CITY OF HANOVER
PLANNING COMMISSION MEETING
JANUARY 28, 2018
AGENDA

CHAIR
STAN KOLASA

COUNCIL LIAISON
KEN WARPULA, Alternate

BOARD MEMBERS
JIM SCHENDEL
MICHAEL CHRISTENSON
MICHELLE ARMSTRONG
DEAN KUITUNEN

1. **Call to Order and Pledge of Allegiance: 7:00 p.m.**

2. **Oath of Office**

3. **Selection of Chair and Vice Chair**

4. **Approval of Agenda**

5. **Approval of Minutes from December 17, 2018, Regular Meeting**

6. **Citizen's Forum**

7. **Public Hearing**

8. **Unfinished Business**
    a. **Rezoning, Planned Unit Development and Preliminary Plat for the Development to be known as Hanover Cove**

9. **New Business**
    a. **River Town Villas Concept Plan**

10. **Reports and Announcements**
    a. **Planning Commission Reports**
    b. **Liaison Report**
    c. **Staff Reports**

11. **Adjournment**

CITY OF HANOVER
PLANNING COMMISSION MEETING
DECEMBER 17, 2018
DRAFT MINUTES

Call to Order/Pledge of Allegiance
Stan Kolasa called the December 17, 2018, Planning Commission Meeting to order at 7:03 pm. Members present were Stan Kolasa, Jim Schendel, Michelle Armstrong, Dean Kuitunen and Mike Christenson. Also present City Planner Cindy Nash, Council Liaison Doug Hammerseng and Administrative Assistant Amy Biren. Many guests were present.

Approval of Agenda
MOTION by Schendel to approve the agenda, seconded by Christenson.
Motion carried unanimously.

Approval of Minutes from the November 26, 2018 Regular Meeting
MOTION by Kuitunen to approve the November 26, 2018, minutes, seconded by Schendel.
Motion carried with Armstrong abstaining due to absence.

Citizen's Forum
None

Public Hearing
Rezoning, Planned Unit Development (PUD) and Preliminary Plat for the Development to be known as Hanover Cove

Kolasa closed the Planning Commission meeting at 7:04 pm and opened the Public Hearing for the Rezoning, Planned Unity Development (PUD) and Preliminary Plat for the Development to be known as Hanover Cove.

Nash introduced Alan Roessler, Paxmar, and stated he would be presenting to the Board and audience. A synopsis of the presentation is included here:

- An architectural committee will be in place that will ensure very specific architectural standards are being met. The architectural standards will be greater than what is currently in the ordinance. No two abutting units would be alike.
- There will be smaller garage sizes for the units in the HOA because they will have maintained grounds and that alleviates the need for maintenance equipment being stored in the garages.
- There will be a master HOA with two sub-HOAs.
- The development aligns with the Comprehensive Plan for Hanover.
- The developer is aware of some of the common concerns expressed by community members: increased traffic, a burden on the schools, impacts on the surrounding property values, the change of perceived open space, the density level, the impact on community character, and a burden on City services.
- Roessler reviewed benefits such as the varied housing styles meeting projected demographics; the patio homes fulfilling a void in current housing; the architectural standards exceed City standards; adding to the tax base and supporting the schools through property taxes; providing a new customer base to attract more businesses; there will be an increase in demand for trade services; and will provide housing for resident throughout their entire life.

Roessler asked the Board take action tonight by approving his requests for rezoning, PUD, and preliminary plat with conditions and working with the City Planner Cindy Nash.

DRAFT

Nash then presented a review to the Board:

- She reviewed the process a development takes and informed the audience of what has occurred thus far. A Concept Plan in April 2018 was approved by Council and a Comprehensive Plan Amendment changing the land use of the southern portion of the Duininck Pit from Industrial to Neighborhood Residential. This was followed by an Environmental Assessment Review (EAW) in which the Council determined there was not a need to have an Environmental Impact Statement conducted.
- The next step of the process is to rezone the southern portion of the property from Limited Industrial (I-1) and General Industrial (I-2) to Single Family Residential (R-1A).
- Changes that have occurred from the presented Concept Plan to the Preliminary Plat include some of the single family homes having a lot width of 58 feet, although the majority of the lot widths are 65 feet; the removal of the pool; and the removal of additional land to Pheasant Run Park. Nash reminded the Board and audience that a Concept Plan is not a legal binding document and is allowed to change. The potential builders for the development requested that the pool be eliminated. Staff recommended that the additional land to Pheasant Run Park be removed as there is not a need to add to the park and that there were two parks within walking distance. Instead, the developer will pay Park Dedication fees.
- Nash broke down each of the lot and housing types in comparison of what is being requested in the PUD and current zoning.
- She explained that density can increase through the PUD because the density is achieved through smaller lot sizes.
- Nash indicated that Block 5 will have a variation compared to what is presented tonight in response to some of her comments.

Justin Messner, City Engineer, began his review comments. He indicated that most of his comments listed in the memo will be addressed or are currently being addressed by the developer's engineer. He stated that the road width being requested is 32 feet while the City standard road width is 36 feet. He explained that when the developments in the Crow River Heights area began, the 36 foot width became the City Standard. The smaller street width does encourage people to slow down as there is a perception of a smaller space, but it would also limit parking and access. He is working with the developer's engineer to address all of his comments.

Nash then began her review comments. Since the builders are not known and specific house plans available, she needs to make sure each lot is buildable. She needs to be able to give the Planning Commission members the information to make an informed decision and if the PUD will better the community. By not having specifics, this is difficult to do. She can make some assumptions when seeing universal designs that would appeal to different groups of buyers. She does see families moving into the community because the price points being presented are attractive and that usually a development sees about 50 percent being families. The Board needs to also consider affordability, the changing market and demographics. She stated that there is not a copy of floor plans for the narrow lot but that it is similar to what is presented in the streetscape. If looking at the narrow house from the street, someone will see a lot of garage and a door to the side. Another item to consider is what private amenities will be added by the development. She indicated that an HOA would be an amenity and what happens on the outlots could also be considered.

Nash asked Biren to read the letters and emails received at City Hall. Five area businesses sent letters of support and two residents sent emails expressing the need for less density or not developing the site at all. Copies of the letters are attached.

David Seiler, 11354 Riverview Road NE: He inquired about the lots that are abutting the proposed development along River Road and why they are not part of the development and should they

become part of the development, would they be similar in nature to what is being proposed around them. He asked about if the setbacks are from the back of the building or a deck or patio. Nash replied that the rear yard setback is from the back of the building and if a deck is attached to the house, the deck is the start of the setback measurement. A concrete patio is not considered part of the building. Seiler went on to say the density is too high and asked whether or not the CSAH 19 vehicle bridge can handle the amount of traffic generated by the development. He sees this development as a detriment to the community.

Jim Steinbrueck, 11557 Lynwood Court NE: His first concern is not having a park within the development for kids to use. He sees this as dollar signs ($) and a land grab. People currently wait in line to access CSAH 19 and sees this development as impacting traffic even more. He would like to see more amenities that St. Michael has like a senior center and senior housing. Steinbrueck told the Board that this is your legacy and asked is this best for this town?

Claudia Pingree, 11711 Riverview Road NE: She has been looking for a place to live and is not sure she would live here. She doesn't see sidewalks and trails and is concerned about kids going to Settler's Park. She went on to say that we need to do something. She acknowledged that the traffic is going to continue to come as it is people going through Hanover to reach a destination. Pingree asked the developer to make the lots a nice place to live and the area safe for kids. She also inquired about the future of the berms and that she would like to see them remain. Pingree brought up the concern for stormwater runoff and how it drains right through her yard and she would like to see it drain to the river.

Glen Albert, 783 Meadowlark Lane N: He echoed Pingree's concerns, stating that the density really concerns him. He continued saying that the point is to be able to look around the neighborhood and enjoy the "open space". Livability and green space all enhance people's well-being.

Drake Parris, 11670 Eighth Street NE: The amount of homes proposed, 285, will generate 906 people at a minimum compressed into an area less than 1/8 of a mile with only two exits. Senior living is needed but it may be too expensive. He included some demographic statistics of 3.5 percent are 65 and older and 14 percent are 50 plus in age. He also talked to members of the Hanover Fire Department who said they would be reluctant to rush into a fire in this proposed development. Wildlife would also be uprooted. He thinks that the developer came in with a higher density number so that when it was reduced, they could claim they listened and reduced the density. He believes that the development should look like the surrounding neighborhoods. He questioned with the narrow streets, where would people park?

Amy Sefton, 11551 Lynwood Court NE: The density is too high with the narrow patio homes and not what we want for the character of the City. This development will change the character of the town.

Nash read an email just received from Melanie Gilbert in support of the development.

Sara Williams, 364 River Road: She asked that the sidewalks and trails be indicated on the map. Williams continued saying that the amenities listed do not provide a community feel and that there is no community area or green space. The number of lots cause concern of the difficulty in reacting to emergency situations. She echoed the concern about traffic and accessing River Road and CSAH 19 and there should be changes to meet this need. She stated she heard Paxmar ask for a decision tonight and was concerned about what property rights that would give them.

Dustin Stay, 821 Meadowlark Lane N: He just moved to Hanover and likes the small-town community. He would like to see a "normal" neighborhood or nothing at all. He said that he read the Traffic Study and that the number of vehicles would cause him to change his travel time to and from Hanover. He said that he enjoys the sounds of the wildlife.

DRAFT

Patty Yantes, 11486 Riverview Road NE: She is a business owner and it is located in the strip mall off of Fourth Street. Yantes has to go around to get to her business and get home instead of taking the most direct route because of the traffic and the ability to make a turn. There is only one restaurant in town and it is located along a main traffic route. Parking and travel is difficult through this area at peak times and she sees it as only getting worse. There are too many houses in this development. She went on to say she has lived here for 25 years and love the small town. The development will change the aesthetics of the town as well as change the property values. She realizes something needs to done, but sees this as too many houses. She also commented that narrow roads do not feel safe to her.

Robyn Steinbrueck, 11557 Lynwood Court NE: She identified herself as an educator and challenged the Board to look at the amount of children this development will bring and the optimum class size is 22 students and under. How would this affect Hanover Elementary School and the middle schools.

Ginger Peasha, 11700 Riverview Road NE: She moved here 20 years ago. She would like the berm to stay and does not want to see the houses. She agreed with others that the traffic will be too much.

Kolasa closed the public hearing and re-opened the Planning Commission meeting at 8:35 pm.

Christenson asked if the developer has concerns about people not wanting these products. Roessler replied that this type of product has been proven and is in demand right now.

Nash stated she would respond to the questions and comments from the public hearing:

- Nash showed the audience the location of the trail stub connecting to the existing City trails and also indicated that one side of the street would have sidewalks. The sidewalks were difficult to see on the map.
- Access to parks include Settler's Park and Pheasant Run Park, both being less than 0.5 miles from the development. River Road would have to be crossed to reach Settler's Park. There is another park a further distance away, Mallard Park, but still within walking distance.
- The engineer did comment on the narrow street width, but there are reasons to consider a narrower street: studies have shown that vehicle speed is reduced; driveways that are closer together provide less street parking; there is not as much street to maintain and reconstruction tends to be less expensive; the width is not impacting the number of lots as the right of way is the same as the surrounding neighborhoods; and it doesn't affect the front yard setback because the property line starts at the edge of the right of way.
- The developer has property rights once the Council gives approval because the Planning Commission is only a recommending body.
- Regarding the traffic, any development will increase some incremental amount.
- The school district was contacted and there is actually additional space available for more students without having to add on to schools.
- It is a routine requirement to install a berm to block visibility from a mining operation. If the berm is not located on the personal property of a resident, the developer can grade up to the property line but not on the resident's property.

Nash was asked how she calculates density. She responded that density is not based on the gross area and excludes items such as the large pond and the portion of River Road that is on the property.

J. Steinbrueck asked about pets within the development. Nash said that City ordinances will apply to the development but that the HOA may have other restrictions. Those restrictions would be enforced by the HOA.

DRAFT

Armstrong expressed concern about the parking and was asked how many town home developments they had completed. Roessler responded that they mainly complete master plan projects such as town homes. The developments try to accommodate two spots in the garage and two additional parking spots in the driveway. They also try to have a couple of places for extra parking and snow storage.

Armstrong said that she likes the architectural looks of the development and having a committee regulating that for the neighborhood. She said there is a need for small flex houses and asked Roessler if he had a builder and price points. He said they have been in discussion with builders and that the slab on grade two bedroom patio home would start around $200,000. As the lots become wider and larger the price increases. The variety of sizes and amounts of lots is a way to spread the infrastructure costs among more homes. Nash added that in the future when reconstruction of the infrastructure happens, assessments will be spread among more property owners.

Armstrong said that she likes the mix, but with would like to see fewer of the higher density homes and more of the single family homes with larger houses especially along the north side of the development.

Roessler said he understands the apprehension but also hears that people are looking for less expensive lots and homes. The medium patio homes will range in price of $250,000 to $325,000. The trend is to build as much on a lot as possible.

Armstrong is concerned about the smaller setbacks as well.

Jeff Yantes, 11486 Riverview Road NE, asked why are all the trees tagged along the berm. Jason Ver Steeg, engineer for the developer, said that Hanover requires a tree inventory of anything six (6) inches or more. They did inventory some trees that were slightly outside of the borders of the property. The inventory is required for the tree removal plan and landscaping plans. Trees will be removed in the graded area.

Kuitunen said that he had been concerned about the width of the road, but now had things to think about after hearing Nash's reasons explaining why some streets benefit from being narrower. He suggested that the members think about the current ordinances and how they would be enforced within this development using the parking of recreational vehicles and having a storage shed as examples. Kuitunen also expressed concern about the lack of parking. He asked why they were not using the curb cut located north and east of Fifth Street that already exists. Messner explained that to use the existing curb cut would have more requirements such as turn lanes as well as create challenges with traffic on River Road and having the entrance directly across from Fifth Street made more sense.

Kolasa used the example of congestion on River Road near the River Inn that occurs regularly as a reason not to have a narrower street width in the development. Ver Steeg said that the Quail Pass Second Addition (Eighth Street) is a 32 foot wide street.

Messner stated that a 32 foot wide street does have two 10 foot lanes which meets the State standards. However, such a street is not desirable with parking on both sides of the street. By restricting parking to one side of the street, that adds to the parking concerns. Through streets would also present challenges by being narrower. Sidewalks will help with safety.

Christenson asked if there were any neighborhoods that Roessler had developed that the member could drive to and view. Roessler said there are examples of the flex homes in Parkside North in Blaine as well as the 50 foot wide lots. Christenson asked if multiple lots could be purchased and then a house built on the lots so that the owner had more space. Roessler replied that the purchaser could come to the City to combine the lots. Each lot will be graded and a building pad created in a strip so a larger home could be built on combined lots without having to disturb the building pad. Christenson also asked about when a house has a trash issue or is in disrepair what were the consequences. Roessler said that an HOA will have the power to take care of such issues as long as the owner had been warned and asked to come into compliance.

Armstrong asked how many builders will be in the development. Roessler replied that they have been talking to three or four builders but that the builders want to see an approved plat.

Armstrong questioned Roessler about the feasibility of the lots located in the cul de sac. He replied that they prefer to have the narrow lots and housing types all on one street.

Christenson asked if they had considered parks within the development. Roessler said they had been directed by staff that there were sufficient parks within the area.

Schendel said that he, as a former fire department member, can see the concerns on how to fight a fire within the proposed development.

Schendel said that he would like to see a minimum of 50 foot wide lots and give everyone room. He said that the narrower streets may cost less to construct, but when reconstruction happens, it actually costs more since it takes longer to complete due to the narrow width and how slow they need to go. Schendel continued with saying there are a lot of homes too close together.

Roessler said they prefer to have 12 feet between houses.

Hammerseng said there is a lot to like about the development, but that they have a way to go before it is done. He likes the idea of the architectural committee and suggest putting some teeth into it and sees it as a positive. He acknowledges that group is struggling with the traffic that has to do with density and that leads to the lot size. The boundaries of Hanover are set and are not something that can change, but the City can control the type of lots within the boundaries. He struggles with the 40 foot wide lots and the looks of the layout. Hammerseng said that he has done some homework looking into this type of development. He has viewed a development where the lots are 50 foot wide, slab on grade with six (6) foot side yard setbacks and they are gorgeous. He wonders about the flex lots and asked what are they and why are they? Continuing, he said that senior housing that is desired is not a two story home with steps. One level living is what seniors desire. He asked if they had ever considered having a 55+ development or a portion of it being such.

Roessler responded to Hammerseng's questions. The flex lots are geared toward first-time home buyers or single people. There is an opportunity to pin it down to one housing type. If the narrower lots are a concern, there is a possibility to making 50 foot wide lots, but then the narrow lots which are more affordable will be gone. Roessler said that they have never done an age restrictive development.

Kolasa gave the example of the Cottages townhomes in St. Michael having a waitlist. He did say that these were attached townhomes. Ver Steeg said that is usually the case.

Nash said that restricted 55+ housing is not usually included as part of a larger neighborhood.

Roessler said that a benefit of an HOA may be the alleviation of residents calling the City with concerns or issues with neighbors.

Pingree said let's do it right and not rush to complete it. She asked the developer to please work with the people living here.

Armstrong said that the garage size of 440 square feet gives her concerns. People still want to be able to store items in the garage. Nash pointed out that even the 50 foot wide lots are requesting the 440 square foot garage size. Roessler said that this give people a choice from a number of garage sizes.

Armstrong asked if all of the patio homes are slab on grade. Roessler replied that was correct but a full basement may be possible if the land and grade would allow it. He went on to say that a tornado room—a reinforced area of the home—would be mandated in the slab on grade homes.

DRAFT

Nash said the Board needs to give the developer specific directions in order for them to bring back plans. The Board spoke about:

- Keep the garage size as stated in the current ordinance.
- Less density.
- Wider lots.
- Have parking spots/areas or wider streets.
- The width of the streets may be okay.
- Provide details for the architectural requirements.
- Look into the possibility of a 55+ section or community.

Messner said that attached townhomes will have a required amount of parking spaces, but with separate townhomes there are no such requirements as they are seen as individual homes and similar to other neighborhoods.

Ver Steeg said that it will a lot of work to change everything for something like a 0.5 foot difference in side yard setbacks in order to increase it to an eight (8) foot side yard setback.

Messner recommended a 36 foot wide street as it is the City Standard even though narrower ones are functional and do work. There is less stormwater runoff with narrower streets.

Nash showed a neighborhood in Carver where the side yard setbacks are 7.5 feet.

Christenson asked about the setbacks when there is a deck or porch. Ver Steeg said that a deck or porch are outside of the setback areas and would not interfere with the setbacks. He directed members to look at the maps where a deck or patio are indicated by a square by the house.

Roessler asked that if the narrower and flex lots are eliminated the rest of the suggestions are incorporated, will the Board support this development and act on it tonight.

Kuitunen and Christenson both replied that they need to see the actual changes to the plat before being able to recommend approval.

Jessica Roessler, Paxmar, said that this development has been designed based on the demographics and the future. The Board needs to look at where the people who the flex or narrow lot is intended for would be able to purchase a home.

Hammerseng replied that Hanover cannot be everything to everyone.

Nash said that she is not comfortable with approving the changes without seeing new plans. She needs to be certain that the housing types will really work on the lots.

Armstrong said that if the flex and narrow lot numbers would be reduced by 18 units, would it be worth it. Hammerseng said yes, it would be worth it. Armstrong continued that with 18 units that may not be enough to make a difference in the density.

Nash said that the Board needs to provide direction to the developer and be comfortable with the redesign.

Armstrong proposed getting rid of the flex lots and replace them with single family lots. Then take the line of narrow patio homes northeast of the cul de sac homes and change them into medium patio homes. Keep a small section of narrow homes around the cul de sac. The five narrow lots on the south side and the three at the intersection would need to become medium or large patio homes.

Christenson said he doesn’t like it because of the look of all garage with a side door.

Kuitunen said that it makes sense since Armstrong knows the market, but there are still too many houses.

Roessler said he could support that and would need to take a look at it.

DRAFT

Christenson asked if a wider house could be put on any of these lots. Roessler said that they want to make sure each lot is buildable so that they are not coming back in the future to ask for variances.

Kuitunen, Christenson and Schendel all said they would need to see new plans before making a decision. Nash added that changes recommended by Messner and herself still needed to be addressed as well.

Kuitunen said that the Board is not the only ones that needed to see the new plans, but the public as well. He is not comfortable recommending this without solid data.

MOTION by Armstrong to table all three applications—for rezoning, the planned unit development, and preliminary plat—for Hanover Cove in order to address the comments of the City engineer and planner along with changing the flex lots to medium single family homes; changing the narrow patio home lots north of the cul de sac intersection to the intersection at Fifth Street into medium patio home lots; changing lots 29-33 into medium or large patio home lots; keeping the streets at a 32 foot width; providing additional details on the architectural review committee; and having no deviation on garage size, seconded by Kuitunen.
Motion carried with Christenson dissenting.

Unfinished Business
None

New Business
2019 Meeting Dates and Application Deadlines
Biren showed the Board the list of meeting dates for 2019 and indicated they needed to decide on a meeting date for May as the regularly scheduled meeting falls on Memorial Day. The Board decided on May 22, 2019. The application deadline will be determined and the list posted on the City website.

Reports
Please stop in to City Hall to sign time cards for the year.

Adjournment
MOTION by Christenson to adjourn, seconded by Kuitunen.
Motion carried unanimously.
Meeting adjourned at 10:41 pm.

ATTEST:

_____
Amy L. Biren
Administrative Assistant

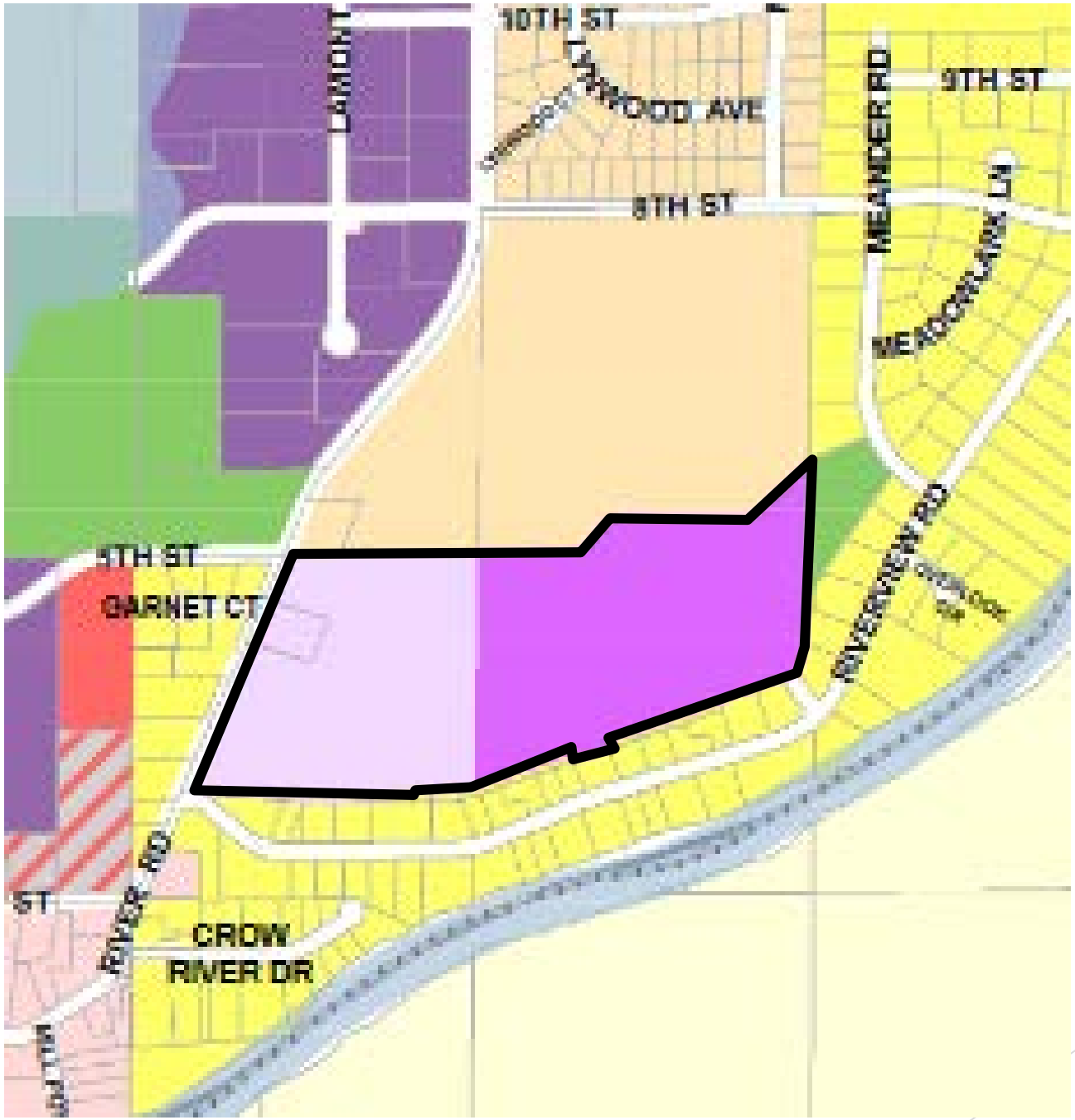
DRAFT

Hanover Planning Commission

Hanover Cove Concept Plan
April 2018

Hanover Cove - Rezoning

- Propose to rezone southern portion of property from I-1 and I-2 to R-1 A.
- Previously reguided this portion of the property from Industrial to Neighborhood Residential in the Comprehensive Plan.
- Receive public comment on the rezoning.


10TH ST
LAMONT
LAKEWOOD AVE
9TH ST
MEANDER RD
8TH ST
MEADOWLARK LN
11TH ST
GARNET CT
RIVERVIEW RD
ST
RIVER RD
CROW
RIVER DR

Changes since Concept Plan

- Lot Width

Lot Width			
		Concept Plan	PUD Narrative
Larger Single Family		75	80
Regular Single Family		65	58
Large Patio Homes		75	75
Medium Patio Homes		50	50
Narrow Patio Homes		40	38
Flex Lots		40	38

- Removal of neighborhood pool/common area
- Removal of additional land for Pheasant Run Park

Hanover Cove Planned Unit Development

- Planned unit developments may be excluded from certain requirements of the Zoning Ordinance and Subdivision Regulations when specifically approved as part of the planned unit development. Such exclusions shall only be granted for the purpose of creating better overall design, environmental protection, and an improved living environment and not solely for the economic advantage of the developer.

Hanover Cove Planned Unit Development

PUD– Large Lot Single Family

		R-1A	Large Lot SF
Lot Area		12000	9840
Lot Width		80	80
Side Yard Setback		10	7.5
Corner Side Setback		30	25
Front Yard Setback		30	25
Rear Yard Setback		30	30
Garage Area		576	576
Home Floor Area		1000	1400

Large Lot Single Family – 80' +

Homes will consist of traditional multi-story single fami
*Minimum 1,400 sqft Home floor area above grade

PUD– Medium Lot Single Family

		R-1A	Medium Lot SF
Lot Area		12000	6815
Lot Width		80	65
Side Yard Setback		10	7.5
Corner Side Setback		30	25
Front Yard Setback		30	25
Rear Yard Setback		30	30
Garage Area		576	576
Home Floor Area		1000	1300

Medium Lot Single Family: 65'–79'

Homes will consist of traditional multi-story single family
*Minimum 1,300 sqft Home floor area above grade

PUD– Large Patio

		R-1A	Large Patio
Lot Area		12000	8315
Lot Width		80	75
Side Yard Setback		10	6
Corner Side Setback		30	25
Front Yard Setback		30	25
Rear Yard Setback		30	20
Garage Area		576	440
Home Floor Area		1000	1500

Large Patio: 75'+

Homes will consist of one level or rambler with full basements
HOA maintain yard/landscaping/snow
*Minimum 1,500 sqft Home floor area above grade

PUD– Medium Patio

		R-1A	Medium Patio
Lot Area		12000	5750
Lot Width		80	50
Side Yard Setback		10	6
Corner Side Setback		30	25
Front Yard Setback		30	25
Rear Yard Setback		30	20
Garage Area		576	440
Home Floor Area		1000	1400

Medium Patio Lot: 50'-74'

Homes will consist of one level, 2 and 3 car garages
HOA maintain yard/landscaping/snow
*Minimum 1,400 sqft Home floor area above grade

PUD– Narrow Patio

		R-1A	Narrow Patio
Lot Area		12000	5250
Lot Width		80	38
Side Yard Setback		10	6
Corner Side Setback		30	25
Front Yard Setback		30	25
Rear Yard Setback		30	20
Garage Area		576	440
Home Floor Area		1000	1200

Narrow Patio Lot: 38'-49'

Hanover Cove

Homes will consist of one level
HOA maintain yard/landscaping/snow
*Minimum 1,200 sqft Home floor area above grade

PUD– Flex Lots

		R-1A	Flex Lots
Lot Area		12000	4940
Lot Width		80	38
Side Yard Setback		10	6
Corner Side Setback		30	25
Front Yard Setback		30	25
Rear Yard Setback		30	20
Garage Area		576	440
Home Floor Area		1000	1200

Flex Lot: 38'-49'

Homes will consist of one level or multi-story
HOA maintain yard/landscaping/snow
*Minimum 1,200 sqft Home floor area above grade

Narrow Lot Street View Example

STREET VIEW
SCALE: 1" = 10'-0"

Flex – if not used for Narrow Patio

Narrow Patio

STREET VIEW
SCALE: 1" = 10'-0"

PUD– Analysis - Density

Density greater than can fit when using base zoning regulations may be allowed with findings related to the following:

- The excess will not have an undue and adverse impact on existing public facilities and on the reasonable enjoyment of neighboring property.
- Increase density may be compensated for by providing additional private amenities and by increase of efficiency in public facilities and services to be achieved by:
  - 1. The location, amount and proposed use of common open space;
  - 2. The location, design and type of dwelling units; and
  - 3. The physical characteristics of the site.

PUD– Analysis - Generally

The consistency of the proposed PUD with the comprehensive plan.

The extent to which the proposed PUD is designed to form a desirable and unified environment within its own boundaries in terms of relationship of structure and open space, circulation patterns, visual character and sufficiency of drainage and utilities.

The extent to which the proposed uses will be compatible with present and planned uses in the surround area.

PUD– Analysis - Generally

That any exceptions to this article are justified by the design of the development.

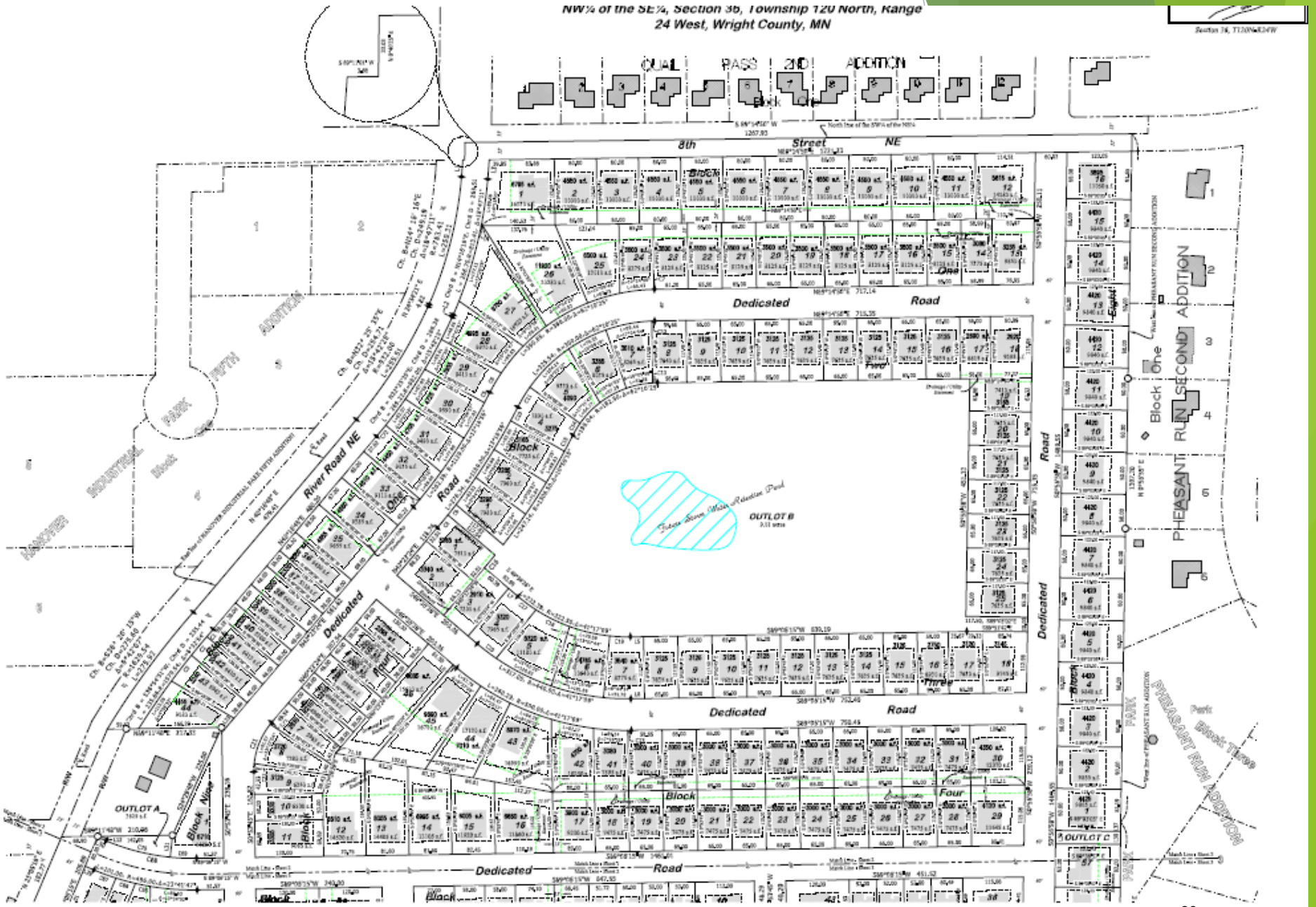
The sufficiency of each planned unit development phase's size, composition, and arrangement in order that its construction, and operation is feasible without dependence upon subsequent phases.

The burden or impact created by the PUD on parks, schools, streets, and other public facilities and utilities.

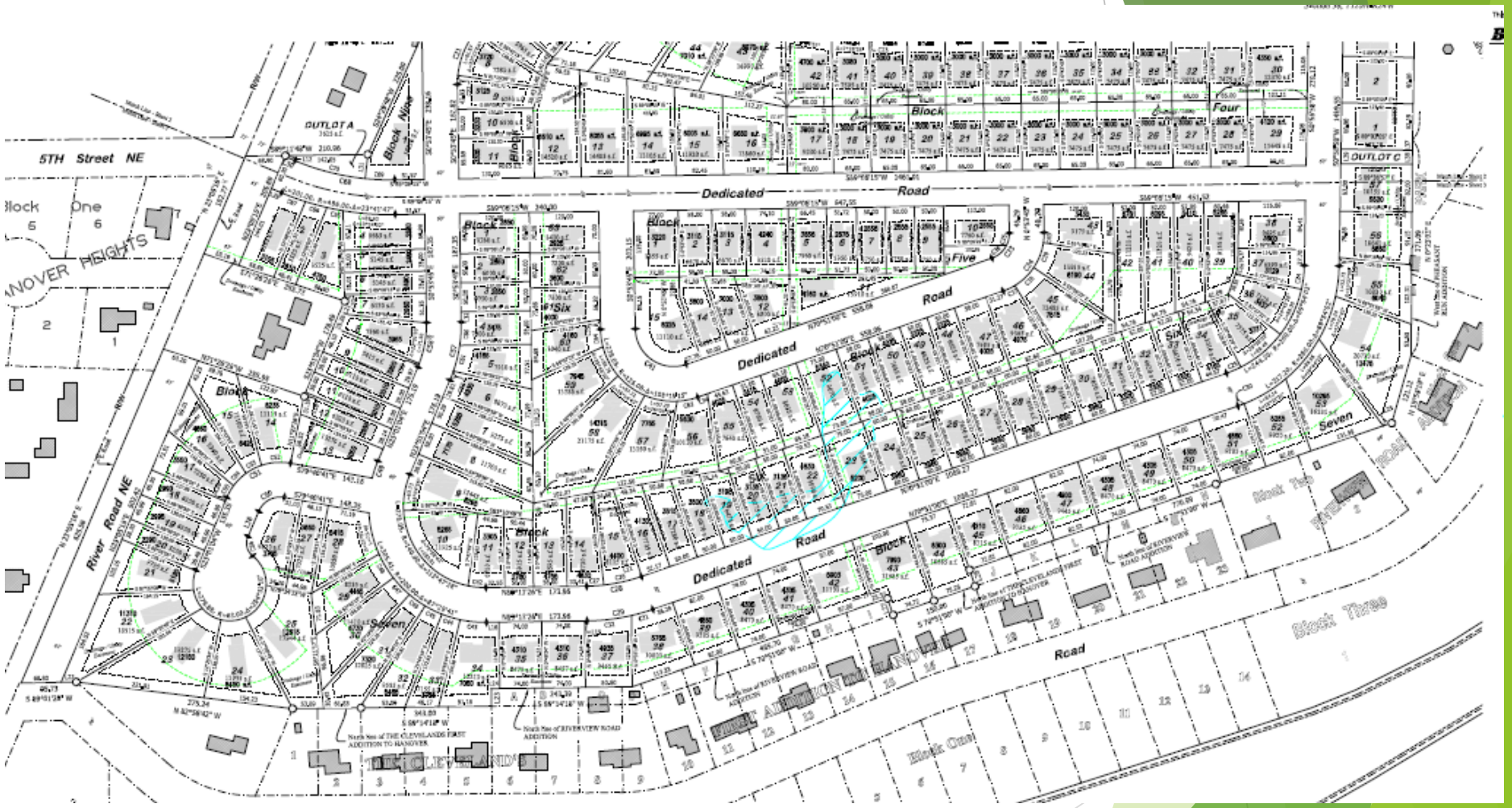
PUD– Analysis - Generally

The impact of the PUD on environmental quality and on the reasonable enjoyment of the surrounding properties.

Hanover Cove Preliminary Plat



Hanover Cove Preliminary Plat



Variation to Block 5

Brian Hagen

From: MaryAnn Hallstein
Sent: Monday, December 17, 2018 7:58 PM
To: Brian Hagen
Subject: Fwd: I support the Hanover Cove proposal

Get Outlook for iOS

From: Melanie Gilbert <info@hanovercovemn.com>
Sent: Sunday, December 16, 2018 7:49:07 AM
To: Chris Kauffman; Doug Hammerseng; Ken Warpula; Jim Zajicek; MaryAnn Hallstein; Stan Kolasa; Michelle Armstrong; Jim Schendel; Mike Christenson; Dean Kuitunen
Subject: I support the Hanover Cove proposal

Dear City Officials,

I support the Hanover Cove proposal, which will provide a variety of homes at multiple price points to accommodate Hanover's anticipated growth.

Transforming a former industrial site to residential use will increase surrounding property values and tax revenue to support local schools, infrastructure and services while providing a new base of customers for local businesses.

I respectfully urge your support for this new neighborhood of homes to strengthen the community and promote economic development for years to come.

Sincerely,
Melanie Gilbert
160 Jansen Ave NE
Hanover MN 55341

Email: Melgilbertjon@gmail.com

Submitted from: 66.41.190.202
Reference: 7

Pearson Bros, Inc
11079 Lamont Ave NE
Hanover MN 55341

December 3, 2018

Re: Duininck Development

Dear Mayor Kauffman and Members of the City Council:

I am writing you to inform you of our support of the proposed development of the Duininck Pit, and the future homes. We feel this development will add value to the City, property values and future commercial opportunities. The project would be a large undertaking and the Duininck's are a quality family and company to take on such a project.

I have worked with them personally in the past and I give them my strongest recommendation.

Please feel free to contact me directly should you have any additional questions.

Regards,

Jack E Pearson

Jack E Pearson
President
Pearson Bros, Inc.

Northern Lines
CONTRACTING

November 27, 2018

City of Hanover
11250 5th Street NE
Hanover, MN 55341

RE: Hanover Cove Development Proposal

Dear City Officials,
I, Blair Raitz, support the Hanover Cove development proposal as I believe it provides a practical solution for meeting the current and projected demographics of the city, and aligns with the development goals that have been outlined by the Hanover City Council and Planning Commission.
Hanover Cove will provide quality homes at multiple price points to accommodate Hanover's anticipated growth. It will ensure that the housing needs of all demographics are fulfilled.
Furthermore, the development will increase surrounding property values and provide significant tax revenue to support local schools, and city infrastructure and services.
As a local business owner, I believe this development will have a positive impact on our local economy as it will provide a new base of customers and potential employees.
I respectfully urge your support for this new neighborhood of homes to strengthen the community and promote economic development for years to come.

Regards,

Blair Raitz
President/Owner
Northern Lines Contracting, Inc
11039 Lamont Ave N.E.
Hanover, MN 55341

NOV 30 2018

Amy Biren

From: MaryAnn Hallstein
Sent: Wednesday, November 28, 2018 8:36 AM
To: Brian Hagen; Amy Biren
Subject: Fwd: I support the Hanover Cove proposal

Just an FYI to keep City Hall in the loop as this was sent to members of council and planning directly.

MaryAnn

From: Tyler Koivisto <info@hanovercovemn.com>

Sent: Wednesday, November 28, 2018 6:01 AM

To: Chris Kauffman; Doug Hammerseng; Ken Warpula; Jim Zajicek; MaryAnn Hallstein; Stan Kolasa; Michelle Armstrong; Jim Schendel; Mike Christenson; Dean Kuitunen

Subject: I support the Hanover Cove proposal

Dear City Officials,

I support the Hanover Cove proposal, which will provide a variety of homes at multiple price points to accommodate Hanover's anticipated growth.

Transforming a former industrial site to residential use will increase surrounding property values and tax revenue to support local schools, infrastructure and services while providing a new base of customers for local businesses.

I respectfully urge your support for this new neighborhood of homes to strengthen the community and promote economic development for years to come.

Sincerely,
Tyler Koivisto
Hanover Dental 411 Labeaux Ave NE
Hanover Minnesota 55341
(763) 400-3005

Email: tyler.koivisto@gmail.com

Brian Hagen

From: Chris Kauffman
Sent: Friday, November 16, 2018 7:41 AM
To: Brian Hagen
Subject: FW: I support the Hanover Cove proposal

From: Amy Jewett [mailto:info@hanovercovemn.com]
Sent: Wednesday, November 14, 2018 5:00 PM
To: Chris Kauffman; Doug Hammerseng; Ken Warpula; Jim Zajicek; MaryAnn Hallstein; Stan Kolasa; Michelle Armstrong; Jim Schendel; Mike Christenson; Dean Kuitunen
Subject: I support the Hanover Cove proposal

Dear City Officials,

I support the Hanover Cove proposal, which will provide a variety of homes at multiple price points to accommodate Hanover's anticipated growth.

Transforming a former industrial site to residential use will increase surrounding property values and tax revenue to support local schools, infrastructure and services while providing a new base of customers for local businesses.

I respectfully urge your support for this new neighborhood of homes to strengthen the community and promote economic development for years to come.

Sincerely,
Amy Jewett
10902 River Road
Hanover MN 55341
(763) 498-7488

Email: amy@hanovertreehouse.com

Submitted from: 63.229.214.214
Reference: 4

WestAIR
HEATING & COOLING
Residential - Commercial Heating & Cooling
11184 River Road NE, Hanover, MN 55341 Phone: 763-498-8071
visit us on the web at westairheating.com

November 14, 2018

City of Hanover
11250 5th Street NE
Hanover, MN 55341

RE: Hanover Cove Development Proposal

Dear City Officials,

I, Joe Lynch, support the Hanover Cove development proposal as I believe it provides a practical solution for meeting the current and projected demographics of the city, and aligns with the development goals that have been outlined by the Hanover City Council and Planning Commission.

Hanover Cove will provide quality homes at multiple price points to accommodate Hanover's anticipated growth. It will ensure that the housing needs of all demographics are fulfilled.

Furthermore, the development will increase surrounding property values and provide significant tax revenue to support local schools, and city infrastructure and services.

As a local business owner, I believe this development will have a positive impact on our local economy as it will provide a new base of customers and potential employees.

I respectfully urge your support for this new neighborhood of homes to strengthen the community and promote economic development for years to come.

Regards,

Joe Lynch
President
WestAIR Heating and Cooling

Brian Hagen

From: Cindy Nash <cnash@collaborative-planning.com>
Sent: Monday, October 22, 2018 12:13 PM
To: Drake Parris
Cc: Brian Hagen; Amy Biren
Subject: RE: Gravel Pit

Hi Drake –

Thank you for your comments. Hanover Cove is not on tonight's Planning Commission agenda for discussion. At this time, it is not currently scheduled for discussion at any upcoming city meetings. You can always find current status including what meetings it will be scheduled for by following the project page on the City's website: Hanover Cove project page

I'll add your comments to my file and can provide them to the Planning Commission at such time that there is a public hearing on that project.

Cindy Nash, AICP, EDFP
Collaborative Planning, LLC

Direct (763)473-0569
Cell (612)702-3845

PO Box 251, Medina, MN 55340

From: Drake Parris <DParris@herculift.com>
Sent: Monday, October 22, 2018 11:59 AM
To: Cindy Nash <cnash@collaborative-planning.com>
Subject: Gravel Pit

Hello-
We cannot attend the planning commission meeting this evening but have some input.
We live on 8th Street (across from the gravel pit) and will be affected in several ways.
Although we welcome the opportunity to make new friends and have new neighbors,
286 opportunities far exceeds my comfort level!
At the same time acknowledging homes for Senior living / HOA properties are necessary and vital to Hanover.

For this plan to be successful, It would be practical and attractive to have this area developed like the rest of Hanover. Unlike this plan for so many homes concentrated in such a small area (discounting the small town feel that is loved by its current residents).

I have seen communities developed with associations that fail and lend themselves to rental or lower income tenants. Introducing 286 homes reduces Hanover's status to just "another bedroom community" when it is so much more.
286 homes adds 907 people (over 25% of its current population) while 60% of homes have a dog, adding 170 dogs.
(Statistics from the US 2017 Hanover, MN census page)
This, plus traffic, noise, medical/fire/law enforcement, and general overpopulation add to the discounted feel.

Brian Hagen

From: City Hall
Sent: Monday, October 22, 2018 7:56 AM
To: Brian Hagen
Subject: FW: Contact Us (form) has been filled out on your site.

-----Original Message-----
From: Please Do Not Click Reply <support@govoffice.com>
Sent: Sunday, October 21, 2018 12:31 PM
To: City Hall <cityhall@ci.hanover.mn.us>
Subject: Contact Us (form) has been filled out on your site.

Your Site has received new information through an online form.
Online Form: Contact Us
Site URL: www.hanovermn.org

Name: John L Kohanek
Address: 734 Meander Rd
City: Hanover
State: MN
Zip Code: 55341
E-mail Address: old31@comcast.net
Phone Number: (763) 497-4539
Subject: Hanover Cove project
Type your question, comment, or suggestion: We do NOT need this eye sore in Hanover,I live next to the pit for 30 years, if this development comes in I`m leaving!

This person selected the following option(s).
-Yes, by e-mail.

Do Not Click Reply - This e-mail has been generated from an online form.

Collaborative Planning, LLC

MEMORANDUM

TO: Planning Commission

FROM: Cindy Nash, AICP, City Planner

DATE: January 23, 2019

SUBJECT: **Hanover Cove** for (1) Rezoning; (2) Planned Unit Development; and (3) Preliminary Plat

APPLICANT: Paxmar

LOCATION: Generally located east of River Road, and south of 8th Street

COMPREHENSIVE PLAN: Neighborhood Residential

Description of Request

Paxmar has submitted applications for a rezoning, planned residential development and preliminary plat. The property consists of approximately 84.1 acres and is located east of River Road and south of 8th Street.

The Developer is proposing to develop the site into 280 detached residential units. There are proposed to be 146 single-family homes and134 patio homes, and 20 flex lots that may be either patio homes or multi-level homes. As compared to the previous version of the plan reviewed by the Planning Commission at their December 2018 meeting, this is an increase of 18 single-family lots and a reduction of 2 patio homes and the removal of all flex lots. The villas would have associated-maintained yards and driveways. he proposed builder has not been identified.

This development is requesting the following approvals:

1. Rezoning of part of the property from I-1 and I-2 to R-1A
2. Planned Unit Development
3. Preliminary Plat.

Paxmar is proposing the construction of two types of housing units. Single-family homes will occupy lots on the northern portion of the site.

Patio homes will occupy lots on the southern portion of the site. A characteristic of this type of development is that not only are the lots smaller, but the homes are constructed closer together with a reduced side yard setback. This is a type of unit that allows for higher density construction, but in an ownership that does not share walls as a townhome neighborhood would. A homeowner's association provides exterior maintenance of snow removal and lawn care. The buildings are maintained by the property owner.

The following items are included in the packet for review:

1. City Engineer Comment letter
2. City Planner Comment letter
3. PUD Narrative
4. Architectural Requirements
5. Housing Types and Locations
6. Streetscape
7. HOA Summary
8. Preliminary Plat and Plan Set
9. Traffic Impact Study

Item 1: Rezoning

Public Hearing: December 17, 2018 Planning Commission

Request

The Developer is requesting to rezone the southern portion of the property from I-1 and I-2 (both Industrial zoning districts) to R-1A. A rezoning is an amendment to the zoning map, which changes the zoning district that a particular property is located within.

In Spring 2018, this portion of the property was reguided in the Comprehensive Plan from Industrial to Neighborhood Residential. The Comprehensive Plan that was recently adopted by the City Council in November 2018 also guided this entire property as Neighborhood Residential.

Analysis

The City Council may adopt an ordinance amending the Zoning Map (rezoning) as a means to reflect change in the goals and policies of the community as reflected in the Comprehensive Plan.

The existing I-1 and I-2 zoning district designations for the southern portion of this parcel is not compatible with a future land use guidance of neighborhood residential. The most consistent zoning district for the neighborhood residential land use category is R-1A.

Staff Recommendation

Staff recommends approving the rezoning subject to the conditions below:

1. Adoption and publication of the ordinance as required by law.

Item 1: Planned Unit Development (PUD)

Public Hearing: December 17, 2018 Planning Commission

Request

The Developer is proposing to construct a 280-lot subdivision for the site. The properties surrounding the proposed development have all been previously developed. The subject property contains an unreclaimed gravel mine, consisting of significant existing slopes, volunteer vegetation, and the berm that was constructed to screen existing adjacent single-family homes and River Road from the former mining operation. The property is proposed to be zoned R-1A, and the review of the proposed project was conducted based on the project's conformance with the requirements of that zoning district.

Analysis

Density

Per the City's ordinances, the total number of dwelling units allowed in a planned unit development shall be determined by either:

> *"a. The standards of the applicable base zoning or overlay district in which the proposed development is to be located; or*
> *b. The density specified by the City Council consistent with the intent of the comprehensive plan. A plan may provide for a greater number of dwelling units per acre than would otherwise be permitted by the regulations otherwise applicable to the site; however, the applicant shall show that such excess will not have an undue and adverse impact on existing public facilities and on the reasonable enjoyment of neighboring property.* ***The council, in determining the reasonableness of the increase in the authorized dwelling units per acre, shall recognize that increase density may be compensated for by additional private amenities and by increase efficiency in public facilities and services to be achieved by****:*
>
> ***1) The location, amount and proposed use of common open space;***
> ***2) The location, design and type of dwelling units; and***
> ***3) The physical characteristics of the site."***

The Developer is proposing the density in a manner consistent with the Comprehensive Plan, which would permit between 2 to 4 dwelling units per acre. At the density proposed, this amount is greater than the regulations would otherwise permit. The standards that are in bold above should be considered by the Planning Commission and advise as to whether any additional information or changes may be needed. Regarding these items, some general comments are as follows:

1. Common open space as proposed consists of Outlot A, which is an irregular and unusable piece of property near the main entrance. Its location being setback from River Road even makes it less desirable for an entrance monument or signage. Outlot D is also being proposed for common open space. The PUD narrative states this outlot can be used for parking, but the parking is actually included adjacent to this outlot within the right of way.
2. The architecture and streetscape view that were submitted should be reviewed and comments provided.
3. The site is an unreclaimed gravel mine, with low quality natural resources present on the site. There are no areas of the site that staff is recommending should be preserved in their current state.

PUD Generally

A PUD is intended to allow for the development of residential areas under a flexible regulatory process that allows for a joint planning design effort by the developer and the City. This process should result in benefits that preserve natural resources and amenities, assure a higher quality living environment, and develop a variety of housing types and densities as a single planned entity. The City may authorize departures from the strict requirements of the underlying zoning district and subdivision regulations after finding that the proposal is consistent with the Comprehensive Plan, the general purposes of the Zoning Ordinance, and if the project complies with the requirements outlined below (discussion should occur on each of these items, along with feedback for redesign that would bring the plan into greater compliance with these standards).

1. The consistency of the proposed PUD with the comprehensive plan.

2. The extent to which the proposed PUD is designed to form a desirable and unified environment within its own boundaries in terms of relationship of structure and open space, circulation patterns, visual character and sufficiency of drainage and utilities.

3. The extent to which the proposed uses will be compatible with present and planned uses in the surround area.

4. That any exceptions to this article are justified by the design or the development.

5. The sufficiency of each planned unit development phase's size, composition, and arrangement in order that its construction, and operation is feasible without dependence upon subsequent phases.

6. The burden or impact created by the PUD on parks, schools, streets, and other public facilities and utilities.

7. The impact of the PUD on environmental quality and on the reasonable enjoyment of the surrounding properties.

Variances from Zoning Requirements in Planned Unit Developments

The City may vary the regulations of the Zoning Ordinance in PUDs, and the development is requesting the following variations from the standard zoning requirements:

Performance Standards		Requested PUD Minimums		
	R-1A	Single Family		
(Minimum)		Large SF	Medium SF	Narrow SF
Lot Area	12,000 SF	9,840-16,330 SF	6,815-20,280 SF	4,940-9,085 SF
Lot Width (at front setback)	80 FT	80 FT	65 FT	50 FT
Side Yard Setback	10 FT	7.5 FT	7.5 FT	6 FT
corner lot abutting street	30 FT	25 FT	25 FT	25 FT
Front Yard Setback	30 FT	25 FT	25 FT	25 FT
Rear Yard Setback	30 FT	30 FT	30 FT	20 FT
Garage Area	576 SF	576 SF	576 SF	576 SF
Home Floor Area	1000 SF	1,400 SF	1,300 SF	1,200 SF

		Requested PUD Minimums		
	R-1A	Patio Home		
(Minimum)		Large Patio	Medium Patio	Narrow Patio
Lot Area	12,000 SF	8,315-20,730 SF	5,750-21,175 SF	5,250-19,275 SF
Lot Width (at front setback)	80 FT	75 FT	50 FT	38 FT
Side Yard Setback	10 FT	6 FT	6 FT	6 FT
corner lot abutting street	30 FT	25 FT	25 FT	25 FT
Front Yard Setback	30 FT	25 FT	25 FT	25 FT
Rear Yard Setback	30 FT	20 FT	20 FT	20 FT
Garage Area	576 SF	440 SF	440 SF	440 SF
Home Floor Area	1000 SF	1,500 SF	1,400 SF	1,200 SF

Some of the variations requested have changed since the submittal reviewed by the Planning Commission at its December meeting. These changes are the following:

1. Corner side setbacks have been increased to match the front yard setback.
2. The minimum home size for the large single-family has decreased, but is still larger than the minimum floor area size in the zoning ordinance.
3. The lot width for the medium single-family home size has increased to be consistent with discussions and presentation materials that these are 65-foot wide pads.

4. The flex category has been removed and replaced with a Narrow Single-family. These lots are generally wider than those requested as flex lots.
5. A reduction in the garage size for the large patio homes is requested from 576 square feet to 440 square feet.
6. A further reduction in the garage size for the medium patio homes is requested from 480 square feet to 440 square feet.
7. A further reduction in the garage size for the narrow patio homes is requested from 480 square feet to 440 square feet.

An analysis of why the applicant feels these changes are necessary is included within the PUD narrative. Note that although typically an applicant only requests that standards be decreased, in this case they are requesting that home floor areas be increased from the current zoning ordinance requirements.

Changes since Planning Commission Meeting

The Developer updated the plans following the last Planning Commission meeting. In general, the following main items that were discussed were addressed as follows:

1. The developer determined not to restrict the narrow patio lots to the one cul-de-sac.
2. Parking areas were added to various locations near the smaller villa lots.
3. The flex lots were removed and narrow single-family lots were added. This means that everything north of the main entrance to the neighborhood is single-family, while everything south is villa lots.
4. Changes they made to the plans resulted in a loss of 5 lots.

Planning Commission Options

The Developer requests the Planning Commission provide a recommendation that can be considered by the City Council. Options for a recommendation include (but may not be limited to):

1. Recommend approval of the PUD subject to addressing the comments in the City Planner and City Engineer memos.
2. Recommend approval of the PUD subject to changes specified by the Planning Commission and the comments in the City Planner and City Engineer memos.
3. Recommend denial of the PUD with reasons for the recommendation.

Item 3: Recommendation on Preliminary Plat

Public Hearing: December 17, 2018 Planning Commission

Preliminary plats provide the layout for lots and blocks for future sale and ownership of specific parcels. The preliminary plat is "preliminary", however approval of a preliminary plat gives the property rights by State law.

Land Use

The proposed land use is 280 single-family lots, and outlots for stormwater ponding and trail connections.

Access, Roads, Guest Parking Pedestrian Circulation

Six streets are proposed to be constructed, including two that provide ingress/egress from the neighborhood. Only one cul-de-sac is proposed.

With the narrow lot sizes, it is anticipated that guests will need to park in the driveway as there will be little room for street parking due to driveways. The proposed 25-foot front yard setbacks will typically provide room for 2 cars to park on the driveway. Since the prior submittal, the developer has also added parking areas in various locations near the smaller sized villa lots.

A traffic study was included as part of the Environmental Assessment Worksheet (EAW).

Street names are not being reviewed at this time.

Sidewalks are proposed on one side of every street, and a trail connection is proposed across Outlot C to access the Pheasant Run park.

Utilities

Utilities are proposed to be installed within the rights of way.

Ponding is located in outlots that will be deeded to the City.

Park Dedication

Park dedication is required for this plat, and will be calculated at the time of execution of the developers agreement. No parks are proposed for this area in the Comprehensive Plan, and this development is within walking distance of both Pheasant Run Park and Settler's Park.

Landscaping and Tree Preservation

Sheets LA1 through LA5 contains the proposed landscaping plan. The landscaping plans generally identify 2 trees per lot, but given lot size the trees are sometimes proposed to be in the rear yards rather than both being in front. This variation can be approved as part of the PUD.

Information on tree removal proposed is included in the plan set. As the condition of the site requires mass grading given its past use as a gravel mine, the developer is proposing to remove nearly every tree. Some of the trees that exist were originally planted to screen the mining operation from adjacent property owners, while many others are volunteer trees that established themselves naturally following the cessation of mining activity. Trees will be replanted as shown on the landscape plan. Care to protect the root system of trees that are on adjacent properties but that may extend into this property should be required prior to grading.

Fire Department

The Fire Department has reviewed the plans and have expressed concerns with the proximity of the buildings to each other but acknowledged that this type of spacing is permitted under building code.

Engineering and Planning

The development should comply with the requirements of the City Engineer's and City Planner's memos.

Planning Commission Options

The Developer requests the Planning Commission provide a recommendation that can be considered by the City Council. Options for a recommendation include (but may not be limited to):

1. Recommend approval of the preliminary plat subject to addressing the comments in the City Planner and City Engineer memos.
2. Recommend approval of the preliminary plat subject to changes specified by the Planning Commission and the comments in the City Planner and City Engineer memos.
3. Recommend denial of the preliminary plat as the PUD was not recommended for approval.

Memorandum

To: Cindy Nash – Hanover City Planner

From: Justin Messner, PE – Hanover City Engineer

Cc: Brian Hagen – Hanover City Administrator
Jason Versteeg, PE – Duininck, Inc.

Date: January 21, 2019

Re: Hanover Cove Revised Preliminary Plat Review
WSB Project No. 012261-000

As requested, we have reviewed the revised Hanover Cove preliminary plat documents as prepared by Duininck, dated January 11, 2019, and we offer the following comments:

Preliminary Plat Comments

1. Provide setbacks with preliminary plat. Note that easements would supersede and increase the minimum required building setbacks where applicable.
2. Provide additional easement or shift storm sewer to provide 10' on either side of the storm sewer;
    a. Between Lots 4 and 5 Block 5
    b. Between Outlot D and Lot 11 Block 5
    c. Rear of Lot 12 and 13 Block 7
    d. Rear of Lots 38-47 Block 7
3. Verify a minimum 6' easement at the northeast corner of Lot 3 Block 7.

Typical Section Comments

1. The proposed street width (16' to back of curb) does not meet City standard (18' to gutter). See City Standard Plate STR-01 for typical residential street section.

Grading and Drainage Plan Comments

1. Provide the EOF for CBMH 64. Verify the proposed lowest opening of Lot 30 Block 7 meets minimum of 1' above the EOF elevations.
2. On Sheets DRAIN 1 and SUB 1, there is a portion of a storm label that is showing in Lot 42 Block 1 that does not show the corresponding storm sewer line work (structures and pipe). Update with the construction plans.

Subcatchment/Stormwater Plan Comments

1. Provide draintile along the roadway at all low points with the construction plans.
2. Provide a detail showing how the existing catch basin along River Road will be relocated including impacted areas and restoration with the construction plans.

Stormwater Management Comments

1. An operations and maintenance plan for the proposed stormwater management system should be included with future submittals.

Storm Sewer

1. Callouts should be added for all pipes from lead structures at the low points in the roadway.
2. Consider utilizing a minimum 15” diameter pipe for storm sewer in the roadway to provide easier long-term maintenance.
3. Match crowns of dissimilar sized pipe in structures whenever possible.
4. Update plans so that structure CB 62 and the connection to existing storm sewer on River Road NE is showing.

Utility Plan Comments

1. Adjust the point of connection to the existing watermain or the proposed storm sewer at the intersection of 8th Street and Public Street G to maintain a minimum 10’ separation distance. The connection should be shown and made with a gate valve.
2. Serve Lots 1-5 Block 1 from 8th Street. Remove the watermain loop and sanitary main across the rear lots of Block 1.
3. Extend the sanitary main within the Public Street C cul de sac to 5’ from the curb line. Provide sanitary services to Lots 23 and 25 Block 7. Eliminate sanitary sewer service bends in the road way.
4. There are several areas on the plans where the water main has been shown with a sanitary sewer line type. Correct with the construction plans.
5. Consider shifting SANMH #1 and SANMH #2 closer to or within the adjacent trail to provide improved access for maintenance in the future.

Plan and Profile Comments

1. Provide a hydrant for or remove the high point of the watermain in Block 1.
2. Provide sanitary service risers where the service depth exceeds 14.5’ with the construction plans.
3. The sanitary sewer is only 6.4’ and 7.0’ deep at SANMH #24 and #40. Insulate over all water or sewer utility pipe with less than 7’ of cover.
4. On Sheet PP4, the 12” pipe between STMH #83 and CB(MH) #27 is shown as 15”.
5. There appears to be numerous places of potential conflict between the storm, sanitary, and water utilities including;
    a. (near storm structures STMH 78, CBMH 22, STMH 48, and STMH 36).
    b. Public Street A - STA 5+50-6+50; 14+75;
        i. Hold the grade of the watermain down throughout the intersection w/ Public Street C
    c. Public Street C - STA 0+50
        i. Hold the grade of the watermain down throughout the intersection w/ Public Street A
    d. Public Street D - STA 7+00-12+00
        i. Consider flattening storm sewer and dropping into the storm structures to minimize conflicts with services
    e. Public Street F - 12+00-14+00;
        i. Consider flattening storm sewer and dropping into the storm structures
    f. Public Street G - STA 0+00-11+00

    The City requires at least 18" of vertical separation and insulation between the water and either the sanitary or storm sewer (See Standard Detail Plate WAT-06). Applicant should confirm this requirement is being met.

