City of Ramsey
Agenda
Regular Planning Commission
Thursday April 9, 2015
7:00 pm
Council Chambers, 7550 Sunwood Drive NW

1. Call to Order

2. Citizen Input

3. Approve Agenda

4. Approve Minutes

1. Approve the Planning Commission Meeting Minutes Dated March 5, 2015

5. Public Hearing/Commission Business

1. Appoint Chairperson and Vice Chairperson

2. PUBLIC HEARING: Consider Request for a Variance to Side Yard Setbacks for an Accessory Building on the Property Located at 6520 170th Ave NW; Case of Jeff Rieck

3. PUBLIC HEARING: Consider Resolution #15-04-092 Granting Preliminary Plat Approval to Harvest Estates, a Major Plat; Case of G S Land, LLC.

4. PUBLIC HEARING: Consider Resolution #15-04-093 Granting Approvals for COR Parkview Addition and Parkview East

1. Preliminary Plat for Major Subdivision
2. Site Plan for 121 Unit Apartment Building

5. Consider Approvals Related to Site Plan Review for Sunwood Village; Case of CommonBond Communities

1. Resolution #15-04-088: Sketch Plan (Minor Plat)
2. Resolution #15-04-089: Site Plan Review

6. PUBLIC HEARING: Consider the Surface Water Management Plan Update

7. PUBLIC HEARING: Consider Ordinance #15-08 Amending Off-Street Parking Regulations

7. Commission/Staff Input

1. Zoning Bulletins

8. Adjournment

Our Mission: To work together to responsibly grow our community, and to provide quality, cost-effective, and efficient government services

Our Mission: To work together to responsibly grow our community, and to provide quality, cost-effective, and efficient government services

Regular Planning Commission **4. 1.**

Meeting Date: 04/09/2015

By: JoAnn Shaw, Community Development

Information

Title:

Approve the Planning Commission Meeting Minutes Dated March 5, 2015

Purpose/Background:

n/a

Notification:

Observations/Alternatives:

Funding Source:

Recommendation:

Action:

Attachments

03.05.15 Minutes

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 12:06 PM
Form Started By: JoAnn Shaw		Started On: 04/02/2015 02:30 PM
Final Approval Date: 04/03/2015		

PLANNING COMMISSION
CITY OF RAMSEY
ANOKA COUNTY
STATE OF MINNESOTA

The Ramsey Planning Commission conducted a regular meeting on Thursday, March 5, 2015, at the Ramsey Municipal Center, 7550 Sunwood Drive NW, Ramsey, Minnesota.

Members Present:	Chairperson Gary Levine Commissioner Randy Bauer Commissioner Ralph Brauer Commissioner Cindy Nosan Commissioner Gary VanScoy
Members Absent:	Commissioner Matthew Maul
Also Present:	Community Development Director Timothy Gladhill City Planner Chris Anderson

1. CALL TO ORDER

Chairperson Levine called the regular meeting to order at 7:00 p.m.

2. CITIZEN INPUT

None.

3. APPROVAL OF AGENDA

Motion by Commissioner VanScoy, seconded by Commissioner Nosan, to approve the agenda as presented.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners VanScoy, Nosan, Bauer, and Brauer. Voting No: None. Absent: Commissioner Maul.

4. APPROVE PLANNING COMMISSION MINUTES

4.01: Approve the Following Planning Commission Minutes:

4.01.1: Planning Commission Meeting Minutes Dated February 5, 2015

Motion by Commissioner VanScoy, seconded by Commissioner Nosan, to approve the following minutes as presented: Planning Commission Meeting Minutes dated February 5, 2015.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners VanScoy, Nosan, Bauer, and Brauer. Voting No: None. Absent: Commissioner Maul.

5. PUBLIC HEARINGS/COMMISSION BUSINESS

5.01: Public Hearing: Consider Request for Variances to Side Yard Setback for an Existing Pool and to Minimum Lot Size in the Critical River Overlay District on the Properties Located at 14255 and 14235 Bowers Drive NW; Case of Travis and Bridgette Richard and Lucas Hase

Public Hearing

Chairperson Levine called the public hearing to order at 7:01 p.m.

Presentation

City Planner Anderson presented the staff report stating the City has received an application for a variance to minimum lot size standards in the Mississippi River Corridor Critical Area Overlay District to accommodate an Administrative Subdivision that would resolve an encroachment of an existing swimming pool across a property boundary. In reviewing the request, it became evident that the Administrative Subdivision, as proposed, would correct the encroachment but would not fully address the minimum required setback for a pool from an adjoining property. The request involves two (2) adjacent properties, 14235 Bowers Drive, NW and 14255 Bowers Drive NW. Staff discussed the request in further detail with the Commission and recommended approval of two variances.

Citizen Input

Commissioner Brauer asked what portion of the pool was encroaching.

City Planner Anderson discussed the City Code amendment that was made several years ago and noted the required 10 foot setback was to the water's edge and noted a four foot concrete apron was required around the pool. He noted that a portion of the water within the pool was split directly on the property line.

Steven Little, attorney representing Travis and Bridgette Richard, noted the pool was built in 1985, prior to his clients purchasing the home. He appreciated the cooperation of the neighbors and noted the buyers/sellers were in agreement with the proposed boundary lines.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to close the public hearing.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, Van Scoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Chairperson Levine closed the public hearing closed at 7:11 p.m.

Commission Business

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to adopt Resolution #15-03-063 approving a variance to minimum lot size on the property located at 14235 Bowers Drive NW.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to adopt Resolution #15-03-064 approving a variance to minimum lot size on the property located at 14235 Bowers Drive NW.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to adopt Resolution #15-03-065 approving a variance to pool setbacks on the property located at 14255 Bowers Drive NW.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to adopt Resolution #15-03-066 approving a variance to pool setbacks on the property located at 14255 Bowers Drive NW.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

5.02: Public Hearing: Consider Ordinance #15-07 Amending City Code Section 117-428 Entitled Towers

Public Hearing

Chairperson Levine called the public hearing to order at 7:15 p.m.

Presentation

Community Development Director Gladhill presented the staff report stating the purpose of this case was to hold a public hearing for Ordinance #15-07. The intent of Ordinance #15-07 is to amend City Code Section 117-428 entitled Towers to increase the maximum height of communications towers to 199 feet for entities providing Stage I and Stage II improvements.

Said improvements are required by City Code and represent basic utility services provided to Ramsey residents such as gas, electric, land-line telephones, streets, water, sanitary sewer, etc. The current height limitation for communications towers is 100 feet. Staff reviewed the code amendment further and recommended approval.

Citizen Input

Crystal Specht, 7060 147th Avenue NW, expressed concern with how the tower would impact the adjacent park. She believed that the tower would be an eyesore.

Community Development Director Gladhill commented other concerns have been voiced regarding the aesthetics or visual impact the tower would have on the neighborhood.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to close the public hearing.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Chairperson Levine closed the public hearing closed at 7:23 p.m.

Commission Business

Commissioner Bauer discussed how neighboring communities were addressing monopole heights. He explained that neighboring cities were allowing towers up to 150 feet in industrial and commercial zoning areas. He suggested that aesthetically pleasing towers be referenced within the code for residentially zoned areas.

Community Development Director Gladhill commented staff could review this language and reiterated that the visual impact of these towers could be softened, but noted the tower would still be visible.

Commissioner Bauer supported amending the Code to allow for a 150 foot tower in commercial-industrial zoning districts.

Community Development Director Gladhill recommended that if this were the direction to staff that the Planning Commission hold another public hearing in April to further discuss the Ordinance as this was not staff's recommendation. He recommended that the proposed Ordinance continue per Connexus Energy's request.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to recommend that City Council adopt Ordinance #15-07, directing staff to review the Code language per the Planning Commission's discussion.

Further discussion

Commissioners requested staff create greater clarity within the City Code regarding tower height.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, Nosan. Voting No: None. Absent: Commissioner Maul.

5.03: Public Hearing: Consider Request for Conditional Use Permit for 199 Foot Communications Tower; Case of Connexus Energy

Public Hearing

Chairperson Levine called the public hearing to order at 7:34 p.m.

Presentation

Community Development Director Gladhill presented the staff report stating the purpose of this case was to hold a public hearing and recommend an action to the City Council regarding a request from Connexus Energy for a Conditional Use Permit to allow a 199 foot communications tower related to their operation. He reported Connexus Energy was located at 14601 Ramsey Boulevard NW and services several communities within a several mile radius of their headquarters. Connexus Energy desires to locate a monopole communications tower at this location to provide communications to its staff, sub-stations, grid, meters, and other related equipment. Primarily, in order to provide adequate coverage over their entire service area, Connexus Energy has stated that this height of tower is required in order to provide coverage with a single tower. It was noted the closed landfill does provide some barrier to coverage. Staff discussed the request further and recommended approval of the request, contingent upon Ordinance #15-07 becoming effective.

Citizen Input

Tom Guttormson, Connexus Energy, thanked the Commission for considering his request. He provided further comment on the purpose and need for the requested tower.

Commissioner VanScoy asked if any alternative locations for the tower.

Mr. Guttormson explained the proposed location was suggested because it would be as far away from adjacent properties as possible. He noted it would also be easier to service in the proposed location.

Chairperson Levine questioned if the tower could be located on top of the landfill site.

Mr. Thompson did not believe this would be possible as the site was not fully stable.

Crystal Specht, 7060 147th Avenue NW, feared that property values would be adversely impacted if the tower were installed on the Connexus property. She expressed concern with the amount of radiation that would be emitted from the tower.

Community Development Director Gladhill believed these were excellent points. He then referred to a study completed in 2008 noting no health concerns have been identified from existing cell phone towers. In addition, he had no data that showed property values declined in residential areas surrounding a cell tower.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to close the public hearing.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Chairperson Levine closed the public hearing closed at 7:51 p.m.

Commission Business

Commissioner Brauer discussed the information available on the CDC's webpage and noted there were no concerns listed with regard to cell towers.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to recommend that City Council adopt Resolution #15-03-067 adopting Findings of Fact #0948.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to recommend that City Council adopt Resolution #15-03-068 approving the Conditional Use Permit.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

5.04: Public Hearing: Consider Ordinance #15-06 to Amend City Code Sections 117-111 (R-1 Residential District) and 117-349 (Accessory Uses and Buildings)

Public Hearing

Chairperson Levine called the public hearing to order at 7:53 p.m.

Presentation

City Planner Anderson presented the staff report stating on January 24th of this year, the 2015 Minnesota State Building Code (MSBC) went into effect. There were several code changes that

occurred within the 2015 MSBC that are prompting this proposed Ordinance Amendment. Specifically, the thresholds triggering a building permit for detached accessory buildings and fences have increased and thus, the standards within Zoning Code need to be updated to ensure that there is not contradictory language between the two codes. The proposed amendments are to City Code Sections 117-111 (R-1 Residential District) and 117-349 (Accessory Uses and Buildings). Staff reviewed the matter further and recommended adoption of Ordinance #15-06.

Citizen Input

Chairperson Levine inquired if a detached accessory structure would require a driveway.

City Planner Anderson stated this would not be required as proposed within the Ordinance.

Motion by Commissioner VanScoy, seconded by Commissioner Bauer, to close the public hearing.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners VanScoy, Bauer, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

Chairperson Levine closed the public hearing closed at 8:02 p.m.

Commission Business

Commissioner Bauer supported staff's recommendation regarding the reduced need for impervious surface. He believed the code was forward thinking.

Commissioner VanScoy asked if a primary detached garage was addressed in the proposed code.

City Planner Anderson stated it was uncommon for new construction homes to have a detached primary garage on the property. He explained he could add language to address this concern noting a driveway would be required.

Motion by Commissioner Bauer, seconded by Commissioner VanScoy, to recommend that City Council adopt Ordinance #15-06 as amended.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Bauer, VanScoy, Brauer, and Nosan. Voting No: None. Absent: Commissioner Maul.

5.05: Zoning Bulletins

Zoning Bulletins were noted.

6. COMMISSION / STAFF INPUT

Staff provided the Commission with an update.

7. ADJOURNMENT

Motion by Commissioner Nosan, seconded by Commissioner VanScoy, to adjourn the meeting.

Motion Carried. Voting Yes: Chairperson Levine, Commissioners Nosan, VanScoy, Bauer, and Brauer. Voting No: None. Absent: Commissioner Maul.

The regular meeting of the Planning Commission adjourned at 8:17 p.m.

Respectfully submitted,

_____

Tim Gladhill
Community Development Director

ATTEST:

_____

JoAnn Shaw
Community Development Assistant

Drafted by Heidi Guenther
TimeSaver Off Site Secretarial, Inc.

Regular Planning Commission **5. 1.**

Meeting Date: 04/09/2015

By: JoAnn Shaw, Community Development

Information

Title:

Appoint Chairperson and Vice Chairperson

Purpose/Background:

Each year the Commissions and Boards appoint officers. Currently, Gary Levine serves as the Chairperson and Randy Bauer serves as the Vice Chairperson.

Notification:

Observations/Alternatives:

Funding Source:

Recommendation:

Action:

Motion to appoint _____ as Chairperson of the Planning Commission

-and-

Motion to appoint _____ as Vice Chairperson of the Planning Commission

Attachments

No file(s) attached.

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 11:59 AM
Form Started By: JoAnn Shaw		Started On: 03/06/2015 09:46 AM
Final Approval Date: 04/03/2015		

Regular Planning Commission **5. 2.**

Meeting Date: 04/09/2015

By: Chris Anderson, Community Development

Information

Title:

PUBLIC HEARING: Consider Request for a Variance to Side Yard Setbacks for an Accessory Building on the Property Located at 6520 170th Ave NW; Case of Jeff Rieck

Purpose/Background:

The City has received an application from Jeff Rieck (the "Applicant") for a variance to the required side yard setback for an addition to an existing, attached garage at the property located at 6520 170th Ave NW (the "Subject Property"). The proposed addition to the garage would be located five (5) feet from the eastern side property boundary of the Subject Property.

Notification:

Staff attempted to notify all Property Owners within a 350 foot radius of the Property of the Public Hearing via Standard US Mail. The Public Hearing was also published in the City's official newsletter, the Anoka County Union Herald.

Observations/Alternatives:

The Applicant would like to construct a twenty-four by forty foot (24' x 40') addition to the attached garage that essentially would convert it from two stalls to a three stall garage (a portion of the existing attached garage would be removed as part of this project). The purpose of the addition would be to provide indoor parking for the Applicant's vehicles as well as for additional storage space. The addition would be serviced with a driveway and the exterior finish will match that of the home (Applicant will, as part of this project, be updating the exterior finish of home as well). The attached garage presently is 440 square feet in size (20' x 22'). The Applicant had originally considered constructing a detached accessory building but, based on several provisions in City Code, found that that was not necessarily feasible.

The Subject Property is located in the R-1 Residential (Rural Developing) Zoning District, is about 1.15 acres in size, and is a corner lot. City Code Section 117-349 (Accessory Uses and Buildings) states that on parcels less than two (2) acres, a detached accessory building shall not be located closer to the front property line than the principal building. The home is setback approximately 100 feet from the front property line, which eliminates almost half the lot from consideration for placement of an accessory building.

The majority of the western and northwestern portions of the Subject Property serve as a collection point for much of the neighborhood's drainage. This area was platted prior to the practice of encumbering these low spots with drainage and utility easements. So while this low area is not encumbered with easement, allowing fill in this area would displace stormwater and potentially result in flooding of other areas and/or structures.

As a corner lot, the Subject Property essentially has two (2) front yards, and is subject to a forty (40) foot setback along Azurite St. Additionally, the septic system is located south of the home and structures must be located at least twenty (20) feet from the drainfield and ten (10) feet from the tank. Thus, between the drainage area and septic system, the western portion of the Subject Property is essentially eliminated from consideration for an accessory building. While there is some potential space in the southeastern portion of the Subject Property, it would be preferable to reserve that area to serve as an alternate location for a septic system should the current system fail and/or be replaced.

The Applicant is proposing to construct the garage addition such that it is five (5) feet from the side lot line, which is less than the required ten (10) foot setback. There is no drainage and utility easement along this property line and the neighbor to the east that abuts this property has submitted a written comment stating that he is not opposed to requested variance.

When contemplating a variance request, there is a three (3) factor test for practical difficulties that must be met by the Applicant. The following are the three (3) factors:
1. Is the property owner proposing to use the property in a reasonable manner?
2. Is the landowner's problem due to circumstances unique to the property and not caused by the landowner?
3. If granted, would the variance alter the essential character of the locality?

An addition to an accessory building (or the construction of a detached accessory building) is a reasonable use of the property, especially when considering the Subject Property is over an acre in size and only has a two (2) stall garage. The Subject Property appears to provide drainage for a majority of the neighborhood and if that low area were filled in, it would result in water pooling in other areas and potentially cause flooding damage to another structure. While a variance would allow for a reduced setback, based on the wooded setting of the neighborhood and the distance to the nearest adjacent homes, it does not appear that this would alter the essential character of the locality.

As a reminder, the Planning Commission acts in a quasi-judicial capacity when considering variances rather than a providing a recommendation.

Alternatives

Option 1: Adopt Resolutions #15-04-077 and #15-04-078 granting a variance to the minimum required side yard setback. While the Subject Property is over an acre in size, there are limited options for adding an accessory building based on existing setback requirements (from lot lines and septic systems), the fact that a large portion of the Subject Property provides drainage for the neighborhood, and the position of the home (about 100 feet from the front lot line). Additionally, the open area in the southeast corner of the lot, which could likely accommodate an accessory building, would preferably be reserved to serve as an alternate site for the septic system should the current system fail in the future. Staff supports this option.

Option 2: Do not approve the variance. This action would result in the Applicant modifying his plans to ensure that the addition meets the minimum required setback of ten (10) feet and/or would result in the Applicant having to construct a detached building in the southeastern portion of the Subject Property, eliminating that space from future use for an alternate location for a septic system. The proposed addition (960 square feet) is not excessive for this size property and on most one (1) acre sites could be easily accommodated (either as a detached building or an addition to an attached garage); however, due to a combination of factors affiliated with the Subject Property, a practical difficulty does appear to exist. Staff does not support this option.

Funding Source:

All costs associated with this request are the Applicant's responsibility.

Recommendation:

Staff recommends approval of the variance.

Action:

Motion to adopt Resolutions #15-04-077 and #15-04-078 approving a variance to the minimum side yard setback for an accessory building addition at 3520 170th Ave NW.

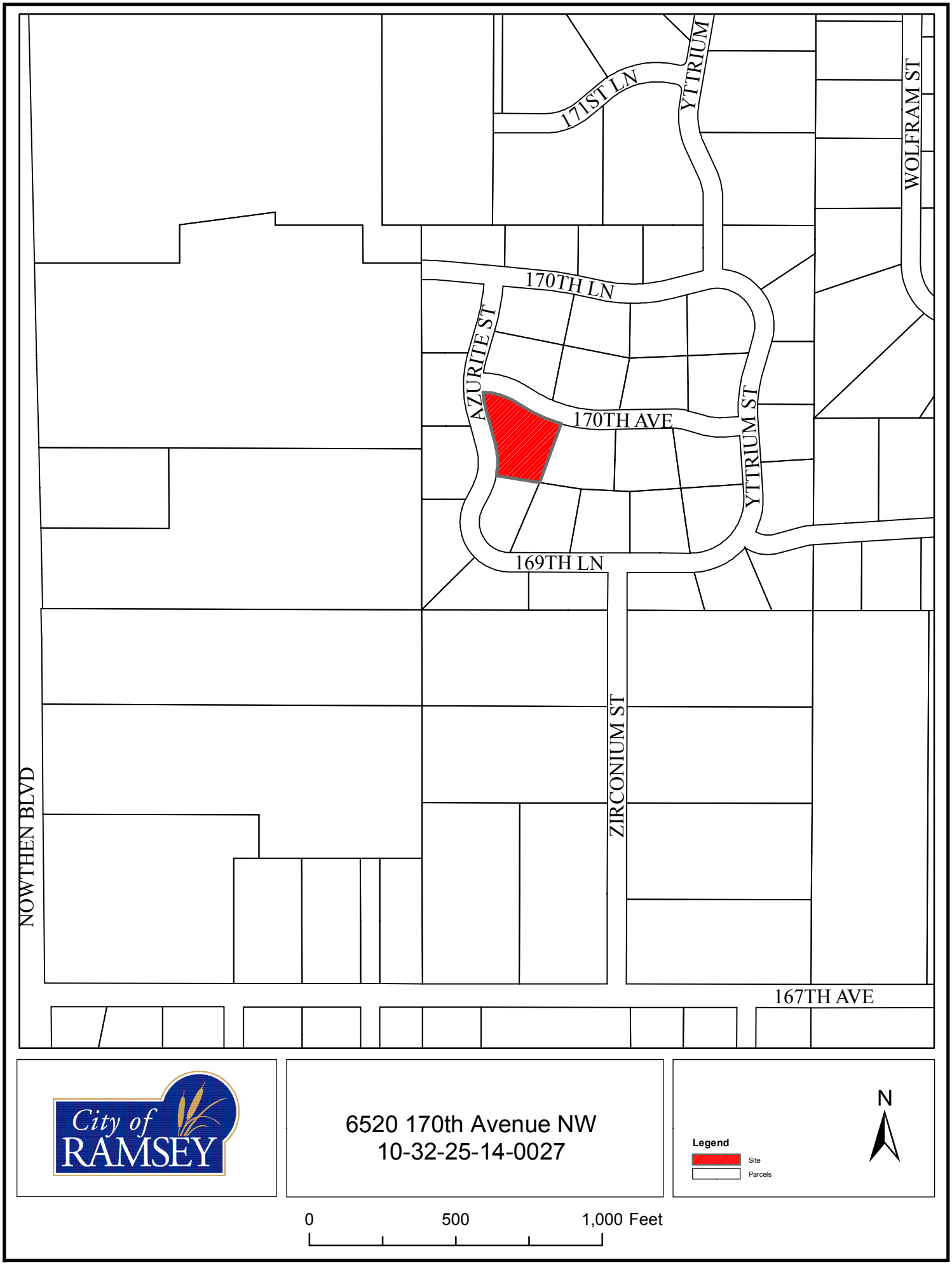
Attachments

Site Location Map

Applicant Narrative
Overview of Site
Neighbor's Comments
Certificate of Survey
Resolution #15-04-077: DRAFT Findings of Fact
Resolution #15-04-078: DRAFT Variance

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 12:08 PM
Form Started By: Chris Anderson		Started On: 03/13/2015 04:19 PM
Final Approval Date: 04/03/2015		


171ST LN
YTTRIUM
WOLFRAM ST
170TH LN
AZURITE ST
170TH AVE
YTTRIUM ST
169TH LN
NOWTHEN BLVD
ZIRCONIUM ST
167TH AVE
City of RAMSEY
6520 170th Avenue NW
10-32-25-14-0027
Legend
Site
Parcels
N
0
500
1,000 Feet

Proposed Garage Addition

The proposed garage addition would be 24' wide by 40' deep and would be built on to the east end of the existing two-stall attached garage. Note that due to space limitations and aesthetics, roughly 7.5' of the existing garage would be removed prior to construction. This would result in an apparent 3 stall wide garage when viewing the home from the front. The two eastern most stalls would essentially be two deep. Please see the attached diagram for the layout.

The existing home is situated on the property in such a fashion that no other alternatives appear feasible with regard to meeting our needs. I looked at building a detached structure to the west of the home, however setback requirements make this just as difficult as the current proposal. Such a structure would not be allowed to be built in front of the front plane of the house, which is over half of the property. There are setback requirements for the property line adjacent to the road as well as from the septic tank and seepage bed. The area behind the home is problematic due to the fact that the seepage bed prevents access from the west and then there would be setback requirements for the side and rear property lines as well as from the house itself.

I've discussed the addition with my neighbor, Gary Simonsen (neighbor to the east – the adjacent property) and he indicated he would support the project.

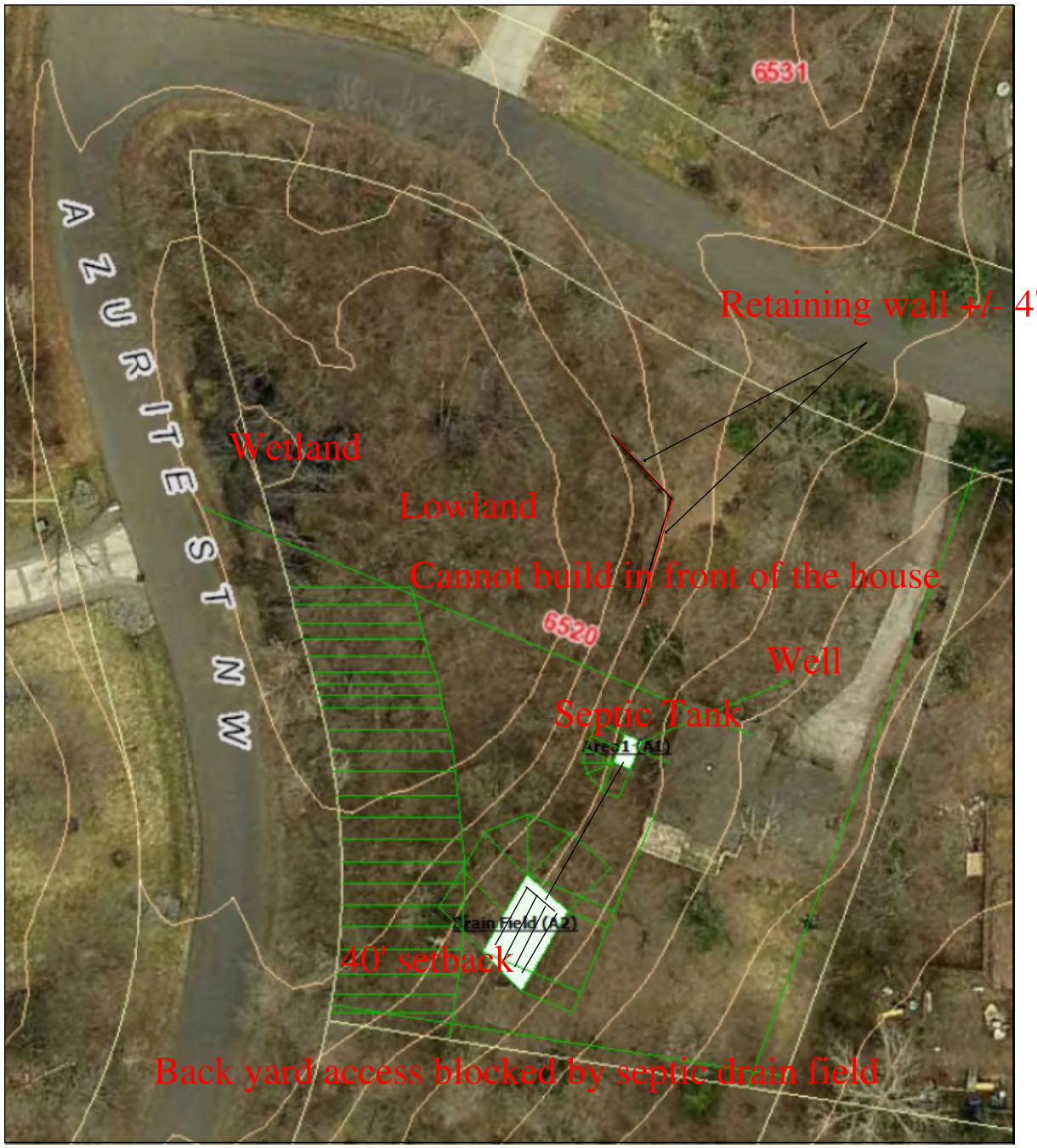
The purpose of the addition is two-fold. First, we would like to get all of our existing vehicles inside. The current two-stall garage is not large enough. We also need the additional storage. The second reason to build the structure onto the dwelling is to facilitate an update of the exterior of the home. The home is in need of windows and siding and it makes sense to update this when the addition is built (also easier to get all rolled into one financial package than separately).

At present we are looking at updating to a maintenance free exterior, likely D-4 dutchlap vinyl siding, with shake style gable ends, and vinyl windows. Note that the color will be appropriate and the blue reflected on the attached mock up is NOT the color we would choose.

The proposed addition will obviously exceed the existing setback requirement of 10' for the eastern boundary of the property, thus this request. The proposed measurements have been determined based on the expected width of vehicles to be stored and to allow access to the doors of those vehicles (the current garage basically requires one vehicle to be against the wall and prevents access from the passenger side of that vehicle) on both sides.

Based on the location of the property line and for the purpose of this request, the proposed addition would be built no closer than 5' from the property line. My neighbor's home and garage are over 80' from the property line and his property is relatively flat, thus the proposed structure will not affect run off from his property. Due to the slope of the property (my property slopes to the west), any runoff from my roof will not affect my neighbor. Gutters will likely be installed (if they become necessary) to prevent water from accumulating against the new foundation and to direct water away from my neighbor's property.

I have contacted a surveyor to lock in the location of the boundary in question. While here, I will have him prepare a survey showing the proposed changes and I will insert a Certificate of Survey with this request once this is complete.


6531
AZURITE ST NW
Retaining wall +/- 4'
Wetland
Lowland
Cannot build in front of the house
6520
Well
Septic Tank
Area1 (A1)
Drain Field (A2)
40' setback
Back yard access blocked by septic drain field

N

Main Level

Chris Anderson

From: Gary Simonsen <g.simonsen@comcast.net>
Sent: Wednesday, March 11, 2015 1:01 PM
To: Chris Anderson
Subject: Variance of property line

We have discussed the building of a addition to my neighbor Jeff Rieck's garage which to our understanding will be closer then ten feet to the existing property line. This proposal will not pose a problem to us to our knowledge and we are in support of the project as submitted by him. If further information is needed from me on this matter please feel free to contact me at my above email address our cell#763-657-9225. Thank you.

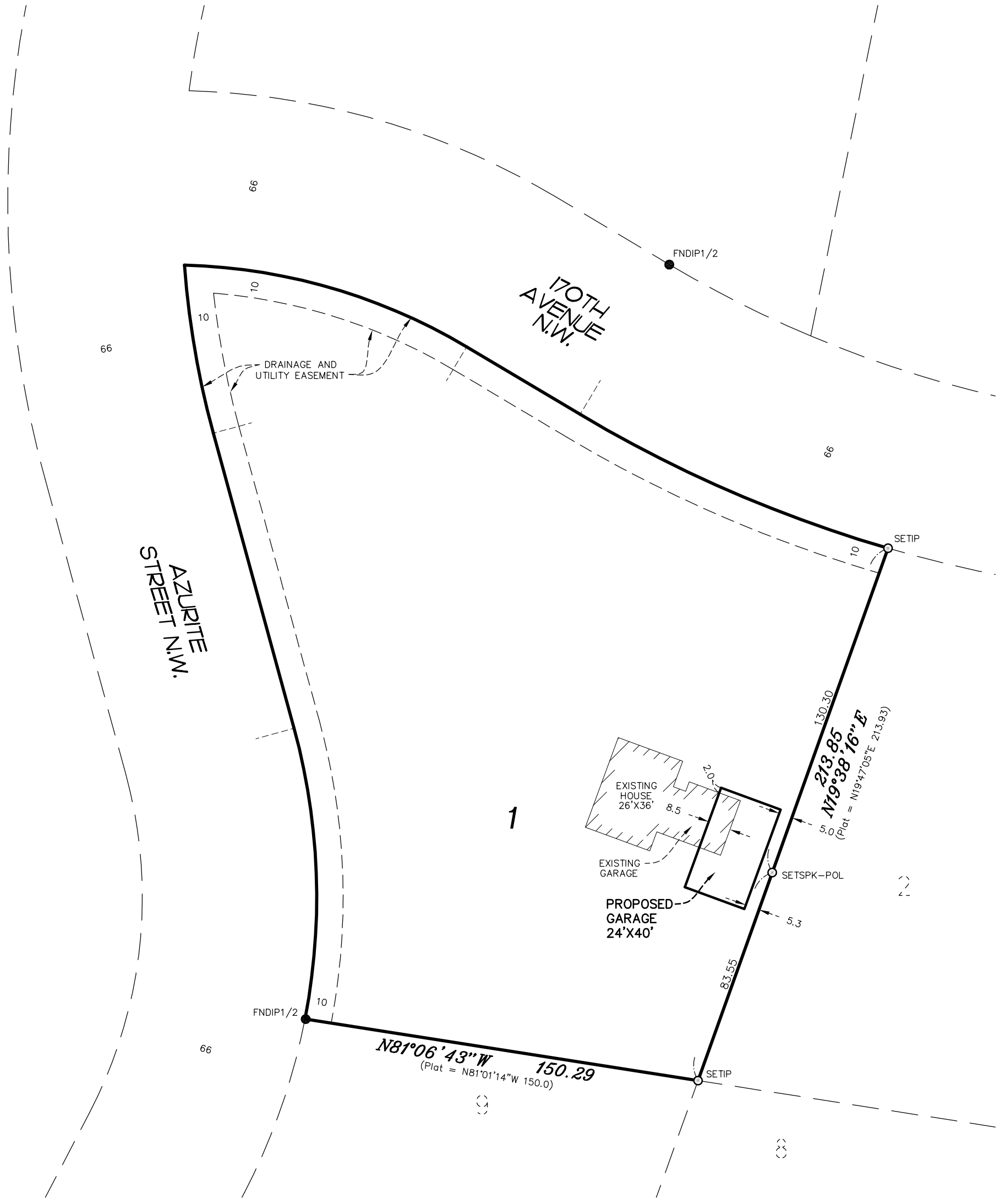
CERTIFICATE OF SURVEY

~for~ JEFF RIECK
~of~ 6520 170TH AVENUE NW
RAMSEY, MN 55303

NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 03/11/15.
- Bearings shown are on an assumed datum.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- For purposes of this survey only the southerly and easterly lot lines were surveyed.

NORTH



Lot 1, Block 6, SHADY LAWN ESTATES, Anoka County, Minnesota.

Location: Ramsey

Scale 1"= 40'	Drawn By: JEN	Project Manager: BLR	Job No.: 15121LS
o Denotes Iron Set	● Denotes Iron Found	Bearings shown are on an assumed datum.	

I hereby certify that this plan, survey or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota. Dated this 19th day of March, 2015.

License No. 19421

E.G. RUD & SONS, INC.
EST. 1977
www.egrud.com
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701

L1–B6

Commissioner _____ introduced the following resolution and moved for its adoption:

RESOLUTION #15-04-077

RESOLUTION ADOPTING FINDINGS OF FACT #0944 RELATING TO A REQUEST FROM JEFF RIECK FOR A VARIANCE TO THE SIDE YARD SETBACK REQUIREMENT IN THE R-1 RESIDENTIAL (RURAL DEVELOPING) DISTRICT FOR AN ADDITION TO AN ATTACHED GARAGE.

WHEREAS, Jeff Rieck, hereinafter referred to as "Applicant," has properly applied for a variance from Section 117-111 (R-1 Residential District) of the Ramsey City Code regarding the side yard setback for accessory structures on the property generally known as 6520 170th Ave NW and legally described as follows:

Lot 1, Block 6, Shady Lawn Estates, Anoka County, Minnesota

(the "Subject Property").

NOW THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF RAMSEY, ANOKA COUNTY, STATE OF MINNESOTA, as follows:

1. That the Applicant appeared before the Planning Commission for a public hearing pursuant to Section 117-53 (Variances) of the Ramsey City Code on April 9, 2015, and that said public hearing was properly advertised, and that the minutes of said public hearing are hereby incorporated as a part of these findings by reference.

2. That the Subject Property is zoned R-1 Residential (Rural Developing) and is approximately 1.15 acres in size.

3. That the Subject Property is surrounded by properties also zoned R-1 Residential (Rural Developing) and of similar sizes.

4. That the Subject Property was platted in 1972 as part of the Shady Lawn Estates plat.

5. That the Applicant is proposing to construct an addition to the existing attached garage to provide additional storage space, which will result in a three (3) stall attached garage.

6. That the addition would be located five (5) feet from the side property line.

7. That City Code Section 117-111 (R-1 Residential) (d) requires accessory buildings to be setback from a side property line a minimum of ten (10) feet.

8. That the Subject Property is a corner lot.

9. That City Code Section 117-111 (R-1 Residential) (d) requires accessory buildings to be setback from a side property line adjacent to public road right-of-way (side corner) a minimum of forty (40) feet.

10. That the septic system (drainfield and tank) are located in the southwestern portion of the Subject Property eliminating that area as a potential location for an accessory building.

11. That the western and northwestern portions of the property are lowland that are serving as a drainage basin for much of the neighborhood eliminating these areas as a potential location for an accessory building.

12. That the principal building is setback approximately 100 feet from the front property line.

13. That City Code Section 117-349 (Accessory Uses and Buildings) restricts the siting of accessory buildings to the side or rear yard of properties that are less than two (2) acres in size, eliminating the front yard area as a potential location for an accessory building.

14. That the southeast portion of the property would preferably be reserved to serve as a potential alternate location for a septic system should the existing system fail in the future.

15. That the owner of the property to the east of the Subject Property has stated that he supports the Applicant's request as proposed.

16. That based on the size of the Subject Property, the Applicant would be eligible for a maximum of 2,200 square feet of detached accessory building space.

17. That there are no other accessory buildings on the Subject Property aside from the existing, two (2) stall attached garage.

18. That as part of this project, the Applicant has stated a willingness to install gutters, if necessary, to direct any stormwater runoff from the roofline away from the neighboring property to the east.

19. That the garage addition would be serviced by a driveway.

20. That economic circumstances alone do not create the practical difficulties.

21. That the plight is/is not due to circumstances unique to the Subject Property.

22. That the plight was/was not created by the Applicant.

23. That, if granted, the variance will/will not alter the locality's essential character.

24. That, if granted, the variance will/will not impair an adequate supply of light and air to adjacent property.

25. That, if granted, the variance will/will not have the effect of allowing a use that is prohibited in the applicable zoning district.

26. That, if granted, the variance will/will not unreasonably increase the congestion on the public street.

27. That, if granted, the variance will/will not adversely impact the degree of public health, safety and general welfare provided for in the Ramsey City Code.

28. That, if granted, the variance will/will not diminish established property values within the neighborhood.

29. That, if granted, the variance requested is/is not the minimum variance necessary to accomplish the intended purpose of the Applicant.

30. That the unique circumstances on the Subject Property do/do not result from the actions of the Applicant.

31. That, if granted, the variance will/will not grant the Applicant any special privilege that is denied to the owners of other land in the same district.

The motion for the adoption of the foregoing resolution was duly seconded by Commissioner _____, and upon vote being taken thereon, the following voted in favor thereof:

and the following voted against the same:

and the following abstained:

and the following were absent:

whereupon said resolution was declared duly adopted by the Ramsey Planning Commission this the 9th day of April, 2015.

_____
Chairperson

ATTEST:

_____
City Clerk

Commissioner _____ introduced the following resolution and moved for its adoption:

RESOLUTION #15-04-078

RESOLUTION APPROVING THE ISSUANCE OF A VARIANCE TO THE SIDE YARD SETBACK FOR AN ACCESSORY STRUCTURE ADDITION.

WHEREAS, Jeff Rieck (Permittee) has properly applied for a variance to Section 117-111 (R-1 Residential District) of the Ramsey City Code with regard to the minimum setback required for accessory buildings on the property generally known as 6520 170th Ave NW and legally described as follows:

Lot 1, Block 6, Shady Lawn Estates, Anoka County, Minnesota

(Subject Property).

AND WHEREAS, the Planning Commission conducted a public hearing on April 9, 2015, pursuant to Section 117-53 of the Ramsey City Code, and adopted findings of fact relating to the request for a variance.

NOW THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF RAMSEY, ANOKA COUNTY, STATE OF MINNESOTA, as follows:

1. That based on Findings of Fact #0944, a variance (the "Variance") to side yard setbacks for accessory buildings, as shown on the attached exhibit, is hereby granted.

2. That the addition shall be located no closer than five (5) feet from the eastern side property boundary of the **Subject Property**.

3. That the exterior finish of the addition shall be the same as that of the principal building.

4. That the proposed garage addition shall comply with all other applicable Zoning, Building, and Fire Code standards.

5. The **Permittee** shall be responsible for all costs incurred in administering and enforcing this **Variance**.

6. That this **Variance** shall automatically expire if the use is not initiated by April 9, 2016, and issuance of the building permit shall constitute initiation.

The motion for the adoption of the foregoing resolution was duly seconded by Commissioner _____, and upon vote being taken thereon, the following voted in favor thereof:

and the following voted against the same:

and the following abstained:

and the following were absent:

whereupon said resolution was declared duly adopted by the Ramsey Planning Commission this the 9th day of April, 2015.

PERMITTEE

Jeff Rieck hereby acknowledges receipt of this variance and that he has reviewed the terms of the variance and has agreed that he will comply with the terms of the variance.

_____
Jeff Rieck

STATE OF MINNESOTA)
)ss.
COUNTY OF ANOKA)

On this _____ day of _____, ____, before me, a Notary Public, personally appeared Jeff Rieck, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as their free act and deed.

_____
Notary Public

CITY OF RAMSEY:

By:_____ By:_____
Chairperson, Planning Commission City Clerk

STATE OF MINNESOTA)
)ss.
COUNTY OF ANOKA)

On this _____ day of _____, ____, before me, a Notary Public, personally appeared Gary Levine and JoAnn M Thieling, to me personally known, who, being each by me duly sworn did say that they are respectively the Planning Commission Chairperson and City Clerk of the City of Ramsey, the Municipal Corporation named in the foregoing instrument, and seal affixed to said instrument is the corporate seal of said Municipal Corporation, and the said instrument was signed and sealed on behalf of said Municipal Corporation by authority of its City Council, and said Gary

Levine and JoAnn M Thieling acknowledge said instrument to be the free act and deed of said Municipal Corporation.

_____

Notary Public

This document drafted by:
City of Ramsey
7550 Sunwood Dr NW
Ramsey, MN 55303

This document reviewed by:
Ratwik, Roszak & Maloney
730 Second Ave. S., Suite 300
Minneapolis, MN 55402

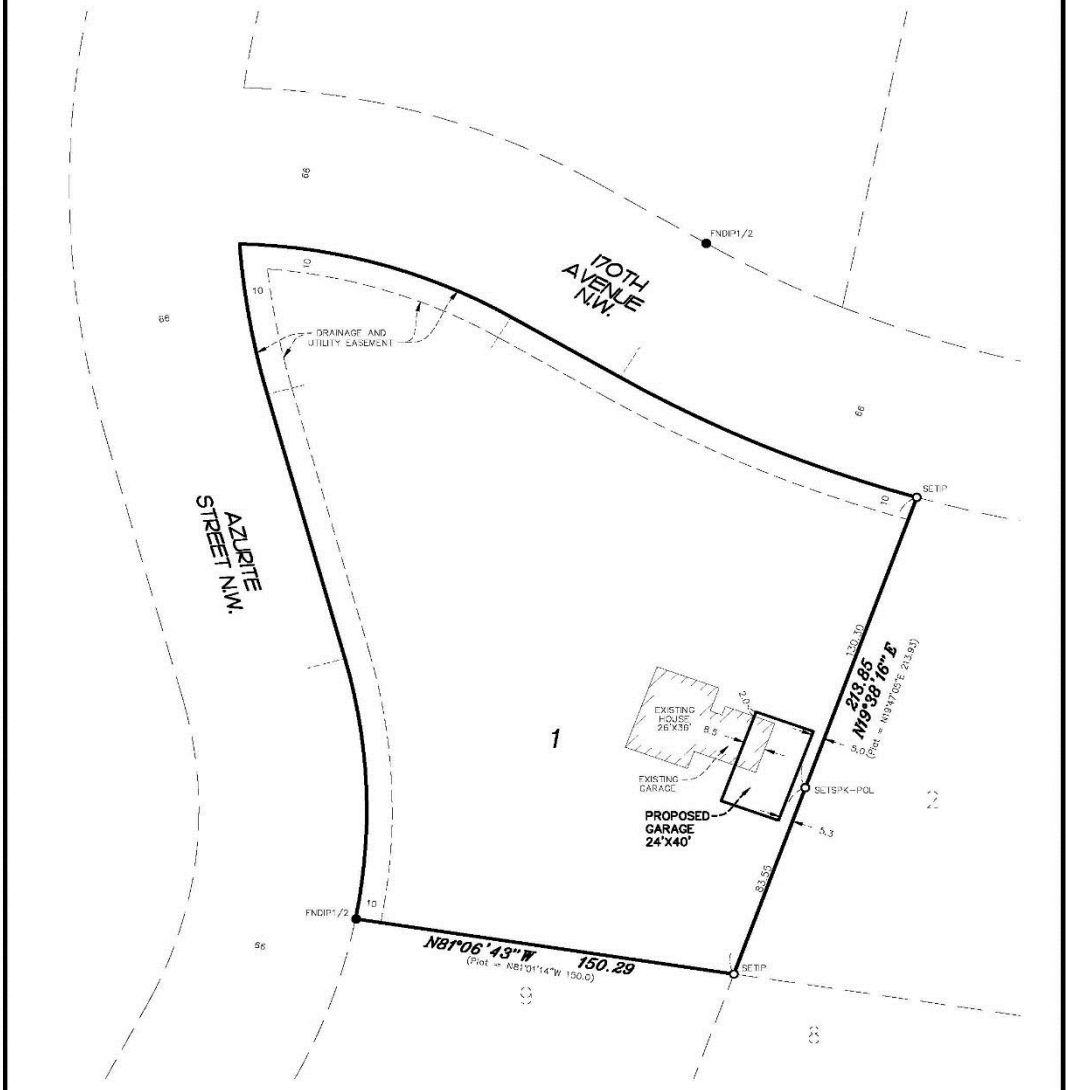
Exhibit

CERTIFICATE OF SURVEY

~for~ JEFF RIECK
~of~ 6520 170TH AVENUE NW
RAMSEY, MN 55303

NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 03/11/15.
- Bearings shown are on an assumed datum.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- For purposes of this survey only the southerly and easterly lot lines were surveyed.



Lot 1, Block 6, SHADY LAWN ESTATES, Anoka County, Minnesota.

Location: Ramsey			
Scale 1"= 40'	Drawn By: JEN	Project Manager: BLR	Job No.: 15121LS
o Denotes Iron Set	● Denotes Iron Found	Bearings shown are on an assumed datum.	

I hereby certify that this plan, survey or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota. Dated this 19th day of March, 2015.

License No. 19421

E. G. RUD & SONS, INC.
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701
www.egrud.com

L1 - B6

Regular Planning Commission **5. 3.**

Meeting Date: 04/09/2015

Submitted For: Tim Gladhill, Community Development

By: Tina Goodroad, Community Development

Information

Title:

PUBLIC HEARING: Consider Resolution #15-04-092 Granting Preliminary Plat Approval to Harvest Estates, a Major Plat; Case of G S Land, LLC.

Purpose/Background:

The purpose of this case is to review the official Preliminary Plat prepared by G S Land, LLC for the redevelopment for the former municipal campus located at 15153 Nowthen Blvd. NW as a 44-lot single-family residential development. The site is currently owned by the City of Ramsey, which has approved a Purchase Agreement to sell the site in two (2) phases to G S Land, LLC. The attached Review File outlines a recent assignment of the Purchase Agreement to G S Land, LLC. The Planning Commission has reviewed a previous sketch plan and approved a recommendation to rezone the property from Public/Quasi-Public to R-1, Residential (MUSA) and a land use change from Public/Quasi-Public in the Comprehensive Plan.

Fire Station No. 2 currently operates from the existing building on the site. The Final Plat will be proposed in two phases to allow the Fire Department to be located at 5650 Alpine Drive, adjacent to the site until the construction of the new Fire Station 2 is completed.

Notification:

Staff attempted to notify all Property Owners with 700 feet of the Subject Property of the Public Hearing via Standard US Mail. A Notification of Public Hearing was published in the Anoka County UnionHerald.

Observations/Alternatives:

The proposed Preliminary Plat is substantially similar to the sketch plan reviewed by the Planning Commission when the reguiding to LDR: Low Density Residential and rezoning to R-1 Residential (MUSA). The proposed density is 2.64 units per acre where three (3) units per acre is required within the LDR land use. However, the City remains consistent overall in meeting the three units/acre average city wide. Staff is supportive of the proposed number of lots and density.

The proposed Preliminary Plat does not include access to Nowthen Boulevard at the direction of the City Council. The details of this discussion are included in the attached copy of the City Council Work Session Minutes dated February 24, 2015. The current layout would allow for a future connection to Nowthen Boulevard, if desired in the future after further study of Nowthen Boulevard safety and mobility issues. The site will have three (3) access points to major roads: Nowthen Boulevard (at 150th Lane); Alpine Drive (at Helium Street); and Trunk Highway 47/Saint Francis Boulevard (at 152nd Avenue).

Landscaping and reforestation has been reviewed by staff and determined to meet the intent of the ordinance. A combination of trees are proposed on each residential lot satisfying the two (2) trees per lot requirement. Additional plantings are proposed in areas to buffer the proposed development from adjacent developments and from Nowthen Boulevard.

Staff is seeking policy direction on the number of sidewalks in the development. City Code would require sidewalks on one (1) side of each public street. The adjacent development known as MEADOW includes sidewalks on both sides of the streets. There will be some minor transitional issues if sidewalks are only included on one (1) side of

the street. Additional details are included in the attached Staff Review File. A ten (10) foot wide bituminous trail is required connecting the internal loop street to Nowthen Boulevard at the location of the existing driveway.

The development agreement will require that all proposed homes meet all the architectural requirements of the underlying R-1, Residential (MUSA) District. No enhanced architectural standards are being required by the City.

Plans will need to be revised prior to review by the City Council. Required revisions are outlined in the attached Staff Review File.

Alternatives

Alternative #1: Recommend approval of the request with revisions as outlined in the Staff Review File. With the requested revisions, the proposal appears to comply with required City standards. Staff recommends this alternative.

Alternative #2: Recommend approval of the request as presented. There are some required revisions and omissions from the plans that are required in order to comply with City regulations. Staff does not recommend this option.

Alternative #3: Recommend denial of the request. The proposed development has gone through significant policy discussion. The general land use is in line with City goals. Required revisions are relatively minor. Staff does not recommend denial of the request.

Funding Source:

All costs associated with processing this Application are the responsibility of the Applicant.

Recommendation:

Staff recommends approval of the request.

The Environmental Policy Board reviewed the Landscape Plan and recommended approval of said plan with suggested revisions as outlined in the Staff Review File.

Action:

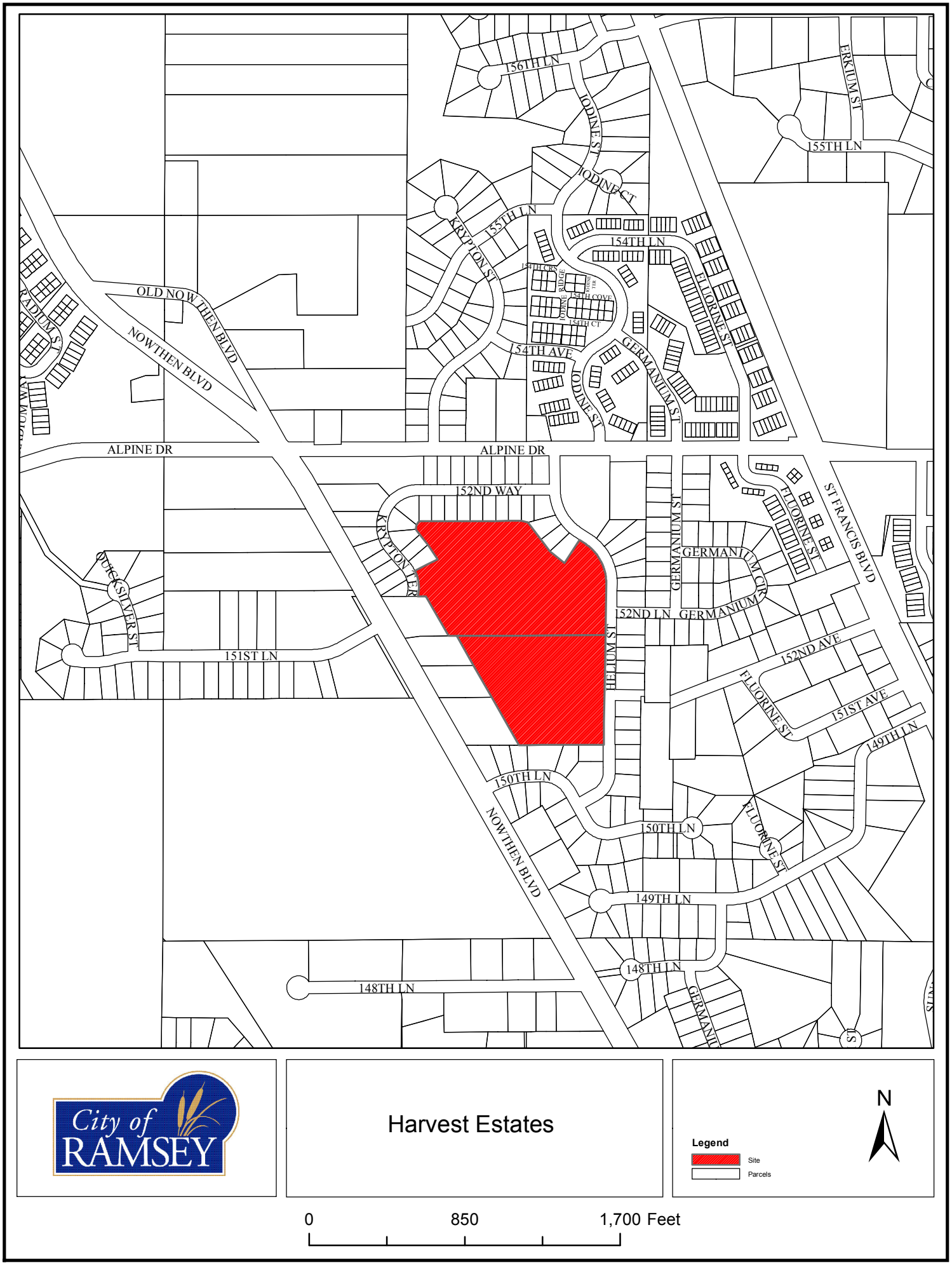
Motion to recommend that the City Council adopt Resolution #15-04-092 granting Preliminary Plat Approval of Harvest Estates.

Attachments

Site Location Map
REVISED Plan Sheet
Full Plan Set to be Revised
Staff Review File
City Council Work Session Minutes dated February 24, 2015
DRAFT Environmental Policy Board Minutes dated March 30, 2015
Resolution #15-04-092

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 11:58 AM
Chris Anderson	Chris Anderson	04/03/2015 12:05 PM
Tim Gladhill	Tim Gladhill	04/03/2015 12:09 PM
Form Started By: Tina Goodroad		Started On: 03/27/2015 10:16 AM
Final Approval Date: 04/03/2015		



City of RAMSEY

Harvest Estates

Legend

Site

Parcels

N

0 850 1,700 Feet

HARVEST ESTATES

City of Ramsey

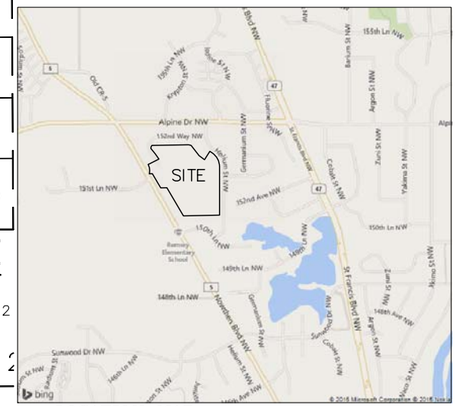
Anoka County, Minnesota

SITE DATA:

		SQ. FT.±	ACRES ±
Total Site Area	=	927,015	21.281
Right-of-Way Area	=	59,135	1.358
Net Area	=	867,880	19.924
Total Number of Lots	=	44	
Total No. Units	=	44	
Net Density	=	2.2 U/A	
Imperivious Surface	=	244,810	5.620

ZONING REGULATIONS:

Current zoning	=	Public/Quasi-Public District
Proposed zoning	=	R1 Residential (MUSA)
Front Yard	=	30 ft.
Rear Yard	=	30 ft.
Side Interior		
Living Space	=	10 ft.
Garage	=	6 ft.
Side Corner	=	30 ft.
Minimum Lot Width At Setback	=	80 ft.
Corner lot	=	90 ft.
Minimum Lot Area	=	10,800 Sf.



LOCATION MAP

No Scale

INDEX:

PRE PLAT:

C-1) COVERSHEET/SITE PLAN
C-2) PRELIMINARY PLAT
C-3) UTILITY PLAN
C-4) LANDSCAPE PLAN
C-5) TREE PRESERVATION PLAN

GRADING AND EROSION:

CG-1) GRADING PLAN
CE-1) EROSION CONTROL
CE-2) EROSION CONTROL DETAILS

PRELIMINARY
NOT FOR CONSTRUCTION

100 0 100 200 300

Scale 1" = 100'

Scale 1" = 30'

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.

Date:

Randall C. Hedlund MN. LIC. NO. 19576

REVISIONS			
REMARKS	DATE	BY
Remove Nowthen Boulevard connection	4/1/15	spk

PROJECT NUMBER 141029

PREPARED BY:

HEDLUND SURVEYING
PLANNING ENGINEERING
2005 Pin Oak Drive
Eagan, MN 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE: *HARVEST ESTATES COVERSHEET/SITE PLAN*

PREPARED FOR: *NIK MANAGEMENT INC.*
11736 177TH St. W.
Lakeville, MN 55044
Phone: (952) 236-9424

DRAWN	CHECKED	DESIGN
---	---	---

SHEET NUMBER *C-1*

DATE 3/5/2015
REV. 4/1/15

Drawing:H:\2014 Projects\141029\Cadd\SubmittalSnts\SiteSht.dwg
Layout:Prelim Site Plan
Date: Apr 02,2015,8:38am
X-Ref Dwg: 141029butt.dwg
X-Ref Dwg: 141029base.dwg
X-Ref Dwg: 141029topo.dwg

HARVEST ESTATES

City of Ramsey

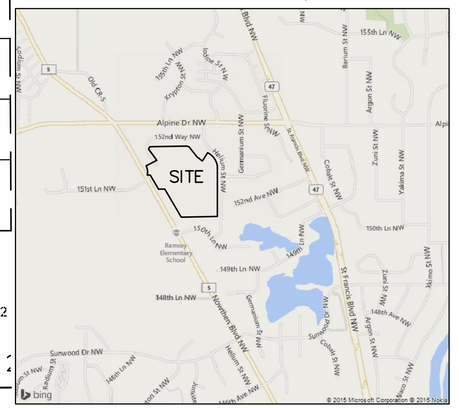
Anoka County, Minnesota

SITE DATA:

		SQ. FT.±	ACRES ±
Total Site Area	=	927,015	21.281
Right-of-Way Area	=	59,135	1.358
Net Area	=	867,880	19.924
Total Number of Lots	=	44	
Total No. Units	=	44	
Net Density	=	2.2 U/A	
Imperivious Surface	=	244,810	5.620

ZONING REGULATIONS:

Current zoning	=	Public/Quasi-Public District
Proposed zoning	=	R1 Residential (MUSA)
Front Yard	=	30 ft.
Rear Yard	=	30 ft.
Side Interior		
Living Space	=	10 ft.
Garage	=	6 ft.
Side Corner	=	30 ft.
Minimum Lot Width At Setback	=	80 ft.
Corner lot	=	90 ft.
Minimum Lot Area	=	10,800 Sf.



LOCATION MAP

No Scale

INDEX:

PRE PLAT:

C-1) COVERSHEET/SITE PLAN
C-2) PRELIMINARY PLAT
C-3) UTILITY PLAN
C-4) LANDSCAPE PLAN
C-5) TREE PRESERVATION PLAN

GRADING AND EROSION:

CG-1) GRADING PLAN
CE-1) EROSION CONTROL
CE-2) EROSION CONTROL DETAILS

Scale 1" = 30'

PRELIMINARY
NOT FOR CONSTRUCTION

100 0 100 200 300

Scale 1" = 100'

PROJECT NUMBER 141029

REVISIONS

REMARKS	DATE	BY
---	---	---

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.

Date:

Randall C. Hedlund MN. LIC. NO. 19576

PREPARED BY:

HEDLUND SURVEYING ENGINEERING PLANNING
2005 Pin Oak Drive
Eagan, MN 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE: HARVEST STATES COVERSHEET/SITE PLAN

PREPARED FOR: NIK MANAGEMENT INC.
11736 177TH St. W.
Lakeville, MN 55044
Phone: (952) 236-9424

DRAWN	CHECKED	DESIGN
---	---	---

SHEET NUMBER C-1

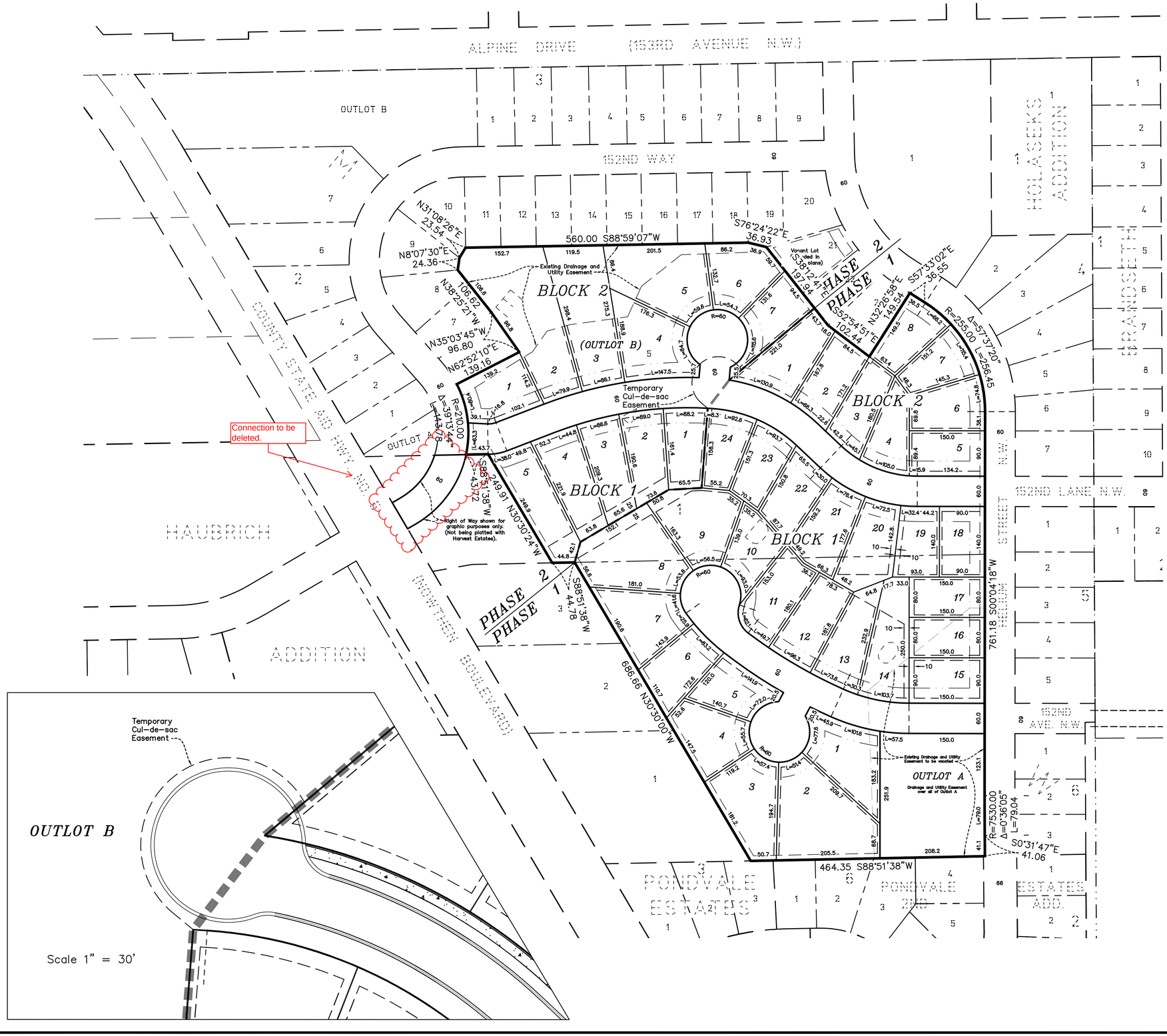
DATE 3/5/2015
REV. 00/00/00

Drawing:H:\2014 Projects\141029\Cadd\SubmittalShts\SiteSht.dwg
Layout:Prelim Site Plan
Date:Mar 05,2015,7:38am
X-Ref Dwg: 141029sit.dwg
X-Ref Dwg: 141029bas.dwg
X-Ref Dwg: 141029topo.dwg

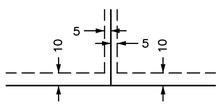
HARVEST ESTATES
City of Ramsey
Anoka County, Minnesota

LEGAL DESCRIPTION:

Lots 4 and 5, MEADOW, City of Ramsey, Anoka County, Minnesota.



Drainage and Utility Easements are shown thus:



Being 5 feet in width and adjoining lot lines, unless otherwise shown, and 10 feet in width and adjoining street lines as shown on the plat.

Bearings shown are based upon an assumed datum.

PRELIMINARY
NOT FOR CONSTRUCTION

100 0 100 200 300

Scale 1" = 100'

PROJECT NUMBER 141029

REVISIONS

REMARKS	DATE	BY
---	---	---

CERTIFICATION:
I hereby certify that this survey, plan, report, or description was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Jeffrey D. Lindgren — MN. LIC. NO. 14376 — Date: ___

PREPARED BY:
HEDLUND SURVEYING
PLANNING ENGINEERING
2005 Pin Oak Drive
Eagan, MN 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE: *HARVEST STATES PRELIMINARY PLAT*

PREPARED FOR: *NIK MANAGEMENT INC.*
11736 177TH St. W.
Lakeville, MN 55044
Phone: (952) 236-9424

DRAWN	CHECKED	DESIGN
---	---	---

SHEET NUMBER
C-2

DATE 3/5/2015
REV. 00/00/00

Drawing:H:\2014 Projects\141029\Cadd\SubmittalSht's\PlatSht.dwg
Layout:PP Plot
Date:Mar 04, 2015,4:16pm
X-Ref Dwg:141029base.dwg

HARVEST ESTATES

City of Ramsey

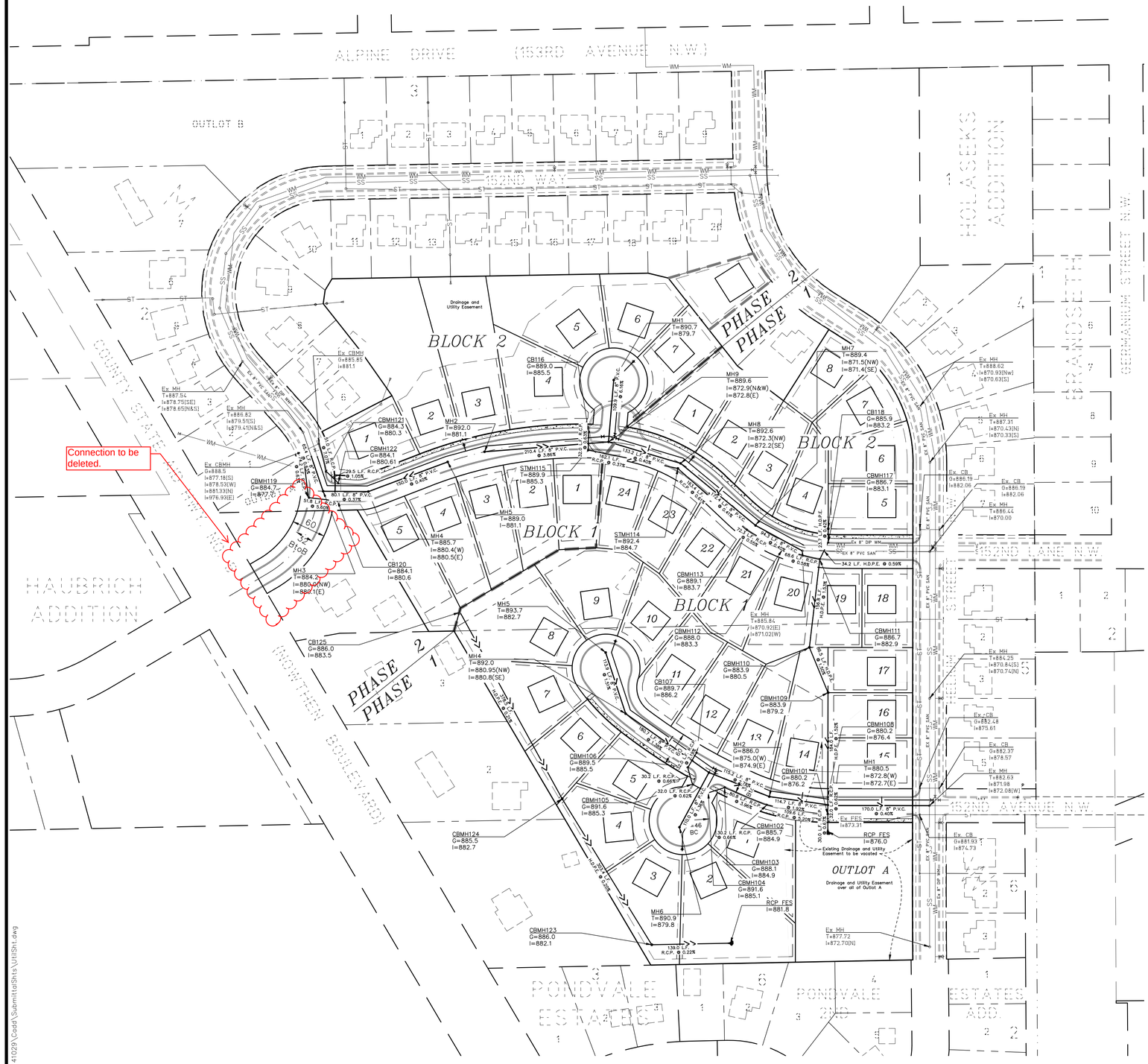
Anoka County, Minnesota

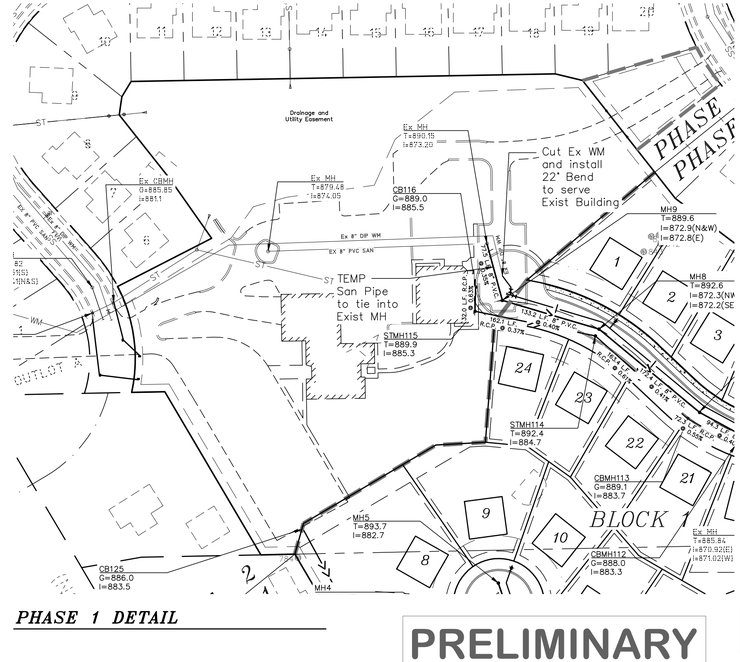
LEGEND:

SS SS	EXISTING SANITARY SEWER
WM WM	EXISTING WATERMAIN
ST ST	EXISTING STORM SEWER
x x	EXISTING FENCE
←—	PROPOSED SANITARY SEWER
—I—	PROPOSED WATERMAIN
<<—	PROPOSED STORM SEWER

GENERAL CONSTRUCTION NOTES:

1.) Existing Utility Locations As-Per As-Built Plans Provided By the _____ and Hedlund Engineering.
2.) All Existing Utilities or Improvements, Including Walks,Curbs Pavement and Parkways Damaged or Removed During Construction Shall be Promptly Restored to Their Respective Original Condition.
3.) The Contractor Shall Notify all Utility Companies Prior to Construction to Verify in the Field all Existing and Underground Utilities Adjacent to the Project, and be Responsible for Protection of the same.
4.) For on Site Location of all Under-ground Utilities Call Gopher State One Call System (651)454-0002
5.) The Contractor Shall Beware of Potential Conflicts with Existing Utilities as Indicated on the Plans The Contractor Shall Excavate Around Utilities to Determine Elev. Before Beginning Construction.
6.) The Contractor Shall Be Responsible To Lower Watermain During Install. Where Necessary To Avoid Service Conflicts.





PHASE 1 DETAIL

PRELIMINARY
NOT FOR CONSTRUCTION

100 0 100 200 300
Scale 1" = 100'

PROJECT NUMBER
141029

REVISIONS

REMARKS	DATE	BY
---	---	---

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.

Date: ---
Randall C. Hedlund — MN. LIC. NO. 19576

PREPARED BY:
HEDLUND SURVEYING
ENGINEERING
PLANNING
2005 Pin Oak Drive
Eagan, MN. 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE:
HARVEST ESTATES
UTILITY PLAN

PREPARED FOR:
NIK MANAGEMENT INC.
11736 177TH ST. W.
Lakeville, MN 55044
Phone: (952) 236-9424

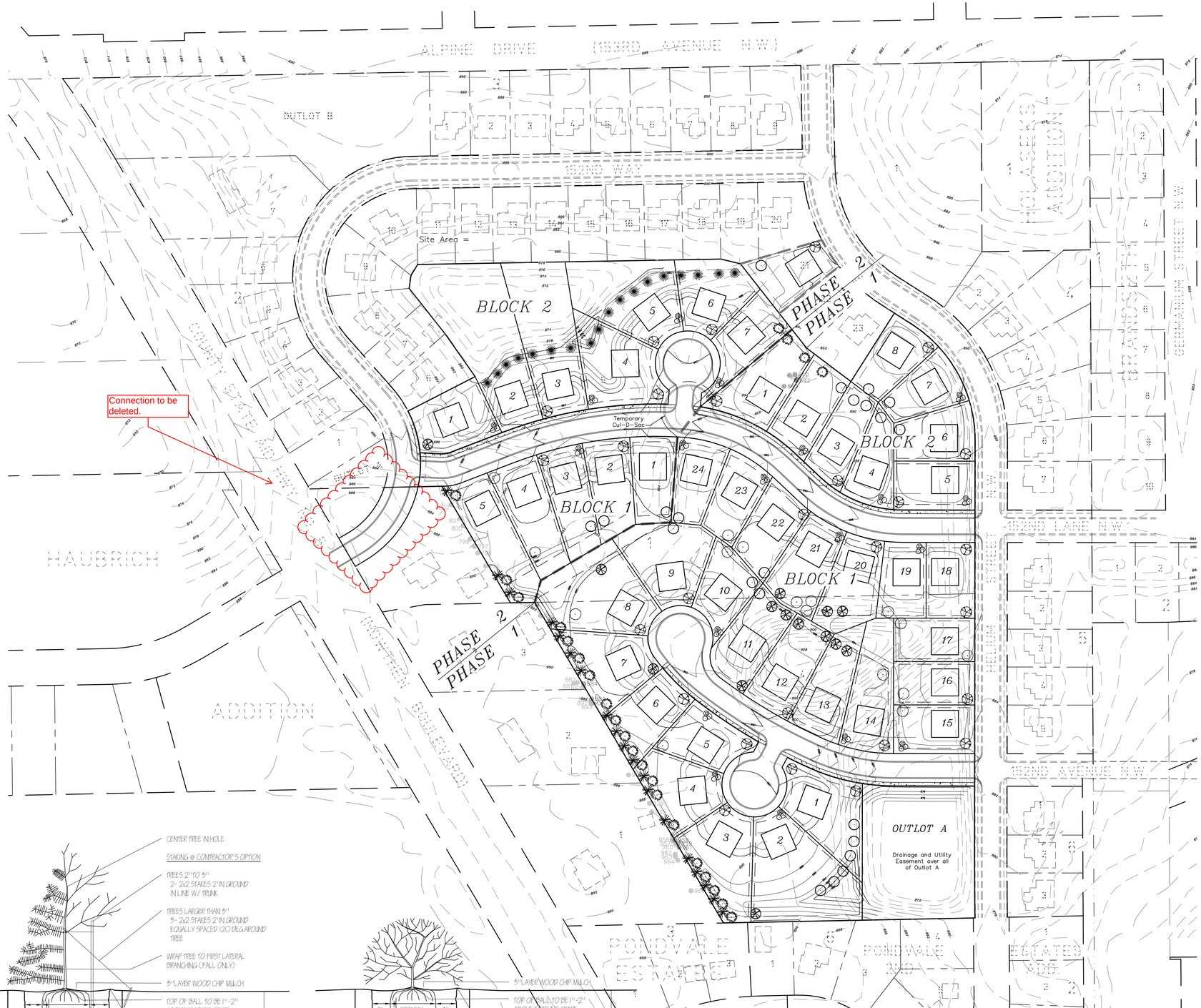
DRAWN	CHECKED	DESIGN
---	---	---

SHEET NUMBER
C-3

DATE 3/5/2015
REV. ----

Drawing:H:\2014 Projects\141029\Cadd\Submittal\Sht1\UtilSht.dwg
Layout: Sht 1 Utility
Date:Mar 05,2015,9:52am
X-Ref Dwg:141029util.dwg
X-Ref Dwg:141029base.dwg

HARVEST ESTATES
City of Ramsey
Anoka County, Minnesota



PLANTING NOTES:

Contractor shall provide one year guarantee of all plant materials. The guarantee begins on the date of the Landscape Architect's written acceptance of the initial planting. Replacement plant materials shall also have a one year guarantee commencing upon planting.

All plants to be northern-grown and hardy.

Plants to be installed as per standard MN planting practices.

Use minimum 12" loam planting soil on trees.

Contractor shall verify locations with all utilities prior to installation of plants.

Staking of trees optional; reposition if not plumb after one year.

Wrap all smooth-barked trees-fasten top and bottom. Remove by April 1.

Open top of burlap on BB materials; remove pot on potted plants; split and break apart peat pots.

Prune plants as necessary - per standard nursery practice.

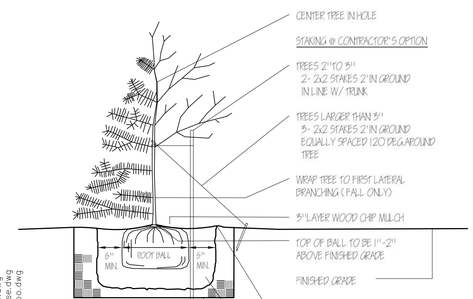
Owner shall be responsible for maintenance after acceptance of the work by the Owner.

Plants shall be immediately planted upon arrival at site. Properly heel-in materials if necessary; temporary only.

Shredded hardwood mulch (4"(1 - 6" deep)) shall be shall be placed around all new trees and shrub clusters. Diameter of mulched areas shrubs shall be a minimum of 4' from the trunk or stem of all trees and shrubs. Trench edging shall be used around all mulched areas.

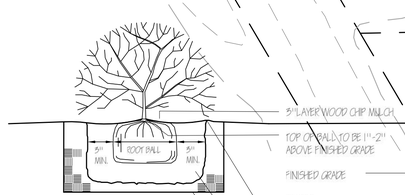
PLANT LIST:

QTY.	KEY	SYM	COMMON NAME	BOTANICAL NAME	SIZE / ROOT
19	AP		Austrian Pine	Pinus nigra	6' B&B
24	BHS		Black Hills Spruce	Picea glauca densata	6' B&B
18	BF		Balsam Fir	Abies balsamea	6' B&B
14	NM		Norway Maple	Acer platanoides	2.5" B&B
16	LL		Legend Linden	Tilia americana	2.5" B&B
19	RB		River Birch	Betula nigra	2.5" B&B
27	PA		Patmore Ash	Fraxinus pennsylvanica	2.5" B&B
25	SWO		Swamp White Oak	Quercus bicolor	2.5" B&B



TREE PLANTING DETAIL

No Scale



SHRUB PLANTING DETAIL

No Scale

PRELIMINARY
NOT FOR CONSTRUCTION

100 0 100 200 300

Scale 1" = 100'

Drawing:H:\2014 Projects\141029\Cadd\SubmittalShts\LandSht.dwg
Layout: Landscape Sheet
Date: Mar 05, 2015 - 10:27am
X-Ref Dwg:141029plt.dwn
X-Ref Dwg:141029base.dwg
X-Ref Dwg:141029topo.dwg

PROJECT NUMBER 141029

REVISIONS

REMARKS	DATE	BY
---	---	---

CERTIFICATION: I hereby certify that this plan 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.

Randall C. Hedlund, Minn. No. 19576

PREPARED BY:

HEDLUND SURVEYING ENGINEERING

PLANNING
2005 Pin Oak Drive
Eagan, MN 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE: *HARVEST ESTATES LANDSCAPE PLAN*

PREPARED FOR:

NIK MANAGEMENT INC.
11736 177TH St. W.
Lakeville, MN 55044
Phone: (952) 236-9424

DRAWN	CHECKED	DESIGN
---	---	---

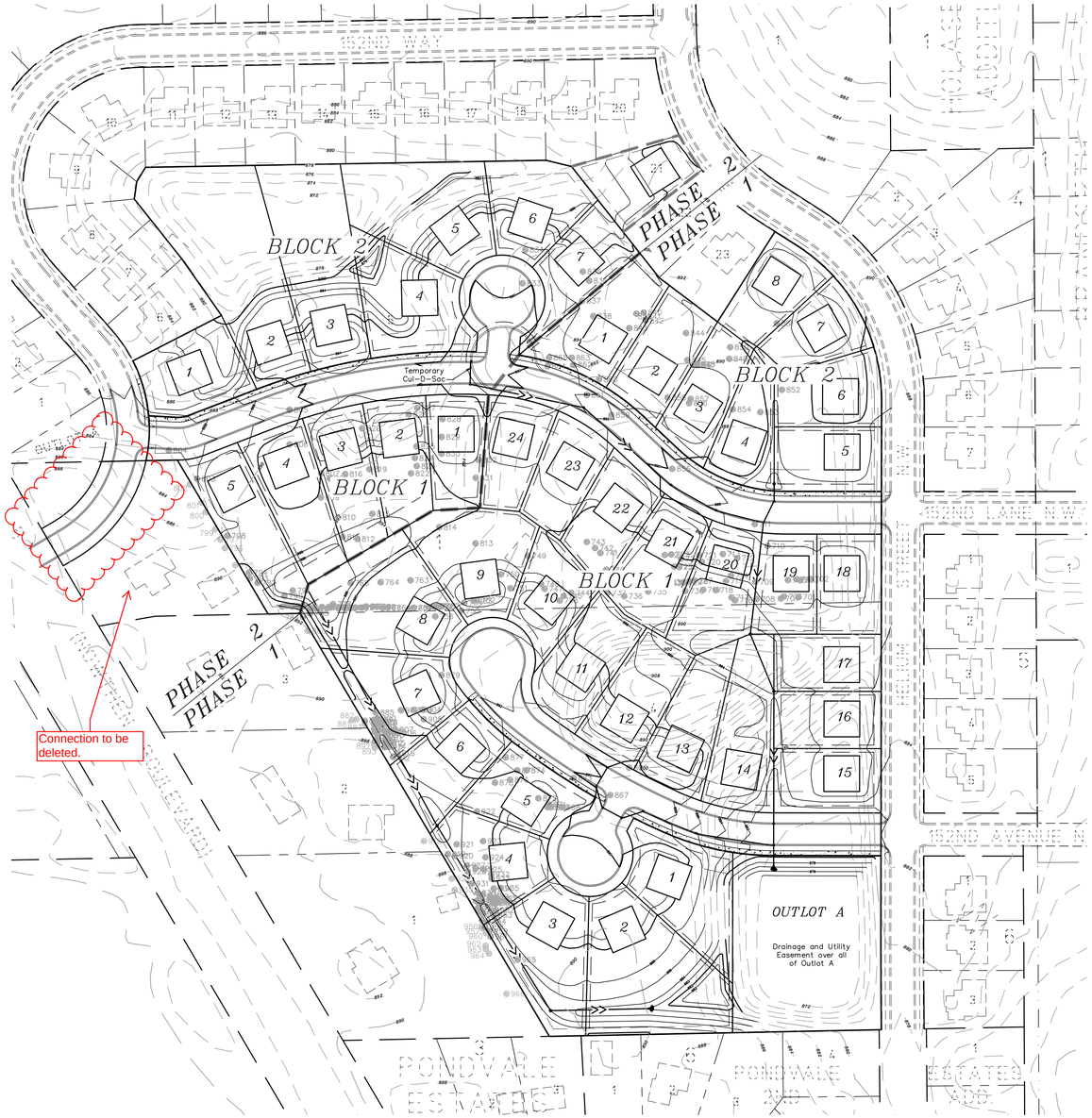
SHEET NUMBER

C-4

DATE 3/5/2015

REV. 00/00/00

HARVEST ESTATES
City of Ramsey
Anoka County, Minnesota



Trees Saved

Tree #	Species	DBH	Condition	Stems
840	Juniper	6.0	Good	1
841	Juniper	7.0	Good	1
842	Juniper	7.0	Good	1
884	Spruce, white	7.0	Fair	1
890	Pine, red	10.0	Good	1
955	Pine, red	11.5	Good	1
958	Pine, red	6.0	Good	1
959	Pine, red	7.0	Good	1
961	Pine, red	13.0	Good	1

Trees Lost

Tree #	Species	DBH	Condition	Stems
702	Pine, red	7.0	Good	1
703	Pine, red	7.5	Good	1
704	Pine, red	7.0	Good	1
705	Pine, red	10.0	Good	1
708	Juniper	5.0	Good	1
709	Pine, red	7.5	Good	1
710	Juniper	15.0	Good	1
711	Juniper	14.0	Good	1
713	Juniper	12.0	Good	1
715	Pine, red	6.5	Good	1
727	Pine, red	7.0	Good	1
728	Pine, red	4.5	Good	1
729	Pine, red	7.5	Good	1
730	Pine, white	10.5	Good	1
731	Pine, red	7.0	Fair	1
732	Pine, red	6.0	Good	1
733	Pine, red	6.5	Good	1
734	Pine, red	8.0	Good	1
736	Spruce, white	4.0	Good	1
738	Pine, red	10.0	Fair	1
739	Pine, red	8.0	Good	1
748	Pine, red	9.0	Good	1
750	Juniper	7.5	Good	1
751	Juniper	8.0	Good	1
752	Pine, Scots	7.5	Good	1
753	Pine, Scots	8.0	Good	1
754	Pine, Scots	7.0	Good	1
757	Pine, Scots	9.5	Good	1
758	Pine, Scots	7.0	Good	1
759	Pine, Scots	13.0	Fair	1
760	Pine, Scots	8.5	Good	1
761	Pine, Scots	4.0	Fair	1
762	Spruce, blue	5.5	Good	1
763	Ash, green	8.5	Good	1
764	Maple, silver	16.5	Good	1
765	Ash, green	9.5	Good	1
766	Spruce, blue	4.0	Fair	1
767	Spruce, blue	4.5	Good	1
768	Spruce, blue	5.5	Good	1
769	Spruce, blue	7.5	Good	1
770	Spruce, blue	8.0	Good	1
771	Spruce, blue	5.0	Good	1
772	Spruce, blue	6.0	Good	1
773	Spruce, blue	7.0	Fair	2
775	Spruce, blue	4.5	Fair	1
776	Spruce, blue	6.0	Good	1
777	Spruce, blue	7.0	Good	1
778	Spruce, blue	5.0	Good	1
779	Pine, Scots	9.0	Good	1
780	Spruce, blue	4.0	Fair	1
781	Spruce, white	5.0	Good	1
782	Spruce, white	4.5	Good	1
786	Spruce, white	5.0	Good	1
787	Spruce, white	5.0	Good	1
788	Spruce, white	7.0	Good	1
789	Spruce, white	5.0	Good	1
790	Oak, red	7.5	Good	1
791	Ash, green	10.0	Good	1
792	Basswood	13.1	Fair	2
793	Basswood	9.0	Good	1
794	Basswood	8.0	Good	1
798	Maple, sugar	8.0	Good	1
803	Maple, Norway	8.5	Good	1
804	Maple, silver	28.0	Fair	4
805	Honeylocust	11.5	Good	1
806	Spruce, white	13.0	Good	1
807	Basswood	10.0	Good	1
808	Ash, green	11.5	Good	1
809	Ash, green	11.5	Good	1
810	Ash, green	12.0	Good	1
811	Maple, sugar	11.5	Fair	1
812	Hackberry	8.0	Good	1
813	Ash, green	11.5	Good	1

Trees Lost

Tree #	Species	DBH	Condition	Stems
814	Maple, silver	13.0	Good	1
815	Spruce, blue	12.0	Good	1
816	Ash, green	10.5	Good	1
817	Ash, green	8.0	Good	1
818	Ash, green	10.0	Fair	1
819	Ash, green	10.0	Good	1
820	Crabapple	8.0	Good	1
821	Hackberry	9.0	Good	1
822	Pine, Scots	14.0	Good	1
823	Pine, Scots	16.0	Good	1
824	Pine, Scots	16.5	Good	1
825	Ash, green	12.0	Good	1
826	Maple, Norway	10.5	Good	1
827	Maple, Norway	9.5	Good	1
828	Ash, green	11.0	Good	1
829	Maple, silver	18.0	Fair	2
830	Birch, paper	15.0	Good	3
834	Juniper	9.0	Good	1
845	Juniper	7.0	Good	1
846	Juniper	17.0	Fair	5
847	Juniper	7.0	Good	1
848	Juniper	11.0	Fair	1
849	Juniper	7.0	Good	1
851	Juniper	5.5	Good	1
855	Juniper	6.0	Good	1
865	Juniper	13.0	Fair	1
886	Pine, red	9.5	Good	1
887	Pine, red	8.0	Good	1
888	Pine, red	8.5	Fair	1
889	Pine, red	10.0	Good	1
894	Pine, red	6.0	Good	1
895	Pine, red	7.0	Good	1
896	Pine, red	6.0	Good	1
897	Pine, red	6.0	Good	1
898	Pine, red	7.0	Good	1
899	Pine, red	7.5	Good	1
900	Pine, red	8.0	Good	1
901	Pine, red	9.5	Good	1
908	Pine, red	7.0	Fair	1
909	Pine, red	7.0	Good	1
910	Pine, red	5.0	Fair	1
911	Pine, red	6.5	Good	1
912	Pine, red	7.0	Good	1
913	Pine, red	10.5	Good	1
914	Pine, red	10.0	Good	1
915	Pine, red	8.0	Good	1
924	Pine, red	13.1	Good	1
925	Pine, red	12.5	Good	1
926	Pine, red	10.5	Good	1
927	Pine, red	14.0	Good	1
928	Pine, red	12.5	Good	1
931	Pine, red	13.0	Good	1
932	Pine, red	12.5	Good	1
933	Pine, red	11.5	Good	1
934	Pine, red	10.5	Good	1
935	Pine, red	12.0	Good	1
936	Pine, red	10.5	Good	1
937	Pine, red	9.5	Good	1
938	Pine, red	9.5	Good	1
939	Pine, red	14.0	Fair	2
940	Pine, red	6.5	Fair	1
941	Pine, red	8.0	Good	1
942	Pine, red	5.5	Good	1
943	Pine, red	8.5	Good	1
944	Pine, red	6.5	Good	1
945	Pine, red	12.0	Good	1
946	Pine, red	9.0	Good	1
947	Pine, red	8.0	Fair	1
948	Pine, red	9.0	Good	1
949	Pine, red	9.5	Good	1
950	Pine, red	10.0	Good	1
951	Pine, red	11.5	Good	1
952	Pine, red	10.0	Good	1
953	Pine, red	10.5	Good	1
954	Pine, red	17.0	Fair	2
965	Pine, red	7.0	Good	1

Total DBH= 1434.7
DBH Saved= 74.5
DBH Lost= 1360.2

Allowable Removal=2545 X 60%= **861**

Excess removed= **499**

Required replanting = 499 in. x 1.25 = 624 in. = 250 trees @ 2.5 inches - 90 trees (2 per lot required per ordinance) = 160 Trees

Siberian Elms (Not included in calculations)

Tree #	Species	DBH	Condition	Stems
784	Elm, Siberian	16.0	Fair	2
839	Elm, Siberian	21.0	Fair	1
843	Elm, Siberian	25.0	Fair	1
701	Elm, Siberian	27.0	Fair	1
706	Elm, Siberian	12.5	Fair	1
707	Elm, Siberian	8.5	Fair	1
716	Elm, Siberian	17.0	Good	1
717	Elm, Siberian	12.0	Fair	1
718	Elm, Siberian	14.0	Good	1
719	Elm, Siberian	19.0	Good	1
720	Elm, Siberian	11.5	Fair	1
721	Elm, Siberian	12.0	Fair	1
722	Elm, Siberian	12.0	Fair	1
723	Elm, Siberian	12.0	Fair	1
724	Elm, Siberian	15.0	Fair	1
725	Elm, Siberian	15.0	Fair	1
726	Elm, Siberian	10.0	Fair	1
712	Elm, Siberian	10.0	Good	1
714	Elm, Siberian	9.5	Good	1
735	Elm, Siberian	17.0	Fair	1
737	Elm, Siberian	20.0	Fair	1
740	Elm, Siberian	13.5	Fair	1
741	Elm, Siberian	10.0	Fair	1
742	Elm, Siberian	8.0	Fair	1
743	Elm, Siberian	18.0	Fair	1
744	Elm, Siberian	13.0	Fair	1
745	Elm, Siberian	16.0	Fair	1
746	Elm, Siberian	15.0	Fair	1
747	Elm, Siberian	10.0	Fair	1
749	Elm, Siberian	16.0	Fair	1
755	Elm, Siberian	8.0	Good	1
756	Elm, Siberian	9.0	Fair	1
774	Elm, Siberian	16.0	Fair	2
788	Elm, Siberian	20.0	Fair	2
785	Elm, Siberian	11.0	Fair	2
831	Elm, Siberian	19.0	Fair	1
832	Elm, Siberian	34.0	Fair	1
833	Elm, Siberian	9.5	Fair	1
835	Elm, Siberian	15.0	Fair	2
836	Elm, Siberian	8.0	Fair	1
837	Elm, Siberian	16.0	Fair	1
838	Elm, Siberian	11.0	Fair	1
844	Elm, Siberian	11.0	Fair	2

Siberian Elms (Not included in calculations)

Tree #	Species	DBH	Condition	Stems
850	Elm, Siberian	11.0	Fair	1
852	Elm, Siberian	9.0	Good	1
853	Elm, Siberian	14.0	Fair	1
854	Elm, Siberian	14.0	Good	1
856	Elm, Siberian	9.0	Good	1
857	Elm, Siberian	13.0	Good	1
858	Elm, Siberian	14.0	Fair	1
859	Elm, Siberian	8.0	Good	1
860	Elm, Siberian	12.0	Fair	2
861	Elm, Siberian	9.0	Fair	1
862	Elm, Siberian	10.0	Fair	1
863	Elm, Siberian	8.0	Fair	1
864	Elm, Siberian	9.0	Fair	1
866	Elm, Siberian	16.0	Fair	2
867	Elm, Siberian	15.0	Fair	4
868	Elm, Siberian	15.0	Fair	4
869	Elm, Siberian	10.0	Fair	2
870	Elm, Siberian	13.0	Fair	1
871	Elm, Siberian	9.0	Fair	2
872	Elm, Siberian	14.0	Fair	1
873	Elm, Siberian	14.0	Fair	1
874	Elm, Siberian	9.0	Fair	2
875	Elm, Siberian	8.0	Fair	2
876	Elm, Siberian	9.0	Fair	1
877	Elm, Siberian	20.0	Fair	1
878	Elm, Siberian	20.0	Fair	1
879	Elm, Siberian	15.0	Fair	1
885	Elm, Siberian	9.0	Fair	1
902	Elm, Siberian	8.0	Fair	1
903	Elm, Siberian	9.0	Fair	1
904	Elm, Siberian	12.0	Fair	1
905	Elm, Siberian	9.0	Fair	1
906	Elm, Siberian	11.0	Fair	1
907	Elm, Siberian	11.0	Fair	2
916	Elm, Siberian	17.0	Fair	3
917	Elm, Siberian	16.0	Fair	1
919	Elm, Siberian	16.0	Fair	1
920	Elm, Siberian	10.0	Fair	1
921	Elm, Siberian	10.0	Fair	1
922	Elm, Siberian	10.0	Fair	1
923	Elm, Siberian	12.0	Fair	1
	Elms DBH=	1110.0		

Trees Removed from inventory (Not on property)

Tree #	Species	DBH	Condition	Stems	Tree #	Species	DBH	Condition	Stems
795	Maple, silver	27.0	Fair	1	892	Pine, red	12.5	Good	1
796	Maple, silver	18.0	Fair	2	893	Pine, red	6.0	Fair	1
797	Maple, silver	9.5	Good	1	918	Elm, Siber	21.0	Fair	1
799	Maple, silver	26.0	Fair	4	929	Elm, Siber	10.0	Fair	1
800	Maple, silver	30.0	Fair	4	930	Elm, Siber	22.0	Fair	1
801	Maple, silver	31.0	Fair	3	956	Pine, red	6.5	Good	1
802	Maple, silver	15.0	Fair	1	957	Pine, red	7.5	Good	1
880	Elm, Siberian	30.0	Fair	1	960	Pine, red	5.5	Good	1
881	Spruce, white	7.0	Fair	1	962	Pine, red	8.5	Good	1
882	Spruce, white	11.0	Good	1	963	Pine, red	4.0	Good	1
883	Elm, Siberian	9.5	Fair	1	964	Pine, red	10.0	Good	1
891	Pine, red	10.0	Good	1	966	Pine, red	5.5	Good	1

PRELIMINARY
NOT FOR CONSTRUCTION

100 0 100 200 300
Scale 1" = 100'

PROJECT NUMBER 141029

REVISIONS

REMARKS	DATE	BY
---	---	---

CERTIFICATION: I hereby certify that this plan 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.

Randall C. Hedlund, Minn. No. 19576

PREPARED BY:
HEDLUND SURVEYING ENGINEERING PLANNING
2005 Pin Oak Drive
Eagan, MN 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE: *HARVEST ESTATES TREE PRESERVATION PLAN*

PREPARED FOR: *NIK MANAGEMENT INC.*
11736 177TH St. W.
Lakeville, MN 55044
Phone: (952) 236-9424

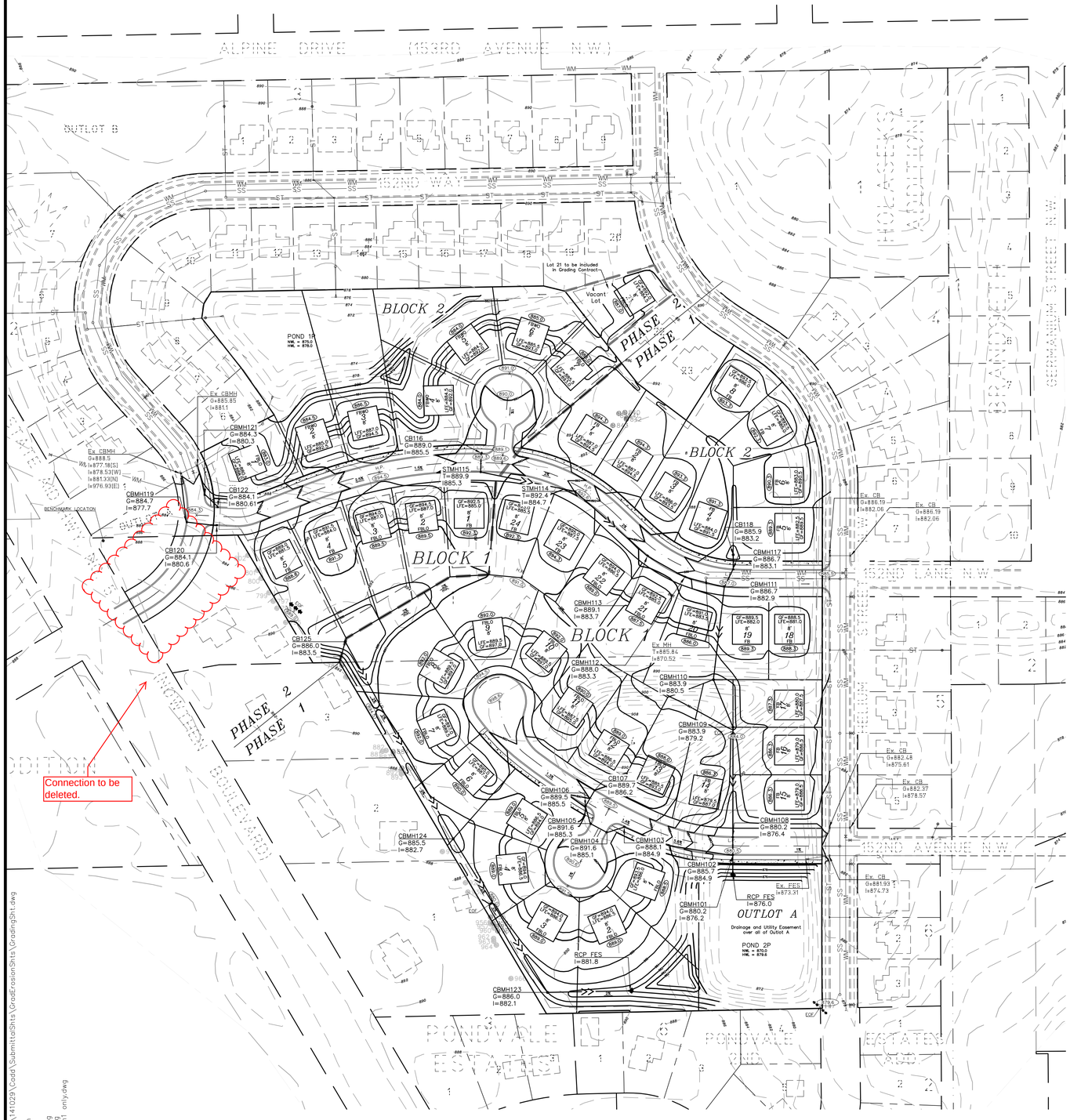
DRAWN	CHECKED	DESIGN
---	---	---

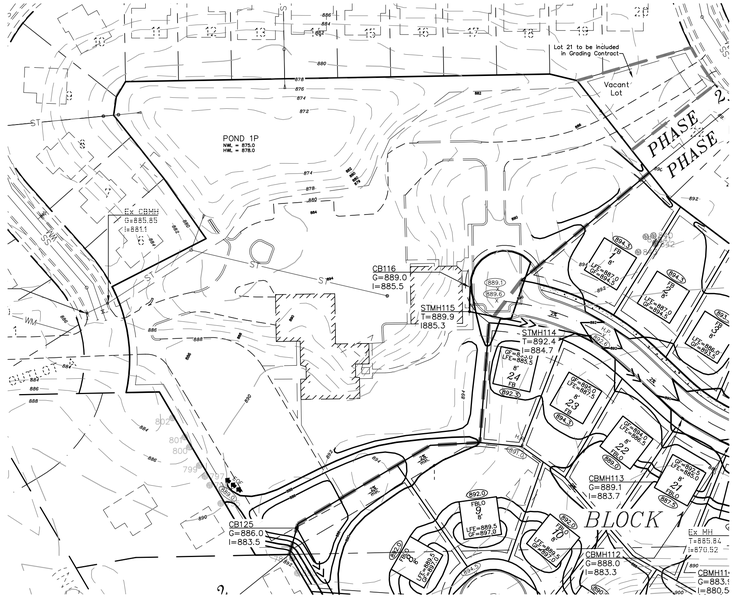
SHEET NUMBER
C-5

DATE 3/5/2015
REV. 00/00/00

Drawing N:\2014 Projects\141029\Cadd\Submittals\Site\TreePresSht.dwg
Layout: Tree Preservation
Date: Mar 05, 2015, 10:20am
X-Ref Dwg: 141029util.dwg
X-Ref Dwg: 141029base.dwg
X-Ref Dwg: 141029topo.dwg

HARVEST ESTATES
City of Ramsey
Anoka County, Minnesota





LEGEND:

X = 920.8	EXISTING CONTOUR
	EXISTING GRADE ELEVATION
ST ST	EXISTING TREE LINE
	EXISTING TREE
ST ST	EXISTING STORM SEWER
x x	EXISTING FENCE
	PROPOSED CONTOUR
	PROPOSED STORM SEWER
920.8	PROPOSED GRADE
	RETAINING WALL
920.8	DENOTES AS-BUILT GRADE
	EMERGENCY OVERFLOW

GENERAL GRADING NOTES:

1.) UNDERLYING TOPOGRAPHY FROM INFORMATION PROVIDED BY ANOKA COUNTY AND FIELD SHOTS BY HEDLUND ENGINEERING.

2.) EXISTING UTILITY LOCATIONS AS-PER PLANS PROVIDED BY THE CITY OF RAMSEY AND FIELD SHOTS BY HEDLUND ENGINEERING.

3.) SEE GRADING AND EROSION CONTROL DETAIL SHEET FOR DETAILED INFORMATION.

LOT BY LOT TABULATION

LOT	BLOCK	HOUSE TYPE	GARAGE FLOOR ELE	DRIVEWAY GRADE (%)	LOWEST FLOOR ELE	LOWEST OPENING ELE	100 YEAR FLOOD ELE	EMERGENCY OVERFLOW ELE	HIGHEST ANTICIPATED WATER TABLE OR MOTTLED SOIL
PHASE 1									
1	1	FBLO	893.5	7.1	886.0	889.2	879.6	879.6	
2	1	FBLO	894.0	5.8	886.5	889.7	879.6	879.6	
3	1	FBLO	894.0	6.0	886.5	889.7	879.6	879.6	
4	1	FBLO	894.0	5.8	886.5	889.7	N/A	880.0	
5	1	FBLO	894.0	8.7	886.5	889.7	N/A	880.0	
6	1	FBLO	895.0	6.4	887.5	890.7	N/A	880.0	
7	1	FBLO	897.0	7.3	889.5	892.7	N/A	880.0	
8	1	FBLO	897.0	6.7	889.5	892.7	N/A	889.0	
9	1	FBLO	897.0	6.2	889.5	892.7	N/A	889.0	
10	1	FBLO	897.0	6.7	889.5	892.7	N/A	884.0	
11	1	FBLO	895.0	6.7	887.5	890.7	N/A	884.0	
12	1	FBLO	894.0	5.1	886.5	889.7	N/A	884.0	
13	1	FBLO	893.0	7.8	885.5	888.7	N/A	884.0	
14	1	FB	887.0	6.7	879.5	887.0	N/A	884.0	
15	1	FB	886.5	5.8	879.0	886.5	N/A	N/A	
16	1	FB	886.5	4.0	879.0	886.5	N/A	N/A	
17	1	FB	887.5	4.2	880.0	887.5	N/A	884.0	
18	1	FB	888.5	1.3	881.0	888.5	N/A	884.0	
19	1	FB	889.5	5.1	882.5	889.5	N/A	884.0	
20	1	FBLO	891.0	6.9	883.5	886.7	N/A	884.0	
21	1	FBLO	892.5	5.8	885.0	888.2	N/A	884.0	
22	1	FBLO	894.0	8.2	886.5	889.7	N/A	884.0	
23	1	FB	895.0	6.7	887.5	895.0	N/A	884	
24	1	FB	893.0	5.1	885.5	893.0	N/A	889	
1	2	FB	894.5	5.6	887.0	894.5	N/A	887.5	
2	2	FB	894.5	5.6	887.0	894.5	N/A	887.5	
3	2	FB	893.5	7.6	886.0	893.5	N/A	887.5	
4	2	FB	891.5	7.8	884.0	891.5	N/A	887.5	
5	2	FB	889.5	3.6	882.5	889.5	N/A	887.5	
6	2	FB	890.5	3.3	883.0	890.5	N/A	887.5	
7	2	FB	892.5	5.3	885.0	892.5	N/A	887.5	
8	2	FB	893.5	4.4	886.0	893.5	N/A	887.5	
PHASE 2									
1	1	FB	892.5	5.6	885.0	892.5	878.0	N/A	
2	1	FB	894.5	5.8	887.0	890.2	878.0	N/A	
3	1	FBLO	894.4	5.6	887.0	890.2	878.0	N/A	
4	1	FB	891.5	6.0	884.0	891.5	878.0	N/A	
5	1	FB	889.0	1.6	881.5	889.0	878.0	N/A	
1	2	FBLO	888.0	4.4	880.5	883.7	878.0	N/A	
2	2	FBWO	892.5	5.6	885.0	885.0	878.0	N/A	
3	2	FBWO	894.5	5.6	887.0	887.0	878.0	N/A	
4	2	FBWO	892.0	4.4	884.5	884.5	878.0	N/A	
5	2	FBWO	892.0	2.9	884.5	884.5	878.0	N/A	
6	2	FBWO	893.0	4.4	885.5	885.5	878.0	N/A	
7	2	FBLO	893.0	6.7	885.5	888.7	878.0	N/A	

Cut/Fill Summary - Preliminary - Run Date - 2-27-15

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Cut-Fill	1.000	1.000	827983.43 Sq. Ft.	43237.64 Cu. Yd.	65380.06 Cu. Yd.	22142.42 Cu. Yd.<Fill>
Totals			827983.43 Sq. Ft.	43237.64 Cu. Yd.	65380.06 Cu. Yd.	22142.42 Cu. Yd.<Fill>

TOTAL DISTURBED AREA = 19.1 ACRES
TOTAL IMPERVIOUS SURFACE = 5.6 ACRES

PRELIMINARY
NOT FOR CONSTRUCTION

BENCHMARK

ANOKA COUNTY BENCHMARK DISK, BENCHMARK NO. 2088,
LOCATED ON THE NORTHWESTERLY CORNER OF
15133 NOWTHEN BLVD NW, RAMSEY, MN 55303
ELEVATION = 886.831

100 0 100 200 300
Scale 1" = 100'

PROJECT NUMBER
141029

REVISIONS	REMARKS	DATE	BY
	---	---	---

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.

