



Planning Commission -AGENDA
October 15, 2024 - 6:30 P.M.
Foley City Hall

1. Approve the agenda.
2. Approve the Planning Commission Minutes.
 - August 12, 2024
3. City Council Update
4. ODAM Medical Center – 700 Penn Street - Rezoning, Parking Variance, Site Plan Review
 - Application and plans provided.
 - Staff has reviewed, outstanding comments/conditions provided.
 -
5. Other Business
 -
6. Next Meeting Date
 - TBD
7. Adjourn

Current Planning Members:

Bill Bronder, Candice Kantor, Jeff Gondeck, Rosalie Musachio, Deb Mathiowetz, Jonathan Brenny

Planning Commission Minutes
August 12, 2024 - 6:30 pm
Foley City Hall

Members Present: Jeff Gondeck, Bill Bronder, Candice Kantor, Deb Mathiowetz, Rosalie Musachio

Members Absent: Jonathan Brenny

Bronder called the Meeting to order @ 6:30 p.m.

Motion by Mathoweitz seconded by Kantor to approve the agenda. Motion carried.

Motion by Gondeck seconded by Mathiowetz to approve the minutes from June 10, 2024. Motion carried.

City Council Update

Gondeck updated the board on the activities of the city council.

Snow Fence Discussion

There was discussion on temporary snow fences and if they are even necessary in the city, the definitions, etc. There was discussion on adding a definition. Motion by Gondeck seconded by Musachio to recommend the following definition:

Snow fence – a barrier that forces windblown, drifting snow to accumulate in a desired place. Snow fences are only allowed on a temporary basis between November 1 to April 1 of each year.

Motion carried, unanimously.

Other Business

Next meeting is TBD.

Motion to adjourn the meeting by Gondeck seconded by Mathiowetz. Motion carried, unanimously.

Submitted by: Sarah Brunn, City Administrator

TCO Design

3305 Highway 169 N, Suite 222, Plymouth, MN 55441
952-994-8276
todd@tcodesign.net

September 30, 2024

Odam Medical Group (Clinic)
700 Penn Street, (PID# 130112300)
Foley, MN 56329

Robert and Abena Odam
920 E 28th Street, Suite 40
Minneapolis, MN 55407

Project Narrative:

Background (Existing and Proposed Use)

The proposed site is vacant and has not been developed. It is currently owned by Great River Federal Credit Union. Odam Realty Holdings, LLC is working to purchase the property from Great River Federal Credit Union. They are currently working with them on a contingent Purchase Agreement. Odam Medical Group (Applicant) is proposing to rezone the site to B1 – Commercial and construct a 5820 square foot one story office medical clinic building.

This is a much-needed facility that will fit nicely in this community. The site is tucked between Penn Street and Highway 23. This central location close to a highway and with great services within a mile makes this site a great location for a small medical clinic.

Odam Medical Group

Odam Medical Group is a welcoming family practice and medical clinic serving patients in Minneapolis and St. Cloud, Minnesota. Robert Larbi-Odam, MD, MPH, Nimo Ahmed, MSN, CNP, and the team are multilingual and communicate to patients about their conditions and treatments in easy-to-understand terms. The providers take a compassionate approach, listening to patient concerns and allowing them to take active roles in their own care. They also have access to state-of-art imaging tests and a laboratory for blood work, urinalysis, and other testing. Odam Medical Group's kid-friendly providers also offer well-child exams to track children's development as they age.

Proposed Facility Use and Patients

Odam Medical Group will focus on five medical objectives. Other objectives could develop in the future as medical needs change for the community and the Country.

1. Primary Care: Ongoing medical care and physical exams for patients aged 1 week to over 65 years. Managing both acute and chronic diseases with a patient load of 20 patients a day. This would include patients who have hypertension, diabetes, asthma, allergies, eczema, hormone imbalances, and a side range of other common conditions.
2. Social Security Disability: Maintaining patients with medical disability filing a claim with Social Security disability with the Minnesota Department of Economic and Employment for income classification. ADA parking will be available for the 5-10 patients a day that will benefit from this facility.
3. Immigration Exam: Department of Homeland Security Medical exam for refugees and immigrants seeking permanent residency and United States citizenship. Approximately five patients will be examined each day.
4. Vaccinations: Regular vaccine and Covid-19 vaccinations will be given to 10-50 walk in (patients without an appointment) patients. They fill in consent forms in the reception area and receive the vaccines in the exam rooms.

Zoning and Neighborhood Impact

The site is currently zoned R2 – Multi-Family Residential. We are requesting to rezone this to B1 – Commercial. The proposed use as an outpatient clinic is considered a permitted use in the B1 – Commercial district. It is adjacent to R2 – Multi-Family Residential to the North and East and adjacent to B1 – Commercial to the West. We will add additional shrubs as screening along the parking lot for headlight screening where needed. The new curb cut will be along Penn Street. The proposed project will comply with the standards of City code section 15.

Traffic Consideration

We are confident that our concept will have little impact on local traffic. The clinic will have standard 8:00 am-5:00 pm hours of operation or at most similar to an average busy daytime business. It will have modest traffic that is associated with a small medical clinic.

Community Benefit

This facility will bring with it a good economic benefit from construction to operation. During construction the project will bring workers who will patron local businesses for lunches, services, and retail. Once in operation, the employees, professional visitors, and patients will also patron the local businesses for the entirety of its operation. The facility will provide approximately 10-12 good new jobs just on employees and increase business opportunities for medical professionals and visiting building and site maintenance personnel.

This medical clinic provides important medical care for the surrounding community.

There are several other advantages to a medical clinic facility for this community. It is important to the owner and operators that this facility is well maintained and run. All aspects of site and building maintenance will be kept to high standards. The employees and patients associated with medical clinics have high standards for this type of facility. These types of facilities are quiet and low key.

Building

The proposed building will be one-story with 12 medical clinic exam and treatment rooms. The total floor area is approximately 5,820 square feet. It will be built on a slab on grade foundation. It will be wood frame construction with generous windows on all sides.

The proposed building will use exterior materials consistent with City code and surrounding buildings. It will utilize a nice balance of manufactured stone, 'LP SmartSide', and decorative metal panels. The siding will be varied by using a combination of textures and colors. The roof will be flat roof construction with EPDM (membrane) finished roofing.

Access and Parking

One new driveway will enter and exit from Penn Street. There will be a new curb cut. There will be a new asphalt parking lot with 30 parking spaces. The Owner is indicating that there will be a maximum of 4 doctors on staff at any one time. Based on Section 7 of City Code we would need 7 ½ parking spaces per doctor on staff which equals 30 parking spaces. We also allowed space as part of the site design for 17 future parking spaces in case there is more need in the future. This is a total of 47 potential spaces. This includes two ADA accessible spaces. There will also be an installation of sidewalks, landscaping, curb cut, curbing, and driveways. There will be a new infiltration basin on the South side of the parking lot and the building that will be designed by our civil Engineer as part of the building permit process.

Parking lot, curbs, and sidewalks will be designed and installed in accordance with 2020 MN Accessibility Code.

Odam Medical Group Clinic Development Schedule

Fall 2024 – Site Plan Review Application to the City of Foley

Fall 2024 – Building Permit Application

Fall/Winter 2024 – Begin Construction

City of Foley Zoning Amendment Application

Street Location of Property: 700 Penn Street

Legal Description of Property: Sect-26 Twp-037 Range-029 GORECKI ADDITION Lot-002 Block-001 1.69 AC

BENTON COUNTY, MN

Current Zoning of Property: R2 – Multi-Family Residential

Proposed Zoning: B1 - Commercial

Type of Request: Zoning Amendment

*** (Attach narrative describing details of project scope) ***

Property Owner: GREAT RIVER FED CREDIT UNION

Name
1532 W SAINT GERMAN ST

Phone:
320-252-5393

Address
ST. CLOUD, MN 56301

Fax:

Email

Applicant: ODAM Medical Group – Robert and Abena Odam

Name
920 E 28th Street, Suite 40

Phone:
Robert 952-992-9305 Abena 612-871-2312

Address
Minneapolis, MN 55407

Robert: rfarbiodam@gmail.com Abena: abena@odammedicalgroup.com

Fax:

Email

Type of Request & Fee Amount:

<input checked="" type="checkbox"/>	Rezoning/Amendment	\$250.00
<input type="checkbox"/>	Conditional Use Permit	\$250.00
<input type="checkbox"/>	Variance	\$250.00
<input type="checkbox"/>	Planned Unit Development	\$250.00

<input type="checkbox"/>	Preliminary Plat	\$500.00
<input type="checkbox"/>	Final Plat	\$
<input type="checkbox"/>	Annexation	\$400.00 +
<input type="checkbox"/>	Site Plan Review/Other	
Total Fees Paid		\$250.00

Has a request been made previously on this property? Yes No Explain: _____

A previous Developer unrelated to Odam Medical Group tried to get a senior living building approved in 2012.

This application must be completed in full, be typewritten or clearly printed, and must be accompanied by all information, supporting documents and plans as required by applicable City Ordinance provisions. A determination of completeness of the application shall be made within ten business days of the application submittal. A written notice of application deficiencies shall be mailed to the applicant.

This is to certify that I am making application for the described action by the City and that I am responsible for all City requirements with regard to this request. This application should be processed in my name and I am the party whom the City should contact regarding any matter pertaining to this application. I have attached a copy of proof of ownership (either copy of Owner's Duplicate Certificate of Title, Abstract of Title or purchase agreement), or I am the authorized person to make this application and the fee owner has also signed this application.

- Supporting Documents Attached
- Appropriate Fees Paid
- Review by City Staff

Application Filed: _____

Date Fees Paid: _____

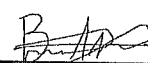
Staff Initials: _____

Completed Application Accepted

Date Application Accepted: _____


Signature of Applicant

9/30/24
Date


Signature of Fee Owner

9/30/2024
Date

City of Foley Variance Application

Street Location of Property: 700 Penn Street

Legal Description of Property: Sect-26 Twp-037 Range-029 GORECKI ADDITION Lot-002 Block-001 1.69 AC BENTON COUNTY, MN

Current Zoning of Property: R2 – Multi-Family Residential **Proposed Zoning:** B1 – Commercial

Type of Request: To install 30 parking spaces instead of the code required 53 parking spaces.
*** (Attach narrative describing details of project scope) ***

Property Owner: GREAT RIVER FED CREDIT UNION
Name
1532 W SAINT GERMAN ST
Address
ST. CLOUD, MN 56301
Phone 320-252-5393
Fax
Email

Applicant: ODAM Medical Group – Robert and Abena Odam
Name
920 E 28th Street, Suite 40
Address
Minneapolis, MN 55407
Phone Robert 952-992-9305 Abena 612-871-2312
Fax
Email Robert: rfarbiodam@gmail.com Abena: abena@odammedicalgroup.com

Type of Request & Fee Amount:

<input type="checkbox"/> Rezoning/Amendment	\$250.00
<input type="checkbox"/> Conditional Use Permit	\$250.00
<input checked="" type="checkbox"/> Variance	\$250.00
<input type="checkbox"/> Planned Unit Development	\$250.00

<input type="checkbox"/> Preliminary Plat	\$500.00
<input type="checkbox"/> Final Plat	\$
<input type="checkbox"/> Annexation	\$400.00 +
<input type="checkbox"/> Site Plan Review/Other	
Total Fees Paid	\$250.00


Has a request been made previously on this property? Yes No Explain: _____
A previous Developer unrelated to Odam Medical Group tried to get a senior living building approved in 2012.

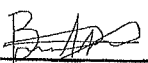
This application must be completed in full, be typewritten or clearly printed, and must be accompanied by all information, supporting documents and plans as required by applicable City Ordinance provisions. A determination of completeness of the application shall be made within ten business days of the application submittal. A written notice of application deficiencies shall be mailed to the applicant.