    For all other utility conflicts provide a minimum 1’ separation to obtain material compaction or provide a concrete collar between utilities

Miscellaneous Comments

1. Provide detail with dimensions for parking bump outs with construction plans.
2. Provide curb radii dimensions for intersections.
3. Provide vertical curves with all street grade transitions that meet a 30-mph stopping sight distance with construction plans.
4. With the construction plans, utilize 2018 City of Hanover Standard Detail Plates whenever possible.

Collaborative Planning, LLC

MEMORANDUM

To: Brian Hagen, City Administrator

From: Cindy Nash, City Planner

Date: January 23, 2019

Subj: Planning Review Comments – Hanover Cove
Preliminary Plat and Plans dated January 11, 2019 and response submissions

---

I have reviewed the preliminary plat and plans dated January 11, 2019 and have the following comments.

1. Density is preliminarily calculated at 3.81 units per acre, which is less than the maximum allowed under the Comprehensive Plan (2 to 4 units per net acre in Neighborhood Residential). Comments in this memo and the City Engineer's memo may impact the density calculation, which will be recalculated at resubmission.

2. Addressing the comments contained in the City Planner and City Engineer staff memos may result in changes to or the removal of lots, outlots or easements.

3. The right of way for River Road is proposed to be dedicated in an amount in excess of the area encompassing River Road and the trail. This extra area is then landscaped, providing some screening to the properties that are proposed to back on River Road. This would provide an additional maintenance burden on the City and should instead be maintained by the HOA. The right of way for River Road is recommended to include that area from the eastern edge of the trail to the western edge of the subject property.

4. Outlot D has no use or purpose except to ensure that Lots 5 -10, Block 5 are not double or triple frontage lots. Lot 10 is the only home in this area with the same front orientation and should be oriented to front on Street D to be consistent with the homes to the west and north. This location is central to the entire neighborhood and would be a possible location to incorporate a neighborhood amenity into this PUD.

5. Outlots E and F are shown to address situations with existing encroachments on the property. A possible method to remove encroachment issues is to deed Outlots E and F to the adjacent property owners. These encroachment issues will be reviewed and addressed with the final plat.

6. If possible, consider adjusting Lots 11 and 12, Block 5 so that Lot 12 has more space.

7. Lot 1, Block 9 is an odd shaped lot with a different orientation than other lots. The other lots on this corner have the front facing Street A or Street F, while this one faces Street D. This lot should be platted as an outlot for future development when it could be combined with the property located off-site to the west for redevelopment as lots with a consistent shape and orientation to the other lots on that portion of Street F.

8. The PUD narrative and preliminary plat remain inconsistent with each other as stated in the previous comment letter. Specifically, but possibly not inclusively, the following lots would not meet the requested PUD requirements and <u>should be removed if they cannot be brought into conformance with the proposed PUD requirements</u>:

    a. Lot 16, Block 8: shows a 30' D&U easement in the front but a 25' setback.
    b. Medium SF Lots that do not meet 65-foot lot width minimum based on the lot width listed in the lot list provided by the developer:
        i. Lot 14, Block 1
        ii. Lot 3, Block 2
        iii. Lot 17, Block 2
        iv. Lot 19, Block 2
        v. Lot 1, Block 3
        vi. Lot 3, Block 3
        vii. Lot 16, Block 3
        viii. Lot 10, Block 4
    c. Lot 44, Block 4 is listed as meeting the lot width requirements, but appears to only contain about 62 feet in width on the plat.
    d. Large patio home lots that do not meet 75-foot lot width minimum based on the lot width listed in the lot list provided by the developer:
        i. Lots 34 – 36, Block 7
        ii. Lots 40 – 41, Block 7
        iii. Lots 44 -45, Block 7

iv. Lots 48-50, Block 7
v. Lot 55, Block 7

9. Corner lots are required to be platted at least 20 % larger than the minimum dimension required to secure the minimum lot area specified and to have additional width or depth to permit appropriate setbacks from both streets (Section 30-08-04, paragraph D). While the lots might be 20% larger, the corner side yard setback still applies which makes the buildable area of the lot smaller than similar lots of that type. A number of lots are proposed that would likely require a smaller home to be constructed on certain corner lots than the other homes in the same type of lot in the neighborhood. An example is Lot 16, Block 8.

10. The future use, ownership and maintenance of outlots needs to be specifically identified rather than listed as possible uses to evaluate any amenities provided in the neighborhood.

11. Some trees that appear that they may be on property lines should be avoided for removal unless the tree is fully within the applicant's property or permission is obtained from the adjacent property owner (example: tree 440, 168).

12. Two trees per lot are required to be installed.

13. Street trees are required in addition to two trees per lot (30-08-06, A.33). Verify that all street trees are at least 30 feet from the any intersection. In addition, on the side of any street without a sidewalk, street trees must be at least five feet from the curb. This requirement will be reviewed for compliance with final plat submissions.

14. The existing curb cut from River Road into the project site that will not be used should be removed, new curb installed, and boulevard plantings installed consistent with existing plantings on the River Road boulevard.

15. Advise as to how encroachments on the property that were identified on the ALTA survey will be addressed.

16. Locations for mailbox clusters should be identified on the plans.

17. A foundation and grading as-built for each home will be required as a condition of approval of the Planned Residential Development.

18. Signage approved by the City will need to be placed along lot lines or corners next to storm ponds or wetlands.

19. Deeds for conveyance of the stormwater outlots to the City shall be coordinated with final plat recording.

cc: Justin Messner, WSB

PAXMAR©

PROJECT NARRATIVE
(REVISED 1/9/19)

January 9, 2019

Ms. Cindy Nash, City Planner
Hanover City Council, Planning Commission & Staff
City of Hanover
11250 5th Street NE
Hanover, MN 55341

Re: Application for Preliminary Plat, Residential Planned Unit Development
Hanover Cove

Dear Ms. Nash, Members of the Council, Planning Commission and Staff:

Paxmar, LLC is pleased to submit this application for preliminary plat and residential Planned Unit Development review and approval of Hanover Cove. This narrative is intended to generally describe the project and address specific development topics.

Location

The Hanover Cove site is located north of the Crow River. The site is bound on the west by River Road NE, the north by 8th Street, on the East by the Pheasant Run housing addition (along Meander Road), and on the south by the Cleveland's 1st Addition (along Riverview Road).

Land Use / Development History

Based upon historic aerial photographs, the subject property and all adjoining properties were in agricultural production from at least 1937 until sometime between 1957 and 1963. Around this time, Riverview Road was constructed, and single-family residences were constructed on the adjoining property to the south. The subject property and adjoining properties to the north, east, and west remained in agricultural production. Between 1959 and 1979, a gravel mine was excavated northwest of the subject property but has since been converted into industrial use. Between 1984 and 1991, the adjoining property to the east was developed as single-family residential land use. Around the same time, the adjoining property to the northwest was developed as commercial and industrial. Between 1997 and 2003, the adjoining property to the north was developed as single-family residential land use. Today, all adjoining properties have been developed.

Between 1984 and 1991, mining of sand and gravel began on the subject property. Mining ceased at the site around 2005; however, the site remains unreclaimed to date. As such, the terrain where gravel has been removed is steep, with approximately 45' of elevation difference between the high point to low point in the middle of the site. The vegetation in the mined areas consists of volunteer grasses and trees. The western portion of the site has not been mined and consists of various grasses and legumes, with a few trees interspersed.

In 2006, a preliminary plat entitled Hanover Commons was approved by the Hanover City Council which sought to develop this property into a residential housing development. In anticipation of this development, the city did plan for and install infrastructure, including streets and underground utilities to serve this development. Ultimately, because of outside housing market conditions, this development did not materialize, and so the site remains as an unreclaimed gravel pit and is not being used for any other commercial, industrial, or residential purpose.

PAXMAR©

Proposed Planned Unit Development (PUD)

Paxmar, LLC is proposing to construct a 280-unit residential development in the City of Hanover. This proposed development lies on two parcels, totaling 84.1 acres, the majority of which currently consists of unreclaimed gravel pit and agricultural grass land. These parcels will be developed into a residential planned-unit development, consisting of several different residential housing types throughout the property, including approximately 146 traditional single-family homes, 134 patio homes.

Infiltration basins and a large engineered pond (approx. 5 acres) are proposed to serve as the storm water management basins for the residential site. The pond will be landlocked but will have an emergency overflow to the southeast at an approximate 906.0 elevation which will connect to the Crow River through an 18" pipe.

Approximately 10,855 LF of public roads will be constructed to serve this project, along with all required storm sewer, sanitary sewer, and water main utilities. One aged pole shed (60'x40') will need to be demolished to accommodate the project.

The project will be completed in several (possibly 6-8) phases; however, the mass grading of the entire development will be completed in one project prior to the construction of the remaining improvements. The proposer anticipates completing all phases of the project within 6-8 years with mass grading commencing in spring of 2019.

Typical construction methods will be used to complete this project, incorporating City of Hanover standard plans and specifications. A total of approximately 600,000 CY of earth will be moved, all of which will originate onsite, as the project will be set up to balance the cuts and fills. All underground utilities and surfacing materials will be trucked into the site for installation using standard industry practices.

Consistency with the Comprehensive Plan Principles

The Hanover Cove housing proposal provides a practical solution for meeting the current and projected demographics of the city, and conforms to the stated objectives, goals and zoning outlined in the 2040 Comprehensive Plan and Chapter 10 of the Hanover Code of Ordinances. Specifically, Hanover Cove supports the Planning Principles of the Hanover 2040 Comprehensive Plan in the following way:

1. Residents and businesses take pride in Hanover and are engaged in improving the community, volunteering, and supporting each other.

No direct impact from proposal.

2. Downtown Hanover will be a vibrant community gathering place with thriving businesses leveraging the natural beauty of the Crow River and a walkable development pattern.

Hanover Cove will include an extensive trail/sidewalk system that will allow future and current residents the ability to traverse the community while walking or biking.

3. Expansion of commercial, office and light industrial uses are encouraged to diversify the tax base and expand service options to residents.

Many businesses base locations on "number of rooftops" in a community. Hanover Cove will create additional customer base to support local businesses and attract new businesses to the area**.** Housing production will increase the demand for trade services, much of which may be supplied by local businesses.

4. Housing development that provides a wide range of housing choices and styles are encouraged to meet the needs of a growing community and to enable existing residents to find housing that permits them to stay in Hanover.

The statistics outlined in the 2040 Comprehensive Plan suggest that more families are moving to the city and that older residents may be having a difficult time remaining in Hanover potentially because of a lack in suitable housing to meet their current needs. To address these trends, the Hanover Cove development is designed to meet the needs of every age demographic, from millennials to young families to empty nesters. The proposal consists of six lot "types", with a mixture of typical single-family homes and patio homes. Proposed home pricing will align with local demographics and positively impact surrounding existing properties. The 2016 Median Property Value in Hanover was $270,600*. Homes in Hanover Cove will likely range from $200,000 – $500,000, with an estimated median property value of $350,000.

** Source: Census Bureau; Dataset: ACS 5-year Estimate*

Hanover already has several larger-lot residential neighborhoods and typical suburban style single-family neighborhoods. Research shows that very little of the existing development pattern consists of housing types to meet the needs of single individuals and older age residents. Hanover Cove specifically addresses this gap in the current housing inventory by designating 45% of the development's lot type to patio homes.

Demographics and historical development patterns both support the need for smaller patio homes. This design will not only fill an immediate need in the community, but it will prepare the community to meet the needs of the aging baby boomer population. Currently the age group with the highest population is adults age 45-54; From 2000-2016, the largest increase was among adults age 60-64 (856%). These populations will likely be looking to downsize in the next 5-10 years and Hanover Cove will provide them with housing options that will make it possible for them to remain in the community. To also accommodate the growing percentage of young families, the remaining lot types (55%) will be larger, traditional single-family homes.

5. Hanover will continue to collaborate with other agencies to achieve outcomes that improve the quality of life or the efficiency of service delivery.

No direct impact from proposal.

6. Hanover will strive to minimize the tax burden on properties while maintaining a quality level of service. Development and redevelopment will have the largest impact on future tax rate, so development of types that provides a cost-effective balance between increased tax base and future cost of service provision is encouraged.

Hanover Cove will help strengthen the community for years to come through bolstered property values and significant new tax revenue to support city maintenance of local infrastructure and services. The development is expected to add $80 million to the city's overall tax base, generating more funding to support schools, infrastructure and municipal services for Hanover. Utilizing denser communities with less frontage is a great way to be cost-effective in terms of cost of service per unit.

By following the guidance of the City's residential growth objectives, Hanover Cove can be effectively served by public facilities and positively contribute to the existing character of the community. Sewers and water main utilities will be constructed to serve the new residential community. The Joint Powers agreement between Hanover, St. Michael and Albertville already has adequate water supply to serve the

needs of this development. The plant capacity is 9 million gallons per day (MGD). In 2017 the total Joint Powers average water usage was 1.99 MGD with the City contributing an average of 0.209 MGD to the total. Based on the residential usage of 280 gallons/day/household of water, it is estimated that the Hanover Cove site would use 0.080 MDG upon full development.

The proposed development, in lieu of park land dedication, will be contributing cash, which the City can use to upgrade existing facilities or expand its park plan.

These additional units will also generate additional funds for the school district with property taxes, which may reduce the need for future levies.

7. New development will be constructed in a manner that does not burden existing property owners with the associated costs.

This proposal is not asking for any type of tax incentives or Municipal bonding for help with any of the infrastructure improvements. It is not foreseen that any direct costs should arise for the existing property owners.

8. The existing rural character and natural environment defined by open space and natural resources will be protected, enhanced and integrated as an amenity in the community.

The Hanover City Council performed a stringent environmental review and approved a "Negative Declaration" resolution for the proposed Hanover Cove site, determining there is no potential for significant environmental impacts that would otherwise necessitate an Environmental Impact Statement. The site contains three excavated ponds/wet areas that were not present prior to mining. They are not natural and were incidentally-created by mining activity, and therefore any impacts to these wetlands constitute a no-loss per WCA Rule 8420.0415 A. While the majority of the site has already been disturbed from the former industrial use, all recommendations made by the Department of Natural Resources' report will be followed throughout the development of this property such that no adverse impacts to wildlife habitats are anticipated.

9. Opportunities will be created to better connect the community through trails and sidewalks.

Hanover Cove will include an extensive trail/sidewalk system that will allow future and current residents the ability to traverse the community while walking or biking.

<u>How the Proposal Varies From Straight Zoning</u>

Guided in the Future Land Use Map as Neighborhood Residential, the Hanover Cove proposal falls within the outlined net density range of 2-4 units per acre, meeting the desired land use guidelines. The development proposal consists of 280 individual housing units, with a density ratio of 3.81.

The underlying zoning requirements for the R-1A Neighborhood Residential zone will be utilized, along with a PUD overlay to reflect the original planning concept. The following is a comparison of the R-1A standards are requested as part of the PUD request:

(*continued on next page)*

PAXMAR©

Performance Standards (Minimum)	R-1A	Requested PUD Minimums: Single Family – Large SF	Medium SF	Narrow SF
Lot Area	12,000 SF	9,840-16,330 SF	6,815-20,280 SF	4,940-9,085 SF
Lot Width (at front setback)	80 FT	80 FT	65 FT	50 FT
Side Yard Setback	10 FT	7.5 FT	7.5 FT	6 FT
corner lot abutting street	30 FT	25 FT	25 FT	25 FT
Front Yard Setback	30 FT	25 FT	25 FT	25 FT
Rear Yard Setback	30 FT	30 FT	30 FT	20 FT
Garage Area	576 SF	576 SF	576 SF	576 SF
Home Floor Area	1000 SF	1,400 SF	1,300 SF	1,200 SF

(Minimum)	R-1A	Requested PUD Minimums: Patio Home – Large Patio	Medium Patio	Narrow Patio
Lot Area	12,000 SF	8,315-20,730 SF	5,750-21,175 SF	5,250-19,275 SF
Lot Width (at front setback)	80 FT	75 FT	50 FT	38 FT
Side Yard Setback	10 FT	6 FT	6 FT	6 FT
corner lot abutting street	30 FT	25 FT	25 FT	25 FT
Front Yard Setback	30 FT	25 FT	25 FT	25 FT
Rear Yard Setback	30 FT	20 FT	20 FT	20 FT
Garage Area	576 SF	440 SF	440 SF	440 SF
Home Floor Area	1000 SF	1,500 SF	1,400 SF	1,200 SF

To further enhance the units above what is allowed in current zoning, the developer proposes the following:

Restrictive Covenants to govern the exterior material types to enhance the streetscape and view from the street. Homes will be required to use Stone, Brick, Stucco, Cultured/Polymer stone products on the fronts of homes, as well as utilizing shakes, batten board, hardi board, vinyl siding and stucco to go above and beyond what is allowable in a straight zoning development and eliminate one-type siding fronts. Homes will have a 2-car garage at minimum and a street facing front door.

A Master HOA will manage the entire site with two sub associations responsible for a) the Traditional Single-Family lots and b) the Patio/Villa lots. The association for the Traditional Single Family will have a limited role mainly to enforce design guidelines and manage Cluster Mailbox Units, while the owners will maintain the traditional responsibilities of home ownership. The association for the Patio/Villa lots will maintain yards/landscaping, maintain irrigation system, remove snow from driveways, entryways and sidewalks (those which are units owner's responsibility to maintain), maintain Cluster Mailboxes and ensure each property does not fall into disrepair. If an owner fell behind on exterior maintenance or a unit became unsightly, the HOA would have the power to step in and rectify the issue. The HOA will own/maintain Outlots A (potential monument sign or enhanced landscaping) & D (used primarily for extra parking and snow storage). Also, anywhere that extra parking has been installed in the Road right of way, the HOA will be responsible to manage/maintain/replace those parking areas. The HOA will also

maintain the road right-of-way area along River Road between the Eastern edge of the existing trail and the adjacent Hanover Cove lot lines.

An extensive Landscaping plan has also been developed to add additional aesthetics to this community. A line of evergreen trees along River Road is proposed to beautify and act as a natural buffer between the development and the road. All units will have two trees along with landscaping consisting of mulch, rock, shrubs and other plantings around the front entrances, and a boulevard tree.

Garage variations are being requested to accommodate a different type of housing. The purchaser of a one level HOA-maintained home does not require a lawnmower, snow blower, weed whacker, rake, etc. A 20x22 garage, for this type of unit will allow for parking of 2 standard-size vehicles, ample walk around room and area for storage of additional items. When the minimum garage size was set by the city, we do not feel that it contemplated or anticipated this type of housing and believe this is an appropriate request.

PUD consideration:
The proposed preliminary plat supports many of goals and principals outlined in Hanover's Comprehensive Plan. Most notably it will provide a wide range of housing choices and styles to meet the city's growth projections, enable existing residents to find housing that permits them to stay in Hanover, and fill an existing void in the marketplace.

Currently the City is severely deficient in options for residents or potential new residents looking for single-level, maintenance-free living. The shortage is likely due to this type of housing not being practically feasible under standard zoning. As stated in the 2040 Comprehensive Plan, *"Hanover has a number of larger-lot residential neighborhoods served by well and septic systems as well as more typical suburban style single-family neighborhoods on municipal services. Very little of the existing development pattern consists of townhouses, apartments, or other higher density housing types".* This proposal not only addresses this gap, but it includes multiple housing choices at varying price levels, to meet the needs of <u>every</u> age demographic.

Extra attention has gone into creating design standards that will help enhance the community character and identity. These guidelines are intended to ensure variation and curb appeal and exceed the standard zoning requirements which allow for mono type front exteriors composed of one type/color of siding. Guidelines include:

- Multiple exterior materials or styles on each unit
- Front doors and garage doors must be varied between abutting units
- Street facing, side and rear elevations must be enhanced with multiple siding types or window treatments
- No abutting unit will look identical

An HOA will be established to ensure that the development is always in pristine condition and exteriors of units do not fall into disrepair.

In summation, we believe our proposal accomplishes many of the goals and principles outlined in the Comprehensive Plan; brings needed housing types at multiple price-points to the city; converts a vacant property from a potential eye sore and safety issue to its highest and best use; and establishes policies and requirements to heighten the finished product to a level superior to standard zoning allowances. Thank you for your consideration of the Hanover Cove Preliminary Plat and PUD. We look forward to working with the City throughout its development.

Sincerely,

Alan Roessler
Paxmar, LLC

Architectural Requirements

Hanover Cove *(Will be incorporated into HOA or Covenants with Final Plat)*

An Architectural Review Committee (ARC) will be established and Paxmar will approval ALL building plans:

1) **Allowable Siding Materials and Types:** Brick, Stone, Vstone, Cultured Stone, Wood, Cement Fiber (LP/Hardi Board), Vinyl, Shakes, Batten Board, Stucco.
    - Front elevation shall consist of multiple allowable materials and types. A single type or material will not be allowed.
    - Side and rear elevations may consist of a single siding material or type.
    - Rear or side elevations facing roadways shall use multiple siding options or at a minimum provide window shutters or framing. Every effort must be made to enhance elevations that are street facing.
    - Siding colors shall be earth toned or alternative color approved by the ARC.

2) **Allowable Roof Materials:** Architectural Shingles, Metal (standing seam), Wood Shingles, Slate or Rubber "slate" tile, Solar Tiles that mimic the look of traditional shingles.
    - Roof colors shall be earth toned or alternative color approved by the ARC.

3) **Garage Doors:**
    - Allowable colors: white, earth tones and faux wood or alternative color approved by the ARC.
    - Use of windows in overhead doors and variation between abutting units is encouraged.

4) **Building Footprint:**
    - All buildings shall fall within the defined setback areas.

The following Minimum Home Floor Area (finished square feet above grade) and Garage Area shall be met:

Lot Type	Min Lot Width at front setback	Home Floor Area	Garage Area
Large Single Family	80'	1,400 SF	576 SF
Medium Single Family	65'	1,300 SF	576 SF
Narrow Single Family	50'	1,200 SF	576 SF
Large Patio	75'	1,500 SF	440 SF
Medium Patio	50'	1,400 SF	440 SF
Narrow Patio	38'	1,200 SF	440 SF

5) Landscaping

- All lots shall have at least 2 trees of at least a 2.5-inch caliper and a boulevard tree planted according to the approved landscape plan.
- Front, Side and 20’ of rear yard must be sodded.
- All units must have installed irrigation systems.

  ** Patio/Villa units will have a master irrigation system*
- All units shall have front yard landscaping utilizing mulch, rocks, shrubs and other plantings around front entry areas.
- A dense buffer line of trees will be planted along River Road.

Housing Examples and Locations
Hanover Cove

Large Lot Single Family – 80’ +

Homes will consist of traditional multi-story single family
*Minimum 1,400 sqft Home floor area above grade

Housing Examples and Locations
Hanover Cove

Medium Lot Single Family: 65’–79’

Homes will consist of traditional multi-story single family
*Minimum 1,300 sqft Home floor area above grade

Housing Examples and Locations
Hanover Cove

Narrow Lot Single Family: 50’- 65’

Homes will consist of traditional multi-story single family with 2 or 3 car garages
*Minimum 1,200 sqft Home floor area above grade

PAXMAR©

Housing Examples and Locations
Hanover Cove

Large Patio: 75'+

Homes will consist of one level or rambler with full basements
HOA maintain yard/landscaping/snow
*Minimum 1,500 sqft Home floor area above grade

PAXMAR©

Housing Examples and Locations
Hanover Cove

Medium Patio Lot: 50’-74’

Homes will consist of one level, 2 and 3 car garages
HOA maintain yard/landscaping/snow
*Minimum 1,400 sqft Home floor area above grade

PAXMAR©

Housing Examples and Locations
Hanover Cove

Narrow Patio Lot: 38’-49’

Homes will consist of one level
HOA maintain yard/landscaping/snow
*Minimum 1,200 sqft Home floor area above grade

PAXMAR©

HOA summary

Hanover Cove

A master Home Owners Association is proposed for all lots in the Hanover Cove Development, under which there will be two sub associations;

a) For the Traditional Single-Family Lots

HOA Responsibilities:

Replace/Reserve/Maintain Cluster Mailbox Units
Manage Architectural Review Committee, ensuring upkeep and general aesthetics
Manage/Maintain common area and area between lot lines and east side of trail along River Road

Home Owner Responsibilities:

Homeowners Insurance
Yard/Landscaping maintenance
Maintain irrigation system
Replacement of exterior finishes

** Would include all traditional responsibilities of a homeowner*

b) For the Patio/Villa Lots

HOA Responsibilities:

Replace/Reserve/Maintain Cluster Mailbox Units
Manage Architectural Review Committee, ensuring upkeep and general aesthetics
Manage/Maintain common area and area between lot lines and East side of trail along River Road
Yard/Landscaping Maintenance
Replace/Reserve/Maintain Master Irrigation System
Snow removal from driveways, walkways, sidewalks and trails
Replace/Reserve/Maintain common parking areas, if any
Step in and repair exteriors, if unit owner fails to address
Own/maintain Outlots A & D:
Manage/maintain/replace any parking areas established in the road right-of-way

Home Owner Responsibilities:

Homeowners Insurance
Replacement of exterior finishes

**HOA responsible for the majority of exterior maintenance*

PRELIMINARY PLAT/
PRELIMINARY ENGINEERING
PLAN SUBMITTAL

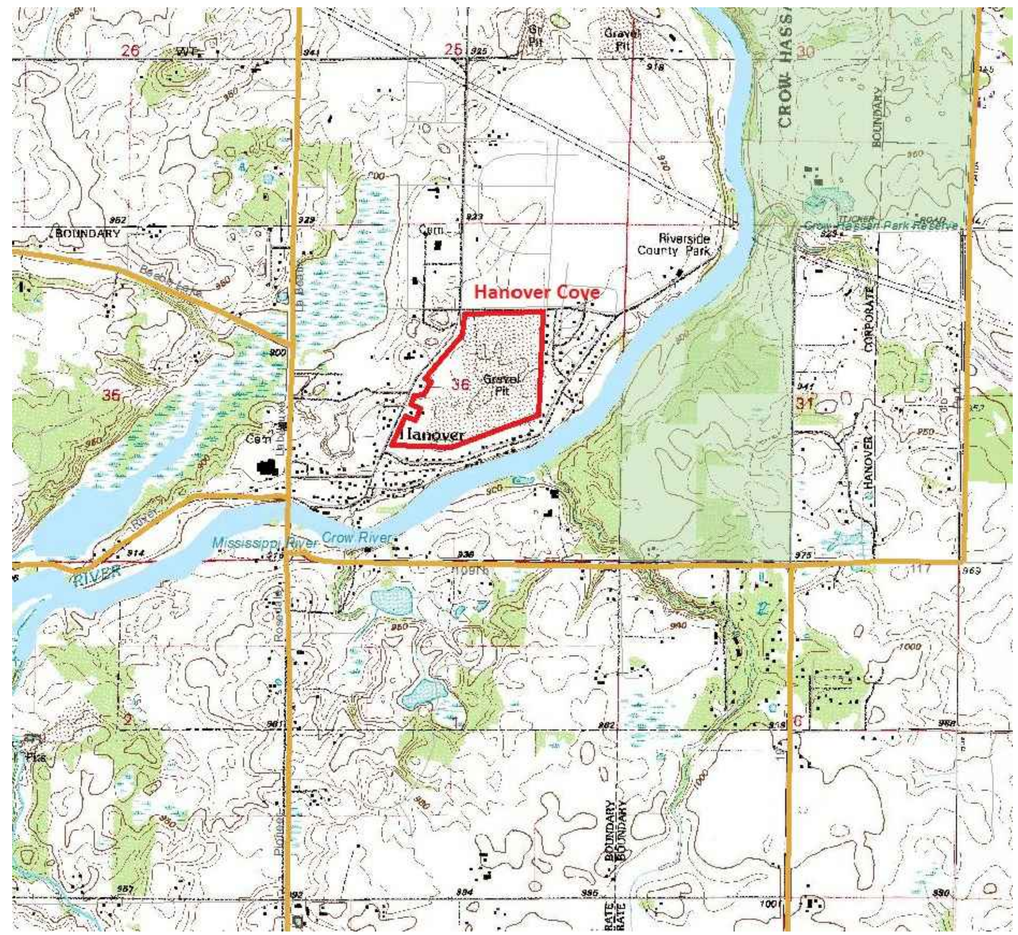
FOR

HANOVER COVE

CALL 48 HOURS BEFORE DIGGING:

GOPHER STATE ONE CALL

MN TOLL FREE 1-800-252-1166



DEVELOPER: PAXMAR, LLC
2850 CUTTERS GROVE AVE.
SUITE 207
ANOKA, MN 55303

SHEET INDEX

TITLE PAGE
ALTA SURVEY
PRELIMINARY PLAT
CONCEPT PLAN
PHASING PLAN
TYPICAL SECTION
OVERALL DRAINAGE MAP
SITE PLAN
GRADING AND DRAINAGE PLAN
SUBCATCHMENT / EOF MAP
UTILITY PLAN
PLAN AND PROFILE SHEETS
STORMWATER POLLUTION PREVENTION PLAN
EROSION CONTROL PLAN
TREE INVENTORY
TREE REMOVAL PLAN
LANDSCAPE/SCREENING PLAN

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
TITLE PAGE

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 19, 2019

SHEET
TITLE

This is a survey of the Land Description as found on Schedule A of

Commitment No. 566416, 3rd Supplemental

issued by Stewart Title Guaranty Company
Issued by its Agent, Land Title, Inc.
dated December 15, 2017

"Parcel 1:
The Southwest Quarter of the Northeast Quarter (SW¼ NE¼), AND the Northwest Quarter of the Southeast Quarter (NW¼ SE¼) (lying North of the Crow River); AND the Northeast Quarter of the Southwest Quarter (NE¼ SW¼), all of said land being in Section Thirty-six (36), Township One Hundred Twenty (120), Range Twenty-four (24), Wright County, Minnesota, excepting therefrom the following tracts:
a) Tract sold to Board of Education of Hanover by deed recorded in Book 28 of Deeds, page 524.
b) Tract sold to Henry Ernest Kirscht by deed recorded in Book 74 of Deeds, page 207.
c) Tract sold to Lakeview Motors, Inc., by deed recorded in Book 158 of deeds, page 143.
d) Tract described as beginning at the Southwest corner of said Northeast Quarter of the Southwest Quarter (NE¼ SW¼), thence North 786.8 feet to beginning tract to be conveyed; thence North 150 feet, thence angle right 90° 337.6 feet to the right of way line of State Aid Road No. 6; thence Southwesterly along said right of way line 160 feet; thence West 275 feet to beginning; all of said land being in Section Thirty-six (36), Township One hundred Twenty (120), Range Twenty-four (24).
e) Plat of Cleveland's First Addition to Hanover as recorded in Book 5 of Plats, page 50.
f) All that land lying in the Northwest corner of the Northeast Quarter of the Southwest Quarter (NE¼ SW¼) West of County Road 19 as presently situated.
g) All that land platted as Olson Addition, Dehmer's Hanover and Riverview Road Addition, Pheasant Run Second Addition.
h) All that land described in Warranty Deed recorded August 13, 1969, in Book 228 of Deeds, page 37.
i) All that land described in Warranty Deed recorded September 28, 1978 in Book 291 of Deeds, page 180.
j) All that land described in Quit Claim Deed recorded July 12, 1979, in Book 294, page 153.

AND

Parcel 2:
That part of the East Half of the Northwest Quarter (E½ NW¼) of Section Thirty-six (36), Township One Hundred Twenty (120), Range Twenty-four (24), Wright County, Minnesota, lying East of County Road No. 19, EXCEPT all that part of the Northwest Quarter (NW¼) of Section Thirty-six (36), Township One Hundred Twenty (120), Range Twenty-four (24), described as follows: Commencing at the center of said Section Thirty-six (36), thence South 89°15' West along the quarter line, 537.14 feet for a point of beginning, thence continuing on said last described course, 214.16 feet to the center of County Road, thence North 24°33' East along said center of road, 225 feet, thence North 89°15' East, 214.16 feet, thence South 24°33' West, 225 feet, to the point of beginning.

Abstract Property"

This is an ALTA / NSPS Land Title Survey of:

part of:

E½ of the NW¼, NE¼ of the SW¼, SW¼ of the NE¼, and NW¼ of the SE¼

Located in:

Section 36, T120N-R24W, Wright County, Minnesota

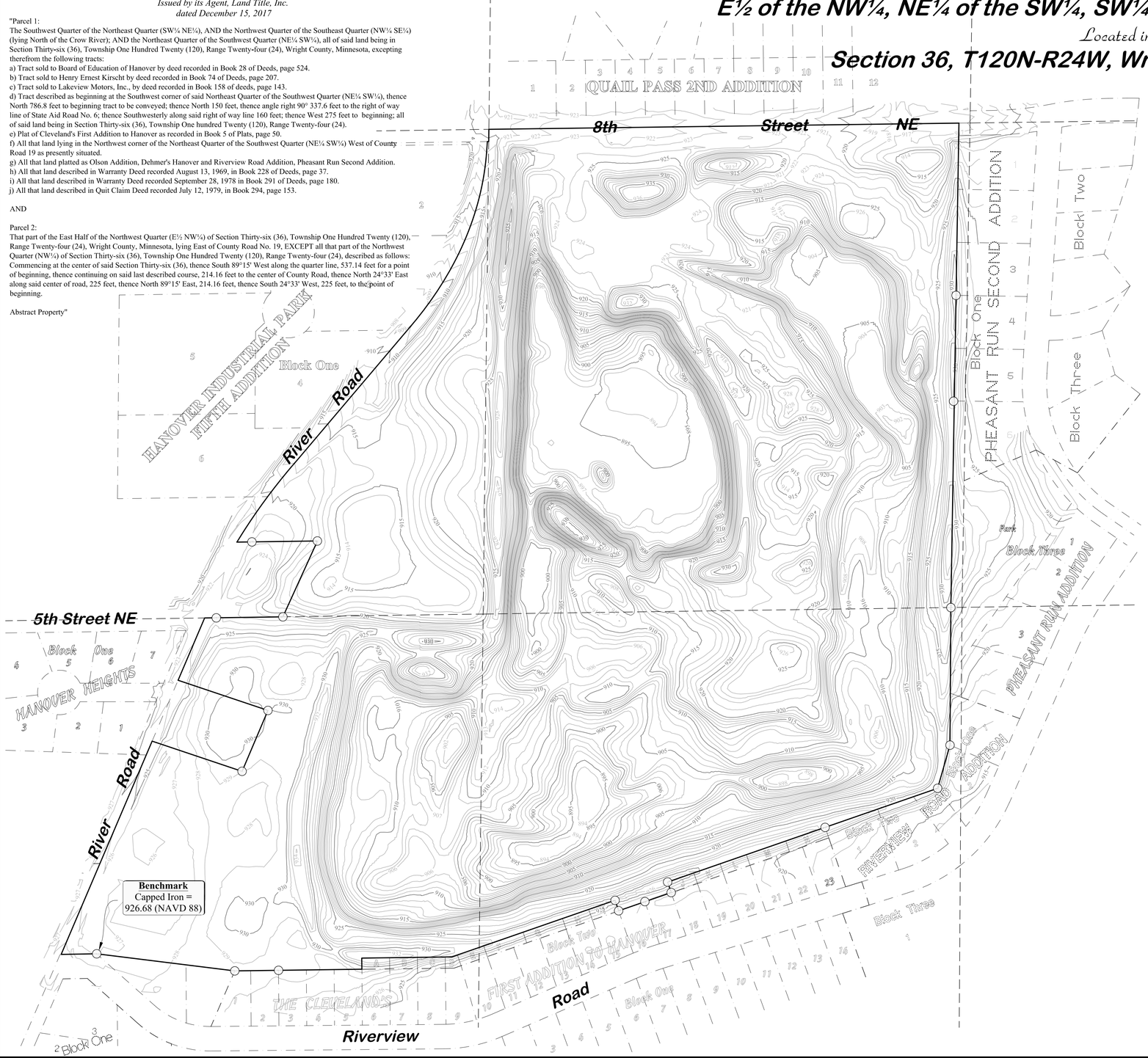


TABLE A ITEMS

Item 1:
Monuments placed or found at all major property boundary corners: As shown on this survey

Item 4:
Area of property as shown on this survey. SEE SHEETS 2 & 3

Item 5:
Vertical relief, as shown on this survey is derived from a ground survey done by Duininck Inc. on 12-14-2017, and has a contour interval of 1 foot. The datum used for this survey is the North American Vertical Datum of 1988 (NAVD 88) using MNDOT Geodetic control point BACKES, which has an NAVD 88 elevation of 922.08.

Item 7a
Exterior dimension of buildings at ground level, as shown on this survey. SEE SHEETS 2 & 3

Item 8:
Substantial features observed in the process of conducting our field work, as shown on this survey.

Item 11:
The Gopher State One Call Utility location system was notified for this survey (Ticket #173312608 on 11-27-2017, submitted by, and utilities located by Duininck Inc.). The following utility companies were notified and are required by Minnesota Statute 7560.0250 to respond.

- Comcast - MARKED 800-762-0592
- Veolia Water - MARKED 763-497-3611
- Centurylink - MARKED 800-283-4237
- Center Point Energy - MARKED 608-223-2014
- Xcel Energy - MARKED 800-848-7558
- Zayo Bandwidth - MARKED 888-267-1063

Some of the utility companies may not have responded to the locate request. There are also various private facilities that do not participate in the Gopher State One Call utility location system and may have utilities located on this property that we are not aware of. Before any excavating is done in this area, the utilities should be re-notified. The utilities shown on this survey are based on information provided by the utility companies and field observations. SEE SHEETS 2 & 3

Item 19:
Plottable offsite easements or servitudes, as shown on this survey. SEE SHEETS 2 & 3

Schedule B - Part 2 Exceptions

Items 1&2:
Are not survey issues and were not addressed as a part of this survey.

Item 3
Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the land.
AS SHOWN ON THIS SURVEY SEE SHEETS 2 & 3

Items 4-11:
Are not survey issues and were not addressed as a part of this survey.

Item 12:
Permanent Drainage, Utility & Pathway Easement filed as Document Number A954819.
AS SHOWN ON THIS SURVEY SEE SHEETS 2 & 3

Item 13:
Is not a survey issue and was not addressed as a part of this survey.

Item 14:
Subject to road(s) as shown by available maps.
AS SHOWN ON THIS SURVEY SEE SHEETS 2 & 3

Item 15:
Current Legal description appears to encroach on to the Plat of Pheasant Run Second Addition. Assuming Document No. A1358544 is the current deed referred to , this description does overlap with Pheasant Run Second Addition, however, the Schedule A land description referred to on this survey DOES NOT overlap with Pheasant Run Section Addition.

Items 16:
Current legal description appears to except out too much property in exception "i)" of Warranty Deed filed as Document Number A1358544. The current legal description (Doc. #A1358544) does except out too much property for exception i, however, the Schedule A land description fits with the found survey monuments and land use.

North

This drawing prepared by:

Bonnema Runke Stern Inc.
Professional Land Surveyors
1809 22nd St SW - Suite 104
Willmar, MN 56201
Office (320) 231-2844 Fax (320) 231-2827

Requested by: ***Duininck Inc.***
C/O Jason Ver Steeg
408 6th St
Prinsburg, MN 56281

0 150 300 450
Scale in Feet

LEGEND

- Found Iron Monument from former survey
- Bonnema Runke Stern Inc. Placed Capped Iron Monument
- Cast Iron Monument
- Course Change - No monument set
- Sanitary manhole
- Water Gate Valve
- Telephone Pedestal
- Electric Transformer
- Fire Hydrant
- Power Pole
- SAN — Sanitary Sewer
- STM — Storm Sewer
- WL — Water Line
- Road Right of way
- GAS — Gas Line
- FO — Buried Fiber Optic
- BE — Buried Electric
- BT — Buried Telephone
- OH — Overhead Power
- Occupation / Farm Tillage
- X — Fence
- (D = XX.XX) Deed Dimension
- (P = XX.XX) Platted Dimension
- Tree Row
- Existing Building

The distances shown from improvements to the property lines are shown for references purposes only and are NOT intended for determining the property line location. Property corner monuments shall always be used when establishing the property line.

To Paxmar, LLC, Duininck Inc., Stewart Title Guaranty Company, and Land Title, Inc:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 4, 5, 7a, 8, 11, and 19 of Table A thereof. The fieldwork was completed on December 18, 2017.

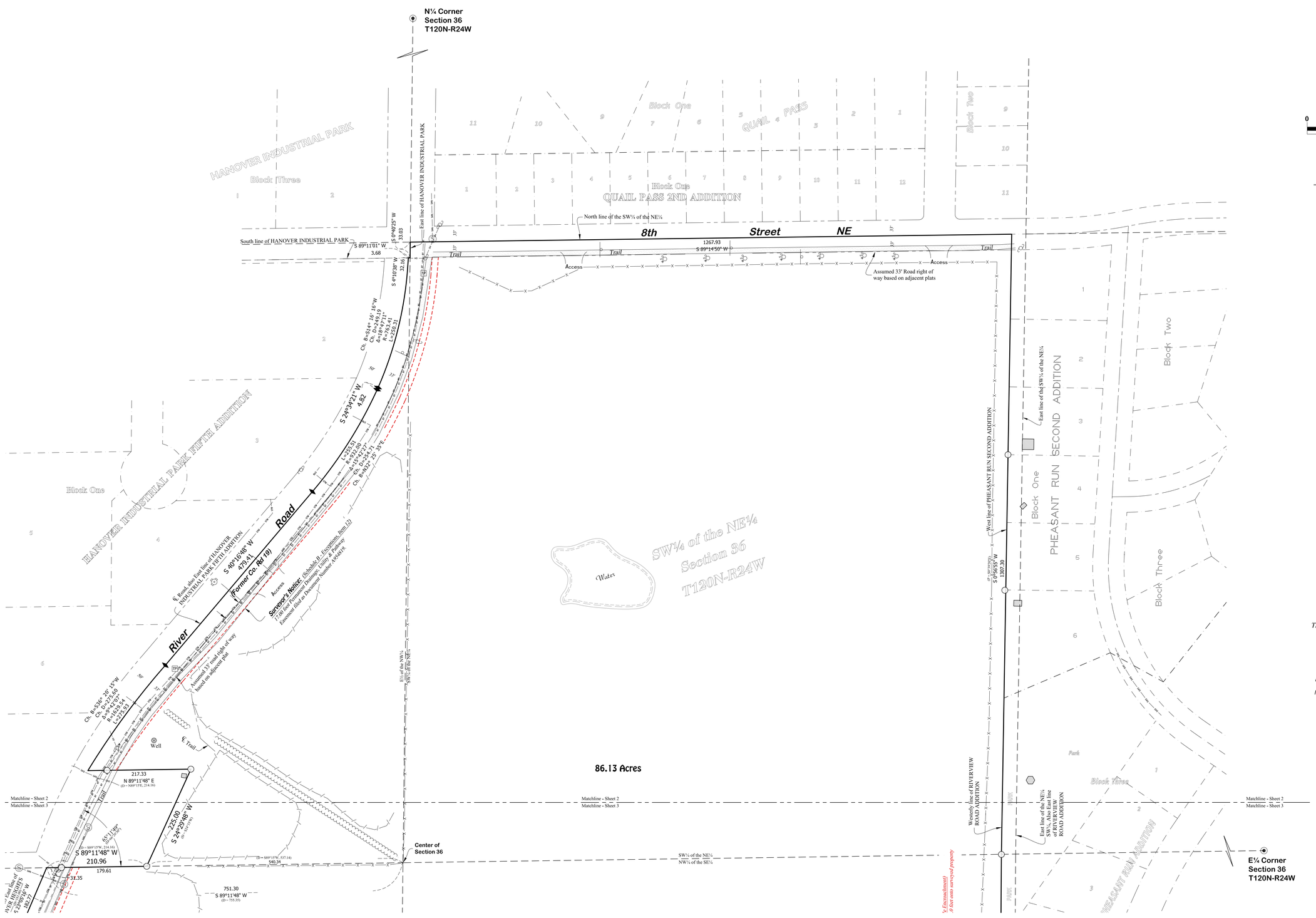
Matthew D. Runke

Date ***July 23, 2018*** License No. 46169

Survey Requested By: **Duininck Inc.**

© BONNEMA RUNKE STERN INC 2018

36-120-24



LEGEND

- Found Iron Monument from former survey
- Bonnema Runke Stern Inc. Placed Capped Iron Monument
- Cast Iron Monument
- Course Change - No monument set
- Sanitary manhole
- Water Gate Valve
- Telephone Pedestal
- Electric Transformer
- Fire Hydrant
- Power Pole
- Sanitary Sewer
- Storm Sewer
- Water Line
- Road Right of way
- Gas Line
- Buried Fiber Optic
- Buried Electric
- Buried Telephone
- Overhead Power
- Occupation / Farm Tillage
- Fence
- (D = XX.XX) Deed Dimension
- (P = XX.XX) Plattted Dimension
- Tree Row
- Existing Building

Elevation Datum:

The Elevation Datum used for this survey is the North American Vertical Datum of 1988 (NAVD 88)

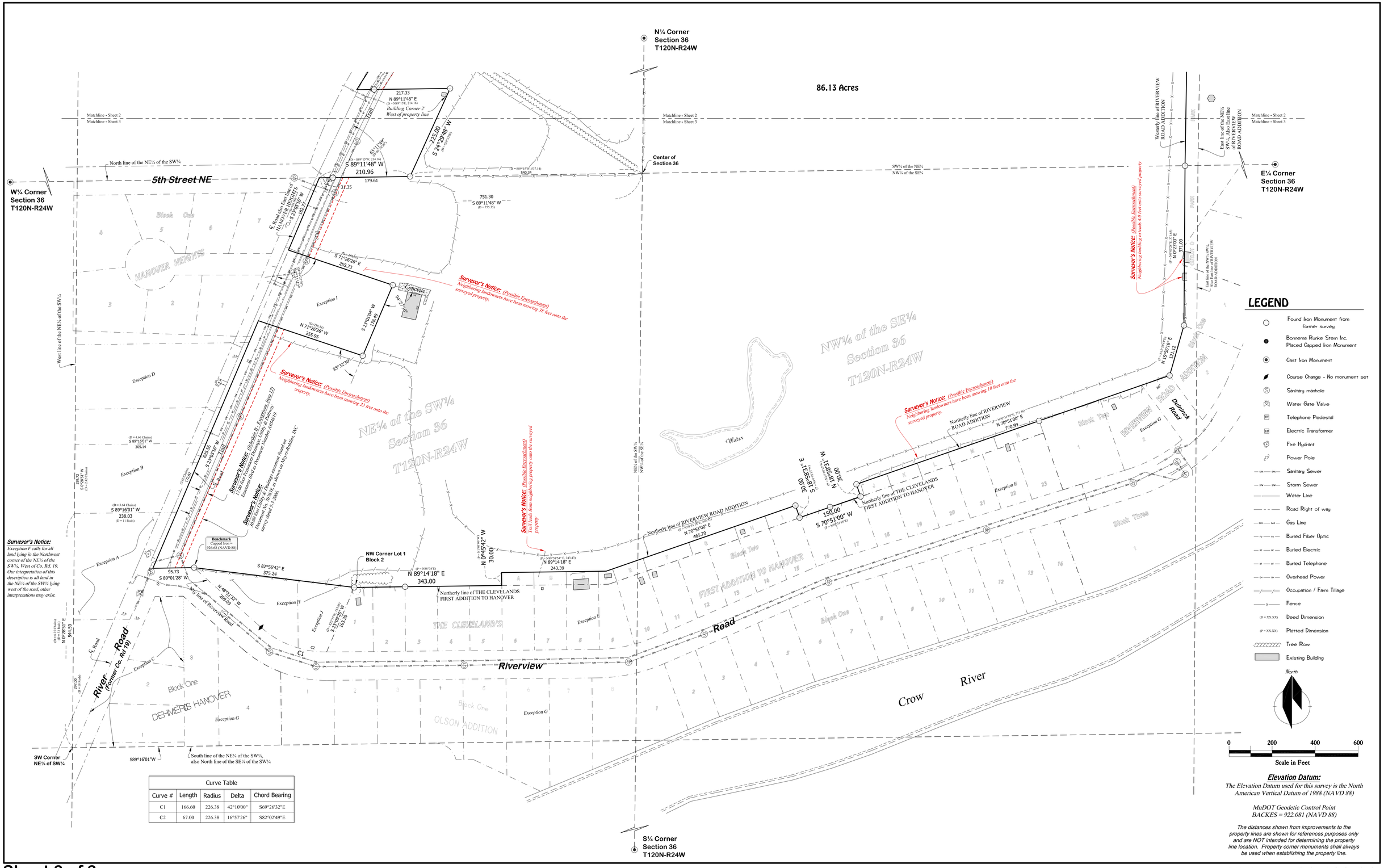
MnDOT Geodetic Control Point
BACKES = 922.081 (NAVD 88)

The distances shown from improvements to the property lines are shown for references purposes only and are NOT intended for determining the property line location. Property corner monuments shall always be used when establishing the property line.

Sheet 2 of 3

Survey Requested By: **Duininck Inc.**
© BONNEMA RUNKE STERN INC 2018

36-120-24



Curve Table				
Curve #	Length	Radius	Delta	Chord Bearing
C1	166.60	226.38	42°10'00"	S69°26'32"E
C2	67.00	226.38	16°57'26"	S82°02'49"E

Elevation Datum:

The Elevation Datum used for this survey is the North American Vertical Datum of 1988 (NAVD 88)

MnDOT Geodetic Control Point
BACKES = 922.081 (NAVD 88)

The distances shown from improvements to the property lines are shown for references purposes only and are NOT intended for determining the property line location. Property corner monuments shall always be used when establishing the property line.

Sheet 3 of 3

Survey Requested By: **Duininck Inc.**

© BONNEMA RUNKE STERN INC 2018

36-120-24

Preliminary Plat of:

HANOVER COVE

A Planned Unit Development

Located In:
E½ of the NW¼, NE¼ of the SW¼, SW¼ of the NE¼ and the NW¼ of the SE¼, Section 36, Township 120 North, Range 24 West, Wright County, MN

Curve Table					
Curve #	Length	Radius	Delta	Chord Bearing	Chord Dist
C1	7.82	1579.54	0°17'01"	S41°02'48"W	7.82
C2	50.00	1579.54	1°48'50"	S39°59'53"W	50.00
C4	19.79	1129.00	1°00'15"	N39°53'17"E	19.79
C5	21.75	1129.00	1°06'14"	N27°37'32"E	21.75
C6	43.29	360.00	6°53'25"	S30°31'08"W	43.27
C7	3.80	360.00	0°36'19"	S88°56'40"W	3.80
C8	31.49	1189.00	1°31'03"	N39°37'52"E	31.49
C9	25.02	1189.00	1°12'20"	N38°16'11"E	25.02
C10	29.49	1189.00	1°25'16"	N27°47'03"E	29.49
C11	44.10	300.00	8°25'18"	S31°17'04"W	44.06
C12	8.51	300.00	1°37'33"	S88°26'04"W	8.51
C13	8.51	182.50	2°40'23"	S87°54'38"W	8.51
C14	26.08	182.50	8°11'14"	S31°10'02"W	26.06
C15	34.62	1306.50	1°31'06"	N27°49'58"E	34.62
C16	31.49	1306.50	1°22'52"	N39°41'58"E	31.49
C17	43.56	322.50	7°44'18"	S53°28'45"E	43.52
C18	70.42	322.50	12°30'42"	S63°36'15"E	70.28
C19	39.82	322.50	7°04'25"	S87°21'33"E	39.79
C20	46.92	440.00	6°06'35"	S52°39'53"E	46.90
C21	100.88	140.00	41°17'09"	S19°44'49"W	98.71
C22	44.29	140.00	18°07'40"	S8°10'05"W	44.11
C23	6.35	500.00	0°43'41"	N89°28'05"E	6.35
C24	41.43	200.00	11°52'10"	N6°53'03"E	41.36
C25	26.79	200.00	7°40'29"	N67°00'46"E	26.77
C26	66.40	300.00	12°40'52"	N77°11'26"E	66.26
C27	29.81	300.00	5°41'34"	N86°22'39"E	29.79
C28	96.21	300.00	18°22'26"	S80°02'13"W	95.79
C29	115.45	360.00	18°22'26"	N80°02'13"E	114.95
C30	11.52	260.00	2°32'21"	N69°34'49"E	11.52
C31	38.88	360.00	6°11'14"	N73°56'37"E	38.86
C32	76.57	360.00	12°11'11"	N83°07'50"E	76.43
C33	56.35	45.00	71°44'45"	N34°58'37"E	52.74
C34	131.48	105.00	71°44'45"	N34°58'37"E	123.06
C35	21.52	45.00	27°24'05"	N12°48'17"E	21.32
C36	34.83	45.00	44°20'40"	N48°40'40"E	33.97
C37	22.35	105.00	12°11'44"	N64°45'08"E	22.31
C38	45.15	105.00	24°38'19"	N46°20'06"E	44.81
C39	46.30	105.00	25°15'58"	N21°22'58"E	45.93
C40	17.68	105.00	9°38'44"	N3°55'37"E	17.66
C41	124.70	66.00	108°15'15"	S55°01'23"E	106.96
C42	30.71	140.00	12°34'01"	S84°29'34"E	30.65
C43	45.33	200.00	12°59'09"	S84°17'00"E	45.23
C44	35.07	200.00	10°02'46"	S72°45'59"E	35.02
C45	34.40	200.00	9°51'19"	S62°48'57"E	34.36
C46	34.41	200.00	9°51'29"	S52°57'33"E	34.37
C47	9.81	200.00	2°48'38"	S36°38'32"E	9.81
C48	34.85	200.00	9°58'58"	S43°02'20"E	34.80
C49	25.57	200.00	7°19'28"	S17°47'26"E	25.55
C50	27.86	813.41	1°57'45"	N22°40'59"E	27.86
C57	102.67	246.00	23°54'49"	N11°03'39"E	101.93
C58	77.63	186.00	23°54'49"	N11°03'39"E	77.07
C59	6.13	186.00	1°53'20"	N22°04'24"E	6.13
C60	39.82	246.00	9°16'29"	N3°44'29"E	39.78
C61	45.70	246.00	10°38'40"	N13°42'04"E	45.64
C62	17.15	246.00	3°59'40"	N21°01'14"E	17.15
C63	35.92	126.00	16°19'54"	N79°00'57"E	35.79
C64	30.48	126.00	13°51'38"	S7°49'35"E	30.41
C65	28.49	486.00	3°21'33"	S78°38'57"E	28.49
C66	38.35	486.00	4°31'16"	S74°42'32"E	38.34
C67	44.52	486.00	5°14'56"	S69°49'26"E	44.51
C68	176.19	426.00	23°41'47"	S79°02'52"E	174.93
C69	50.27	426.00	6°45'42"	S87°30'54"E	50.24
C70	125.91	426.00	16°56'06"	S75°40'01"E	125.45
C71	56.59	140.00	23°09'29"	S28°48'39"W	56.20
C72	27.99	982.00	1°37'58"	N39°27'50"E	27.99
C73	67.15	200.00	19°14'10"	S13°23'59"W	66.83
C74	134.92	100.00	77°18'15"	S61°40'11"W	124.92
C75	17.29	100.00	9°54'25"	N84°37'53"W	17.27
C76	30.72	100.00	17°36'07"	S81°36'51"W	30.60
C77	30.38	100.00	17°24'29"	S64°06'33"W	30.27
C78	26.53	100.00	15°12'12"	S47°48'12"W	26.46
C79	29.99	100.00	17°11'02"	S31°36'35"W	29.88
C80	35.02	63.00	31°50'43"	S7°05'50"W	34.57
C81	34.74	63.00	31°35'44"	S24°37'23"E	34.30
C82	38.44	63.00	34°57'24"	S57°53'57"E	37.84
C83	43.87	63.00	39°53'58"	N84°40'22"E	42.99

Line Table		
Line #	Length	Direction
L1	32.16	N4°10'38"E
L2	5.61	N24°34'21"E
L3	36.66	N4°10'38"E
L4	2.78	S89°14'50"W
L5	24.52	N89°06'15"E
L6	26.39	S89°06'15"W
L7	22.59	S49°36'36"E
L8	8.56	S49°36'36"E
L9	47.59	S19°45'47"W
L10	18.84	N0°53'45"W
L11	0.70	S70°51'00"W
L12	1.68	N23°05'16"E
L13	14.53	S0°56'58"W
L14	4.18	S89°14'13"W
L15	21.78	S89°14'43"W
L16	46.06	N77°33'53"W
L17	29.47	S3°06'12"W
L18	11.35	S0°53'45"E
L19	23.72	S23°01'04"W
L20	25.28	S23°01'04"W
L21	30.00	S0°45'42"E
L22	14.80	N89°14'18"E
L23	15.84	N70°51'00"E
L24	30.00	S18°58'31"E
L25	30.00	N18°58'31"W
L26	18.36	N67°11'58"W
L27	18.06	N67°11'58"W
L28	41.84	S6°10'51"W
L29	18.35	S1°08'25"E
L30	17.98	N70°51'00"E
L31	16.82	N0°53'45"W
L32	17.81	S0°23'03"W
L33	24.22	N0°23'03"E
L34	25.44	S0°57'31"W
L35	35.66	N17°24'25"E
L36	4.04	S40°23'24"W
L37	14.00	S19°09'00"E
L38	14.00	S19°09'00"E
L39	16.61	S79°40'40"E
L40	98.94	S23°01'04"W
L41	16.46	N23°01'04"E
L42	57.70	S23°01'04"W
L43	41.06	S79°40'41"E
L44	14.00	N10°19'19"E
L45	11.45	S61°39'19"W
L46	11.45	S61°39'19"W
L47	48.00	S28°20'41"E
L48	21.18	S49°36'36"E
L49	5.81	N89°49'55"E
L50	6.16	N69°55'37"W
L51	34.66	N0°23'03"E
L52	10.25	S34°57'04"W
L53	41.55	N0°23'53"E
L54	45.20	S0°19'31"W
L55	39.40	S0°28'28"W
L56	6.61	S70°51'00"W
L57	7.43	N66°56'58"W
L58	26.73	N89°01'28"E
L59	33.03	S21°31'48"E

DEDICATION

KNOW ALL MEN BY THESE PRESENTS that Marah, Co. as owners and proprietors of the following described property, situated in the County of Wright, State of Minnesota, to wit:

"Parcel 1:
The Southwest Quarter of the Northeast Quarter (SW¼ NE¼), AND the Northwest Quarter of the Southeast Quarter (NW¼ SE¼) (lying North of the Crow River); AND the Northeast Quarter of the Southwest Quarter (NE¼ SW¼), all of said land being in Section Thirty-six (36), Township One Hundred Twenty (120), Range Twenty-four (24), Wright County, Minnesota, excepting therefrom the following tracts:
a) Tract sold to Board of Education of Hanover by deed recorded in Book 28 of Deeds, page 524.
b) Tract sold to Henry Ernest Kirscht by deed recorded in Book 74 of Deeds, page 207.
c) Tract sold to Lakeview Motors, Inc., by deed recorded in Book 158 of deeds, page 143.
d) Tract described as beginning at the Southwest corner of said Northeast Quarter of the Southwest Quarter (NE¼ SW¼), thence North 786.8 feet to beginning tract to be conveyed; thence North 150 feet, thence angle right 90° 337.6 feet to the right of way line of State Aid Road No. 6; thence Southwesterly along said right of way line 160 feet; thence West 275 feet to beginning; all of said land being in Section Thirty-six (36), Township One hundred Twenty (120), Range Twenty-four (24).
e) Plat of Cleveland's First Addition to Hanover as recorded in Book 5 of Plats, page 50.
f) All that land lying in the Northwest corner of the Northeast Quarter of the Southwest Quarter (NE¼ SW¼) West of County Road 19 as presently situated.
g) All that land platted as Olson Addition, Dehmer's Hanover and Riverview Road Addition, Pheasant Run Second Addition.
h) All that land described in Warranty Deed recorded August 13, 1969, in Book 228 of Deeds, page 37.
i) All that land described in Warranty Deed recorded September 28, 1978 in Book 291 of Deeds, page 180.
j) All that land described in Quit Claim Deed recorded July 12, 1979, in Book 294, page 153.

AND

Parcel 2:
That part of the East Half of the Northwest Quarter (E½ NW¼) of Section Thirty-six (36), Township One Hundred Twenty (120), Range Twenty-four (24), Wright County, Minnesota, lying East of County Road No. 19, EXCEPT all that part of the Northwest Quarter (NW¼) of Section Thirty-six (36), Township One Hundred Twenty (120), Range Twenty-four (24), described as follows: Commencing at the center of said Section Thirty-six (36), thence South 89°15' West along the quarter line, 537.14 feet for a point of beginning, thence continuing on said last described course, 214.16 feet to the center of County Road, thence North 24°33' East along said center of road, 225 feet, thence North 89°15' East, 214.16 feet, thence South 24°33' West, 225 feet, to the point of beginning.

Has caused the same to be surveyed and platted as HANOVER COVE, and does hereby dedicate to the public for public use the public way(s) and/or the drainage and utility easement(s) as created by this plat.

In witness whereof said Marah, Co. have hereunto set their hands this ____ day of _____ 20 __

_____
OWNER NAME

STATE OF MINNESOTA
COUNTY OF_____

This instrument was acknowledged before me this____ day of _____ 20___ by Marah, Co.

_____
Notary Signature
Notary Public, _____ County, Minnesota
My Commission Expires _____

Land Surveyor

I Matthew D. Runke hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments indicated on this plat have been, or will be set within one year; that all water boundaries and wet lands, as defined Minnesota Statutes, Section 505.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this ____ day of _____ 20 ____

_____
Matthew D. Runke, Licensed Land Surveyor
Minnesota License No. (46171)

STATE OF MINNESOTA
COUNTY OF _____

This instrument was acknowledged by me this ____ day of _____ 20___, by Matthew D. Runke, Licensed Land Surveyor, Minnesota License No. 46171.

_____
Notary Signature
Notary Public, _____ County, Minnesota
My Commission Expires_____

Vicinity Sketch
City of Hanover, MN

Section 36, T120N-R24W

City Planning Commission

Approved by the Planning Commission of the City of Hanover, this____ day of _____ 20_____.

Signed:_____
Chair

ATTEST: _____
Secretary

City Council

Passed and adopted this _____ day of _____ 20___.

Signed:_____
Mayor

ATTEST: _____
City Clerk

County Surveyor

Approved this _____ day of _____, 20_____, A.D.

_____
Wright County Surveyor

County Auditor/Treasurer

TAX STATEMENT
I hereby certify that all taxes for 20 ___ on the land described herein are paid; and no delinquent taxes are due and transfer entered this _____ day of _____ 20____ .

_____
Wright County Auditor / Treasurer

County Recorder

I hereby certify that this instrument was filed for record in the office of the County Recorder in and for Wright County, Minnesota on this _____ day of _____, 20___, at _____ o'clock __.M., as Folder No._____, and as Document No. _____.

_____
Wright County Recorder

North

This drawing prepared by:

Bonnema Runke Stern Inc.
Professional Land Surveyors
4566 Hwy 71 NE - Suite 1
Willmar, MN 56201
Office (320) 231-2844
Fax (320) 231-2827

Requested by: **Duininck Inc.**
C/O Jason Ver Steeg
408 6th St
Prinsburg, MN 56281

Dated: **January 11, 2019**

0 100 200 300
Scale in Feet

LEGEND

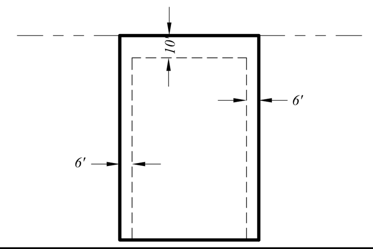
- Found Iron Monument from Former Survey
- Bonnema Runke Stern Inc. placed a 5/8" Iron Rod with a 46169-46171-14895 stamped Plastic Cap
- Cast Iron Monument
- Course Change - No Monument Set
- Open Water / Low Area
- Proposed Drainage / Utility Easement Lines

The Orientation of this bearing system is assumed. The West line of PHEASANT RUN SECOND ADDITION is assumed to bear N 0°56'55" E

Surveyor's Notice:
A 10.00 foot drainage and utility easement is contiguous to all dedicated roads. A 6.00 foot drainage and utility easement is contiguous to all interior side lot lines, unless otherwise noted.

Typical Lot Easement Sketch

Surveyor's Notice:
A 10.00 foot drainage and utility easement is contiguous to all dedicated roads. A 6.00 foot drainage and utility easement is contiguous to all interior side lot lines, unless otherwise noted.