Randall C. Hedlund — MN. LIC. NO. 19576
Date: ---

PREPARED BY:
HEDLUND SURVEYING ENGINEERING
PLANNING
2005 Pin Oak Drive
Eagan, MN 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE: HARVEST ESTATES GRADING PLAN

PREPARED FOR:
NIK MANAGEMENT INC.
11736 177TH St. W.
Lakeville, MN 55044
Phone: (952) 236-9424

DRAWN	CHECKED	DESIGN
---	---	---

SHEET NUMBER
CG-1

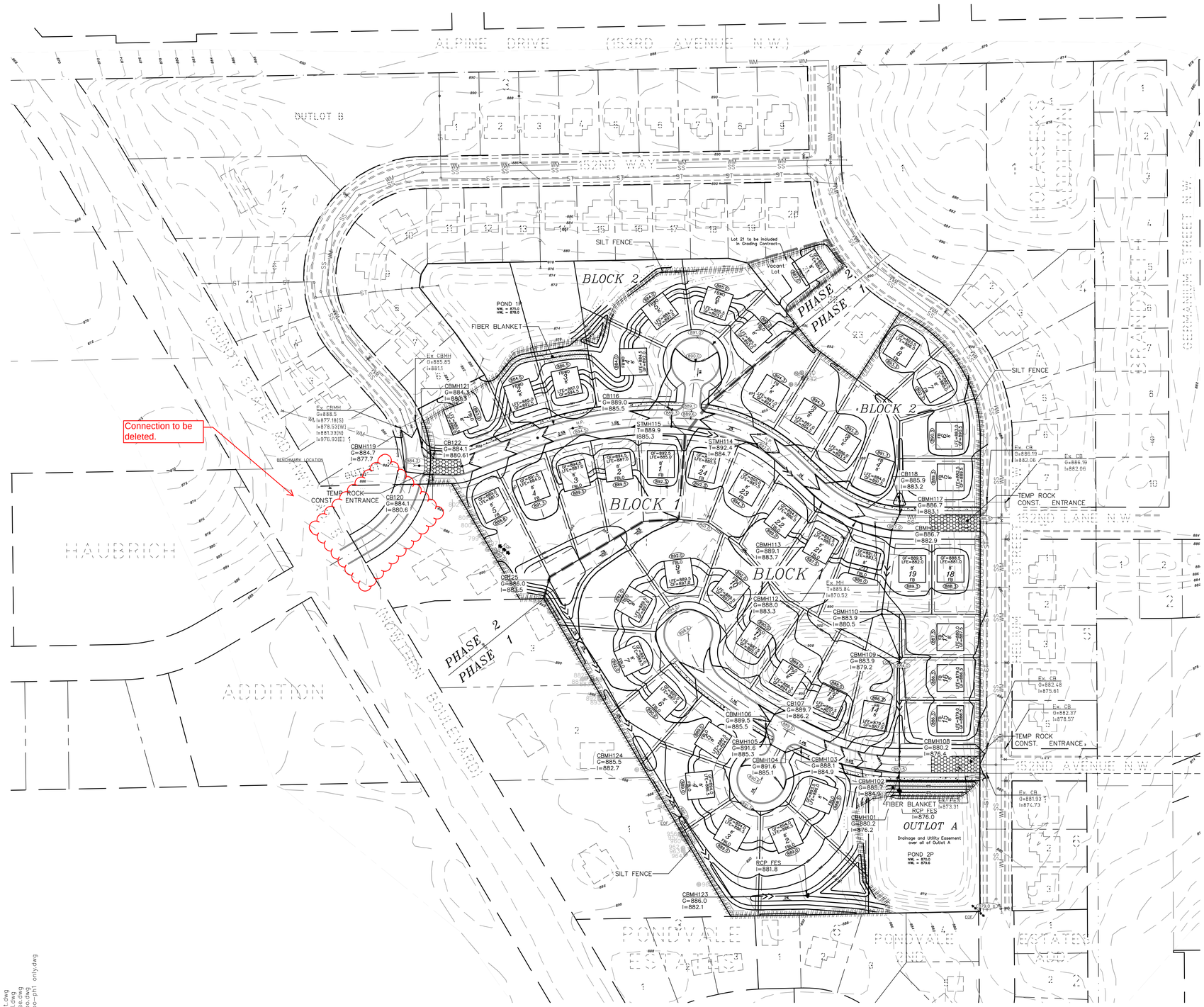
DATE 3/5/2015
REV. ---

Drawing:H:\2014 Projects\141029\Cadd\Submittal Shts\GradErosionSht's\GradingSht.dwg
Layout:Grading Plan
Date:Mar 05,2015,10:05am
X-Ref Dwg:141029utl.dwg
X-Ref Dwg:141029base.dwg
X-Ref Dwg:141029topo.dwg
X-Ref Dwg:141029topo-ph1 only.dwg

HARVEST ESTATES

City of Ramsey

Anoka County, Minnesota



GENERAL EROSION CONTROL NOTES:

EROSION CONTROL SCHEDULE:

1.) INSTALL EROSION CONTROL MEASURES PRIOR TO ANY LAND DISTURBANCE. INSTALL SEDIMENT FILTERS IMMEDIATELY FOLLOWING INSTALLATION OF STRUCTURE.
2.) SLOPES MUST BE STABILIZED BY BEING SEEDED AND COVERED WITH AN EROSION CONTROL BLANKET OR MULCHED WITH A TACKIFYING AGENT AS SOON AS POSSIBLE AFTER COMPLETION OF GRADING
3.) ALL EROSION CONTROL INSTALLATIONS SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION BY THE CONTRACTOR/PERMITTEE UNTIL THE SITE HAS BEEN RE-VEGETATED, AT WHICH TIME THEY SHALL BE REMOVED. FOR PROPOSED PAVED SURFACE AREA, THE CONTRACTOR MAY REMOVE NECESSARY SILT FENCING TO CONSTRUCT ROADWAY WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREAS.
4.) SUFFICIENT TOPSOIL SHALL BE STOCKPILED TO ALLOW FOR THE REPLACEMENT OF A MINIMUM OF 4" OF TOPSOIL FOR DISTURBED AREAS THAT ARE TO BE REVEGATATED.
5.) THE CONTRACTOR/PERMITTEE SHALL SCHEDULE SITE GRADING, UTILITY INSTALLATION AND ROADWAY CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE-SEEDED SOON AFTER DISTURBANCE. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS AFTER COMPLETION OF FINAL GRADING OR AFTER 14 DAYS OF GRADING INACTIVITY. ALL MULCH MATERIAL SHALL BE DISCED INTO THE SOIL IN DIRECTION PERPENDICULAR TO THE STORMWATER FLOW OVER SUCH AREAS.
6.) REVEGETATE WITH MNDOT MIX 50B OR 60B AT 75 LBS/ACRE WITH TYPE 1 MULCH AT 2000 LBS/ACRE.

EROSION CONTROL MAINTENANCE PROGRAM:

1.) INSPECT CONSTRUCTION SITE ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF MORE THAN $\frac{1}{2}$ INCHES IN 24 HOUR PERIOD.
2.) SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
3.) SILT FENCE FABRIC SHALL BE REPLACED PROMPTLY WHEN IT DECOMPOSES OR BECOMES INEFFECTIVE BEFORE THE BARRIER IS NO LONGER NECESSARY.
4.) ALL SOILS TRACKED ONTO PAVEMENT SHALL BE REMOVED DAILY.
5.) ANY SEDIMENT REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER FABRIC IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED WITH THE APPROPRIATE SEED MIX.
6.) IN THOSE AREAS WHERE WOOD FIBER BLANKET OR OTHER SLOPE STABILIZATION METHOD HAS FAILED, THE SLOPE SHALL BE REESTABLISHED, SEED AND TOPSOIL REPLACED, AND ADDITIONAL SLOPE TREATMENT INSTALLED.
7.) SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPWARD SLOPE AREA HAS BEEN PERMANENTLY STABILIZED. REMOVAL IS REQUIRED WITH ALL TEMPORARY EROSION CONTROL FACILITIES (SEDIMENT FILTERS, HAY BALES, ETC.) ONCE SITE IS PERMANENTLY STABILIZED BY THE BUILDER.
8.) ALL PERMANENT SEDIMENTATION BASINS MUST BE RESTORED TO THEIR DESIGN CONDITION IMMEDIATELY FOLLOWING PERMANENT STABILIZATION OF THE SITE.

EROSION CONTROL LEGEND:

- WOOD FIBER BLANKET
- ROCK CONSTRUCTION ENTRANCE
- SEDIMENT TRAP OUTLET
- XXXXXXXXXXXX TREE PROTECTION
- ########### SILT FENCE

PRELIMINARY
NOT FOR CONSTRUCTION

100 0 100 200 300
Scale 1" = 100'

PROJECT NUMBER 141029

REVISIONS

REMARKS	DATE	BY
---	---	---

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.

Randall C. Hedlund — Date: — MN. LIC. NO. 19576

PREPARED BY:
HEDLUND SURVEYING ENGINEERING PLANNING
2005 Pin Oak Drive
Eagan, MN 55122
Phone: (651) 405-6600
Fax: (651) 405-6606

SHEET TITLE: HARVEST ESTATES EROSION PLAN

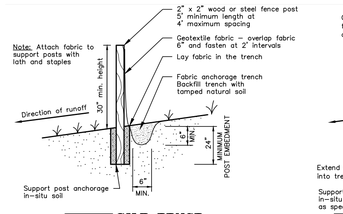
PREPARED FOR: NIK MANAGEMENT INC.
11735 177TH St. W.
Lakeville, MN 55044
Phone: (952) 236-9424

DRAWN	CHECKED	DESIGN
---	---	---

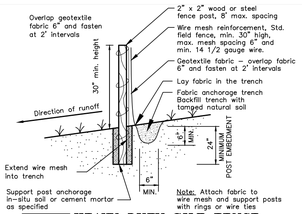
SHEET NUMBER
CE-1

DATE 3/5/2015
REV. ----

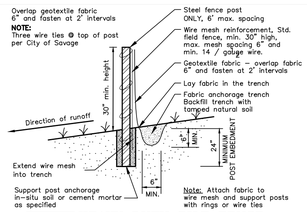
Drawing N:\2014 Projects\141029\Cadd\Submittal Sht's\Grad Erosion Sht's\ErosionSht.dwg
Layout: Erosion Control Plan
Date: Mar 05, 2015 - 9:41am
X-Ref Dwg: GradingSht.dwg
X-Ref Dwg: 141029utl.dwg
X-Ref Dwg: 141029topo.dwg
X-Ref Dwg: 141029topo.dwg
X-Ref Dwg: 141029topo-ph1 only.dwg



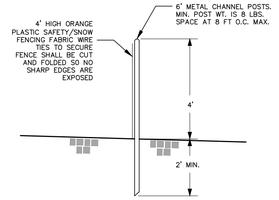
T-1 SILT FENCE
NO SCALE



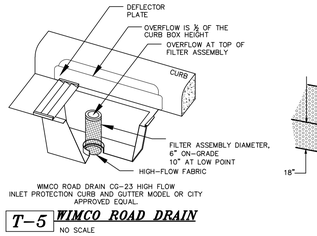
T-2 HEAVY DUTY SILT FENCE
NO SCALE



T-3 HEAVY DUTY SILT FENCE
NO SCALE (STEEL POST ONLY)

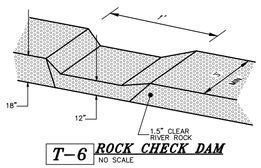


T-4 CONSTRUCTION FENCE
NO SCALE

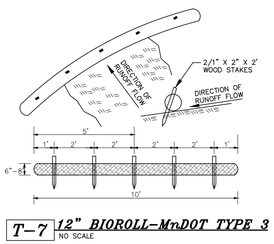


WIMCO ROAD DRAIN CG-23 HIGH FLOW INLET PROTECTION CURB AND GUTTER MODEL OR CITY APPROVED EQUAL.

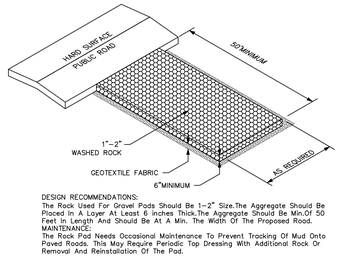
T-5 WIMCO ROAD DRAIN
NO SCALE



T-6 ROCK CHECK DAM
NO SCALE

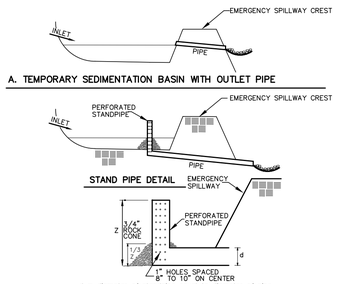


T-7 12" BIOROLL–MnDOT TYPE 3
NO SCALE

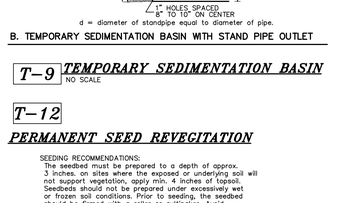


DESIGN RECOMMENDATIONS:
The Rock Used For Gravel Pads Should Be 1–2" Size.The Aggregate Should Be Placed In A Layer At Least 6 inches Thick.The Aggregate Should Be Min.Of 50 Feet In Length And Should Be At A Min. The Width Of The Proposed Road.
MAINTENANCE:
The Rock Pad Needs Occasional Maintenance To Prevent Tracking Of Mud Onto Paved Roads. This May Require Periodic Top Dressing With Additional Rock Or Removal And Reinstallation Of The Pad.

T-8 ROCK CONSTRUCTION ENTRANCE



A. TEMPORARY SEDIMENTATION BASIN WITH OUTLET PIPE



d = diameter of standpipe equal to diameter of pipe.

B. TEMPORARY SEDIMENTATION BASIN WITH STAND PIPE OUTLET

T-9 TEMPORARY SEDIMENTATION BASIN
NO SCALE

T-12 PERMANENT SEED REVEGITATION

SEEDING RECOMMENDATIONS:
The seedbed must be prepared to a depth of approx. 3 inches. on sites where the exposed or underlying soil will not support vegetation, apply min. 4 inches of topsoil. Seedbeds should not be prepared under excessively wet or frozen soil conditions. Prior to seeding, the seedbed should be firmed with a roller or cultipaker. Avoid compaction that will increase runoff and erosion, deter seed germination or prevent proper anchoring of mulch. For example, the soil should support the weight of an adult without sinking more than 1/2 inch.

1. GENERAL SEED & MULCH (MIN. 6" TOPSOIL)
   a. Seed: MnDOT Seed Mix # 25–141 @ rate of 59 PLS.
   b. Fertilizer: 22–5–10 80% W.I.N. 0% @ a Rate of 350 lbs/Acre.
   c. Mulch: MnDOT Type 1 @ a Rate of 2 Tons/Acre.

P-1 PERMANENT SOD REVEGITATION

SODDING RECOMMENDATIONS:
The soil must be prepared in the same way that it would for seeding. The upper 4 inches must be loosened and relatively free of clods, rocks etc.. the area to be sodded should be fertilized with 25 pounds per 1000 sq.ft. (1000 lb/ac) of 10–0–10 fertilizer and worked into the loosened topsoil. Prior to laying the sod, dampen the soil bed. The joints in the sod should be staggered, and the edges butted together tightly. On slopes of 3:1 or greater, or in areas of concentrated flows, the sod should be pegged down. On steep slopes w/ sheet flows, the sod should be laid with the length perpendicular to the water flow. After the sod is laid, it should be tamped or rolled to provide good contact between sod and soil. after rolling, the sod should be watered so that the soil is moistened 4 inched below the the sod.
MAINTENANCE:
In the absence of adequate rainfall, water during the 30 day period following sod placement to keep soil moist.Following this initial 30 day establishment period, water as necessary to maintain adequate moisture in the root zone. Where mowing is desired, maintain grass height of 3 inches and should not be attempted until the sod is firmly rooted, usually two to three weeks after sod is laid. Inspect areas of concentrated flow annually and following intense storms. make need repair and reveg. promptly.

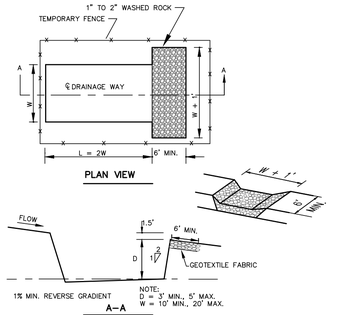
P-2 PERMANENT SEED REVEGITATION

SEEDING RECOMMENDATIONS:
The seedbed must be prepared to a depth of approx. 3 inches. on sites where the exposed or underlying soil will not support vegetation, apply min. 4 inches of topsoil. Seedbeds should not be prepared under excessively wet or frozen soil conditions. Prior to seeding, the seedbed should be firmed with a roller or cultipaker. Avoid compaction that will increase runoff and erosion, deter seed germination or prevent proper anchoring of mulch. For example, the soil should support the weight of an adult without sinking more than 1/2 inch.

1. WETLAND & POND SEED & MULCH (MIN. 6" TOPSOIL)
   a. Seed: MnDOT Seed Mix # 34–262 @ rate of 14.5 PLS.
   b. Fertilizer: 18–0–8 Natural Base @ a Rate of 120 lbs/Acre
   c. Mulch: MnDOT Type 3 @ a Rate of 2 Tons/Acre.

2. UPLAND BUFFER SEED & MULCH (MIN. 6" TOPSOIL)
   a. Seed: MnDOT Seed Mix # 33–261 @ rate of 35 PLS.
   b. Fertilizer: 18–0–8 Natural Base @ a Rate of 150 lbs/Acre
   c. Mulch: MnDOT Type 3 @ a Rate of 2 Tons/Acre.

Note: Mulch To Be Disced Anchored In Place.



T-10 TEMPORARY SEDIMENT TRAP
NO SCALE

GENERAL GRADING NOTES:

1.) UNDERLYING TOPOGRAPHY FROM INFORMATION PROVIDED BY ANOKA COUNTY AND FIELD SHOTS BY HEDLUND ENGINEERING.

2.) EXISTING UTILITY LOCATIONS AS–PER PLANS PROVIDED BY THE CITY OF RAMSEY AND FIELD SHOTS BY HEDLUND ENGINEERING.

3.) SEE GRADING AND EROSION CONTROL DETAIL SHEET FOR DETAILED INFORMATION.

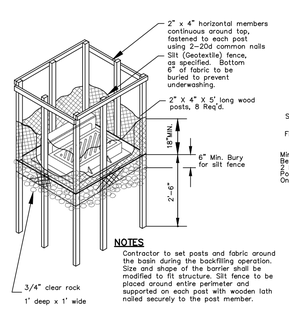
GENERAL EROSION CONTROL NOTES:

EROSION CONTROL SCHEDULE:

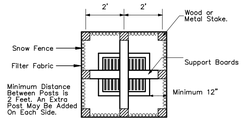
1.) INSTALL EROSION CONTROL MEASURES PRIOR TO ANY LAND DISTURBANCE. INSTALL SEDIMENT FILTERS IMMEDIATELY FOLLOWING INSTALLATION OF STRUCTURE.
2.) THE CONTRACTOR SHALL SCHEDULE SITE GRADING, UTILITY INSTALLATION AND ROADWAY CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RESEEDED SOON AFTER DISTURBANCE. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS AFTER COMPLETION OF FINAL GRADING OR AFTER 14 DAYS OF GRADING INACTIVITY.
3.) ALL EROSION CONTROL INSTALLATIONS SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION BY THE CONTRACTOR/PERMITTEE UNTIL THE SITE HAS BEEN RE–VEGETATED, AT WHICH TIME THEY SHALL BE REMOVED. FOR PROPOSED PAVED SURFACE AREA, THE CONTRACTOR MAY REMOVE NECESSARY SILT FENCING TO CONSTRUCT ROADWAY WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREAS.
4.) SUFFICIENT TOPSOIL SHALL BE STOCKPILED TO ALLOW FOR THE REPLACEMENT OF A MINIMUM OF 4" OF TOPSOIL FOR DISTURBED AREAS THAT ARE TO BE REVEGATATED.
5.) THE CONTRACTOR/PERMITTEE SHALL SCHEDULE SITE GRADING, UTILITY INSTALLATION AND ROADWAY CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE–SEEDED SOON AFTER DISTURBANCE. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS AFTER COMPLETION OF FINAL GRADING OR AFTER 14 DAYS OF GRADING INACTIVITY. ALL MULCH MATERIAL SHALL BE DISCED INTO THE SOIL IN DIRECTION PERPENDICULAR TO THE STORMWATER FLOW OVER SUCH AREAS.
6.) REVEGETATE WITH MNDOT MIX 50B OR 60B AT 75 LBS./ACRE WITH TYPE 1 MULCH AT 2000 LBS./ACRE.

EROSION CONTROL MAINTENANCE PROGRAM:

1.) INSPECT CONSTRUCTION SITE ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF MORE THAN 3 INCHES IN 24 HOUR PERIOD.
2.) SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER.
3.) SILT FENCE FABRIC SHALL BE REPLACED PROMPTLY WHEN IT DECOMPOSES OR BECOMES INEFFECTIVE BEFORE THE BARRIER IS NO LONGER NECESSARY.
4.) ALL SOILS TRACKED ONTO PAVEMENT SHALL BE REMOVED DAILY.
5.) ANY SEDIMENT REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER FABRIC IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED WITH THE APPROPRIATE SEED MIX.
6.) IN THOSE AREAS WHERE WOOD FIBER BLANKET OR OTHER SLOPE STABILIZATION METHOD HAS FAILED, THE SLOPE SHALL BE REESTABLISHED, SEED AND TOPSOIL REPLACED, AND ADDITIONAL SLOPE TREATMENT INSTALLED.
7.) SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPWARD SLOPE AREA HAS BEEN PERMANENTLY STABILIZED. REMOVAL IS REQUIRED WITH ALL TEMPORARY EROSION CONTROL FACILITIES (SEDIMENT FILTERS, HAY BALES, ETC.) ONCE SITE IS PERMANENTLY STABILIZED BY THE BUILDER.
8.) ALL PERMANENT SEDIMENTATION BASINS MUST BE RESTORED TO THEIR DESIGN CONDITION IMMEDIATELY FOLLOWING PERMANENT STABILIZATION OF THE SITE.



NOTES
Contractor to set posts and fabric around the basin during the backfilling operation. Size and shape of the barrier shall be modified to fit structure. Silt fence to be placed around entire perimeter and supported on each post with wooden lath nailed securely to the post member.



TYPE A SEDIMENT FILTER PLAN VIEW

T-11 EROSION CONTROL AROUND CATCH BASINS
NO SCALE

PROJECT NARRATIVE:

CONSTRUCTION OF A

PROJECT CONTACTS:

PROJECT ENGINEER:	RANDY HEDLUND, P.E.	HEDLUND ENGINEERING, SWPPP DESIGNER U OF M CERT. PROGRAM, FALL 2012, 651–203–6612
SWPPP CERT. IMPLEMENTOR	FRED VOLZ	HEDLUND ENGINEERING, U OF M CERT. PROGRAM, APRIL 2012, 612–363–3684
SWPPP CERTIFIED INSTALLER	MATT MARTIN	METRO EROSION, U OF M CERT. PROGRAM, FALL 2009, 320–266–4748
DEVELOPER:	NAME	COMPANY–NUMBER
CITY CONTACT:	NAME	CITY OF
NPDES OFFICER	NAME	MPCA
CONTRACTOR CONTACT	NAME	COWAN GRADING AND EXCAVATING, 651–248–3080

POND MAINTENANCE:

TO BE PERFORMED AS NECESSARY BY THE CITY OF WOODBURY.

ESTIMATED QUANTITIES:

SILT FENCE	=	4121 L.F.
CONST. FENCE	=	N/A L.F.
INLET PROTECTION	=	21 CB'S
ROCK CONST. ENTRANCE	=	3
EROSION CONTROL BLANKET	=	AS NEEDED
TEMP. SEED AND MULCH	=	x ACRES
PERMANENT SEED	=	x ACRES
PERMANENT SOD	=	x ACRE
BIO LOGS	=	xxx L.F.

SEQUENCE OF CONSTRUCTION:

(RECOMMENDED SEQUENCE – CONTRACTOR TO DETERMINE FINAL SEQUENCE.)

1. CONTRACTOR TO VERIFY THAT ALL PERMITS HAVE BEEN OBTAINED AND BECOME FAMILIAR WITH PERMIT REQUIREMENTS.
2. CONTRACTOR TO INSTALL PERIMETER SEDIMENT CONTROL DEVICES, CONSTRUCTION ENTRANCES, AND PROTECTIVE FENCING FOR TREES, DITCHES, EXISTING WATER BODIES AND AREAS TO REMAIN UNDISTURBED.
3. CONTRACTOR TO ROUGH GRADE SITE AND INSTALL UTILITIES.
4. CONTRACTOR TO INSTALL TEMPORARY EROSION CONTROL DEVICES AS NECESSARY.
5. CONTRACTOR TO INSTALL EROSION CONTROL BLANKETS WITH PERMANENT SEED MIX AND/OR SOD.
6. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED, OBTAIN APPROVAL FROM THE CITY ENGINEER AND WITHIN TWO WEEKS OF FINAL STABILIZATION.
7. CONTRACTOR TO REMOVE SEDIMENT CONTROL DEVICES WITHIN TWO WEEKS OF APPROVAL.
8. SUBMIT NOTICE OF TERMINATION WITHIN 30 DAYS OF FINAL STABILIZATION.

NPDES GENERAL PERMIT REQUIREMENTS

CONSTRUCTION ACTIVITY NOTES:

EROSION PREVENTION PRACTICES:

Phased construction will be used to extent practical or as indicated in the plans to minimize exposed soil.

Areas not to be disturbed shall be delineated with flags, stakes, signs, silt fence, etc. prior to work beginning. The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200'of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Energy dissipation or other outlet treatment must be installed within 24 hours of connection.

All exposed soils must be stabilized as soon as possible but in no case later than 14 days after the construction activity has temporarily or permanently ceased.

Seed and/ or sod, fertilizer, and mulch shall be placed as indicated in the plans and project specifications.

Rapid stabilization shall be of type and quantity indicated in the project specifications. Additional rapid stabilization may be necessary to minimize erosion throughout the duration of the project. Type and quantity shall be determined by the engineer or inspector prior to installation.

If the contractor stockpiles material on site, he shall install the appropriate erosion control devices around the stockpile and perform the best management practices possible to avoid erosion from the stockpile.

Temporary (or permanent) sedimentation ponds are required for areas > 10 acres of disturbed soils draining soils draining to one point.

SEDIMENT CONTROL PRACTICES:

Installation of silt fence and all other down gradient sediment protection measures shall be completed prior to commencement of upstream land disturbing activities.

Silt fence shall be installed along the constant contours with continuous links not to exceed 600 feet.

No unbroken slope lengths greater than 75 feet are permitted when slope is 3:1 or greater. Slope shall be broken with silt fence or biorolls as indicated on plans.

Vehicle trafficking to be minimize to all practical extents. All eroded material that leaves the construction zone shall be collected by the contractor and returned to the site at the contractor's expense.

All stockpiles shall be surrounded by silt fence and seeded with temporary seed and mulch. See erosion and sediment control plans.

All site storm sewer inlets as well as off-site downstream inlets with potential to receive sediment, shall be protected with approved inlet protection measures at all times. Inlets shall remain protected until site is 100% stabilized and vegetation is at least 70% established. Inlet protection may be removed in winter, if the project has an approval letter from jurisdictional authority or can produce it within 72 hours.

TEMPORARY SEDIMENTATION BASINS AND DEWATERING:

Temporary sedimentation basins are required prior to runoff leaving the construction site or entering surface waters when 10 or more acres of disturbed soils drain to a common location. The basin must provide 3600 ft.^{3} of storage below the outlet per acre drained. If hydraulic calculations are available, the temporary sedimentation basin must provide a storage volume equivalent to the 2- year, 24- hour storm, but in no case less than 1800 ft.^{3} per acre drained. The temporary sedimentation basin must be constructed and made operational concurrent with the start of soil disturbance up gradient of the pond. All dewatering on site during construction must be routed to temporary sedimentation basins.

Temporary sedimentation basins must be trained within 48 hours of any rainfall event. If the rock filtered outlets plug or cause the pond not to drain within 48 hours, ponds are to be drained with pumps. Pump inlets should be protected with a geotextile membrane and rock filter set up as shown in the details, or an approved alternative. Excessive sediment-laden water that is not properly filtered will not be permitted to discharge from the site.

Dewatering practices cannot cause downstream nuisance conditions, erosion, or non-permitted wetland inundation causing adverse impacts.

INSPECTION AND MAINTENANCE:

The permittees must routinely inspect the construction site once every seven (7) days during active construction and within 24 hours of a rainfall event greater than 0.5 inches in a 24-hour period.

All inspections performed during construction must be recorded and records retained on site with the SWPPP in accordance with the stormwater permit. Records must include a site map showing areas of land disturbing activities and areas where activities have temporarily or permanently ceased.

Silt fence, biorolls and Inlet protection devices must be maintained when nonfunctional or when accumulated sediment reaches 1/3 of device height.

Off-site vehicle tracking to be removed within 24 hours of occurrence.

All non-functional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours of discovery, or as soon as field conditions allow access.

POLLUTION PREVENTION:

All solid waste collected from the construction site must be disposed of in accordance with MPCA disposal requirements.

Concrete washout must be contained in a device similar to those provided by Neaton Brothers Concrete Washout LLC. Equivalent units shall be approved by engineer. Unit must be maintained to manufacturer recommendation.

All hazardous materials (e.g., oil, gasoline, fuel, antifreeze, paint, cleaning solvents, curing compounds, fertilizers, etc.) must be properly stored, (including secondary containment when necessary) to prevent spills, leaks, or other discharge. Storage and disposal of hazardous waste must be in compliance with MPCA regulations.

External washing areas must be limited to a defined area of the site. All runoff containing any hazardous material must be properly collected and disposed of. Defined area must be contained with heavy-or super-duty silt fence. NO ENGINE DEGREASING ALLOWED ON-SITE.

The contractor is responsible for monitoring air pollution and ensuring it does not exceed levels set by local, state, or federal regulations. This includes dust created by work being performed on the site. Air pollution and dust control correction is considered incidental to the unit bid prices for which work is being performed. Additional dust control measures may be required by the engineer.

FINAL STABILIZATION:

The permittees must insure final stabilization of the site. Final stabilization is not complete until the following is complete:

The contractor must ensure final stabilization of the site. Final stabilization shall include a minimum of 70%, vegetation establishment (100% stabilized) on all pervious areas.

The permanent stormwater management system is constructed, meets all requirements and is operating as designed. Temporary or permanent sedimentation basins that are to be used as permanent water quality management basins have been cleaned of any accumulated sediment. All sediment has been removed from conveyance systems and ditches are stabilized with permanent cover.

All temporary erosion control measures and BMPs must be removed as part of the final site stabilization, unless directed otherwise by owner or engineer.

For residential construction only, individual lots are considered finally stabilized if the structure(s) are finished and temporary erosion protection and downgradient perimeter control has been completed and the residence has been sold to the homeowner. Additionally, the Permittee has distributed the MPCA's "Homeowner Fact Sheet" to the homeowner to inform the homeowner of the need for, and benefits of, permanent cover.

RECORD RETENTION:

The SWPPP, all changes to it, and inspections and maintenance records must be at the site during construction. All owner(s) must retain the following for 3 years after submittal of NOT:

1) SWPPP;
2) Any other permits required for the project;
3) Inspection and maintenance logs;
4) All permanent operation and maintenance agreements for surface water facilities;
5) All design calculations for temporary and permanent stormwater management.

PLAN SHEETS:

Sheet number CE 1 of this plan set is also considered a part of the SWPPP for this project.

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NUMBER 141029

REVISIONS

REMARKS	DATE	BY

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.

Signature: _____ Date: _____
Randall C. Hedlund MN. LIC. NO. 19576

PREPARED BY:
HEDLUND ENGINEERING SURVEYING
PLANNING
2905 Plaza VII Drive
Suite 105
Lakeville, MN 55044
Phone: (651) 405–6600
Fax: (651) 405–6606

SHEET TITLE: HARVEST ESTATES EROSION CONTROL PLAN

PREPARED FOR: NIK MANAGEMENT INC.
11736 177TH ST. W.
Lakeville, MN 55044
Phone: (952) 236–9424

DRAWN	CHECKED	DESIGN
---	---	---

SHEET NUMBER
CE–2

DATE 3/5/2015
REV. --- --- ---

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	04/03/2015	**PROJECT ADDRESS**	15153 NOWTHEN BOULEVARD
PROJECT. TITLE	HARVEST ESTATES		
ESCROW #	114538		
DEPARTMENT:	Community Development: Planning Division (Comprehensive Plan and Zoning Code)		
PRIMARY CONTACT:	Name: Tim Gladhill Phone: 763-433-9826 Email: tgladhill@cityoframsey.com		
TECHNICAL REVIEW ASSISTANCE:	Name: Tina Goodroad, AICP Phone: 763-496-6751 Email: tgoodroad@loucksassociates.com		

General: The purpose of this file is to review the official Preliminary Plat prepared by N.I.K. management on behalf of G S Land, LLC for the redevelopment for the former municipal campus located at 15153 Nowthen Blvd. NW as a 44-lot single-family residential development. The previous Sketch Plan review noted 45 lots. An existing lot along Helium Street has been removed, as it has already been subdivided as a buildable lot.

The site is currently owned by the City of Ramsey, which has approved a Purchase Agreement to sell the site in two (2) phases to G S Land, LLC. The Purchase Agreement by and between the City and N.I.K. is being assigned by N.I.K. Management, Inc. to G S Land, LLC. The project will still be managed by N.I.K. Management, Inc. on behalf of G S Land, LLC. The Planning Commission has reviewed a previous sketch plan and approved a recommendation to rezone the property from Public/Quasi-Public to R-1, Residential (MUSA) and a land use change from Public/Quasi-Public in the Comprehensive Plan. These amendments will be finalized with Final Plat approval.

Plans have been prepared by Hedlund Engineering Services, Inc. This review is based on plans dated March 5, 2015. It is noted that the current plan set is presently being revised based on City Council direction regarding access to Nowthen Boulevard. It is also noted that as of April 1, 2015, Hedlund Engineering has merged with Landform Professional Services, LLC. Staff notes this merger to avoid confusion with future plan sheets submitted to the City for review on this project. It is anticipated the same Engineering Project Team will continue to bring the project forward.

Fire Station No. 2 currently operates from the existing building on the site. The City Council also recently approved the site plan, final plans, and authorized advertisement for competitive bids to construct a new Fire Station to be located at 5650 Alpine Drive, adjacent to the site. The Final Plat would be approved in phases to allow the Fire Department to continue to operate at the current Fire Station No. 2 until construction of the new Fire Station No. 2 is completed. The Preliminary Plat includes Phase I and II, whereas the Final Plat will include only Phase I which totals 32 lots. Please see advisory comments from Staff regarding alternatives to the phasing plan later in this review.

Based on actions by the City Council to approve a Comprehensive Plan Amendment and Zoning Amendment, the proposed Preliminary Plat is being reviewed per City Code Section 117-111 entitled R-1 Residential District and Chapter 117, Article III entitled Subdivisions.

Comprehensive Plan: The City Council has approved a Comprehensive Plan Amendment as noted above to LDR: Low Density Residential. Areas guided Low Density Residential must have urban services before development can take place. These areas will average three (3) units per acre and contain single family, detached dwellings. The proposed net density is 2.64 units per net acre. While this development falls short of the three (3) units per net developable acre, the City remains consistent overall in meeting the three (3) units per net developable acre average

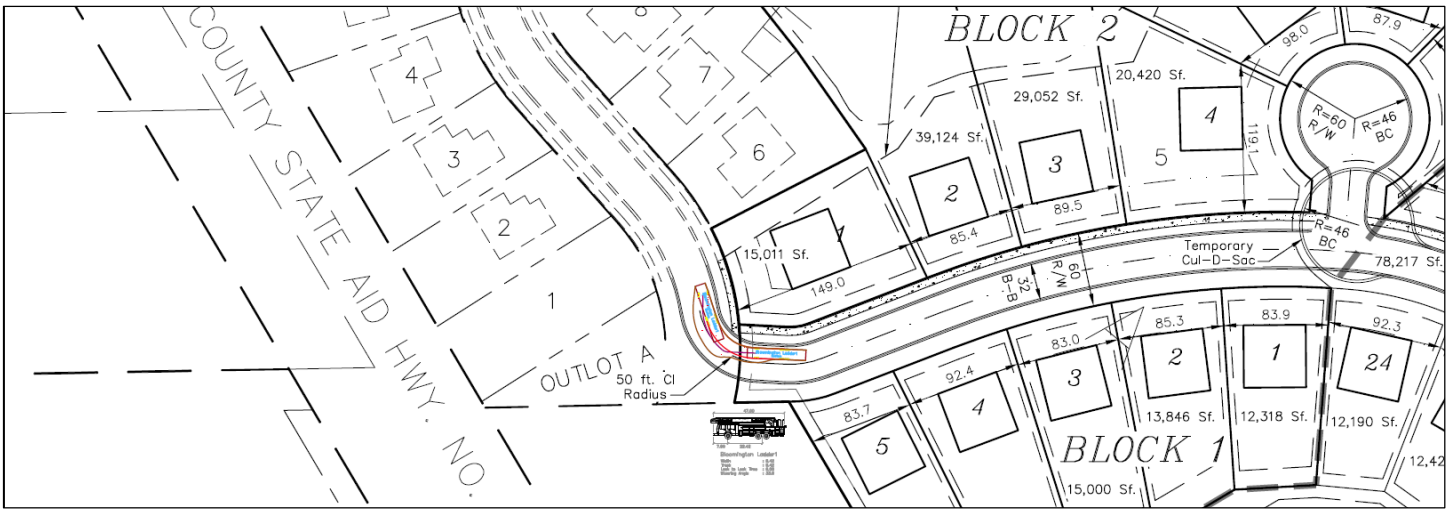
city wide. Additionally, the layout of the site makes it difficult to achieve the three (3) units per acre. The City has previously established that this is an appropriate metric to calculate average net density within the MUSA boundary.

Zoning: The City has adopted a Zoning Amendment to R-1 Residential (MUSA) as noted above. The intent of the R-1 Residential District is to allow for the construction of single-family dwellings on suitable land. All newly created lots located within the Metropolitan Urban Service Area (MUSA) shall be serviced by municipal sanitary sewer and water supply, with the exception of a lot of record not less than five (5) acres in size. The proposed use is consistent with the R-1 Residential (MUSA) District.

Dimensional Standards. The proposed Preliminary Plat meets all minimum requirements for lot area, lot width, and setbacks of the R-1 zoning district:

Setback Required	Proposed
Front yard: 30 feet	30 feet
Side yard uninhabitable: 6 feet	6 feet
Side yard habitable: 10 feet	10 feet
Side yard corner: 30 feet	30 feet
Rear yard: 30 feet	30 feet
Minimum lot width: 80/corner 90	80 at setback for interior and 90 feet for all corner lots
Minimum lot area: 10,800 sq. ft	All lots exceed the 10,800 sq. ft. minimum lot size

Access & Streets. The plat proposes to gain access from Helium Street and Krypton Terrace, existing internal residential roads. The layout is being amended since it was last reviewed by the Planning Commission, per the direction of the City Council, regarding the Nowthen Boulevard access. The proposed Preliminary Plat will not include access to Nowthen Boulevard. This amendment was at the direction of the City Council at their February 24, 2015 Work Session. Details of that discussion are included in the minutes attached to the agenda item for this case. Generally speaking, the City Council requested that the Nowthen Boulevard corridor be studied for broader safety, accessibility, and mobility improvements throughout the entire corridor before individual intersection connections are allowed. It is further noted that the current plat is being designed in such a way that a future connection to Nowthen Boulevard could be made if the future Nowthen Boulevard Study supported said connection. The City's draft Strategic Plan identifies this study as a priority, Staff has had informal verbal discussions with Anoka County, and Staff will be making a formal request for study in the coming weeks.



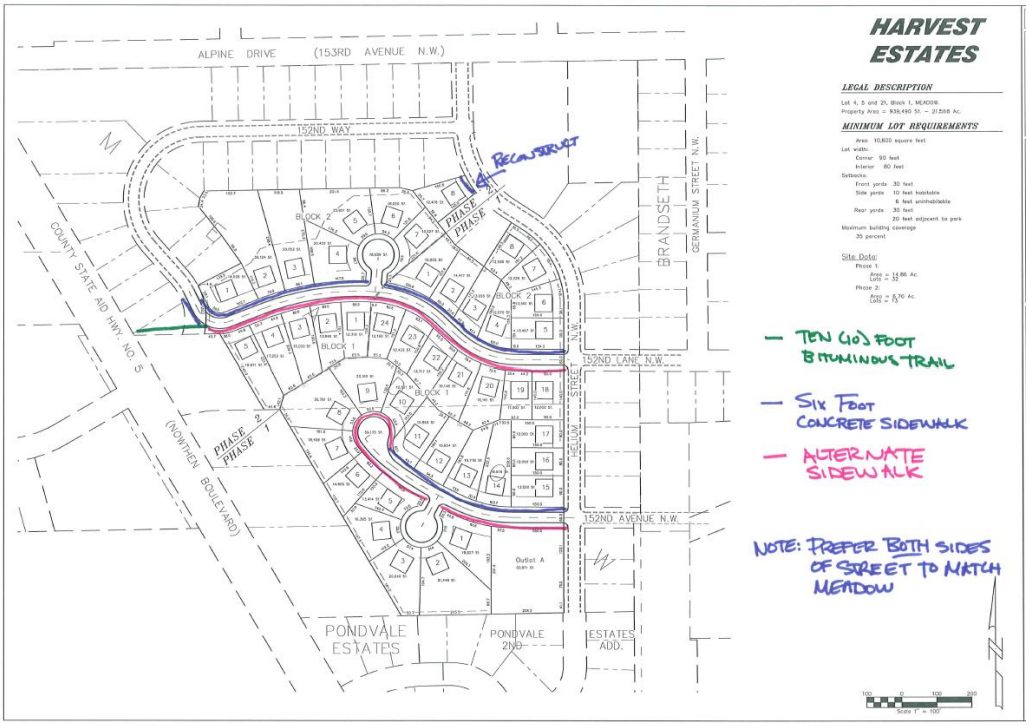
The site will have three (3) access points to major roads: 1) Nowthen Boulevard (at 150th Lane); 2) Alpine Drive (at Helium Street); and 3) Trunk Highway (TH) 47/Saint Francis Boulevard (at 152nd Avenue). Based on a split between these three intersections upon full build-out (existing homes + proposed development), it appears that the traffic levels would continue to be within acceptable levels of service. The Preliminary Plat includes enhanced internal circulation with a loop street consisting of 152nd Way NW/Krypton Terrace connecting to Helium Street NW on the northern portion of the plat. A new cul-de-sac will extend from Helium Street on the southern portion of the plat.

Interim Improvements

A portion of the northernmost proposed road is impacted by the phasing plan. This area is located near the former Police Department building. Staff recommends that the parking lot for this building serve as an interim turnaround due to the proposed schedule, as opposed to constructing a full-sized cul-de-sac. However, the plans show a full-sized cul-de-sac in the event Phase II does not commence construction in 2016. The Development Agreement and financial surety requirement shall address this staging issue to ensure the City can react as needed.

Sidewalks and Trails. A sidewalk is proposed on the south side of the proposed southern cul-de-sac (152nd Avenue NW) and along the north side of the proposed loop street. Staff notes that six (6) foot wide concrete sidewalks are included on *both sides* of the streets in Meadow, the adjacent residential development. It is noted, however, that MEADOW was accomplished through a Planned Unit Development (PUD), in which the Developer requested a deviation to lot size, and a public benefit was added by creating sidewalks on both sides of the public street. This is not the case with Harvest Estates. Staff desires policy direction from the Planning Commission regarding this matter. City Code requires sidewalks on one (1) side of each newly constructed public street. In addition, a small six foot wide concreate sidewalk shall be reconstructed on Lot 8, Block 2 located in the northeast corner of Phase 2.

A ten (10) foot wide bituminous trail is required connecting the proposed internal road to Nowthen Boulevard near the location of the existing driveway. This will be constructed during the Phase 2 development. Plans should be revised to show this trail connection.



Architectural Standards. Architectural renderings are not required as part of Preliminary Plat review. City Code Section 117-111 requires that all structures be constructed with exterior materials consisting of face brick, natural stone, aluminum, steel, or vinyl siding, wood, masonite products, or other compatible residential materials that may be approved by the City. The assumption is that the Developer will be constructing homes similar to those constructed in MEADOW, the adjacent residential development constructed in 2005. The required Development Agreement shall clearly state that additional architectural requirements are not being required at this time, and that the underlying requirements for the R-1 Residential (MUSA) District are required.

Development Fees. The Developer will be required to pay development fees consistent with the City's approved schedule of Rates and Charges. These estimates are based on the entire development, both phases. The final plat request will break down by actual units created by phase.

Fee	Amount	# of Units	Total
Park Dedication	$2,600/unit	44	$114,400
Trail Development	$700/unit	44	$30,800
Water Trunk	$1,597/unit	44	$70,268
Sanitary Sewer Trunk	$1,126	44	$49,544
Stormwater Management	$459/unit	44	$20,196
Street Light	$1,300/light	TBD	TBD
Street Light O & M	$294/light	TBD	TBD

The following Financial Guarantee requirement is based on Phase I only. Numbers do not reflect Phase II, which will be calculated separately.

The City also requires a Financial Guarantee for all Stage I and Stage II Improvements in the amount of 125% the cost of said improvements. The original Engineer's Estimate prepared by Hedlund Engineering was for $670,844. The lowest quote from a contractor provided by N.I.K. Management, Inc. prepared by Northwest Asphalt is $700,949. These are simply estimates at this time, which will need to be confirmed by the City Engineer. Staff has flagged the unit price for imported fill as a concern when comparing to the Engineer's Estimate provided by the Developer's Engineer, Hedlund Engineering and other comparable quotes provided by the Developer. Staff will provide a final recommendation with Final Plat review. Additionally, Staff has provided advisory comments regarding the overall grading plan and amount of fill needed for the overall project later in this review.

Building Permit Fees. The Developer shall contact the City's Building Division to provide an estimate of fees due with each Building Permit. It is hereby noted that Sewer Availability Charges (SAC) and Water Availability Charges are due at time of building permit in addition to the above at a rate of $2,485 per unit and $1,177 per unit respectively.

Recommendation. City Staff recommends that the City approve the Preliminary Plat with amendments as required in the attached review files.

Advisory Comments. The following section contains advisory comments to assist the City and Developer in reviewing outcomes of the current phasing plan.

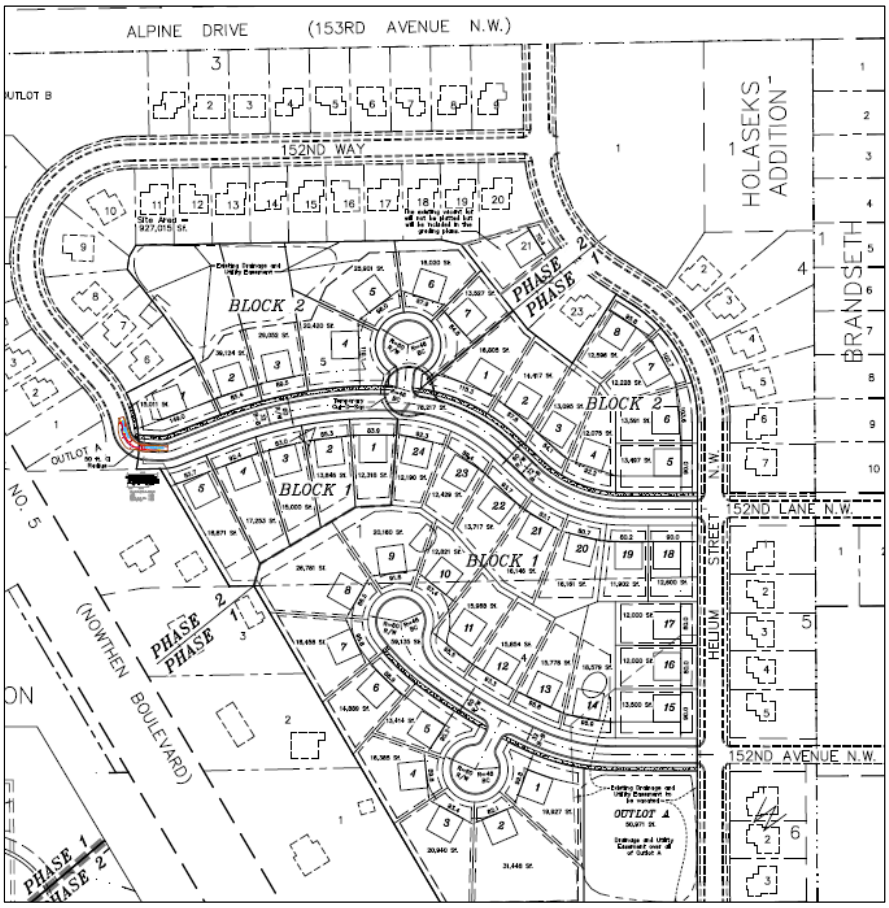
Phasing Plan

The Preliminary Plat contains 44 lots. It is anticipated that the project will happen in two (2) phases. Phase I is planned for thirty-two (32) lots. Phase II is planned for twelve (12) lots. Phasing is necessary to allow a portion of the project to move forward prior to the new Fire Station No. 2. Staff would like to explore an alternative phasing plan with the

Developer that would either 1) amend the scope of Phase I or 2) divide the project into three (3) phases. Regardless, Staff will support the current phasing plan as outlined in the Purchase Agreement. The intent of this section is to outline outcomes and alternatives now that additional design details are known that weren't available during concept and sketch plan review.

Only a portion of 152nd Lane (proposed Northern street) will be able to be constructed with the current phasing plan due to existing buildings. Interim Step #1 of the current phasing plan would utilize the existing parking lot for the former police station as a 'temporary cul-de-sac'. Interim Step #2 of the current phasing plan in the event of delay of Phase II would be to construct an actual cul-de-sac at the end of 152nd Lane for Phase I. As the Commission is aware, these 'temporary' cul-de-sacs can be challenging. There are ten (10) lots proposed on 152nd Lane in Phase I.

All of 152nd Avenue (proposed Southern street) will be able to be constructed as designed without impacts to existing buildings or need for temporary cul-de-sacs. There are fourteen (14) lots proposed on 152nd Avenue, all created in Phase I. Additionally, there are seven (7) lots proposed to be created along existing Helium Street.



Historically, the City sees an average of ten (10) to twenty (20) lots per development constructed each year in the current market environment. City Staff has received this feedback from a number of local developers as well. Twenty-one (21) lots would be created with the construction of 152nd Avenue and lots created along existing Helium Street.

The benefit to the City would be to avoid a phased construction of 152nd Lane, avoiding construction staging conflicts and temporary cul-de-sac conditions. The benefit to the Developer would be a lower Financial Guarantee requirement and cost-savings in construction staging and reconstruction. The City's Subdivision Ordinance would provide the City the tools to require full cul-de-sac construction and associated rights-of-way. If the City were to require full cul-de-sac construction and associated right-of-way, two (2) lots would need to be removed from Phase I.

Grading Plan

Development of the Grading Plan has discovered the need for more imported fill to be required than anticipated by the Developer in order to obtain the mix of floor plans desired by the Developer. The geographic area of impact is focused on the future Phase II.

Phase	Quantity	Unit Price[1]	Total
Phase I	2,500 cubic yards	7.60/cubic yard	$19,000
Phase II	16,500 cubic yards	7.60/cubic yard	$125,000

Staff is noting these assumptions as it may have an impact on the Purchase Agreement related to Phase II. Cost for fill may be in excess of $100,000 than originally anticipated by the Developer. From a regulatory perspective, the City can accept the current quantity of 2,500 cubic yards, that amount necessary for Phase I only. It is hereby noted that the full amount of fill will be calculated for Phase II when that phase comes forward. Staff is simply noting this as an advisory comment to relay the fact that there may be some potential risk that additional costs above what was originally anticipated to the Development upon execution of Phase II. This is a normal course of a due diligence and design process when more of the unknowns of design become known.

[1] Based on Quote to Developer from Northwest Asphalt. Original Engineer's Estimate was $10/cubic yard.

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	APRIL 3, 2015	**PROJECT ADDRESS**	WEST OF HELIUM STREET SOUTH OF 152ND WAY
PROJECT. TITLE	HARVEST ESTATES PRELIMINARY PLAT		
ESCROW #	114538		
DEPARTMENT:	Engineering		
TECHNICAL REVIEWER:	Name: Leonard Linton Phone: 763 433-9834 Email: llinton@ci.ramsey.mn.us		

We offer the following comments regarding your request for the Preliminary Plat of Harvest Estates. The submittal consists of 8 sheets prepared by Hedlund Engineering Services dated March 5, 2015.

General: The submitted major subdivision proposes to plat Block 1, lots 4 & 5, Meadow to create 44 urban single family lots and 1 Outlot. The subject property is generally located south of 152nd Way NW and West of Helium Street NW. The eastern border is single family homes fronting County Road 5, Nowthen Boulevard.

Streets and Access: The development accesses Helium Street which connects to Alpine Drive on the North and County Road 5, Nowthen Boulevard through 150th Lane NW on the south.

The streets will be urban section with concrete curb and gutter and bituminous pavement. A sidewalk is generally provided on one side.

Outlot A encompasses the stormwater pond constructed with Meadow subdivision.

Traffic Analysis Report: A traffic generation analysis for the Meadow development has been prepared by Bolton & Menk Inc. which analyzed the impact of this development on the following intersections:

1. Sunwood Drive NW at CSAH 5 (Nowthen Blvd)
2. 150th Lane at CSAH 5
3. 151st Lane at CSAH 5
4. Ramsey City Hall Driveway at CSAH 5 (proposed to be removed with this project)
5. Alpine Drive NW at CSAH 5 (Signalized in 2014)
6. Alpine Drive NW at Germanium Street
7. Alpine Drive NW at TH 47 (St. Francis Blvd)
8. 152nd Lane at TH 47 (connected to Helium Street after study completed)
9. Sunwood Drive NW at TH 47
10. CSAH 5 at TH47

The proposed new development studied was estimated to consist of 50 single family residential units and a 1000 student middle School by 2026. Based on the traffic analysis conducted the recommendations and conclusions are: *Original recommendations* 2015 Comments

1. *Stop signs shall be placed at all development entrances that intersect with the Current Roadway Network.* No new connections to the existing roadway network are proposed.
2. *The intersection of Sunwood Drive and CSAH 5 will need to be reconstructed with full turn lanes on CSAH 5.* CSAH 5 is a county highway. The plat has been submitted to Anoka County for comment.
3. *The analysis recommended addition of lanes to TH47 and CSAH 5 by 2026.* Changing the proposed use from a school to single family residential units will significantly reduce the traffic impact from this parcel TH47 and CSAH 5 have regional significance and decisions on upgrades should be made by MNDOT and Anoka County, respectively.

Grading and Drainage Plans: A preliminary grading and drainage plan has been prepared for this subdivision by Hedlund Engineering Services. Staff offers the following comments on this plan:

1. Lot corner elevations need to be provided on all lot corners and along the centerline of drainage swales which do not coincide with common property lines. The 100 year high water elevations for ponding areas and the FEMA 100 year flood elevations are shown on the plan. All lowest floor building elevations must be two feet above the highest elevation noted.
2. Grading plan sheets at 1" = 50' must be added to the set.
3. A tabulation of lot elevations with minimum floor elevations and adjacent pond high water levels must be added to the plan.
4. The emergency overflow elevation for each water quality pond must be one foot lower than the lowest adjacent grade of the building structures.
5. The maximum slope should not exceed one foot vertical to four feet horizontal. .
6. The font size/ pen weight of labels must be increased to make plan readable.
7. Sidewalks are generally shown adjacent to the streets. Sidewalk must be added to 152nd Lane and 152nd Avenue.

A permit from the Lower Rum River Water Management Organization (LRRWMO) will be required.

Submit a copy of the MPCA Construction Stormwater Permit to the City prior to construction. Submit copies of erosion inspection results to the City prior to release of escrow.

Utilities: All lots are proposed to be served by municipal sewer and water. Construction plans and specifications are subject to review of the City Engineering Department. The Utility Plan shall be revised to show the re-alignment of utilities from Nowthen Boulevard through Lot 1, Block 2, MEADOW in order to remove conflict with buildable pad site for said lot. The details of financial obligations and timing of said alignment will be handled as part of the Purchase Agreement by and between the City and G S Land, LLC. The City will review the City's policy stance on timing and need of said re-alignment with the City Council.

Stormwater Pollution Prevention Plan: Hydraulic Grade calculations must be submitted for the storm sewer system. A copy of the stormwater calculations provided to the LRRWMO for plan approval must be submitted to the City. The calculations submitted are missing CB 119-121 which are shown on the plans. The CB drainage map is missing labels.

Staff offers the following general comments on all sheets:

- Increase the contrast between exisiting and proposed conditions.
- Add additional sheets to reduce the scale and improve readability.
- Add Street Names to all Sheets. (City Staff will forward appropriate names based on County Grid System)
- Add profile sheets for utilities.
- Add dedicated sheet for removal and replacement of Existing Sewer and Water lines.
- Separate Sewer and Water from Storm Sewer and Street sheet for this submittal.

Staff offers the following sheet specific comments:

C-3 – Existing FES at 152nd Avenue will be in new street alignment. Plans must show relocation of this structure. Provide separate plan showing phasing for relocation of existing sewer and water lines along alignment of 152nd Lane NW. Lots fronting Helium Street will require cutting into street for services. Add

CG-1 – No Water can leave site along southwest edge adjacent to existing homes. Provide detail for overflow from new pond in south east corner of site to existing pond. Verify downstream route for overflow to Helium Street from existing pond. Verify the flood elevation and emergency overflow elevations for lots 11-21 in the table.

Detail Sheets – Detail sheets were not included in the submittal. Use the City standard details with the notes as follows:

- All sidewalks shall be 6 feet wide and 6 inches thick.
- The MnDOT 5 sheet pad ramp details must be added to the plans.
- Each pedestrian ramp must have a detailed diagram for each pedestrian ramp showing elevations, slopes and dome plate layout with radius (as needed).
- Rock Construction Entrances are ineffective in Ramsey. Add the following text to the SWPPP and Grading Plan Notes: "A street sweeper must be available within 3 hours upon notice from the City that the streets need to be swept."
- The typical street section shall have 6" Premium Topsoil.
- All references to Class 5 shall read Class 5, Ramsey Modified. Gradation is shown on Ramsey Street Details.
- Use Ramsey Detail STR-25 for connection to existing street and installing new services in Helium Street.

Specifications were not submitted. These notes are required when the specifications are submitted.

- Include City where ever Engineer or Owner is referenced in Specifications.

- General Statements - Include City in notifications to Engineer and Owner.
- Sunday work is not permitted in the City of Ramsey without City Council approval. Working hours are 7:00 am – 10:00 pm, Monday –Saturday, 48 hour notice is required for Saturday Work.
- The contractor must have a City License.
- A City right-of-way permit is required prior to working in the ROW.

Water – Add Notes:

- Only City Personnel shall operate valves.
- All valves not in paved surfaces shall have blue carsonite markers.
- Paragraph 2.7.C.2 – Valve nut extensions are not used in the City of Ramsey.

Sanitary Sewer – Add note:

- All manholes not in paved surfaces shall have green carsonite markers.
- All sanitary sewer shall have 10 gauge solid copper tracer wire.

Storm Sewer – Add note:

- All manholes not in paved surfaces shall have green carsonite markers.
- All storm sewer shall have 10 gauge solid copper tracer wire.

Landscaping – Include City on all Correspondence.

- All plant material in City ROW shall have two (2) year warranty

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	4/3/15	**PROJECT ADDRESS**	UNKNOWN
PROJECT. TITLE	HARVEST ESTATES		
ESCROW #	114538		
DEPARTMENT:	Community Development: Planning Division (Landscape Plan & Environmental Resources)		
TECHNICAL REVIEWER:	Name: Chris Anderson Phone: 763-433-9817 Email: canderson@cityoframsey.com		

We offer the following comments regarding the Landscape and Tree Preservation Plans prepared by Hedlund and dated March 5, 2015:

Tree Preservation: At least forty percent (40%) of the Diameter at Breast Height (DBH) inches of significant trees shall be preserved. For every one (1) inch of significant tree DBH removed beyond this threshold, 1.25 inches of DBH shall be replanted or $125.00 shall be paid to the City in restitution (or some combination thereof). Invasive species, diseased trees, and trees removed for stormwater ponds, public trails and sidewalks, shall not be considered when calculating the removal threshold (they should be noted as such in the inventory to receive credit).

Sheet C-5 indicates that there is a total of 1,435 total DBH on site (this excludes all invasive species, primarily Siberian Elm) and of that, 1,360 DBH inches will be removed (five percent [5%] of significant tree DBH inches preserved). Thus, reforestation (and/or restitution) should equate to 624 inches (1360-861=499 inches beyond removal threshold x 1.25"). However, the reforestation requirement exceeds the base landscape requirement (two [2] trees per lot) and per the direction of the Environmental Policy Board, the greater of the base landscape requirements or the reforestation requirement (reduced by the base landscape requirement) shall apply. This results in a total of 400 inches of required reforestation. The following revisions are required:

- *Sheet C-5 must be revised as follows:*
  - *Allowable Removal needs to be amended to read 1435 x 60% (2545 includes the Siberian Elm DBH).*
  - *All reforestation perimeter plantings (excluding required front yard trees) shall be installed as a Stage I improvement by the developer.*
  - *Plan sheet should include tree save fencing around trees being preserved.*
- *Sheet C-6 must be revised as follows:*
  - *Tree save fencing must be shown on the grading plan and shall be installed at or beyond the dripline of trees or groups of trees being preserved. Tree save fencing shall be installed and maintained in a plumb condition throughout all land disturbance activities.*
- *Sheet CE-1 must be revised as follows:*
  - *The legend includes a symbol for tree protection but that symbol is not shown on the plan sheet. Update this sheet (and the grading plan and tree preservation plan sheets) to show the tree protection fencing around those trees being preserved.*

Landscaping: Two (2) front yard trees are required per lot. Deciduous trees shall be a minimum of one (1) inch caliper and evergreen trees shall be at least five (5) feet in height. As a general note, builders should be provided a copy of the approved Landscape Plan and Planting Detail if they will be assuming responsibility for installing the front yard trees on each lot. The following revisions are necessary:

- *While it appears generally that each lot will have two (2) trees planted, many of them indicate that one tree will be planted in the rear yard. Each lot shall have two (2) front yard trees. Please revise the Landscape Plan accordingly.*
- *An alternative to Patmore Ash (Fraxinus pennsylvanica) shall be utilized due to the looming emergence of Emerald Ash Borer and the potential that these trees may be planted within the public road right of way becoming the City's responsibility for long term maintenance.*
- *The planting detail must be amended to include the following*
    - *Planting depth shall be such that the 1st set of primary roots is at finished grade*
    - *Only prune out dead/broken/deformed branches at time of installation*
    - *Remove upper 1/3 of wire basket and burlap after being placed in planting hole*
    - *2-4 inches of wood chip mulch shall be included around all trees. Mulch shall not be piled against the trunk of trees.*
- *Since required landscaping is proposed to help satisfy the reforestation requirement, all trees planted shall be at least 2.5 inches in diameter, as that was the caliper used in the calculations.*
- *Boulevard area is required to be finished with sod. Remaining portions of lot can be finished with sod, seed, hydroseed, or other acceptable ground cover.*

Topsoil: Each individual lot will need to have four (4) inches of topsoil meeting the City's topsoil specification. A topsoil inspection is required prior to landscaping being installed and copies of the load tickets are required as well. This is reviewed at time of Building Permit Application and request for Certificate of Occupancy for each individual lot.

Stormwater: The project is addressing stormwater management standards through the use of storm sewer pipes and traditional ponding. While a complete review of the grading and drainage plans will be completed by the Engineering Division, it should be noted that the contour labels on the small new pond in the southeast corner of the site (adjacent to the existing pond) need to be revised. Presently, three (3) consecutive contours are labeled as 882 and it appears they should be labeled as 882, 880, and 878.

The Environmental Policy Board (EPB) reviewed the Tree Preservation and Reforestation Plan with the at their March 30, 2015 meeting. The EPB recommended approval of the plan contingent upon the revisions outlined in this Staff Review Letter as well as the following:

- Explore the potential for additional plantings around the rim of the swale between Phase I and Phase II.
- Explore the use of native flowers/grasses within the swale between Phase I and Phase II, essentially looking at improving infiltration and limiting the overall amount of turf.

2.02: Discuss Policy Statement on Nowthen Boulevard Access and Exterior Development Boundary for Harvest Estates; Case of N.I.K. Management, Inc.

Community Development Director Gladhill noted the attendance of Planning Commission Chair Levine.

Community Development Director Gladhill reviewed the staff report, three alternatives for consideration, and explained the purpose of this case is to confirm policy direction of the Planning Commission and Parks & Recreation Commission for Sketch Plan for Harvest Estates, a proposed 45-lot detached, single-family subdivision on the former Municipal Center campus located at 15153 Nowthen Boulevard NW.

Community Development Director Gladhill advised of Nowthen Boulevard outcomes should it be closed, noting it may still be worthwhile to have a trail connection from the proposed development to Nowthen Boulevard. He displayed aerial views depicting the driveway constructed in place and another with the driveway realigned to better connect with the street to the west. He advised that both have implications with right-of-way acquisition and County Road improvements such as turn lanes.

Community Development Director Gladhill stated if the roadway is closed, all streets would operate at acceptable levels of service that comply with engineering standards. He addressed the significant cost to leave this access open and the Anoka County Highway Department's recommendation for full closure of this access.

Community Development Director Gladhill presented the project proforma, noting this site is subject to a Purchase Agreement between N.I.K. Management and the City. He pointed out the proforma goes negative, in varying degrees, to keep the access open depending on type of access and County Road enhancements. Staff is currently researching the use of HRA dollars to cover part of the costs.

Community Development Director Gladhill advised of staff's additional discussions related to Highway 47 and requested Council direction whether it supports staff exploring additional options for that node.

Community Development Director Gladhill stated the second issue addressed by the Planning Commission was the development boundary to address density transition even though it is not required by Code. He indicated the Planning Commission recommends the City not close the existing access to Nowthen Boulevard and that the proposed development modify the northern exterior development boundary as illustrated in the document and outlined in red.

Community Development Director Gladhill advised of the discussion by the Parks and Recreation Commission relating to whether a park should be located within this project or nearby area. He stated the Parks and Recreation Commission has found that park needs are met and recommends the City require cash in lieu of land and not require a City park within the proposed development.

Councilmember Development Director Gladhill reviewed the policy questions open for Council direction and asked whether staff should explore options related to Highway 47.

Councilmember Kuzma asked if the access is closed, would the City have to acquire property.

Community Development Director Gladhill answered in the affirmative and used a slide to point out the private property that would need to be acquired for right-of-way purposes under both driveway alignment options. He explained that property owner has indicated the asking price would be approximately $65,000 for that parcel.

Councilmember Riley noted that would be to access a building the City does not intend to use beyond a year or two.

Community Development Director Gladhill stated that is correct; however, there are utilities in that temporary access easement that would have to be relocated or abandoned.

Councilmember Riley stated the Park and Recreation Commission has consistently recommended no City park in this project, which he supports.

Councilmember Johns concurred, noting the close location of Solstice Park. She stated that 'park' may mean a trail or other amenity.

Councilmember Shryock concurred.

Mayor Strommen stated she does not necessarily disagree with that recommendation but at this point in time, the neighborhood has a lot of small children and there is no place for them to go on their own. She agreed that will change over time, but felt it was worth discussion in how to provide opportunities for children to have outdoor play time without a scheduled visit accompanied by an adult. She asked if the Council wants to provide those opportunities or if that is being provided in another way.

Councilmember Shryock stated she lives off Emerald Pond Park in an urban area where a lot of residents, because they are busy, have their own play equipment so children play in that way. She felt it was almost an automatic given that people provide their own play equipment in their yards. She stated there is other infrastructure to be considered, such as trails, noting most of the proposed yards will be of reasonable size and able to accommodate private play structures. Councilmember Shryock felt that should suffice at this point, so she does not support requiring a dedicated City park within this development.

Planning Commission Chair Levine stated the Planning Commission wrestled with that point and came up with the same conclusion and that the Elementary School is across the street and provides a larger-sized play area for younger and up through teen-aged children. He noted the school has vey nice play equipment.

Mayor Strommen agreed the Elementary School is an incredible resource and the Council will need to address how to assure safe crossing of Highway 5 to access that play equipment. She stated if that is supported, she would want the City to address that concern with the County.

Councilmember Johns pointed out that Solstice Park is not that far away and does not involve the need to cross Highway 5. She suggested using resources to create safe access to Solistice Park, creating connection for a park experience for younger children.

Community Development Director Gladhill noted the location of a City-owned outlot that could be used to increase pedestrian connectivity to Solstice Park.

Councilmember Williams stated she respects the thoughtful recommendation of the Parks and Recreation Commission, noting the City's larger parks provide a recreational experience for its residents.

Councilmember Kuzma stated because his children are older, he had not thought about the issue of park experience for younger children and he also respects the recommendation of the Parks and Recreation Commission.

Acting Mayor LeTourneau noted that requiring park land may also impact the financial feasibility for the developer to move forward with this development.

Councilmember Williams asked about staff's comment on an encroachment use of private property.

Community Development Director Gladhill stated that was a discussion topic raised at the meeting, that the City maintains the stormwater pond at the old Municipal Center. He stated the idea was more than maintaining the stormwater pond but whether additional density transitioning could be created.

Councilmember Riley stated with density transitioning, it most often involves going from large lots to small lots but in this case it is the opposite. He noted the abutting lots would be larger so he thinks it odd that this is even being discussed. Councilmember Riley stated those property owners could have that discussion with the developer.

Acting Mayor LeTourneau stated the consensus of the Council is that the City not change the development boundary as presented by N.I.K. Management. He asked the Council to next discuss access to Nowthen Boulevard.

Councilmember Williams supported closing the access completely as having fewer driveways would be better. In addition, if the traffic goes to 157th for access, there will be school crossing guards in that location. If left open, she supported aligning it with the existing roadway.

Acting Mayor LeTourneau asked about the benefits of keeping the access open versus closing it.

Planning Commission Chair Levine stated the Planning Commission looked at traffic and decided using the frontage road would not be a viable option. They also addressed additional traffic on Highway 47 if the access to Highway 5 is closed. He pointed out that Highway 47 does not function well during rush hours and it was felt that adding traffic will worsen that situation. Because of that, the Planning Commission felt access to Highway 5, in some fashion, should remain. The Planning Commission also addressed whether closing the access would create additional safety issues.

Acting Mayor LeTourneau stated he reviewed the Planning Commission meeting minutes and did not see mention of the option to use Helium Street NW and Alpine Drive to access Highway 5, which he thinks may be a reasonable alternative.

Planning Commission Chair Levine stated that was discussed and it was felt the vehicles would go to Highway 47 anyway as most traffic heads east.

Mayor Strommen agreed drivers prefer to make right-hand turning movements.

Councilmember Johns stated it seems if they are using Highway 5, they are using it to get to Highway 47 so there will just be more vehicles stacking and merging whether at Alpine Drive or Xkimo Street NW.

Planning Commission Chair Levine stated the issue is that the stacking will start at Bills.

Councilmember Johns stated vehicles will also stack at the school entrances. She stated the other issue is with safety should there be two points of access.

Fire Chief Kapler concurred that most often, more points of access are better, noting there is another access on Helium Street NW. He stated with regard to safety, he advised it is an adequate route should access to Highway 5 be closed.

Councilmember Shryock stated with access on Highway 47 versus Highway 5, she thinks that if people are not comfortable with Highway 47, they will start using Highway 5 as traffic will find its own path. With regard to a driveway access to Highway 5, she noted that having another driveway that close to the school will create an additional obstacle, impacting student pedestrians. She favored closing the access, limiting access points and conflicts with students.

Councilmember Kuzma asked about emergency vehicle access and potential impact for City plows access should the access be closed.

Fire Chief Kapler stated there is no problem with access from the Fire Station.

Public Works Superintendent Riemer stated there is no problem with access for City snow plows/equipment.

Councilmember Kuzma stated the neighborhood supported houses over a data center and indicated they were comfortable if additional traffic was created. He stated that is a result of what the

neighborhood wanted so the Council needs to determine the best method to address safety. He supported closing the access.

Mayor Strommen stated most often she supports keeping access points open but in this case, Highway 5 is a safety challenge and as Councilmember Shryock pointed out, the school is in close proximity and has multiple access points. In addition, Highway 5 traffic stacks at the points of access, unlike stacking for Highway 47. She stated she is uncomfortable with an uncontrolled intersection and creating additional traffic at an access so close to the school unless the City has a conversation with the County in how to address safety.

Acting Mayor LeTourneau stated there have been many conversations about the importance of addressing the needs of Highways 47 and 5.

Councilmember Riley asked if Anoka County is totally opposed to an entrance but would allow a right-in/right-out at City cost.

Community Development Director Gladhill stated Anoka County strongly opposes a full access but if it were opened, it would need proper safety investments and the County may consider a right-in/right-out at the City's costs.

Planning Commission Chair Levine noted that a right-in/right-out option does not help the situation much and when the Planning Commission was talking about it, it was with full access.

Councilmember Riley stated the City wants to work with Anoka County, but the City has already pushed back on the option of having medians. He noted the Planning Commission's recommendation may not be possible if it is not supported by Anoka County.

Asst. City Administrator/Economic Development Manager Brama stated he talked with Anoka County who opposes any access whether full or right-in/right-out; however, if opened would select right-in/right-out. He stated Anoka County indicated a willingness to work with the City and the biggest issue with Anoka County is safety.

Mayor Strommen asked if a meeting could be held with the Anoka County Commissioners and Anoka County Highway staff prior to the Council making a final decision. She felt it would be worth the time investment to have a conversation on a solution that accomplishes the City's goals rather than only considering this highway corridor in a piecemeal manner.

Community Development Director Gladhill stated the City Engineer has started those discussions with the Anoka County Assistant Engineer and staff can come up with a 'game plan' going forward.

City Engineer Westby agreed that Highway 5 is an ongoing concern. He stated it is low on Anoka County's priority list; however, if the City requested a corridor study the County indicated they would consider it.

Mayor Strommen suggested this also be addressed with Anoka County Commissioners Look and Schulte to assure the corridor is addressed holistically rather than intersection-by-intersection.

Acting Mayor LeTourneau pointed out that the closing of the access is the only option in the sale analysis that shows a gain for the community in the sale of the property. He supported holding a broader discussion on having a corridor plan, noting however, that may not make the City want to move forward with the access.

Councilmember Riley asked if the Planning Commission reviewed the analysis on cost implications.

Community Development Director Gladhill stated they did but it was an early version without realtor commissions and contingency costs.

City Administrator Ulrich stated on Friday, staff will be meeting with Anoka County Commissioners Look and Schulte and can raise the need to better plan for this corridor to assure safety is addressed.

Councilmember Riley agreed the Council needs to consider the smartest ideas for the right outcome and one of those relates to the dollars. He stated there is a stark difference in how the City comes out depending on the option taken. If the Council supports closure, he thinks staff should look at Helium Street NW, which is inadequate at this time to accommodate additional traffic.

Mayor Strommen stated the financial piece is important but cautioned the Council that the City will get one shot at this access and in the future, if it is found to be important for the corridor, it will be much more difficult to get it back after the development is configured. Rather than solely being driven by dollars, she felt the Council needed to be sure its planning is solid and the best plan for the corridor.

Acting Mayor LeTourneau asked how many homes are being proposed.

Community Development Director Gladhill answered 45 homes.

Acting Mayor LeTourneau stated the discussion is how to mitigate access and safety issues for 45 homes, but this is not a gateway development that opens to additional neighborhoods.

Community Development Director Gladhill stated there is potential for future connections but it would involve additional right-of-way access. He stated staff will raise that conversation with Anoka County.

Acting Mayor LeTourneau indicated the consensus of the Council is to address the need for a larger corridor study with Anoka County and to move forward under premise it will be a closed access.

5.02: Review Landscape and Tree Preservation Plans Associated with the Preliminary Plat Application for Harvest Estates; case of NIK Management, Inc.

City Planner Anderson presented the staff report.

Board Member Valentine inquired about storm water compliance.

City Planner Anderson replied that the engineering staff is responsible for storm water compliance but from what he can see, it appears to meet the minimum standards. There would not be tree loss directly related to storm water ponding. He pointed out that the proposed lot sizes are approximately a quarter of an acre and each site would get two front yard trees. He stated that a concern raised by residents that they would like to see more of a buffer has been addressed with the plan. He spoke about reforestation standards and their interpretations.

Board Member Lewis asked about the area between phase one and two.

City Planner Anderson replied that it will be ponding for the site.

Board Member Lewis asked if it was a ponding area or swale.

Community Development Director Gladhill stated his assumption that it is needed for storm water purposes.

Board Member Lewis asked if there is any possibility for additional plantings in that area.

City Planner Anderson replied that it is a possibility and the Board could make a request for additional plantings at the rim of the ponding area.

Board Member Valentine stated it was worth looking at it if it wasn't going to create interference with storm water management.

Community Development Director Gladhill stated this is an excellent example of how the ordinance is being applied and that we have more plantings with the reforestation requirements. He stated that Staff is looking for a policy direction on how the ordinance is interpreted and calculated to make sure the Board is accomplishing what it intended.

Board Member Valentine stated that the ordinance would be unworkable without some flexibility and he is comfortable with the City's interpretation of the ordinance in this case.

City Planner Anderson stated that this is one of the benefits we should see with the Board reviewing proposed development plans.

Board Member Hiatt said he could see the logic of two options and asked if the City is setting a precedent for other developers. He asked if the Board is giving flexibility without giving precedent.

DRAFT

City Planner Anderson stated that every request or proposal is unique and that everything cannot be accounted for in an ordinance. Having flexibility and checking in with various advisory boards protects the City from setting undesirable precedents.

Board Member Valentine stated that he felt another developer would try to take advantage of a precedent if it was advantageous to them, but that checking in with the various advisory boards should protect the City.

City Planner Anderson stated that Staff is supportive of what is being proposed in this case as meeting the City's overall ordinance. He is hoping to get feedback from the Board in terms of policy direction moving forward and would like direct feedback on perimeter plantings in the rear yards of properties. He stated that it is Staff's opinion that it should be a stage one improvement and should be the developer's responsibility to install the trees. He is seeking feedback from the Board on Staff's recommendation that excluding the two front yard trees, the remainder of the plantings be the responsibility of the developer as a stage one improvement. He is seeking a motion to recommend that the landscaping and tree preservation plans are acceptable.

Board Member Lewis would like to get additional feedback on the recommendation. He would like to take a look additional plantings at the perimeter to avoid it being mowed grass and to make sure that these plantings are part of the original plan.

City Planner Anderson stated that Staff is open to additional plantings around the perimeter. He stated that the City's engineering staff would have to determine that the plantings would not cause any additional maintenance issues.

Board Member Lewis stated that his intention is not to interfere, but to enhance the area.

Motion by Board Member Valentine and seconded by Board Member Hiatt to recommend Option 1; to include Staff's recommendation that excluding the two front yard trees, the remainder of the plantings be the responsibility of the developer as a stage one improvement; and to explore the potential for additional plantings around the rim or perimeter of the area between Block One Harvest Estates and Block One Harvest Estates Second Addition.

City Council Liaison LeTourneau suggested adding the recommendation that the plantings be the responsibility of the developer in the phase one improvement clause also.

Board Member Valentine accepted that as a friendly amendment.

Motion carried. Voting Yes: Chairperson Stodola, Board Member Valentine, Hiatt, Bernard, and Lewis. Voting No: None. Absent: Board Member Bentz.

DRAFT

Councilmember ___ introduced the following resolution and moved for its adoption:

RESOLUTION #15-04-092

RESOLUTION GRANTING PRELIMINARY PLAT APPROVAL OF HARVEST ESTATES

WHEREAS, G S Land, LLC, hereafter referred to as "Developer", properly applied for preliminary plat approval of the following described property located in the City of Ramsey:

Lots 4 & 5, MEADOW, Anoka County, Minnesota

(the "Subject Property")

WHEREAS, on March 5, 2015, the City received an Application for Major Plat from N.I.K., Management, Inc.; and

WHEREAS, on April 3, 2015, the Application for Major Plat was assigned to G S Land, LLC; and

WHEREAS, the City finds that the Plat does not required an Environmental Assessment Worksheet (EAW) or Environmental Impact Statement (EIS) due to the size of the project and number of lots; and

WHEREAS, on April 9, 2015, the Planning Commission held a Public Hearing for the plat known as HARVEST ESTATES; and

WHEREAS, on April 28, 2015, the City Council reviewed the Preliminary Plat.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF RAMSEY, ANOKA COUNTY , STATE OF MINNESOTA, as follows:

1) That the Ramsey City Council hereby grants preliminary plat approval to HARVEST ESTATES in accordance with relevant City Codes contingent upon compliance with the City Staff Review Letter dated April 3, 2015.

The motion for the adoption of the foregoing resolution was duly seconded by Councilmember ____, and upon vote being taken thereon, the following voted in favor thereof:

and the following voted against the same:

and the following abstained:

and the following were absent:

whereupon said resolution was declared duly passed and adopted by the Ramsey City Council this 24th day of June, 2014.

_____
Mayor

ATTEST:

_____
City Clerk

Regular Planning Commission **5. 4.**

Meeting Date: 04/09/2015

Submitted For: Tim Gladhill, Community Development

By: Tina Goodroad, Community Development

Information

Title:

PUBLIC HEARING: Consider Resolution #15-04-093 Granting Approvals for COR Parkview Addition and Parkview East

1. Preliminary Plat for Major Subdivision
2. Site Plan for 121 Unit Apartment Building

Purpose/Background:

The purpose of this file is to review the official Preliminary Plat and Site plan Review for the Parkview East Apartment Complex. The subject property is located south of Ramsey Parkway, east of Town Center Drive East and west of Rhinestone Street NW and north of Sunwood Drive. The property is located in COR-1 zoning sub-district. The application includes a plat to be called COR Parkview Addition and development of phase one apartment complex consisting of one four-story building with a total of 121 units with tuck under, detached garage and surface parking.

Notification:

Staff attempted to notify all Property Owners within 700 feet of the Subject Property of the Public Hearing via Standard US Mail. A notification of Public Hearing was published in the Anoka County Union Herald.

Observations/Alternatives:

The property is zoned COR-1 Mixed Use Core Subdistrict which is intended to provide a mix of residential, retail, and service uses. This sub-district allows the highest intensity of uses including high density housing. The proposed use as an apartment building meets the intent of the COR-1 sub-district.

The COR Design Framework establishes maximum build to lines based on the roadway the property frontage. For buildings located along a Parkway, sixty (60) percent of the building (at least 300 feet) shall be located five (5) feet from the back of the side walk. The proposed building is located ten (10) and in some portions greater than ten (10) feet. The site does curve causing more difficulty in meeting this build to line. However, efforts should be made to meet the five (5) foot maximum for at least sixty (60) percent of the building façade along Ramsey Parkway. Later in this review a suggestion will be made to widen the boulevard which will help shift the sidewalk slightly closer to the building. In addition, because the building has frontage on more than one street, the building shall be located five (5) feet from the back of curb along Rhinestone Street. There are minimum or maximums for rear and internal side yard setbacks.

The COR Design Framework includes guidelines on how to manage parking. This is particularly important in COR-1 subdistrict, being the most intense and pedestrian oriented. A variety of parking options are proposed for the site. The building will include forty-four (44) tuck under garages with garage door entries on the south elevation internal to the site. An additional ninety-one (91) garage spaces are provided within five (5) detached garage structures. Finally, 148 surface parking spaces are planned south of the building internal to the south for a total of 283 spaces. No surface parking areas are abutting a street.

Typically the spaces internal to the building would not be counted dropping the total to 239 spaces. The COR Design Framework sets a maximum parking allotment of two (2) spaces per unit for multi-family structures. The development incudes 121 units requiring 242 parking spaces. The site meets and even slightly exceeds the

maximum allowed with the internal garage spaces. The additional spaces are not in a response to building code but rather based on perceived need due to the number of two (2) and three (3) bedroom units in the building which could result in more parking demand. The proposed break down in units is as follows: forty-one (41) percent one (1) bedroom; forty-five (45) percent two (2) bedroom and fourteen (14) percent three bedroom. The additional spaces will also prevent potential use of on-street parking which is particularly important during summer months when the adjacent park is programmed.

As the surface parking lot is well screened by either the apartment building or the detached garage structures, and therefore not visible from the roadways, staff supports the additional parking. If concern exists the Planning Commission could recommend that some excess parking be included as a proof of parking area until the need for additional spaces is evident.

The COR Design Framework includes Street Design Standards within the COR. The plans will need to be revised to reflect the revisions required in the Staff Review File. Generally speaking, both the sidewalk and boulevard area along Ramsey Parkway will need to be widened. The landscape plan includes rows of street trees along each of the three streets the site abuts. Ramsey Parkway and Rhinestone Street contain two types of trees while Sapphire Street and 145 th Avenue include one type. The proposed trees meet the requirements based on street type. No other landscaping is shown on the plan other than the required street trees. A community garden and playground space is include at the northwest corner. Additional detail and proposed landscaping for this area shall be submitted. The Environmental Policy Board made several advisory recommendations to enhance the internal landscaping plan, as outlined in the Staff Review File.

High quality architecture and building materials is an essential component in fulfilling the objectives of the COR Design Framework. Roof design, materials, amount of windows, and overall design that breaks up the different floors and walls are all important elements to the overall building design. In the COR-1 subdistrict buildings are placed closer to the street so greater emphasis is placed on materials and design features at the street level.

Plans for the front elevation (south) and rear elevation (north) for the apartment building have been provided. Plans for each side elevation will also be required. The proposed materials consist of stone and brick at the base. The rear elevation includes an enhanced stone entry with canopy and additional stone above. Other materials include composite panel (i.e. fiber cement panels) and steel lap and vertical siding. Metal siding can be used as a complementary material. In COR-1 subdistrict buildings shall be primarily brick or comparable alternative and shall comprise a minimum of fifty (50) percent of the non-glazed wall area. Calculations shall be provided for brick and stone for each elevations.

Full colored elevation plans should be provided. The combination of composite and steel in the differing patterns divides the floors and sections of the building. Multiple sections of the building are articulated to break up the flat wall. In addition windows and decks are proposed for each unit that provide further breaks in the building wall design. Additional information is required for the specific appearance of the individual air conditioning units. Staff is concerned over the appearance, color, size and overall look of units on each elevation.

The south elevation includes garage doors for tuck under garages. Garage doors shall be in colors that are complementary to the main building materials. The roof design is pitched with asphalt shingles. The elevation facing Ramsey Parkway is actually the rear of the building and contains the same materials as the front. The first floor contains windows to create street-level interest and pedestrian scale along this street frontage. The northern elevation does include an entrance for the building.

Five detached garage buildings are planned in the southern portion of the site. Three long buildings each containing 16 stalls are located in a row along the south property line with two additional buildings just north of this row containing 22 stalls each. The garage buildings contain the same materials as the apartment building. The roofs are pitched with additional accenting so that they are of a higher design standard than typical detached structures. The materials will include stone, horizontal lap siding, shake siding and an asphalt shingle roof. The sides will contain the stone and horizontal siding. The additional roof treatments and glass demonstrate a good effort in enhancing the design of these detached structures. The use of stone at the base will help improve the longevity of these structures. Staff would recommend considering all brick or stone on the back side of these garages in lieu of any lap siding.

Although the garages will eventually be screened by future buildings, that timeline is undetermined. The Environmental Policy Board recommended additional landscaping along this wall to soften the view. The EPB noted that the number of plantings along public streets could be reduced to off-set the suggested plantings along the southern garages.

Funding Source:

All costs associated with processing this Application are the responsibility of the Applicant.

Recommendation:

Staff recommends approval of the request, contingent upon conditions in the Development Agreement..

Action:

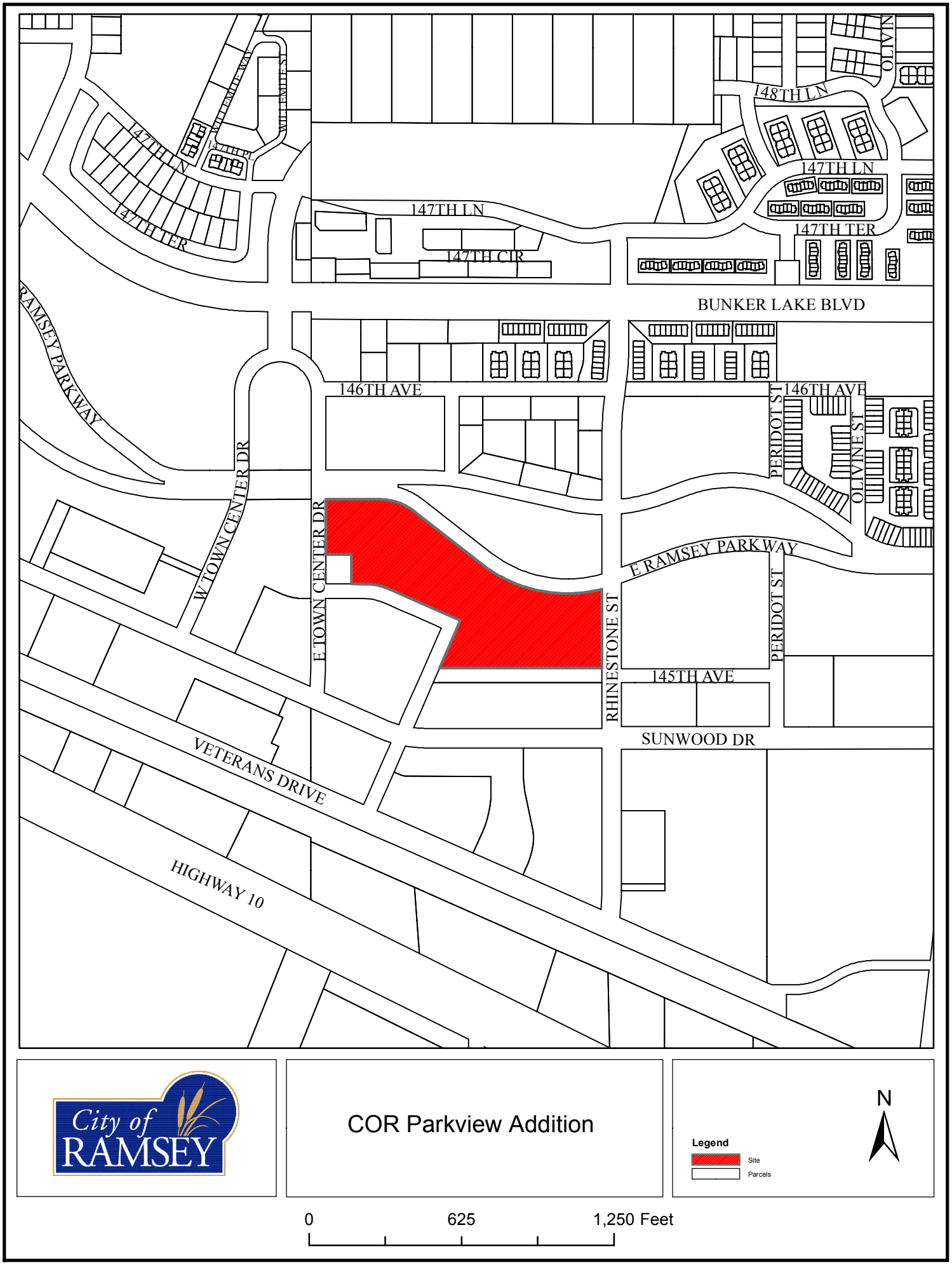
Motion to recommend that the City Council adopt Resolution #15-04-093 granting Preliminary Plat and Site Plan Approval for COR Parkview Addition/Parkview East.

Attachments

Site Location Map
Site Plan
Civil Engineering Plan Set
Staff Review File
Environmental Policy Board Minutes dated March 31, 2015
Resolution #15-04-093

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 03:18 PM
Tim Gladhill	Tim Gladhill	04/03/2015 03:18 PM
Form Started By: Tina Goodroad		Started On: 03/27/2015 10:55 AM
Final Approval Date: 04/03/2015		


147TH LN
147TH TER
WILLOW WAY
WILLOW CT
WILLOW ST
147TH LN
147TH CIR
148TH LN
OLIVE ST
147TH LN
147TH TER
BUNKER LAKE BLVD
RAMSEY PARKWAY
146TH AVE
146TH AVE
PERIDOT ST
OLIVINE ST
W TOWN CENTER DR
E TOWN CENTER DR
E RAMSEY PARKWAY
PERIDOT ST
RHINESTONE ST
145TH AVE
SUNWOOD DR
VETERANS DRIVE
HIGHWAY 10
City of RAMSEY
COR Parkview Addition
Legend
Site
Parcels
N
0
625
1,250 Feet

OUTLOT A

COMMUNITY GARDEN

PLAYGROUND

PATIO W/ BBQ GRILLS

522.66
S13

PHASE I
4 STORY - 121 UNIT APT
44 T/U GARAGES

148 SURFACE STALLS

22 STALL GARAGE

21 STALL GARAGE

16 STALL GARAGE

16 STALL GARAGE

16 STALL GARAGE

91 DETACHED GARAGES

REFUSE

REFUSE

FUTURE PARKING RAMP IF NEEDED

145TH AVE NW

SAPPHIRE STREET NW

323.42

263.64

263'-0"

433.51

433.51

246.03

665.92

692.28

246.92

523.47

SITE PLAN
SCALE 1:30

COLE GROUP
ARCHITECTS LLC
214 Park Avenue South
Suite 102
Saint Cloud, MN 56301
320.654.5180
www.colegrouparchitects.com

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.
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 Architect under the laws of the state of MINNESOTA
Date
22288
Name NORMAN E. COLE Signature

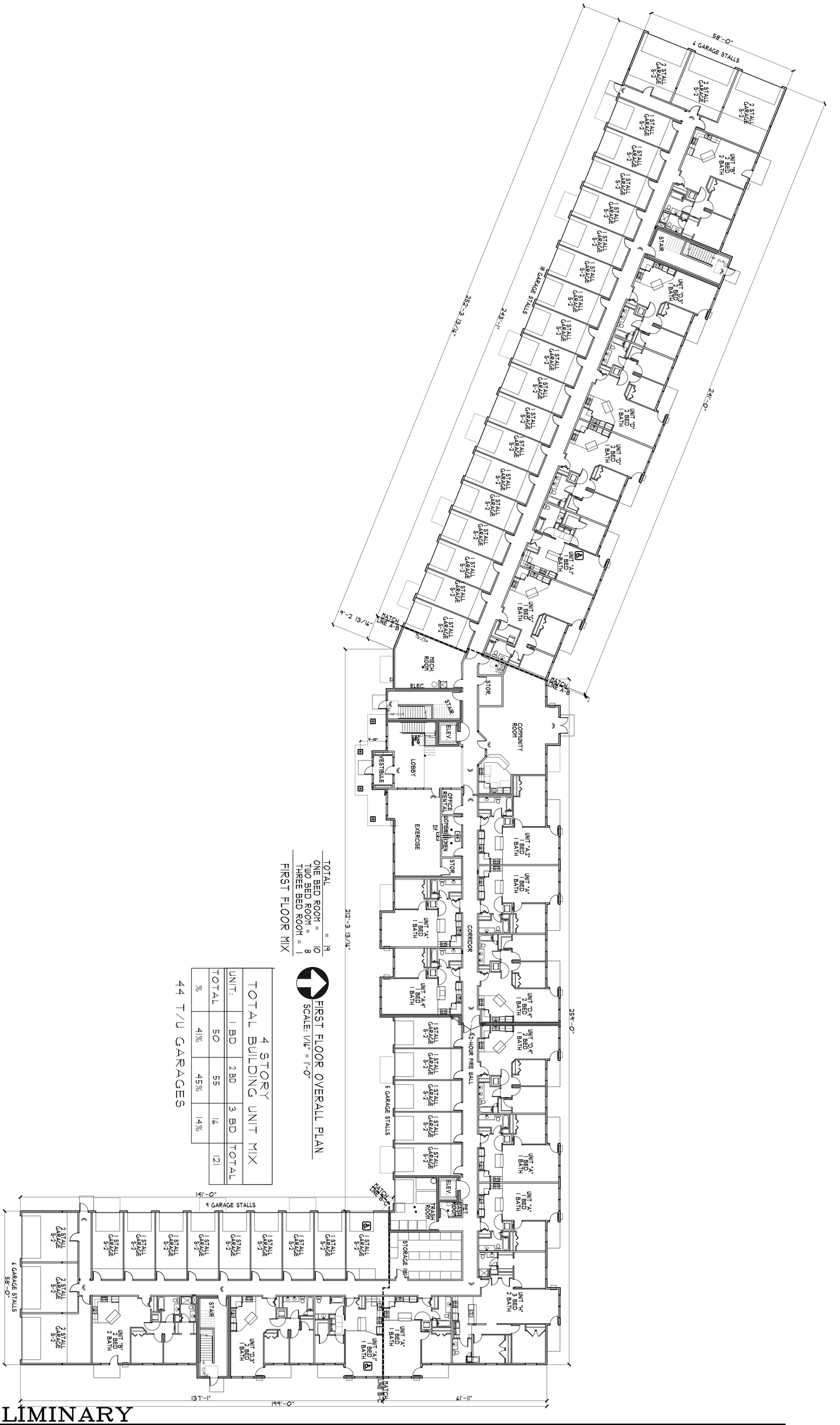
PRELIMINARY

PROPOSED:
PARKVIEW EAST APARTMENTS
RAMSEY, MN

Project No.
14082
Issue Date:
3-9-15
Revision:

PLOTTED: 3-9-15
FILE: 140825
COM:

A1
OF 8



FIRST FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

FIRST FLOOR MIX

TOTAL	= 19
ONE BED ROOM =	10
TWO BED ROOM =	8
THREE BED ROOM =	1

4 STORY
TOTAL BUILDING UNIT MIX

UNIT:	1 BD	2 BD	3 BD	TOTAL
TOTAL	50	55	16	121
%	41%	45%	14%	

44 T/U GARAGES

PRELIMINARY

PROPOSED:
PARKVIEW EAST APARTMENTS
RAMSEY, MN

PLOTTED: 3-9-15 FILE: 14082P COM:

Project No. 14082
Issue Date: 3-9-15
Revision:

A2
OF 8

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.

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 Architect under the laws of the state of MINNESOTA

Date _____ # 22288

Name NORMAN E. COLE Signature _____

COLE GROUP
ARCHITECTS LLC.
214 Park Avenue South
Suite 102
Saint Cloud, MN 56301
(320) 654-4870
www.colegrouparchitects.com

SECOND FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

TOTAL	= 34
ONE BED ROOM =	14
TWO BED ROOM =	15
THREE BED ROOM =	5

SECOND FLOOR MIX

4 STORY TOTAL BUILDING UNIT MIX				
UNIT:	1 BD	2 BD	3 BD	TOTAL
TOTAL	50	55	16	121
%	41%	45%	14%	

44 T/U GARAGES

COLE GROUP ARCHITECTS, LLC.
214 Park Avenue South
Suite 1004
Minneapolis, MN 55401
(320) 491-4870
www.colegrouparchitects.com

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.

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 Architect under the laws of the state of MINNESOTA

Date _____ # 22288

Name NORMAN E. COLE Signature _____

PRELIMINARY

PROPOSED:
PARKVIEW EAST APARTMENTS
RAMSEY, MN

Project No.
14082
Issue Date:
3-9-15
Revision:
-

A3
OF 8

PLOTTED: 3-9-15 FILE: 14082P COM:

THIRD FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

TOTAL	= 34
ONE BED ROOM =	13
TWO BED ROOM =	16
THREE BED ROOM =	5

THIRD FLOOR MIX

4 STORY
TOTAL BUILDING UNIT MIX

UNIT:	1 BD	2 BD	3 BD	TOTAL
TOTAL	50	55	16	121
%	41%	45%	14%	

44 T/U GARAGES

COLE GROUP
ARCHITECTS LLC.
216 Park Avenue South
Suite 220
Saint Cloud, MN 56301
(320) 654-5510
www.colegrouparchitects.com

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.
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 Architect under the laws of the state of MINNESOTA
Date _____ # 22288
Name NORMAN E. COLE Signature _____

PRELIMINARY

PROPOSED:
PARKVIEW EAST APARTMENTS
RAMSEY, MN

Project No: 14082
Issue Date: 3-9-15
Revision:

A4
OF 8

PLOTTED: 3-9-15 FILE: 14082P COM.

TOTAL = 34
ONE BED ROOM = 13
TWO BED ROOM = 16
THREE BED ROOM = 5

FOURTH FLOOR MIX

FOURTH FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

4 STORY TOTAL BUILDING UNIT MIX				
UNIT:	1 BD	2 BD	3 BD	TOTAL
TOTAL	50	55	16	121
%	41%	45%	14%	

44 T/U GARAGES

COLE GROUP ARCHITECTS LLC.
214 Park Avenue South
Suite 102
Hopkins, MN 55301
(320) 654-6510
www.colegrouparchitects.com

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.

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 Architect under the laws of the state of MINNESOTA

Date _____ # 22288

Name NORMAN E. COLE Signature _____

PRELIMINARY

PROPOSED:
PARKVIEW EAST APARTMENTS
RAMSEY, MN

Project No. 14082
Issue Date: 3-9-15
Revision:

A5
OF 8

PLOTTED: 3-9-15 FILE: 14082P COM:



FRONT ELEVATION (SOUTH)

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



REAR ELEVATION (NORTH)

SCALE: 3/32" = 1'-0"

PRELIMINARY

FILE: 14082E COM: 4 PLOTTED: 3-9-15

COLE GROUP ARCHITECTS LLC.
214 Park Avenue South
Suite 102
Saint Cloud, MN 56301
(320) 654-4570
www.colegrouparchitects.com

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.

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 Architect under the laws of the state of MINNESOTA

Date _____ # 22288 _____

Name NORMAN E. COLE Signature _____

PROPOSED:

PARKVIEW EAST APARTMENTS

RAMSEY, MN

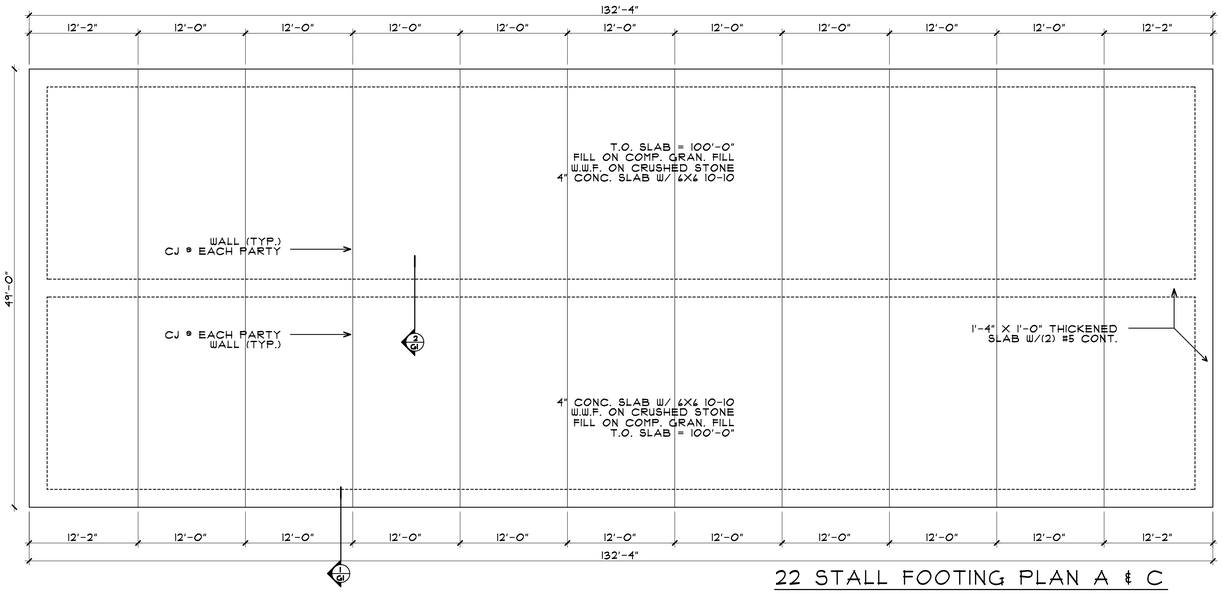
Project No. 14082

Issue Date: 3-9-15

Revision: -

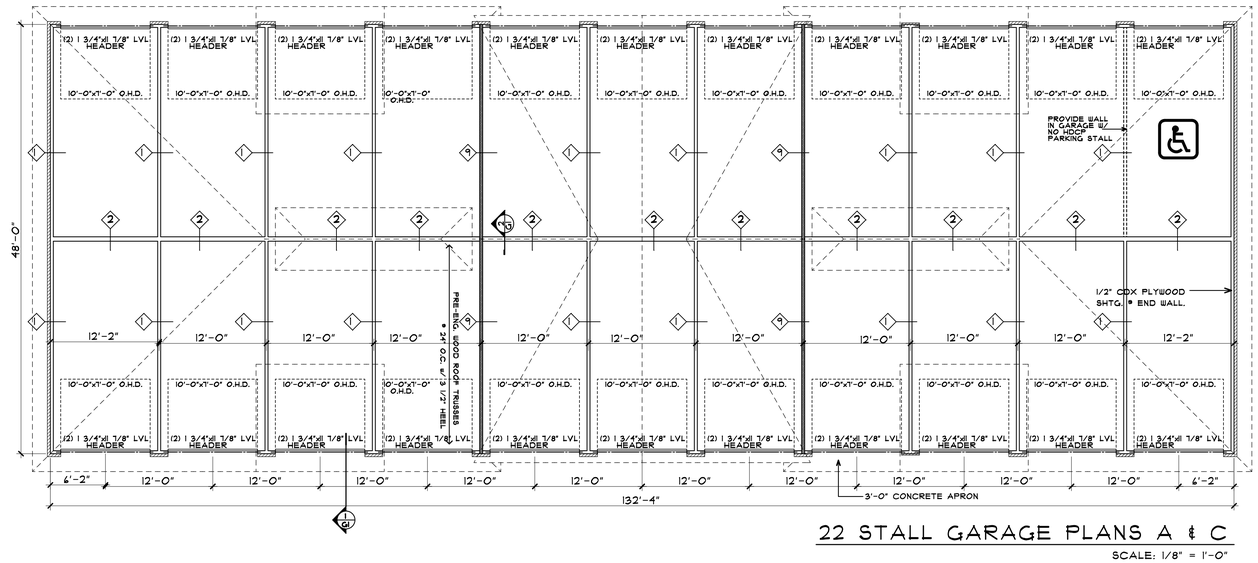
A6

OF 8



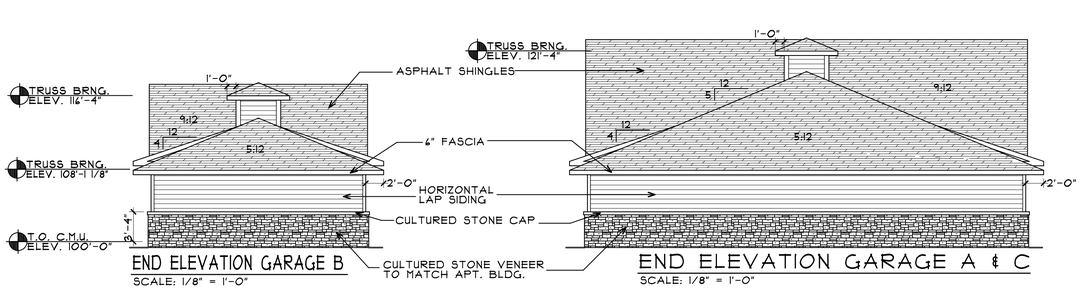
22 STALL FOOTING PLAN A & C

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



22 STALL GARAGE PLANS A & C

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

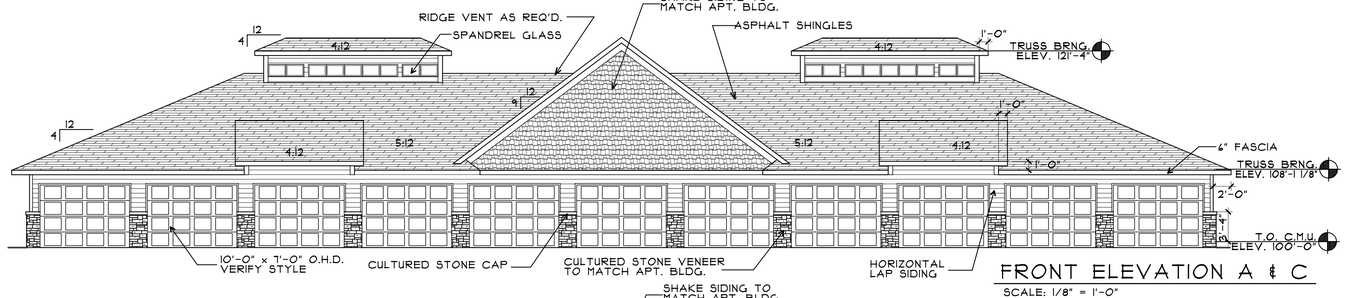


END ELEVATION GARAGE B

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

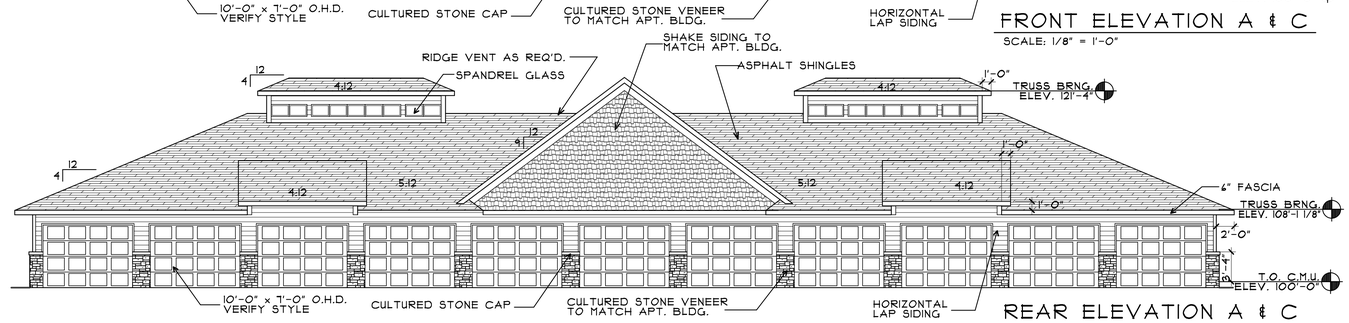
END ELEVATION GARAGE A & C

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



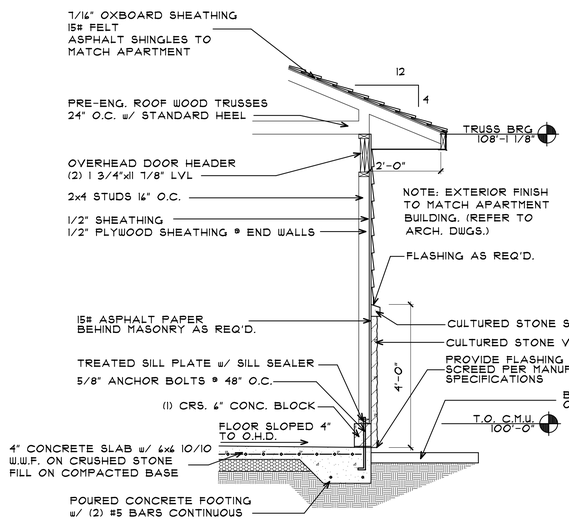
FRONT ELEVATION A & C

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



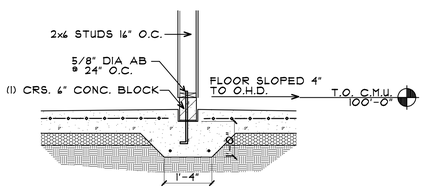
REAR ELEVATION A & C

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



1 WALL SECTION

1/2" = 1'-0"



2 WALL SECTION

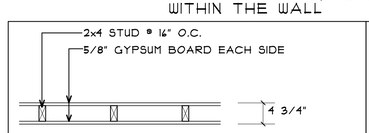
1/2" = 1'-0"

NOTE:
VERIFY FINISH FLOOR ELEVATION FOR EACH GARAGE W/ CIVIL PLANS

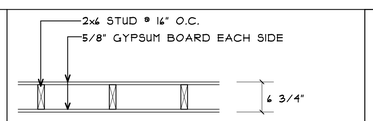
WALL KEY

2 HOUR RATED FIRE SEPARATION WALL. MUST EXTEND FROM TOP OF FLOOR SLAB TO UNDERSIDE OF ROOF DECK ABOVE

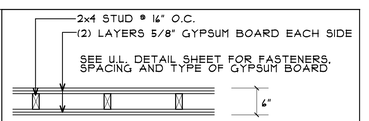
NO MECHANICAL, ELECTRICAL OR PLUMBING ALLOWED WITHIN THE WALL



① WALL TYPE	S.T.C. - 35
SCALE: 3/4"=1'-0"	RATING - NONE (LOAD BEARING)
	U.L. DESIGN NO.



