email list.

The best feature with Nixle is that you can sign up via text. Basically, you text "Keyword" to 888777 and you are subscribed for "Alert" and "Advisory" messages. The signup is the biggest barrier to an effective communication subscription.

As part of renewing our contract with Nixle, the City would also undertake a massive marketing effort to promote the new tool (Marketing plan attached). There will be some minor design and printing costs associated with the marketing materials (approximately < \$3,000).

Nixle has the capability of sending an "Alert" or "Advisory" message via – reverse 911, text message, email, website update, social media and Google Alerts. This would be a consistent message on all formats.

The annual subscription to Nixle is approximately \$4,300.

ACTION TO BE CONSIDERED:

Motion to enter into a renewal with Nixle and discuss the communications plan.

Attachments:

- 1) Staff Marketing and Implementation Plan
- 2) Nixle Brochure

**Staff Meeting Report
May 30th, 2018**

TO: Department Heads
FROM: Joe Kohlmann, City Administrator
SUBJECT: Nixle Communication Tool
DATE: May 30th, 2018

OVERVIEW:

Department Heads have responded with their likely intended uses for the Nixle communication tool. It can be summed up as follows:

Alert:

Police	Fire	Public Works
Evacuations Hazmat Leaks/Spills TORNADOS Missing Persons Life Threatening Weather Active Shooter Criminal Activity (threat posed) Other imminent threats	Wildfires Hazmat Leaks/Spills Large Building Fires	Hazmat Leaks/Spills Water use restrictions Drinking Water Health Sewer backups

Advisory:

Police	Fire	Public Works
Traffic Issues (operations) Accident Road closure Burglaries Hazardous weather School Lockdown	Traffic Issues (operations) Burning Restrictions Live Burn Trainings	Hydrant Flushing Winter Roadway Benching Water Tower Painting Planned Detours/Road Maintenance Liquor Store Closings

- Water main break

Community/Outreach:

These can basically be outlined below. The master list of notifications will be provided and distributed as it applies to various departments. If it is a general event notification that does not fit a specific department – Clerk and Community Development will need to determine who handles these notifications.

City Clerk	Public Works	Police	Comm. Dev.
Job Openings Events Comm. Meetings Elections Information Holiday Closings Bottle Shop Promo	Events Fertilizing/Spraying Ice Rink Info	Events Safety Reminders Extra DWI Enforce. Public Safety Crosswalk Safety	Events Citizen Engagement

Marketing Plan and Implementation Timeline:

Training will be completed with all applicable Staff Members by the Police Chief and City Administrator. The estimated date to have all appropriate Staff trained by **will be June 22nd**.

A work group of the **Community Development Director, City Clerk, Finance Director, Public Works Admin, and a Police Representative** will be created once training is completed. This group will be tasked with working with a Printer/Graphic Designer/Marketing consultant or similar to create an effective branding and communication for the getting the Program out to the Public. A meeting should be scheduled with a selected consultant for the **week of June 25th to ensure designed materials are sent out by the dates below.**

- 1) Press Releases – Upon completion of training for employees. The **Police Chief** and **City Administrator** will send out a press release by **July 16th**.
- 2) Flyers – **Community Development** will be in charge of designing flyers with effective communication of the product and branding of the City. This department will be the head of the workgroup. This will be worked on immediately after the completion of training and a plan for locations to put flyers along with printed flyers will be available on **July 16th**.

- 3) Posters – **Community Development** will also work on the creation of posters for City Buildings. Effective communication and branding consistency. These will be mocked up and printed posters for City Buildings on **July 16th**.
- 4) Postcards – Postcards will be ordered by the **City Clerk**. Branding and message will be coordinated with **Community Development and consultant** for consistency and clear messaging. These will be printed by **July 16th and ready for mailing**.
- 5) Registration cards – These will be coordinated by the **City Clerk** and forms will be available for Admins by **July 16th**.
- 6) Utility Bill Inserts – Consistent Branding and printing/coordination of utility bill inserts will be the responsibility of the **Finance Director with oversight of Comm. Dev. and consultant**. These will be ready to go on the billing immediately after **July 16th**. *→ August*
- 7) Door Hangers – consistent branding and messages. Door hangers will be printed and ready for hanging as close to **July 16th** as possible. **Public Works** will hang door hangers.
- 8) Social Media posts – **Community Development/ Clerk** will prepare a series of Facebook posts ready to be sent out beginning on **July 16th** and will be continued weekly for at least 90 days.
- 9) Website Information – **Public Works Admin**. Ready for **July 16th**.
- 10) Newsletter write-ups – **City Clerk** for Fall Newsletter.
- 11) City Council Presentations – **City Administrator** – **June 4th**
- 12) Other potential methods