Preliminary Plat of:

HANOVER COVE

A Planned Unit Development

Located In:
E½ of the NW¼, NE¼ of the SW¼, SW¼ of the NE¼ and the NW¼ of the SE¼, Section 36, Township 120 North, Range 24 West, Wright County, MN

Vicinity Sketch
City of Hanover, MN

Section 36, T120N-R24W

North

This drawing prepared by:

Bonnema Runke Stern Inc.
Professional Land Surveyors
4566 Hwy 71 NE - Suite 1
Willmar, MN 56201
Office (320) 231-2844
Fax (320) 231-2827

Requested by: **Duininck Inc.**
C/O Jason Ver Steeg
408 6th St
Prinsburg, MN 56281

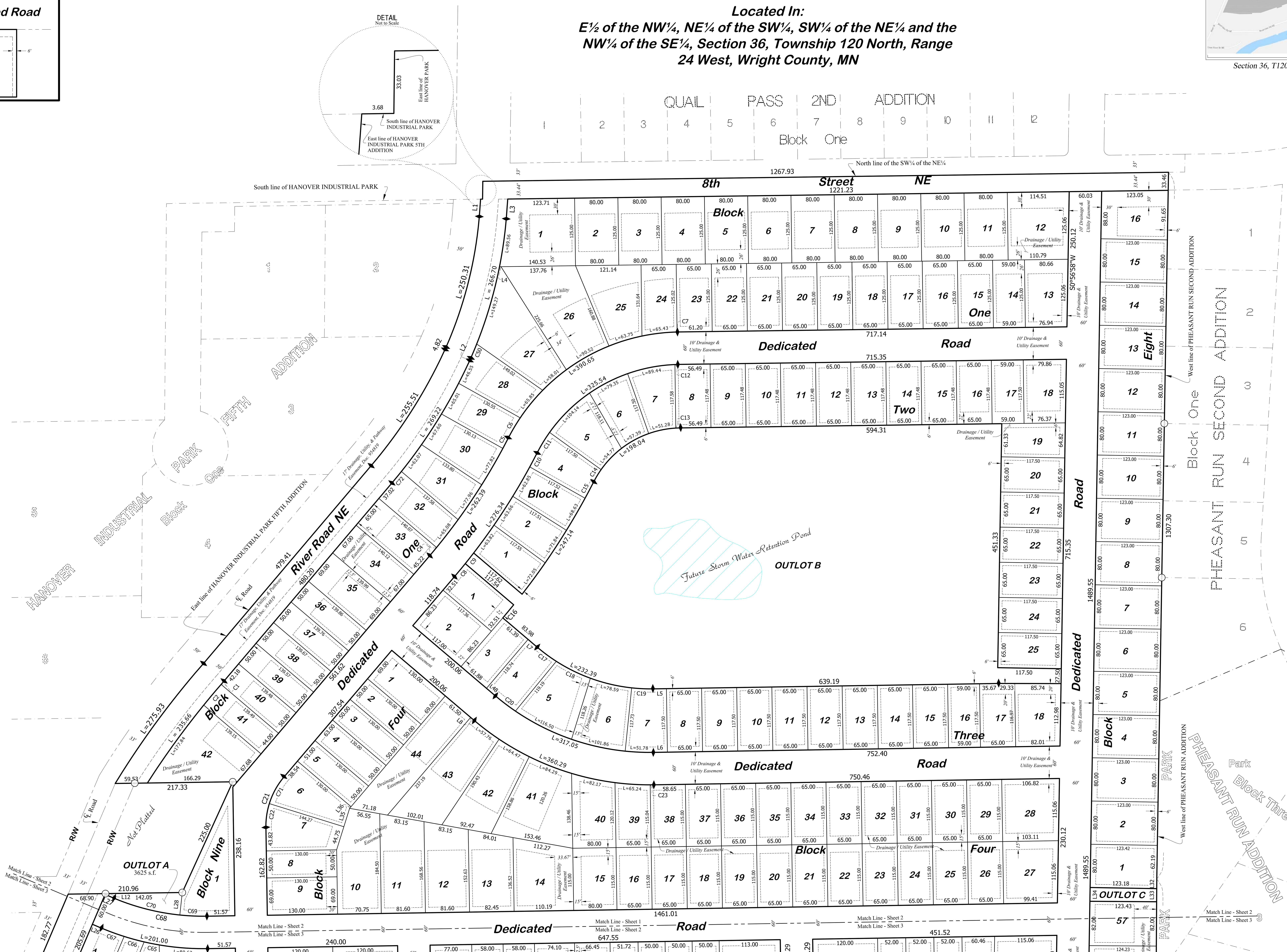
Dated: **January 11, 2019**

0 100 200 300
Scale in Feet

LEGEND

- ○ Found Iron Monument from Former Survey
- ● Bonnema Runke Stern Inc. placed a ⅝" Iron Rod with a 46169-46171-14895 stamped Plastic Cap
- ⊙ Cast Iron Monument
- ◆ Course Change - No Monument Set
- Open Water / Low Area
- - - - Proposed Drainage / Utility Easement Lines

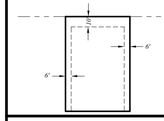
The Orientation of this bearing system is assumed.
The West line of PHEASANT RUN SECOND ADDITION is assumed to bear N 0°56'55" E



Typical Lot Easement Sketch

Surveyor's Notice:
A 10.00 foot drainage and utility easement is contiguous to all dedicated roads. A 6.00 foot drainage and utility easement is contiguous to all interior side lot lines, unless otherwise noted.

Dedicated Road



Preliminary Plat of:

HANOVER COVE

A Planned Unit Development

Located In:
E½ of the NW¼, NE¼ of the SW¼, SW¼ of the NE¼ and the NW¼ of the SE¼, Section 36, Township 120 North, Range 24 West, Wright County, MN

Vicinity Sketch
City of Hanover, MN

Section 36, T120N-R24W

North

This drawing prepared by:

Bonnema Runke Stern Inc.
Professional Land Surveyors
4566 Hwy 71 NE - Suite 1
Willmar, MN 56201

Office (320) 231-2844
Fax (320) 231-2827

Requested by: **Duininck Inc.**
C/O Jason Ver Steeg
408 6th St
Prinsburg, MN 56281

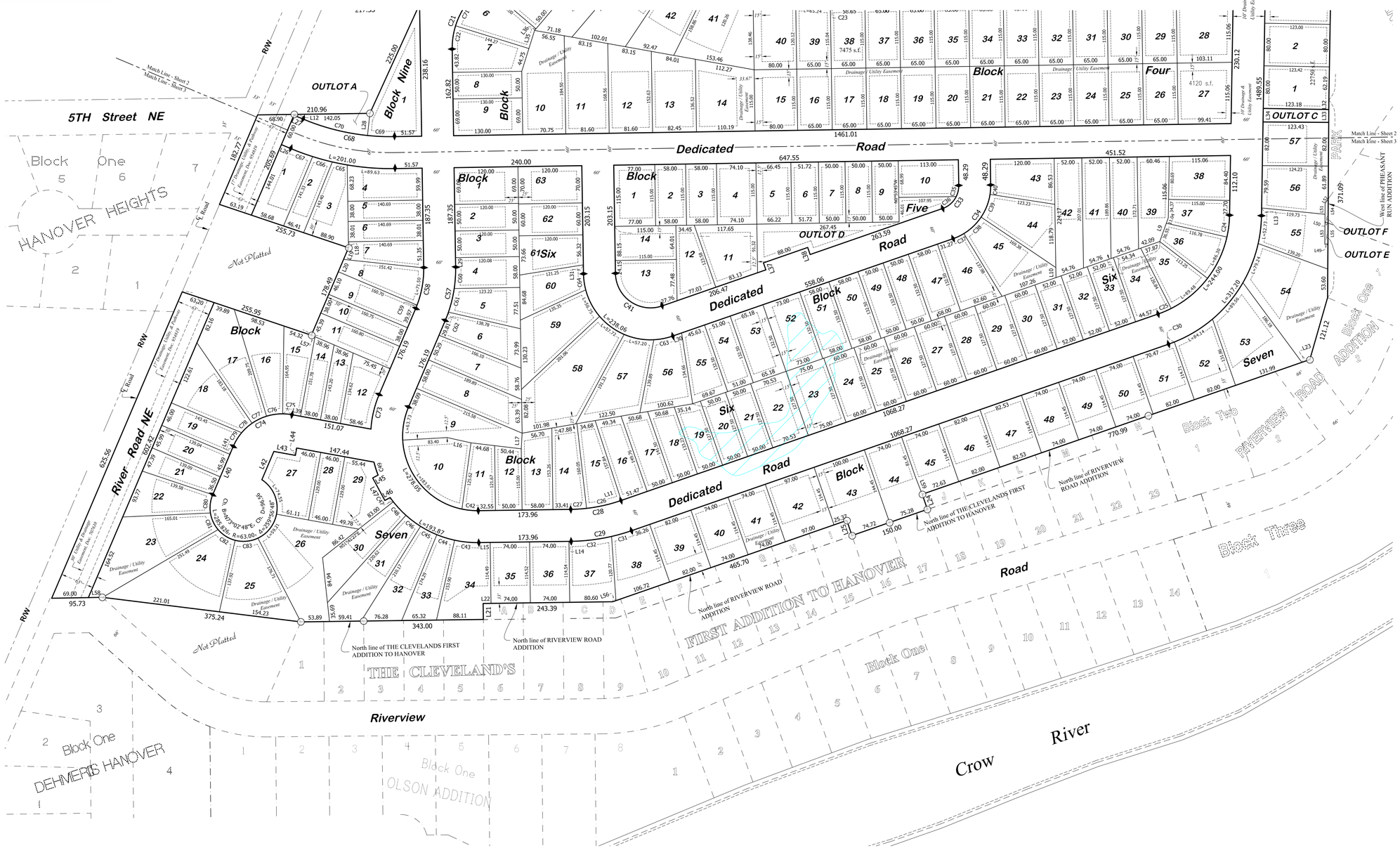
Dated: **January 11, 2019**

0 100 200 300
Scale in Feet

LEGEND

- Found Iron Monument from Former Survey
- Bonnema Runke Stern Inc. placed a 9/16" Iron Rod with a 46169-46171-14895 stamped Plastic Cap
- Cast Iron Monument
- Course Change - No Monument Set
- Open Water / Low Area
- Proposed Drainage / Utility Easement Lines

The Orientation of this bearing system is assumed. The West line of PHEASANT RUN SECOND ADDITION is assumed to bear N 0°56'55" E



Preliminary Plat of:

HANOVER COVE

A Planned Unit Development

Located In:

E½ of the NW¼, NE¼ of the SW¼, SW¼ of the NE¼ and the NW¼ of the SE¼, Section 36, Township 120 North, Range 24 West, Wright County, MN

Vicinity Sketch
City of Hanover, MN

Section 36, T120N-R24W

This drawing prepared by:

Bonnema Runke Stern Inc.

Professional Land Surveyors

1809 22nd St SW - Suite 104
Willmar, MN 56201

Office (320) 231-2844
Fax (320) 231-2827

Requested by: **Duininck Inc.**
C/O Jason Ver Steeg
408 6th St
Prinsburg, MN 56281

Dated: **January 11, 2019**

Block	Lot	Area (SF)	Width @ Front Setback	Buildable Area (SF)	Front Setback	Rear Setback	Side Setback	Side Street Setback	House Pad Width	House Pad Depth
1	1	16,330	122.82	6915	30	20	7.5	N/A	56	66
	2	10,000	80.00	4875	30	20	7.5	N/A	56	66
	3	10,000	80.00	4875	30	20	7.5	N/A	56	66
	4	10,000	80.00	4875	30	20	7.5	N/A	56	66
	5	10,000	80.00	4875	30	20	7.5	N/A	56	66
	6	10,000	80.00	4875	30	20	7.5	N/A	56	66
	7	10,000	80.00	4875	30	20	7.5	N/A	56	66
	8	10,000	80.00	4875	30	20	7.5	N/A	56	66
	9	10,000	80.00	4875	30	20	7.5	N/A	56	66
	10	10,000	80.00	4875	30	20	7.5	N/A	56	66
	11	10,000	80.00	4875	30	20	7.5	N/A	56	66
	12	14,080	113.62	6000	30	20	7.5	25	56	66
	13	9,850	77.24	3710	25	20	7.5	25	44	70
	14	7,375	59.00	3520	25	20	7.5	N/A	44	70
	15	8,125	65.00	4000	25	20	7.5	N/A	50	70
	16	8,125	65.00	4000	25	20	7.5	N/A	50	70
	17	8,125	65.00	4000	25	20	7.5	N/A	50	70
	18	8,125	65.00	4000	25	20	7.5	N/A	50	70
	19	8,125	65.00	4000	25	20	7.5	N/A	50	70
	20	8,125	65.00	4000	25	20	7.5	N/A	50	70
	21	8,125	65.00	4000	25	20	7.5	N/A	50	70
	22	8,125	65.00	4000	25	20	7.5	N/A	50	70
	23	8,125	65.00	4000	25	20	7.5	N/A	50	70
	24	8,275	65.29	4100	25	20	7.5	N/A	50	70
	25	13,010	73.24	7455	25	20	7.5	N/A	50	70
	26	20,280	95.08	11920	25	20	7.5	N/A	50	70
	27	16,925	67.82	9160	25	30	7.5	N/A	44	70
	28	9,970	68.24	4685	25	30	7.5	N/A	44	70
	29	8,410	65.00	3705	25	30	7.5	N/A	44	70
	30	9,590	75.87	4455	25	30	7.5	N/A	44	70
	31	9,490	75.03	4455	25	30	7.5	N/A	44	70
	32	9,035	65.07	4200	25	30	7.5	N/A	44	70
	33	9,110	65.00	4260	25	30	7.5	N/A	44	70
	34	9,385	67.00	4420	25	30	7.5	N/A	44	70
	35	9,655	69.00	4585	25	30	6	N/A	44	70
	36	6,990	50.00	3220	25	30	6	N/A	38	68
	37	6,985	50.00	3220	25	30	6	N/A	38	68
	38	6,980	50.00	3215	25	30	6	N/A	38	68
	39	6,975	50.00	3210	25	30	6	N/A	38	68
	40	6,970	50.00	3210	25	30	6	N/A	38	68
	41	6,970	50.00	3210	25	30	6	N/A	38	68
	42	16,860	89.65	8830	25	30	6	N/A	38	68
2	1	7,980	65.57	3850	25	20	7.5	N/A	44	70
	2	7,960	65.40	3835	25	20	7.5	N/A	44	70
	3	7,725	64.08	3690	25	20	7.5	N/A	44	70
	4	7,890	70.78	3760	25	20	7.5	N/A	44	70
	5	9,335	93.19	4595	25	20	7.5	N/A	44	70
	6	8,035	74.45	3835	25	20	7.5	N/A	44	70
	7	8,265	81.02	3955	25	20	7.5	N/A	44	70
	8	7,640	65.00	3625	25	20	7.5	N/A	50	70
	9	7,635	65.00	3625	25	20	7.5	N/A	50	70
	10	7,635	65.00	3625	25	20	7.5	N/A	50	70
	11	7,635	65.00	3625	25	20	7.5	N/A	50	70
	12	7,635	65.00	3625	25	20	7.5	N/A	50	70
	13	7,635	65.00	3625	25	20	7.5	N/A	50	70
	14	7,635	65.00	3625	25	20	7.5	N/A	50	70
	15	7,635	65.00	3625	25	20	7.5	N/A	50	70
	16	7,635	65.00	3625	25	20	7.5	N/A	50	70
	17	6,930	59.00	3190	25	20	7.5	N/A	44	70
	18	9,180	79.56	3300	25	20	7.5	25	44	70
	19	7,410	64.08	3660	25	20	7.5	N/A	44	70
	20	7,635	65.00	3625	25	20	7.5	N/A	44	70
	21	7,635	65.00	3625	25	20	7.5	N/A	44	70
	22	7,635	65.00	3625	25	20	7.5	N/A	44	70
	23	7,635	65.00	3625	25	20	7.5	N/A	44	70
	24	7,635	65.00	3625	25	20	7.5	N/A	44	70
	25	7,635	65.00	3625	25	20	7.5	N/A	44	70
3	1	7,515	64.00	3555	25	20	7.5	N/A	44	70
	2	10,105	86.23	3880	25	20	7.5	25	50	70
	3	7,320	60.77	3365	25	20	7.5	N/A	44	70
	4	7,965	67.64	3835	25	20	7.5	N/A	50	70
	5	11,065	107.47	5755	25	20	7.5	N/A	50	70
	6	10,640	96.70	5450	25	20	7.5	N/A	50	70
	7	8,375	75.17	4060	25	20	7.5	N/A	50	70
	8	7,635	65.00	3625	25	20	7.5	N/A	44	70
	9	7,635	65.00	3625	25	20	7.5	N/A	50	70
	10	7,635	65.00	3625	25	20	7.5	N/A	50	70
	11	7,635	65.00	3625	25	20	7.5	N/A	44	70
	12	7,635	65.00	3625	25	20	7.5	N/A	44	70
	13	7,635	65.00	3625	25	20	7.5	N/A	44	70
	14	7,635	65.00	3625	25	20	7.5	N/A	50	70
	15	7,635	65.00	3625	25	20	7.5	N/A	50	70
	16	6,930	59.00	3190	25	20	7.5	N/A	44	70
	17	7,630	65.00	3620	25	20	7.5	N/A	44	70
	18	9,745	82.00	3670	25	20	7.5	25	50	70

Block	Lot	Area (SF)	Width @ Front Setback	Buildable Area (SF)	Front Setback	Rear Setback	Side Setback	Side Street Setback	House Pad Width	House Pad Depth
4	1	8,970	69.04	3230	25	20	6	25	38	68
	2	6,500	50.00	3230	25	20	6	N/A	38	68
	3	6,500	50.00	3230	25	20	6	N/A	38	68
	4	6,500	50.00	3230	25	20	6	N/A	38	68
	5	6,500	50.00	3230	25	20	6	N/A	38	68
	6	9,220	50.00	4985	25	20	6	N/A	38	68
	7	8,985	68.20	4940	25	20	6	N/A	38	68
	8	6,615	50.00	3230	25	20	6	N/A	38	68
	9	8,970	69.22	3230	25	20	6	25	38	68
	10	14,520	50.00	9105	25	20	7.5	N/A	50	70
	11	14,405	69.89	8735	25	20	7.5	N/A	50	70
	12	13,105	80.75	7675	25	20	7.5	N/A	50	70
	13	11,920	81.60	6690	25	20	7.5	N/A	50	70
	14	13,860	81.60	7650	25	20	7.5	N/A	50	70
	15	9,200	82.45	4550	25	20	7.5	N/A	50	70
	16	7,475	110.19	3500	25	20	7.5	N/A	44	70
	17	7,475	80.00	3500	25	20	7.5	N/A	44	70
	18	7,475	65.00	3500	25	20	7.5	N/A	50	70
	19	7,475	65.00	3500	25	20	7.5	N/A	50	70
	20	7,475	65.00	3500	25	20	7.5	N/A	44	70
	21	7,475	65.00	3500	25	20	7.5	N/A	44	70
	22	7,475	65.00	3500	25	20	7.5	N/A	44	70
	23	7,475	65.00	3500	25	20	7.5	N/A	50	70
	24	7,475	65.00	3500	25	20	7.5	N/A	50	70
	25	7,475	65.00	3500	25	20	7.5	N/A	44	70
	26	7,475	65.00	3500	25	20	7.5	N/A	44	70
	27	11,645	65.00	4820	25	20	7.5	25	50	70
	28	12,070	65.00	5065	25	20	7.5	25	50	70
	29	7,475	99.41	3500	25	20	7.5	N/A	44	70
	30	7,475	106.01	3500	25	20	7.5	N/A	44	70
	31	7,475	65.00	3500	25	20	7.5	N/A	50	70
	32	7,475	65.00	3500	25	20	7.5	N/A	50	70
	33	7,475	65.00	3500	25	20	7.5	N/A	44	70
	34	7,475	65.00	3500	25	20	7.5	N/A	44	70
	35	7,475	65.00	3500	25	20	7.5	N/A	44	70
	36	7,475	65.00	3500	25	20	7.5	N/A	50	70
	37	7,475	65.00	3500	25	20	7.5	N/A	50	70
	38	7,475	65.00	3500	25	20	7.5	N/A	44	70
	39	7,595	65.00	3580	25	20	7.5	N/A	44	70
	40	10,250	65.00	5350	25	20	7.5	N/A	50	70
	41	16,990	65.18	10230	25	20	7.5	N/A	50	70
	42	13,130	81.87	7735	25	20	7.5	N/A	50	70
	43	16,700	96.29	10505	25	20	7.5	N/A	50	70
	44	15,690	67.65	9625	25	20	7.5	N/A	44	70
5	1	8,855	77.00	3220	25	20	6	25	46	68
	2	6,670	58.00	3115	25	20	6	N/A	46	68
	3	6,670	58.00	3115	25	20	6	N/A	46	68
	4	8,520	74.10	4240	25	20	6	N/A	46	68
	5	7,560	65.72	3655	25	20	6	N/A	38	68
	6	5,950	51.72	2675	25	20	6	N/A	38	68
	7	5,750	50.00	2555	25	20	6	N/A	38	68
	8	5,750	50.00	2555	25	20	6	N/A	38	68
	9	5,750	50.00	2555	25	20	6	N/A	38	68
	10	7,760	113.00	2555	25	20	6	25	38	61
	11	10,510	70.48	5305	25	20	6	N/A	38	63
	12	7,195	50.00	3585	25	20	6	N/A	38	56
	13	9,185	50.00	3695	25	20	6	N/A	38	63
	14	7,360	81.27	2660	25	20	6	N/A	38	68

Block	Lot	Area (SF)	Width @ Front Setback	Buildable Area (SF)	Front Setback	Rear Setback	Side Setback	Side Street Setback	House Pad Width	House Pad Depth
6	1	8,280	69.00	2850	25	20	6	25	38	68
	2	6,000	50.00	2850	25	20	6	N/A	38	68
	3	6,000	50.00	2850	25	20	6	N/A	38	68
	4	7,000	58.07	3475	25	20	6	N/A	46	68
	5	7,910	51.71	4165	25	20	6	N/A	38	68
	6	8,870	50.81	4930	25	20	6	N/A	38	68
	7	9,275	50.80	5265	25	20	6	N/A	38	68
	8	11,755	58.00	7170	25	20	6	N/A	46	68
	9	13,450	89.32	8295	25	20	6	N/A	46	56
	10	11,925	138.94	5265	25	20	6	N/A	46	58
	11	6,710	59.36	3305	25	20	6	N/A	38	63
	12	5,915	50.00	2780	25	20	6	N/A	38	68
	13	8,595	58.00	4755	25	20	6	N/A	46	68
	14	8,700	60.70	4830	25	20	6	N/A	41	68
	15	8,115	61.88	4400	25	20	6	N/A	38	56
	16	7,705	51.03	4130	25	20	6	N/A	38	68
	17	7,280	50.00	3815	25	20	6	N/A	38	68
	18	6,870	50.00	3500	25	20	6	N/A	38	68
	19	6,475	50.00	3195	25	20	6	N/A	38	68
	20	6,375	50.00	3135	25	20	6	N/A	38	68
	21	6,375	50.00	3135	25	20	6	N/A	38	68
	22	8,990	70.53	4830	25	20	6	N/A	38	68
	23	9,560	75.00	5200	25	20	6	N/A	46	68
	24	7,650	60.00	3960	25	20	6	N/A	46	68
	25	7,650	60.00	3960	25	20	6	N/A	46	68
	26	7,650	60.00	3960	25	20	6	N/A	46	68
	27	7,650	60.00	3960	25	20	6	N/A	46	68
	28	7,650	60.00	3960	25	20	6	N/A	46	68
	29	7,650	60.00	3960	25	20	6	N/A	46	68
	30	7,650	60.00	3960	25	20	6	N/A	46	68
	31	6,630	52.00	3300	25	20	6	N/A	38	68
	32	6,630	52.00	3300	25	20	6	N/A	38	68
	33	6,630	52.00	3300	25	20	6	N/A	38	68
	34	8,010	67.96	4165	25	20	6	N/A	46	70
	35	7,575	77.64	3731	25	20	6	N/A	39	68
	36	7,120	74.93	3437	25	20	6	N/A	38	68
	37	6,590	63.81	3129	25	20	6	N/A	38	68
	38	9,495	83.59	3600	25	20	6	25	46	68
	39	9,155	59.66	5285	25	20	6	N/A	38	68
	40	9,425	52.00	5410	25	20	6	N/A	38	68
	41	10,320	52.00	6095	25	20	6	N/A	38	68
	42	11,210	52.00	6781	25	20	6	N/A	38	68
	43	9,170	70.10	3430	25	20	6	25	38	68
	44	10,935	56.86	6190	25	20	6	N/A	46	68
	45	12,485	55.47	7515	25	20	6	N/A	46	68
	46	9,065	58.81	4960	25	20	6	N/A	46	68
	47	7,685	58.00	4025	25	20	6	N/A	46	68
	48	6,625	50.00	3325	25	20	6	N/A	38	68
	49	6,625	50.00	3325	25	20	6	N/A	38	68
	50	7,685	58.00	4025	25	20	6	N/A	46	68
	51	7,685	58.00	4025	25	20	6	N/A	46	68
	52	9,670	73.00	5340	25	20	6	N/A	46	68
	53	8,635	65.18	4655	25	20	6	N/A	38	68
	54	6,760	51.00	3415	25	20	6	N/A	38	68
	55	7,640	50.16	4025	25	20	6	N/A	38	68
	56	10,110	62.17	5630	25	20	6	N/A	46	68
	57	13,050	64.32	7765	25	20	6	N/A	46	68
	58	21,175	65.25	14315	25	20	6	N/A	46	68
	59	13,385	64.16	7945	25	20	6	N/A	46	68
	60	8,040	53.97	4160	25	20	6	N/A	38	68
	61	7,800	59.94	4000	25	20	6	N/A	46	68
	62	7,200	60.00	3600	25	20	6	N/A	46	68
	63	8,400	70.00	2925	25	20	6	25	38	68

Block	Lot	Area (SF)	Width @ Front Setback	Buildable Area (SF)	Front Setback	Rear Setback	Side Setback	Side Street Setback	House Pad Width	House Pad Depth
7	1	8,980	62.94	3105	25	30	6	25	34	84
	2	5,535	38.63	2610	25	30	6	N/A	26	84
	3	8,525	41.63	4750	25	30	6	N/A	26	84
	4	8,685	59.99	2880	25	30	6	25	26	84
	5	5,345	38.00	2490	25	30	6	N/A	26	84
	6	5,345	38.01	2490	25	30	6	N/A	26	84
	7	6,130	48.86	2960	25	30	6	N/A	26	84
	8	7,560	64.06	3955	25	30	6	N/A	26	84
	9	7,415	45.97	3950	25	30	6	N/A	34	84
	10	6,110	38.00	3010	25	30	6	N/A	26	84
	11	7,320	45.65	2730	25	30	6	N/A	26	84
	12	7,958	51.17	2615	25	30	6	25	26	82
	13	5,280	38.57	2425	25	30	6	N/A	26	84
	14	5,605	38.00	2555	25	30	6	N/A	26	84
	15	7,400	38.17	3495	25	30	6	N/A	26	84
	16	10,890	38.88	5705	25	30	6	N/A	26	84
	17	13,290	38.40	7350	25	30	6	N/A	26	84
	18	11,180	41.88	5690	25	30	6	N/A	26	84
	19	6,435	46.00	2875	25	30	6	N/A	34	84
	20	6,395	46.00	2858	25	30	6	N/A	34	84
	21	5,835	38.45	2500	25	30	6	N/A	26	84
	22	9,290	38.58	4520	25	30	6	N/A	26	84
	23	18,535	47.74	10600	25	30	6	N/A	26	84
	24	19,280	61.91	10395	25	30	6	N/A	26	84
	25	13,975	63.74	7220	25	30	6	N/A	26	84
	26	19,515	47.40	11050	25	30	6	N/A	26	84
	27	10,110	83.54	4300	25	20	6	N/A	34	84
	28	5,935	46.00	2855	25	20	6	N/A	34	84
	29	9,405	67.53	4835	25	20	6	25	34	84
	30	9,900	38.73	5575	25	30	6	N/A	26	84
	31	12,385	38.74	7105	25	30	6	N/A	26	84
	32	9,700	38.73	5005	25	30	6	N/A	26	84
	33	7,910	39.31	3815	25	30	6	N/A	26	84
	34	11,980	73.04	6130	25	30	6	N/A	62	56
	35	8,475	74.00	3690	25	30	6	N/A	62	56
	36	8,475	74.00	3690	25	30	6	N/A	62	56
	37	9,800	81.37	4425	25	30	6	N/A	70	56
	38	10,465	82.32	4680	25	30	6	N/A	68	56
	39	9,385	82.00	4160	25	30	6	N/A	70	56
	40	8,470	74.00	3685	25	30	6	N/A	62	56
	41	8,470	74.00	3685	25	30	6	N/A	70	56
	42	11,100	97.00	5055	25	30	6	N/A	62	56
	43	13,685	100.00	7110	25	30	6	N/A	70	56
	44	10,750	74.00	5570	25	30	6	N/A	62	56
	45	8,445	74.00	3680	25	30	6	N/A	62	56
	46	9,385	82.00	4160	25	30	6	N/A	70	56
	47	9,445	82.53	4195	25	30	6	N/A	62	56
	48	8,470	74.00	3685	25	30	6	N/A	62	56
	49	8,470	74.00	3686	25	30	6	N/A	62	56
	50	8,470	74.00	3685	25	30	6	N/A	62	56
	51	9,385	82.00	4160	25	30	6	N/A	70	56
	52	9,920	83.46	4555	25	30	6	N/A	70	56
	53	16,535	96.52	9175	25	30	6	N/A	70	56
	54	20,730	93.87	11855	25	30	6	N/A	62	56
	55	10,830	73.40	5220	25	30	6	N/A	62	56
	56	10,640	81.90	5110	25	30	6	N/A	70	56
	57	10,155	82.00	4840	25	30	6	N/A	70	56
8	1	9,840	80.00	4420	25	30	7.5	N/A	56	66
	2	9,840	80.00	4420	25	30	7.5	N/A	56	66
	3	9,840	80.00	4420	25	30	7.5	N/A	56	66
	4	9,840	80.00	4420	25	30	7.5	N/A	56	66
	5	9,840	80.00	4420	25	30	7.5	N/A	56	66
	6	9,840	80.00	4420	25	30	7.5	N/A	56	66
	7	9,840	80.00	4420	25	30	7.5	N/A	56	66
	8	9,840	80.00	4420	25	30	7.5	N/A	56	66
	9	9,840	80.00	4420	25	30	7.5	N/A	56	66
	10	9,840	80.00	4420	25	30	7.5	N/A	56	66
	11	9,840	80.00	4420	25	30	7.5	N/A	56	66
	12	9,840	80.00	4420	25	30	7.5	N/A	56	66
	13	9,840	80.00	4420	25	30	7.5	N/A	56	66
	14	9,840	80.00	4420	25	30	7.5	N/A	56	66
	15	9,840	80.00	4420	25	30	7.5	N/A	56	66
	16	11,050	88.00	3895	30	30	7.5	30	56	66
9	1	14,230	98.85	5710	25		6	25	48	66
OUTLOTS	A	3,625								
	B	392,660								
	C	3,060								
	D	14,675								
	E	235								
	F	230								

Preliminary Plat of:

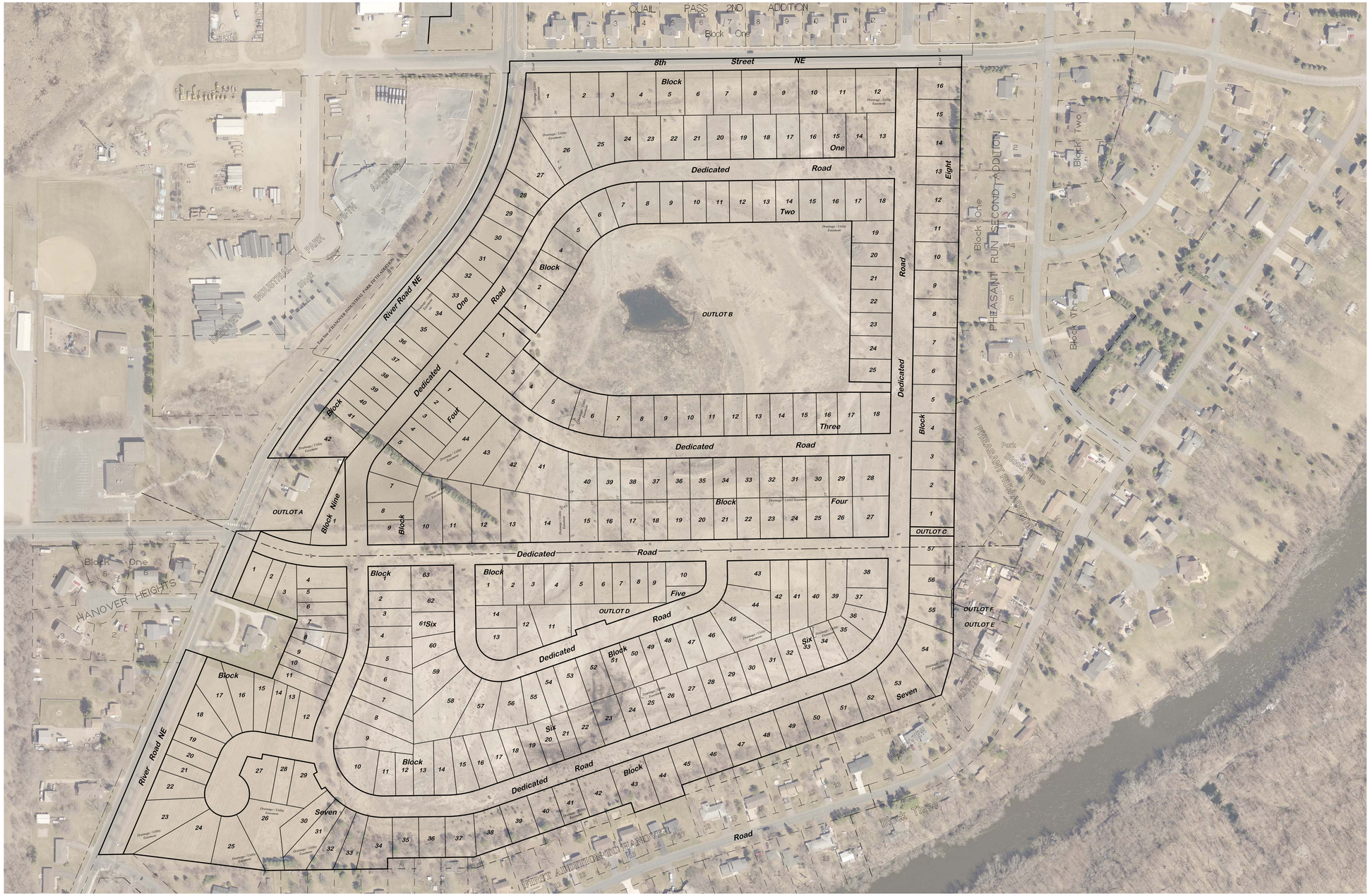
HANOVER COVE

A Planned Unit Development

Located In:
E½ of the NW¼, NE¼ of the SW¼, SW¼ of the NE¼ and the NW¼ of the SE¼, Section 36, Township 120 North, Range 24 West, Wright County, MN

Vicinity Sketch
City of Hanover, MN

Section 36, T120N-R24W



North

This drawing prepared by:

Bonnema Runke Stern Inc.
Professional Land Surveyors
1809 22nd St SW - Suite 104
Willmar, MN 56201
Office (320) 231-2844
Fax (320) 231-2827

Requested by: **Duininck Inc.**
C/O Jason Ver Steeg
408 6th St
Prinsburg, MN 56281

Dated: **January 11, 2019**

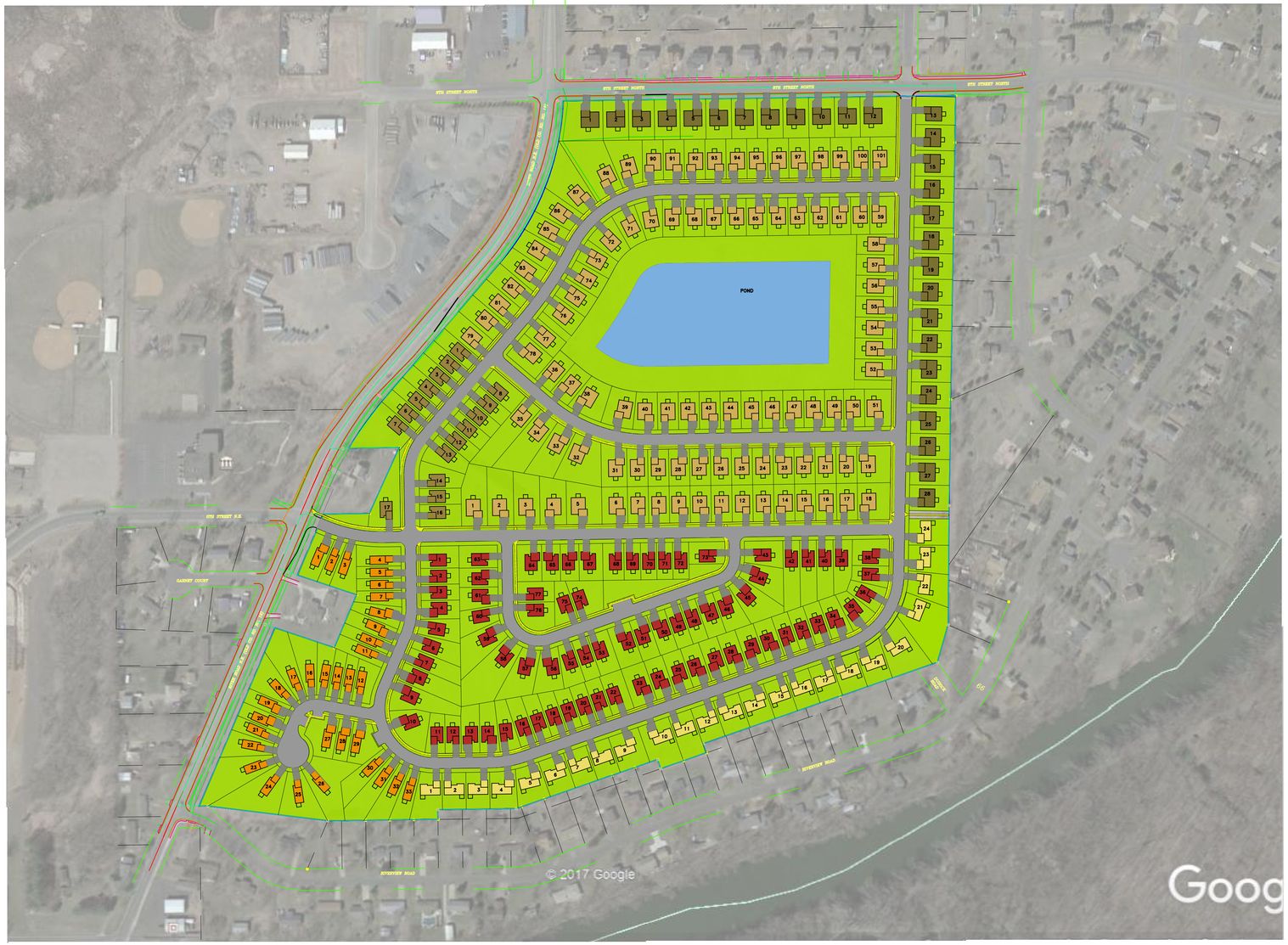
0 150 300 450
Scale in Feet

LEGEND

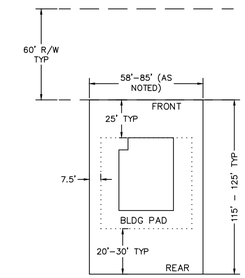
- ○ Found Iron Monument from Former Survey
- ● Bonnema Runke Stern Inc. placed a ⅝" Iron Rod with a 46169-46171-14895 stamped Plastic Cap
- ⊙ Cast Iron Monument

The Orientation of this bearing system is assumed. The West line of PHEASANT RUN SECOND ADDITION is assumed to bear N 0°56'55" E

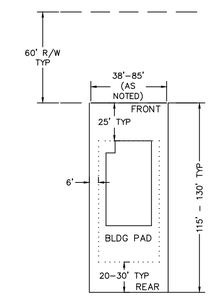
Sheet 5 of 5



PRELIMINARY LOT CONFIGURATIONS



STANDARD SINGLE FAMILY HOMES



PATIO / 50-60' SINGLE FAMILY HOMES

CONCEPT DATA

GROSS SITE AREA: 82.6 ACRES
LOT AREA: 58.6 ACRES
R/W AREA: 14.8 ACRES
PONDING/OPEN AREA: 9.2 ACRES

LOT LEGEND	# OF LOTS
75-85' SINGLE FAMILY LOTS	28
75'-85' PATIO HOME LOTS	24
65'-75' SINGLE FAMILY LOTS	101
50-60' SINGLE FAMILY LOTS	17
50-60' PATIO HOME LOTS	77
38'-46' PATIO HOME LOTS	33
TOTAL	280

DEVELOPER:

PAXMAR, LLC
3495 NORTHDALE BLVD
SUITE 210
COON RAPIDS, MN 55448

0 200 400 Feet

DATE	REVISIONS	NO.	BY

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

DUININCK
P.O BOX 208
408 SIXTH STREET
PRINSBURG, MN 56281
PHONE: (320) 978-6011
FAX: (320) 978-4978

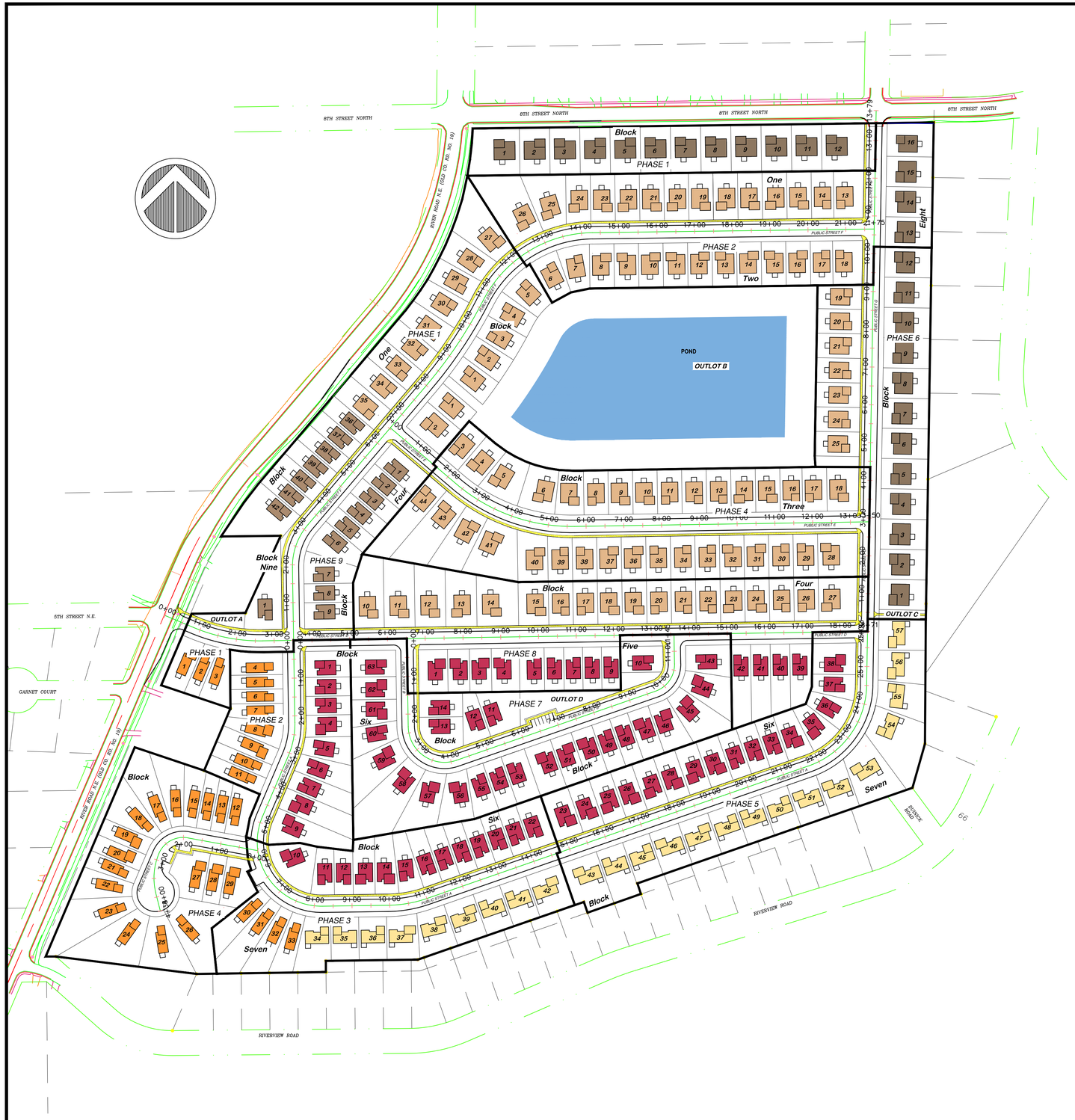
SCALE GRAPHIC
DRAWN BY: JVS
CHECKED BY: JVS
SURVEYED BY: KVD

HANOVER COVE
CONCEPT PLAN

HANOVER, MN

DATE
REVISED: JANUARY 10, 2019

SHEET
1 OF 1



Lot List by Phase

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Block 1, Lot 1	Block 1, Lot 13	Block 6, Lot 10	Block 3, Lot 3	Block 6, Lot 23	Block 2, Lot 19	Block 5, Lot 10	Block 4, Lot 10
Block 1, Lot 2	Block 1, Lot 14	Block 6, Lot 11	Block 3, Lot 4	Block 6, Lot 24	Block 2, Lot 20	Block 5, Lot 11	Block 4, Lot 11
Block 1, Lot 3	Block 1, Lot 15	Block 6, Lot 12	Block 3, Lot 5	Block 6, Lot 25	Block 2, Lot 21	Block 5, Lot 12	Block 4, Lot 12
Block 1, Lot 4	Block 1, Lot 16	Block 6, Lot 13	Block 3, Lot 6	Block 6, Lot 26	Block 2, Lot 22	Block 5, Lot 13	Block 4, Lot 13
Block 1, Lot 5	Block 1, Lot 17	Block 6, Lot 14	Block 3, Lot 7	Block 6, Lot 27	Block 2, Lot 23	Block 5, Lot 14	Block 4, Lot 14
Block 1, Lot 6	Block 1, Lot 18	Block 6, Lot 15	Block 3, Lot 8	Block 6, Lot 28	Block 2, Lot 24	Block 6, Lot 43	Block 4, Lot 15
Block 1, Lot 7	Block 1, Lot 19	Block 6, Lot 16	Block 3, Lot 9	Block 6, Lot 29	Block 2, Lot 25	Block 6, Lot 44	Block 4, Lot 16
Block 1, Lot 8	Block 1, Lot 20	Block 6, Lot 17	Block 3, Lot 10	Block 6, Lot 30	Block 8, Lot 1	Block 6, Lot 45	Block 4, Lot 17
Block 1, Lot 9	Block 1, Lot 21	Block 6, Lot 18	Block 3, Lot 11	Block 6, Lot 31	Block 8, Lot 2	Block 6, Lot 46	Block 4, Lot 18
Block 1, Lot 10	Block 1, Lot 22	Block 6, Lot 19	Block 3, Lot 12	Block 6, Lot 32	Block 8, Lot 3	Block 6, Lot 47	Block 4, Lot 19
Block 1, Lot 11	Block 1, Lot 23	Block 6, Lot 20	Block 3, Lot 13	Block 6, Lot 33	Block 8, Lot 4	Block 6, Lot 48	Block 4, Lot 20
Block 1, Lot 12	Block 1, Lot 24	Block 6, Lot 21	Block 3, Lot 14	Block 6, Lot 34	Block 8, Lot 5	Block 6, Lot 49	Block 4, Lot 21
Block 1, Lot 27	Block 1, Lot 25	Block 6, Lot 22	Block 3, Lot 15	Block 6, Lot 35	Block 8, Lot 6	Block 6, Lot 50	Block 4, Lot 22
Block 1, Lot 28	Block 1, Lot 26	Block 7, Lot 30	Block 3, Lot 16	Block 6, Lot 36	Block 8, Lot 7	Block 6, Lot 51	Block 4, Lot 23
Block 1, Lot 29	Block 2, Lot 6	Block 7, Lot 31	Block 3, Lot 17	Block 6, Lot 37	Block 8, Lot 8	Block 6, Lot 52	Block 4, Lot 24
Block 1, Lot 30	Block 2, Lot 7	Block 7, Lot 32	Block 3, Lot 18	Block 6, Lot 38	Block 8, Lot 9	Block 6, Lot 53	Block 4, Lot 25
Block 1, Lot 31	Block 2, Lot 8	Block 7, Lot 33	Block 4, Lot 28	Block 7, Lot 43	Block 8, Lot 10	Block 6, Lot 54	Block 4, Lot 26
Block 1, Lot 32	Block 2, Lot 9	Block 7, Lot 34	Block 4, Lot 29	Block 7, Lot 44	Block 8, Lot 11	Block 6, Lot 55	Block 4, Lot 27
Block 1, Lot 33	Block 2, Lot 10	Block 7, Lot 35	Block 4, Lot 30	Block 7, Lot 45	Block 8, Lot 12	Block 6, Lot 56	Block 5, Lot 1
Block 1, Lot 34	Block 2, Lot 11	Block 7, Lot 36	Block 4, Lot 31	Block 7, Lot 46	Outlot C	Block 6, Lot 57	Block 5, Lot 2
Block 1, Lot 35	Block 2, Lot 12	Block 7, Lot 37	Block 4, Lot 32	Block 7, Lot 47		Block 6, Lot 58	Block 5, Lot 3
Block 1, Lot 36	Block 2, Lot 13	Block 7, Lot 38	Block 4, Lot 33	Block 7, Lot 48		Block 6, Lot 59	Block 5, Lot 4
Block 1, Lot 37	Block 2, Lot 14	Block 7, Lot 39	Block 4, Lot 34	Block 7, Lot 49		Block 6, Lot 60	Block 5, Lot 5
Block 1, Lot 38	Block 2, Lot 15	Block 7, Lot 40	Block 4, Lot 35	Block 7, Lot 50		Block 6, Lot 61	Block 5, Lot 6
Block 1, Lot 39	Block 2, Lot 16	Block 7, Lot 41	Block 4, Lot 36	Block 7, Lot 51		Block 6, Lot 62	Block 5, Lot 7
Block 1, Lot 40	Block 2, Lot 17	Block 7, Lot 42	Block 4, Lot 37	Block 7, Lot 52		Block 6, Lot 63	Block 5, Lot 8
Block 1, Lot 41	Block 2, Lot 18		Block 4, Lot 38	Block 7, Lot 53		Outlot D	Block 5, Lot 9
Block 1, Lot 42	Block 6, Lot 1		Block 4, Lot 39	Block 7, Lot 54			Block 6, Lot 39
Block 2, Lot 1	Block 6, Lot 2		Block 4, Lot 40	Block 7, Lot 55			Block 6, Lot 40
Block 2, Lot 2	Block 6, Lot 3		Block 4, Lot 41	Block 7, Lot 56			Block 6, Lot 41
Block 2, Lot 3	Block 6, Lot 4		Block 4, Lot 42	Block 7, Lot 57			Block 6, Lot 42
Block 2, Lot 4	Block 6, Lot 5		Block 4, Lot 43	Outlot E			
Block 2, Lot 5	Block 6, Lot 6		Block 4, Lot 44	Outlot F			
Block 3, Lot 1	Block 6, Lot 7		Block 7, Lot 12				
Block 3, Lot 2	Block 6, Lot 8		Block 7, Lot 13				
Block 4, Lot 1	Block 6, Lot 9		Block 7, Lot 14				
Block 4, Lot 2	Block 7, Lot 4		Block 7, Lot 15				
Block 4, Lot 3	Block 7, Lot 5		Block 7, Lot 16				
Block 4, Lot 4	Block 7, Lot 6		Block 7, Lot 17				
Block 4, Lot 5	Block 7, Lot 7		Block 7, Lot 18				
Block 4, Lot 6	Block 7, Lot 8		Block 7, Lot 19				
Block 4, Lot 7	Block 7, Lot 9		Block 7, Lot 20				
Block 4, Lot 8	Block 7, Lot 10		Block 7, Lot 21				
Block 4, Lot 9	Block 7, Lot 11		Block 7, Lot 22				
Block 7, Lot 1	Block 8, Lot 13		Block 7, Lot 23				
Block 7, Lot 2	Block 8, Lot 14		Block 7, Lot 24				
Block 7, Lot 3	Block 8, Lot 15		Block 7, Lot 25				
Block 9, Lot 1	Block 8, Lot 16		Block 7, Lot 26				
Outlot A			Block 7, Lot 27				
Outlot B			Block 7, Lot 28				
			Block 7, Lot 29				

Phasing Summary

Phase	# of Lots / Dwelling Units	Total Area (Acres)	Buildable Area (Acres)	Roadway / Utility Construction	
Phase 1	48	21.6	4.81	Street "D"	Sta 0+00 - 3+88
				Street "F"	Sta 0+00 - 12+25
Phase 2	48	11.8	4.52	Street "F"	Sta 12+25 - 21+75
				Street "A"	Sta 0+00 - 5+50
				Street "G"	Sta 10+25 - 13+79
Phase 3	26	6.5	2.57	Street "A"	Sta 5+50 - 14+75
Phase 4	51	13.7	5.58	Street "E"	Sta 0+00 - 13+50
				Street "C"	Sta 0+00 - 4+38
Phase 5	31	8.3	3.25	Street "A"	Sta 14+75 - 25+93
Phase 6	19	5.1	1.80	Street "G"	Sta 0+00 - 10+25
Phase 7	26	7.6	2.90	Street "B"	Sta 0+00 - 11+45
				Street "D"	Sta 3+88 - 6+85
Phase 8	31	7.9	3.19	Street "D"	Sta 6+85 - 18+71

NOTE:

TREE REMOVAL AND MASS GRADING (INCLUDING EROSION CONTROL) WILL BE COMPLETED ON ENTIRE DEVELOPMENT, PRIOR TO COMMENCEMENT OF PHASE 1 IMPROVEMENTS.

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PHASING PLAN

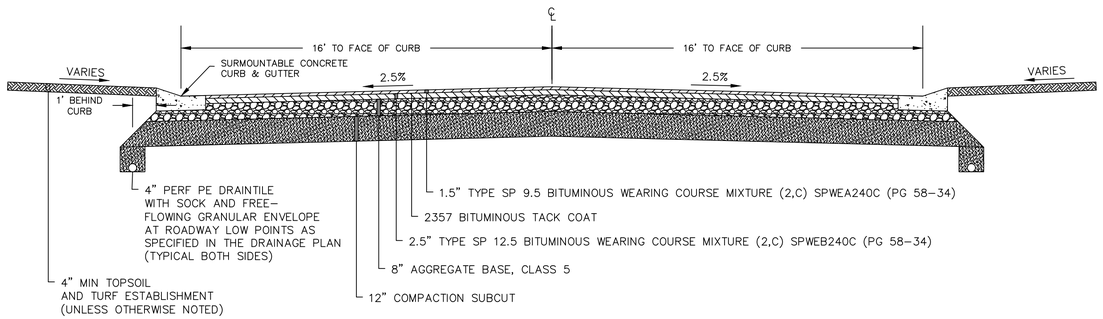
HANOVER, MN

CHECKED BY: JVS
DRAWN BY: JVS

SCALE

DATE
JAN 10, 2019

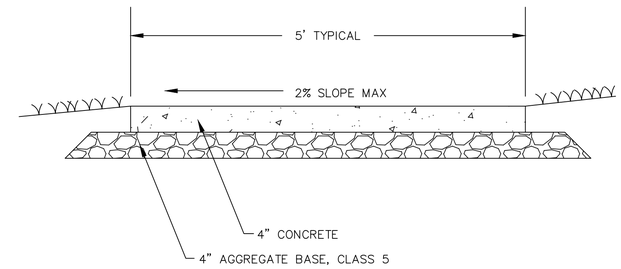
SHEET
PHASING



ROADWAY TYPICAL SECTION

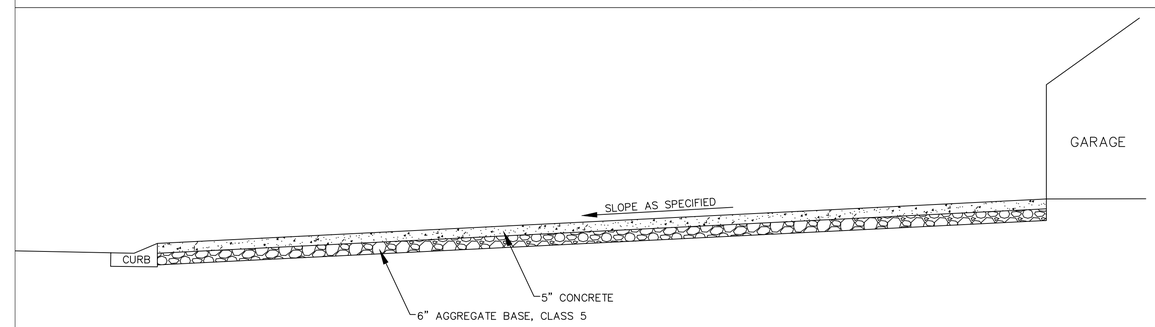
N.T.S.

NOTE: ALL CURB RADIUSES ARE 20' UNLESS OTHERWISE NOTED.



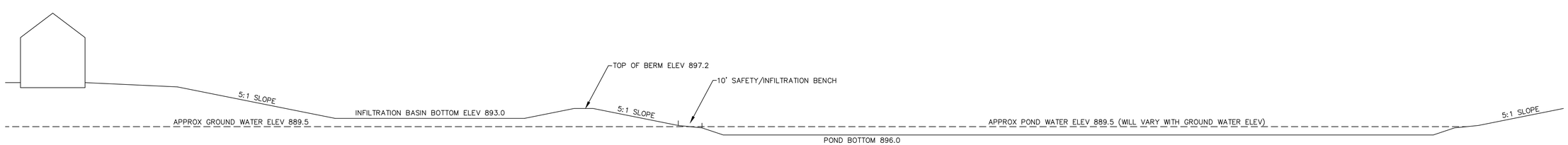
SIDEWALK TYPICAL SECTION

N.T.S.



DRIVEWAY TYPICAL SECTION

N.T.S.



PONDING TYPICAL SECTION

N.T.S.

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
TYPICAL SECTIONS

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
TYP1

DRAINAGE AREA SUMMARY

DRAINS OFFSITE	12.8 ACRES
INFILTRATES ONSITE	69.7 ACRES
TOTAL	82.5 ACRES

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
OVERALL EXISTING DRAINAGE MAP

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
EXDRN

DRAINAGE AREA SUMMARY

DRAINS OFFSITE	4.0 ACRES
INFILTRATES ONSITE	78.5 ACRES
TOTAL	82.5 ACRES

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
OVERALL PROPOSED DRAINAGE MAP

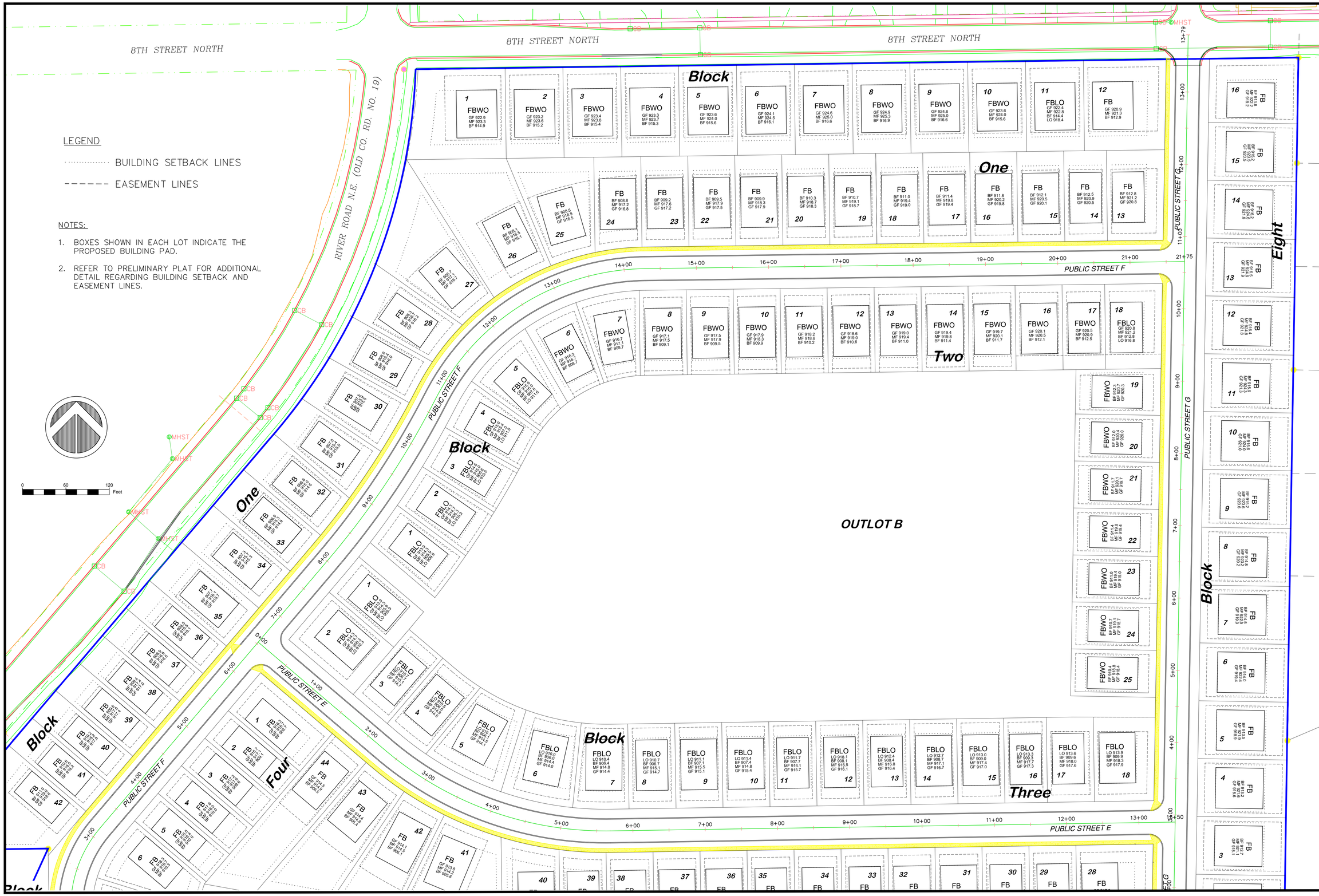
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
DEC 10, 2019

SHEET
PRODRN



LEGEND

BUILDING SETBACK LINES

EASEMENT LINES

NOTES:

1. BOXES SHOWN IN EACH LOT INDICATE THE PROPOSED BUILDING PAD.
2. REFER TO PRELIMINARY PLAT FOR ADDITIONAL DETAIL REGARDING BUILDING SETBACK AND EASEMENT LINES.