② WALL TYPE	S.T.C. 30-34
SCALE: 3/4"=1'-0"	RATING - NONE (LOAD BEARING)



⑨ WALL TYPE	S.T.C. - 43
SCALE: 3/4"=1'-0"	RATING - 2 HOUR (LOAD BEARING)
U.L. DESIGN NO. U301	G.A. DESIGN NO. WP 4135

PRELIMINARY

FILE: 14082C COM: 4 PLOTTED: 3-9-15

COLE GROUP ARCHITECTS LLC.
214 Park Avenue South
Suite 102
Saint Cloud, MN 56301
(320) 654-4570
www.colegrouparchitects.com

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.

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 Architect under the laws of the state of MINNESOTA

Date _____ # 22288

Name NORMAN E. COLE Signature _____

PROPOSED:

PARKVIEW EAST APARTMENTS

RAMSEY, MN

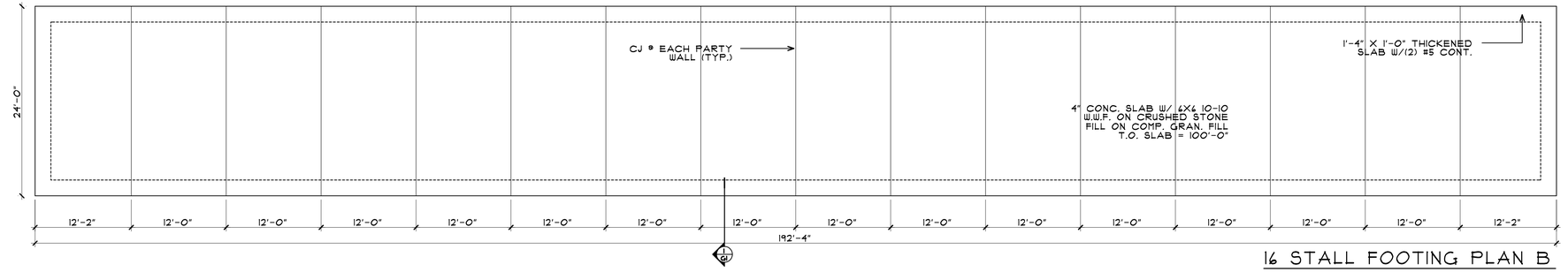
Project No. 14082

Issue Date: 3-9-15

Revision: -

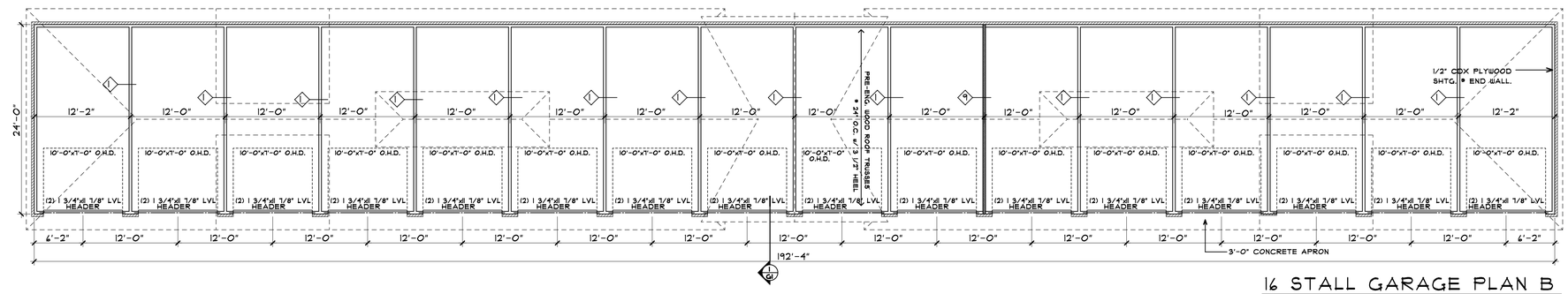
A7

OF 8



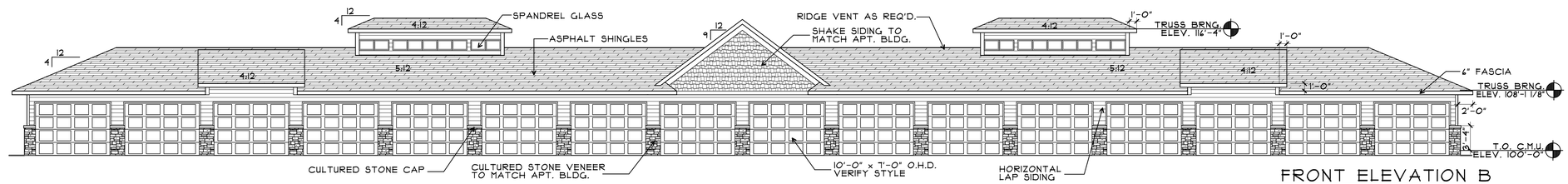
16 STALL FOOTING PLAN B

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



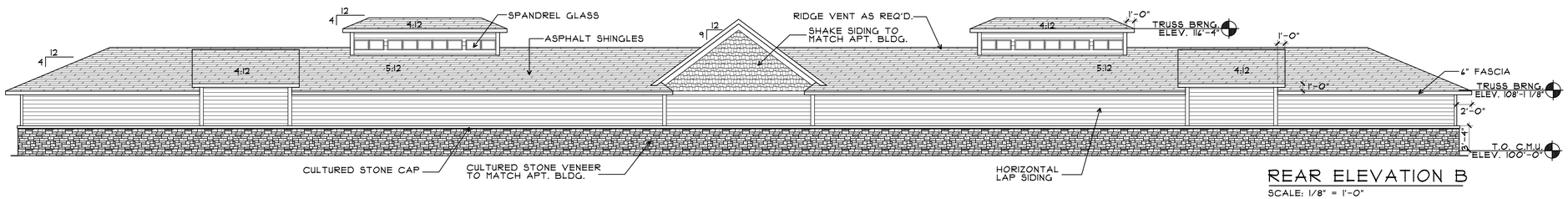
16 STALL GARAGE PLAN B

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



FRONT ELEVATION B

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



REAR ELEVATION B

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

WALL KEY

2 HOUR RATED FIRE SEPARATION WALL. MUST EXTEND FROM TOP OF FLOOR SLAB TO UNDERSIDE OF ROOF DECK ABOVE

NO MECHANICAL, ELECTRICAL OR PLUMBING ALLOWED WITHIN THE WALL

1 WALL TYPE	2 WALL TYPE	9 WALL TYPE
2x4 STUD @ 16" O.C.; 5/8" GYPSUM BOARD EACH SIDE; 4 3/4"	2x6 STUD @ 16" O.C.; 5/8" GYPSUM BOARD EACH SIDE; 6 3/4"	2x4 STUD @ 16" O.C.; (2) LAYERS 5/8" GYPSUM BOARD EACH SIDE; SEE U.L. DETAIL SHEET FOR FASTENERS, SPACING AND TYPE OF GYPSUM BOARD; 6"
SCALE: 3/4"=1'-0"	SCALE: 3/4"=1'-0"	SCALE: 3/4"=1'-0"
S.T.C. - 35	S.T.C. 30-34	S.T.C. - 43
RATING - NONE (LOAD BEARING)	RATING - NONE (LOAD BEARING)	RATING - 2 HOUR (LOAD BEARING)
U.L. DESIGN NO.		U.L. DESIGN NO. U301
		G.A. DESIGN NO. WP 4135

PRELIMINARY

COLE GROUP ARCHITECTS LLC.
216 Park Avenue South
Suite 102
Saint Cloud, MN 56301
(320) 654-6570
www.colegrouparchitects.com

These documents are not valid for building permit unless signed in ink and oversealed. Copies are not valid.

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 Architect under the laws of the state of MINNESOTA

Date _____ # 22288

Name NORMAN E. COLE Signature _____

FILE: 14082G COM: 4 PLOTTED: 3-9-15

PROPOSED:
PARKVIEW EAST APARTMENTS
RAMSEY, MN

Project No. 14082
Issue Date: 3-9-15
Revision: -

A8
OF 8

CITY OF RAMSEY, MN

CIVIL CONSTRUCTION PLANS FOR

PARKVIEW EAST APARTMENT COMPLEX

GRADING, AGGREGATE BASE, SANITARY SEWER, WATERMAIN, STORM SEWER,
PEDESTRIAN CURB RAMPS, CONCRETE SIDEWALK, & BITUMINOUS SURFACING.
MAY, 2015



1000 0 1000
SCALE FEET

MAP OF THE
CITY OF RAMSEY
ANOKA COUNTY, MN

SHEET INDEX

SHEET NO.	TITLE
C.0	TITLE SHEET
C1.0	LEGEND
C1.1 - C1.5	DETAILS
C1.6	TYPICAL SECTIONS
C1.7	INTERSECTION DETAILS AND CONSTRUCTION NOTES
C2.0	SWPPP
C2.1	SWPPP
C2.2	SWPPP
C2.3	EXISTING CONDITIONS AND REMOVALS
C2.4	SITE PLAN
C2.5	GRADING AND STORM UTILITY PLAN
C2.6	EROSION CONTROL PLAN
C2.7	STORM UNDERGROUND STORAGE
C2.8	LANDSCAPE/TREE PLAN
C3.0	PLAN AND PROFILE - 145TH AVENUE NW
C3.1	PLAN AND PROFILE - PARKVIEW SITE
C3.2	STORM PROFILES - PARKVIEW SITE

THIS PLAN CONTAINS 21 SHEETS

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.

CODY L. HOLMES REG. NO. 49143 DATE: 3/3/2015

SCALES

PLAN 0' 20'
PROFILE 0' 20' HORIZ.
0' 5' VERT.
INDEX MAP 0' 500'

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_TTL.dwg 3/3/15 3:42 pm



PROJECT LOCATION
ANOKA COUNTY, MN

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 612-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

PROJECT DATUM:
HORIZONTAL: Anoka County Coordinates (1996 Adjustment)
VERTICAL: NGVD 29

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

RECORD DRAWING INFORMATION
OBSERVER:
CONTRACTOR:
DATE:

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
TITLE SHEET

SHEET C.0

EXISTING

- IRON PIPE MONUMENT SET
- MONUMENT FOUND
- CAST IRON MONUMENT FOUND
- STONE MONUMENT FOUND
- POST SET
- BENCH MARK
- AUTO SPRINKLER
- ANTENNA
- AIR CONDITIONER
- ANCHOR
- AIR PUMP
- APRON
- BASKETBALL HOOP
- BIRD FEEDER
- BENCH
- BRACE POLE
- CATCH BASIN
- CLOTHES LINE POLE
- CONTROL POINT
- CLEAN OUT
- COMMUNICATION PEDESTAL
- CURB STOP VALVE
- DITCH TOP
- DRINKING FOUNTAIN
- DOWN SPOUT
- ELECTRIC MANHOLE
- ELECTRIC METER
- ELECTRIC PEDESTAL
- ELECTRIC TRANSFORMER
- EXHAUST VENT
- FLAG POLE
- FILL PIPE
- GAS MANHOLE
- GAS REGULATOR
- GAS VALVE
- GAS METER
- ACCESS GRATE
- HANDICAPPED PARKING
- HAND HOLE
- HYDRANT
- IRRIGATION CONTROL VALVE
- LIGHT DECORATIVE
- LIGHT POLE
- MAILBOX
- METER
- POST
- MANHOLE
- LIFT STATION MANHOLE
- MONITORING WELL
- ORDER MICROPHONE
- PARK GRILL
- GAS PUMP
- POST INDICATOR VALVE
- PARKING METER
- SANITARY MANHOLE
- SATELLITE DISH
- SEMAPHORE TRAFFIC LIGHT
- SIGNAL BOX
- SIGNAL POLE - RR
- SOIL BORING
- SIREN
- SPRINKLER HEAD
- STORM MANHOLE
- TELEPHONE MANHOLE
- PUBLIC TELEPHONE
- TILE INLET
- TILE RISER
- TRAFFIC ARM BARRIER
- TRAFFIC SIGN
- TRANSMISSION TOWER
- UTILITY POLE
- VACUUM
- VENT PIPE
- DECIDUOUS TREE
- CONIFEROUS TREE
- STUMP
- BUSH
- WELL
- WATER MANHOLE
- WATER METER
- WATER SPIGOT
- WATER VALVE
- WETLAND / MARSH
- WETLAND - DELINEATED

PROPOSED

- ALIGNMENT/CENTERLINE (22+00)
- RIGHT-OF-WAY LINE
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS
- CURB & GUTTER
- CURB & GUTTER (OUT)
- BITUMINOUS EDGE
- CONCRETE EDGE
- GRAVEL EDGE
- SILT FENCE-PREASSEMBLED
- SILT FENCE-HEAVY DUTY
- EROSION PROTECTION AT INLET
- MANHOLE
- CATCH BASIN
- STORM INLET
- APRON
- STORM SEWER
- PERFORATED PIPE DRAIN
- STORM DRAIN TILE
- CULVERT W/APRON
- STORM MANHOLE NUMBER (1)
- SANITARY SEWER
- SANITARY FORCEMAIN
- SANITARY SEWER SERVICE
- SANITARY LIFT STATION
- SANITARY MANHOLE
- SANITARY MANHOLE NUMBER (A)
- WATERMAIN
- WATERMAIN SERVICE
- WATER SYSTEM MANHOLE
- HYDRANT
- HYDRANT W/ VALVE
- VALVE
- CURBSTOP
- BEND
- REDUCER
- CROSS
- TEE
- CAP
- SLEEVE
- SIGN
- LIGHT POLE
- GUARD RAIL
- SOIL BORING (B-?)
- WETLAND
- BUSH
- CONIFEROUS TREE
- DECIDUOUS TREE

- OVERHEAD ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- GAS LINE
- FIBER OPTIC LINE
- UNDERGROUND COMMUNICATIONS LINE
- OVERHEAD UTILITY LINE
- WATER SYSTEM
- STORM SEWER
- TILE LINE
- SANITARY SEWER
- SANITARY FORCEMAIN
- CULVERT
- INTERMEDIATE CONTOURS
- INDEX CONTOURS
- COUNTY LINE
- CITY LIMITS
- SIXTEENTH LINE
- QUARTER LINE
- SECTION LINE
- ADJACENT LINES
- EASEMENT LINE
- BUILDING SETBACK LINE
- FENCE LINE
- GUARD RAIL
- ACCESS CONTROL LINE
- CENTERLINE
- PROPERTY / LOT LINE
- ROAD RIGHT-OF-WAY LINE
- RAILROAD RIGHT-OF-WAY LINE
- GRAVEL EDGE
- BITUMINOUS EDGE
- CONCRETE EDGE
- CURB & GUTTER
- WATER EDGE
- WATER CENTERLINE
- HIGHWATER LINE
- WETLAND EDGE
- SWALE CENTERLINE
- RAILROAD TRACKS
- TREE DRIP LINE

NOTE: DETAILS NOT TO SCALE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_LEG.dwg 3/3/15 3:39 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

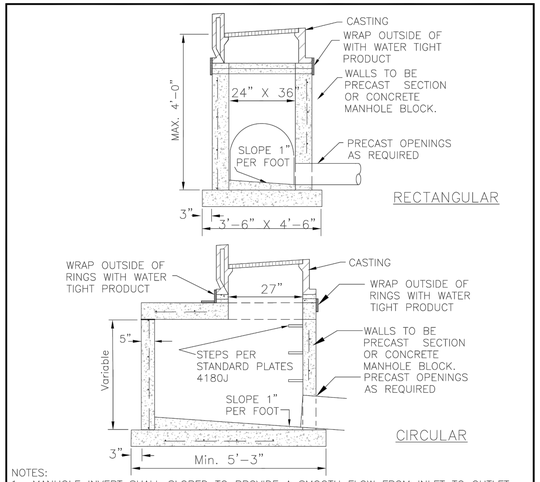
DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
LEGEND

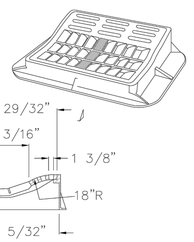
SHEET C1.0



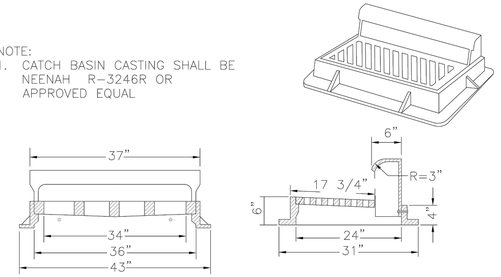
NOTES:
1. MANHOLE INVERT SHALL SLOPED TO PROVIDE A SMOOTH FLOW FROM INLET TO OUTLET
2. CONCRETE BASE SHALL BE 6" POURED IN PLACE OR 5" PRECAST SLAB.
3. CONCRETE ADJUSTING RINGS TO BE INSTALLED MAX.7–2" RINGS, MIN 2–2" RINGS
4. GROUT BETWEEN RINGS,SHIMS SHALL BE METAL, CONCRETE OR PLASTIC
5. INSPECTION OF MANHOLE REQUIRED BEFORE BACKFILLING
6. A 10 GAUGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL STORM LINES.
7. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE
8. STEPS ARE REQUIRED IF STRUCTURE FROM THE CASTING TO THE INVERT IS GREATER THAN 4 FEET
9. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS

APPROVED DATE 4–2007	City of RAMSEY	STANDARD DETAILS CATCH BASIN CITY PLATE No. STO–7

NOTE:
1. CATCH BASIN CASTING SHALL BE NEENAH R–3501–TB OR APPROVED EQUAL
2. ILLUSTRATION R–3501–TB

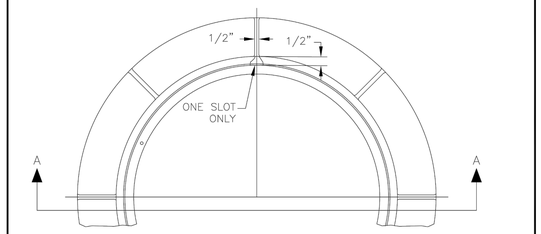


NOTE:
1. CATCH BASIN CASTING SHALL BE NEENAH R–3246R OR APPROVED EQUAL

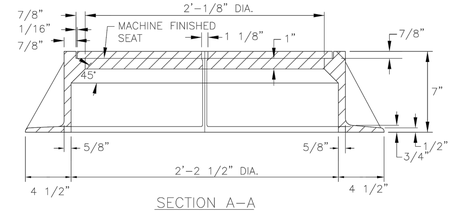


STANDARD CATCHBASIN CASTING

APPROVED DATE 2–2007	City of RAMSEY	STANDARD DETAILS STORMWATER CASTINGS CITY PLATE No. STO–2

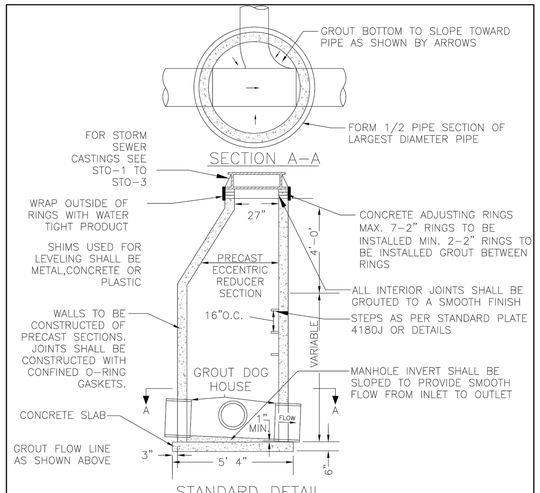


HALF TOP VIEW



SECTION A–A
7" CASTING

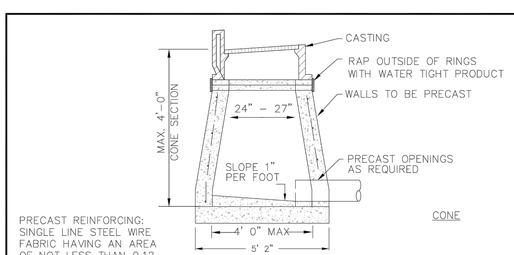
APPROVED DATE 7–93	City of RAMSEY	STANDARD DETAILS RING CASTING FOR NON–INLET STRUCTURE CITY PLATE No. STO–1



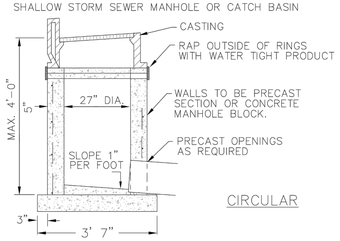
STANDARD DETAIL

NOTES:
1. MANHOLE INVERT SHALL SLOPED TO PROVIDE A SMOOTH FLOW FROM INLET TO OUTLET
2. INSPECTION OF MANHOLE REQUIRED BEFORE BACKFILLING
3. ALL INLET INVERTS TO BE 0.10 ABOVE OUTLET INVERTS UNLESS OTHERWISE NOTED
4. A 10 GAUGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL STORM LINES.
5. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE
6. STEPS ARE REQUIRED IF STRUCTURE FROM THE CASTING TO THE INVERT IS GREATER THAN 4 FEET
7. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS

APPROVED DATE 1–2006	City of RAMSEY	STANDARD DETAILS STORM MANHOLE CATCH BASIN CITY PLATE No. STO–4



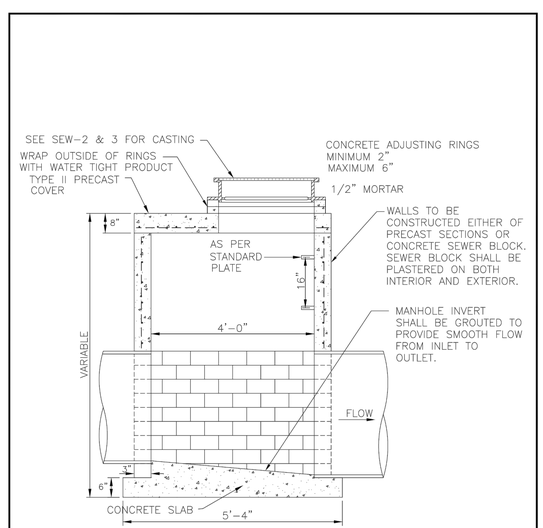
SHALLOW STORM SEWER MANHOLE OR CATCH BASIN



SHALLOW STORM SEWER MANHOLE OR CATCH BASIN

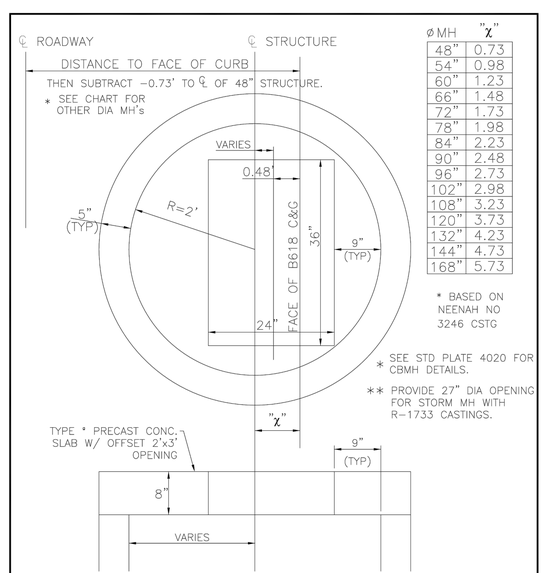
NOTES:
1. MANHOLE INVERT SHALL BE SLOPED TO PROVIDE A SMOOTH FLOW FROM INLET TO OUTLET.
2. CONCRETE BASE SHALL BE 6" POURED IN PLACE OR 5" PRECAST SLAB.
3. CONCRETE ADJUSTING RINGS TO BE INSTALLED MAX 7–2" RINGS, MIN 2–2" RINGS.
4. GROUT BETWEEN RINGS
5. SHIMS USED FOR LEVELING SHALL BE METAL OR CONCRETE.
6. A 10 GAGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL SEWER LINES.
7. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE
8. TRACER WIRED ARE TO END IN STRUCTURES, AT FINIHED GRADE ON ALL SERVICES AND STUBS.

APPROVED DATE 6–2008	City of RAMSEY	STANDARD DETAILS STORM AREA INLET CITY PLATE No. STO–6



SLAB–TOP MANHOLE
N.T.S.

APPROVED DATE 9–2011	City of RAMSEY	STANDARD DETAILS STANDARD DETAILS SLAB–TOP MANHOLE CITY PLATE No. SEW–6



ØMH	"X"
48"	0.73
54"	0.98
60"	1.23
66"	1.48
72"	1.73
78"	1.98
84"	2.23
90"	2.48
96"	2.73
102"	2.98
108"	3.23
120"	3.73
132"	4.23
144"	4.73
168"	5.73

* BASED ON NEENAH NO 3246 CSTG

* SEE STD PLATE 4020 FOR CBMH DETAILS.

** PROVIDE 27" DIA OPENING FOR STORM MH WITH R–1733 CASTINGS.

APPROVED DATE 4–2005	City of RAMSEY	STANDARD DETAILS SLAB TOP MANHOLE FOR CBMH CITY PLATE No. STO–5

NOTE: DETAILS NOT TO SCALE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_DET.dwg 3/3/15 3:13 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED	CLH
DRAWN	JEN
CHECKED	CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
DETAIL SHEET

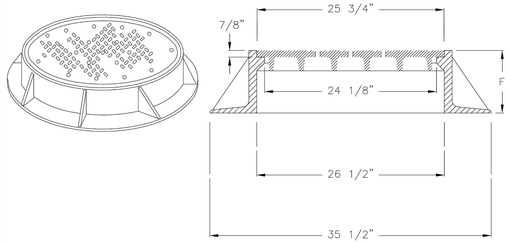
SHEET C1.1

R–1733 Series
Manhole Frames, Vented Lids

Heavy Duty

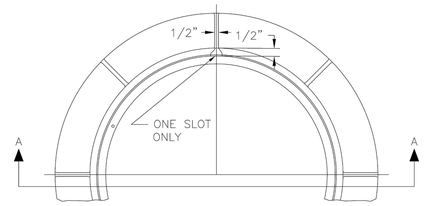
Specify:
1. catolog number.
2. Solid lid with two lift holes.

Catalog No.	Height F	Wt. Lbs.
R–1733–1	4"	405
R–1733	7"	425
R–1733–A	8"	485
R–1733–B	9"	490
R–1733–C	10"	500

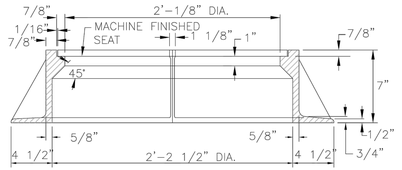


SANITARY SEWER CASTING

APPROVED		STANDARD DETAILS STANDARD DETAILS Sanitary SEWER CASTING
DATE 9–2011	City of RAMSEY	CITY PLATE No. SEW–3



HALF TOP VIEW

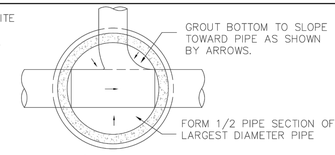


SECTION A–A
7" CASTING

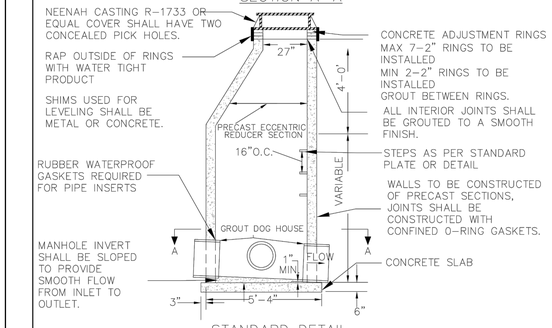
RING CASTING FOR
SANITARY SERVICE STRUCTURES

APPROVED		STANDARD DETAILS STANDARD DETAILS Sanitary SEWER SERVICE
DATE 9–2011	City of RAMSEY	CITY PLATE No. SEW–2

A 5 FT. GREEN CARSONITE MARKER SHALL BE INSTALLED NEXT TO ALL STRUCTURES NOT IN A PAVED SURFACE.



SECTION A–A



STANDARD DETAIL

NOTES:
1. A 10 GAGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL SEWER LINES.
2. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE.
3. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS.
4. 6" BASE FOR ALL MANHOLES LESS THAN 14 FT. OF DEPTH, INCREASE BASE THICKNESS 2" PER 6 FT. OF DEPTH BEYOND 14 FT.
5. 5" PRECAST BASE MAY BE USED FOR MANHOLES LESS THAN 14 FT. DEEP.
6. ALL INVERTS TO BE 0.10' ABOVE OUTLET,

APPROVED		STANDARD DETAILS MANHOLE
DATE 1–2006	City of RAMSEY	CITY PLATE No. SEW–4

NOTE: DETAILS NOT TO SCALE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_DET.dwg 3/3/15 3:13 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

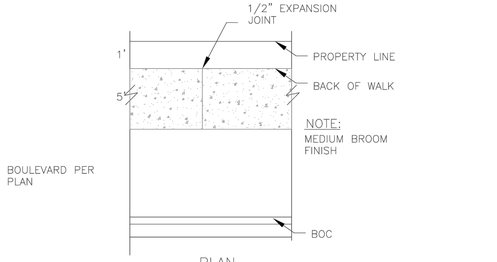
DESIGNED	DRAWN	CHECKED
CLH	JEN	CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

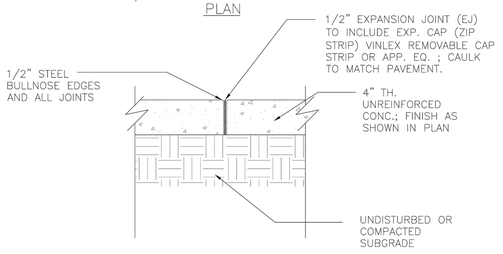
REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
DETAIL SHEET

SHEET
C1.2



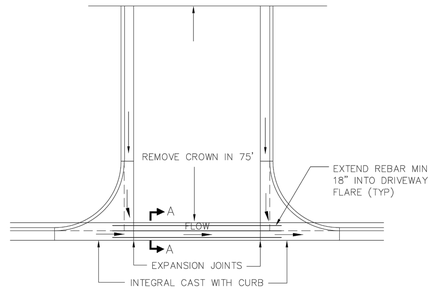
PLAN



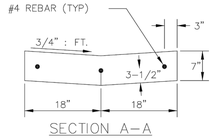
SECTION W/ GRANULAR BASE MATERIAL

NOT TO SCALE

APPROVED		STANDARD DETAILS
DATE 7-2011	City of RAMSEY	CONCRETE SIDEWALK
		CITY PLATE No. STR-03



PLAN

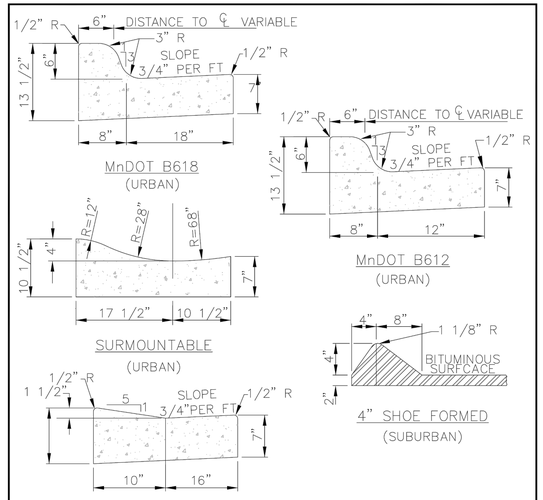


SECTION A-A

CONCRETE VALLEY GUTTER

NOTES:
1. WITH REMOVAL OF EXISTING CURB AT A STREET, MILL BITUMINOUS TO A DEPTH OF 1.5" ANS A WIDTH OF 18" IN EXISTING STREET.
2. TO BE USED WHENEVER CROSS DRAINAGE IS < 2%

APPROVED		STANDARD DETAILS
DATE 4-2007	City of RAMSEY	CROSS GUTTER
		CITY PLATE No. STR-2

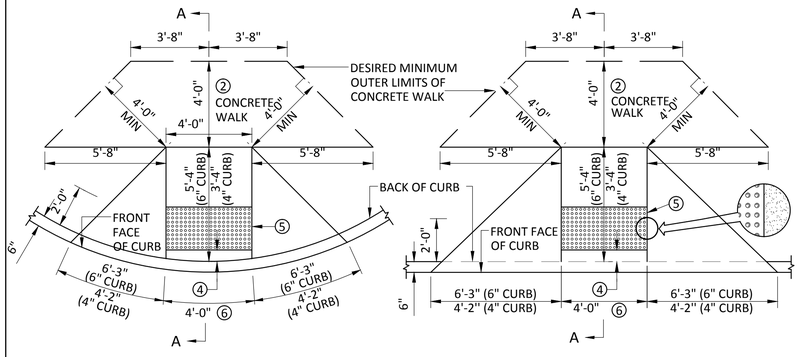


DRIVEWAY FOR B618

NOTES:

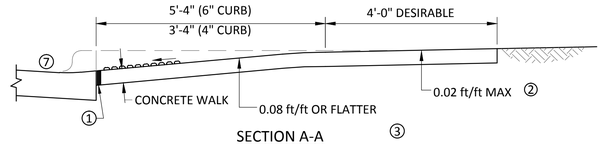
1. ON WEAR COURSE MILL THE EXISTING BITUMINOUS 1.5" BY 24" IN FRONT OF THE REPLACEMENT CURB.
2. ON BASE COURSE SAW CUT AND REMOVE EXISTING BITUMINOUS 18" IN FRONT OF THE REPLACEMENT CURB.

APPROVED		STANDARD DETAILS
DATE 04-12	City of RAMSEY	CURB AND GUTTER
		CITY PLATE No. STR-1



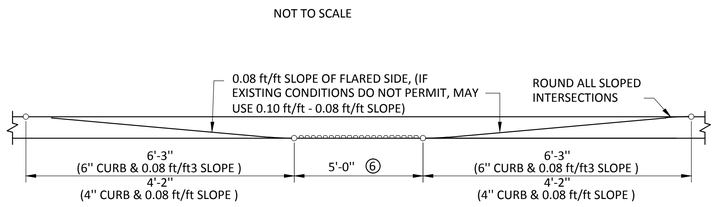
PLAN VIEW OF DIAGONAL RAMP

PLAN VIEW OF PERPENDICULAR RAMP



SECTION A-A ③

NOT TO SCALE



ELEVATION OF RAMP

NOTES:

① 1/2 INCH PREFORMED JOINT FILLER MATERIAL, AASHTO M 213.

② WHEN POSSIBLE, PROVIDE A PATH OF TRAVEL 4'-0" WIDE BEHIND THE PEDESTRIAN RAMP. A RELATIVELY FLAT 4'x4' LANDING WILL ALLOW WHEELCHAIRS TO NAVIGATE AROUND THE PEDESTRIAN RAMP.

③ WHEN A MEDIAN IS NOT WIDE ENOUGH FOR TWO PEDESTRIAN RAMPS AND A 48" LANDING BETWEEN THEM, THE PEDESTRIAN CROSSING SHALL BE CUT THROUGH THE MEDIAN AT STREET LEVEL.

④ 4" to 6" IS THE REQUIRED OFFSET OF THE DETECTABLE WARNINGS/TRUNCATED DOME AREA FROM THE BACK OF CURB.

⑤ ADA REQUIRED TRUNCATED DOME AREA SHALL BE 2'-0" MIN. IN DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH (4'-0" TYP.) OF THE CURB RAMP. THIS 2'-0" BY 4'-0" WIDTH (TYP.) TRUNCATED DOME AREA SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKING SURFACE. THE ENTIRE TRUNCATED DOME AREA SHALL BE A DARK COLOR (RED, BLACK, DARK GRAY, OR BRIGHT YELLOW) WHEN THE ADJACENT SIDEWALK IS A "WHITE" OR LIGHT GRAY CEMENT COLOR.

⑥ 5'-0" FOR NEW CONSTRUCTION.

⑦ FLATTEN GUTTER OF CURB 0.02% AT TRUNCATED DOMES.

PED RAMP, WITH TRUNCATED DOMES

NOT TO SCALE

NOTE: DETAILS NOT TO SCALE

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

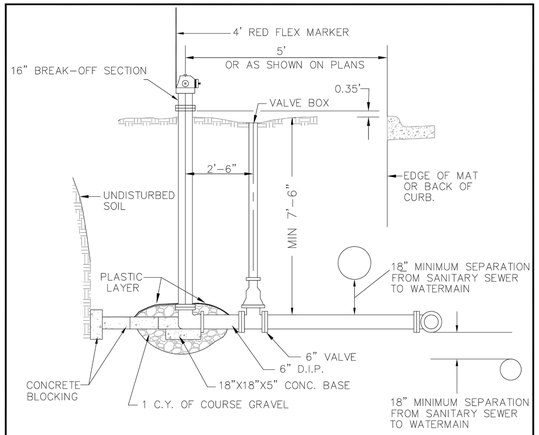
BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
DETAIL SHEET

SHEET C1.3

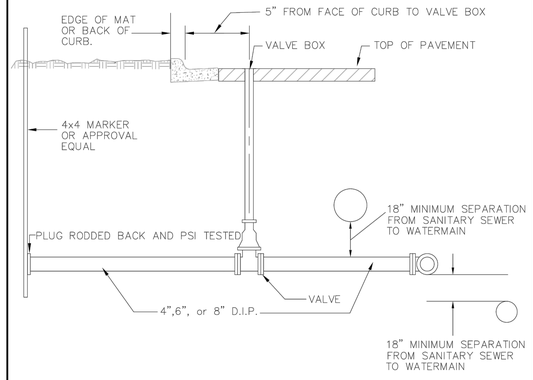
© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_DET.dwg 3/3/15 3:13 pm



NOTES:

1. HYDRANTS TO BE ORDERED FOR 8'-0" BURY. IN AREAS OF EXTRA DEPTH ON THE WATERMAIN, HYDRANTS EXTENSIONS MAY BE REQUIRED.
2. HYDRANTS SHALL BE BLOCKED OR TIED TO THE TEE AT MAIN WITH 2-3/4" DIAMETER TIE RODS. ALL TIE RODS TO BE COAL TAR COATED AFTER INSTALLATION. RESTRAINED JOINT PIPE AND RETAINING GLANDS MAY BE USED.
3. TOP NUT OF HYDRANT 2.5' ABOVE TOP BACK OF CURB OR BITUMINOUS SURFACE.
4. HYDRANTS BURIED BELOW WATER TABLE, DRAIN HOLES NEED TO BE PLUGGED AND HYDRANT MARKED BY PAINTING 5" CAP YELLOW.
5. BRUSH PAINT ALL HYDRANTS AFTER INSTALLATION IS COMPLETE.

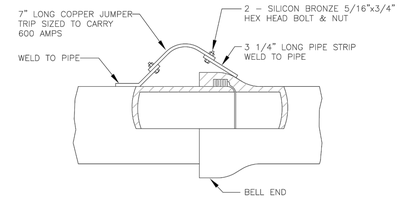
APPROVED DATE 4-2005	City of RAMSEY	STANDARD DETAILS HYDRANT
		CITY PLATE No. WAT-3



NOTES:

1.SHALL BE BLOCKED OR TIED TO THE MAIN WITH 2-3/4" DIAMETER TIE RODS. ALL TIE RODS TO BE COAL TAR COATED AFTER INSTALLATION. RESTRAINED JOINT PIPE AND RETAINING GLANDS MAY BE USED.

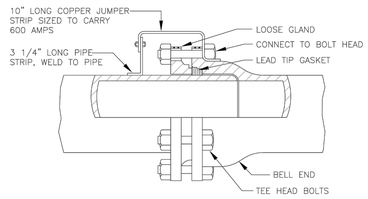
APPROVED DATE 2-2013	City of RAMSEY	STANDARD DETAILS COMMERCIAL SERVICE
		CITY PLATE No. WAT-6



PUSH ON JOINT

NOTE: DO NOT PASS CURRENT THROUGH PIPE UNLESS PIPE IS FULL OF WATER.

ALTERNATE METHOD BY AMERICAN CAST -IRON USING 4 COPPER CONTACT STRIPS IS AN APPROVED EQUAL TO ABOVE



MECHANICAL JOINT

APPROVED DATE 7-93	City of RAMSEY	STANDARD DETAILS JOINT CONNECTION FOR ELECTRICAL CONDUCTIVITY
		CITY PLATE No. WAT-1

NOTE: DETAILS NOT TO SCALE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R1610947S\CAD\109475_DET.dwg 3/3/15 3:13 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

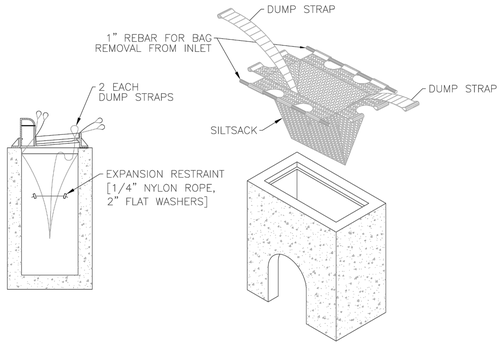
DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
DETAIL SHEET

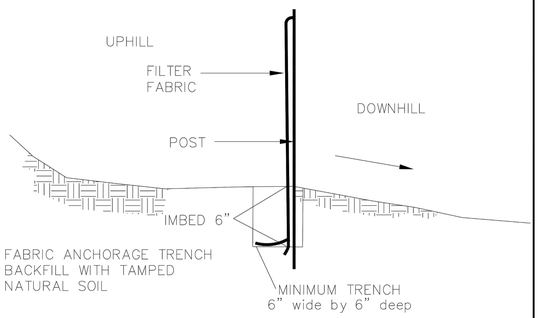
SHEET C1.4



CATCH BASIN SEDIMENT FILTER SACK

NOT TO SCALE

APPROVED DATE 7-2011	City of RAMSEY	STANDARD DETAILS CB SEDIMENT FILTER SACK
		CITY PLATE No. STO 11

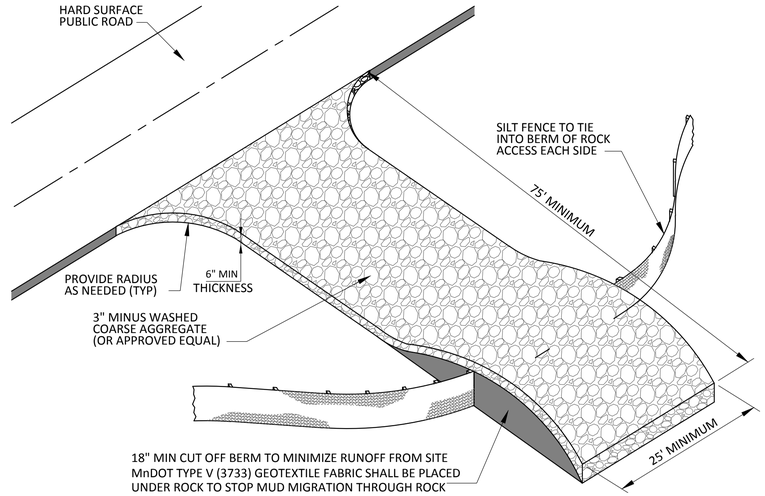


INSTALL AS PER FILTER FABRIC MANUFACTURER'S RECOMMENDATIONS

SILT FENCE DETAIL

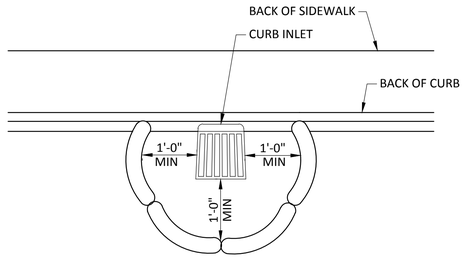
NO SCALE

APPROVED DATE 2-2005	City of RAMSEY	STANDARD DETAILS SILT FENCE
		CITY PLATE No. ERO-3

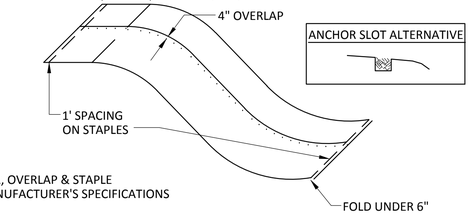


ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTE:
THIS INLET PROTECTION IS USED DURING ROUGH GRADING ONLY, USE BEFORE ROAD IS OPEN TO TRAFFIC OR IS PAVED



NOTE:
ANCHOR, OVERLAP & STAPLE PER MANUFACTURER'S SPECIFICATIONS

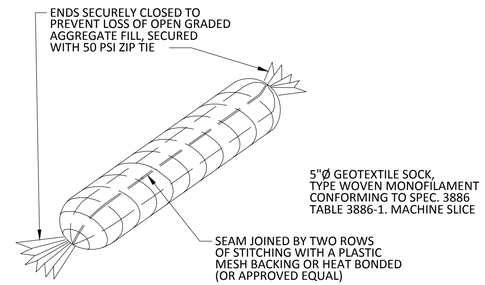
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

FILL ROCK LOG WITH 45 LBS. OF OPEN GRADED AGGREGATE CONSISTING OF SOUND, DURABLE PARTICLES OF CRUSHED QUARRY ROCK OR GRAVEL CONFORMING TO THE FOLLOWING GRADATION.

GRADATION	
SIEVE SIZE	PERCENT PASSING
1 1/2"	100
1"	95-100
3/4"	65-95
3/8"	30-65
NO 4	10-35
NO 10	3-20
NO 40	0-8
NO 200	0-3

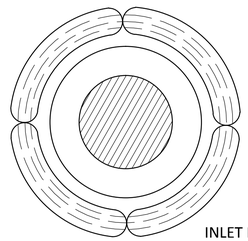
NOTE:
CRUSHED CONCRETE OR BITUMINOUS SHALL NOT BE USED FOR OPEN GRADED AGGREGATE.



INLET PROTECTION
ROCK BAG

NOT TO SCALE

PAYMENT SHALL INCLUDE ALL MATERIALS, FILLING OF LOG, PLACEMENT, MAINTENANCE & REMOVAL; 80% OF BID PRICE SHALL BE PAID UPON PROPER PLACEMENT WITH THE FINAL 20% PAID UPON REMOVAL



INLET PROTECTION WITH ROCK LOG

NOTE: DETAILS NOT TO SCALE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_DET.dwg 3/3/15 3:13 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

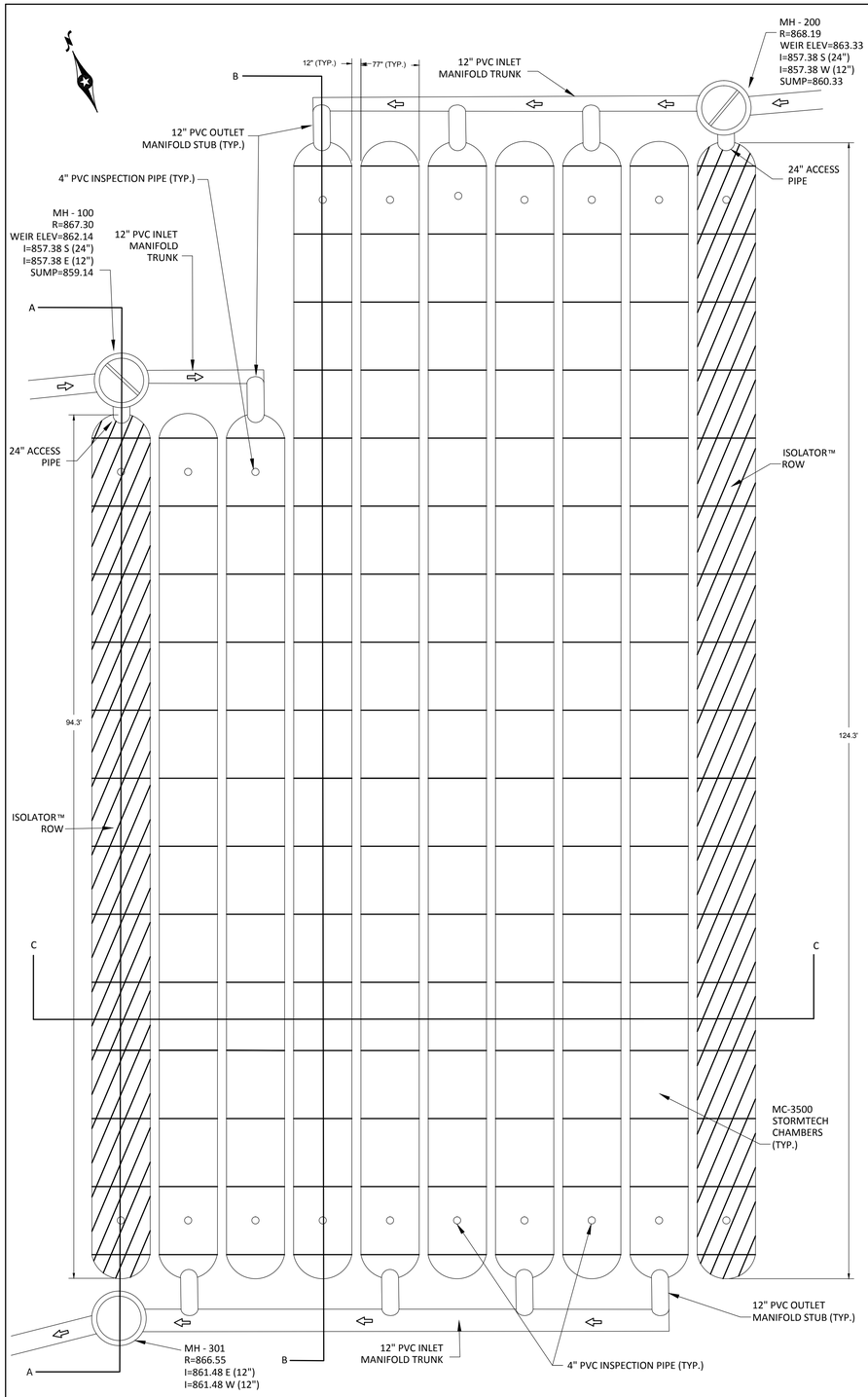
DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

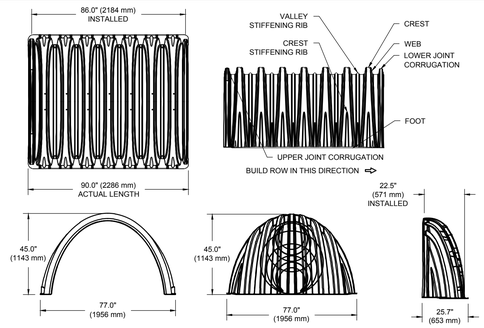
REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
DETAIL SHEET

SHEET C1.5



NOTE: DETAILS NOT TO SCALE



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	178.9 CUBIC FEET	(5.06 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

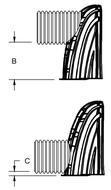
NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 22.5"	(1956 mm X 1143 mm X 571 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	46.0 CUBIC FEET	(1.30 m³)
WEIGHT	50.0 lbs.	(22.7 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

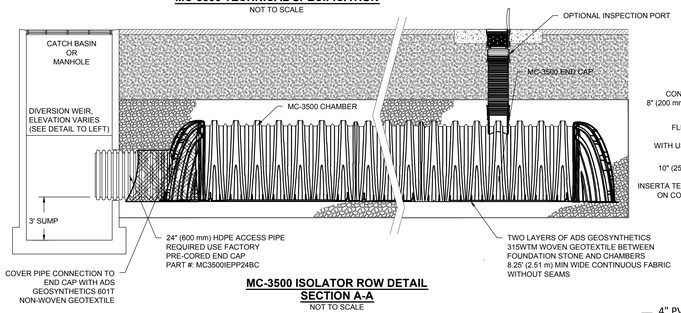
PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP30BC	30" (750 mm)	---	



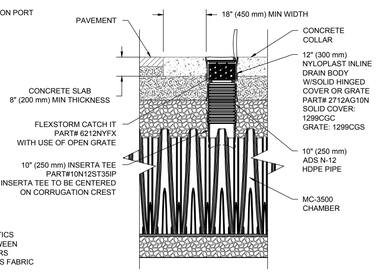
NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS.
CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm)
THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHTEST POSSIBLE FOR THE PIPE SIZE.

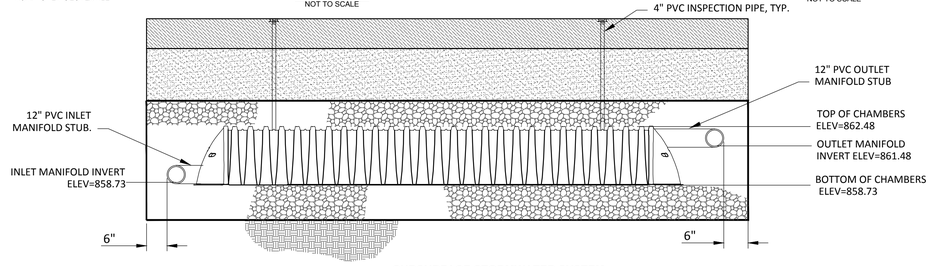
MC-3500 TECHNICAL SPECIFICATION
NOT TO SCALE



MC-3500 ISOLATOR ROW DETAIL
SECTION A-A
NOT TO SCALE



MC-3500 INSPECTION PORT DETAIL
NOT TO SCALE

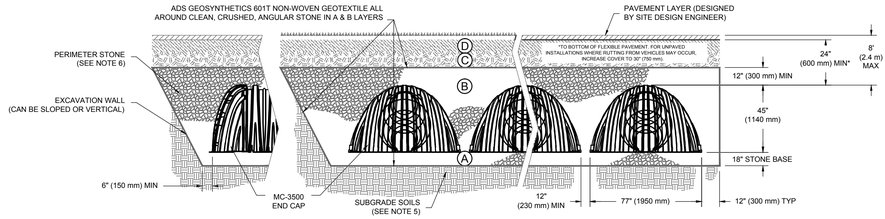


SUBSURFACE STORMWATER SYSTEM
SECTION B-B
NOT TO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



SECTION C-C
NOT TO SCALE

Notes:
1. MC-3500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
5. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
7. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

INSPECTION AND MAINTENANCE NOTES:

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES:
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_DET.dwg 3/3/15 3:13 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

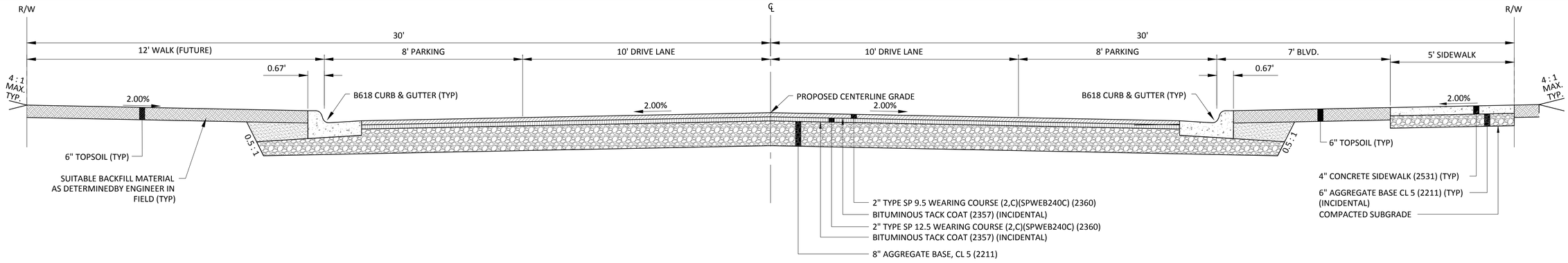
DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

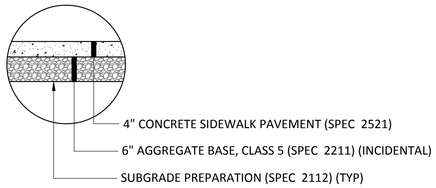
REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
UNDERGROUND STORAGE DETAILS

SHEET C1.6

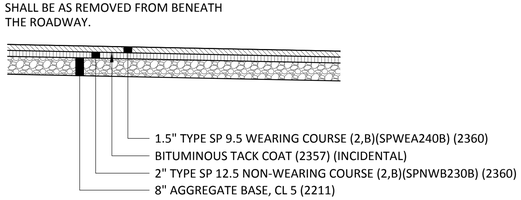


TYPICAL 36'-0" STREET SECTION
NOT TO SCALE

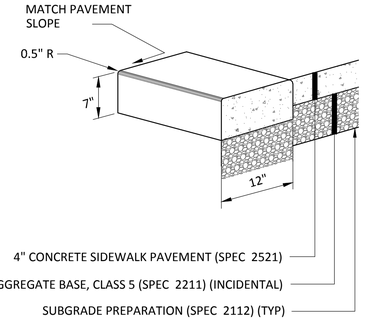


4" CONCRETE WALK
NOT TO SCALE

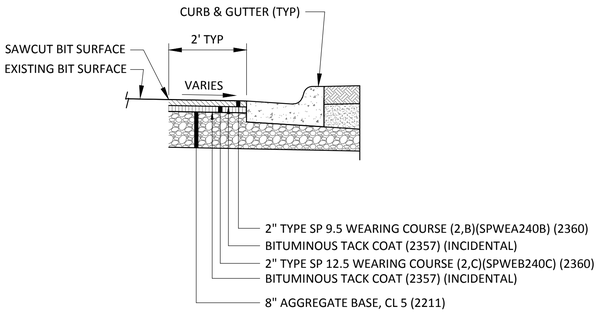
NOTE:
ALL ORGANIC OR UNSUITABLE MATERIAL SHALL BE AS REMOVED FROM BENEATH THE ROADWAY.



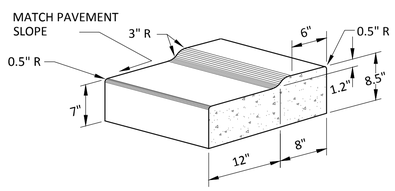
TYPICAL BITUMINOUS PARKING LOT SECTION
NOT TO SCALE



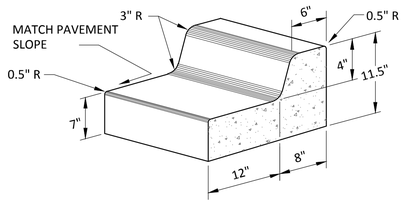
CONCRETE RIBBON AT BUILDING ENTRANCE
NOT TO SCALE



BITUMINOUS REPAIR, CURB AND GUTTER INSTALLATION
NOT TO SCALE



CONCRETE CURB & GUTTER AT TRANSISITION AREAS
NOT TO SCALE



CONCRETE CURB & GUTTER DESIGN B412
NOT TO SCALE

NOTE: DETAILS NOT TO SCALE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_TYP.dwg 3/3/15 4:18 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

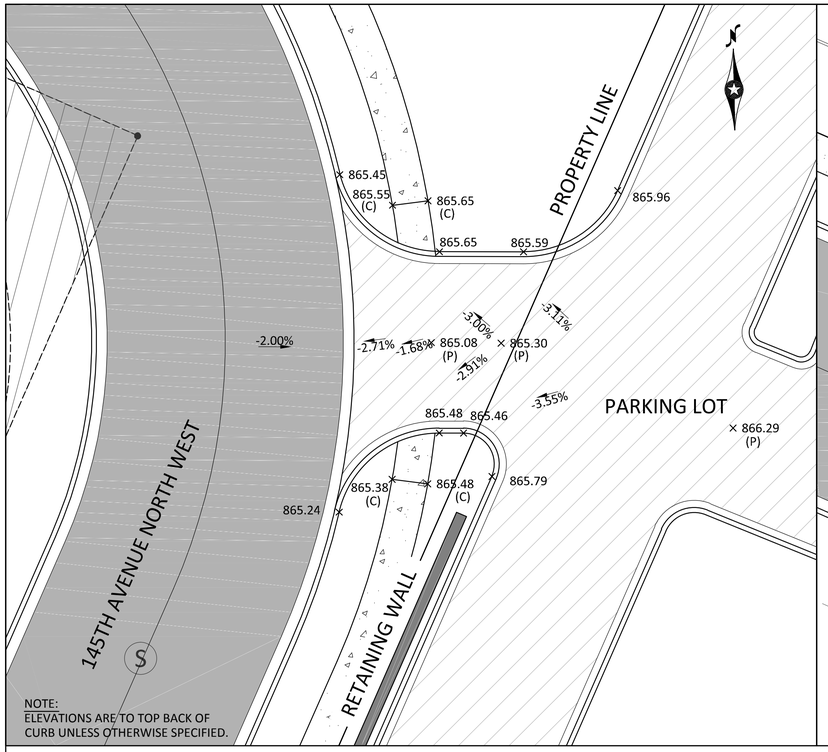
DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

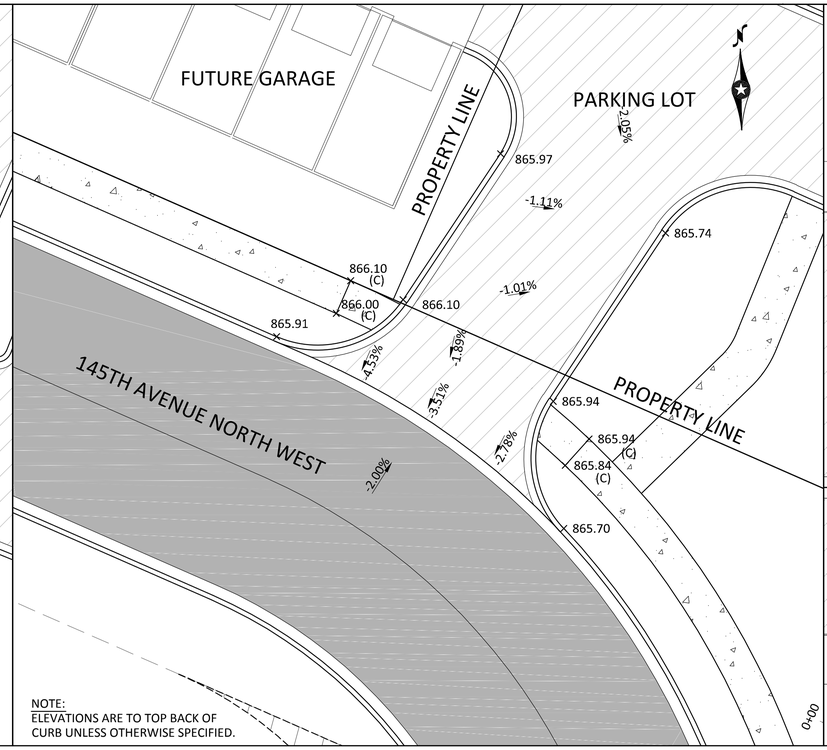
PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
TYPICAL SECTIONS

SHEET C1.7



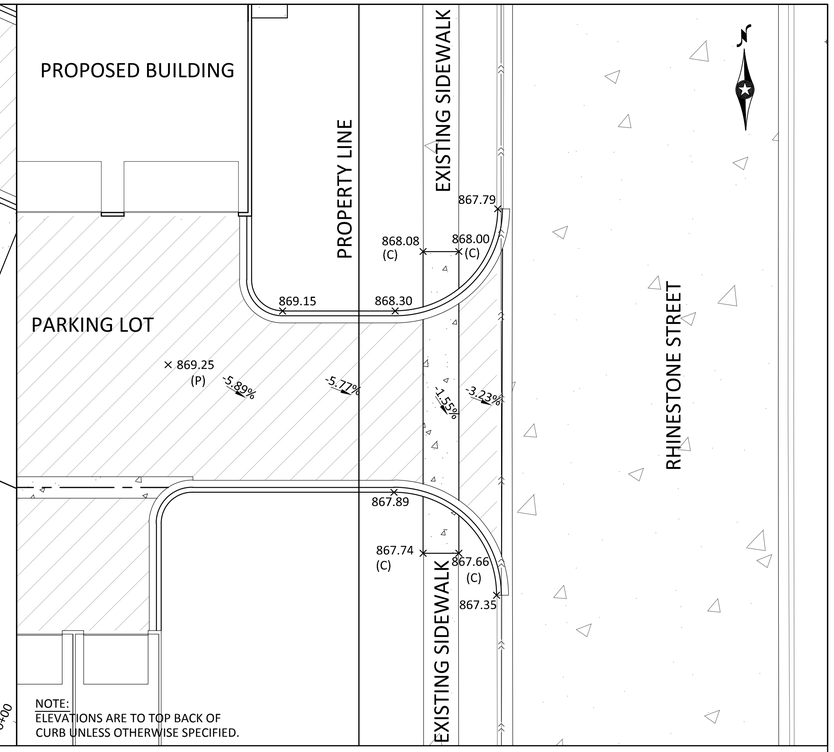
145TH AVENUE NORTH WEST & SOUTH PARKING LOT ENTRANCE

SCALE: 1' = 10'



145TH AVENUE NORTH WEST & NORTH PARKING LOT ENTRANCE

SCALE: 1' = 10'



RHINESTONE STREET & EAST PARKING LOT ENTRANCE

SCALE: 1' = 10'

STORM SEWER TABLE

STRUCT.	ALIGNMENT	OFFSET STATION	OFFSET DIST. FROM ALIGN.	LT/RT	RIM ELEV. FLOW LINE	STRUCT. FLOW OUT ELEV.	FLOWS TO STRUCT.	FLOWS TO ELEV.	DRAINAGE STRUCTURE DESIGN DESIGN H	DRAINAGE STRUCTURE DESIGN R-1 (2'x3')	DRAINAGE STRUCTURE DESIGN 48"-4022	DRAINAGE STRUCTURE DESIGN 60"-4022	DRAINAGE STRUCTURE DESIGN 84" -4022	CASTING ASSEM. EACH	RC PIPE (DESIGN 3006) 12" CL V PIPE	RC PIPE (DESIGN 3006) 18" CL V PIPE	RC PIPE (DESIGN 3006) 24" CL V PIPE	PIPE GRADE	CONNECT TO EXISTING STM. SEWER PIPE	CONNECT TO EXISTING STM. SEWER STRUCTURE	NOTES
		FT	FT		FT	FT		FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	LIN FT	LIN FT	LIN FT	%	EACH	EACH	
100	STORM 100	11+58.37	0.00'	CL	867.30	859.38	STORAGE	859.38				7.92		R-1733			15	0.00			
101	STORM 100	11+04.90	0.00'	CL	867.42	859.60	100	859.38				7.82		R-1733			53	0.41			
102	STORM 100	10+31.12	0.00'	CL	865.14	861.14	101	860.60		4.00				R-3067-L	74			0.73			
103	STORM 100	11+03.81	78.88'	RT	865.00	860.00	101	859.60			5.00			R-3067-L			80	0.50			
104	STORM 100	11+04.09	105.69'	RT	864.85	860.85	103	860.72		4.00				R-3067-L	26			0.50			
200	STORM 200	26+65.41'	0.00'	CL	868.19	860.00	STORAGE	860.00			8.19			R-1733		45		0.00			
201	STORM 200	25+01.23'	0.00'	CL	867.90	861.46	200	860.03			6.44			R-3067-L		164		0.87			
202	STORM 200	23+13.94'	0.00'	CL	868.44	862.89	201	861.96		5.55				R-3067-L	187			0.49			
203	STORM 200	22+54.53'	0.00'	CL	868.02	863.19	202	862.89		4.83				R-3067-L	59			0.50			
204	STORM 200	22+08.10'	0.00'	CL	868.40	863.42	203	863.19			4.98			R-3067-L	46			0.50			
205	STORM 200	20+00.00'	0.00'	CL	868.46	864.46	204	863.42		4.00				R-3067-L	208			0.50			
300	Storm 300	31+65.58'	0.00'	CL	864.67	861.48	EXISTING	862.48'					3.19	R-3067-L					1		(2)
301	Storm 300	30+59.82'	0.00'	CL	866.55	861.48	300	861.68'			5.07			R-1733	106			0.76			
STORAGE	Storm 300	26+00.00	4.37'	RT	-	861.48	301	861.48						-	60			0.00			
400	STORM 400	40+00.00	0.00	CL	867.40	864.40	EXISTING 401	864.13	3.00					R-4342	27			1.00		1	
								TOTALS	3.00	22.38	29.68	15.74	3.19	14	793.00	209.00	148.00	6.76	1	1	

SANITARY SEWER TABLE

STRUCT.	ALIGNMENT	OFFSET STATION	OFFSET DIST. FROM ALIGN.	LT/RT	RIM ELEV. FLOW LINE	STRUCT. FLOW OUT ELEV.	FLOWS TO STRUCT.	FLOWS TO ELEV.	SANITARY STRUCTURE DESIGN H 48-4700C	SANITARY CASTING ASSEM.	8" PVC SDR 26 PIPE	PIPE GRADE	CONNECT TO EXISTING SAN SEWER PIPE	NOTES
		FT	FT		FT	FT		FT	LIN FT	EACH	LIN FT	%	EACH	
A	PRO SANITARY	0+00.00	0.00	CL	865.75	856.20	EXISTING	856.04	9.55	1	41	0.40	1	
D	PRO SANITARY	1+64.66	0.00	CL	868.71	856.96	A	856.30	11.75	1	165	0.40		
E	PRO SANITARY	4+47.16	0.00	CL	869.23	858.19	D	857.06	11.04	1	282	0.40		
SERVICE	PRO SANITARY	4+57.66	0.00	CL	-	858.33	E	858.29			10	0.40		
STUB	PRO SANITARY	1+64.66	66.15	LT		857.32	D	857.06			66	0.40		
								TOTALS	32.34	3	564.00	2.00	1	

NOTE: DETAILS NOT TO SCALE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_TYP.dwg 3/3/15 4:18 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

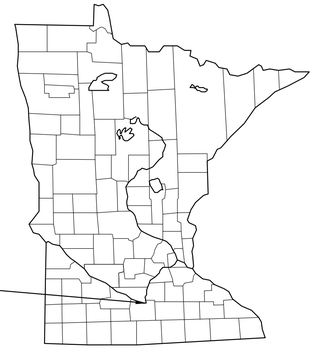
PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
INTERSECTION DETAILS & CONSTRUCTION NOTES

SHEET C1.8

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

<PROJECT NAME -YEAR>

CITY OF <ADD CITY>
<ADD COUNTY> COUNTY, MINNESOTA



RESPONSIBLE PARTIES:
The Contractor and Owner must apply for coverage under the MPCA's General Storm Water Permit for Construction Activity as required by the National Pollutant Discharge Elimination System (NPDES) Phase II program. Coverage under the permit will begin automatically 7 calendar days after the electronic submittal date or after the postmarked date of a complete application. [Longer time frames apply to sites that disturb areas greater than 50 acres.]

	COMPANY	CONTACT PERSON	PHONE
OWNER:			
SWPPP DESIGNER:	Bolton & Menk, Inc.	TIM OLSON	651-704-9970
CONTRACTOR:			
SITE MANAGER:			
PARTY RESPONSIBLE FOR LONG TERM O&M:			

Individuals listed above, including the SWPPP preparer, individual overseeing implementation of, revising, and amending the SWPPP, individuals performing or supervising the installation, maintenance and repair of BMPs must be trained. At least one individual present on the permitted project, or available on site within 72 hours, shall be trained in the applicable job duties. Documentation showing training commensurate with the job duties and responsibilities is required to be included in the SWPPP prior to any work beginning on the site. Copies of the SWPPP preparer information is included in the Project Manual. The Contractor shall provide information for the individual(s) overseeing implementation, supervising installation, maintenance, and repair of BMP's to be included in the Project Manual prior to the start of construction. This information shall be kept up to date until the project NOT is filed.

Documentation shall include:
a. Names of trained personnel associated with this project.
b. Dates of training, names of instructor(s) and entity providing training.
c. Content of training course or workshop including the number of hours trained.
d. As an alternative to a, b, and c listed above, a photocopy of a current Erosion and Stormwater Management card issued by the University of Minnesota can be attached to the SWPPP as suitable documentation of training.

SPECIAL ENVIRONMENTAL CONSIDERATIONS:

Was an environmental review required for this project or any part of a common plan of development or sale that includes all or any portion of this project?	NO
Does any portion of the site have the potential to affect threatened or endangered species or their critical habitat?	NO
Does any portion of this site discharge to a Calcareous fen and the letter of approval from the DNR is located in the Project Manual.	NO
Will any portion of the site potentially affect properties listed on the National Register of Historic Places or a known or discovered archeological site?	NO
Have any Karst features have been identified in the project vicinity?	NO
Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
Has the MN DNR promulgated "work in water restrictions" for any Public Water this site disharges to during fish spawning?	NO

charge

3. Peak flow rates and stormwater volumes to minimize erosion at outlets and downstream channel and stream bank erosion.
4. The range of soil particle sizes expected to be present on the site.

LEGEND

PROJECT BOUNDARY

IMPAIRED, SPECIAL OR PROTECTED WATERS

NATIONAL WETLANDS INVENTORY

PROJECT AREAS:

Total Project Size (disturbed area) =	14.7	ACRES
Existing area of impervious surface =	0.0	ACRES
Post construction area of impervious surface =	4.9	ACRES
Total new impervious surface area created =	4.9	ACRES

Planned Construction Start Date: 07/01/2015
Estimated Construction Completion Date: 12/31/2015

PERMANENT STORMWATER MANAGEMENT SYSTEM:
Type of storm water management used if more than 1 acre of new impervious surface is created:

	Wet Sedimentation Basin
X	Infiltration/Filtration
	Regional Pond
	Permanent Storm Water Management Not Required

PROJECT LOCATION:

COUNTY	TOWNSHIP	RANGE	SECTION	LATITUDE	LONGITUDE
ANOKA	32N	25W	28	45.233710	-93.456399

BMP SUMMARY:

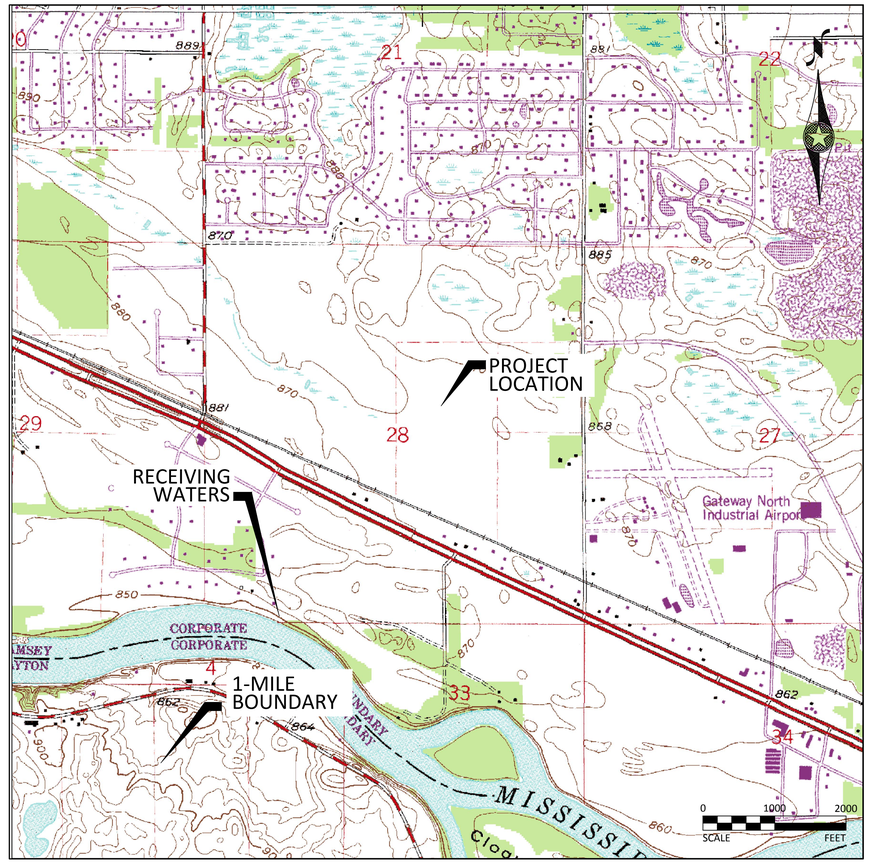
BMP	QUANTITY	UNIT
HYDROMULCH, SEED MIX 25-131 & FERTILIZER TYPE 3 (22-5-10)	0.90	AC
SILT FENCE	1956	LIN FT
INLET PROTECTION	8	EACH

DESCRIPTION OF CONSTRUCTION ACTIVITIES AND STORMWATER MANAGEMENT:
Construction activities include: Site grading, sanitary sewer and water main extensions, temporary erosion and sediment control, and permanent stabilization.

PSD, LLC is proposing to construct a 4-story apartment complex and road to the west. Drainage will flow overland into area inlets where it will be conveyed to a proposed underground storage system. This system will tie into the existing conveyance system along Sapphire Street and be discharged south of the site.

Existing drainage patterns and discharge rates are to be maintained in the proposed condition. All modifications to this SWPPP shall be approved by the engineer and remain on site during construction.

DOCUMENT RETENTION
The following documentation will be retained for a period of not less than 3-years from the date of submittal of the NOT in compliance with Part III.E of the Permit.
1. The final SWPPP
2. Copies of all stormwater related permits required for the project
3. Records of all inspection and maintenance conducted during construction
4. Copies of all permanent operation and maintenance agreements; including all right-of-way, contracts, covenants and other binding requirements regarding perpetual maintenance, and
5. All required calculations for design of the temporary and permanent BMPs.



RECEIVING WATERS:
Receiving waters, including surface water, wetlands, Public Waters, and stormwater ponds, are identified on the USGS 7.5 min quad map within one mile of the project boundary. Receiving waters that are impaired, the impairment, and WLA are listed as follows. All specific BMPs relative to construction activities listed in this permit for special and impaired waters have been incorporated into this plan. All specific BMPs listed in approved TMDLs and those BMPs listed for construction related waste load allocations have also been incorporated.

NAME OF WATER BODY	TYPE (ditch, pond, wetland, lake, etc.)	Appendix A Special Water?	Flows to Impaired Water Within 1 Mile?	USEPA Approved TMDL?
MISSISSIPPI RIVER	RIVER	YES	YES	YES
Impairments:				

IMPLEMENTATION SCHEDULE AND PHASING:
1) Submit SWPPP Updates to Engineer. Submittal shall include any requested changes to the SWPPP, including but not limited to: Trained Personnel, Locations for Stockpiles, Concrete Washout, Sanitation Facilities, Types and Locations of Erosion & Sediment Control. Failure to submit updates shall be considered acceptance of the SWPPP as designed with no changes.
2) Install perimeter sediment control, inlet protection, and construction exit.
3) Rough grade site.
4) Construct underground infiltration chamber and storm sewer.
5) Construct parking and building areas. Protect all catch basins to ensure construction sediment does not enter infiltration chamber.
6) Add additional temporary BMPs as necessary during construction based on inspection reports.
7) Ensure final stabilization measures are complete.
8) Submit Notice of Termination (NOT) to MPCA within 30 days of final stabilization.

PROJECT INFORMATION AND LOCATION MAP

HORZ. 0 40 80 SCALE FEET

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\C3D\SWPPP\SWPPP_02_27_2015\CAD\SWPPP_1_PROJ_INFO_MAP.dwg 3/3/15 2:22 pm

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.
CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
STORMWATER POLLUTION PREVENTION PLAN

SHEET C2.0

STORMWATER POLLUTION PREVENTION PLAN NARRATIVE

Information contained in this SWPPP summarizes requirements of the GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM PROGRAM - Permit No: MN RI0000I as they apply to this project. All provisions of the permit including those not specifically cited herein shall apply to this project. The Contractor is responsible to be familiar with and comply with all conditions of the permit. The full text of the permit is available at: http://www.pca.state.mn.us/index.php/water/water-types-and-programs/stormwater/construction-stormwater/mpca-to-re-issue-construction-stormwater-general-permit.html.

SWPPP AMENDMENTS

Permittee must amend SWPPP as necessary to include additional requirements to correct problems identified or address the following situations.

1. There is a change in design, construction, operation, maintenance, weather or seasonal conditions.
2. Inspections or investigations by site owner or operators, USEPA or MPCA officials determine the SWPPP is not minimizing discharge of pollutants to surface waters or underground waters or discharges are causing water quality standard exceedances.
3. The SWPPP is not achieving the objectives of minimizing pollutants in stormwater discharges associated with construction activity, or the SWPPP is not consistent with the terms and conditions of the permit.
4. The MPCA determines that the project's stormwater discharges may cause, have reasonable potential to cause, or contribute to non-attainment of any applicable water quality standard, or the SWPPP does not incorporate the applicable requirements of the permit.

EROSION PREVENTION PRACTICES:

The location of areas not to be disturbed must be delineated on the project before site work begins.

Disturbance on steep slopes (>33.3%) shall be minimized. Where required, techniques such as phasing and stabilizing practices designed for steep slopes shall be used.

All exposed soils must be stabilized as soon as possible but in no case later than 7 days after the construction activity has temporarily or permanently ceased.

For public waters that have been promulgated "work in water restrictions" during fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete stabilization within 24-hours during the time period.

Stormwater conveyance channels shall be routed around unstabilized areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance channel.

The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Stabilization of the remaining portions of any temporary or permanent ditches or swales with 7 calendar days after connecting to a surface water or property edge and construction in that portion of the ditch has temporary or permanently ceased.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized during temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mulch, hydromulch, tackifier, or similar practice shall not be used in any portion of a temporary or permanent drainage ditch. Refer to erosion and sediment control plan for temporary and permanent stabilization measures for ditches and swales.

Stormwater discharges shall be directed to vegetated areas where feasible. Velocity dissipation devices shall be used at discharge point.

Phased construction will be used to extent practical or as indicated in the plans to minimize exposed soils.

Rapid stabilization shall be of type and quantity indicated in the project specifications. Additional rapid stabilization may be necessary to minimize erosion throughout the duration of the project. Type and quantity shall be determined by the engineer or inspector prior to installation. In extreme cases, the contractor shall use any available rapid stabilization to immediately mitigate erosion, then further remedy the situation with approval by owner or engineer.

SEDIMENT CONTROL PRACTICES:

Practices must be established on all down gradient perimeters and be located up gradient of any buffer zones. Perimeter controls must be in place before up gradient land- disturbing activities begin and shall remain in place until final stabilization.

All sediment controls practices shall be re-installed if they have been adjusted or removed to accommodate short-term activities and replaced immediately after the short term activity has ceased. Short term activities shall be performed as quickly as possible. Sediment control practices shall be re-installed even before the next precipitation event if the activity is not complete.

All storm drains must be protected by appropriate BMPs during construction until all sources to the inlet have been stabilized. Inlet protection may be removed for specific safety concerns identified by the Permittee or jurisdictional authority. The removal shall be documented in the SWPPP and retained on site. Temporary stockpiles must have silt fence or other effective sediment controls and shall not be placed in surface waters or natural buffers.

Vehicle tracking BMPs shall be installed to minimize track out of sediment from the construction site. Method shall be approved by engineer prior to commencement of construction activities. Street sweeping shall be used if vehicle tracking BMPs are not adequate to prevent sediment from being tracked onto the street.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

A 100 foot natural buffer, or redundant BMPs (where a buffer is infeasible) must be maintained when a surface water is located within 100 feet of disturbance activities and site runoff flows to the surface water.

If polymers, flocculants, or other sedimentation treatment chemicals are used on site, 1) conventional erosion and sediment controls shall be sowed prior to chemical placement, 2) chemicals shall be chosen based on soil types, and expected turbidity, pH, and flow rate of stormwater flowing into the treatment system, and 3) chemicals shall be used with accepted engineering practices and dosing specifications.

TEMPORARY SEDIMENTATION BASINS:

The temporary sedimentation basin shall be constructed and made operational prior to disturbance of 5 or more acres draining to a common location.

Temporary sedimentation basins are required prior to runoff leaving the construction site or entering surface waters when 5 or more acres of disturbed soils drain to a common location. The basin must provide 3,600 cubic feet of storage below the outlet per acre drained. If hydraulic calculations are available, the temporary sedimentation basin must provide a storage volume equivalent to the 2-year, 24-hour storm, but in no case less than 1800 cubic feet per acre drained. The temporary sedimentation basin must be constructed and made operational concurrent with the start of soil disturbance up gradient of the pond. The temporary sedimentation basin shall be designed to prevent short circuiting. The outfall shall be designed to remove floatable debris, allow for complete drawdown of the pond for maintenance activities, and have energy dissipation. The emergency spillway shall be stabilized.

Temporary sedimentation basins shall be situated outside of surface waters and any required buffer zone, and must be designed to avoid draining wetlands, unless the impact is in compliance with the requirements of this permit.

Excessive sediment-laden water that is not properly filtered will not be permitted to discharge from site.

DEWATERING AND BASIN DRAINING

Turbid or sediment-laden waters related to dewatering or basin draining shall be discharged to a temporary or permanent sedimentation basin on the project site unless infeasible. The temporary or permanent basin may discharge to surface waters if the basin water has been visually checked to ensure adequate treatment has been obtained in the basin and that the nuisance conditions will not result from the discharge. Discharge points shall be adequately protected from erosion and proper velocity dissipation provided.

All water from dewatering or basin-draining activities must be discharged in a manner that does not cause nuisance conditions, erosion in the receiving channels or on down slope properties, or inundation in wetlands causing significant adverse impacts to the wetland.

If filters with backwash waters are used, the backwash water shall be hauled away for disposal, returned to the beginning of the treatment process, or incorporated into site in a manner that does not cause erosion. Backwash water may be discharged to sanitary sewer if permission is granted by the sanitary sewer authority.

POLLUTION PREVENTION:

Building products that have the potential to leach pollutants must be under cover to prevent discharge or protected by an effective means designed to minimize contact with stormwater.

Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials must be under cover.

Hazardous materials and toxic waste must be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas must be provided to prevent vandalism.

Solid waste must be stored, collected and disposed of in compliance with Minn. R. CH 7035.

Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. CH 7041.

Discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded shall be prevented using drip pans or absorbents. Supplies shall be available at all times to clean up discharged materials and that an appropriate disposal method must be available for recovered spilled materials.

Exterior vehicle or equipment washing on the project site shall be limited to a defined area of the site. Runoff from the washing area shall be contained in a sediment basin or other similarly effective controls and waste from the washing activity must be properly disposed of. No engine degreasing is allowed on site.

Effective containment for all liquid and solid wastes generated by concrete and other washout operations related to construction activity shall be effectively contained. Liquid and solid washout waste shall not contact the ground, and containment must be designed so that it does not result in runoff from the washout operations or areas. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

INFESTED WATERS:

MN DNR permits are not valid for work in waters that are designated as infested waters unless accompanied by and Infested Waters Permit or written notification from MN DNR that an Infested Waters Permit is not required. There is no exception for pre-existing permits. If a MN DNR Permit has been issued for the project and the water is later designated as infested, the Contractor shall halt all work covered by the MN DNR Permit until an Infested Water Permit or written notification that in Infested Water is not required is obtained.

INSPECTION & MAINTENANCE:

A trained person shall routinely inspect the entire construction site at least once every 7 days during active construction and within 24-hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24-hours after a rainfall event, the next inspection must be conducted within 7 days.

All inspections and maintenance conducted during construction must be recorded within 24 hours in writing and records must be retained with the SWPPP. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer.

Where parts of the project site have permanent cover, but work remains on other parts of the site, inspections may be reduced on these areas to once per month.

Where the site has permanent cover on all exposed areas and no construction activity is occurring anywhere on site, the site must be inspected during non-frozen conditions at least once per month for 12 months. Following the 12th month of permanent cover and no construction activity, inspections shall be terminated until construction activity resumes or notification from MPCA has been issued that erosion has been detected at the site.

During frozen ground conditions, inspections may be suspended and shall resume within 24 hours after runoff occurs or 24 hours prior to resuming construction activity, whichever is first.

Inspection and maintenance shall resume until another Permittee has obtained coverage under this Permit or the project has undergone Final Stabilization, and an NOT has bee submitted.

All erosion prevention and sediment control BMPs shall be inspected to ensure integrity and effectiveness during all routine and post-rainfall inspections. All non-functioning BMPs must be repaired, replaced, or supplemented with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow access.

All perimeter control devices must be repaired, replaced, or supplemented when they become non-functional or the sediment reaches one-half (1/2) of the height of the device. These repairs must be made by the end of the next business day after discovery, or as soon as field conditions allow.

Temporary and permanent sediment basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches one-half (1/2) the storage volume. Drainage and sediment removal must be completed within 72 hours of discovery, or as soon as field conditions allow.

Surface waters, including drainage ditches and conveyance systems, must be inspected for erosion and sediment deposition during each inspection. All deltas and sediment deposited in drainage ways, catch basins, and other drainage systems shall be removed. The removal and stabilization must take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. The Permittee is responsible for obtaining all applicable permits prior to conducting any work in surface waters.

Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all paved surfaces both on and off site within 24-hours of discovery, or if applicable, within a shorter time to comply with the permit.

Streets and other areas adjacent to the project must be inspected for evidence of off-site accumulations of sediment. If sediment is present, it must be removed in a manner and at a sufficient frequency to minimize off-site impacts.

All infiltration areas must be inspected to ensure that no sediment from ongoing construction activity is reaching the infiltration area and that equipment is not being driven across the infiltration area.

FINAL STABILIZATION:

Final Stabilization is not complete until all of the following requirements have been met:

1. All soil disturbing activities at the site have been completed and all soils are stabilized by a uniform perennial vegetative cover with a density of 70% of its expected final growth density over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.
2. Permanent stormwater management system is constructed, meets all requirements of the Permit, and is operating as designed. Temporary or permanent sedimentation basins that are to be used as permanent water quality management basins have been cleaned of any accumulated sediment. All sediment has been removed from conveyance systems, and ditches are stabilized with permanent cover.
3. All temporary synthetic and structural erosion prevention and sediment control BMPs have been removed. BMPs designed to decompose on site may be left in place.
4. For residential construction only, individual lots are considered finally stabilized if the structure(s) are finished, temporary erosion protection and down gradient perimeter control has been completed and the residence has been sold to the homeowner. Also, the "Homeowner Fact Sheet" has been provided to the homeowner.

NARRATIVE

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\C3D\SWPPP\SWPPP_02_27_2015\CAD\SWPPP_2_NARRATIVE.dwg 3/3/15 2:44 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
STORMWATER POLLUTION PREVENTION PLAN

SHEET C2.1



LEGEND

- PROJECT BOUNDARY
- SOIL TYPE
- IMPAIRED, SPECIAL OR PROTECTED WATERS
- NATIONAL WETLANDS INVENTORY
- DWSMA, LOW VULNERABILITY
- STEEP SLOPES (>33.3%)

SOIL TYPE SUMMARY

Map Unit Symbol	Soil Name	Hyd. Soil Group
MUSYM	MUNAME	HYDGRP
Dp	DUELM	A
HuA	HUBBARD	A

NHEL - Not Highly Erodible Land
PHEL - Potentially Highly Erodible Land
HEL - Highly Erodible Land

SITE AND SOILS MAP

HORZ. 0 100 200
SCALE FEET

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\C3D\SWPPP\SWPPP_02_27_2015\CAD\SWPPP_3_SOILS.dwg 3/3/15 2:34 pm

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.
CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
STORMWATER POLLUTION PREVENTION PLAN

SHEET C2.2

LEGEND

- BITUMINOUS PAVEMENT REMOVAL
- CONCRETE CURB REMOVAL
- CONCRETE PAVEMENT REMOVAL

EAST RAMSEY PARKWAY

TOWN CENTER DR

145TH AVENUE NW

SAPPHIRE STREET NW

SUNWOOD DRIVE

RHINESTONE STREET NW

OUTLOT A
AREA = 3.90 ACRES
(FUTURE SITE)

LOT 1
AREA = 5.12 ACRES
(PROPOSED SITE)

BLOCK 1

OUTLOT V
RAMSEY TOWN CENTER ADDITION

OUTLOT B

OWNER: RAMSEY HRA
PID#: 283225130007
ZONING DISTRICT: THE COR

OWNER: RAMSEY HRA
PID#: 283225420018
ZONING DISTRICT: THE COR

OWNER: HOUSING AND REDEVELOPMENT AUTHORITY
PID#: 283225420008
ZONING DISTRICT: THE COR

OWNER: RAMSEY HRA
PID#: 283225420019
ZONING DISTRICT: THE COR

OWNER: RAMSEY PROFESSIONAL CENTER LLC
PID#: 283225420020
ZONING DISTRICT: THE COR

OWNER: RAMSEY HRA
PID#: 283225140008
ZONING DISTRICT: THE COR

S 52°01'55" E 352.07

S 17°30'09" W 6.81

S 2°43'04" W 6.81

S 0°01'19" W 120.00

S 89°58'41" E 59.51

L=95.12 R=230.00
Δ=23°41'45"

S 66°16'56" E 323.42

S 22°43'04" W 213.45

L=522.66 R=573.00
CB=S 78°09'47" E CH=504.73
Δ=52°15'43"

S 00°00'00" E 323.47

N 00°00'00" W 665.93

REMOVE 14 LF
CONCRETE CURB AND GUTTER

REMOVE TREE

REMOVE TREE

REMOVE TREES

ADJUST GATE VALVES (5)

ADJUST FRAME AND
RIM CASTING

REMOVE 270 LF
BITUMINOUS CURB

REMOVE 765 SQ YD
BITUMINOUS PAVEMENT

REMOVE 53 SQ.FT.
CONCRETE WALK

REMOVE 206 SQ.FT.
CONCRETE WALK

REMOVE 54 LF
CONCRETE CURB AND GUTTER

ELECTRICAL TRANSFORMER

PROPOSED
ROADWAY
EASEMENT

FF=
868.28

FF=
868.36

FF=
867.24

FF=
867.27

CB
R=867.76
I=SE (15") 863.66

CB
R=866.62
I=NW (15") 862.47
I=SE (15") 862.39

CB
R=865.76
I=SW (18") 861.36
I=SE (18X24") 861.26
I=NW (15") 861.36

CB
R=866.86
I=NW (18X24") 860.60
I=SE (30") 860.56
I=SW (18") 860.60

CB
R=867.64
I=N (54") 860.39
I=NW (30") 860.39
I=E (42") 863.49
I=S (36") 860.49

CB
R=869.36
I=S (42") 860.61
I=W (42") 860.56
I=NE (15") 863.41

CB
R=869.24
I=NW (42") 860.79
I=S (42") 860.69

CB
R=866.40
I=SE (24") 861.46
I=W (24") 861.40

CB
R=865.56
I=NE (15") 861.46
I=NW (24") 861.43
I=S (15") 861.46

CB
R=866.57
I=N (42") 861.12
I=W (18") 861.47
I=E (24") 861.17

CB
R=864.00
I=N 857.90
I=S 857.90
I=E (27") 858.40
I=W (24") 858.55

CB
R=864.08
I=W (27") 858.40
I=SE (24") 858.42

CB
R=864.68
I=NW (24") 858.73
I=E (24") 858.78
I=S (12") 859.04

CB
R=864.21
I=W (24") 859.21
I=E (24") 859.31

CB
R=864.45
I=W (24") 859.35
I=SE (18") 859.43

CB
R=863.44
I=SW (12") 859.14

CB
R=862.72
I=NW (18") 859.66
I=E (15") 859.72

CB
R=863.44
I=N (12") 859.06
I=W (24") 858.94
I=E (24") 859.06

CB
R=864.02
I=N 857.42
I=S 857.22
I=E 858.72

CB
R=863.66
I=S (15") 860.03

CB
R=863.98
I=W (15") 860.03

SAN MH
R=865.59
I=NW (30") 853.19
I=SE (30") 853.19
I=N (10") 854.08
I=S (8") 854.51

SAN MH
R=864.77
I=N (8") 854.93
I=E (8") 854.97
I=W (8") 854.97
I=S (8") 854.79

STM MH
R=864.71
I=NE 857.21
I=SW 857.21

MH
R=865.19
I=N (8") 856.04
I=S (8") 856.01
I=E (8") 856.04
I=W (8") 856.04

SAN MH
R=870.51
I=N (18") 85
I=S (18") 85
I=NW (8") 85

SAN MH
R=866.54
I=E (8") 860.04
I=E (8")(DROP) 854.98
I=W (8") 854.33
I=N (18") 853.47
I=S (18") 853.47

STUB
INV=860.85
(PER PLAN)

DIP STUB PLUG

DIP STUB PLUG

DIP STUB PLUG

LEGEND

- CONCRETE
- ROADWAY PAVEMENT SECTION
- PARKING PAVEMENT SECTION

NOTE:
ALL DIMENSIONS ARE TO FACE OF BACK OF CURB UNLESS OTHERWISE NOTED.

EAST RAMSEY PKWY

145TH AVENUE NW

SAPPHIRE STREET NW

RHINESTONE STREET NW

CONCRETE SIDEWALK

B412 CONCRETE CURB GUTTER OUT

B618 CONCRETE CURB & GUTTER

B612 CONCRETE CURB & GUTTER (TYP)

CURB KNOCKDOWNS

CONCRETE/ RIBBON CURB FOR HANDICAP ACCESS

RETAINING WALL BEGIN

RETAINING WALL

RETAINING WALL END

TAPER CURB

375 L.F. CONCRETE VALLEY GUTTER

F.F.E= 870.00

F.F.E. =869.31

F.F.E. =869.24

L=522.66, R=573.00
CB=S 78°09'47" E, CH=504.73
Δ=52°15'43"

S 86°16'56" E 323.47

S 00°00'00" E 323.47

N 90°00'00" W 665.93

12" STM

HORZ. SCALE 0 30 60 FEET

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_EXCON.dwg 3/3/15 3:32 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

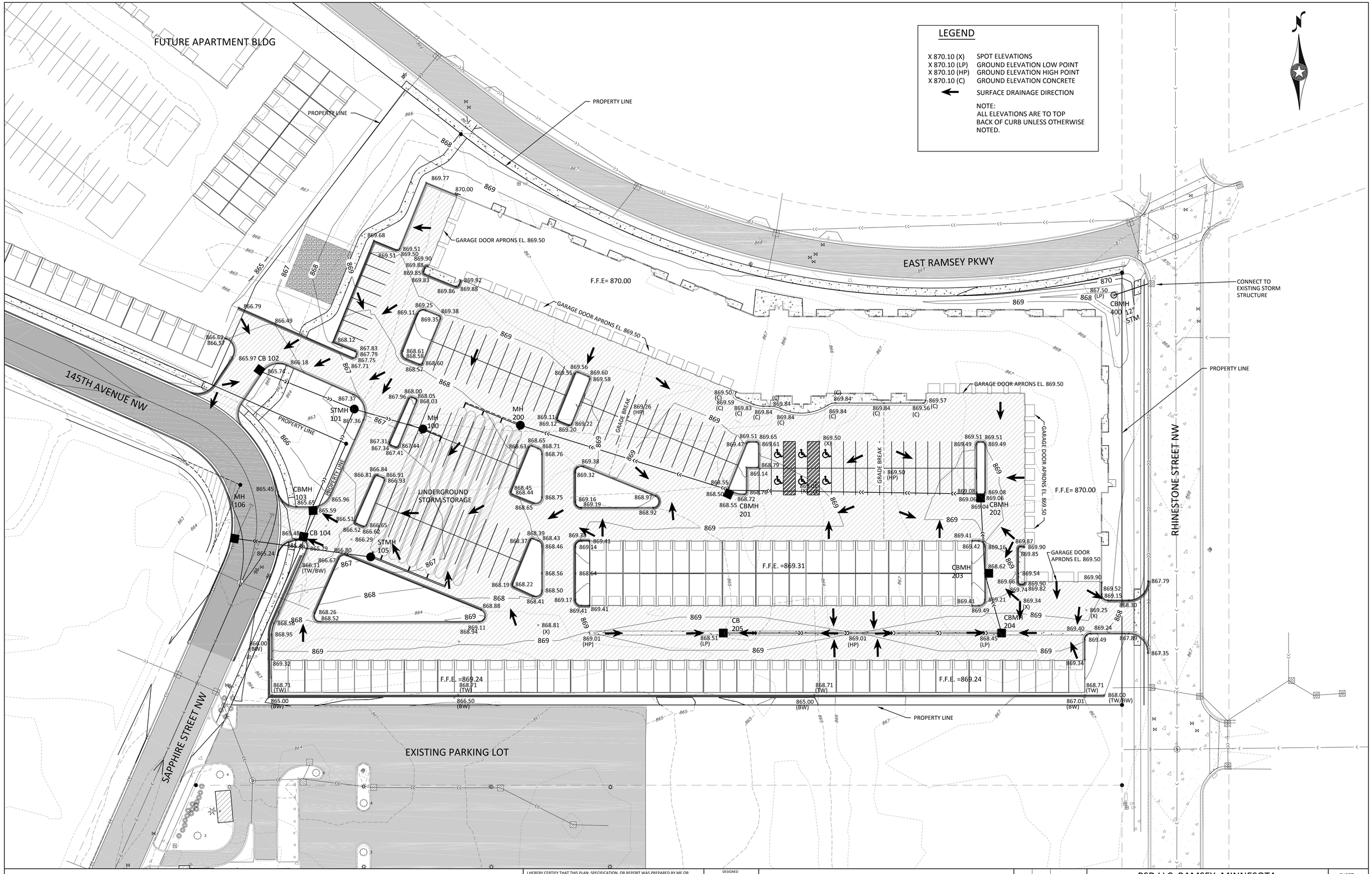
DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
SITE PLAN

SHEET C2.4



0 30 60
HORZ. SCALE FEET

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_EXCON.dwg 3/3/15 3:32 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
GRADING & STORM UTILITY PLAN

SHEET C2.5

NOTES:

SILT FENCE

CONSTRUCT ROCK CONSTRUCTION ENTRANCE

F.F.E= 870.00

F.F.E= 870.00

F.F.E. =869.31

F.F.E. =869.24

F.F.E. =869.24

CB 102

STMH 101

MH 100

MH 200

CBMH 103

MH 106

CB 104

STMH 105

CBMH 201

CBMH 202

CBMH 203

CB 205

CBMH 204

CBMH 400

SILT FENCE

SILT FENCE

SILT FENCE

SILT FENCE

NOTES:

1. INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION.
2. KEEP ALL STREET SWEPT CLEAN OF TRACKED DIRT AND SAND.
3. ALL SILT FENCE TO BE REMOVED ONCE SEED IS ESTABLISHED.

LEGEND

- HYDROMULCH, SEED MIX 25-131 & FERTILIZER TYPE 3 (22-5-10)
- SILT FENCE
- INLET PROTECTION
- SURFACE FLOW ARROW

HORZ. SCALE 0 30 60 FEET

© Bolton & Menk, Inc. 2015, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\109475_EXCON.dwg 3/3/15 3:32 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
EROSION CONTROL PLAN

SHEET C2.6

LEGEND

LEGEND

SIENNA GLEN MAPLE (10' ON CENTER) (2" DIA)

BUTTERNUT HICKERY (16' ON CENTER) (2" DIA)

GYNKGO (16' ON CENTER) (2" DIA)

EAST RAMSEY PARKWAY

TOWN CENTER DR

145TH AVENUE NW

SAPPHIRE STREET NW

RHINESTONE STREET NW

SUNWOOD DRIVE

OUTLOT V
RAMSEY TOWN CENTER ADDITION

RAMSEY TOWN CENTER ADDITION

OUTLOT B

RAMSEY TOWN CENTER 11TH ADDITION

LOT 1
BLOCK 1

EXISTING BLDG.

FUTURE GARAGES

PROPOSED BUILDING

PROPOSED GARAGES

ELECTRICAL TRANSFORMER

8" WMN

12" WMN RAW

12" WMN DOM

12" DIP WMN

8" DIP WMN

HORZ. SCALE 0 40 80 FEET

© Bolton & Menk, Inc. 2015, All Rights Reserved

H:\PSDLLC_PR\R16109475\CAD\109475_EXCON.dwg 3/3/15 3:32 pm

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.

CODY L. HOLMES

LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH

DRAWN JEN

CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA

PARKVIEW EAST APARTMENT COMPLEX

LANDSCAPE TREE PLAN

SHEET C2.7

LEGEND

CONCRETE

ROADWAY PAVEMENT SECTION

PARKING PAVEMENT SECTION

EXISTING OFFICE BLDG

FF= 867.27

FF= 867.24

EXISTING BLDG.