This is to certify that I am making application for the described action by the City and that I am responsible for all City requirements with regard to this request. This application should be processed in my name and I am the party whom the City should contact regarding any matter pertaining to this application. I have attached a copy of proof of ownership (either copy of Owner's Duplicate Certificate of Title, Abstract of Title or purchase agreement), or I am the authorized person to make this application and the fee owner has also signed this application.

- Supporting Documents Attached
- Appropriate Fees Paid
- Review by City Staff
- Completed Application Accepted

Application Filed: 9/30/24
Date Fees Paid: 9/30/24
Staff Initials: _____
Date Application Accepted: _____


Signature of Applicant
Date 9/30/24


Signature of Fee Owner
Date 9/30/2024

City of Foley
Variance
Findings & Order

Date: 8-22-24

Applicant: O D A M Medical Group

Variance Requested: Reduce required parking spaces from 53 to 30.

1. Does the variance demonstrate harmony with the general purposes and intent of the zoning ordinance?

Yes No

Why or why not: _____

The variance demonstrates harmony with the general purposes and intent of the zoning ordinance. The intent of the zoning ordinance is to provide the proper number of parking spaces for the use of a building. 30 parking spaces will be sufficient for how this building will be used.

2. Is the proposed variance consistent with the city comprehensive plan?

Yes No

Why or why not: _____

The variance is consistent with the city comprehensive plan. It maintains the intent of the current zoning by providing sufficient parking spaces that Dr. Odam has indicated the building will be used and is consistent with his parking needs at his similar Crystal offices.

3. Is the proposed use a reasonable manner not permitted by the zoning ordinance?

Yes No

Why or why not: _____

The proposed use is a reasonable manner not permitted by the zoning ordinance. Dr. Odam has indicated that 30 parking spaces is reasonable for the use of his office building as it is reasonable with his similar building located in Crystal.

4. Is the plight of the landowner due to circumstances unique to the property not created by the landowner?

Yes No

Why or why not: _____

The plight of the landowner is due to circumstances unique to the property not created by the landowner. The usable space is restricted because of the long narrow part of the property that is needed for access from Penn Street. The code required 53 spaces would detract from the much-desired landscape area.

5. **Granting the variance will not alter the essential character of the neighborhood?**

Yes No

Why or why not: _____
Granting the variance will not alter the essential character of the neighborhood. In fact, we believe it will enhance the essential character of the neighborhood by having an increase in the more desirable landscape area.

6. **Are the "practical difficulties" more than economic?**

Yes No

Why or why not: _____
The practical difficulties are more than economics. The practical difficulties are created by the reduction of usable buildable area with the unusual narrow property access needed to get to Penn Street.

IF ALL OF THE ANSWERS ARE "YES", THE CRITERIA FOR GRANTING A VARIANCE HAVE BEEN MET.

❖ *Facts supporting the answer to each question above are hereby certified to be the Findings.*

THE FOLEY PLANNING COMMISSION RECOMMENDS THE VARIANCE:

Approved Not Approved

Date Chair, Foley Planning Commission

Date of Public Hearing: _____ Time: _____

Results: _____

THE FOLEY CITY COUNCIL DETERMINES THE VARIANCE:

Approved Not Approved

The following conditions to be imposed on the property to insure compliance and to protect adjacent properties and the public interest:

Date Mayor



ODAM MEDICAL

Specialist in Primary Care Medicine and Community Health

ODAM MEDICAL GROUP

www.odammedicalgroup.com

09/30/2024

To whom it may concern

City of Foley, Minnesota

STATEMENT ON PARKING NEEDS

Odam Medical Group's future medical office being planned in the City of Foley will have 4 doctors on staff and will not need more than 30 parking spaces.

We have a clinic of a similar size in Crystal, Minnesota and we have not needed more than 28 parking spaces.

Your respectfully,

Dr. Robert Larbi-Odam, MD, MPH

STORM WATER MANAGEMENT PLAN

Odam Medical - Foley

700 Penn Street
Foley, Minnesota

September 30th, 2024

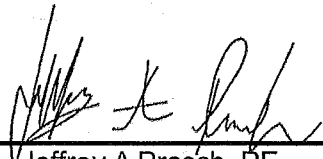
Prepared By:

Demarc Land Surveying & Engineering
7601 73rd Avenue North
Brooklyn Park, Minnesota 55428
763.560.3093

Prepared For:

Odam Medical Group
920 E 28th Street, Suite 40
Minneapolis, MN 55407

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.



Jeffrey A Prasch, PE
Project Engineer

52706

License Number

09.30.2024

Date

Table of Contents

Table of Contents i

1.0 Project Overview ii

2.0 Design Considerations ii

3.0 Rate Control..... ii

Table 3.1 – Discharge Rate Summary..... ii

4.0 Volume Control..... iii

Table 4.1 –Volume Control Summary..... iii

Figures

Figure 1 – Drainage Areas Existing Conditions

Figure 2 – Drainage Areas Proposed Conditions

Figure 3 – Precipitation Data

Figure 4 – Rational Method

Appendix B – Existing Conditions 2-Summary.....1-4

Appendix C – Existing Conditions 10-Year Summary.....5

Appendix D – Existing Conditions 100-Year Summary.....6-7

Appendix E – Proposed Conditions 2-Year Summary.....1-6

Appendix F – Proposed Conditions 10-Year Summary.....7-9

Appendix G – Proposed Conditions 100-Year Summary.....10-17

Appendix H – Soil Summary.....1-5

1.0 Project Overview

A building with an associated parking lot is being proposed at 700 Penn Street in the city of Foley, Minnesota. The entire site is 1.69 acres with a proposed land disturbance of 1.77 acres. There is private property to the east and west, Penn Street to the north, and highway 23 to the south of the site. The entire site is vacant and drains to highway 23. The existing drainage conditions are shown in **Figure 1**.

The proposed site improvements will include a building and associated parking lot. The Proposed site improvements will include 0.83 acres of new impervious area. An infiltration basin is proposed to meet the stormwater requirements for the site. Most of the stormwater runoff from the impervious area will be directed to the proposed basin with an outlet to highway 23. A portion of the north side of the site will drain towards Penn Street. The site is within the Drinking Water Supply Management Area (DWSMA) with moderate vulnerability based on the City of Foley. **Figure 2** shows the proposed drainage conditions.

The proposed stormwater improvements will include:

- ▲ Infiltration Basin

2.0 Design Considerations

The rate and volume requirements for this site are being considered. The following design tools, methods, and considerations were used in the design of the on-site storm water system:

- ▲ Rate and Volume Modeling Software – HydroCAD 10.20
- ▲ Rainfall Distribution – MSE 24-hour Type III
- ▲ Rainfall Data – NOAA Atlas 14 rainfall data as shown in **Figure 3**
- ▲ Soil Conditions – Hydrologic Soil Group B based on websoil survey (**Appendix H**)

3.0 Rate Control

The total post-development peak flow rates at the project site boundary shall not exceed pre-development total peak flow rates for 2-year, 10-year, and 100-year, 24-hour storm events. The discharge rates for each storm event are summarized in **Table 3.1**.

Table 3.1 – Discharge Rate Summary

Discharge Node	Discharge Rate [cfs]					
	Storm Event					
	2-Year		10-Year		100-Year	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
Highway 23 (1L)	0.47	0.13	2.38	1.89	7.44	4.67
Penn Street (2L)	0.00	0.26	0.00	0.38	0.00	0.65
Total Offsite (3L)	0.47	0.26	2.38	2.07	7.44	5.21

From the above table, the total offsite proposed runoff rates do not exceed the total offsite existing runoff rates. HydroCAD results for rate control are included in **Appendix B-G**.

4.0 Volume Control

The volume of water discharged from the site was analyzed. The requirement is that 1.0 inches of runoff from all new impervious surfaces must be abstracted. **Table 4.1** summarizes the volume control for the redevelopment of the site.