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2018

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
SITE PLAN (NORTH)

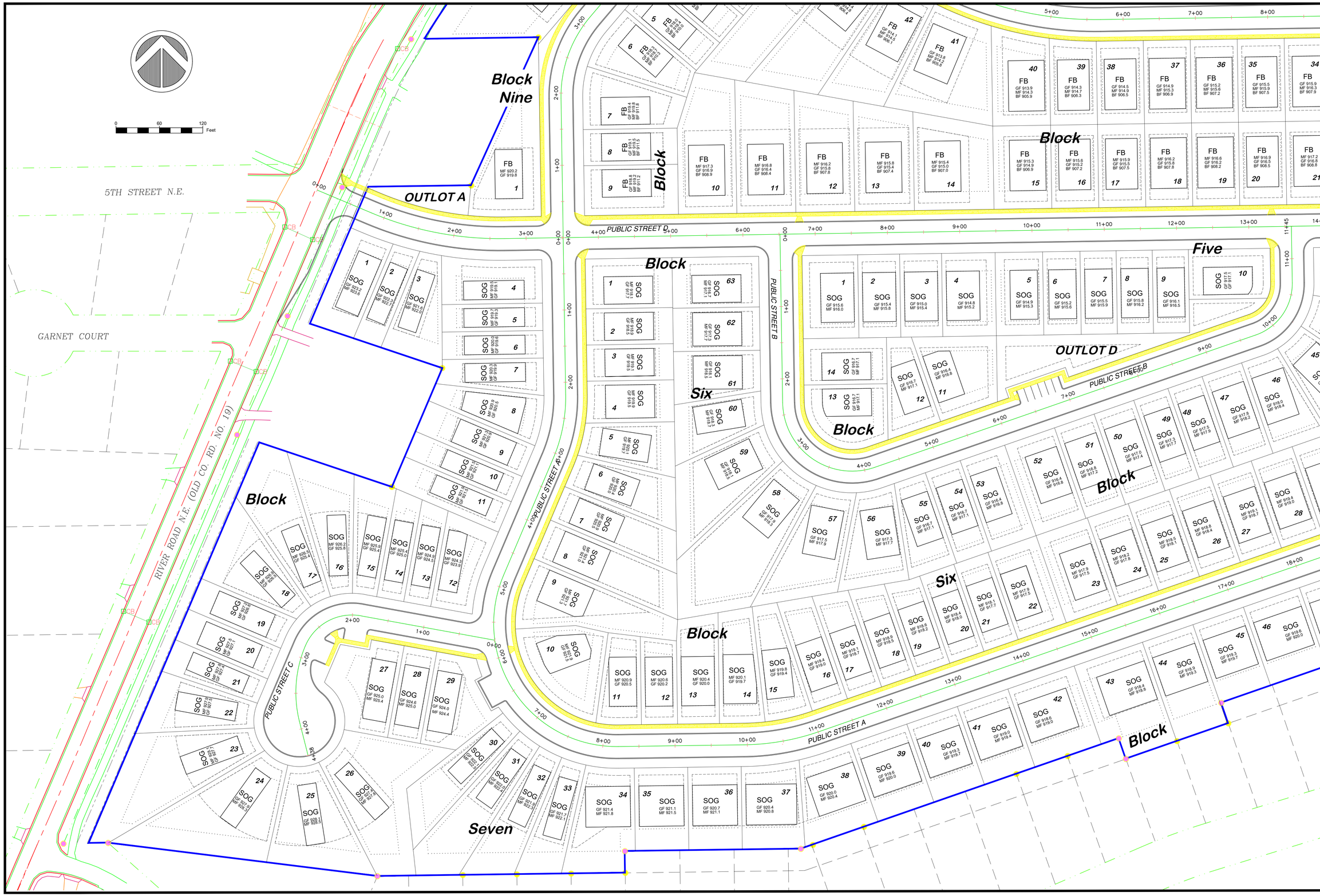
HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS

SCALE GRAPHIC

DATE JAN 10, 2019

SHEET SITE1



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
SITE PLAN (SOUTHWEST)

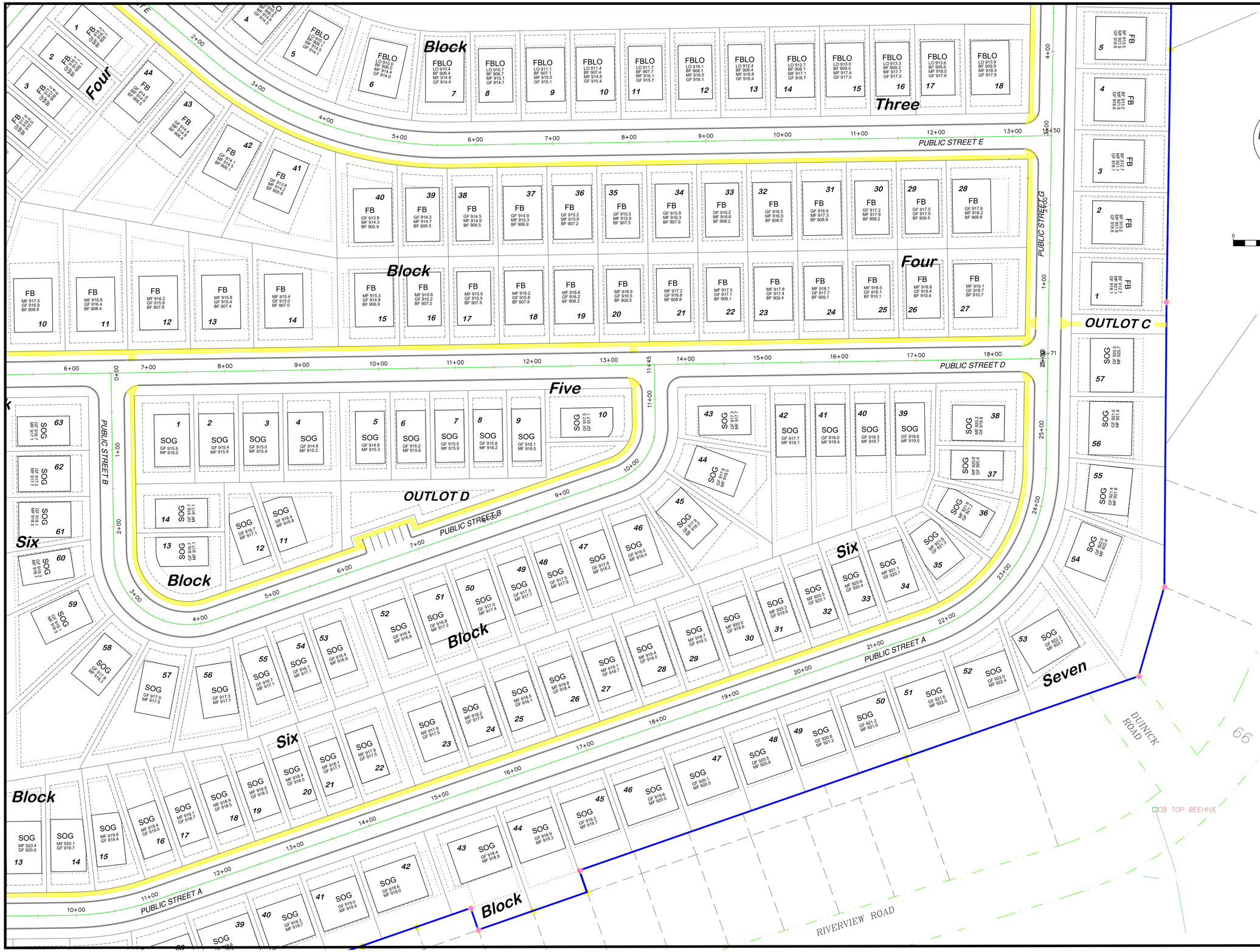
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
SITE 2



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
SITE PLAN (SOUTHEAST)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

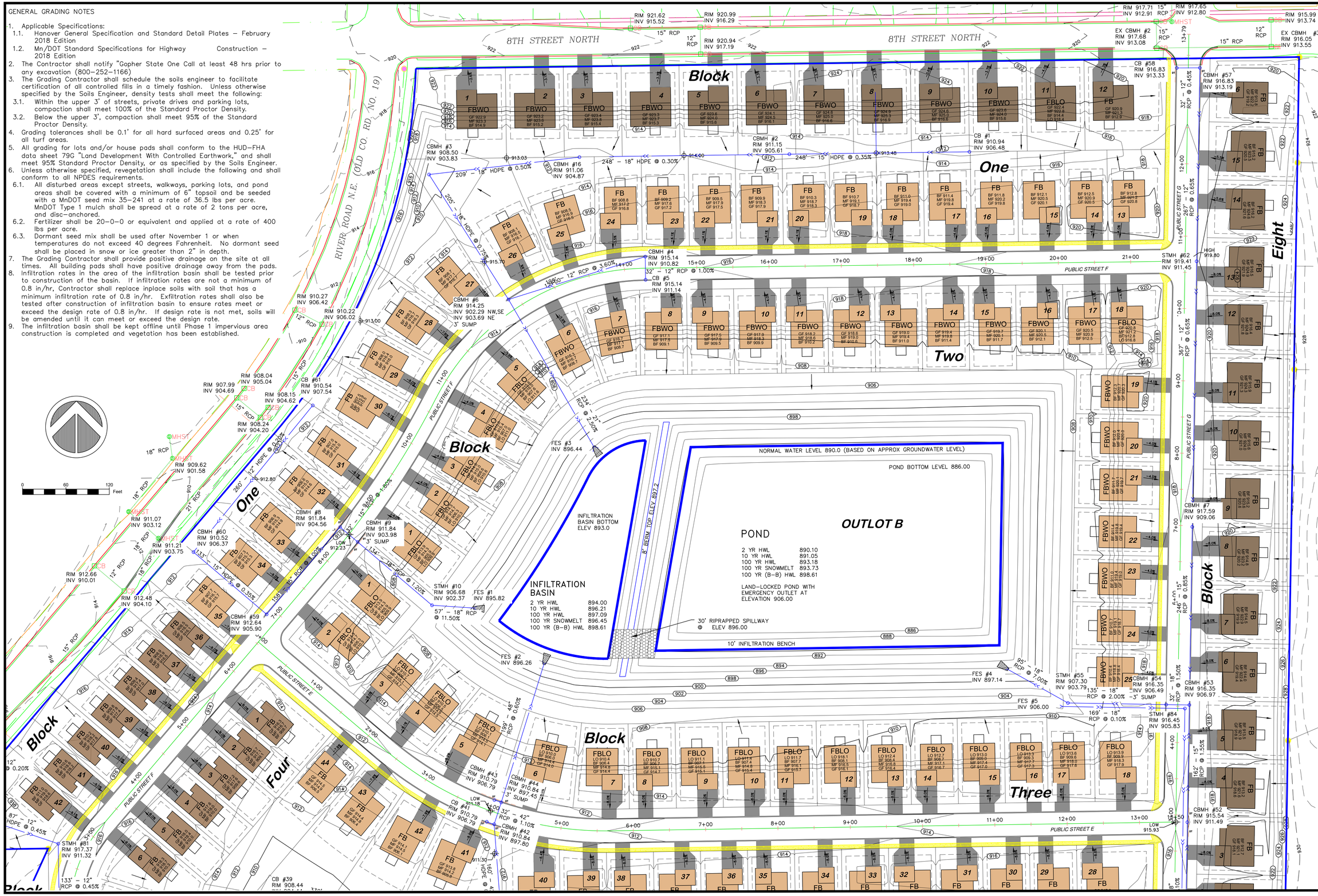
SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
SITE3

GENERAL GRADING NOTES

1. Applicable Specifications:
   1.1. Hanover General Specification and Standard Detail Plates – February 2018 Edition
   1.2. Mn/DOT Standard Specifications for Highway Construction – 2018 Edition
2. The Contractor shall notify "Gopher State One Call at least 48 hrs prior to any excavation (800–252–1166)
3. The Grading Contractor shall schedule the soils engineer to facilitate certification of all controlled fills in a timely fashion. Unless otherwise specified by the Soils Engineer, density tests shall meet the following:
   3.1. Within the upper 3' of streets, private drives and parking lots, compaction shall meet 100% of the Standard Proctor Density.
   3.2. Below the upper 3', compaction shall meet 95% of the Standard Proctor Density.
4. Grading tolerances shall be 0.1' for all hard surfaced areas and 0.25' for all turf areas.
5. All grading for lots and/or house pads shall conform to the HUD–FHA data sheet 79G "Land Development With Controlled Earthwork," and shall meet 95% Standard Proctor Density, or as specified by the Soils Engineer.
6. Unless otherwise specified, revegetation shall include the following and shall conform to all NPDES requirements.
   6.1. All disturbed areas except streets, walkways, parking lots, and pond areas shall be covered with a minimum of 6" topsoil and be seeded with a MnDOT seed mix 35–241 at a rate of 36.5 lbs per acre. MnDOT Type 1 mulch shall be spread at a rate of 2 tons per acre, and disc–anchored.
   6.2. Fertilizer shall be 20–0–0 or equivalent and applied at a rate of 400 lbs per acre.
   6.3. Dormant seed mix shall be used after November 1 or when temperatures do not exceed 40 degrees Fahrenheit. No dormant seed shall be placed in snow or ice greater than 2" in depth.
7. The Grading Contractor shall provide positive drainage on the site at all times. All building pads shall have positive drainage away from the pads.
8. Infiltration rates in the area of the infiltration basin shall be tested prior to construction of the basin. If infiltration rates are not a minimum of 0.8 in/hr, Contractor shall replace inplace soils with soil that has a minimum infiltration rate of 0.8 in/hr. Exfiltration rates shall also be tested after construction of infiltration basin to ensure rates meet or exceed the design rate of 0.8 in/hr. If design rate is not met, soils will be amended until it can meet or exceed the design rate.
9. The infiltration basin shall be kept offline until Phase 1 impervious area construction is completed and vegetation has been established.



© DUININCK INC. 2018. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE

DATE: 1/10/2018

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978–6011 FAX: (320)978–4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
GRADING AND DRAINAGE PLAN (NORTH)

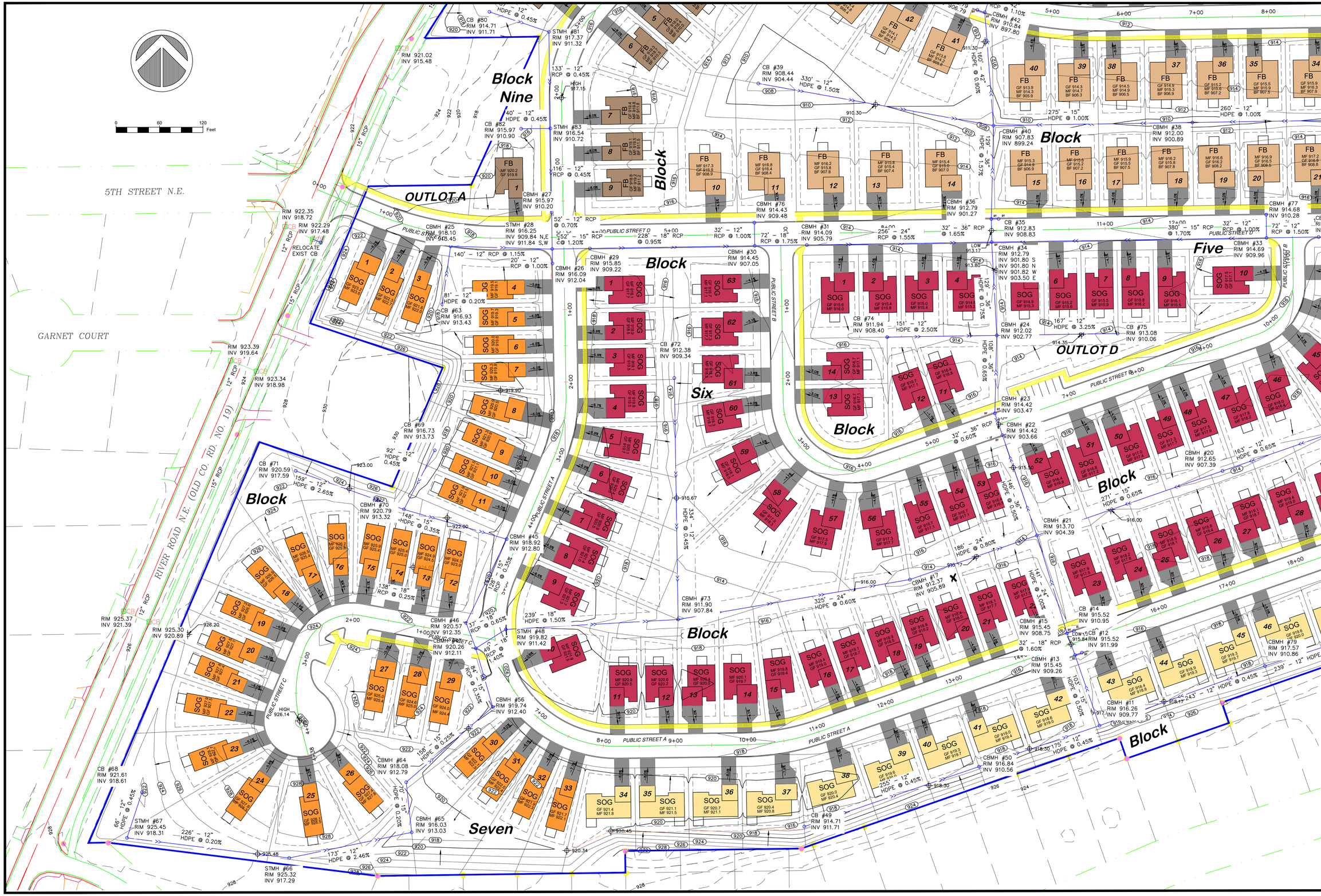
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
DRAIN1



© DUININCK INC. 2018 ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE

PRELIMINARY ENGINEERING PLAN

GRADING AND DRAINAGE PLAN (SOUTHWEST)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE: GRAPHIC

DATE: JAN 10, 2019

SHEET: DRAIN2

© DUININCK INC. 2018. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE

DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
GRADING AND DRAINAGE PLAN (SOUTHEAST)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
DRAIN3

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
SUBCATCHMENT / EOF MAP (NORTH)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
SUB1

© DUININCK INC. 2018. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE

PRELIMINARY ENGINEERING PLAN

SUBCATCHMENT / EOF MAP (SOUTHWEST)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE: GRAPHIC

DATE: JAN 10, 2019

SHEET: SUB2

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX:
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
SUBCATCHMENT / EOF MAP (SOUTHEAST)

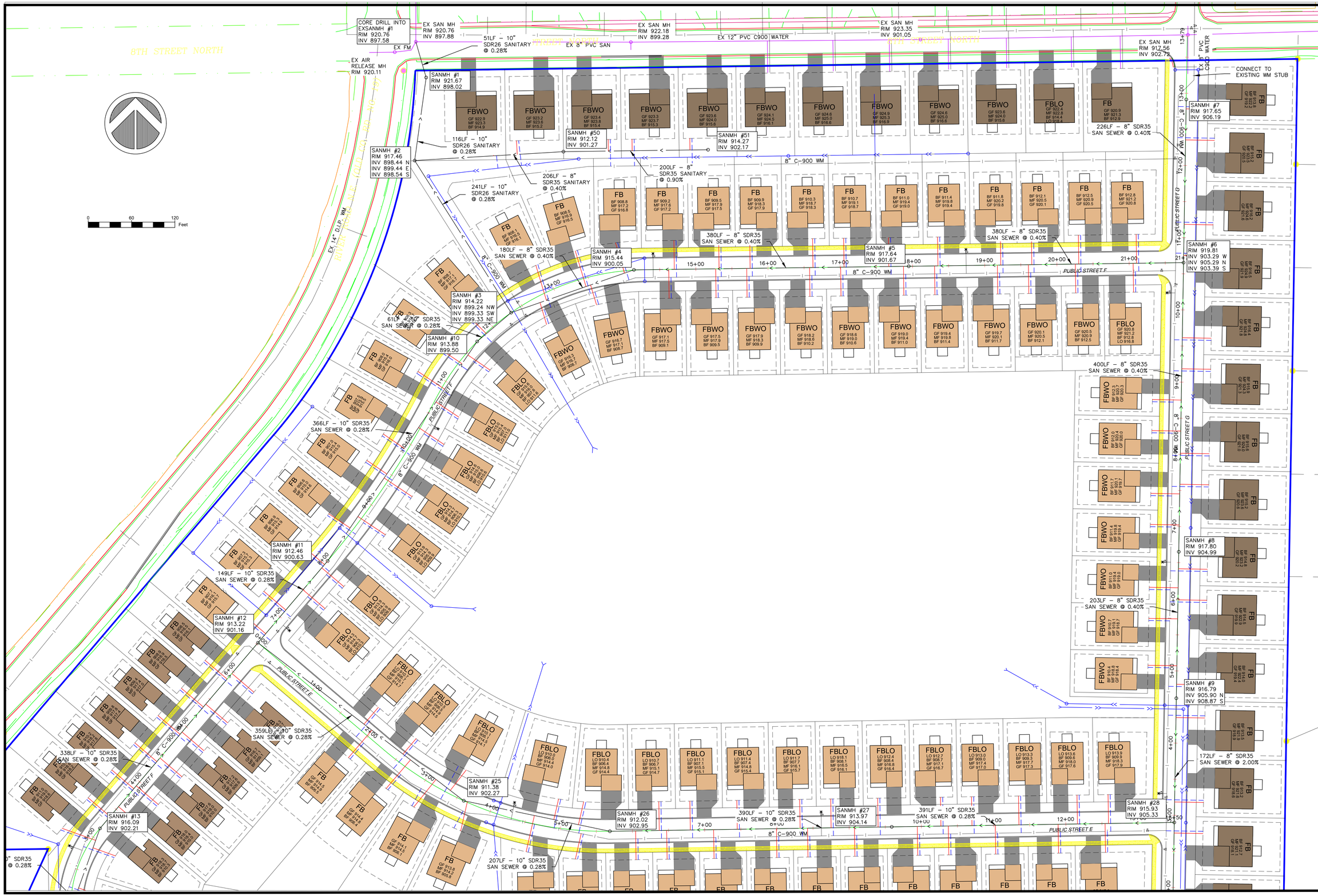
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
SUB3



© DUININCK INC. 2018. ANY USE OR REUSE OF THIS PLAN, DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

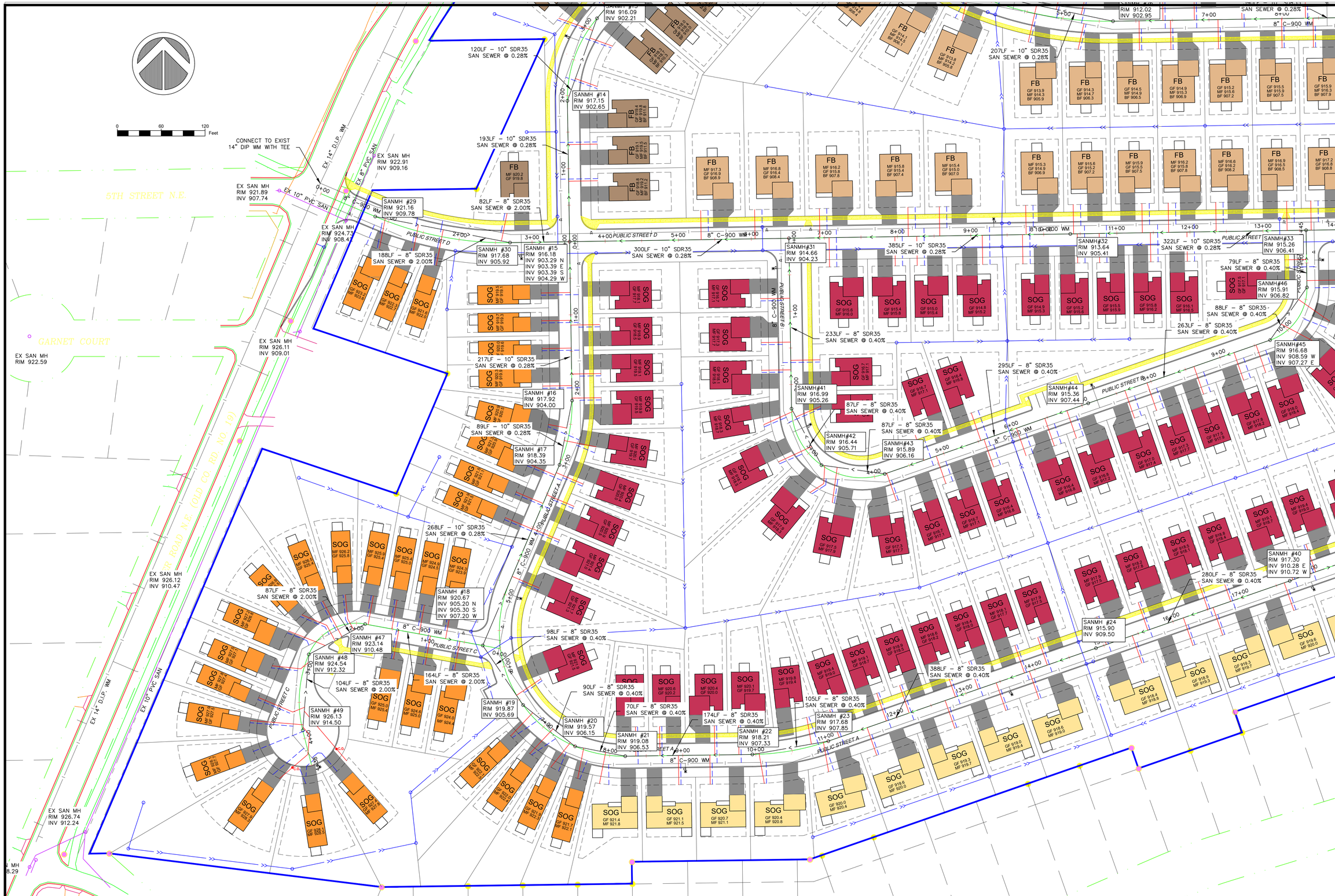
NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
UTILITY PLAN (NORTH)

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE GRAPHIC	
DATE JAN 10, 2019	
SHEET UTIL1	



© DUININCK INC. 2018. ANY USE OR REUSE OF THIS PLAN, DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
UTILITY PLAN (SOUTHWEST)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE: GRAPHIC

DATE: JAN 10, 2019

SHEET: UTIL2

© DUININCK INC. 2018. ANY USE OR REUSE OF THIS PLAN, DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
UTILITY PLAN (SOUTHEAST)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE: GRAPHIC

DATE: JAN 10, 2019

SHEET: UTIL3

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
FIRE HYDRANT COVERAGE PLAN

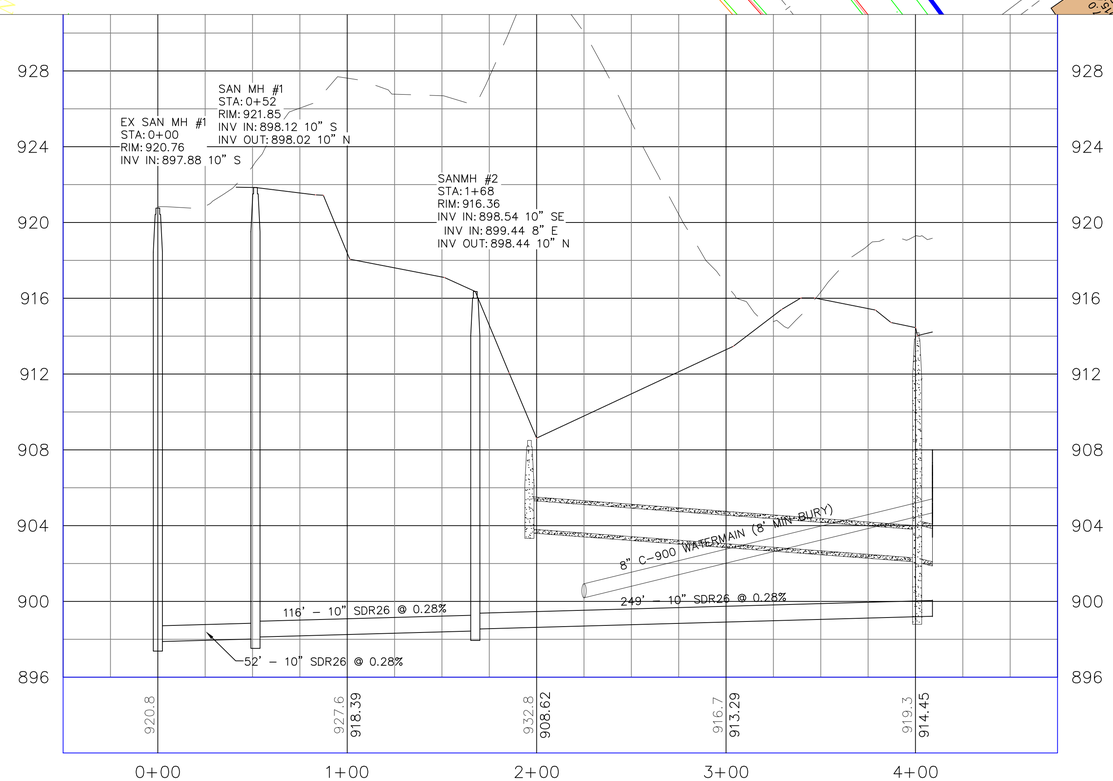
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
UTIL4



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

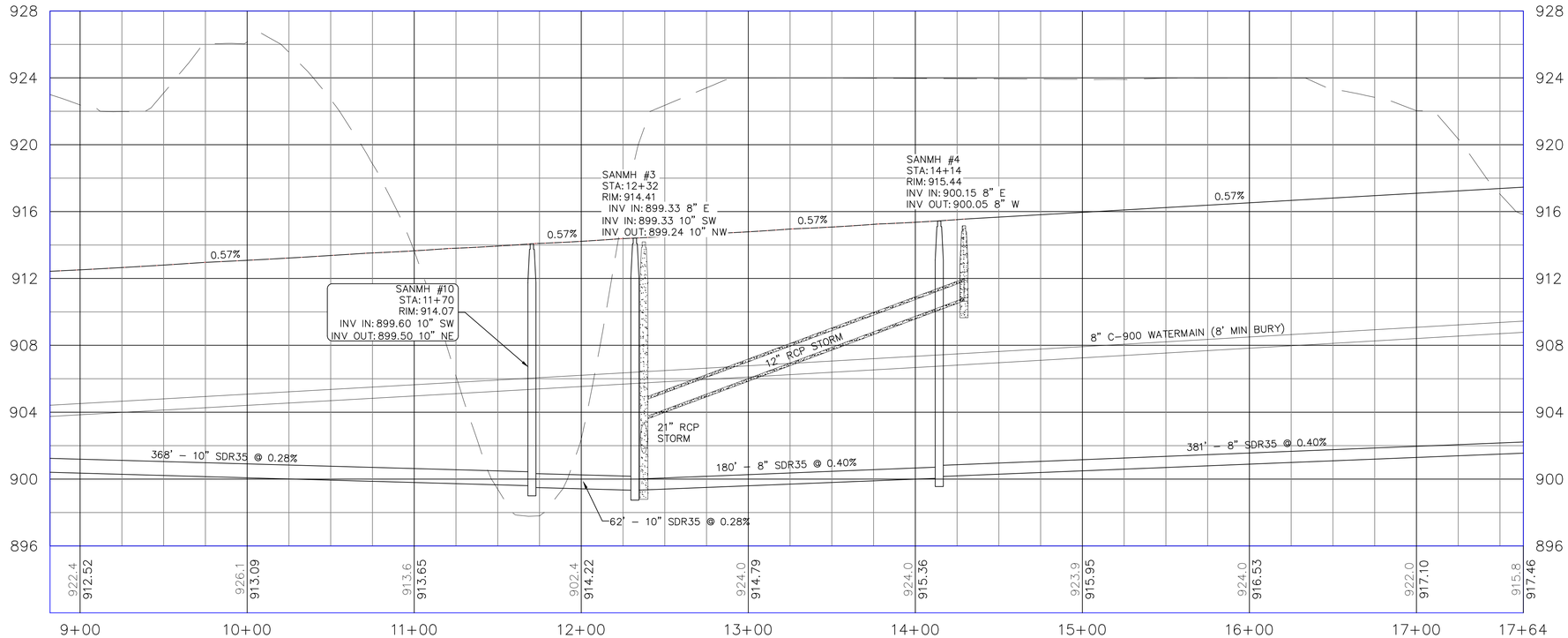
NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE GRAPHIC	
DATE JAN 10, 2019	
SHEET PP1	



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED THEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

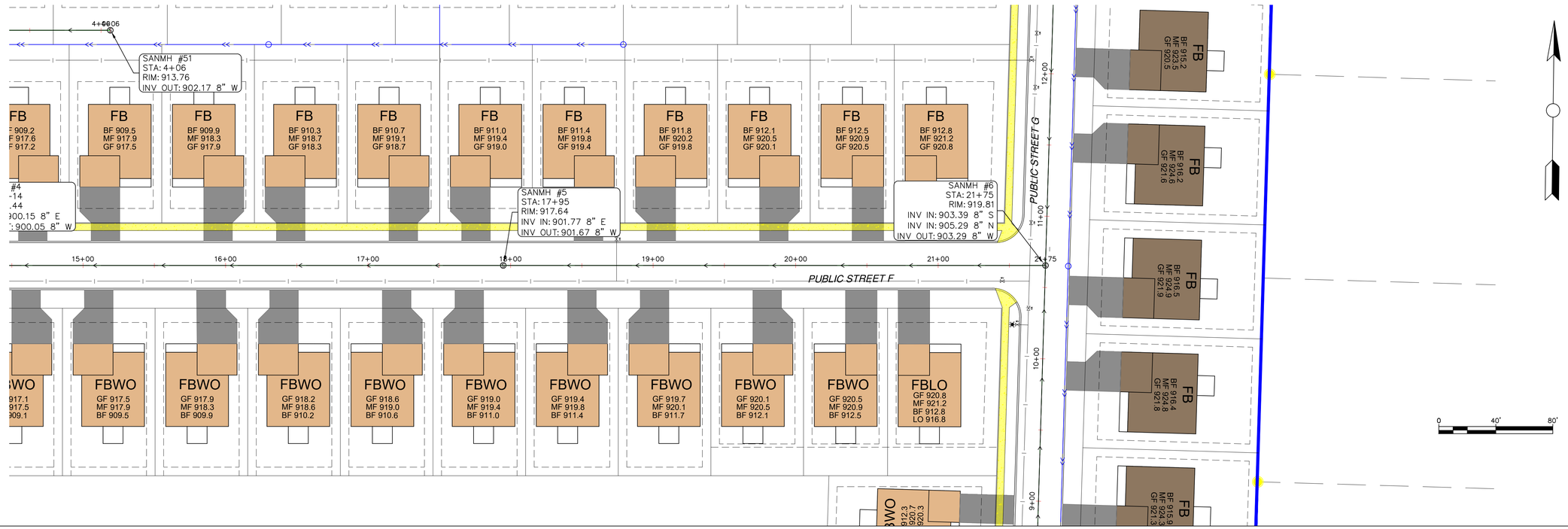
NAME: JASON VERSTEEG LIC. NO. 26505

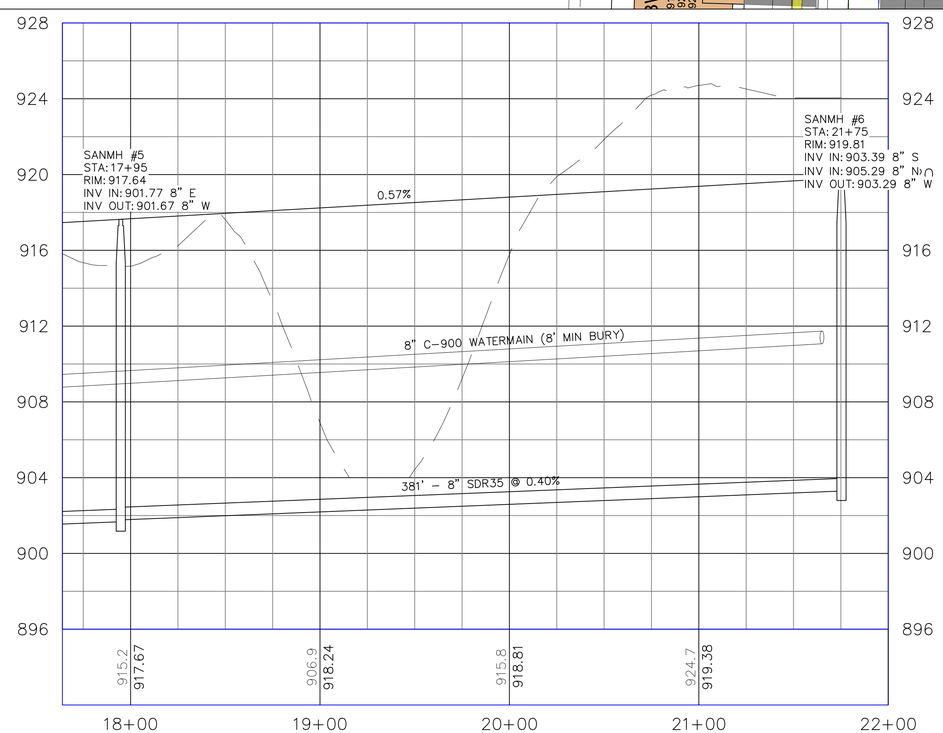
DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE – STREET F

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE GRAPHIC	
DATE JAN 10, 2019	
SHEET PP2	





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED HEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

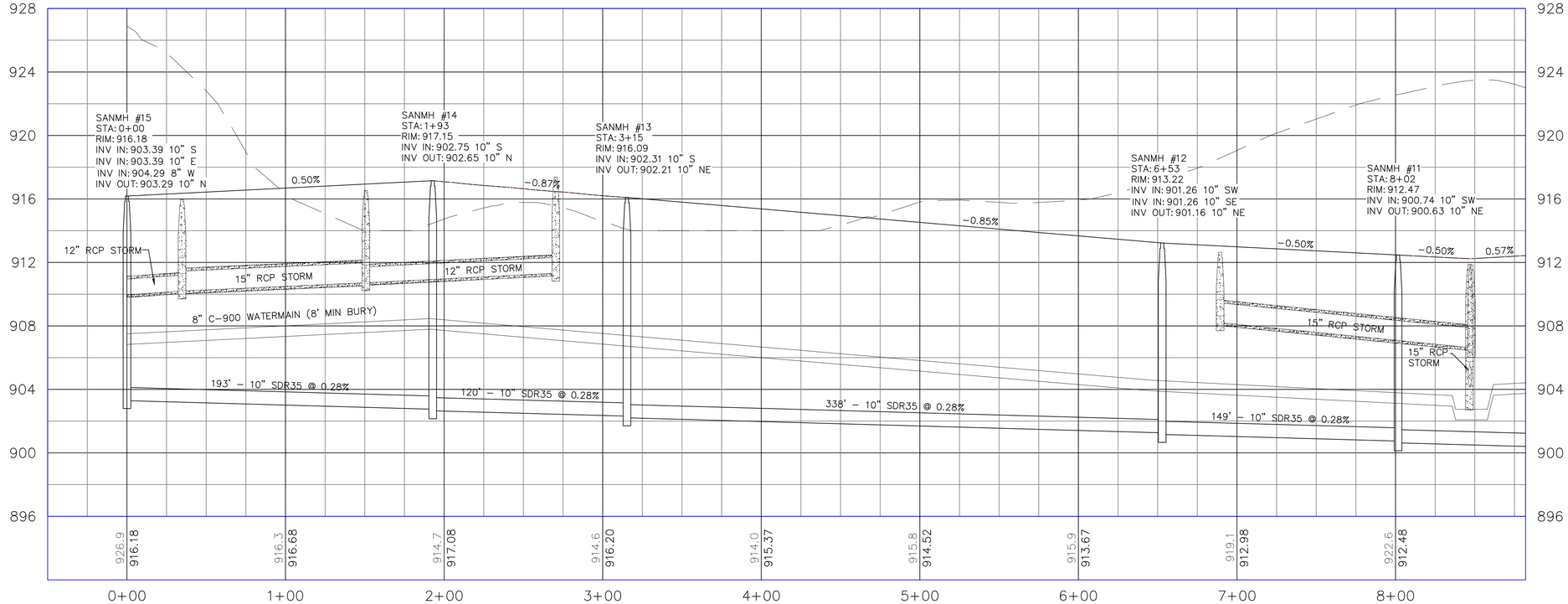
NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET F

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE GRAPHIC	
DATE JAN 10, 2019	
SHEET PP3	



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED THEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

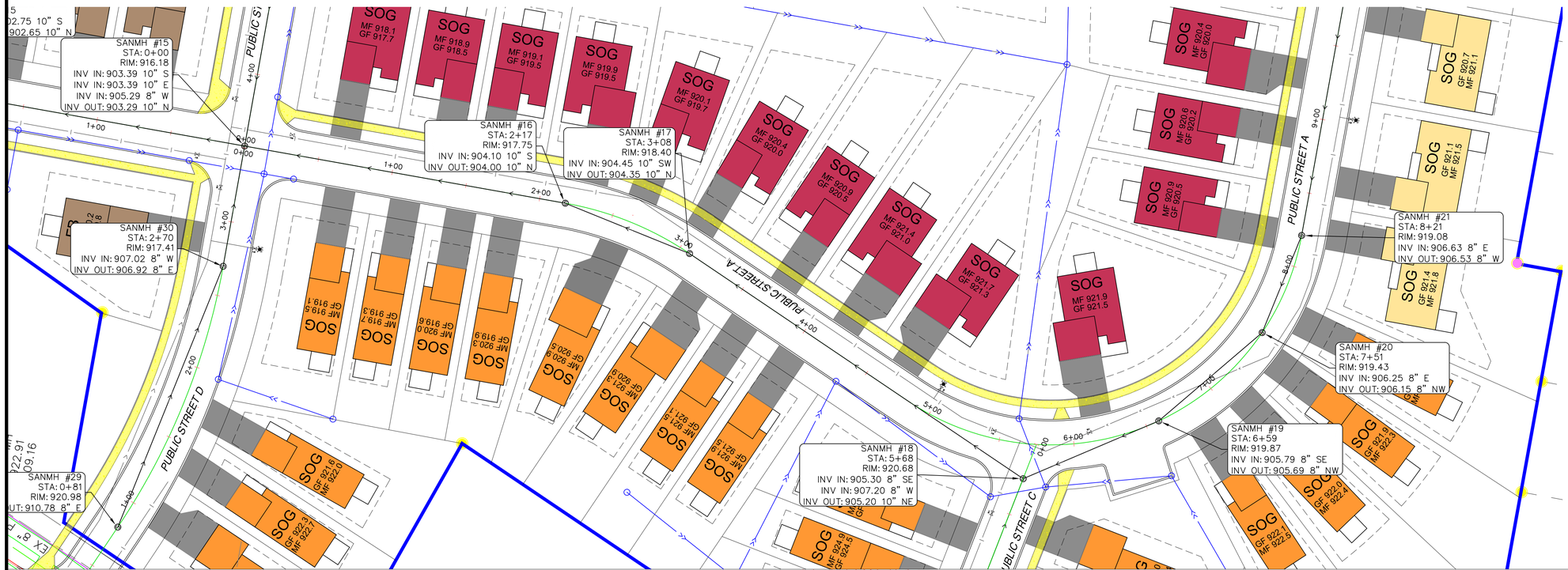
NAME: JASON VERSTEEG LIC. NO. 26505

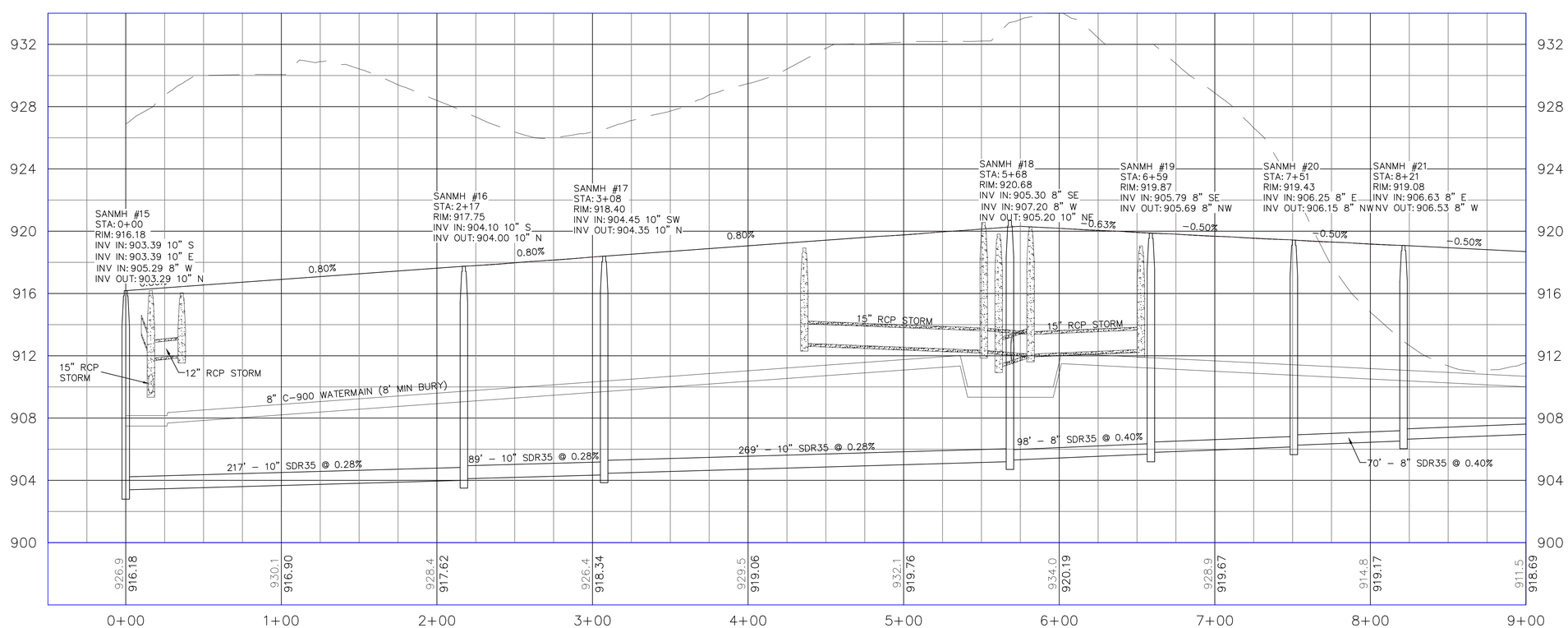
DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET F

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE GRAPHIC	
DATE JAN 10, 2019	
SHEET PP4	





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THIS MATERIAL OR ANY DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET A

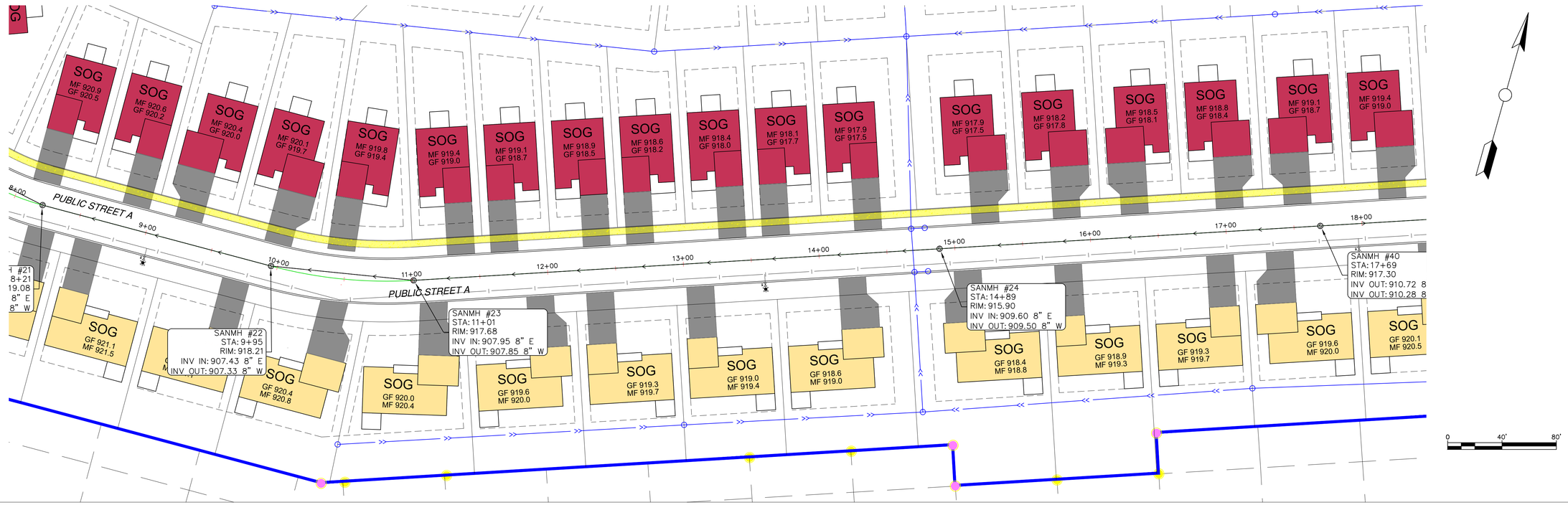
HANOVER, MN

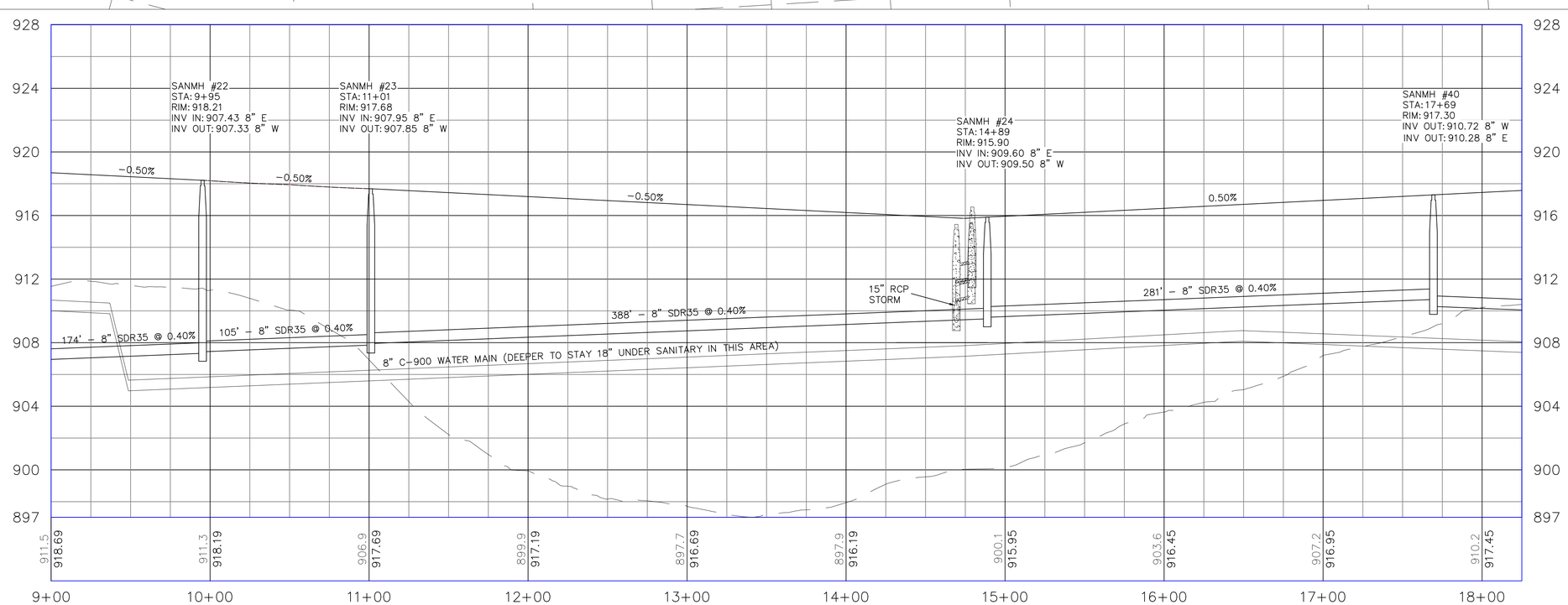
CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP5





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND ITS CONTENTS WITHOUT PRIOR WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE

PRELIMINARY ENGINEERING PLAN

PLAN AND PROFILE - STREET A

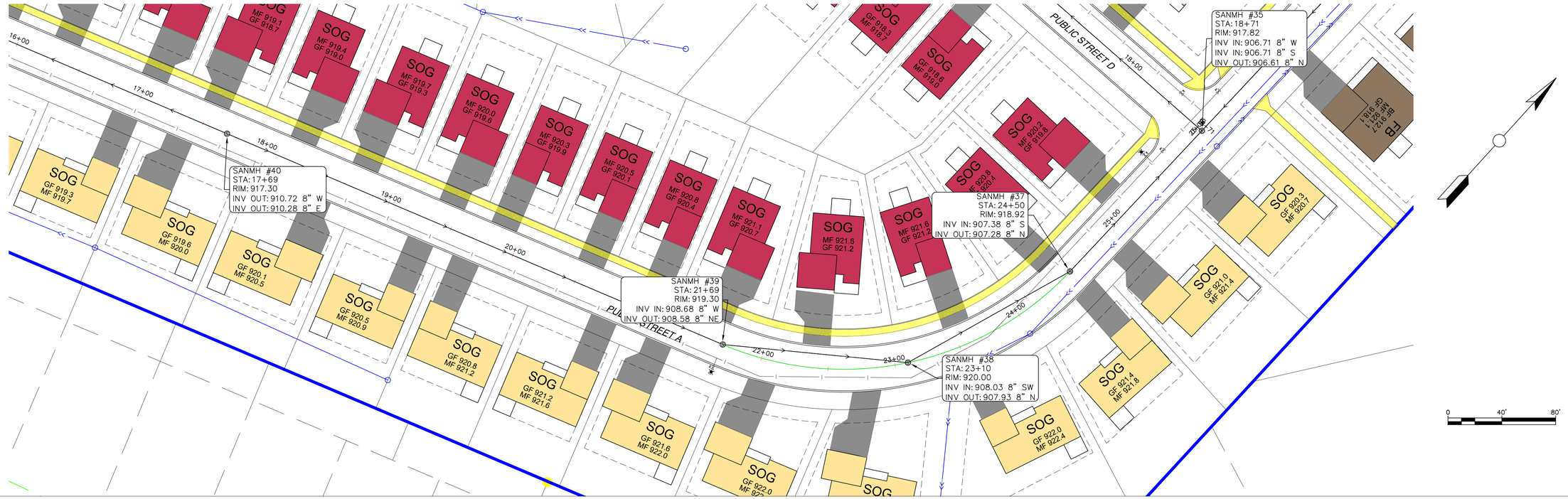
HANOVER, MN

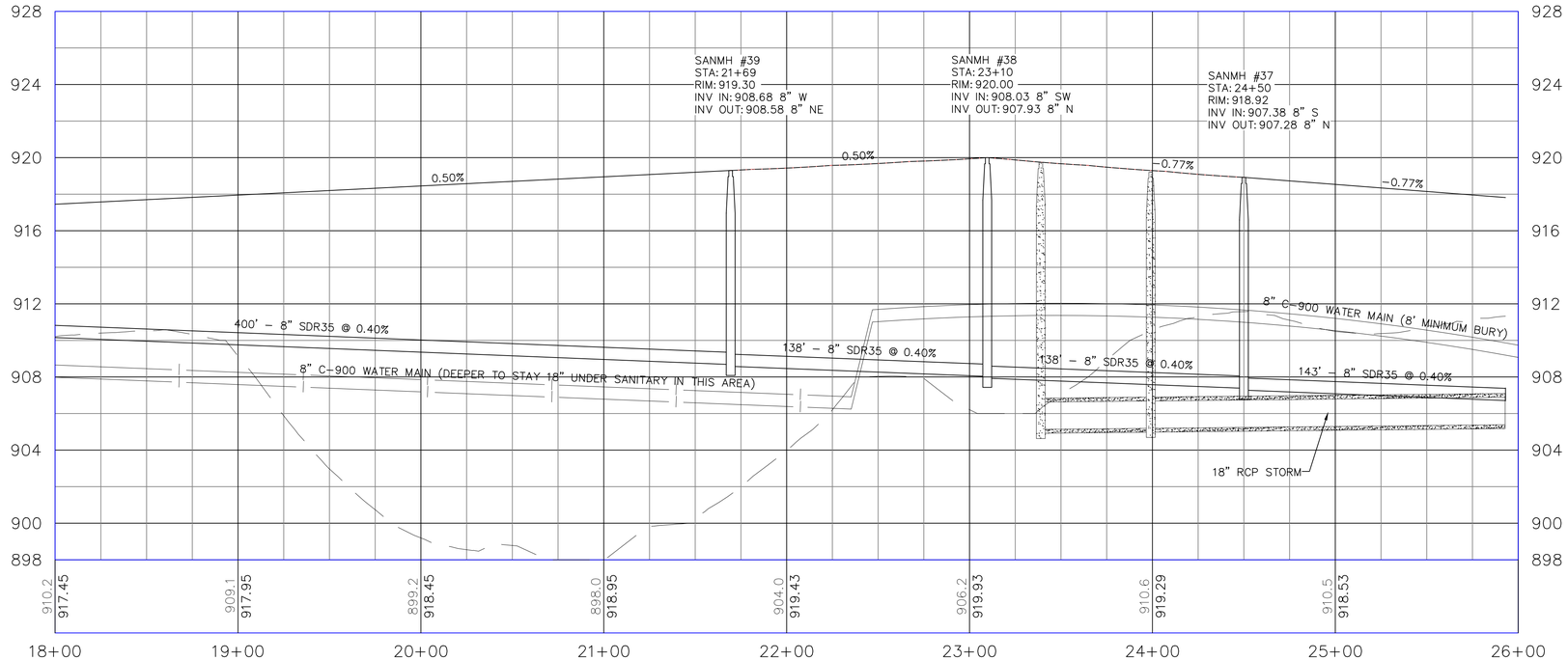
CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP6





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CONTENTS THEREOF, OTHER THAN DESIGN DRAFTING FILES, WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE – STREET A

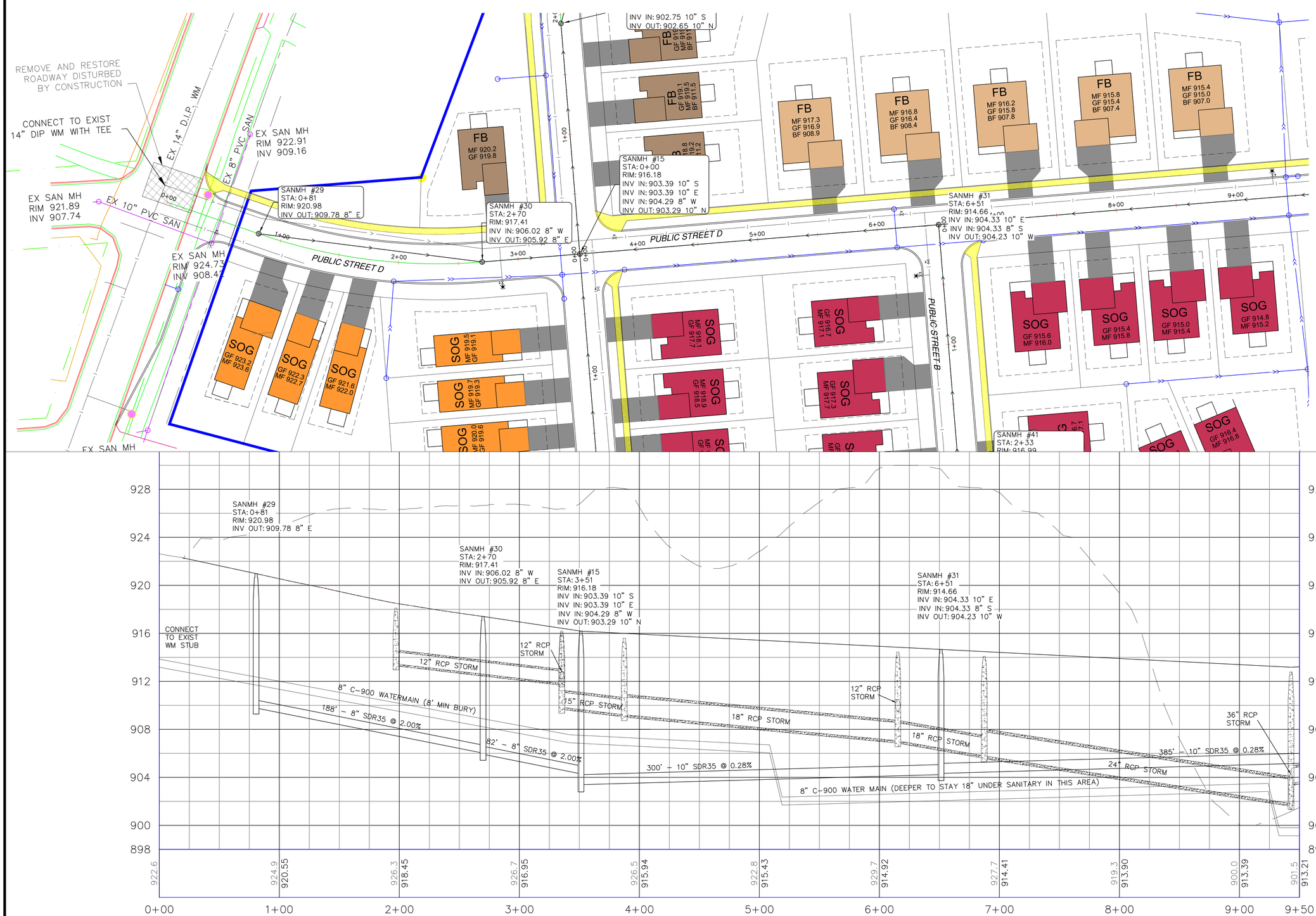
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP7



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED THEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET D

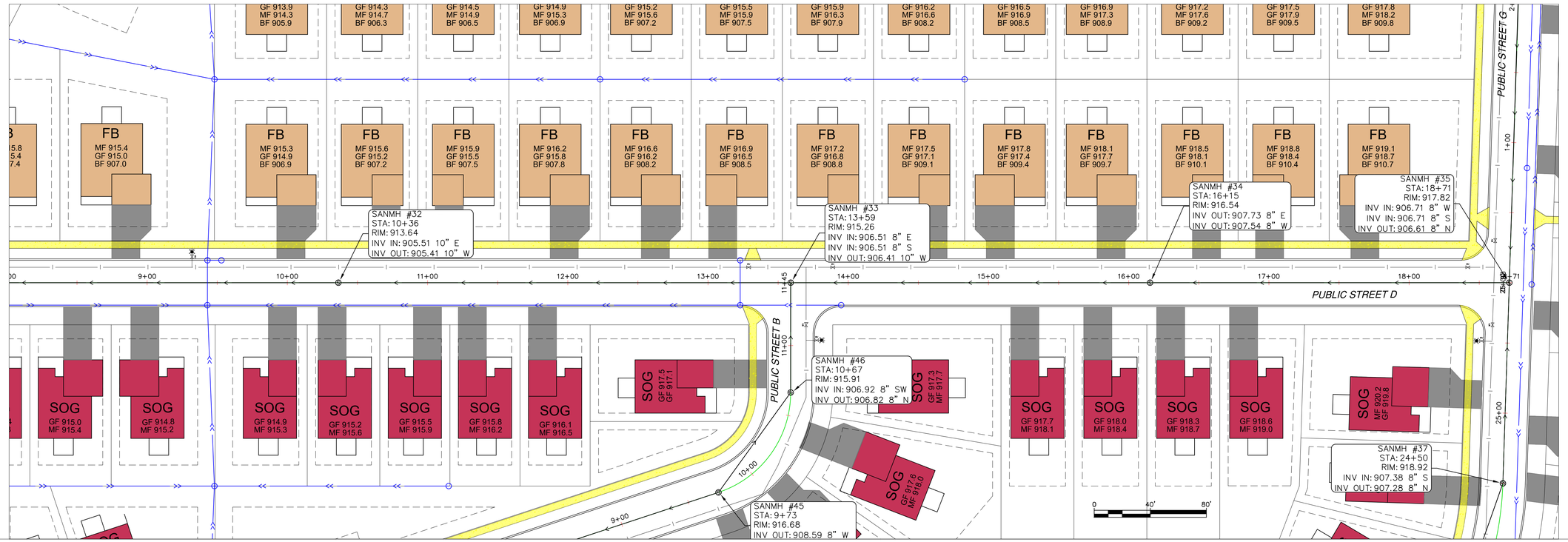
HANOVER, MN

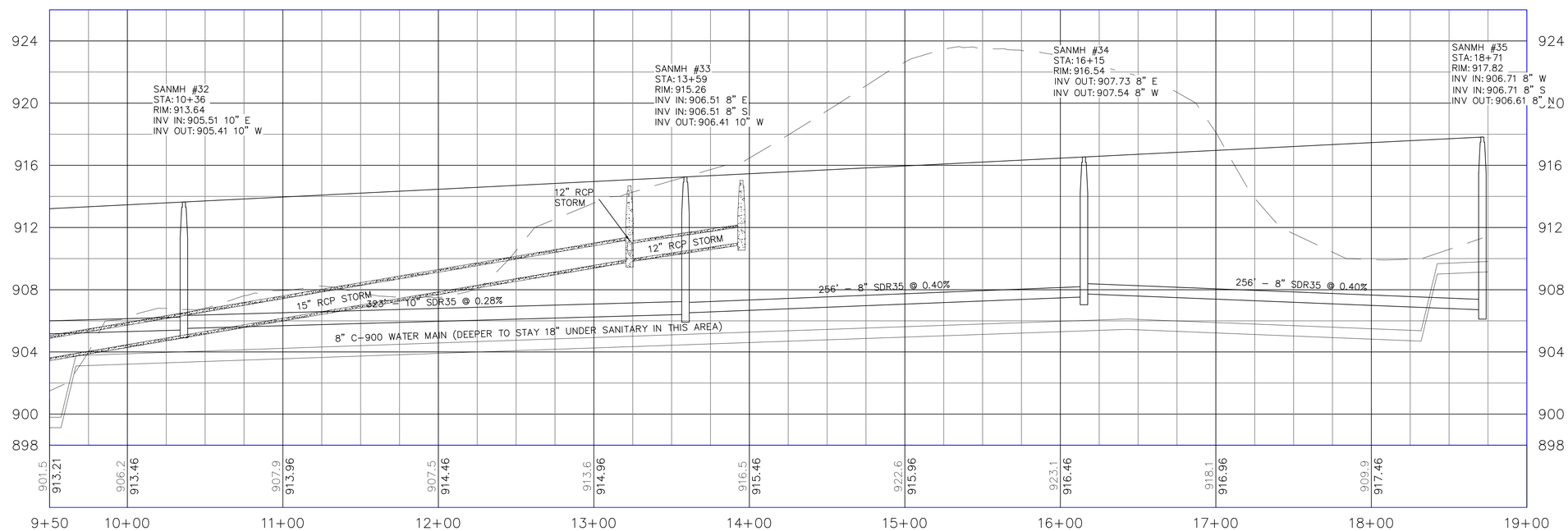
CHECKED BY: JVS	DRAWN BY: JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP8