EXISTING PARKING LOT

SAPPHIRE STREET NW

145TH AVENUE NW

CONNECT TO EXISTING SANITARY SEWER STUB

CONNECT TO EXISTING STORM SEWER BUILD NEW 84" MHCB OVER EXISTING 51" ARCH STORM

PROPOSED ROADWAY EASEMENT

F&I:
1 EA 8" X 6" TEE
1 EA 6" GV & BOX
1 EA HYDRANT
12 LF 6" WMN
STA. 4+59.97, 21.96' RT
G=866.79

F&I:
1 EA 8" GV & BOX
CONNECT TO EXISTING WMN

F&I:
1 EA 8" - 22.5 ° BEND

CONNECT TO EXISTING WMN
F&I:
1 EA 8" GV & BOX

PROPERTY LINE

PROPOSED GARAGES

PROPOSED PARKING LOT

PROPOSED UNDERGROUND STORM STORAGE

FUTURE

FUTURE GARAGES

FUTURE APARTMENT BLDG

FUTURE PARKING LOT

CB 104

STMH 105

CBMH 103

STMH 101

CB 102

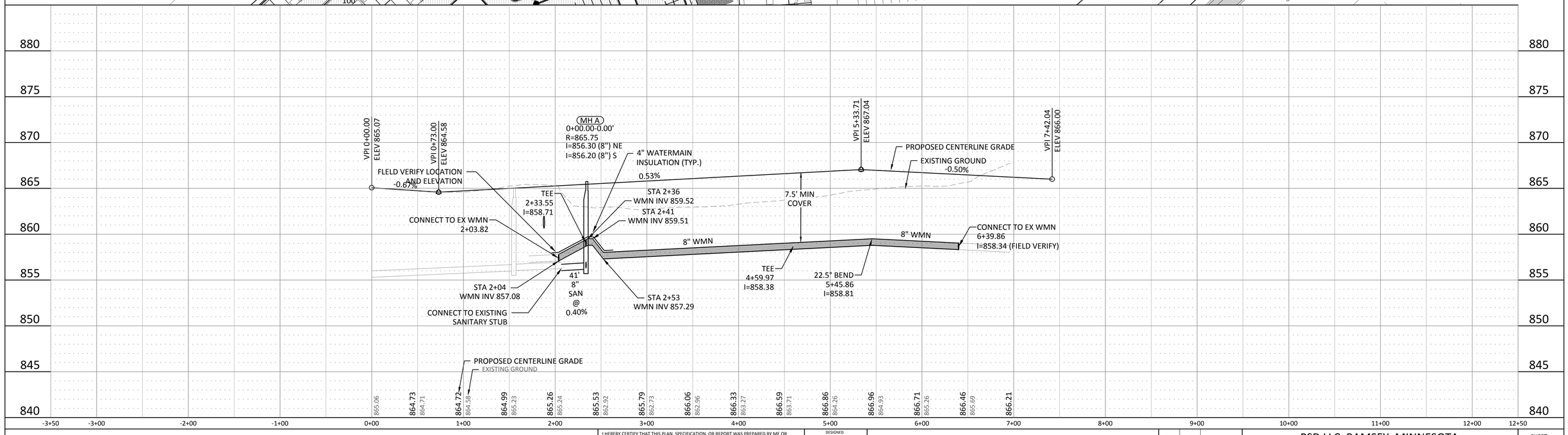
MH A

MH 100

CB 100

F&I:
1 EA 8" X 8" TEE
1 EA 8" GV & BOX
SEE SHEET C3.1 FOR WATERMAIN CONTINUATION TO APARTMENT CONNECTION

PROPERTY LINE



HORZ. 0 50 100 SCALE FEET

VERT. 0 5 10 SCALE FEET

© Bolton & Menk, Inc. 2014, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\C3D\109475_BSE.dwg 3/3/15 4:16 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

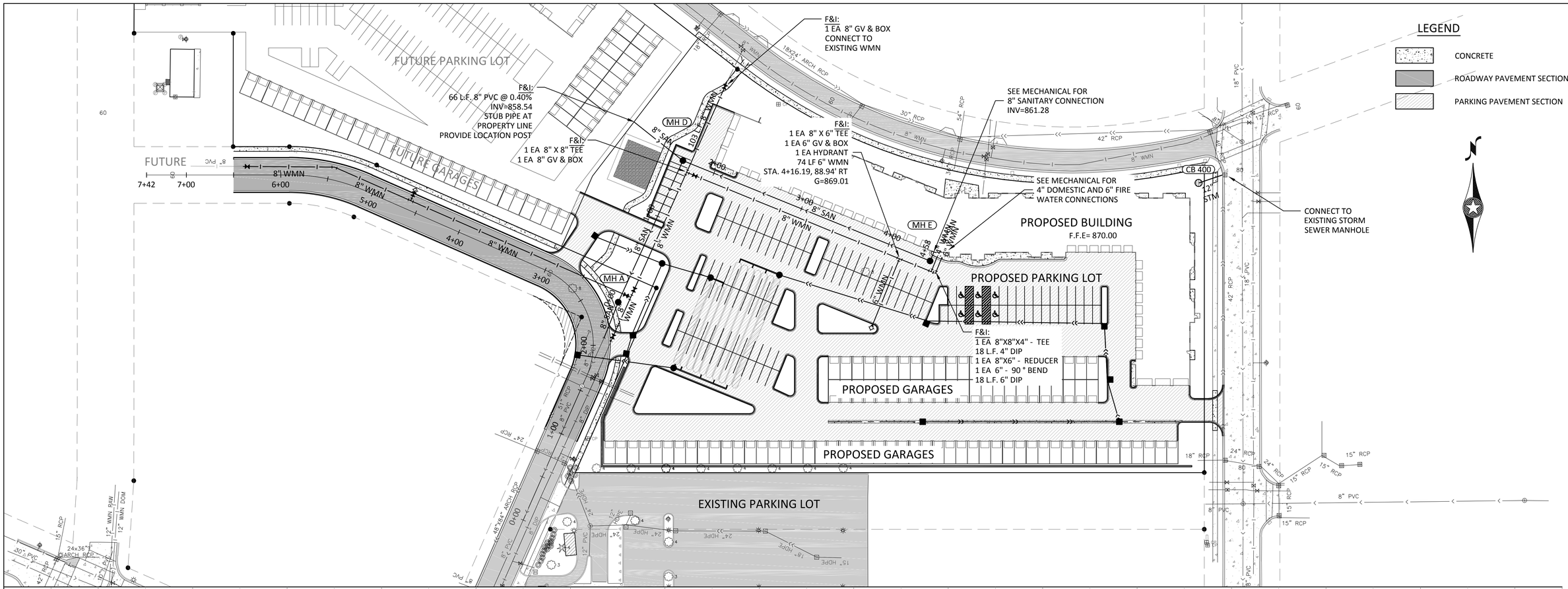
DESIGNED CLH
DRAWN JEN
CHECKED CLH

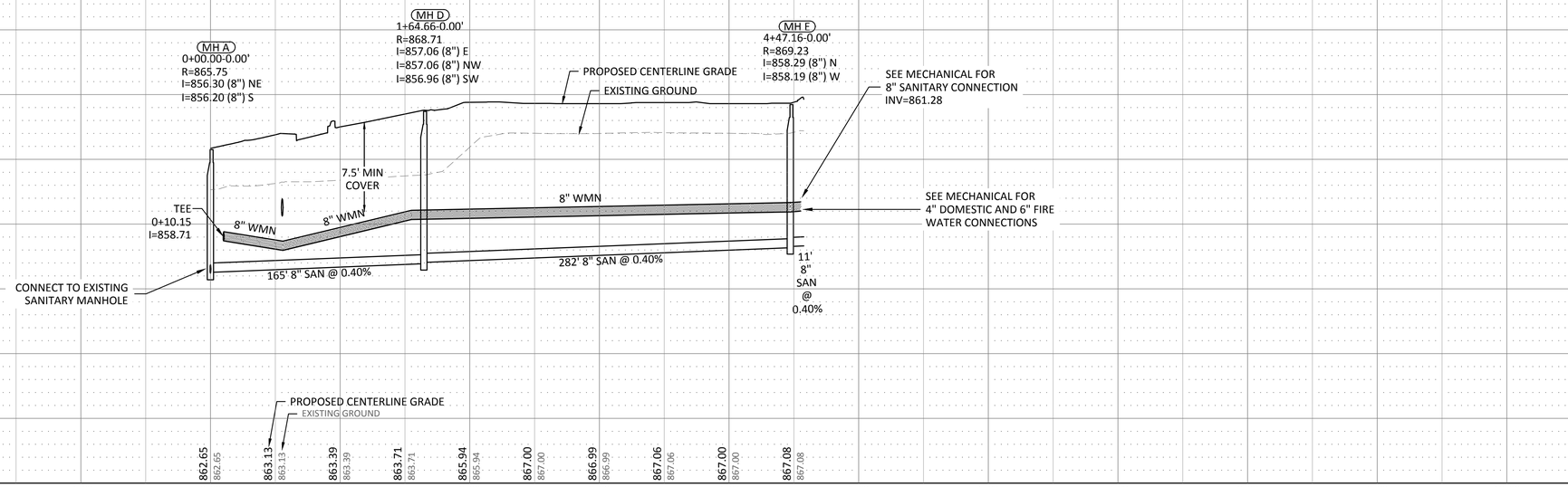
BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
PLAN AND PROFILE - 145TH AVENUE NW

SHEET C3.0





HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 5 10 FEET

© Bolton & Menk, Inc. 2014, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\C3D\109475_BSE.dwg 3/3/15 4:16 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

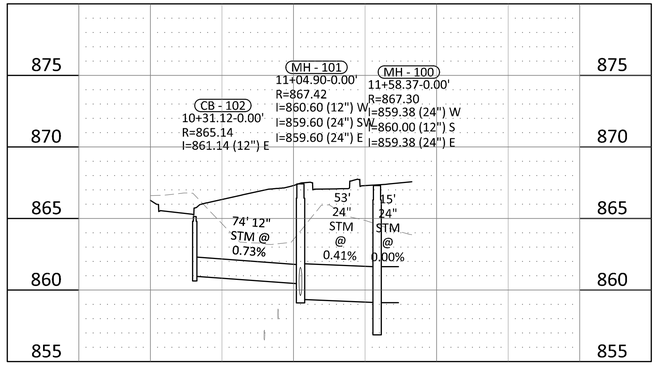
DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

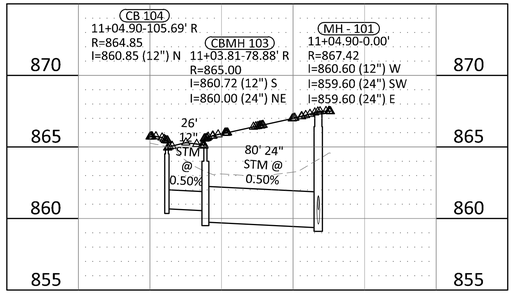
REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
PLAN AND PROFILE - PARKVIEW SITE

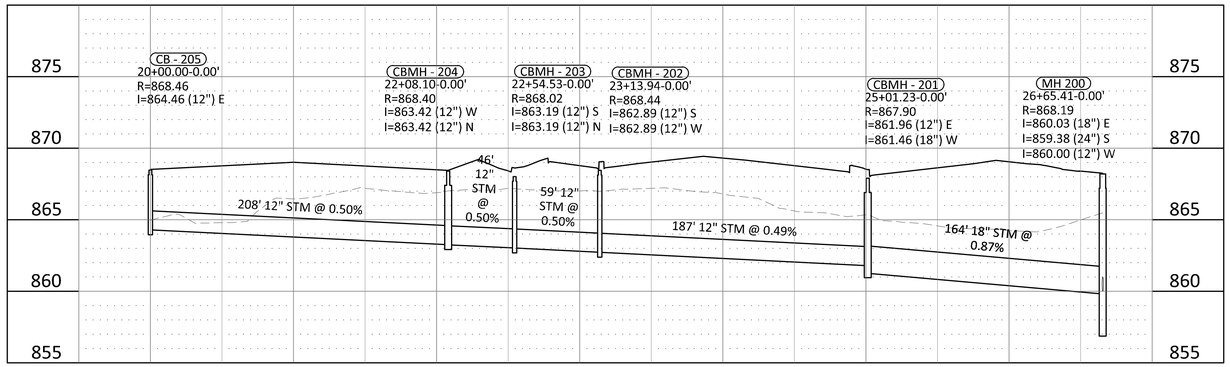
SHEET C3.1



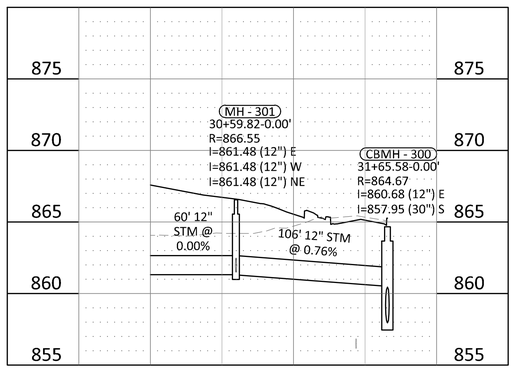
CB-102 TO CB-100



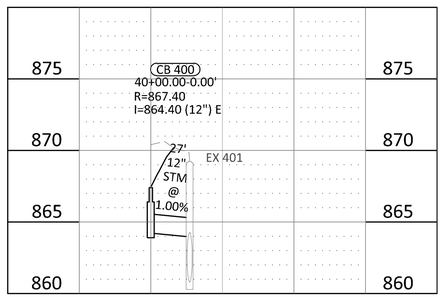
CB-104 TO CB-101



CB-205 TO CB-200



STORAGE BASIN TO CB-300



CB-400 TO EX-401

0 50 100
HORZ.
SCALE FEET

0 5 10
VERT.
SCALE FEET

© Bolton & Menk, Inc. 2014, All Rights Reserved
H:\PSDLLC_PR\R16109475\CAD\C3D\109475_BSE.dwg 3/3/15 4:16 pm

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.

CODY L. HOLMES
LIC. NO. 49143 DATE 3/3/2015

DESIGNED CLH
DRAWN JEN
CHECKED CLH

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN
WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN
BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA

REV.	BY	DATE

PSD LLC, RAMSEY, MINNESOTA
PARKVIEW EAST APARTMENT COMPLEX
STORM SEWER PROFILES

SHEET C3.2

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	APRIL 3, 2015	**PROJECT ADDRESS**	15153 NOWTHEN BOULEVARD
PROJECT. TITLE	PARK VIEW EAST – PRELIMINARY AND FINAL PLAT AND SITE PLAN REVIEW		
ESCROW #	114538		
DEPARTMENT:	Community Development: Planning Division (Comprehensive Plan and Zoning Code)		
PRIMARY CONTACT	Name: Tim Gladhill, Community Development Director Phone: 763-433-9826 Email: tgladhill@cityoframsey.com		
TECHNICAL REVIEW ASSISTANCE:	Name: Tina Goodroad, AICP Phone: 763-496-6751 Email: tgoodroad@loucksassociates.com		

General: The purpose of this file is to review the official Preliminary and Final Plat and Site plan Review for the Parkview East Apartment Complex. The subject property is located south of Ramsey Parkway, east of Town Center Drive East and west of Rhinestone Street NW and north of Sunwood Drive. The property is located in COR-1 zoning district. The application includes a plat to be called COR Parkview Addition and development of phase one apartment complex consisting of one four-story building with a total of 121 units with tuck under, detached garage and surface parking.

Based on current zoning the proposed Preliminary and Final Plat and Site Plan Review is being reviewed per City Code Section 117-118 entitled COR-1, requirements of the COR Design Framework and Chapter 117, Article III entitled Subdivisions.

The plans will require amendments as outlined in this report. Most notably, the Civil Engineering Plans developed by Bolton and Menk will need to be revised to match the most recent architectural set prepared by Cole Architect Group. The revisions must be made before forwarding to City Council. Of note, the row of detached garages along the southern property line has been divided into several smaller buildings. This is not reflected on the Civil Engineering Plans.

Zoning: The COR-1 Mixed Use Core Sub-district is intended to provide a mix of residential, retail, and service uses. This sub-district allows the highest intensity of uses including high density housing. The proposed use as an apartment building meets the intent of the COR-1 district.

Dimensional Standards. The COR Design Framework establishes maximum build to lines based on the roadway the property frontage. The purpose of the build to line is to locate the majority of the building frontage close to the street to define the edge and create a strong pedestrian feel along the street. For buildings located along a Parkway, sixty (60) percent of the building (at least 300 feet) shall be located five (5) feet from the back of the side walk. The proposed building is located ten (10) and in some portions greater than ten (10) feet. The site does curve causing more difficulty in meeting this build to line. However, efforts should be made to meet the five (5) foot maximum for at least sixty (60) percent of the building façade along Ramsey Parkway. Later in this review a suggestion will be made to widen the boulevard which will help shift the sidewalk slightly closer to the building.

In addition, because the building has frontage on more than one street, the building shall be located five (5) feet from the back of curb along Rhinestone Street. There are minimum or maximums for rear and internal side yard setbacks.

The minimum Floor Area Ratio (FAR) is 0.65 in the COR-1 district. The applicant shall provide the proposed FAR for the first phase building on Lot 1, Block 1, COR Parkview Addition.

The site plan indicates a patio along the north side of the building for outdoor grills. Due to the required maximum five (5) build to line this patio will should be relocated. It may be possible to use space immediately adjacent to the west side of the building, which would create an excellent community space to be shared between Phase I and Phase II.

Access. The site will gain access via Rhinestone Street NW on the east side of the site and from Sapphire Street NW at the southwest corner of the site. Vehicular access shall not be granted to Ramsey Parkway.

Parking: The COR Design Framework includes guidelines on how to manage parking. This is particularly important in COR-1 sub-district, being the most intense and pedestrian oriented. Surface lots shall be located either behind or to the side of building, not located along major street frontages. A variety of parking options are proposed for the site. The building will include forty-four (44) tuck under garages with garage door entries on the south elevation internal to the site. An additional ninety-one (91) garage spaces are provided within five (5) detached garage structures. Finally, 148 surface parking spaces are planned south of the building internal to the south for a total of 283 spaces. No surface parking areas are abutting a street.

Typically the spaces internal to the building would not be counted dropping the total to 239 spaces. The COR Design Framework sets a maximum parking allotment of two (2) spaces per unit for multi-family structures. The development incudes 121 units requiring 242 parking spaces. The site meets and even slightly exceeds the maximum allowed with the internal garage spaces. The additional spaces are not in a response to building code but rather based on perceived need by the Developer due to the number of two (2) and three (3) bedroom units in the building which could result in more parking demand. The proposed break down in units is forty-one (41) percent one (1) bedroom; forty-five (45) percent two (2) bedroom and fourteen (14) percent three bedroom. The additional spaces will also prevent potential use of on-street parking which is particularly important during summer months when the adjacent park is programmed. However, Staff would encourage the Developer to utilize available on-street parking availability on Sapphire Street and 145th Avenue, which is not directly impacted by events in The Draw Park and Amphitheater.

The intent of the maximum surface parking is to encourage developments to better manage their parking. In this case, parking is managed to a degree by create 44 stalls within the building in lieu of surface parking stalls. Similar to if stalls are provided in a park ramp/structure, the City does not calculate these stalls in the maximum parking calculation.

As the surface parking lot is well screened by either the apartment building or the detached garage structures, and therefore not visible from the roadways, staff supports the additional parking. If concern exists the Planning Commission could recommend that some excess parking be included as a proof of parking area until the need for additional spaces is evident.

This topic was also addressed by the City's Environmental Policy Board, who suggested at looking at ways to reduce the amount of surface parking area and enhancing the internal landscaping for the benefit of future residents. Details on the EPB discussion are covered in the Landscape Technical Report.

Architectural Standards. High quality architecture and building materials is an essential component in fulfilling the objectives of the COR Design Framework. Roof design, materials, amount of windows, and overall design that breaks up the different floors and walls are all important elements to the overall building design. In the COR-1 sub-district buildings are placed closer to the street so greater emphasis is placed on materials and design features at the street level.

Plans for the front elevation (south) and rear elevation (north) for the apartment building have been provided. Plans for each side elevation will also be required. The proposed materials consist of stone and brick at the base. The rear elevation includes an enhanced stone entry with canopy and additional stone above. Other materials include composite panel (i.e. fiber cement panels) and steel lap and vertical siding. Metal siding can be used as a complementary material. In COR-1 sub-district buildings shall be primarily brick or comparable alternative and shall comprise a minimum of fifty (50) percent of the non-glazed wall area. Calculations shall be provided for brick and stone for each elevations. The City can approve deviations to the 50% brick or stone requirement provided that another high-quality material is provided.

Colors have not been provided. Full colored elevation plans should be provided. The combination of composite and steel in the differing patterns divides the floors and sections of the building. Multiple sections of the building are articulated to break up the flat wall. In addition windows and decks are proposed for each unit that provide further breaks in the building wall design. Additional information is required for the specific appearance of the individual air conditioning units. Staff is concerned over the appearance, color, size and overall look of units on each elevation.

The south elevation includes garage doors for tuck under garages. Garage doors shall be in colors that are complementary to the main building materials. The roof design is pitched with asphalt shingles. The elevation facing Ramsey Parkway is actually the rear of the building and contains the same materials as the front. The first floor contains windows to create street-level interest and pedestrian scale along this street frontage.

Five detached garage buildings are planned in the southern portion of the site. Three long buildings each containing 16 stalls are located in a row along the south property line with two additional buildings just north of this row containing 22 stalls each. The garage buildings contain the same materials as the apartment building. The roofs are pitched with additional accenting so that they are of a higher design standard than typical detached structures. The materials will include stone, horizontal lap siding, shake siding and an asphalt shingle roof. The sides will contain the stone and horizontal siding. The additional roof treatments and glass demonstrate a good effort in enhancing the design of these detached structures. The use of stone at the base will help improve the longevity of these structures.

The Planning Commission, Economic Development Authority (EDA), Environmental Policy Board (EPB), and City Council all expressed questions and potential concern regarding the use of detached garages as it relates to architectural quality. Staff acknowledges that the Developer has enhanced the architecture of these detached garages, but seeks policy direction regarding the status of this design. Staff would recommend considering removing all horizontal lap siding on the back side of the southern garages and enhance the landscaping along said southern wall. The EPB did recommend that landscape be added along this wall.

Trash enclosures are shown on the site plan in the parking lot and at the northeast corner of the building on the south elevation. Details shall be provided as to the proposed material and design of the proposed enclosure.

Development Fees. The Developer will be required to pay development fees consistent with the City's approved schedule of Rates and Charges.

Fee	Amount	# of Units	Total
Park Dedication	$2,600/unit	121	$314,600
Trail Development	$700/unit	121	$84,700
Water Trunk	$1,597/unit	121	$193,237
Sanitary Sewer Trunk	$1,126	121	$136,246
Stormwater Management	$459/unit	121	$55,539
Street Light	$1,300/light	TBD	TBD
Street Light O & M	$294/light	TBD	TBD

The Developer will also be responsible for a Financial Guarantee in the amount of 125% the costs of the required public infrastructure and 150% the costs of the required private infrastructure (excluding the building itself).

Building Permit Fees. The Developer shall contact the City's Building Division to provide an estimate of fees due with each Building Permit. It is hereby noted that Sewer Availability Charges (SAC) and Water Availability Charges are due at time of building permit in addition to the above at a rate of $2,485 per unit and $1,177 per unit respectively.

Recommendation. City Staff is recommending that the City approve the Preliminary Plat, Final Plat, and Site Plan.

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	APRIL 3, 2015	**PROJECT ADDRESS**	WEST OF RHINESTONE STREET, SOUTH OF EAST RAMSEY PARKWAY
PROJECT. TITLE	COR PARKVIEW ADDITION PRELIMINARY PLAT/ PARKVIEW EAST APARTMENT COMPLEX SITE PLAN		
ESCROW #	114584		
DEPARTMENT:	Engineering		
TECHNICAL REVIEWER:	Name: Leonard Linton Phone: 763 433-9834 Email: llinton@ci.ramsey.mn.us		

We offer the following comments regarding your request for the Preliminary Plat of COR Parkview Addition and Site Plan Approval of the Parkside East Apartments. The submittal consists of 25 sheets prepared by Bolton & Menk, Inc. dated March 3, 2015.

General: The submitted plat proposes to plat Outlot A, Ramsey Town Center 11th Addition to create 1 multifamily lot and 1 Outlot. The subject property is generally located south of East Ramsey Parkway and west of Rhinestone Street.

Streets and Access: The development accesses Sapphire Street and Rhinestone Street. The proposed access to Rhinestone Street does not line up with 145th Avenue, The access must be shifted south to line up with 145th Avenue and provide one (1) access to Lot 1 Block 1 COR Parkview addition and the east end of Lot 1, Block 1 Ramsey Town Center 11th Addition. There is not adequate separation on Rhinestone Street between this proposed access and the future access to the Ramsey Town Center 11th Addition.

The project will construct 145th Avenue from Sapphire Street to Center Street.

The internal parking and access aisles will be private.

Traffic Analysis Report: An AUAR was prepared for the Ramsey Town Center Development which included an extensive traffic analysis. The needed traffic improvements were identified, many have been constructed. The remainder of the improvements will be constructed as development occurs.

Grading and Drainage Plans: A final grading and drainage plan has been prepared for this subdivision by Bolton & Menk, Inc. Staff offers the following comments on this plan:

1. The grading and storm utility plans are combined. Notes must be added to sheets C2.5 and C3.2 linking the plan view utilities to the profile views.

2. The plans show a series of catch basins in the parking areas with garages on either side. Stormwater calculations must be submitted showing that the 100 year overflow from the catchbasins will not enter the garages.

A permit from the Lower Rum River Water Management Organization (LRRWMO) will be required. The project is within the 10 year capture zone of a municipal well. Infiltration is not permitted in the 10 year capture zone. Alternative volume reduction strategies will need to be investigated and documented per the LRRWMO rules.

Submit a copy of the MPCA Construction stormwater permit to the City prior to construction. Submit copies of erosion inspection results to the City prior to Certificate of Occupancy.

Utilities: The building will be served by municipal sewer and water extended from Sapphire Street. Construction plans and specifications are subject to review of the City Engineering Department.

Park Dedication: Park Dedication was satisfied with the Ramsey Town Center Master development agreement.

Trail Fee: Trail Fees were satisfied with the Ramsey Town Center Master development agreement.

Sewer and Water Trunk Fee: Trunk sewer and water fees must be paid for all new lots being created. The rate in effect at the time of final plat approval must be paid prior to the City's release of the final plat for recording.

Stormwater Management Fee: A stormwater management fee must be paid for all new lots being created. The rate in effect at the time of final plat approval must be paid prior to the City's release of the final plat for recording

Stormwater Pollution Prevention Plan: Hydraulic Grade calculations must be submitted for the storm sewer system. A copy of the stormwater calculations provided to the LRRWMO for plan approval must be submitted to the City.

Sheet Specific Comments:

C1.3 – Detail STR-03 Revise sidewalk to 6" thick. Ped Ramp Detail, revise ramp flat area width to 6 feet at curb [Note 6]. Add MNDOT pedestrian ramp details (5 Sheets). Add MNDOT details for pedestrian detour routes. Add detailed diagram for each ped ramp showing elevations, slopes and dome plate layout with radius (as needed). Add Detail for Valley Gutter shown on plans.

C1.5 – Rock Construction Entrances are ineffective in Ramsey. Add the following text to the SWPPP and Grading Plan Notes: "A street sweeper must be available within 3 hours upon notice from the City that the streets need to be swept."

C1.6 – The underground storage may not be perforated or allow infiltration.

C1.7 – Revise typical street section - 6" Premium Topsoil, 6' wide sidewalk, all references to Class 5 shall read Class 5, Ramsey Modified. Gradation is shown on Ramsey Street Details. Use Ramsey Detail STR-25 for connection to existing street.

C1.8 – Pipe from STMH 105 – MH106 is not listed in table. Pipe from 300 to 301 is not shown on plans.

C2.0 – This sheet is incomplete. Needs project name and details.

All Plan Sheets – Show continuation notes for 145th Avenue. Provide plan sheet showing entire plat with proposed improvements.

C2.3 – There is an existing 6" watermain from Sapphire Street to Rhinestone Street across Lot 1, Block 1, Ramsey Town Center 11th Addition, This must be shown. Move the label out of the underground storage area. Only 1 access will be permitted to Rhinestone Street from this plat and 11th Addition. A detailed Temporary Pedestrian Access Route Detour must be added to the plan set. The Ramsey HRA does not own the existing commercial lot. Revise the data. A special detail will be required for the Rhinestone Street Connection as it is a concrete street. Coordinate with the City for the specific requirements of this detail.

C2.4 – Provide details for the retaining wall on the east side of Sapphire Street. All sidewalks are 6' wide. Pedestrian ramps are required at all intersections in Public right of way and where the sidewalk crosses internal drives. A detail for each is required as noted above.

C2.5 – There is existing storm pipe north east of MH106. This is 52" arch pipe. Add notes to detail disposition of this pipe (ie. Removal, reconnection)

C3.0 – The plan and profile alignments must line up. Break the plan view into two windows if necessary. Show disposition of 52" arch pipe north of MH106. Run Watermain under sanitary sewer at MH A. Add note: "All watermain 6" and smaller shall be Class 53. Watermain 8" and larger shall be Class 52."

C3.1 – Use 2-45º bends in place of 90º bends. Provide drainage and utility easement over all watermain in site.

Specifications

Include City where ever Engineer or Owner is referenced in Specifications.

Section 01310 – Section 01315 is not in book. Paragraph 1.2.B -Include City in those notified. Sunday work is not permitted in the City of Ramsey without City Council approval. Working hours are 7:00 am – 10:00 pm. 48 hour notice is required for Saturday Work.

Section 01410 – Paragraph 1.3.A -The contractor must have a City License.

Section 01555 – Paragraph A.7 – A City right-of-way permit is required prior to working in the ROW.

Section 02510 – Add Notes:
Only City Personnel shall operate valves.
All valves not in paved surfaces shall have blue carsonite markers.
Paragraph 2.7.C.2 – Valve nut extensions are not used in the City of Ramsey.

Section 02510 – Add note:
All manholes not in paved surfaces shall have green carsonite markers.
All sanitary sewer shall have 10 gauge solid copper tracer wire.

Section 02630 – Add note:
All manholes not in paved surfaces shall have green carsonite markers.
All storm sewer shall have 10 gauge solid copper tracer wire.

Section 02630 – Include City on all Correspondence. Paragraph 1.6.A – All plant material in City ROW shall have two (2) year warranty.

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	3/27/15	**PROJECT ADDRESS**	TBD
PROJECT. TITLE	PARKVIEW EAST		
ESCROW #	114584		
DEPARTMENT:	Community Development: Planning Division (Landscape Plan & Environmental Resources)		
TECHNICAL REVIEWER:	Name: Chris Anderson, City Planner Phone: 763-433-9817 Email: canderson@cityoframsey.com		

The COR Design Framework outlines the required streetscape elements such as tree species, tree spacing, boulevard width, and sidewalk width based on the street hierarchy. There site abuts three (3) different streets, each with a different designation (Downtown, Connector, and Parkway). However, along Rhinestone Street, there is existing sidewalk and boulevard, which shall be utilized. Similarly, along Sapphire Street south of the project site, sidewalk and boulevard dimensions have already been established and the intention should be to mimic those to maintain a consistent appearance. Along Ramsey Parkway, boulevard and sidewalk width both should be six (6) feet. Finally, tree spacing for streetscape plantings should be between thirty (30) and thirty-five (35) feet.

We offer the following comments regarding the Landscape Plan prepared by Bolton & Menk, Inc. and dated March 3, 2015:

- The width of the boulevard area along Ramsey Parkway is not specified on the plans. The width should be at least six (6) feet and the additional width should be toward the building not the curb. This may require shifting the sidewalk closer to the building but that would benefit the project by improving the build to requirement (which is measure from edge of sidewalk). If this results in the public sidewalk being partially on private property, a permanent public easement over that portion of the sidewalk shall also be granted to the City for public purposes. *Please revise Sheet C2.4 to identify the boulevard width as six (6) feet*.
- The plans show a sidewalk connecting Ramsey Parkway and 145th Ave, which was requested by the City. It is presumed that park patrons (or other public) may traverse this sidewalk and thus, it would be beneficial to encumber this with a permanent public easement.
- Sidewalk width along 145th Ave should be increased to six (6) feet with the expansion being toward the future building (away from the curb). *Please revise Sheet C2.4 to accordingly.*
- The boulevard area must be finished with topsoil and sod and the developer (and eventually the management company) shall be responsible for its establishment (e.g.

watering). *Please revise Sheet C2.7 to specify that boulevards will be established with topsoil and sod.*

- *Planting details must be added to Sheet C2.7 to include the following*
  - *Planting depth shall be such that the 1st set of primary roots is at finished grade*
  - *Only prune out dead/broken/deformed branches at time of installation*
  - *Remove upper 1/3 of wire basket and burlap after being placed in planting hole*
  - *2-4 inches of wood chip mulch shall be included around all trees. Mulch shall not be piled against the trunk of trees.*
- The proposed street trees are too close together, the overall number should be reduced so that the spacing is equal to 30-35 feet on center. *Please revise Sheet C2.7 to reflect the proper spacing and update the quantities for each species accordingly.*
- All plantings shall be outside the vision clearance triangle at all intersections and access points. Definition of the vision clearance triangle can be found in City Code Section 117-348 (g). *Please revise Sheet C2.7 to identify the vision clearance triangle at all intersections and access points and ensure that no plantings are within this area.*
- Street trees should be planted with one (1) species per block or, if a standard block does not exist, such as along Ramsey Parkway and Rhinestone Street, in blocks or groups consisting of 5-6 trees of the same species. *Please revise Sheet C2.7 to reflect the street trees planted in linear groups of 5-6 trees per one species.*
- Street trees shall have a minimum branch height of not less than five (5) feet. *Please revise Sheet C2.7 to include this note.*
- There are no foundation plantings or internal landscape elements shown on the plan. Are any plantings proposed? How about within any of the parking lot islands? An internal landscaping plan shall be submitted for review.
- It appears that there will be a very narrow strip of vegetation between the sidewalk and the retaining wall along Sapphire Street. It would be recommended to eliminate that and just widen the sidewalk to abut the wall.
- The plan must be revised to identify turf establishment with sod. The notes refer to both sod and seed but there is no legend or labels to determine which is being used and where. Please note that any alternative to the sod requirement requires City Council approval.
- Upon acceptance of landscaping by City, a two (2) year maintenance guarantee is required to ensure survival of plantings.
- The project is subject to the City's topsoil requirement, which states that all disturbed areas not otherwise improved with walkways, driveway, home and other impervious surfacing, shall receive four (4) inches of topsoil meeting the City's topsoil specification. A topsoil inspection is required prior to landscaping being installed and copies of the load tickets are required as well. This is reviewed at time of Building Permit Application and request for Certificate of Occupancy. *Please update the Landscape Installation Notes to include this requirement.*

- The plans do not indicate whether an irrigation system will be installed or not. Establishment of the streetscape (trees and sod), including watering, is the responsibility of the Developer (and eventually the property management company). In ground irrigation within the boulevard area is subject to review and approval by the City.

Please submit a revised landscaping plan that addresses these matters.

Tree Preservation: This site is devoid of any significant tree cover and therefore, no tree preservation plan is necessary.

Stormwater: It appears that the site will utilize a subsurface stormwater system to achieve the required infiltration of the first one (1) inch of rainfall in accordance with the Lower Rum River Water Management Organization's 3rd Generation Plan. The system appears to be designed with an overflow outlet that allows runoff from larger events to outlet into the existing storm sewer infrastructure in Sapphire St where it will eventually be routed to a regional pond. The Engineering Division will be completing a more comprehensive review of the grading/drainage plans.

The plans were reviewed by the Environmental Policy Board (EPB) at their March 30, 2015 meeting and the EPB was generally supportive of the Landscape Plan. However, they request that some of the trees originally proposed as street trees be relocated south of the enclosed parking facilities. This would provide some visual relief and screening of the buildings from the south (without requesting more trees). Additionally, the EPB also noted their concern for a lack of landscaping internal to the site and requested the applicant provide additional detail on this component. Finally, the EPB also had some advisory comments that they desire the applicant to explore in more detail including:

- Is the site being over-parked? Could some of the surface parking be eliminated and replaced with greenspace?
- Could some of the larger islands within the parking lot be designed as swales with curb cuts and appropriate vegetation that could serve as small infiltration points?

The EPB did recommend approval of the Landscape Plan contingent upon compliance with the revisions requested in this Staff Review Letter.

5.03: Consider Landscape Plan Association with a Site Plan Application for Parkview East; Case of PSD, LLC

City Planner Anderson presented the staff report.

Board Member Stodola asked if the developer could put shrubbery in along the perimeter.

City Planner Anderson replied that the City is trying to stay clear of shrubbery installations on the boulevard area for maintenance reasons.

Board Member Lewis inquired about the ratio of parking spaces to apartment units.

Community Development Director Gladhill stated the number of parking spaces are more than the City would require and there are tuck under garages in the apartment building. He stated that the applicant feels that they are meeting the parking needs from a marketing perspective. If the issue becomes a storm water question, the Board will be addressing it.

Board Member Lewis stated that the planting proposal seems unimaginative to him and talked about the back wall of the parking stalls. He indicated that there was no photometric plan included in the proposal.

City Planner Anderson agreed and stated that plans for internal landscaping and photometrics have not yet been received from the applicant.

Community Development Director Gladhill stated that currently the architectural plans don't match up with civil engineering plans.

Board Member Hiatt asked if an internal landscaping plan can be required as part of their proposal.

City Planner Anderson replied that it is not specifically required as part of the proposal but that it is reasonable to ask what the intentions are and the City will be reaching out to the applicant.

Board Member Hiatt stated that the City should make sure the applicant is aware that we are expecting an internal landscaping plan from them and that suggested addressing the landscaping along the back wall of the garage.

Community Development Director Gladhill asked the Board if they wanted to continue the trend to prescribe the plantings in the boulevard area for a consistent look and the Board's desire with regard to reducing the parking lot size.

Board Member Hiatt stated that the Board could not take the number of parking spaces below the code for minimum parking spaces.

Board Member Lewis stated he was not proposing that the Board force the applicant down to the minimum number of parking spaces, but that it seemed to him that there was inordinate amount of

parking. He would like to know if the parking is appropriate for the size of the building and he would like to see more imaginative landscaping.

City Council Liaison LeTourneau stated he would like to know about any economic reasons for having that much parking.

City Planner Anderson confirmed the Board's general consensus to explore the question of parking and if there is an ability to shrink it and to offset it with landscaping.

Board Member Valentine stated that it would be useful to look at landscaping to provide drainage and a way to handle storm water management.

City Council Liaison LeTourneau stated his concern is any storm water that makes it back into the river and he would want to think about it before we asked them to re-engineer.

Board Member Valentine stated he was not talking about major re-design of their storm water system but trying to create more pervious and impervious area.

City Planner Anderson stated that the Staff Review Letter can be revised and general advisory comments added regarding the parking lot and the storm water plan and stating that the City feels this is an issue worth exploring. He stated that the Board is identifying a best management practice that could be implemented on this site.

Community Development Director Gladhill will forward the Board's comments on the aesthetic components of development plans to the Planning Commission.

City Council Liaison LeTourneau stated that the Board should be focused on the exterior development plan and that the garage issue does need to be addressed.

Board Member Lewis felt that it was important to look at the overall development plan.

City Council Liaison LeTourneau stated that the Board is making judgements without an internal concept.

Chairperson Stodola stated that the review process is new to the Board.

City Council Liaison LeTourneau stated that the feedback from the Board is very valuable.

City Planner Anderson stated he is looking for recommendation with regard to the landscape plan. He summarized the Board's wishes to explore with the project developer the quantity of parking on site and if there are opportunities to shrink that and offset it with additional green space and to consider as an advisory comment opportunities within the two largest islands for additional plantings of some sort. He stated that Staff is looking for a recommendation to approve the landscape plan contingent on compliance with the Staff Review Letter and upon exploring the quantity of parking and additional plantings raised by the Board.

Board Member Lewis added the issue of taking some of trees that are being displaced in the current plan and placing them in the back of garages.

City Council Liaison LeTourneau asked about the tree species along Ramsey Parkway being consistent with what is on the North side of the parkway.

City Planner Anderson stated that the North side is a park and it will look different.

Motion by Board Member Hiatt and seconded by Board Member Valentine to support Staff's recommendation of Option 1 with exploration with the developer the quantity of parking on site and if there are opportunities to shrink that and offset it with additional green space; an advisory comment to consider opportunities within the two largest islands for additional plantings of some sort; and to look at relocating landscaping to the South side of the enclosed parking structure.

Motion carried. Voting Yes: Chairperson Stodola, Board Member Hiatt, Valentine, Bernard, and Lewis. Voting No: None. Absent: Board Member Bentz.

Councilmember ___ introduced the following resolution and moved for its adoption:

RESOLUTION #15-04-093

RESOLUTION GRANTING PRELIMINARY PLAT APPROVAL OF COR PARKVIEW ADDITION

WHEREAS, PSD, LLC, hereafter referred to as "Developer", properly applied for preliminary plat approval of the following described property located in the City of Ramsey:

Lots 4 & 5, MEADOW, Anoka County, Minnesota

(the "Subject Property")

WHEREAS, on March 5, 2015, the City received an Application for Major Plat from N.I.K., Management, Inc.; and

WHEREAS, the City finds that the Plat does not required an Environmental Assessment Worksheet (EAW) or Environmental Impact Statement (EIS) due to the size of the project and number of lots; and

WHEREAS, on April 9, 2015, the Planning Commission held a Public Hearing for the plat known as COR PARKVIEW ADDITION; and

WHEREAS, on April 28, 2015, the City Council reviewed the Preliminary Plat.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF RAMSEY, ANOKA COUNTY , STATE OF MINNESOTA, as follows:

1) That the Ramsey City Council hereby grants preliminary plat approval to COR PARKVIEW ADDITION in accordance with relevant City Codes contingent upon compliance with the City Staff Review Letter dated April 3, 2015.

The motion for the adoption of the foregoing resolution was duly seconded by Councilmember ____, and upon vote being taken thereon, the following voted in favor thereof:

and the following voted against the same:

and the following abstained:

and the following were absent:

whereupon said resolution was declared duly passed and adopted by the Ramsey City Council this 28th day of April, 2015.

_____
Mayor

ATTEST:

_____
City Clerk

Regular Planning Commission **5. 5.**

Meeting Date: 04/09/2015

By: Chris Anderson, Community Development

Information

Title:

Consider Approvals Related to Site Plan Review for Sunwood Village; Case of CommonBond Communities

1. Resolution #15-04-088: Sketch Plan (Minor Plat)
2. Resolution #15-04-089: Site Plan Review

Purpose/Background:

The City received an application for a Minor Plat and Site Plan for Sunwood Village, a proposed forty-seven (47) unit, three (3) story apartment building within The COR. The project site is located on Outlot A, COR ONE, or upon recording of the plat, Lot 1 Block 1 Sunwood Village (the "Subject Property"), between Sunwood Drive and Veterans Drive, directly adjacent to the Residence at the COR property. The project proposes to replat Outlot A, COR ONE into a buildable lot to accommodate the proposed apartment building.

There is an active Purchase Agreement between CommonBond Communities and the City for this parcel. The Purchase Agreement was entered into on May 20, 2014 and the document is included for reference.

Notification:

Staff attempted to notify all property owners within 700 feet of the Subject Property of the Site Plan and Minor Plat request.

Observations/Alternatives:

The Subject Property is guided as mixed use in the Comprehensive Plan and is located in the COR zoning district. The COR is further broken down into sub-districts to differentiate between desired uses. The Subject Property is partially located in the COR-1 sub-district, which permits multi-story apartment buildings, and the COR-2 sub-district, which focuses more on commercial uses. However, when the COR AUAR was most recently updated, the Subject Property was considered as residential (allowing up to eighty-four [84] residential units). Additionally, the Design Framework provides some flexibility for minor adjustments to sub-district boundaries without requiring a zoning amendment. Thus, the project is being reviewed under the COR-1 sub-district standards.

The COR Design Framework establishes a build to standard of zero to five feet (0-5') for the building related to the public sidewalk. The intent is that at least sixty percent (60%) of a building is located within five (5) feet of the back of the public sidewalk. As proposed, the building would meet the intent of the build to requirement (while it may not meet the 60% threshold, that is due to the building articulation; however, it does provide a consistent building front at the build to line). The proposed building includes two (2) ingress/egress ramps/stairs to access public entrances along Sunwood Drive. As shown, these ramps extend out to the property line (zero setback). However, the proposed sidewalk along Sunwood Drive will need to be widened to match the sidewalk width in front of the adjacent property. In order to avoid potential conflicts between inattentive pedestrians and these improvements, the ramps, and by default the building, will need to be shifted south to accommodate the wider sidewalk. Staff still believes that the intent of the build to standard is still being met as there still would not be anything separating the building from the public domain.

Minimum and maximum parking standards are also addressed in the Design Framework. Residential uses are required to provide at least one (1) parking stall per unit and no more than two (2) stalls per unit. There are forty-seven residential units proposed, equating to a minimum of forty-seven (47) and a maximum of ninety-four

(94) parking stalls. The Site Plan indicates there will be a total of sixty (60) surface parking stalls. The Applicant has also requested the City allocate ten (10) parking stalls within the parking ramp for visitor use.

The building will screen the surface parking from Sunwood Drive. However, it will be visible from Veterans Drive and thus, screening will be necessary along this frontage. Staff has requested that groupings of shrubs be installed, in addition to the trees, between the sidewalk and parking area along Veterans Drive to accommodate the screening requirement. This would also be consistent with what was provided between the surface parking for the Municipal Center and Veterans Drive.

The Design Framework also addresses streetscape standards. The streetscape along Sunwood Drive is already in place, with no additional improvements necessary (other than protecting it from damage as a result of the site improvements). The streetscape along Veterans Drive should be consistent, in terms of boulevard and sidewalk width, with that adjacent to the Municipal Center. Staff has identified minor revisions to this aspect of the Site Plan to ensure a consistent appearance.

The internal landscaping proposed is generally acceptable with requested revisions outlined in the Staff Review Letter. It should be noted that the project is proposing two Best Management Practices (BMPs) related to stormwater management. An underground cistern and a tree trench are proposed to address the first one (1) inch of rainfall as required by the LRRWMO's 3rd Generation Plan. However, the Subject Property is within a ten (10) year capture zone of one of the community wells where infiltration is not permitted, thus, the cistern will be connected to the site's irrigation system and the stormwater will be reused throughout the summer for irrigating the site landscaping. Both BMPs are designed with overflow outlets that, during large rain events, will route stormwater into the existing storm sewer infrastructure where it will ultimately end up in The Draw water feature (where again, the water is recycled for irrigation purposes).

High quality architecture and building materials are an essential component in fulfilling the objectives of the Design Framework. Roof design, materials, amount of windows, and overall design that breaks up the different floors and walls are all important elements to the overall building design. In the COR-1 sub-district, buildings are placed closer to the street so greater emphasis is placed on materials and design features at the street level.

The proposed finish of the building consists of a combination of burnished CMU, face brick, cement fiber board panels, metal panels, metal siding, and fiberglass windows. The street level facade consists primarily of burnished CMU and face brick. Staff has requested the Applicant provide a calculation of the percentage of brick versus the overall facade to verify that the exterior finish of the non-glazed wall area consists of at least fifty percent (50%) brick or comparable alterative per the Design Framework. The combination of materials and building articulation meets the intent of enhanced architectural features outlined in the Design Framework.

It appears that there may be a need for several easements and/or agreements with the adjacent property owner. The Subject Property is proposing to utilize existing accesses onto Sunwood Drive and Veterans Drive with the adjacent property. There is a Reciprocal Driveway Easement recorded against both parcels that addresses this. However, it is unclear whether that existing easement is sufficient for the proposed drive lane leading to the east wall of the building (presumably where the trash enclosure is located). Additionally, the Site Plan also shows a private play structure area that encroaches onto the neighboring property, although it is unclear whether that encroachment accounts for a required fall zone or indicates actual site improvements. Staff has requested clarification on both of these items.

The grading and drainage plans are generally acceptable with revisions as outlined in the Staff Review Letter.

The Environmental Policy Board reviewed the request at their March 30, 2015 meeting and recommended approval of the Landscape Plan and was also very supportive of the BMPs proposed with this project.

Alternatives

Option #1: Recommend City Council adopt Resolutions #15-04-088 and #15-04-089 granting Final Plat and Site Plan approval for Sunwood Village, contingent upon compliance with the Staff Review Letter dated April 3, 2015.

The project appears to be generally consistent with the Design Framework with the necessary revisions outlined in the Staff Review Letter and Staff supports this option.

Option #2: Recommend City Council adopt Resolutions #15-04-088 and #15-04-089 granting Final Plat and Site Plan approval for Sunwood Village with modifications and contingent upon compliance with the Staff Review Letter dated April 3, 2015.

Option #3: Recommend City Council not adopt Resolutions #15-04-088 and #15-04-089. There do not appear to be any major deviations from the Design Framework. Necessary revisions have been outlined in the Staff Review Letter and as long as those revisions are incorporated into the plans, there would be no reason not to recommend approval. Staff does not support this option.

Funding Source:

All costs associated with processing this Application are the responsibility of the Applicant.

Recommendation:

Staff recommends approval of the Site Plan contingent upon compliance with the Staff Review Letter dated April 3, 2015.

Action:

Motion to recommend the following:

- Recommend City Council Adopt Resolution #15-04-088 Approving the Plat entitled 'SUNWOOD VILLAGE'
- Recommend City Council Adopt Resolution #15-04-089 approving the Site Plan for Sunwood Village

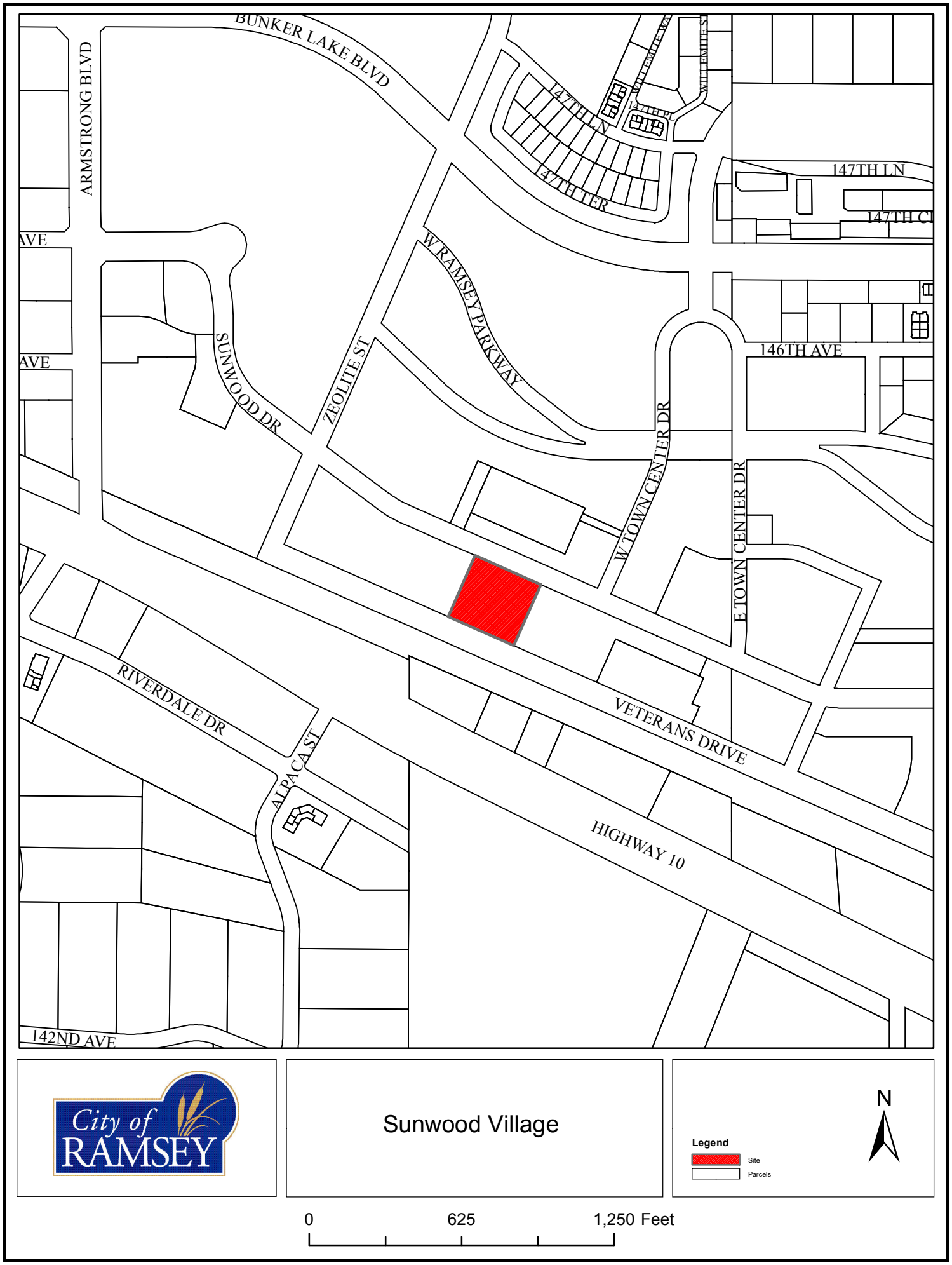
---

Attachments

Site Location Map
Site Plan
Sketch Plan/Final Plat
Color Elevation of Building
North and East Building Elevations
South and West Building Elevations
Staff Review Letter Dated April 3, 2015
Purchase Agreement
Environmental Policy Board Minutes dated March 30, 2015
DRAFT Resolution #15-04-088: Final Plat
DRAFT Resolution #15-04-089: Site Plan

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 12:32 PM
Form Started By: Chris Anderson		Started On: 04/01/2015 11:47 AM
Final Approval Date: 04/03/2015		


BUNKER LAKE BLVD
ARMSTRONG BLVD
147TH LN
147TH TER
147TH LN
147TH CT
W RAMSEY PARKWAY
SUNWOOD DR
ZEOLITE ST
146TH AVE
W TOWN CENTER DR
E TOWN CENTER DR
RIVERDALE DR
ALPACA ST
VETERANS DRIVE
HIGHWAY 10
142ND AVE
City of RAMSEY
Sunwood Village
Legend
Site
Parcels
N
0
625
1,250 Feet

SUNWOOD DRIVE

(80 FOOT WIDE PUBLIC RIGHT OF WAY)

TRASH CAN

BENCH

TRASH CAN

CH

5'-0" SETBACK

48'-0" SETBACK

63'-5 3/4"

3-STORY
47 UNIT
APARTMENT BUILDING

PLANTER, TYP.

147'-8"

BENCH

8

14

60 PARKING STALLS

9

7

7

121'-4"

PLAY AREA

HC

63'-5 3/4"

34'-10" SETBACK

OUTLOT

LOT

BLOCK

3

ASPHALT PAVING
SEE CIVIL

15

B

SUNWOOD VILLAGE	COMM. NO.: 1408
ZONING DATA	
CURRENT ZONING:	COR-1 Sub-District
SITE ADDRESS:	OUTLOT A, COR ONE, Anoka County, Minnesota
PROPOSED USE:	MULTI-FAMILY RESIDENTIAL: 3-Story, 47 UNIT APARTMENT BUILDING
BASE SITE AREA:	80,637 S.F. (1.85 acres) PER 12/14/2014 BOUNDARY & TOPO SURVEY
NET DENSITY:	25.4 UNITS PER ACRE
GROSS BUILDING AREAS:	FIRST FLOOR: 17,696 S.F. SECOND FLOOR: 17,696 S.F. + THIRD FLOOR: 17,696 S.F. TOTAL: 53,088 S.F.
BUILDING COVERAGE:	18,055 S.F. (23% OF SITE)
IMPERVIOUS COVERAGE:	BUILDING = 18,055 S.F. + DRIVES & WALKS = 30,279 S.F. TOTAL IMPERVIOUS = 48,334 S.F. (60% OF SITE)

CIVIC CENTER DRIVE

(100 FOOT WIDE PUBLIC RIGHT OF WAY)

1 SITE PLAN
1/16" - 1'-0"

N

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUE & REVISION
PRELIMINARY- 5/6/2015

COMM #1408

CIVIL & LANDSCAPE:
Loucks Associates
7200 Hemlock Lane
Suite 300
Maple Grove, MN 55369
Tel: 763.424.5505

CONTRACTOR:
Watson-Forsberg
4645 Victoria Blvd.
Suite 110
Minneapolis, MN 55426
Tel: 952.564.3878

CommonBond communities
1080 Montreal Avenue
St Paul MN 55116
Phone: 651-291-1750
Fax: 651-290-0693
Web: www.commonbond.org

SUNWOOD VILLAGE
City of Ramsey, MN
City Parcel #47 (Outlot A)

1201 HAWTHORNE AVENUE
MINNEAPOLIS, MINNESOTA 55403
TEL: 612-332-5420
FAX: 612-332-5428
WWW.MILLERHANSON.COM

MILLER HANSON PARTNERS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT, WAS PREPARED, UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA

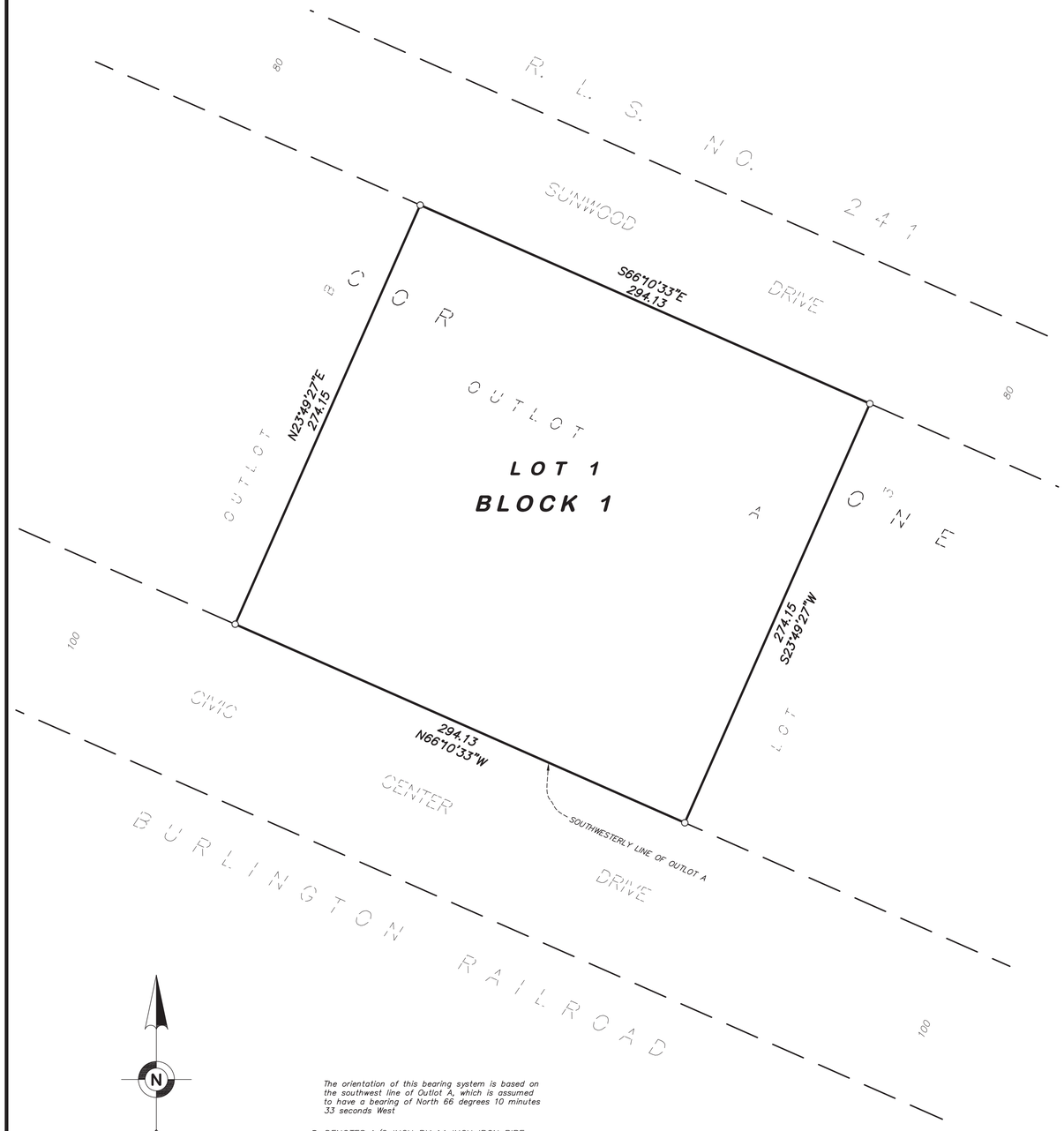
NO. XXXX
NAME
DATE:

SITE PLAN

A200

© 2015 Miller Hanson Partners

SUNWOOD VILLAGE



The orientation of this bearing system is based on the southwest line of Outlot A, which is assumed to have a bearing of North 66 degrees 10 minutes 33 seconds West

○ *DENOTES 1/2 INCH BY 14 INCH IRON PIPE MONUMENT SET & MARKED BY LICENSE 44123*

KNOW ALL MEN BY THESE PRESENTS: That CB Ramsey Housing Limited Partnership, a Minnesota limited partnership, fee owner of the following described property situated in the City of Ramsey, County of Anoka, State of Minnesota:

Outlot A, COR ONE, according to the recorded plat thereof, City of Ramsey

Has caused the same to be surveyed and platted as SUNWOOD VILLAGE.

In witness whereof said CB Ramsey Housing Limited Partnership, a Minnesota limited partnership, has caused these presents to be signed by its proper officer this _____ day of _____ , 201__.

Signed: CB Ramsey Housing Limited Partnership, a Minnesota limited partnership
By: _____, its General Partner

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____ , 201___, by _____, _____ of CB Ramsey Housing Limited Partnership, a Minnesota limited partnership, on behalf of the company.

_____

_____
Notary Public _____ County, _____
My commission expires _____

I, Brent R. Peters, Professional Land Surveyor, do hereby certify that I have surveyed or directly supervised the survey of the property described on this plat; prepared this plat or directly supervised the preparation of this plat; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been correctly set; that all water boundaries and wet lands, as defined in Minnesota Statutes Section 505.01, Subd. 3, as of the date of the surveyor's certification are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this _____ day of _____ , 201___.

_____
Brent R. Peters, Land Surveyor
Minnesota License No. 44123

STATE OF _____
COUNTY OF _____

The foregoing Surveyor's Certificate was acknowledged before me this _____ day of _____ , 201___, by Brent R. Peters, Land Surveyor, Minnesota License No. 44123.

_____

_____
Notary Public _____ County, _____
My commission expires _____

CITY COUNCIL, CITY OF RAMSEY, MINNESOTA

This Plat of SUNWOOD VILLAGE was approved and accepted by the City Council of the City of Ramsey, Minnesota at a regular meeting thereof held this _____ day of_____ , 201___, and said plat is in compliance with the provisions of Minnesota Statutes, Section 505.03, Subd. 2, have been fulfilled.

_____, Mayor _____, Clerk

COUNTY AUDITOR/TREASURER

Pursuant to Minnesota Statutes, Section 505.021, Subd. 9, taxes payable in the year _____ on the land hereinbefore described have been paid. Also, pursuant to Minnesota Statutes, Section 272.12, there are no delinquent taxes and transfer entered this _____ day of _____ , 201___.

_____
Property Tax Administrator

By: _____, Deputy

COUNTY SURVEYOR

I hereby certify that in accordance with Minnesota Statutes, Section 505.021, Subd. 11, this plat has been reviewed and approved this _____ day of _____, 201___.

_____
Larry D. Hoium
Anoka County Surveyor

REGISTRAR OF TITLES
County of Anoka, State of Minnesota

I hereby certify that this plat of SUNWOOD VILLAGE was filed in the office of the Registrar of Titles for public record this _____ day of _____ , 201___, at _____ o'clock __. M., and was duly filed in Book _____ of Plats, Pages _____ and _____ as Document Number _____ .

_____
Registrar of Titles

By _____, Deputy

Egan, Field & Nowak, Inc.
land surveyors since 1872



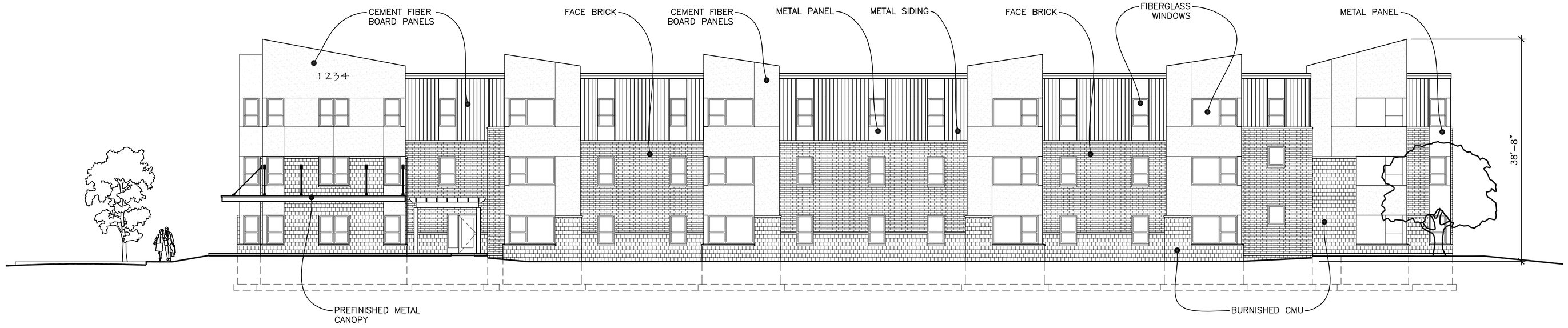
NORTH EXTERIOR ELEVATION

0 4' 8' 16'

Sunwood Village

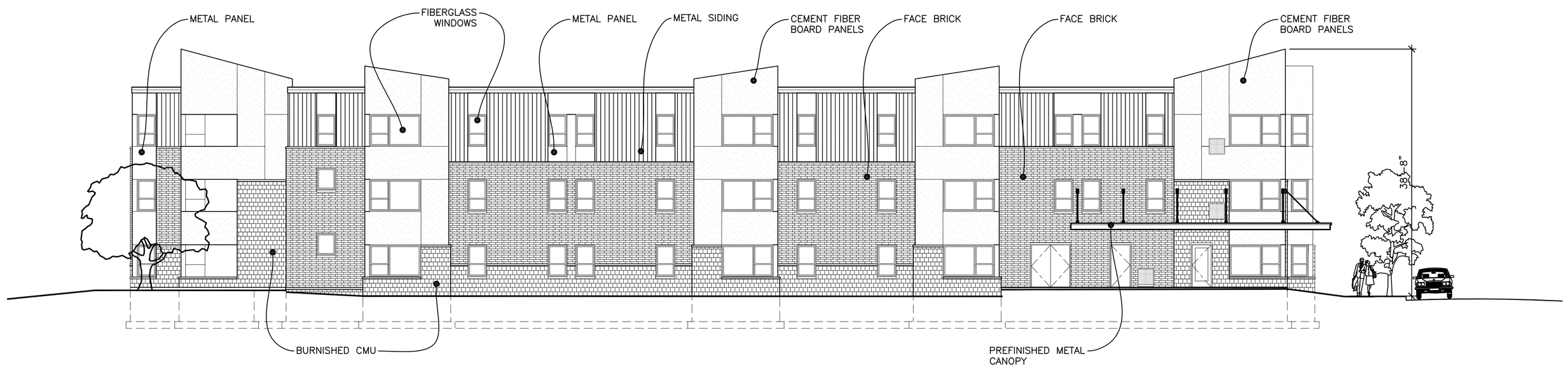
MILLER HANSON PARTNERS
ARCHITECTS + PLANNERS
1201 Hawthorne Ave, suite 400
Minneapolis, MN, 55403
Phone: 612-332-5420
Fax: 612-332-5425
Web: www.millerhanson.com

CommonBond communities
1080 Montreal Avenue
St. Paul MN 55116
Phone: 651-291-1750
Fax: 651-291-1003
Web: www.commonbond.org



1 NORTH EXTERIOR ELEVATION

3/32" = 1'-0"



2 EAST EXTERIOR ELEVATION

3/32" = 1'-0"

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUE & REVISION
PRELIMINARY- 5/27/2015

COMM #1408

CONTRACTOR:
Watson-Forsberg
4645 W. Fyzatte Blvd.
Suite 110
Minneapolis, MN 55426
Tel: 952.584.3878

CIVIL & LANDSCAPE:
Loucks Associates
7200 Hemlock Lane
Suite 300
Maple Grove, MN 55369
Tel: 763.424.5505

MEP
Steen Engineering Inc.
6500 Olson Memorial Hwy. N.
Golden Valley, MN 55429
Tel: 763.595.6742

CommonBond communities
1080 Montreal Avenue
St. Paul MN 55116
Phone: 651-291-1750
Fax: 651-641-1465
Web: www.commonbond.org

SUNWOOD VILLAGE
City of Ramsey, MN
City Parcel #47 (Outlot A)

1201 HAWTHORNE AVENUE
MINNEAPOLIS, MINNESOTA 55403
TEL: 612-332-5420
FAX: 612-332-5428
WWW.MILLERHANSON.COM
MILLER HANSON PARTNERS

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA

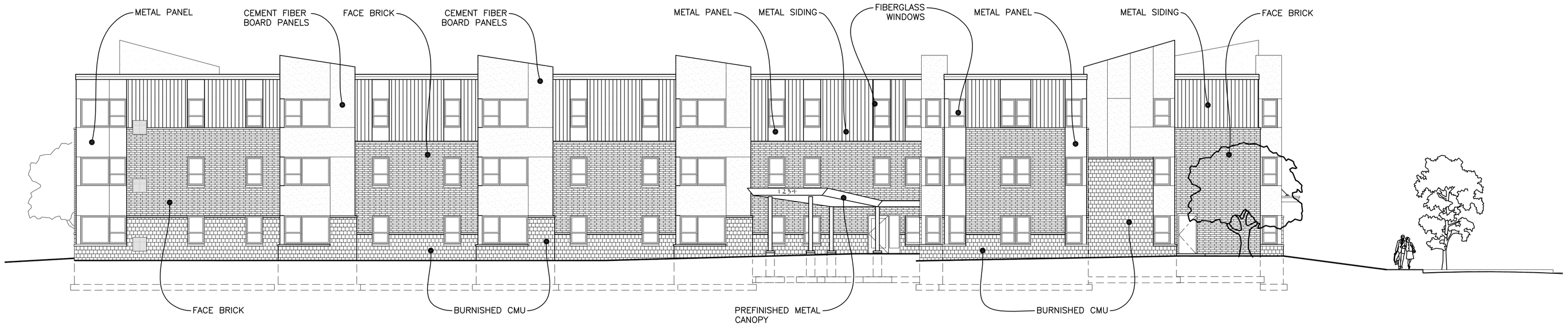
NAME
DATE:

NO. XXXX

EXTERIOR ELEVATIONS

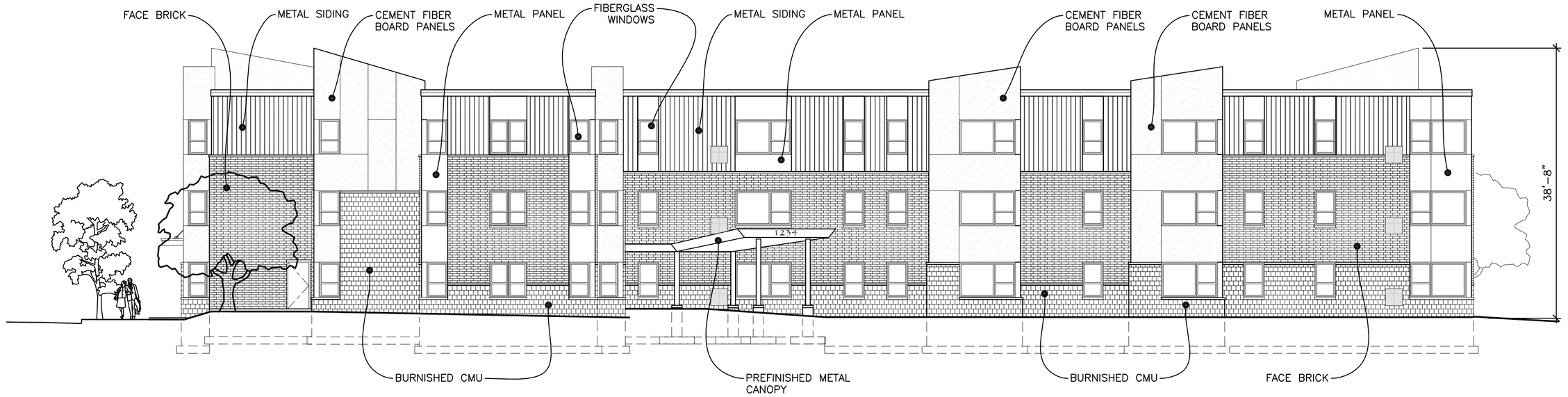
A500

© 2015 Miller Hanson Partners



1 SOUTH EXTERIOR ELEVATION

3/32" = 1'-0"



2 WEST EXTERIOR ELEVATION

3/32" = 1'-0"

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUE & REVISION
PRELIMINARY- 5/27/2015

COMM #1408

CONTRACTOR: Watson-Forsberg, 4645 Nyzata Blvd. Suite 110, Minneapolis, MN 55426, Tel: 952.584.3878

CIVIL & LANDSCAPE: Loucks Associates, 7200 Hemlock Lane Suite 300, Maple Grove, MN 55369, Tel: 763.424.5505

MEP: Steen Engineering Inc. 6440 Flying Cloud Drive N. Chanhassen, MN 55429, Tel: 763.585.6742

CommonBond communities
1080 Montreal Avenue
St. Paul MN 55116
Phone: 651-291-1750
Fax: 651-641-1465
Web: www.commonbond.org

SUNWOOD VILLAGE
City of Ramsey, MN
City Parcel #47 (Outlot A)

1201 HAWTHORNE AVENUE
MINNEAPOLIS, MINNESOTA 55403
TEL: 612-332-5420
FAX: 612-332-5428
WWW.MILLERHANSON.COM
MILLER HANSON PARTNERS

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA

NAME
DATE:

NO. XXXX

EXTERIOR ELEVATIONS

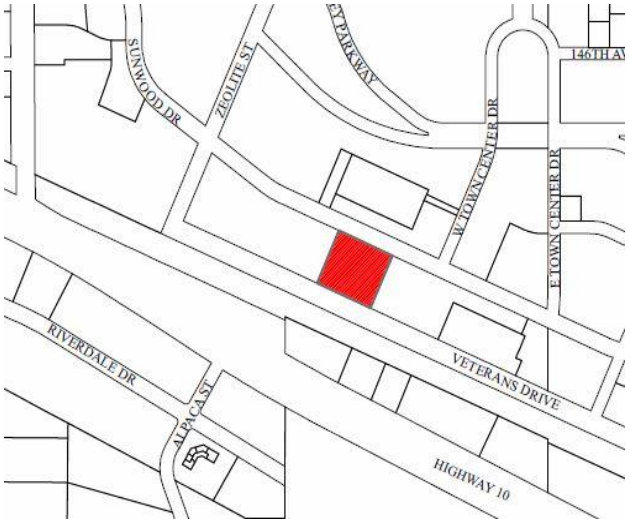
A501

© 2015 Miller Hanson Partners

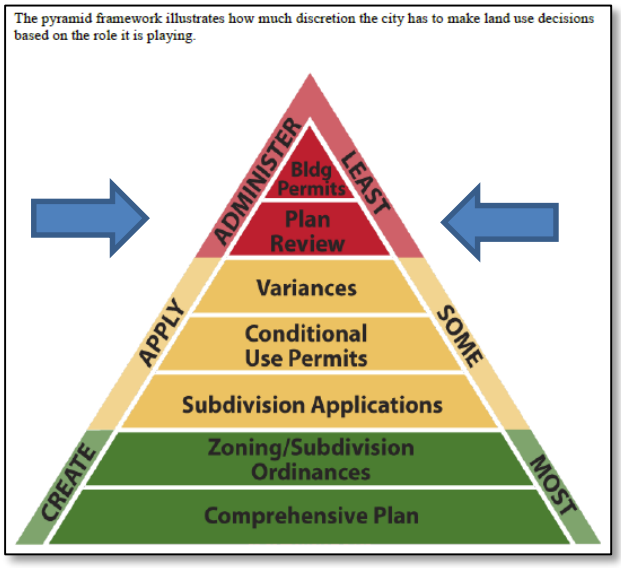
CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	4/3/15	**PROJECT ADDRESS**	TBD
PROJECT. TITLE	SUNWOOD VILLAGE (SKETCH PLAN, FINAL PLAT, AND SITE PLAN)		
ESCROW #	114596		
DEPARTMENT:	Community Development: Planning Division (Comprehensive Plan and Zoning Code)		
TECHNICAL REVIEWER:	Name: Chris Anderson, City Planner Phone: 763-433-9817 Email: canderson@cityoframsey.com		

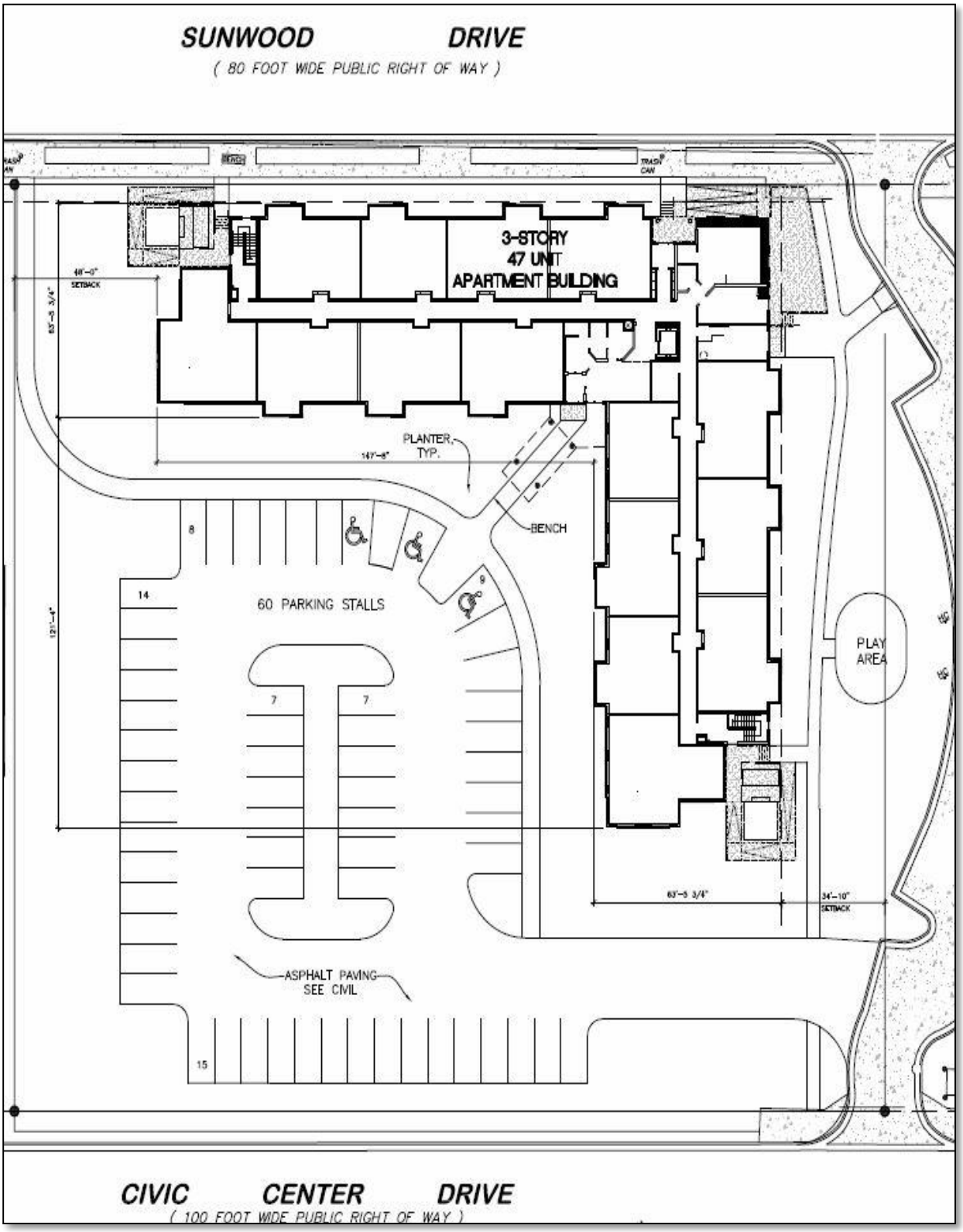
General: The purpose of this file is to provide sketch plan, final plat and site plan review for a planned 18,055 square foot, three (3) story apartment building. The architect of record is Miller Hanson Partners and the Civil Engineer of record is Loucks Associates. See Exhibit A for a detailed list of corrections, revisions, and requested clarifications organized per individual sheet of the submitted plans.



Sketch Plan and Final Plat: The project proposes to replat Outlot A, COR ONE into Lot 1 Block 1 SUNWOOD VILLAGE (the "Plat"). The Plat does not propose altering or realigning any property boundaries. The Plat meets or exceeds all applicable dimensional bulk standards. *The Plat should be revised to correctly indicate Veterans Drive rather than Civic Center Drive. The Plat, once approved by City Council, should be recorded after successfully closing on the property.*



Site Plan: City Code Section 117-118 requires that any construction of buildings within the District will be subject to the site plan review process as outlined in City Code Section 117-54 and is subject to the standards found within the COR Design Framework.


SUNWOOD DRIVE
(80 FOOT WIDE PUBLIC RIGHT OF WAY)
3-STORY
47 UNIT
APARTMENT BUILDING
PLANTER, TYP.
BENCH
60 PARKING STALLS
PLAY AREA
ASPHALT PAVING
SEE CIVIL
CIVIC CENTER DRIVE
(100 FOOT WIDE PUBLIC RIGHT OF WAY)

Comprehensive Plan: The Property is designated as Mixed Use in the Comprehensive Plan. This category generally includes retail, commercial entertainment office, institutional, high density residential, transit hubs and park and recreation uses. The proposed use appears to be consistent with this designation.

Zoning: The property is located within the COR Zoning District and this site has always been envisioned for residential development. When the COR AUAR was last updated, this site was considered as residential, allowing for up to eighty-four (84) residential units. While The COR Sub-district Map, Version 6.2, indicates a portion of this parcel being in Sub-district COR-2A, the intent of the sub-districts within the COR Zoning District was to retain some flexibility to make minor sub-district boundary adjustments without processing a zoning amendment. As a result, the project is being reviewed under the COR-1 Sub-district standards. The City can and will at some future point make an adjustment to the sub-district boundary to accurately reflect this entire parcel as being in the COR-1 Sub-district.

Dimensional Standards. While City Code Section 117-118 guides permitted and prohibited uses within the District, it does not contain specific dimensional and performance standards. Those are outlined in the COR Design Framework. The proposed site plan appears to be generally consistent with the standards below.

Standard	Requirement	Proposed
Minimum Lot Size	None	1.85 acres
Minimum Lot Width	20 feet	294.13 feet
Minimum Lot Depth	80 feet	274.15 feet
Allowable Residential Density in Units per Acre	>15 DU/AC	25.4 DU/AC
Maximum Building Height	2-5 stories	3 stories
Front Yard Build to Line	5 feet*	5 feet**

*As measured from building front to right-of-way (60% of front façade within max)
**Articulation and egress ramps are incorporated into the building design, so while the building may not quite achieve the 60% threshold, there is a consistent building front along this build to line with nothing separating it from the public domain, which satisfies the intent of the build to requirement.

While as drawn, the building meets the intent of the build to requirement, the sidewalk along Sunwood Drive must be widened to match that east of the access point. If the building is not shifted south, the egress ramps will essentially be an extension of the sidewalk and pedestrians may inadvertently end up on the ramp (or worse, potentially walk into the railing). Thus, the building should be shifted south somewhat to accommodate the wider sidewalk. As the egress ramps serve as an extension of the building and as well as a public entrance, they will be used for the build to determination. The overall intent of the build to standard is still being met as there will not be any other features separating the building from the public domain.

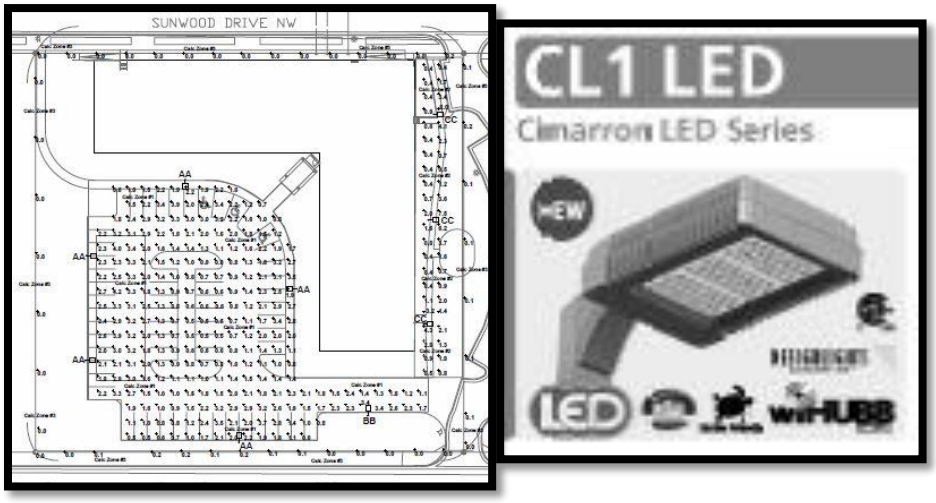
Lot Coverage/Floor Area Ratio (FAR): The COR-1 Subdistrict requires a minimum FAR of 0.65. The Site Plan indicates that the proposed lot is 80,637 square feet in size (1.85 acres). The proposed building footprint is 17,693 square feet and with three (3) stories, the gross floor area will be 53,088 square feet per Sheet A200. This results in a FAR of 0.66.

Architectural Standards. The design standards for this area are addressed in the COR Design Framework. The COR Design Framework places a strong emphasis on high quality architecture and encourages the integration of both traditional and contemporary design. Within the COR-1 Subdistrict, at least fifty percent (50%) of the non-glazed wall area shall consist of brick or an alternative comparable. The exterior finish is proposed to consist of a combination cement board fiber panels, face brick, metal paneling, burnished CMU, and an unidentified element. *Please provide a calculation of the brick versus the overall building façade to verify that the 50% threshold is satisfied. Additionally, please provide more detail regarding the proposed metal siding for review. Finally, color elevations should be provided for all four (4) sides of the building, not just the north face.*



It is unclear where the trash enclosure is located. It is assumed that the trash enclosure is within the east wall of the building where, on Sheet C2-1, there is a section of heavy duty pavement shown leading to the building. *The plans should be updated to clearly indicate where the trash enclosure will be located. Also, it should be noted that a Reciprocal Driveway Easement exists for Lot 3 Block 1 COR ONE and Outlot A, COR ONE. The applicant shall verify that this easement adequately addresses the drive lane to the eastern wall.*

As outlined in the COR Design Framework, one of the main entrances must be oriented toward the street. In reviewing the renderings and building elevations, it appears that there will be at least one (1) entrance from Sunwood Drive. However, it appears that the elevations submitted differ from those that accompanied the Metropolitan Council Livable Communities Act grant application, which indicated that the main floor units facing Sunwood Drive would each have direct access to the street. *Please clarify why these direct accesses appear to have been removed from the plan.*



Lighting Standards. Any lighting used to illuminate an off-street parking area, sign, or structure shall be arranged to deflect light away from an adjoining residential district or public street. Bulbs emitting an excess of 3,000 lumens (150 watts) shall be positioned so that the source of light is not visible from off of the property. The site plan includes shop drawings of all proposed lighting. The applicant is responsible for the installation and 3 years of operations and maintenance of all boulevard lighting adjacent to their project consistent with the COR master lighting plan.

Parking: The Design Framework outlines both minimum and maximum on-site parking standards based on a proposed use. Multifamily units shall provide at least one (1) parking stall per unit but no more than two (2) parking stalls per unit. There are forty-seven (47) residential dwelling units proposed with this project. Thus, the allowable range of parking stalls provided shall be forty-seven (47) to ninety-four (94). The Site Plan indicates a total of sixty (60) surface parking stalls, which complies with the parking requirements.

Standard	Required	Proposed
Minimum Stall Width	9 feet	9 feet
Minimum Stall Depth	18 feet	19 feet
Minimum Aisle Width	24 feet	24 feet

Signage: It is highly encouraged to submit renderings of any proposed signage for the site for review in conjunction with the Site Plan review. While a separate Permanent Site Permit Application is required, this can help identify any potential inconsistencies with the sign standards within the COR Design Framework. *The submittal does not include any information related to signage.*

Waste Storage: Waste storage is required to be designed such that it is internal to the building. As noted above, it appears that waste storage is proposed inside the eastern wall of the building. *Please include details regarding the waste storage area to ensure consistency with the Design Framework.*

Sidewalks/Boulevards: The streetscape is mostly established already along Sunwood Drive. However, the sidewalk will need to be widened to match the sidewalk east of the access point along Sunwood Drive. Along Veterans Drive, the sidewalk and boulevard widths should be consistent with the sidewalk and boulevard south of the Municipal Center. *The plans should be revised accordingly.*

Easements/Agreements: Based on the submitted Site Plan, multiple easements/agreements will be necessary. A Reciprocal Driveway Easement appears to be in place for this lot and Lot 3 Block 1 COR ONE. An Encroachment Agreement with the owner of Lot 3 Block 1 COR ONE may be necessary for the proposed Tot Lot if any improvements (land disturbance) for it will encroach onto the adjacent property, as shown on multiple sheets. Alternatively, the improvements could be shifted west so they are entirely on the Sunwood Village parcel. Additionally, a Temporary Construction Easement will also be necessary, again from the owner of Lot 3 Block 1 COR ONE, for some of the improvements shown on Sheet C1-2. Finally, the applicant must verify whether the existing Reciprocal Driveway Easement is sufficient for the access lane leading to the eastern wall of the building. *Note that all easements must be recorded prior to the City issuing a Building Permit and the applicant must provide proof of recording of all documents as required by the City. A title search should be completed to ensure that all underlying easements are vacated as necessary. Vacating easements is a separate Land Use Application with the City.*

Development Fees: The project will be subject to applicable development fees including, but not necessarily limited to, Park Dedication, Trail Development, Stormwater Management, Water and Sanitary Sewer Trunk Fees. A full analysis of the Development Fees can be found in Exhibit B. *Note that a detailed Engineer's Cost Estimate for all improvements (excluding the building) must be submitted to calculate the required Surety and Inspection Fees. The estimate should be broken down by line item and include quantities and unit costs.*

Recommendation: City Staff is recommending that the City Council adopt Resolutions #15-04-088 and #15-04-089 approving the Final Plat and Site Plan for Sunwood Village, with amendments as outlined in this Staff Review File.

Next Steps. Following Planning Commission Review, the Site Plan and Final Plat will be forwarded to City Council for consideration. Review by the City Council could tentatively occur at the April 28, 2015 City Council meeting.

EXHIBIT A

Below are revisions and requested clarifications that must be addressed with revised plans. Note that comments that are intended as advisory or recommendations only will be specifically identified.

General Comments:

- Revised/final plans shall have signature blocks for both the Engineer and Architect to inform us of who is responsible for preparation of each sheet.
- A Pedestrian Detour Plan is required and is subject to review and approval by the City.

Plat Sheet:

- Amend to correctly label Veterans Drive.
- Plat should be recorded AFTER acquisition of the property.

Boundary and Topographic Survey Sheet:

- Amend to correctly label Veterans Drive.

Sheet C1-2

- A Temporary Construction Easement will be needed from the owner of Lot 3 Block 1 COR ONE for some of the proposed work.
- The existing segment of sidewalk along Sunwood Drive, west of the access point, should be retained and extended to the western edge of the plat following the same pattern.
- The existing segment of sidewalk along Veterans Drive, west of the access point, should be removed and replaced so there is a consistent sidewalk width along the southern boundary of the entire plat (as shown, there is an awkward transition as the sidewalk drastically narrows just west of the access point).

Sheet C2-1

- It is unclear whether the area identified as Tot Lot is just the improvements or if this includes the required fall zone. Note that all improvements must be entirely on Lot 1 Block 1 Sunwood Village or an Encroachment Agreement with the owner of Lot 3 Block 1 COR ONE must be executed.
- Sidewalk width along Sunwood Drive should match that of the sidewalk on the east side of the access point (accomplished by extending the existing segment of sidewalk to western boundary of plat). Sidewalk should be widened toward the building, which will result in the building shifting south slightly. Please provide a hand sketch of the revised sidewalk prior to revising plan sheets so that City Staff can verify its placement.
- Update this sheet to clearly indicate where the trash enclose will be located and provide specific details.

- Verify whether the Reciprocal Driveway Easement sufficiently covers the drive lane to the east wall of the building noted as heavy duty pavement section.
- Provide a legend identifying all abbreviations, labels, and symbols/patterns (examples: what is PSBL and what is the symbol/pattern indicating for the Tot Lot, improvements only or fall zone as well).
- At the western edge of the access from Veterans Drive, there is a remnant of concrete sidewalk that transitions to the proposed six (6) foot sidewalk. This remnant portion of sidewalk should be removed and replaced with a consistent sidewalk from this access point to the west boundary of the plat.
- Boulevard width should be labeled and should match the boulevard width along Veterans Drive adjacent to the Municipal Center.
- Please provide clarification as to why the direct access to each ground floor unit facing Sunwood Drive has been removed from the plans.
- Groups of shrubs should be installed between the trees along Veterans Drive. The shrubs will serve as screening of the surface parking as required in the Design Framework.
- Advisory Comment: Should the underground cistern be shifted west slightly so that it is not underneath any part of the sidewalk?
- Advisory Comment: The internal sidewalk in the northwest portion of the site be shifted to the east, preferably at least ten (10) to fifteen (15) feet, to provide some separation between it and the property line. Otherwise, please provide reasoning for keeping it in the proposed location.

Sheet C3-1

- At the western edge of the access from Veterans Drive, there is a remnant of concrete sidewalk that transitions to the proposed six (6) foot sidewalk. This remnant portion of sidewalk should be removed and replaced with a consistent sidewalk from this access point to the west boundary of the plat.
- It is unclear whether the area identified as Tot Lot is just the improvements or if this includes the required fall zone. Note that all improvements must be entirely on Lot 1 Block 1 Sunwood Village or an Encroachment Agreement with the owner of Lot 3 Block 1 COR ONE must be executed.
- Sidewalk width along Sunwood Drive should match that of the sidewalk on the east side of the access point (accomplished by extending the existing segment of sidewalk to western boundary of plat). Sidewalk should be widened toward the building, which will result in the building shifting south slightly. Please provide a hand sketch of the revised sidewalk prior to revising plan sheets so that City Staff can verify its placement.
- Advisory Comment: Should the underground cistern be shifted west slightly so that it is not underneath any part of the sidewalk?
- Advisory Comment: The internal sidewalk in the northwest portion of the site be shifted to the east, preferably at least ten (10) to fifteen (15) feet, to provide some separation between it

and the property line. Otherwise, please provide reasoning for keeping it in the proposed location.

Sheet C3-2

- At the western edge of the access from Veterans Drive, there is a remnant of concrete sidewalk that transitions to the proposed six (6) foot sidewalk. This remnant portion of sidewalk should be removed and replaced with a consistent sidewalk from this access point to the west boundary of the plat.
- It is unclear whether the area identified as Tot Lot is just the improvements or if this includes the required fall zone. Note that all improvements must be entirely on Lot 1 Block 1 Sunwood Village or an Encroachment Agreement with the owner of Lot 3 Block 1 COR ONE must be executed.
- Sidewalk width along Sunwood Drive should match that of the sidewalk on the east side of the access point (accomplished by extending the existing segment of sidewalk to western boundary of plat). Sidewalk should be widened toward the building, which will result in the building shifting south slightly. Please provide a hand sketch of the revised sidewalk prior to revising plan sheets so that City Staff can verify its placement.
- Advisory Comment: Should the underground cistern be shifted west slightly so that it is not underneath any part of the sidewalk?
- Advisory Comment: The internal sidewalk in the northwest portion of the site be shifted to the east, preferably at least ten (10) to fifteen (15) feet, to provide some separation between it and the property line. Otherwise, please provide reasoning for keeping it in the proposed location.

Sheet C4-1

- At the western edge of the access from Veterans Drive, there is a remnant of concrete sidewalk that transitions to the proposed six (6) foot sidewalk. This remnant portion of sidewalk should be removed and replaced with a consistent sidewalk from this access point to the west boundary of the plat.
- It is unclear whether the area identified as Tot Lot is just the improvements or if this includes the required fall zone. Note that all improvements must be entirely on Lot 1 Block 1 Sunwood Village or an Encroachment Agreement with the owner of Lot 3 Block 1 COR ONE must be executed.
- Sidewalk width along Sunwood Drive should match that of the sidewalk on the east side of the access point (accomplished by extending the existing segment of sidewalk to western boundary of plat). Sidewalk should be widened toward the building, which will result in the building shifting south slightly. Please provide a hand sketch of the revised sidewalk prior to revising plan sheets so that City Staff can verify its placement.
- Advisory Comment: Should the underground cistern be shifted west slightly so that it is not underneath any part of the sidewalk?

- Advisory Comment: The internal sidewalk in the northwest portion of the site be shifted to the east, preferably at least ten (10) to fifteen (15) feet, to provide some separation between it and the property line. Otherwise, please provide reasoning for keeping it in the proposed location.

Sheets C8-1 through C8-3

- Add a detail addressing the brush finish of the sidewalk (each panel should alternate between vertical and horizontal brush strokes).

Sheet L1-1 (in addition to comments provided under the Landscape & Environmental Resources review)

- At the western edge of the access from Veterans Drive, there is a remnant of concrete sidewalk that transitions to the proposed six (6) foot sidewalk. This remnant portion of sidewalk should be removed and replaced with a consistent sidewalk from this access point to the west boundary of the plat.
- It is unclear whether the area identified as Tot Lot is just the improvements or if this includes the required fall zone. Note that all improvements must be entirely on Lot 1 Block 1 Sunwood Village or an Encroachment Agreement with the owner of Lot 3 Block 1 COR ONE must be executed.
- Sidewalk width along Sunwood Drive should match that of the sidewalk on the east side of the access point (accomplished by extending the existing segment of sidewalk to western boundary of plat). Sidewalk should be widened toward the building, which will result in the building shifting south slightly. Please provide a hand sketch of the revised sidewalk prior to revising plan sheets so that City Staff can verify its placement.
- Boulevard area along Veterans Drive must be established with sod and this should be reflected on the plans.
- Groups of shrubs should be installed between the trees along Veterans Drive. The shrubs will serve as screening of the surface parking as required in the Design Framework.
- Advisory Comment: Should the underground cistern be shifted west slightly so that it is not underneath any part of the sidewalk?
- Advisory Comment: The internal sidewalk in the northwest portion of the site be shifted to the east, preferably at least ten (10) to fifteen (15) feet, to provide some separation between it and the property line. Otherwise, please provide reasoning for keeping it in the proposed location.

Sheet E101

- Amend to correctly label Veterans Drive (remove Civic Center Drive label).

Sheet A200

- Add the Floor Area Ratio (FAR) calculation to this sheet.

- Amend to correctly label Veterans Drive.
- Advisory Comment: The internal sidewalk in the northwest portion of the site be shifted to the east, preferably at least ten (10) to fifteen (15) feet, to provide some separation between it and the property line. Otherwise, please provide reasoning for keeping it in the proposed location.
- At the western edge of the access from Veterans Drive, there is a remnant of concrete sidewalk that transitions to the proposed six (6) foot sidewalk. This remnant portion of sidewalk should be removed and replaced with a consistent sidewalk from this access point to the west boundary of the plat.
- It is unclear whether the area identified as Tot Lot is just the improvements or if this includes the required fall zone. Note that all improvements must be entirely on Lot 1 Block 1 Sunwood Village or an Encroachment Agreement with the owner of Lot 3 Block 1 COR ONE must be executed.
- Sidewalk width along Sunwood Drive should match that of the sidewalk on the east side of the access point (accomplished by extending the existing segment of sidewalk to western boundary of plat). Sidewalk should be widened toward the building, which will result in the building shifting south slightly. Please provide a hand sketch of the revised sidewalk prior to revising plan sheets so that City Staff can verify its placement.

Sheet A500

- Provide clarification on why the direct access to the ground floor units facing Sunwood Drive were removed from the plans.
- Provide a calculation for the brick versus the overall façade to verify that the brick is at least fifty percent (50%) of the total non-glazed surface.

Exhibit B (Development Fees)

City of Ramsey

2015 Residential Development Fee Calculator

	Units	Unit Type	Unit Price	Total	Notes
Park Dedication and Trail Development					
Park Dedication					
0-12 Units per acre; or	0	per unit	*$2,600*	$0	
12-19 Units per acre; or	0	per unit	*$2,405*	$0	7.5% Density Bonus
20+ Units per acre; or	47	per unit	*$2,210*	$103,870	15% Density Bonus
Assisted Living	0	per acre	*$4,738*	$0	
Trail Development	47	per unit	*$700*	$32,900	
Subtotal Park and Trail Development				***$136,770***	
Water and Sewer Fees					
Collected prior to recording plat.					
Water Fees					
Trunk/Connection	47	per unit	*$1,597*	$75,059	
Lateral		per acre	*$6,297*	$0	If already constructed
Sewer Fees					
Trunk/Connection	47	per unit	*$1,126*	$52,922	
Lateral		per acre	*$3,411*	$0	If already constructed
Subtotal Trunk and Lateral				*$127,981*	
Collected with individual building permits.					
Accessibility Charges					
Accessibility Charge (WAC)	47	per SAC Unit	*$1,177*	$55,319	Collected with Building Permit
Accessibility Charge (SAC)	47	per SAC Unit	*$2,485*	$116,795	Collected with Building Permit
SAC Handling Fee	0	per address	*$25*	$0	Collected with Building Permit
**SAC is a Metropolitan Council Environmental Services (MCES) Fee; SAC Unit Determined by MCES*					
Subtotal Water and Sewer Fees				***$300,095***	
Stormwater Management Fees					
Stormwater Management	47	per unit	*$459*	$21,573	
Subtotal Stormwater Management				***$21,573***	
Street Light Fees					
An estimate of the number of street lights required. Actual number will depend on site plan.					
Street Light Type					
Cobra; or		per light	*$1,300*	$0	
The COR	3	per light	*$2,600*	$7,800	
Three (3) Years Operating and Maintenance	3	per light	*$294*	$882	
Subtotal Street Lights				***$8,682***	
Sureties and Inspection Fees					
Amount unknown! Developer will need to submit costs of City required improvements (Stage I and Stage II)					
Sureties (to ensure completion; returned when complete)					
Subdivisions/Plats (public improvements)		cost of improvement	*125%*	$0	Cash or Letter of Credit
Site Plans (private improvements)		cost of improvement	*150%*	$0	Cash or Letter of Credit
Subtotal Sureties				*$0*	
Engineering Inspection Fee		cost of improvement	*5%*	$0	Cash Escrow
Subtotal Surety and Inspection Fee				***$0***	
GRAND TOTAL FOR DEVELOPMENT FEES				**$295,006**	
GRAND TOTAL FOR ENGINEERING INSPECTION FEES				**$0**	Separate from Building Permit
GRAND TOTAL FOR SURETIES				**$0**	
GRAND TOTAL FOR SAC/WAC				**$172,114**	Collected with Building Permit

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	3/27/15	**PROJECT ADDRESS**	TBD
PROJECT. TITLE	SUNWOOD VILLAGE		
ESCROW #	114596		
DEPARTMENT:	Community Development: Planning Division (Landscape Plan & Environmental Resources)		
TECHNICAL REVIEWER:	Name: Chris Anderson, City Planner Phone: 763-433-9817 Email: canderson@cityoframsey.com		

We offer the following comments regarding the Landscape Plan prepared by Loucks Associates and dated March 3, 2015:

- Proposed species are generally acceptable with the exception of Burgundy Carousel Barberry. This is a cultivar of Japanese Barberry, which is on the City's list of prohibited species. *Please replace this species with an alternative.*
- The width of the boulevard area along Veterans Drive should be widened to match the boulevard area east of the parking ramp (four [4] feet). While the COR Design Framework identifies a six (6) foot wide boulevard along Connector Streets, the proposed boulevard trees are located on the back side of the sidewalk and thus, the additional width is not necessary.
- The boulevard area must be finished with sod and the developer (and eventually the management company) shall be responsible for its establishment (e.g. watering).
- Plan should identify a unique symbol for each shrub species proposed and add the species labels to the plan as well.
- Planting details/specifications shall be updated to include:
    - Removal of upper portion of wire basket and burlap after being placed in planting hole
- The plan must be revised to identify turf establishment with sod. The notes refer to both sod and seed but there is no legend or labels to determine which is being used and where. Please note that any alternative to the sod requirement requires City Council approval.
- Upon acceptance of landscaping by City, a two (2) year maintenance guarantee is required to ensure survival of plantings.
- Any damage to existing streetscape elements (plants, trees, irrigation, etc.) along Sunwood Drive will need to be repaired and/or replaced. All plan sheets should include this note so that contractors are aware of this.
- The project is subject to the City's topsoil requirement, which states that all disturbed areas not otherwise improved with walkways, driveway, home and other impervious surfacing, shall receive four (4) inches of topsoil meeting the City's topsoil

specification. A topsoil inspection is required prior to landscaping being installed and copies of the load tickets are required as well. This is reviewed at time of Building Permit Application and request for Certificate of Occupancy. *Please update the Landscape Installation Notes to include this requirement.*

Please submit a revised landscaping plan that addresses these matters.

Tree Preservation: This site is devoid of any significant tree cover and therefore, no tree preservation plan is necessary.

Best Management Practices (BMPs): There are a couple BMPs proposed with this project. First, satisfy the Lower Rum River Water Management Organization's (LRRWMO) infiltration requirement, the project proposes to capture the first one (1) inch of rainfall from the site with an underground cistern. However, since the project site is within a 10-year capture zone of one of the community wells where infiltration is not permitted, the captured runoff will be used for irrigation purposes onsite. The second BMP proposed is the use of a tree trench. This essentially is a lined trench that will also be used to store stormwater runoff for uptake by trees and other vegetation. Both BMPs have overflow measures built in that allow runoff from larger events to be routed through to the existing stormwater sewer system.

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	APRIL 1, 2015	**PROJECT ADDRESS**	SOUTH OF SUNWOOD DRIVE, NORTH OF VETERANS DRIVE, WEST OF RESIDENCE AT THE COR
PROJECT. TITLE	SUNWOOD VILLAGE		
ESCROW #	114596		
DEPARTMENT:	Engineering		
TECHNICAL REVIEWER:	Name: Leonard Linton Phone: 763 433-9834 Email: llinton@ci.ramsey.mn.us		

We offer the following comments regarding your request for the Preliminary Plat of COR Parkview Addition and Site Plan Approval of the Parkside East Apartments. The submittal consists of 14 sheets prepared by Miller Hanson Partners dated March 3, 2015. The Civil Sheets were prepared by Loucks Associates.

General: The submitted plat proposes to plat Outlot A, COR ONE to create 1 multifamily lot. The subject property is generally located south of Sunwood Drive, north of Veterans Drive and west of the Residence at the COR.

Streets and Access: The development will primarily gain access from Veterans Drive through the existing parking lot at Residence at the COR. The site will have access to the northeast corner of the project from Sunwood Drive. Cross access agreements will need to be executed with Residence at the COR for both driveways.

The internal parking and access aisles will be private.

Traffic Analysis Report: An AUAR was prepared for the Ramsey Town Center Development which included an extensive traffic analysis. The needed traffic improvements were identified, many have been constructed. The remainder of the improvements will be constructed as development occurs.

Grading, Drainage, Demolition and Utility Plans: Preliminary grading, drainage, demolition and utility plans have been prepared for this subdivision by Bolton & Menk, Inc. Staff offers the following general comments on these plans:

1. There is an active sidewalk along the north side of the lot. A pedestrian detour plan must be prepared and submitted to the City prior to release of the building permit. The plan must conform to the latest guidance available from the MNDOT website. The detour must remain in place until the sidewalk is restored.

2. Stormwater calculations must be submitted showing that the 100 year overflow from the catchbasins will not enter the garages.
3. The benchmark information note must be fully visible on all sheets.

A permit from the Lower Rum River Water Management Organization (LRRWMO) will be required. The project is within the 10 year capture zone of a municipal well. Infiltration is not permitted in the 10 year capture zone. Alternative volume reduction strategies will need to be investigated and documented per the LRRWMO rules.

Submit a copy of the MPCA Construction stormwater permit to the City prior to construction. Submit copies of erosion inspection results to the City prior to Certificate of Occupancy.

Utilities: The building will be served by municipal sewer and water extended from Sunwood Drive. Construction plans and specifications are subject to review of the City Engineering Department.

Stormwater Pollution Prevention Plan: Hydraulic Grade calculations must be submitted for the storm sewer system. A copy of the stormwater calculations provided to the LRRWMO for plan approval must be submitted to the City.

Sheet Specific Comments:

C1-2 – The notes along the right edge of the frame are cutoff. The full text must be visible.
Pavement removal is shown along the existing driveways. The driveways serve an active building. Advance notice must be provided to the owner of the building prior to commencing demolition work. One access may be closed for a short period while sawing and removing the existing pavement. Both driveways must be restored at the end of each working day. Barriers must be installed to delineate the edge of the driveway. The functionality of the catchbasin to be removed must be maintained until the new storm sewer system is functional.

C2-1 – Provide protective fence around existing planting beds and maintain until construction is finished. A temporary pedestrian access route (TPAR) plan must be included in the plan set and note 6 must reference the TPAR.

C3-1 – Rock Construction Entrances are ineffective in Ramsey. Add the following text to the SWPPP and Grading Plan Notes: "A street sweeper must be available within 3 hours upon notice from the City that the streets need to be swept."
The underground storage may not be perforated or allow infiltration.
Revise note 3 to read "…*4 inches of* premium *topsoil…".*
Revise note 6 to read "...*left idle for* day, *weekends and holidays,* or as directed by City."
The proposed grades in the grass area east of the building are less than 2 percent. City code requires an as-built grading plan prior to issuing the Certificate of Occupancy for all lots with grades less than 2 percent on pervious areas.

C3-2 – Revise typical street section - 6" Premium Topsoil, 6' wide sidewalk, all references to Class 5 shall read Class 5, Ramsey Modified. Gradation is shown on Ramsey Street Details. Use Ramsey Detail STR-25 for connection to existing street. Revise the SWPPP to conform with the requirements of the MPCA Construction Stormwater permit.

C4-1 – All storm sewer pipes in public ROW shall be RCP.
Remove or label dark line on nw corner of plan.

C8-1 – Concrete sidewalk Detail – Sidewalk shall be 6" thick.
Add information to Concrete Washout detail – 10 mil poly, ground shall slope away from area, how deep is the pit,
The MNDOT 5 sheet curb ramp details must be added to set.
A custom detail is required for each pedestrian ramp and must include spot elevations, slopes and layout of detectable warnings.

Specifications were not submitted. These notes are required when the specifications are submitted.

- Include City where ever Engineer or Owner is referenced in Specifications.

- General Statements - Include City in notifications to Engineer and Owner.
- Sunday work is not permitted in the City of Ramsey without City Council approval. Working hours are 7:00 am – 10:00 pm, Monday –Saturday, 48 hour notice is required for Saturday Work.
- The contractor must have a City License.
- A City right-of-way permit is required prior to working in the ROW.

Water – Add Notes:
- Only City Personnel shall operate valves.
- All valves not in paved surfaces shall have blue carsonite markers.
- Paragraph 2.7.C.2 – Valve nut extensions are not used in the City of Ramsey.

Sanitary Sewer – Add note:
- All manholes not in paved surfaces shall have green carsonite markers.
- All sanitary sewer shall have 10 gauge solid copper tracer wire.

Storm Sewer – Add note:
- All manholes not in paved surfaces shall have green carsonite markers.
- All storm sewer shall have 10 gauge solid copper tracer wire.

Landscaping – Include City on all Correspondence.
- All plant material in City ROW shall have two (2) year warranty

PURCHASE AGREEMENT

THIS PURCHASE AGREEMENT ("Agreement") is made and entered into effective as of May 20, 2014 (the "Effective Date") by and between COMMONBOND COMMUNITIES, a Minnesota nonprofit corporation, its successors and / or assigns ("Buyer"), and the HOUSING AND REDEVELOPMENT AUTHORITY OF THE CITY OF RAMSEY, MINNESOTA, a Minnesota municipal corporation ("Seller").

In consideration of the Earnest Money, the mutual covenants set forth in this Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer agree as follows:

1. Capitalized Terms and Other Key Terms. Capitalized terms used in this Agreement that are not otherwise defined herein shall have the meanings assigned to such terms as set forth on Exhibit A hereto, which is hereby incorporated by reference.

2. Sale of Property. Seller agrees to sell to Buyer, and Buyer agrees to buy from Seller, the Property, upon and subject to the terms, conditions, and limitations herein contained.

3. Purchase Price and Manner of Payment. The Purchase Price shall be payable by Buyer to Seller as follows:

   3.1. Earnest Money Deposit. Within two (2) business days following the Effective Date, Buyer shall deposit the Earnest Money in the form of cash with the Title Company and such funds shall be held and disbursed pursuant to the Escrow Agreement and this Agreement; provided, however, that if there are any inconsistent terms between the Escrow Agreement and this Agreement, the terms of this Agreement shall control. Except as otherwise provided herein, the Earnest Money shall be credited against the Purchase Price at the Closing.

   3.2. Balance of Purchase Price. The balance of the Purchase Price, as increased or decreased by any and all other adjustments set forth in this Agreement, shall be paid by wire transfer of immediately available funds at the Closing.

4. Inspection Period. Within ten (10) days after the Effective Date, Seller shall deliver to Buyer copies of all of the documents set forth in Exhibit C hereto in the possession or reasonable control of Seller. During the Inspection Period, Buyer shall have the right, at Buyer's sole cost, expense, and risk, to enter upon and examine and inspect the Property to conduct environmental reviews, soil condition testing, survey, engineering studies, and appraisals of the Property. Buyer shall promptly restore the Property to substantially the same condition it existed immediately prior to any physical tests conducted by or on behalf of Buyer. Further, Buyer agrees to indemnify and hold Seller harmless from and against any liability, loss, claim, or damages to Seller that arise solely from Buyer's physical inspections of the Property. During the Executory Period, Seller agrees not to market the Property for sale and/or to negotiate with any third parties for the sale of the Property unless Buyer and Seller in writing terminate this Agreement.

5. Title Examination.

5.1. Title Commitment and Survey. Within twenty (20) days after the Effective Date, Seller shall, at its expense, provide the Title Company with any and all documents or materials needed for the Title Company to issue the Title Commitment that are in Seller's possession within thirty (30) days after the Effective Date. Buyer, at its sole expense, may obtain an updated Survey at any time during the Inspection Period.

5.2. Title Objections. During the Inspection Period, Buyer shall be allowed to examine the Title Evidence and deliver any objections ("Title Objections") thereto. Title Objections not made in writing by the expiration of the Inspection Period shall be deemed to be waived by Buyer. Seller shall use diligent efforts to correct any valid Title Objections within thirty (30) days after receipt of said Title Objections, or such longer period as the parties mutually may agree, and, pending such correction, the parties agree that the Closing Date shall be postponed, if necessary. If the Closing Date has been postponed as a result of Title Objections, within fifteen (15) days after written notice of correction of such Title Objections given by Seller to Buyer, Seller and Buyer shall perform this Agreement according to its terms. If the Title Objections are not cured within such thirty (30) day period above provided (or such longer period as the parties mutually may agree), Buyer will have the option to do any of the following:

5.2.1. terminate this Agreement and obtain the Earnest Money from the Title Company;

5.2.2. withhold from the Purchase Price an amount which, in the reasonable judgment of the Title Company, is sufficient to ensure correction of the uncured Title Objection(s); or

5.2.3. waive the uncured Title Objections and proceed to Closing.

6. Buyer's Contingencies. The obligations of Buyer under this Agreement are contingent upon each of the following:

6.1. Representations, Warranties, and Covenants. The representations, warranties, and covenants of Seller contained in this Agreement must be true as of the Effective Date and on the Closing Date as if made on the Closing Date.