Community Events Postings

Website & Facebook Postings

- Easter Bingo 2018
- Easter Egg Hunt 2018
- Bike Rodeo 2017 & 2018
- National Drug Take Back Day (Spring/Fall) 2017 & 2018
- Pet Clinic 2017 & 2018
- Spring Recycling Day 2017 & 2018
- The Top Secret Project – SFHS 2018
- Come Visit Santa 2017
- Holiday Lights & Cell Phone Collection 2017
- Santa on the Fire Truck 2017
- Casino Night – St. Francis Chamber Post 2018
- Community Tree Lighting 2017
- (2) Reminders to express opinion on 2040 Comp Plan 2017
- Breakfast with Santa – SF American Legion 2017
- (3) Fall Recycling Events Post 2017
- SF American Legion A Gathering of Friends post 2017
- Community Tree Light Ceremony – 2017
- Winter Parking Reminders – 2017
- Fall Back – Daylight Saving time Reminder – 2017
- Fall Street Sweeping 2017
- Dracula The Musical SFHS
- Chicken Permits – Notification 2017
- Eddie Eagle 2017
- Fire Prevention Week – Open House 2017
- Shred Event (Recycling)
- All Holiday Closing Notices 2017/2018
- 1st Annual Community Saints Night SFHS 2017
- Tatorfest SF Lions 2017
- Septic Smart Week 2017
- Fall Newsletter 2017
- Movies in the Park 2017
- National Night Out/Night to Unite 2017
- SF Chamber Golf Tournament 2017
- Alexandria House – Walk for Hope 2017
- Bottle Shop Open Sundays giveaway 2017
- City-Wide Garage Sale 2017
- Summer Recycling Event 2017
- Pioneer Days 2017

- Drinking Water Week 2017 & 2018
- PD Food Drive 2017
- PD Toy Drive 2017
- Congratulations Class of ????

Facebook Only Posts

- Frozen Pipes 2018
- Sledding Hill – Usage Reminder, Have Fun! 2018
- National Weather Service – Winter Storm Possible 2018
- Ice Rink opening – 2017
- Demolition of the old Food & Fuel 2017
- Granny's Closet Donations 2017
- Small Business Saturday 2017
- Happy Thanksgiving Post 2017
- New City Website Post – Come check it out! 2017
- Winter Driving Tips – 2017
- Jake Rehling remembrance post – 2017
- Don't Forget to Vote, ISD15 – 2017
- Wooden Lath Reminders for plows
- Fire Dept. Live House Fire Notice – 2017
- Lost Dog – ULAF 2017
- Hiring Reserves Notice 2017
- Recycling Survey
- Construction Update (CR 24) 2017
- Other Agency Alerts (PD) 2017/2018
- Wanted/Missing Persons (PD) 2017/2018
- DWI Task Force (PD)
- Winning with Cops (PD)

Website Only Posts

- Hydrant Flushing 2018
- Spring Street Sweeping 2018
-

All City meetings and work sessions.



Nixle Message Types

Message Publishing Best Practices

Selecting the correct Message Type is extremely important when creating a new publication. See below for suggestions on how to choose the correct Message Type for your next Nixle message.

Alert

Definition: Alert messages should be reserved for critically important information where loss of life and/or property is potentially imminent. Alert messages are time-sensitive and require your residents to take immediate action. Additionally, Alert messages may be republished on Google Public Alerts based on the message content and the chosen CAP fields.

Resident Notification Settings: By default, Alert messages reach your residents by SMS and Email; however, residents have the ability to change their settings on www.nixle.com. Sending non-critical Alerts, or overusing the Alert message type, increases the chance that residents will opt out of SMS and/or Email notifications from your agency.

Alert Examples:

Severe Weather Warning

Gas Leak

Tsunami Warning

Missing Child

Wildfire

Contagious Disease Outbreak

Advisory

Definition: Advisory messages are intended to communicate important, need-to-know information. Advisories should be considered less time-critical than Alerts and require a heightened sense of awareness from your residents.