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED THEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

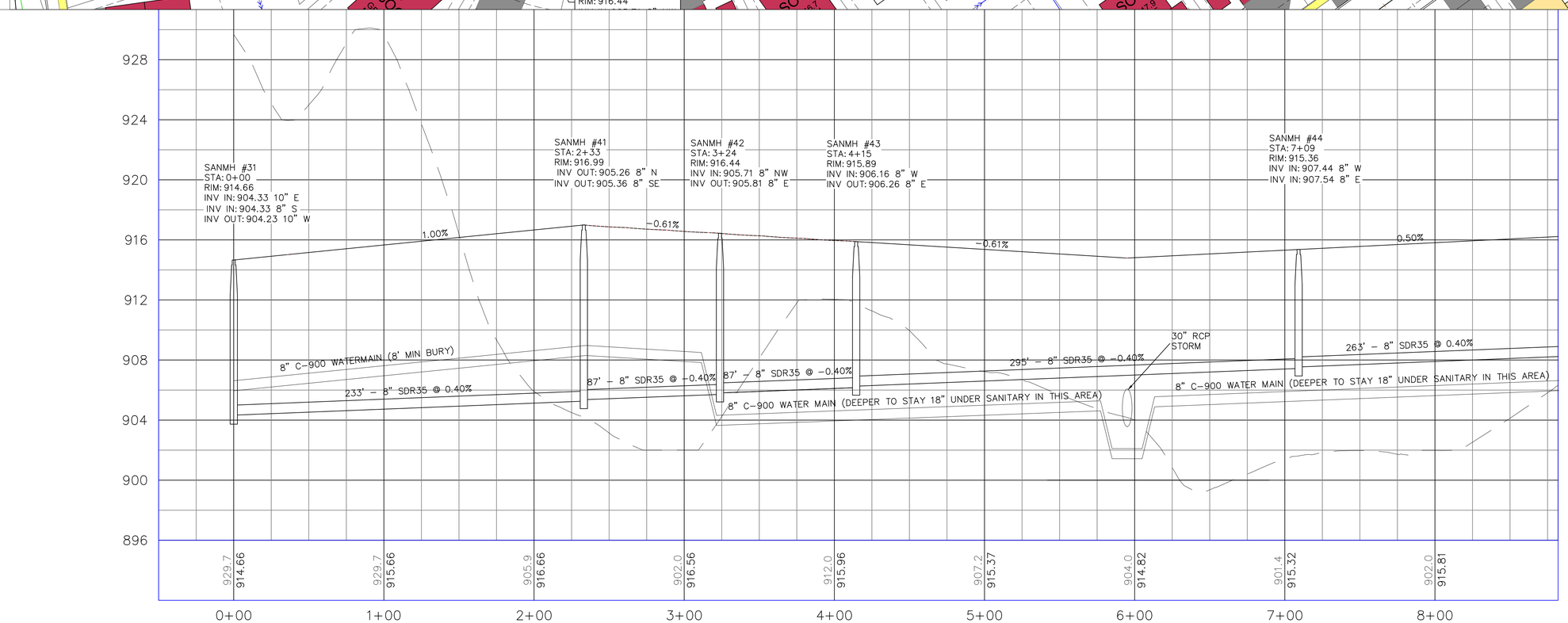
NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE – STREET D

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE	GRAPHIC
DATE	JAN 10, 2019
SHEET	PP9



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED HEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET B

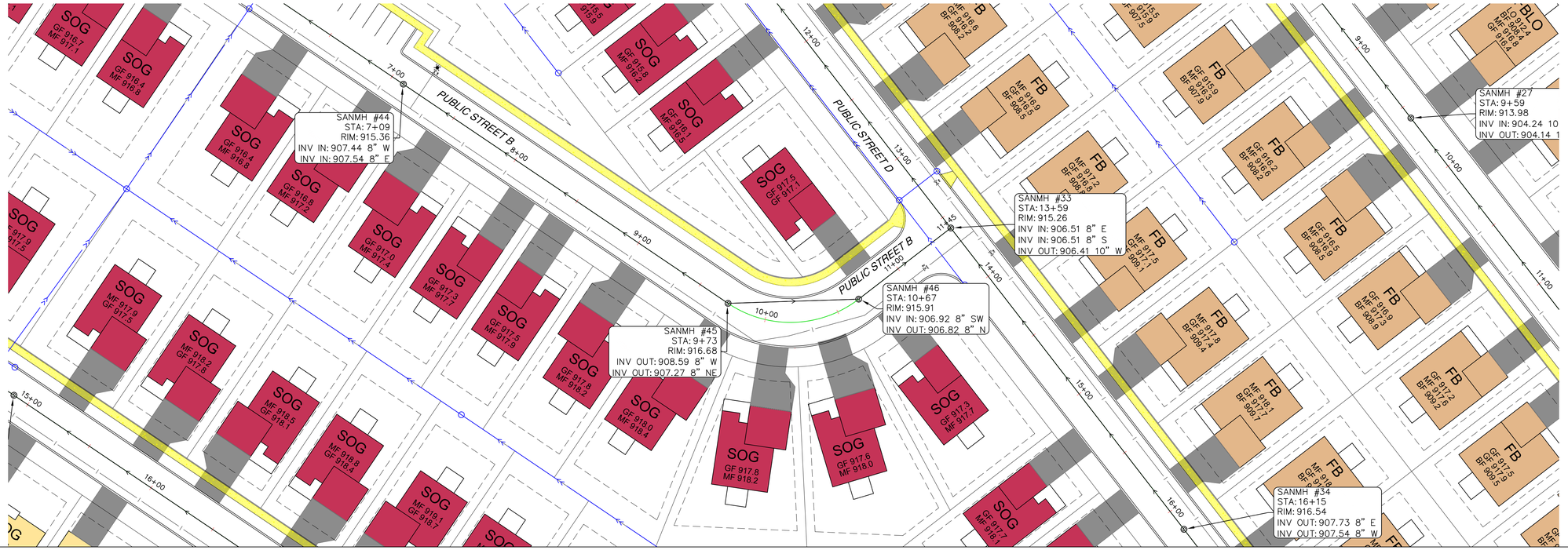
HANOVER, MN

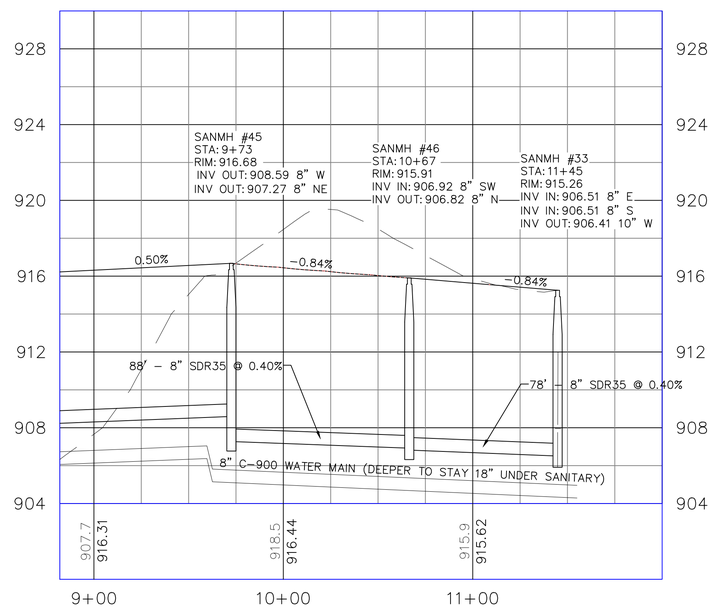
CHECKED BY: JVS	DRAWN BY: JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP10





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED HEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET B

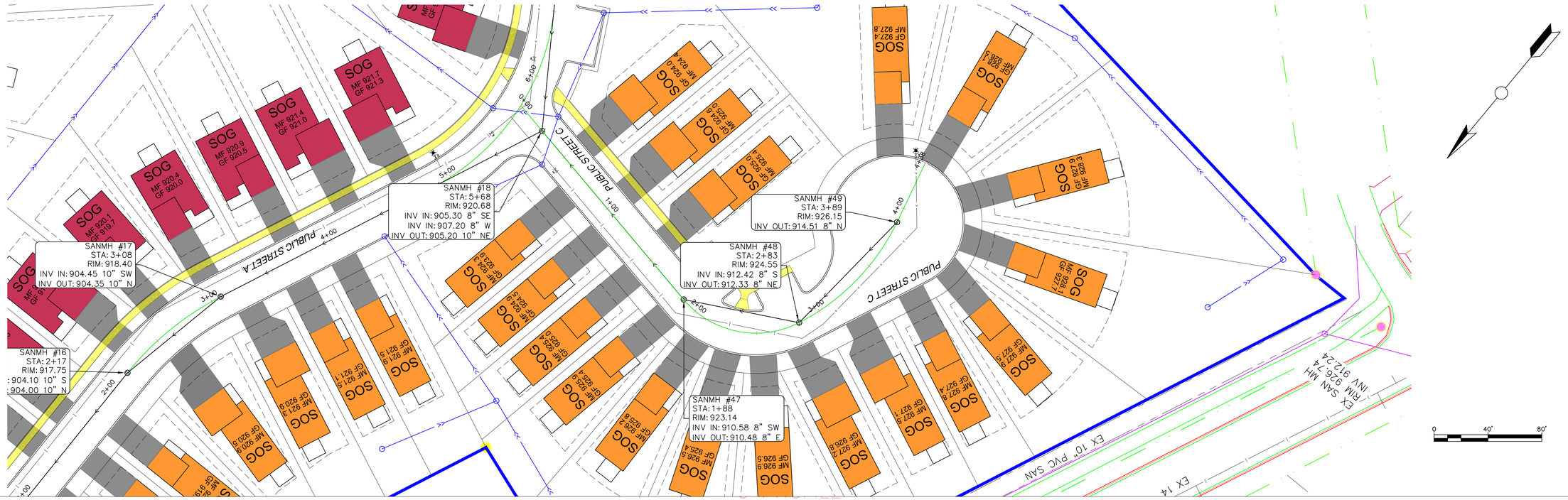
HANOVER, MN

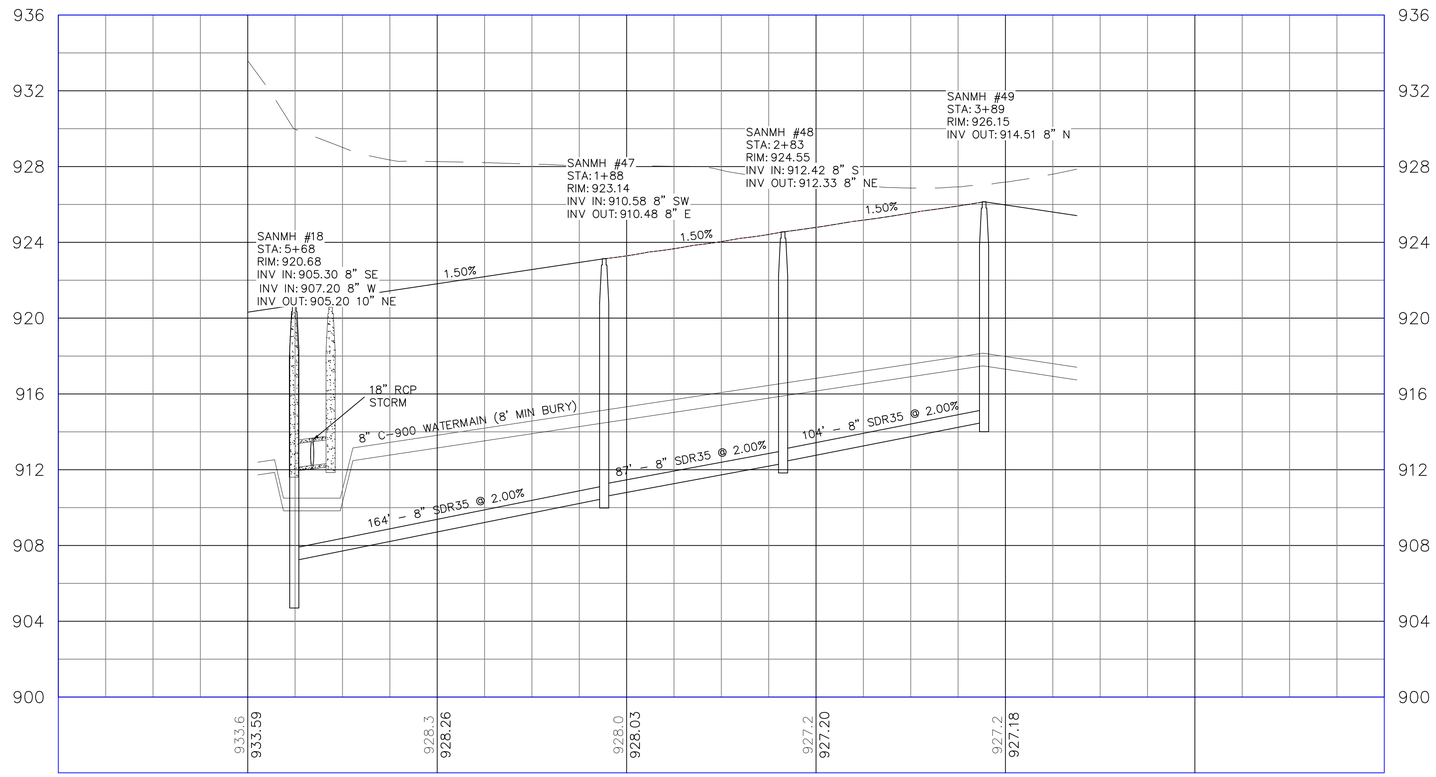
CHECKED BY: JVS	DRAWN BY: JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP11





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CONTENTS CONTAINED THEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET C

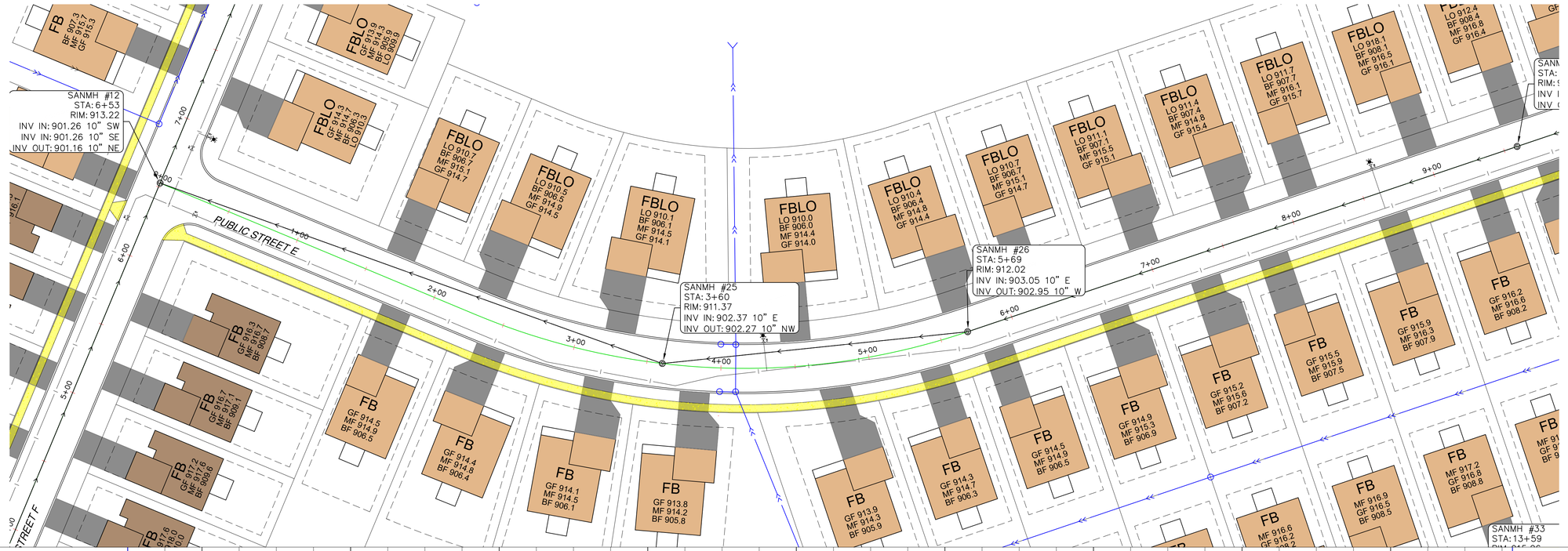
HANOVER, MN

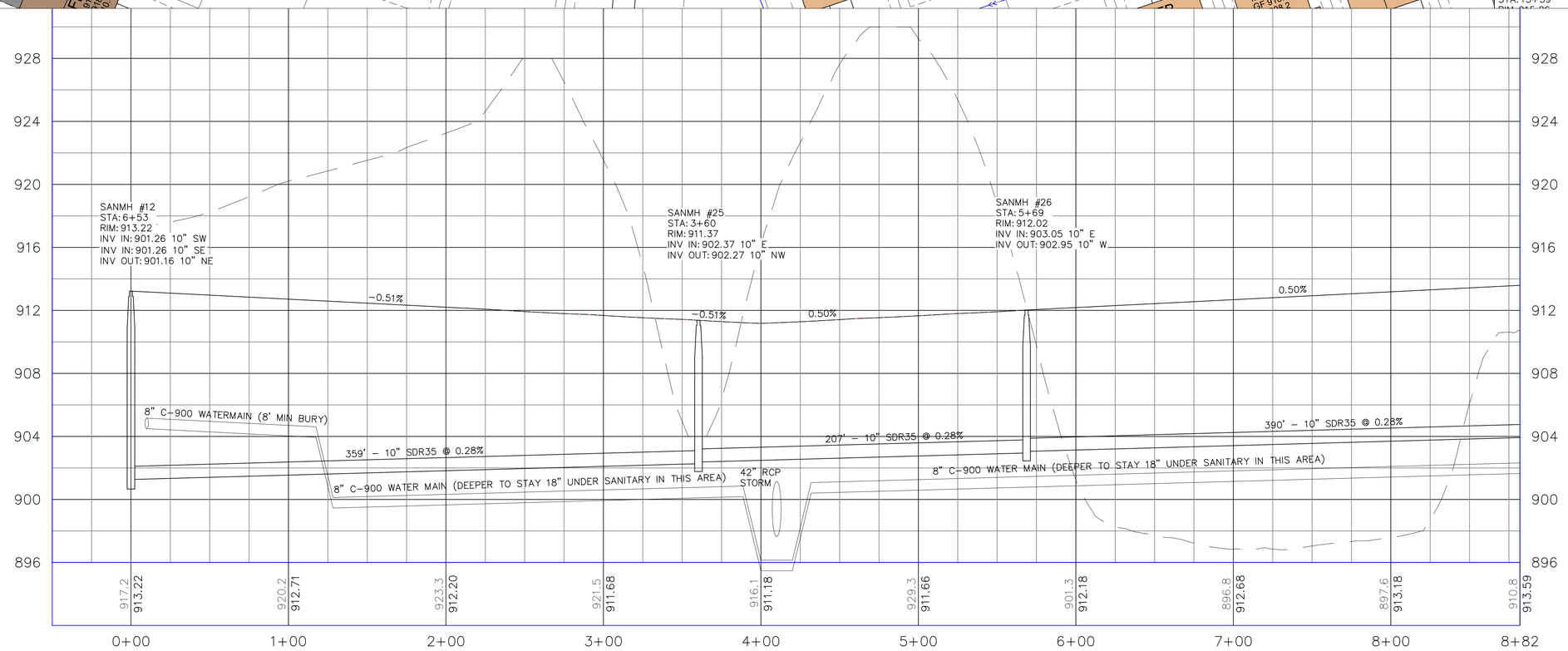
CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP12





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CONTENTS THEREIN OR ATTACHED DESIGN DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/20/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET E

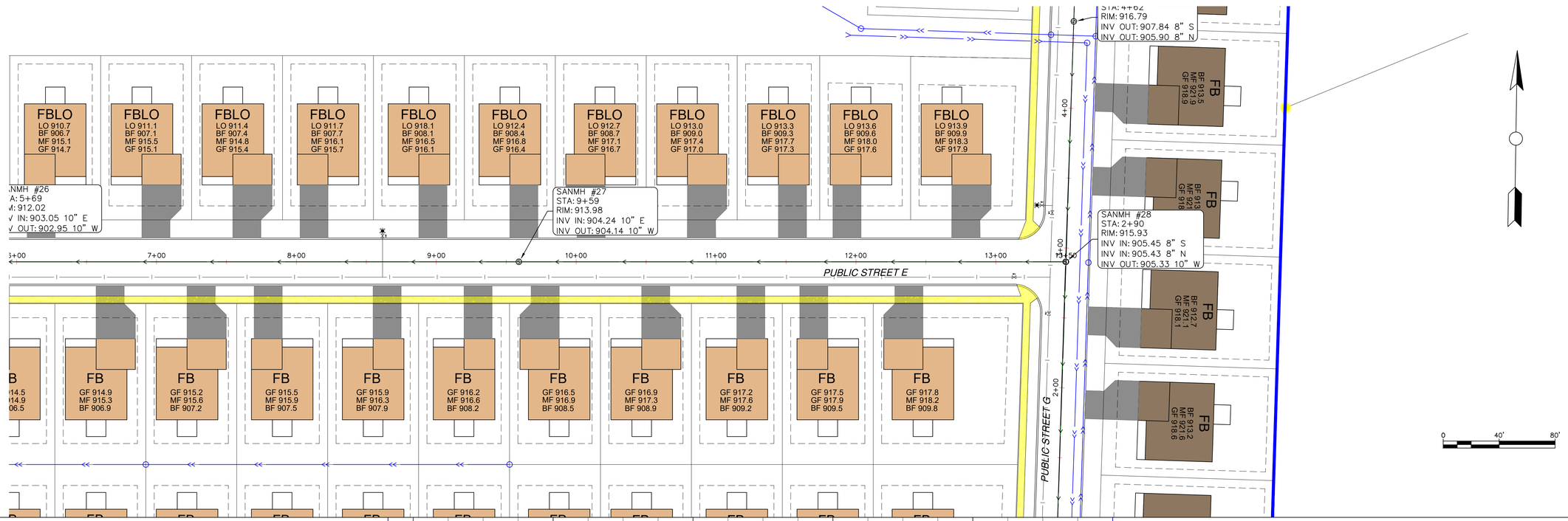
HANOVER, MN

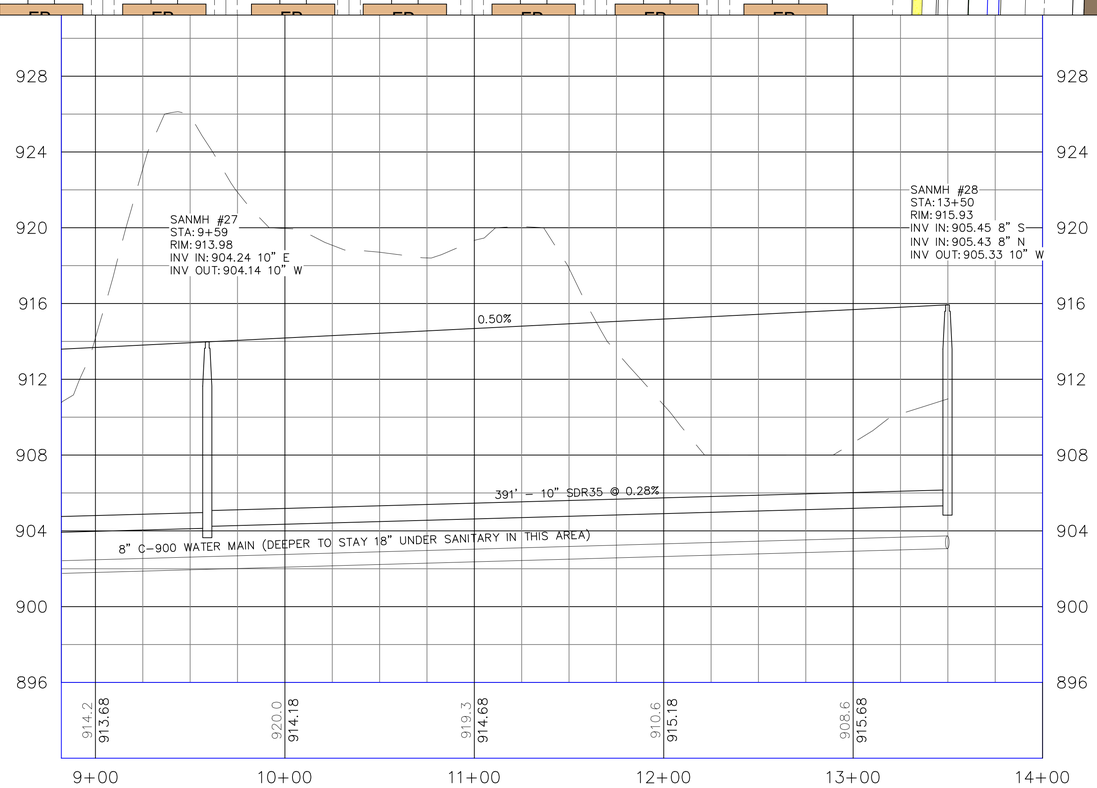
CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP13





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED THEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

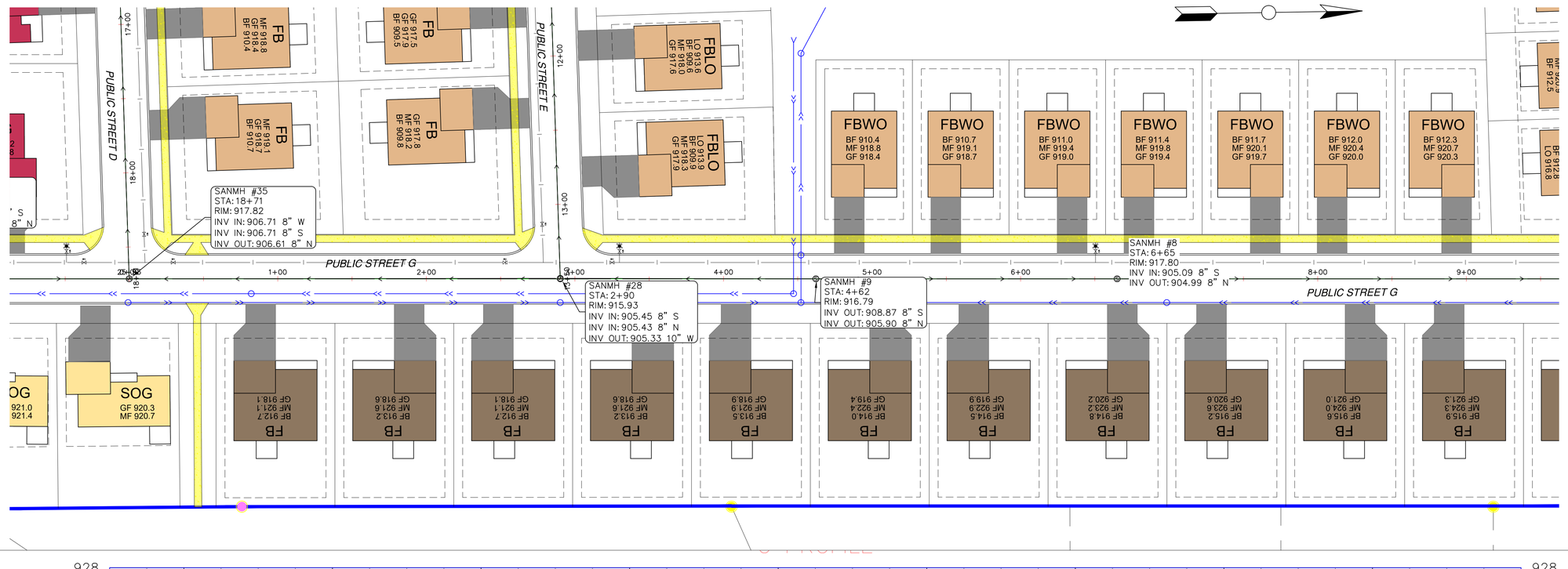
NAME: JASON VERSTEEG LIC. NO. 26505

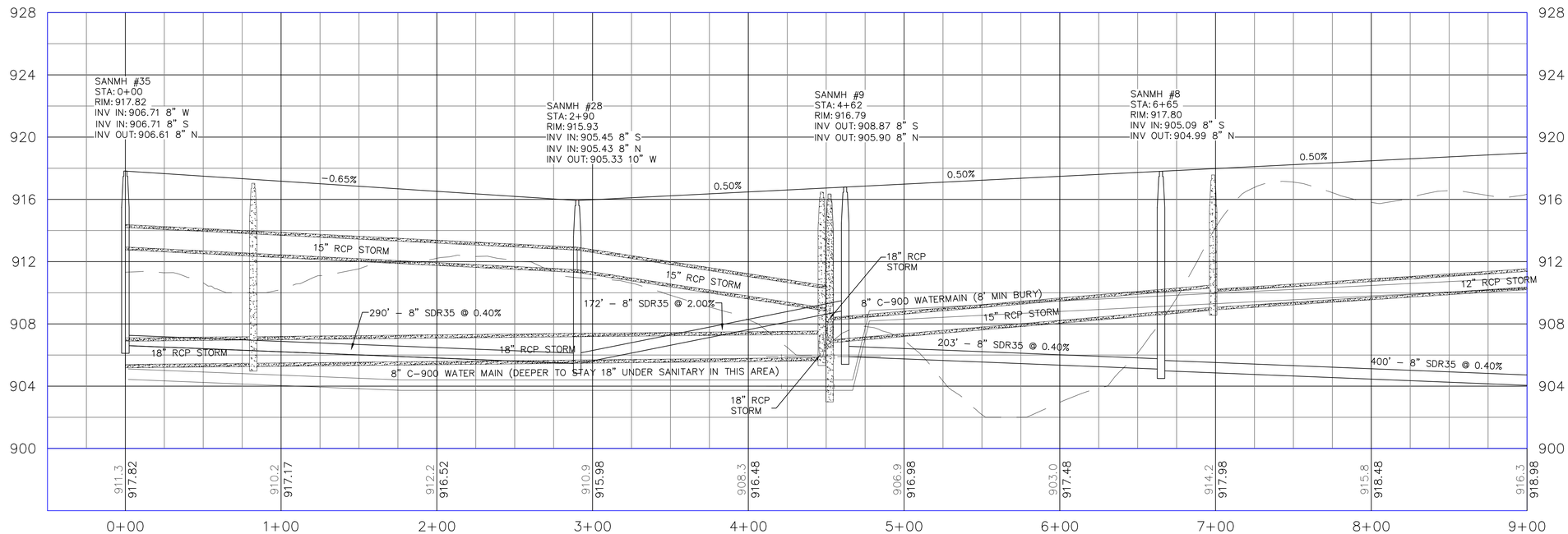
DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE – STREET E

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE GRAPHIC	
DATE JAN 10, 2019	
SHEET PP14	





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND TITLED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

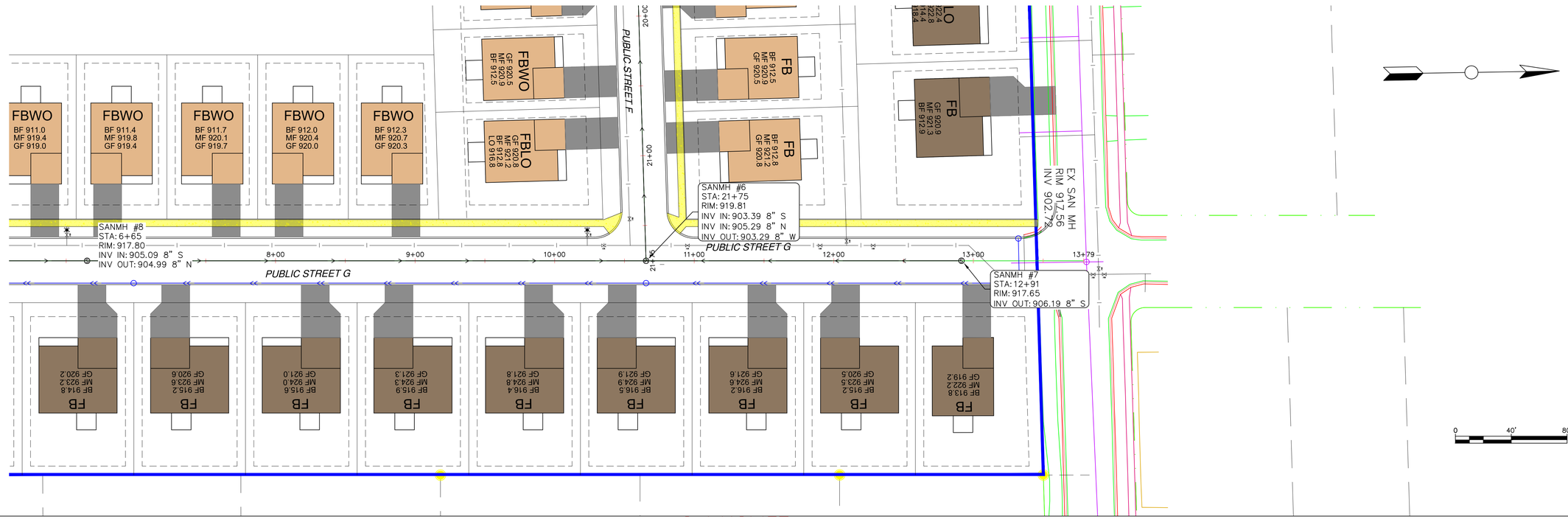
NAME: JASON VERSTEEG LIC. NO. 26505

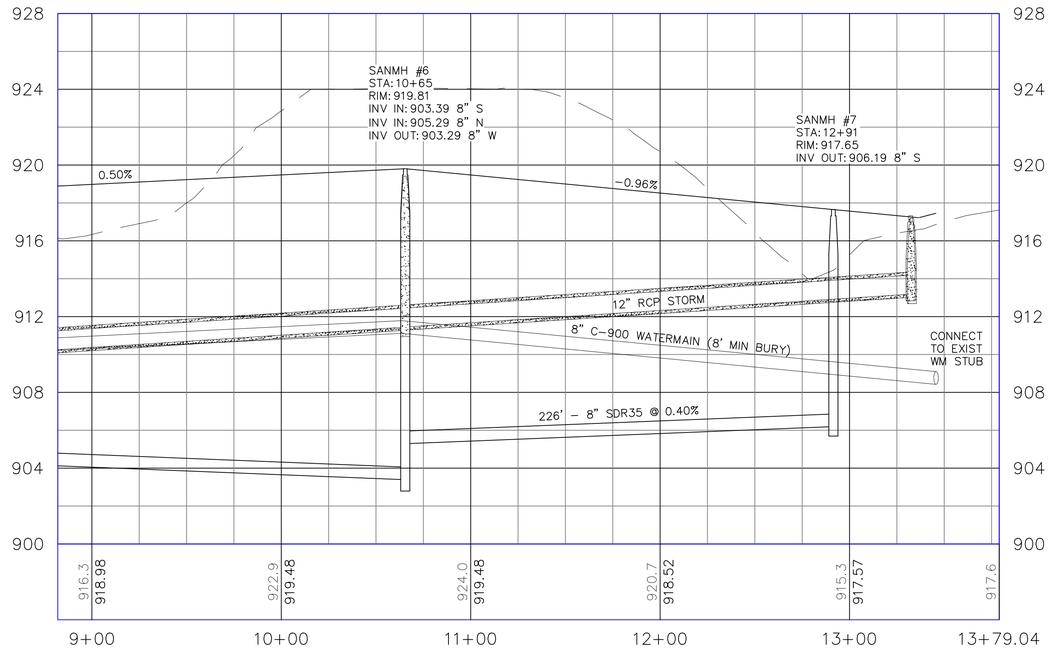
DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - STREET G

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE	GRAPHIC
DATE	JAN 10, 2019
SHEET	PP15





© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED HEREIN AND DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

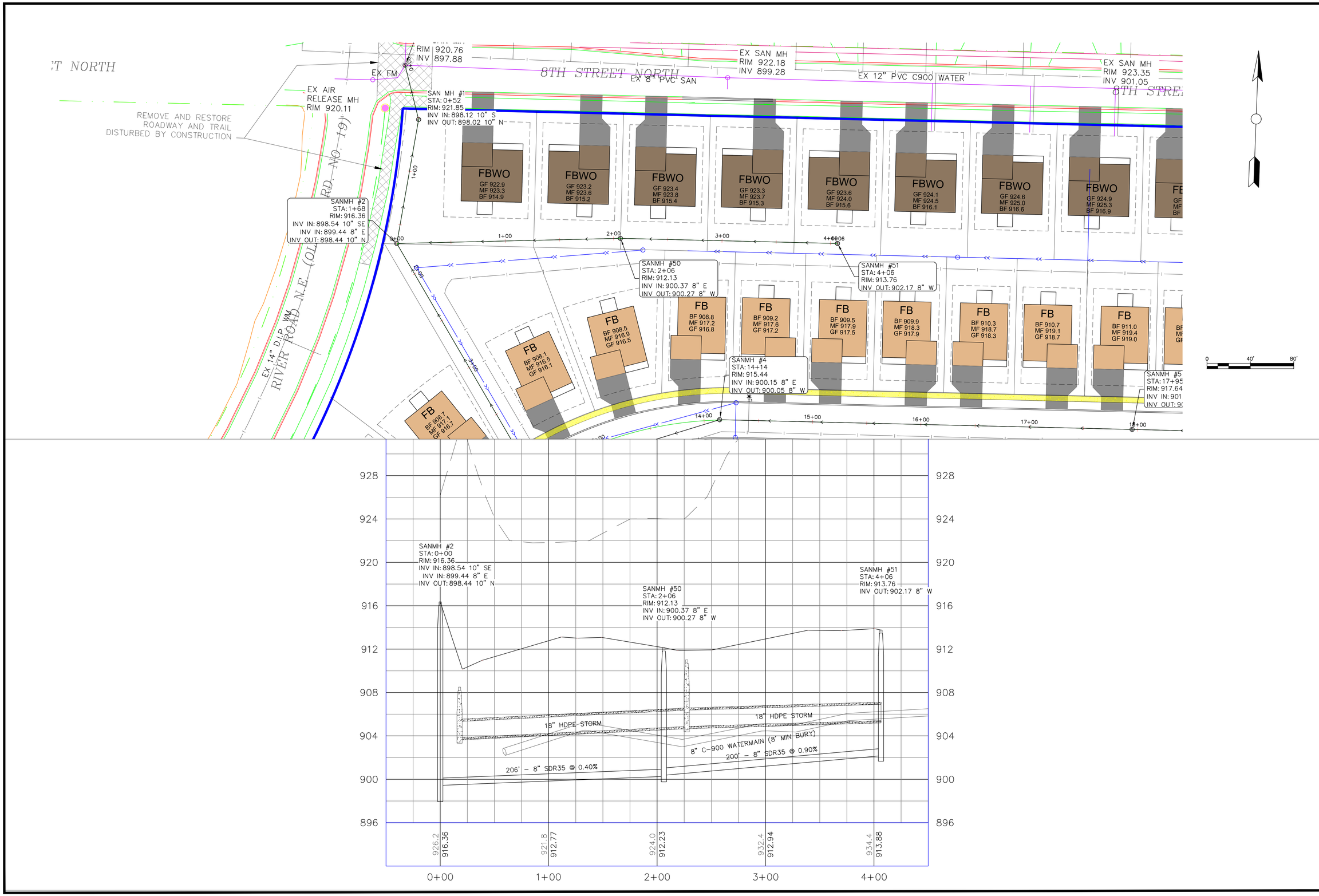
HANOVER COVE

PRELIMINARY ENGINEERING PLAN

PLAN AND PROFILE - STREET G

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS
SCALE	GRAPHIC
DATE	JAN 10, 2019
SHEET	PP16



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE DESIGN CONTAINED THEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
PLAN AND PROFILE - BACKYARDS

HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
PP17

GENERAL PROJECT INFORMATION

PROJECT NAME: HANOVER COVE
Hanover, MN COUNTY: Wright

DESCRIPTION OF CONSTRUCTION ACTIVITY

This project includes construction of land disturbance of 1.03 acres to realign an existing township road on land owned by Al Ranta. Work includes removals, grading, gravel surfacing, and turf establishment.

KNOWLEDGEABLE PERSON / CHAIN OF RESPONSIBILITY

Owner: Paxmar, LLC Phone: 952-250-9895

SWPPP Preparer: Duininck, Inc. Contact Person: Jason Ver Steeg Phone: 320-212-9339

Contractor: _____ Contact Person: _____ Phone: _____

Person Responsible for SWPPP Inspections/Maintenance: _____ Phone: _____

Long-term O&M: Paxmar, LLC and City of Hanover

TRAINING

The individual(s) listed as the SWPPP preparer must be trained. The individual(s) overseeing implementation of, revising, and amending the SWPPP, as well as performing inspections must be trained and also must be available for an onsite inspection within 72 hours upon request by the MPCA. The individual(s) performing or supervising the installation, maintenance and repair of BMP's must be trained.

Required Documentation:

1. Names of trained personnel assigned to this project.
2. Dates of training and entity providing the training.
3. Content of training course or workshop.
4. As an alternative to 1, 2, and 3, a photocopy of a current Erosion and Stormwater Management card, issued by the University of Minnesota can be attached to the SWPPP.

SPECIAL ENVIRONMENTAL CONCERNS

An Environmental Assessment Worksheet (EAW) was prepared for this site, and any applicable findings were incorporated into this Stormwater Pollution Prevention Plan.

The Contractor should be aware of the potential to impact the Blandings Turtle and the Rusty Patch Bumblebee. If either of these species are encountered, special care must be taken to avoid any impact and the Engineer must be notified. No protected archeological features were identified in the EAW.

This site does not drain to a Calcareous Fen.

PROJECT LOCATION

County: Wright Township: 120 N Range: 22 W Section(s): 36

Latitude: 45° 09' 35" Longitude: -93° 39' 21"

PROJECT AREA CALCULATIONS

Total Project Area: 82.56 Acres

Total Disturbed Area: 82.56 Acres

Existing Impervious Area: 0.06 Acres

Post- construction Impervious Area: 31.35 Acres

New Impervious Surface Area Created: 31.29 Acres

NPDES Permit Required?: Yes (Apply at least 7 days prior to land disturbance)

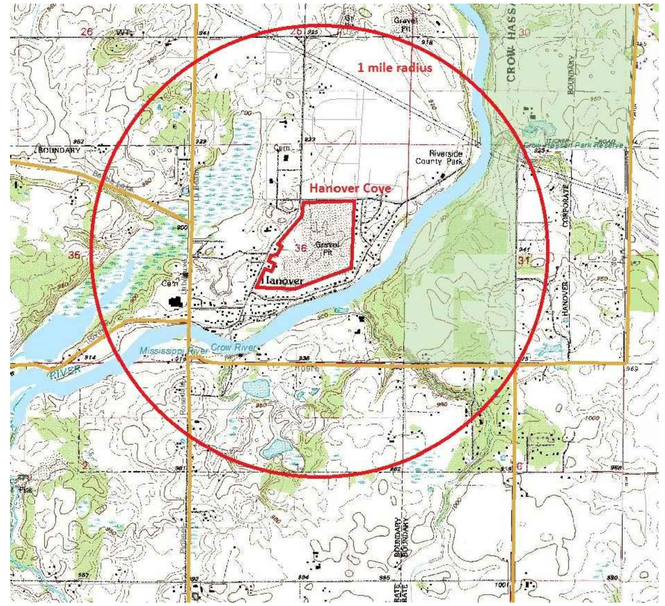
Permanent Storm Water Management Required?: No

PROJECT TIMING

Estimated Construction Start Date: March 1, 2019

Estimated Construction Completion Date: December 31, 2025

USGS QUAD MAP



RECEIVING WATERS

Receiving water (including surface water, wetlands, or stormwater ponds) within 1 mile are shown on the USGS 7.5 min quad map above and further identified in the list below, including whether the surface water is a special or impaired water. All special measures required by the NPDES permit or TMDL study to address runoff into special or impaired waters have been incorporated into the plan.

Name of Water Body	Type (ditch, pond, wetland, lake, etc.)	Appendix A Special Water	Flows to Impaired Water within 1 mi?	USEPA Appr. TMDL?
Crow River	River	No	Yes	No

PERMANENT STORMWATER MANAGEMENT SYSTEM

Type of permanent storm water management:

- Wet sedimentation basin X
- Infiltration / Filtration X
- Regional Pond ____
- Not required ____

All design calculations required to comply with Part III of the Permit are on file at the office of the Civil Engineer of record. In cases where compliance with temporary or permanent storm water management design requirements are infeasible, documentation of infeasibility is also on on file at the office of the Civil Engineer of record.

PLAN SHEETS

The following sheets are incorporated into the SWPPP by reference:

Grading and Drainage Plan
Erosion Control Plan

USDA SCS SOIL SURVEY MAP

SOIL TYPE SUMMARY:

Map Unit Symbol	Map Unit Name	Hyd Soil Group
1015	Udipsamments (cut and fill land)	A
1033	Pits, gravel-Udipsamments complex	A
1066B	Malardi-Hawick complex, 1 to 6 percent slopes	A

BMP QUANTITIES

Construction Entrance	2 LS
Silt Fence (Machine-Sliced)	8,580 LF
Inlet Protection	88 EACH
Seeding	54.0 ACRES

ORDER OF CONSTRUCTION ACTIVITIES

- Install Erosion Control Items
- Install Temporary Tracking Control
- Clearing and Grubbing
- Mass Site Grading
- Sanitary Sewer, Storm Sewer, Watermain Installation
- Aggregate Base Installation
- Curb and Gutter Installation
- Bituminous Pavement Installation
- Turf Establishment
- Individual Lot/House Construction

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
STORMWATER POLLUTION PREVENTION PLAN
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE: GRAPHIC

DATE: JAN 10, 2019

SHEET: SWPPP1

EROSION CONTROL NOTES

- Appropriate BMPs such as construction phasing, vegetative buffer strips, horizontal slope grading, inspection and maintenance of Part IV.E. and other construction practices that minimize erosion as necessary must be planned and implemented
- The location of areas not to be disturbed must be delineated (e.g.,with flags, stakes, signs, silt fence etc.) on the project site before work begins.
- Disturbance of portions of the project that have steep slopes must be minimized. In locations that steep slopes must be disturbed, techniques such as phasing and stabilization practices designed for steep slopes (e.g., slope draining and terracing) must be used.
- All exposed soil areas (including stockpiles) must be stabilized. Stabilization must be initiated immediately to limit soil erosion whenever any construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed no later than 14 calendar days after the construction activity in that portion of the site has temporarily or permanently ceased. For Public Waters that the Minnesota Department of Natural Resources has promulgated "work in water restrictions" during specified 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 the stabilization activities within 24 hours during the restriction period. Temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) and the constructed base components of roads, parking lots and similar surfaces are exempt from this requirement but must comply with the requirements of "Sediment Control Practices, Item 3."
- Stormwater conveyance channels must be routed around unstabilized areas on the site to reduce erosion, unless infeasible.
- Erosion controls and velocity dissipation devices such as check dams, sediment traps, riprap, or grouted riprap at outlets shall be used within and along the length of any constructed stormwater conveyance channel, and at any outlet.
- The normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the site, within 200 lineal feet from the property edge, or from the point of discharge into any surface water must be stabilized. Stabilization of the last 200 lineal feet must be completed within 24 hours after connecting to a surface water or property edge. Stabilization of the remaining portions of any temporary or permanent ditches or swales must be stabilized within 14 calendar days after connecting to a surface water or property edge and construction in that portion of the ditch has temporarily or permanently ceased. Temporary or permanent ditches or swales that are being used as a sediment containment system during construction (with properly designed rock ditch checks, bio rolls, silt dikes, etc.) do not need to be stabilized during the temporary period of its use as a sediment containment system. These areas must be stabilized within 24 hours after no longer being used as a sediment containment system. Applying mulch, hydromulch, tackifier, polyacrylamide or similar erosion prevention practices is not acceptable stabilization in any part of a temporary or permanent drainage ditch or swale.
- Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours after connection to a surface water.
- Unless infeasible due to lack of pervious or vegetated areas, discharges from BMPs must be directed to vegetated areas of the site (including any natural buffers). The Permittee(s) must use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.

RECORD RETENTION

The SWPPP (original or copies) including, all changes to it, and inspections and maintenance records must be kept at the site during construction by the party who has/have operational control of that portion of the site. The SWPPP can be kept in either the field office or in an on-site vehicle during normal working hours. All owner(s) must keep the following records on file for three (3) years after submittal of the NOT:

1. The final SWPPP
2. Any other stormwater related permits required for the project
3. Records of all inspection and maintenance conducted during construction
4. All permanent operation and maintenance agreements that have been implemented, including all right-of-way, contracts, covenants and other binding requirements regarding perpetual maintenance
5. All required calculations for design of the temporary and permanent Stormwater Management Systems identified in the SWPPP.

SEDIMENT CONTROL PRACTICES

- Sediment control practices shall be employed as necessary to minimize sediment from entering surface waters, including curb and gutter systems and storm sewer inlets.
- Sediment control practices must be established on all down gradient perimeters and be located upgradient of any buffer zones. The perimeter sediment control practice must be in place before any upgradient land-disturbing activities begin. These practices shall remain in place until final stabilization has been established.
- Sediment control practices that have been adjusted or removed to accommodate short-term activities such as cleaning or grubbing, or passage of vehicles, shall be re-installed immediately after the short-term activity has been completed, or before the next precipitation event, whichever comes first.
- All storm drain inlets must be protected by appropriate BMPs during construction until all sources with potential for discharging to the inlet have been stabilized. Inlet protection may be removed for a particular inlet if a specific safety concern (street flooding/freezing) has been identified by the permittee or the jurisdictional authority (e.g., city/county/township/MnDOT engineer). Documentation of the need for removal must be included in the SWPPP.

SEDIMENT CONTROL PRACTICES (cont)

- Temporary soil stockpiles must have silt fence or other effective sediment controls, and cannot be placed in any natural buffers or surface waters, including stormwater conveyances such as curb and gutter systems, or conduits and ditches unless there is a bypass in place for the stormwater.
- Where vehicle traffic leaves any part of the site (or onto paved roads within the site),a vehicle tracking BMP to minimize the track out of sediment from the construction site. Examples of vehicle tracking BMPs include (but are not limited to) rock pads, mud mats, slash mulch, concrete or steel wash racks, or equivalent systems. Where such vehicle tracking BMPs are not adequate to prevent sediment from being tracked onto the street, street sweeping shall be used.
- Soil compaction shall be minimized in all areas except where the function of a specific area of the site dictates that it be compacted.
- All topsoil shall be preserved, unless infeasible.
- A 50 foot natural buffer shall be maintained, or (if a buffer is infeasible on the site) redundant sediment controls provided, when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water. Natural buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets, and sediment basins.
- The use of polymers, flocculants, or other sedimentation treatment chemicals on the project site must comply with the following minimum requirements: 1) Conventional erosion and sediment controls must be used prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control system which allows for filtration or settlement of the floc prior to discharge. 2) Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction, and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area. 3) Chemicals must be used in accordance with accepted engineering practices, and with dosing specifications and sediment removal design specifications provided by the manufacturer or provider/supplier of the applicable chemicals.

DEWATERING AND BASIN DRAINING

- Turbid or sediment-laden waters related to dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) must be discharged to a temporary or permanent sedimentation basin on the project site unless infeasible. The temporary or permanent sedimentation basins 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 nuisance conditions will not result from the discharge. If the water cannot be discharged to a sedimentation basin prior to entering the surface water, it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream properties. If water containing oil or grease must be discharged, an oil-water separator or suitable filtration device (e.g. cartridge filters, absorbents pads) must be used prior to discharging the water.
- Discharge points must be adequately protected from erosion and scour by dispersion over natural rock riprap, sand bags, plastic sheeting, or other accepted energy dissipation measures.
- All water from dewatering or basin-draining activities must be discharged in a manner that does not cause nuisance conditions, erosion in receiving channels or on downslope properties, or inundation in wetlands causing significant adverse impact to the wetland.
- If filters with backwash water are being used, the backwash water must be hauled away for disposal, returned to the beginning of the treatment process, or incorporated into the site in a manner that does not cause erosion. Backwash water may be discharged to the sanitary sewer if permission is granted by the sanitary sewer authority. The filter media used in the dewatering device must be replaced and cleaned when required to retain adequate function.

POLLUTION PREVENTION MANAGEMENT MEASURES

- Building products that have the potential to leach pollutants must be under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by a similarly effective means designed to minimize contact with stormwater.
- Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials must be under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by similarly effective means designed to minimize contact with stormwater.
- Hazardous materials, toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) must be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste or hazardous materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable.
- Solid waste must be stored, collected and disposed of properly 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.

POLLUTION PREVENTION MANAGEMENT MEASURES (cont)

- Fueling and Maintenance of Equipment or Vehicles; Spill Prevention and Response: Reasonable steps must be taken to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded, including the use of drip pans or absorbents, and fueling in a contained area, unless infeasible. Adequate supplies must be available at all times to clean up discharged materials and an appropriate disposal method must be available for recovered spilled materials. Spills must be reported and cleaned up immediately as required by Minn. Stat. § 115.061, using dry clean up measures where possible.
- Vehicle and equipment washing: Washing the exterior of vehicles or equipment on the project site must be limited to a defined area of the site. Runoff from the washing area must be contained in a sediment basin or other similarly effective controls and waste from the washing activity must be properly disposed of. Soaps, detergents, or solvents must be properly used. No engine degreasing is allowed on site.
- Concrete and other washouts waste: Effective containment must be provided for all liquid and solid wastes generated by washout operations (concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the construction activity. The liquid and solid washout wastes must not contact the ground, and the containment must be designed so that it does not result in runoff from the washout operations or areas. Liquid and solid wastes must be disposed of properly and in compliance with MPCA rules. 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.

TEMPORARY SEDIMENTATOIN BASINS

Where ten (10) or more acres of disturbed soil drain to a common location, a temporary sediment basin must be provided to treat the runoff before it leaves the construction site or enters surface waters. A temporary sediment basin may be converted to a permanent basin after construction is complete. The temporary basin is no longer required when permanent cover has reduced the acreage of disturbed soil to less than ten (10) acres draining to a common location. The basins must be designed and constructed according to the following requirements:

1. The basins must provide live storage for a calculated volume of runoff from a two-year, 24-hour storm from each acre drained to the basin, except that in no case shall the basin provide less than 1,800 cubic feet of live storage from each acre drained to the basin.
2. Where this calculation has not been performed, a temporary sediment basin providing 3,600 cubic feet of live storage per acre drained to the basin shall be provided for the entire drainage area of the temporary basin.
3. Temporary basin outlets must be designed to prevent short-circuiting and the discharge of floating debris. The basin must be designed with the ability to allow complete basin drawdown for maintenance activities, and must include a stabilized emergency overflow to prevent failure of pond integrity. The outlet structure must be designed to withdraw water from the surface in order to minimize the discharge of pollutants, except that the use of a surface withdrawal mechanism for discharge of the basin may be temporarily suspended during frozen conditions. Energy dissipation must be provided for the basin outlet.
4. Sediment Basins must be situated outside of surface waters and any required buffer zone required and must be designed to avoid draining water from wetlands unless the impact to the wetland.
5. The temporary basins must be constructed and made operational prior to 10 or more acres of disturbed soil draining to a common location.
6. Where a temporary sediment basin meeting the requirements of this part is infeasible, equivalent sediment controls such as smaller sediment basins, and/or sediment traps, silt fences, vegetative buffer strips, or any appropriate combination of measures are required for all down-]slope boundaries of the construction area and for side-slope boundaries as dictated by individual site conditions. In determining whether installing a sediment basin is infeasible, public safety must be considered, as well as other factors such as site soils, slope, and available area on site. This determination of infeasibility must be documented in the SWPPP

INSPECTIONS AND MAINTENANCE

- A properly trained person must routinely inspect the entire construction site at least once every seven (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 seven (7) days after the rainfall event.
- All inspections and maintenance conducted during construction must be recorded within 24 hours in writing and these records must be retained with the SWPPP. Records of each inspection and maintenance activity shall include: a.) Date and time of inspections b.) Name of person(s) conducting inspections c.) Findings of inspections, including the specific location where corrective actions are needed d.) Corrective actions taken (including dates, times, and party completing maintenance activities) e.) Date and amount of all rainfall events greater than 1/2 inch (0.5 inches) in 24 hours. Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, a weather station that is within 1 mile of your location or a weather reporting system that provides site specific rainfall data from radar summaries. f.) If any discharge is observed to be occurring during the inspection, a record of all points of the property from which there is a discharge must be made, and the discharge should be described (i.e., color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of pollutants) and photographed. g.) Any amendments to the SWPPP proposed as a result of the inspection must be documented within seven (7) calendar days.

INSPECTIONS AND MAINTENANCE (cont)

Inspection Frequency Adjustment: Where parts of the project site have permanent cover, but work remains on other parts of the site, the Permittee(s) may reduce inspections of the areas with permanent cover to once per month. Where construction sites have permanent cover on all exposed soil areas and no construction activity is occurring anywhere on the site, the site must be inspected during non-frozen ground conditions at least once per month for a period of twelve (12) months. Following the twelfth month of permanent cover and no construction activity, inspections may be terminated until construction activity is once again initiated unless the Permittee(s) is/are notified in writing by the MPCA that erosion issues have been detected at the site and inspections need to resume. Where work has been suspended due to frozen ground conditions, the inspections may be suspended. The required inspections and maintenance schedule must begin within 24 hours after runoff occurs at the site or 24 hours prior to resuming construction, whichever comes first.

The temporary and permanent water quality management BMPs must be inspected, as well as all erosion prevention and sediment control BMPs, until responsibility for inspections and maintenance has been transferred by submitting notice to the MPCA, or the project has undergone Final Stabilization, and an NOT has been submitted to the MPCA.

As part of each and every routine and post-rainfall event inspection, all erosion prevention and sediment control BMPs and Pollution Prevention Management Measures must be inspected to ensure integrity and effectiveness. All nonfunctional 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, unless another time frame is specified below:

a. All perimeter control devices must be repaired, replaced, or supplemented when they become nonfunctional 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 thereafter as soon as field conditions allow access.

b. Temporary and permanent sedimentation 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 removal must be completed within 72 hours of discovery, or as soon as field conditions allow access

c. Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of erosion and sediment deposition during each inspection. All deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems, must be removed and restabilized. The removal and stabilization must take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. All reasonable efforts must be used to obtain access. If precluded, removal and stabilization must take place within seven (7) calendar days of obtaining access. All applicable local, regional, state and federal authorities must be contacted and any applicable permits received, prior to conducting any work in surface waters.

d. 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.

e. 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 frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).

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

FINAL STABILIZATION

Final Stabilization of the site must be assured. Final Stabilization is not complete until all of the following requirements are complete:

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 percent 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. The permanent stormwater management system is constructed according to the plans 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 (such as silt fence) have been removed. BMPs designed to decompose on site (such as some compost logs) may be left in place.
4. For residential construction only, individual lots are considered finally stabilized if the structure(s) are finished and temporary erosion protection and down-gradient perimeter control has been completed and the residence has been sold to the homeowner. Additionally, the MPCA's "Homeowner Fact Sheet" must be delivered to the homeowner to inform the homeowner of the need for, and benefits of, permanent cover.
5. For construction projects on agricultural land (e.g., pipelines across crop, field pasture or range land) the disturbed land has been returned to its pre-construction agricultural use.