6.2. Title. Title to the Property shall have been found acceptable, or been made acceptable, in accordance with the requirements and terms of Section 5 of this Agreement.

6.3. Access and Inspection. Seller shall have allowed Buyer, and Buyer's agents, immediate access to the Property during the Inspection Period without charge and at all reasonable times for the purpose of Buyer's investigation and testing the same in accordance with Section 4 of this Agreement, and Buyer shall have been

satisfied in its sole discretion with the results of such investigation and testing before the expiration of the Inspection Period.

6.4. Document Review. Buyer shall have determined, on or before the expiration of the Inspection Period, that it is satisfied with its review and analysis of the Contracts, the Reports, the Permits, and the Warranties.

6.5. Government Approvals. Buyer shall have obtained on or before the Closing Date all final approvals from all Governmental Authorities necessary in Buyer's judgment to make the use of the Property which Buyer intends. Seller shall, at the request of Buyer, and at no cost to Seller, reasonably cooperate with Buyer in connection with Buyer's application(s) for project and development approvals from Governmental Authorities as provided in this Agreement (including, without limitation, joining in the execution of the materials described in this Section) in connection with (i) applications, agreements, amendments, approvals and annexation agreements relating to, among other things, zoning, site plan, planned development, subdivision, protective covenants, utility and other development matters to permit the use and/or development of the Property in accordance with Buyer's proposed development plans, and (ii) any requirements of any Governmental Authorities relating to the proposed use and/or development of the Property.

6.6. Financing. Buyer shall have received, on or before the Closing Date, the proceeds of financing necessary and sufficient, in Buyer's sole discretion, to complete the purchase of the Property and to implement Buyer's planned use of the Property, including, but not limited to, an award of Low Income Housing Tax Credits from the Minnesota Housing Finance Agency in an amount and under terms acceptable to Buyer to facilitate the development of the Real Property as intended by Buyer and an award of funding in an amount not less than $250,000 from the Anoka County Housing and Redevelopment Authority upon terms acceptable to Buyer.

Buyer may terminate this Agreement by written notice to Seller on or before the last day of the applicable periods as specified above. Upon termination of this Agreement for failure to satisfy one of Buyer's contingencies set forth in this Section 6, neither party will have any further rights or obligations regarding this Agreement or the Property and the Earnest Money shall be returned to Buyer. All the contingencies are specifically for the benefit of Buyer, and Buyer shall have the right to waive any contingency by written notice to Seller.

7. Seller's Contingency. The obligations of Seller under this Agreement are contingent upon the representations, warranties, and covenants of Buyer contained in this Agreement being true as of the Effective Date and as of the Closing Date.

8. Closing. The Closing shall occur on the Closing Date. The Closing shall take place at a location mutually agreeable to Seller and Buyer. Seller agrees to deliver possession of the Property to Buyer on the Closing Date.

8.1. Seller's Closing Documents. On the Closing Date, Seller shall execute and deliver to Buyer the following documents (collectively, the "Seller's Closing Documents"), all in form and content reasonably satisfactory to Buyer:

8.1.1. The Deed.

8.1.2. The Closing Statement.

8.1.3. An Assignment of Contracts, Permits, Warranties, any development agreements relating to the ongoing use and development of the Property that are consented to and approved by Buyer, and miscellaneous documents conveying Seller's interest to Buyer together with the consent of all parties having a right to consent to such Assignment.

8.1.4. A non-foreign affidavit, properly executed, containing such information as is required by Code Section 1445(b)(2) and the regulations promulgated thereunder.

8.1.5. A Designation Agreement designating the "reporting person" for purposes of completing Internal Revenue Service ("IRS") Form 1099 and, if applicable, IRS Form 8594.

8.1.6. Any executed documents that may be required in the State or other jurisdiction where the Property is located in order for the Deed to be recorded properly on the Closing Date.

8.1.7. A Certification to Buyer whereby Seller shall certify that the representations and warranties set forth in Section 11 of this Agreement are true and correct as of the Closing Date.

8.1.8. All other documents determined by Buyer or the Title Company to be necessary to transfer the Property to Buyer free and clear of all encumbrances other than the Permitted Encumbrances.

8.2. Buyer's Closing Documents. On the Closing Date, Buyer will execute and deliver to Seller the following (collectively, the "Buyer's Closing Documents"):

8.2.1. The funds representing the remaining portion of the Purchase Price due hereunder, subject to any adjustments and/or prorations required hereunder.

8.2.2. A Designation Agreement designating the "reporting person" for purposes of completing IRS Form 1099 and, if applicable, IRS Form 8594.

8.2.3. The Closing Statement.

8.3. Extended Closing Date. Notwithstanding anything to the contrary herein, Buyer shall have the right to extend the date on which the Closing shall occur from the Initial Closing Date to a date on or before the Extended Closing Date by providing written notice of such election to Seller on or before the Initial Closing Date.

9. Prorations. Seller and Buyer agree to the following prorations and allocation of costs regarding this Agreement:

9.1. Title Insurance and Closing Fee. Seller will pay all costs of the issuance of the Title Commitment and the fees charged by the Title Company for any escrow required regarding Buyer's Title Objections. Buyer will pay all additional premiums required for the issuance of any lender's and owner's Title Policies and any endorsements requested by Buyer that are not necessary to cure Title Objections as provided in Section 5 of this Agreement. Seller and Buyer will each pay one-half (1/2) of any closing fee or charge imposed by any closing agent or by the Title Company.

9.2. Real Estate Taxes and Special Assessments. All real estate taxes payable in the years prior to the year in which the Closing occurs and any and all and pending special assessments (regardless of when such assessments are due) shall be paid by Seller at the Closing. Real estate taxes payable in the year in which Closing occurs shall be prorated between Buyer and Seller based upon the Closing Date. Seller shall receive a credit for the amount in the real estate tax escrow as of the Closing Date.

9.3. Recording Fees. Seller will pay any recording fees in connection with the release of all mortgages, liens and encumbrances and security interests against the Property that are not being assumed by Buyer. Seller shall also pay any deed tax due in connection with the sale of the Property pursuant to applicable State statutes. Buyer shall pay the recording fee in connection with the recording of the Deed.

9.4. Funds. Any account balances or other funds connected to the Property shall be retained by Seller.

9.5. Other Costs. All other operating costs of the Property shall be prorated between Seller and Buyer as of the Closing Date so that Seller pays that part of operating costs payable before the Closing Date, and Buyer pays that part of operating costs payable from and after the Closing Date.

9.6. Attorneys' Fees. Each of the parties will pay its own attorney's fees, except that a party defaulting under this Agreement or any document referenced in this Agreement will pay the reasonable attorneys' fees and court costs incurred by the nondefaulting party to enforce its rights hereunder.

10. Seller's Covenants During Executory Period. During the Executory Period, Seller covenants to comply with the following conditions:

10.1. Seller shall maintain the Property in the ordinary course of business in accordance with prudent, reasonable business standards, including the maintenance of adequate liability insurance.

10.2. Without obtaining the Consent of Buyer, Seller shall refrain (i) from creating any mortgage, easement, lien, pledge or any other encumbrance in any way affecting the Property, (ii) from conveying any interest in the Property, and/or (iii) from entering into any other contracts or agreements pertaining to the Property, except contracts or agreements which are consistent with Buyer's rights hereunder and that may be terminated on or prior to the Closing Date.

10.3. Seller shall refrain from committing any waste or nuisance upon the Property.

10.4. Seller shall not market the Property for sale and/or to negotiate with any third parties for the sale of the Property unless Buyer and Seller in writing terminate this Agreement.

10.5. Seller shall, at the request of Buyer, and at no cost to Seller, reasonably cooperate with Buyer in connection with Buyer's application(s) for project and development approvals from Governmental Authorities as provided in Section 6.5 of this Agreement. This Section shall survive Closing and delivery of the Deed.

10.6. Without the Consent of Buyer, Seller shall not allow any labor to be performed on the Property that could give rise to the filing of a mechanic's lien against any portion of the Property if the costs of such labor are not timely paid.

11. Representations and Warranties of Seller. Seller represents and warrants to Buyer as of the Effective Date and the Closing Date as follows:

11.1. Title to Property. Seller has good and marketable, fee simple title to the Property, subject only to the Permitted Encumbrances. The Property constitutes a separate tax parcel eligible for development in accordance with the Regulations without need for further subdivision.

11.2. Authority; Consents. Seller represents and warrants to and covenants with Buyer that: (i) Seller is duly organized and has received all requisite authority to transact business in the State in which the Property is located; (ii) Seller has the power and authority to enter into this Agreement and all of the Seller's Closing Documents signed or to be signed by it; (iii) the execution, delivery and performance of Seller of the Seller's Closing Documents do not conflict with or result in violation of Seller's organizational documents, any judgment, order or decree of any court or arbiter to which Seller is a party, or any local ordinance, or statute, rule, or law of the State; (iv) upon execution, the Seller's Closing Documents will be valid and binding obligations of Seller, and are enforceable in accordance with their terms,

subject to applicable bankruptcy, insolvency, reorganization, moratorium, creditor's rights and other similar laws; and (v) the consents of no other parties are required as a condition to the Closing.

11.3. Unrecorded Agreements. There are no unrecorded agreements, undertakings or restrictions which affect the Property.

11.4. Leases. There are no leases or possessory rights of others regarding the Real Property.

11.5. No Default Notice. Seller has not received notice of a default or breach of any agreement to which Seller is a party, and is not aware of any facts that would result in Seller being in default or breach of any agreement to which it is a party.

11.6. Reports. The Reports delivered or to be delivered to Buyer hereunder are correct and complete and, to Seller's actual knowledge, do not contain any false information.

11.7. Operations. Seller has received no notice of actual or threatened cancellation or suspension of any utility services at or on the Real Property, nor has Seller received any notice of any violation of any Regulations. Except as disclosed in the Title Commitment, Seller has received no notice of actual or threatened special assessments or reassessments, condemnation, or eminent domain proceedings with respect to the Real Property.

11.8. Environmental Laws. To Seller's actual knowledge, no Hazardous Substances have been generated, treated, stored, transferred from, released or disposed of, or otherwise placed, deposited in or located on the Property, nor has any activity been undertaken on the Property that would cause or contribute to the Property becoming a treatment, storage or disposal facility within the meaning of, or otherwise bring the Property within the ambit of, any Regulations relating to the protection of the environment. To Seller's actual knowledge, there are no Hazardous Substances in or on the Property that may support a claim or cause of action under any Regulations relating to the protection of the environment. To Seller's actual knowledge, the Property is not now, and never has been, listed on any list of sites contaminated with Hazardous Substances, nor used as landfill, dump, disposal or storage site for Hazardous Substances.

11.9. FIRPTA. Seller is not a "foreign person," "foreign partnership," "foreign trust," or "foreign estate," as those terms are defined in Code Section 1445 and the regulations promulgated thereunder.

11.10. No Proceedings. No legal or administrative proceeding is pending or, to Seller's actual knowledge, threatened (i) against Seller or any of its affiliates which would adversely affect its right to convey the Property to Buyer as contemplated in this Agreement, or (ii) affecting the Property. There are no condemnation or eminent

domain proceedings pending or, to Seller's knowledge, threatened with respect to the Property.

11.11. Additional Interests. There are no property interests or other improvements that are owned by Seller and which are necessary or useful for the use and operation of the Property that are not being conveyed pursuant to this Agreement.

11.12. Private Sewage Systems; Wells. There are no private sewage systems or wells located on the Property.

11.13. Use of Property. To the best of Seller's knowledge, no methamphetamine production has occurred on the Property.

11.14. Unpaid Labor and Materials. Neither Seller nor any other party is indebted for labor or material that might give rise to the filing of notice of mechanic's lien against any portion of the Property.

11.15. No Broker. Seller has not engaged the services of any broker in connection with the sale and purchase contemplated by this Agreement except CBRE, to whom Seller will pay all real estate commissions due and owning no later than the Closing Date.

11.16. Property Notice / No Redemption Rights. There exist no outstanding redemption rights in any third parties with respect to all or any portion of the Property and the Seller has given all proper notices and obtained all requisite approvals necessary to sell and convey the Property to the Buyer pursuant to the terms of this Agreement.

Seller will indemnify the Indemnified Parties, against, and will hold each of the Indemnified Parties harmless from, any expenses or damages, including reasonable attorneys' fees, that the Indemnified Parties incur because of the breach of any of the above representations and warranties. Each of the foregoing representations and warranties shall be deemed remade as of the Closing Date with respect to the Property.

12. Representations and Warranties of Buyer. Buyer represents and warrants to Seller as of the Effective Date and the Closing Date as follows:

12.1. Buyer is duly organized or incorporated under the laws of the State of its formation and has received all requisite authority to transact business in the State in which the Property is located.

12.2. Buyer has the power and authority to enter into this Agreement and all of the Buyer's Closing Documents signed or to be signed by it.

12.3. Buyer's execution, delivery and performance this Agreement and of the Buyer's Closing Documents do not conflict with or result in violation of Buyer's

organizational documents or any judgment, order or decree of any court or arbiter to which Buyer is a party

12.4. Upon execution, the Buyer's Closing Documents will be valid and binding obligations of Buyer, and are enforceable in accordance with their terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium, creditor's rights and other similar laws.

12.5. No consents or approvals from any third parties are required for Buyer to perform its obligations under this Agreement.

12.6. Buyer has not engaged the services of any broker in connection with the sale and purchase contemplated by this Agreement. Buyer is purchasing the Property for an investment with the intent of making a profit.

13. Casualty; Condemnation. If all or any part of the Property is substantially damaged by fire, casualty, the elements, or any other cause, Seller immediately shall give written notice to Buyer, and Buyer shall have the right to terminate this Agreement by giving written notice within thirty (30) days after Buyer receives written notice from Seller of the same. If Buyer shall fail to give notice of termination, then the parties shall proceed to Closing and Seller shall assign to Buyer all rights to insurance proceeds resulting from such event. If eminent domain proceedings are threatened or commenced against all or any part of the Property, Seller immediately shall give written notice to Buyer, and Buyer shall have the right to terminate this Agreement by giving written notice within thirty (30) days after Buyer receives written notice from Seller of the same. If Buyer shall fail to give notice of termination, then the parties shall proceed to Closing and Seller shall assign to Buyer all rights to appear in and receive any award from such proceedings.

14. Remedies.

14.1. If Buyer defaults in its obligation to proceed to the Closing in accordance with the terms of this Agreement and fails to cure such default within ten (10) days after being notified in writing thereof, Seller shall be entitled, as its sole and exclusive remedy, to terminate this Agreement and to retain the Earnest Money as liquidated damages. The parties agree that in the event of default by Buyer, subject to the expiration of the cure period above, Seller's damages will be difficult or impractical to ascertain and the Earnest Money will be deemed to constitute a reasonable estimate of Seller's damages and shall not be deemed to constitute a forfeiture or penalty. Seller shall not have the right to recover any other damages of any kind from Buyer or to obtain other equitable adjustment to the terms of the sale of the Property.

14.2. If Seller defaults on any of its material obligations under this Agreement and fails to cure such default within ten (10) days after receiving written notice thereof, Buyer shall be entitled to exercise any remedies available to Buyer at law or equity for a default by Seller hereunder including, without limitation, (i) the

immediate return of the Earnest Money, (ii) to apply for and to receive from a court of competent jurisdiction equitable relief by way of specific performance to enforce Seller's performance of the terms of this Agreement, and/or (iii) to seek and recover from Seller damages for nonperformance of this Agreement for all of Buyer's out-of-pocket costs and fees, including without limitation, reasonable attorneys' fees, accountants' fees and other consultants' fees incurred by Buyer in preparing and negotiating this Agreement, preparing for the Closing, obtaining financing commitments, investigating the status, title and condition of the Property, and other similar and reasonable costs and expenses.

14.3. If either party hereto shall bring suit against the other to enforce the terms of this Agreement, the losing party shall pay to the prevailing party the prevailing party's cost and expenses (including, without limitation, reasonable attorneys' fees and costs) incurred in enforcing such prevailing party's rights under this Agreement.

15. Miscellaneous.

15.1. Construction. This Agreement shall not be construed more strictly against one party than against the other, merely by virtue of the fact that it may have been prepared primarily by counsel for one of the parties, it being recognized that both Buyer and Seller have contributed substantially and materially to the preparation of this Agreement.

15.2. Headings. The headings preceding the text of the paragraphs and subparagraphs hereof are inserted solely for convenience of reference and shall not constitute a part of this Agreement, nor shall they affect its meaning, construction or effect.

15.3. Further Acts. Each party hereto agrees to do such further acts and execute, deliver, file and record such further documents and instruments as may be reasonably necessary to effectuate, evidence, and record the transactions contemplated by this Agreement.

15.4. Severability. The invalidity or unenforceability of any term or terms of this Agreement shall not invalidate, make unenforceable or otherwise affect any other term of this Agreement, and this Agreement shall be construed in all respects as if such invalid or unenforceable provision were omitted, and in such event, the remaining terms of this Agreement shall remain in full force and effect.

15.5. Governing Law; Parties in Interest. This Agreement shall be governed by and be construed in accordance with the laws of the State.

15.6. Computation of Time. In computing any period of time pursuant to this Agreement, the day of the act or event from which the designated period of time begins to run will not be included. The last day of the period so computed will be included, unless it is a Saturday, Sunday or legal holiday, in which event the

period runs until the end of the next day which is not a Saturday, Sunday or such legal holiday.

15.7. Time of the Essence. All times, wherever specified herein for the performance by Seller or Buyer of their respective obligations hereunder, are of the essence of this Agreement.

15.8. Assignment. Neither party shall be entitled to assign or convey any interest in this Agreement to any third party, without first obtaining the prior written consent of the other party. Notwithstanding the foregoing, Buyer shall have the right to assign its interest in this Agreement to an entity affiliated with, or controlled by Buyer, without the consent of Seller; provided, however, that Buyer shall provide Seller with a copy of any such assignment promptly after it has been executed. The parties' rights and obligations under this Agreement shall inure to the benefit of and shall be binding on successors and assigns.

15.9. Notices. All notices and other communications in respect to this Agreement shall be deemed to have been duly given, if in writing and delivered personally or if mailed in a sealed wrapper by United Sates registered or certified mail, return receipt requested, postage prepaid, or via facsimile, properly addressed to the parties as provided in Exhibit A attached hereto.

15.10. Complete Agreement. This instrument and any exhibits, schedules or addendums attached hereto contain the entire Agreement of the parties, and supersedes all prior negotiations, agreements or understandings, whether oral or in writing. This Agreement may not be changed orally but only by an Agreement in writing signed by the party against whom enforcement of any such waiver, change, modification, extension or discharge is sought.

15.11. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall constitute an original but all of which, taken together, shall constitute but one and the same instrument.

[THE REMAINDER OF THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.]

IN WITNESS WHEREOF, Seller and Buyer have executed this Purchase Agreement effective as of the Effective Date.

SELLER:

THE HOUSING AND REDEVELOPMENT AUTHORITY OF THE CITY OF RAMSEY, MINNESOTA,
a Minnesota municipal corporation

By: _____
Name: Randy Backous
Title: Chair

By: _____
Name: Theodore LaFrance
Title: Executive Director

BUYER:

COMMONBOND COMMUNITIES,
a Minnesota nonprofit corporation

By: _____
Name: Ellen Higgins
Title: Vice President

9042408v2

EXHIBIT A

Key Terms and Definitions

A. Definitions. For purposes of this Agreement, the following capitalized terms shall have the following meanings:

1. "Agreement" shall mean the Purchase Agreement between Buyer and Seller to which this Exhibit is attached.

2. "Buyer" shall have the meaning assigned to such term in the opening paragraph of this Agreement.

3. "Buyer's Closing Documents" shall have the meaning assigned to such term in Section 8.2 of the Agreement.

4. "Closing" shall mean the closing of the purchase and sale of the Property contemplated by this Agreement.

5. "Closing Date" shall mean the later of the Initial Closing Date or the Extended Closing Date, as applicable.

6. "Closing Statement" means a closing statement prepared by the Title Company to be executed by Seller, Buyer, and the Title Company at the Closing that accurately describes the economic terms of transaction described this Agreement

7. "Code" shall mean the Internal Revenue Code of 1986, as amended.

8. "Consent" means the prior written consent of Buyer, which consent may be withheld in Buyer's sole discretion unless otherwise stated in this Agreement.

9. "Contracts" shall mean all service and maintenance contracts and other contracts relating to the Property.

10. "Deed" shall mean a Warranty Deed conveying the Real Property to Buyer, free and clear of all encumbrances, except the Permitted Encumbrances, at the Closing.

11. "Earnest Money" means Five Thousand Dollars ($5,000.00), along with any interest or earnings accrued thereon while such funds are held by the Title Company.

12. "Effective Date" shall be as defined in the opening paragraph of this Agreement.

13. "Escrow Agreement" shall mean any form of acknowledgement of escrow deposit in the form required by the Title Company upon its receipt of the Earnest Money.

14. "Executory Period" shall mean the period of time from the Effective Date through and including the Closing Date.

15. "Extended Closing Date" means the date which is 60 days after the Initial Closing Date.

16. "Governmental Authority" means any state, federal, local, municipal or other governmental authority, agency, or licensing authority of any kind having jurisdiction over the Property or Seller.

17. "Hazardous Substances" shall mean toxic or hazardous substances or wastes, pollutants or contaminants (including, without limitation, asbestos, urea formaldehyde, the group of organic compounds known as polychlorinated biphenyls, petroleum products including gasoline, fuel oil, crude oil and various constituents of such products, and any hazardous substance as defined in any state, local or federal Regulations relating to the protection of the environment.

18. "Indemnified Parties" means collectively, Buyer, its officers, directors, members, partners, governors, managers, and employees and their respective successors and assigns

19. "Initial Closing Date" means May 1, 2015.

20. "Inspection Period" shall mean the period of time from the Effective Date through and including the Closing Date.

21. "Land" shall mean the real property located near the intersection of Zeolite Street NW and Civic Centre Drive in the City of Ramsey, Anoka County, Minnesota, described on Exhibit B to this Agreement.

22. "Permits" shall mean all permits, licenses, and trade names relating to the Property.

23. "Permitted Encumbrances" means any defects or encumbrances on the Real Property to which Buyer does not submit a written Title Objection during the Inspection Period, or any defect or encumbrance that is waived by Buyer in accordance with the terms of this Agreement.

24. "Property" shall mean collectively the Real Property, the Contracts, the Permits, and the Warranties.

25. "Purchase Price" means Four Hundred Thirty-Five Thousand Dollars ($435,000.00), as the same may be adjusted pursuant to the terms and conditions of this Agreement.

26. "Real Property" shall mean collectively the Land, any improvements located thereon, and all easements and rights benefiting or appurtenant to the Land.

27. "Regulations" means the rules and regulations applicable to the Property or Seller of any Governmental Authority having jurisdiction.

28. "Reports" means all feasibility studies, soil reports, environmental reports, permits, licenses, service contracts, title policies, surveys, and other appraisals, inspections, tests, reports, or studies in the possession or reasonable control of Seller with respect to the Property.

29. "Seller" shall have the meaning assigned to such term in the opening paragraph of this Agreement.

30. "Seller's Closing Documents" shall have the meaning assigned to such term in Section 8.1 of the Agreement.

31. "State" shall mean the State of Minnesota.

32. "Survey" means an updated ALTA/ACSM survey of the Real Property prepared by a surveyor acceptable to Buyer in its sole discretion.

33. "Title Commitment" means a commitment for an ALTA Owner's Policy of Title Insurance insuring fee simple title to the Real Property in the amount of the Purchase Price, which shall (i) commit the Title Company to insure fee simple title to the Real Property subject only to the Permitted Encumbrances, (ii) so long as Buyer obtains the Survey, affirmatively insure Buyer against any and all encroachments or mechanic's liens not of record, (iii) provide that the Title Company will increase its coverage at any time to reflect increase in the property values and/or improvements being made to the Property, upon payment to the Title Company of a standard policy premium for the amount of the increased insurance coverage; and (iv) provide that the Real Property is zoned properly for Buyer's intended use of the Property and that the Real Property is in compliance with all applicable zoning requirements.

34. "Title Company" shall mean Commonwealth Land Title Insurance Company or such other title insurance company as Buyer may select in its reasonable discretion.

35. "Title Evidence" shall mean the Title Commitment and the Survey, together.

36. "Title Objections" shall have the meaning assigned to such term in Section 5.2 of this Agreement.

37. "Warranties" shall mean all warranties and guaranties relating to the Property.

B. **Notices**. Notices, as provided in this Agreement, shall be given to the parties at the following addresses, or such other address as any of the parties may reasonably notify the other parties of in accordance with this Agreement:

If to Buyer: CommonBond Communities

Prior to August 1, 2014: 328 Kellogg Boulevard West
Saint Paul, Minnesota 55102
Attention: Vice President of Development
Facsimile Number: (651) 291-1003

From and after August 1, 2014: 1080 Montreal Avenue
Saint Paul, Minnesota 55116
Attention: Vice President of Development

Facsimile Number: (651) 291-1003

With a copy to:

Winthrop & Weinstine, P.A.
Capella Tower, Suite 3500
225 South Sixth Street
Minneapolis, Minnesota 55402
Attention: Jeffrey J. Koerselman
Facsimile Number: (612) 604-6802

If to Seller:

City of Ramsey
7550 Sunwood Drive NW
Ramsey, Minnesota 55303
Attention: Ted LaFrance
Facsimile Number: _____

With a copy to:

Ratwik, Roszak, & Maloney, P.A.
730 Second Avenue South, Suite 300
Minneapolis, MN 55402
Attention: Joseph Langel
Facsimile Number: (612) 339-0038

EXHIBIT B

Legal Description

Outlot A, COR ONE, according to the recorded plat thereof, City of Ramsey, Anoka County, Minnesota.

EXHIBIT C

List of Required Documents

Copies of the following:

- Exiting title policies, title commitments and surveys;
- Real estate tax statements and other tax bills (including special assessments) affecting the Property for the last two calendar years;
- All inspections, reports, clearances and other documentation issued by any Governmental Authority having jurisdiction of the Property in the last three calendar years;
- Any environmental reports in connection with the Property in Seller's possession;
- Copy of the plat for the Property; and
- All other material Contracts, Reports, and Warranties not specifically referenced above (as each term is defined in the foregoing Agreement).

5.04 Review Landscape and Storm Water Management Plan Associated with a Site Plan Application for Sunwood Village: Case of Common Bond

City Planner Anderson presented the staff report.

Chairperson Stodola asked if they would be sharing the ramp.

City Planner Anderson replied that the access points will be shared.

Community Development Director Gladhill stated that there is on-site parking.

Board Member Lewis inquired if it was all surface parking.

Community Development Director Gladhill responded affirmatively.

Chairperson Stodola asked if there is enough parking.

Community Development Director Gladhill stated that the type of floor plan and income levels were considered. This project would likely be more one car households so it would meet the minimum of one stall per unit.

City Planner Anderson stated that there is visitor parking a half a block away that is not overnight parking for guests.

Board Member Lewis commented that this plan was well thought out and robust and that he was impressed. He doesn't have a problem with it and felt that it was more innovative and detailed than the previous proposal.

Community Development Director Gladhill stated that this project did receive $580,000 in funding from the Metropolitan Council.

Board Member Lewis stated that this is the kind of project and plan that should be looked at for the Eco Star Award.

City Council Liaison LeTourneau spoke to the Staff regarding the contrast between the two cases and how the Board is appreciative of complete picture. He asked how likely is it that the Board can ask developers to provide more complete plans in the future.

Community Development Director Gladhill stated that this is something the Staff strives to achieve. He spoke about project deadlines and said that historically the City has tried to give some contingent recommendations and revisit them. If the Board feels that the information in the last case was not enough, then Staff should know and then they can go back to the developer. He stated that if it is the Board's wish to have the kind of detail found in this project, Staff will make sure they provide it without delaying projects. Staff can work with code to provide the desired level of detail.

DRAFT

Board Member Valentine would like to support the Staff. He talked about the huge contrast between the cases. He felt that the Parkview East case was close to the line of not be developed enough. He would like to support the Staff to be able to go back to developers to get more fully developed plans.

City Council Liaison LeTourneau stated that he doesn't think it is the Board intention to push developers away by setting too high a standard.

Community Development Director Gladhill stated that the Parkview East case warrants pursuing additional details and that the City can commit to a smooth process if they are provided with detail.

Chairperson Stodala asked about the timeframe of the projects.

Community Development Director Gladhill replied that the City tries to provide approval 45 days from the date the application is received. Some cases do take longer depending on complexity.

Motion by Board Member Bernard and seconded by Board Member Lewis to move forward with the project.

Motion carried. Voting Yes: Chairperson Stodola, Board Member Bernard, Lewis, Hiatt, and Valentine. Voting No: None. Absent: Board Member Bentz.

DRAFT

Councilmember _____ introduced the following resolution and moved for its adoption:

RESOLUTION #15-04-088

RESOLUTION APPROVING SITE PLAN FOR SUNWOOD VILLAGE

WHEREAS, CommonBond Communities, hereinafter referred to as "Developer", properly applied to the City of Ramsey (the "City") for approval of a final plat of the following described property located in the City of Ramsey:

Outlot A, COR ONE, Anoka County Minnestoa

(the "Subject Property")

WHEREAS, on March 24, 2015, the City received an application and plans from Common Bond for Sketch Plan and Final Plat Review for Sunwood Village; and

WHEREAS, on April 9, 2015, the Planning Commission reviewed the Sketch Plan for Sunwood Village, and recommended that the City Council approve the Final Plat; and

WHEREAS, on April 24, 2015, the City Council reviewed the Final Plat for Sunwood Village.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF RAMSEY, ANOKA COUNTY, STATE OF MINNESOTA:

1) That the City Council of the City of Ramsey hereby grants final plat approval to SUNWOOD VILLAGE in accordance with relevant City Codes, contingent upon compliance with the Staff Review Letter dated April 3, 2015 and upon Developer entering into a Development Agreement with the City of Ramsey.

The motion for the adoption of the foregoing resolution was duly seconded by Councilmember _____, and upon vote being taken thereon, the following voted in favor thereof:

and voted against the same:

and the following abstained:

and the following were absent:

Whereupon said resolution was declared duly passed and adopted by the Ramsey City Council the 28th day of April, 2015.

_____
Mayor

ATTEST:

_____

City Clerk

Councilmember _____ introduced the following resolution and moved for its adoption:

RESOLUTION #15-04-089

RESOLUTION GRANTING SITE PLAN APPROVAL FOR SUNWOOD VILLAGE

WHEREAS, on March 24, 2015, the City received an application and plans from CommonBond Communities for Site Plan Review for Sunwood Village; and

WHEREAS, on April 9, 2015, the Planning Commission reviewed the Site Plan, and recommended that the City Council approve said Site Plan; and

WHEREAS, on April 24, 2015, the City Council considered approval of the Site Plan for Sunwood Village.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF RAMSEY, ANOKA COUNTY, STATE OF MINNESOTA:

1) That the City Council of the City of Ramsey does approve the Site Plan for Sunwood Village, contingent upon compliance with the Staff Review Letter dated April 3, 2015.

The motion for the adoption of the foregoing resolution was duly seconded by Councilmember _____, and upon vote being taken thereon, the following voted in favor thereof:

and voted against the same:

and the following abstained:

and the following were absent:

Whereupon said resolution was declared duly passed and adopted by the Ramsey City Council the 28th day of April, 2015.

_____
Mayor

ATTEST:

_____
City Clerk

Regular Planning Commission **5. 6.**

Meeting Date: 04/09/2015

Submitted For: Len Linton, Engineering/Public Works

By: Len Linton, Engineering/Public Works

Information

Title:

PUBLIC HEARING: Consider the Surface Water Management Plan Update

Purpose/Background:

The purpose for this case is to review proposed updates to the Surface Water Management Plan (SWMP). As most of the regulatory provisions outlined within the SWMP are in the Zoning Ordinance, Staff thought it appropriate to conduct a Public Hearing through the Planning Commission. Any future amendments to City Code due to the SWMP will also be subject to the standard public hearing process.

State Statute requires Cities to prepare a SWMP. The City of Ramsey has prepared several plans since the law went into effect. The attached document represents the latest update to the SWMP for the City. The current plan was prepared in 2008 and was scheduled for updating in 2015.

The Lower Rum River Watershed Management Organization (LRRWMO) adopted their Third Generation Plan in 2012, which triggered the need to update Ramsey's SWMP. The Minnesota Pollution Control agency issued a revised Municipal Separate Storm Sewer System (MS4) permit in 2013. The City requested an extension from the LRRWMO for updating the SWMP so that the revisions would include the Third Generation and MS4 permit requirements. The MS4 permit requires that the City have controls in place for regulating the discharge of stormwater. These controls include the SWMP, City Code, and Best Management Practices (BMPs) to guide development. The BMPs are collected in a document called a Storm Water Pollution Prevention Program (SWPPP). The SWPPP is also being updated. The updated SWPPP will be included in the final SWMP before it is adopted by City Council, which is anticipated to occur in August 2015.

The following paragraphs were in the case presented to the EPB in March 2015.

The Lower Rum River Watershed Management Organization (LRRWMO) adopted their Third Generation Rules in 2012. The state regulations require that all local Storm Water Management Plans be updated within 2 years of adoption of revised Watershed Management Organization Plans. The Minnesota Pollution Control Agency was in the process of revising the Permit for the Municipal Small Separate Stormsewer Systems (MS4) and the Construction Stormwater Permit when the LRRWMO plan was adopted. The Cities of Ramsey, Anoka and Andover all applied for an extension of the deadline from the LRRWMO for revising their SWMPs until after the MS4 Permit was adopted so that required ordinance changes could be made once instead of several times. The extensions were approved.

The changes contained in the MS4 Permit, Construction Stormwater Permit and LRRWMO covered the following areas:

1. Lowering the size of a project requiring a permit from 5 acres to 1 acre.
2. Requiring infiltration on site of the first 1" of runoff from all new impervious surfaces.
3. Limiting discharge from the site for the 2 year, 10 year and 100 year storms to the existing rate for each storm.
4. Reducing the amount of Total Suspended Solids and Total Phosphorus in runoff leaving the site.

These goals can be achieved through the following measures:

1. Construction of infiltration or water reuse practices on site such as infiltration trenches, rain gardens, tree trenches or water re-use practices.
2. Constructing detention facilities that retain the peak flow and discharge it at a slower rate.
3. Construction of wet ponds that provide adequate time for settling of the Total Suspended Solids and Total Phosphorus and prevent re-suspension with the next storm event.

Timeframe:

The SWMP was reviewed by the EPB at their March meeting. They were in general agreement with the content of the SWMP.

The SWMP was also reviewed by the Public Works Committee at their March meeting. They were in general agreement with the content of the SWMP and passed a motion to recommend City Council approval.

The SWMP will be the subject of a Public Hearing before the Planning Commission tonight with particular emphasis on the recommended changes to City Code related to land use. A Public Hearing is required when considering changes to City Code and any potential ordinance amendments resulting from the SWMP will also be subject to the public hearing process. The SWMP will be brought to the City Council at the April 28 meeting for review and approval.

The plan will then be sent to the LRRWMO and the Metropolitan Council during the first week of May for concurrent reviews. The LRRWMO has sixty (60) days to review and approve the plan, while the Metropolitan Council has forty-five (45) days for review. The document will then be updated as necessary after comments are received and will be brought back to City Council for adoption. This is anticipated to be the first meeting in August.

Observations/Alternatives:

The City of Ramsey is bordered on the east by the Rum River and on the south by the Mississippi River. The City has many wetlands, lakes and streams within its borders. Managing the discharge of stormwater from developed sites is a critical component of preserving the water quality of the wetlands, lakes, streams and rivers in and adjacent to the City. The Surface Water Management Plan provides a framework for allowing development while maintaining surface water quality.

The changes to the document include:

- Updating City Code references to the current system
- Updating the Stormwater management requirements for new construction
    - Infiltrate first 1" of runoff from new impervious surfaces
    - Provide rate control and water quality treatment for the 2, 10 and 100 year return events.
    - Provide reduction for Total Suspended Solids and Total Phosphorus concentrations in stormwater leaving the site.
    - Update the reference storms to use the Atlas 14 publication. The LRRWMO adopted use of the Atlas 14 and required the member cities to adopt this standard.
- Remove references to wetland buffers for new construction. The City completed a Wetland Management Plan with the 2008 SWMP. The implementation of the Wetland Management Plan was postponed by City Council Action.
- Update the Stormwater Models to include developments constructed after 2008 and use Atlas 14 for rainfall events.
- Update the tables and figures to include the new model results.

The tables and an overall map of the watersheds is attached for reference. The 10 year storm sewer capacity map and 100 year pond capacity map for the D43 watershed have also been attached to the case. The descriptions of the tables and maps is included in the plan.

Funding Source:

Staff has performed the update to the plan as part of their normal duties. The Stormwater Utility Fund covers part of staff salaries. The plan lists Capital Improvement Projects that will need to be brought back individually for review and approval.

Recommendation:

Staff recommends approving the updated Surface Water Management Plan and forwarding it to the City Council for approval.

Action:

Motion to approve the Surface Water Management Plan and forward it to City Council for approval.

Attachments

SWMP
Tables_1
Tables_2
Watersheds
Figure 10
Figure 11

Form Review

Inbox	Reviewed By	Date
Bruce Westby	Bruce Westby	04/02/2015 09:59 AM
Tim Gladhill	Tim Gladhill	04/03/2015 12:12 PM
Chris Anderson	Chris Anderson	04/03/2015 12:29 PM
Grant Riemer	Grant Riemer	04/03/2015 12:34 PM
Kurt Ulrich	JoAnn Shaw	04/03/2015 03:31 PM
Form Started By: Len Linton		Started On: 04/01/2015 08:54 AM
Final Approval Date: 04/03/2015		

The City of Ramsey
Surface Water Management Plan

Project 14-31
March 20, 2015

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.

PUBLIC WORKS COMMITTEE REVIEW

By: _____

Leonard L. Linton, P.E.

Date: March 20, 2015 Registration

I hereby certify that this plan, specification or report was reviewed for Quality Control and Quality Assurance purposes and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PUBLIC WORKS COMMITTEE REVIEW

_____

Bruce Westby, PE

Date: March 20, 2015 License No. 40116

TABLE OF CONTENTS

I. PURPOSE OF PLAN 1

II. EXECUTIVE SUMMARY 2

A. Plan Purpose and Background 2
B. General Content of Required Local Plans 4
C. Summary of the Goals, Problems, and Potential Solutions 4
D. Amendments and Updates 7

III. REGULATORY REQUIREMENTS AFFECTING PLAN 8

A. Minnesota Rules Chapter 8410.0170 8
B. Minnesota Statute 103B.235 8
C. Local Ordinances 9
D. Total Maximum Daily Loads and Impaired Waters 10
E. Specific Lakes and Streams with Water Quality Problems 10
F. Lower Rum River Water Management Organization 10
G. NPDES Requirements 11
H. Non-Degradation Rulemaking 12

IV. LAND AND WATER RESOURCES INVENTORY 13

A. Precipitation 13
B. General Geology and Topographic Data 13
C. Surface Water Resource Data 14
D. Design Requirements 31
E. Storm Water Modeling 34

V. GOALS AND POLICIES 38

A. Water Quantity 38
B. Water Quality 40
C. Recreation, Fish and Wildlife 41
D. Public Participation, Information and Education 42
E. Public Ditch System 42
F. Groundwater 42
G. Wetlands 43
H. Erosion Control 44
I. Development Standards 44
J. Regulatory Responsibility 45
K. Finance 45
L. Records Management and Documentation 46

VI. ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS 47

A. Specific Lakes and Streams with Water Quality Problems 47
B. Flooding and Storm Water Rate Control Issues 47
C. Impacts of Water Quality and Quantity Management Practices on Recreation Opportunities 49
D. Impacts of Stormwater Discharges on Water Quality and Fish and Wildlife Resources 49
E. Impacts of Soil Erosion on Water Quality and Quantity 49
F. General Impact of Land Use Practices 49
G. Adequacy of Programs 50
H. Adequacy of Capital Improvement Programs 50

I. Future Potential Problems 50
VII. FINANCIAL CONSIDERATIONS 52
A. 5-year Capital Improvement Program 52
B. Local Financing Options 53
C. Recommended Local Financing 54
VIII. IMPLEMENTATION OF PRIORITIES AND PROGRAM 56
A. Special Waters 56
B. City-wide SWPPP and MS4 Permit 56
C. Implementation Schedule 56
D. Capital Improvement Program 56
E. Enforcement 57
F. Administration Process 57
IX. AMENDMENT PROCEDURES 62
X. SUMMARY AND RECOMMENDATIONS 63
A. Summary 63
B. Model Results 64
C. Recommendations 68
XI. ACRONYMS AND GLOSSARY 70
A. Acronyms 70
B. Glossary 71

TABLES

Table 1 – D43 Modeled 100-yr Peak Pond Data ..... Tables Appendix
Table 2 – D66 Modeled 100-yr Peak Pond Data ..... Tables Appendix
Table 3 – EMISS Modeled 100-yr Peak Pond Data ..... Tables Appendix
Table 4 – GOLF Modeled 100-yr Peak Pond Data ..... Tables Appendix
Table 5 – MMISS Modeled 100-yr Peak Pond Data ..... Tables Appendix
Table 6 – TROTT Modeled 100-yr Peak Pond Data ..... Tables Appendix
Table 7 – WMISS Modeled 100-yr Peak Pond Data ..... Tables Appendix
Table 8 – D43 Watershed 10-yr Storm Sewer Pipe Capacity ..... Tables Appendix
Table 9 – D66 Watershed 10-yr Storm Sewer Pipe Capacity ..... Tables Appendix
Table 10 – EMISS Watershed 10-yr Storm Sewer Pipe Capacity ..... Tables Appendix
Table 11 – GOLF Watershed 10-yr Storm Sewer Pipe Capacity ..... Tables Appendix
Table 12 – MMISS Watershed 10-yr Storm Sewer Pipe Capacity ..... Tables Appendix
Table 13 – TROTT Watershed 10-yr Storm Sewer Pipe Capacity ..... Tables Appendix
Table 14 – WMISS Watershed 10-yr Storm Sewer Pipe Capacity ..... Tables Appendix
Table 15 – 303d Impaired Waters List Excerpt from MPCA ..... Page 16
Table 16 – Infiltration Rates per Soil Type ..... Page 17
Table 17 – Known or Potential Sources of Soil or Groundwater Contamination ..... Page 20
Table 18 – Implementation Process List ..... Page 47

FIGURES

Figure 1 - Map of Areas with High Land Slope
Figure 2 - Conceptual Model of the Area Groundwater Hydrostatigraphic Column
Figure 3 - Map of the Geologic Sensitivity of the Uppermost Aquifer to Pollution
Figure 4 - Drinking Water Supply Management Area Map
Figure 5 - Public Waters Inventory Map
Figure 5A- Public Waters Inventory Map with Public Ditches (MS 103E)
Figure 6 - Parks Map
Figure 7 - National Wetlands Inventory Map
Figure 8 - General Watershed Map and Historic Flooding Locations
Figure 9 - County Section Numbering and Modeling Naming Convention
Figure 10 - D43 Watershed Pond Summary, 100-year Peak Elevation Map
Figure 11 - D43 Watershed 10-year Pipe Capacity
Figure 12 - D66 Watershed Pond Summary, 100-year Peak Elevation Map
Figure 13 - D66 Watershed 10-year Pipe Capacity
Figure 14 - EMISS Watershed Pond Summary, 100-year Peak Elevation Map
Figure 15 - EMISS Watershed 10-year Pipe Capacity
Figure 16 - GOLF Watershed Pond Summary, 100-year Peak Elevation Map
Figure 17 - GOLF Watershed 10-year Pipe Capacity
Figure 18 - MMISS Watershed Pond Summary, 100-year Peak Elevation Map
Figure 19 - MMISS Watershed 10-year Pipe Capacity
Figure 20 - TROTT Watershed Pond Summary, 100-year Peak Elevation Map
Figure 21 - TROTT Watershed 10-year Pipe Capacity
Figure 22 - WMISS Watershed Pond Summary, 100-year Peak Elevation Map
Figure 23 - WMISS Watershed 10-year Pipe Capacity
Figure 24 - FEMA Floodplain Boundaries Map
Figure 25 - Hydrologic Soils Map
Figure 26 - Existing Land Use Map
Figure 27 - Proposed Land Use Map
Figure 28 - Minnesota Land Cover Classification Map
Figure 29 - Proposed Land Uses Map
Figure 30 - Typical SCS Hydrograph
Figure 31 - GIS/SSA Output: Plan View Plot of Chestnut Ridge Subdivision Discharge
Figure 32 - SSA Output: Storm Sewer Profile, Chestnut Ridge Subdivision Discharge, 2-yr Rainfall Event
Figure 33 - SSA Output: Storm Sewer Profile, Chestnut Ridge Subdivision Discharge, 10-yr Rainfall Event
Figure 34 - SSA Output: Storm Sewer Profile, Chestnut Ridge Subdivision Discharge, 100-yr Rainfall Event
Figure 35 - SSA Output: Storm Sewer Profile, Chestnut Ridge Subdivision Discharge, Back-to-back 100-yr Rainfall Events
Figure 36 - 24” x 36” D43 Watershed Pond and Pipe Numbering Map
Figure 37 - 24” x 36” D66 Watershed Pond and Pipe Numbering Map
Figure 38 - 24” x 36” EMISS Watershed Pond and Pipe Numbering Map
Figure 39- 24” x 36” GOLF Watershed Pond and Pipe Numbering Map
Figure 40- 24” x 36” MMISS Watershed Pond and Pipe Numbering Map
Figure 41 - 24” x 36” TROTT Watershed Pond and Pipe Numbering Map
Figure 42 - 24” x 36” WMISS Watershed Pond and Pipe Numbering Map

APPENDICES

Appendix A - Ramsey Stormwater Pollution Prevention Plan
Appendix B - Comment Letters

I. PURPOSE OF PLAN

The purpose of this Surface Water Management Plan (SWMP) is to promote, preserve and enhance the natural resources within the City of Ramsey. The City will protect water quality and unique and fragile environmentally sensitive land from adverse effects that can potentially be caused by poorly sited development or incompatible activities. The City proposes to accomplish this by regulating land disturbances and development activities.

This plan was originally prepared in 2008 by Bolton and Menk, Inc. (the "2008 Plan"). This document is intended to update the 2008 Plan as required (the "2015 Update"). The City has prepared the 2015 Update utilizing the 2008 baseline data prepared by Bolton and Menk.

Minnesota Rules Chapter 8410 (Metropolitan Area Local Water Management) requires specific elements to be addressed in local water management plans. The various chapters of this report are designed to address each element required under these rules. In addition, this plan follows the Metropolitan Council's 2030 Water Resources Management Policy Plan requirements. At the time of drafting of this report, the Metropolitan Council was in the process of completing the 2040 Water Resources Policy Plan, which replaces the plan mentioned in this paragraph. As part of the City's 2040 Comprehensive Plan Update, the City will review the need to update this document. IN 2002, the Minnesota Pollution Control Agency designated the City of Ramsey as a mandatory Municipally Separate Storm Sewer System (MS4) community needing to submit a National Pollutant Discharge Elimination System (NPDES) permit regulating its storm water runoff. As such, the City submitted a Storm Water Pollution Prevention Plan (SWPPP) with its permit application in 2003. The permit was reissued in 2006 and 2013. The City has update the SWPPP to meet the requirements of each reissue. Accordingly, an additional purpose of this SWMP is to control or eliminate storm water pollution. Key contributors to storm water pollution are soil erosion and sedimentation. The city-wide SWPPP incorporates ordinance changes that address erosion control, sedimentation associated with construction activities as well as illicit discharges to surface waters, all primary contributors of storm water pollution.

The City's goal is to minimize conflicts and encourage compatibility between land disturbing activities, water quality and environmentally sensitive lands. This will be accomplished through detailed development ordinances, plan review standards and recommended pollution control procedures in an effort to strike a balance between urban growth and the protection of water quality and natural areas. This SWMP, in conjunction with the policies set forth in the City ordinances, establishes standards and specifications for conservation practices and planning activities to minimize storm water pollution, soil erosion and sedimentation.

This submittal is a culmination of research, mapping, land use analysis/planning and hydraulic design. The end product is a detailed design tool that can be used by the City of Ramsey in planning growth and infrastructure replacement. This summary report represents only a small part of the total work product created through the master planning process. The current City ordinances have also been revisited as part of this process, as they are the best means to implement the recommendations made in this report.

Following the approval of this SWMP by the Lower Rum River Watershed Management Organization (LRRWMO), the City will have administrative authority for the approved SWMP and ordinances. The City will also have the duty to enforce the SWMP and associated ordinances. The City places a high priority in improving impaired waters and intends to work with the LRRWMO and other agencies to achieve water quality goals by reducing the impact created by the City.

DRAFT

II. EXECUTIVE SUMMARY

A. Plan Purpose and Background

Storm water regulations have changed significantly since the original Comprehensive Storm Drainage Plan was approved in 1980 and the southeast growth area was revisited in 1997 and 2002. The plan was updated in 2008 and renamed the Storm Water Management Plan. The following is a listing of those regulatory changes:

1. 1982

   The *Metropolitan Surface Water Management Act* was passed. The Act was originally included in Minnesota Statute Chapter 509. The Act was recreated and modified in 1990 and became Minnesota Statue 103B.205 to 103B.255.

   Originally, the former State of Minnesota Water Resources Board oversaw implementation of the act. When that board was merged with two other boards to form the Minnesota Board of Water and Soil Resources in 1987, the Board of Water and Soil Resources assumed responsibility for the act. Forty-six watershed management organizations (36 joint powers Watershed Management Organizations and 10 Watershed Districts) were originally responsible for preparing plans to:

   - protect, preserve, and use natural surface and groundwater storage and retention systems
   - minimize public capital expenditures needed to correct flooding and water quality problems
   - identify and plan for means to effectively protect and improve surface and groundwater quality
   - establish more uniform local policies and official controls for surface and groundwater management
   - prevent erosion of soil into surface water systems
   - promote groundwater recharge
   - protect and enhance fish and wildlife habitat and water recreational facilities
   - secure the other benefits associated with the proper management of surface and groundwater [1]

2. 1985

   The Lower Rum River Water Management Organization (LRRWMO) was formed to meet the requirements of the Metropolitan Surface Water Management Act.

[1] Excerpt taken from the Minnesota Board of Water & Soil Resources Website: http://www.bwsr.state.mn.us/watermgmt/metroareasurface.html

3. 1987

The Federal Clean Water Act was amended to address storm water as a pollution source. This resulted in the EPA developing a NPDES Phase I permit that targeted Cities with populations in excess of 100,000. As a result, in 1991, Minneapolis and St. Paul were required to apply for permits. One permit requirement was the development of a city-wide Storm Water Pollution Prevention Plan (SWPPP) that included approximately 30 mandatory Best Management Practices (BMPs) addressing everything from education and good housekeeping for municipal operations to mandatory city ordinances.

4. 1991

The Minnesota Legislature passed the Wetlands Conservation Act (WCA). The WCA is administered according to Minnesota Rules Chapter 8420 to implement the purpose of the Act, which is to:

- Achieve no net loss in the quantity, quality, and biological diversity of Minnesota's existing wetlands
- Increase the quantity, quality and biological diversity of Minnesota wetlands by restoring or enhancing diminished or drained wetlands;
- Avoid direct and indirect impacts from activities that destroy or diminish the quantity, quality, or biological diversity of wetlands
- Replace wetland values where avoidance of activities is not feasible and prudent. [2]

5. 1992

The Board of Soil and Water Resources (BWSR) developed Minnesota Rules Chapter 8410. This set of rules consists of 18 parts that define the scope, general structure and content required for BWSR approval of a Local Surface Water Management Plan. The table of contents of this report and the content within each chapter has been structured to meet MN Rule 8410 as well as the specific requirements of the City of Ramsey.

6. 2003

NPDES Phase II, the second round of the 1987 Federal Clean Water Act amendment, targeted cities with populations over 10,000. The City submitted a permit application and SWPPP in accordance with MPCA deadlines.

The City finalized its most recent SWPPP in 2013. That SWPPP is attached in Appendix B to this report.

[2] Excerpt taken from the University of Minnesota Duluth website: http://www.d.umn.edu/fm/safety_envir/wetlands/pdf_pages/4.0%20Wetland%20Regulations.pdf

7. 2005

The Metropolitan Council has requirements for local governments to include local water management plans as part of their Comprehensive Plans. The Metropolitan Council does not have authority to set policy or administer local storm water regulations. This Surface Water Management Plan Update is designed to address current requirements governing local water management plans. The general boundary of the plan includes all property within the City limits of Ramsey. When accepted by all local, regional, state and federal agencies having jurisdiction, the City of Ramsey will be the sole responsible party for administering this plan.

8. 2012

The Lower Rum River Watershed Management Organization adopted their Third Generation Plan. The new plan requires infiltration for new and redeveloped sites, use of the Atlas-14 rainfall distributions and reductions in Total Suspended Solids (TSS) and Total Phosphorus (TP) for runoff discharged from new permitted projects.

B. General Content of Required Local Plans

This SWMP follows the general report structure listed in Minnesota Rules Chapter 8410.0170, the general requirements in Minnesota Statute sections 103B.205 - 103B.255, and the Metropolitan Council's requirements for local water management plans as adopted May 2005 as part of the Metropolitan Council's *Water Resources Management Plan*. As stated above, the City will update this plan subsequent to the adoption of the Metropolitan Council's 2040 Water Resources Policy Plan.

C. Summary of the Goals, Problems, and Potential Solutions

The general findings of this Surface Water Management Plan report are summarized as follows:

1. Ramsey is located in the Anoka Sand Plain. The area is well known for its highly permeable soil. As such, the runoff from significant rainfalls is generally reduced to the extent that the existing drainage network functions well with no significant flooding outside the Mississippi River, Rum River, Trott Brook, Ford Brook, County Ditch 43 and County Ditch 66 flood plains.

   Because of the pervious nature of the Anoka Sand Plain, the City will need to review its development ordinances to mitigate the adverse effect that a significant increase in impervious surfacing and mass grading can have on runoff conditions. The addition of significant amounts of impervious surfaces and the reduced permeability associated with the soil compaction in mass grading without a reasonable attempt to restore or duplicate the current infiltration pattern could create very significant increases in runoff volumes and downstream flooding. This is especially true in the Trott Brook, D66, EMISS and WMISS watersheds (see Figure 9), where improvements in uppermost watershed limits must flow a significant distance to the ultimate watershed outlet. The longer flow path associated with each of these watersheds allows greater opportunities for peak flows from conventional detention ponds to coincide.

   One solution to the problem of coincident peak flows is the use of low impact development techniques. There are a variety of low impact development

techniques. The current low-density residential developments in northern Ramsey are a close approximation of what a low impact development can be like. This area has a noticeably lesser storm water impact than that of either high-density residential developments or commercial/industrial developments.

However, Ramsey's land use plan creates a variety of land use types in which low-density residential is not planned for all areas of the community. With these development plans in mind to balance low impact development with the City's economic development goals, the City must consider other techniques to encourage maximized infiltration of storm water.

This report recommends modifying the current development ordinances to encourage infiltration and soil ripping of mass grading to compensate for lost infiltration conditions as well as requiring oversized retention ponding to mitigate and compensate for increases in runoff. Innovative solutions to the storm water runoff increases associated with the increase in impervious surface will be investigated and encouraged when deemed appropriate. Potential solutions include pervious pavements, rain gardens, infiltration basins and low impact development among others.

2. An integral part of this SWMP is updating the comprehensive storm water runoff modeling performed in 2008. The 2008 modeling effort captured the existing conditions throughout the entire city. This modeling includes:

   a. Mapping out the small watersheds draining to general collection points such as low points in roadways and intersections, wetlands or ponds.

   b. Estimating the runoff from the 2, 10 and 100-year rainfall events.

   c. Routing the runoff through the existing system.

   The existing system may be a pipe network, a pond, a wetland or a waterway. The modeling predicts the high water levels and flows associated with each rainfall event modeled.

   This modeling provides a baseline for comparison purposes as new developments change the drainage pattern. With this modeling information, City staff can readily review the cumulative impacts of large developments for effects on the baseline conditions across the entire watershed.

   Storm and Sanitary Analysis (SSA) software was used in the comprehensive modeling. This software is based on the industry standard EPASWMM process and the St. Vennant equations. The model can be used to input actual rainfall events from rain gauges and can model the transport of pollutants through the system. This will be very useful in evaluating the BMP measures to address future TMDLs.

3. Where the cumulative effect of regulated development is potential flooding, the recommended practice is the construction of retention ponds or detention basins, including infiltration, as a requirement of further development of the outlying growth areas. It is further recommended that the post construction peak outflows from new developments be limited to no more than the existing peak flow for the 2-, 10-, and 100-year storms. The Third Generation Lower Rum River Watershed Management Plan requires infiltration of the first 1" of runoff from new

impervious surfaces. This will better mitigate the cumulative effects of increased impervious surfacing and increased runoff volume from new developments.

Because the majority of the area is served by large stream/wetland complexes, regional ponding is not possible for a significant part of the city. Where they are possible, the creation of regional ponds is preferred because of the limited maintenance (compared to a multitude of individual development ponds) and the opportunity to control larger drainage areas. By contrast, a multitude of scattered ponds associated with each individual site development may be designed to reduce the peak outflow for its smaller area, by storing the excess runoff and releasing it at a lesser rate for a longer duration. This longer pond outflow duration may coincide with the reduced peak flows from other individual site ponds and create a larger combined peak flow than the original undeveloped condition. Hence, regional ponds are recommended where physically possible, because of the opportunity to control the runoff on a larger scale and ensure that the downstream system is not adversely impacted by uncoordinated development that meets a typical runoff ordinance. The greater control afforded by regional ponds may also reduce the flows to the downstream system and allow for decreased costs in downstream infrastructure improvements.

4. The proposed infiltration requirements and pond network is part of the goal of accommodating continued responsible growth. Revisions will be required as formal developer layouts are presented to the City. Although this plan forms a sound basis for future development, it is important to remain flexible in finding ways to manage runoff while still accommodating the continued development of the city.

5. The maps attached at the end of this report are for general illustration purposes. As part of the plan development, large scale maps and GIS compatible files have been prepared as part of the 2008 SWMP and updated with preparation of this plan. The GIS maps and files show more detailed information including watershed areas, proposed pond areas and storage volumes, estimated flow rates into and out of the proposed ponds for both the existing and developed conditions, proposed interconnecting pipe sizes between ponds, etc.

6. The City will pursue outside funding to help finance the recommended capital improvements described in this plan. Local financing will most likely come from a combination of storm sewer trunk fees and the City's storm water utility fund.

   Any determined storm water management charges or area charges to new developments should be reviewed on an annual basis to ensure that changes in land acquisition, construction cost, bonding cost, legal cost, etc. are included in the computed fee.

7. The 2008 SWMP included a complete wetland functions and values assessment as part of a greater wetlands management plan.

   The wetland buffers recommended in the Wetlands Function assessment were approved by City Council when the 2008 SWMP was approved. Further review of the buffers by the City Council resulted in a policy decision to delay the implementation of the wetland buffers recommendations.

   Wetlands are to be further protected by controlling discharges from developing areas. The proposed controls include pretreatment BMPs and runoff controls

designed to maintain the current hydrology and maintain or improve the current functions and values of the wetland.

D. **Amendments and Updates**

This report is intended for the coverage period to 2022. It should be considered as a working document that should be updated and amended in accordance with the procedures described in Section IX. Amendment will be needed as development progresses and actual new development data is integrated into the overall model.

The Minnesota Pollution Control Agency (MPCA) has not completed total maximum daily load (TMDL) studies for the impaired waters within the city boundaries of Ramsey (see Table 15 for the list), and is still completing the TMDL study of Lake Pepin (downstream from Ramsey). The Lake Pepin TMDL may have a major impact on all NPDES permittees in the metro area. The City of Ramsey is aware of the potential need to amend the local water management plan prior to 2022 based on the implications and requirements of the Lake Pepin TMDL and the TMDLs for the impaired waters within the city.

The City has updated the SWPPP in accordance with the reissuance of the MS4 permit in 2013.

DRAFT

III. REGULATORY REQUIREMENTS AFFECTING PLAN

The following is a brief summary of the primary Statutes and Rules governing storm water management in the 7-County metropolitan area. These requirements establish and control the content of this plan and cite objectives regarding surface water management:

A. Minnesota Rules Chapter 8410.0170

These rules outline the structure of a SWMP. Each SWMP must have the following at a minimum:

1. A purpose statement outlining the purposes of the water management programs required by MN Statute sections 103B.205 - 103B.255.
2. A section of water resource related agreements
3. A land and water resource inventory (required by part 8410.0060)
4. A section on the establishment of policies and goals
5. A section on assessment of problems
6. A section on corrective actions
7. A section on financial considerations
8. An implementation program discussing which components of the implementation program the City will prioritize
9. A section on the City's amendment procedures

This document is intended to meet these rules and hence each requirement is included.

B. Minnesota Statute 103B.235

This state law predates Minnesota Rule 8410 and includes additional requirements as follows:

1. Subdivision 1 - *Requirement* states that the City of Ramsey is required to submit a watershed management plan because it is within the 7-County metropolitan area.
2. Subdivision 2 - *Contents* states that the SWMP shall:
    a. Describe existing and proposed physical environment and land use;
    b. Define drainage areas and the volumes, rates, and paths of storm water runoff;
    c. Identify areas and elevations for storm water storage adequate to meet performance standards established in the watershed plan;
    d. Define water quantity and water quality protection methods adequate to meet performance standards established in the watershed plan;
    e. Identify regulated areas; and
    f. Set forth an implementation program, including a description of official controls and, as appropriate, a capital improvement program.
3. Subdivision 3 - *Review* states that, after consideration but before adoption by the governing body, the City shall submit its SWMP to the area water management

DRAFT

organization (WMO) for review for consistency with the watershed plan adopted pursuant to section 103B.231. The Lower Rum River Water Management Organization (LRRWMO) has WMO jurisdiction in Ramsey. According to the statute, the LRRWMO must approve or disapprove the plan or parts of the plan. The LRRWMO has 60 days to complete its review; provided, however, that the LRRWMO shall, as part of its review, take into account the comments submitted to it by the Metropolitan Council pursuant to subdivision 3a. If the WMO fails to complete its review within the prescribed period, the SWMP shall be deemed approved unless the City agrees to an extension.

3a. Subdivision 3a - *Review by Metropolitan Council* states that the City shall submit its SWMP to the Metropolitan Council for review and comment. The council shall have 45 days to review and comment upon the SWMP or parts of the plan with respect to consistency with the Metropolitan Council's comprehensive development guide for the metropolitan area. The Metropolitan Council's 45-day review period shall run concurrently with the 60-day review period by the LRRWMO. The Metropolitan Council shall submit its comments to the LRRWMO and shall send a copy of its comments to the City. If the Metropolitan Council fails to complete its review and make comments to the LRRWMO within the 45-day period, the LRRWMO shall complete its review as provided in subdivision 3 of State Statute 103B.235.

4. Subdivision 4 - *Adoption and Implementation* requires the City to adopt and implement its plan within 120 days after approval of the SWMP by the LRRWMO and to amend its official controls accordingly within 180 days.

5. Subdivision 5 - *Amendments* states that to the extent and in the manner required by the LRRWMO, all major amendments to the SWMP shall be submitted to the LRRWMO for review and approval in accordance with the provisions of State Statute 103B.235, subdivisions 3 and 3a for the review of plans. All minor amendments will be reviewed and approved by the City Council.

All of these required MS 103B.235 items are covered in this document.

C. **Local Ordinances**

The City of Ramsey will administer and enforce the water resource-related ordinances under the direction and control of, and subject to the powers expressly reserved to, the City Council. Following approval of this SWMP and ordinances, the City shall have administrative authority for the approved SWMP and ordinances. The Applicant, permittee or any other person or political subdivision with an interest in the determination of the City's interpretation or application of these ordinances may file a written appeal to the City Council within fifteen (15) business days of said determination. Said appeal shall state the specific grounds upon which the appeal is based. Within thirty (30) days of the date of receipt of the appeal, the City shall schedule the appeal for a regular or special meeting of the City Council. The City Council shall make its decision to affirm, reverse, or remand the determination by adopting a resolution stating findings of fact.

D. **Total Maximum Daily Loads and Impaired Waters**

The 1987 amendment to the Federal Clean Water Act required all impaired waters to be corrected. In making rules to meet the 1987 Amendment, the Environmental Protection Agency (EPA) first set criteria to determine a list of impaired waters depending on the potential use of the water. The Minnesota Pollution Control Agency (MPCA) worked to set guidelines to establish intended uses for the waters of the state and then set acceptable water quality criteria. After testing to determine the water quality, waters failing to meet the water quality criteria are placed on the 303d Impaired Waters list that is submitted to the EPA. Table 15 in Section IV, page 16 of this report, lists the current (2006) MPCA 303d Impaired Waters in Ramsey. It should be noted that, as of 2007, only about 25% of the waters of the State of Minnesota had been tested. Hence, the impaired waters list is likely to increase in the Ramsey area.

The process to remedy the impairment includes establishing a Total Maximum Daily Load (TMDL) allocation to each contributor to the problem. A TMDL is a calculation that determines the allowable pollutant load that can be discharged into the impaired water so that the limited load will ensure that the water improves to levels where it is no longer impaired. The typical process is initiated by the MPCA and includes a series of stakeholder meetings to formulate viable solutions and mutually work out a reasonable allocation of acceptable pollutant loading.

E. **Specific Lakes and Streams with Water Quality Problems**

Since a TMDL study has not been completed for the known impaired waters in Ramsey and downstream from Ramsey (such as Lake Pepin), the City should identify the priority it places on addressing impaired waters and how the City intends to participate in the development or implementation of TMDL projects. The Rum River and Mississippi River watersheds are too large for the City of Ramsey to take the lead on the TMDL Stakeholder process for these two waters. It is recommended that the City volunteers to participate in the Stakeholder process for these waters. Through this SWMP, the City of Ramsey has the capability of modeling contaminant transport using the SSA model. The City will work with the LRRWMO and the MPCA to formulate a TMDL for the impaired Rogers Lake.

Once a TMDL study is completed for the impaired water, the City must include, in this SWMP and its City-wide SWPPP, an implementation strategy including funding mechanisms that will allow the implementation of the TMDL requirements. As MPCA completes its TMDL process for each impaired water, the implementation of the measures to meet the TMDL will immediately become a priority item for the City of Ramsey.

F. **Lower Rum River Water Management Organization**

The City of Ramsey entered into a Joint and Cooperative Agreement for the Establishment of the *Lower Rum River Watershed Management Organization to Plan, Control and Provide for the Development of the Lower Rum River Watershed* in June of 1995. The Minnesota Board of Water and Soil Resources officially signed the Findings of Fact, Conclusions and Order accepting the Second Generation Watershed Management Plan on August 26, 1998. The LRRWMO updated its plan in 2012. The LRRWMO's plan update will trigger the mandatory re-evaluation and potential need for an update of the City's SWMP within two years from the date the LRRWMO's plan is approved by

BWSR. Update of the City's SWMP was delayed to incorporate the requirements associated with the reissuance of the MS4 permit in 2013.

G. **NPDES Requirements**

In 1987, the US Congress amended the Clean Water Act to include storm water pollution and directed the Environmental Protection Agency (EPA) to initiate rulemaking. The first round of EPA rules were implemented in 1991 when NPDES Phase I permits were required for all cities exceeding 100,000 in population. Phase II was implemented in 2003 and targeted all cities with populations exceeding 10,000. The Minnesota Pollution Control Agency (MPCA) assumed responsibility for implementing the rules and issuing all Phase II permits. The City of Ramsey was required to submit a permit for its Municipally Separate Storm Sewer System (MS4) in March of 2003. The permit was reissued in 2006 and 2013. The permit required the City of Ramsey to meet six minimum storm water control measures as follows:

1. Public education and outreach
2. Public participation and involvement
3. Detection and elimination of illegal discharges
4. Control of large construction sites runoff
5. Post construction storm water management
6. Pollution prevention or housekeeping for municipal operations

To show that the City of Ramsey is committed to implementing its Phase II permit, it was required to submit a Storm Water Pollution Prevention Program (SWPPP), which is essentially a list of promised steps the City proposes to make to meet these minimum control measures. The promises are in the form of Best Management Practices (BMPs) to be implemented at specified times over the life of the permit.

In general, the NPDES storm water discharge permit program is designed to reduce adverse impacts to water quality. The primary targets of acceptable storm water management plans are urban runoff and construction runoff. This is because urban runoff carries pollutants from cars, lawn fertilizers, pesticide spills and other contaminants into our lakes, wetlands and streams without entering wastewater treatment systems. Construction runoff is often laden with sediment caused by large amounts of un-vegetated soil that is loosened by excavation and grading.

The MPCA mandates are intended to regulate these sources of continued environmental degradation. To comply with the NPDES permit requirements, the City's SWPPP was drafted to establish measurable goals using the Best Management Practice (BMP) approach and to be able to track performance and progress.

Erosion and sediment control measures must be included in the City-wide SWPPP. The minimum standard is the General Permit Authorization to Discharge Storm Water Associated With Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R040000 (NPDES/SDS Permit) issued by the Minnesota Pollution Control Agency on August 1, 2013, as amended. Some components of the NPDES/SDS Permit include:

1. If land disturbing activity is taking place on a site where the soils are currently disturbed (e.g., a tilled agricultural site that is being developed), areas that will

not be disturbed as part of the development and areas that will not be disturbed according to the time frames and slopes specified in the NPDES General Construction permit Part IV.B.2, shall be seeded with temporary or permanent cover before commencing the proposed land disturbing activity.

2. Where one (1) or more acres of disturbed soil drain to a common location, a temporary (or permanent) sediment basin must be provided prior to the runoff leaving the site or entering surface waters. The basins must be designed and constructed according to the standards in the NPDES General Construction Permit Part III.B.

3. The Permittee or applicant must ensure final stabilization of the site in accordance with the NPDES General Construction Permit requirements. The site will be considered as having achieved final stabilization following submission of Certificate of Completion by the permittee or applicant, and inspection and approval by the City.

H. Non-Degradation Rulemaking

The MPCA is currently going through due process to update its non-degradation rulemaking effort and amend the state rules governing the non-degradation of waters (Minn. R. 7050.0180 and 7050.0185). Rules protecting Outstanding Resource Value Waters were adopted in 1984, while rules governing non-degradation of all waters were adopted in 1988. Since then, there have been many changes to the state and federal structure for water protection and to the understanding of water quality. The MPCA intends, with the assistance of a significant stakeholder effort, to thoroughly investigate the issues associated with non-degradation of waters, and to adopt rules that will address those concerns.

The MPCA has already taken the first steps in the rulemaking process by publishing two Requests for Comments regarding our intent to amend the current non-degradation rules. These Requests for Comments were published in the *State Register* on January 29, 2007, May 29, 2007 and February 25, 2013.[3]

This language was copied from the MPCA website in January 2015. The City of Ramsey will incorporate the non-degradation policies into this SWMP when they are formally adopted into the state rules.

[3] Excerpt taken from MPCA website: http://www.pca.state.mn.us/http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-rulemaking/nondegradation-rulemaking.html

IV. LAND AND WATER RESOURCES INVENTORY

Each plan must contain an inventory of water resource and physical factors affecting the water resources based on existing records and publications. If data publications and maps are available at a convenient central location, they may be included by reference. The plan must include a brief summary of the data and must identify where the publication can be obtained. The following subsections are required.

A. Precipitation

The state climatology office has records of all official rain gauges throughout Anoka County. The monthly precipitation totals and county-wide monthly averages for Anoka County are available online at:

http://climate.umn.edu/HIDENannual/

The two closest high-density rain gauges are:

1. No. 211785, Coon Creek
2. No. 217308, Saint Francis

Information is readily available from 1971 to the present. Over this time period, the aggregate annual precipitation ranged as follows:

Lowest annual precipitation	16.5 inches in 1976
Highest Annual Precipitation	39.09 inches in 1983
Average Annual Precipitation	29.54 inches per year

The following is the average annual precipitation per decade:

1970s	26.8 inches per year
1980s	29.9 inches per year
1990s	31.2 inches per year
2000s	29.6 inches per year
2010s	29.2 inches per year

On the average, June is the wettest month, followed by July and May.

B. General Geology and Topographic Data

The City of Ramsey is nestled between the Rum and Mississippi Rivers and within 2 miles of the confluence of these rivers. The general terrain is relatively flat and is often called the Anoka Sand Plain. The elevations range from approximate elevation 920 feet above mean seal level in northwestern Ramsey to near 840 feet at the lower Rum River. The straight-line distance between these points is approximately 60,000 feet, making the average slope less than 1 percent. In general, the land slope is in the 2 to 5 percent range.

DRAFT

There are steep slopes within the shoreland protection zone of the Rum and Mississippi Rivers, as well as scattered locations throughout the City. From the aerial photographic contour map, the slopes near the rivers can be as high as 65 percent. A map showing the areas with slopes between 12 and 18 percent and separately showing the areas with slopes greater than 18 percent is attached as Figure 1.

Virtually all of the Ramsey city limits is within the Anoka Sand Plain, which consists of highly permeable soils. Figure 2 shows the general subsurface geology of aquifers in the vicinity of Ramsey. The Anoka Sand Plain is part of the undifferentiated drift (Layer 1). The Minnesota Department of Natural Resources and the Minnesota Geological Survey generated Figure 3 as part of the Regional Hydrogeologic Assessment for the Anoka Sand Plain.[4] Based on Figure 3, waterborne contaminants in the Ramsey area can reach upper aquifers within hours or months of release, necessitating additional care in regulating surface water contamination. The majority of Ramsey is rated with the highest geologic sensitivity to pollution in the uppermost aquifer.

The Board of Water and Soil Resources website indicates that Anoka County, though not participating in the official metropolitan groundwater planning process, has prepared a "groundwater protection assessment." The county public health department coordinates the county groundwater planning and management activities.[5] However, there is no mention of the assessment on Anoka County Health and Environment Department website.

The City Wellhead Protection Plan was completed in the September of 2007. The final draft of Part 1 was accepted by all review agencies and City staff is currently working on Part 2. Figure 4 shows the 10-year capture zone (Well Head Protection Area, WHPA) as well as the Drinking Water Supply Management Area (DWSMA) for the seven municipal drinking water wells in Ramsey. Storm water infiltration will not be allowed inside these zones.

C. Surface Water Resource Data

1. Public Waters

A map of the public waters, streams, lakes, and public ditch systems established under Minnesota Statutes, chapter 103D or 103E, including the location of existing dams and control structures is shown in Figure 5. A map of the natural drainage routes is also attached as part of the Parks Map in Figure 6.

The Minnesota Department of Natural Resources (DNR) uses the U.S. Fish and Wildlife classification system (Circular 39) for wetlands and currently requires a permit for alteration of wetland types 3-5 which are 2.5 acres or larger. Ramsey City Code Section 117-124, Environmental Protection Overlay Districts includes provisions designed to further protect wetlands. . As stated previously, this section of code does not include required vegetative buffers for new developments around the perimeter of wetlands.

[4] Minnesota Dept. of Administration / Office of Geographic and Demographic Analysis / Land Management Information Center. Website: http://www.lmic.state.mn.us/chouse/metadata/asp.html

[5] http://www.bwsr.state.mn.us/watermgmt/metrogroundwaterplans.html

In addition to the protected waters list, the Mississippi River has a designated Critical Area Corridor and the Rum River is designated as a Wild & Scenic Outstanding Resource Value Water (see Figure 6 – Parks Map).

2. Shoreland

In order to control the development and utilization of shoreland along protected waters thereby preserving the water quality, natural characteristics, economic values and the general health, safety and welfare, the following waters in the city limits have been given a shoreland management classification. These protected waters within the city limits have been classified by the Commissioner of Natural Resources as follows:

	Natural Environment Lakes	**DNR I.D. #**
1.	Lake Eddy	2-109
2.	Itasca	2-110
3.	Rogers	2-104

	Recreational Development Lakes	**DNR I.D. #**
1.	Jeglens Marsh	2-111
2.	Peltzer Pond	2-112
3.	Grass (Sunfish)	2-113

	General Development Lakes	**DNR I.D. #**
1.	Ramsey Terrace Pond	2-114
2.	Magnesium Street Pond	2-116
3.	Industry Avenue Pond South	2-117
4.	Industry Avenue Pond North	2-118

	General Development Streams	**Locations**
1.	Trott Brook	Sections 1, 2, 3, 7, 8, 9, T32N, R25W
2.	Ford Brook	Sections 1 & 2, T32N, R25W

The above shorelands of the city are designated as a Shoreland Overlay District. The purpose of the Shoreland Overlay District is to control the utilization of shoreland areas and to preserve the quality and natural character of these protected waters within the City. The shoreland overlay districts are shown on the City's Mississippi/Rum River Overlay Districts Map. Boundaries of the overlay districts can be determined by scaling distances off the official environmental overlay map.

All wetlands on the National Wetlands Inventory map are shown on Figure 7. The National Wetlands Inventory Map is not all inclusive, wetlands exist in the

DRAFT

City of Ramsey that are not shown on the map. Each site proposed for development must be evaluated for wetlands as required in City Code.

Pretreatment of all storm water from new developments is required prior to discharge into any wetlands. Wetlands may be, and are currently being used for storm water storage for larger rainfall events. They may continue to be used for this purpose – even after upstream development, provided that:

1. There is acceptable Best Management Practice pretreatment of the runoff in accordance with the MPCA NPDES/SDS Construction Permit, Section III.D., Permanent Stormwater Management System.
2. The bounce from the normal water level to the high water level does not exceed two feet.

The Minnesota Wetland Conservation Act (WCA) requires the designated Local Governmental Unit (LGU) in charge of administering the WCA to generate a Notice of Wetland Conservation Act Decision for any impact to wetlands within the City of Ramsey. In all but minor decisions, the LGU will call for a Technical Evaluation Panel (TEP) review of the application or impact prior to issuing a decision. The LGU must give notice of proposed actions affecting wetlands to all of the following:

a. The Minnesota Board of Water and Soil Resources
b. The Soil and Water Conservation District
c. The Minnesota Department of Natural Resources
d. The Lower Rum River Watershed Management Organization
e. The U.S. Army Corps of Engineers
f. Interested citizens requesting notification of such actions

If a TEP meeting is required, all listed parties are invited to review the proposed action. However, it is not uncommon for a TEP meeting to consist of only a small contingent of this list, as some invitees may have no jurisdiction over the proposed action.

3. Watersheds

A general watershed map breaking the City of Ramsey into seven primary watersheds is attached as Figure 8. The naming convention for the nodes (i.e., pipes, channels, junctions, manholes, and ponds) is based on the county section and quadrant numbers and is described in Figure 9. The subsequent Figure Nos. 10 through 23 show the subwatersheds and drainage pattern within each of the separate primary watersheds. Storm water ponds, 100-year peak pond elevations and outfalls are also shown on these maps.

The City Storm Sewer infrastructure is also shown on the individual primary watershed maps. In the GIS database for these maps, the pipe network is color coded to reflect the various pipe sizes.

4. Flood Levels

Floodplains are covered by City of Ramsey Code Section City Code Chapter 117, Article II, Division 4, Subdivision III. A comprehensive map showing all of

the FEMA Flood Insurance Rate Map (FIRM) flood plains is attached as Figure 24. Flood studies have been performed for the following waterways:

a. Mississippi River

b. Rum River

c. Trott Brook

d. Ford Brook

Copies of the flood studies are available at the office of the City Engineer or online at the FEMA Map Service Center. These studies have been incorporated into the Official Zoning Map in accordance with Ramsey City Code Section II Chapter 117, Article II, Division 4, Subdivision III... The Official Zoning Map is on file in the Office of the City Administrator and the City Zoning Administrator.

In addition to the flood levels predicted by the FEMA flood studies, Bolton & Menk performed a flood study of County Ditch 66 using the HEC-RAS stream modeling program. This information has been coordinated with the SSA modeling software and submitted to FEMA for agency acceptance as a flood plain elevation. The 100-year flood plain has been recorded on the map along with the FEMA data. The color-coded legend of Figure 24 helps to differentiate between the federally modeled floodplain and the unofficial City flood plain.

In addition to the flood map, Tables 1 through 7, located in the Tables Appendix of this report summarize the modeled 100-year flood levels and peak discharges of existing storm water ponds and natural depressions that correspond to the peak discharges of channel flow passing through the watershed.

After a detailed review of the new and available flood profile information, the results appear consistent and provide a reasonable hydraulic grade from the upper reaches of the various flood channels to the ultimate confluence with the Rum and/or Mississippi Rivers.

5. Water Quality Information

Section 303d of the Clean Water Act requires that each state submit a list of Impaired Waters. The MPCA website lists the impaired waters as officially designated in 2014. Table 15 lists the impaired waters found in Ramsey:

Table 15
303d Impaired Waters List Excerpt from MPCA

Name	Affected Use	Pollutant or Stressor	Year Designated	Target Start	Target Completion
Rogers Lake	Aquatic Recreation	Excess Nutrients	2006	2013	2017
Rum River	Aquatic Consumption	Mercury, FCA	1998	2008	2025
Mississippi River	Aquatic Consumption	Mercury, FCA	1998	2008	2025
	Aquatic Consumption	PCB, FCA	2002	2002	2025

The Minnesota DNR maintains a database on all Minnesota lakes. Some of this data is very limited or not available, while other lakes have been studied in great detail. To find the most current data on the lakes in Ramsey, access the Lake Finder on the DNR Website.

The WMO document has a list of monitoring locations. The Anoka Conservation District (ACD) has water quality information. The ACD has also published a water atlas.

6. Water Appropriations

Upon approval by all of the review authorities, the City's approved Wellhead Protection Plan will be incorporated into this plan by reference. At present, the draft includes all of the current municipal ground water appropriations. The City is considering obtaining surface water appropriations from the Mississippi River for a 20 MGD water treatment plant. The scope of the project will require Regional Participation. The City is working with the Metropolitan Council and other regional partners to explore a regional funding solution to locally operated surface water supply treatment plant. The water treatment plant is intended to supply water for the anticipated population growth of the City. When the new water treatment plant is approved and constructed, the existing City wells and permitted groundwater appropriations are planned to remain unchanged to be readily available as backup for water needs.

7. Soil Data

Ramsey City Code, Section 117-424 covers types of soil that are adequate for septic systems. According to Ramsey City Code, the City adopts the Anoka County Soil Survey, 1977 (Soil Survey) and supplemental operational soil surveys as its official soil survey and makes it a part of the City Code. The Anoka County soil survey map of the Ramsey area is attached as Figure 25. In general, the City of Ramsey has soils in SCS Hydrologic Soil Type A. Table 16 lists the recommended infiltration rates based on SCS hydrologic soil types.

Table 16
Infiltration Rates per Soil Type

Hydrologic Soils Type	Infiltration Rate	Soil Texture
A	0.30 inches/hour	Sand, loamy sand, or sandy loam
B	0.15 inches/hour	Silt loam or loam
C	0.07 inches/hour	Sandy clay loam

Source: Urban Hydrology for Small Watersheds (SCS, 1986), as amended, revised or supplemented.

8. Land Use and Public Utility Services

Necessary land use and public utility services information is limited to information that existed at the time the plan or plan amendment was developed, including:

a. A general map of existing land uses (Figure 26A);

b. A general map showing anticipated land uses (Figure 26B); and

c. A reference to the location of the metropolitan urban service area.

Land use is one of the primary mechanisms that affect flooding and water quality. As prairie and forested areas are converted to agricultural and urban uses, the volume and rate of storm water runoff increases. This increase in storm water runoff can cause a change in the bank full flow of area streams and conveyances. This can cause stream bank erosion and deterioration of the stream. In addition, increased area runoff can cause erosion in steep areas. The conversion of natural land cover also increases the amount of pollutants in storm water runoff such as the levels of pesticides and nutrients from agricultural land use, and trace metal concentrations from urban land use. Pollutant loading analysis has not been included within this report. This plan estimates the future land use throughout the study area in order to evaluate the drainage system needs.

Although pollutant concentrations may not vary greatly between land uses, pollutant loadings are a function of both runoff volume and concentration. The volume of runoff is directly related to the amount of impervious surface from a particular land use. For example, if a fictitious *Area A* has twice the runoff due to higher impervious land cover as *Area B* with the same pollutant concentration, *Area A* will have twice the pollutant loading. This is the basis for the major difference in water quality between residential and commercial land uses and affects surface water planning strategies for the different land uses. The Minnesota Land Cover Classification System (MLCCS) cover types for the Ramsey area are shown in Figure 26C.

9. Water-based Recreation Areas and Land Ownership

Figure 6 – Parks Map shows the location of all Parks and the location of all DNR public water accesses within the City of Ramsey.

10. Fish and Wildlife Habitat

The City of Ramsey has applied to the DNR for an updated list and description of the conclusions and recommendations of biological surveys or reconnaissance studies in December of 2014. Since this list is sensitive it is not included in this report, but is on file in the office of the City Engineer.

11. Unique Features and Scenic Areas

The Mississippi and Rum River Corridors within the City are unique and valuable local, state, regional and national resources. The rivers are an essential element in the local, regional, state and national transportation, sewer and water and recreational systems and serve important biological and ecological functions. The prevention and mitigation of irreversible damage to these resources and the preservation and enhancement of their natural, aesthetic, cultural and historic values is in furtherance of the health, safety and general welfare of the City. The Mississippi River Corridor Critical Area and the Rum River Scenic River are

protected under Ramsey City Code Chapter 117, Article II, Division 4, Subdivisions II and V Respectively. 2.

Ramsey City Code Section 117-252 regulates bluff land and river land development in order to protect and preserve the outstanding scenic, recreational, natural, historical, and scenic values of the Rum River in the city of Ramsey in a manner consistent with Minnesota Statutes, §104.31 - 104.40, Minnesota Regulations NR78-81, and the Management Plan for the Rum River (6 MCAR 1.2700 - 12720).

The City has an Environmental Policy Board that has been actively documenting and mapping the City's existing natural features, through a Natural Resources Inventory and a Wetland Functions and Values Assessment, including:

a. Native prairie communities

b. Woodlands

c. Functions and values of wetlands

d. Rare and endangered species

e. Historic and heritage buildings and features

Their report, which may be found on the City website, is included in this document by reference. NEED TO ADD WEB PAGE

The Scenic River Land Use District is divided into two areas designated as the Urban Area Overlay District, or Rural Area Overlay District and are covered under City of Ramsey Code Section 117-254.

Pollutant Sources

The City of Ramsey has one closed landfill (the Anoka Regional Solid Waste Facility). The MPCA keeps the records. The City is not aware of any other landfills.

There was a high nitrate area east of Armstrong Boulevard between 158th Avenue and 161st Avenue that was attributed to agricultural activity. There was a hog farm west of TH47 at 157th Avenue. The City does not have any permitted wastewater discharges.

The City does not keep a list of storage tanks. These records are currently kept at the Anoka County Environmental Services office.

The MPCA "What's in My Neighborhood?" website lists known and potential sources for soil and groundwater contamination. The majority of the sites listed are Voluntary Investigation and Cleanup (VIC) sites. There are 215 sites listed in Ramsey. A text based search for Anoka County and Zip code 55303 will list over 600 permits; however, some of the addresses were in the Cities of Anoka or Andover which share a zip code with Ramsey. Additionally many sites had multiple permits at the same address.

These are listed in Table 17.**Table 17**

Known or Potential Sources of Soil or Groundwater Contamination

Activity ID	Activity Name	Address	
VP20690	14140 Azurite	14140 Azurite St NW	Ramsey

Activity ID	Activity Name	Address	
VP24480	A1O0143 - Alpine Park	6600 Alpine Dr NW	Ramsey
MND985724061	Aca Management 367	5195 142nd Ave NW	Ramsey
MNR000058230	Accent Precision Wood Products	6250 McKinley St NW	Ramsey
MNR000118802	Accurate Auto Inc.	9716 Highway 10	Ramsey
MND982220089	Accurate Auto Inc.-Ramsey	9617 Highway 10 W	Ramsey
VP18690	Ace Solid Waste - Ramsey	6601 McKinley St NW	Ramsey
MND985702851	Adrien Mechanic Services	6021 Bunker Lake Blvd NW	Ramsey
MNR000079889	Aero Restoration & Repair Co	7101 143rd Ave NW Ste B	Ramsey
MNRNE35D6	All-Brite Graphics LLC - ISW	6320 Highway 10 NW	Ramsey
MNS000177972	Allina Health Ramsey Clinic	7231 Sunwood Dr NW	Ramsey
MNR000060970	Allina Medical Clinic - Ramsey - Alpine Drive	5300 Alpine Dr NW	Ramsey
MND985752047	Alloy Recovery Co Inc.	7060 142nd Ave NW	Ramsey
MNR000027722	Alpha Power & Technology	14000 Unity St	Ramsey
SA7044	Alsil Stephens Dump	See location description	Ramsey
MND089476451	Altron Inc.	6700 Bunker Lake Blvd NW	Ramsey
MNR000081067	Amcor Precast Inc.	6640 Industry Ave	Ramsey
MND982071714	American Trade A Bus Inc.	14000 Sunfish Lake Blvd NW	Ramsey
MNR000078246	Anderson & Dahlen Inc.	6850 Sunwood Dr NW	Ramsey
MNR000015057	Anderson Wade	15031 Hematite St NW	Ramsey
SA7100	Anoka County State Hospital Demo Fill	See location description	Ramsey
SA7111	Anoka Municipal Regional Landfill	14730 Sunfish Lake Blvd NW	Ramsey

DRAFT

Activity ID	Activity Name	Address	
MND985705292	Anoka Ramsey Automotive - Hwy 10	6262 Highway 10 NW	Ramsey
MND985753730	Anoka Ramsey Dental	5300 153rd Ave NW Ste 3	Ramsey
MNR000032169	Anoka Ramsey Sport Center	6760 Highway 10 NW	Ramsey
MNS000177618	Anoka-Ramsey Dental	5400 140th Ave NW Ste 104	Ramsey
MNR000114918	AR Honing	6250 Bunker Lake Blvd NW Ste 219	Ramsey
MNS000143404	Arrow Components Corp	6230 McKinley St NW Ste A	Ramsey
3789	Auto Ranch	7665 Highway 10 NW	Ramsey
MN0000036038	Auto Truck Hydraulics	7445 Highway 10 NW Ste 3	Ramsey
MNR000115139	Automated EDM Inc.	6231 McKinley St NW	Ramsey
MNR000023234	B & A Cylinder Head - Ramsey	14165 Ramsey Blvd NW	Ramsey
MND985684406	B & D Auto	14966 Nowthen Blvd NW	Ramsey
MND982642936	B & D Repair - Ramsey	9451 Highway 10 NW	Ramsey
MNS000172445	B&K Swiss Inc.	14220 Basalt St NW	Ramsey
MNR000115022	Bailey Woodworking	6250 Bunker Lake Blvd NW Ste 216	Ramsey
MNR000101824	Baker White Inc.	6111 Highway 10 NW	Ramsey
MNS000131292	Barnett Family Dentistry	7962 Sunwood Dr NW Ste 200	Ramsey
VP4771	Barnett Olds #2	6415 Hwy 10 NW	Ramsey
MNS000178897	B-Brothers Auto	7103 Highway 10 NW	Ramsey
VP8482	BK Ramsey Site	7205 Hwy 10 NW	Ramsey
MND985709401	Blass Automotive	6100 Industry Ave	Ramsey
MND982212045	Blatz Automotive	7105 Highway 10 NW	Ramsey
MND985720952	Blue Line Collision Center	6260 Highway 10 NW	Ramsey

DRAFT

Activity ID	Activity Name	Address	
VP8481	BNSF R-O-W #2	See location description	Ramsey
MN0000380881	Boart Longyear Co - Anoka	6300 Industry Ave	Ramsey
MNR000064659	C & F Race Cars	7101 143rd Ave NW Ste P	Ramsey
VP18650	Cabinetry Concepts	14410 Azurite St	Ramsey
MNRNE35J5	Carbon Products/ Division of Graphel Corp - ISW	6251 McKinley St NW	Ramsey
MN0000043513	Champlin Towing	14300 Sunfish Lake Blvd NW	Ramsey
MNS000133942	Chips Tool Repair Inc.	6250 Bunker Lake Blvd Ste 206	Ramsey
MND985695808	Cjs Auto Repair	17600 Gibbon St NW	Ramsey
MNS000135558	Class C Components Inc.	6825 Sunwood Dr NW	Ramsey
MND985738293	Coated Abrasive Products Co	14059 Sunfish Lake Blvd	Ramsey
MNS000174011	Coborn's Pharmacy 33	7900 Sunwood Dr NW	Ramsey
MNS000118869	Collision 2000 Inc.	3345 Viking Blvd	Ramsey
MNR000042424	Command Tooling Systems	13931 Sunfish Lake Blvd NW	Ramsey
MND985680040	Commercial Asphalt Co - Plant 906	6640 141st Ave NW	Ramsey
MNS000141010	Concrete Masonry Unlimited	9411 Alpine Dr NW	Ramsey
MNR000033787	Connexus Energy	14601 Ramsey Blvd NW	Ramsey
MNRNE373P	Countryside Printing Inc. - ISW	6250 Bunker Lake Blvd NW Ste 113	Ramsey
MNS000186908	Courage Kenny Sports & Physical Therapy Center Ram	7231 Sunwood Dr NW Ste A	Ramsey
VP26500	CSAH 116 Reconstruction - ROW	6100 Industry Ave NW	Ramsey
VP25020	CTT Properties, LLC	6600 Sunwood Dr NW	Ramsey
MNS000140152	Cullinan Rigging & Erecting Inc.	6815 McKinley St NW	Ramsey
MN0000012450	D Cobey Co Inc.	9340 Highway 10 NW	Ramsey

DRAFT

Activity ID	Activity Name	Address	
MND006220719	Dahlheimer Beverage LLC	13554 Tungsten St NW	Ramsey
MND982640476	Danny's Trannys Inc.	14050 Basalt St NW	Ramsey
MNR000004036	Detail Tool & Engineering Inc.	6511 Industry Ave	Ramsey
MND985669936	Diamond Automotive Inc./ Auto Fitness & Service Ctr	7029 Highway 10 NW	Ramsey
MNS000141085	Diamond Graphics	14350 Azurite St NW	Ramsey
PW6124218640	Dickenson Diesel	NW Highway 10	Ramsey
MNR000119271	Die Concepts Inc.	13915 Radium St NW Ste F	Ramsey
MNR000077495	Digital Tool & Automation	6501 McKinley St NW	Ramsey
MNR000103978	Dynamic Group Inc. - Ramsey	13911 Unity St NW	Ramsey
MND985729847	E & L Machine	5944 168th Ln NW	Ramsey
MNS000168625	Eddy's Auto & Body Repair Inc.	6845 Highway 10 NW	Ramsey
MNR000076554	Egan Oil Co	500 Bunker Lake Blvd NW	Ramsey
MNR000013532	Erin Contracting	8050 147th Ave NW	Ramsey
MNR000119669	E-Z Auto Sales Inc.	7751 Highway 10 Ste 6	Ramsey
MNR000115501	Falcon Machine Inc.	7101 143rd Ave NW Ste N	Ramsey
MNR000060186	Ferrellgas - Anoka	7255 Highway 10 NW	Ramsey
MNR000100057	First Cut Products Inc.	6250 Bunker Lake Blvd NW Ste 104	Ramsey
MNNONGEN1170	Flavor Midwest Inc.	9459 Highway 10 NW	Ramsey
MN0000275925	Food N Fuel C15	13939 Saint Francis Blvd	Ramsey
MN0000196147	Galindo Electric	15645 Traprock St NW	Ramsey
MN0000083741	GEC Auto Service ink - Ramsey	7129 Highway 10 NW Site C	Ramsey
MND985722420	Gerdes Racing	7321 152nd St	Ramsey
MNS000177170	Gibbs Lawn	6300 Bunker Lake Blvd NW	Ramsey

DRAFT

Activity ID	Activity Name	Address	
MNR000080655	Gibbs Lawn - Radium Street	13915 Radium St NW Ste D	Ramsey
MNRNE39NX	Graphel Carbon Products ISW	6251 McKinley St NW	Ramsey
MNR000015867	H Ten Sports	8110 Highway 10 NW	Ramsey
VP26700	Harber Industries	6690 Sunwood Dr NW	Ramsey
MND985749530	Harold's Our Own Hardware	6000 167 Ave NW	Ramsey
MNRNE39BB	Health Care Marketing Inc. dba Perry Products ISW	6023 167th Ave NW	Ramsey
MNS000147306	Heartland Tire	7151 Riverdale Dr	Ramsey
MND982642894	Heichel Brian	6933 164th Ln NW	Ramsey
MN0000036061	Hi Tech Collision Frame	7445 Highway 10 NW Ste 2	Ramsey
3700	Hills Property	7443 Highway 10	Ramsey
MNR000066407	Hitech Motorsport Inc. - Ramsey	13915 Radium St NW Ste C	Ramsey
3473	Hi-Ten Sports Center	8110 Highway 10 NW	Ramsey
MNS000117358	Home Dame Brothers Painting	15621 Barium St NW	Ramsey
MNR000117317	Import Auto Sales Inc.	7443 Highway 10	Ramsey
MNR000115113	Intech Industries Inc.	7180 Sunwood Dr NW	Ramsey
MNR000051607	Integrity Tool & Engineering	6221 McKinley St NW	Ramsey
MNR000022061	Intercity Oil	6021 Highway 10 NW	Ramsey
MNR000076778	ISD 11 Ramsey Elementary	15000 Nowthen Blvd NW	Ramsey
MND985704634	Jac Auto Repair & Sales	6336 Highway 10 NW	Ramsey
MND985764141	Jacks Auto Repair	14290 Sunfish Lake Blvd NW	Ramsey
MNS000130245	JDI Signs & Graphics	6451 McKinley St NW Ste P	Ramsey
MNR000112235	JR Data Solutions Inc.	6250 Bunker Lake Blvd NW Ste 204	Ramsey

DRAFT

Activity ID	Activity Name	Address	
MN0000367144	Julian M Johnson Construction Corp	6191 140th Ave NW	Ramsey
MNR000078725	Just Precision Inc.	6250 Bunker Lake Blvd Ste 213	Ramsey
MND071773733	Kens Automotive	15415 St Francis Blvd	Ramsey
MNR000111534	Kit Masters Inc.	6250 Industry Ave NW Ste 211	Ramsey
MNS000214106	Kovar Sales	14047 Azurite St NW	Ramsey
MND985721208	Ksiazek Charles	15710 Juniper Ridge Dr NW	Ramsey
MND981535230	Lamey Dave	15940 Sodium St NW	Ramsey
MND981802390	Lano Equipment Inc.	6140 Highway 10 NW	Ramsey
MNR0534DB	Life Fitness Div of Brunswick Corp - SW	14150 Sunfish Lake Blvd NW	Ramsey
MN0000190736	Links At Northfork	9400 153rd Ave NW	Ramsey
A00002353	Listul Industries Inc. - SW	13900 Sunfish Lake Blvd NW	Ramsey
MNR000007898	Mach 5 Auto Service	7129 Highway 10 NW	Ramsey
MND985714658	Marshall Concrete Products Inc. - Ramsey	14141 Unity St NW	Ramsey
MNR000058859	Mat Inc.	6230 McKinley St NW Ste E	Ramsey
MND057087678	Mate Punch & Die Co	6400 Industry Ave	Ramsey
MND022705834	McKay's Auto Sales	6415 Highway 10 NW	Ramsey
MNS000191544	Metro Dentalcare - Ramsey	7600 Sunwood Dr NW	Ramsey
MNR000078980	Midwest Car Care - Ramsey	6745 Highway 10 NW	Ramsey
MNR000027802	Midwest Overhead Crane Corp	13900 Sunfish Lake Blvd NW	Ramsey
MN0000625962	Minnesota Sawdust & Shavings Co Inc.	14100 Jasper St NW	Ramsey
MNR000069252	Minnesota Tool & Die Works Inc.	6220 McKinley St NW	Ramsey

DRAFT

Activity ID	Activity Name	Address	
VP22410	Minnesota Waterjet	See location description	Ramsey
MNS000111344	Mississippi West Regional Park	13935 Traprock St NW	Ramsey
VP21480	MNDOT TH 10 & CTY RD 56	Ramsey Blvd & Hwy 10	Ramsey
MND982605495	MPCA Ramsey Municipal Center	15153 Nowthen Blvd NW	Ramsey
MNS000172833	Multisource Manufacturing LLC Ramsey	6690 Sunwood Dr NW	Ramsey
MND982613234	Noard Machine Tool Inc. - Anoka	6760 Highway 10 NW	Ramsey
MND008797938	Noons RV Center	7405 Highway 10 NW	Ramsey
MNR000069179	North Country Concrete	7040 143rd Ave NW	Ramsey
MN0069396	Northern Lights 2009-2010 Zone EF	Address Unknown	Ramsey
MNS000174284	Northwest Metro VA Clinic	7545 Civic Center Dr NW	Ramsey
MNU000661	Oak Terrace Mobile Home Park	6545 Highway 10 NW	Ramsey
MNR000016972	Oil Change Anywhere Inc.	14620 Fluorine St NW	Ramsey
MNS000138859	Oldcastle Precast Inc.	6820 143rd Ave NW	Ramsey
MNS000179796	Optimum Appliance & Recycling Center LLC	9539 Highway 10 W	Ramsey
MN0000998948	Outside Services Inc.	14140 Azurite St	Ramsey
MNS000107490	PACT Charter School - Ramsey	7250 Ramsey Pkwy E	Ramsey
MNR000119677	Park RV	9919 Highway 10 W	Ramsey
MND982212532	Pearsons Trucking Inc.	14050 Azurite Blvd	Ramsey
4542	Peck Construction	13900 Sunfish Lake Blvd NW	Ramsey
MNR000026880	Pine Ridge Pet Care - Ramsey	7245 Highway 10 NW	Ramsey
MNR000080648	Plateworks Inc. - Ramsey	6230 McKinley St NW Ste B	Ramsey
MNS000162735	Pleasureland RV Center	7900 Riverdale Dr	Ramsey

Activity ID	Activity Name	Address	
MN0068691	Prairie Meadows/Kelly Acres	Armstrong Blvd NW & Tiger St NW	Ramsey
MNR000023374	Pro Power Sports & Marine Inc.	6781 Highway 10 NW	Ramsey
MND985717925	Production Products Inc.	14161 Basalt St NW	Ramsey
VP15161	QDP and JBT Alliance Site (see Waste Management Site)	See location description	Ramsey
MNS000100776	Quail Manufacturing Co Inc.	6250 Bunker Lake Blvd NW Ste 222	Ramsey
MNS000147835	Qwest - Ramsey Garage	6651 141st Ave NW Ste 2	Ramsey
MNS000147546	Rain for Rent	9550 156th Ave NW	Ramsey
MNS000113290	Ramsey Brake & Exhaust Inc.	5143 179th Ln NW	Ramsey
MNR000013086	Ramsey city of Public Works	14100 Jasper St NW	Ramsey
MND985703941	Ramsey Dental Center	15243 Nowthen Blvd NW	Ramsey
MNS000177782	Ramsey Police Department	7550 Sunwood Dr NW	Ramsey
MND985677723	Ramsey Public Works Shop	St Francis Blvd & 142nd Ave	Ramsey
VP26860	Ramsey School Site	See location description	Ramsey
VP22580	Ramsey Vacant Land Parcel	See location description	Ramsey
MND985764968	Renolette Trucking	6100 Industry Ave Ste 201	Ramsey
MNS000210823	Residence - 9131 178th Ave	9131 178th Ave NW	Ramsey
4573	Rivenwick Village North	6897 139th Ln NW	Ramsey
3591	Rivenwick Village Outlot B	Riverdale Dr & Highway 10	Ramsey
MNS000123760	RJM General Paper Products Inc.	6650 143rd Ave NW	Ramsey
MND982219297	Rockford Autobody	14000 Basalt St NW	Ramsey
VP19380	Rotary Systems	Azurite St NW	Ramsey
MND985700012	Royal Concrete Pipe Ramsey	6640 Industry Ave	Ramsey
MND138781364	Rum River Hills Golf Club Inc.	16600 Saint Francis Blvd	Ramsey

DRAFT

Activity ID	Activity Name	Address	
MNR000109751	Sauter & Sons Inc.	6651 141st Ave NW Ste 2	Ramsey
MND099055691	Sauter & Sons Inc. - Azurite St	14050 Azurite St NW	Ramsey
VP19550	Senior Housing Parcel	County Road 116	Ramsey
MNR000059618	Shorewood RV Center	8390 Highway 10 NW	Ramsey
MNR000103952	Signature USA Inc.	8781 162nd Ln	Ramsey
MNR000078733	Simhof Manufacturing Tech	6250 Industry Ave Ste 112	Ramsey
A00022596	Solo Manufacturing Inc. - ISW	6230 McKinley St NW Ste C	Ramsey
MN0000341545	Sorby Jan	16301 Azurite St NW	Ramsey
MNR000080069	Specialized Coatings Inc.	6250 Bunker Lake Blvd NW Ste 214	Ramsey
MN0001025162	Spider Staging Corp	6250 Industry Ave Ste 108	Ramsey
VP19590	St. Anthony Gun Club	16128 Variolite St NW	Ramsey
VP18800	St. Paul Terminals - Ramsey	14050 Basalt St NW	Ramsey
MNR000055376	Star Auto Sales Inc.	7009 Highway 10 NW	Ramsey
MNR000023036	State Of Minnesota Weigh Scale	9225 Highway 10 NW	Ramsey
VP16770	Sunfish Business	See location description	Ramsey
MNR000017889	SuperAmerica 4508	14000 Saint Francis Blvd	Ramsey
MNR000004333	Superior Striping Inc.	14021 Basalt St NW	Ramsey
MNR000056010	Tech One Motorsports Inc.	6250 Industry Ave Ste 106	Ramsey
4270	The Lighthouse Bar And Grill	6937 Highway 10	Ramsey
MND985749522	Tim's RV Service	14050 Azurite St NW	Ramsey
MND922222135	Trade A Bus	Sunfish Blvd	Ramsey
MNR000056887	Utili Trax Contracting Partnership	6300 Industry Ave	Ramsey
MND982619983	Vance Brothers Inc.	14021 Azurite St NW	Ramsey

DRAFT

Activity ID	Activity Name	Address	
SA7043	Ve-Ve, Inc. Caustic Soaps	See location description	Ramsey
MN0065501	Vision-Ease LP dba Vision-Ease Lens	7000 Sunwood Dr NW	Ramsey
MNR000109900	V-Tech Motorsports Inc.	14000 Sunfish Lake Blvd Ste I	Ramsey
MNR000100792	Walser Outlet Center	7955 Riverdale Dr NW	Ramsey
VP5021	Waltek Inc. II	14310 Sunfish Lake Blvd	Ramsey
VP15160	Waste Management Site	Sunfish Lake Boulevard	Ramsey
MN0000234179	Welsh Engine Sales	6150 Highway 10 NW	Ramsey
MND985677970	Welsh Engine Sales	15443 Ramsey Blvd NW	Ramsey
VP31280	Wendell's Inc.., Ramsey	6601 Bunker Lake Blvd NW	Ramsey
MN0000010769	Westside Auto Body	6140 1/2 NW Highway 10	Ramsey
VP20930	Wildlife Research Center	Azurite St	Ramsey
PW6124274140	Wuorio Truck Sales	9619 Highway 10 W	Ramsey
MNRNE35LF	Zero Zone Refrigeration - ISW	6151 140th Ave NW	Ramsey

DRAFT

D. **Design Requirements**

The Ramsey SWMP has a dual purpose: 1) It will serve as a guide for the construction of storm drainage facilities, and 2) It will provide a basis for a consistent approach to the preservation of lakes, wetlands, streams, and the Mississippi and Rum Rivers. The following issues have been incorporated into this plan:

1. Division of the City into major watersheds based on contour maps, grading plans and natural topography
2. Determination of storm water runoff problems under current land use conditions
3. General layout and sizing of trunk storm sewers and open channels
4. Tributary areas, storage volumes, and high water levels of all existing ponding areas
5. Recommendations to accommodate the ultimate land use conditions
6. Recommendations for the revision of the current development ordinances
7. Recommendations for standard Operations and Maintenance procedures
8. Recommendations for specific construction site erosion control practices
9. Estimated construction and implementation costs of the SWMP
10. Recommendations for education of City residents, staff, and development community.

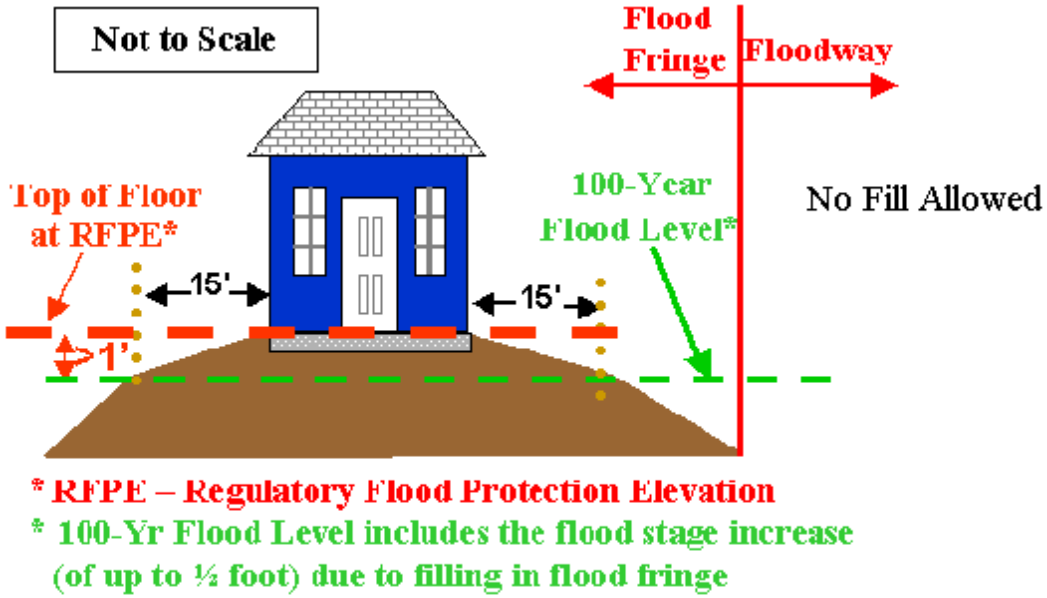
The primary function of an urban storm drainage system is to minimize economic loss and inconvenience due to periodic flooding of streets and other low-lying areas. Adequately designed storm drainage facilities provide flood control, minimize hazards and inconvenience associated with flooding, and protect or enhance water quality. The SWMP takes the entire drainage basin with future saturation development into consideration.

Wet water quality ponds upstream of dry regional infiltration basins (where possible) will help control the rate and the volume of storm water runoff. To provide flood protection for adjacent property, the design storm interval for ponding areas is a 100-year storm as compared to a 10-year storm for design of storm sewer piping. Any new residential, commercial, industrial and other habitable structures shall be constructed with the following low floor elevation: Elevation of the lowest opening of a structure shall be a minimum of 1 foot above the Emergency Overflow, or 2 feet above the HWL of the nearby pond or water body, whichever is higher. The area of a pond's HWL plus 1 foot of freeboard shall be contained entirely within an outlot that is owned and maintained by the City or within a drainage utility easement.