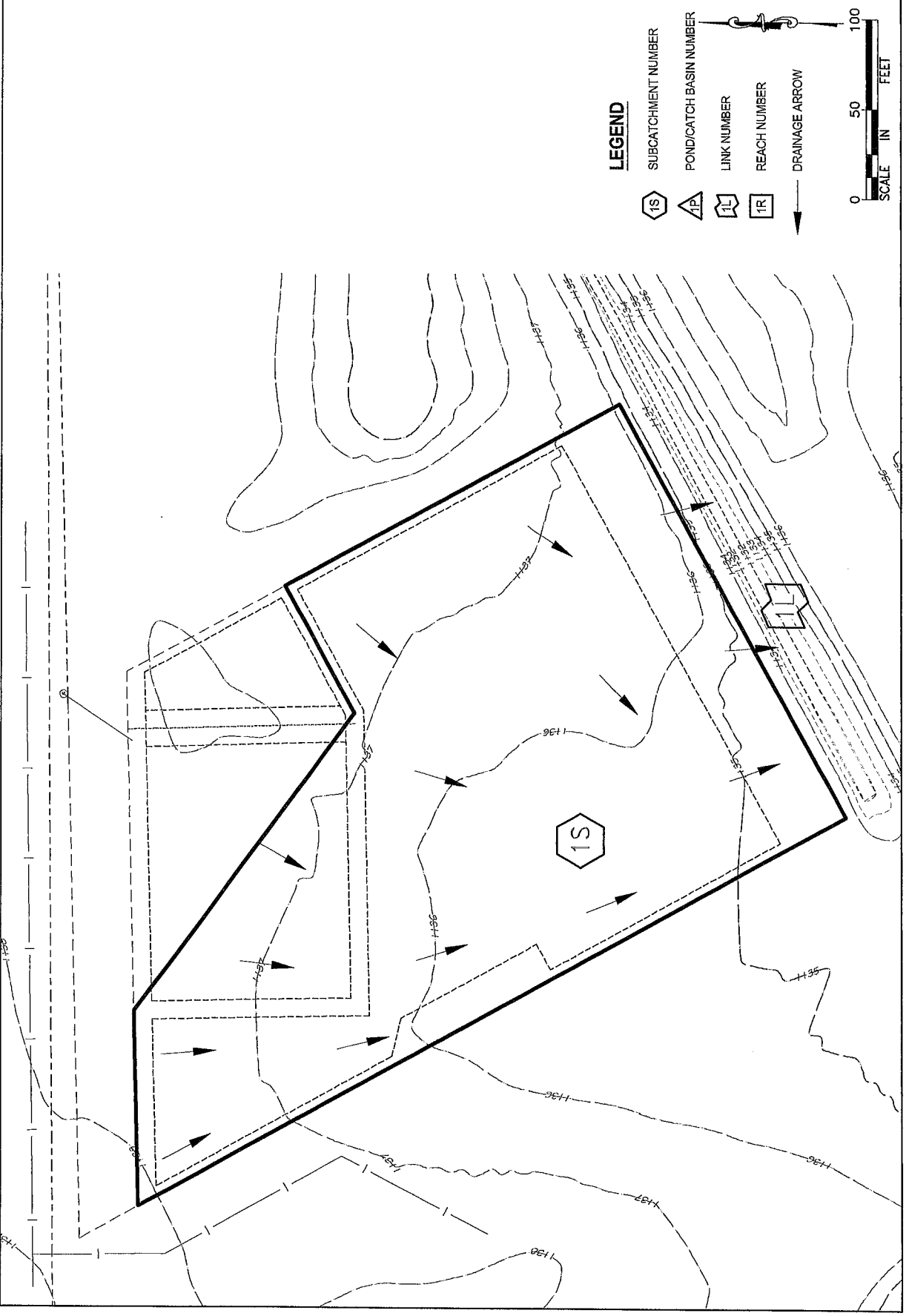
Table 4.1 –Volume Control Summary

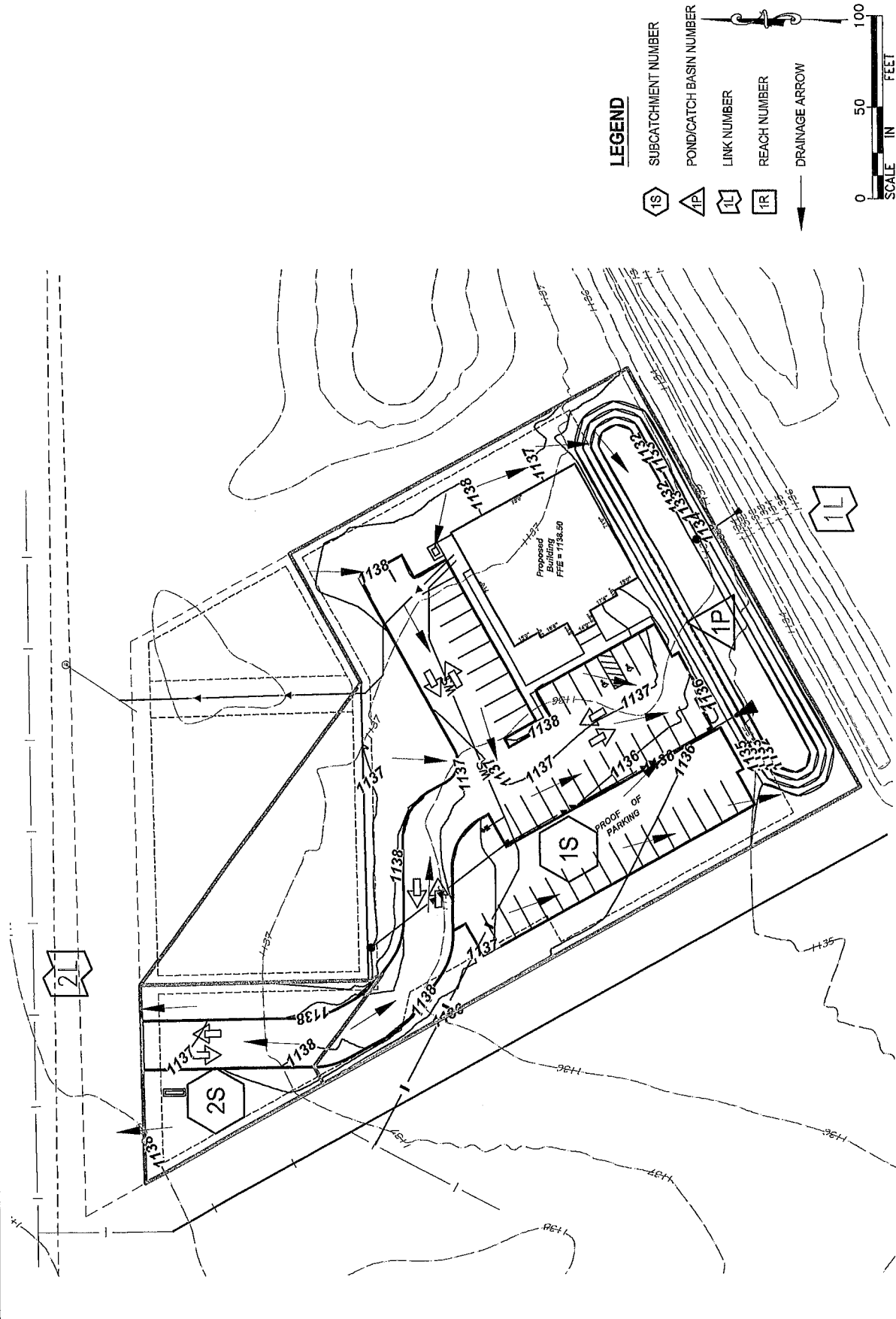
Water Quality Treatment Facility	New Impervious Area (sf)	Required Water Volume (cf) from 1.0" of Precipitation	Actual Water Volume (cf)	Time to Filtrate (hrs)
Infiltration Basin (1P)	36,033	3,003	4,066	42

As shown in the table above, the actual water quality treatment volume is greater than the required water quality treatment volume. This meets the volume requirement for the site.

Appendix A

Figures







NOAA Atlas 14, Volume 8, Version 2
Location name: Foley, Minnesota, USA*
Latitude: 45.6692°, Longitude: -93.909°
Elevation: 1139 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk,
 Dale Unruh, Michael Yekta, Geoffery Bonnín

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.357 (0.279-0.455)	0.422 (0.329-0.539)	0.529 (0.411-0.676)	0.618 (0.478-0.792)	0.741 (0.557-0.967)	0.837 (0.617-1.10)	0.933 (0.669-1.24)	1.03 (0.714-1.39)	1.16 (0.778-1.59)	1.26 (0.826-1.74)
10-min	0.523 (0.408-0.667)	0.618 (0.482-0.789)	0.774 (0.602-0.990)	0.905 (0.701-1.16)	1.09 (0.816-1.42)	1.23 (0.904-1.61)	1.37 (0.979-1.82)	1.51 (1.04-2.04)	1.70 (1.14-2.33)	1.85 (1.21-2.56)
15-min	0.637 (0.498-0.813)	0.753 (0.588-0.962)	0.944 (0.735-1.21)	1.10 (0.854-1.41)	1.32 (0.996-1.73)	1.50 (1.10-1.96)	1.67 (1.19-2.22)	1.84 (1.27-2.49)	2.08 (1.39-2.85)	2.25 (1.48-3.12)
30-min	0.885 (0.692-1.13)	1.05 (0.819-1.34)	1.32 (1.02-1.68)	1.54 (1.19-1.97)	1.85 (1.39-2.41)	2.08 (1.54-2.73)	2.32 (1.66-3.09)	2.56 (1.77-3.46)	2.88 (1.92-3.94)	3.12 (2.04-4.31)
60-min	1.12 (0.875-1.43)	1.35 (1.05-1.72)	1.72 (1.34-2.20)	2.03 (1.57-2.60)	2.45 (1.84-3.19)	2.77 (2.04-3.64)	3.09 (2.22-4.11)	3.42 (2.36-4.61)	3.84 (2.57-5.26)	4.16 (2.73-5.76)
2-hr	1.36 (1.07-1.72)	1.65 (1.30-2.09)	2.13 (1.67-2.70)	2.52 (1.97-3.20)	3.06 (2.31-3.94)	3.46 (2.57-4.50)	3.87 (2.79-5.10)	4.28 (2.98-5.72)	4.81 (3.24-6.54)	5.21 (3.44-7.15)
3-hr	1.49 (1.18-1.88)	1.83 (1.45-2.30)	2.37 (1.87-2.99)	2.82 (2.22-3.56)	3.44 (2.62-4.42)	3.91 (2.92-5.06)	4.38 (3.18-5.75)	4.85 (3.40-6.47)	5.48 (3.71-7.42)	5.95 (3.95-8.14)
6-hr	1.76 (1.41-2.19)	2.12 (1.69-2.64)	2.73 (2.17-3.40)	3.24 (2.57-4.06)	3.96 (3.06-5.07)	4.53 (3.42-5.84)	5.12 (3.75-6.68)	5.72 (4.05-7.58)	6.53 (4.47-8.80)	7.16 (4.79-9.73)
12-hr	2.06 (1.67-2.55)	2.40 (1.94-2.97)	3.00 (2.41-3.71)	3.53 (2.82-4.38)	4.31 (3.38-5.51)	4.96 (3.80-6.37)	5.64 (4.19-7.35)	6.37 (4.57-8.43)	7.40 (5.12-9.94)	8.22 (5.54-11.1)
24-hr	2.33 (1.90-2.85)	2.70 (2.20-3.31)	3.35 (2.72-4.11)	3.94 (3.18-4.84)	4.80 (3.80-6.09)	5.52 (4.27-7.04)	6.28 (4.71-8.13)	7.10 (5.14-9.33)	8.26 (5.77-11.0)	9.18 (6.24-12.3)
2-day	2.58 (2.12-3.12)	3.06 (2.52-3.71)	3.88 (3.18-4.71)	4.57 (3.73-5.57)	5.56 (4.42-6.95)	6.36 (4.94-7.99)	7.17 (5.41-9.15)	8.02 (5.83-10.4)	9.18 (6.44-12.1)	10.1 (6.91-13.4)
3-day	2.86 (2.37-3.45)	3.34 (2.76-4.04)	4.16 (3.43-5.03)	4.86 (3.99-5.89)	5.86 (4.68-7.29)	6.67 (5.21-8.35)	7.50 (5.69-9.53)	8.37 (6.12-10.8)	9.57 (6.76-12.6)	10.5 (7.24-13.9)
4-day	3.12 (2.59-3.75)	3.59 (2.98-4.31)	4.39 (3.64-5.29)	5.09 (4.19-6.15)	6.10 (4.90-7.56)	6.92 (5.44-8.64)	7.77 (5.92-9.85)	8.67 (6.37-11.2)	9.91 (7.03-13.0)	10.9 (7.53-14.4)
7-day	3.70 (3.10-4.41)	4.21 (3.52-5.02)	5.08 (4.24-6.07)	5.84 (4.84-6.99)	6.93 (5.60-8.52)	7.81 (6.18-9.67)	8.72 (6.70-11.0)	9.69 (7.17-12.4)	11.0 (7.87-14.4)	12.1 (8.40-15.8)
10-day	4.21 (3.54-5.00)	4.77 (4.01-5.66)	5.72 (4.79-6.80)	6.53 (5.44-7.78)	7.69 (6.24-9.39)	8.62 (6.85-10.6)	9.58 (7.38-12.0)	10.6 (7.86-13.5)	12.0 (8.57-15.5)	13.0 (9.11-17.0)
20-day	5.78 (4.92-6.79)	6.46 (5.48-7.59)	7.56 (6.40-8.91)	8.49 (7.15-10.0)	9.79 (8.00-11.8)	10.8 (8.64-13.1)	11.8 (9.17-14.6)	12.8 (9.61-16.2)	14.2 (10.3-18.3)	15.3 (10.8-19.8)
30-day	7.12 (6.08-8.31)	7.91 (6.76-9.25)	9.20 (7.83-10.8)	10.3 (8.69-12.0)	11.7 (9.59-14.0)	12.8 (10.3-15.4)	13.8 (10.8-17.0)	14.9 (11.2-18.6)	16.3 (11.8-20.7)	17.3 (12.3-22.4)
45-day	8.80 (7.56-10.2)	9.80 (8.42-11.4)	11.4 (9.76-13.3)	12.7 (10.8-14.8)	14.3 (11.8-17.0)	15.5 (12.5-18.6)	16.7 (13.1-20.3)	17.8 (13.4-22.1)	19.2 (14.0-24.3)	20.2 (14.4-26.0)
60-day	10.2 (8.82-11.8)	11.4 (9.87-13.2)	13.3 (11.5-15.5)	14.8 (12.7-17.3)	16.8 (13.8-19.7)	18.1 (14.7-21.6)	19.4 (15.2-23.5)	20.6 (15.6-25.4)	22.0 (16.1-27.7)	23.0 (16.5-29.5)

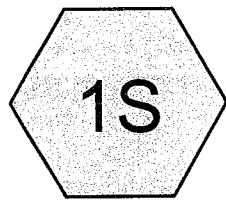
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

Figure 4: Rational Method Storm Sewer Calculations
 Odan Medical - Foley, Minnesota