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

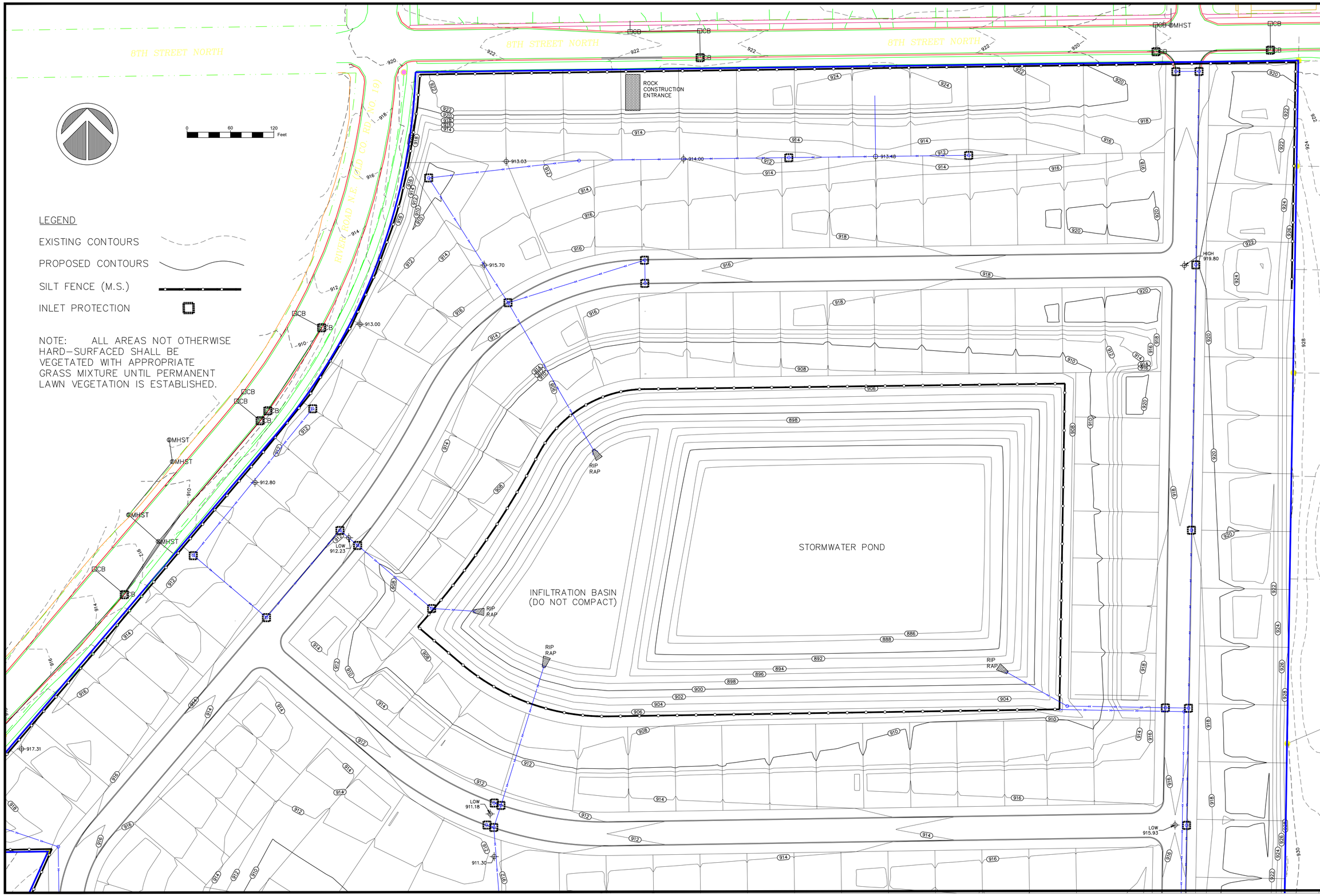
HANOVER COVE
PRELIMINARY ENGINEERING PLAN
STORMWATER POLLUTION PREVENTION PLAN
HANOVER, MN

CHECKED BY: JVS	DRAWN BY: JVS

SCALE: GRAPHIC

DATE: JAN 10, 2019

SHEET: SWPPP2



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
EROSION CONTROL PLAN (NORTH)

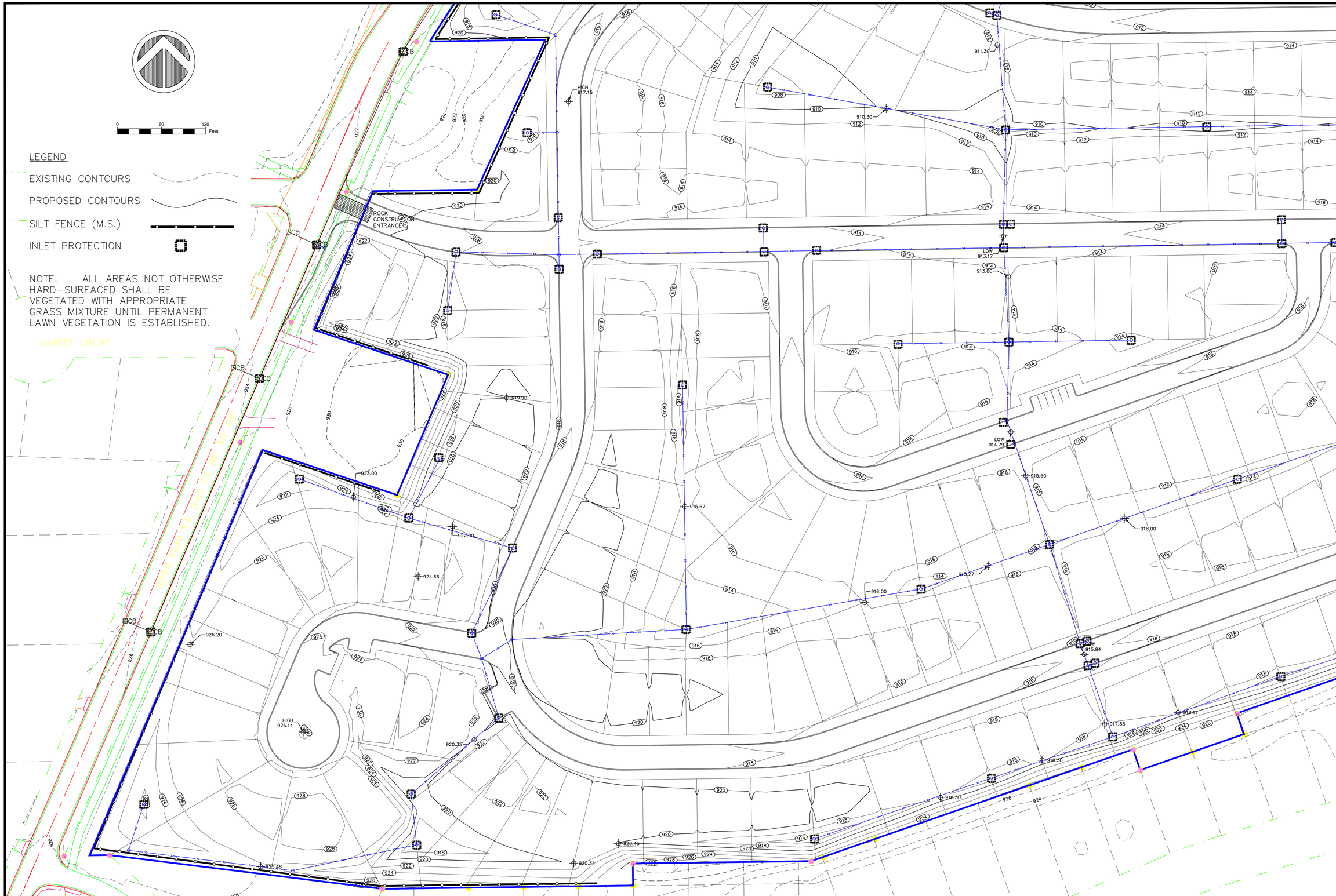
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
EC1



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
EROSION CONTROL PLAN (SOUTHWEST)

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
EC2

LEGEND

EXISTING CONTOURS

PROPOSED CONTOURS

SILT FENCE (M.S.)

INLET PROTECTION

NOTE: ALL AREAS NOT OTHERWISE HARD-SURFACED SHALL BE VEGETATED WITH APPROPRIATE GRASS MIXTURE UNTIL PERMANENT LAWN VEGETATION IS ESTABLISHED.

0 60 120 Feet

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK

PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE

PRELIMINARY ENGINEERING PLAN

EROSION CONTROL PLAN (SOUTHEAST)

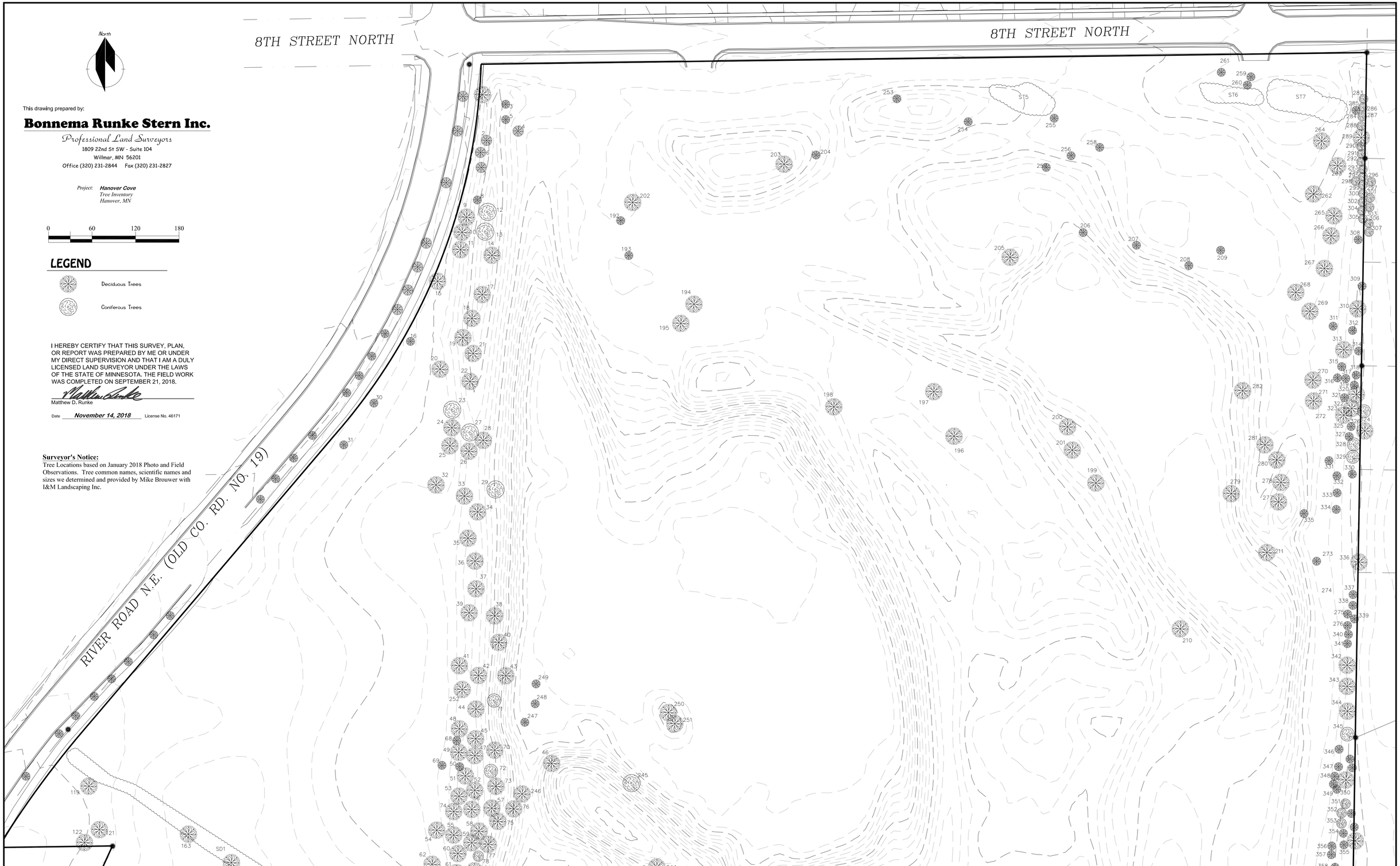
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2018

SHEET
EC3



This drawing prepared by:

Bonnema Runke Stern Inc.

Professional Land Surveyors

1809 22nd St SW - Suite 104

Willmar, MN 56201

Office (320) 231-2844 Fax (320) 231-2827

Project: ***Hanover Cove***
Tree Inventory
Hanover, MN

0 60 120 180

LEGEND

Deciduous Trees

Coniferous Trees

I HEREBY CERTIFY THAT THIS SURVEY, PLAN, OR REPORT 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. THE FIELD WORK WAS COMPLETED ON SEPTEMBER 21, 2018.

Matthew D. Runke

Date ***November 14, 2018*** License No. 46171

Surveyor's Notice:
Tree Locations based on January 2018 Photo and Field Observations. Tree common names, scientific names and sizes we determined and provided by Mike Brouwer with I&M Landscaping Inc.

Survey Requested By: **Duininck Inc.**

© BONNEMA RUNKE STERN INC 2018

Tree Inventory - Sheet 1 of 5

Survey Requested By: **Duininck Inc.**

© BONNEMA RUNKE STERN INC 2018

Tree Inventory - Sheet 2 of 5

This drawing prepared by:

Bonnema Runke Stern Inc.

Professional Land Surveyors

1809 22nd St SW - Suite 104
Willmar, MN 56201
Office (320) 231-2844 Fax (320) 231-2827

Project: ***Hanover Cove***
Tree Inventory
Hanover, MN

Survey Requested By: **Duininck Inc.**

© BONNEMA RUNKE STERN INC 2018

Tree Inventory - Sheet 3 of 5

ID#	Size	common name	Scienfic Name
1	8"	Green Ash	Fraxinus Pennsylvanica
2	8"	Flowering Crab apple	Malus "Hopa"
3	6-8"	Lombardy Popluar	Populus Tremula
4	12"	Cottonwood	Populus Deltoides
5	10"	Lombardy Popluar	Populus Tremula
6	6"	Lombardy Popluar	Populus Tremula
7	10"	Green Ash	Fraxinus Pennsylvanica
8	8"	Green Ash	Fraxinus Pennsylvanica
9	6"	Flowering Crabapple	Malus "Hopa"
10	6"	Green Ash	Fraxinus Pennsylvanica
11	8"	Green Ash	Fraxinus Pennsylvanica
12	7"	Scotch Pine	Pinus Sylvestris
13	9"	Scotch Pine	Pinus Sylvestris
14	6"	Cotton Wood	Populus Deltoides
15	8"	Flowering Crabapple	Malus "Hopa"
16	6"	Flowering Crabapple	Malus "Hopa"
17	8"	Green Ash	Fraxinus Pennsylvanica
18	9"	Green Ash	Fraxinus Pennsylvanica
19	6"	Flowering Crabapple	Malus "Hopa"
20	20"	Chinese Elm	Ulmus Parvifolia
21	6"	Green Ash	Fraxinus Pennsylvanica
22	8"	Green Ash	Fraxinus Pennsylvanica
23	8"	Scotch Pine	Pinus Sylvestris
24	8"	Green Ash	Fraxinus Pennsylvanica
25	7"	Green Ash	Fraxinus Pennsylvanica
26	8"	Flowering Crabapple	Malus "Hopa"
27	6"	Eastern Red Cedar	Juniperus Virginiana
28	6"	Lombardy Popluar	Populus Tremula
29	5"	Eastern Red Cedar	Juniperus Virginiana
30	10"	Green Ash	Fraxinus Pennsylvanica
31	8"	Chinese Elm	Ulmus Parvifolia
32	7"	Box Elder	Acer Negundo
33	7"	Flowering Crabapple	Malus "Hopa"
34	6"	Flowering Crabapple	Malus "Hopa"
35	6"	Green Ash	Fraxinus Pennsylvanica
36	8"	Box Elder	Acer Negundo
37	6"	Flowering Crabapple	Malus "Hopa"
38	8"	Green Ash	Fraxinus Pennsylvanica
39	12"	Box Elder	Acer Negundo
40	8"	Box Elder	Acer Negundo
41	10"	Box Elder	Acer Negundo
42	8"	Flowering Crabapple	Malus "Hopa"
43	6"	Green Ash	Fraxinus Pennsylvanica
44	9"	Box Elder	Acer Negundo
45	12"	Box Elder	Acer Negundo
46	7"	Chinese Elm	Ulmus Parvifolia
47	10"	American Elm	Ulmus Americana
48	12"	Box Elder	Acer Negundo
49	8"	Box Elder	Acer Negundo
50	8"	Box Elder	Acer Negundo
51	6"	Box Elder	Acer Negundo
52	6"	Flowering Crabapple	Malus "Hopa"
53	18"	Box Elder	Acer Negundo
54	8"	Box Elder	Acer Negundo
55	6"	Box Elder	Acer Negundo
56	8"	Box Elder	Acer Negundo
57	8"	Box Elder	Acer Negundo
58	6"	Box Elder	Acer Negundo
59	8"	Box Elder	Acer Negundo
60	8"	Box Elder	Acer Negundo
61	8"	Box Elder	Acer Negundo
62	8-10"	Box Elder	Acer Negundo
63	7-8"	Flowering Crabapple	Malus "Hopa"
64	6"	Chinese Elm	Ulmus Parvifolia
65	12 dia	Eastern Red Cedar	Juniperus Virginiana
66	12 dia	Eastern Red Cedar	Juniperus Virginiana
67	12 dia	Eastern Red Cedar	Juniperus Virginiana
68	7"	Box Elder	Acer Negundo
69	8"	Flowering Crabapple	Malus "Hopa"
70	6"	Flowering Crabapple	Malus "Hopa"
71	12 dia	Eastern Red Cedar	Juniperus Virginiana
72	12 dia	Eastern Red Cedar	Juniperus Virginiana
73	6-7"	Flowering Crabapple	Malus "Hopa"
74	7-8"	Flowering Crabapple	Malus "Hopa"
75	6"	Green Ash	Fraxinus Pennsylvanica
76	6"	American Elm	Ulmus Americana
77	6"	Green Ash	Fraxinus Pennsylvanica
78	12 dia	Eastern Red Cedar	Juniperus Virginiana
79	8"	Chinese Elm	Ulmus Parvifolia
80	6"	Flowering Crabapple	Malus "Hopa"
81	8-10"	Box Elder	Acer Negundo
82	6"	Chinese Elm	Ulmus Parvifolia
83	10"	American Elm	Ulmus Americana
84	8"	Green Ash	Fraxinus Pennsylvanica
85	6"	Flowering Crabapple	Malus "Hopa"
86	7-8"	American Elm	Ulmus Americana
87	8"	American Elm	Ulmus Americana
88	10"	Box Elder	Acer Negundo
89	12"	Green Ash	Fraxinus Pennsylvanica
90	8-10"	Box Elder	Acer Negundo

ID#	Size	common name	Scienfic Name
91	10"	Hackberry	Celtis occidentali
92	6-7"	Green Ash	Fraxinus Pennsylvanica
93	9"	Green Ash	Fraxinus Pennsylvanica
94	6-7"	Cotton Wood	Populus Deltoides
95	8"	Cotton Wood	Populus Deltoides
96		Green Ash	Fraxinus Pennsyvanica
97	12 dia	Eastern Red Cedar	Juniperus Virginiana
98	8"	Green Ash	Fraxinus Pennsyvanica
99	18 clump	Silver Maple	Acer saccharinum
100	7-8"	Green Ash	Fraxinus Pennsyvanica
101	12 dia	Eastern Red Cedar	Juniperus Virginiana
102	10"	Cotton Wood	Populus Deltoides
103	8"	Cotton Wood	Populus Deltoides
104	18"	Cotton Wood	Populus Deltoides
105	14"	Cotton Wood	Populus Deltoides
106	7"	Chinese Elm	Ulmus Parvifolia
107	12"	Cotton Wood	Populus Deltoides
108	20 dia	Eastern Red Cedar	Juniperus Virginiana
109	7"	Chinese Elm	Ulmus Parvifolia
110	14 dia	Eastern Red Cedar	Juniperus Virginiana
111	12 dia	Eastern Red Cedar	Juniperus Virginiana
112	12 dia	Eastern Red Cedar	Juniperus Virginiana
113	12 dia	Eastern Red Cedar	Juniperus Virginiana
114	7-9"	Chinese Elm	Ulmus Parvifolia
115	7"	Box Elder	Acer Negundo
116	12"	Cotton Wood	Populus Deltoides
117	12"	Cotton Wood	Populus Deltoides
118	12 dia	Black Hills Spruce	Picea glauca densatta
119	12 dia	Green Ash	Fraxinus Pennsyvanica
120	8"	Box Elder	Acer Negundo
121	2' clump	Silver Maple	Acer saccharinum
122	6"	Chinese Elm	Ulmus Parvifolia
123	8"	White Spruce	Picea Glauca
124	10"	Silver Maple	Acer saccharinum
125	8"	American Elm	Ulmus Americana
126	10"	Cotton Wood	Populus Deltoides
127		Tartarian Maple	Acer Tataricum
128	8"	Green Ash	Fraxinus Pennsyvanica
129	12 dia	Eastern Red Cedar	Juniperus Virginiana
130	12 dia	Eastern Red Cedar	Juniperus Virginiana
131	12 dia	Eastern Red Cedar	Juniperus Virginiana
132	12 dia	Eastern Red Cedar	Juniperus Virginiana
133	12 dia	Eastern Red Cedar	Juniperus Virginiana
134	12 dia	Eastern Red Cedar	Juniperus Virginiana
135	12 dia	Eastern Red Cedar	Juniperus Virginiana
136	12 dia	Eastern Red Cedar	Juniperus Virginiana
137	12 dia	Eastern Red Cedar	Juniperus Virginiana
138	10"	Chinese Elm	Ulmus Parvifolia
139	7"	Green Ash	Fraxinus Pennsyvanica
140	14 clump	Silver Maple	Acer saccharinum
141	8"	Silver Maple	Acer saccharinum
142	12"	American Elm	Ulmus Americana
143	6"	Swamp White Oak	Quercus Bicolor
144	10"	Hackberry	Celtis occidentali
145	8"	Chinese Elm	Ulmus Parvifolia
146	10"	American Elm	Ulmus Americana
147	14 dia	Eastern Red Cedar	Juniperus Virginiana
148	10"	Tartarian Maple	Acer Tataricum
149	8"	Flowering Crabapple	Malus "Hopa"
150	14 dia	Eastern Red Cedar	Juniperus Virginiana
151	14 dia	Eastern Red Cedar	Juniperus Virginiana
152	7-8"	Chinese Elm	Ulmus Parvifolia
153	6"	Tartarian Maple	Acer Tataricum
154	2' dia	Cottonwood	Populus Deltoides
155	10"	Box Elder	Acer Negundo
156	10"	Apple Tree	Malus
157	10"	Apple Tree	Malus
158	6"	Apple Tree	Malus
159	8"	Apple Tree	Malus
160	8"	Black Walnut	Juglans Nigra
161	6-7"	Chinese Elm	Ulmus Parvifolia
162	10"	Chinese Elm	Ulmus Parvifolia
163	10"	Chinese Elm	Ulmus Parvifolia
164	12"	Chinese Elm	Ulmus Parvifolia
165	18"	Green Ash	Fraxinus Pennsyvanica
166	18" clump	Chinese Elm	Ulmus Parvifolia
167	18"	Green Ash	Fraxinus Pennsyvanica
168	18"	Green Ash	Fraxinus Pennsyvanica
169	8"	Green Ash	Fraxinus Pennsyvanica
170	8"	Chinese Elm	Ulmus Parvifolia
171	16"	Chinese Elm	Ulmus Parvifolia
172	12" clump	Silver Maple	Acer Saccharinum
173	16" clump	Silver Maple	Acer Saccharinum
174	18" clump	Silver Maple	Acer Saccharinum
175	18"	Flowering Crabapple	Malus "Hopa"
176	10"	Flowering Crabapple	Malus "Hopa"
177	7"	Black Hills Spruce	Picea Glauca
178	10"	Green Ash	Fraxinus Pennsyvanica
179	10"	Flowering Crabapple	Malus "Hopa"
180	8"	Green Ash	Fraxinus Pennsyvanica

ID#	Size	common name	Scienfic Name
181	7-8"	Green Ash	Fraxinus Pennsyvanica
182	10"	Flowering Crabapple	Malus "Hopa"
183	12"	Green Ash	Fraxinus Pennsyvanica
184	2' clump	Chinese Elm	Ulmus Parvifolia
185	14"	Green Ash	Fraxinus Pennsyvanica
186	12"	Flowering Crabapple	Malus "Hopa"
187	8"	Flowering Crabapple	Malus "Hopa"
188	18"	Chinese Elm	Ulmus Parvifolia
189	10"	Flowering Crabapple	Malus "Hopa"
190	7"	Flowering Crabapple	Malus "Hopa"
191	12' dia	Eastern Red Cedar	Juniperus Virginiana
192	6"	Cottonwood	Populus Deltoides
193	6"	Chinese Elm	Ulmus Parvifolia
194	6"	Chinese Elm	Ulmus Parvifolia
195	6-7"	Chinese Elm	Ulmus Parvifolia
196	6"	Chinese Elm	Ulmus Parvifolia
197	6"	Chinese Elm	Ulmus Parvifolia
198	6"	Cotoonwood	Populus Deltoides
199	6"	Green Ash	Fraxinus Pennsyvanica
200	6"	Cottonwood	Populus Deltoides
201	6"	Cottonwood	Populus Deltoides
202	8"	Cottonwood	Populus Deltoides
203	8"	Cottonwood	Populus Deltoides
204	6"	Cottonwood	Populus Deltoides
205	6"	Cottonwood	Populus Deltoides
206	6"	Chinese Elm	Ulmus Parvifolia
207	6"	Chinese Elm	Ulmus Parvifolia
208	7"	Chinese Elm	Ulmus Parvifolia
209	7"	Cottonwood	Populus Deltoides
210	8"	Chinese Elm	Ulmus Parvifolia
211	6"	Chinese Elm	Ulmus Parvifolia
212	6-7"	Cottonwood	Populus Deltoides
213	6"	Cottonwood	Populus Deltoides
214	6"	Cottonwood	Populus Deltoides
215	6"	Cottonwood	Populus Deltoides
216	6"	Chinese Elm	Ulmus Parvifolia
217	6"	Swamp Willow	Salix Nigra
218	6-8"	Cottonwood	Populus Deltoides
219	6-8"	Cottonwood	Populus Deltoides
220	8"	Chinese Elm	Ulmus Parvifolia
221	8"	Chinese Elm	Ulmus Parvifolia
222	8"	Chinese Elm	Ulmus Parvifolia
223	8"	Chinese Elm	Ulmus Parvifolia
224	10"	Chinese Elm	Ulmus Parvifolia
225	8"	Cottonwood	Populus Deltoides
226	6"	Cottonwood	Populus Deltoides
227	6"	Chinese Elm	Ulmus Parvifolia
228	6"	Chinese Elm	Ulmus Parvifolia
229	6"	Chinese Elm	Ulmus Parvifolia
230	6"	Cottonwood	Populus Deltoides
231	6"	Chinese Elm	Ulmus Parvifolia
232	6" clump	Chinese Elm	Ulmus Parvifolia
233	6" clump	Cottonwood	Populus Deltoides
234	6" clump	Cottonwood	Populus Deltoides
235	6-7" clump	Cottonwood	Populus Deltoides
236	7-8"	Cottonwood	Populus Deltoides
237	6"	Cottonwood	Populus Deltoides
238	6"	Chinese Elm	Ulmus Parvifolia
239	6"	Cottonwood	Populus Deltoides
240	7"	Cottonwood	Populus Deltoides
241	6"	Cottonwood	Populus Deltoides
242	6"	Cottonwood	Populus Deltoides
243	7"	Cottonwood	Populus Deltoides
244	10"	Chinese Elm	Ulmus Parvifolia
245	8"	Chinese Elm	Ulmus Parvifolia
246	8"	Cottonwood	Populus Deltoides
247	10"	Cottonwood	Populus Deltoides
248	10"	Cottonwood	Populus Deltoides
249	10"	Cottonwood	Populus Deltoides
250	8"	Cottonwood	Populus Deltoides
251	6"	Cottonwood	Populus Deltoides
252	6"	Lombardy Popluar	Populus Tremula
253	6"	Chinese Elm	Ulmus Parvifolia
254	6"	Chinese Elm	Ulmus Parvifolia
255	6"	Chinese Elm	Ulmus Parvifolia
256	6"	Chinese Elm	Ulmus Parvifolia
257	6"	Chinese Elm	Ulmus Parvifolia
258	8"	Chinese Elm	Ulmus Parvifolia
259	7"	Cottonwood	Populus Deltoides
260	8"	Cottonwood	Populus Deltoides
261	8"	Cottonwood	Populus Deltoides
262	6"	Chinese Elm	Ulmus Parvifolia
263	8"	Chinese Elm	Ulmus Parvifolia
264	8"	Chinese Elm	Ulmus Parvifolia
265	8"	Box Elder	Acer Negundo
266	6"	Box Elder	Acer Negundo
267	8" clump	Box Elder	Acer Negundo
268	8" clump	Box Elder	Acer Negundo
269	8"	Box Elder	Acer Negundo
270	6"	Lombardy Popluar	Populus Tremula

ID#	Size	common name	Scienfic Name
271	6"	Lombardy Popluar	Populus Tremula
272	6" clump	Box Elder	Acer Negundo
273	10"	Lombardy Popluar	Populus Tremula
274	6"	Cottonwood	Populus Deltoides
275	6"	Cottonwood	Populus Deltoides
276	6"	Chinese Elm	Ulmus Parvifolia
277	6"	Chinese Elm	Ulmus Parvifolia
278	6"	Chinese Elm	Ulmus Parvifolia
279	6"	Chinese Elm	Ulmus Parvifolia
280	6"	Box Elder	Acer Negundo
281	6"	American Elm	Ulmus Americana
282	6"	Chinese Elm	Ulmus Parvifolia
283	14' tall	Colorado Blue Spruce	Picea Pungens
284	10"	Lombardy Popluar	Populus Tremula
285	14' tall	Colorado Green Spruce	Picea Pungens
286	16' tall	Colorado Blue Spruce	Picea Pungens
287	12' tall	White Spruce	Picea Glauca
288	12' tall	Eastern Red Cedar	Juniperus Virginiana
289	10"	Green Ash	Fraxinus Pennsyvanica
290	12"	Scotch Pine	Pinus Sylvestris
291	14"	Scotch Pine	Pinus Sylvestris
292	14"	Scotch Pine	Pinus Sylvestris
293	18"	Scotch Pine	Pinus Sylvestris
294	8"	Scotch Pine	Pinus Sylvestris
295	14"	Scotch Pine	Pinus Sylvestris
296	16"	Scotch Pine	Pinus Sylvestris
297	14"	Scotch Pine	Pinus Sylvestris
298	6"	Scotch Pine	Pinus Sylvestris
299	16"	Scotch Pine	Pinus Sylvestris
300	16-20'	Colorado Blue Spruce	Picea Pungens
301	16-20'	Colorado Blue Spruce	Picea Pungens
302	16-20'	Colorado Blue Spruce	Picea Pungens
303	16-20'	Colorado Blue Spruce	Picea Pungens
304	16-20'	Colorado Blue Spruce	Picea Pungens
305	16-20'	Colorado Blue Spruce	Picea Pungens
306	16-20'	Colorado Blue Spruce	Picea Pungens
307	16-20'	Colorado Blue Spruce	Picea Pungens
308	12"	Flowering Crabapple	Malus "Hopa"
309	14' tall	Amur Maple	Acer Ginnala
310	14' tall	Amur Maple	Acer Ginnala
311	12"	Flowering Crabapple	Malus "Hopa"
312	12"	Flowering Crabapple	Malus "Hopa"
313	10" clump	Silver Maple	Acer Saccharinum
314	14' tall	Amur Maple	Acer Ginnala
315	10"	Silver Maple	Acer Saccharinum
316	10"	Silver Maple	Acer Saccharinum
317	6"	Hackberry	Celtis occidentali
318	6"	Silver Maple	Acer Saccharinum
319	16" clump	Silver Maple	Acer Saccharinum
320	12"	Flowering Crabapple	Malus "Hopa"
321	8"	Green Ash	Fraxinus Pennsyvanica
322	8"	Silver Maple	Acer Saccharinum
323	10"	Green Ash	Fraxinus Pennsyvanica
324	20' tall	Colorado Blue Spruce	Picea Pungens
325	10" clump	Green Ash	Fraxinus Pennsyvanica
326	10" clump	Silver Maple	Acer Saccharinum
327	10"	Silver Maple	Acer Saccharinum
328	14"	Scotch Pine	Pinus Sylvestris
329	16"	Scotch Pine	Pinus Sylvestris
330	14" clump	Silver Maple	Acer Saccharinum
331	14" clump	Silver Maple	Acer Saccharinum
332	14" clump	Silver Maple	Acer Saccharinum
333	14" clump	Silver Maple	Acer Saccharinum
334	8"	Green Ash	Fraxinus Pennsyvanica
335	6"	Hackberry	Celtis occidentali
336	8" clump	Silver Maple	Acer Saccharinum
337	8"	Green Ash	Fraxinus Pennsyvanica
338	10"	Silver Maple	Acer Saccharinum
339	6"	Green Ash	Fraxinus Pennsyvanica
340	8"	Flowering Crabapple	Malus "Hopa"
341	12" clump	Silver Maple	Acer Saccharinum
342	6"	Flowering Crabapple	Malus "Hopa"
343	10"	Canada Red Cherry	Prunus Virginiana
344	6"	Flowering Crabapple	Malus "Hopa"
345	14"	Scotch Pine	Pinus Sylvestris
346	6"	Green Ash	Fraxinus Pennsyvanica
347	8"	Green Ash	Fraxinus Pennsyvanica
348	6"	Green Ash	Fraxinus Pennsyvanica
349	8"	Flowering Crabapple	Malus "Hopa"
350	6"	Green Ash	Fraxinus Pennsyvanica
351	12"	Scotch Pine	Pinus Sylvestris
352	8"	Scotch Pine	Pinus Sylvestris
353	12"	Scotch Pine	Pinus Sylvestris
354	6"	Green Ash	Fraxinus Pennsyvanica
355	8"	Flowering Crabapple	Malus "Hopa"
356	8"	Flowering Crabapple	Malus "Hopa"
357	6"	Flowering Crabapple	Malus "Hopa"
358	8"	Flowering Crabapple	Malus "Hopa"
359	12"	Green Ash	Fraxinus Pennsyvanica
360	8"	Green Ash	Fraxinus Pennsyvanica

ID#	Size	common name	Scienfic Name
361	8"	Green Ash	Fraxinus Pennsyvanica
362	10" clump	Silver Maple	Acer Saccharinum
363	6"	Green Ash	Fraxinus Pennsyvanica
364	6"	Green Ash	Fraxinus Pennsyvanica
365	7"	Green Ash	Fraxinus Pennsyvanica
366	6"	Green Ash	Fraxinus Pennsyvanica
367	14' tall	Eastern Red Cedar	Juniperus Virginiana
368	12' tall	Eastern Red Cedar	Juniperus Virginiana
369	8"	Green Ash	Fraxinus Pennsyvanica
370	6"	Green Ash	Fraxinus Pennsyvanica
371	10"	Green Ash	Fraxinus Pennsyvanica
372	8"	Green Ash	Fraxinus Pennsyvanica
373	8"	Flowering Crabapple	Malus "Hopa"
374	6"	Green Ash	Fraxinus Pennsyvanica
375	8"	Flowering Crabapple	Malus "Hopa"
376	8"	Scotch Pine	Pinus Sylvestris
377	12"	Scotch Pine	Pinus Sylvestris
378	6"	Flowering Crabapple	Malus "Hopa"
379	12' tall	Eastern Red Cedar	Juniperus Virginiana
380	10"	Green Ash	Fraxinus Pennsyvanica
381	12"	Green Ash	Fraxinus Pennsyvanica
382	12"	Flowering Crabapple	Malus "Hopa"
383	8"	Lombardy Popluar	Populus Tremula
384	12"	Lombardy Popluar	Populus Tremula
385	12"	Lombardy Popluar	Populus Tremula
386		Green Ash	Fraxinus Pennsyvanica
387	8"	Lombardy Popluar	Populus Tremula
388	12" clump	Silver Maple	Acer Saccharinum
389	6"	American Elm	Ulmus Americana
390	6"	Green Ash	Fraxinus Pennsyvanica
391	8"	Lombardy Popluar	Populus Tremula
392	8"	Flowering Crabapple	Malus "Hopa"
393	8"	Flowering Crabapple	Malus "Hopa"
394	10"	Lombardy Popluar	Populus Tremula
395	10"	Lombardy Popluar	Populus Tremula
396	8"	Green Ash	Fraxinus Pennsyvanica
397	14' tall	Scotch Pine	Pinus Sylvestris
398	6"	Flowering Crabapple	Malus "Hopa"
399	8"	Green Ash	Fraxinus Pennsyvanica
400	8"	American Elm	Ulmus Americana
401	6"	eastern Red Cedar	Juniperus Virginiana
402	6"	Flowering Crabapple	Malus "Hopa"
403	6"	Flowering Crabapple	Malus "Hopa"
404	14"	Scotch Pine	Pinus Sylvestris
405	10"	Scotch Pine	Pinus Sylvestris
406	8"	Flowering Crabapple	Malus "Hopa"
407	7"	Green Ash	Fraxinus Pennsyvanica
408	10"	Green Ash	Fraxinus Pennsyvanica
409	16"	Scotch Pine	Pinus Sylvestris
410	8"	Green Ash	Fraxinus Pennsyvanica
411	6"	Green Ash	Fraxinus Pennsyvanica
412	8"	Green Ash	Fraxinus Pennsyvanica
413	10"	Flowering Crabapple	Malus "Hopa"
414	10"	Flowering Crabapple	Malus "Hopa"
415	8"	Scotch Pine	Pinus Sylvestris
416	8"	Green Ash	Fraxinus Pennsyvanica
417	12"	Box Elder	Acer Negundo
418	6"	Flowering Crabapple	Malus "Hopa"
419	10"	Flowering Crabapple	Malus "Hopa"
420	6"	Green Ash	Fraxinus Pennsyvanica
421	10"	Flowering Crabapple	Malus "Hopa"
422	10"	Green Ash	Fraxinus Pennsyvanica
423	6"	Green Ash	Fraxinus Pennsyvanica
424	14"	Scotch Pine	Pinus Sylvestris
425	12"	Green Ash	Fraxinus Pennsyvanica
426	6"	Flowering Crabapple	Malus "Hopa"
427	6"	Green Ash	Fraxinus Pennsyvanica
428	8"	Green Ash	Fraxinus Pennsyvanica
429	10"	Green Ash	Fraxinus Pennsyvanica
430	7"	Green Ash	Fraxinus Pennsyvanica
431	9"	Green Ash	Fraxinus Pennsyvanica
432	8"	Green Ash	Fraxinus Pennsyvanica
433	6"	Green Ash	Fraxinus Pennsyvanica
434	10"	Green Ash	Fraxinus Pennsyvanica
435	10"	Green Ash	Fraxinus Pennsyvanica
436	6"	Box Elder	Acer Negundo
437	7"	Green Ash	Fraxinus Pennsyvanica
438	10"	Green Ash	Fraxinus Pennsyvanica
439	10"	Green Ash	Fraxinus Pennsyvanica
440	10"	Flowering Crabapple	Malus "Hopa"
441	8"	Green Ash	Fraxinus Pennsyvanica
442	8"	Box Elder	Acer Negundo
443	8"	Flowering Crabapple	Malus "Hopa"
444	10"	Green Ash	Fraxinus Pennsyvanica
445	10"	Black Cherry	Prunus Serotina
446	8"	Green Ash	Fraxinus Pennsyvanica
447	8"	Green Ash	Fraxinus Pennsyvanica
448	8"	Green Ash	Fraxinus Pennsyvanica
449	10"	Box Elder	Acer Negundo
450	10"	Green Ash	Fraxinus Pennsyvanica

North

This drawing prepared by:

Bonnema Runke Stern Inc.

Professional Land Surveyors

1809 22nd St SW - Suite 104
Willmar, MN 56201
Office (320) 231-2844 Fax (320) 231-2827

Project: ***Hanover Cove***
Tree Inventory
Hanover, MN

Survey Requested By: **Duininck Inc.**

© BONNEMA RUNKE STERN INC 2018

Tree Inventory - Sheet 4 of 5

ID#	Size	common name	Scienfic Name
451	6"	Green Ash	Fraxinus Pennsyvanica
452	8"	Green Ash	Fraxinus Pennsyvanica
453	8"	Green Ash	Fraxinus Pennsyvanica
454	6"	Flowering Crabapple	Malus "Hopa"
455	20"	Chinese Elm	Ulmus Parvifolia
456	8"	Green Ash	Fraxinus Pennsyvanica
457	12"	Norway Maple	Acer Platanoides
458	10"	Green Ash	Fraxinus Pennsyvanica
459	10"	Green Ash	Fraxinus Pennsyvanica
460	8"	Flowering Crabapple	Malus "Hopa"
461	12"	Green Ash	Fraxinus Pennsyvanica
462	8"	Green Ash	Fraxinus Pennsyvanica
463	10"	Green Ash	Fraxinus Pennsyvanica
464	8"	Flowering Crabapple	Malus "Hopa"
465	10"	Flowering Crabapple	Malus "Hopa"
466	10"	Norway Maple	Acer Platanoides
467	8' clump	Service Berry	Amelanchier Arborea
468	10"	Flowering Crabapple	Malus "Hopa"
469	8"	Scotch Pine	Pinus Sylvestris
470	8"	Green Ash	Fraxinus Pennsyvanica
471	10"	Flowering Crabapple	Malus "Hopa"
472	8" clump	Tartarian Maple	Acer Tataricum
473	8"	Amur Maple	Acer Ginnala
474	8"	Tartarian Maple	Acer Tataricum
475	12"	Green Ash	Fraxinus Pennsyvanica
476	6"	Green Ash	Fraxinus Pennsyvanica
477	6"	Service Berry	Amelanchier Arborea
478	6" clump	Tartarian Maple	Acer Tataricum
479	6" clump	Black Cherry	Prunus Serotina
480	8"	Flowering Crabapple	Malus "Hopa"
481	10" clump	Tartarian Maple	Acer Tataricum
482	8"	Tartarian Maple	Acer Tataricum
483	10"	Green Ash	Fraxinus Pennsyvanica
484	12"	Green Ash	Fraxinus Pennsyvanica
485	10"	Box Elder	Acer Negundo
486	8"	Box Elder	Acer Negundo
487	8"	Box Elder	Acer Negundo
488	18"	Box Elder	Acer Negundo
489	6"	Box Elder	Acer Negundo
490	6"	Mulberry	Morus Nigra
491	8"	Box Elder	Acer Negundo
492	10"	Green Ash	Fraxinus Pennsyvanica
493	10"	Green Ash	Fraxinus Pennsyvanica
494	20"	Honey Locust	Gleditsia triacanthos
495	10"	Flowering Crabapple	Malus "Hopa"
496	8"	Green Ash	Fraxinus Pennsyvanica
497	10"	Box Elder	Acer Negundo
498	8"	Green Ash	Fraxinus Pennsyvanica
499	8"	Green Ash	Fraxinus Pennsyvanica
500	6"	Chinese Elm	Ulmus Parvifolia
501	12"	Box Elder	Acer Negundo
502	8"	Green Ash	Fraxinus Pennsyvanica
503	8"	Flowering Crabapple	Malus "Hopa"
504	8-10"	Green Ash	Fraxinus Pennsyvanica
505	8-10"	Green Ash	Fraxinus Pennsyvanica
506	10"	Box Elder	Acer Negundo
507	10"	Green Ash	Fraxinus Pennsyvanica
508	10"	Flowering Crabapple	Malus "Hopa"
509	10"	Green Ash	Fraxinus Pennsyvanica
510	12"	Green Ash	Fraxinus Pennsyvanica
511	8"	Flowering Crabapple	Malus "Hopa"
512	10"	Green Ash	Fraxinus Pennsyvanica
513	12"	Green Ash	Fraxinus Pennsyvanica
514	16"	Green Ash	Fraxinus Pennsyvanica
515	24" clump	Silver Maple	Acer Saccharinum
516	8"	Green Ash	Fraxinus Pennsyvanica
517	10"	Green Ash	Fraxinus Pennsyvanica
518	8"	Tartarian Maple	Acer Tataricum
519	12"	Green Ash	Fraxinus Pennsyvanica
520	8"	Green Ash	Fraxinus Pennsyvanica
521	10"	Green Ash	Fraxinus Pennsyvanica
522	8"	Green Ash	Fraxinus Pennsyvanica
523	8"	Tartarian Maple	Acer Tataricum
524	8" clump	Tartarian Maple	Acer Tataricum
525	8"	Tartarian Maple	Acer Tataricum
526	10"	Green Ash	Fraxinus Pennsyvanica
527	14"	Colorado Blue Spruce	Picea Glauca
528	10"	Scotch Pine	Pinus Sylvestris
529	10"	Green Ash	Fraxinus Pennsyvanica
530	12"	Flowering Crabapple	Malus "Hopa"
531	16'	Colorado Blue Spruce	Picea Pungens
532	16'	Colorado Blue Spruce	Picea Pungens
533	16'	Colorado Blue Spruce	Picea Pungens
534	14"	Green Ash	Fraxinus Pennsyvanica
535	10"	Lombardy Popluar	Populus Tremula
536	18"	Silver Maple	Acer Saccharinum
537	14'	Eastern Red Cedar	Juniperus Virginiana
538	8"	Flowering Crabapple	Malus "Hopa"
539	8"	Flowering Crabapple	Malus "Hopa"
540	12"	Flowering Crabapple	Malus "Hopa"

ID#	Size	common name	Scienfic Name
541	6"	Flowering Crabapple	Malus "Hopa"
542	8"	Flowering Crabapple	Malus "Hopa"
543	16'	Eastern Red Cedar	Juniperus Virginiana
544	16'	Eastern Red Cedar	Juniperus Virginiana
545	10"	Green Ash	Fraxinus Pennsyvanica
546	6"	Lombardy Popluar	Populus Tremula
547	6"	Chinese Elm	Ulmus Parvifolia
548	8"	Cottonwood	Populus Deltoides
549	10"	Chinese Elm	Ulmus Parvifolia
550	12"	Chinese Elm	Ulmus Parvifolia
551	6"	Green Ash	Fraxinus Pennsyvanica
552	7"	Green Ash	Fraxinus Pennsyvanica
553	12"	Scotch Pine	Pinus Sylvestris
554	6"	Green Ash	Fraxinus Pennsyvanica
555	18"	Scotch Pine	Pinus Sylvestris
556	8"	Green Ash	Fraxinus Pennsyvanica
557	10-12"	Flowering Crabapple	Malus "Hopa"
558	10-12"	Flowering Crabapple	Malus "Hopa"
559	10-12"	Flowering Crabapple	Malus "Hopa"
560	8"	Flowering Crabapple	Malus "Hopa"
561	12"	Green Ash	Fraxinus Pennsyvanica
562	8"	Green Ash	Fraxinus Pennsyvanica
563	10"	Flowering Crabapple	Malus "Hopa"
564	6"	Green Ash	Fraxinus Pennsyvanica
565	6"	White Spruce	Picea Glauca
566	16"	Scotch Pine	Pinus Sylvestris
567	10"	Flowering Crabapple	Malus "Hopa"
568	10"	Flowering Crabapple	Malus "Hopa"
569	10"	Flowering Crabapple	Malus "Hopa"
570	8"	Russian Olive	Elaeagnus Angustifolia
571	6-8"	Green Ash	Fraxinus Pennsyvanica
572	6-8"	Green Ash	Fraxinus Pennsyvanica
573	6-8'	Green Ash	Fraxinus Pennsyvanica
574	7"	Box Elder	Acer Negundo
575	12'	Eastern Red Cedar	Juniperus Virginiana
576	12"	Chinese Elm	Ulmus Parvifolia
577	14"	Scotch Pine	Pinus Sylvestris
578	10"	Chinese Elm	Ulmus Parvifolia
579	8"	American Linden	Tilia Americana
580	14'	Eastern Red Cedar	Juniperus Virginiana
581	6"	Black Walnut	Juglans Nigra
582	8"	American Linden	Tilia Americana
583	8"	Green Ash	Fraxinus Pennsyvanica
584	10"	Flowering Crabapple	Malus "Hopa"
585	12"	Chinese Elm	Ulmus Parvifolia
586	12"	White Oak	Quercus alba
587	12"	Flowering Crabapple	Malus "Hopa"
588	8"	Catalpa	Catalpa Speciosa
589	6"	Chinese Elm	Ulmus Parvifolia
590	22"	Chinese Elm	Ulmus Parvifolia
591	8"	Flowering Crabapple	Malus "Hopa"
592	10"	Chinese Elm	Ulmus Parvifolia
593	12"	Box Elder	Acer Negundo
594	12"	Box Elder	Acer Negundo
595	6"	Green Ash	Fraxinus Pennsyvanica
596	8"	Green Ash	Fraxinus Pennsyvanica
597	8"	Chinese Elm	Ulmus Parvifolia
598	6"	Black Cherry	Prunus Serotina
599	6"	American Linden	Tilia Americana
600	14"	Scotch Pine	Pinus Sylvestris
601	12"	Chinese Elm	Ulmus Parvifolia
602	6"	American Elm	Ulmus Americana
603	12"	Tartarian Maple	Acer Tataricum
604	10"	Flowering Crabapple	Malus "Hopa"
605	12"	White Pine	Pinus Strobus
606	10"	Chinese Elm	Ulmus Parvifolia
607	18"	Chinese Elm	Ulmus Parvifolia
608	6"	American Elm	Ulmus Americana
609	12"	Green Ash	Fraxinus Pennsyvanica
610	12"	White Pine	Pinus Strobus
611	6"	Mulberry	Morus Nigra
612	12"	White Pine	Pinus Strobus
613	8"	Chinese Elm	Ulmus Parvifolia
614	18"	Scotch Pine	Pinus Sylvestris
615	6"	Chinese Elm	Ulmus Parvifolia
616	8"	Tartarian Maple	Acer Tataricum
617	12"	American Elm	Ulmus Americana
618	10"	Chinese Elm	Ulmus Parvifolia
619	8'	Black Cherry	Prunus Serotina
620	6"	Chinese Elm	Ulmus Parvifolia
621	6"	Flowering Crabapple	Malus "Hopa"
622	12"	Box Elder	Acer Negundo
623	12"	Box Elder	Acer Negundo
624	6"	Box Elder	Acer Negundo
625	12"	Box Elder	Acer Negundo
626	10"	Box Elder	Acer Negundo
627	14"	Box Elder	Acer Negundo
628	25-30'	Colorado Blue Spruce	Picea Pungens
629	25-30'	Colorado Blue Spruce	Picea Pungens
630	25-30'	Colorado Blue Spruce	Picea Pungens

631	25-30'	Colorado Blue Spruce	Picea Pungens
632	25-30'	Colorado Blue Spruce	Picea Pungens
633	25-30'	Colorado Blue Spruce	Picea Pungens
634	25-30'	Colorado Blue Spruce	Picea Pungens
635	25'	White Pine	Pinus Strobus
636	25'	White Pine	Pinus Strobus
637	25'	White Pine	Pinus Strobus
638	6"	Apple	Malus
639	25'	White Pine	Pinus Strobus
640	8"	Flowering Crabapple	Malus "Hopa"
641	24"	American Linden	Tilia Americana
642	18"	Green Ash	Fraxinus Pennsyvanica
643	18"	American Linden	Tilia Americana
644	12"	Colorado Blue Spruce	Picea Pungens
645	18"	Box Elder	Acer Negundo
646	18"	Colorado Blue Spruce	Picea Glauca
647	6"	Lombardy Popluar	Populus Tremula
648	6"	Eastern Red Cedar	Juniperus Virginiana
649	8"	Chinese Elm	Ulmus Parvifolia
650	6"	Chinese Elm	Ulmus Parvifolia
651	10"	Chinese Elm	Ulmus Parvifolia
652	10"	Chinese Elm	Ulmus Parvifolia
653	8"	Green Ash	Fraxinus Pennsyvanica
654	18"	Box Elder	Acer Negundo
655	8"	Chinese Elm	Ulmus Parvifolia
656	6"	Chinese Elm	Ulmus Parvifolia
657	14"	Box Elder	Acer Negundo
658	12"	Green Ash	Fraxinus Pennsyvanica
659	6"	Chinese Elm	Ulmus Parvifolia
660	12"	Box Elder	Acer Negundo
661	12"	Box Elder	Acer Negundo
662	10"	Flowering Crabapple	Malus "Hopa"
663	6"	Green Ash	Fraxinus Pennsyvanica
664	6"	Chinese Elm	Ulmus Parvifolia

Tree Stand Areas

ID#	# of Trees	Tree Stand Area (Acres)	common name	Scienfic Name
ST 1	96	0.27	Colorado Blue Spruce	Picea Glauca
ST 2	8	0.03	Flowering Crab	Malus "Hopa"
ST 3	16	0.03	Green Ash	Fraxinus Pennsyvanica
ST 4	116	0.46	Chinese Elm	Ulmus Parvifolia
ST 5	48	0.07	Box Elder	Acer Negundo
ST 6	28	0.05	Box Elder	Acer Negundo
ST 7	79	0.10	Chinese Elm	Ulmus Parvifolia
ST 8	20	0.05	Chinese Elm	Ulmus Parvifolia

SUMMARY

	# OF INDIVIDUAL TREES ON OR ADJ TO PROPERTY	# OF TREES IN SIGNIFICANT TREE STANDS	TOTAL TREES
DECIDUOUS	561	315	876
CONIFEROUS	103	96	199
TOTAL	664	411	1065

North

This drawing prepared by:

Bonnema Runke Stern Inc.

Professional Land Surveyors

1809 22nd St SW - Suite 104

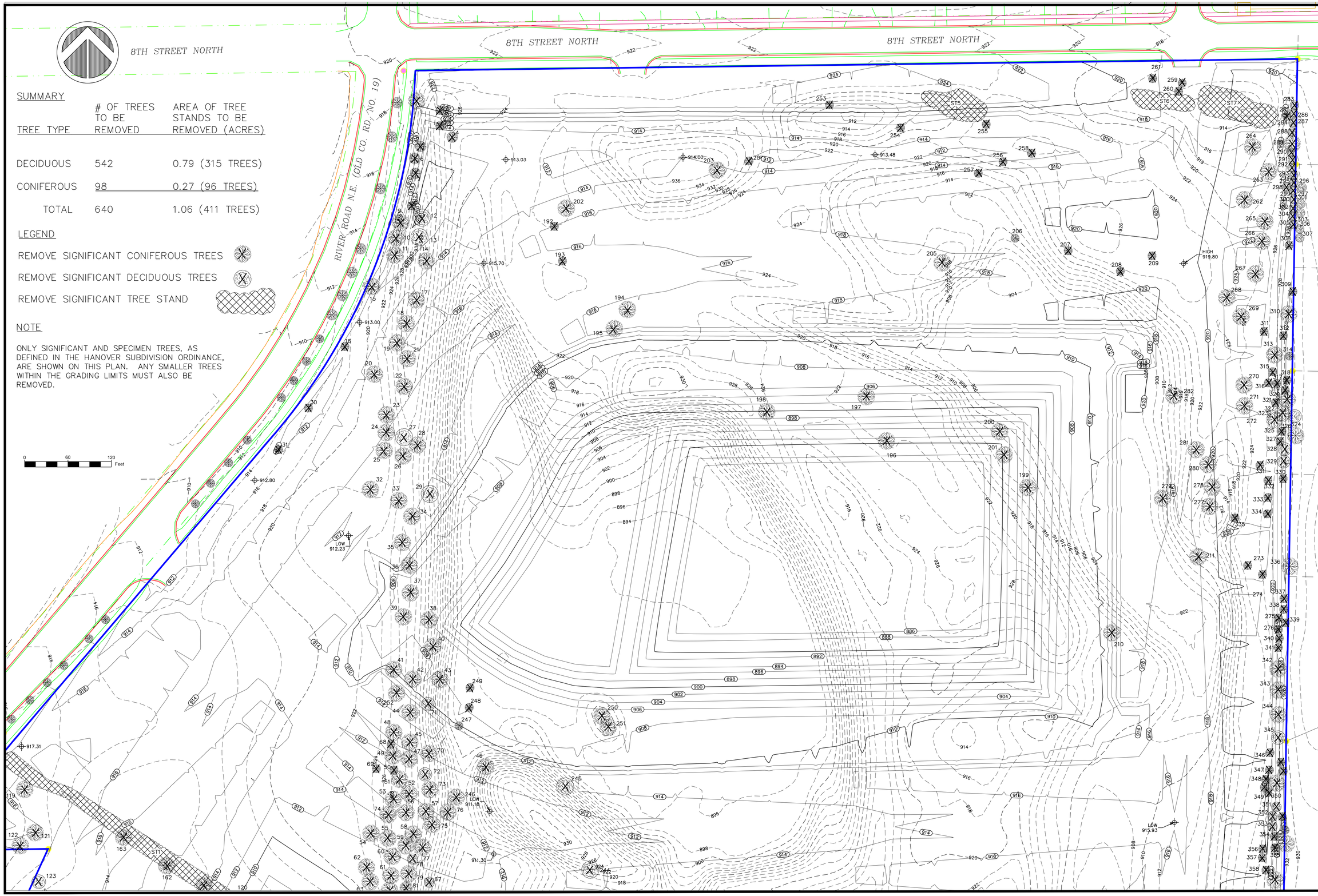
Willmar, MN 56201

Office (320) 231-2844 Fax (320) 231-2827

Project: ***Hanover Cove***
Tree Inventory
Hanover, MN

Survey Requested By: **Duininck Inc.**
© BONNEMA RUNKE STERN INC 2018

Tree Inventory - Sheet 5 of 5



SUMMARY

TREE TYPE	# OF TREES TO BE REMOVED	AREA OF TREE STANDS TO BE REMOVED (ACRES)
DECIDUOUS	542	0.79 (315 TREES)
CONIFEROUS	98	0.27 (96 TREES)
TOTAL	640	1.06 (411 TREES)

LEGEND

REMOVE SIGNIFICANT CONIFEROUS TREES

REMOVE SIGNIFICANT DECIDUOUS TREES

REMOVE SIGNIFICANT TREE STAND

NOTE

ONLY SIGNIFICANT AND SPECIMEN TREES, AS DEFINED IN THE HANOVER SUBDIVISION ORDINANCE, ARE SHOWN ON THIS PLAN. ANY SMALLER TREES WITHIN THE GRADING LIMITS MUST ALSO BE REMOVED.

© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN, DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
TREE REMOVAL/PRESERVATION PLAN

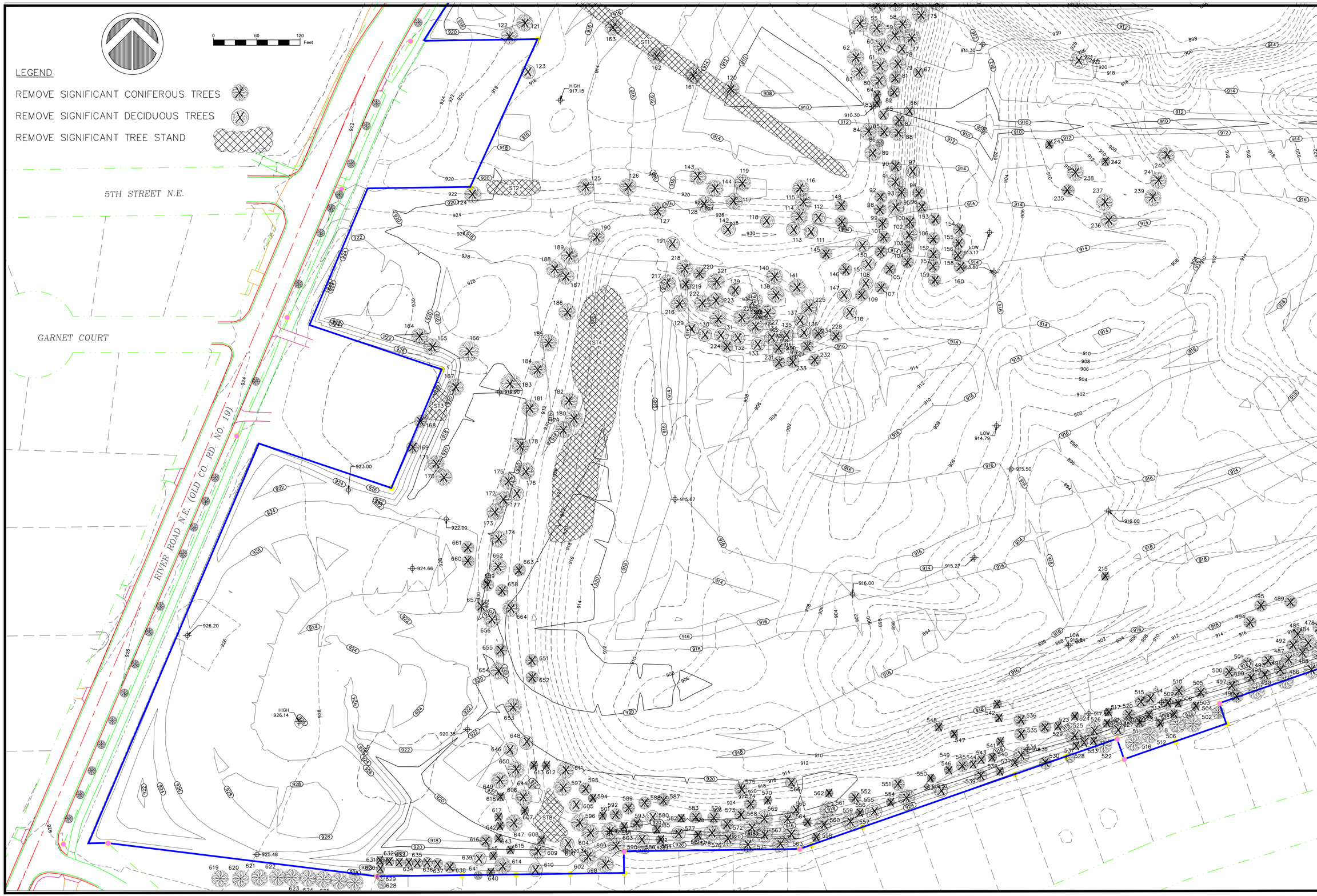
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
TREEREM1



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN, DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
TREE REMOVAL/PRESERVATION PLAN

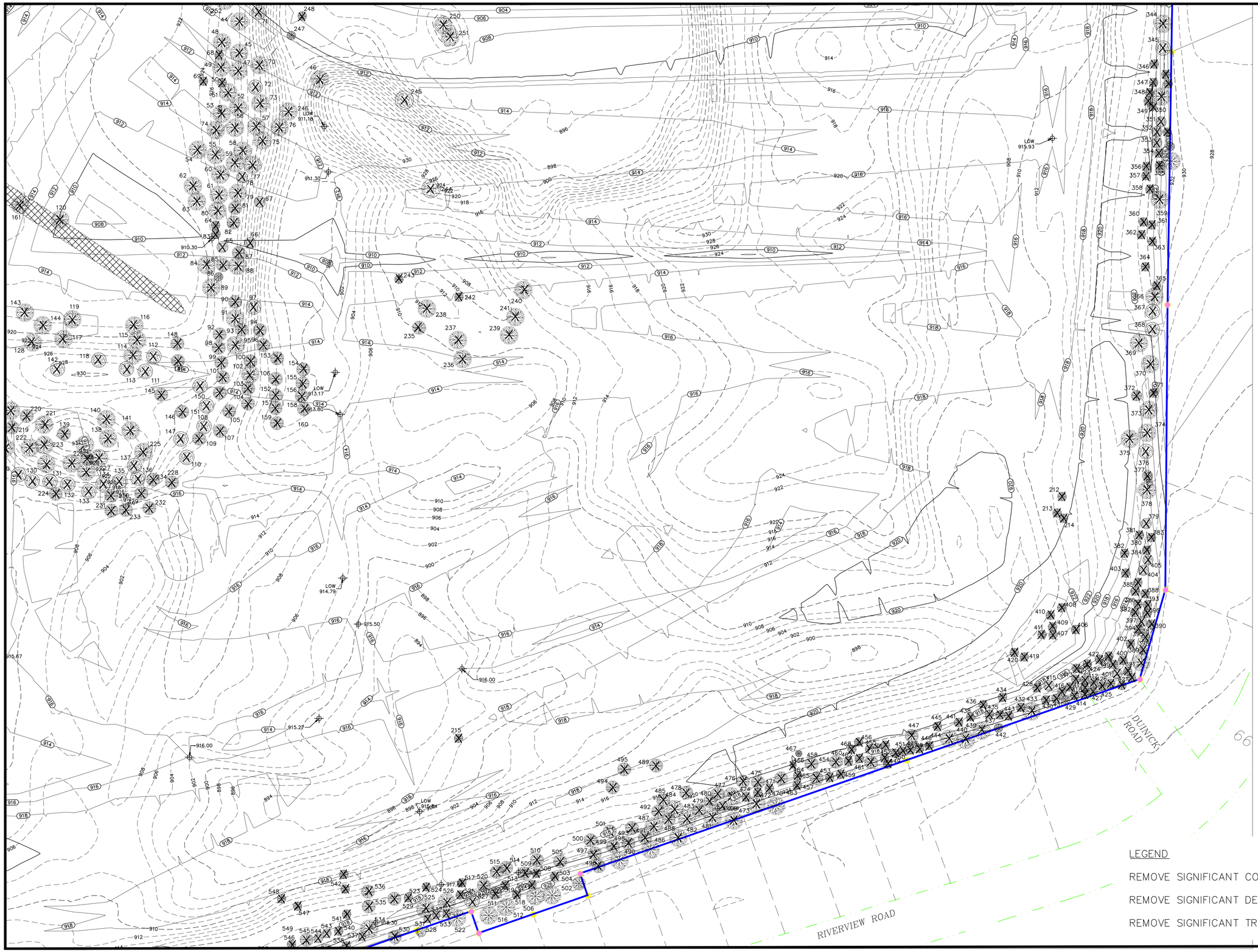
HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
TREEREM2



© DUININCK INC. 2019. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF DUININCK INC. IS PROHIBITED. DUININCK INC. SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIAL, OR DAMAGES RESULTING THEREFROM.

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.