DRAFT

In areas adjacent to designated flood plains as mapped on a Flood Insurance Rate Map, the Regulatory Flood Protection Elevation (RFE) applies. The RFE is defined as the mapped 100-year flood elevation plus 1 foot. However, the LRRWMO requires that the low floor elevation of structures be 2 feet above the calculated flood elevation. Therefore, all structures, including accessory structures, must be elevated on fill so that the lowest floor including basement floor is 1ft above the Regulatory Flood Protection Elevation or 2 foot above the mapped 100-year flood elevation. The finished fill elevation for structures shall be no lower than the Regulatory Flood Protection Elevation and the fill shall extend at such elevation at least fifteen (15) feet beyond the outside limits of the structure erected thereon. The following drawing better defines the Regulatory Flood elevations.[6]

The following exhibit applies only when fill is required to bring a structure at least two (2) feet above the 100-year flood level.



Minimum Standards for Structures in 100-year floodplain

The numerous natural depressions found throughout Ramsey have been incorporated into the SWMP as ponding areas. The effective use of ponding areas enables the installation of outflow sewers with reduced capacities since the design storm duration is effectively increased over the total time required to fill and empty the ponding reservoirs. Storm sewers represent a sizable investment for the community and this investment can be more

[6] Taken from the Minnesota DNR website: http://www.dnr.state.mn.us/waters/watermgmt_section/floodplain/rfpe.html

efficiently utilized by ponding storm water in designated ponding areas and allowing smaller diameter pipes to be used as outfall lines.

Equally as important as flood control and cost considerations, is the use of ponding areas to:

1. Improve water quality;
2. Return storm water to the groundwater table;
3. Increase water amenities in developments for aesthetic, recreational and wildlife purposes.

For water quality ponds, the storage below the outlet is the most important consideration. The area and depth of the ponds may differ from the values presented here, storage below the outlet must be provided so that the prescribed pollutant loading of the system is not exceeded.

From time to time, local developers proposed enhancing required storm water ponds to also serve as an amenity for new development. Most frequently, this entails allowing the storm water pond to consistently maintain a certain level water. Amenity aspects are maximized by careful planning in the initial development of any residential or industrial area and by integrating the ponding system into an overall comprehensive SWMP. However, care should be given to make the developer responsible for the design water level to serve as the amenity above and beyond the base storm water requirements. If development plans show a permanent water level, it is strongly advised that the City include a provision in its development agreements making the developer and ultimately the subdivision or development area responsible for maintaining the water level. The City's review should include wording that specifically addresses water quality and hydraulics and not the permanent water level. The Anoka Sand Plain is known for its high infiltration capacity as well as its fluctuating water levels. The City of Ramsey should not be involved in maintaining or engineering water level maintenance.

The wildlife aspects of the ponding areas shall be maximized in design and the proper location of the trail system will allow good access to these areas for wildlife observation.

It is extremely important that each area be re-evaluated at the time of final design to confirm the criteria used in this study and to make any changes that a proposed development may dictate. Special consideration must be given to areas that develop differently than shown in the Comprehensive SWMP, especially when a higher runoff coefficient (higher impervious surface ratio) is likely to result from development.

All storm sewer facilities, especially those conveying large quantities of water at high velocities, shall be designed with efficient hydraulic characteristics. Special attention shall be given during final design to those lines that have extreme slopes and create high hydraulic heads.

The Best Management Practices (BMPs) recommended by the MPCA shall be followed wherever necessary or plausible. Before the City would enforce any of these BMPs, they first need to be adopted by ordinance on a case by case basis. This paragraph is not intended to be a blanket adoption of BMPs.

.

DRAFT

Rain gardens and infiltration basins are a viable alternative to storage ponds. These structures are encouraged by many review agencies as a way to mimic the original runoff conditions from a site. By incorporating infiltration, the basin provides volume and water quality management. A water quality basin does not need to have standing water, just a permanent "dead-pool" volume to meet the MPCA water quality requirements. The rain gardens and infiltration basins will assist in meeting MPCA regulations. However, rain gardens and infiltration basins are not recommended in a wellhead protection zone. Figure Nos. 3 and 4 show areas where rain gardens and infiltration may not be the best runoff management solution. City Policy adopted in conjunction with infiltration requirements of the LRRWMO Third Generation Plan permits infiltration in areas within the Drinking Water Supply Management Area (DWSMA), so long as it is not also within the 10-year capture zone.

E. Storm Water Modeling

1. Runoff

Storm water runoff is defined as that portion of precipitation, which flows over the ground surface during, and for a short time after, a storm. The quantity of runoff is dependent on the intensity of the storm, the length of storm, the amount of rainfall, the type of ground cover, and the slope of the ground surface.

The intensity of a storm is described by the amount of rainfall that occurs during a specific time interval. A specific rainfall amount occurring during a given time interval will statistically recur, on the average, at a certain frequency (usually measured in years). This is called a return frequency. A return frequency designates the average time span during which a single storm of a specific magnitude is likely to occur. For example, a 100-year rainfall event in Ramsey is that 24-hour rainfall amount (7.1 inches) that recurs, on the average, once in 100 years.

The degree of protection afforded by storm sewer facilities is determined by selecting a return frequency to be used for design based on good economic sense and current engineering practices. See section E.3 for further discussion.

2. Hydrographs

Storm sewer and associated detention basin design is typically based on hydrograph analysis. A hydrograph is graphical depiction of the time versus rate of runoff for a particular area. For example, if a rainstorm started at midnight, the first few minutes is spent with sprinkles and wetting the various surfaces. As the storm intensifies, the rainfall overwhelms the ability of the pavement and adjacent ground to absorb it, and water begins to runoff. At the peak of the storm, the water runs off at its greatest rate. Finally, as the storm passes, the runoff begins to slowly taper off. Figure 28 is an example of a typical runoff hydrograph.

The U.S. Soil Conservation Service (SCS) has performed extensive research in hydrograph analysis and developed a standard hydrograph. Technical Release No. 20 (SCS TR 20) describes a methodology that is generally accepted by the reviewing authorities and hydrologic engineers across the United States. The SCS procedure is based on a standard rainfall hydrograph that is modified by local parameters (i.e., rainfall, soil type, watershed size, watershed shape, the fall

across the watershed, etc.). Based on local conditions, the SCS hydrograph was used for development of the Ramsey storm water models in this plan.

A SCS 24-hour Type II storm distribution with 100-year intensity was used for the design of ponds and drainage systems. The Soil Conservation Service has determined from National Weather Bureau data that a Type II distribution is the storm event recommended for the upper-Midwestern United States.

The SCS hydrograph method is based on sound hydrologic theory and is commonly used to analyze runoff for the design and analysis of flows and water levels. The detailed modeling computations for this plan have been performed using the SSA Modeling Software as developed by Boss International, Inc.

3. Rainfall Probability

Rainfall amounts for hydrologic analyses should be based on:

NOAA Atlas 14: Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin (2013). NOAA Atlas 14, Volume 8, Version 2, *Precipitation-Frequency Atlas of the United States, Midwestern States.* NOAA, National Weather Service, Silver Spring, MD.

More recent updates of these documents shall be used, if available.

The SCS National Engineering Handbook snowmelt data shows the 100-year, 10-day snowmelt event is 7.3 inches over 10 days.

4. Pond and Pipe Design Criteria

To provide reasonable protection of downstream facilities, analysis of flood levels, storage volumes and flow rates for water bodies and detention basins shall be based on the range of rainfall and snow melt durations producing the critical flood levels and discharges. This report recommends a 10-year frequency design for storm sewer pipe using the Rational Method[7]. It is further recommended that pond design be based on the greater of the 100-year, 24-hour frequency SCS rainfall event, or the 100-year, 10-day snowmelt event for overland drainage and pond storage design. In comparing the peak pond elevations for each of these events, the 100-year SCS rainfall event, with the assumption that the infiltration rate was negligible, created the highest peak pond elevations. Hence, throughout the remainder of this report, the peak 100-year pond rates are discussed for typical pond High Water Levels (HWL). These design criteria were selected for the analysis and design of the drainage system for this SWMP. In addition, a 10-inch, 24-hour rain event has also been modeled over the entire city to analyze all ponds, overflow drainage ways and natural channels to evaluate whether the emergency over flows (EOFs) function as intended.

Storm water detention facilities with peak discharge rates less than 2 cfs/40 acres are typically susceptible to high water levels during snowmelt conditions. Special consideration of the snowmelt condition becomes critical for areas, like the Anoka Sand Plain where infiltration dampens the effect of runoff from rainfall. These areas can accept high amounts of rainfall during the warm,

[7] The Rational Method is markedly different than the SCS methodology in that it does not deal with runoff volumes, only flow rates. An explanation of the Rational Method is made later in this report.

summer months, but often remain frozen later in the season and are relatively impervious in the spring during the snowmelt. Hence, snowmelt runoff can be a greater flood hazard than a large summer rainfall due to the impermeable nature of frozen soil. Accordingly, final basin design must consider snowmelt conditions when sizing storage and outlet structures.

When rainfalls exceed the recommended 10-year storm sewer infrastructure design, the excess runoff will be accommodated by ponding in low spots in streets for short periods of time and outflow through overland drainage routes and/or EOFs. With proper planning, this short-term flooding and overland drainage should minimize damage to property that would occur if those facilities were not provided. Drainage routes and EOF locations should be protected and preserved either by ordinance or through recorded permanent easements. Where possible, storm water pond designs shall include an emergency overflow to provide an outlet one-foot below the lowest floor elevation of any adjacent structure for added safety.

The Rational Method is a flow rate design method that ignores volumes and assumes a peak flow to each pipe based on hydrologic parameters such as watershed area, time of concentration, and standard rainfall intensity curves. This design method requires the selection and/or computation of a time of concentration and a runoff coefficient. The time of concentration is the time required for the runoff from a storm to become established and for the flow from the most remote point (in time, not distance) of the drainage area to reach the design point. The time of concentration will vary with the slope and type of surface that the rain falls on. Rational Method design including design methodology and hydrologic references should be based on the Minnesota Department of Transportation Drainage Manual.

A minimum concentration time of fifteen minutes for residential areas and ten minutes for commercial/industrial areas shall be used for design of the trunk storm sewer systems. These minimum times shall be considered in the design of lateral systems. As the storm water runoff enters the system, the flow time in the storm sewer is then added to the concentration time and compared to the downstream drainage area concentration time. The maximum of these values is used downstream, which results in a longer concentration time and peak runoff rate as the flow moves downstream from the initial design point.

5. Land Use Factors in Modeling (Runoff Coefficients)

The percentage of rainfall falling on an area that must be collected by a hydraulic facility is dependent on watershed variables such as soil permeability, ground slope, vegetation, surface depressions, type of development and antecedent rainfall. These factors are taken into consideration when selecting a runoff coefficient (C) for the Rational Method or a runoff curve number (CN) for use in SCS methodology.

Under ultimate (fully developed) conditions, the values of the coefficient will increase with increases in the amount of impervious surfaces caused by street surfacing, building construction, and grading.

The antecedent moisture condition (AMC) relates to the moisture content of the soil prior to a given storm event. Curve numbers based on land use can be

adjusted based on an assumed moisture condition. For purposes of the model, normal antecedent moisture condition (AMC II) was assumed. Curve number values can be adjusted for dry conditions (AMC I) or wet conditions (AMC III).

Curve numbers are also dependent on the type of soil in a given drainage area. Soil types are classified into four basic hydrologic groups as follows:

Group A - Includes soils consisting of deep sand and aggregated silts.

Group B - Includes sandy loam soils.

Group C - Includes soils that are low in organic content and made up of clay loams and soils high in clay.

Group D - Includes soils consisting of heavy plastic type clay soils.

Curve numbers that were assumed in the development of the model were based on the hydrologic soil group for each watershed based on the information contained in the County Soil Survey. Development plans shall consider post-development site soil conditions when choosing runoff curve numbers for final design.

Curve numbers (CN) are given in SCS TR-55. Average CN values for each land use type are used in the design of the storm drainage facilities in undeveloped areas. For the modeling of existing facilities, CN values were determined for each type of development and current zoned land use in each subwatershed. In general, the unpaved, non-wetland areas were modeled with curve numbers that most closely represent the Anoka Sand Plain. The curve numbers were then adjusted to reflect the percentage of impervious surfacing.

It should be noted that if land use changes to more or less impervious surfacing than the model, it will affect the model and updates may be needed.

DRAFT

V. GOALS AND POLICIES

Problem Statement

The increase in developed areas within the community, with its associated runoff and sediment-related pollutants will have an impact on wetlands and other water resources including the Rum River and Mississippi River.

Mission Statement

The City of Ramsey, in cooperation with the LRRWMO, Anoka County, state and federal agencies, will prepare a watershed plan which will accommodate anticipated community development and redevelopment while providing clear direction to the developers for controlling the quality and quantity of storm water runoff and properly managing surface and groundwater resources and the physical habitat of existing wetlands, lakes and the Mississippi and Rum Rivers in a consistent fashion. The City is committed to a goal of no adverse impact to, and nondegredation of, its water resources.

Goals

This plan identifies several specific goals to control the City's water resources planning and management functions. The goals of this plan were established in accordance with the purposes of the water management programs required by Sections 103B.201 to 103B.251.

Policies

Each goal has several corresponding policies. A policy is a governing principle that provides the means for achieving established goals.

Standards

Standards are an extension of the policies. They provide specific, detailed guidance regarding water management practices. Plan standards are included in the Implementation Program (Section VIII) of this document.

A. Water Quantity

The following runoff quantity goals and policies are considered part of this plan.

Goal 1: Control flooding and minimize public capital expenditures.

- Policy 1.1: Natural storm water storage areas and manmade detention areas should be utilized to control flooding.
- Policy 1.2: The storage capacity of the natural drainage system will be utilized to control rates of runoff. The City will jointly define and adhere to flow rates at municipal boundaries as established in this plan.
- Policy 1.3: The City will pursue regional detention wherever targeted land acquisition opportunities arise.
- Policy 1.4: All hydrologic studies will be based on standard hydrologic criteria and ultimate or anticipated development of the entire tributary drainage area.

DRAFT

Policy 1.5: Major storm water facilities (i.e., ponds, pond outlet systems, and major conveyance systems) will be designed using a return period of 100 years.

Policy 1.6: The peak outflow from all new developments shall be limited to the existing peak outflow for the 2-, 10- and 100-year SCS 24-hour rainfall events.

Policy 1.7: All minor drainage system analyses and design (i.e., piped collection systems and minor conveyance systems) will be based on a return period of 10 years unless otherwise specified. The minor drainage system pipe will be sized using the full gravity flow capacity of the pipe. Pressure flow based on surcharging the upstream manhole or structure to near the street will not be allowed.

Policy 1.8: Where plausible, detention facility design will include a paved access route or a "Netlon" or approved equal stabilized access route; and dedicated right-of-way, outlot access and/or drainage and utility easement for maintenance of the outlet structure and to the facility in general. Construction and long-term maintenance of these accesses will need to be negotiated on a case-by-case basis.

Policy 1.9: Where plausible, fences will be restricted from crossing drainage and utility easements. The City will consider encroachment of fences; however, the Owner will be responsible for entering into an Encroachment Agreement to allow the City to remove obstructions for necessary maintenance and waives the City of any liability stemming from improvements within the easement.

Policy 1.10: The design of storm water facilities will consider and identify location(s) of overflow(s) that prevent property damage to adjacent properties from extreme water levels.

Policy 1.11: Minimum building elevations should be above designed designated flood levels. The minimum building floor elevation shall be two (2) feet above the 100-year level or 1-foot above the EOF. The 100-year level shall be on the highest 100-year level resulting from a single event analysis; the 100-year, 10-day snowmelt event; a multiple day runoff event analysis, or the critical event analysis. This will likely require that the City begin to require As-Built Certificates of Grading, a practice that is not currently required by the City.

Policy 1.12: Landlocked runoff basins shall be sized to handle back-to-back 100-year Atlas14 24-hour rainfall events, the 10-inch SCS 24-hour rainfall event or the 100-year, 10-day snowmelt snow melt event, whichever produces the higher peak pond elevation (Landlocked HWL). The minimum building floor elevation around landlocked basins shall be two (2) feet above the Landlocked HWL.

DRAFT

Policy 1.13: Emergency overflows or outlets to drainage systems will be provided to any landlocked area if the available storm water storage capacity is inadequate to prevent flooding of residences and if the available downstream conveyance system capacity is adequate to accept additional flow.

Policy 1.14: The City will have standard hydrologic design criteria for all storm water systems to assure consistency.

Policy 1.15: The City will perform maintenance measures to assure proper function of the drainage system.

Policy 1.16: The City will adopt ordinances that control peak runoff consistent with standards and recommendations in the Minnesota Stormwater Manual.

B. **Water Quality**

Goal 2: Achieve water quality standards in City lakes, streams, rivers, and wetlands consistent with intended use and classification, which include quantifiable limits on specific pollutants (i.e., phosphorus, turbidity, excess nutrients, etc.). The City's ultimate goal is to meet the standards for the designated use of each water body.

Policy 2.1: The ranking system established by the LRRWMO shall dictate intended use and water quality standards.

Policy 2.2: Future outlets to DNR protected waters must first pass through a sediment pond/trap prior to discharging into the protected water body.

Policy 2.3: Phosphorus loading to a drainage system or water body will be reduced to the greatest practical extent through the use of Best Management Practices (BMPs).

Policy 2.4: All construction plans developed for the maintenance and/or improvement of water quality will include a detailed access and maintenance plan and shall require approval by the City.

Policy 2.5: A community education program relating to preserving and improving water quality will be developed and implemented.

Policy 2.6: All on-site waste water systems will be the responsibility of the owner.

Policy 2.7: A water quality plan outlining education programs, water quality monitoring needs, water quality modeling requirements, phosphorus budgets for subwatersheds, and any other water quality issues should be developed and implemented. The City-wide SWPPP and MS4 permit already addresses the education, monitoring, maintenance, good housekeeping, illicit discharges and construction erosion control.

DRAFT

Policy 2.8: The LRRWMO and the City should take an active role in implementing the necessary policies to allow development of regional water quality ponds.

Policy 2.9: The City will perform maintenance measures to minimize pollutant loadings to local water bodies.

Policy 2.10: The City will adopt best management practices for development that will result in TSS and TP reductions of 90% and 60%, respectively.

Policy 2.11: The City will adopt best management practices for redevelopment that will result in TSS and TP reductions consistent with the Minnesota Stormwater Manual.

Policy 2.12: The City will integrate their Stormwater Pollution Prevention Plan into their local water management plan, in accordance with MPCA requirements and schedules.

Policy 2.13: The City will revise its Stormwater Pollution Prevention Plan to include the required nondegredation information and summarize or integrate that information into its local water management plan when the nondegradation rules are finalized and become a mandatory part the Municipally Separate Storm Sewer System (MS4) permit.

C. **Recreation, Fish and Wildlife**

Goal 3: Protect and enhance water recreational facilities, fish and wildlife habitat.

Policy 3.1: Natural areas, wildlife habitat and wetlands to be protected during construction should be clearly marked and/or fenced in the field.

Policy 3.2: Buffer zones of natural vegetation are encouraged in privately-owned areas around existing ponds and wetlands located within current wildlife corridors to provide habitat for wildlife in accordance with the Wetland Management Plan.

Policy 3.3: The water level fluctuation of a wetland or pond shall be maintained consistent with the management function of the water body. Wetlands used for stormwater overflow purposes shall be limited to a maximum bounce of 2-feet between the NWL and HWL.

Policy 3: The City has already assessed the functions and values of all wetlands over ¼-acre in size. The City will not be updating this assessment as part of this update. When a logical time in the furtherance of future development warrants, likely coinciding with a future Comprehensive Plan Update, the City will consider updating this assessment. Policy 3.5: The City supports programs to control aquatic invasive species.

DRAFT

Policy 3.5: Activities related to recreation, fish and wildlife should be consistent with the Anoka County Regional Park objectives and the City's comprehensive plan.

Policy 3.6 The City supports the establishment of native vegetation around sedimentation ponds and wetlands following disturbance, and when new ponds are created whenever possible.

D. **Public Participation, Information and Education**

Goal 4: Increase public participation and knowledge in management of the water resources of the community.

Policy 4.1: The City must call an annual meeting to discuss its SWPPP as part of its MS4 permit. This opportunity will be used to discuss water resource issues affecting the City. The City will explore avenues to increase notification and publicity of this annual meeting. The City will consider holding a special meeting coinciding with major flooding events.

Policy 4.2: The City will utilize available resources and input from the public to address local water resources issues.

Policy 4.3: Citizen lake water quality monitoring is encouraged and supported by the City.

Policy 4.4: The City supports Anoka County's recreation and educational programs related to the water resources of the community.

Policy 4.5: The City will support natural environment programs in the public schools.

E. **Public Ditch System**

Goal 5: Maintain the current ditch system to convey water and maintain the current defined maximum flood levels to protect businesses and residences.

Policy 5.1: The City will continue to maintain public ditches to provide protection of private property and structures from flooding, provided that such maintenance is in accordance with the Minnesota Wetlands Conservation Act, Minnesota Statute 103E governing agricultural drainage, is acceptable to the U.S. Army Corps of Engineers, and does not adversely affect the value of wetlands or water quality.

Policy 5.2: With the exception of County Ditch 66 and County Ditch 43 which have been turned back to the City, Anoka County is recognized as having authority over all public ditches within the watershed in accordance with Minnesota Statute 103E.

F. **Groundwater**

Goal 6: Promote groundwater recharge and prevent contamination of the aquifers.

Policy 6.1: Anoka County is recognized as the lead agency regarding groundwater controls.

Policy 6.2: Recharge areas identified by Anoka County shall be protected from adverse development and from potential contamination.

Policy 6.3: Infiltration of the first 1.0-inches of runoff from new impervious areas will be required wherever the soils are appropriately permeable (i.e., hydraulic soil types A and B) to promote groundwater recharge and volume controls. This is subject to proximity to wellhead protection zones as noted earlier in this report whereby infiltration shall not be allowed within the 10-year capture zone.

Policy 6.4: Whenever practical, ponds shall be designed as "wet ponds" with storage volume below the outlet to promote infiltration and/or groundwater recharge.

Policy 6.5: The use of grassed waterways shall be encouraged to maximize infiltration. Proper grades shall be maintained or underdrain systems installed as part of an overall site plan to insure positive drainage.

Policy 6.6: Any spring area should be identified in the field, denoted on maps by the City and protected from development within the watershed.

Policy 6.7: The appropriate jurisdiction shall use both regulatory (ordinances, permits, etc.) and non-regulatory (Best Management Practices) tools to protect the land area within designated wellhead protection areas.

G. **Wetlands**

Goal 7: Maintain the amount of wetland acreage and try to increase the wetland values within the watershed.

Policy 7.1: Use and function of all wetlands greater than ¼-acre in size has been determined as part of the 2008 SWMP plan preparation.

Policy 7.2: Restoration of poor quality wetlands shall be prioritized.

Policy 7.3: The City or Anoka County shall identify areas that can be used for wetland mitigation.

Policy 7.4: Wetland mitigation criteria will be established consistent with the Minnesota Wetland Conservation Act of 1991 and subsequent amendments and associated rules thereto (e.g., Minnesota Rule 8420), state and federal regulations, the LRRWMO and the needs of the City.

Policy 7.5: Alteration of wetlands is discouraged unless for restoration. Alteration may be allowed on an individual basis if the alteration can be properly mitigated in accordance with the Wetland Conservation Act (WCA). Allowable alternatives must comply with WCA sequencing requirements including, in order, avoidance, minimization and mitigation. In general, it will

DRAFT

require a full Technical Evaluation Panel meeting and majority approval before any wetland impact is allowed.

Policy 7.6: Wetland banking opportunities will be pursued by the City and/or the LRRWMO in accordance with the Wetland Conservation Act.

Policy 7.7: The City has prepared, a Wetland Management Plan.

Policy 7.8: The use of native vegetation for buffers in undeveloped and previously developed areas is recommended.

H. **Erosion Control**

Goal 8: Prevent soil erosion.

Policy 8.1: The City will protect natural vegetation to the greatest extent possible.

Policy 8.2: Soil erosion shall be prevented through the installation of erosion control practices in accordance with MPCA's Best Management Practices Handbook.

Policy 8.3: Topsoil stockpiled for reuse shall be protected from erosion.

Policy 8.4: It shall be the responsibility of the developer/contractor to keep streets and property adjacent to construction areas free from sediment carried by construction traffic at site entrances and access points, from sediment laden site runoff and blowing dust.

Policy 8.5: The MPCA Storm Water Permit Program for Construction Activities shall be followed.

Policy 8.6: The City has adopted an erosion and sediment control ordinance including provisions that are consistent with NPDES Construction Stormwater permit and its MS4 permit requirements.

I. **Development Standards**

Goal 9: Residential Grading

Policy 9.1: Residential lots shall have a minimum surface slope of 2-percent in all directions. Lesser slopes, between 1-percent and 2-percent may be allowed with a certificate of grading.

Policy 9.2: In acknowledgement of historical consumption data, the City will require water conservation measures for new development such as, but not limited to four inches of topsoil shall be placed in the turf restoration areas of all new residential lots.

Policy 9.3 Where residential lots are newly graded and there is no immediate plan for new housing within the lot, the entire lot

DRAFT

shall be covered with 4-inches of topsoil and seeded in accordance with the following schedule:[8]

Type of Slope	Time*
Steeper than 3:1	7 days
10:1 to 3:1	14 days
Flatter than 10:1	21 days

* The maximum time an area can remain open when the area is not actively being worked.

Policy 9.4 Bluff protection ordinances and shoreland protection ordinances shall govern steep sloped areas.

J. **Regulatory Responsibility**

Goal 10: Recognize the regulatory authority of other local, state and federal entities.

Policy 10.1: The City is responsible for establishing and implementing a local permitting program for water resources management. For smaller projects, an administrative Grading Permit shall be sufficient. For larger projects, an Interim Use Permit (IUP) shall be required

Policy 10.2: Other governmental agencies with watershed management responsibility include:

- The Lower Rum River Watershed Management Organization (LRRWMO)
- Minnesota Department of Natural Resources (DNR)
- United States Army Corps of Engineers (USCOE)
- Minnesota Board of Water and Soil Resources (BWSR)
- Minnesota Pollution Control Agency (MPCA)

Policy 10.3: The WMO and the City will require a permit for certain activities, as described in this plan.

K. **Finance**

Goal 11: Equitably finance water resources.

Policy 11.1: All developments should, to an extent determined by the City, provide land, funding, or a combination of both for management of local water resources, which includes development of regional facilities and planning studies.

[8] Minnesota Pollution Control Agency, National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS), Application for General Storm-water Permit for Construction Activity (MN R100001)

Policy 11.2: The City may establish a fee structure charged to developers for analyzing the impacts of the proposed development.

Policy 11.3: The City has established a fee structure charged to developers for constructing capital improvements (i.e., trunk conveyance systems).

Policy 11.4: The WMO should establish an equitable cost allocation formula for water resource project implementation that affects more than one unit of government.

Policy 11.5: Grants may be sought by the City to fund watershed related projects.

Policy 11.6: The City should investigate the feasibility of alternative funding sources, such as Ad Valorem Taxes, bond sales, and user charges (storm water utility).

Policy 11.7: The City should encourage donations and in-kind contributions of public and private organizations and the school systems for plan implementation.

Policy 11.8: The City shall investigate and evaluate other funding mechanisms that support implementation and enforcement.

L. Records Management and Documentation

Goal 12: The City shall preserve historic data, records, and files pertaining to the water resources of the LRRWMO.

Policy 12.1: The City should develop a classification to be recorded for each new detention area, including the basis for the classification.

Policy 12.2: Engineering calculations will be required in a standard format.

Policy 12.3: Past studies will be documented and filed by the City.

Policy 12.4: Immediately after extreme rainfall events, high water elevations should be noted and surveyed by the City.

Policy 12.5: The City will develop a history of flooding and water quality problems by noting past events and recording current floods.

Policy 12.6: The City will record changes in water quality, such as increased aquatic vegetation, changing thermal conditions, increased sedimentation, reduced fish numbers, and fish kills.

Policy 12.7: The City will perform regular wet storage volume surveys of its stormwater quality ponds on a 10-year rotating basis. If the water quality storage volume is being lost to sedimentation, the City will clean out the pond to reestablish the design storage volume below the outlet and consequently reestablish the design residence time.

Policy 12.8: The City will document all items/BMPs provided in the SWPPP and MS4 permit.

DRAFT

VI. ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS

This section assesses the water-related problems in the City, prioritizes the problems and includes actions to adequately solve each identified problem.

The City held a public open house on July 11, 2007 to gather input on water resources-related problems in preparation of the original 2008 plan.. A public notice was published in accordance with City policies. Four residents attended the open house. The feedback that was received was primarily associated with the desire to protect the City's natural beauty including wetlands, wildlife habitat and wildlife corridors. The primary concern was that continued and uncontrolled development would adversely impact the current environment. All attendees expressed satisfaction that the SWMP is intended to protect these features.

Throughout the course of completion of the 2008 plan and subsequent flooding events in 2011 and 2014, prior to this 2015 update, City staff compiled a list of nuisance flooding areas either noted by maintenance staff or by resident complaints.

Figure 9 highlights all known nuisance flooding areas.

A. Specific Lakes and Streams with Water Quality Problems

Table 15 in Section IV, page 17 of this report, lists the current (2014) MPCA 303d Impaired Waters in Ramsey. There are also waters downstream of the City of Ramsey, such as Lake Pepin, that are impaired. The process to remedy the impairment includes establishing a Total Maximum Daily Load (TMDL) allocation to each contributor to the problem. A TMDL is a calculation that determines the allowable pollutant load that can be discharged into the impaired water so that the limited load will ensure that the water improves to levels where it is no longer impaired. The typical process is initiated by the MPCA and includes a series of stakeholder meetings to formulate viable solutions and mutually work out a reasonable allocation of acceptable pollutant loading.

Since a TMDL study has not been completed for these waters, the City should identify the priority it places on addressing impaired waters and how the City intends to participate in the development or implementation of TMDL projects. Furthermore, the City should volunteer to participate in the stakeholder process.

Once a TMDL study is completed for the impaired water, the City must include, in this SWMP and its City-wide SWPPP, an implementation strategy including funding mechanisms that will allow the implementation of the TMDL requirements. As MPCA completes its TMDL process for each impaired water, the implementation of the measures to meet the TMDL will immediately become a priority item for the City of Ramsey.

B. Flooding and Storm Water Rate Control Issues

Figure 9 is a map of all flooding areas either noted by staff or associated with a resident complaint compiled between 1985 and 2014.

The lake levels in Lake Itasca are historically variable, and have ranged from elevation 863.24 to elevation 871.9 with an average water level of 867.7. The DNR protects the lake to its Ordinary High Water Level of 871.4. To protect the properties around the lake, an emergency overflow should be established above the DNR protected level of 871.4. The overflow may be in the form of a pipe to the south or southeast, or it may be a new outfall to the Mississippi River.

The storm water modeling performed for the area shows few opportunities for property damage associated with rainfall. Ponding areas having a potential for property damage are shown in red on Figures 10 through 23. The relatively low percentage of potential property damage is presumed to be attributed to the high permeability of the Anoka Sand Plain and proper storm sewer system design.

Because of the pervious nature of the Anoka Sand Plain, the City should be cognizant of the impact that a significant increase in impervious surfacing and mass grading can have on runoff conditions. The addition of significant amounts of impervious surfaces and the reduced permeability associated with the soil compaction in mass grading without a reasonable attempt to restore and duplicate the current infiltration pattern could create significant increases in runoff volumes and downstream flooding.

The City will review and modify its current development ordinances to encourage infiltration and require soil ripping of mass grading to compensate for lost infiltration conditions as well as requiring extended retention ponding to mitigate and compensate for increases in runoff. Innovative solutions to the storm water runoff volume increases associated with the increase in impervious surface will be investigated. Potential solutions include pervious pavements, rain gardens and infiltration basins among others.

Comprehensive storm water runoff modeling of the existing conditions throughout the entire City was completed as part of the 2008 plan. The modeling was updated in 2015 to reflect new development and incorporate the Atlas 14 runoff rates. This modeling will provide a baseline for comparison purposes as new developments change the drainage pattern. With this modeling information, City staff can readily review the cumulative impacts of large developments for effects on baseline conditions across the entire city.

SSA software was used in the comprehensive modeling. This software is based on the industry accepted EPA SWMM process and St. Vennant equations. The model can be used to input actual rainfall events from rain gauges and can model the transport of pollutants through the system. This will be very useful in evaluating the BMP measures to address future TMDLs.

The 2008 plan addressed several previous flooding complaints the City had received over a number of years, beginning in 1980. It was determined in 2008 that several of these concerns were solved by later construction of storm sewer systems as the City developed. The areas that were not solved are shown on the flooding area map.

The City experienced high water levels in 2011 and 2014 caused by high snowfall over the winter and heavy spring rains. Staff logged the complaints received in each year. The lists were presented to the Public Works Committee for review.

The 2011 complaints sorted into three (3) categories, clean existing drainage ways and structures, water ponding outside of existing easements, and water ponding in existing easements. Where water was ponding in existing easements the action was homeowner education on the purpose of drainage and utility easements. The action where existing drainage was and structures needed cleaning was to add the work to the Public Works action list. The action where water was ponding outside of existing easements was a combination of performing a detailed study of each area using Consultant Pool and Staff resources. Cost estimates were generated from the studies and presented to the City Council. Several projects were selected for construction, the remainder were deemed infeasible at that time.

The 2014 complaints were also studied. Staff determined that the majority of these complaints would require additional study, these areas could not be drained without causing high water problems on downstream properties. The City wide storm water model is being used in the review of possible solutions to these problems. The Public Works Committee of the City Council has discussed stormwater ponding concerns several times in 2014 and 2015. Staff is preparing a feasibility study on potential solutions to be brought back to City Council for review.

C. Impacts of Water Quality and Quantity Management Practices on Recreation Opportunities

The current City ordinances together with the LRRWMO, County, regional, state and federal rules and laws are designed to protect the existing land and water resources within the City of Ramsey. The City believes that it can allow continued development while maintaining or improving its resources including water quality and recreation opportunities. With the implementation of this plan and the recommended policy and ordinance changes, the developers will be responsible for protecting water quality, mitigating the runoff quantity and ensuring that there will continue to be recreation opportunities in Ramsey. In addition, the City's Storm Water Pollution Prevention Plan is designed to educate the public to better protect the city's water resources, to implement temporary and permanent erosion and sediment controls for new developments, to ensure good housekeeping of the City's municipal operations, and to detect and eliminate illicit discharges.

D. Impacts of Stormwater Discharges on Water Quality and Fish and Wildlife Resources

As stated in C above, the current and proposed ordinances and the City's SWPPP are designed to protect the existing land and water resources within the City of Ramsey. This includes measures that are designed to maintain or improve the habitat of the fish and wildlife throughout the area.

E. Impacts of Soil Erosion on Water Quality and Quantity

As part of the City-wide SWPPP and MS4 permit, the City established an erosion and sediment control ordinance governing construction practices. The City will also evaluate existing erosion control problem areas that may not be associated with recent construction and formulate mitigation plans to rectify those issues. Given increased regulation of the typical causes of soil erosion and sediment transport, it is anticipated impacts of soil erosion on water quality in the Ramsey area will be greatly diminished.

The SWPPP and MS4 permit also call for the annual inspection of required structural BMPs (structural BMPs are physical devices designed to trap or filter pollutants from runoff or reduce runoff velocities; an example being silt fence). Maintenance is included in the City's annual budget to ensure that structural BMPs continue to work and provide the design storage needed to ensure continued flood mitigation.

F. General Impact of Land Use Practices

As stated in Section VI.B, increases in impervious surfacing will require mitigation to reduce the impacts related to change in permeability from the natural Anoka Sand Plain conditions. The preferred mitigation method is to encourage infiltration to duplicate the existing condition. In addition to infiltration, the City will consider low impact

alternatives and oversized regional retention basins to mitigate potential downstream flow changes.

The City also prepared a Wetland Management Plan along with this the 2008 SWMP that includes a function and value assessment of all wetlands in excess of ¼ acre in size. Although the wetland buffer requirements were later rescinded by the City Council, the City gathered a great degree of quantitative data to help study the effects of furtherance of developed areas within the community. The City will continue to use this data as a baseline for analysis as well as to consider potential outcomes of development in close proximity to wetlands Adequacy of Existing Regulatory Controls

The City of Ramsey believes it has adequate policies in place to self-regulate the anticipated growth without sacrificing its abundant water resources. In addition to its ordinances, the existing greater area regulatory controls of the LRRWMO, BWSR, the Metropolitan Council, the DNR, the U.S. Army Corps of Engineers, Anoka County, etc. are more than adequate to properly manage or mitigate adverse impacts on public waters and wetlands.

The City must rely on the regulatory authority of Anoka County, the LRRWMO and the regional, state, and federal plans to monitor and control the runoff entering the City from outside its jurisdiction. The City understands that it will also need to address issues brought to its attention by these outside regulating authorities.

The City is also concerned that the ordinance revisions, various permit fees and charges needed to finance the proposed changes will adversely affect development in Ramsey. To ensure that Ramsey has an equal chance of attracting development, the City must rely on outside agencies and WMOs in the area to regionally enforce similar environmental requirements with comparable financing obligations.

G. Adequacy of Programs

The City of Ramsey believes that the BMPs promised in its City-wide SWPPP and MS4 permit are designed to adequately:

1. Limit soil erosion and water quality degradation
2. Maintain the tangible and intrinsic values of natural storage and retention systems
3. Maintain water level control structures

H. Adequacy of Capital Improvement Programs

The storm water improvements recommended in the City's 5-year Capital Improvement Program are designed to address and correct problems related to:

1. Runoff Quantity
2. Water Quality Management
3. Fish and Wildlife Habitat and Public Waters and Wetland Management
4. Recreational Opportunities

I. Future Potential Problems

The greatest potential for future problems with storm water planning is associated with the ever-growing impervious footprint that is inevitable with growth. As stated earlier, highly pervious nature of the Anoka Sand Plain means that the cumulative effect of development could result in drastically increased runoff volume and flow rates.

DRAFT

The recommended ordinance revisions are designed to:

1. Encourage infiltration and soil ripping of newly graded sites so that developed sites can adequately mimic unimproved site runoff and flow rates.

2. Limit post development runoff rates to the existing condition so that multiple developments do not cause cumulative increases in the downstream condition.

In addition, regional pond modifications are also recommended where plausible because of the economic and runoff management capabilities of larger scale hydrologic systems. By implementing the recommendations in the SWMP, these potential future problems are being anticipated and adequately addressed within the City of Ramsey. As stated earlier, the City must rely on the regulatory authority of Anoka County, the LRRWMO and the regional, state, and federal agencies to monitor and control the runoff entering the city from outside its jurisdiction. The City understands that it will also need to address issues brought to the attention by these outside regulating authorities.

DRAFT

VII. FINANCIAL CONSIDERATIONS

Typically a Capital Improvement Program (CIP) is an itemized program for at least a five-year prospective period. The items and associated costs are subject to at least biennial review. The benefits include setting forth the schedule, timing, and details of specific contemplated capital improvements by year, together with their estimated cost, the need for each improvement, financial sources, and the financial effect that the improvements will have on the local government unit or watershed management organization.

The City recognizes that the detailed modeling exercise of the storm water system for the city laid out many areas of potential full pipes, inadequate flow structures, and potential flooding issues that will need to be constantly re-evaluated as more detailed information is available for the system and as the city grows. As this re-evaluation occurs, the CIP will need to be updated to reflect new projects.

A. 5-year Capital Improvement Program

The current 5-year Capital Improvement Program includes the following:

1. Annual Sediment Pond Cleaning $125,000
2. County Ditch 43 Cleaning $180,000
3. COR Bunker Lake Boulevard (Armstrong Blvd to Ramsey Blvd) $560,000
4. West Mississippi Outlet $680,000
5.
6. Whispering Pines Estates Plat 2 Storm Sewer $330,000
7. Annual Drainage Enhancements $675,000
8. Stormwater Drainage Improvements –Treatment before discharge to River $410,000
9. Storm Sewer South of Bunker Lake Boulevard -COR $250,000
10. Garnet Street Reconstruction $198,000
11. Reconstruction of Andrie Street/ 164th Avenue $1,020,600
12. Reconstruction of Streets -Ford Brook Estates $237,600
13. Alpine Drive Reconstruction $60,700
14. Reconstruction of Streets – Stanhope Terrace and North Forty $587,000
15.

Total Current 5-year Plan Expenditures $5,389,500

The financial impact of implementation of the proposed regulatory controls and programs identified in Section VI is anticipated to include the following:

16. Adopting and Enforcing the SWMP Local Controls and Standards[9] $25,000/year
17. SWPPP Annual Cost and Implementation[10] $100,000/year
18. Current Five Year Capital Improvements $5,389,500

Total 5-year Financial Impact $6,014,500

[9] Estimated cost is based on one half-time employee at salaries (plus benefits) of $50,000 per year.
[10] Estimated cost is based on two fulltime employees at salaries (plus benefits) of $50,000 per year.

Although the cost associated with these recommendations can be financed locally, the City will pursue all opportunities for outside funding. Without outside financing the City will need to finance the adoption of, and enforcement of, the local controls and standards, implementation of the specified programs, and capital improvements recommended in this SWMP using one or more of the following:

1. Increasing the storm water development charges (storm water trunk fees)
2. Increasing the storm water utility fees
3. Increasing the general levy (within levy limits)
4. Creating a storm sewer assessment district
5. Accessing funds from other City projects and funds

The City increased the storm water trunk fees and storm water utility fees in 2015.

Outside funding is greatly desired as the impact of increasing these taxes, fees and charges will increase tax burden against homes and farmsteads, increase the utility burden for all parcels or postpone other necessary improvements currently scheduled in the City's Capital Improvement Plan.

The following are potential sources of outside funding that may be available to assist in the financing of the various storm water related issues:

1. Minnesota Clean Water Legacy funds
2. Clean Water Partnership Funds
3. Clean Water Act, Section 319 funds, administered by the MPCA
4. Minnesota Public Facilities Authority (PFA) grants and low interest loans

There is significant competition for these limited funding sources. If these sources are pursued by the City, it will likely involve innovative treatment technologies in addition to timely requests for funding.

The application deadlines for Section 319 and PFA funds are published annually by the State. The PFA prepares an annual Intended Use Plan for each program that lists the projects eligible to apply for loans. A written request must be submitted by the City to the PFA to place a project on the IUP for consideration. The City routinely monitors the deadlines for these programs.

B. **Local Financing Options**

Development Charges or Trunk Fees According to City of Ramsey Code section 117-618, anyone creating a new residential lot or a new nonresidential site plan must pay a storm water trunk fee as established by ordinance. Each year the fee is reviewed and approved as part of the City's overall fee ordinance. For residential property, the fee is a flat fee per residential unit. For nonresidential property (commercial / industrial), the trunk fee is calculated on a per acre basis. The monies collected are deposited in the Storm Water Management Fund and are only used to pay for storm drainage financing and improvements. Maintenance of the storm water system is paid for with utility revenue deposited into the Storm Water Utility Fund.

1. Increased Storm Water Utility Fees

DRAFT

According to City of Ramsey Code Section 58-194, the City may impose just and reasonable charges for the use and availability of storm sewer facilities. Rates and charges for the use and availability of the system shall be determined through the use of a Residential Equivalent Factor ("REF"). For the purposes of the Ramsey City Code, one REF is defined as the ratio of the average volume of surface water runoff coming from one acre of land and subjected to a particular use, to the average volume of runoff coming from one acre of land subjected to typical single-family residential use within the City during a standard five-year rainfall event. Rates and charges for the use and availability of the system shall be determined through the use of a Residential Equivalent Unit ("REU"). For the purposes of the Ramsey City Code, one REU is defined as the product of the acreage of a particular parcel multiplied by the REF. The REF shall be based on the relative runoff generated by any land use compared to the expected runoff from a typical half-acre single-family dwelling. This relationship shall be interpreted as a function of the percent of the total lot area that is impervious and shall be applied as determined in City of Ramsey Code.

The City Storm Sewer Utility fee is intended to finance infrastructure maintenance, upgrading, reconstruction and new construction serving previously developed areas. It is not typically used to finance retrofitting the existing system to accommodate new developments. Most cities require the developer to finance the entire new storm sewer system associated with the development. Then, once the new system is accepted and turned over to the City, the municipal maintenance funds (typically storm sewer utility funds) are used to maintain the new system.

2. Increasing the General Levy

If the City has not yet reached its levy limits, financing could come from increases in the general tax levy across Ramsey. This option is generally not favored because it may duplicate costs for property owners who have either directly or indirectly already financed their own developments. Unless tax expenditures for storm water needs can be uniformly spread to all properties, political opposition should be expected from entities that have already invested in storm water facilities.

3. Creating a Storm Sewer Assessment District or Storm Water Tax District

If a watershed is well defined and the greater majority of the property owners have a share in the benefit of the proposed storm sewer improvement, the City could form a storm water assessment district. When improvements or repairs are needed within the district, an advertisement hearing process is required similar to that used for assessments in Minnesota Statute 429. Many cities are not choosing this financing option because it can be cumbersome. Cities also find it difficult, on occasion, to legally prove the level of benefit associated with the assessment.

C. **Recommended Local Financing**

1. The cost of existing system retrofitting and maintenance projects should be borne by the Storm Sewer Utility fund as this is the primary focus of these funds.

2. The cost of new improvements in undeveloped land should be borne by the developer.

3. The cost of retrofitting the downstream system to accommodate new developments should be borne by newly established New Development Charges or Trunk Fees.
4. Increasing the general levy for storm sewer related costs is not recommended.
5. Creating a storm sewer assessment district is not recommended.

DRAFT

VIII. IMPLEMENTATION OF PRIORITIES AND PROGRAM

A. Special Waters

According to the MPCA's Special Waters list (January 2004), special waters in the Ramsey area include:

1. The **Mississippi River** is considered part of the Mississippi River Corridor Critical Area (MRCCA) from the western borders of the cities of Ramsey and Dayton to Hastings. The cities of Ramsey and Dayton had previously also been included in the Wild and Scenic Designation until 2012, when these cities received an exemption from the Minnesota Legislature as these areas were also included in the MRCCA.
2. The **Rum River** is considered Scenic/Recreational from Highway 27 bridge in Onamia to Madison and Rice Streets in Anoka.

The City will meet State requirements for development near these waters as identified in the Minnesota Stormwater Manual by designing storm water basins using the sizing criteria described in *Design Calculations for Wet Detention Ponds*, by William Walker Jr. The City will also encourage storm water practices that promote infiltration/filtration and decrease impervious areas (better site design and integrated stormwater management), where practical.

B. City-wide SWPPP and MS4 Permit

The City-wide SWPPP, associated with its MS4 permit, is available on the City's website. The SWPP was updated to reflect the 2013 re-issuance of the MS4 Permit. A copy of the SWPPP is attached in Appendix B.

C. Implementation Schedule

In accordance with Minnesota Rule 8410.0010, the City of Ramsey must provide for the adoption of necessary regulatory controls, storm water design standards, education programs, data collection programs, and maintenance programs. This SWMP must clearly distinguish the City's responsibilities versus the responsibilities of the LRRWMO and Anoka County with respect to implementing each program element.

According to Minnesota Rule 8410, each organization plan must include a schedule for implementation by the organization, joint powers agreement members, and affected local units of government. All plan controls and programs to be implemented by the organization must be in effect within one year of plan adoption. All local plan controls and programs must be developed and in effect within two years of adoption of the last organization plan in the local unit of government.

Since this SWMP is an update to a previously accepted plan, most of the required programs have already been developed and coordinated with Anoka County and the LRRWMO.

D. Capital Improvement Program

This SWMP must include a capital improvement program that identifies specific capital improvements necessary to implement the water resource management goals and policies of the organization. The 5-year Capital Improvement Program is discussed in Section VII of this report.

A Capital Improvement Program, or CIP, already exists and is updated on annually for a projected 5-year period. The CIP includes projects to implement the recommendations in this SWMP.

E. **Enforcement**

This SWMP must identify the procedure to be followed to enforce violations of the controls of the organization as well as those of the local unit of government.

The City uses a permitting process with a surety requirement for new developments. If the developer fails to follow the conditions of the permit, the City can call on the surety to ensure immediate rectification. The surety must be in the form of a Letter of Credit or Cash Escrow.

The City has adopted the following ordinances:

1. Erosion and Sediment Control Ordinance
2. Illicit Discharge Ordinance
3. Post Construction Storm Water Management Ordinance.

Each of these ordinances will be enforceable locally and will carry fines for failure to adhere to them. In addition, the MPCA can impose significant fines for pollution discharges associated with these ordinance controls as well as any unauthorized pollution discharge.

The City will amend its ordinance to include the enforcement of storm water ordinances as part of City Code Chapter 2, Article VII entitled Administrative Enforcement of Ordinance Violations. The City will have to adopt an ordinance to establish the rates and charges associated with administrative fines for storm water ordinance violations.

F. **Administration Process**

This SWMP must specify the administrative process and timelines for the submittal, review, and approval of local plans and variances by the organization.

Requirement 1: All communities need to include information on the types of best management practices to be used to improve storm water quality and quantity and the maintenance schedule for the best management practices (BMPs).

Solution 1: *The City's SWPPP, available on the City website, includes the mandatory list of BMPs together with an implementation timeline. All of the BMPs in the SWPPP and designed to improve storm water quality. The City's current development ordinances are designed to regulate storm water quantity in accordance with the LRRWMO requirements. Within a year after the acceptance of this plan, the City will review its ordinances controlling development to include the recommendations of this SWMP, chiefly the recommended runoff volume controls.*

Requirement 2: All communities need to include a Wetland Management Plan or a process and timeline to prepare a plan. The Wetland Management Plan should incorporate a function and value assessment for wetlands.

Pretreatment of storm water prior to discharge is required for discharge into all wetland types.

Solution 2: *The City has completed a MNRAM evaluation of all of wetlands within city limits and greater than ¼ acre in size. The report is available at the Municipal Center. The implementation of the plan was postponed by the*

Requirement 3: The City needs to include funding sources for the various required activities.

Solution 3: *The required funding sources are described in detail in Section VII of this SWMP.*

Requirement 4: The City needs to include activities to be undertaken along with numerical goals, strategies and timelines.

Solution 4: *The City's SWPPP, available on the City website and attached in Appendix B, includes BMPs describing the necessary activities, numerical goals, strategies and timelines.*

Table 18 is an implementation process list of the recommended actions, timing, responsible party, and the cost or funding sources which are presented for the City Council's consideration based upon the data compiled in this report. Actions are listed in order of priority, from highest to lowest.

DRAFT

Table 18

Implementation Process List

Action	Timing	Responsible Party	Cost/Funding Source
Maintain and implement Capital Improvement Program.	On-going, updated on a 5-year period.	City of Ramsey	Storm water area charge and monthly storm water utility fee
A storm water maintenance program enforced to ensure the successful operation of the drainage system.	On-going.	City of Ramsey	Storm water area charge and monthly storm water utility fee
Corrective actions for storm water problem areas.	On-going, as problems come up.	City of Ramsey	Storm water area charge and monthly storm water utility fee
The erosion and sedimentation control criteria for new developments enforced.	On-going, as developments are submitted to the City for approval.	City of Ramsey	Funding by developer's fees and building permits
Low impact development/better site design for new developments encouraged.	On-going, as developments are submitted to the City for approval.	Developer's Engineers, City of Ramsey	City staff funding by developer's fees and building permits. Developers pay for design and construction of developments.
Conceptual regional Ponding areas established as described herein and made a part of the storm water management system.	On-going, as Developments are submitted to the City for approval. Right of first refusal purchasing at time of sale of property.	City of Ramsey	Cost sharing with Anoka County
Standard review procedures established to ensure all development within the City is in compliance with proper erosion control practices.	Currently in place. Update as necessary.	City of Ramsey	Funding by developer's fees and building permits
Detailed hydrologic analysis required during final design of all ponding areas.	Currently in place. Update as necessary.	Developer's Engineers, City of Ramsey	Developers pay for design and construction of developments. City staff funding by developer's fees and building permits.

DRAFT

Final high water levels governing building floor elevations adjacent to ponding areas and floodplains established as development occurs or when drainage facilities are constructed.	On-going.	Developer's Engineers, City of Ramsey	Developers pay for design and construction of developments. City staff funding by developer's fees and building permits.
Overflow routes established and maintained to provide relief during extreme storm conditions, which exceed design conditions.	On-going, as developments are submitted to the City for approval.	City of Ramsey	Developers pay for design and construction of overflow routes. City-conducted maintenance funded by developer's fees and building permits.
An education program for City residents, staff, and development community implemented.	On-going.	City of Ramsey	City of Ramsey, with help from LRRWMO, DNR, University of Minnesota Extension Service, SWCD, NRCS
Amendments to the SWMP adopted and implemented and the SWMP updated.	As warranted by future standards or regulations – by 2015 or earlier if needed.	City of Ramsey	Storm water area charge and monthly storm water utility fee
Regulate construction and land uses along the bluff, to prevent erosion.	On-going, as developments are submitted to the City for approval.	City of Ramsey	Funding by developer's fees and building permits
Encourage landowners to retain any areas of native vegetation, and to plant species native to the area, to protect and improve wildlife habitat and maintain the historic ecological role and appearance of the steeper riverbanks. The existing housing developments along steeper riverbanks have addressed retention of native vegetation in one of two ways: platting of the property in an outlot and deeding that to the City or	On-going, as developments are submitted to the City for approval.	Land Owners, Developers, City of Ramsey	Landowner, City of Ramsey, Future grant opportunities if they arise

DRAFT

through a conservation easement.			
Develop an implementation strategy for TMDLs.	Once TMDLs are formulated.	City of Ramsey, working with LRRWMO	LRRWMO, BWSR, DNR, etc.

DRAFT

IX. AMENDMENT PROCEDURES

This Updated SWMP extends to 2022. Amendments to the plan may be adopted and implemented as warranted by future standards or regulations. The City is aware that the Lower Rum River Watershed Management Organization will be updating its watershed management plan during the effective period of this plan which will trigger the mandatory re-evaluation and potential need for an update of this SWMP within two years from the date the watershed plan is approved by BWSR. The City will initiate any amendments by resolution of the City Council. The citizens of Ramsey, City Staff, the City Council, or any of the review authorities having jurisdiction may submit amendment requests.

The amendment request will be evaluated by City staff and a recommendation will be made to the City Council. If the Council deems the amendment necessary, it will order City staff and/or the City attorney to draft an amendment.

The draft amendment will be brought to the Council for review. If approved, the Council will pass a resolution calling for a hearing on the amendment. The amendment must be forwarded to each organization affected by the amendment. The proposed amendment will be published in the official city newspaper not less than 10 days before the hearing.

The hearing will be held in a public place, typically in the Council chambers at City hall. At the hearing, all interested citizens will be given the opportunity to submit a written statement or voice their opinion on the acceptability of the proposed amendment.

When all have been heard, the City Council will close the hearing and vote their decision on whether to pass a resolution accepting the amendment as written.

According to State Statute 103B.235, Subd. 5, Amendments, to the extent and in the manner required by the LRRWMO, all major amendments to the SWMP shall be submitted to the LRRWMO for review and approval in accordance with the provisions of State Statute 103B.235, subdivisions 3 and 3a for the review of plans. All major plan updates and amendments will be submitted to the Lower Rum River Watershed Management Organization and the Metropolitan Council simultaneously. All minor amendments will have a Public Hearing before the Planning Commission which will then recommend approval by the City Council. The City Council will review the amendments and approve or deny the changes.

DRAFT

X. SUMMARY AND RECOMMENDATIONS

A. Summary

The 2008 plan was prepared by Bolton & Menk, Inc. The technical analysis found within this 2015 update was prepared by Bolton & Menk, Inc. in 2008 and refreshed by City Staff in 2015.

The Ramsey SWMP has a dual purpose: it will serve as a guide for the construction of storm drainage facilities and provide a basis for a consistent approach to the preservation of lakes, wetlands, streams, and the Mississippi and Rum Rivers. The following issues have been incorporated into this plan:

1. Division of the City into major watersheds based on contour maps, grading plans and natural topography
2. Determination of storm water runoff under ultimate land use conditions
3. General layout and sizing of trunk storm sewers and open channels
4. Tributary areas, storage volumes, and high water levels of all existing ponding areas
5. Recommendations for the revision of the current development ordinances
6. Recommendations for standard Operations and Maintenance procedures
7. Recommendations for specific construction site erosion control practices
8. Estimated construction and implementation costs of the SWMP
9. Recommendations for education of City residents, staff, and development community.

The primary function of an urban storm drainage system is to minimize economic loss and inconvenience due to periodic flooding of streets and other low-lying areas. Adequately designed storm drainage facilities provide flood control, minimize hazards and inconvenience associated with flooding, and protect or enhance water quality. The SWMP takes the entire drainage basin with future saturation development into consideration.

Wet water quality ponds upstream or dry regional infiltration basins (where possible) will help control the rate and the volume of storm water runoff. To provide flood protection for adjacent property, the design storm interval for ponding areas with a known outfall is a 100-year storm as compared to a 10-year storm for design of storm sewer piping. For land locked ponds or wetlands, the design storm interval is a back-to-back 100-year storm or the 100-year, 10-day snow melt event, whichever is larger. Any new residential, commercial, industrial and other habitable structures shall be constructed with the following low floor elevation: Elevation of the lowest floor of a structure shall be a minimum of 1 foot above the Emergency Overflow, or 2 feet above the HWL of the nearby pond or waterbody, whichever is higher.

In areas adjacent to designated flood plains as mapped on a Flood Insurance Rate Map, the Regulatory Flood Protection Elevation (RFE) applies. The RFE is defined as the mapped 100-year flood elevation plus 1 foot. However, the LRRWMO requires that the lowest floor elevation be 2 feet above the calculated flood elevation. Therefore, all structures, including accessory structures, must be elevated on fill so that the lowest floor

DRAFT

including basement floor is at or above the Regulatory Flood Protection Elevation or 2 foot above the mapped 100-year flood elevation. The finished fill elevation for structures shall be no lower than the Regulatory Flood Protection Elevation and the fill shall extend at such elevation at least fifteen (15) feet beyond the outside limits of the structure erected thereon.

The area of a pond's HWL plus 1 foot of freeboard shall be contained entirely within an outlot that is owned and maintained by the City.

The numerous natural depressions found throughout Ramsey have been incorporated into the SWMP as ponding areas. Wetlands may be, and are currently being used for stormwater storage for larger rainfall events. They may continue to be used for this purpose – even after upstream development, provided that:

1. There is acceptable Best Management Practice pretreatment of the runoff in accordance with the MPCA NPDES/SDS Construction Permit, Section III.D., Permanent Stormwater Management System.
2. The bounce from the normal water level to the high water level does not exceed two feet.

The effective use of ponding areas enables the installation of outflow sewers with reduced capacities since the design storm duration is effectively increased over the total time required to fill and empty the ponding reservoirs. Storm sewers represent a sizable investment for the community and this investment can be more efficiently utilized by ponding storm water in designated ponding areas and allowing smaller diameter pipes to be used as outfall lines.

Equally as important as flood control and cost considerations, is the use of ponding areas to:

1. Improve water quality;
2. Return storm water to the groundwater table;

For water quality ponds, the storage below the outlet is the most important consideration. The area and depth of the ponds may differ from the values presented here, storage below the outlet must be provided so that the prescribed pollutant loading of the system is not exceeded.

The City will allow Developers to construct storm water ponds to serve a secondary purpose as a development amenity. However, the Developer shall be required to enter into a Development Agreement or Maintenance Agreement that outlines that the City will not take on maintenance obligations beyond basic storm water functions. If constructed as a water feature, the City will not guarantee water levels or water quality above basic storm water requirements.

The wildlife aspects of the ponding areas shall be maximized in design and the proper location of the trail system will allow good access to these areas for wildlife observation.

B. **Model Results**

Odd numbered Figures from Figure 11 through Figure 23 are maps of critical SSA pond data superimposed on the most recent aerial photo of Ramsey. They are color coded to highlight whether the 100-year storm conditions as follows:

Green – The pond functions properly and the peak elevation is fully contained within the pond

Yellow – The peak pond elevation is above the emergency overflow spillway

Red – The peak pond elevation may threaten structures

All red and yellow areas will be "ground truthed" to verify the condition depicted. These maps can be used to evaluate regional pond opportunities. In reviewing these maps, one can easily see where the current ponds or depressions are overtaxed for the 100-year event.

The following is a brief discussion of the opportunities and recommendations associated with each watershed:

Figures 11 & 12 – D43 Watershed

This is the Ditch 43 watershed. From Figure 11, it can be seen that this area is fully developed around a significant amount of existing wetlands. This leaves little opportunity to construct regional ponds.

The red areas on Figure 11 indicate ponds that are subject to flooding during the 100-year event. The yellow areas indicate that the emergency overflow is reached during a 100-year event. These ponds should be reviewed relative to the following:

- Should the outfall pipe be replaced with a larger one?
- Can the pond be enlarged?
- Can the overflow spillway be lowered?
- Can rain gardens be incorporated into the upstream watershed?
- Is the upstream watershed larger than allowed by the original design?
- Can some of the upstream watershed be diverted?

The two ponds in the southwestern part of the watershed that are highlighted in red, P26308 and P26310, appear to be infiltration ponds with no outlet pipe. Because our model conservatively assumes no infiltration, the threat of flooding from these ponds may be exaggerated. In comparing this area with the historic flooding map of Figure 9, there have been no reports of flooding in this area.

Pond P25454 appears to need a raised emergency overflow to the west in order to relieve potential flooding. Our model suggests that a 12-inch outfall culvert under Sunwood Drive with an inlet elevation of 866 will eliminate this threat from a 100-yr rainfall event.

Since the D43 watershed is comprised of a significant amount of wetland which acts as satisfactory runoff storage, no other significant designs are necessary with the exception of the localized flooding associated with the red highlighted ponds. Otherwise, upstream watershed review for infiltration/rain garden opportunities is recommended.

Figures 13 & 14 – D66 Watershed

This is the Ditch 66 watershed. It is nearly identical in nature to the D43 Watershed in build out and wetland storage. Hence, the recommendation is the same: review the highlighted ponds and determine if they need upgrading through either upstream infiltration practices, pond enlargement or increasing the outfall.

DRAFT

From Figure 13, only one pond, P22110 is a potential threat to structures. In reviewing Figure 9, no residential complaints have been made for this area and City Staff has not highlighted this area as a nuisance flooding area. It currently exists as a small natural depression that may have infiltration capacity. Our modeling conservatively assumes that no infiltration occurs and that relief is only provided by storage and the capacity of the outfall pipe. Hence, the potential threat to structures may be exaggerated. If this pond proves to be a problem, the pond storage could be increased or the existing 15" outfall could be increased to a 21" pipe with a lower pipe inlet elevation of 883 to adequately relieve the potential flooding.

The yellow coded ponds in Figure 13 highlight ponds that are immediately adjacent to large wetlands. With the exception of pond P09308, in the northwest part of the watershed, these ponds have emergency overflows directly to these wetlands and there is no concern for public welfare or property damage associated with these ponds. Pond P09308 is another infiltration basin with no historic complaints in the vicinity. Because our model conservatively assumes no infiltration, any threat of flooding from this pond may be exaggerated.

Figures 15 & 16 – EMISS Watershed

This is the Eastern Mississippi watershed. The majority of the northern part of this watershed is adequate in storage and functioning properly. Where there is undeveloped land, the SSA model can be used to recommend appropriate pipe sizing and ponding to ensure that it remains free of flooding.

The southern part is more commercialized and also more prone to flooding. However, there are no historic complaints of flooding in the area (see Figure 9).

If additional flood protection is needed in the southern EMISS watershed, there are some opportunities to correct the ponds that are modeled to be surcharged. From the aerial photograph, it appears that there are a few opportunities for expanding troubled ponds and the creation of additional ponding that may be constructed as backflow basins to relieve the flood prone ponds in the area. Those best opportunities are immediately adjacent to the railroad. These would be best incorporated into future development of this area. Otherwise, retrofitting rain gardens, infiltration basins, and as a last resort, increasing outfall pipes may be considered for nuisance ponds.

Figures 17 & 18 – GOLF Watershed

This watershed is currently functioning well. There is only one pond, P11320, in the watershed that is a potential threat to structures. It appears to be a roadside ditch infiltration basin pond. Again, conservatively ignoring infiltration may exaggerate the flooding potential of this pond. There is no history of complaints of flooding in this area. If flooding becomes a problem, it may only need minor grading to correct its emergency overflow spillway. Also, upstream watershed review for infiltration/rain garden opportunities may also suffice in correcting the problem.

The remaining yellow ponds appear to be in undeveloped areas and are probably natural depressions that fill and overflow.

For the few upstream areas that are not developed, careful retention, infiltration and outfall design review using the SSA model is the best way to accommodate continued development.

Figures 19 & 20 – MMISS Watershed

This watershed is only partially developed. The existing development is on the downstream end. The ponding areas within the developed part of the watershed are working well. As recommended earlier, infiltration and rain gardens should be incorporated into the upstream development where possible. The recommended ordinance changes should help ensure that this occurs.

Figures 21 & 22 – TROTT Watershed

This watershed is unique in that the majority of the area is currently designed as low impact development. The general nature of the Trott Brook watershed is that it is a linear wetland. The majority of the ponds are functioning well. City staff has noted that one area, near 179th Avenue and Azurite Street is a problem area (Figure 9). This area is also highlighted as a potential threat to structures in Figure 21. Regrading the roadside ditches or constructing a new outfall to relieve this area is recommended to alleviate the problem flooding in this area.

The remaining red highlighted pond and the only yellow highlighted pond in TROTT Watershed are infiltration areas with no historic complaints of flooding in the vicinity. Because our model conservatively assumes no infiltration, any threat of flooding from this pond may be exaggerated. If infiltration is not resolving the problem, the emergency overflow from this area should be regraded to protect the structures in the area.

Figures 23 & 24 – WMISS Watershed

This watershed includes the COR (former Ramsey Town Center) area. However, some ponds are indicated as being a threat. To ensure that this does not become a problem, we recommend using the SSA model to correct these potential problems as future expansion of the COR area occurs. The residential area to the northwest has several ponds that should be reviewed with the same considerations as the Trott and Ditch 43 watersheds.

Pond number P17306, located immediately west of 156th and Nutria, shows as a potential threat to structures and is in an area of property owner complaints. This appears to be a land locked infiltration pond that has very little infiltration capacity. The best solution to this pond is to provide an outfall to the west.

Pond P21210-E, immediately south of 151st Avenue and east of Rhinestone Street, is also shown as flooded. This is also an isolated infiltration with no outlet. The property owners in the vicinity of this pond have filed complaints of nuisance flooding in this area. Solutions for this pond include:

- Expanding the storage and working the pond invert to encourage infiltration
- Regrading to lower the existing emergency overflow channel
- Constructing a new piped outfall to serve the area.

There are two infiltration basins in the mid-eastern part of the watershed (Section 21 near 162nd Avenue and Zirconium Street that have been modeled to be either using the emergency spillway or a potential threat to structures. Although the peak elevation of these ponds may be exaggerated by neglecting infiltration in our model, nuisance flooding has been reported in the vicinity by area residents as shown in Figure 9. To alleviate this problem in Pond P21208, we recommend constructing an outlet culvert outlet under 161st Avenue may adequately address the problem flooding experienced there. The problem in Pond P21210, which is upstream from the residential nuisance flooding area, may be corrected by either expanding the infiltration basin storage or by

regrading the emergency overflow spillway at a lower elevation to alleviate the potential flooding threat.

We recommend that the undeveloped part of the WMISS watershed, lying immediately west of the COR, treated in a similar fashion as the COR. If a separate outfall can be created for this area, it could work in an almost identical fashion. If a separate outfall cannot be obtained, a large regional pond network is recommended. If the ponding alternative is taken, the regional pond network would need to store 100 percent of the runoff at a safe level prior to outletting into the COR system. This would ensure that the COR is not threatened by continued development upstream.

Finally, the Highway 10 corridor is appears to have some pond overflow problems that are only associated with using the ditches as storage. We believe that the best financial and hydrological solution to alleviate these problem areas is to coordinate with MNDOT on any future TH 10 improvements. Any improvements to TH 10 are likely to involve new corridor stormwater management and funding.

General

Figures 30 through 34 are typical SSA output files for a single pipe/pond corridor. These are intended to illustrate the output potential of the model and software. If similar output files were created for every aspect of the entire system, this report would be too cumbersome. The 2008 Plan provided Geographic Information System (GIS) data that allows the City to model virtually any pipe, pond or ditch within Ramsey.

It is extremely important that each area be re-evaluated at the time of final design to confirm the criteria used in this study and to make any changes that a proposed development may dictate. Special consideration must be given to areas that develop differently than shown in the Comprehensive SWMP, especially when a higher runoff coefficient is likely to result from development.

All storm sewer facilities, especially those conveying large quantities of water at high velocities, should be designed with efficient hydraulic characteristics. Special attention should be given during final design to those lines that have extreme slopes and create high hydraulic heads.

The Best Management Practices (BMPs) recommended by the MPCA should be followed wherever necessary, but shall require adoption of an ordinance for enforcement of individual practice as a required standard...

C. Recommendations

The following recommendations are presented for the City Council's consideration based upon the data compiled in this report:

1. The SWMP as presented herein should be adopted by the City of Ramsey.
2. The recommended corrections for flood prone areas should be made as described herein and made a part of the storm water management system, where feasible.
3. Standard review procedures should be established, where feasible, to ensure all development within the City is in compliance with proper erosion control practices.
4. Detailed hydrologic analysis should be required, where feasible, during final design of all new developments and ponding areas.

5. Final high water levels governing building elevations adjacent to ponding areas and floodplains should be established as development occurs or when drainage facilities are constructed.
6. Overflow routes should be established and maintained, where feasible, to provide relief during extreme storm conditions, which exceed design conditions.
7. An emergency overflow should be constructed for Lake Itasca to relieve the extreme fluctuation in lake levels of this isolated lake.
8. A storm water maintenance program should be enforced, where feasible, to ensure the successful operation of the drainage system.
9. The erosion and sedimentation control criteria for new developments should be enforced, where feasible.
10. An education program for City residents, staff, and development community should be implemented, where feasible.
11. Amendments to the plan should be adopted and implemented as warranted by future standards or regulations, where feasible.
12. That the plan should be updated in the year 2022 or earlier if needed and feasible.

The existing storm sewer system of the City of Ramsey is not adequate to handle the continued development around the presently developed area. If development continues, the existing system will need major improvement and enlargements to effectively serve the community without excessive flooding. The proposed infiltration and oversized ponding development scenario together with strategically located regional ponds presents one method of accommodating the present growth of Ramsey. However, this report and the proposed scenario is not necessarily the only method of accomplishing the goal of comprehensive storm water management.

Given this, it is imperative that this plan and the SSA model of the City is continually updated on a regular basis and compared to the baseline runoff of the existing conditions model to ensure that any adjustments in area developments continue to be coordinated. In addition, the proposed storm water development charges should be updated annually to ensure that the associated City costs are fully financed. In this manner, the plan can maintain its usefulness as a current document.

Finally, the EPA has initiated the NPDES Phase II requirements whereby cities with populations in excess of 10,000 people are required to apply for a Phase II permit. Some additional cities that are actually under 10,000 in population are also included. The City of Ramsey is a mandatory small MS4 community. One of the requirements of the NPDES permitting process is the existence of a storm water management plan.

As stated earlier, this report is predominantly based on information obtained from available topographic data, field verification of the watershed areas, “ground truthing” of modeled flood prone areas, and discussions with City staff relative to the historical flooding areas. Since the modeled existing system closely matches that described by observation, we feel that this plan has significant benefit as a planning and design tool. However, the quality and accuracy of this report could be further validated with more detailed survey data in the growth areas around the City.

DRAFT

XI. ACRONYMS AND GLOSSARY

A. Acronyms

BMP - Best Management Practices
BWSR - Minnesota Board of Water and Soil Resources
DNR - Minnesota Department of Natural Resources
EOF - Emergency Overflow
EPA - United States Environmental Protection Agency
EPB - Environmental Policy Board
EQB - Minnesota Environmental Quality Board
FEMA - Federal Emergency Management Agency
FIRM - Flood Insurance Rate Map
GIS - Geographic Information System
GPS - Geographic Positioning System
HWL - High Water Level, typically associated with the 100 year rainfall event
IDF - **I**ntensity-Duration-Frequency (for precipitation)
LID - Low Impact Development
LRRWMO - Lower Rum River Watershed Management Organization
LUST - Leaking Underground Storage Tank
MNDOT - Minnesota Department of Transportation
MNRAM - Minnesota Routine Assessment Method
MPCA - Minnesota Pollution Control Agency
MS4 - Municipal Separate Storm Sewer System
MSWMP - Metropolitan Surface Water Management Program
MUSA - Metropolitan Urban Services Area
NOI - Notice of Intent (for coverage under the NPDES Permit Program)
NPDES - National Pollutant Discharge Elimination System
NPDES/SDS - The General Permit Authorization to Discharge Storm Water Associated with Construction Activity under the National Pollutant Discharge Elimination System/State Disposal System Permit Program. Administered by the MPCA
NURP - Nationwide Urban Runoff Program
NWL - Normal Water Level or Low Outlet Elevation
SWCD - Soil and Water Conservation District
SWMP - Surface Water Management Plan
SWPPP - Storm Water Pollution Prevention Program
TP - Total Phosphorus
TEP - Technical Evaluation Panel, typically needed for WCA approval of wetland impacts
TSS - Total Suspended Solids
USEPA - United States Environmental Protection Agency
UST - Underground Storage Tank
WCA - The Minnesota Wetland Conservation Act and its subsequent Minnesota Rules 6115 and 8420.
WD - Watershed District
WMO - Watershed Management Organization

DRAFT

B. **Glossary**

100-Year Flood: The flood reaching water levels or flow rates with a one-percent (1%) chance of occurring in any given year. On the average, a 100-year flood is statistically probable to occur only once in a 100-year period. A 100-year flood is synonymous with Base Flood, Regional or 1% Chance Flood.

100-Year Storm Event: The rainfall event having a total precipitation over a 24-hour period with a one-percent (1%) chance of occurring in any given year. On the average, a 100-year storm event is statistically probable to occur only once in a 100-year period. NOAA Atlas 14: Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin (2013). NOAA Atlas 14, Volume 8, Version 2, *Precipitation-Frequency Atlas of the United States, Midwestern States.* NOAA, National Weather Service, Silver Spring, MD.**100-Year, 10-Day Snowmelt Event:** The storm event having a total precipitation over a 10-day period with a one-percent (1%) chance of occurring in any given year. On the average, a 100-year snowmelt event is statistically probable to occur only once in a 100-year period. The value for the Ramsey area is taken from the SCS National Engineering Handbook, which shows the 100-year, 10-day snowmelt event is 7.3 inches over 10 days.

Agricultural Land: Any land designated specifically for agricultural production. This may include row crops, pasture, hay land, orchards, or land used for horticultural purposes.

Anaerobic: Conditions either in water or soil where there is a lack of oxygen.

Army Corps of Engineers (COE or USCOE): The United States Army Corps of Engineers is a regulatory agency involved in design, permitting and construction projects related to or impacting navigable waters of the United States including lakes, waterways and wetlands.

Aquatic Bench: A 10- to 15-foot bench around the inside perimeter of a permanent pool that ranges from zero depth at the shore to 1-foot depth no less than 10-feet from the shore. Normally vegetated with emergent plants, the bench augments pollutant removal, provides habitat, conceals trash and water level drops, and enhances safety.

Best Management Practice (BMP): An action, procedure, or structural improvement designed to improve water quality. BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the State. BMPs also include treatment practices such as ponds, rain gardens, vegetated buffers and vegetated swales, treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, or drainage from raw material storage.

Buffer: A vegetated area immediately adjacent to a wetland that is not mowed and/or managed. Buffers are ideally dominated by native vegetation and add to the ecological health of the wetland by adding habitat and assisting and filtering pollutants from surface water runoff.

Buffer Strip: An area of vegetated ground cover abutting a water body that is intended to remove sediment and other pollutants from runoff.

BWSR: Board of Water and Soil Resources. This is the lead regulatory agency that oversees Minnesota Statue 103B.205 to 103B.255, Minnesota Rule 8410 and the Minnesota Wetland Conservation Act.

Circular 39: A wetland classification system developed by United States Fish and Wildlife Service in 1956 that categorizes wetlands into eight types. This is the same classification system generally accepted by the State of Minnesota for wetland classification.

Comprehensive Plan: As defined in Minnesota Statutes 394.21, a Comprehensive Plan defines a City's the policies, statements, goals and interrelated plans for private and public land and water use, transportation and community facilities to assist in guiding future development and growth.

Cowardin Classification: A wetland classification system developed by the United States Fish and Wildlife Service in 1979. This system defines wetlands by a tiered system and is more detailed than the Circular 39 method. The Cowardin System is the classification System used in the National Wetlands Inventory.

Design Storm: A rainfall event of specified size and return frequency that is used to calculate the runoff volume and peak discharge rate to a BMP. In Ramsey, a 10-year design storm is 4.1-inches in 24-hours and a 100-year storm is 5.9-inches in 24-hours. If designing piped storm sewer, a 10-year design storm may also refer to an IDF curve used in the Rational Method of storm sewer design.

Detention: The temporary storage of runoff from rainfall and snowmelt events to control peak discharge rates and provide an opportunity for treatment to occur. Detention storage is typically designed in basins.

Development: The construction, installation or alteration of any structure, the extraction, clearing or other alteration of terrestrial or aquatic vegetation, land or the course, current or cross section of any water body or water course or division of land into two (2) or more parcels. See also re-development, new development and existing development.

Drawdown: The gradual reduction in water level typically due to the combined effect of infiltration and evaporation, but may be the result of human interference.

Draining: The removal of surface water or ground water.

Drop Structure: Placement of logs with a weir notch across a stream channel. Water flowing through the weir creates a plunge pool downstream of the structure and creates fish habitat.

Easement: A grant of one or more property rights by a property owner for use by the public, a corporation, or another person or entity.

Emergency Overflow (EOF): A hydraulic channel, swale, weir, etc. that provides an outlet from a pond or flooded area at an elevation below the point where property damage can occur.

End of Pipe Control: Water quality control technologies suited for the control of existing urban storm water at the point of storm sewer discharge to a receiving water. Due to typical space constraints, these technologies are usually designed to provide water **quality control rather than quantity control.**

Erosion: The wearing away of land surface and soil by the action of natural elements (wind and/or water).

Eutrophication: Process by which overabundance of nutrients in a waterbody lead to accelerated productivity and general decrease in water clarity and quality.

Exfiltration: The downward movement of runoff through the surface and into the subsoil.

Existing Development: A property or parcel of land that has previously been subject to development and no major changes are anticipated to the property in the near future.

Exotic Species or Invasive Species: Non-native plants or wild animals that can naturalize, have high propagation potential, are highly competitive for limiting factors, and cause displacement of, or otherwise threaten, native plants or native animals in their natural communities.

Extended Detention: A storm water design feature that provides for the gradual release of a volume of water (typically 0.25 to 1.0 inches per impervious acre) over a 12 to 48 hour time period. With proper design, the extended detention period allows for an increased settling of pollutants, and can protect channels from frequent flooding or scour.

Extended Detention (ED) Ponds: A conventional ED pond temporarily detains a portion of storm water runoff for a period of 12 to 48 hours after a storm using a fixed orifice. Such extended detention allows urban pollutants to settle out. ED ponds can be designed to be "dry" between storm events and thus do not have any permanent standing water or "wet" with a permanent pool of water. An enhanced ED pond is designed to prevent clogging and resuspension and provides greater flexibility in achieving target detention times. It may be equipped with plunge pools near the inlet, a micropool at the outlet, and utilize an adjustable reverse-sloped pipe at the ED control device. See also "wet pond" definition for diagram.

Extended Detention Wetland: A storm water wetland design alternative in which the total treatment volume is equally split between a shallow marsh and temporary detention of runoff above the marsh. After a storm, the normal pool of the shallow marsh may rise by up to two feet. The extra runoff is stored for up to 24 hours to allow pollutants to settle before being released downstream.

Finished Floor Elevation: The lowest elevation of the first floor or basement in a residential building or other structure that will or may be inhabited by a person or persons.

Filtration Basin: A treatment area designed to treat storm water by a process that physically removes particles from the water.

Flood: A temporary rise in stream flow or stage that results in inundation of the areas adjacent to the channel or water body.

Flood Frequency: The statistically determined average time period between events where a specific flood stage or discharge may be equaled or exceeded.

Flood Fringe: That portion of the 100-year floodplain outside of the floodway.

Flood Obstruction: Any dam, wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel rectification, culvert, building, wire, fence, stockpile, refuse, fill, structure or matter in, along, across or projecting into any channel, watercourse or regulatory flood hazard area that may impede, retard or change the direction of the flow of water, either in itself or by catching or collecting debris carried by such water that may cause the flood level to rise and damage property or threaten life.

Floodplain: Floodplains are lowland areas adjoining lakes, wetlands, and rivers that are susceptible to inundation of water during a flood. For regulatory purposes, the floodplain is the area covered by the 100-year flood and it is usually divided into districts called the floodway and flood fringe. Areas where floodway and flood fringe have not been determined are called approximate study areas or general floodplain.

Floodplain (General) Area: The general floodplain area is determined using the best available data, in lieu of performing a detailed engineering study. These data may be from soils mapping, experienced high water profiles, aerial photographs of previous floods, or other appropriate sources. There are no associated published 100-year flood elevations with general floodplain delineations, unlike detailed study areas. General floodplain area is synonymous with approximate study area and unnumbered A-Zone.

Flood Proofing: A combination of structural provisions, changes or adjustments to properties and structures subject to flooding primarily for the reduction or elimination of flood damages to properties, water and sanitary facilities, structures and contents of buildings in a flood hazard area in accordance with the Minnesota State Building Code.

Floodway: The floodway is the channel of a river or other watercourse and the adjacent land areas which must remain open in order to discharge the 100-year flood.

Forebay: An extra storage area provided near an inlet of a pond or BMP to trap incoming sediments, reducing the amount that accumulates in a pond or BMP.

DRAFT

Freeboard: A factor of safety usually expressed in feet above a certain flood level. Freeboard compensates for the many unknown factors (e.g., waves, ice, debris, etc.) that may increase flood levels beyond the calculated level.

Forbs: Vegetation that does not consist of trees, grass or shrubs. Forbs are typically associated with flowering plants

Geographic Information System (GIS): Computer databases of georeferenced information on the cities various resources.

Global Positioning System (GPS): Network of satellites used to map and identify locations on the earth.

Hydric Soil: Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soil is one of the three criteria that define wetlands

Hydrophytic Vegetation: Macrophytic plant life growing in water, soil, or a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Hypereutropic: A very nutrient-rich lake characterized by frequent and severe nuisance algae blooms and low transparency.

Intensity-Duration-Frequency (IDF) Curve: A graphical representation of the rainfall intensity versus time of concentration for an area. The IDF curve is typically used in the Rational Method of storm sewer design to determine design rainfall intensity in inches per hour. The following IDF curve is taken from the Minnesota Department of Transportation Drainage Manual and applies is used in the rational method of storm sewer design for the Ramsey Area.

DRAFT

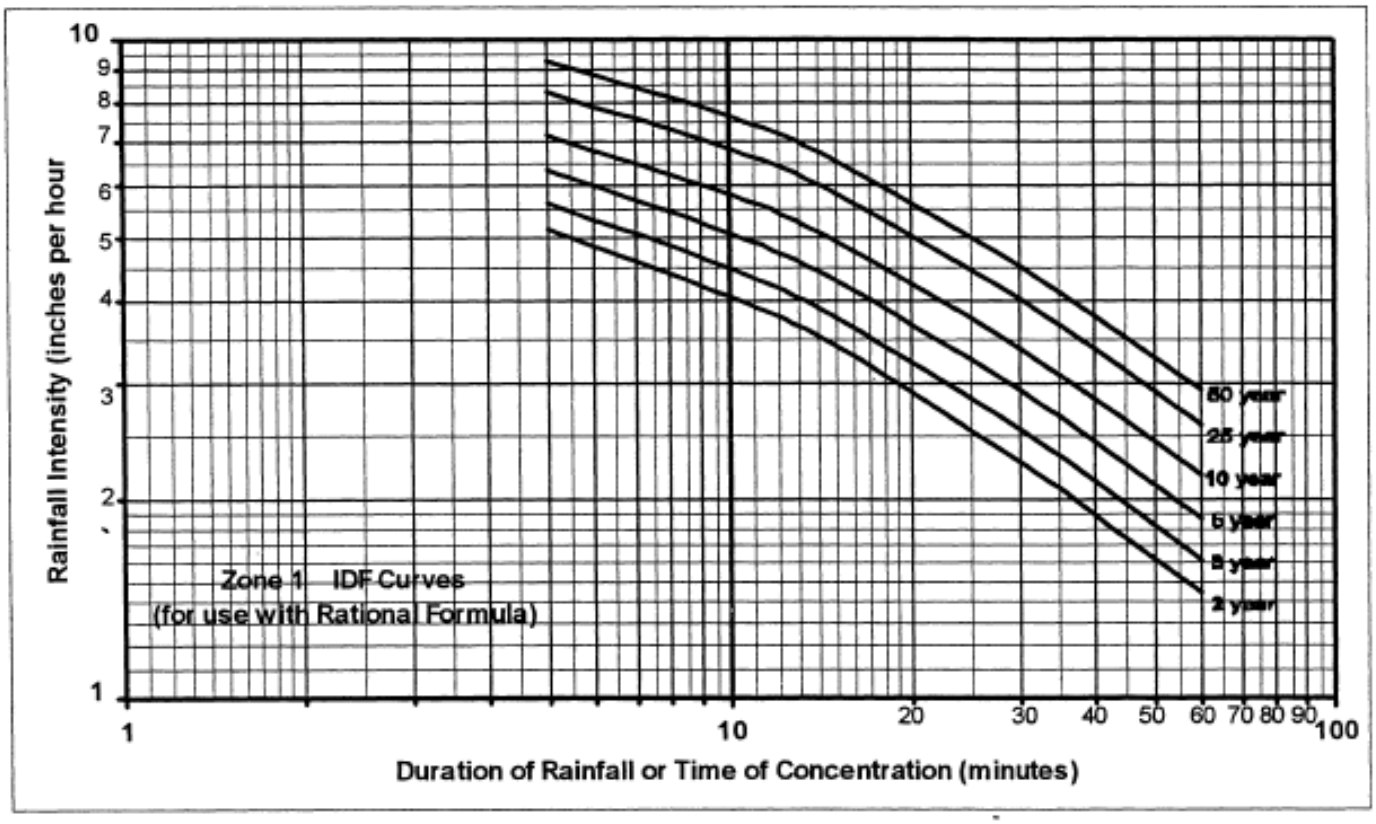


Figure 3.4 Zone 1 Southern Minnesota Rainfall Intensity - Duration - Frequency (IDF) Curves

Impervious Surface: The portion of the buildable parcel which has a covering which does not permit water to percolate into the natural soil. Impervious surface shall include, but not be limited to, buildings, all driveways and parking areas (whether paved or not), sidewalks, patios, swimming pools, tennis and basketball courts, covered decks, porches, and other structures. Open, uncovered decks are not considered impervious for the purposes of this ordinance. The use of patio blocks, paver bricks or class 5 gravel material are considered impervious surfaces as a majority of water runs-off the surface rather than being absorbed into natural soils underneath. Some exceptions to these conditions may include paver blocks or pavement systems engineered to be permeable with the underlying soils suitable for infiltration.

Infiltration Basin: An impoundment where incoming storm water runoff is stored until it gradually infiltrates into and through the soil of the basin floor.

Infiltration Trench: A conventional infiltration trench is a shallow, excavated trench that has been backfilled with stone to create an underground reservoir. Storm water runoff diverted into the trench gradually exfiltrates from the bottom of the trench into the subsoil and eventually into the water table. An enhanced infiltration trench has an extensive pretreatment system to remove sediment and oil. It requires an on-site geotechnical investigation to determine appropriate design and location.

Infrastructure: Public facilities and services, including transportation, storm water pipes, structures and ponds, water and sewer pipes and structures, telecommunications, recycling and solid waste disposal, parks and other public spaces, schools, police and fire protection, and health and welfare services.

Integrated Management Practice (IMP): A range of small-scale storm water controls or practices distributed throughout a site and intended to maintain flow patterns, filter pollutants and/or re-create or maintain existing site hydrology.

Invasive Species or Exotic Species: Non-native plants or wild animals that can naturalize, have high propagation potential, are highly competitive for limiting factors, and cause displacement of, or otherwise threaten, native plants or native animals in their natural communities.

Landlocked High Water Level or Landlocked HWL: The peak water level or high water level in a land locked basin. The HWL is the highest peak ponding elevation generated by the back-to-back 100-year SCS 24-hour rainfall events, the 10-inch SCS 24-hour rainfall event or the 100-year, 10-day snowmelt snow melt event.

Local Government Unit (LGU): Agency that has the primary responsibility of administering the Wetland Conservation Act. The City of Ramsey acts as LGU for all wetlands within the City limits and shares responsibility for basins that border adjacent municipalities.

Lowest Floor: The lowest floor of a structure, including basement.

Low Impact Development (LID): An approach to storm water management intended to protect water resources, reduce storm sewer infrastructure costs and provide a more attractive storm water management system. LID practices include infiltration systems, bioretention areas, rain barrels, green roofs, porous pavements and a long list of additional innovative storm water treatment practices.

Mesotrophic: Describes a lake of moderate photosynthetic productivity.

MNRAM: The Minnesota Routine Assessment Methodology as referenced by Minnesota Rules 8420. MNRAM is the primary tool used to assess wetland functions and values on a qualitative basis. MNRAM evaluates wetlands based on vegetation, wildlife habitat, water quality, flood and storm water attenuation, recreational opportunities, aesthetics, fishery habitat, groundwater interactions, and commercial use. The result of a MNRAM evaluation is a ranking of the wetland quality that can be used to monitor the wetland

changes over time and to set appropriate protection needs and techniques. The version referenced in this plan is Version 3.0.

Monotypic: Used to describe vegetation communities in which only one dominant species is present. Most often used to describe areas that are entirely dominated by reed canary grass or cattails.

Navigable Waters: Waters defined by the United States, 33 Code of Federal Regulations Section 329.4 as those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. The U.S. Army Corps of Engineers has Federal Jurisdiction over Navigable Waters.

New Development: Development of a property or portion thereof that is currently undeveloped property.

NURP: Nationwide Urban Runoff Program, a study by the U.S. Environmental Protection Agency. A key component of this program was to assess the effectiveness of urban runoff detention/retention basins (e.g., ponds) in removing pollutants from storm water runoff.

Off-Line BMP: A water quality facility designed to treat a portion of storm water (usually 0.5 to 1.0 inches per impervious acre) which has been diverted from a stream or storm drain.

Off-Line Treatment: A BMP system that is located outside of the stream channel or drainage path. A flow diverter is used to divert runoff from the channel and into the BMP for subsequent treatment.

Ordinary High Water Level (OHWL or OHW): The Minnesota DNR jurisdictional boundary of public waters and wetlands that is depicted by an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel. For reservoirs and flowage, the ordinary high water level is the operating elevation of the normal summer pool. In Ramsey all of the lakes have an OHW established. For streams and waterways, the OHW is considered the top of bank. Areas below the OHW are under the jurisdiction of the Minnesota Department of Natural Resources and are not regulated by the Wetland Conservation Act.

Permanent Pool: A 3- to 10-foot deep pool in a storm water pond system that provides removal of urban pollutants through settling and biological uptake (also referred to as a wet pond).

Porous Pavement: An alternative to conventional pavement whereby runoff is diverted through a porous asphalt or concrete layer and into an underground stone reservoir. The stored runoff then gradually infiltrates into the subsoil.

Protected Water: Any water or wetland designated by the Minnesota Department of Natural Resources and identified by statute on the Protected Waters Inventory.

Public Waters: Those waters of the state identified as public waters or wetlands under Minnesota Statutes, Section 103G.005.

Rational Method: A method of estimating the peak runoff from a watershed that is based on the formula Q = CIA. Where:

Q = peak flow rate in cubic feet per second
C = a runoff coefficient based on the percentage of impervious surface, type of vegetative cover, and soil type
I = rainfall intensity in inches per hour as determined from an area IDF curve
A = watershed area in acres

Reach: A hydraulic engineering term to describe a longitudinal segment of a stream or river influenced by the natural or man-made obstruction. In an urban area, the segment of a stream or river between two consecutive bridge crossings or between two reservoirs would most typically constitute a reach.

Redevelopment: Any development including but not limited to rebuilding, renovation, revision, remodeling, reconstruction or redesign of or at an existing development.

Regional Flood: A flood which is representative of large floods known to have occurred generally in Minnesota and reasonably characteristics of what can be expected to occur on an average frequency in the magnitude of the 100-year recurrence interval. A regional flood is synonymous with the term "base flood" used in the Flood Insurance Study.

Regulatory Flood Protection Elevation: A point not less than one-foot above the water surface profile associated with the 100-year flood as determined by the use of the 100-year flood profile and surrounding technical data in the Flood Insurance Study plus any increase in flood heights attributable to encroachments on the floodplain. It is the minimum elevation the DNR requires Cities to regulate by ordinance.

Retention: The permanent storage of runoff from rainfall and snowmelt events with volume reduction coming from infiltration, evaporation or emergency release.

Riprap: A combination of large stone, cobbles and boulders used as an erosion control BMP. Riprap is typically used to line channels, stabilize banks, reduce runoff velocities, or filter out sediment.

Runoff (Storm Water): The overland and near surface flow from rainfall and snowmelt.

Runoff Coefficient: A measure of the rate of runoff that is statistically generated from a parcel of land that is based on the land use, percent of impervious surfacing, soil type and vegetative cover. The higher the coefficient, the higher the amount of runoff anticipated from the parcel. Rational method runoff coefficients range from 0.2 for meadow lands to 0.95 for paved surfaces.

Runoff Conveyance: Methods for safely conveying runoff to a BMP to minimize disruption of the stream network, and promote infiltration or filtering of the runoff.

Runoff Pretreatment: Techniques to capture or trap coarse sediments before they enter a BMP to preserve storage volumes or prevent clogging within the BMP. Examples include forebays and micropools for pond BMPs, and plunge pools, grass filter strips and filter fabric for infiltration BMPs.

Sand Filter: A technique for treating storm water, whereby the first flush of runoff is diverted into a self-contained bed of sand. The runoff is then strained through the sand, collected in underground pipes and returned back to the stream or channel.

Sediment Forebay: A storm water design feature that employs the use of a small settling basin to settle out incoming sediments before they are delivered to a storm water BMP. Often used full in tandem with infiltration devices, wet ponds or marshes.

Sequencing: The process used by the Local Government Unit to evaluate the necessity of an activity relative to its impact on a wetland. The party proposing the impact must demonstrate that the activity proposed complies with the following principles in descending order of priority.

1. Avoids direct or indirect impacts to the wetlands that may diminish or destroy them;
2. Minimizes the impact to the wetland by limiting the degree or magnitude of the wetland activity and its implementation;
3. Rectifies the impacts by repairing, rehabilitating, or restoring the affected wetland;
4. Reduces or eliminates the impact to the wetland over time by preservation and maintenance operations; and,
5. Replaces unavoidable wetland impacts to the wetland by restoring or, if wetland restoration opportunities are not reasonably available, creating substitute wetland areas having equal or greater public value as provided for under the Wetland Conservation Act.

Shoreland: Land located within the following distances from public waters:

1. One thousand feet from the ordinary high water level of a lake, pond, or flowage
2. Three hundred feet from a river or stream, or the landward extent of a floodplain designated by ordinance on a river or stream, whichever is greater.

The limits of shoreland may be reduced whenever the waters involved are bounded by topographic divides which extend landward from the waters for lesser distances and when approved by the Commissioner of the DNR.

DRAFT

Short Circuiting: The passage of runoff through a BMP in less than the theoretical or design treatment time. For example, a properly designed treatment pond will have the inlet and outlet pipes located as far apart (along the water flow path) as possible. A short circuiting pond would have the inlet very close to the outlet and the water coming into the pond would leave the pond much sooner than if it were able to travel through the entire pond.

Storm Water Treatment: The use of accepted BMPs to treat runoff including **d**etention, retention, filtering or infiltration of a given volume of storm water to remove pollutants.

Stream Buffer: A variable width strip of vegetated land adjacent to a stream that is preserved from a disturbance and/or mowing to protect water quality and aquatic and terrestrial habitats. See also buffer strip.

Structure: Anything manufactured, built, constructed, erected, or a portion thereof which is normally attached to or positioned on land, whether temporary or permanent in character, including but not limited to buildings, fences, sheds, advertising signs, dog kennels, hard surface parking areas, boardwalks, playground equipment, concrete slabs.

Shoreland Wetland Protection Zone: The land located within 1,000 feet from the Ordinary High Water Elevation of a Protected Water, 500 feet from the Mississippi or Rum Rivers or the landward extent of the designated floodplain, and 300 feet from any stream designated in the shoreline management ordinance.

Storm Water: (See Runoff)

Storm Water Treatment Pond: Any waterbody that has been specifically created to remove sediment and nutrients and "treat" surface water runoff. Storm water ponds that were created from existing wetland are still regulated as jurisdictional wetlands. Storm water ponds created from upland areas are not wetland and are exempt from regulatory jurisdiction.

Subwatershed: A subdivision based on hydrology corresponding to a smaller drainage area within a larger watershed.

Technical Evaluation Panel (TEP): A panel of technical professionals from the Board of Water and Soil resources, the Anoka County SWCD, the LRRWMO and the LGU (City of Ramsey) at a minimum. This panel may also be expanded to include a Minnesota Department of Natural Resources representative, the U.S. Army Corps of Engineers and interested citizens requesting to participate in the wetland decision making process. Invitations to a TEP meeting are typically sent to all parties listed. The DNR, COE and interested citizens (if any) may elect not to attend. The TEP provides decision making support for the LGU for many wetland and regulatory issues.

DRAFT

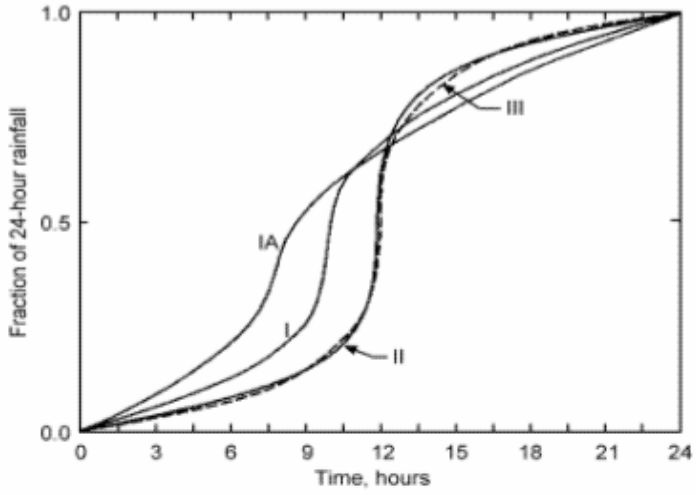
Ten-Day Snow Melt Runoff with Type "C" Distribution (100-Year/10-day snow melt runoff): A modeled runoff event that represents snowmelt conditions over a 10-day period for a return period snow depth of 100 years. The runoff event is simulated for a curve number (CN) of 100 which represents frozen soil conditions or where all surfaces are considered impervious. For some Ramsey the ten-day runoff event is critical event for identifying the high water level of the basin or water body because the Anoka Sand Plain typically reduces runoff under unfrozen conditions. The Type C distribution is similar in concept to the Type I and II distributions, and for this event, establishes the time distribution of runoff volume over the ten-day period.

Treatment Volume (Vt): The volume of storm water runoff that is treated within a BMP or IMP storm water treatment facility. Typically the volume is expressed in terms of inches of runoff per impervious acre.

Type I, IA, II and III Storm Distributions - NRCS: These storm types represent the time distribution of a 24-hour rainfall event for areas throughout the United States. The total storm depth is distributed according to the diagram in subpart A. Type II storms are more "flashy" (i.e., convective/thunderstorms) than a Type I or IA storm. Subpart B illustrates that all of Minnesota is within the Type II rainfall distribution area.

DRAFT

A. SCS 24-hour rainfall distributions (SCS, 1986):



B. Approximate geographic boundaries for SCS rainfall distributions (SCS, 1986):



Underdrain: Typically perforated plastic pipes installed on the bottom of a filtration of infiltration BMP, or sand filter. The under drain is used to collect and remove treated storm water that exceeds the water holding and/or infiltration capacity of the soil.

Upland: General term to describe any area that is not a wetland.

Vegetated Filter Strip: A vegetated section of land designed to accept runoff as overland sheet flow from upstream development. It may adopt any natural vegetated form, from grassy meadow to small forest. The dense vegetative cover facilitates pollutant removal. Vegetated filter strips cannot treat high velocity flows; therefore, they have generally been recommended for use in agriculture and low-density development. A filter strip can also be an enhanced natural buffer, whereby the removal capability of the natural buffer is improved through engineering and maintenance activities such as land grading or the installation of a level spreader. A filter strip differs from a grassed

swale in that a swale is a concave vegetated conveyance system, whereas a filter strip has a fairly level surface.

Watershed: A topographically defined area within which all runoff water drains to a point.

Water Quality Volume: A design volume of water as defined by the MPCA that is required to be treated from a new development site. The MPCA defines the water quality volume as 0.5-inches of runoff from all new impervious surfaces associated with the development in the watershed.

Watershed-to-Lake Ratio: The relative surface area of the contributing watershed to the surface area of the lake or water body. In terms of water quality, generally the smaller the watershed-to-lake ratio, the better the quality of the lake. For example a lake with a ratio of 4 to 1 means that the watershed is four times the size of the lake (i.e., 200 acres contributing to a 50 acre lake).

Wetland: Transitional land between terrestrial and aquatic systems where the water table is at or near the surface or the land is covered by shallow water. The jurisdictionally accepted definition of a wetland includes the following three characteristics:

1. Have a predominance of hydric soil
2. Be inundated or saturated within 1-foot of the surface for at least 5 percent of the growing season. The inundation refers to a single continuous episode.
3. Support a prevalence of hydrophytic vegetation typically adapted for life in saturated soils.

Wetland Conservation Act (WCA): In 1991 Minnesota adopted the initial Wetland Conservation Act (Minnesota Laws Chapter 354) to protect the states wetland resources. This act has been amended and updated periodically, typically under Minnesota Rule 8420, and is used by reference to the current program, as well as any future amendments.

Wetland Delineation: The process and procedure by which an area is determined a wetland or non-wetland including a determination of the wetland boundary based on the point where the non-wetland areas shift to wetlands or aquatic habitats.

Wetland Mitigation: Wetlands created to replace wetland areas destroyed or impacted by land disturbances.

Wet Pond: A conventional wet pond has a permanent pool of water for treating incoming storm water runoff and a live storage component for flood storage and additional water quality treatment detention.