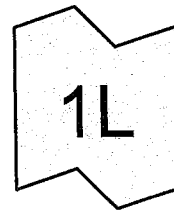
Sewer Inlet		Subcatchment for T _{Peak}		Pipe		Area of Subcatchment, A (acre)	Runoff Coefficient, C	C x A	Σ C x A	Time of Concentration (min)			T _{Transverse} (Composite T _{Peak})	Inertial (min)	Ratoff, Q (cfs)	Capacity Full (cfs)	Minimum Required Pipe Diameter (in)	Design Pipe Diameter (in)	Velocity of Design Full Pipe, V (ft/s)
Sewer Inlet	To Node	Subcatchment for T _{Peak}	Length, L (ft)	Slope (ft/ft)	T _{Peak}					T _{Transverse} for Intensity	T _{Peak}	T _{Peak}							
CB 3	CB 2	-	95	0.0050	0.230	0.173	0.173	0.173	0.173	7.00	0.44	7.00	7.44	6.56	1.13	2.74	8.63	12	3.48
CB 2	CB 1	-	131	0.0050	0.260	0.297	0.297	0.420	0.420	7.00	0.65	7.44	8.07	6.41	2.69	2.74	11.94	12	3.48
CB 1	FES 1	-	17	0.0120	0.270	0.257	0.257	0.676	0.676	8.00	0.05	8.07	8.12	6.21	4.20	4.24	11.97	12	5.40
CE 100 to CE 105																			

Appendix B

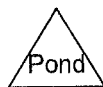
Existing Conditions 2-Year Summary



Subcat 1S



Highway 23



Existing Conditions

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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
83,676	61	>75% Grass cover, Good, HSG B (1S)
83,676	61	TOTAL AREA

Existing Conditions

MSE 24-hr 3 2-Year Rainfall=2.70"

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Page 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcat 1S

Runoff Area=83,676 sf 0.00% Impervious Runoff Depth=0.26"
Tc=7.0 min CN=61/0 Runoff=0.47 cfs 1,803 cf

Link 1L: Highway 23

Inflow=0.47 cfs 1,803 cf
Primary=0.47 cfs 1,803 cf

Total Runoff Area = 83,676 sf Runoff Volume = 1,803 cf Average Runoff Depth = 0.26"
100.00% Pervious = 83,676 sf 0.00% Impervious = 0 sf

Existing Conditions

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MSE 24-hr 3 2-Year Rainfall=2.70"

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Page 4

Summary for Subcatchment 1S: Subcat 1S

Runoff = 0.47 cfs @ 12.17 hrs, Volume= 1,803 cf, Depth= 0.26"
Routed to Link 1L : Highway 23

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.70"

Area (sf)	CN	Description
83,676	61	>75% Grass cover, Good, HSG B
83,676	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Summary for Link 1L: Highway 23

Inflow Area = 83,676 sf, 0.00% Impervious, Inflow Depth = 0.26" for 2-Year event
Inflow = 0.47 cfs @ 12.17 hrs, Volume= 1,803 cf
Primary = 0.47 cfs @ 12.17 hrs, Volume= 1,803 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 4L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Appendix C

Existing Conditions 10-Year Summary

Existing Conditions

MSE 24-hr 3 10-Year Rainfall=3.94"

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Page 5

Summary for Subcatchment 1S: Subcat 1S

Runoff = 2.38 cfs @ 12.16 hrs, Volume= 5,454 cf, Depth= 0.78"
Routed to Link 1L : Highway 23

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=3.94"

Area (sf)	CN	Description
83,676	61	>75% Grass cover, Good, HSG B
83,676	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Summary for Link 1L: Highway 23

Inflow Area = 83,676 sf, 0.00% Impervious, Inflow Depth = 0.78" for 10-Year event
Inflow = 2.38 cfs @ 12.16 hrs, Volume= 5,454 cf
Primary = 2.38 cfs @ 12.16 hrs, Volume= 5,454 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 4L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Appendix D

Existing Conditions 100-Year Summary

Existing Conditions

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MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 6

Summary for Subcatchment 1S: Subcat 1S

Runoff = 7.44 cfs @ 12.15 hrs, Volume= 15,307 cf, Depth= 2.20"
 Routed to Link 1L : Highway 23

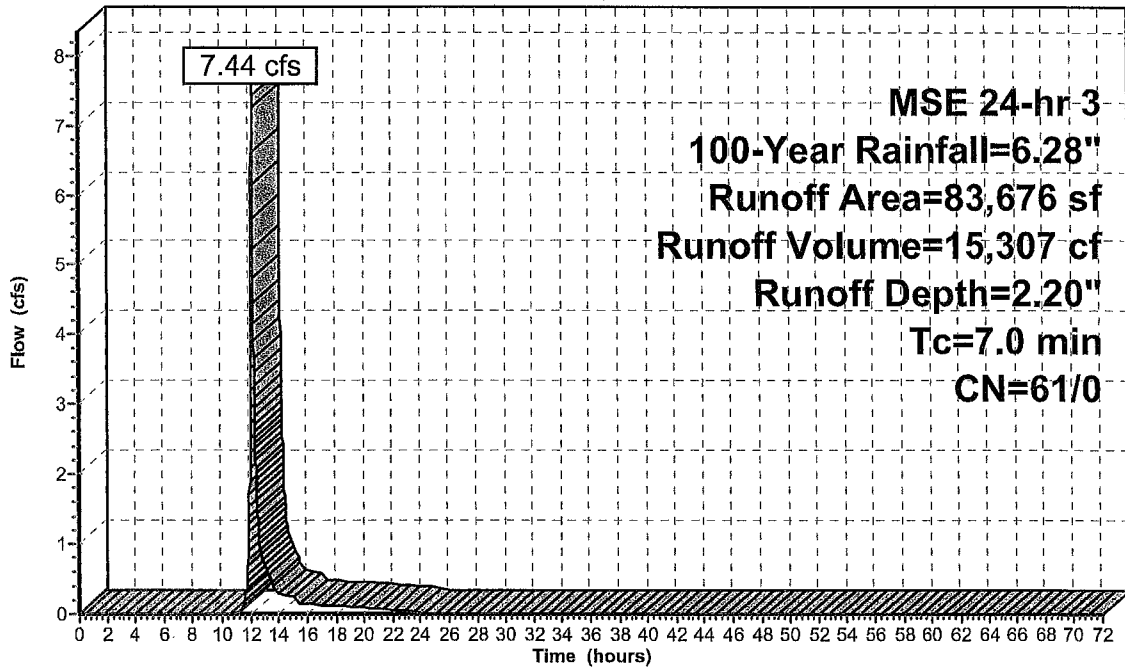
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 MSE 24-hr 3 100-Year Rainfall=6.28"

Area (sf)	CN	Description
83,676	61	>75% Grass cover, Good, HSG B
83,676	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 1S: Subcat 1S

Hydrograph



Existing Conditions

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MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 7

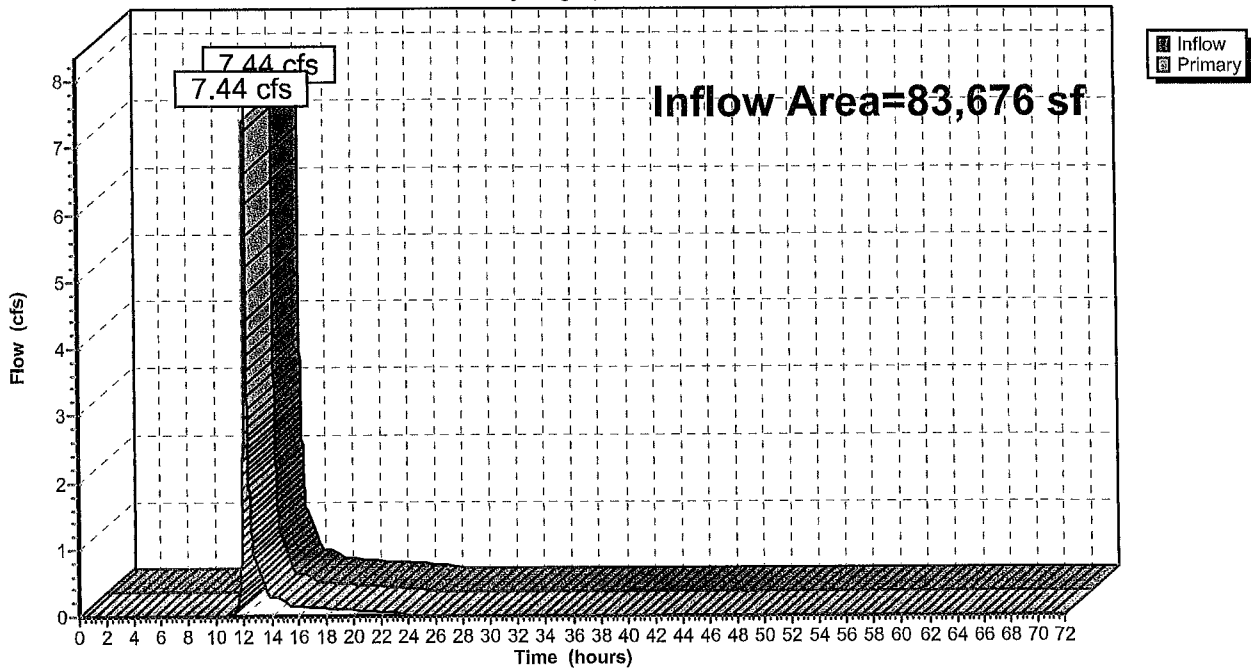
Summary for Link 1L: Highway 23

Inflow Area = 83,676 sf, 0.00% Impervious, Inflow Depth = 2.20" for 100-Year event
Inflow = 7.44 cfs @ 12.15 hrs, Volume= 15,307 cf
Primary = 7.44 cfs @ 12.15 hrs, Volume= 15,307 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 4L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

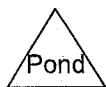
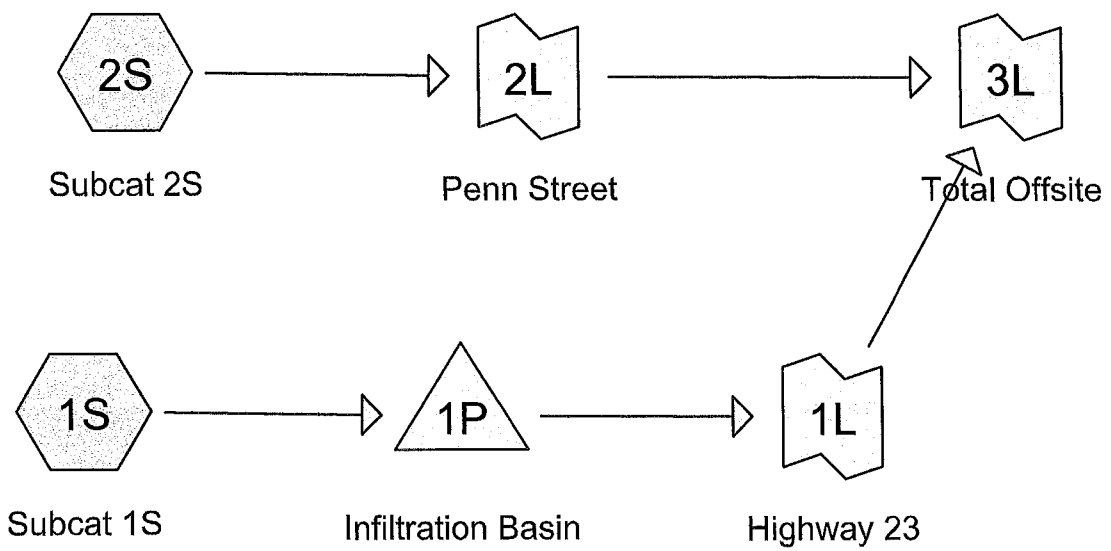
Link 1L: Highway 23

Hydrograph



Appendix E

Proposed Conditions 2-Year Summary



Routing Diagram for Proposed Conditions
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Proposed Conditions