SIGNATURE: DATE: 1/10/2019

NAME: JASON VERSTEEG LIC. NO. 26505

DUININCK
PHONE: (320)978-6011 FAX: (320)978-4978
P.O. BOX 208 408 SIXTH STREET
PRINSBURG, MN 56281

HANOVER COVE
PRELIMINARY ENGINEERING PLAN
TREE REMOVAL/PRESERVATION PLAN

HANOVER, MN

CHECKED BY:	DRAWN BY:
JVS	JVS

SCALE
GRAPHIC

DATE
JAN 10, 2019

SHEET
TREEREM3

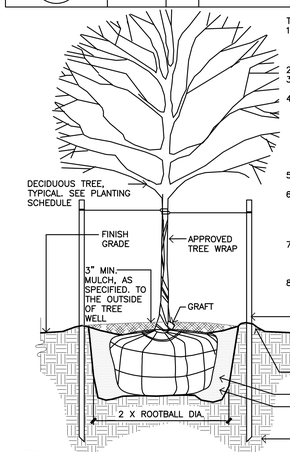
PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	CAL	SIZE
	ACE APO	72	Acer saccharum 'Apollo' TM / Apollo Sugar Maple	B & B	2"Cal	
	MAL R42	84	Malus x 'Royal Raindrops' / Royal Raindrops Crabapple	B & B	2"Cal	
	PRU PI2	61	Prunus sargentii 'Pink Flair' / Sargent Cherry	B & B	2"Cal	
	PYR CLE	83	Pyrus calleryana 'Cleveland Select' / Cleveland Select Pear	B & B	2"Cal	
EVERGREEN TREES	**CODE**	**QTY**	**BOTANICAL NAME / COMMON NAME**	**CONT**	**CAL**	**SIZE**
	ABI BA2	111	Abies balsamea / Balsam Fir	B & B		8' TALL
	PIC BLA	170	Picea glauca densata / Black Hills Spruce	B & B		8' TALL
STREET TREES	**CODE**	**QTY**	**BOTANICAL NAME / COMMON NAME**	**CONT**	**CAL**	**SIZE**
	ACE STA	88	Acer miyabei 'State Street' / Miyabei Maple	B & B	2.5"Cal	
	GIN AUT	68	Ginkgo biloba 'Autumn Gold' TM / Maidenhair Tree	B & B	2.5"Cal	
	POP PR2	60	Populus tremuloides 'Prairie Gold' / Prairie Gold Aspen	B & B	2.5"Cal	
	TIL BOU	56	Tilia americana 'Boulevard' / Boulevard Linden	B & B	2.5"Cal	
	ULM PRI	76	Ulmus americana 'Princeton' / American Elm	B & B	2.5"Cal	

NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. REMOVING CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.

DETAIL: SHRUB PLANTING
SCALE: 1" = 1'-0"

EACH UNIT SHOULD HAVE AT A MINIMUM (6) SHRUBS PLANTED IN A LAYOUT SIMILAR TO WHAT IS INDICTED IN THIS PLAN. INSTALL 5" ALUMINUM EDGING THE LENGTH OF THE PLANTING BED AS SHOWN. SPECIMENS SHALL BE COLD HARDY TO ZONE 4a AND NOT BE PRESENT ON THE INVASIVE SPECIES LIST. SOME ACCEPTABLE PLANTINGS ARE: 'WALKERS LOW' CATMINT 'KARL FOERSTER' FEATHER REED GRASS SUMAC 'LOW GROW' 'GOLDSTAR' POTENTILLA 'SNOWBOUND' SPIREA 'GOLD TIDE' FORSYTHIA

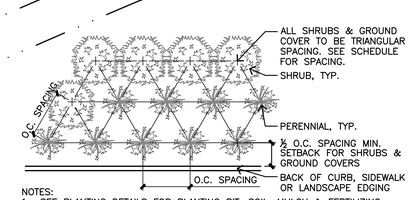


TREE PLANTING NOTES:
1. INSTALL TREE WITH GRAFT AT OR SLIGHTLY ABOVE GRADE. THE PLANT'S GRAFT SHALL BE INSTALLED ABOVE GRADE REGARDLESS OF HOW TREE WAS PLANTED FROM THE NURSERY.
2. DO NOT CUT OR DAMAGE LEADER.
3. PRUNE DAMAGED LIMBS IMMEDIATELY PRIOR TO PLANTING.
4. PLANT SHALL BE SET PLUMB AND SHALL BE CENTERED IN PLANTING PIT. REMOVE ALL BURLAP, TWINE, ROPE, WIRE & WIRE BASKET FROM ROOT BALL. IF TREE IS IN FIBER POT, REMOVE PRIOR TO PLANTING. BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. REMOVING THE WIRE WILL NOT BE AN EXCUSE FOR A DAMAGED ROOTBALL.
5. IF TREE IS PLANTED IN A TURF AREA, EARTH SAUCER IS NOT NEEDED.
6. INSTALL AGSAFE 20-10-5 FERTILIZER TABLETS AT EACH PLANTING. PLACE (1) TABLET FOR EVERY 1/2" OF TRUNK DIAMETER (CALIPER). DEEP SOAK PLANTING AT TIME OF PLANTING TO ENSURE ACTIVATION.
7. PLANTING PITS: PRIOR TO PLANTING, APPROVED PLANTING SOIL SHALL BE THOROUGHLY MIXED WITH 25% PEAT BY VOLUME. CO-COMPOST FROM THE CITY LANDFILL IS NOT ACCEPTABLE.
8. INSTALL CEDAR MULCH AT BASE OF ALL PLANTINGS UNDER CANOPY OF PLANT BUT NOT WITHIN 2" OF THE TRUNK OF THE TREE.

SECTION: TYPICAL B&B DECIDUOUS TREE
SCALE: 1/2" = 1'-0"

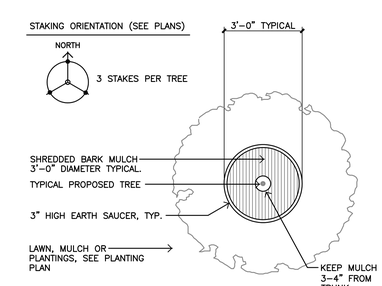
PLANTING NOTES:

1. ALL GRADED, UNPAVED AREAS SHALL BE REVEGETATED. SEEDED AREAS ARE TO RECEIVE 4" MINIMUM DEPTH OF CLEAN TOPSOIL. TOPSOIL SHALL BE FREE OF ROCKS, CLODS, BRANCHES & DEBRIS. UPON REVIEW OF THE STOCKPILED TOPSOIL, THE LANDSCAPE ARCHITECT MAY REQUIRE THE TOPSOIL TO BE SCREENED WITH A 1" SCREEN AT CONTRACTORS COST. LANDSCAPE BEDS WHERE TREES, SHRUBS, PERENNIALS & GRASSES ARE PLANNED SHALL BE AMENDED AS FOLLOWS:
- USE STOCKPILED SITE TOPSOIL FOR TOP 8" OF SOIL (MAY NEED TO BE SCREENED)
- REFER TO PLANTING DETAILS FOR FERTILIZER TABLETS TO BE INSTALLED IN THE PLANTING PIT.
2. TREES ARE TO BE PLANTED AT THE COMPLETION OF THE RESIDENTIAL CONSTRUCTION ON EACH LOT.
3. TREES IN LAWN AND BOULEVARD AREAS ARE TO RECEIVE A 48" DIA. SHREDDED CEDAR MULCH RING WITH A MIN. DEPTH OF 4". MULCH SHALL BE INSTALLED IMMEDIATELY UPON PLANTING TREE. FORM EARTH SAUCER AROUND BASE OF TREE PER DETAIL PRIOR TO PLACING MULCH. INSTALL PLANTING MIX IN PIT & USE MIX AS BACKFILL.
4. LIMITS OF SOIL PREPARATION ARE DEFINED BY FENCELINES, LIMITS OF GRADING OPERATIONS, FACES OF WALLS, OR BUILDINGS, AND EDGES OF PAVEMENTS, OR CURBING, AS SHOWN ON PLAN.
5. COORDINATE STOCK-PILING OF TOPSOIL FROM THE SITE WITH GENERAL CONTRACTOR PRIOR TO EXCAVATIONS & ROUGH GRADING OPERATIONS. LANDSCAPE CONTRACTOR SHALL ENSURE THAT NO PONDING OR STANDING WATER CONDITIONS OCCUR IN ANY UNPAVED AREAS WITHIN THE SCOPE OF THIS CONTRACT & THAT ALL SURFACE WATER FLOWS FREELY TO DESIGNATED SWALES, DRAINAGE INLETS, & AWAY FROM BUILDINGS.
6. ALL LAWN, BOULEVARDS AND DISTURBED AREAS ARE TO BE HYDRO-SEEDED AND MULCHED WITH A TACKIFIER. ALL SEEDING AND MULCHING SHALL BE INSTALLED PER CITY OF MINNEAPOLIS STANDARD SPECIFICATION.
7. ALL SEED MIXES SPECIFIED ARE AVAILABLE AT TWIN CITY SEED. PH: 952-944-7105. SEEDING RATES PER SUPPLIER.
   7.1. BOULEVARD SEEDING SHALL BE: BOULEVARD MIX
   7.2. LAWNS (WITHIN PROPERTY LINE) SHALL BE: OVERSEED MIXTURE
   7.3. ALL OTHER DISTURBED AREAS (EXCLUDING THE DETENTION AREA) SHALL BE: TUFF TURF MIX
   7.4. DETENTION / STORMWATER TREATMENT AREAS: 33-261 STORMWATER SOUTH & WEST
8. CONTRACTOR SHALL PROVIDE IRRIGATION FOR ALL BOULEVARD AREAS. IRRIGATION SYSTEM TO BE DESIGN/BUILD. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL OF THE SYSTEM LAYOUT AND DETAILS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AVAILABLE PSI, SIZE OF ALL EQUIP. INCL. METER, BACKFLOW, PIPE, RAIN SENSOR, ROTORS, ETC. ALL BOULEVARD AREAS TO RECEIVE SPRAY IRRIGATION W/ HEAD-HEAD COVERAGE. BOULEVARDS TO RECEIVE 1" OF WATER/WEEK.
8. IRRIGATION AT EACH UNIT: IRRIGATION WILL BE INSTALLED AT THE COMPLETED OF THE RESIDENTIAL UNIT CONSTRUCTION. CONTRACTOR SHALL PROVIDE IRRIGATION FOR EACH UNIT. IRRIGATION SYSTEM TO BE DESIGN/BUILD. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL OF THE SYSTEM LAYOUT AND DETAILS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AVAILABLE PSI, SIZE OF ALL EQUIPMENT INCLUDING METER, BACKFLOW, PIPE, RAIN SENSOR, ROTORS, ETC. ALL LAWN AREAS TO RECEIVE SPRAY IRRIGATION WITH HEAD TO HEAD COVERAGE. ALL BOULEVARDS TO RECEIVE 1" OF WATER PER WEEK. ALL SHRUB BEDS SHALL HAVE DRIP IRRIGATION AND RECEIVE .25" OF WATER / WEEK.
9. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PORTION OF THE WORK IS IN PLACE. PLANT MATERIAL SHALL BE PROTECTED AND MAINTAINED UNTIL THE INSTALLATION OF THE PLANTS IS COMPLETE, INSPECTION HAS BEEN MADE, AND PLANTINGS ARE ACCEPTED EXCLUSIVE OF THE GUARANTEE. MAINTENANCE SHALL INCLUDE WATERING, CULTIVATING, MULCHING, REMOVAL OF DEAD MATERIALS, RE-SETTING PLANTS TO PROPER GRADE AND KEEPING PLANTS IN A PLUMB POSITION. AFTER ACCEPTANCE, THE OWNER SHALL ASSUME MAINTENANCE RESPONSIBILITIES. HOWEVER, THE CONTRACTOR SHALL CONTINUE TO BE RESPONSIBLE FOR KEEPING THE TREES PLUMB THROUGHOUT THE GUARANTEE PERIOD.
10. THE LAWN SHALL MEET FINAL ACCEPTANCE WHEN:
   a. A HEALTHY ACTIVE TURF PROVIDES AT LEAST 95% COVERAGE WITHIN ANY 10 FOOT SQUARE AREA, AND
   b. THE GRASS COVER IS ESSENTIALLY FREE OF WEEDS
9. SHRUB BEDS TO RECEIVE 4" DEPTH OF SHREDDED CEDAR MULCH. MULCH SHALL BE APPLIED IN A WAY THAT MINIMIZES OR ELIMINATES DAMAGE TO PLANT MATERIAL. IF PLANTS ARE DAMAGED DURING MULCH INSTALLATION THEY SHALL BE REPLACED AT NO COST TO OWNER.
10. CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED UTILITIES AT NO COST TO OWNER.
11. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSEYMEN.
12. ALL TREE & SHRUB LOCATIONS SHALL BE STAKED OR LAID OUT BY CONTRACTOR & APPROVED BY OWNER REPRESENTATIVE.
13. ALL PLANT SUBSTITUTIONS SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO PLANTING.
14. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE AT HARVESTING.
15. PLANTING SEASONS SHALL BE FROM APRIL 15 TO JUNE 15 AND FROM SEPTEMBER 1 TO NOVEMBER 1 UNLESS OTHERWISE COORDINATED. EXCEPTIONS SHALL BE COORDINATED THROUGH THE LANDSCAPE ARCHITECT AND OWNER.
14. REMOVE UNSATISFACTORY PLANTS WITHIN (7) DAYS OF NOTICE, REPLACE W/ OWNER APPROVED REPLACEMENT TREE.
15. TREES SHALL BE WRAPPED WITH NURSERYMAN'S STANDARD CREPE TAPE NOT LESS THAN 4" WIDE, CONSISTING OF TWO LAYERS OF CRINKLED PAPER CEMENTED TOGETHER WITH BITUMINOUS MATERIAL.
16. DECIDUOUS TREES WITH SOFT TISSUE BARK TO BE PROTECTED BY THE LANDSCAPE CONTRACTOR BY MEANS BEST TO PREVENT "BUCK RUB". 6' WIRE FENCING AROUND THE T-POSTS IS PERMITTED. FAILURE BY THE CONTRACTOR PROTECT TREES & ARE DAMAGED BY DEER SHALL BE REPLACED AT CONTRACTORS EXPENSE WITHIN THE WARRANTY PERIOD.
17. GUY/ANCHOR TREES IMMEDIATELY UPON PLANTING TREE.
18. CONTRACTOR SHALL PROVIDE A ONE (1) YEAR WARRANTY FOR ALL PLANT MATERIAL. REPLACEMENT PLANT MATERIAL IS SUBJECT TO THE SAME ONE (1) YEAR WARRANTY. LIMITED TO (1) REPLACEMENT.



NOTES:
1. SEE PLANTING DETAILS FOR PLANTING PIT, SOIL, MULCH & FERTILIZING.
2. REFER TO PLANTING SCHEDULE AND NOTES FOR SPACING.

DETAIL: PERENNIAL OR SHRUB SPACING
SCALE: 1" = 1'-0"



PLAN: TYPICAL MULCH RING DETAIL
SCALE: 1/4" = 1'-0"

Wyss Associates, Inc.
Landscape Architecture
Golf Course Architecture
Parks & Recreation Design
728 Sixth Street Rapid City, South Dakota 57701-3670
Phone: 605.348.2268 Fax: 605.348.6506 email:admin@wyssassociates.com

REGISTERED LANDSCAPE ARCHITECT 15142 PATRICK H. WYSS STATE OF MINNESOTA
1/8/2019

Project Name
Hanover Cove Residential Development
Hanover, MN

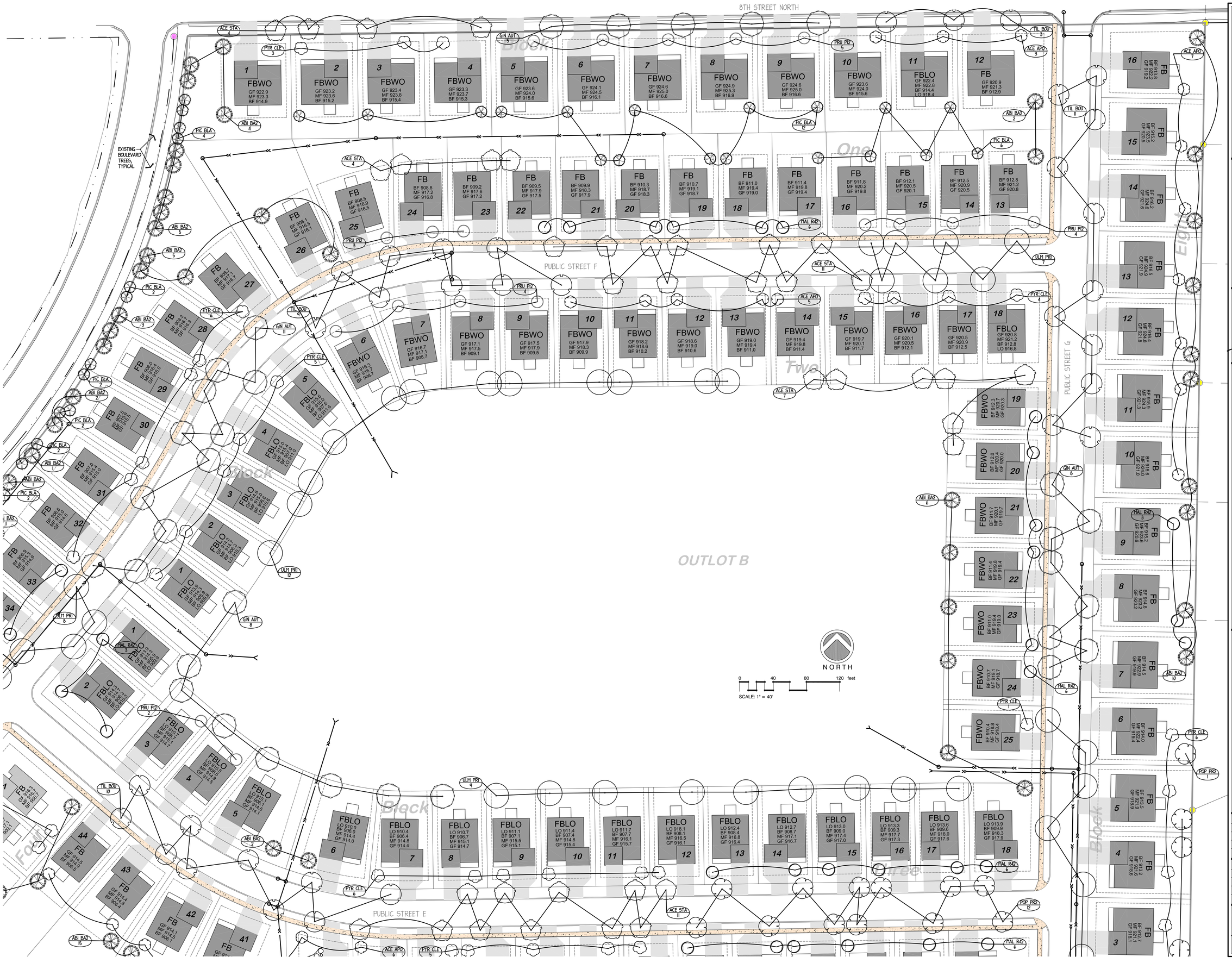
Sheet Title
Overall Planting Plan

DESIGNED BY:	PHW
DRAWN BY:	CMW
APPROVED BY:	PHW
PROJECT NO.	18111
DATE:	January 8, 2019

NO.	REVISION	DATE

Sub Sheet
LA1
Sheet
OF

Ownership of Instruments of Service: All reports, plans, specifications, computer files, field data, notes and instruments prepared by the design professional as instruments of service shall remain the property of the design professional. All common law, statutory and other reserved rights including the copyright thereto.



Wyss Associates, Inc.
Landscape Architecture
Golf Course Architecture
Parks & Recreation Design
728 Sixth Street Rapid City, South Dakota 57701-3670
Phone: 605-348.2268 Fax: 605.348.6506 emailadmin@wyssassociates.com

PATRICK H. WYSS
REGISTERED LANDSCAPE ARCHITECT
15142
STATE OF MINNESOTA
1/8/2019

Project Name
Hanover Cove Residential Development
Hanover, MN

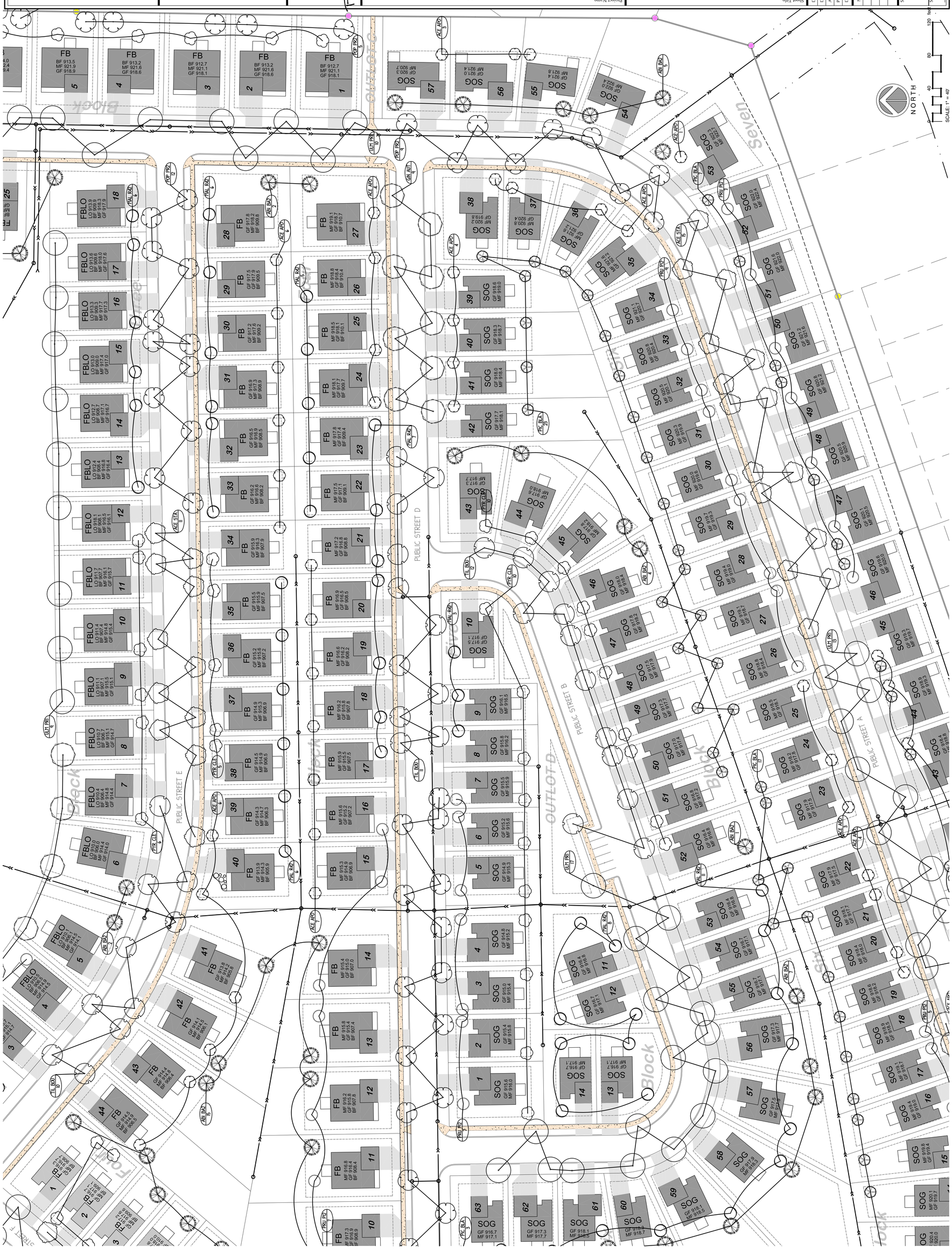
Sheet Title
Enlarged Planting Plan

DESIGNED BY:	PHW
DRAWN BY:	CMW
APPROVED BY:	PHW
PROJECT NO.	18111
DATE:	January 8, 2019

NO.	REVISION	DATE

Sub Sheet
LA2
Sheet ____ OF ____

Ownership of Instruments of Service: All reports, plans, specifications, computer files, field data, notes and instruments prepared by the design professional as instruments of service shall remain the property of the design professional. All common law, statutory and other reserved rights including the copyright thereto.



Sub Sheet
LA3
Sheet OF

DESIGNED BY:	PHW
DRAWN BY:	CMW
APPROVED BY:	PHW
PROJECT NO.	18111
DATE:	January 8, 2014

NO.	REVISION	DATE

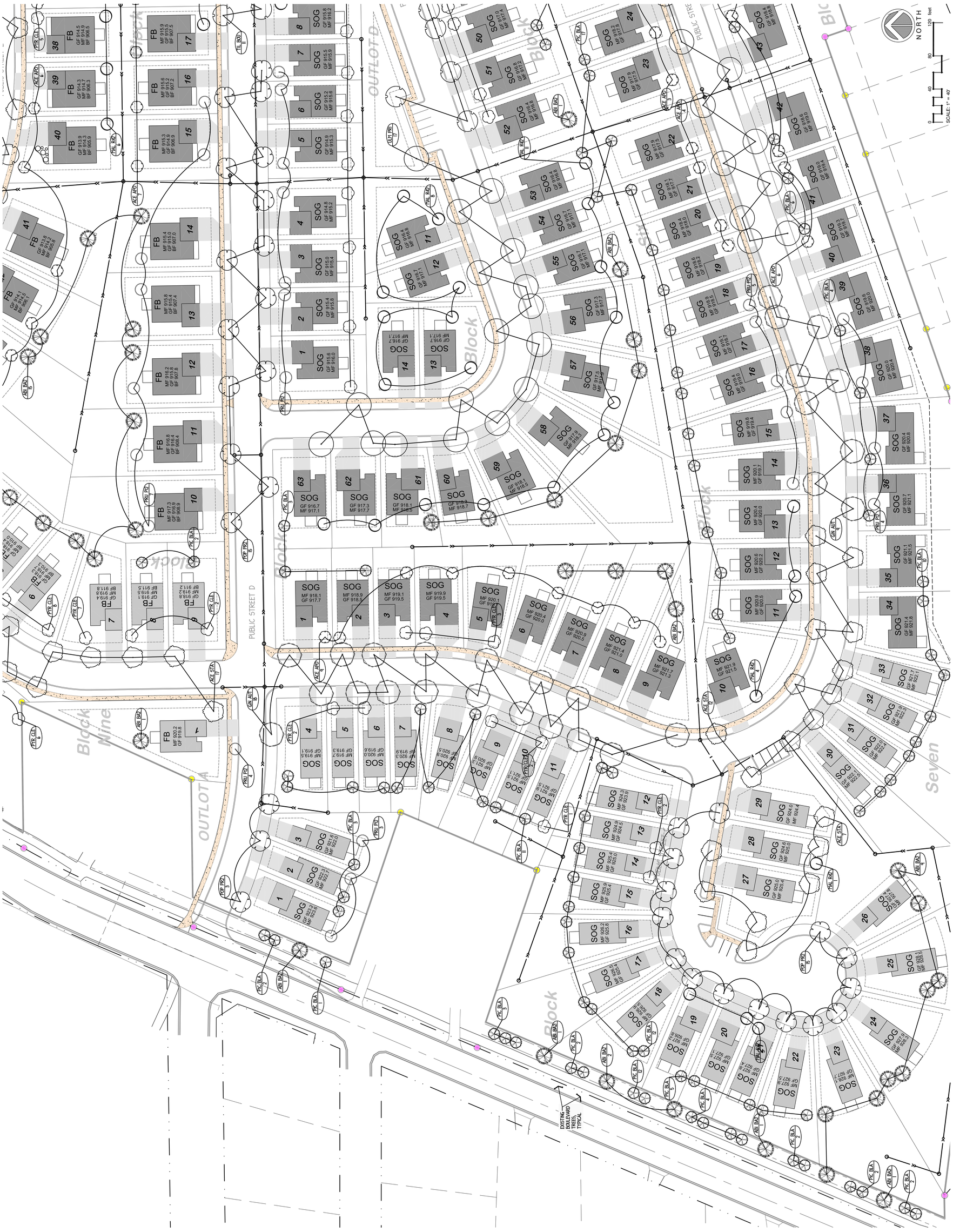
Sheet Title
Enlarged Planting Plan

Project Name
Hanover Cove Residential Development
Hanover, MN

REGISTERED LANDSCAPE ARCHITECT 13142 PATRICK H. WYSS STATE OF MINNESOTA
1/8/2014

Wyss Associates, Inc.
Landscape Architecture
Golf Course Architecture
Parks & Recreation Design
228 Sixth Street Rapid City, South Dakota 57701-3670
Phone: 605.348.2268 Fax 605.348.6506 email@wyssassociates.com

Ownership of Instruments of Service All reports, plans, specifications, computer files, field data, notes and instruments prepared by the design professional as instruments of service shall remain the property of the design professional. All common law, statutory and other reserved rights including the copyright thereto.

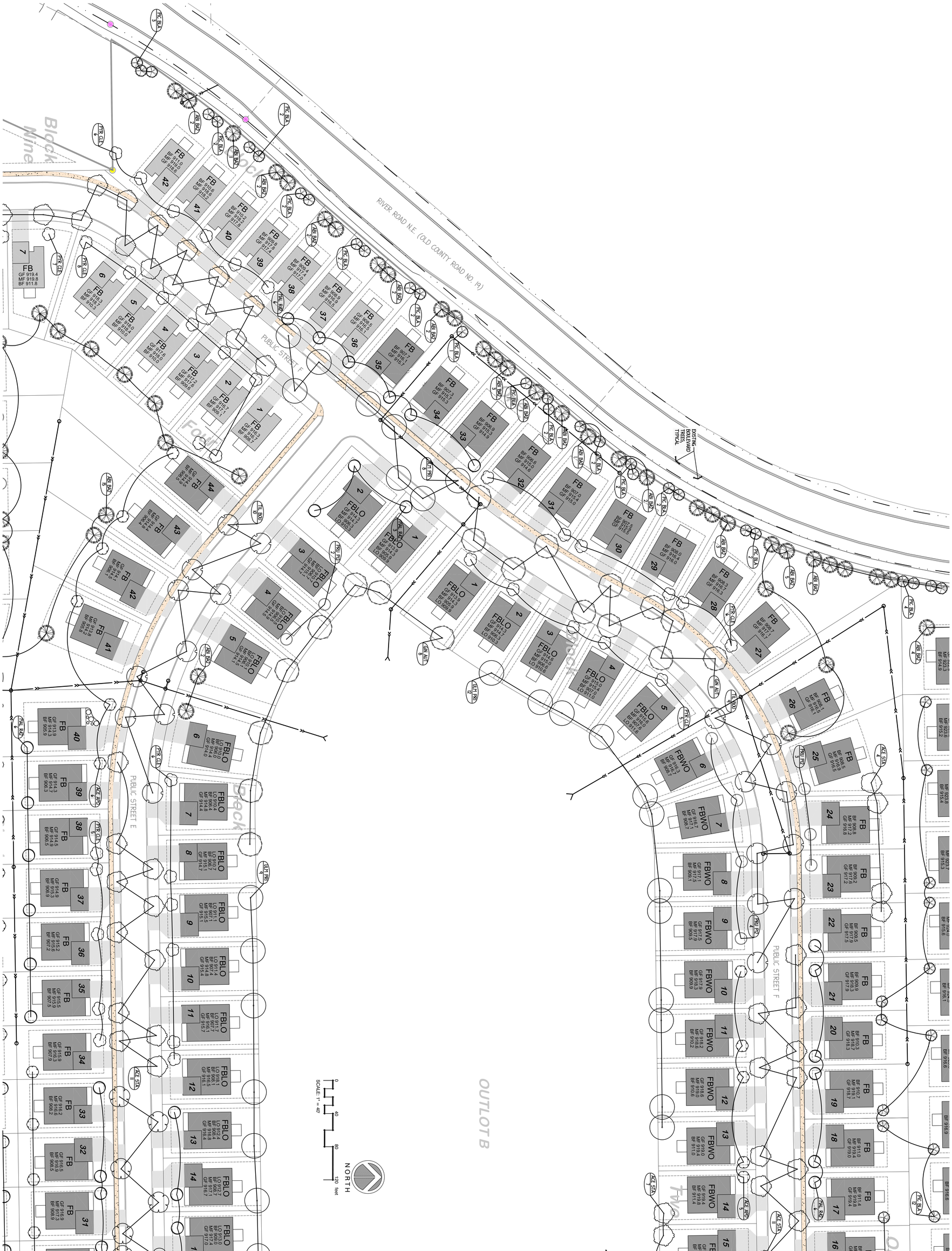


Sheet Title	Enlarged Planning Plan
Project Name	Hanover Cove Residential Development Hanover, MN
DESIGNED BY:	PHW
DRAWN BY:	CMW
APPROVED BY:	PHW
PROJECT NO.	18111
DATE:	January 8, 2019
NO. / REVISION / DATE	
Sub Sheet	LA4
Sheet	OF

REGISTERED LANDSCAPE ARCHITECT 15142 STATE OF MINNESOTA
PATRICK H. WYSS
1/8/2019

Wyss Associates, Inc.
Landscape Architecture
Golf Course Architecture
Parks & Recreation Design
728 Sixth Street Rapid City, South Dakota 57701-3670
Phone: 605.348.2268 Fax: 605.348.6506 email:admin@wyssassociates.com

Ownership of Instruments of Service: All reports, plans, specifications, computer files, field data, notes and instruments prepared by the design professional as instruments of service shall remain the property of the design professional. All common law, statutory and other reserved rights including the copyright thereto.



Sheet Title

Enlarged Planting Plan

Project Name

Hanover Cove Residential Development

Hanover, MN

DESIGNED BY: PHW
DRAWN BY: CMW
APPROVED BY: PHW
PROJECT NO. 18111
DATE: January 8, 2019

NO.	REVISION	DATE

Sub Sheet

LA5

Sheet OF

PATRICK H. WYSS
REGISTERED LANDSCAPE ARCHITECT
15142
MINNESOTA

1/8/2019

Wyss Associates, Inc.
Landscape Architecture
Golf Course Architecture
Parks & Recreation Design

728 Sixth Street Rapid City, South Dakota 57701–3670
Phone: 605.348.2268 Fax 605.348.6506 email:admin@wyssassociates.com

Ownership of Instruments of Service: All reports, plans, specifications, computer files, field data, notes and instruments prepared by the design professional as instruments of service shall remain the property of the design professional. All common law, statutory and other reserved rights including the copyright thereto.

HANOVER COVE

RESIDENTIAL DEVELOPMENT

STS

Swing Traffic Solutions

TRAFFIC IMPACT STUDY

in

HANOVER, MN

September 28, 2018

Hanover Cove Residential Development

Hanover, MN

TRAFFIC IMPACT STUDY

PROJECT NO. 2018023

September 28, 2018

I hereby certify that this plan, specification, or report was prepared by me, or under my direct supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota:

Vernon E. Swing, P.E.

Date: 9-28-2018 Lic. No.: 41417

TRAFFIC IMPACT STUDY

Hanover Cove Residential Development

Hanover, MINNESOTA

September 28, 2018

Prepared For:

Duininck, Inc.
P.O. Box 208
Prinsburg, MN 56281

Prepared By:

Swing Traffic Solutions, LLC
4290 Norwood Lane North
Plymouth, MN 55442
612-968-4142

Project No. 2018023

TABLE OF CONTENTS

I. INTRODUCTION 1

II. EXISTING TRAFFIC CONDITIONS 4

A. Data Collection 4
B. Roadway Description 4
C. Intersection Description 7

III. NO-BUILD ALTERNATIVE 9

A. Background Growth 9
B. Anticipated Improvements for No-Build Conditions 10
C. Results of Analysis 10

IV. BUILD ALTERNATIVE 13

A. Site-Generated Traffic 13
B. Trip Distribution and Assignment 13
C. Build Traffic Volumes 16
D. Intersection Operational Analysis Description 16
E. Results of Analysis 19
F. 2040 Operations 30

VI. SUMMARY AND SUGGESTIONS 38

LIST OF TABLES

Table ..... Page Number

1. Trip Generation 13
2. 2025 No-Build Operations 19
3. 2025 No-Build Operations with Mitigation 21
4a. 2025 Build Operations without Improvements 23
4b. 2025 Build Operations with Protected/Permissive Signal Phasing 25
4c. 2025 Build Operations with Turn Lanes 26
4d. 2025 Build Operations with Combined Improvements 28
5. 2040 No-Build Operations 30
6. 2040 No-Build Operations with Mitigation 34
7. 2040 Build Operations 35

LIST OF FIGURES

Figure ..... Page Number

1. Vicinity Map 2
2. Site Plan 3
3. Existing Peak Hour Traffic Volumes 6
4. 2025 No-Build AM and PM Peak Traffic 11
5. 2040 No-Build AM and PM Peak Traffic 12
6. Trip Distribution 14
7. Trip Assignment 15
8. 2025 Build AM and PM Peak Traffic 17
9. 2040 Build AM and PM Peak Traffic 18
10. Proposed Improvements 33

TECHNICAL APPENDICES

(Available upon Request)

A. TRAFFIC COUNTS

B. TRIP GENERATION CALCULATIONS

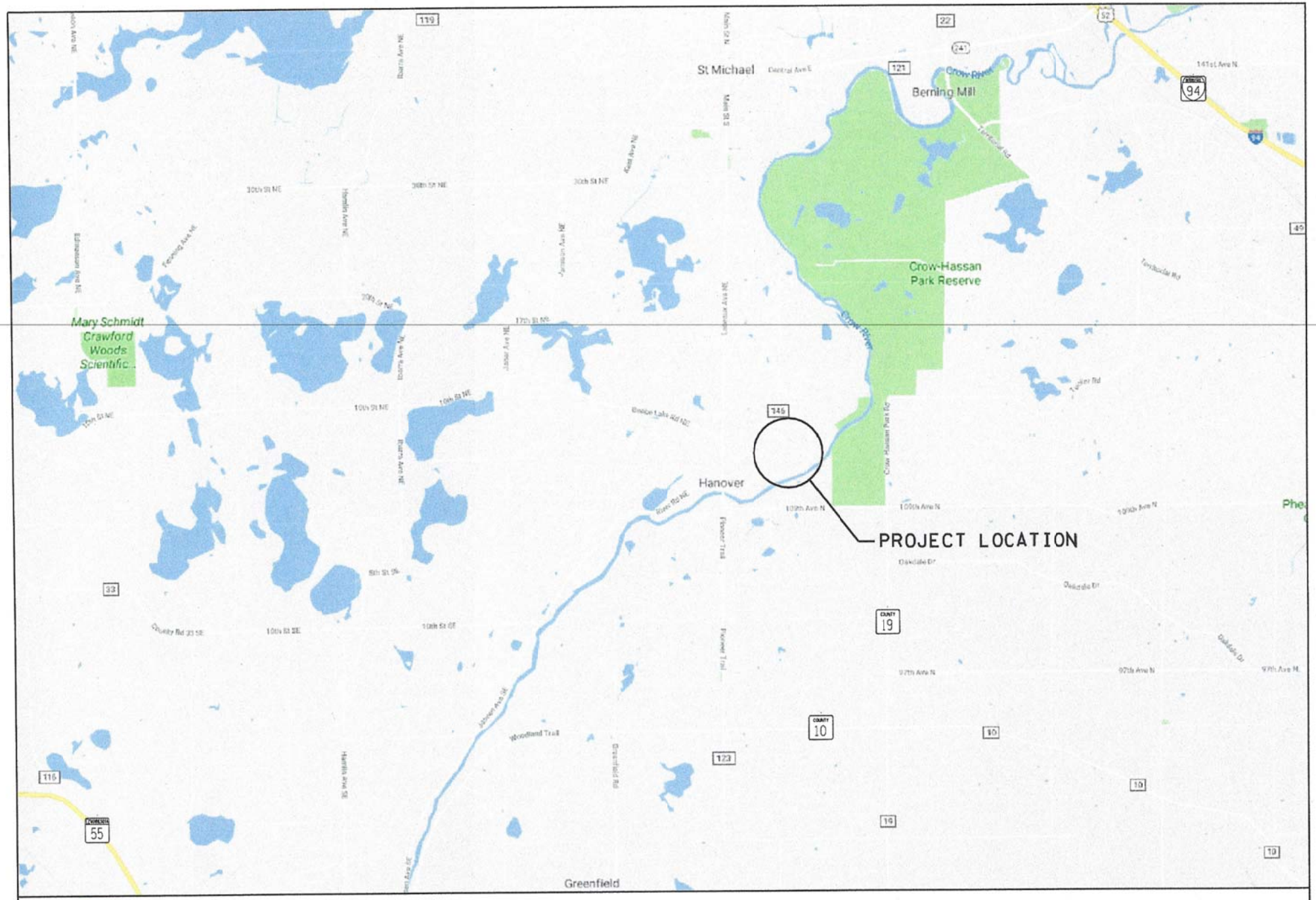
C. RESULTS OF OPERATIONAL ANALYSES

I. INTRODUCTION

Duininck, Inc. proposes to develop an approximately 82.6-acres site referred to as Hanover Cove in Hanover, Minnesota as single family detached residential homes. The project will consist of 286 single-family homes. For the purposes of this study, it is anticipated that construction will be complete, and the facilities fully occupied by 2025.

The proposed site is a former gravel mine and is located adjacent to the east side of River Road NE, adjacent to the south side of 8th Street NE, and is north and west of Riverview Road NE. The site location is illustrated on Figure 1, "Vicinity Map". Access to the site is proposed via an extension of 5th Street NE to the east from River Road NE and via an extension of Mallard Street NE to the south from 8th Street NE. The location of these accesses are illustrated on the Concept Site Plan, Figure 2.

The purpose of this study is to support the EAW completed for the Hanover Cove development, particularly to evaluate the impact of traffic generated by the proposed development on the operations and safety of the adjacent roadway network. The study focuses on the roads and intersections that provide direct and indirect access into the site. This study details the existing and future roadway conditions at studied intersections and includes traffic volumes, lane geometrics and traffic operational analysis results. Recommendations regarding roadway improvements to accommodate the anticipated growth in background traffic are included as necessary.



STS
Swing Traffic Solutions

HANOVER COVE
HANOVER, MN

VICINITY MAP
FIGURE 1

STS
Swing Traffic Solutions

HANOVER COVE
HANOVER, MN

SITE MAP
FIGURE 2

I. Existing Conditions

A. Data Collection

The existing conditions of the nearby roadway system were documented by a field inventory conducted during the week of June 18, 2018. The purpose was to identify features that affect roadway capacity, including traffic control, sight distances, turn lanes, speed limits, etc. In addition, turning movement traffic counts were conducted revealing the AM Peak hour occurs at 6:45 – 7:45 AM and the PM Peak hour at 4:45 – 5:45 PM at the following intersections:

- 15th Street NE and Labeaux Avenue NE
- 5th Street NE and Labeaux Avenue NE
- Labeaux Avenue NE and River Road NE/River Road NE
- River Road NE and 5th Street NE
- River Road NE and 8th Street NE

Figure 3 illustrates the existing AM and PM Peak hour turning movement counts. Also, the 2016 average daily traffic volume for River Road NE, and Labeaux Avenue NE has been collected and published by MnDOT as 3,450 vehicles per day and 11,600 vehicles per day, respectively.

B. Roadway Descriptions

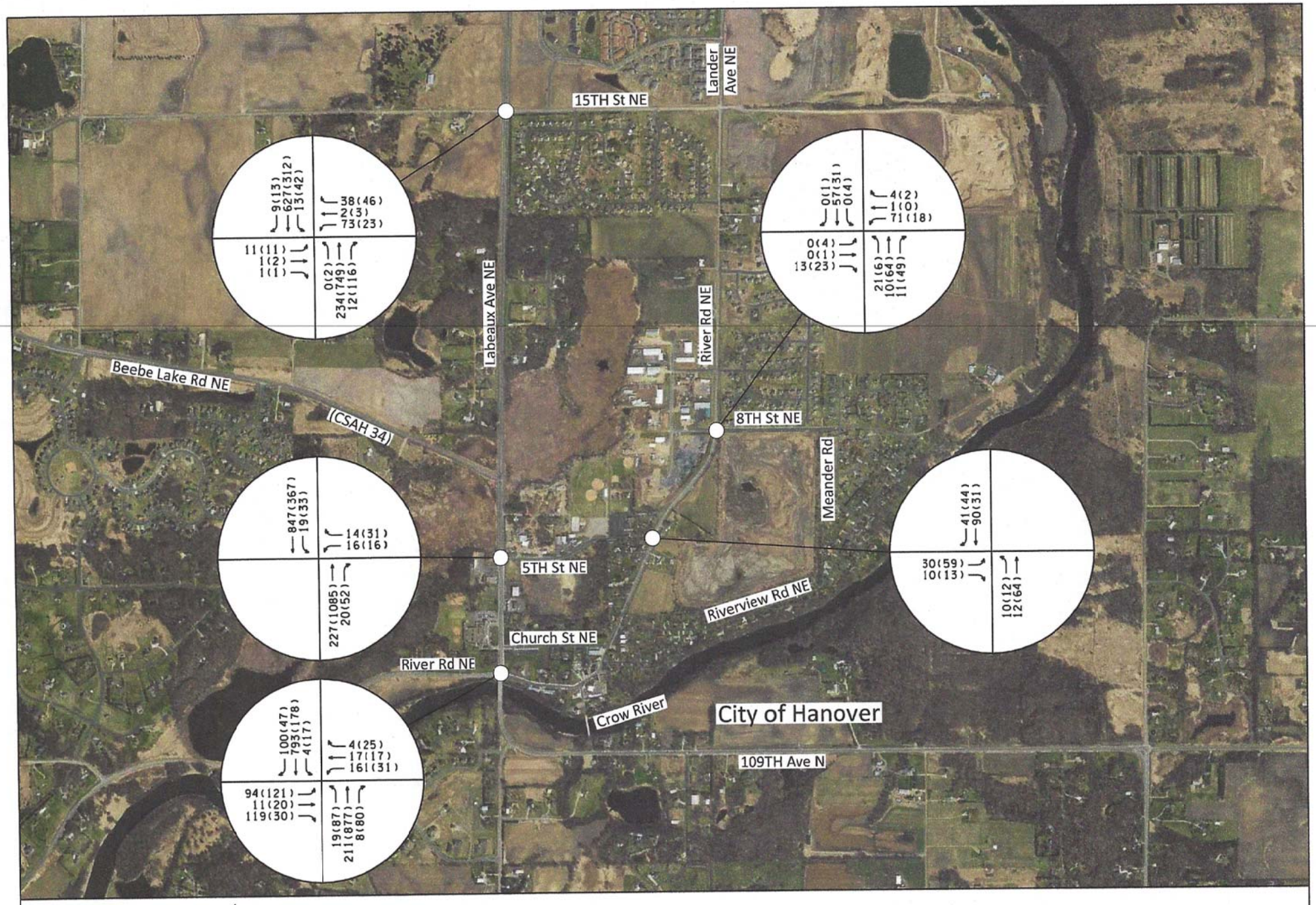
The existing geometrics of the Study Area Roadway Network have been document based on a field review. The discussion that follows details specific items such as lane and shoulder layout, roadway classifications, and turn lane storage lengths.

- **River Road NE,** which runs generally north/south along the western border of the site. It is a County State Aid Highway (CSAH 20) and is functionally classified as a B Minor Arterial to the west of Labeaux Avenue NE. It provides direct access to the site at 5th Street NE and indirectly at 8th Street NE. In the study area, River Road NE is a two-lane undivided facility including right and

left turn lanes at critical intersections. It has an urban cross-section east of Labeaux Avenue NE and a rural cross-section to the west of Labeaux Avenue NE, and it is a 30-mph speed limit facility.

- **Lebeaux Avenue NE,** which runs north south in the study area is a County State Aid Highway (CSAH 19) and is classified as a B Minor Arterial. It has a two-lane undivided rural cross-section footprint from 15th Street NE to Beebe Lake Road NE. Labeaux Avenue NE changes to an undivided three-lane footprint with a rural cross-section beginning at Beebe Lake Road NE and continuing to the south to just north of 5th Street NE. From north of 5th Street NE the cross-section changes to an urban 3-lane cross-section which continues to the south across the Crow River Bridge. There are left and right turn lanes at critical intersections. It is signed for 55 mph to the north of Beebe Lake Toad NE and changes to 30 mph through the heart of town. Labeaux Avenue NE provides access to the region and indirect access to the site via its intersections with River Road NE, 5th Street NE, and 15th Street NE.

- **15th Street NE, 8th Street NE and 5th Street NE** run east/west and are local streets that provide access to site, 15th Street indirectly, and 8th Street and 5th Street directly. They are two lane roads with undivided urban cross-sections and are 30 mph facilities.



STS
Swing Traffic Solutions

AM(PM)
XXX(XXX)

HANOVER COVE
HANOVER, MN

EXISTING PEAK HOUR VOLUMES
FIGURE 3

C. Intersection Descriptions

- **Labeaux Avenue NE and 15th Street NE,** form a four-legged unsignalized intersection north of the site. All 15th Street NE approaches are two lanes, one lane entering and one lane exiting the intersection and are stop controlled. The Labeaux Avenue NE approaches are free flowing and include left and right turn lanes.

- **Labeaux Avenue NE and 5th Street NE** form a three-legged unsignalized intersection west of the site. The 5th Street NE approach is stop controlled and has three lanes, two lanes entering (left and right turning lanes) and one lane exiting the intersection. The Labeaux Avenue NE approaches are free flowing, and the northbound approach provides a through lane and a right turn lane, while the southbound approach includes a through lane and left turn lane.

- **Labeaux Avenue NE and River Road NE** form a four-legged, signalized intersection southeast of the site. The west approach includes a dedicated left turn lane, and a shared through/right lane entering the intersection and one lane leaving the intersection. The south and east approaches are the same. The north approach to the intersection includes a dedicated right turn and a dedicated left turn lane and one through lane entering the intersection, and one lane exiting the intersection.

- **River Road NE and 5th Street NE** form a three-legged unsignalized intersection adjacent to the site. The west leg, 5th Street NE, is stop controlled and has two lanes, one lane entering and one lane exiting the intersection. The River Road NE approaches are free flowing, and the northbound approach provides a through lane and a left turn lane, while the southbound approach includes a through lane and a right turn lane.

- **River Road NE and 8th Street NE,** form a four-legged unsignalized intersection north of the site. The west 8th Street NE approaches is two lanes, one lane entering and one lane exiting the intersection and is stop sign controlled. The east 8th Street approach is also stop sign controlled

and includes two lanes entering, a left and through lane and a right turn lane, and one lane exiting the intersection. The River Road NE approaches are free flowing, and the northbound approach includes a left turn lane.

III. NO-BUILD ALTERNATIVE

To address the impacts of a development on the surrounding roadway system, it is necessary to predict the traffic that would be present on the roadway system at the time (the design year) of completion of the proposed development, without the inclusion of the proposed development. This is considered the No-Build scenario, and serves as a basis with which to compare Build scenarios. In this study two design years were analyzed 2025, the year after the development is fully built and occupied, and 2040, the current planning year horizon.

A. Background Growth

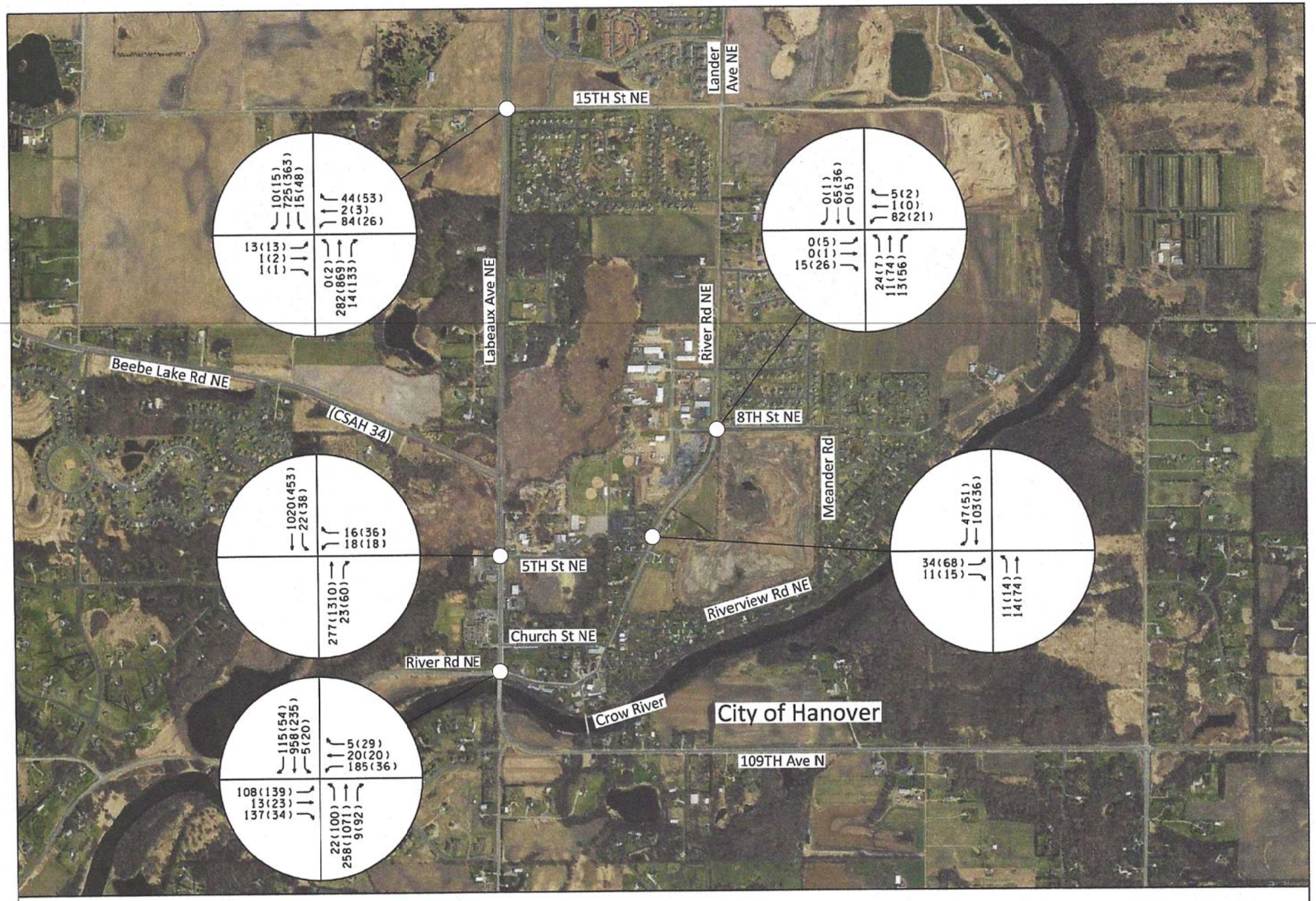
Review of the latest City of Hanover Comprehensive Transportation Plan, and historical traffic counts results in differing estimates of future conditions. The City of Hanover Comprehensive Transportation Plan completed in 2006 suggested traffic counts would grow at an annual rate of 6.5 percent per year. Review of historical counts from MnDOT indicate traffic has actually grown at 1.67 percent per year from 1998 to 2016. Further, discussions with MnDOT regarding the anticipated impact of the future Brockton interchange with I-94, as well as the future connection of TH 610 to Hennepin County 30 suggest traffic patterns along I-94 will change. It is expected that more traffic will use I-94 and divert at the new connections rather than leave I-94 early, as currently occurs, to use cut through routes such as CSAH 19. This will reduce the anticipated future background traffic growth in Hanover. However, Swing Traffic Solutions utilized an annual rate of 2 percent per year to predict and model the 2025 and 2040 no build conditions to ensure a conservative estimate. Further, it is anticipated the Crow River Heights West development will be occupied by 2025 and its traffic has been added to the 2025 and 2040 Background numbers. Figures 4 and 5 reflects the estimated future background volumes for the 2025 and 2040 design years.

B. Anticipated Improvements for No-Build Conditions

The 2006 Hanover Comprehensive Transportation Plan identified road improvements that would be required to manage the anticipated growth in traffic. At this time no improvements are expected to occur to study area intersections or roadways prior to 2025.

C. Results of Analysis

The study area intersections identified in Section II were analyzed for the 2025 and 2040 No-Build scenarios. Complete discussion of the results of these analyses is provided in Section IV, where a comparison with corresponding design year Build alternatives are made.



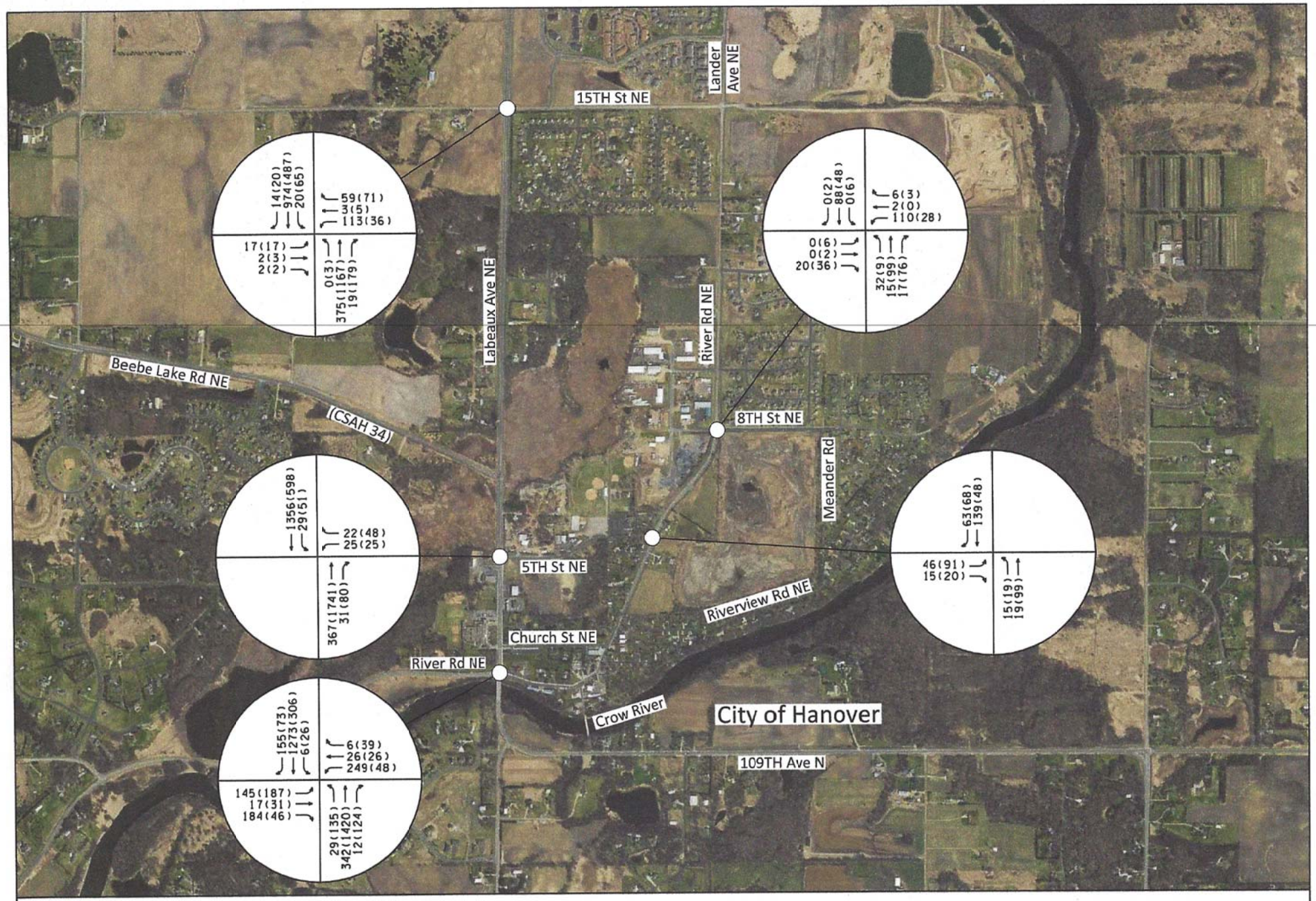
STS
Swing Traffic Solutions

N

AM(PM)
XXX(XXX)

HANOVER COVE
HANOVER, MN

2025 NO BUILD AM & PM PEAK HOUR TRAFFIC
FIGURE 4



STS
Swing Traffic Solutions

AM(PM)
XXX(XXX)

HANOVER COVE
HANOVER, MN

2040 NO BUILD AM & PM PEAK HOUR TRAFFIC
FIGURE 5

IV. BUILD ALTERNATIVE

A. Site-Generated Traffic

The number of vehicle trips generated by the 286 units to be developed as part of the Hanover Cove residential development were estimated for the weekday daily, and AM and PM traffic peak hours using the data and methodologies contained in the 10th Edition of Trip Generation, published by the Institute of Transportation Engineers (ITE). The proposed development will include single-family homes corresponding to (ITE) Land Use Code 210. Table 1 summarizes the trip generation estimates.