Resident Notification Settings: By default, Advisory messages reach your residents by SMS and Email; however, residents have the ability to change their settings at www.nixle.com. Sending non-important Advisories, or overusing the Advisory message type, increases the chance that residents will opt out of SMS notifications from your agency.

Advisory Examples:

Road Closure/Detour

Police Activity

School Closing

Wanted Suspect

Severe Weather Watch

Traffic Congestion

Community

Definition: Community messages should be used to convey everyday local news, happenings, and developments. Community messages should not contain any time-critical information.

Resident Notification Settings: By default, Community messages will reach your residents by Email only; however, residents can adjust their settings at www.nixle.com and opt in to receive Community messages by SMS as well.

Community Examples:

Police Blotter

Sobriety Checkpoint Notice

Crime Prevention Tips

Event Reminder

Town Hall Meeting

Community Updates



Call Us **Today**
877-649-5362



QUICK AND RELIABLE communication techniques to enhance emergency preparedness planning.

MULTI-MODAL ENGAGEMENT with residents and key personnel using voice, email, SMS texting and social media.

COMPREHENSIVE SOLUTION is completely web-based, combining reverse 911 directories with a database of geographically-located phone numbers that don't require citizen opt-in for emergency usage.

COMMUNITY ENGAGEMENT + EMERGENCY NOTIFICATION TOGETHER

Nixle 360 delivers maximum community impact by enabling public safety agencies to connect and engage their residents through all communication channels including voice. Features include:

- + Emergency Voice Messages
- + Unlimited Text, Email & Web Messaging
- + Facebook, Twitter, and YouTube Posting
- + IPAWS Publication (FEMA Authorization required)
- + Publication to Google Alerts
- + Anonymous Tipping for residents
- + National Weather Service (NWS) severe weather alerts
- + GIS targeting of households and neighborhoods
- + Robust and customizable reporting and analytics
- + Automatic retry for unconnected calls
- + Mobile Message Publishing

“ **TO ENGAGE THE PUBLIC WHEREVER THEY ARE WHEN IT MATTERS MOST - THAT'S WHAT NIXLE DOES FOR US.** ”

- **CHARLIE BECK**
LOS ANGELES POLICE CHIEF

SIMPLIFY, AUTOMATE AND ACCELERATE COMMUNICATIONS FOR:

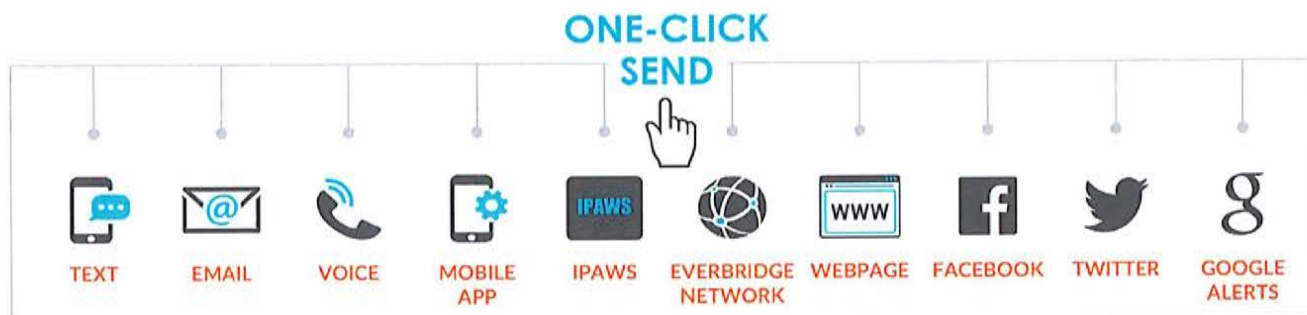
- + Emergency resident notifications
- + Coordination across first responders
- + Shelter-in-place and evacuations
- + Publication to IPAWS
- + Posting to Facebook, Twitter, Youtube, and Google Public Alerts

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Learn
www.nixle.com

Join the 8,000 Public Safety Agencies that Use Nixle



ONE PLATFORM, MULTIPLE COMMUNICATION CHANNELS.

“NIXLE MAKES IT EASY TO SEND OUT A MESSAGE ON THE GO. WITH NIXLE, YOU ARE ALWAYS CONNECTED WITH YOUR COMMUNITY.”

- CHIEF JOHN SORRENTINO
SEA BRIGHT POLICE DEPARTMENT NJ

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