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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
47,643	39	>75% Grass cover, Good, HSG A (1S, 2S)
30,240	98	Paved parking, HSG B (1S, 2S)
5,793	98	Roofs, HSG B (1S)
83,676	64	TOTAL AREA

Proposed Conditions

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MSE 24-hr 3 2-Year Rainfall=2.70"

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Page 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcat 1S

Runoff Area=74,961 sf 44.16% Impervious Runoff Depth=1.09"
Tc=7.0 min CN=39/98 Runoff=2.91 cfs 6,813 cf

Subcatchment 2S: Subcat 2S

Runoff Area=8,715 sf 33.63% Impervious Runoff Depth=0.83"
Tc=7.0 min CN=39/98 Runoff=0.26 cfs 603 cf

Pond 1P: Infiltration Basin

Peak Elev=1,133.77' Storage=4,130 cf Inflow=2.91 cfs 6,813 cf
Discarded=0.08 cfs 6,442 cf Primary=0.13 cfs 370 cf Outflow=0.21 cfs 6,813 cf

Link 1L: Highway 23

Inflow=0.13 cfs 370 cf
Primary=0.13 cfs 370 cf

Link 2L: Penn Street

Inflow=0.26 cfs 603 cf
Primary=0.26 cfs 603 cf

Link 3L: Total Offsite

Inflow=0.26 cfs 973 cf
Primary=0.26 cfs 973 cf

Total Runoff Area = 83,676 sf Runoff Volume = 7,416 cf Average Runoff Depth = 1.06"
56.94% Pervious = 47,643 sf 43.06% Impervious = 36,033 sf

Proposed Conditions

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MSE 24-hr 3 2-Year Rainfall=2.70"

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Page 4

Summary for Subcatchment 1S: Subcat 1S

Runoff = 2.91 cfs @ 12.14 hrs, Volume= 6,813 cf, Depth= 1.09"
Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.70"

Area (sf)	CN	Description
41,859	39	>75% Grass cover, Good, HSG A
27,309	98	Paved parking, HSG B
5,793	98	Roofs, HSG B
74,961	65	Weighted Average
41,859	39	55.84% Pervious Area
33,102	98	44.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Summary for Subcatchment 2S: Subcat 2S

Runoff = 0.26 cfs @ 12.14 hrs, Volume= 603 cf, Depth= 0.83"
Routed to Link 2L : Penn Street

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.70"

Area (sf)	CN	Description
5,784	39	>75% Grass cover, Good, HSG A
2,931	98	Paved parking, HSG B
0	98	Roofs, HSG B
8,715	59	Weighted Average
5,784	39	66.37% Pervious Area
2,931	98	33.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Summary for Pond 1P: Infiltration Basin

Inflow Area = 74,961 sf, 44.16% Impervious, Inflow Depth = 1.09" for 2-Year event
Inflow = 2.91 cfs @ 12.14 hrs, Volume= 6,813 cf
Outflow = 0.21 cfs @ 12.95 hrs, Volume= 6,813 cf, Atten= 93%, Lag= 48.5 min
Discarded = 0.08 cfs @ 12.95 hrs, Volume= 6,442 cf
Primary = 0.13 cfs @ 12.95 hrs, Volume= 370 cf
Routed to Link 1L : Highway 23

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Proposed Conditions

MSE 24-hr 3 2-Year Rainfall=2.70"

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Page 5

Peak Elev= 1,133.77' @ 12.95 hrs Surf.Area= 7,569 sf Storage= 4,130 cf

Plug-Flow detention time= 501.0 min calculated for 6,812 cf (100% of inflow)

Center-of-Mass det. time= 501.0 min (1,256.7 - 755.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,132.00'	12,699 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 31,748 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,132.00	4,089	0	0
1,135.00	9,982	21,107	21,107
1,136.00	11,300	10,641	31,748

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,132.00'	0.450 in/hr Exfiltration over Surface area Phase-In= 0.01'
#2	Device 3	1,133.75'	r4342 yard stool Head (feet) 0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50 Disch. (cfs) 0.000 0.630 1.770 3.250 5.010 6.810 7.460 8.060 8.610 9.140 9.630 10.100 10.550 10.980 11.390 11.790
#3	Primary	1,132.14'	12.0" Round RCP_Round 12" L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 1,132.14' / 1,132.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Discarded OutFlow Max=0.08 cfs @ 12.95 hrs HW=1,133.77' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.13 cfs @ 12.95 hrs HW=1,133.77' (Free Discharge)

↳ **3=RCP_Round 12"** (Passes 0.13 cfs of 3.59 cfs potential flow)

↳ **2=r4342 yard stool** (Custom Controls 0.13 cfs)

Summary for Link 1L: Highway 23

Inflow Area = 74,961 sf, 44.16% Impervious, Inflow Depth = 0.06" for 2-Year event
 Inflow = 0.13 cfs @ 12.95 hrs, Volume= 370 cf
 Primary = 0.13 cfs @ 12.95 hrs, Volume= 370 cf, Atten= 0%, Lag= 0.0 min
 Routed to Link 3L : Total Offsite

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link 2L: Penn Street

Inflow Area = 8,715 sf, 33.63% Impervious, Inflow Depth = 0.83" for 2-Year event
 Inflow = 0.26 cfs @ 12.14 hrs, Volume= 603 cf
 Primary = 0.26 cfs @ 12.14 hrs, Volume= 603 cf, Atten= 0%, Lag= 0.0 min
 Routed to Link 3L : Total Offsite

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Proposed Conditions

MSE 24-hr 3 2-Year Rainfall=2.70"

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Page 6

Summary for Link 3L: Total Offsite

Inflow Area = 83,676 sf, 43.06% Impervious, Inflow Depth = 0.14" for 2-Year event
Inflow = 0.26 cfs @ 12.14 hrs, Volume= 973 cf
Primary = 0.26 cfs @ 12.14 hrs, Volume= 973 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Appendix F

Proposed Conditions 10-Year Summary

Proposed Conditions

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MSE 24-hr 3 10-Year Rainfall=3.94"

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Page 7

Summary for Subcatchment 1S: Subcat 1S

Runoff = 4.28 cfs @ 12.14 hrs, Volume= 10,361 cf, Depth= 1.66"
 Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 MSE 24-hr 3 10-Year Rainfall=3.94"

Area (sf)	CN	Description
41,859	39	>75% Grass cover, Good, HSG A
27,309	98	Paved parking, HSG B
5,793	98	Roofs, HSG B
74,961	65	Weighted Average
41,859	39	55.84% Pervious Area
33,102	98	44.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Summary for Subcatchment 2S: Subcat 2S

Runoff = 0.38 cfs @ 12.14 hrs, Volume= 924 cf, Depth= 1.27"
 Routed to Link 2L : Penn Street

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 MSE 24-hr 3 10-Year Rainfall=3.94"

Area (sf)	CN	Description
5,784	39	>75% Grass cover, Good, HSG A
2,931	98	Paved parking, HSG B
0	98	Roofs, HSG B
8,715	59	Weighted Average
5,784	39	66.37% Pervious Area
2,931	98	33.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Summary for Pond 1P: Infiltration Basin

Inflow Area = 74,961 sf, 44.16% Impervious, Inflow Depth = 1.66" for 10-Year event
 Inflow = 4.28 cfs @ 12.14 hrs, Volume= 10,361 cf
 Outflow = 1.98 cfs @ 12.25 hrs, Volume= 10,361 cf, Atten= 54%, Lag= 6.6 min
 Discarded = 0.08 cfs @ 12.25 hrs, Volume= 7,245 cf
 Primary = 1.89 cfs @ 12.25 hrs, Volume= 3,116 cf
 Routed to Link 1L : Highway 23

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Proposed Conditions

MSE 24-hr 3 10-Year Rainfall=3.94"

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Page 8

Peak Elev= 1,133.96' @ 12.25 hrs Surf.Area= 7,936 sf Storage= 4,710 cf

Plug-Flow detention time= 380.6 min calculated for 10,359 cf (100% of inflow)

Center-of-Mass det. time= 380.7 min (1,134.4 - 753.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,132.00'	12,699 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 31,748 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,132.00	4,089	0	0
1,135.00	9,982	21,107	21,107
1,136.00	11,300	10,641	31,748

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,132.00'	0.450 in/hr Exfiltration over Surface area Phase-In= 0.01'
#2	Device 3	1,133.75'	r4342 yard stool Head (feet) 0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50 Disch. (cfs) 0.000 0.630 1.770 3.250 5.010 6.810 7.460 8.060 8.610 9.140 9.630 10.100 10.550 10.980 11.390 11.790
#3	Primary	1,132.14'	12.0" Round RCP_Round 12" L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 1,132.14' / 1,132.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Discarded OutFlow Max=0.08 cfs @ 12.25 hrs HW=1,133.96' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=1.89 cfs @ 12.25 hrs HW=1,133.96' (Free Discharge)

↑3=RCP_Round 12" (Passes 1.89 cfs of 4.00 cfs potential flow)

↑2=r4342 yard stool (Custom Controls 1.89 cfs)

Summary for Link 1L: Highway 23

Inflow Area = 74,961 sf, 44.16% Impervious, Inflow Depth = 0.50" for 10-Year event
 Inflow = 1.89 cfs @ 12.25 hrs, Volume= 3,116 cf
 Primary = 1.89 cfs @ 12.25 hrs, Volume= 3,116 cf, Atten= 0%, Lag= 0.0 min
 Routed to Link 3L : Total Offsite

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link 2L: Penn Street

Inflow Area = 8,715 sf, 33.63% Impervious, Inflow Depth = 1.27" for 10-Year event
 Inflow = 0.38 cfs @ 12.14 hrs, Volume= 924 cf
 Primary = 0.38 cfs @ 12.14 hrs, Volume= 924 cf, Atten= 0%, Lag= 0.0 min
 Routed to Link 3L : Total Offsite

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Proposed Conditions

MSE 24-hr 3 10-Year Rainfall=3.94"

Prepared by Gregory Group DBA Demarc

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Page 9

Summary for Link 3L: Total Offsite

Inflow Area = 83,676 sf, 43.06% Impervious, Inflow Depth = 0.58" for 10-Year event
Inflow = 2.07 cfs @ 12.24 hrs, Volume= 4,040 cf
Primary = 2.07 cfs @ 12.24 hrs, Volume= 4,040 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Appendix G

Proposed Conditions 100-Year Summary

Proposed Conditions

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MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 10