DRAFT

Tables

Figures

Appendix A

Ramsey City-wide

Storm Water Pollution Prevention Plan

Appendix B

Comment Letters

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P23202	880	L23240	873.2	CIRCULAR	18	881.9	10.58
P23218	882		0		0	876.83	0.85
P23310	874	L23308	870	CIRCULAR	15	871.79	9.06
P23320	866.5	OC23318	863.5	RECT_OPEN		863.91	55.24
P23400	866	L23320	864	CIRCULAR	24	866.37	16.01
P23402	872.5	L23400	864.5	CIRCULAR	42	868.01	49.05
P23404	874	L23402	866	CIRCULAR	24	869.29	12.73
P23406	874	L23404	868	CIRCULAR	18	869.83	7.84
P24212	861	L24TH47-1	858.92	ARCH	18.25	860.77	8.17
P24310	880	L24308	872	CIRCULAR	15	879.1	8.24
P24322	861	L24213	858.46	CIRCULAR	12	862.14	6.21
P24324	865	L24321	860	CIRCULAR	12	863.47	5.23
P24324A	867	ZC24324A	865.5	RECT_OPEN		866.27	4.65
P24324B	866	ZC24324B	865.5	RECT_OPEN		866.24	4.31
P24326	864	L24324	862	CIRCULAR	15	866.32	12.29
P24330	864	OC24213	863.5	RECT_OPEN		863.8	18.4
P24350	870	L24348	864	CIRCULAR	12	868.81	8.44
P24354	866	OC24327	865	RECT_OPEN		866.33	50.93
P24355	868		0		0	866.33	25.35
P24366	863	L24TH47	860.15	CIRCULAR	15	861.27	37.67
P24368	864	L24366	860.2	CIRCULAR	18	862.09	9.88
P24374	864	L24TH47-4	858.21	ARCH	18.25	863.72	29.98
P24389	867.39		0		0	860.96	0.11
P24391	860.5		0		0	862.07	4.24
P24392	868	L24387	864	CIRCULAR	12	866.22	4.76
P25204	858	L25202	854	CIRCULAR	24	855.59	12.27
P25216	850	L25214	847.8	CIRCULAR	48	850.76	106.84
P25304	856	L25302	852	CIRCULAR	15	856.85	17.52
P25315	862.3	L26215	859.42	CIRCULAR	12	861.82	17.49
P25317	867	L25319	861.93	CIRCULAR	12	866.18	5.86
P25319	872.5	L25321	866	CIRCULAR	15	866.91	3.17
P25321	879.5	L25329	875.56	CIRCULAR	15	877.78	2.92
P25328	858	C25326	852.8	RECT_OPEN		857.44	27.06
P25400	868	L25400	866	CIRCULAR	15	869.38	4.81
P25402	876	L25402	870	CIRCULAR	18	877.29	15.44
P25424	866	L25420	862	CIRCULAR	12	866.17	6
P25426	863	L25425	863	CIRCULAR	15	859.21	6
P25442	880	L25439	878	CIRCULAR	12	880.07	5.09
P25454	868	D43-P559	866	CIRCULAR	12	868.53	18.79
P25456	868	L25447	863	CIRCULAR	12	866.85	5.32
P25458	860	C25456	860	RECT_OPEN		860	33.48
P25484	872	L25482	870	CIRCULAR	12	872.02	5.26

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P25488	880.19	L25488	873	CIRCULAR	18	881.93	2.1
P25490	880		0		0	881.93	0.06
P25492	879.29		0		0	885.35	0
P26112	870	L26110	866	CIRCULAR	12	869.32	4.87
P26118	866	L26117	860	CIRCULAR	24	862.71	15.91
P26136	874	L26135	871	CIRCULAR	15	871.58	5.51
P26144	868	L26442	863	CIRCULAR	15	864.32	2.99
P26158	864	L26154	860	CIRCULAR	18	862.86	7.89
P26168	864		0		0	863.41	0
P26176	866	L25418	862.39	CIRCULAR	15	867.88	7.06
P26190	872	L26187	868	CIRCULAR	12	870.39	4.39
P26200	860	C25329	856	RECT_OPEN		857.45	24.41
P26204	862	L26200	858.2	CIRCULAR	15	861.65	8.56
P26206	864	L26209	858.39	CIRCULAR	30	863.83	29.9
P26226	866	L26415	865.24	CIRCULAR	15	864.14	0
P26302	862		0		0	856	23.1
P26304	874	L26323	868	CIRCULAR	18	874.2	10.47
P26306	876	L26326	870.96	CIRCULAR	15	873.54	4.66
P26308	872	C26313	871.5	RECT_OPEN		876.47	8.31
P26310	874		0		0	876.47	5.69
P26312	860	L28313	852.55	CIRCULAR	18	855.37	3.96
P26400	865		0		0	860.9	0.03
P26402							
864	864		0	0	0	864.07	0
P26420	865	L26418	861	CIRCULAR	15	863.51	7.31
P26424	866	L26423	860	CIRCULAR	24	861.49	10.62
P26428	865		0		0	864.14	7.44
P26458	872	L26456	868.9	CIRCULAR	15	869.92	5.15
P28313	858	L28315	850	CIRCULAR	18	854.32	3.74
P36400	855	L25236	850.82	CIRCULAR	36	853.33	33.77

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P09308	878	C16406	875	RECT_OPEN		875.31	11.68
P11338	874	ZC14436	872	RECT_OPEN		872.81	39.3
P11340	878	ZC11338	874	RECT_OPEN		874.43	29.08
P13314	872	ZC13312	871	RECT_OPEN		871.18	23.14
P13408	864	L13406	850.77	CIRCULAR	36	862.63	138.87
P14104	866	L14102	861.5	CIRCULAR	12	867.58	7.57
P14118	866	L14116	862	CIRCULAR	18	863.93	10.71
P14122	866	L14120	858	CIRCULAR	12	868.37	10.75
P14124	878	L14132	870	RECT_CLOSE	48	870.33	7.86
P14126	870	L14127	866	CIRCULAR	12	867.96	3.25
P14140	874	L14137	868.9	CIRCULAR	12	872.55	4.71
P14148	872	ZC14455	871	RECT_OPEN		870.27	0
P14156	874	ZC14156	865.5	RECT_OPEN		867.58	19.84
P14166	874		0			873.18	0
P14202	888	C23157	868	RECT_OPEN		869.33	97.68
P14218	864	ZC14215	861	RECT_OPEN		863.31	56.12
P14220	870	L14218	853.63	CIRCULAR	48	864.35	106.51
P14228	866.5	ZC14223	864.5	RECT_OPEN		865.13	48.77
P14230	872	ZC14228	871.7	RECT_OPEN		870.71	0
P14240	888	L14238	882	CIRCULAR	21	884.25	6.75
P14246	888	L14237	884	CIRCULAR	12	884.78	6.09
P14260	865	L14258	861	CIRCULAR	12	865.29	11.86
P14268	868	L14263	865	CIRCULAR	12	867.74	4.71
P14270	881	Link-12	878	CIRCULAR	15	879.54	4.77
P14334	870		0		0	869.34	0
P14432	870	L14430	861.4	CIRCULAR	36	867.05	111.97
P14436	874	L14434	870	CIRCULAR	15	872.3	10.48
P14438	874	L14438	871	CIRCULAR	15	873.07	13.61
P14440	872	ZC14422	871	RECT_OPEN		871.09	1.26
P14442	872	ZC14423	871	RECT_OPEN		871.47	21.25
P14446	872	ZC14456	870.5	RECT_OPEN		872.3	10.29
P14449	875	L14440	871.9	CIRCULAR	18	873.07	9.82
P14450	870	ZC14453	869	RECT_OPEN		869.16	6.09
P15102	876	C15334	875.2	RECT_OPEN		875.57	34.75
P15236	878	L15234	863.6	CIRCULAR	36	867.33	32.36
P15240	871.5	L15238	865	CIRCULAR	36	868.4	30.44
P15244	872	C15243	870	RECT_OPEN		870.52	87.92
P15246	872	C22145	872	RECT_OPEN		872.05	1.3
P15248	878	C15250	877	RECT_OPEN		873.45	0
P15250	874	C15246	873.2	RECT_OPEN		873.26	0.87
P15252	877	C15248	877	RECT_OPEN		875.78	0
P15350	874	L15348	867.46	CIRCULAR	36	870.96	80.07

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P15352	872	L15347	867.66	CIRCULAR	18	871.68	17.43
P15402	876		0		0	873.56	0
P16104	872	L16102	868	CIRCULAR	12	873.08	6.2
P16114	878	L16138	868.1	CIRCULAR	12	878.27	6.95
P16128	872	C16201	871	RECT_OPEN		870.53	0.2
P16140	873	L16254a	869	CIRCULAR	18	871.95	24.44
P16252	872	C15350	870.5	IRREGULAR		871.08	175.98
P16402	874	C16200	871	RECT_OPEN		872	44.07
P16404	874	L16402	872	CIRCULAR	15	873.32	4.59
P16406	874	L16404	871	CIRCULAR	15	873.48	8.72
P19E304	848	L19302	845	CIRCULAR	21	854.5	14.4
P22110	886	L22208	885	CIRCULAR	15	886.72	5.46
P22150	876	ZC23447	875.8	RECT_OPEN		875.94	4.09
P22208	886	L22206	881.4	CIRCULAR	15	884.6	5.87
P22216	874		0		0	873.07	0.13
P22220	876	L22218	872	CIRCULAR	15	876.51	8.27
P22402	872		0		0	871.11	7.22
P22404	872	L22402	868.5	CIRCULAR	15	871.03	11.91
P22406	874	L22404	868.4	CIRCULAR	15	871.03	3.99
P22408	872	ZC22408	867.72	TRAPEZOIDA		871.27	15.93
P22410	874	L22408	871	CIRCULAR	18	874.47	37.18
P22454	872	ZC22408A	866.47	TRAPEZOIDA		871.28	43.04
P23102	870	L23101	865.8	CIRCULAR	12	877.22	17.63
P23118	870	L24412	866	CIRCULAR	15	869.38	11.21
P23158	868	P23158	864	CIRCULAR	18	865.68	1.03
P23160	868	L23159	862.5	CIRCULAR	15	866.16	5.37
P23186	867.2	L23185	864.27	CIRCULAR	15	866.16	9.81
P23302	872		0		0	867.78	4.34
P23312	869		0		0	867.34	0.04
P23416	872	L23408	866.16	CIRCULAR	18	871.12	11.57
P23438	868	C23158	866	RECT_OPEN		867.08	36.78
P23444	872	C15241	868.9	RECT_OPEN		869.18	4.89
P23446	872	L23444	871	CIRCULAR	18	872.38	39.06
P24114	870	L24112	858.71	CIRCULAR	21	867.43	11.03
P24118	868.3	L24116	864.24	CIRCULAR	15	868.52	8.34
P24126	880	L24124	878	CIRCULAR	21	879.04	12.71
P24148	874	L24146	864.5	CIRCULAR	15	871.94	20.32
P24222	890	L24150	883.07	CIRCULAR	15	887.22	6.85
P24230	888	L24228	884	CIRCULAR	12	887.81	7.71
P24244	890	L24242	886	CIRCULAR	15	889.44	4.78
P24402	868	L24451	861	CIRCULAR	15	865.7	4.33
P24406	868	L24404	862.3	CIRCULAR	15	866.13	5.79

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P24426	868	L24425	864.2	CIRCULAR	15	866.31	6.66
P24440	868	L24138	857.4	CIRCULAR	15	865.93	6.03
P24450	866	L24448	862.04	CIRCULAR	18	865.35	12.42
P24452	872	L24449	870	CIRCULAR	18	872.17	13.52
P24454	872	C24450	871.2	RECT_OPEN		871.31	4.18

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P22302	870	L27116	864.5	CIRCULAR	12	866.38	2.42
P22304	870	L22302	866	CIRCULAR	15	866.69	3.87
P22306	888	C22304	887.6	RECT_OPEN		886.49	0
P27102	868	L27119	864.5	CIRCULAR	18	862.5	0
P27104	870	C27104	870.5	RECT_OPEN		869.49	0
P27106	872	C27108	871.2	RECT_OPEN		868.61	0
P27108	872		0			864.92	0
P27110	872	C27109	870.4	RECT_OPEN		867.02	0
P27112	872	C27107	870	RECT_OPEN		869.18	0
P27114	872	C27106	870.6	RECT_OPEN		869.75	0
P27116	870	C27411	870.3	RECT_OPEN		866.38	1.81
P27118	866		0		0	862.53	0.01
P27202	866	L27232	857.65	CIRCULAR	36	865.45	42.67
P27234	866	L27229	861.6	CIRCULAR	15	863.71	37.61
P27268	868	C27269	864.5	RECT_OPEN		864.78	7.32
P27270	866		0		0	862.59	0.02
P27276	880	C27270				873.81	0
P27302	867	L27344	858.2	CIRCULAR	15	866.01	12.46
P27316	866	L27301	865	CIRCULAR	24	865.51	2.21
P27330	866	L27328	858	CIRCULAR	18	865.43	8.49
P27338	862	C34176	862	RECT_OPEN		862.28	8.03
P27346	865	L27404	862	CIRCULAR	18	863.9	9.95
P27402	868	L27118	862.5	CIRCULAR	24	861.82	0.14
P27404	868	C27402	868.2	RECT_OPEN		867.36	0
P27406	868	C27403	868.2	RECT_OPEN		868.36	3.18
P27408	870		0		0	865.44	0
P27416	872	L27414	868	CIRCULAR	15	870.95	7.31
P27434	880	L27432	876	CIRCULAR	12	878.04	4.73
P27446	870	L27401	863.84	CIRCULAR	12	869.08	6.09
P27456	872		0		0	870.59	0
P34106	859	L34104	857.4	CIRCULAR	24	859.03	22.17
P34137	864	L34137	854	CIRCULAR	15	859.1	10.41
P34148	860	L34149	853.8	CIRCULAR	24	857.94	11.19
P34150	862	L34152	854.49	CIRCULAR	30	861.21	29.48
P34164	866		0		0	864.74	0
P34166	868		0		0	868.07	0
P34168	860		0		0	861.93	0
P34170	862	L34139	858.5	CIRCULAR	15	862.2	13.82
P34172	868		0		0	869.01	0
P34174	863.49	L27274	860.79	CIRCULAR	15	863.36	14.12
P34402	861	L34405	855.72	ARCH	36	860.68	8.09
P34408	860	C34106	858.5	RECT_OPEN		859.04	13.2

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P34410	862	C34408	862	RECT_OPEN		862.12	14.93
P34412	864	C34410	864	RECT_OPEN		864.08	7.99
P34414	862		0			860.49	0
P34416	862	C34414	862	RECT_OPEN		860.57	0
P35402	856	L35317	848.5	CIRCULAR	18	852.5	10.56
P35407	860	L35407	851	CIRCULAR	36	858.21	9.78
P35420	862	L35420	858	CIRCULAR	42	860.22	38.76
P35422	862	P35418	856.2	CIRCULAR	42	860.29	8.51
P35424	860		0		0	861.3	58.55
P35438	862	L35436	858	CIRCULAR	12	861.9	5.69
P35446	866		0		0	866.72	2.74
P35464	868	L35462	861.5	CIRCULAR	12	866.72	5.75
P35474	868	L35432	866.8	CIRCULAR	15	867.13	27.53
P35476	882		0		0	881.35	0
P35478	866		0		0	864.39	0
P35480	866		0		0	865.91	0

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P10242	884	C11340	883	RECT_OPEN		883.02	0.62
P10244	884	C10242	883.5	RECT_OPEN		883.56	0.4
P10246	878		0			875.15	0
P10248	878	C10246	876.3	RECT_OPEN		876.33	0.91
P10254	884	C10243	886.9	RECT_OPEN		882.35	0
P11104	884		0			885.69	0
P11106	882	C11105	880.6	RECT_OPEN		880.79	14.44
P11108	888	C11106	886.3	RECT_OPEN		878.38	0
P11110	884	C11107	882.9	RECT_OPEN		876.05	0
P11112	880	C11210	880.7	PARABOLIC		881.08	16.24
P11114	878	C11113	878	RECT_OPEN		878.15	10.05
P11116	882	L11118	877.7	CIRCULAR	18	879.35	1.75
P11118	878	L11120	873	CIRCULAR	18	874.13	9.15
P11202	874	L11211	868	CIRCULAR	12	870.59	3.12
P11206	876	L11204	871.5	CIRCULAR	24	872.93	10.64
P11208	878	C11205	875.9	PARABOLIC		873.89	0
P11210	878	C11208	877.4	PARABOLIC		877.62	1.23
P11212	878	C11215	875.5	TRAPEZOIDA		876.77	11.25
P11213	872.5	C11202	870	TRAPEZOIDA		870.66	8.41
P11306	886	C11104	885.1	RECT_OPEN		885.69	23.83
P11308	880	C11406	878.8	RECT_OPEN		875.6	0
P11310	881	C11308	880.1	RECT_OPEN		880.32	6.79
P11312	881	C11310	880.5	RECT_OPEN		880.69	12.39
P11314	881		0			880.69	1.34
P11316	876	C11407	872.1	CIRCULAR	18	872.92	7.51
P11318	878	C11316	877.5	RECT_OPEN		877.6	4.58
P11320	878	C11206	876.1	RECT_OPEN		876.48	40.08
P11338	874	C14436	872	RECT_OPEN		872.53	42.52
P11340	878	L11338	874	CIRCULAR	18	875.03	13.39
P11402	874		0		0	872.82	0
P11404	874	C11402	872.7	RECT_OPEN		873.03	44.2
P11406	878	C11404	877.5	RECT_OPEN		873.01	0
P11408	874	C11403	872.4	RECT_OPEN		873.5	73.31
P11410	882	C11408	880.5	RECT_OPEN		880.6	45.05
P12302	860	C12300	856	RECT_OPEN		856.73	44.89
P12304	862	C12302	860	RECT_OPEN		860.6	28.45
P12306	878	C12301	877.1	PARABOLIC		877.14	1.18
P12312	876	C12303	874	RECT_OPEN		874.23	30.27
P12313	860	L12306	857.8	CIRCULAR	15	858.07	9.44
P12314	858	C12307	856	TRAPEZOIDA		856.79	2.02
P13402	880		0			879.01	0
P13404	879	C13410	878.6	RECT_OPEN		878.37	0

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P13408	865	L13406	863.4	CIRCULAR	12	864.06	7.24
P13410	868	C13408	866.8	RECT_OPEN		866.87	2.3
P14106	876	L14104	874.5	CIRCULAR	12	876.69	5.87
P14108	881	C14106	880.2	RECT_OPEN		880.31	16.37
P14401	877.5	L14435	871.5	CIRCULAR	15.72	876.81	8.6
P14402	896		0		0	894.11	0
P14436	874	L14434	870	CIRCULAR	15	872.53	7.32
P15150	888	C10248	887.3	RECT_OPEN		884.28	0
P15152	888	C15150	888.7	RECT_OPEN		882.14	0

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P34304	848	P34304	841.96	CIRCULAR	24	848.9	35.63
P34311	854	P34311	850	CIRCULAR	15	853.49	5.3
P34316	856	P34316	851.95	CIRCULAR	15	855.68	6.5
P34418	856	P34418	850.1	CIRCULAR	24	859.81	28.94
P34434	856	P34434	852.96	CIRCULAR	15	859.31	6.98
P34451	854	P34451	849.12	CIRCULAR	18	853.57	9.56
P34452	854	P34452	849.32	CIRCULAR	18	853.57	5.24
P34460	858	P34460	853.21	CIRCULAR	27	856.34	10.54

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P01108	864	C01200	863.7	RECT_OPEN		863.42	0
P01304	858	C01301	856.5	RECT_OPEN		858.23	95.14
P01306	870	C01304	867.3	RECT_OPEN		867.53	18.81
P01307	864	C01303	862.7	RECT_OPEN		862.72	0.96
P01308	874	L01306	870	FILLED_CIR	18	871.78	7.33
P01314	870	C01305	869	RECT_OPEN		869.22	32.99
P01410	872	C01108	870.5	RECT_OPEN		870.8	40.47
P02110	890	C02208	888.9	RECT_OPEN		889.14	26.06
P02112	890	C02211	889.62	RECT_OPEN		889.85	8.99
P02114	900	C02112	899.5	RECT_OPEN		893.94	0
P02116	902	C02114	900	RECT_OPEN		900.03	0.26
P02206	868	C02204	858	IRREGULAR		861.94	474.75
P02208	864	C02205	863.8	RECT_OPEN		864.06	40.2
P02212	886	C01311	885.1	RECT_OPEN		885.12	2.26
P02310	872	C02209	871	RECT_OPEN		871.25	34.43
P02412	892	C02410	888.3	RECT_OPEN		888.59	39.25
P03212	874	C02310	873.5	RECT_OPEN		873.78	35.61
P03314	886	L03312	882	CIRCULAR	18	884.8	14.67
P03316	888	C03314	886.9	RECT_OPEN		888.71	37.84
P03330	886	C03315	884.9	RECT_OPEN		885	2.7
P03418	890	C03316	889	RECT_OPEN		889.45	37.09
P03432	892	L03419	889	CIRCULAR	18	889.5	3.34
P04220	896	C03418	892	RECT_OPEN		893.27	41.34
P05338	892	L05336	886	CIRCULAR	42	888.17	96.12
P05340	894	L05338	890	CIRCULAR	42	892.36	92.62
P05344	906	C08135	904.5	RECT_OPEN		905.96	111.92
P05346	908	C05344	905.6	RECT_OPEN		906.73	106.98
P05444	894	C05443	892	RECT_OPEN		891.96	1
P06148	900	C06146	899.5	RECT_OPEN		900.17	24.58
P06302	896		0		0	896.37	0
P06404	891	L04402	887	CIRCULAR	18	889.66	12.64
P06410	898	L06408	890	CIRCULAR	18	892.53	11.89
P06414	906	L06412	902	CIRCULAR	18	902.95	12.95
P06418	904	L06416	901	CIRCULAR	18	901.97	13.53
P06424	912	L06422	910	CIRCULAR	18	910.75	6.89
P07102	892	L07414	889	CIRCULAR	15	893.29	18.24
P07104	892	C07102	892.81	RECT_OPEN		893.3	15.7
P07106	892	L07107	889.2	CIRCULAR	24	894.08	19.6
P07107	892	L07102	889	CIRCULAR	24	893.61	13.23
P07112	892	L08410	890	ARCH	27.6	891.57	16.89
P07114	890	C08411	889.9	RECT_OPEN		890.35	24.31
P07116	894		0		0	892.03	0

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P07204	890	L07202	885	CIRCULAR	18	888.27	12.57
P07206	902	L07204	898	CIRCULAR	18	903.86	23.45
P07210	878	C07203	877	RECT_OPEN		877.13	4.18
P07340	880	C07338	879	IRREGULAR		880.01	8.34
P07414	892	C07112	893	RECT_OPEN		893.17	16.62
P08130	878	C08228	873	RECT_OPEN		875.53	468.11
P08134	884	C08132	880	RECT_OPEN		881.24	334.67
P08304	888	L08302	886	CIRCULAR	18	887.47	14.66
P08330	878	L08328	868	ARCH	60	871.38	197.28
P08406	888	C08304	887	RECT_OPEN		887.49	24.06
P08408	886		0			889.43	11.02
P08410	890	C08408	889.8	RECT_OPEN		889.99	28.99
P08412	890	C08409	889.5	RECT_OPEN		889.84	23.45
P08414	896	C08412	895.2	RECT_OPEN		895.54	36.2
P08416	886	L08408	882.2	CIRCULAR	15	887.82	10.99
P08418	896	L08407	891.7	CIRCULAR	18	892.58	13.62
P08420	900	L08418	893.5	CIRCULAR	15	897.67	10.8
P08430	880	C08229	879	RECT_OPEN		879.55	26.49
P08434	903	C08133	903	RECT_OPEN		901.73	0
P08436	904	C08434	904	RECT_OPEN		904.23	17.93
P09118	890	C09215	889	RECT_OPEN		889.04	3.22
P09120	902	C09118	899	RECT_OPEN		899.12	12.44
P09122	892	C09221	890.5	RECT_OPEN		890.63	12.07
P09124	900	C09122	898.2	RECT_OPEN		898.31	8.59
P09222	874	C09220	872.3	RECT_OPEN		872.37	1.96
P09320	872	L09218	864	ARCH	60	868.61	224.9
P09330	876	C09323	873.5	RECT_OPEN		873.73	9.8
P09422	890	C04220	899.27	RECT_OPEN		890.74	0
P09424	898	C09422	896.6	RECT_OPEN		893.25	0.17
P09426	896	L09324	893	CIRCULAR	15	893.57	3.15
P09428	894	L09326	892	CIRCULAR	15	892.96	1.53
P09432	892	L09330	886.5	CIRCULAR	15	889.68	7.11
P09434	890	L09123	889	CIRCULAR	15	886.81	1.31
P10114	890	L10112	886	HORIZ_ELLI	18	887.25	14.05
P10116	890	C10114	888.8	RECT_OPEN		888.99	5.47
P10118	890	C10116	889.1	RECT_OPEN		889.52	17.31
P10120	890	C10118	888.5	RECT_OPEN		889.51	4.1
P10122	890	L10122	888	CIRCULAR	15	888.99	4.54
P10214	890	C10413	889.8	RECT_OPEN		890.25	11.28
P10216	888	C10415	887.6	RECT_OPEN		886.02	0
P10412	867	L10110	863	ARCH	84	866.65	239.3
P10416	884	C10417	883.1	RECT_OPEN		883.28	41.7

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P10418	888	C10419	886	RECT_OPEN		886.37	29.76
P15424	876	C09222	875.3	RECT_OPEN		875.03	0
P15426	876	C15424	874.6	RECT_OPEN		875.03	11.75
P16424	892	C09325	890.4	RECT_OPEN		889.16	0
P17106	878	C17404	876.2	RECT_OPEN		875.57	0
P17108	898	C17106	897.2	RECT_OPEN		894.86	0
P17110	892	C17107	889.5	RECT_OPEN		889.82	51.69
P17124	886	C09321	885	RECT_OPEN		885.15	7.22
P17126	894	C08223	892.5	RECT_OPEN		892.59	11.54
P17402	880	C08329	878.2	RECT_OPEN		874.48	0
P17404	876	C17402	875.3	RECT_OPEN		875.4	1.41
P17407	880	L17405	878	CIRCULAR	15	874.94	0
P17409	874	C07233	873	RECT_OPEN		873.22	6.52
P17410	880	C17408	879.3	RECT_OPEN		878.92	0

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
1P	867	Link-40	858.5	CIRCULAR	18	869.6	128.05
2P	870	2 Pipe	864	CIRCULAR	21	869.74	106.97
3P	872	3 pipe	869	CIRCULAR	18	871.36	35.83
9P	869	9 outlet	867.16	CIRCULAR	15	869	3.36
P16300	900		0		0	900.63	0
P16302	900		0		0	900.92	0
P17200	888	C17307	888	RECT_OPEN		887.4	0
P17202	884		0			879.98	0
P17204	884	C17302	883.5	RECT_OPEN		883.61	4.17
P17300	872	C19105	872	RECT_OPEN		872.13	53.86
P17302	874	C17301	872	RECT_OPEN		872.21	68.53
P17304	874	C17300	872	RECT_OPEN		871.81	0.85
P17306	874		0		0	875.49	0
P17400	874	L17400	870.5	CIRCULAR	15	873.47	9.82
P17406	876	L174111	873.1	CIRCULAR	15	873.98	2.53
P17408	876	C17305	872	RECT_OPEN		872.47	25.65
P18100	876	C18102	883.6	RECT_OPEN		875.59	0
P18102	876		0			875.46	0
P18104	874	C18100	873.7	RECT_OPEN		875.59	24.52
P18106	874		0			873.03	0
P18108	874	C18106	874	RECT_OPEN		874.14	4.12
P18110	874	C18108	874	RECT_OPEN		873.83	0.73
P18112	874	C18107	874	RECT_OPEN		873.21	0
P18200	884		0			874.13	0
P18202	872	C19107	870	RECT_OPEN		871.87	73.89
P18300	886		0			868.89	185.16
P18334	885	C18332	881	RECT_OPEN		883.02	12.52
P18336	882		0			883.96	0
P18338	884		0			883.41	0
P18400	886	C18406	883.5	RECT_OPEN		883.98	59.76
P18402	894	C18400	886	RECT_OPEN		886.44	40.68
P18404	886	C18407	885.3	RECT_OPEN		885.75	61.07
P18406	884		0			880.25	0
P18408	882		0			881.64	0
P18410	878		0			875.15	0
P19100	874		0			871.87	0
P19102	888	C19109	886	RECT_OPEN		886.16	9.47
P19200	870	C20308	870	RECT_OPEN		869.37	0
P19202	872	C19101	875	RECT_OPEN		872.15	0
P19206	868	C19300	868	RECT_OPEN		868.23	70.98
P19304	858	C19302	856	RECT_OPEN		856.13	24.53
P19306	858	C19304	858	RECT_OPEN		858.17	12.06

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P19400	888	L19400	885	RECT_OPEN		886.71	58.52
P19402	884		0			886.05	0
P19404	882		0			879.79	0
P19406	882	C19404	880.6	RECT_OPEN		880.97	19.75
P19408	881		0			880.95	0
P19410	888	L19410	885	RECT_OPEN		886.46	42.42
P20100	880		0			875.12	0
P20102	880	C20100	880	RECT_OPEN		877.34	0
P20104	880		0			879.97	0
P20106	882	C20104	882	RECT_OPEN		882.15	8.17
P20200	874	C29107	874	RECT_OPEN		874.15	6.65
P20300	870		0			871.48	0
P20302	880	C29105	878	RECT_OPEN		878.54	31.26
P20304	868	C29104	868	RECT_OPEN		868.22	15.3
P20306	870	C20304	871.5	RECT_OPEN		871.04	0.49
P20308	868	C20305	868	RECT_OPEN		868.23	6.3
P20400	872	L20306	870	CIRCULAR	24	871.04	1.57
P20402	884	C20400	884	RECT_OPEN		884.06	5.16
P20404	878	C19103	878	RECT_OPEN		871.89	0
P21202-E	870	L28136-E	867	CIRCULAR	18	869.85	7.27
P21204-E	870	L21202-E	866.5	CIRCULAR	15	870.04	3.7
P21206-E	870	L21204-E	867	CIRCULAR	15	870.29	6.27
P21208-E	870	ZC21206-E	869	RECT_OPEN		870.29	24.82
P21210-E	872	ZC21208-E	871.4	RECT_OPEN		872.31	28.24
P21300	876	C21405	876	RECT_OPEN		875.96	0
P21400	876		0			868.77	0
P21402	882	L21400	876	CIRCULAR	24	877.87	24.3
P21404	881.9	C21401	881.1	RECT_OPEN		881.58	77.52
P21406	886	C21403	885.2	RECT_OPEN		885.58	43.85
P27306	862	L27301	862	CIRCULAR	18	863.46	3.48
P28102	867	L28100	860	ARCH	44.64	866.24	101.81
P28104	867	L28118	859	CIRCULAR	15	866.24	62.67
P28104-E	870	L28102-E	862.5	CIRCULAR	24	865.76	14.26
P28106-E	868	L28104-E	864	CIRCULAR	18	867.51	17.04
P28124	871.45	L28122	865.25	CIRCULAR	18	869.36	12.12
P28136-E	870	L28134-E	867	CIRCULAR	15	869.67	6.28
P28143-E	870	L28154-E	861.5	CIRCULAR	18	868.37	13.34
P28200	870		0		0	868	0
P28220	868.12	L28218	856	RECT_CLOSE	36	863.61	227.25
P28228	864.03	L28219	855.78	ARCH	72	863.44	110.35
P28242	864.6	L28240	858.49	CIRCULAR	42	865.28	28.57
P28244	864.86	L28237	859.5	ARCH	31.32	865.22	42.52

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P28248	864	L28246	858.84	CIRCULAR	33	865.67	22.47
P28258	862		0		0	862.24	0
P28304	864	L28302	850.79	CIRCULAR	42	861.32	80.46
P28310	865	L28201	853	CIRCULAR	48	862.97	138.87
P28320	866.12	L28318	859.24	CIRCULAR	48	865.56	62.21
P28326	865.43	L28244	860.36	ARCH	31.32	865.89	35.36
P28332	872		0		0	874.19	0
P28334	870	L28301	847	CIRCULAR	30	860.28	62.46
P28336	867	PipeÂ 16	858.5	CIRCULAR	15	864.62	9.45
P28342	865	PipeÂ 40	860	CIRCULAR	18	862.74	5.73
P28353	872		0		0	871.84	5.47
P28401	881		0		0	881.32	7.48
P28402	879		0		0	877.36	10.78
P28403	872	L28422	866	CIRCULAR	27	867.38	6.13
P28404	872.18	L28424	869.16	CIRCULAR	21	871.69	8.12
P28405	871.45	L28425	868.17	CIRCULAR	24	870.94	11.23
P28406	870.85	L28427	867.34	CIRCULAR	24	870.16	13.99
P28407	870.05	L28428	866.52	CIRCULAR	24	869.09	16.78
P28408	871	L28406	854	RECT_CLOSE	24	865.41	130.07
P28409	871.7	L28440	869.18	CIRCULAR	18	870.37	3.66
P28410	870	L28439	868.09	CIRCULAR	18	870	6.65
P28411	869.8	L28441	867.21	CIRCULAR	18	869.8	6.2
P28412	868	L28410	862	CIRCULAR	48	865.42	33.16
P28413	869.5	L28442	866.35	CIRCULAR	18	869.11	4.21
P28414	868	C28412	862	TRAPEZOIDA		865.43	32.01
P28415	868.86	Link-30	865.24	CIRCULAR	21	868.57	8.42
P28416	867	L28414	862.7	CIRCULAR	30	868.19	85.74
P28417	868.54	Link-31	864.42	CIRCULAR	24	868.31	4.07
P28418	868	C28416	862.7	IRREGULAR		868.19	17.35
P28420	868	L28449	865	CIRCULAR	15	863.93	2.13
P28440	865.5		0		0	865.08	14.1
P28441	868	LROut	865.7	TRAPEZOIDA		861.3	0
P28472	866.13	L28470	860.61	CIRCULAR	33	866.37	27.27
P28474	866.93	L28472	860.76	CIRCULAR	33	867.2	30.2
P28486	869.19	L28484	863.07	CIRCULAR	27	869.3	18.69
P28492	870	L28490	857.67	CIRCULAR	36	868.9	41.6
P29100	872	C29207	871.5	RECT_OPEN		870.89	10.42
P29102	874	L29100	868.53	CIRCULAR	18	870.13	4.59
P29104	869	L28416	864	CIRCULAR	24	867.93	23.22
P29202	856	C29200	854	RECT_OPEN		854.66	82.46
P29204	864	C29205	863.5	RECT_OPEN		863.8	11.53
P29304	858	C29203	857.5	RECT_OPEN		860.09	17.72

Pond ID	Ground Elev	DS Link	Outlet Invert Elevation (ft)	Outlet Shape	Outlet Size	100 Year Peak Elev (ft)	Peak Outflow (cfs)
P29400	870	C29304	869.5	RECT_OPEN		870.28	57.57
P29402	878	C29400	877	RECT_OPEN		877.41	41.19
P29404	878		0			880.58	0
P33402	862	C33400	861.5	RECT_OPEN		856.65	0
P34400	862	L27308	862	ARCH	18	864.18	15.7
P34402	862	C34400	862	RECT_OPEN		864.63	15.21
P34404	862	C34402	862	RECT_OPEN		864.63	18.96
P34406	862	C34404	862	RECT_OPEN		864.63	5.28
P-6	876	Link-35	866	CIRCULAR	36	874.5	243.75

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
D43-P559	P25454	P24366	100.00	4.00	CIRCULAR	12	12	7.13	867.52	860.62	7.08	No
L23138	CB23240	CB23238	19.83	0.35	CIRCULAR	18	18	6.24	880.22	879.94	9.12	Yes
L23200	CB23200	P23320	304.00	3.49	CIRCULAR	15	15	12.06	876.28	863.74	6.60	No
L23202	CB23204	P23202	50.00	0.60	CIRCULAR	24	24	17.52	880.59	880.56	14.00	Yes
L23203	CB23244	P23202	48.00	0.96	CIRCULAR	18	18	10.28	880.82	880.56	9.84	Yes
L23204	CB23206	CB23204	155.04	2.68	CIRCULAR	18	18	17.19	885.33	880.59	14.64	Yes
L23206	CB23208	CB23206	204.40	1.78	CIRCULAR	12	12	4.75	887.05	885.33	2.01	Yes
L23207	CB23212	CB23206	200.86	2.09	CIRCULAR	12	12	5.15	887.2	885.33	3.56	Yes
L23208	CB23110	CB23208	164.70	0.84	CIRCULAR	12	12	3.26	885.26	887.05	2.21	No
L23213	CB23214	CB23206	209.07	0.82	CIRCULAR	12	12	3.23	887.62	885.33	5.16	Yes
L23214	CB23216	CB23214	290.15	0.70	CIRCULAR	12	12	2.98	887.31	887.62	3.40	Yes
L23218	CB23220	P23218	161.77	3.14	CIRCULAR	12	12	6.31	881.03	874.33	8.14	Yes
L23219	CB23228	CB23220	230.80	0.36	CIRCULAR	12	12	2.15	876.71	881.03	4.51	No
L23220	CB23222	CB23220	334.25	0.54	CIRCULAR	12	12	2.61	886.96	881.03	5.69	Yes
L23221	CB23226	CB23220	110.70	0.53	CIRCULAR	12	12	2.60	882.52	881.03	4.04	Yes
L23222	CB23224	CB23222	164.49	2.53	CIRCULAR	12	12	5.67	889.22	886.96	4.49	Yes
L23232	CB23234	CB23232	221.08	0.27	CIRCULAR	18	18	5.43	878.15	873.91	8.06	No
L23234	CB23236	CB23234	42.31	0.21	CIRCULAR	18	18	4.84	878.57	878.15	8.06	Yes
L23236	CB23238	CB23236	213.89	0.25	CIRCULAR	18	18	5.28	879.94	878.57	8.06	Yes
L23240	P23202	CB23240	30.00	0.33	CIRCULAR	18	18	6.06	880.56	880.22	14.05	Yes
L23244	CB23246	CB23244	207.72	0.71	CIRCULAR	18	18	8.84	885.85	880.82	9.84	Yes
L23246	CB23248	CB23246	231.66	2.58	CIRCULAR	15	15	10.37	884.03	885.85	4.88	No
L23301	CB23302	J23316	116.00	2.10	CIRCULAR	27	27	44.92	867.95	862.44	26.43	No
L23302	CB23304	CB23302	55.85	1.00	CIRCULAR	21	21	15.87	869.85	867.95	23.11	Yes
L23304	CB23306	CB23304	139.87	0.99	CIRCULAR	18	18	10.47	872.16	869.85	12.49	Yes
L23306	CB23308	CB23306	203.63	0.78	CIRCULAR	15	15	5.71	876.99	872.16	9.50	Yes
L23308	P23310	CB23308	232.32	0.87	CIRCULAR	15	15	6.02	870.51	876.99	3.21	No
L23311	CB23312	J23316	114.00	4.52	CIRCULAR	15	15	13.73	867.98	862.44	3.26	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L23313	CB23314	P23320	180.00	0.71	CIRCULAR	15	15	5.43	868.97	863.74	3.02	No
L23320	P23400	P23320	140.00	0.14	CIRCULAR	24	24	8.55	865.35	863.74	7.28	No
L23321	CB23230	P23320	160.00	1.88	CIRCULAR	18	18	14.38	870.06	863.74	14.14	No
L23400	P23402	P23400	310.00	0.16	CIRCULAR	42	42	35.02	866.69	865.35	23.80	No
L23402	P23404	P23402	630.00	0.24	CIRCULAR	24	24	11.04	867.54	866.69	9.09	No
L23404	P23406	P23404	190.00	1.05	CIRCULAR	18	18	10.78	868.77	867.54	5.59	No
L24112	CB24314	CB24312	168.09	0.32	CIRCULAR	12	12	2.00	877.02	875.71	0.00	No
L24212	CB24214	P24212	196.00	0.09	CIRCULAR	18	18	3.18	862.16	859.61	12.76	Yes
L24213	P24322	P24212	48.00	0.54	CIRCULAR	12	12	2.62	860.27	859.61	3.83	Yes
L24214	CB24216	CB24214	227.10	0.11	CIRCULAR	18	18	3.55	862.17	862.16	3.02	Yes
L24216	CB24218	CB24216	138.13	0.10	CIRCULAR	18	18	3.34	862.11	862.17	3.05	Yes
L24218	CB24218	CB25104	177.74	1.16	CIRCULAR	18	18	11.31	862.11	859.49	12.67	Yes
L24219	CB24220	CB24218	162.72	0.92	CIRCULAR	12	12	3.42	868.13	862.11	5.52	No
L24266	CB24302	P24366	570.00	1.40	CIRCULAR	27	27	31.80	870.56	860.62	4.29	No
L24302	CB24304	CB24302	365.76	0.23	CIRCULAR	15	15	3.10	873.11	870.56	4.29	No
L24304	CB24306	CB24304	248.53	0.17	CIRCULAR	15	15	2.66	874.3	873.11	4.29	Yes
L24306	CB24308	CB24306	218.54	0.17	CIRCULAR	15	15	2.66	875.36	874.3	4.29	Yes
L24308	P24310	CB24308	77.00	0.48	CIRCULAR	15	15	4.48	875.7	875.36	3.92	Yes
L24310	CB24312	P24310	40.00	0.50	CIRCULAR	24	24	16.00	875.71	875.7	18.62	Yes
L24312	CB24314	CB24312	168.04	0.30	CIRCULAR	24	24	12.34	877.02	875.71	18.62	Yes
L24314	CB24316	CB24314	461.23	0.61	CIRCULAR	18	18	8.20	880.75	877.02	10.12	Yes
L24316	CB24318	CB24316	345.34	0.82	CIRCULAR	15	15	5.85	881.84	880.75	4.81	Yes
L24321	P24324	P24322	48.00	0.35	CIRCULAR	12	12	2.12	861.39	860.27	3.64	No
L24323	CB24330	P24322	20.00	0.35	CIRCULAR	15	15	3.82	860.27	860.27	7.50	Yes
L24324	P24326	P24324	610.00	0.49	CIRCULAR	15	15	4.53	863.02	861.39	3.96	No
L24326	CB25128	P24326	154.00	1.30	CIRCULAR	15	15	7.36	865.35	863.02	5.37	No
L24331	CB24332	P24330	133.00	0.45	CIRCULAR	24	24	15.19	863.64	863.6	15.03	Yes
L24332	CB24334	CB24332	125.88	0.47	CIRCULAR	24	24	15.49	863.64	863.64	11.61	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L24333	CB24342	CB24332	76.09	1.25	CIRCULAR	24	24	25.28	863.64	863.64	11.51	No
L24334	CB24336	CB24334	65.55	0.24	CIRCULAR	18	18	5.19	863.92	863.64	9.00	Yes
L24336	CB24338	CB24336	113.46	1.60	CIRCULAR	15	15	8.16	864.51	863.92	5.23	No
L24338	CB24340	CB24338	68.00	7.51	CIRCULAR	15	15	15.35	869.07	864.51	2.57	No
L24344	CB24346	CB24344	261.34	0.23	CIRCULAR	24	24	10.84	864.85	863.64	7.14	No
L24346	CB24348	CB24346	196.90	0.23	CIRCULAR	24	24	10.81	865.08	864.85	6.20	No
L24348	P24350	CB24348	36.00	0.19	CIRCULAR	12	12	1.57	866.65	865.08	6.19	Yes
L24350	CB24352	P24350	171.00	7.60	CIRCULAR	12	12	9.82	878.46	866.65	4.29	No
L24354	CB24356	P24354	36.00	1.39	CIRCULAR	24	24	26.66	867.06	865.08	27.79	No
L24356	CB24358	CB24356	194.91	1.80	CIRCULAR	24	24	30.31	870.64	867.06	27.93	Yes
L24357	CB24364	CB24358	163.15	0.61	CIRCULAR	12	12	2.79	872.67	870.64	4.11	Yes
L24358	CB24360	CB24358	428.23	3.74	CIRCULAR	24	24	37.90	884.98	870.64	18.46	No
L24359	CB24362	CB24358	36.32	3.30	CIRCULAR	12	12	6.48	881	870.64	7.00	Yes
L24366	P24368	P24366	100.00	0.20	CIRCULAR	18	18	4.07	861.2	860.62	3.36	No
L24368	CB24370	P24368	65.00	0.31	CIRCULAR	15	15	3.58	866.27	861.2	12.08	Yes
L24369	CB24374	P24368	52.00	0.96	CIRCULAR	15	15	6.33	862.44	861.2	4.57	No
L24370	CB24372	CB24370	247.55	1.94	CIRCULAR	15	15	9.00	871.07	866.27	9.45	Yes
L24374	CB24392	P24374	67.00	0.60	CIRCULAR	15	15	4.99	864.29	862.08	8.46	No
L24375	CB24376	P24374	135.00	0.19	CIRCULAR	21	21	6.82	864.91	862.08	14.30	No
L24376	CB25478	CB24376	427.93	0.68	CIRCULAR	21	21	13.07	868.33	864.91	13.65	Yes
L24387	P24392	CB24388	27.82	3.63	CIRCULAR	12	12	6.79	864.99	864.86	3.74	No
L24388	CB24388	CB24376	209.48	0.35	CIRCULAR	15	15	3.84	864.86	864.91	2.17	Yes
L24389	CB24390	CB24388	213.97	0.24	CIRCULAR	15	15	3.15	860.41	864.86	2.72	No
L24390	J24390	P24391	73.71	4.07	CIRCULAR	18	18	18.37	861.19	861.19	0.60	No
L24391	J24391	P24389	16.00	4.63	CIRCULAR	18	18	19.58	869.91	860.84	12.42	No
L24392	J24392	J24391	148.00	0.50	CIRCULAR	18	18	6.44	873.34	869.91	12.41	Yes
L24393	J24393	J24392	337.00	0.50	CIRCULAR	18	18	6.47	875.36	873.34	7.17	Yes
L24394	J24394	J24393	289.00	0.61	CIRCULAR	18	18	7.08	875.71	875.36	7.17	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L24395	J24395	J24394	96.01	1.84	CIRCULAR	15	15	7.60	871.75	875.71	9.83	Yes
L24396	CB23228	J24395	248.00	3.40	CIRCULAR	15	15	10.32	876.71	871.75	6.41	No
L24TH47	P24366	P24212	129.00	0.50	CIRCULAR	15	15	4.59	860.62	859.61	1.18	No
L24TH47-1	P24212	J24tH47-1	40.00	0.12	Arch	11	18	1.76	859.61	860.1	3.85	No
L24TH47-2	J24tH47-1	J24TH47-2	197.00	0.14	Arch	11	18	1.88	860.1	861.46	3.85	Yes
L24TH47-3	J24TH47-2	P24374	72.00	0.18	Arch	11	18	2.12	861.46	862.08	3.85	Yes
L24TH47-4	P24374	J24TH47-3	153.86	0.08	Arch	11	18	1.45	862.08	861.25	3.32	Yes
L24TH47-5	J24TH47-3	J24TH47-4	192.00	0.15	Arch	11	18	1.94	861.25	860.48	3.32	Yes
L24TH47-6	J24TH47-4	D43-CB444	270.00	0.15	Arch	11	18	1.69	860.48	860.42	3.32	Yes
L24TH47-7	D43-CB444	CB24390	30.00	0.27	Arch	11	18	2.58	860.42	860.41	3.32	Yes
L25100	CB25102	O-25-1-02	292.23	3.10	CIRCULAR	30	30	72.22	854.27	844.99	53.25	No
L25102	CB25104	CB25102	420.00	0.54	CIRCULAR	30	30	30.09	859.49	854.27	37.32	No
L25104	CB25106	CB25104	360.02	0.47	CIRCULAR	27	27	21.28	860.34	859.49	13.73	Yes
L25105	CB25108	CB25104	219.32	0.23	CIRCULAR	18	18	4.35	867.63	859.49	12.99	No
L25106	CB25110	CB25106	186.34	9.03	CIRCULAR	15	15	19.41	876.53	860.34	7.05	No
L25108	CB24390	CB25106	375.86	0.13	CIRCULAR	27	27	11.07	860.41	860.34	6.28	Yes
L25114	CB25116	CB25114	349.60	0.21	CIRCULAR	18	18	4.87	864	861.51	8.89	Yes
L25116	CB25118	CB25116	105.68	0.47	CIRCULAR	12	12	2.45	862.94	864	6.07	Yes
L25118	CB25420	CB25118	218.94	2.28	CIRCULAR	12	12	5.38	863.57	862.94	3.31	Yes
L25120	CB25122	O-25-1-01	215.00	7.44	CIRCULAR	18	18	28.66	866.72	851.9	13.43	No
L25200	CB25202	O-25-2-05	163.41	0.31	CIRCULAR	24	24	12.51	854.61	853.91	6.59	No
L25202	P25204	CB25202	115.84	0.43	CIRCULAR	24	24	14.86	854.94	854.61	6.38	No
L25204	CB25114	P25204	220.00	0.34	CIRCULAR	18	18	6.13	861.51	854.94	8.89	No
L25206	CB25208	O-25-2-04	214.21	0.23	CIRCULAR	18	18	5.07	853.49	850.71	9.84	No
L25210	CB25212	O-25-2-03	220.00	2.93	CIRCULAR	18	18	17.97	852.14	849	9.50	Yes
L25214	P25216	O-25-2-01a	140.00	0.21	CIRCULAR	48	48	66.49	850.12	849.34	37.96	No
L25216	CB25218	P25216	130.00	0.37	CIRCULAR	48	48	87.28	850.27	850.12	46.85	No
L25218	CB25220	CB25218	274.00	0.19	CIRCULAR	42	42	43.83	851.47	850.27	42.23	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L25220	CB25222	CB25220	133.11	0.44	CIRCULAR	30	30	27.31	852.51	851.47	26.78	No
L25221	CB25232	CB25220	555.34	0.61	CIRCULAR	15	15	5.02	857.93	851.47	7.32	Yes
L25222	CB25224	CB25222	575.08	0.39	CIRCULAR	30	30	25.54	854.17	852.51	20.82	No
L25224	CB25226	CB25224	59.08	0.41	CIRCULAR	27	27	19.74	854.68	854.17	18.22	No
L25225	CB25236	CB25220	349.00	0.10	CIRCULAR	36	36	21.42	851.55	851.47	20.46	No
L25226	CB25228	CB25226	296.51	0.42	CIRCULAR	24	24	14.75	855.22	854.68	9.79	No
L25228	CB25230	CB25228	133.48	0.78	CIRCULAR	12	12	3.14	858.41	855.22	5.27	Yes
L25232	CB36136	CB25232	208.57	0.48	CIRCULAR	12	12	2.47	859.19	857.93	4.91	Yes
L25233	CB25234	CB25232	76.26	3.93	CIRCULAR	12	12	7.07	858.65	857.93	3.82	Yes
L25236	P36400	CB25236A	236.00	0.33	CIRCULAR	36	36	38.59	852.43	851.55	20.25	No
L25236A	CB25236A	CB25236	90.00	0.71	CIRCULAR	36	36	56.25	851.55	851.55	20.26	No
L25301	CB25302	P36400	40.00	0.18	CIRCULAR	15	15	2.70	855.3	852.43	12.68	Yes
L25302	P25304	CB25302	89.63	0.30	CIRCULAR	15	15	3.55	855.07	855.3	7.72	Yes
L25303	FES25301	CB25340	217.12	1.65	CIRCULAR	15	15	8.29	867.84	864.35	7.64	Yes
L25306	CB25306	P25304	140.00	0.17	CIRCULAR	24	24	9.37	855.22	855.07	16.95	Yes
L25307	CB25308	P36400	172.00	0.10	CIRCULAR	36	36	20.97	853.55	852.43	41.24	No
L25308	CB25310	CB25308	280.08	0.10	CIRCULAR	36	36	21.46	854.18	853.55	29.32	Yes
L25310	CB25312	CB25310	314.81	0.10	CIRCULAR	36	36	20.59	855.49	854.18	22.58	Yes
L25312	CB25314	CB25312	289.61	0.09	CIRCULAR	24	24	6.78	854.74	855.49	6.79	Yes
L25313	CB25316	CB25312	170.00	0.29	CIRCULAR	30	30	22.02	854.87	855.49	16.13	Yes
L25316	CB25318	CB25316	154.03	0.14	CIRCULAR	27	27	11.70	855.09	854.87	14.69	Yes
L25317	CB36418	CB25312	129.05	0.42	CIRCULAR	12	12	2.30	856.5	855.49	3.35	Yes
L25318	CB25320	CB25318	145.08	0.05	CIRCULAR	27	27	6.80	855.12	855.09	14.59	Yes
L25319	P25317	P26200	164.00	1.15	CIRCULAR	12	12	3.82	863.95	856.67	4.45	No
L25320	CB25322	CB25320	112.54	0.08	CIRCULAR	27	27	8.76	855.11	855.12	14.26	Yes
L25321	P25319	CB25331	10.00	2.00	CIRCULAR	15	15	9.14	866.9	862.5	3.08	No
L25322	CB25324	CB25322	184.35	0.20	CIRCULAR	27	27	13.87	855.03	855.11	14.06	Yes
L25323	CB25323	CB25325	421.45	0.88	CIRCULAR	18	18	9.87	870.44	867.47	0.89	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L25324	CB25326	CB25324	93.53	0.10	CIRCULAR	27	27	9.61	855.32	855.03	14.06	Yes
L25325	CB25325	CB25328	493.16	0.50	CIRCULAR	24	24	15.95	867.47	865.54	8.68	No
L25327	CB25327	CB25325	203.11	1.88	CIRCULAR	15	15	8.86	872.24	867.47	8.68	No
L25328	CB25330	P25328	112.00	0.18	CIRCULAR	18	18	4.44	860.03	855.33	20.99	Yes
L25329	P25321	CB25329	283.09	-0.16	CIRCULAR	15	15	2.60	876.61	876.29	0.89	No
L25330	CB25332	CB25330	228.73	0.44	CIRCULAR	18	18	6.95	860.14	860.03	10.16	Yes
L25331	CB25329	CB25360	53.35	1.48	CIRCULAR	18	18	12.78	876.29	875.76	0.89	No
L25332	CB25335	CB25332	466.28	0.21	CIRCULAR	18	18	4.86	861.04	860.14	7.57	Yes
L25334	CB25336	CB25335	400.04	0.20	CIRCULAR	15	15	2.89	861.16	861.04	4.57	Yes
L25336	CB25338	CB25336	99.80	0.20	CIRCULAR	15	15	2.89	861.2	861.16	4.82	Yes
L25339	CB25331	P25328	72.05	0.28	CIRCULAR	15	15	3.40	862.5	855.33	12.01	Yes
L25340	CB25340	CB25341	99.97	0.17	CIRCULAR	18	18	4.33	864.35	863.47	7.64	No
L25341	CB25341	CB25342	170.25	0.64	CIRCULAR	18	18	8.41	863.47	861.02	7.59	No
L25342	CB25342	CB25344	186.28	0.27	CIRCULAR	30	30	21.25	861.02	865.82	12.53	Yes
L25344	CB25344	P25315	179.99	0.22	CIRCULAR	30	30	19.34	865.82	860.97	17.49	Yes
L25346	CB25346	CB25348	57.18	0.38	CIRCULAR	15	15	4.01	886.17	885.33	6.06	Yes
L25348	CB25348	CB25350	140.92	0.30	CIRCULAR	15	15	3.53	885.33	878.81	6.06	No
L25350	CB25350	P25321	198.40	0.25	CIRCULAR	15	15	3.21	878.81	876.61	6.05	No
L25352	CB25352	CB25354	65.35	0.58	CIRCULAR	12	12	2.72	876.61	876.61	0.00	No
L25354	CB25354	P25321	177.99	0.29	CIRCULAR	18	18	5.68	876.61	876.61	0.05	No
L25356	CB25356	CB25358	38.14	1.18	CIRCULAR	12	12	3.87	875.76	875.76	0.07	No
L25358	CB25358	CB25360	158.78	1.37	CIRCULAR	18	18	12.28	875.76	875.76	0.38	No
L25360	CB25360	CB25323	209.09	-0.21	CIRCULAR	18	18	4.76	875.76	870.44	0.89	No
L25362	FES25362	CB25364	150.25	3.37	CIRCULAR	15	15	11.87	872.05	866.98	0.00	No
L25364	CB25364	CB25342	160.13	3.73	CIRCULAR	15	15	12.48	866.98	861.02	0.00	No
L25366	CB25366	CB25368	145.00	1.12	CIRCULAR	12	12	3.77	878.83	876.8	3.35	No
L25368	CB25368	CB25370	101.00	3.18	CIRCULAR	12	12	6.35	876.8	867.21	3.28	No
L25370	CB25370	P25319	295.12	0.78	CIRCULAR	18	18	9.29	867.21	866.9	3.25	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L25372	CB25372	CB25370	53.00	0.32	CIRCULAR	12	12	2.02	867.21	867.21	0.03	No
L25374	CB25374	P25319	53.00	0.81	CIRCULAR	12	12	3.21	866.9	866.9	0.01	No
L25376	CB25376	P25319	49.00	0.59	CIRCULAR	18	18	8.08	866.9	866.9	0.01	No
L25400	P25400	P24366	1295.66	0.39	CIRCULAR	15	15	4.01	866.75	860.62	2.45	No
L25402	P25402	CB25442	193.44	1.66	CIRCULAR	18	18	13.53	873.16	870.79	12.48	Yes
L25404	CB25404	P24366	143.00	0.35	CIRCULAR	15	15	3.82	863.37	860.62	6.31	No
L25405	CB25406	P24366	142.00	0.14	CIRCULAR	21	21	5.95	865.14	860.62	19.06	No
L25406	CB25408	CB25406	191.02	0.19	CIRCULAR	21	21	6.88	866.77	865.14	15.50	Yes
L25408	CB25410	CB25408	131.76	0.45	CIRCULAR	21	21	10.60	867.22	866.77	11.74	Yes
L25410	CB25412	CB25410	444.78	2.21	CIRCULAR	15	15	9.61	876.08	867.22	8.95	Yes
L25413	CB25414	P24366	120.00	0.42	CIRCULAR	18	18	6.78	864	860.62	8.40	No
L25414	CB25416	CB25414	256.00	0.23	CIRCULAR	18	18	5.00	864.54	864	5.85	Yes
L25416	CB25418	CB25416	179.01	0.61	CIRCULAR	15	15	5.04	863.94	864.54	5.10	Yes
L25418	P26176	CB25418	120.00	0.18	CIRCULAR	15	15	2.77	864.74	863.94	5.10	Yes
L25420	P25424	CB25420	27.10	3.69	CIRCULAR	12	12	6.84	863.62	863.57	1.66	Yes
L25424	CB25422	P25424	63.00	3.97	CIRCULAR	15	15	12.87	866.88	863.62	2.20	No
L25425	P25426	P25424	237.73	0.21	CIRCULAR	15	15	2.96	857.32	863.62	1.04	No
L25432	CB25434	CB25432	95.62	0.52	CIRCULAR	18	18	7.60	881.21	880.56	0.22	No
L25436	CB25438	CB25436	414.27	1.45	CIRCULAR	15	15	7.77	880.08	879.87	6.01	Yes
L25438	CB25440	CB25438	42.73	0.47	CIRCULAR	15	15	4.42	880.24	880.08	5.44	Yes
L25439	P25442	CB25438	157.24	1.27	CIRCULAR	12	12	4.02	879.06	880.08	4.02	Yes
L25444	P25454	CB25444	180.08	0.28	CIRCULAR	18	18	5.54	867.52	865.75	7.39	No
L25445	CB25447	CB25444	223.34	1.00	CIRCULAR	15	15	6.47	871.24	865.75	7.20	No
L254454	CB25442	P25454	146.97	1.22	CIRCULAR	18	18	11.59	870.79	867.52	12.77	Yes
L25446	CB25444	CB25446	72.39	5.37	CIRCULAR	21	21	36.73	865.75	864.45	13.87	No
L25447	P25456	CB25446	58.38	3.24	CIRCULAR	12	12	6.41	865.14	864.45	4.68	Yes
L25448	CB25446	CB25448	66.72	0.91	CIRCULAR	24	24	21.63	864.45	863.9	16.57	Yes
L25450	CB25448	CB25450	215.21	0.23	CIRCULAR	24	24	10.90	863.9	862.44	17.73	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L25452	CB25450	CB25452	222.88	0.36	CIRCULAR	24	24	13.55	862.44	860.83	18.25	No
L25454	CB25452	P25458	115.80	0.43	CIRCULAR	24	24	14.87	860.83	860	19.98	Yes
L25468	CB25466	CB25468	47.11	1.13	CIRCULAR	12	12	3.78	875.71	875.69	2.33	Yes
L25469	CB25466	CB25468	47.30	1.12	CIRCULAR	12	12	3.77	875.71	875.69	2.09	Yes
L25478	CB25486	CB25478	57.35	0.51	CIRCULAR	15	15	4.59	868.78	868.33	6.70	Yes
L25479	CB25480	CB25478	137.75	2.06	CIRCULAR	15	15	9.28	870.92	868.33	8.67	Yes
L25480	CB25482	CB25480	336.30	0.15	CIRCULAR	15	15	2.49	871.36	870.92	4.30	Yes
L25482	P25484	CB25482	98.15	1.53	CIRCULAR	12	12	4.40	870.98	871.36	2.71	No
L25488	P25488	P25490	210.00	0.00	CIRCULAR	18	18	0.23	876.34	876.34	0.85	Yes
L26102	CB26104	CB26102	71.73	0.78	CIRCULAR	15	15	5.71	867.57	867.3	4.71	Yes
L26104	CB26106	CB26104	108.03	0.78	CIRCULAR	12	12	3.14	867.55	867.57	2.53	Yes
L26106	CB26110	CB26106	173.29	0.78	CIRCULAR	12	12	3.14	867.67	867.55	2.51	Yes
L26110	P26112	CB26110	25.76	0.70	CIRCULAR	12	12	2.98	867.69	867.67	2.17	Yes
L26113	CB26114	J26186	85.00	2.35	CIRCULAR	12	12	5.47	863.55	860.93	5.42	No
L26115	CB26116	J26184	75.00	0.37	CIRCULAR	15	15	3.95	863.33	860.8	8.21	No
L26117	P26118	J26186	125.00	0.16	CIRCULAR	24	24	9.05	861.51	860.93	9.38	No
L26118	CB26122	P26118	52.00	0.38	CIRCULAR	24	24	14.03	862.65	861.51	12.71	No
L26119	CB26120	P26118	45.00	1.11	CIRCULAR	15	15	6.81	865.03	861.51	7.39	No
L26123	CB26124	CB26122	81.07	0.74	CIRCULAR	15	15	5.56	865.37	862.65	2.10	No
L26124	CB26126	CB26122	397.31	0.80	CIRCULAR	18	18	9.40	865.83	862.65	9.37	Yes
L26126	CB26456	CB26126	646.00	0.63	CIRCULAR	18	18	8.36	869.24	865.83	6.27	No
L26127	CB26128	J26180	130.00	1.21	CIRCULAR	27	27	34.09	861.99	860.03	15.23	No
L26128	CB26134	CB26128	97.50	1.38	CIRCULAR	18	18	12.36	862.81	861.99	5.41	No
L26129	CB26130	CB26128	317.70	1.98	CIRCULAR	15	15	9.09	867.73	861.99	5.07	No
L26130	CB26132	CB26130	204.02	1.87	CIRCULAR	12	12	4.88	871.49	867.73	3.30	No
L26134	CB26138	CB26134	176.50	1.04	CIRCULAR	18	18	10.73	864.61	862.81	4.00	No
L26135	P26136	CB26134	235.90	3.76	CIRCULAR	15	15	12.53	871.31	862.81	1.73	No
L26138	CB26142	CB26138	199.09	0.86	CIRCULAR	15	15	6.00	865.68	864.61	0.00	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L26139	CB26140	CB26138	62.22	1.19	CIRCULAR	12	12	3.89	872.28	864.61	4.05	No
L26145	CB26146	J26180	138.00	1.30	CIRCULAR	24	24	25.84	864.21	860.03	17.40	No
L26146	CB26148	CB26146	307.50	0.47	CIRCULAR	21	21	10.81	866.41	864.21	12.72	No
L26148	CB26186	CB26148	664.02	0.47	CIRCULAR	21	21	10.86	868.58	866.41	9.11	No
L26149	CB26150	J26182	73.00	5.89	CIRCULAR	12	12	8.65	864.34	860.4	4.41	No
L26151	CB26152	J26182	92.00	3.59	CIRCULAR	15	15	12.23	863.5	860.4	5.57	No
L26153	CB26156	CB26154	83.15	0.36	CIRCULAR	18	18	6.31	860.89	860.64	5.28	No
L26154	P26158	CB26156	118.00	0.42	CIRCULAR	18	18	6.84	861.21	860.89	5.28	No
L26156	CB26162	CB26160	167.01	0.34	CIRCULAR	15	15	3.74	866.09	864.27	7.59	Yes
L26158	CB26160	P26158	51.00	0.33	CIRCULAR	15	15	3.73	864.27	861.21	10.81	Yes
L26159	CB26166	P26158	156.00	5.45	CIRCULAR	15	15	15.08	875.7	861.21	15.58	Yes
L26162	CB26164	CB26162	76.83	0.35	CIRCULAR	12	12	2.11	866.1	866.09	4.32	Yes
L26166	CB25468	CB26166	235.65	0.70	CIRCULAR	15	15	5.41	875.69	875.7	7.65	Yes
L26167	CB25472	CB26166	196.25	1.83	CIRCULAR	12	12	4.83	873.37	875.7	3.32	No
L26168	CB26170	P26168	141.00	0.71	CIRCULAR	15	15	5.44	865.62	861.49	10.78	No
L26169	CB25430	P26168	114.00	0.88	CIRCULAR	18	18	9.84	869.33	861.49	0.98	No
L26170	CB26172	CB26170	221.03	1.81	CIRCULAR	15	15	8.69	869.04	865.62	7.87	Yes
L26171	CB26174	CB26170	68.67	1.46	CIRCULAR	12	12	4.30	866.12	865.62	4.73	Yes
L26172	CB25436	CB26172	414.30	1.21	CIRCULAR	15	15	7.10	879.87	869.04	10.19	Yes
L26176	CB26178	P26176	343.00	0.76	CIRCULAR	15	15	5.65	867.92	864.74	4.00	No
L26178	CB23280	CB26178	237.00	0.16	CIRCULAR	15	15	2.59	869.1	867.92	4.01	No
L26187	P26190	CB26186	109.70	0.59	CIRCULAR	12	12	2.74	869.04	868.58	2.81	Yes
L26200	P26204	P26200	170.00	0.41	CIRCULAR	15	15	4.15	859.98	856.67	5.58	No
L26201	CB26102	J26188	320.00	0.18	CIRCULAR	15	15	2.73	867.3	861.05	6.82	No
L26203	CB26154	P26204	180.00	0.11	CIRCULAR	18	18	3.50	860.64	859.98	5.28	No
L26206	CB26206	P26204	150.00	2.47	CIRCULAR	15	15	10.15	865.82	859.98	12.65	Yes
L26207	CB26208	P26204	100.00	0.27	CIRCULAR	30	30	21.31	859.98	859.98	28.18	Yes
L26208	CB26210	CB26208	68.80	0.29	CIRCULAR	15	15	3.48	862.58	859.98	8.66	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L26209	P26206	CB26208	635.00	0.26	CIRCULAR	30	30	20.72	861.2	859.98	23.41	No
L26211	CB26212	P26204	115.00	2.17	CIRCULAR	30	30	60.48	861.76	859.98	22.05	No
L26212	CB26214	CB26212	71.93	1.39	CIRCULAR	27	27	36.52	863.12	861.76	18.07	No
L26214	CB26216	CB26214	90.91	0.77	CIRCULAR	24	24	19.85	863.73	863.12	12.44	No
L26215	P25315	P26204	52.00	0.54	CIRCULAR	12	12	2.61	860.97	859.98	3.70	No
L26216	CB26218	CB26216	73.09	0.82	CIRCULAR	21	21	14.36	864.17	863.73	10.47	No
L26218	CB26220	CB26218	85.90	1.98	CIRCULAR	15	15	9.09	866.12	864.17	7.93	Yes
L26220	CB26222	CB26220	193.09	0.26	CIRCULAR	12	12	1.81	869.03	866.12	4.81	Yes
L26302	CB26304	CB26302	66.94	0.25	CIRCULAR	18	18	5.29	863.76	863.71	11.05	Yes
L26303	CB26316	CB26302	672.41	0.52	CIRCULAR	24	24	16.37	868.2	863.71	15.31	Yes
L26304	CB26308	CB26304	334.10	2.28	CIRCULAR	18	18	15.86	871.37	863.76	15.48	Yes
L26307	CB26302	P26206	210.00	0.09	CIRCULAR	30	30	12.01	863.71	861.2	41.32	No
L26309	CB26314	CB26308	292.78	1.19	CIRCULAR	15	15	7.05	876.77	871.37	8.48	Yes
L26310	CB26312	CB26310	698.89	0.86	CIRCULAR	15	15	5.98	881.87	876.06	5.80	Yes
L26311	CB26328	P26308	120.00	0.40	CIRCULAR	24	24	14.31	874.89	874.05	26.03	Yes
L26315	CB26336	P26310	120.50	2.00	CIRCULAR	15	15	9.14	874.05	874.05	7.72	Yes
L26316	CB26318	CB26316	208.59	0.36	CIRCULAR	24	24	13.57	869.47	868.2	15.86	Yes
L26317	CB26338	P26310	188.00	4.52	CIRCULAR	30	30	87.22	877.6	874.05	34.96	No
L26318	CB26320	CB26318	190.70	1.30	CIRCULAR	21	21	18.07	870.13	869.47	15.86	Yes
L26320	CB26322	CB26320	138.21	0.12	CIRCULAR	18	18	3.57	871.11	870.13	12.13	Yes
L26321	CB26326	CB26320	346.62	0.78	CIRCULAR	15	15	5.69	870.23	870.13	3.83	No
L26322	CB26324	CB26322	301.46	1.86	CIRCULAR	15	15	8.81	876.23	871.11	8.19	Yes
L26323	P26304	CB26322	132.89	1.14	CIRCULAR	18	18	11.20	871.42	871.11	10.25	Yes
L26325	CB26348	P26312	22.00	0.23	CIRCULAR	18	18	5.01	856.24	854.75	13.37	No
L26326	P26306	MH28328	300.00	0.10	CIRCULAR	15	15	2.08	872.71	871.64	3.83	No
L26327	CB26344	P26312	30.00	0.67	CIRCULAR	21	21	12.94	858	854.75	17.18	No
L26328	CB28329	P26306	224.00	0.21	CIRCULAR	15	15	2.99	873.77	872.71	6.10	Yes
L26329	CB26330	CB26328	250.00	0.35	CIRCULAR	18	18	6.23	875.47	874.89	7.35	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L26330	CB26332	CB26330	297.42	0.31	CIRCULAR	18	18	5.87	876.52	875.47	7.48	Yes
L26331	CB26224	P26312	80.00	0.25	CIRCULAR	12	12	1.78	860.52	854.75	7.01	Yes
L26332	CB26334	CB26332	400.00	0.41	CIRCULAR	15	15	4.11	879.1	876.52	5.31	Yes
L26333	CB26354	P26312	165.00	0.91	CIRCULAR	15	15	6.16	868	854.75	8.80	No
L26338	CB26340	CB26338	459.35	0.11	CIRCULAR	24	24	7.46	881.81	877.6	17.56	No
L26341	CB28330	CB26328	30.00	1.20	CIRCULAR	15	15	7.08	874.22	874.89	6.09	Yes
L26344	CB26346	CB26344	142.48	4.74	CIRCULAR	15	15	14.06	865.79	858	15.72	Yes
L26345	CB26344	P26302	17.00	-1.18	CIRCULAR	24	24	1.74	858	856	23.10	Yes
L26348	CB26350	CB26348	87.98	6.50	CIRCULAR	15	15	16.47	865.56	856.24	13.37	No
L26350	CB26352	CB26350	54.36	2.72	CIRCULAR	15	15	10.66	866.69	865.56	5.79	Yes
L26402	CB26404	P26402	186.00	0.39	CIRCULAR	18	18	6.58	867.16	864.81	9.30	No
L26403	CB26412	P26402	28.00	2.14	CIRCULAR	15	15	8.20	865.86	864.81	5.95	No
L26404	CB26406	CB26404	127.71	0.98	CIRCULAR	18	18	10.39	867.33	867.16	3.87	No
L26406	CB26408	CB26406	221.12	0.92	CIRCULAR	15	15	6.19	868.94	867.33	3.90	No
L26408	CB26310	CB26308	265.14	1.44	CIRCULAR	15	15	7.75	876.06	871.37	8.33	Yes
L26409	CB26410	CB26408	156.28	0.47	CIRCULAR	15	15	4.45	869.96	868.94	3.91	No
L26413	CB26414	P26400	48.00	0.75	CIRCULAR	18	18	9.10	862.87	860.03	15.26	No
L26414	CB26416	CB26414	270.63	0.15	CIRCULAR	18	18	4.04	863.72	862.87	5.66	Yes
L26415	P26226	CB26414	120.00	4.20	CIRCULAR	15	15	13.24	861.99	862.87	0.00	No
L26416	CB26418	CB26416	88.01	0.27	CIRCULAR	18	18	5.49	864.01	863.72	5.67	Yes
L26418	P26420	CB26418	202.07	0.08	CIRCULAR	15	15	1.82	862.05	864.01	3.03	No
L26422	CB26422	CB26414	214.72	0.24	CIRCULAR	15	15	3.18	864.66	862.87	6.55	Yes
L26423	P26424	P26400	150.00	0.33	CIRCULAR	24	24	13.06	860.7	860.03	3.06	No
L26426	P26226	P26428	33.00	1.21	CIRCULAR	12	12	3.92	861.99	861.99	3.66	Yes
L26428	CB26430	P26428	80.00	0.21	CIRCULAR	36	36	30.75	861.99	861.99	12.12	No
L26430	CB26432	CB26430	68.14	0.76	CIRCULAR	15	15	5.64	869.44	861.99	1.30	No
L26431	CB26434	CB26430	138.90	0.22	CIRCULAR	36	36	31.00	861.99	861.99	8.99	No
L26434	CB26436	CB26434	294.96	0.19	CIRCULAR	33	33	23.25	862.15	861.99	7.31	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L26436	CB26438	CB26436	113.74	0.21	CIRCULAR	27	27	14.23	862.43	862.15	6.45	No
L26438	CB26440	CB26438	227.48	0.20	CIRCULAR	21	21	7.05	862.57	862.43	2.45	No
L26440	CB26442	CB26440	232.65	0.35	CIRCULAR	15	15	3.84	862.96	862.57	0.91	No
L26442	P26144	CB26442	306.76	0.15	CIRCULAR	15	15	2.47	863.57	862.96	0.91	No
L26445	CB26446	P26428	81.00	1.00	CIRCULAR	15	15	6.46	862	861.99	6.17	No
L26446	CB26448	CB26446	90.70	3.12	CIRCULAR	15	15	11.41	864.26	862	5.67	No
L26448	CB26450	CB26448	149.29	0.35	CIRCULAR	15	15	3.81	865.37	864.26	4.11	No
L26450	CB26452	CB26450	135.32	0.35	CIRCULAR	15	15	3.81	865.57	865.37	2.49	No
L26452	CB26454	CB26452	224.07	0.33	CIRCULAR	15	15	3.69	865.83	865.57	1.11	No
L26456	P26458	CB26456	69.80	0.90	CIRCULAR	15	15	6.14	869.16	869.24	0.59	No
L26458	CB26460	P26458	125.00	0.58	CIRCULAR	15	15	4.90	869.17	869.16	8.24	Yes
L26460	CB26462	CB26460	68.88	0.38	CIRCULAR	15	15	3.44	869.18	869.17	8.26	Yes
L26462	CB26464	CB26462	114.15	0.25	CIRCULAR	15	15	3.20	870.13	869.18	6.77	Yes
L26463	CB26263	CB26462	94.18	7.78	CIRCULAR	12	12	9.94	872.04	869.18	1.95	No
L26464	CB26466	CB26464	163.76	0.52	CIRCULAR	15	15	4.65	871.13	870.13	4.90	Yes
L26466	CB26468	CB26466	50.57	0.85	CIRCULAR	15	15	5.96	871.2	871.13	2.56	Yes
L26467	CB26476	CB26466	62.62	0.70	CIRCULAR	18	18	8.81	871.2	871.13	3.90	Yes
L26468	CB26470	CB26468	143.74	0.49	CIRCULAR	15	15	4.54	871.22	871.2	1.89	Yes
L26470	CB26472	CB26470	236.36	0.50	CIRCULAR	15	15	4.56	871.4	871.22	2.78	Yes
L26472	CB26474	CB26472	103.95	5.37	CIRCULAR	15	15	14.97	873.8	871.4	2.76	No
L26476	CB26478	CB26476	101.05	0.76	CIRCULAR	15	15	5.64	871.21	871.2	2.60	Yes
L26478	CB26480	CB26478	146.10	0.17	CIRCULAR	15	15	2.67	871.21	871.21	2.52	Yes
L26480	CB26482	CB26480	110.88	4.88	CIRCULAR	12	12	7.87	872.91	871.21	3.52	No
L26482	CB26484	CB26482	107.55	0.60	CIRCULAR	12	12	2.75	873.82	872.91	2.24	No
L26486	CB26188	CB26186	70.92	0.47	CIRCULAR	15	15	4.41	868.8	868.58	3.50	No
L28312	CB28330	CB28329	10.00	0.40	CIRCULAR	15	15	4.09	874.22	873.77	6.11	Yes
L28313	P26312	P28313	140.00	-1.09	CIRCULAR	18	18	9.23	854.75	853.93	1.85	No
L28315	P28313	J28317	35.00	0.00	CIRCULAR	18	18	0.56	853.93	853.92	3.74	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L28317	J28317	O28301	40.00	1.33	CIRCULAR	24	24	26.04	853.92	853	1.15	No
L28328	MH28328	MH28329	23.00	0.74	CIRCULAR	15	15	5.55	871.64	871.43	3.83	No
L28329	MH28329	CB26326	137.00	0.51	CIRCULAR	15	15	4.62	871.43	870.23	3.83	No
L36400	CB36406	P36400	240.00	0.42	CIRCULAR	24	24	14.60	855.15	852.43	20.94	No
L36401	CB36402	P36400	184.00	0.27	CIRCULAR	18	18	5.48	853.3	852.43	7.49	No
L36402	CB36404	CB36402	132.52	0.38	CIRCULAR	12	12	2.19	854.38	853.3	2.89	Yes
L36406	CB36408	CB36406	333.90	0.46	CIRCULAR	15	15	4.40	855.93	855.15	4.84	Yes
L36407	CB36414	CB36406	116.23	0.50	CIRCULAR	18	18	7.42	856.17	855.15	10.52	Yes
L36408	CB36410	CB36408	98.14	0.46	CIRCULAR	15	15	4.37	857.07	855.93	1.24	Yes
L36409	CB36412	CB36408	111.18	0.40	CIRCULAR	15	15	4.11	857.54	855.93	3.62	Yes
L36414	CB36416	CB36414	174.66	0.50	CIRCULAR	15	15	4.56	856.53	856.17	3.21	Yes
Link-28	CB25328	P25317	198.62	0.20	CIRCULAR	24	24	10.02	865.54	863.95	8.68	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L13202	CB13204	J144278	177.65	3.34	CIRCULAR	18	18	19.21	863.98	856.9	19.48	YES
L13203	J144278	O-13-2-01	144.46	3.39	CIRCULAR	18	18	19.35	856.9	857.6	17.69	YES
L13204	CB13206	CB13204 A	107.3	0.4	CIRCULAR	21	21	10.03	865.42	864.52	13.15	YES
L13204 A	CB13204 A	CB13204	55.47	0.7	CIRCULAR	21	21	13.29	864.52	863.98	13.15	YES
L13206	CB13208	CB13206	394.22	0.36	CIRCULAR	21	21	9.48	865.56	865.42	10.77	YES
L13208	CB13210	CB13208	138	0.11	CIRCULAR	21	21	5.22	864.46	865.56	18.86	YES
L13209	CB13312	CB13208	158.18	5.37	CIRCULAR	12	12	8.26	872.72	865.56	8.92	YES
L13210	CB24112	CB13210	259	0.15	CIRCULAR	21	21	6.07	864.62	864.46	8.37	YES
L13402	J13404	J13402	67.47	0.13	CIRCULAR	48	48	31	857.84	856.11	110.08	YES
L13406	P13408	J13406	64.21	0.16	CIRCULAR	36	36	31.11	859.44	857.91	103.66	YES
L14102	P14104	CB14102	32	-6.25	CIRCULAR	12	12	8.91	866.32	865.98	3.01	YES
L14104	CB14106	P14104	99	0.32	CIRCULAR	21	21	9.01	866.35	866.32	10.85	YES
L14106	CB14108	CB14106	154.29	0.4	CIRCULAR	18	18	6.6	868	866.35	8.55	YES
L14108	CB14110	CB14108	181.64	0.3	CIRCULAR	18	18	5.78	868	868	7.72	YES
L14110	CB14112	CB14110	131.54	6.13	CIRCULAR	15	15	15.99	873.51	868	4.43	NO
L14111	CB14114	CB14110	216.58	0.48	CIRCULAR	12	12	2.48	869	868	1.63	YES
L14112	CB14214	CB14212	464.48	0.11	CIRCULAR	18	18	3.45	887.01	885.62	6.81	YES
L14116	P14118	CB14116	91.84	0.54	CIRCULAR	18	18	7.75	863.06	862.16	6.87	NO
L14118	CB14120	P14118	24	2.08	CIRCULAR	12	12	5.14	864.48	863.06	5.76	NO
L14120	P14122	CB14120	25	-20	CIRCULAR	12	12	15.93	865.56	864.48	5.76	YES
L14121	CB14134	P14122	149	0.68	CIRCULAR	21	21	13.11	865.57	865.56	10.95	NO
L14122	CB14124	P14122	149	0.3	CIRCULAR	24	24	12.43	865.61	865.56	15.03	YES
L14123	CB14132	CB14124	186.87	0.49	CIRCULAR	15	15	4.51	865.89	865.61	3.4	YES
L14124	CB14126	CB14124	136.24	0.34	CIRCULAR	21	21	9.31	866.63	865.61	10.36	YES
L14126	CB14128	CB14126	143.75	0.24	CIRCULAR	18	18	5.18	867.25	866.63	7.23	YES
L14127	P14126	P14118	503.35	0.16	CIRCULAR	12	12	1.42	866.91	863.06	1.42	NO
L14128	CB14130	CB14128	411.79	0.45	CIRCULAR	15	15	4.35	869.06	867.25	4.8	YES
L14132	P14124	J14132	389.16	1.54	Rectangular	48	48	227.09	870.17	861.1	2.77	NO

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L14134	CB14136	CB14134	288.03	1.39	CIRCULAR	18	18	12.36	868.87	865.57	7.77	NO
L14135	CB14142	CB14134	127.76	3.24	CIRCULAR	15	15	11.63	868.61	865.57	3.22	NO
L14136	CB14138	CB14136	25.16	1.79	CIRCULAR	15	15	8.64	869.03	868.87	2.41	NO
L14137	P14140	CB14136	212.98	0.42	CIRCULAR	12	12	2.3	869.44	868.87	1.31	NO
L14202	CB14204	P14202	180	1.67	CIRCULAR	36	36	86.11	873.17	868.65	62.72	NO
L14204	CB14206	CB14204	216.41	1.39	CIRCULAR	36	36	78.53	876	873.17	51.62	NO
L14205	CB14242	CB14204	41.31	1.21	CIRCULAR	15	15	7.11	874.19	873.17	8.29	YES
L14206	CB14208	CB14206	184.31	0.43	CIRCULAR	36	36	43.94	877.38	876	45.74	NO
L14207	CB14230	CB14206	198.09	3.03	CIRCULAR	12	12	6.2	883	876	6	YES
L14208	CB14210	CB14208	64.52	1.86	CIRCULAR	24	24	30.85	878.4	877.38	22.33	YES
L14209	CB14216	CB14208	62.32	1.93	CIRCULAR	30	30	56.92	877.63	877.38	23.07	NO
L14210	CB14212	CB14210	709.04	0.78	CIRCULAR	21	21	13.96	885.62	878.4	15.65	YES
L14216	CB14258	J14216	20	51.3	CIRCULAR	12	12	25.52	863.36	859.69	4.15	NO
L14217	CB14232	CB14216	558.68	0.21	CIRCULAR	30	30	19.01	879.18	877.63	17.49	NO
L14218	P14220	J14218	79.04	0.14	CIRCULAR	48	48	46.44	860.11	859.72	62.63	YES
L14219	CB14102	P14218	368	0.27	CIRCULAR	12	12	1.86	865.98	861.42	3.01	NO
L14224	J14226	J14224	75.71	0.15	CIRCULAR	36	36	22.03	860.99	860.16	49.26	YES
L14232	CB14234	CB14232	182.64	0.33	CIRCULAR	21	21	9.08	879.8	879.18	8.58	YES
L14233	CB14238	CB14232	442.17	0.97	CIRCULAR	21	21	15.63	882.31	879.18	6.86	NO
L14234	CB14236	CB14234	44.1	0.45	CIRCULAR	15	15	4.35	880.28	879.8	6.25	YES
L14236	CB14248	CB14236	117.98	0.42	CIRCULAR	12	12	2.32	882.06	880.28	4.44	YES
L14237	P14246	CB14236	147.51	4.07	CIRCULAR	12	12	7.19	884.35	880.28	1.87	NO
L14238	P14240	CB14238	147.06	0.34	CIRCULAR	21	21	9.24	882.84	882.31	3.87	NO
L14242	CB14244	CB14242	143.49	2.44	CIRCULAR	12	12	5.56	878.43	874.19	6.16	YES
L14254	CB14256	CB14254	78.82	0.38	CIRCULAR	15	15	3.99	879.91	877.86	7.86	NO
L14258	P14260	CB14258	20	-10	CIRCULAR	12	12	11.27	864.08	863.36	4.15	NO
L14260	CB14262	P14260	334.13	0.38	CIRCULAR	18	18	6.48	869.14	864.08	8.12	NO
L14262	CB14264	CB14262	366.88	0.54	CIRCULAR	15	15	4.76	867.17	869.14	3.93	NO

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L14263	P14268	CB14262	184	0.42	CIRCULAR	12	12	2.32	866.37	869.14	2.54	YES
L14264	CB14266	CB14264	192.35	0.32	CIRCULAR	15	15	3.67	867.98	867.17	3.92	NO
L14430	P14432	J14430	83.02	0.13	CIRCULAR	36	36	21.04	863.72	862.52	44.71	NO
L14434	P14436	J14434	623.82	0.03	CIRCULAR	15	15	0.68	871.41	869.87	0.99	NO
L14438	P14438	P14436	30	3.33	CIRCULAR	15	15	11.79	871.99	871.41	9.27	NO
L14440	P14449	J14442	715	0.97	CIRCULAR	18	18	10.32	872.38	861.64	2.18	NO
L15234	P15236	J15234	157.83	0.19	CIRCULAR	36	36	29.08	866.86	866.74	18.38	YES
L15238	P15240	J15238	108.17	0.65	CIRCULAR	36	36	46.5	867.82	867.69	19.56	NO
L15347	P15352	J15352A	113.73	0.69	CIRCULAR	18	18	7.59	869.95	869.22	10.64	YES
L15348	P15350	J15348	178.72	0.04	CIRCULAR	36	36	14.11	869.84	869.27	25.6	NO
L15402	J15404	P15402	1090	0.37	CIRCULAR	18	18	6.36	884.62	872.04	2.19	NO
L16102	P16104	CB16102	28	0.36	CIRCULAR	12	12	2.13	871.86	871.67	4.87	YES
L16104	CB16106	P16104	172	0.23	CIRCULAR	18	18	5	874.86	871.86	9.25	YES
L16106	CB16108	CB16106	358.52	0.66	CIRCULAR	15	15	5.24	875.74	874.86	6.14	YES
L16107	CB16110	CB16106	157.42	0.26	CIRCULAR	15	15	3.3	873.62	874.86	3.46	YES
L16114	CB16117	P16114	195.62	0.42	CIRCULAR	33	33	34.24	876.21	874.69	15.59	NO
L16115	CB16134	P16114	57.69	0.38	CIRCULAR	12	12	2.2	874.7	874.69	4.86	YES
L16116	CB16118	CB16116	103.2	0.69	CIRCULAR	24	24	18.76	880.58	880.4	7.92	YES
L16117	CB16117	CB16116	175.89	1.18	CIRCULAR	15	15	7.01	876.21	880.4	9.51	YES
L16118	CB16120	CB16118	151.27	0.62	CIRCULAR	27	27	24.41	880.65	880.58	7.43	YES
L16119	CB16132	CB16118	251.79	0.26	CIRCULAR	15	15	3.28	880.95	880.58	2.41	YES
L16120	CB16122	CB16120	123.14	0.25	CIRCULAR	18	18	5.27	880.94	880.65	5.18	YES
L16122	CB16124	CB16122	407.52	0.64	CIRCULAR	15	15	5.16	882.53	880.94	3.96	YES
L16123	CB16126	CB16122	55.11	0.45	CIRCULAR	12	12	2.4	880.98	880.94	2.35	YES
L16127	CB16102	P16128	255	0.78	CIRCULAR	12	12	3.16	871.67	869.82	2.33	NO
L16128	CB16130	CB16117	332.14	1.83	CIRCULAR	12	12	4.82	885.96	876.21	4.15	NO
L16129	CB16138	P16128	255	0.24	CIRCULAR	12	12	1.73	873.65	869.82	4.06	NO
L16134	CB16136	CB16134	118.4	5.07	CIRCULAR	15	15	14.54	883.52	874.7	4.86	NO

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L16138	P16114	CB16138	64	0.16	CIRCULAR	12	12	1.41	874.69	873.65	4.1	YES
L16254a	P16140	J16254	72	-2.08	CIRCULAR	18	18	15.16	871.35	870.93	3.39	NO
L16255	P16140	J16254	72	-0.14	CIRCULAR	18	18	7.83	871.35	870.93	5.35	NO
L16402	P16404	P16402	110	0.45	CIRCULAR	15	15	3.77	872.64	871.54	1.85	NO
L16404	P16406	P16404	115	-0.87	CIRCULAR	15	15	5.22	872.72	872.64	1.71	NO
L19300	CB19302	O-19E-3-01	101.19	0.99	CIRCULAR	12	12	3.54	854.5	854.5	9.33	YES
L19302	P19E304	CB19302	50	2	CIRCULAR	21	21	22.41	854.5	854.5	20.6	YES
L19304	CB19306	P19E304	619.81	6.7	CIRCULAR	18	18	27.18	888.33	854.5	16.09	NO
L19306	CB19308	CB19306	123.51	0.4	CIRCULAR	18	18	6.68	889.44	888.33	8.79	NO
L22146	J22148	J22146	111.28	0.45	CIRCULAR	24	24	15.16	884.55	882.65	17.49	NO
L22204	CB22206	CB22204	468.08	0.75	CIRCULAR	15	15	5.61	882.04	877.92	5.71	NO
L22206	P22208	CB22206	145.84	0.53	CIRCULAR	15	15	4.72	883.04	882.04	5.35	YES
L22208	P22110	P22208	484	0.72	CIRCULAR	15	15	5.49	885.97	883.04	5.21	NO
L22216	CB22218	P22216	240	0.63	CIRCULAR	15	15	5.11	876.03	870.25	8.97	NO
L22218	P22220	CB22218	430	0.12	CIRCULAR	15	15	2.2	874.73	876.03	5.29	YES
L22220	J22222	P22220	145	0.32	CIRCULAR	15	15	3.64	875.04	874.73	4.95	NO
L22402	P22404	J22404A	108.91	0.33	CIRCULAR	15	15	3.71	869.83	869.83	3.62	YES
L22404	P22406	J122406A	124.72	0.26	CIRCULAR	15	15	3.27	869.83	869.83	3	YES
L22406	J22408A	P22408	96.96	0.55	CIRCULAR	15	15	4.78	869.83	869.81	3.98	YES
L22408	P22410	P22402	160	1.25	CIRCULAR	18	18	11.74	873.58	869.83	13.91	NO
L23101	P23102	P23158	55	0.55	CIRCULAR	12	12	2.63	872.64	865.25	10.48	YES
L23102	CB23104	P23102	104.77	1.34	CIRCULAR	30	30	47.41	872.75	872.64	37.17	YES
L23103	CB23106	CB23104	47.85	1.5	CIRCULAR	12	12	4.37	872.75	872.75	7.2	YES
L23104	CB23108	CB23104	245.93	1.5	CIRCULAR	27	27	37.88	874.41	872.75	32.44	YES
L23108	CB23112	CB23108	314.43	1.5	CIRCULAR	24	24	27.69	879.4	874.41	26.87	YES
L23109	CB23136	CB23108	207.37	2.47	CIRCULAR	15	15	10.15	876.91	874.41	6.71	NO
L23110	CB24412	CB23110	123.08	0.45	CIRCULAR	15	15	4.32	868.01	868	4.62	YES
L23112	CB23114	CB23112	115.59	1.5	CIRCULAR	21	21	19.38	881.41	879.4	20.1	YES

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L23114	CB23116	CB23114	147.64	1.49	CIRCULAR	18	18	12.82	883.51	881.41	16.87	YES
L23116	CB23118	CB23116	225.26	1.5	CIRCULAR	18	18	12.87	887.21	883.51	12.72	YES
L23117	CB24420	P23118	94	0.2	CIRCULAR	21	21	7.12	869.2	867.53	17.93	NO
L23118	CB23128	CB23118	207.78	1.49	CIRCULAR	15	15	7.89	888.16	887.21	7.1	YES
L23119	CB23120	CB23118	47.96	1.5	CIRCULAR	15	15	7.91	888.4	887.21	8.56	YES
L23120	CB23122	CB24420	154.67	0.2	CIRCULAR	21	21	7.09	871.59	869.2	17.93	YES
L23122	CB23124	CB23122	250.45	0.2	CIRCULAR	18	18	4.69	871.85	871.59	8.04	YES
L23129	CB23130	P23158	140	1.25	CIRCULAR	18	18	11.74	869.82	865.25	9.08	NO
L23130	CB23132	CB23130	48.84	0.31	CIRCULAR	18	18	5.82	870.23	869.82	7.94	NO
L23132	CB23134	CB23132	203.67	0.54	CIRCULAR	15	15	4.75	870.84	870.23	3.56	NO
L23138	CB23140	CB23138	171.5	0.99	CIRCULAR	15	15	6.43	872.5	868.5	6.89	YES
L23142	CB23144	CB23142	75.51	1.8	CIRCULAR	12	12	4.78	870.43	866.4	7.37	NO
L23144	CB23146	CB23144	345.73	1.82	CIRCULAR	15	15	8.71	873.86	870.43	4.74	NO
L23159	P23160	P23158	90	-1.11	CIRCULAR	15	15	5.9	865.25	865.25	3.43	YES
L23160	CB23162	P23160	130.62	0.38	CIRCULAR	18	18	6.5	867.11	865.25	12.71	NO
L23161	CB23168	CB23162	57.62	3.47	CIRCULAR	12	12	6.64	868.21	867.11	4.56	YES
L23162	CB23164	CB23162	103.54	0.97	CIRCULAR	15	15	6.35	869.25	867.11	8.75	YES
L23164	CB23166	CB23164	174.29	0.57	CIRCULAR	15	15	4.89	870.09	869.25	6	YES
L23169	CB23170	P23158	77	0.3	CIRCULAR	24	24	12.36	867.92	865.25	13.64	NO
L23170	CB23172	CB23170	113.96	0.3	CIRCULAR	24	24	12.36	868.5	867.92	13.64	NO
L23172	CB23174	CB23172	121.13	0.3	CIRCULAR	24	24	12.33	868.77	868.5	10.1	NO
L23173	CB23184	CB23172	96.08	0.3	CIRCULAR	12	12	1.96	869.41	868.5	3.29	YES
L23174	CB23176	CB23174	53.2	0.3	CIRCULAR	21	21	8.69	868.83	868.77	4.63	YES
L23176	CB23178	CB23176	80.98	0.3	CIRCULAR	21	21	8.63	868.9	868.83	4.36	NO
L23178	CB23180	CB23178	132.97	0.3	CIRCULAR	15	15	3.54	869.45	868.9	4.37	YES
L23180	CB23182	CB23180	64.98	0.31	CIRCULAR	12	12	1.98	869.88	869.45	2.79	YES
L23185	P23186	P23158	10	0.8	CIRCULAR	15	15	5.78	865.27	865.25	4.6	NO
L23186	CB23188	P23186	181	3.87	CIRCULAR	18	18	20.66	871.8	865.27	11.21	NO

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L23302	CB22204	P23302	165	4.3	CIRCULAR	15	15	13.39	877.92	865.91	9.52	NO
L23312	CB23314	P23312	130	0.22	CIRCULAR	18	18	4.96	865.88	865.88	5.11	NO
L23314	CB23314	P23302	60	1.58	CIRCULAR	15	15	8.13	865.88	865.91	7.32	YES
L23402	CB23404	CB23402	215.66	2.56	CIRCULAR	15	15	10.33	876.22	868.81	4.41	NO
L23403	CB23402	P23444	52	0.79	CIRCULAR	15	15	5.74	868.81	867.05	9.52	NO
L23404	CB23406	CB23404	63.3	1.42	CIRCULAR	15	15	7.7	877.03	876.22	2.29	NO
L23407	CB23408	P23444	197	0.15	CIRCULAR	18	18	4.1	868.83	867.05	8.24	NO
L23408	P23416	CB23408	48.31	-0.06	CIRCULAR	18	18	2.62	869.27	868.83	10.65	YES
L23410	CB23412	CB23410	111.09	1.04	CIRCULAR	18	18	10.69	874.32	872.85	6.44	NO
L23412	CB23414	CB23412	83.34	1.32	CIRCULAR	15	15	7.42	875.04	874.32	2.57	NO
L23416	CB23410	P23416	55.82	7.67	CIRCULAR	18	18	29.09	872.85	869.27	7.44	NO
L23417	CB23418	P23416	107	3.52	CIRCULAR	18	18	19.72	872.43	869.27	7.03	NO
L23418	CB23420	CB23418	213.98	0.34	CIRCULAR	15	15	3.77	873.67	872.43	4.24	NO
L23444	P23446	P23444	110	1.82	CIRCULAR	18	18	14.16	872.06	867.05	10.52	NO
L24111	J24113	CB24112	70	0.2	CIRCULAR	21	21	7.09	864.62	864.62	11.01	YES
L24112	P24114	J24113	80.47	-1.34	CIRCULAR	21	21	18.36	864.64	864.62	10.92	YES
L24113	CB24115	P24114	135	0.37	CIRCULAR	12	12	2.17	881.6	864.64	9.21	YES
L24114	CB24116	P24114	247	0.12	CIRCULAR	18	18	3.66	872.32	864.64	5.32	YES
L24116	P24118	CB24116	778	0.29	CIRCULAR	15	15	3.45	865.37	872.32	3.34	NO
L24118	CB24120	P24118	192	1.29	CIRCULAR	24	24	25.66	868.6	865.37	23.24	NO
L24119	CB24164	P24118	230	3.19	CIRCULAR	36	36	119.15	866.32	865.37	24.94	NO
L24120	CB24122	CB24120	220.75	2.42	CIRCULAR	21	21	24.64	873.25	868.6	11.85	NO
L24121	CB24128	CB24120	170	0.71	CIRCULAR	21	21	13.31	869.69	868.6	7.87	NO
L24122	CB24124	CB24122	145.6	0.37	CIRCULAR	21	21	9.65	874.11	873.25	8.08	NO
L24124	P24126	CB24124	223.44	2.27	CIRCULAR	21	21	23.87	878.55	874.11	5.08	NO
L24128	CB24130	CB24128	178	0.38	CIRCULAR	21	21	9.79	869.88	869.69	4.48	NO
L24130	CB24252	CB24130	331.49	2.91	CIRCULAR	15	15	11.01	879.61	869.88	4.38	NO
L24135	CB24136	CB24116	311	0.12	CIRCULAR	15	15	2.2	864.25	872.32	3.3	YES

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L24136	CB24138	CB24136	541	0.07	CIRCULAR	15	15	1.73	863.79	864.25	3.39	YES
L24137	CB24152	CB24136	220	2.32	CIRCULAR	15	15	9.84	872.99	864.25	2.81	NO
L24138	P24440	CB24138	50	-3.68	CIRCULAR	15	15	12.39	863.84	863.79	3.39	YES
L24140	CB24142	P24440	392.47	1.03	CIRCULAR	21	21	16.1	865.67	863.84	14.66	YES
L24142	CB24144	CB24142	203.48	0.49	CIRCULAR	18	18	7.36	867.77	865.67	11.43	YES
L24143	CB24150	CB24142	47.34	4.33	CIRCULAR	12	12	7.41	865.17	865.67	3.63	YES
L24144	CB24146	CB24144	102.3	0.27	CIRCULAR	18	18	5.5	867.71	867.77	4.86	YES
L24146	P24148	CB24146	482.84	0.37	CIRCULAR	15	15	3.91	868.21	867.71	4.25	YES
L24148	CB24154	P24148	189.27	0.77	CIRCULAR	30	30	35.9	868.34	868.21	15.31	YES
L24149	P24118	P24148	150	0.33	CIRCULAR	18	18	6.06	865.37	868.21	7.94	NO
L24150	P24222	CB24250	127	1.09	CIRCULAR	15	15	6.73	885.03	885.41	4.52	YES
L24152	CB24250	CB24252	917	0.28	CIRCULAR	15	15	3.44	885.41	879.61	4.38	NO
L24154	CB24156	CB24154	132.36	1.46	CIRCULAR	27	27	37.4	868.42	868.34	13.69	NO
L24156	CB24158	CB24156	220.97	1.05	CIRCULAR	21	21	16.2	870.77	868.42	10.46	NO
L24158	CB24160	CB24158	177.61	2.63	CIRCULAR	18	18	17.03	874.93	870.77	5.16	NO
L24159	CB24162	CB24158	223.7	0.59	CIRCULAR	15	15	4.94	871.76	870.77	3.37	NO
L24164	CB24172	CB24164	117.66	4.31	CIRCULAR	18	18	21.81	870.93	866.32	5.57	NO
L24165	CB24166	CB24164	384.44	0.18	CIRCULAR	33	33	22.73	867.56	866.32	14.42	NO
L24166	CB24168	CB24166	362.68	4.4	CIRCULAR	30	30	86.02	882.49	867.56	7.22	NO
L24167	CB24170	CB24166	46.52	12.75	CIRCULAR	18	18	37.5	879.91	867.56	5.67	NO
L24172	CB24174	CB24172	169.36	0.89	CIRCULAR	15	15	6.08	872.6	870.93	3.26	NO
L24175	CB24176	P24118	175	0.57	CIRCULAR	27	27	23.41	865.84	865.37	25.45	NO
L24176	CB24178	CB24176	35.75	0.28	CIRCULAR	24	24	11.96	866.32	865.84	22.05	YES
L24178	CB24180	CB24178	227.07	0.22	CIRCULAR	18	18	4.93	870.11	866.32	13.62	YES
L24180	CB24182	CB24180	108.04	8.33	CIRCULAR	15	15	18.64	876.02	870.11	13.85	YES
L24182	CB24184	CB24182	322.72	2.17	CIRCULAR	15	15	9.51	880.51	876.02	3.31	NO
L24183	CB24186	CB24182	189.5	0.26	CIRCULAR	12	12	1.83	877.15	876.02	4.56	YES
L24185	CB24188	P24118	400	1.36	CIRCULAR	15	15	7.52	871.82	865.37	7.82	NO

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L24186	CB24190	CB24188	154.69	3.38	CIRCULAR	12	12	6.55	879.33	871.82	7.92	YES
L24189	CB24194	P24118	231.55	1.51	CIRCULAR	15	15	7.94	868.74	865.37	4.96	NO
L24221	CB24238	P24222	150	3	CIRCULAR	18	18	18.19	887.21	885.03	18.2	YES
L24222	CB24224	P24222	140	0.26	CIRCULAR	15	15	3.28	885.06	885.03	7	YES
L24224	CB24226	CB24224	564.98	0.2	CIRCULAR	15	15	2.86	889.22	885.06	5.75	YES
L24226	CB24228	CB24226	63.11	0.13	CIRCULAR	15	15	2.3	889.11	889.22	2.92	YES
L24228	P24230	CB24228	198.62	0.35	CIRCULAR	12	12	2.12	886.76	889.11	4.39	YES
L24230	CB24232	P24230	40	0.25	CIRCULAR	15	15	3.23	886.53	886.76	5.06	YES
L24231	CB24234	CB24232	162.95	0.09	CIRCULAR	15	15	1.96	886.53	886.53	4.26	NO
L24232	CB24236	CB24232	994.12	0.1	CIRCULAR	15	15	2.05	889.31	886.53	3.62	YES
L24234	CB24234	O-24-2-01	143.71	21.57	CIRCULAR	12	12	16.55	886.53	854.5	15.01	YES
L24238	CB24240	CB24238	223.33	0.22	CIRCULAR	15	15	3.06	891.51	887.21	10.11	YES
L24241	CB24242	P24222	132	0.38	CIRCULAR	15	15	3.98	886.8	885.03	7.82	YES
L24242	P24244	CB24242	232.02	0.86	CIRCULAR	15	15	6	887.59	886.8	5.07	YES
L24245	CB24246	P24222	313	0.26	CIRCULAR	18	18	5.31	889.17	885.03	8.06	NO
L24246	CB24248	CB24246	123.85	0.16	CIRCULAR	18	18	4.22	891	889.17	7.22	YES
L24402	CB24104	P24402	240	0.17	CIRCULAR	15	15	2.64	863.96	863.1	4.72	YES
L24403	CB23150	P24402	110	1.82	CIRCULAR	18	18	14.16	870.14	863.1	11.5	NO
L24404	P24406	CB24104	90	0.44	CIRCULAR	15	15	4.31	864.5	863.96	4.72	YES
L24405	CB23138	P24406	98	0.82	CIRCULAR	15	15	5.84	868.5	864.5	6.95	NO
L24406	CB24408	P24406	22	2	CIRCULAR	15	15	9.14	865.89	864.5	15.9	YES
L24407	CB23142	P24406	86	1.8	CIRCULAR	24	24	30.37	866.4	864.5	9.59	NO
L24408	CB24428	CB24408	147.52	2.7	CIRCULAR	21	21	26.06	867.66	865.89	14.55	NO
L24409	CB23110	CB24408	298.32	0.69	CIRCULAR	15	15	5.37	868	865.89	5.5	YES
L24412	P23118	CB24412	51	1.86	CIRCULAR	15	15	8.82	867.53	868.01	7.72	YES
L24413	CB24414	CB24412	230.88	1.98	CIRCULAR	15	15	9.09	872.26	868.01	8.4	YES
L24414	CB24416	CB24414	167.29	0.54	CIRCULAR	12	12	2.63	873.62	872.26	2.63	YES
L24425	P24426	CB24408	186	0.04	CIRCULAR	15	15	1.34	863.95	865.89	3.8	NO

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L24428	CB24430	CB24428	219.66	1.63	CIRCULAR	18	18	13.43	870.87	867.66	8.05	NO
L24430	CB24432	CB24430	271.51	0.61	CIRCULAR	18	18	8.21	872.93	870.87	8.05	NO
L24432	CB24434	CB24432	173.89	0.88	CIRCULAR	15	15	6.06	874.97	872.93	6.63	YES
L24434	CB24436	CB24434	163.1	0.44	CIRCULAR	15	15	4.26	875.79	874.97	3.18	YES
L24440	CB24442	P24440	40	6.88	CIRCULAR	24	24	59.32	863.84	863.84	34.15	YES
L24442	J24444	CB24442	265.78	0.13	CIRCULAR	18	18	3.81	865.85	863.84	12.51	YES
L24444	J24446	J24444	798.9	0.13	CIRCULAR	18	18	3.77	866.52	865.85	3.03	YES
L24446	J24448	J24446	400.9	0.12	CIRCULAR	18	18	3.63	864.59	866.52	7.13	YES
L24448	P24450	J24448	70	0.17	CIRCULAR	18	18	4.35	863.04	864.59	12.05	NO
L24449	P24452	P24450	110	0.91	CIRCULAR	18	18	10.02	871.52	863.04	10.09	NO
L24451	P24402	P24450	146	-0.34	CIRCULAR	15	15	3.78	863.1	863.04	2.09	YES
L24453	P23158	P24402	205	0.3	CIRCULAR	18	18	5.73	865.25	863.1	1.15	NO
L25250	CB23152	CB23150	38.26	7.84	CIRCULAR	18	18	25.49	872.74	870.14	10.22	NO
Link-12	P14270	P14220	300	0.45	CIRCULAR	15	15	4.32	878.77	860.11	2.72	NO
ZC15352	J22454	J22454A	93.96	0.28	CIRCULAR	15	15	2.95	869.97	872	4.98	YES
ZC24414A	CB24416	CB24414	140.12	0.65	CIRCULAR	15	15	4.51	873.62	872.26	4.73	YES