Summary for Subcatchment 1S: Subcat 1S

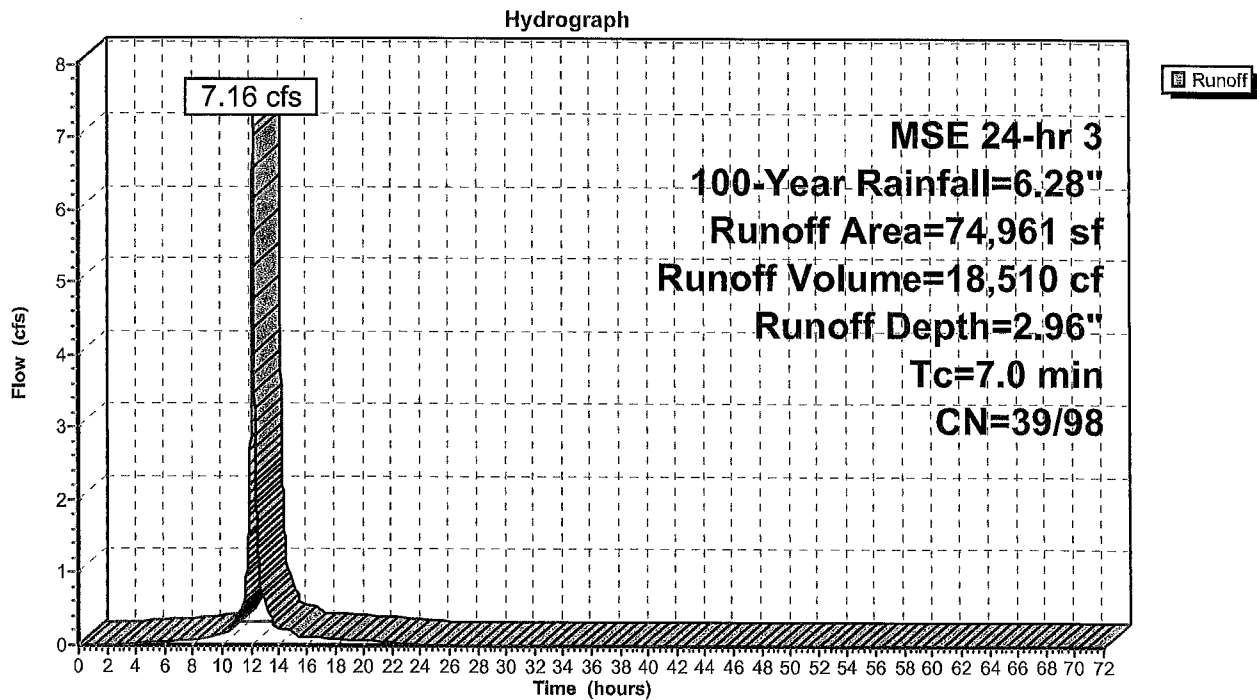
Runoff = 7.16 cfs @ 12.14 hrs, Volume= 18,510 cf, Depth= 2.96"
 Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 MSE 24-hr 3 100-Year Rainfall=6.28"

Area (sf)	CN	Description
41,859	39	>75% Grass cover, Good, HSG A
27,309	98	Paved parking, HSG B
5,793	98	Roofs, HSG B
74,961	65	Weighted Average
41,859	39	55.84% Pervious Area
33,102	98	44.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 1S: Subcat 1S



Proposed Conditions

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MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 11

Summary for Subcatchment 2S: Subcat 2S

Runoff = 0.65 cfs @ 12.14 hrs, Volume= 1,730 cf, Depth= 2.38"
 Routed to Link 2L : Penn Street

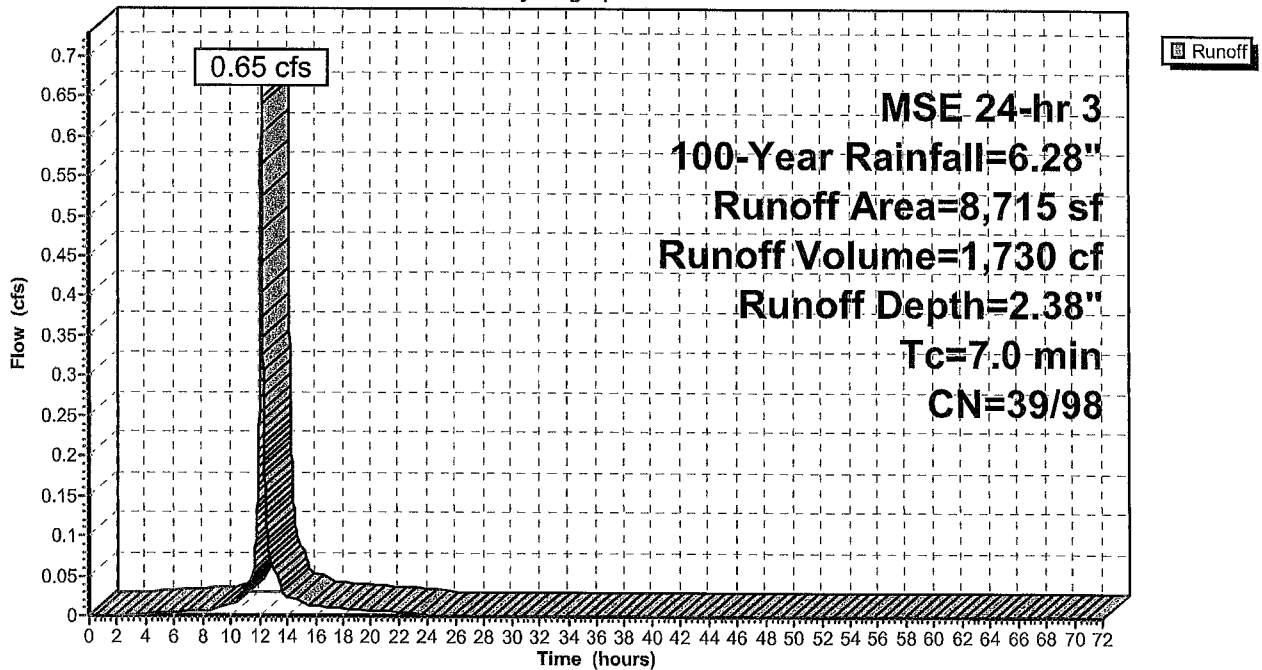
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 MSE 24-hr 3 100-Year Rainfall=6.28"

Area (sf)	CN	Description
5,784	39	>75% Grass cover, Good, HSG A
2,931	98	Paved parking, HSG B
0	98	Roofs, HSG B
8,715	59	Weighted Average
5,784	39	66.37% Pervious Area
2,931	98	33.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 2S: Subcat 2S

Hydrograph



Proposed Conditions

Prepared by Gregory Group DBA Demarc
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MSE 24-hr 3 100-Year Rainfall=6.28"
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 Page 12

Summary for Pond 1P: Infiltration Basin

Inflow Area = 74,961 sf, 44.16% Impervious, Inflow Depth = 2.96" for 100-Year event
 Inflow = 7.16 cfs @ 12.14 hrs, Volume= 18,510 cf
 Outflow = 4.76 cfs @ 12.21 hrs, Volume= 18,510 cf, Atten= 33%, Lag= 4.1 min
 Discarded = 0.09 cfs @ 12.21 hrs, Volume= 8,423 cf
 Primary = 4.67 cfs @ 12.21 hrs, Volume= 10,086 cf
 Routed to Link 1L : Highway 23

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,134.31' @ 12.21 hrs Surf.Area= 8,624 sf Storage= 5,870 cf

Plug-Flow detention time= 264.2 min calculated for 18,510 cf (100% of inflow)
 Center-of-Mass det. time= 264.2 min (1,022.8 - 758.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,132.00'	12,699 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 31,748 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,132.00	4,089	0	0
1,135.00	9,982	21,107	21,107
1,136.00	11,300	10,641	31,748

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,132.00'	0.450 in/hr Exfiltration over Surface area Phase-In= 0.01' r4342 yard stool Head (feet) 0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50 Disch. (cfs) 0.000 0.630 1.770 3.250 5.010 6.810 7.460 8.060 8.610 9.140 9.630 10.100 10.550 10.980 11.390 11.790
#2	Device 3	1,133.75'	
#3	Primary	1,132.14'	12.0" Round RCP_Round 12" L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 1,132.14' / 1,132.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Discarded OutFlow Max=0.09 cfs @ 12.21 hrs HW=1,134.31' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=4.67 cfs @ 12.21 hrs HW=1,134.31' (Free Discharge)
 ↳3=RCP_Round 12" (Barrel Controls 4.67 cfs @ 5.95 fps)
 ↳2=r4342 yard stool (Passes 4.67 cfs of 7.19 cfs potential flow)

Proposed Conditions

Prepared by Gregory Group DBA Demarc

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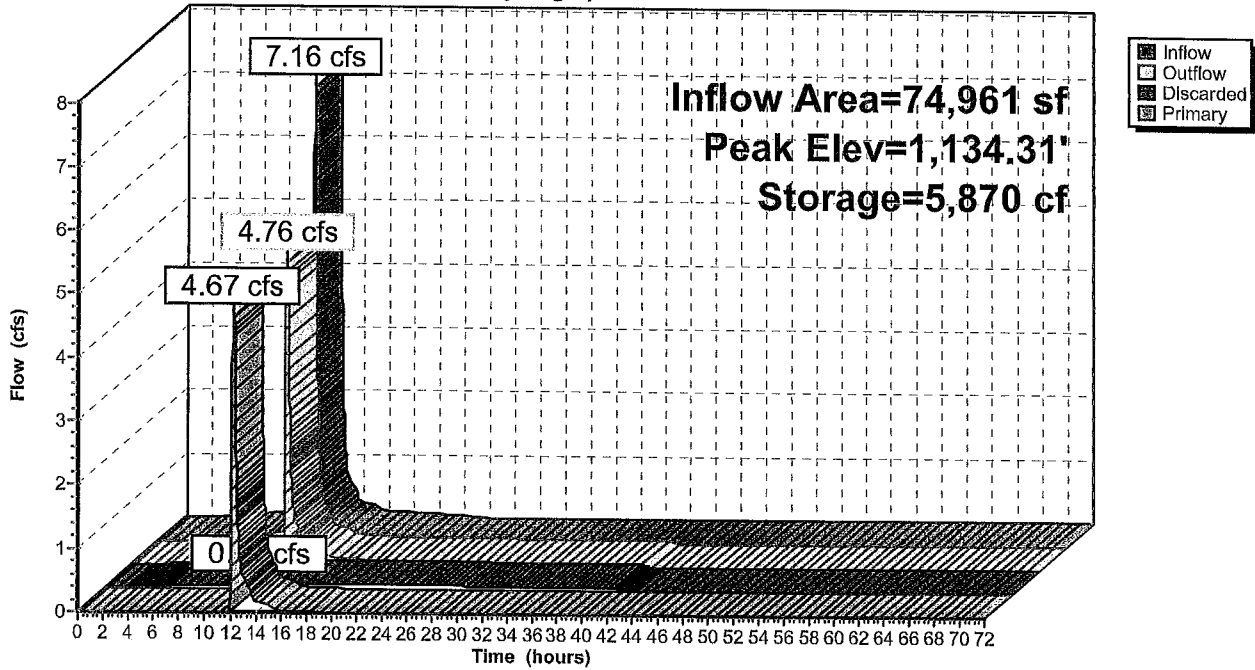
MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 13

Pond 1P: Infiltration Basin

Hydrograph



Proposed Conditions

MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 14

Stage-Area-Storage for Pond 1P: Infiltration Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,132.00	4,089	0	1,134.65	9,294	7,093
1,132.05	4,187	83	1,134.70	9,393	7,280
1,132.10	4,285	167	1,134.75	9,491	7,469
1,132.15	4,384	254	1,134.80	9,589	7,660
1,132.20	4,482	343	1,134.85	9,687	7,853
1,132.25	4,580	433	1,134.90	9,786	8,047
1,132.30	4,678	526	1,134.95	9,884	8,244
1,132.35	4,777	621	1,135.00	9,982	8,443
1,132.40	4,875	717	1,135.05	10,048	8,643
1,132.45	4,973	816	1,135.10	10,114	8,845
1,132.50	5,071	916	1,135.15	10,180	9,047
1,132.55	5,169	1,018	1,135.20	10,246	9,252
1,132.60	5,268	1,123	1,135.25	10,312	9,457
1,132.65	5,366	1,229	1,135.30	10,377	9,664
1,132.70	5,464	1,337	1,135.35	10,443	9,872
1,132.75	5,562	1,448	1,135.40	10,509	10,082
1,132.80	5,660	1,560	1,135.45	10,575	10,293
1,132.85	5,759	1,674	1,135.50	10,641	10,505
1,132.90	5,857	1,790	1,135.55	10,707	10,718
1,132.95	5,955	1,908	1,135.60	10,773	10,933
1,133.00	6,053	2,028	1,135.65	10,839	11,149
1,133.05	6,152	2,151	1,135.70	10,905	11,367
1,133.10	6,250	2,275	1,135.75	10,971	11,585
1,133.15	6,348	2,401	1,135.80	11,036	11,806
1,133.20	6,446	2,528	1,135.85	11,102	12,027
1,133.25	6,544	2,658	1,135.90	11,168	12,250
1,133.30	6,643	2,790	1,135.95	11,234	12,474
1,133.35	6,741	2,924	1,136.00	11,300	12,699
1,133.40	6,839	3,060			
1,133.45	6,937	3,198			
1,133.50	7,036	3,337			
1,133.55	7,134	3,479			
1,133.60	7,232	3,623			
1,133.65	7,330	3,768			
1,133.70	7,428	3,916			
1,133.75	7,527	4,065			
1,133.80	7,625	4,217			
1,133.85	7,723	4,370			
1,133.90	7,821	4,526			
1,133.95	7,919	4,683			
1,134.00	8,018	4,843			
1,134.05	8,116	5,004			
1,134.10	8,214	5,167			
1,134.15	8,312	5,333			
1,134.20	8,411	5,500			
1,134.25	8,509	5,669			
1,134.30	8,607	5,840			
1,134.35	8,705	6,013			
1,134.40	8,803	6,188			
1,134.45	8,902	6,365			
1,134.50	9,000	6,544			
1,134.55	9,098	6,725			
1,134.60	9,196	6,908			

Proposed Conditions

Prepared by Gregory Group DBA Demarc

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MSE 24-hr 3 100-Year Rainfall=6.28"

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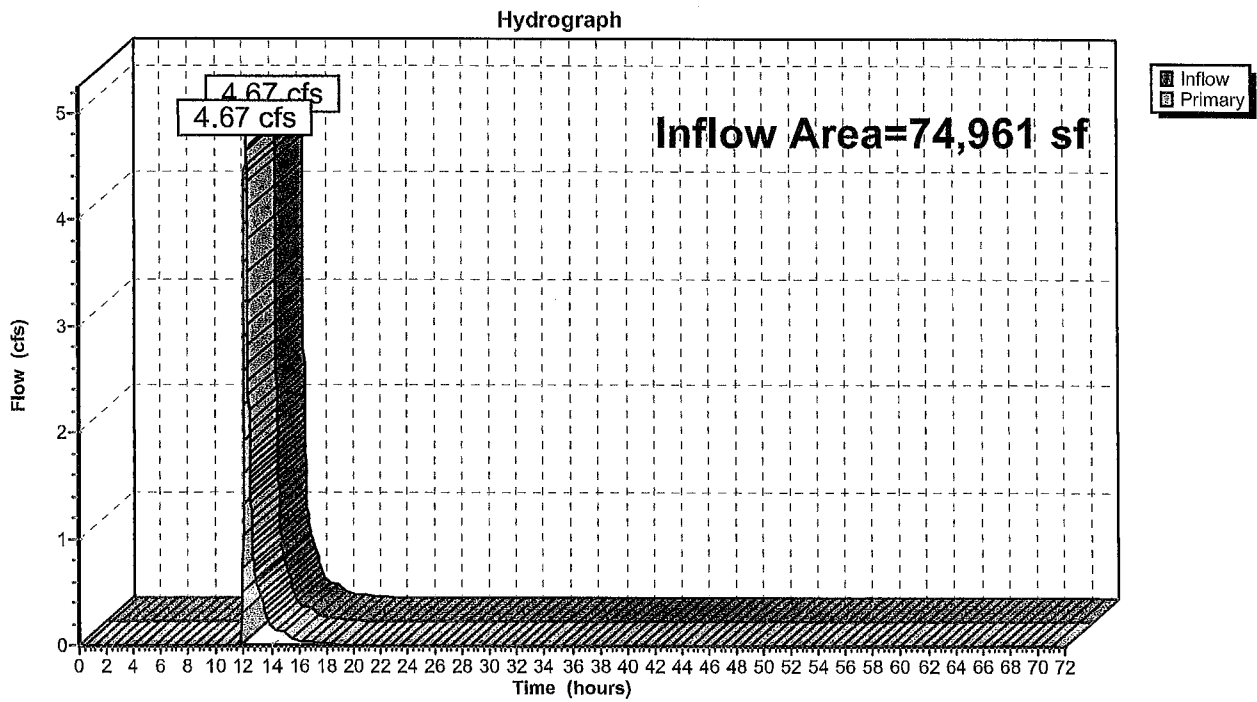
Page 15

Summary for Link 1L: Highway 23

Inflow Area = 74,961 sf, 44.16% Impervious, Inflow Depth = 1.61" for 100-Year event
Inflow = 4.67 cfs @ 12.21 hrs, Volume= 10,086 cf
Primary = 4.67 cfs @ 12.21 hrs, Volume= 10,086 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Total Offsite

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 1L: Highway 23



Proposed Conditions

Prepared by Gregory Group DBA Demarc

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MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 16

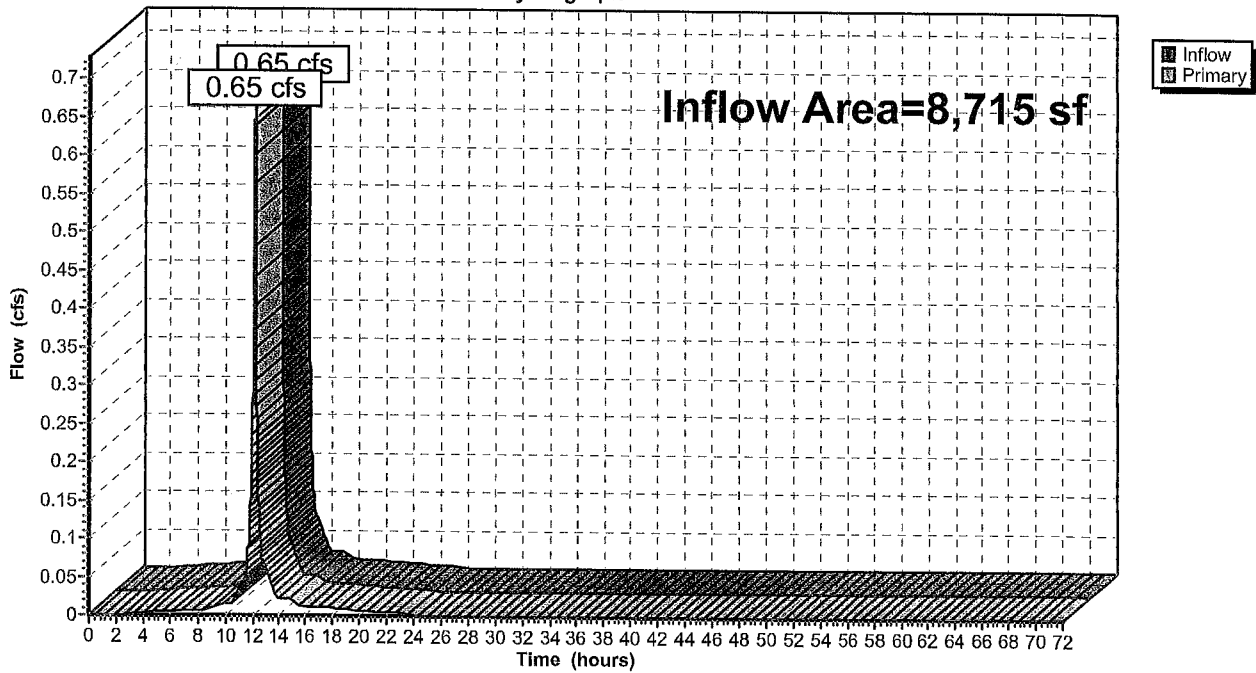
Summary for Link 2L: Penn Street

Inflow Area = 8,715 sf, 33.63% Impervious, Inflow Depth = 2.38" for 100-Year event
Inflow = 0.65 cfs @ 12.14 hrs, Volume= 1,730 cf
Primary = 0.65 cfs @ 12.14 hrs, Volume= 1,730 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Total Offsite

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2L: Penn Street

Hydrograph



Proposed Conditions

Prepared by Gregory Group DBA Demarc

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MSE 24-hr 3 100-Year Rainfall=6.28"

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Page 17

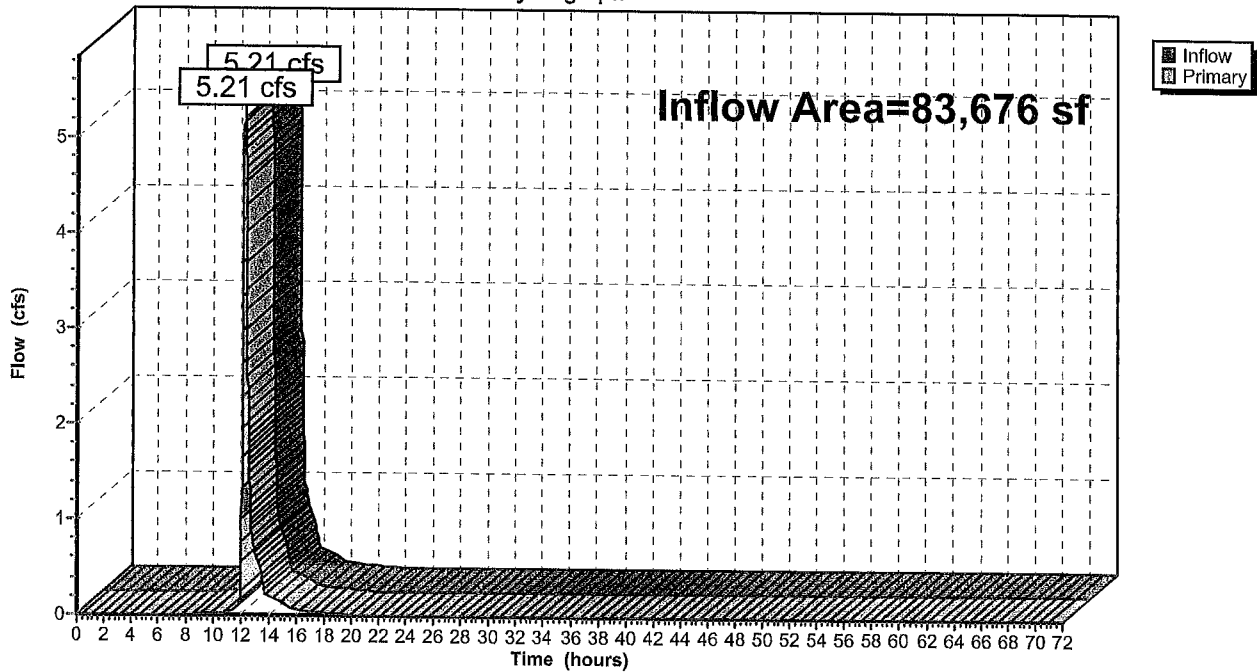
Summary for Link 3L: Total Offsite

Inflow Area = 83,676 sf, 43.06% Impervious, Inflow Depth = 1.69" for 100-Year event
Inflow = 5.21 cfs @ 12.17 hrs, Volume= 11,817 cf
Primary = 5.21 cfs @ 12.17 hrs, Volume= 11,817 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 3L: Total Offsite