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
C27270	P27276	P27270	90	2	CIRCULAR	18	18	12.87	873.81	862.59	0	No
L22302	P22304	P22302	85	1.76	CIRCULAR	15	15	4.65	866.69	866.38	2.72	No
L27116	P22302	P27116	75	0.4	CIRCULAR	12	12	1.22	866.38	866.38	1.81	Yes
L27118	P27402	P27118	150	0.13	CIRCULAR	24	24	7.16	861.82	862.53	0.01	No
L27119	P27102	P27118	150	0.33	CIRCULAR	18	18	6.06	862.5	862.53	0	No
L27168	CB27170	CB27168	205	0.15	CIRCULAR	15	15	2.47	867.67	867.37	0	No
L27202	CB27204	P27202	246.08	0.57	CIRCULAR	27	27	23.44	866.3	865.45	24.72	Yes
L27203	CB27216	P27202	253	0.09	CIRCULAR	36	36	19.67	866.12	865.45	42.67	Yes
L27204	CB27206	CB27204	249.76	0.2	CIRCULAR	27	27	13.86	869.34	866.3	25.01	Yes
L27206	CB27208	CB27206	358.38	0.2	CIRCULAR	27	27	13.78	869.8	869.34	25.01	Yes
L27207	CB27214	CB27208	355.78	0.2	CIRCULAR	24	24	10.11	870.6	869.8	11.6	Yes
L27208	CB27210	CB27208	274.29	0.3	CIRCULAR	24	24	12.37	870.36	869.8	14.62	Yes
L27210	CB27212	CB27210	249.7	0.3	CIRCULAR	15	15	3.54	870.13	870.36	5.78	Yes
L27216	CB27218	CB27216	411.98	1.28	CIRCULAR	21	21	17.94	867.07	866.12	11.83	Yes
L27217	CB27220	CB27216	432.3	0.13	CIRCULAR	30	30	15.02	866.34	866.12	21.41	Yes
L27220	CB27222	CB27220	56.19	1.25	CIRCULAR	18	18	11.72	867.62	866.34	16.14	Yes
L27221	CB27322	CB27220	90.48	0.13	CIRCULAR	18	18	3.83	866.34	866.34	9.28	Yes
L27222	CB27224	CB27222	239.52	2.3	CIRCULAR	15	15	9.79	869.62	867.62	6.22	Yes
L27226	CB27228	CB27226	242.8	0.1	CIRCULAR	36	36	20.97	863.21	862.64	46.6	Yes
L27228	CB27230	CB27228	92.2	0.1	CIRCULAR	36	36	20.84	863.73	863.21	38.76	Yes
L27229	P27234	CB27228	30	0.27	CIRCULAR	15	15	3.34	863.71	863.21	8.85	Yes
L27230	CB27232	CB27230	203	0.06	CIRCULAR	36	36	16.88	864.6	863.73	38.76	Yes
L27232	P27202	CB27233	24	-1.46	CIRCULAR	36	36	80.55	865.45	865.14	41.41	Yes
L27234	CB27236	P27234	60	0.42	CIRCULAR	36	36	43.05	863.88	863.71	37.61	Yes
L27236	CB27238	CB27236	261.17	0.51	CIRCULAR	36	36	47.42	864.47	863.88	29.91	Yes
L27238	CB27240	CB27241	53.52	0.3	CIRCULAR	30	30	22.43	865.69	865.14	29.39	Yes
L27238A	CB27241	CB27238	276.59	0.54	CIRCULAR	33	33	38.95	865.14	864.47	24.32	Yes
L27240	CB27242	CB27240	261.17	0.2	CIRCULAR	30	30	18.13	865.74	865.69	4.72	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L27242	CB27244	CB27242	184.51	0.26	CIRCULAR	24	24	11.54	865.75	865.74	4.05	Yes
L27243	CB27246	CB27244	68.2	0.22	CIRCULAR	18	18	4.93	865.87	865.75	4.2	Yes
L27244	CB27274	CB27244	38	0.71	CIRCULAR	21	21	13.36	864.88	865.75	18.08	Yes
L27248	CB27250	CB27248	107	0.21	CIRCULAR	15	15	2.99	858.22	858.04	0	No
L27250	CB27252	CB27250	247	0.18	CIRCULAR	15	15	2.76	858.68	858.22	0	No
L27252	CB27254	CB27252	291	0.15	CIRCULAR	15	15	2.54	859.11	858.68	0	No
L27254	CB27256	CB27254	250	1.84	CIRCULAR	15	15	8.75	863.7	859.11	0	No
L27256	CB27258	CB27256	400.78	0.21	CIRCULAR	15	15	2.96	864.54	863.7	0	No
L27258	CB27260	CB27258	394	0.12	CIRCULAR	15	15	2.28	865.03	864.54	0	No
L27260	CB27262	CB27260	387	0.1	CIRCULAR	15	15	2.08	865.43	865.03	0	No
L27262	CB27264	CB27262	400	0.21	CIRCULAR	15	15	2.98	866.28	865.43	0	No
L27264	CB27266	CB27264	403	0.12	CIRCULAR	15	15	2.25	866.77	866.28	0	No
L27266	CB27168	CB27266	403	0.15	CIRCULAR	15	15	2.49	867.37	866.77	0	No
L27272	CB27226	MH27235	136	0.16	CIRCULAR	42	42	40.47	862.64	862.61	46.56	Yes
L27274	P34174	CB27274	14	0.71	CIRCULAR	15	15	5.46	863.36	864.88	17.32	Yes
L27276	MH27235	P27270	40	0.55	CIRCULAR	42	42	74.61	862.61	862.59	46.53	Yes
L27301	P27316	P27302	120	0.67	CIRCULAR	24	24	18.47	865.51	866.01	4.53	No
L27302	CB27304	P27302	202.82	0.2	CIRCULAR	24	24	10.05	866.45	866.01	16.94	Yes
L27303	CB27310	P27302	156.58	0.32	CIRCULAR	18	18	5.94	866.18	866.01	16.87	Yes
L27304	CB27306	CB27304	412.06	0.1	CIRCULAR	24	24	7.05	866.48	866.45	12.67	Yes
L27306	CB27308	CB27306	333.84	0.1	CIRCULAR	24	24	7.22	866.56	866.48	10.9	Yes
L27310	CB27312	CB27310	502.07	0.22	CIRCULAR	18	18	4.92	866.64	866.18	7.11	Yes
L27312	CB27314	CB27312	131.05	0.31	CIRCULAR	15	15	3.57	866.64	866.64	2.02	Yes
L27322	CB27324	CB27322	273.79	0.13	CIRCULAR	18	18	3.76	866.69	866.34	6.59	Yes
L27324	CB27326	CB27324	220.51	0.13	CIRCULAR	18	18	3.74	865.51	866.69	9.75	Yes
L27326	CB27328	CB27326	268.85	0.54	CIRCULAR	18	18	7.71	865.42	865.51	9.66	Yes
L27328	P27330	CB27328	20	0	CIRCULAR	18	18	0.74	865.43	865.42	9.51	Yes
L27330	CB27332	P27330	128	0.31	CIRCULAR	30	30	22.93	865.43	865.43	23.9	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L27332	CB27334	CB27332	353.86	0.23	CIRCULAR	27	27	14.73	865.43	865.43	17.63	Yes
L27334	CB27336	CB27334	397.22	0.2	CIRCULAR	18	18	4.71	865.58	865.43	7.89	Yes
L27338	CB27340	P27338	136	0.2	CIRCULAR	21	21	7.06	862.48	862.28	8.86	Yes
L27340	CB27342	CB27340	396.9	0.2	CIRCULAR	21	21	7.11	863.11	862.48	8.86	Yes
L27342	CB27344	CB27342	388.64	0.17	CIRCULAR	21	21	6.63	863.81	863.11	8.86	Yes
L27344	P27302	CB27344	143.35	0	CIRCULAR	15	15	0.17	866.01	863.81	8.86	Yes
L27346	CB27348	P27346	70	0.71	CIRCULAR	30	30	34.67	864.39	863.9	31.34	No
L27347	CB27352	P27346	108	0.37	CIRCULAR	21	21	9.64	863.97	863.9	14.02	Yes
L27348	CB27350	CB27348	660.47	0.08	CIRCULAR	24	24	6.22	866.62	864.39	12.74	Yes
L27352	CB27354	CB27352	233.15	0.09	CIRCULAR	21	21	4.64	864.63	863.97	7.92	Yes
L27401	P27446	CB27447	81.71	-1.6	CIRCULAR	12	12	4.51	869.08	867.33	4.78	Yes
L27402	CB27447	P27102	96	0.72	CIRCULAR	12	12	3.02	867.33	862.5	4.78	No
L27404	P27346	P27402	100	0.5	CIRCULAR	18	18	7.43	863.9	861.82	9.95	No
L27407	CB27444	P27408	204	1.96	CIRCULAR	15	15	9.05	872.72	865.44	5.41	No
L27408	CB27410	P27408	174	0.34	CIRCULAR	21	21	9.3	868.14	865.44	9.85	No
L27409	CB27438	P27408	856.87	0.18	CIRCULAR	24	24	9.47	872	865.44	13.24	No
L27410	CB27412	CB27410	55.74	0.36	CIRCULAR	18	18	6.29	868.83	868.14	9.41	Yes
L27412	CB27414	CB27412	257.7	0.35	CIRCULAR	18	18	6.21	870.16	868.83	7.82	Yes
L27414	P27416	CB27414	55	0.55	CIRCULAR	15	15	4.77	870.95	870.16	7.31	Yes
L27415	CB27436	CB27414	184.49	0.6	CIRCULAR	18	18	8.11	870.15	870.16	2.99	No
L27416	CB27418	P27416	164	0.37	CIRCULAR	21	21	9.58	873.82	870.95	15.85	No
L27417	CB27426	P27416	148	0.54	CIRCULAR	21	21	11.65	871.12	870.95	12.62	Yes
L27418	CB27420	CB27418	209.66	0.29	CIRCULAR	21	21	8.48	874.69	873.82	11.29	Yes
L27420	CB27422	CB27420	94.92	0.32	CIRCULAR	18	18	5.91	875.67	874.69	9.46	Yes
L27422	CB27424	CB27422	167.88	0.3	CIRCULAR	15	15	3.53	878.02	875.67	7.2	Yes
L27426	CB27428	CB27426	35.71	0.56	CIRCULAR	18	18	7.86	871.25	871.12	11.38	Yes
L27428	CB27430	CB27428	63.59	0.79	CIRCULAR	15	15	5.73	872.9	871.25	9.19	Yes
L27430	CB27432	CB27430	407.35	1.35	CIRCULAR	12	12	4.14	880	872.9	3.96	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L27432	P27434	CB27432	158.66	0.63	CIRCULAR	12	12	2.83	878.04	880	3.61	Yes
L27438	CB27440	CB27438	247.67	0.81	CIRCULAR	18	18	9.44	874.02	872	12.13	Yes
L27440	CB27442	CB27440	220.83	0.91	CIRCULAR	15	15	6.15	876.06	874.02	7.9	Yes
L27446	CB27448	P27446	48	2.06	CIRCULAR	15	15	9.28	869.22	869.08	5.86	Yes
L27447	CB27454	P27446	160	1.08	CIRCULAR	12	12	3.7	869.51	869.08	2.15	Yes
L27448	CB27450	CB27448	144	1.14	CIRCULAR	15	15	6.89	870.1	869.22	7.22	Yes
L27450	CB27452	CB27450	124	1.05	CIRCULAR	15	15	6.61	870.84	870.1	4.32	No
L34104	P34106	CB34104	254.91	1.45	CIRCULAR	24	24	27.25	859.03	854	22.17	No
L34118	CB34120	CB35318	152.36	0.47	CIRCULAR	42	42	68.68	852.66	851.72	61.47	No
L34120	CB34122	CB34120	105.12	0.47	CIRCULAR	42	42	68.69	853.46	852.66	61.46	No
L34121	CB34152	CB34130	710	0.2	CIRCULAR	30	30	18.34	860.69	856.88	29.48	Yes
L34122	CB34124	CB34122	145.85	0.71	CIRCULAR	42	42	84.96	854.26	853.46	61.46	No
L34124	CB34126	CB34124	31	0.13	CIRCULAR	42	42	36.14	854.82	854.26	61.46	No
L34128	CB34130	CB34128	194	0.14	CIRCULAR	42	42	37.53	856.88	856.5	38.83	Yes
L34130	CB34132	CB34130	80	0.18	CIRCULAR	42	42	42.09	856.9	856.88	9.39	Yes
L34132	CB34134	CB34132	44	0.73	CIRCULAR	21	21	13.51	857.13	856.9	9.39	Yes
L34134	CB34136	CB34134	233	0.15	CIRCULAR	21	21	6.05	858.01	857.13	9.39	Yes
L34136	CB34138	CB34136	304	0.16	CIRCULAR	21	21	6.43	858.02	858.01	2.37	Yes
L34137	P34137	CB34136	41.71	-1.03	CIRCULAR	15	15	6.56	859.1	858.01	10.41	Yes
L34138	CB34140	CB34138	321.89	0.14	CIRCULAR	21	21	6.05	858.02	858.02	2.23	Yes
L34139	P34170	CB34182	200	0.08	CIRCULAR	15	15	1.83	862.2	861.34	5.71	Yes
L34140	CB34142	CB34140	324	0.21	CIRCULAR	21	21	7.26	858.03	858.02	1.76	Yes
L34142	CB34144	CB34142	404	0.13	CIRCULAR	18	18	3.77	858.02	858.03	1.11	No
L34144	CB34146	CB34144	396	0.17	CIRCULAR	18	18	4.29	858.03	858.02	0.58	No
L34146	CB27248	CB34146	386	0.19	CIRCULAR	18	18	4.54	858.04	858.03	0.06	No
L34149	P34148	CB34128	522	0.38	CIRCULAR	24	24	14	857.94	856.5	11.19	Yes
L34150	CB34154	P34150	141	0.23	CIRCULAR	36	36	32.27	861.28	861.21	38.77	Yes
L34152	P34150	CB34152	46	0.2	CIRCULAR	30	30	18.14	861.21	860.69	29.48	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L34154	CB34156	CB34154	270	0.05	CIRCULAR	36	36	14.64	861.75	861.28	39.77	Yes
L34156	CB34158	CB34156A	20.21	-0.54	CIRCULAR	36	36	49.21	862.2	861.97	40.68	Yes
L34156B	CB34156A	CB34156	18	0.61	CIRCULAR	36	36	52.14	861.97	861.75	40.52	Yes
L34158	CB34160	CB34158	344	0.09	CIRCULAR	36	36	20.34	863.08	862.2	37.44	Yes
L34160	CB34162	CB34160	311	0.13	CIRCULAR	36	36	23.62	863.8	863.08	35.1	Yes
L34174	CB34176	CB34178	300	0.1	Arch	15.48	26.04	3.49	862.02	861.35	9.14	Yes
L34178	CB34178	CB34180	350	0.1	Arch	15.48	26.04	3.49	861.35	864.27	10.49	Yes
L34180	CB34180	CB34162	352	0.1	CIRCULAR	36	36	18.23	864.27	863.8	25.16	Yes
L34182	CB34182	P34150	80	0.54	CIRCULAR	15	15	4.74	861.34	861.21	5.71	Yes
L34405	P34402	MH34404	44	-2.66	Arch	15.48	26.04	17.99	860.68	860.5	8.88	Yes
L34406	CB34406	P34402	47	0.06	CIRCULAR	24	24	5.72	860.68	860.68	8.09	Yes
L34412	CB34408	CB34406	188	0.16	CIRCULAR	24	24	9.04	860.76	860.68	8.09	Yes
L34416	CB34410	CB34408	247	0.09	CIRCULAR	24	24	6.9	861	860.76	8.09	Yes
L35126	CB34128	CB34126	417	0.14	CIRCULAR	42	42	37.2	856.5	854.82	61.46	Yes
L35300	CB35302	O35301	209.03	1.91	CIRCULAR	27	27	42.84	851.81	842.1	63.94	Yes
L35302	CB35304	CB35302	385.37	1.04	CIRCULAR	27	27	31.55	857.57	851.81	43.25	Yes
L35304	CB35306	CB35304	426.8	0.94	CIRCULAR	24	24	21.9	857.59	857.57	27.03	Yes
L35310	CB35312	O34204	269.57	0.48	CIRCULAR	48	48	99.37	849.68	847.91	92.16	No
L35312	CB35314	CB35312	73.86	0.47	CIRCULAR	48	48	98.88	850.52	849.68	92.15	No
L35314	CB35316	CB35314	86.54	0.46	CIRCULAR	48	48	97.66	851.02	850.52	75.23	No
L35316	CB35318	CB35316	431.98	0.47	CIRCULAR	48	48	98.23	851.72	851.02	65.95	No
L35317	P35402	CB35316	126.17	1.16	CIRCULAR	18	18	11.3	852.5	851.02	10.56	Yes
L35400	J34101	O34203	32	1.84	CIRCULAR	21	21	21.52	843.93	842.5	45.28	Yes
L35401	CB34102	J34101	470	1.1	CIRCULAR	21	21	20.74	855	843.93	23.3	Yes
L35402	CB35403	CB35404	430	0.1	CIRCULAR	36	36	21.09	857.13	857.61	24.07	Yes
L35403	MH34404	CB34176	150	0.12	Arch	15.48	26.04	4.41	860.5	862.02	9.14	Yes
L35404	CB35404	CB35406	225	0.1	CIRCULAR	36	36	23.11	857.61	858.05	23.85	Yes
L35406	CB35406	CB35407	110	0.14	CIRCULAR	36	36	24.63	858.05	858.21	23.64	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L35407	P35407	CB35407	40	-1.32	CIRCULAR	36	36	76.78	858.21	858.21	68.88	Yes
L35408	CB35408	CB35410	205	0.13	CIRCULAR	42	42	35.83	859.34	859.7	41.68	Yes
L35410	CB35410	P35420	296.71	0.27	CIRCULAR	42	42	52.24	859.7	860.22	38.76	Yes
L35411	CB35412	CB35410	109.33	0.91	CIRCULAR	42	42	96.22	859.7	859.7	11.35	Yes
L35414	CB35416	CB35414	355.99	0.27	CIRCULAR	48	48	74.59	860.75	860.25	52.78	Yes
L35416	CB35418	CB35416	349.36	0.27	CIRCULAR	48	48	74.51	861.64	860.75	37.62	Yes
L35419	CB35440	P35420	735.61	0.48	CIRCULAR	30	30	28.37	862	860.22	29.94	Yes
L35420	P35420	P35424	133	0.38	CIRCULAR	42	42	61.69	860.22	861.3	58.55	No
L35421	CB35414	P35420	148.95	0.34	CIRCULAR	48	48	83.22	860.25	860.22	52.78	Yes
L35422	SB35409	SB35411	220	0.27	CIRCULAR	36	36	37.62	858.54	859.2	44.31	Yes
L35423	CB35407	SB35409	202	0.21	CIRCULAR	36	36	30.77	858.21	858.54	46.55	Yes
L35424	CB35426	P35424	180	0.28	CIRCULAR	54	54	103.64	861.57	861.3	59.26	Yes
L35425	CB35403	CB35402	295	-0.1	CIRCULAR	36	36	21.27	857.13	856.88	24.29	Yes
L35426	CB35428	CB35427	374.3	0.11	CIRCULAR	48	48	48.69	862.55	862.42	41	Yes
L35427	CB34129	CB34128	41	0.39	CIRCULAR	36	36	41.67	856.55	856.5	24.6	Yes
L35428	CB35402	CB34129	502	-0.1	CIRCULAR	36	36	21.05	856.88	856.55	24.5	Yes
L35429	CB35434	CB35428	209.63	0.24	CIRCULAR	24	24	11.05	862.61	862.55	10.05	Yes
L35430	CB35430	CB35428	459	0.15	CIRCULAR	42	42	39.01	863.03	862.55	39.29	Yes
L35431	CB35432	CB35430	121.33	0.15	CIRCULAR	36	36	25.69	863.26	863.03	35.15	Yes
L35432	P35474	CB35432	331.18	3	CIRCULAR	15	15	11.19	867.13	863.26	1.69	No
L35434	CB35436	CB35434	50.99	0.59	CIRCULAR	12	12	2.73	862.28	862.61	3.62	Yes
L35436	P35438	CB35436	87.43	0.57	CIRCULAR	12	12	2.69	861.9	862.28	4.47	Yes
L35440	CB35442	CB35440	203.01	0.75	CIRCULAR	30	30	35.49	861.99	862	22.68	Yes
L35442	CB35444	CB35442	255.69	0.77	CIRCULAR	30	30	35.91	862.64	861.99	26.76	Yes
L35445	CB35454	P35446	497.39	0.6	CIRCULAR	30	30	31.85	866.72	866.72	18.45	Yes
L35446	CB35466	CB354466A	363	1	CIRCULAR	27	27	31.01	872.06	867.73	32.79	No
L35446A	CB354466A	CB35466B	180	4.28	CIRCULAR	27	27	64.1	867.73	866.72	32.54	No
L35446B	CB35466B	P35446	26	1.46	CIRCULAR	27	27	37.44	866.72	866.72	27	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L35447	CB35470	P35446	470.04	1.17	CIRCULAR	30	30	44.37	866.72	866.72	15.51	Yes
L35448	CB35448	P35446	187.07	4.01	CIRCULAR	21	21	31.73	866.81	866.72	16.95	Yes
L35449	CB35450	CB35448	492.25	0.81	CIRCULAR	18	18	9.47	868.32	866.81	6.26	No
L35450	CB35452	CB35450	332.39	3.16	CIRCULAR	15	15	11.48	877.9	868.32	2.6	No
L35454	CB35456	CB35454	121.65	2.06	CIRCULAR	24	24	32.43	866.72	866.72	4.42	Yes
L35455	CB35458	CB35454	110.77	0.45	CIRCULAR	24	24	15.2	866.72	866.72	7.18	Yes
L35458	CB35460	CB35458	127.61	1.41	CIRCULAR	18	18	12.48	866.72	866.72	3.25	Yes
L35460	CB35462	CB35460	41.58	0.48	CIRCULAR	15	15	4.48	866.72	866.72	2.25	Yes
L35462	P35464	CB35462	84.51	0.59	CIRCULAR	12	12	2.74	866.72	866.72	4.51	Yes
L35466	CB35468	CB35466	174.06	1.19	CIRCULAR	18	18	11.48	874.27	872.06	11.89	Yes
L35468A	CB35468A	CB35468	115	0.61	CIRCULAR	18	18	8.2	876.16	874.27	12.36	Yes
L35468B	CB35468B	CB35468A	40	0.6	CIRCULAR	18	18	8.14	877.17	876.16	12.37	Yes
L35470	CB35472	CB35470	545.93	0.22	CIRCULAR	24	24	10.61	866.72	866.72	5.96	Yes
P243	CB35476	CB35474	398.8	0.26	CIRCULAR	42	42	50.88	861.09	862	24.35	Yes
P244	CB35474	CB35418	399.36	0.27	CIRCULAR	42	42	52.32	862	861.64	33.7	Yes
P247	SB35411	CB35408	65	0.31	CIRCULAR	42	42	55.81	859.2	859.34	42.93	Yes
P248	CB35427	CB35426	518.65	0.11	CIRCULAR	48	48	47.62	862.42	861.57	59.25	Yes
P35418	P35422	CB35476	392.31	0.05	CIRCULAR	42	42	22.72	860.29	861.09	10.41	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
C11407	P11316	P11338	50	0.2	CIRCULAR	18	18	4.07	872.52	872.16	0.95	No
L11118	P11116	P11118	100	-1.1	CIRCULAR	18	18	11.02	879.23	874.09	1.25	No
L11120	P11118	P11402	100	1	CIRCULAR	18	18	10.5	874.09	871.52	8.71	No
L11204	P11206	J11204	85	0.24	CIRCULAR	24	24	10.97	872.51	871.98	7.03	No
L11211	P11202	J11206	398.43	-0.1	CIRCULAR	12	12	1.13	869.63	868.81	1.24	No
L11212	J11206	J11207	100	1	CIRCULAR	12	12	3.56	868.81	867.99	1.24	No
L11213	J11207	J11208	672.77	0.34	CIRCULAR	12	12	2.09	867.99	864.98	1.24	No
L11216	J11209	J11210	63.25	0.47	CIRCULAR	12	12	2.45	875.29	874.16	4.92	No
L11218	J11204	P11213	20	6.5	CIRCULAR	12	12	9.08	871.98	870.57	7.03	No
L11338	P11340	P11338	100	2	CIRCULAR	18	18	12.87	874.54	872.16	2.73	No
L11401	J11412	P11402	185	1.35	CIRCULAR	18	18	12.21	875.82	871.52	6.51	No
L12306	P12313	P12314	20	9	CIRCULAR	15	15	19.38	858.01	856.54	1.44	No
L13406	P13408	J13406	40	1	CIRCULAR	12	12	1.93	864.02	863.09	1.4	No
L14104	P14106	J14104	80	0.25	CIRCULAR	12	12	1.78	875.15	874.4	1.35	No
L14434	P14436	J14434	76	-0.66	CIRCULAR	15	15	4.54	871.49	870.61	3.37	No
L14435	P14401	O14429	715	0.91	CIRCULAR	15	15	6.98	874.89	866.31	7.77	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L34106	CB34108	CB34106	444.35	0.56	CIRCULAR	18	18	7.88	857.72	855.24	11.71	Yes
L34200	CB34202	O34300	181.87	7.15	CIRCULAR	27	27	82.8	849.65	843	14.88	No
L34201	CB34204	O34301	340.29	3.23	CIRCULAR	27	27	55.68	852.25	843.3	48.9	Yes
L34204	CB34106	CB34204	562.32	0.53	CIRCULAR	27	27	22.62	855.24	852.25	32.89	Yes
L34300	CB34302	O34400	43	0.67	CIRCULAR	24	24	18.58	847.68	843.6	58.78	Yes
L34302	P34304	CB34302	90	1.14	CIRCULAR	24	24	24.2	846.98	847.68	28.44	Yes
L34304	CB34306	P34304	150	0.5	CIRCULAR	27	27	21.9	848.13	846.98	32.63	Yes
L34305	CB34342	P34304	165	0.3	CIRCULAR	18	18	5.78	848.43	846.98	13.32	Yes
L34306	CB34308	CB34306	251	0.39	CIRCULAR	27	27	19.45	851.44	848.13	32.63	Yes
L34308	CB34310	CB34308	225	0.45	CIRCULAR	27	27	20.75	853.26	851.44	21.32	Yes
L34310	CB34412	CB34310	147	0.48	CIRCULAR	27	27	21.37	852.1	853.26	19.49	Yes
L34311	P34311	CB34310	65	1.08	CIRCULAR	15	15	6.7	851.97	853.26	5.58	Yes
L34328	CB34442	CB34440	279	0.42	CIRCULAR	27	27	20.14	854.88	854.39	13.72	No
L34340	CB34344	CB34342	320	0.37	CIRCULAR	18	18	6.41	854.02	848.43	13.32	Yes
L34342	CB34346	CB34344	270	0.26	CIRCULAR	18	18	5.31	854.76	854.02	6.91	Yes
L34344	CB34448	CB34346	472	0.2	CIRCULAR	18	18	4.66	854.77	854.76	5.89	Yes
L344100	CB34485	CB34487	28.54	0.7	CIRCULAR	30	30	34.34	854.34	854.34	1.76	Yes
L344101	CB34487	CB34489	33.67	0	CIRCULAR	30	30	2.24	854.34	854.34	1.82	Yes
L344102	CB34488	CB34489	46.54	5.35	CIRCULAR	18	18	24.3	854.34	854.34	0.01	No
L344103	CB34486	CB34485	71.93	1.11	CIRCULAR	18	18	11.08	854.34	854.34	0.06	Yes
L344104	CB34489	CB34497	241.59	0.41	CIRCULAR	30	30	26.26	854.34	854.34	2.04	Yes
L344105	CB34474	CB34476	97.57	1.47	CIRCULAR	30	30	49.66	854.34	854.34	0.07	No
L34412	CB34414	CB34412	217	0.3	CIRCULAR	27	27	16.95	855.47	852.1	19.26	Yes
L34414	P34418	CB34414	380	0.42	CIRCULAR	24	24	14.68	854.34	855.47	19.1	Yes
L34415	P34316	CB34414	30	12.17	CIRCULAR	15	15	22.53	852.3	855.47	3.85	No
L34416	CB34418	P34418	157	0.21	CIRCULAR	42	42	46.13	854.35	854.34	37.39	Yes
L34417	CB34430	P34418	51	1	CIRCULAR	18	18	10.5	854.35	854.34	8.86	Yes
L34418	CB34420	CB34418	155	0.43	CIRCULAR	36	36	43.52	854.38	854.35	35.3	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L34420	CB34422	CB34420	450	0.34	CIRCULAR	36	36	39.14	854.43	854.38	28.05	No
L34422	CB34424	CB34422	219	0.39	CIRCULAR	30	30	25.55	855.58	854.43	21.69	No
L34424	CB34426	CB34424	219	0.61	CIRCULAR	24	24	17.63	856.54	855.58	15.02	No
L34426	CB34428	CB34426	143	0.44	CIRCULAR	24	24	15.02	857.32	856.54	15.28	No
L34430	CB34432	CB34430	65	1.25	CIRCULAR	15	15	7.21	854.37	854.35	8.87	Yes
L34432	P34434	CB34432	32	3.28	CIRCULAR	15	15	11.7	854.38	854.37	3.54	Yes
L34433	CB34433	CB34432	30	1.97	CIRCULAR	15	15	9.06	855.47	854.37	11.35	Yes
L34434	CB34436	P34434	54	0.43	CIRCULAR	36	36	43.53	854.38	854.38	26.33	Yes
L34436	CB34438	CB34436	149	0.13	CIRCULAR	36	36	24.44	854.38	854.38	26.34	Yes
L34438	CB34440	CB34438	333	0.4	CIRCULAR	30	30	26.02	854.39	854.38	25.37	No
L34442	CB34444	CB34442	183	0.59	CIRCULAR	24	24	17.38	855.78	854.88	14.47	No
L34444	CB34446	CB34444	282	0.72	CIRCULAR	15	15	5.47	857.51	855.78	3.6	No
L34448	CB34450	CB34448	204	0.84	CIRCULAR	18	18	9.62	852.29	854.77	11.21	Yes
L34450	CB34454	CB34450	168	0.21	CIRCULAR	18	18	4.86	853.26	852.29	7.55	Yes
L34451	P34451	CB34450	32	0.31	CIRCULAR	18	18	5.87	852.23	852.29	15.38	Yes
L34452	P34452	CB34450	62	0.48	CIRCULAR	18	18	7.31	852.34	852.29	7.25	Yes
L34454	CB34456	CB34454	267	0.25	CIRCULAR	18	18	5.22	854.72	853.26	7.9	Yes
L34456	CB34458	CB34456	140	0.36	CIRCULAR	15	15	3.86	857.07	854.72	7.1	Yes
L34458	P34460	CB34458	2.61	100	CIRCULAR	27	27	309.7	855.02	857.07	83.6	No
L34459	CB34493	CB34494	33.37	0.27	CIRCULAR	18	18	5.46	854.34	854.34	0.02	No
L34460	CB34496	CB34497	122.82	1.15	CIRCULAR	18	18	11.25	854.34	854.34	0.62	Yes
L34461	CB34494	CB34496	136.81	1.36	CIRCULAR	18	18	12.25	854.34	854.34	0.05	No
L34462	CB34495	CB34496	103.55	0.69	CIRCULAR	18	18	8.7	854.34	854.34	1.95	Yes
L34463	CB34492	CB34493	81.16	0.36	CIRCULAR	18	18	6.28	854.34	854.34	0.01	No
L34464	CB34497	CB34498	38.88	1.8	CIRCULAR	36	36	89.5	854.34	854.34	2.54	Yes
L34465	CB34498	P34418	45	0.82	CIRCULAR	36	36	60.48	854.34	854.34	2.59	Yes
L34466	CB34491	CB34497	119.39	1.37	CIRCULAR	18	18	12.27	854.34	854.34	0.17	Yes
L34467	CB34490	CB34491	109.2	0.62	CIRCULAR	18	18	8.29	854.34	854.34	0.06	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L34468	CB344102	CB344103	36.58	0.36	CIRCULAR	18	18	6.26	854.34	854.34	0.04	Yes
L34469	CB344104	CB344105	132.01	-0.05	CIRCULAR	21	21	3.65	854.34	854.34	0.25	Yes
L34470	CB344103	CB344104	72.86	2.14	CIRCULAR	21	21	23.19	854.34	854.34	0.14	Yes
L34471	CB344105	CB344106	117.23	0.38	CIRCULAR	21	21	9.82	854.34	854.34	0.56	Yes
L34472	CB344106	P34418	47	0.21	CIRCULAR	24	24	10.43	854.34	854.34	0.74	Yes
L34473	CB344100	P34418	20	1	CIRCULAR	12	12	10.17	854.34	854.34	0.03	Yes
L34474	CB34499	P34418	20	1	CIRCULAR	12	12	6.62	854.34	854.34	0.03	Yes
L34475	CB34459	CB34460	31.4	7.36	CIRCULAR	12	12	9.66	858.47	856.16	0	No
L34476	CB34461	CB34462	23.73	12.73	CIRCULAR	12	12	12.71	858.53	855.51	0	No
L34477	CB34460	CB34462	69.2	0.94	CIRCULAR	18	18	10.18	856.16	855.51	0	No
L34478	CB34462	CB34463	77.68	0.33	CIRCULAR	18	18	6.08	855.51	855.25	0	No
L34479	CB34463	CB34465	94.68	0.25	CIRCULAR	18	18	5.29	855.25	855.01	0	No
L34480	CB34464	CB34465	24.77	4.84	CIRCULAR	12	12	7.84	856.21	855.01	0	No
L34481	CB34465	CB34474	38.36	5.14	CIRCULAR	18	18	23.8	855.01	854.34	0	No
L34482	CB34466	CB34467	36	0.44	CIRCULAR	12	12	2.38	855.94	855.78	0	No
L34483	CB34467	CB34468	42.89	0.49	CIRCULAR	12	12	2.49	855.78	855.57	0	No
L34484	CB34468	CB34469	89.41	0.83	CIRCULAR	18	18	9.56	855.57	854.83	0	No
L34485	CB34469	CB34470	179.48	0.53	CIRCULAR	18	18	7.64	854.83	854.34	0	No
L34486	CB34471	CB34472	32.86	0.79	CIRCULAR	12	12	3.17	855.87	855.61	0	No
L34487	CB34472	CB34470	61.69	2.8	CIRCULAR	12	12	5.97	855.61	854.34	0	No
L34488	CB34470	CB34473	60.49	0.31	CIRCULAR	18	18	5.89	854.34	854.34	0.02	No
L34489	CB34473	CB34474	59.35	1.1	CIRCULAR	18	18	10.99	854.34	854.34	0.03	No
L34490	CB34475	CB34476	42.98	7.38	CIRCULAR	18	18	28.53	854.78	854.34	0	No
L34491	CB34477	CB34478	35.24	6.07	CIRCULAR	18	18	25.89	854.34	854.34	0.01	No
L34492	CB34476	CB34478	147.21	0	CIRCULAR	30	30	1.07	854.34	854.34	0.63	Yes
L34493	CB34479	CB34480	139.99	0.34	CIRCULAR	18	18	6.15	854.47	854.34	0	No
L34494	CB34480	CB34481	118.29	0.74	CIRCULAR	18	18	9.01	854.34	854.34	0.02	No
L34495	CB34481	CB34483	99.83	0.56	CIRCULAR	18	18	7.87	854.34	854.34	0.06	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L34496	CB34482	CB34483	133.04	0.56	CIRCULAR	18	18	7.89	854.34	854.34	0.04	No
L34497	CB34483	CB34478	108.36	0.88	CIRCULAR	18	18	9.84	854.34	854.34	0.24	Yes
L34498	CB34478	CB34484	126.56	-0.37	CIRCULAR	30	30	25	854.34	854.34	1.39	No
L34499	CB34484	CB34485	123.45	0.5	CIRCULAR	30	30	29.07	854.34	854.34	1.57	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L01306	P01308	P01306	50	5	Filled Circula	6	18	3.5	871.14	867.44	1.01	No
L03312	P03314	J03312	70	1.43	CIRCULAR	18	18	10.88	882.68	881.11	3.74	No
L03419	P03432	P03418	150	0.67	CIRCULAR	18	18	7.43	888.84	888.25	0	No
L04402	P06404	J06402	98.38	0.51	CIRCULAR	18	18	6.49	888.35	887.31	9.38	No
L05336	P05338	J05136	20	5	CIRCULAR	42	42	194.97	887.18	885.2	32.42	No
L05338	P05340	P05338	150	2.67	CIRCULAR	42	42	142.39	891.19	887.18	31.28	No
L06408	P06410	J06408	107.95	0.93	CIRCULAR	18	18	8.76	890.97	889.13	5.91	No
L06412	P06414	J06412	96.03	2.08	CIRCULAR	18	18	13.14	902.52	900.07	2.47	No
L06416	P06418	J06416	99.94	2	CIRCULAR	18	18	12.88	901.54	899.08	2.72	No
L06419	J06420	J06419	39.28	20.37	CIRCULAR	18	18	41.08	909	900.16	20.07	No
L06422	P06424	J06422	106.7	0.47	CIRCULAR	18	18	6.23	910.32	909.55	0.5	No
L07102	P07107	P07102	100	0.5	CIRCULAR	24	24	13.86	892.23	892.21	6.28	yes
L07107	P07106	P07107	100	0.2	CIRCULAR	24	24	8.77	892.26	892.23	6.66	yes
L07202	P07204	J07202	300	4.33	CIRCULAR	18	18	12.92	885.57	872.38	3.07	No
L07204	P07206	P07204	77	10.39	CIRCULAR	18	18	20.01	900.36	885.57	19.87	No
L07206	J07208	P07206	100	0.5	CIRCULAR	18	18	6.44	901.33	900.36	12.83	yes
L07414	P07102	P07414	100	0.5	CIRCULAR	15	15	3.96	892.21	892.18	3.64	yes
L08302	P08304	J08302	90	2.78	CIRCULAR	18	18	15.17	886.37	883.56	1.41	No
L08328	P08330	J08328	91.17	1.1	Arch	60	108	481.07	870.15	870.11	81.1	No
L08406	CB08408	P08406	50	0.2	CIRCULAR	15	15	2.5	887.06	887.06	8.55	yes
L08407	P08418	P08408	50	11.4	CIRCULAR	18	18	21.96	892.43	884.97	10.04	No
L08408	P08416	P08408	35	0.57	CIRCULAR	15	15	4.23	884.97	884.97	8.05	yes
L08409	CB08406	P08406	50	3	CIRCULAR	18	18	15.77	888.59	887.06	19.17	yes
L08410	P07112	P08410	130	1.15	Arch	27.6	18	22.54	890.38	889.84	1.85	No
L08416	CB08420	P08416	30	13.33	CIRCULAR	15	15	20.44	884.97	884.97	9.73	No
L08417	CB08418	P08416	50	0.2	CIRCULAR	15	15	2.5	887.42	884.97	11.22	yes
L08418	P08420	P08418	105	1.05	CIRCULAR	15	15	5.73	896.24	892.43	8.83	No
L09123	P09434	P09122	1659.56	0.03	CIRCULAR	15	15	0.97	885.55	890.04	0.81	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L09218	P09320	J09218	110	0.23	Arch	60	108	218.98	867.05	866.9	88.64	No
L09324	P09426	P09424	100	0.5	CIRCULAR	15	15	3.96	892.84	892	0	No
L09326	P09428	P09426	1100.57	0.05	CIRCULAR	15	15	1.19	891.96	892.84	0.82	No
L09330	P09432	P09330	818.23	1.28	CIRCULAR	15	15	6.34	887.89	873.39	6.73	No
L10110	P10412	J10110	90	0.56	Arch	84	138	766.48	865.41	865.32	91.39	No
L10112	P10114	J10112	115	0.43	rizontal Ellip	18	24	11.1	886.78	885.74	5.68	No
L10122	P10122	P10120	100	1	CIRCULAR	15	15	5.6	888.47	888.61	1.47	No
L17405	P17407	P17404	100	3	CIRCULAR	15	15	9.7	873.54	874.21	0	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
2P Pipe	2P	1P	172	0.58	CIRCULAR	21	21	10.47	869.52	868.62	15.45	Yes
3P pipe	3P	2P	115	0.55	CIRCULAR	18	18	6.74	871.11	869.52	8.66	No
L17400	P17400	CB17400	107.87	-0.76	CIRCULAR	15	15	4.88	871.96	871.92	0.73	No
L17402	CB17401	MH17401	51.89	1.16	CIRCULAR	15	15	6.02	871.69	871.54	0.73	No
L174111	P17406	CB17402	100	0.3	CIRCULAR	15	15	3.07	873.34	873	0.21	No
L174112	CB17402	CB17403	31	0.65	CIRCULAR	15	15	4.5	873	872.78	0.21	No
L174113	CB17403	J17405	181.73	0.72	CIRCULAR	15	15	4.74	872.78	871.96	0.21	No
L18302	CB18304	J18302	195	0.39	CIRCULAR	24	24	14.22	883.1	868.68	27.27	No
L18304	CB18306	CB18304	48	0.15	CIRCULAR	24	24	8.64	883.22	883.1	8.32	No
L18305	CB18310	CB18304	168.05	1.79	CIRCULAR	15	15	8.65	885.43	883.1	7.68	Yes
L18306	CB18308	CB18306	224.92	0.12	CIRCULAR	15	15	2.28	883.71	883.22	4.7	Yes
L18307	CB18312	CB18304	484	0.4	CIRCULAR	15	15	4.07	886.52	883.1	6.2	Yes
L18312	CB18314	CB18312	169	0.5	CIRCULAR	15	15	4.58	887	886.52	5.63	Yes
L18316	J18318	L18316	164	6.9	CIRCULAR	15	15	14.7	879.18	868.54	6.45	No
L18318	CB18320	J18318	350	0.35	CIRCULAR	15	15	3.33	884.46	879.18	6.45	No
L18322	CB18324	J18322	320	4.54	CIRCULAR	15	15	13.76	881.94	868.61	12.07	No
L18326	CB18328	J18326	195	0.39	CIRCULAR	24	24	14.22	880.75	878.05	12.42	No
L18328	CB18330	CB18328	48	0.13	CIRCULAR	24	24	8	881.88	880.75	1.29	No
L18329	CB18340	CB18328	293	0.2	CIRCULAR	18	18	4.67	884.61	880.75	8.81	Yes
L18330	J18332	CB18330	275	0.1	CIRCULAR	15	15	2.06	882.45	881.88	1.17	No
L18336	CB18338	J18336	198	0.29	CIRCULAR	15	15	3.47	890.32	885.93	5.1	No
L18339	CB18339	CB18338	68	0.28	CIRCULAR	15	15	2.96	893.46	890.32	10.74	Yes
L20306	P20400	P20306	125	0	CIRCULAR	24	24	0.55	870.17	869.8	0.03	No
L21202-E	P21204-E	P21202-E	90	0.33	CIRCULAR	15	15	3.73	868.39	868.31	2.56	Yes
L21204-E	P21206-E	P21204-E	86	0.58	CIRCULAR	15	15	4.27	868.48	868.39	3.86	Yes
L21400	P21402	P21400	100	2	CIRCULAR	24	24	27.73	876.88	867.82	9.26	No
L27300	CB27302	J27300	176.06	0.01	CIRCULAR	18	18	15	863.45	863.4	5.07	No
L27301	P27306	J27300	120.3	0.06	CIRCULAR	18	18	2.62	862.85	863.4	4.48	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L27302	CB27304	CB27302	153.25	0.03	CIRCULAR	18	18	1.9	863.5	863.45	2.73	Yes
L27308	P34400	O27308	90	0	Arch	18	15	0.33	863.09	860	3.37	No
L28100	P28102	CB28100	1050	0.25	Arch	45	72	99.29	865.33	864.47	68.29	Yes
L28100-E	CB28102-E	CB28136	120.01	-0.52	CIRCULAR	24	24	16.26	865.46	865.43	11.28	Yes
L28101	J28116	P28102	10	0	CIRCULAR	15	15	0.6	865.33	865.33	5.23	Yes
9P outlet	9P	1P	108	4.31	CIRCULAR	15	15	11.63	868.64	868.62	2.76	Yes
L28102-E	P28104-E	CB28102-E	415	0.36	CIRCULAR	24	24	13.6	864.3	865.46	12.23	No
L28103	CB28130	P28102	50	0.1	CIRCULAR	24	24	6.64	865.35	865.33	20.72	Yes
L28104	CB28106	P28104	43	0.22	Arch	36	58	52.8	865.34	865.33	63.99	Yes
L28104-E	P28106-E	P28104-E	70	0.71	CIRCULAR	18	18	8.88	865.75	864.3	10.14	No
L28105	J28132	P28102	150	0.39	CIRCULAR	60	60	151.67	865.33	865.33	79.89	No
L28105-E	MH28154-E	P28104-E	90	0.11	CIRCULAR	18	18	42	865.86	864.3	7.6	No
L28106	CB28254	P28104	70	0.21	CIRCULAR	42	42	43.25	865.35	865.33	40.55	Yes
L28106a	CB28108	CB28106	56	0.2	Arch	36	58	50.24	865.35	865.34	57.95	Yes
L28106-E	CB28108-E	P28106-E	100	0.46	CIRCULAR	48	48	97.42	866.79	865.75	33.33	No
L28107	CB28120	P28104	67	0.55	CIRCULAR	33	33	36.49	865.35	865.33	37.01	Yes
L28107a	CB28146	P28102	50	0.76	CIRCULAR	48	48	116.28	865.34	865.33	75.98	Yes
L28107-E	CB28142-E	P28106-E	282.65	0.18	CIRCULAR	18	18	4.42	867.94	865.75	6.84	No
L28108	J28110	CB28108	208	0.5	CIRCULAR	36	36	43.79	868.05	865.35	27.84	Yes
L28108-E	CB28110-E	CB28108-E	94.51	0.28	CIRCULAR	30	30	21.51	867.81	866.79	31.39	No
L28109	J28156	P28102	120	0.1	CIRCULAR	54	54	57.74	865.33	865.33	57.61	Yes
L28109-E	CB28138-E	CB28110-E	209.73	1.56	CIRCULAR	12	12	4.46	868.53	867.81	2.15	No
L28110	CB28112	J28110	300	0.5	CIRCULAR	30	30	26.93	869.5	868.05	27.84	Yes
L28110-E	CB28112-E	CB28110-E	110	0.55	CIRCULAR	27	27	23.06	869.22	867.81	28.12	Yes
L28111	CB28256	P28104	50	0.38	CIRCULAR	21	21	9.07	865.33	865.33	5.07	Yes
L28111-E	CB28134-E	CB28110-E	163.57	0.41	CIRCULAR	15	15	4.13	868.21	867.81	3.78	Yes
L28112	CB28114	CB28112	320	0.5	CIRCULAR	24	24	14.85	870	869.5	12.5	Yes
L28112-E	CB28114-E	CB28112-E	186.54	0.36	CIRCULAR	27	27	18.56	870.59	869.22	22.6	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L28113-E	CB28140-E	CB28112-E	223.47	1.24	CIRCULAR	12	12	3.97	871.76	869.22	4.02	Yes
L28114-E	CB28116-E	CB28114-E	218.56	0.69	CIRCULAR	27	27	25.66	871	870.59	10.56	Yes
L17401	CB17400	CB17401	27	-0.3	CIRCULAR	15	15	3.05	871.92	871.69	0.73	No
L28115-E	CB28124-E	CB28114-E	62.98	0.79	CIRCULAR	24	24	20.16	870.9	870.59	13.63	Yes
L28116-E	CB28118-E	CB28116-E	286.64	0.23	CIRCULAR	21	21	7.55	871.8	871	6.29	Yes
L28118	P28104	N28118	10	0	CIRCULAR	15	15	0.6	865.33	865.33	6.99	Yes
L28118-E	CB28120-E	CB28118-E	134.75	1.22	CIRCULAR	15	15	7.15	870.87	871.8	1.37	No
L28119-E	CB28122-E	CB28118-E	78.67	0.6	CIRCULAR	18	18	8.12	872.64	871.8	5.04	Yes
L28120	J28122	CB28120	250	1	CIRCULAR	18	18	9.75	867.68	865.35	11.36	Yes
L28121	J28126	CB28120	191	0.5	CIRCULAR	30	30	26.86	865.8	865.35	24.45	Yes
L28122	P28124	J28122	40	0.5	CIRCULAR	18	18	6.9	868.23	867.68	12.03	Yes
L28124-E	CB28126-E	CB28124-E	332.53	0.23	CIRCULAR	24	24	10.74	871.25	870.9	11.45	Yes
L28126	CB28128	J28126	200	0.49	CIRCULAR	30	30	26.66	867.8	865.8	24.45	Yes
L28126-E	CB28128-E	CB28126-E	137.89	0.23	CIRCULAR	21	21	7.63	871.58	871.25	7.24	Yes
L28128-E	CB28132-E	CB28128-E	316.76	0.32	CIRCULAR	18	18	5.9	872.58	871.58	6.7	Yes
L28129-E	CB28130-E	CB28128-E	194.16	0.22	CIRCULAR	12	12	1.68	872	871.58	1.52	Yes
L28132	CB28134	J28132	300	0.09	CIRCULAR	60	60	73.88	865.34	865.33	81.11	No
L28134a	CB28136	CB28134	130	0.42	CIRCULAR	54	54	118.77	865.43	865.34	54.68	No
L28134-E	P28136-E	CB28134-E	193.08	0.83	CIRCULAR	15	15	5.9	867.76	868.21	3.78	No
L28136	J28138	CB28136	100	0.69	CIRCULAR	30	30	31.64	866.01	865.43	20.72	Yes
L28136-E	P21202-E	P28136-E	100	0.2	CIRCULAR	18	18	2.66	868.31	867.76	3.75	No
L28137	CB28144	CB28136	300	0.65	CIRCULAR	27	27	23.13	870.42	865.43	20.63	Yes
L28138	CB28140	J28138	250	0.44	CIRCULAR	27	27	18.99	869.91	866.01	20.71	Yes
L28143-E	MH28144-E	P28143-E	30	2.5	CIRCULAR	48	48	227.12	866.2	866.21	17.04	No
L28144-E	MH28146-E	MH28144-E	19.78	0.51	CIRCULAR	48	48	102.13	866.21	866.2	10.07	No
L28145-E	MH28148-E	MH28146-E	64.82	0.08	CIRCULAR	12	12	0.99	866.7	866.21	3.23	Yes
L28146	CB28148	CB28146	220	0.12	Arch	36	58	39.36	867.26	865.34	67.88	Yes
L28146-E	MH28150-E	MH28146-E	399.16	-0.03	CIRCULAR	36	36	11.07	866.41	866.21	6.91	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L28148	CB28150	CB28148	600	0.21	CIRCULAR	27	27	13.02	869.59	867.26	22.91	Yes
L28149	CB28154	CB28148	350	0.54	CIRCULAR	33	33	36.09	871.1	867.26	24.44	Yes
L28150	CB28152	CB28150	320	0.13	CIRCULAR	27	27	10.54	871.81	869.59	6.32	Yes
L28150-E	MH28152-E	MH28150-E	296.88	0.13	CIRCULAR	30	30	14.87	866.49	866.41	4.28	No
L28154-E	P28143-E	MH28154-E	40	0	CIRCULAR	18	18	0.53	866.21	865.86	12.39	Yes
L28156	CB28158	J28156	100	0.1	CIRCULAR	27	27	9.09	865.35	865.33	20.76	Yes
L28157	CB28162	J28156	300	0.1	CIRCULAR	30	30	12.04	865.34	865.33	14.12	Yes
L28158	CB28160	CB28158	180	0.39	CIRCULAR	21	21	9.18	866.4	865.35	14.06	Yes
L28159	CB28164	J28156	280	0.1	CIRCULAR	42	42	29.54	865.34	865.33	25.24	Yes
L28164	CB28166	CB28164	365	0.1	CIRCULAR	42	42	29.34	865.35	865.34	23.78	Yes
L28188	J28490	J28488	400	0.5	CIRCULAR	36	36	40.87	865.8	870	26.67	Yes
L28201	P28310	J28202	20	-0.15	CIRCULAR	48	48	51.66	862.42	861.43	111.37	Yes
L28202	J28204	J28202	120.29	0.12	CIRCULAR	60	60	217.8	861.42	861.43	36.81	Yes
L28204	J28206	J28204	141	0.1	CIRCULAR	60	60	76.2	861.37	861.42	36.82	Yes
L28206	J28208	J28206	343	0.1	CIRCULAR	60	60	71.07	861.25	861.37	36.8	Yes
L28208	J28210	J28208	360	0.1	CIRCULAR	60	60	76.48	861.13	861.25	36.8	Yes
L28210	J28212	J28210	360	0.1	CIRCULAR	60	60	76.48	861	861.13	36.8	Yes
L28212	J28214	J28212	360	0.1	CIRCULAR	60	60	76.48	860.89	861	36.8	Yes
L28214	J28216	J28214	360	0.1	CIRCULAR	60	60	76.48	860.75	860.89	36.81	Yes
L28216	J28218	J28216	246	0.1	CIRCULAR	60	60	77.1	862.16	860.75	150.66	Yes
L28218	P28220	J28218	210	2.33	Rectangular	36	84	351.74	863.46	862.16	150.66	Yes
L28219	P28228	P28220	591	-0.04	Arch	72	114	135.25	863.4	863.46	149.85	Yes
L28220	J28222	P28220	106	-0.33	Arch	54	88	192.7	863.62	863.46	94.17	Yes
L28221	CB28250	P28220	150	-0.31	CIRCULAR	36	36	34.67	864.91	863.46	49.71	Yes
L28222	CB28224	J28222	179	0.13	Arch	54	88	122.8	863.8	863.62	94.17	Yes
L28223	CB28252	P28220	200	-0.21	CIRCULAR	30	30	17.45	864.45	863.46	28.36	Yes
L28224	CB28226	CB28224	500	0.1	Arch	54	87	103.97	864.2	863.8	73.49	Yes
L28225	J27300	P28220	341.37	1.74	CIRCULAR	24	24	29.8	863.4	863.46	4.4	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L28226	CB28100	CB28226	300	0.1	Arch	54	87	102.22	864.47	864.2	72.97	Yes
L28228	CB28230	P28228	239	0.07	Arch	72	114	181.37	863.35	863.4	151.92	Yes
L28230	CB28232	CB28230	365	0.07	Arch	54	88	87.77	863.39	863.35	104.14	Yes
L28231	J28246	CB28230	750	0.17	Arch	36	58	45.69	865.41	863.35	31.87	Yes
L28232	CB28234	CB28232	265	0.07	Arch	54	88	87.4	863.33	863.39	76.97	Yes
L28234	J28236	CB28234	440	0.07	Arch	54	88	87.57	863.76	863.33	79.99	Yes
L28236	J28238	J28236	340	0.13	Arch	54	88	120.64	864.08	863.76	79.99	Yes
L28237	P28244	J28238	125	1.18	Arch	31	51	84.89	864.59	864.08	36.47	Yes
L28238	J28240	J28238	260	0.1	CIRCULAR	60	60	74.99	864.95	864.08	44.75	Yes
L28240	P28242	J28240	200	0.11	CIRCULAR	42	42	30.27	864.38	864.95	18.31	Yes
L28244	P28326	P28244	200	0.38	Arch	31	51	48.25	865.17	864.59	33.17	Yes
L28246	P28248	J28246	280	0.1	CIRCULAR	33	33	15.53	864.03	865.41	13.47	Yes
L28300	J28302	J28300	300	1.63	CIRCULAR	42	42	111.32	851.68	846.71	27.83	No
L28301	P28334	Mh28305	44	-3	CIRCULAR	30	30	61.57	854.3	853.54	27.83	Yes
L28302	P28304	P28334	146	0.25	CIRCULAR	42	42	47.03	854.41	854.3	24.97	Yes
L28303	Mh28305	J28302	400	0.1	CIRCULAR	42	42	27.57	853.54	851.68	27.83	No
L28305	MH28306	J28302	129.86	0.32	CIRCULAR	42	42	2.42	851.68	851.68	0.1	No
L28306	J28200	I28337	6.03	3.48	CIRCULAR	72	72	784.56	854.41	861.96	3.57	No
L28310	CB28312	P28310	187	0.18	CIRCULAR	54	54	153.42	863.04	862.42	136.9	Yes
L28312	CB28314	CB28312	560	0.1	CIRCULAR	84	84	187.59	863.34	863.04	119.47	No
L28314	CB28316	CB28314	357	0.1	CIRCULAR	84	84	188.37	863.55	863.34	104.53	No
L28316	CB28318	CB28316	506	0.1	CIRCULAR	84	84	187.59	863.76	863.55	94.51	No
L28317	CB28400	CB28318	650	0.1	CIRCULAR	72	72	124.36	863.91	863.76	66.26	No
L28318	P28320	CB28318	340	0.2	CIRCULAR	48	48	59.65	864.33	863.76	50.4	Yes
L28320	CB28324	P28320	300	1.34	CIRCULAR	18	18	11.28	868.1	864.33	10.33	Yes
L28321	CB28322	P28320	660	0.26	CIRCULAR	24	24	10.72	865.14	864.33	7.3	Yes
L28326	CB28328	P28326	400	0.1	Arch	26	43	15.76	866.45	865.17	22.78	Yes
L28400	J28102	CB28400	500	0.1	CIRCULAR	72	72	121.85	863.93	863.91	37.94	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L28401	J28488	CB28400	600	0.2	CIRCULAR	36	36	27.63	870	863.91	26.67	Yes
L28402	J28404	J28102	125	0.05	CIRCULAR	42	42	20.47	863.89	863.93	34.43	Yes
L28403	CB28476	J28102	420	0.27	Arch	45	72	105.6	864.2	863.93	52.77	No
L28404	J28406	J28404	605	0.05	CIRCULAR	42	42	20.8	864.16	863.89	34.41	Yes
L28405	CB28454	P28408	220	0.1	CIRCULAR	72	72	121.5	864.31	864.3	99.72	No
L28406	P28408	J28406	100	0.15	Rectangular	24	60	32.85	864.3	864.16	130.07	Yes
L28407	CB28430	P28408	100	0.6	CIRCULAR	21	21	11.4	864.33	864.3	12.83	Yes
L28408	CB28410	P28408	215	0.05	CIRCULAR	54	54	41.3	864.49	864.3	32.73	No
L28409	J28432	P28408	150	0.27	CIRCULAR	60	60	126.44	864.3	864.3	13.54	No
L28410	P28412	CB28410	107	0.05	CIRCULAR	48	48	28.83	864.3	864.49	24.49	No
L28411	CB28426	CB28410	330	0.1	CIRCULAR	42	42	29.54	866	864.49	35.94	No
L28413	CB28470	P28408	100	0.14	CIRCULAR	48	48	49.91	864.31	864.3	40.18	Yes
L28414	P28416	P28414	116	0.22	CIRCULAR	30	30	18.03	867.24	864.31	35.7	No
L28415	CB28401	P28402	220	0.5	CIRCULAR	18	18	6.41	877.41	876.61	3.17	No
L28416	P29104	P28416	60	0.1	CIRCULAR	24	24	6.2	866.31	867.24	16.54	No
L28417	MH28401	MH28402	24.7	2.06	CIRCULAR	15	15	8.04	873.09	872.71	1.48	No
L28418	MH28402	MH28403	232.36	0.5	CIRCULAR	18	18	6.43	872.71	871.36	1.48	No
L28419	MH28403	MH28404	43.44	0.99	CIRCULAR	24	24	19.51	871.36	870.85	1.48	No
L28420	MH28404	MH28405	30.14	1	CIRCULAR	24	24	19.56	870.85	870.66	1.48	No
L28421	MH28405	CB28406	324.57	1.04	CIRCULAR	24	24	19.98	870.66	866.22	4.68	No
L28422	P28403	CB28406	432.27	0.14	CIRCULAR	27	27	10	866.43	866.22	0.63	No
L28423	CB28407	P28404	94.17	0.46	CIRCULAR	18	18	6.15	870.37	869.94	2.72	No
L28424	P28404	P28405	164.3	0.6	CIRCULAR	21	21	10.66	869.94	869.2	4.35	No
L28425	P28405	P28406	177.99	0.47	CIRCULAR	24	24	13.39	869.2	868.49	6.26	No
L28426	CB28428	CB28426	380	0.21	CIRCULAR	33	33	22.39	866.76	866	19.05	Yes
L28427	P28406	P28407	148.52	0.55	CIRCULAR	24	24	14.57	868.49	867.93	7.73	No
L28428	P28407	CB28408	168.11	0.47	CIRCULAR	24	24	13.44	867.93	866.84	9.21	No
L28429	CB28408	CB28409	140.84	0.5	CIRCULAR	30	30	25.24	866.84	865.91	9.15	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L28430	CB28409	CB28412	149.41	0.91	CIRCULAR	33	33	43.73	865.91	865.12	12.05	No
L28431	CB28406	CB28411	281.54	0.25	CIRCULAR	48	48	62.52	866.22	865.71	5.72	No
L28432	CB28434	P28440	214	0.26	Arch	45	72	103.21	864.32	863.56	31.94	No
L28433	CB28411	CB28412	315.8	0.14	CIRCULAR	60	60	84.25	865.71	865.12	18.23	No
L28434	CB28413	CB28411	142.32	1.1	CIRCULAR	36	36	60.71	866.42	865.71	10.72	No
L28435	CB28414	CB28413	87.52	1.58	CIRCULAR	30	30	44.64	867.76	866.42	6.5	No
L28436	CB28415	CB28414	109.46	0.59	CIRCULAR	24	24	15.11	868.81	867.76	6.54	No
L28437	CB28416	CB28415	98.08	0.53	CIRCULAR	18	18	6.63	868.99	868.81	2.65	No
L28439	P28410	CB28415	75.79	0.51	CIRCULAR	18	18	6.53	869.11	868.81	3.93	No
L28440	P28409	P28410	220.74	0.49	CIRCULAR	18	18	6.4	869.76	869.11	2.01	No
L28441	P28411	P28413	173.23	0.5	CIRCULAR	18	18	6.41	868.28	867.99	4.05	No
L28442	P28413	P28415	220.61	0.5	CIRCULAR	18	18	6.46	867.99	867.63	3.63	Yes
L28449	P28420	CB28412	142	0.39	CIRCULAR	15	15	3.48	861.81	865.12	0.08	No
L28454	CB28456	CB28454	300	0.23	CIRCULAR	54	54	88.21	865.3	864.31	79.85	No
L28455	J28466	CB28456	290	0.33	CIRCULAR	42	42	54.03	866.01	865.3	34.11	Yes
L28456	CB28458	CB28456	445	0.28	CIRCULAR	42	42	49.32	866.18	865.3	33.65	Yes
L28458	CB28460	CB28458	389	0.28	CIRCULAR	42	42	49.34	866.6	866.18	31.9	No
L28460	CB28462	CB28460	188	0.28	CIRCULAR	42	42	49.37	866.93	866.6	31.38	No
L28462	CB28464	CB28462	400	0.41	CIRCULAR	27	27	18.53	871.07	866.93	22.57	Yes
L28466	J28468	J28466	350	0.53	CIRCULAR	27	27	21.02	868.53	866.01	16.14	Yes
L28470	P28472	CB28470	360	0.13	CIRCULAR	33	33	17.74	864.44	864.31	22.59	Yes
L28472	P28474	P28472	150	0.1	CIRCULAR	33	33	15.53	864.97	864.44	23.15	Yes
L28475	CB28186	CB28476	100	0.27	CIRCULAR	54	54	94.88	864.21	864.2	1.3	No
L28476	J28478	CB28476	130	0.28	Arch	40	65	78.93	864.25	864.2	26.73	Yes
L28478	CB28480	J28478	210	0.1	CIRCULAR	42	42	29.54	864.47	864.25	27.68	No
L28480	CB28482	CB28480	170	0.11	CIRCULAR	42	42	30.4	864.68	864.47	24.79	No
L28482	CB28484	CB28482	150	0.11	CIRCULAR	42	42	30.51	864.79	864.68	18.4	No
L28484	P28486	CB28484	470	0.2	CIRCULAR	27	27	12.93	865.74	864.79	12.97	Yes

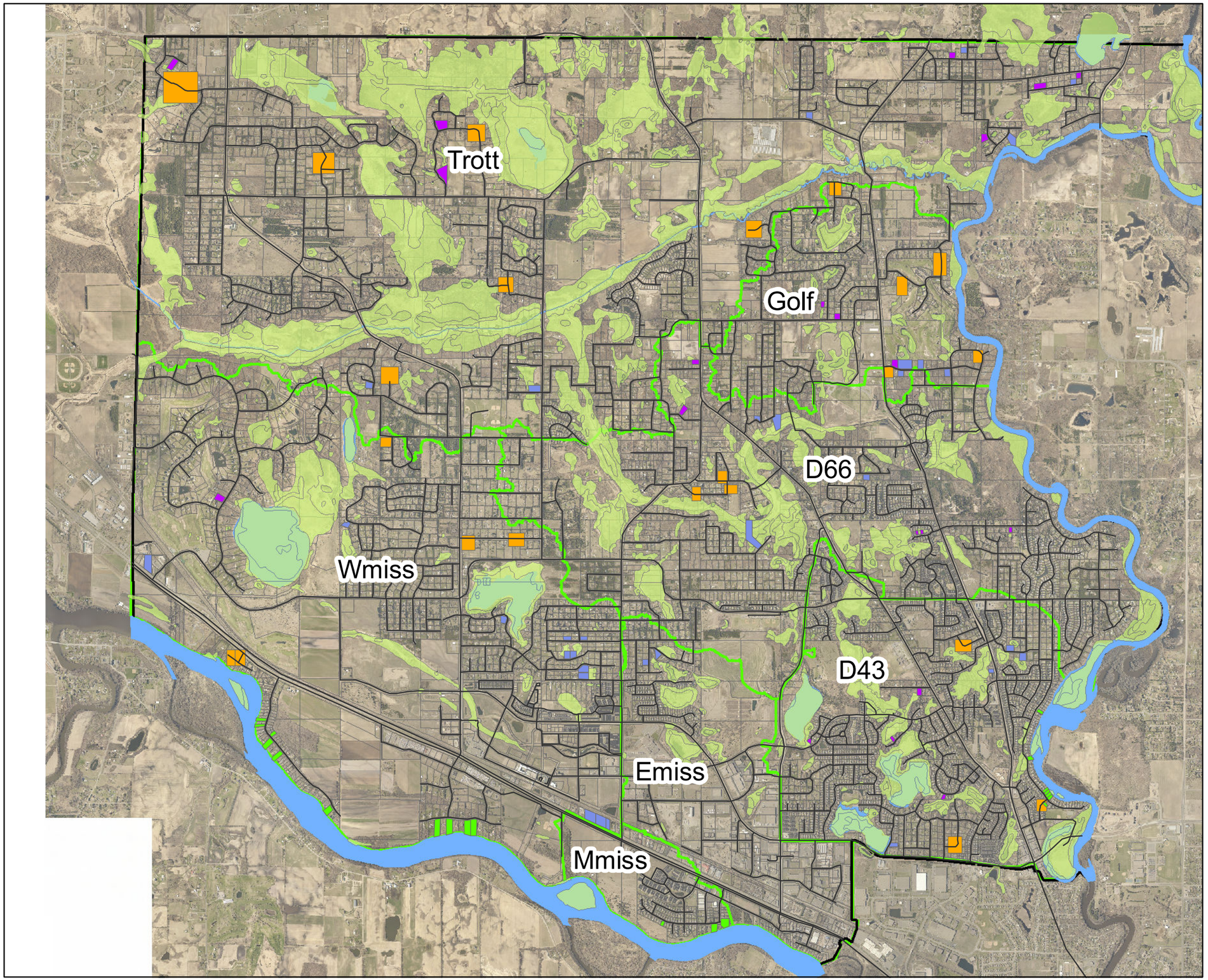
PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
L28490	P28492	J28490	56	-0.38	CIRCULAR	36	36	57.93	866.15	865.8	39.95	Yes
L28492	J28494	P28492	28	0.5	CIRCULAR	36	36	43.79	866.39	866.15	65.44	Yes
L28494	J28496	J28494	46	0.5	CIRCULAR	36	36	43.79	868.22	866.39	65.45	Yes
L28496	CB28498	J28496	12.5	0.4	CIRCULAR	36	36	39.17	869.03	868.22	65.46	Yes
L28497	CB29106	CB28498	80	0.2	CIRCULAR	36	36	27.7	869.35	869.03	39.4	Yes
L28498	CB28499	CB28498	76	0.5	CIRCULAR	24	24	14.85	870.08	869.03	24.65	Yes
L29100	P29102	CB29105	371.55	0.5	CIRCULAR	18	18	6.42	869.44	868.43	3.85	No
L29102	CB29105	P29100	26.71	1.87	CIRCULAR	18	18	12.46	868.43	868.43	3.84	Yes
L29104	CB29104	P29102	39.89	0.18	CIRCULAR	12	12	1.29	871.2	869.44	5.04	No
L30102	CB30104	O30101	345.94	0.23	CIRCULAR	24	24	10.88	852.8	849	16.19	Yes
L30104	CB30106	CB30104	244.41	0.08	CIRCULAR	18	18	36	852	852.8	8.77	Yes
L30106	CB30108	CB30106	802.88	1.18	CIRCULAR	12	12	3.88	861.96	852	4.24	Yes
L33404	J33408	O33404	10	10	CIRCULAR	4	4	1.02	842.5	850.5	3.55	Yes
L33408	J33410	J33408	176	1.51	CIRCULAR	42	42	106.99	861.33	842.5	97.91	Yes
L33410	J33412	J33410	294	1.5	CIRCULAR	42	42	114.42	843.02	861.33	27.83	No
L33412	J28300	J33412	300	1.49	CIRCULAR	42	42	114.04	846.71	843.02	27.83	No
L5065	5065	CB28100	257.71	0.57	CIRCULAR	24	24	14.81	867.8	864.47	21.83	Yes
L5066	5066	5065	214.13	0.51	CIRCULAR	24	24	13.99	866.36	867.8	10.52	Yes
L5067	5067	5066	218.78	0.42	CIRCULAR	18	18	5.9	867.46	866.36	3.63	Yes
L5073	5073	5065	66.74	0.72	CIRCULAR	15	15	4.75	868.86	867.8	3.57	Yes
L5074	5074	5066	65.95	0.86	CIRCULAR	21	21	12.77	866.52	866.36	10.39	Yes
L5200	5200	5067	103.59	0.29	CIRCULAR	15	15	3.01	866.51	867.46	1.77	Yes
L5202	5202	5067	41.18	0.44	CIRCULAR	18	18	5.67	867.15	867.46	3.44	Yes
L5203	5203	5202	94.35	0.35	CIRCULAR	18	18	5.38	867.19	867.15	3.51	Yes
L5204	5204	5203	99.58	0.27	CIRCULAR	18	18	4.74	866.69	867.19	4.73	Yes
L-A1	A1	5065	65	1	CIRCULAR	24	24	19.61	868.16	867.8	14.12	Yes
L-A2	A2	A1	165	1	CIRCULAR	21	21	13.73	868.16	868.16	9.4	Yes
L-A3	A3	A2	40	1	CIRCULAR	15	15	5.6	867.8	868.16	5.54	Yes

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
Link-05	J28353A	I28348	47	0.4	CIRCULAR	12	12	1.96	870.01	861.96	3.74	Yes
Link-06	J28376	J28374	7.13	1.96	CIRCULAR	18	18	12.76	874.02	873.94	0.35	No
Link-07	J28374	I28372	27.33	0.88	CIRCULAR	18	18	8.53	873.94	861.96	0.35	No
Link-08	J28362	P28336	127	0.31	CIRCULAR	30	30	23.02	860.76	860.41	22.51	No
Link-10	I28366	I28364	62.51	1.68	CIRCULAR	18	18	11.8	861.96	861.96	1.49	No
Link-11	CB28412	CB28434	57	0.14	Arch	45	72	72.21	865.12	864.32	32.16	No
Link-12	I28362	I28364	34.22	0.7	CIRCULAR	18	18	7.62	861.96	861.96	0.34	No
Link-13	I28364	I28368	56.5	0.81	CIRCULAR	18	18	8.21	861.96	861.96	1.95	No
Link-14	J28380	I28380	61.28	0.46	CIRCULAR	18	18	6.15	870.77	861.96	1.37	No
Link-15	I28380	J28378	21.43	1.49	CIRCULAR	18	18	11.12	861.96	870.33	1.68	No
Link-25	I28337	P28304	91.97	0.34	CIRCULAR	72	72	228.32	861.96	854.41	16.91	No
Link-26	J28433	P28418	371.31	0.08	CIRCULAR	42	42	24.78	867.27	867.24	13.4	Yes
Link-27	J28431	J28433	130.06	1.66	CIRCULAR	24	24	25.27	867.43	867.27	9.34	Yes
Link-30	P28415	P28417	162.38	0.5	CIRCULAR	21	21	9.76	867.63	867.31	6.97	Yes
Link-31	P28417	J28430	95.49	1.15	CIRCULAR	24	24	21.04	867.31	870.93	5.2	Yes
Link-32	J28430	J28433	163.57	0.62	CIRCULAR	33	33	36.19	870.93	867.27	11.66	Yes
Link-35	P-6	P29104	50	-1.6	CIRCULAR	36	36	219.36	874.32	866.31	4.33	No
Link-40	1P	1P outlet	32	-5	CIRCULAR	18	18	20.36	868.62	868	8.41	Yes
Link-42	1P outlet	RTC Connect	426	0.12	CIRCULAR	36	36	19.8	868	868	0.22	Yes
P-33	I28360	I28358	10.85	1.66	CIRCULAR	18	18	11.73	861.96	861.96	0.26	Yes
P-38A	I28352	I28356	69.17	0.39	CIRCULAR	15	15	4.37	861.96	861.96	2.96	No
P391	I28372	I28370	73.42	6.69	CIRCULAR	18	18	23.54	861.96	861.96	0.35	No
P392	I28370	J28372	92.42	0.94	CIRCULAR	18	18	8.83	861.96	868.63	4.64	No
Pipe - (11)	I28348	I28346	37.5	0.51	CIRCULAR	15	15	4.6	861.96	861.96	4.15	No
Pipe - (28)	I28378	I28376	36	0.33	CIRCULAR	18	18	10.21	861.96	861.96	1.81	No
Pipe 10	I28336	I28334	35	0.26	CIRCULAR	15	15	3.28	861.96	861.96	2.92	No
Pipe 11	CBMH13	J28360	55	0.58	CIRCULAR	24	24	17.26	861.96	857.59	8.36	No
Pipe 12	J28360	J28358	454	0.22	CIRCULAR	24	24	10.62	857.59	856.78	8.19	No

PIPE ID	FROM NODE	TO NODE	LENGTH (ft)	AVERAGE PIPE SLOPE %	PIPE SHAPE	PIPE DIAMETER (in)	PIPE WIDTH (in)	DESIGN FLOW CAPACITY (cfs)	MAXIMUM US HGL (ft)	MAXIMUM DS HGL (ft)	PEAK FLOW DURING ANALYSIS (CFS)	PIPE FLOWING FULL?
Pipe 14	CBMH 14	CBMH13	34	0.5	CIRCULAR	18	18	7.43	861.96	861.96	6.92	No
Pipe 15	I28340	I28338	36.74	0.49	CIRCULAR	15	15	4.52	861.96	861.96	1.67	No
Pipe 16	P28336	CBMH 14	116	0.72	CIRCULAR	15	15	5.5	860.41	861.96	6.47	No
Pipe 18	J28364	J28362	164	0.44	CIRCULAR	30	30	27.18	861.56	860.76	22.57	No
Pipe 19	J28366	J28364	243	0.44	CIRCULAR	30	30	27.22	862.58	861.56	22.74	No
Pipe 20a	I28338	J28366	320.21	0.44	CIRCULAR	30	30	27.12	861.96	862.58	23.18	No
Pipe 21	I28342	I28338	195	0.35	CIRCULAR	30	30	24.4	861.96	861.96	20.11	No
Pipe 22	I28346	I28342	164	0.35	CIRCULAR	27	27	18.42	861.96	861.96	17.04	No
Pipe 24	I28344	I28342	38.2	0.5	CIRCULAR	18	18	7.41	861.96	861.96	1.82	No
Pipe 25	J28368	I28346	384	0.24	CIRCULAR	27	27	15.08	866.26	861.96	11.74	No
Pipe 27	J28370	J28368	248	0.25	CIRCULAR	27	27	15.36	866.8	866.26	11.97	No
Pipe 28	I28354	J28370	236	0.49	CIRCULAR	24	24	15.79	861.96	866.8	12.26	No
Pipe 29	I28376	I28368	34	0.32	CIRCULAR	18	18	5.97	861.96	861.96	2.17	No
Pipe 3	J28356	I28337	96	0.36	CIRCULAR	18	18	6.34	861.78	861.96	0.27	No
Pipe 30	I28368	I28370	38	0.34	CIRCULAR	18	18	6.14	861.96	861.96	4.31	No
Pipe 31	I28374	J28376	33	0.64	CIRCULAR	18	18	8.38	861.96	874.02	0.35	No
Pipe 312	J28358	I28337	267	0.22	CIRCULAR	24	24	10.72	856.78	861.96	10.14	No
Pipe 32	J28372	I28354	121	0.6	CIRCULAR	18	18	8.16	868.63	861.96	4.99	No
Pipe 35	I28356	I28354	39.01	1.1	CIRCULAR	18	18	11.03	861.96	861.96	5.81	No
Pipe 36	J28378	I28378	34	0.5	CIRCULAR	15	15	4.95	870.33	861.96	1.67	No
Pipe 37	I28350	I28352	10.54	1.23	CIRCULAR	15	15	7.77	861.96	861.96	2.98	No
Pipe 4	J28354	J28356	164	0.35	CIRCULAR	18	18	6.19	862.35	861.78	0.29	No
Pipe 40	P28342	J28354	115.58	-1.3	CIRCULAR	18	18	10.37	861.68	862.35	5.11	No
Pipe 5	J28352	J28354	93	0.35	CIRCULAR	18	18	6.26	863.72	862.35	5.41	No
Pipe 6	J28350	J28352	321	0.35	CIRCULAR	18	18	6.18	864.75	863.72	5.45	No
Pipe 8	I28334	J28350	115	0.35	CIRCULAR	18	18	6.2	861.96	864.75	5.51	No
Pipe PL	P28340	I28344	26	1.96	CIRCULAR	12	12	5.41	867.26	861.96	0	No

GENERAL WATERSHED MAP WITH HISTORIC FLOODING LOCATIONS

FIGURE NO. 8
APRIL, 2015



Legend

- Streets

HISTORIC FLOODING

- 10-18-85 CITY COUNCIL MEETING
- 1997 LIST
- CITY STAFF 2007
- 2011 LIST
- 2014 LIST
- NWI
- Creeks
- Rivers
- Lakes, Ponds
- City Limits
- Watersheds
- Parcels

N

0 2,000 4,000 8,000 Feet

D43 POND SUMMARY 100 YEAR PEAK ELEVATION

FIGURE NO. 10
APRIL, 2015

P23202
MAX ELEV = 881.9

P24355
MAX ELEV = 866.33

P24354
MAX ELEV = 866.33

P23218
MAX ELEV = 876.83

P26400
MAX ELEV = 860.9

P26424
MAX ELEV = 861.49

P25442
MAX ELEV = 880.07

P25490
MAX ELEV = 881.93

P26204
MAX ELEV = 861.65

P26200
MAX ELEV = 857.45

P25216
MAX ELEV = 850.76

P26312
MAX ELEV = 855.37

P36400
MAX ELEV = 853.33

P28313
MAX ELEV = 854.32

Legend

Pond Flood Status

- Functioning Properly
- EOF Utilized
- Potential Threat to Structures
- Pipe
- Junc
- Outfall
- Subbasin
- NWI
- City Limits

N

0 500 1,000 2,000 Feet

City of RAMSEY

D43 PIPE SUMMARY
10 YEAR PIPE CAPACITY

FIGURE NO. 11
APRIL, 2015

Legend

- Pond
- Pipe
- Pipe Flowing Full
- Junc
- Outfall
- Subbasin
- NWI
- City Limits

N

0 500 1,000 2,000 Feet

Regular Planning Commission **5. 7.**

Meeting Date: 04/09/2015

By: Chris Anderson, Community Development

Information

Title:

PUBLIC HEARING: Consider Ordinance #15-08 Amending Off-Street Parking Regulations

Purpose/Background:

City Code Section 117-355 (Residential Development Off-Street Parking) currently outlines permissible locations for parking motor vehicles and equipment on residential lots. There are different standards for lots less than two (2) acres in size then there are for lots two (2) acres or larger in size. The purpose of this proposed amendment is to consider a standardized setback for parking motor vehicles and/or equipment in the side and rear yard of residential lots, regardless of their size.

Notification:

The Public Hearing was published in the Anoka County UnionHerald.

Observations/Alternatives:

Presently, on residential properties less than two (2) acres in size, City Code requires that all motor vehicles and equipment parked in the side and rear yards be closer to the principal structure than the property boundary. The intent was to try and limit visibility of stored vehicles/equipment from adjacent properties. In theory this seemed reasonable, however, application of this standard has proven to be impractical and hasn't necessarily accomplished the intended goal.

On residential properties that are two (2) acres or greater in size, motor vehicles and equipment parked in the side or rear yard of a property are required to be at least fifteen (15) feet from the property boundary. This provision was simply to ensure that items were not parked right along a property boundary.

The proposed amendment would simplify the off-street parking standards regarding where items (motor vehicles and equipment) can be parked on a residential lot by establishing a base setback of five (5) feet from side and rear property lines regardless of property size. This is compatible with the current setback requirement for driveways, which is applicable regardless of property size and residential zoning district. Under current regulations, a motor vehicle parked on a lawful driveway in the side or rear yard of a property could still be in violation of the off-street parking ordinance if the vehicle was either closer to the property line than the home (in the MUSA District) or within fifteen (15) feet of the side/rear property line (Rural Developing District). The proposed amendment would eliminate this contradiction.

Ideally, additional parking area would be accommodated along the side of a garage. However, attached and detached accessory buildings must maintain a minimum setback of at least six (6) feet (MUSA District) or ten (10) feet (Rural Developing District), oftentimes resulting in insufficient space to accommodate a driveway extension that meets the driveway setback and that does not encroach within a drainage and utility easement. Thus, while the proposed amendment wouldn't solve this, it does not result in additional obstacles for individuals trying to accommodate off-street parking needs.

Alternatives

Option 1: Recommend that City Council adopt Ordinance #15-08 amending the off-street parking regulations by establishing a consistent setback of five (5) feet for parking motor vehicles and equipment on residential properties,

regardless of lot size. This simplifies off-street parking provisions by eliminating different standards based on lot size. The requirement that motor vehicles and equipment be stored closer to the principal structure than the lot line has proven impractical when applied in the field and has not necessarily achieved its intended goal. Furthermore, the amendment still ensures that items are not parked right along a property boundary, consistent with setback standards for driveways. Staff supports this option.

Option 2: Do not recommend that City Council adopt Ordinance #15-08. If the amendment were not adopted, off-street parking standards would remain as is, including different provisions based on lot size. While Staff is not aware of any noted issues with a fifteen (15) foot setback (other than it being three [3] times the setback of a driveway), there have been concerns raised regarding parking items closer to the principal structure than the lot line. From an enforcement perspective, this has not been practical nor has it seemed to achieve its intended purpose of limiting the view of items from adjacent properties. Staff does not support this option.

Funding Source:

This ordinance is being prepared as part of normal Staff duties.

Recommendation:

Staff recommends that the City Council adopt Ordinance #15-08.

Action:

Motion to recommend the City Council adopt Ordinance #15-08.

Attachments

City Code Section 117-355 with Redlined Text

DRAFT Ordinance #15-08

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 12:14 PM
Form Started By: Chris Anderson		Started On: 03/27/2015 03:22 PM
Final Approval Date: 04/03/2015		

Sec. 117-355. - Residential development off-street parking.

(a) In any residential district, inside parking of licensed and/or unlicensed motor vehicles and equipment, in any number, commercial or private, shall be permitted.

(b) In any residential district, outside parking of any motor vehicle(s) and/or recreational equipment is subject to the following conditions:

(1) *Number of items.*

a. Six items allows for outdoor storage and parking on parcels less than two acres in size.

b. Eight items allowed for outdoor storage and parking on parcels between two and 4.99 acres in size.

c. Ten items allowed for outdoor storage and parking on parcels five acres or greater in size.

d. Items stored or parked separate from other items shall count as one item each; multiple items stored or parked on a trailer, for instance, count as one item. (Example: two snowmobiles and an empty trailer on the ground are three items; two snowmobiles on a trailer are one item).

e. Items that will count towards the number restriction include, but are not limited to, the following examples: motor vehicles, recreational vehicles, campers, boats, canoes, snowmobiles, jet-skis, all terrain vehicles, go-carts, motocross bikes, motorcycles, fish houses, and other recreational equipment and self-propelled vehicles.

f. Exceptions: Items that will not count towards the number restriction include those items typically seen as accessory to a residential use. Examples would be lawnmowers, garden tractors and attachments, bicycles, wheelbarrows, play structures, stepladders, and other items used for routine home and lawn maintenance.

g. Increase in the number of items will be allowed through an administrative zoning permit at the discretion of the zoning administrator if the applicant can demonstrate a higher number of drivers, topographical issues on the lot or other practical difficulties.

(2) *Location and setbacks.*

a. On all residential parcels ~~less than two acres in size~~:

1. ~~Items, including motor vehicles and equipment, stored outdoors shall be stored closer to the principal structure than the lot lines. Items shall be required to meet all other setbacks in the underlying and/or overlay zoning district.~~ Motor vehicles parked or stored in a side or rear yard shall maintain a setback of at least 5 feet from the edge of the parking surface to the lot line(s).

2. Equipment parked or stored in the side yard shall maintain a setback of at least 5 feet from the edge of the parking surface to the lot line(s).

3. Equipment parked or stored in the rear yard shall maintain a setback of at least 5 feet from the lot line(s).

~~b. On parcels two acres or greater:~~

~~1. Motor vehicles stored or parked in a side or rear yard shall maintain a 15-foot setback from the edge of the parking surface to the lot line.~~

~~2. Equipment stored in the side or rear yard shall maintain a setback of 15 feet from the lot lines.~~

(3) *Surfacing.*

a. Inside the metropolitan urban service area (MUSA).

1. Currently licensed and operable motor vehicles, the primary purpose of which is for private transportation or recreational use may be parked:

   (i) In the front yard if on a driveway.

   (ii) In the side or rear yard provided it is parked on a residential parking surface that consists of either bituminous pavement or concrete.

2. Equipment, for which the primary purpose is private or personal/recreational use may be parked:

   (i) In the front yard if on a driveway.

   (ii) In the side yard on a residential parking surface of either bituminous pavement or concrete.

   (iii) In the rear yard on an unimproved surface.

b. Outside the metropolitan urban service area (MUSA).

1. Currently licensed and operable motor vehicles, the primary purpose of which is for private transportation or recreational use may be parked:

   (i) In the front yard if on a driveway.

   (ii) In the side or rear yard provided it is parked on a residential parking surface that consists of either bituminous pavement, concrete, or prepared gravel/Class V of at least two inches in depth that is applied to the entire area beneath the motor vehicle and extending 12 inches around the perimeter of the motor vehicle.

2. Equipment, for which the primary purpose is private or personal/recreational use may be parked:

   (i) In the front yard if on a driveway.

   (ii) In the side yard on a residential parking surface of bituminous pavement, concrete, or Class V of at least two inches in depth, that is applied to the entire area beneath the equipment and extending 12 inches around the perimeter of the equipment.

   (iii) In the rear yard on an unimproved surface.

c. An alternative surface, such as pervious pavement, may be considered with appropriate base and approval of the zoning administrator.

(4) Residents shall be allowed to have one unlicensed, inoperable motor vehicle that may be stored outdoors. This motor vehicle shall not be permitted to be stored in the front yard or driveway. This motor vehicle must be stored in the side or rear yard on a prepared surface and must be completely screened from adjacent properties and right of way. This motor vehicle shall still be subject to the city's public nuisance regulations.

(5) The material for the prepared parking surface must be at least two inches in depth. It is reiterated that City Code requires the surface to be applied under the entire motor vehicle or equipment and extend 12 inches beyond the perimeter of the motor vehicle or equipment.

(6) At no time shall a motor vehicle or equipment be parked such that any portion of the motor vehicle or equipment extends into a sidewalk or trail, as these are considered public right of ways.

(c) Commercial use motor vehicles and equipment may be parked outside for short-term periods, defined as eight hours or less in one 24-hour period, or for longer periods under the following conditions:

(1) *Inside the MUSA:*

a. Said items shall be screened to a degree of 75 percent at ground level view from the public right-of-way and adjacent properties.

b. Said items shall be parked only in the side or rear yard of the subject property and said items shall be parked on a residential parking surface that consists of bituminous pavement or concrete.

c. Commercial use motor vehicles and equipment intended to be parked outside that cannot meet criteria established in subsections (c)(1)a. and b. above, but can provide for alternatives to same, shall be required to obtain an interim use permit or home occupation permit, where applicable.

d. Commercial use motor vehicles and equipment shall count towards the total number of allowable items that may be stored outside as defined in this section.

(2) *Outside the MUSA:*

a. Said items shall be screened to a degree of 50 percent at ground level view from the public right-of-way and adjacent properties.

b. Said items shall be parked only in the side or rear yard of the subject property and said items shall be parked on a residential parking surface that consists of bituminous pavement, concrete, or Class V with a minimum of a two-inch base.

c. Commercial use motor vehicles and equipment intended to be parked outside that cannot meet criteria established in subsection (c)(2)a. and b. above, but can provide for alternatives to same, shall be required to obtain an interim use permit or home occupation permit, where applicable.

d. Commercial use motor vehicles and equipment shall count towards the total number of allowable items that may be stored outside as defined in this section.

(d) Active agricultural motor vehicles and equipment necessary to sustain agricultural uses are allowed and not required to be parked on a prepared surface nor screened.

(e) Private and/or commercial use motor vehicles and equipment shall not be parked on a parcel unless said personal property is owned or leased by a person residing on the parcel, or owned or leased by the employer of a person residing on the parcel. The Minnesota Department of Motor Vehicles registration records shall be used to determine the owner of registered vehicles and/or equipment and said owner's address.

(f) The "GF game fair parking overlay district," is established as shown on the official zoning map accompanying this code. Notwithstanding the provisions of section 117-355 to the contrary, game fair parking on residentially zoned property may be permitted in required side and front yards only during the period of the annual "game fair" conducted by Armstrong Kennels.

(Code 1978, § 9.11.08; Ord. No. 73-05, 5-21-1973; Ord. No. 03-30, 9-15-2003; Ord. No. 08-27, § 2(9.11.08), 10-14-2008; Ord. No. 10-02, § 2, 1-26-2010; Ord. No. 12-12, § 2, 8-13-2012)

ORDINANCE #15-08
CITY OF RAMSEY
ANOKA COUNTY
STATE OF MINNESOTA

AN AMENDMENT TO CHAPTER 117 OF THE CITY CODE, WHICH CHAPTER IS KNOWN AS ZONING AND SUBDIVISIONS OF THE CITY CODE OF RAMSEY, MINNESOTA

AN ORDINANCE AMENDING SECTIONS 117-355 (RESIDENTIAL DEVELOPMENT OFF-STREET PARKING) OF THE RAMSEY CITY CODE.

The City of Ramsey Ordains:

SECTION 1 AUTHORITY

This ordinance is adopted pursuant to and under the authority of the City Charter of the City of Ramsey.

SECTION 2 AMENDMENTS

Section 117-355 Subsection (B) (2) a. is amended to read as follows:

a. On all residential parcels:
    1. Motor vehicles stored or parked in a side or rear yard shall maintain a setback of at least 5 feet from the edge of the parking surface to the lot line(s).
    2. Equipment parked or stored in the side yard shall maintain a setback of at least 5 feet from the edge of the parking surface to the lot line(s).
    3. Equipment parked or stored in the rear yard shall maintain a setback of at least 5 feet from the lot line(s).

SECTION 3. SUMMARY

The following is the official summary of Ordinance #15-08, which has been approved by the City Council of the City of Ramsey as clearly informing the public of the intent and effect of the Ordinance.

It is the intent and effect of Ordinance #15-08 to amend Ramsey, Minnesota City Code Sections 117-355 to:

- Eliminate the provision that on properties less than two (2) acres in size motor vehicles and equipment shall be parked closer to the principal structure than the lot line.
- Eliminate the provision that on properties two (2) acres or greater in size motor vehicles and equipment shall maintain a 15 foot setback from the lot line.
- Establish a minimum setback requirement of five (5) feet from side and rear property lines for motor vehicles and equipment parked on any residential property, regardless of property size.

SECTION 4. EFFECTIVE DATE

The effective date of this Ordinance is thirty (30) days after its passage and publication, subject to City Charter Section 5.07.

Adopted by the Ramsey City Council the 12th day of May, 2015.

_____
Mayor

ATTEST:

_____
City Clerk

Introduction Date:
Posting Dates:
Adoption Date:
Publication Date:
Effective Date:

Regular Planning Commission **7. 1.**

Meeting Date: 04/09/2015

By: JoAnn Shaw, Community Development

Information

Title:

Zoning Bulletins

Purpose/Background:

Enclosed are zoning periodicals for your review.

Notification:

Observations/Alternatives:

Funding Source:

Recommendation:

Action:

Attachments

Zoning Bulletins

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/03/2015 12:06 PM
Form Started By: JoAnn Shaw		Started On: 04/02/2015 02:32 PM
Final Approval Date: 04/03/2015		

QUINLAN™ February 25, 2015 | Volume 9 | Issue 4

Zoning Bulletin

in this issue:

Telecommunications Act—City denies cell tower request and provides published meeting minutes with reasons for denial 26 days later 2

Validity of Zoning Regulations—Township's zoning ordinance prohibits all billboards 5

Time for Proceedings—Neighboring property owners appeal site plan approval 7

Sovereign Immunity/Preemption—Town alleges zoning violations against property owner 9

Zoning News from Around the Nation 12

THOMSON REUTERS

Mat #41675495

Telecommunications Act—City denies cell tower request and provides published meeting minutes with reasons for denial 26 days later

Telecommunication company contends city failed to meet Telecommunications Act requirement of providing written reasons for denial

Citation: *T-Mobile South, LLC v. City of Roswell, Ga., 135 S. Ct. 808 (2015)*

The Supreme Court of the United States has ultimate appellate jurisdiction

Contributors

Corey E. Burnham-Howard

For authorization to photocopy, please contact the **Copyright Clearance Center** at 222 Rosewood Drive, Danvers, MA 01923, USA (978) 750-8400; fax (978) 646-8600 or **West's Copyright Services** at 610 Opperman Drive, Eagan, MN 55123, fax (651) 687-7551. Please outline the specific material involved, the number of copies you wish to distribute and the purpose or format of the use.

This publication was created to provide you with accurate and authoritative information concerning the subject matter covered; however, this publication was not necessarily prepared by persons licensed to practice law in a particular jurisdiction. The publisher is not engaged in rendering legal or other professional advice and this publication is not a substitute for the advice of an attorney. If you require legal or other expert advice, you should seek the services of a competent attorney or other professional.

Zoning Bulletin is published and copyrighted by Thomson Reuters, 610 Opperman Drive, P.O. Box 64526, St. Paul, MN 55164-0526. For subscription information: call (800) 229-2084, or write to West, Credit Order Processing, 620 Opperman Drive, PO Box 64833, St. Paul, MN 55164-9753.

POSTMASTER: Send address changes to Zoning Bulletin, 610 Opperman Drive, P.O. Box 64526, St. Paul, MN 55164-0526.

THOMSON REUTERS

610 Opperman Drive
P.O. Box 64526
St. Paul, MN 55164-0526
1-800-229-2084
email: west.customerservice@thomsonreuters.com
ISSN 0514-7905
©2015 Thomson Reuters
All Rights Reserved
Quinlan™ is a Thomson Reuters brand

over all federal courts and over state court cases involving issues of federal law.

SUPREME COURT OF THE UNITED STATES (01/14/15)—This case addressed the issues of whether, and in what form, localities must provide reasons when they deny telecommunication companies' applications to construct cell phone towers. More specifically, it addressed: (1) whether a locality must provide reasons when it denies a siting application; and (2) whether a locality's reasons for denying a siting application must appear in the same writing that conveys the locality's denial.

The Background/Facts: In February 2010, T-Mobile South, LLC ("T-Mobile") applied to build a new, 108-foot-tall cell phone tower on 2.8 acres of vacant residential property in the city of Roswell, Georgia (the "City"). Ultimately, the City's Planning and Zoning Division found that T-Mobile's application met all of the requirements set out in the City's ordinances. After a public hearing, the City Council ultimately denied T-Mobile's application. Two days later, the City's Planning and Zoning Division informed T-Mobile of the denial via a letter. The letter did not provide reasons for the denial, but stated that minutes from the meeting (at which City Council members voiced their reasons) would be made available. The detailed minutes were published 26 days later.

Three days after the detailed minutes were published—and now 29 days after the City Council denied T-Mobile's application and one day before T-Mobile's appeal period expired—T-Mobile filed suit in Federal District Court. T-Mobile alleged that the City Council's denial was not supported by substantial evidence in the record, and would effectively prohibit provision of wireless service in violation of the federal Telecommunications Act of 1996 (the "Act").

The Act provides, in relevant part, that "[a]ny decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record." (110 Stat. 151, 47 U.S.C.A. § 332(c)(7)(B)(iii).)

Both the City and T-Mobile moved for summary judgment; they asked the district court to find that there were no material issues of fact in dispute and to decide the matter in their favor on the law alone. The district court agreed with T-Mobile and issued summary judgment in its favor. It concluded that the City, by failing to issue a written decision stating its reasons for denying the application, had violated the Act.

The City appealed. The Eleventh Circuit Court of Appeals disagreed with the district court. It found that the City had met the Act's requirements because T-Mobile had received a denial letter and also possessed a transcript of the public hearing at which the City Council voted to deny the application. (T-Mobile had arranged privately to have the public hearing transcribed and thus possessed that transcript since the date of the public hearing.)

T-Mobile again appealed. It argued that the City was required by the Act to provide reasons for its denial in the writing conveying the denial itself. The City countered that "a reason-giving obligation would deprive it of local zoning authority."

DECISION: Judgment of Eleventh Circuit reversed and matter remanded.

© 2015 Thomson Reuters

The United States Supreme Court held that the Act (§ 332(c)(7)(B)(iii)) does require localities to provide reasons why they deny applications to build cell phone towers. The court stressed that the reasons that must be given "need not be elaborate or even sophisticated, but rather . . . simply clear enough to enable judicial review." The court based this holding on the plain language of the provisions of the Act, noting that it "would be considerably difficult for a reviewing court to determine whether a locality's denial was 'supported by substantial evidence contained in a written record,' § 332(c)(7)(B)(iii), or whether a locality had 'unreasonably discriminate[d] among providers of functionally equivalent services,' § 332(c)(7)(B)(i)(I), or regulated siting 'on the basis of the environmental effects of radio frequency emissions,' § 332(c)(7)(B)(iv), if localities were not obligated to state their reasons for denial." Moreover, the court found the Act's phrase "substantial evidence" was used as a "term of art" that describes how "an administrative record is to be judged by a reviewing court."

Importantly, the court also held that localities are not required to provide their reasons for denying siting applications in the denial notice itself. Rather, the court concluded that localities "may state those reasons with sufficient clarity in some other written record issued essentially contemporaneously with the denial." In so holding, the court again looked to the text of the Act, finding nothing imposed any requirement that the reasons be given in any particular form. Thus, here, the court concluded that the City's detailed meeting minutes fulfilled the written reasons requirement.

Although the court found that the Act does not require a locality to provide its written reasons in any particular format, and although the court found that a locality may rely on detailed meeting minutes as it did here, the court also held that a "locality must provide or make available its written reasons at essentially the same time as it communicates its denial." The court said that a locality cannot "stymie or burden the judicial review contemplated by the [Act] by delaying the reasons for a substantial time after it conveys its written denial" to an entity that only has 30 days within which to seek judicial review under the Act.

Here, although the court found that the City had provided its reasons in writing and did so in the acceptable form of detailed minutes of the City Council meeting, the court also concluded that the City failed to provide its written reasons for denial "essentially contemporaneously" with its written denial. The court found that the City's issuance of the detailed minutes 26 days after the date of the written denial letter and just 4 days before T-Mobile's time to seek judicial review would have expired, did not meet the Act's requirements.

See also: *U. S. v. Carlo Bianchi & Co., 373 U.S. 709, 83 S. Ct. 1409, 10 L. Ed. 2d 652 (1963).*

Case Note:

In its decision, the court noted that a cell phone tower application denial itself need only be issued "within a reasonable period of time" (§ 332(c)(7)(B)(ii)), which has been interpreted to allow localities 90 days to act on applications to place new antennas on existing towers and 150 days to act on other siting applications.

 © 2015 Thomson Reuters

Case Note:

The court's holding that locality's reasons for denying a siting application need not appear in the same writing that conveys the locality's denial, abrogated (i.e., repealed/abolished) the following cases: Southwestern Bell Mobile Systems, Inc. v. Todd, 244 F.3d 51, 31 Envtl. L. Rep. 20578 (1st Cir. 2001); New Par v. City of Saginaw, 301 F.3d 390, 2002 FED App. 0276P (6th Cir. 2002); and MetroPCS, Inc. v. City and County of San Francisco, 400 F.3d 715 (9th Cir. 2005).

Validity of Zoning Regulations—Township's zoning ordinance prohibits all billboards

Billboard company challenges zoning prohibition as unconstitutionally exclusionary

Citation: *In re Bartkowski Inv. Group, Inc., 2014 WL 6865462 (Pa. Commw. Ct. 2014)*

PENNSYLVANIA (12/08/14)—This case addressed the issues of: (1) whether a township's zoning ordinance was unconstitutionally exclusionary as to billboards; and (2) to what judicial relief is a challenger/developer entitled when a zoning ordinance is found to be unconstitutionally exclusionary.

The Background/Facts: Bartkowski Investment Group, Inc. ("BIG") sought to construct several billboards in the Haverford Township (the "Township"). It applied to the Township's Zoning Hearing Board ("ZHB") for approval to construct the billboards. In those applications, BIG raised substantive validity challenges to the Township's zoning ordinance ("ZO"). It alleged that the ZO's municipality-wide exclusion of billboards was unconstitutional.

The ZHB ultimately issued a decision denying BIG's substantive validity challenges. Although the ZHB found that the ZO prohibited "billboards," the ZHB held that it did not prohibit all nonaccessory outdoor advertising signs and therefore was not unconstitutional. In any case, the ZHB alternatively concluded that even if the ZO improperly excluded billboards, the Township had demonstrated that health and safety concerns supported the prohibition of BIG's billboards.

BIG appealed. The trial court affirmed the ZHB's decision "to the extent that the billboards proposed by [BIG] were not suitable for the proposed sites."

BIG again appealed. On appeal, BIG again argued that the ZO was unconstitutionally exclusionary to billboards. It also argued that since the ZO was unconstitutional, it was entitled to judicial relief in the form of site-specific relief granting approval of its billboards.

DECISION: Judgment of court of common pleas affirmed in part and remanded.

The Commonwealth Court of Pennsylvania held that the ZO was unconstitu-

tional for totally excluding billboards from the entire municipality given that the exclusion was not substantially related to the public health, safety, morality, or general welfare.

In so holding, the court explained that zoning ordinances are presumed constitutional unless the challenger (i.e., here, BIG) can demonstrate that the ordinance totally or effectively excludes an otherwise legitimate use by showing that the ordinance is either: (1) *de jure* exclusionary in that, on its face, the ordinance totally bans a legitimate use; or (2) *de facto* exclusionary in that the ordinance permits the use on its face, but, when applied, actually prohibits the use throughout the municipality.

The court further explained that if a challenger meets that burden, the burden then shifts to the municipality to show, through evidence, that the total exclusion "bears a substantial relationship to the public health, safety, morality, or welfare." Such a showing by the municipality "will rescue an otherwise exclusionary ordinance from a constitutional challenge," said the court.

Here, BIG had argued that the ZO was *de jure* exclusionary because it expressly prohibited billboards in the Township. The court found that all parties agreed that the ZO did prohibit billboards in the Township. The court found that the ZO classified a "commercial billboard" as a form of off-premises advertising sign. Section 182-701.B(6) of the ZO provided that "[a]ll signs, other than exempt signs, shall be erected on the same lot as the use to which it pertains." Section 182-701.B(9) provided that signs "are intended for purposes of identification and information and not for advertising of a product or service." Roughly translated, the court found that those provisions meant that the ZO generally prohibited all off-premises advertising signs, including billboards, subject to certain exemptions, none of which allowed for a billboard or advertising sign.

Having found the ZO totally excluded billboards as a permitted use, the court found the burden shifted to the Township to show, through evidence, that the total exclusion of billboards from the Township "[bore] a substantial relationship to the public health, safety, morality, or welfare." The court said that the Township had to "present evidence to support the ban of the use throughout the municipality, and not simply rely upon evidence demonstrating only that health, safety, and welfare concerns support the prohibition on the particular sites upon which [BIG] propose[d] to develop or construct the prohibited use."

The court concluded that the Township failed to meet that burden. The court found that each of the ZHB's material factual findings relating to the Township's burden to justify the municipality-wide exclusion of billboards, and the evidence on which the ZHB relied, were directed to BIG's proposed billboards, as configured and located at specific locations. "Neither the findings of the ZHB nor the record provide[d] a sufficient basis to justify [the Township's] municipality-wide exclusion of billboards," concluded the court.

Accordingly, the court held that the ZO was unconstitutional for totally excluding billboards from the entire municipality and that the Township failed to prove a substantial relationship between the exclusion and the public health, safety, morality, or general welfare.

As to the appropriate relief to thus grant BIG in light of the finding that the ZO was unconstitutional, the court looked to § 1006-A(c) of the state's

 © 2015 Thomson Reuters

Municipalities Planning Code ("MPC"). That statute provides that if an ordinance unlawfully prevents a use, the court may order the described use approved as to all elements or it may order it approved as to some elements and refer other elements to the governing body having jurisdiction for further proceedings. The court found that the record before the ZHB was "more than adequate to reject [BIG's request for] judicial relief under Section 1006-A(c) in the form of approval of all elements of BIG's proposed billboards" in that it showed ample evidence that allowing the proposed billboards at the proposed sites could be detrimental to the health and safety of the residents and passersby. However, the court remanded the matter to the trial court to consider whether alternative relief could and should be made available to BIG with respect to BIG's proposed billboard sites.

See also: *Interstate Outdoor Advertising, L.P. v. Zoning Hearing Bd. of Warrington Tp., 39 A.3d 1019 (Pa. Commw. Ct. 2012), appeal denied, 621 Pa. 680, 75 A.3d 1283 (2013).*

See also: *Township of Exeter v. Zoning Hearing Bd. of Exeter Tp., 599 Pa. 568, 962 A.2d 653 (2009).*

See also: *Appeal of Miller and Son Paving, Inc., 161 Pa. Commw. 138, 636 A.2d 274 (1993).*

Time for Proceedings—Neighboring property owners appeal site plan approval

Town argues appeal is untimely, and parties dispute whether appeal period ran from date of public hearing vote or date or written decision issued

Citation: *Beckford v. Town of Clifton, 2014 ME 156, 2014 WL 7448471 (Me. 2014)*

MAINE (12/31/14)—This case addressed the issue of whether property owners timely appealed a planning board decision. More specifically, it addressed the issue of whether a vote by a zoning board of appeals only triggers the statutory appeal period once a written decision is issued.

The Background/Facts: In late 2010, Pisgah Mountain, LLC applied to the Town of Clifton Planning Board (the "Board") for site plan approval to build and operate a five-turbine commercial wind energy project. The Board eventually voted to approve Pisgah's application. Peter and Julie Beckford (the "Beckfords") then appealed the Board's decision to the Town's Zoning Board of Appeals ("ZBA").

On January 25, 2012, the ZBA held a hearing on the appeal at which it voted to adopt the Board's findings of fact and to reject each of the Beckfords' specific challenges that had been raised on appeal. At that hearing, the ZBA voted to deny the appeal "in its entirety." The ZBA then decided to meet again on January 30, "for the Final Decision."

© 2015 Thomson Reuters

On January 30, 2012, the ZBA approved the minutes of the January 25 meeting, which memorialized the votes from the January 25 meeting. The ZBA also voted to accept a written Notice of Final Decision on the Beckfords' appeal.

On March 5, 2012, the Beckfords again appealed, filing a complaint in superior court. Pisgah and the Town moved to dismiss the Beckfords' complaint. They argued that the Beckfords' appeal to court was untimely in that it was filed outside of the 45-day statutory appeal period (30-A M.R.S. § 2691(3)(G)). They contended that the statutory appeal period started on January 25 when the ZBA voted to deny the appeal at the public hearing.

The Superior Court disagreed and denied the motion to dismiss. The court held that the statutory appeal period started on January 30 when the ZBA issued its written findings and decision, not on January 25 when it voted to deny the appeal. The court also ultimately vacated the Board's decision to approve the permit on the ground that the Town misapplied the requirements of the Town Land Use Ordinance.

The Town and Pisgah appealed, and the Beckfords cross-appealed.

DECISION: Judgment of superior court vacated, and matter remanded.

The Supreme Judicial Court of Maine held that the statutory appeal period began on January 25 when the ZBA voted to deny on the appeal, not on January 30 when the ZBA issued its written findings and decision on the denial. Accordingly, the court concluded that the Superior Court lacked jurisdiction to hear the Beckfords' appeal from the ZBA's decision.

In so holding, the court analyzed the plain language of the governing statute. The statute, 30-A M.R.S. § 2691, which governs municipal boards of appeals, provides: "Any party may take an appeal within 45 days of the date of the vote on the original decision . . . ."

Based on that language, the court noted that the timeliness of the Beckfords' appeal hinged on whether the ZBA's "vote on the original decision" occurred on January 25 or January 30.

The court found that § 2691 was clear and unambiguous, providing that the time period for filing an appeal runs from "the vote." The court found that § 2691 "[did] not include any language that directly or indirectly suggest[ed] that to be sufficient to invoke the appeal period, a vote must be accompanied by issuance of a written decision." The court stated that the issuance of written findings is an event that is distinct from the vote itself—even when a municipal ordinance requires a zoning board of appeals to issue a written decision. The court held that the statutory appeal period runs from the date of a board of appeal's final public vote, regardless of whether or when a written decision is issued.

Here, the court found that it was the January 25 vote that triggered the appeal period, not the January 30 vote. The court found the January 25 vote was a public vote on each of the issues on appeal, publicly making a decision on the appeal and announced at the public meeting. In comparison, the January 30 vote was only a vote by the ZBA to approve the text of a document memorializing the decision that had already been made, found the court.

Consequently, the court concluded that the Beckfords' appeal to the superior court, which was filed 50 days after the January 25 vote, was untimely. Accordingly, the court held that the superior court did not have jurisdiction over the

 © 2015 Thomson Reuters

appeal. The court remanded the matter to the superior court to dismiss the Beckfords' appeal.

See also: *Carroll v. Town of Rockport, 2003 ME 135, 837 A.2d 148 (Me. 2003).*

See also: *Vachon v. Town of Kennebunk, 499 A.2d 140, 142 (Me. 1985).*

See also: *Woodward v. Town of Newfield, 634 A.2d 1315 (Me. 1993).*

Case Note:

In its decision, the court noted that had the Beckfords so moved, the superior court would have had the authority to allow an extension of the deadline for "good cause shown." (30-A M.R.S. § 2691(3)(G).) However, even though Pisgah moved to dismiss the appeal as untimely, the Beckfords failed to make such a motion.

Sovereign Immunity/Preemption—Town alleges zoning violations against property owner

Property owner, which had contracted with state to provide nursing homes services, claims sovereign immunity as "arm of state"

Citation: *Town of Rocky Hill v. SecureCare Realty, LLC, 315 Conn. 265, 2015 WL 46242 (2015)*

CONNECTICUT (01/6/15)—This case addressed the issue of whether a group of private entities, who together have contracted with the state pursuant to Connecticut General Statutes § 17b-372a to provide nursing home services to state prisoners and others in state custody, comprise an "arm of the state" that may assert the defense of sovereign immunity in an action brought against them by a municipality claiming noncompliance with its zoning regulations. It also addressed the issue of whether § 17b-372a preempts the application of town zoning regulations to the owners and operators of private nursing home properties which the state contracts under § 17b-372a.

The Background/Facts: SecureCare Realty, LLC ("SecureCare") owned real property in the town of Rocky Hill (the "Town"). A nursing home facility had previously been operated on SecureCare's property. The property was located in a district that was zoned for residential use. SecureCare had neither sought nor received from the Town any special use permits in connection with the use of its property.

On SecureCare's property, iCare Management, LLC ("iCare"), a management and consulting firm, was overseeing a development of a § 17b-372a nursing home. Connecticut General Statutes § 17b-372a permits certain state officials to "establish or contract for the establishment of" nursing home facilities for state prisoners and individuals receiving services from the Connecticut

© 2015 Thomson Reuters

Department of Mental Health and Addiction Services. iCare was negotiating with the State of Connecticut (the "State") to reopen the nursing home facility on the property and to place at that facility individuals who were in State custody.

After hearing of the plans for the § 17b-372a facility, the Town filed a lawsuit. It asked the court to declare that SecureCare and iCare (hereinafter, collectively, the "Care Services") were prohibited from opening and operating the proposed facility on the property because such use would be noncompliant with Town zoning regulations and did not constitute a prior nonconforming use, and no special permit had been sought or issued.

Care Services asked the court to dismiss the Town's action. Care Services claimed that the action was barred by sovereign immunity, and, therefore, should be dismissed for lack of subject matter jurisdiction. According to Care Services, they were an "arm of the state" and therefore immune from suit.

The trial court agreed with Care Services. It found that Care Services met five of the eight factors used by courts in determining whether an entity should be immune from suit as an "arm of the state." Additionally, the court concluded that even if Care Services were not shielded by sovereign immunity as an arm of the state, the Town's zoning authority over the project was expressly preempted by § 17b-372a.

The Town appealed. It argued that: (1) Care Services was not an "arm of the state," absolutely shielded from suit by sovereign immunity, because none of the eight factors used to determine whether an entity is an arm of the state was conclusively proven; and (2) § 17b-372a did not preempt local zoning regulations.

DECISION: Judgment of superior court reversed, and matter remanded.

The Supreme Court of Connecticut agreed with the Town. It held that Care Services was not an arm of the state entitled to assert a sovereign immunity defense in the zoning action brought against Care Services by the Town. The court also held that § 17b-372a does not preempt the application of town zoning regulations or irreconcilably conflict with municipal zoning regulations.

In so holding, the court analyzed the "list of factors to guide courts in determining whether an entity should be immune from suit as an 'arm of the state.' " Those eight factors include consideration of whether:

> "(1) the state created the entity and expressed an intention in the enabling legislation that the entity be treated as a state agency; (2) the entity was created for a public purpose or to carry out a function integral to state government; (3) the entity is financially dependent on the state; (4) the entity's officers, directors or trustees are state functionaries; (5) the entity is operated by state employees; (6) the state has the right to control the entity; (7) the entity's budget, expenditures and appropriations are closely monitored by the state; and (8) a judgment against the entity would have the same effect as a judgment against the state."

The court said that "[t]o establish that an entity is an arm of the state, an entity need not satisfy every criteria. Rather, [a]ll relevant factors are to be considered cumulatively, with no single factor being essential or conclusive."

Here, the trial court had determined that five of the eight factors had been met. The Supreme Court of Connecticut disagreed. It found that only the second

 © 2015 Thomson Reuters

factor had been met: Care Services were created exclusively for the purpose of running the nursing home facility and thus to provide services on behalf of the state to individuals who otherwise would be receiving those services directly from the state. However, looking at the other factors, the Supreme Court of Connecticut disagreed with the trial court and found that none of them were met. Balancing all of those factors, the Supreme Court of Connecticut held that they clearly weighed against a conclusion that Care Services were an arm of the state, entitled to share the state's sovereign immunity.

The court also concluded that the state legislature did not intend, by enacting § 17b-372a, to occupy the entire field as to regulation of nursing home location and preempt municipal zoning regulations. The court found that zoning regulations did not irreconcilably conflict with § 17b-372a or frustrate the state's statutory objective of establishing nursing homes for those in state custody. As a general matter, the court explained that "zoning regulations do not bar outright particular uses of land, but require that they be conducted in certain areas or subject to various conditions." "Thus, a regulation requiring a nursing home facility to be located in a particular zone, or to have a permit that might impose conditions on its operation, does not 'attempt to . . . forbid that which the legislature has expressly authorized . . . but rather, properly subjects what the legislature has authorized to additional requirements," said the court.

See also: *Gordon v. H.N.S. Management Co., Inc., 272 Conn. 81, 861 A.2d 1160 (2004).*

See also: *Bauer v. Waste Management of Connecticut, Inc., 234 Conn. 221, 662 A.2d 1179 (1995).*

See also: *Greater New Haven Property Owners Ass'n v. City of New Haven, 288 Conn. 181, 951 A.2d 551 (2008).*

Case Note:

The court noted that its conclusion that the facts of the case did not present an appropriate occasion for affording sovereign immunity to a private, for profit entity was supported in the decisions of other jurisdictions. See, e.g, Rosario v. American Corrective Counseling Services, Inc., 506 F.3d 1039, 1047 (11th Cir. 2007) (bad check restitution program run by private contractor for State's Attorney's Office not immune from suit alleging unfair debt collection practices); Ormsby v. C.O.F. Training Services, Inc., 194 F. Supp. 2d 1177, 1179, 1187 7 Wage & Hour Cas. 2d (BNA) 1258, 146 Lab. Cas. (CCH) P 34506 (D. Kan. 2002) (nonprofit corporation overseeing provision of community services for developmentally disabled persons, pursuant to contract authorized by state statute, not immune, as arm of state, from employee's action for overtime wages), judgment aff'd, 60 Fed. Appx. 724 (10th Cir. 2003); Veolia Water Indianapolis, LLC v. National Trust Ins. Co., 3 N.E.3d 1 (Ind. 2014), on reh'g, 12 N.E.3d 240 (Ind. 2014) (private, for profit company operating city's water utility pursuant to agreement not entitled to sovereign immunity in action seeking damages for losses sustained due to inadequate water supply to fire hydrants); Macon Ass'n for Retarded Citizens v. Macon-Bibb County Planning and Zoning Com'n, 252 Ga. 484, 490, 314 S.E.2d 218 (1984) (governmentally financed nonprofit organization providing housing for developmentally disabled and mentally ill persons not exempt from local zoning regulations), appeal dismissed, 469 U.S. 802, 105 S.Ct. 57, 83 L.Ed.2d 8 (1984); Board of Child Care of

Baltimore Annual Conference of the Methodist Church, Inc. v. Harker, 316 Md. 683, 685, 693, 561 A.2d 219 (1989)(nonprofit corporation contracting with state to provide adolescent shelter facilities, in pursuit of statutory policy, not entitled to share state's immunity from municipal zoning ordinances); Washington Tp. v. Central Bergen Community Mental Health Center, Inc., 156 N.J. Super. 388, 406-408, 383 A.2d 1194 (Law Div. 1978) (nonprofit corporation contracting with state to provide mental health care and services, pursuant to statutory plan, not immune from township zoning ordinance as arm of state government); but see City of Portsmouth v. John T. Clark & Son of New Hampshire, Inc., 117 N.H. 797, 798-99, 378 A.2d 1383 (1977) (private port terminal operating firm under contract to provide services to state port authority exempt from city zoning ordinance).

Case Note:

In its decision, the court emphasized that the extension of a state's immunity to a private, for-profit entity should be a rare occurrence.

Zoning News from Around the Nation

NATIONWIDE

The United States Supreme Court is considering a case that has the potential to "weaken" the Fair Housing Act of 1968. In the case, the court must address the issue as to "whether the law requires blacks and other minorities to prove intentional racial discrimination in sales, rentals, zoning or lending practices, or whether a policy's disparate impact is enough to make it illegal."

Source: *USA Today; www.usatoday.com*

DELAWARE

A bill was expected to be introduced in the General Assembly that seeks to limit the University of Delaware's longstanding immunity from zoning laws. The bill would reportedly "require that [the University of Delaware] conform to relevant zoning restrictions for any commercial development on university property, but would continue the school's exemption for projects related to student services or academic research." Bill sponsors say it makes the zoning process more fair for the city of Newark and other commercial developers.

Source: *The News Journal; www.delawareonline.com*

MASSACHUSETTS

A state commission is reportedly recommending major zoning changes for many coastal communities in Massachusetts. A panel is expected to propose "the creation of buffer zones along the coast, where construction is not allowed," and call for "experimenting with new ways to fight erosion and for the use of 'sea-level rise scenarios' when studying new waterfront developments."

Source: *myfoxboston.com; www.myfoxboston.com*

 © 2015 Thomson Reuters