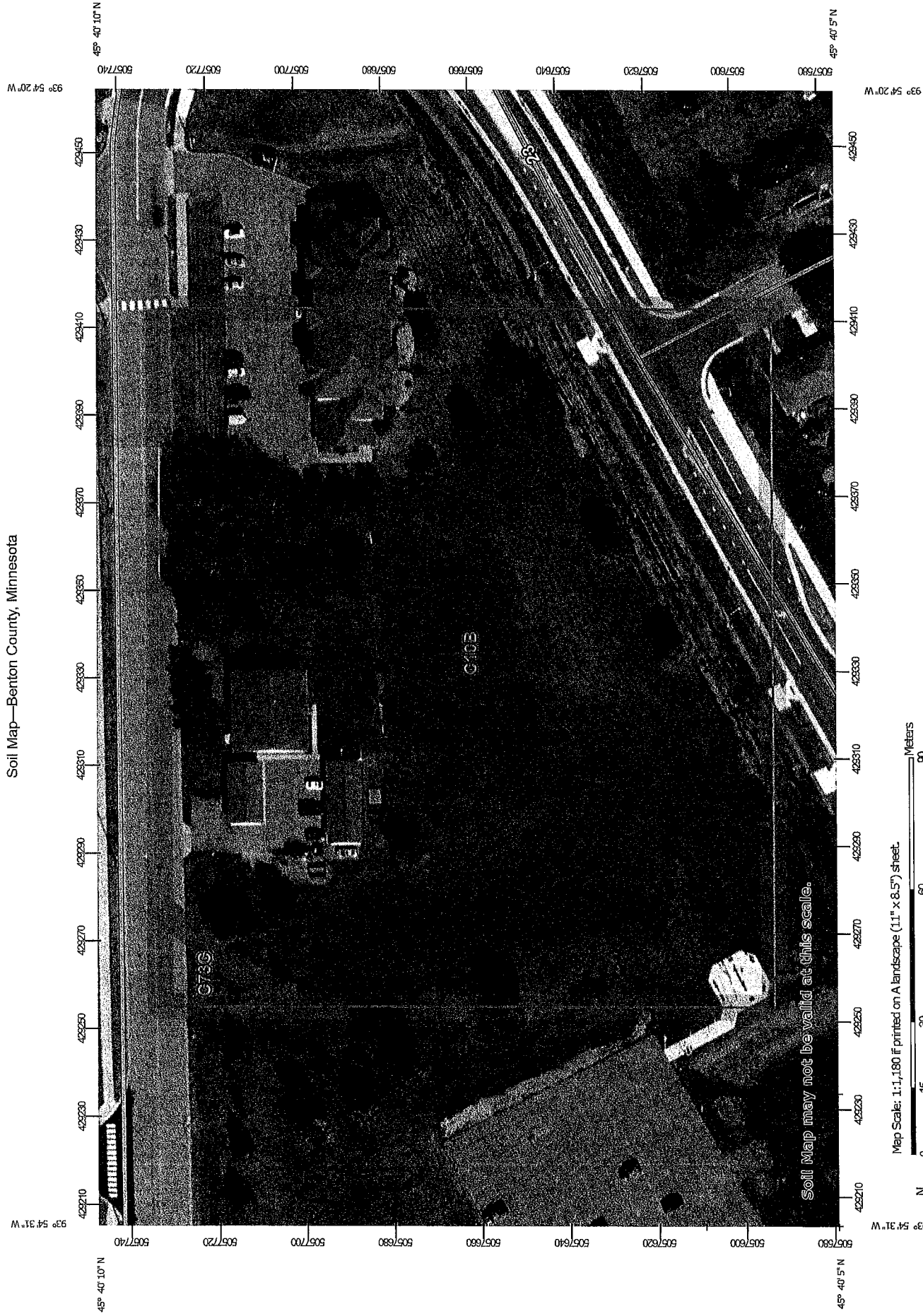
Hydrograph



Appendix H

Soil Summary

Soil Map—Benton County, Minnesota



Map Scale: 1:1,180 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
C10B	Brennyville-Freer complex, 1 to 4 percent slopes, stony	5.5	98.5%
C73C	Milaca loam, 1 to 7 percent slopes, stony	0.1	1.5%
Totals for Area of Interest		5.5	100.0%

Benton County, Minnesota

C10B—Brennyville-Freer complex, 1 to 4 percent slopes, stony

Map Unit Setting

National map unit symbol: 2z19m

Elevation: 790 to 1,970 feet

Mean annual precipitation: 27 to 36 inches

Mean annual air temperature: 37 to 46 degrees F

Frost-free period: 80 to 150 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Brennyville, stony, and similar soils: 50 percent

Freer, stony, and similar soils: 40 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brennyville, Stony

Setting

Landform: Moraines, drumlins

Landform position (two-dimensional): Backslope, summit

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over coarse-loamy lodgment till

Typical profile

A - 0 to 8 inches: silt loam

E - 8 to 12 inches: silt loam

B/E - 12 to 18 inches: silt loam

Bt1 - 18 to 24 inches: silt loam

2Bt2 - 24 to 45 inches: fine sandy loam

2BCd - 45 to 79 inches: fine sandy loam

Properties and qualities

Slope: 1 to 4 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: 35 to 55 inches to densic material

Drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: About 16 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 2 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B/D

Ecological site: F090AY011WI - Moist Loamy Lowland

Forage suitability group: Level Swale, Acid (G090XN005MN)

Other vegetative classification: Level Swale, Acid
(G090XN005MN)

Hydric soil rating: No

Description of Freer, Stony

Setting

Landform: Moraines, drumlins

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Side slope, tal

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Loess over loamy lodgment till

Typical profile

A - 0 to 10 inches: silt loam

E - 10 to 13 inches: silt loam

B/E - 13 to 17 inches: silt loam

Bt1 - 17 to 26 inches: silt loam

2Bt2 - 26 to 47 inches: fine sandy loam

2BCd - 47 to 79 inches: fine sandy loam

Properties and qualities

Slope: 1 to 3 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: 35 to 55 inches to densic material

Drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately high (0.00 to 0.20 in/hr)

Depth to water table: About 8 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 2 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0
mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.2
inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F090AY011WI - Moist Loamy Lowland

Forage suitability group: Level Swale, Acid (G090AN005MN)

Other vegetative classification: Level Swale, Acid
(G090AN005MN)
Hydric soil rating: No

Minor Components

Cebana, stony

Percent of map unit: 6 percent
Landform: Moraines, interdrumlins
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F090AY006WI - Wet Loamy Lowland
Other vegetative classification: Level Swale, Acid (G090XN005MN)
Hydric soil rating: Yes

Milaca, stony

Percent of map unit: 3 percent
Landform: Drumlins, moraines
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: F090AY014WI - Loamy Bedrock Upland
Other vegetative classification: Sloping Upland, Acid
(G090XN006MN)
Hydric soil rating: No

Giese, frequently ponded, stony

Percent of map unit: 1 percent
Landform: Interdrumlins, moraines
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave
Ecological site: F090AY006WI - Wet Loamy Lowland
Other vegetative classification: Ponded If Not Drained
(G090XN013MN)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Benton County, Minnesota
Survey Area Data: Version 20, Sep 9, 2023

October 8, 2024

Ms. Sarah Brunn
City of Foley

RE: ODAM Medical Group Site Plan
MN Highway 23
Foley, Minnesota

Dear Ms. Brunn:

The Minnesota Department of Transportation (MnDOT) has reviewed the above-referenced plat in compliance with the provisions of Minnesota Statutes 505.03, Plats and Surveys. MnDOT would like to offer the following comments/recommendations:

1. MnDOT District 3 staff at their Development Review Committee meeting on October 8, 2024, have reviewed the ODAM Medical Group property site plan and have no issues with the proposed project.
2. Any right of way, permit or stormwater questions may be directed to Keith Peterson, District 3B Permits, keith.peterson@state.mn.us.

If you have any further questions or comments, please call me at 320/223-6526.

Sincerely,

Thomas Cruikshank

Digitally signed by Thomas
Cruikshank
Date: 2024.10.08 10:58:49 -05'00'

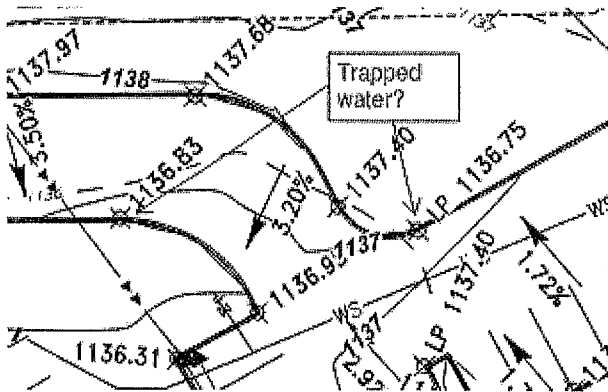
Tom Cruikshank
Principal Planner

ecc: MnDOT District 3 Development Review Committee File

Sarah Brunn

From: Jarod Griffith <jgriffith@sehinc.com>
Sent: Thursday, October 10, 2024 12:36 PM
To: Mark Pappenfus; Sarah Brunn; Ashley Bukowski; Nancy Scott
Subject: RE: ODAM Medical Foley Application Documents

Good Afternoon-
I will follow up with any stormwater calc comments later this afternoon but I have the following plan sheet comments...



- Confirm water will not be trapped in these two locations in the parking lot.
- Provide benchmark and vertical datum used
- Confirm CB3 Rim of 1137.00 is the low point for the surrounding around.
- Add insulation at water and storm crossing.
- 6" Sanitary service.
- Provide an erosion control / turf establishment plan sheet
- Provide structure detail for CB4 (pond outlet)
- Provide a construction details sheet
 - Erosion control BMPs (silt fence, blanket, inlet protection, culvert controls, etc)
 - Water accessories (hydrant, valves, insulation, etc)
 - Storm (pipe bedding, structure/casting assembly, external seals, riprap, etc.)
 - Pond Detail

Thanks

Jarod R. Griffith, PE (MN)
Engineer IV
Short Elliott Hendrickson, Inc.
320.229.4304 direct | 218.849.0539 mobile | 320.229.4300 main

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From: Mark Pappenfus <mpappenfus@ci.foley.mn.us>
Sent: Thursday, October 10, 2024 11:25 AM
To: Sarah Brunn <sbrunn@ci.foley.mn.us>; Ashley Bukowski <ABukowski@rinkenoonan.com>; Jarod Griffith

Sarah Brunn

From: Mark Pappenfus
Sent: Thursday, October 10, 2024 11:25 AM
To: Sarah Brunn; Ashley Bukowski; Jarod Griffith; Nancy Scott
Subject: RE: ODAM Medical Foley Application Documents

A few comments from Public Works side.

- Make sure for the Fire Hydrant we are using the City of Foley Boilerplate – 28" barrel, plugged, hydrant marker, GV in front, etc.
- Using 6" PVC 22* bends on the 6" water main – is this OK.
- Clarify the 6"x4" 'T' at the hydrant. It has to stay 6" until the East side of the 'T'.
- is there ever a chance that this building will ever be required to be Fire Sprinklered – like if a second story is added. A 4" is not normally adequate for a sprinkler system.
- Is there anyway to use less bends in the sewer service just North of where it leaves the building.
- Is 4" sewer service adequate – normally 6" for commercial.
- Are we OK with letting them "Y" into the existing Apt. sewer service, or must they go all the way to the Manhole in Penn St. (need any type agreement if they do)
- Is there anyway that a sidewalk could be added on the South side, coming off the Hwy. 23 sidewalk, possibly on the West property line, west of the storm water pond.

Thanks, Mark

Mark Pappenfus
City of Foley Public Works Director
320-290-9186

From: Sarah Brunn <sbrunn@ci.foley.mn.us>
Sent: Tuesday, October 1, 2024 10:54 AM
To: Ashley Bukowski <ABukowski@rinkenoonan.com>; Jarod Griffith <jgriffith@sehinc.com>; Mark Pappenfus <mpappenfus@ci.foley.mn.us>; Nancy Scott <nscott64@hotmail.com>
Subject: FW: ODAM Medical Foley Application Documents

Email 1 of 2

Sarah A. Brunn
City Administrator
sbrunn@ci.foley.mn.us



City of Foley
251 4th Avenue North