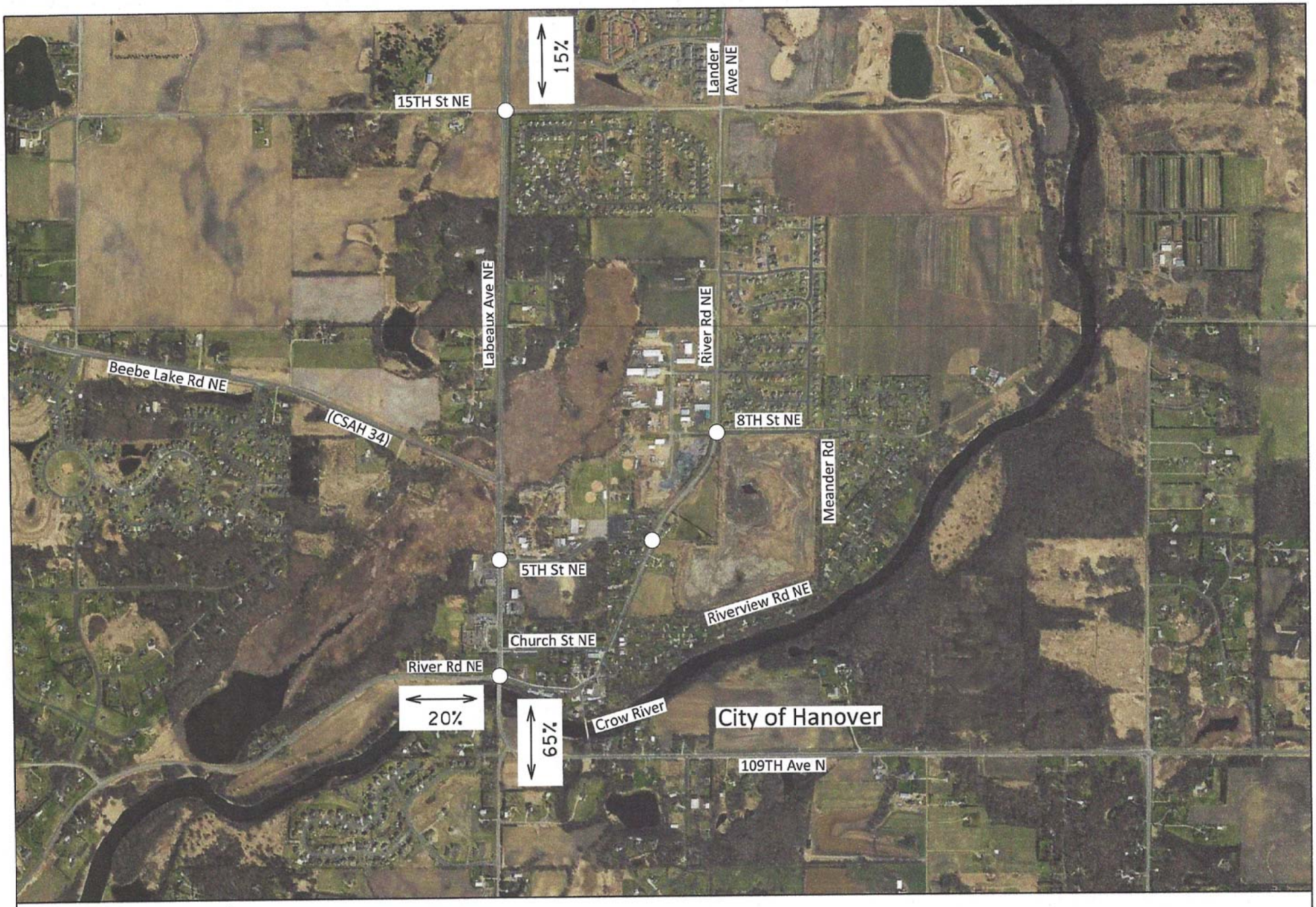
Table 1
Trip Generation

Land Use	AM Peak Hour		PM Peak Hour		Daily Trips
	Enter	Exit	Enter	Exit	
Single Family Homes (286 Homes)	53 Trips	159 Trips	178 Trips	105 Trips	2,700 Trips
TOTAL	**212 Trips**		**283 Trips**		**2,700 Trips**

1. Per the data and methodologies in Trip Generation, 10th Edition, published by ITE.

B. Trip Distribution and Assignment

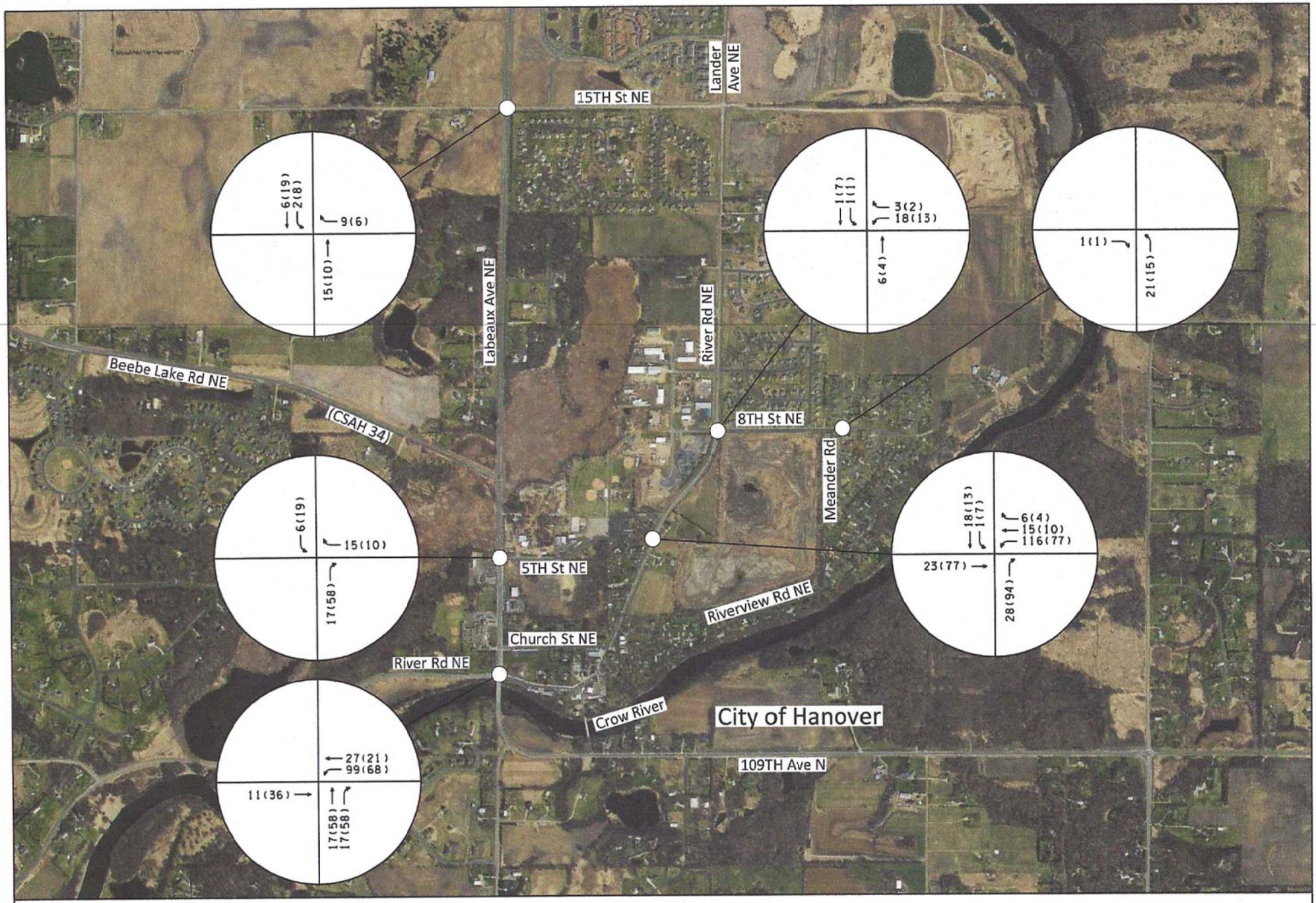
The distribution of site-generated traffic from and to the adjacent street system was based on existing traffic patterns. Figure 6, titled "Trip Distribution," depicts the distribution of the estimated site-generated traffic entering and exiting the study area roadway network. Traffic was assigned to the roadway network on the route that would minimize travel time. It is assumed each access approach to the existing street system will include one lane in and one lane out. The River Road NE approaches to the site access at approximately 5th Street NE should include left and right turn lanes toward the site to improve safety by removing turning traffic from the through traffic path. Figure 7, titled "Trip Assignment," illustrates the estimated changes in traffic volume on the study area roadways associated with the proposed redevelopment.



STS
Swing Traffic Solutions

HANOVER COVE
HANOVER, MN

TRIP DISTRIBUTION
FIGURE 6



STS
Swing Traffic Solutions

AM(PM)
XXX(XXX)

HANOVER COVE
HANOVER, MN

TRIP ASSIGNMENT
FIGURE 7

C. Build Traffic Volumes

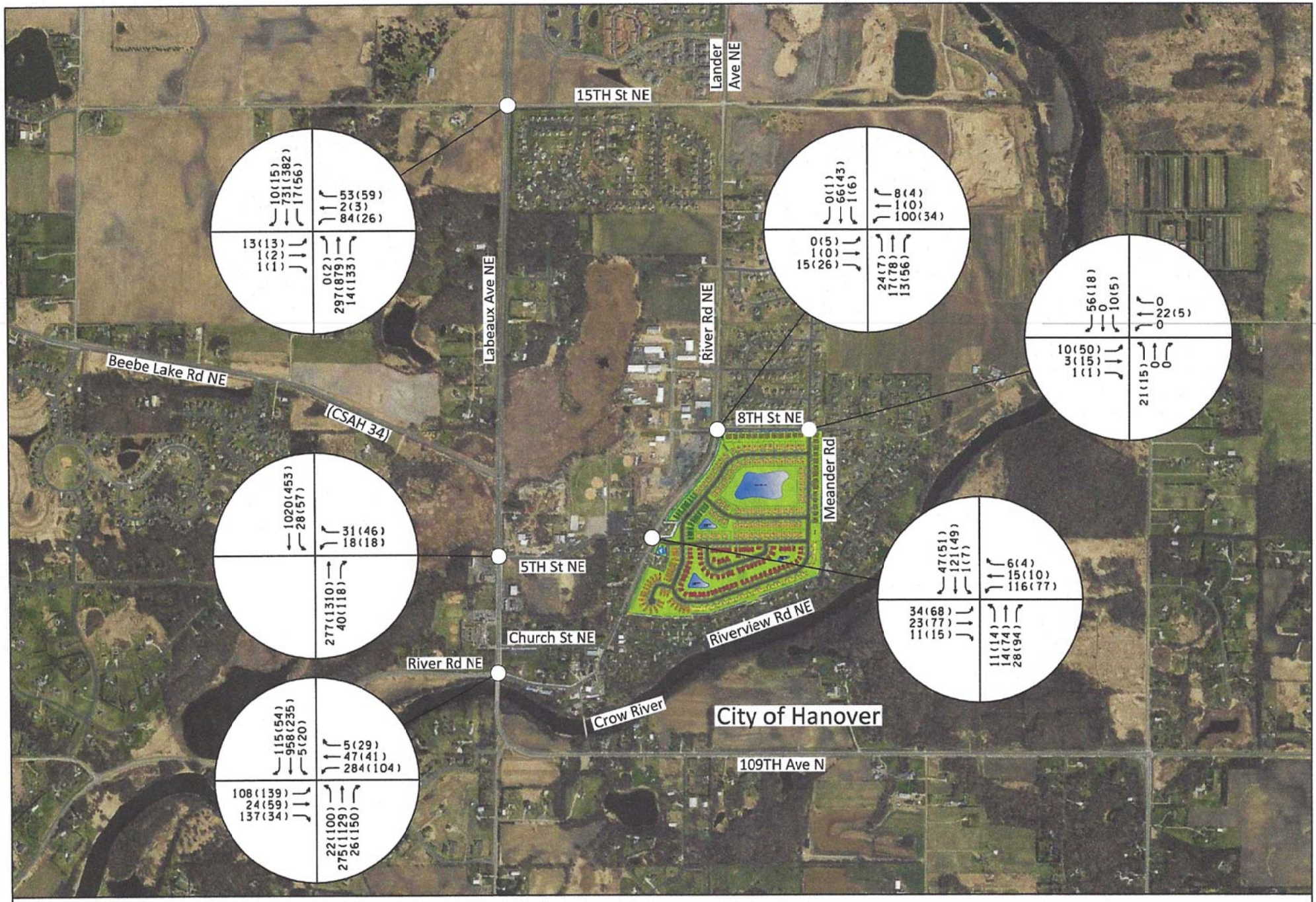
When combined, the site-generated traffic volumes and No-Build scenario traffic volumes result in the Build scenario traffic volumes, shown on Figures 8 and 9 for the 2025 and 2040 design years, respectively.

D. Intersection Operational Analysis Description

The operating conditions of transportation facilities, such as roadways, traffic signals and stop-controlled intersections, are evaluated based on the relationship of the theoretical capacity of a facility to the actual traffic volume on that facility. Various factors affect capacity including travel speed, roadway geometry, grade, number of travel lanes, and intersection control. The current standards for evaluating capacity and operating conditions are contained in the 6th Edition of Highway Capacity Manual, published by the Transportation Research Board. The procedures describe operating conditions in terms of driver delay represented as a Level of Service (LOS). Operations are given letter designations with "A" representing the best operating conditions and "F" representing the worst. Generally, level of service "D" represents the threshold for acceptable overall intersection operating conditions during a peak hour. The Chart below summarizes the level of service and delay criteria for signalized and unsignalized intersections.

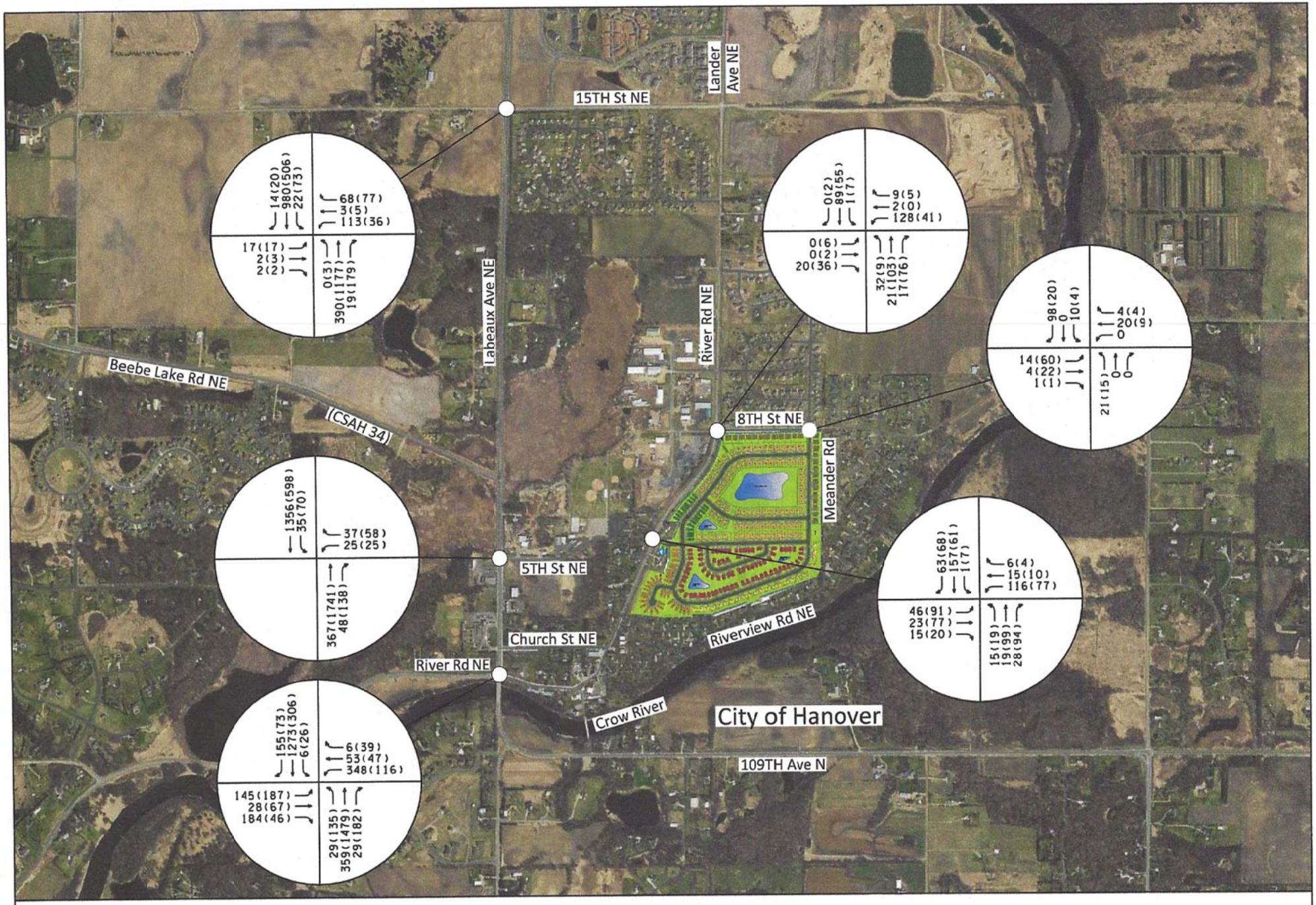
LOS Designation	Signalized Intersection Average Delay/Vehicle (Sec.)	Unsignalized Intersection Average Delay/Vehicle (Sec.)
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

A final fundamental component of operational analyses is a study of vehicular queuing, or the line of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable Level of Service, but if queues from the intersection extend back to block entrances to turn lanes or accesses to adjacent land uses, unsafe operating conditions could result. In this report, the Industry Design Standard 95th percentile queue length is used. The 95th Percentile Queue Length refers to that length of vehicle queue that has only a five-percent probability of occurring during an analysis hour.



HANOVER COVE
HANOVER, MN

2025 BUILD AM & PM PEAK HOUR TRAFFIC
FIGURE 8



STS
Swing Traffic Solutions

AM(PM)
XXX(XXX)

HANOVER COVE
HANOVER, MN

2040 BUILD AM & PM PEAK HOUR TRAFFIC
FIGURE 9

E. Results of Analysis

This section contains the results of the intersection operational analyses based on Synchro/Simtraffic, 10th Edition, and provides recommendations, as necessary to mitigate the impacts. Table 2 summarize the results of the operational analyses for the 2025 No Build scenario.

Table 2
2025 No-Build Operations

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**a (4.7 sec)**	**a (3.2 sec)**	-	-
	EB Left	d (29.5 sec)	f (60.9 sec)	34	24
	EB Thru	d (29.5 sec)	f (60.9 sec)	34	24
	EB Right	d (29.5 sec)	f (60.9 sec)	34	24
	WB Left	e (39.1 sec)	e (42.2 sec)	325	86
	WB Thru	e (39.1 sec)	e (42.2 sec)	325	86
	WB Right	e (39.1 sec)	e (42.2 sec)	325	86
	NB Left	a (0)	a (8.1 sec)	-	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	6
	SB Left	a (7.9 sec)	b (11.0 sec)	22	60
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.7 sec)**	**a (1.8 sec)**	-	-
	WB Left	c (23.5 sec)	f (53.2 sec)	33	9
	WB Right	c (23.5 sec)	f (53.2 sec)	33	19
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	7	1
	SB Left	a (8.0 sec)	b (13.8 sec)	26	27
	SB Thru	a (0)	a (0)	-	-
Labeaux Ave NE & River Road NE	**Overall**	**C (28.7 sec)**	**C (26.7 sec)**	-	-
	EB Left	D (43.1 sec)	F (90.2 sec)	133	176
	EB Thru	A (9.6 sec)	C (26.6 sec)	153	170
	EB Right	(N/A)	(N/A)	-	-
	WB Left	F (85.2 sec)	D (52.7 sec)	289	75
	WB Thru	C (31.6 sec)	C (27.1 sec)	224	86
	WB Right	(N/A)	(N/A)	-	-
	NB Left	A (8.4 sec)	A (3.4 sec)	52	457
	NB Thru	A (8.9 sec)	C (26.1 sec)	103	1023
	NB Right	(N/A)	(N/A)	-	-
	SB Left	A (7.0 sec)	A (7.1 sec)	-	47
	SB Thru	C (27.8 sec)	A (6.6 sec)	707	138
	SB Right	A (6.5 sec)	A (1.5 sec)	132	64
River Road NE & 5th Street NE	**Overall**	**a (2.7 sec)**	**a (3.6 sec)**	-	-
	EB Left	a (9.6 sec)	a (9.8 sec)	50	55
	EB Right	a (9.6 sec)	a (9.8 sec)	50	55
	NB Left	a (7.5 sec)	a (7.4 sec)	5	5
	NB Thru	a (0)	a (0)	-	-

	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
River Road NE & 8th Street NE	**Overall**	**a (5.5 sec)**	**a (2.6 sec)**	-	-
	EB Left	-	a (2.8 sec)	27	45
	EB Thru	-	a (2.8 sec)	27	45
	EB Right	a (8.7 sec)	a (2.8 sec)	27	45
	WB Left	b (10.1 sec)	b (10.0 sec)	47	40
	WB Thru	b (10.1 sec)	b (10.0 sec)	47	40
	WB Right	b (10.1 sec)	b (10.0 sec)	47	40
	NB Left	a (7.4 sec)	a (7.3 sec)	11	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	-	a (0)	-	-
	SB Thru	a (0)	a (0)	-	-
	SB Right	-	a (0)	-	-

1. Overall Level of Service reported from Synchro 10, upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

The results shown in Table 2 indicate all intersections are expected to operate at acceptable overall LOS in 2025 without the proposed project. That said, the southbound and westbound movements at the intersection of Labeaux Avenue NE and River Road NE will be operating with long vehicle queues during the AM peak traffic hour, and similarly the northbound movement will be operating with long queues during the PM peak traffic hour. Review of the SimTraffic simulation suggests these queues are managed during each signal cycle, however, this is indicative that additional capacity should be considered for north and southbound traffic on Labeaux. It is suggested the traffic signal be modified to provide protect permitted left turn phasing for the eastbound and westbound approaches during the AM peak, and right turn lanes should be considered (if feasible) for the east, west and south approaches. Table 3 summarizes the results of the 2025 No-Build conditions with the suggested mitigation. With the suggested improvement the westbound operations at Labeaux Avenue and River Road NE improve and the queue is reduced to a more manageable 198 feet. This intersection should be monitored over the coming years as traffic volumes increase for potential improvements such as the installation of an additional through lane in each direction from 15th Street NE to the south across the Crow River Bridge. It is further noted, the minor street approaches to Labeaux from 15th Street and 5th Street in the PM peak are expected to at or near capacity and experience long delays.

Table 3
2025 No-Build Operations with mitigation

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**a (4.7 sec)**	**a (3.4 sec)**	-	-
	EB Left	d (29.5 sec)	f (65.7 sec)	34	32
	EB Thru	d (29.5 sec)	f (65.7 sec	34	32
	EB Right	d (29.5 sec)	f (65.7 sec)	34	32
	WB Left	e (39.1 sec)	e (45.2 sec)	325	124
	WB Thru	e (39.1 sec)	e (45.2 sec)	325	124
	WB Right	e (39.1 sec)	e (45.2 sec)	325	124
	NB Left	a (0)	a (8.4 sec)	-	14
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	12
	SB Left	a (7.9 sec)	b (11.2 sec)	26	39
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.7 sec)**	**a (2.2 sec)**	-	-
	WB Left	c (23.5 sec)	f (56.4 sec)	39	103
	WB Right	c (23.5 sec)	f (56.4 sec)	24	85
	NB Thru	a (0)	a (0)	-	7
	NB Right	a (0)	a (0)	-	25
	SB Left	a (8.0 sec)	b (14.7 sec)	29	112
	SB Thru	a (0)	a (0)	-	-
Labeaux Ave NE & River Road NE	**Overall**	**C (27.5 sec)**	**C (25.6 sec)**	-	-
	EB Left	D (36.6 sec)	F (121.6 sec)	121	175
	EB Thru	D (49.8 sec)	E (61.6 sec)	78	111
	EB Right	B (18.6 sec)	A (2.0 sec)	145	42
	WB Left	D (45.7 sec)	D (52.2 sec)	182	90
	WB Thru	D (47.2 sec)	E (58.0 sec)	198	71
	WB Right	A (0.2 sec)	A (1.8 sec)	16	54
	NB Left	A (9.2 sec)	A (3.9 sec)	51	267
	NB Thru	A (9.2 sec)	C (20.7 sec)	123	1053
	NB Right	A (0)	A (2.9 sec)	26	62
	SB Left	A (6.8 sec)	A (4.8 sec)	55	41
	SB Thru	C (32.1 sec)	A (7.1 sec)	708	129
	SB Right	A (3.9 sec)	A (0.6 sec)	117	57
River Road NE & 5th Street NE	**Overall**	**a (2.7 sec)**	**a (3.6 sec)**	-	-
	EB Left	a (9.6 sec)	a (9.8 sec)	49	54
	EB Right	a (9.6 sec)	a (9.8 sec)	49	54
	NB Left	a (7.5 sec)	a (7.4sec)	-	11
	NB Thru	a (0)	a (0)	-	-
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
	Overall	**a (5.5 sec)**	**a (2.8 sec)**	-	-
	EB Left	-	a (8.8 sec)	27	41
	EB Thru	-	a (8.8 sec)	27	41
	EB Right	a (8.7 sec)	a (8.8 sec)	27	41
	WB Left	b (10.1 sec)	b (10.1 sec)	47	48
	WB Thru	b (10.1 sec)	-	47	48

	WB Right	b (10.1 sec)	b (10.1 sec)	47	48
	NB Left	a (7.4 sec)	a (7.3 sec)	9	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	-	a (0)	-	11
River Road NE & 8th Street NE	SB Thru	a (0)	a (1.4)	-	11
	SB Right	-	-	-	11

1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

2025 Build traffic analysis considers the operations without improvements and tests the potential benefits to the traffic operations at the intersection of Labeaux Avenue and River Road that were suggested to improve operations for the 2025 No-Build scenario. (Similarly, all other intersections do not assume any changes from existing conditions.) As noted earlier, the intersection experiences long southbound queues during the AM peak hour and long northbound queues during the PM Peak hour. Also during the AM peak, traffic from Hanover residents on the east leg of River Road experience long delays and long queues. Ultimately, mitigation of these conditions will require an additional lane of traffic in each direction on Labeaux Avenue beginning to the south of the bridge and extending to 15th Street. However, there are some strategies that can be adopted to reduce some of the travel time and delay experienced by the residents of Hanover. In particular, during the AM Peak the westbound traffic on River Road would benefit by the addition of protected/permitted left turn phasing. In the PM peak this strategy is not as useful, and the signal could return to permitted only phasing. During the PM peak the addition of capacity at the intersection by way of right turn lanes reduces the northbound delay and queues. The Tables that follow summarize the results of analyses conducted for the intersection of Labeaux and River Road for the no improvement scenario, the protected/permitted signal phasing scenario, the addition of right turn lanes scenario, and the combined strategies scenario. The combined strategies include the turn lanes and the protected permitted phasing for the AM Peak, which is reduced to permitted only during the PM peak. All the 2025 Build analyses include traffic from the proposed development plus the traffic included in the 2025

No-Build scenarios. Table 4a contains a summary of the analysis results assuming no improvements to the existing conditions have occurred.

Table 4a
2025 Build - Operations without improvements

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**a (5.2 sec)**	**a (3.7 sec)**	-	-
	EB Left	d (31.6 sec)	f (70.2 sec)	30	40
	EB Thru	d (31.6 sec)	f (70.2 sec)	30	40
	EB Right	d (31.6 sec)	f (70.2 sec)	30	40
	WB Left	e (41.8 sec)	e (46.9 sec)	136	166
	WB Thru	e (41.8 sec)	e (46.9 sec)	136	166
	WB Right	e (41.8 sec)	e (46.9 sec)	136	166
	NB Left	-	a (8.2 sec)	-	9
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (8.0 sec)	b (11.3 sec)	23	51
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.8 sec)**	**a (2.2 sec)**	-	-
	WB Left	c (19.6 sec)	f (56.6 sec)	59	39
	WB Right	c (19.6 sec)	f (56.6 sec)	42	67
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	17
	SB Left	a (8.0 sec)	b (14.9 sec)	34	62
	SB Thru	a (0)	a (0)	64	-
Labeaux Ave NE & River Road NE	**Overall**	**D (38.1 sec)**	**D (37.7 sec)**	-	-
	EB Left	C (34.0 sec)	F (82.1 sec)	143	144
	EB Thru	A (8.9 sec)	D (40.5 sec)	153	110
	EB Right	-	-	-	-
	WB Left	F (83.1 sec)	E (70.7 sec)	187	156
	WB Thru	C (29.0 sec)	C (34.5 sec)	721	131
	WB Right	-	-	-	
	NB Left	B (11.4 sec)	A (3.6 sec)	57	644
	NB Thru	B (12.3 sec)	D (39.7 sec)	175	1872
	NB Right	-	-	-	
	SB Left	A (8.4 sec)	A (5.9 sec)	44	61
	SB Thru	D (43.4 sec)	A (6.9 sec)	1670	103
	SB Right	A (7.5)	A (1.6 sec)	138	60
River Road NE & 5th Street NE	**Overall**	**a (5.5 sec)**	**a (5.9 sec)**	-	-
	EB Left	b (10.3 sec)	b (11.9 sec)	58	62
	EB Thru	b (10.3 sec)	b (11.9 sec)	58	62
	EB Right	b (10.3 sec)	b (11.9 sec)	58	62
	WB Left	b (11.4 sec)	b (12.3 sec)	55	42
	WB Thru	b (11.4 sec)	b (12.3 sec)	55	42
	WB Right	b (11.4 sec)	b (12.3 sec)	55	42
	NB Left	a (7.3 sec)	a (7.5 sec)	-	5
	NB Thru	a (0)	a (0)	-	-

	NB Right	a (0)	a (0)	-	-
	SB Left	a (7.4 sec)	a (7.6 sec)	-	12
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
River Road NE & 8th Street NE	**Overall**	**a (5.9 sec)**	**a (2.9 sec)**	**-**	**-**
	EB Left	-	a (8.9 sec)	-	40
	EB Thru	-	a (8.9 sec)	33	40
	EB Right	a (8.7 sec)	a (8.9 sec)	33	40
	WB Left	b (10.4 sec)	b (10.3 sec)	64	46
	WB Thru	b (10.4 sec)	b (10.3 sec)	64	46
	WB Right	b (10.4 sec)	b (10.3 sec)	64	46
	NB Left	a (7.4 sec)	a (7.3 sec)	13	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (0)	a (0)	-	-
	SB Thru	a (0.1 sec)	a (1.0 sec)	-	-
	SB Right	-	a (1.0 sec)	-	-
8th Street NE & Site Access	**Overall**	**a (6.9 sec)**	**a (6.6 sec)**	**-**	**-**
	EB Left	a (0.1 sec)	a (0.2 sec)	-	-
	EB Thru	a (5.4 sec)	a (5.6 sec)	-	-
	EB Right	a (5.4 sec)	a (5.6 sec)	-	-
	WB Left	-	-	-	-
	WB Thru	a (0)	a (0)	-	-
	WB Right	-	-	-	-
	NB Left	a (9.6 sec)	a (9.7 sec)	47	32
	NB Thru	-	-	47	32
	NB Right	-	-	47	32
	SB Left	a (8.7 sec)	a (8.6 sec)	54	40
	SB Thru	-	-	54	40
	SB Right	a (8.7 sec)	a (8.6 sec)	54	40

1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

The overall traffic operations at the study intersections are expected to be at acceptable LOS. Again however, the southbound and westbound movements at the intersection of Labeaux Avenue NE and River Road NE will be operating with long vehicle queues during the AM peak traffic hour, and similarly the northbound movement will be operating with long vehicle queues during the PM peak traffic hour. Table 4b summarizes the analysis results reflecting a change in signal phasing at the Labeaux Avenue NE and River Road intersection to include protected/permitted phasing for the east and westbound approaches.

Table 4b
2025 Build - Operations with Protected/Permitted Signal Phasing

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**a (5.2 sec)**	**a (3.7 sec)**	-	-
	EB Left	d (31.6 sec)	f (70.2 sec)	30	40
	EB Thru	d (31.6 sec)	f (70.2 sec)	30	40
	EB Right	d (31.6 sec)	f (70.2 sec)	30	40
	WB Left	e (41.8 sec)	e (46.9 sec)	136	166
	WB Thru	e (41.8 sec)	e (46.9 sec)	136	166
	WB Right	e (41.8 sec)	e (46.9 sec)	136	166
	NB Left	-	a (8.2 sec)	-	9
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (8.0 sec)	b (11.3 sec)	23	51
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.8 sec)**	**a (2.2 sec)**	-	-
	WB Left	c (19.6 sec)	f (56.6 sec)	59	39
	WB Right	c (19.6 sec)	f (56.6 sec)	42	67
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	17
	SB Left	a (8.0 sec)	b (14.9 sec)	34	62
	SB Thru	a (0)	a (0)	64	-
Labeaux Ave NE & River Road NE	**Overall**	**C (33.9 sec)**	**D (37.7 sec)**	-	-
	EB Left	D (36.5 sec)	F (83.2 sec)	161	142
	EB Thru	C (25.7 sec)	E (56.3 sec)	212	105
	EB Right	-	-	-	-
	WB Left	E (68.6 sec)	E (65.6 sec)	195	176
	WB Thru	D (42.2 sec)	D (45.6 sec)	656	189
	WB Right	-	-	-	
	NB Left	B (10.5 sec)	A (4.6 sec)	51	647
	NB Thru	B (11.0 sec)	D (49.3 sec)	188	1902
	NB Right	-	-	-	
	SB Left	A (8.2 sec)	A (7.2 sec)	43	60
	SB Thru	D (35.8 sec)	A (8.3 sec)	1556	116
	SB Right	A (1.9 sec)	A (0.7 sec)	156	50
River Road NE & 5th Street NE	**Overall**	**a (5.5 sec)**	**a (5.9 sec)**	-	-
	EB Left	b (10.3 sec)	b (11.9 sec)	58	62
	EB Thru	b (10.3 sec)	b (11.9 sec)	58	62
	EB Right	b (10.3 sec)	b (11.9 sec)	58	62
	WB Left	b (11.4 sec)	b (12.3 sec)	55	42
	WB Thru	b (11.4 sec)	b (12.3 sec)	55	42
	WB Right	b (11.4 sec)	b (12.3 sec)	55	42
	NB Left	a (7.3 sec)	a (7.5 sec)	-	5
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (7.4 sec)	a (7.6 sec)	-	12
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-

River Road NE & 8th Street NE	**Overall**	**a (5.9 sec)**	**a (2.9 sec)**	**-**	**-**
	EB Left	-	a (8.9 sec)	-	40
	EB Thru	-	a (8.9 sec)	33	40
	EB Right	a (8.7 sec)	a (8.9 sec)	33	40
	WB Left	b (10.4 sec)	b (10.3 sec)	64	46
	WB Thru	b (10.4 sec)	b (10.3 sec)	64	46
	WB Right	b (10.4 sec)	b (10.3 sec)	64	46
	NB Left	a (7.4 sec)	a (7.3 sec)	13	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (0)	a (0)	-	-
	SB Thru	a (0.1 sec)	a (1.0 sec)	-	-
	SB Right	-	a (1.0 sec)	-	-
8th Street NE & Site Access	**Overall**	**a (6.9 sec)**	**a (6.6 sec)**	**-**	**-**
	EB Left	a (0.1 sec)	a (0.2 sec)	-	-
	EB Thru	a (5.4 sec)	a (5.6 sec)	-	-
	EB Right	a (5.4 sec)	a (5.6 sec)	-	-
	WB Left	-	-	-	-
	WB Thru	a (0)	a (0)	-	-
	WB Right	-	-	-	-
	NB Left	a (9.6 sec)	a (9.7 sec)	47	32
	NB Thru	-	-	47	32
	NB Right	-	-	47	32
	SB Left	a (8.7 sec)	a (8.6 sec)	54	40
	SB Thru	-	-	54	40
	SB Right	a (8.7 sec)	a (8.6 sec)	54	40

1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

As shown in Table 4b, the overall traffic operations at the study intersections are still expected to be at acceptable LOS. With the addition of the protected permitted phasing the overall LOS at Labeaux Avenue and River Road NE is shown to improve in the AM Peak, and the southbound and westbound movements will have reduced queues compared to the no improvement option. Table 4c summarizes the analysis results reflecting no change to signal phasing at the Labeaux Avenue NE and River Road intersection but includes short right turn lanes on all legs.

Table 4c
2025 Build - Operations with Turn Lanes

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
	Overall	**a (5.2 sec)**	**a (3.7 sec)**	**-**	**-**
	EB Left	d (31.6 sec)	f (70.2 sec)	30	40
	EB Thru	d (31.6 sec)	f (70.2 sec)	30	40
	EB Right	d (31.6 sec)	f (70.2 sec)	30	40

Labeaux Ave NE & 15th Street NE	WB Left	e (41.8 sec)	e (46.9 sec)	136	166
	WB Thru	e (41.8 sec)	e (46.9 sec)	136	166
	WB Right	e (41.8 sec)	e (46.9 sec)	136	166
	NB Left	-	a (8.2 sec)	-	9
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (8.0 sec)	b (11.3 sec)	23	51
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.8 sec)**	**a (2.2 sec)**	-	-
	WB Left	c (19.6 sec)	f (56.6 sec)	59	39
	WB Right	c (19.6 sec)	f (56.6 sec)	42	67
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	17
	SB Left	a (8.0 sec)	b (14.9 sec)	34	62
	SB Thru	a (0)	a (0)	64	-
Labeaux Ave NE & River Road NE	**Overall**	**C (29.8 sec)**	**C (24.0 sec)**	-	-
	EB Left	D (40.3 sec)	F (88.4 sec)	144	150
	EB Thru	C (34.8 sec)	D (52.4 sec)	26	89
	EB Right	A (7.4 sec)	A (9.4 sec)	143	34
	WB Left	E (75.6 sec)	E (69.2 sec)	175	154
	WB Thru	D (35.5 sec)	D (50.9 sec)	1218	110
	WB Right	A (0.0 sec)	A (6.8 sec)	15	41
	NB Left	A (8.0 sec)	A (3.4 sec)	46	197
	NB Thru	A (9.1 sec)	B (19.6 sec)	135	776
	NB Right	A (0.7 sec)	A (3.9)	45	68
	SB Left	A (6.4 sec)	A (4.2 sec)	16	49
	SB Thru	C (28.0 sec)	A (6.5 sec)	858	87
	SB Right	A (5.9 sec)	A (1.5 sec)	104	56
River Road NE & 5th Street NE	**Overall**	**a (5.5 sec)**	**a (5.9 sec)**	-	-
	EB Left	b (10.3 sec)	b (11.9 sec)	58	62
	EB Thru	b (10.3 sec)	b (11.9 sec)	58	62
	EB Right	b (10.3 sec)	b (11.9 sec)	58	62
	WB Left	b (11.4 sec)	b (12.3 sec)	55	42
	WB Thru	b (11.4 sec)	b (12.3 sec)	55	42
	WB Right	b (11.4 sec)	b (12.3 sec)	55	42
	NB Left	a (7.3 sec)	a (7.5 sec)	-	5
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (7.4 sec)	a (7.6 sec)	-	12
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
River Road NE & 8th Street NE	**Overall**	**a (5.9 sec)**	**a (2.9 sec)**	-	-
	EB Left	-	a (8.9 sec)	-	40
	EB Thru	-	a (8.9 sec)	33	40
	EB Right	a (8.7 sec)	a (8.9 sec)	33	40
	WB Left	b (10.4 sec)	b (10.3 sec)	64	46
	WB Thru	b (10.4 sec)	b (10.3 sec)	64	46
	WB Right	b (10.4 sec)	b (10.3 sec)	64	46
	NB Left	a (7.4 sec)	a (7.3 sec)	13	-

	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (0)	a (0)	-	-
	SB Thru	a (0.1 sec)	a (1.0 sec)	-	-
	SB Right	-	a (1.0 sec)	-	-
8th Street NE & Site Access	**Overall**	**a (6.9 sec)**	**a (6.6 sec)**	-	-
	EB Left	a (0.1 sec)	a (0.2 sec)	-	-
	EB Thru	a (5.4 sec)	a (5.6 sec)	-	-
	EB Right	a (5.4 sec)	a (5.6 sec)	-	-
	WB Left	-	-	-	-
	WB Thru	a (0)	a (0)	-	-
	WB Right	-	-	-	-
	NB Left	a (9.6 sec)	a (9.7 sec)	47	32
	NB Thru	-	-	47	32
	NB Right	-	-	47	32
	SB Left	a (8.7 sec)	a (8.6 sec)	54	40
	SB Thru	-	-	54	40
	SB Right	a (8.7 sec)	a (8.6 sec)	54	40

1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

As shown in Table 4c, the overall traffic operations at the study intersections are improved and are still expected to be at acceptable LOS. With the addition of the right turn lanes the AM and PM Peak traffic queuing estimates are greatly reduced on Labeaux Avenue, however, during the AM Peak, the westbound River Road approach is forecast to have very long queues that will take several cycles to clear. Table 4d summarizes the analysis results of the combined strategies of signal phasing change during the AM Peak and short right turn lanes on all legs.

Table 4d
2025 Build – Combined Improvements

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**a (5.2 sec)**	**a (3.7 sec)**	-	-
	EB Left	d (31.6 sec)	f (70.2 sec)	30	40
	EB Thru	d (31.6 sec)	f (70.2 sec)	30	40
	EB Right	d (31.6 sec)	f (70.2 sec)	30	40
	WB Left	e (41.8 sec)	e (46.9 sec)	136	166
	WB Thru	e (41.8 sec)	e (46.9 sec)	136	166
	WB Right	e (41.8 sec)	e (46.9 sec)	136	166
	NB Left	-	a (8.2 sec)	-	9
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (8.0 sec)	b (11.3 sec)	23	51
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-

Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.8 sec)**	**a (2.2 sec)**	-	-
	WB Left	c (19.6 sec)	f (56.6 sec)	59	39
	WB Right	c (19.6 sec)	f (56.6 sec)	42	67
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	17
	SB Left	a (8.0 sec)	b (14.9 sec)	34	62
	SB Thru	a (0)	a (0)	64	-
Labeaux Ave NE & River Road NE	**Overall**	**C (30.8 sec)**	**C (24.7 sec)**	-	-
	EB Left	D (41.6 sec)	F (88.4 sec)	165	150
	EB Thru	E (58.6 sec)	D (52.4 sec)	120	89
	EB Right	C (20.0 sec)	A (9.4 sec)	175	34
	WB Left	E (68.8 sec)	E (69.2 sec)	175	154
	WB Thru	D (52.8 sec)	D (50.9 sec)	656	110
	WB Right	A (0.2 sec)	A (6.8 sec)	5	41
	NB Left	A (8.9 sec)	A (3.4 sec)	55	197
	NB Thru	A (9.8 sec)	B (19.6 sec)	151	776
	NB Right	A (0.0 sec)	A (3.9)	46	68
	SB Left	A (7.2 sec)	A (4.2 sec)	41	49
	SB Thru	C (29.0 sec)	A (6.5 sec)	1311	87
	SB Right	A (2.0 sec)	A (1.5 sec)	153	56
River Road NE & 5th Street NE	**Overall**	**a (5.5 sec)**	**a (5.9 sec)**	-	-
	EB Left	b (10.3 sec)	b (11.9 sec)	58	62
	EB Thru	b (10.3 sec)	b (11.9 sec)	58	62
	EB Right	b (10.3 sec)	b (11.9 sec)	58	62
	WB Left	b (11.4 sec)	b (12.3 sec)	55	42
	WB Thru	b (11.4 sec)	b (12.3 sec)	55	42
	WB Right	b (11.4 sec)	b (12.3 sec)	55	42
	NB Left	a (7.3 sec)	a (7.5 sec)	-	5
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (7.4 sec)	a (7.6 sec)	-	12
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
River Road NE & 8th Street NE	**Overall**	**a (5.9 sec)**	**a (2.9 sec)**	-	-
	EB Left	-	a (8.9 sec)	-	40
	EB Thru	-	a (8.9 sec)	33	40
	EB Right	a (8.7 sec)	a (8.9 sec)	33	40
	WB Left	b (10.4 sec)	b (10.3 sec)	64	46
	WB Thru	b (10.4 sec)	b (10.3 sec)	64	46
	WB Right	b (10.4 sec)	b (10.3 sec)	64	46
	NB Left	a (7.4 sec)	a (7.3 sec)	13	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (0)	a (0)	-	-
	SB Thru	a (0.1 sec)	a (1.0 sec)	-	-
	SB Right	-	a (1.0 sec)	-	-
	Overall	**a (6.9 sec)**	**a (6.6 sec)**	-	-
	EB Left	a (0.1 sec)	a (0.2 sec)	-	-
	EB Thru	a (5.4 sec)	a (5.6 sec)	-	-
	EB Right	a (5.4 sec)	a (5.6 sec)	-	-

8th Street NE & Site Access	WB Left	-	-	-	-
	WB Thru	a (0)	a (0)	-	-
	WB Right	-	-	-	-
	NB Left	a (9.6 sec)	a (9.7 sec)	47	32
	NB Thru	-	-	47	32
	NB Right	-	-	47	32
	SB Left	a (8.7 sec)	a (8.6 sec)	54	40
	SB Thru	-	-	54	40
	SB Right	a (8.7 sec)	a (8.6 sec)	54	40

1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

Again, the results shown in Table 4d indicate all intersections are expected to operate at acceptable overall LOS in 2025 with the proposed project. The combined strategy balances the operations and queues present on Labeaux Avenue with those present on the westbound approach of River Road NE. This intersection should be monitored over the coming years as traffic volumes increase for potential improvements.

F. 2040 Operations

The long-range planning horizon year is 2040, as mentioned in the No-Build section. The results of the analysis of the 2040 No-Build traffic conditions, which continue to reflect a 2 percent annual growth rate and no mitigation are summarized in Table 4.

Table 5
2040 No-Build Operations

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**d (32.6 sec)**	**c (22.6 sec)**	-	-
	EB Left	f (61.3 sec)	f (361.3 sec)	39	72
	EB Thru	f (61.3 sec)	f (361.3 sec)	39	72
	EB Right	f (61.3 sec)	f (361.3 sec)	39	72
	WB Left	f (289.9 sec)	f (339.5 sec)	1481	1292
	WB Thru	f (289.9 sec)	f (339.5 sec)	1481	1292
	WB Right	f (289.9 sec)	f (339.5 sec)	1481	1292
	NB Left	-	a (8.5 sec)	-	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	9
	SB Left	a (8.2 sec)	b (14.2 sec)	32	74
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
Labeaux Ave NE & 5th Street NE	**Overall**	**a (1.4 sec)**	**a (7.5 sec)**	-	-
	WB Left	f (50.4 sec)	f (247.3 sec)	205	224
	WB Right	f (50.4 sec)	f (247.3 sec)	34	213
	NB Thru	a (0)	a (0)	-	7
	NB Right	a (0)	a (0)	-	23

	SB Left	a (8.3 sec)	c (19.8 sec)	954	96
	SB Thru	a (0)	a (0)	(3705)	-
Labeaux Ave NE & River Road NE	**Overall**	**E (71.3 sec)**	**E (69.7 sec)**	-	-
	EB Left	E (67.4 sec)	F (274.7 sec)	175	175
	EB Thru	D (50.8 sec)	E (59.3 sec)	355	1533
	EB Right	D (42.1 sec)	A (5.9 sec)	198	45
	WB Left	F (277.2 sec)	D (52.2 sec)	177	96
	WB Thru	D (51.8 sec)	E (57.7 sec)	1355	83
	WB Right	A (0.2 sec)	A (2.8 sec)	12	64
	NB Left	A (9.2 sec)	A (3.8 sec)	52	552
	NB Thru	A (7.1 sec)	E (77.9.0)	131	5483
	NB Right	A (0)	A (2.3 sec)	30	58
	SB Left	A (5.0 sec)	A (6.7 sec)	61	52
	SB Thru	E (64.6 sec)	A (7.4 sec)	5000+	170
	SB Right	A (4.2 sec)	A (2.3 sec)	144	69
River Road NE & 5th Street NE	**Overall**	**a (2.4 sec)**	**a (3.8 sec)**	-	-
	EB Left	b (10.1 sec)	b (10.4 sec)	49	72
	EB Right	b (10.1 sec)	b (10.4 sec)	49	72
	NB Left	a (7.7 sec)	a (7.5 sec)	9	72
	NB Thru	a (0)	a (0)	-	21
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
River Road NE & 8th Street NE	**Overall**	**a (5.9 sec)**	**a (2.7 sec)**	-	-
	EB Left	-	a (9.0 sec)	31	43
	EB Thru	-	a (9.0 sec)	31	43
	EB Right	a (8.8 sec)	a (9.0 sec)	31	43
	WB Left	b (11.0 sec)	b (10.4 sec)	61	42
	WB Thru	b (11.0 sec)	-	61	42
	WB Right	b (11.0 sec)	b (10.7 sec)	61	42
	NB Left	a (7.5 sec)	a (7.3 sec)	8	-
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	-	a (0)	-	9
	SB Thru	a (0)	a (0.9 sec)	-	9
	SB Right	-	a (0.9 sec)	-	9

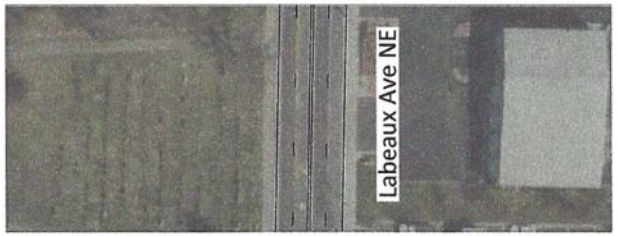
1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.
3. (XXX) queue from River Road NE intersection.

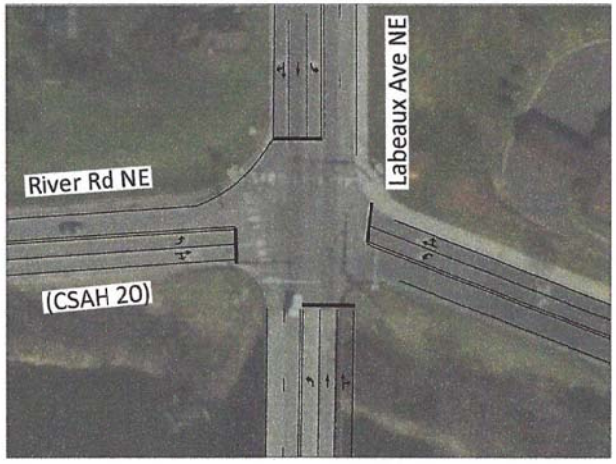
The results shown in Table 5 indicate some of the approaches to the intersection of Labeaux Avenue NE and River Road NE are at or over capacity during the 2040 AM and PM peak hours. The estimated queues for the north and southbound approaches are over 5,000 feet in length and do not clear during the signal cycle. Further, the intersections of 15th Street NE and River Road NE with Labeaux Avenue NE will experience very long east and westbound vehicle queues that are not able to clear during the hour. It is recommended that Labeaux Avenue NE be improved to provide an additional through lane in each direction

beginning just to the north of the intersection with 15th Street and continuing to the south beyond the Crow River bridge, with left turn lanes at critical intersections. Additionally, a traffic signal should be considered at the intersection of 15th Avenue NE and Labeaux Avenue NE. Figure 10 conceptually illustrates potential improvements.

CURRENT CONDITION

PROPOSED CONDITION





STS
Swing Traffic Solutions

HANOVER COVE
HANOVER, MN

PROPOSED IMPROVEMENTS
FIGURE 10

It is assumed the recommended capacity improvements will occur between 2025 and 2040 resulting in improved operations. Traffic operations have been tested for the suggested improvements, and the results for the mitigated 2040 No-Build conditions are summarized in Table 6.

Table 6
2040 Mitigated No-Build Operations

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**A (7.5 sec)**	**A (4.7 sec)**	-	-
	EB Left	B (13.9 sec)	B (18.0 sec)	27	35
	EB Thru	B (11.5 sec)	B (15.0 sec)	13	12
	EB Right	-	-	13	12
	WB Left	B (18.4 sec)	B (19.4 sec)	91	44
	WB Thru	A (6.2 sec)	A (8.4 sec)	26	66
	WB Right	-	-	26	66
	NB Left	-	A (3.0 sec)	-	13
	NB Thru	A (5.2 sec)	A (4.9 sec)	74	104
	NB Right	A (2.6 sec)	A (1.1 sec)	11	55
	SB Left	A (5.1 sec)	A (7.3 sec)	37	83
	SB Thru	A (7.3 sec)	A (3.4 sec)	116	69
	SB Right	A (2.9 sec)	A (1.7 sec)	20	18
Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.7 sec)**	**a (4.8 sec)**	-	
	WB Left	c (20.2 sec)	f (151.7 sec)	68	46
	WB Right	c (20.2 sec)	f (151.7 sec)	31	60
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (8.3 sec)	c (20.0 sec)	40	63
	SB Thru	a (0)	a (0)	-	-
Labeaux Ave NE & River Road NE	**Overall**	**C (24.4 sec)**	**B (17.0 sec)**	-	-
	EB Left	C (32.4 sec)	D (51.4 sec)	144	185
	EB Thru	D (37.1 sec)	C (22.7 sec)	178	194
	EB Right	-	-	178	194
	WB Left	D (48.9 sec)	D (38.8 sec)	204	98
	WB Thru	C (32.6 sec)	D (32.8 sec)	204	108
	WB Right	-	-	204	108
	NB Left	B (12.7 sec)	A (6.9 sec)	65	103
	NB Thru	B (12.1 sec)	B (15.5 sec)	123	300
	NB Right	A (0)	A (2.1 sec)	27	51
	SB Left	B (10.7 sec)	A (7.8 sec)	38	53
	SB Thru	C (22.6 sec)	B (10.3 sec)	401	88
	SB Right	A (4.8 sec)	A (0.3 sec)	164	61
River Road NE & 5th Street NE	**Overall**	**a (2.4 sec)**	**a (3.8 sec)**	-	
	EB Left	b (10.1 sec)	b (10.4 sec)	55	62
	EB Right	b (10.1 sec)	b (10.4 sec)	55	62
	NB Left	a (7.1 sec)	a (7.5 sec)	11	9
	NB Thru	a (0)	a (0)	-	-
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-

River Road NE & 8th Street NE	**Overall**	**a (5.9 sec)**	**a (2.7 sec)**	-	-
	EB Left	-	a (9.0 sec)	11	44
	EB Thru	-	a (9.0 sec)	11	44
	EB Right	a (8.8 sec)	a (9.0 sec)	11	44
	WB Left	b (11.0 sec)	b (10.7 sec)	34	49
	WB Thru	b (11.0 sec)	-	34	49
	WB Right	b (11.0 sec)	b (10.7 sec)	34	49
	NB Left	a (7.5 sec)	a (7.3 sec)	1	6
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	-	a (0)	-	14
	SB Thru	a (0)	a (0.9 sec)	-	14
	SB Right	-	a (0.9 sec)	-	14

1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

The results shown in Table 6 indicate all intersections are expected to operate at acceptable overall LOS in the Mitigated 2040 No-Build scenario. It is noted, the 95th percentile queues at all intersection are shorter than the 2025 No-Build scenario and dissipate during each traffic signal cycle. The operations for the minor 5th Street NE approach to the intersection with Labeaux Avenue NE are still include long delays during the PM Peak hour, however, the predicted vehicles are manageable.

The analyses of the 2040 Build conditions assume capacity improvements have been made along Labeaux Avenue NE as reflected in the Mitigated 2040 No-Build scenario. Table 7 summarizes the results of the 2040 Build analysis.

Table 7
2040 Build Operations

Intersection	Movement	LOS & Delay (sec)	LOS & Delay (sec)	Queue Length (ft)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
Labeaux Ave NE & 15th Street NE	**Overall**	**A (7.5 sec)**	**A (4.8 sec)**	-	-
	EB Left	B (13.9 sec)	B (18.2 sec)	9	24
	EB Thru	B (11.5 sec)	B (15.2 sec)	2	7
	EB Right	-	-	2	7
	WB Left	B (18.3 sec)	B (19.6 sec)	48	63
	WB Thru	A (6.1 sec)	A (8.4 sec)	27	87
	WB Right	-	-	27	87
	NB Left	-	A (3.0 sec)	-	10
	NB Thru	A (5.6 sec)	A (4.9 sec)	18	110
	NB Right	A (2.6 sec)	A (1.0 sec)	4	52
	SB Left	A (5.1 sec)	A (8.1 sec)	9	114
	SB Thru	A (7.3 sec)	A (3.4 sec)	67	66
	SB Right	A (2.9 sec)	A (1.6 sec)	4	13

Labeaux Ave NE & 5th Street NE	**Overall**	**a (0.8 sec)**	**a (6.4 sec)**	-	-
	WB Left	c (18.0 sec)	f (184.4 sec)	35	132
	WB Right	c (18.0 sec)	f (184.6 sec)	34	53
	NB Thru	a (0)	a (0)	-	19
	NB Right	a (0)	a (0)	-	10
	SB Left	a (8.4 sec)	c (23.3 sec)	41	143
	SB Thru	a (0)	a (0)	-	-
Labeaux Ave NE & River Road NE	**Overall**	**C (28.9 sec)**	**C (20.2 sec)**	-	-
	EB Left	C (27.8 sec)	D (50.4 sec)	165	182
	EB Thru	D (39.2 sec)	D (46.2 sec)	197	231
	EB Right	-	-	197	231
	WB Left	D (47.2 sec)	D (42.9 sec)	195	143
	WB Thru	C (31.9 sec)	D (45.2sec)	337	106
	WB Right	-	-	337	106
	NB Left	B (17.3 sec)	A (7.5 sec)	52	96
	NB Thru	B (15.8 sec)	B (17.5 sec)	105	388
	NB Right	A (0.1 sec)	A (2.8 sec)	36	73
	SB Left	B (14.3 sec)	A (8.7 sec)	44	66
	SB Thru	C (29.7 sec)	B (11.1 sec)	498	112
	SB Right	A (6.1 sec)	A (1.8 sec)	168	42
River Road NE & 5th Street NE	**Overall**	**a (5.4 sec)**	**a (6.1 sec)**	-	-
	EB Left	b (10.9 sec)	b (13.0 sec)	53	109
	EB Thru	b (10.9 sec)	b (13.0 sec)	53	109
	EB Right	b (10.9 sec)	b (13.0 sec)	53	109
	WB Left	b (12.2 sec)	b (13.3 sec)	72	62
	WB Thru	b (12.2 sec)	b (13.3 sec)	72	62
	WB Right	b (12.2 sec)	b (13.3 sec)	72	62
	NB Left	a (7.7 sec)	a (7.5 sec)	5	10
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (7.3 sec)	a (7.7 sec)	-	8
	SB Thru	a (0)	a (0)	-	-
	SB Right	a (0)	a (0)	-	-
River Road NE & 8th Street NE	**Overall**	**a (6.3 sec)**	**a (6.3 sec)**	-	-
	EB Left	-	a (9.1 sec)	12	39
	EB Thru	-	a (9.1 sec)	12	39
	EB Right	a (8.8 sec)	a (9.1 sec)	12	39
	WB Left	b (11.3 sec)	b (11.0 sec)	37	56
	WB Thru	b (11.3 sec)	-	37	56
	WB Right	b (11.3 sec)	b (11.0 sec)	37	56
	NB Left	a (7.5 sec)	a (7.4 sec)	2	6
	NB Thru	a (0)	a (0)	-	-
	NB Right	a (0)	a (0)	-	-
	SB Left	a (0)	a (0)	-	10
	SB Thru	a (0.1 sec)	a (0.9 sec)	-	10
	SB Right	-	a (0.9 sec)	-	10
	Overall	**a (7.5 sec)**	**a (6.0 sec)**	-	-
	EB Left	a (0.1 sec)	a (0.3 sec)	-	-
	EB Thru	a (5.5 sec)	a (5.4 sec)	-	-
	EB Right	a (5.5 sec)	a (5.4 sec)	-	-

8th Street NE & Site Access	WB Left	-	-	-	-
	WB Thru	a (0)	a (0)	-	-
	WB Right	a (0)	a (0)	-	-
	NB Left	b (10.2 sec)	b (10.0 sec)	41	36
	NB Thru	-	-	41	36
	NB Right	-	-	41	36
	SB Left	a (8.9 sec)	a (8.7 sec)	42	43
	SB Thru	-	-	42	43
	SB Right	a (8.9 sec)	a (8.7 sec)	42	43

1. Overall Level of Service reported from Synchro 10. Upper case letters indicate signalized intersection, and lower-case letters indicate unsignalized intersection.
2. 95th percentile queues are a result from an average of 10 SimTraffic simulations.

Again, the results shown in Table 7 indicate all intersections are expected to operate at acceptable overall LOS in the Build 2040 scenario, with manageable queues.

V. SUMMARY AND SUGGESTIONS

The preceding analysis has evaluated the potential traffic impacts of the proposed development of the Hanover Cove residential project, on the operations of the study area intersections. The site is located along the east side of River Road NE and along the south side of 8th Street NE in the City of Hanover, Minnesota.

Two design years were considered in this study, 2025 to correspond to the year after build out and 2040 to remain consistent with the long range planning horizon. For both design years a No-Build and Build scenario, was analyzed and compared to assess the development's impact, and the area's future infrastructure needs. Development of the residential homes on the Hanover Cove site by 2025 is expected to result in approximately 2,700 new vehicle trips on the study area roadway network per average weekday. Peak hour trips generated by the development are estimated at 212 during the AM peak hour and 283 during the PM peak hour. The site access approaches to the existing street system will consist of one lane in and one lane out. The access from River Road NE at 5th Street NE should provide left and right turn lanes on River Road NE to remove the turning traffic from the path of the through vehicles. The development trips were distributed through the site access routes to the regional roadways according to existing regional patterns. Growth in background traffic at a rate of 2 percent per year was accounted for in the analysis.

Results of the operational analyses in the 2025 and 2040 No-Build and 2025 and 2040 Build scenarios indicate there is no change in overall traffic operations at the study area intersections associated with the build out of the Hanover Cove development. However, by 2025 the intersection of Labeaux Avenue NE and River Road West will experience long vehicle queues in the southbound direction in the AM and in the northbound direction in the PM. This is due to the large directional peaking characteristic of home to work drivers. It is suggested Labeaux Avenue NE be improved to include 2 through traffic lanes in each direction from 15th Street NE on the north, to the south side of the Crow River Bridge on the south to manage No-

Build traffic conditions. Also, a traffic signal should be considered at Labeaux Avenue NE and 15th Street NE. Comparison of mitigated 2040 No-Build and Build conditions shows there is no change in traffic operations at the study are intersections associated with the build out of the project.

Collaborative Planning, LLC

MEMORANDUM

TO: Planning Commission

FROM: Cindy Nash, AICP, City Planner

DATE: January 23, 2019

SUBJECT: **River Town Villas** for Concept Plan

APPLICANT: Wits Land Realty

LOCATION: Generally located west of River road and north of Church Street

COMPREHENSIVE PLAN: Multi-Family

Description of Request

The applicant has submitted a concept plan to redevelop a property on Church Street into a detached villa neighborhood consisting of 18 homes on approximately 4 acres. An aerial photo of the proposed redevelopment property is to the right.

A concept plan is a courtesy review of a proposed project prior to engineering design being completed. Comments and approval by the City Council is non-binding and meant to be used as a guide when preparing a preliminary plat for a development. Full review of project plans occurs at the preliminary plat stage, and there are frequently additional changes made to the plans prior to preliminary plat submission.

Utilizing the density calculations, this development would have the following approximate density:

Gross Acreage	4 acres
Less Ponding	.75 acres (rough estimate)
Equals Net Acreage	3.25 acres

Density = 18 units/3.25 acres = 5.53 units/acre

This density is consistent with the Comprehensive Plan guidance of Multi-Family Residential which requires greater than 4 but less than 12 units per net acre. However, the density calculations made at this time are an estimate and would be recalculated with a preliminary plat application. This density is less than would be possible if the property were developed as townhomes or an apartment (under R-2 zoning) while still meeting the density required by the Comprehensive Plan.

The site is proposed to have an HOA that maintains the yards, driveway plowing, entrance monuments, and the private road. The individual driveways appear sufficient to provide guest parking, but there are also approximately 12 designated guest parking spaces proposed.

Staff Comments

Staff and consultants have reviewed the concept plan and offer the following comments:

1. The site must be designed to meet the density requirements of the Comprehensive Plan (4 to 12 units per net developable acre). This design appears to meet this requirement.
2. An application for rezoning is required. The property is currently zoned B-1A. There is not currently a zoning district that is a perfect match for this type of use (villas on smaller lots) as the R-2 zoning that would typically be associated with Multi-Family Residential Comp Plan guidance does not currently allow for detached villas. The suggested zoning district for this request would either be 1) R-1A, which would then require a PUD for the various exceptions needed for lot size and setbacks, or 2) R-2, which would also require a text amendment to allow villa lots in the R-2 District and would likely still require a PUD.
3. City subdivision ordinances prohibit private streets and requires that all lots front on a public street. However, in a PUD the City can deviate from that requirement.
4. The plat needs to be designed to meet the setback of the underlying zoning district on the perimeter of the site.
5. Information should be provided with plat submittal to verify that the proposed hammerhead turn-around is sufficient for fire trucks to make turning movements.
6. Prior to design, coordination with the City Engineer on the street section for the private road is encouraged.

7. The City will need to discuss whether the water and sewer utility lines will be private or public.
8. A Homeowner's Association will be required, and association documents will be required to be provided to the City for review and approval with the Final Plat submittal.
9. The City's Comprehensive Plan does not identify a need for additional park land in this location. Park dedication would be payment-in-lieu of land.
10. Architectural requirements would be a part of a PUD approval.
11. No overhead utilities would be permitted.
12. A landscape and tree preservation plan would be required to be submitted with preliminary plat.

Memorandum

To: Cindy Nash – Hanover City Planner

From: Justin Messner, PE – Hanover City Engineer

Cc: Brian Hagen – Hanover City Administrator

Date: January 23, 2019

Re: River Town Villas Concept Plan Review
WSB Project No. 013265-000

As requested, we have reviewed the River Town Village concept plan as prepared by Loucks dated January 3, 2019, and we offer the following comments:

Concept Plan Comments

1. The proposed street is noted as private which is prohibited per Chapter 30.08.06.A.15 of the Hanover Subdivision Ordinance.
2. The proposed street width does not meet the minimum required 28-feet wide per Chapter 30.08.06.A.7. If the street is approved for designation as “private” under a PUD and maintained by the homeowners association, 26-feet wide may be accepted.
3. If the street were approved as private will the utilities be private as well or would easements be provided to provide access and maintenance of the utilities.
4. Access such as the proposed, located on low-volume, low-speed local street (AADT less than 1000), requires a minimum upstream corner clearance of 75-feet. The distance of the proposed access from the intersection at River Road is exceed 100-feet which satisfies this requirement. No revision is needed.
5. No contours are provided so we are unable to elaborate on drainage at this time. Given the existing site grades, the proposed pond on the north side of the development will likely be landlocked. If this is the case an agreement/easement will likely be needed with the adjacent properties to the north for the pond EOF.
6. Sanitary sewer and water service are available off Church Street and appear to have plenty of capacity and depth to serve the proposed homes. However, a complete plan detailing the proposed utilities and grades is needed to verify this.
7. It appears the watermain length will exceed 500-feet and would be a dead-end. Per Chapter 30.08.10, this would not be allowed. A looped watermain system would be required or possibly an agreement allowing a watermain stub to the north property line to accommodate future looping when the parcel to the north develops.
8. When developing the construction plans, utilize the 2018 City of Hanover Standard Detail Plates wherever appropriate.

DEVELOPMENT ASSUMPTIONS:

- 25' Minimum Setback Face of Garage to Curb
- 20' Front Building Setback
- 15' Total Side Yard Setbacks (5' Garage/10' House)
- 30' Minimum Rear Yard Setback
- 35' Setback to Church Street
- Guest Parking Scattered Throughout Development
- 26' Private Drive with Hammer-head Style Turnaround

LEGEND:

- LDR Residential
- MDR Residential
- Detached Villas
- Medical/Office
- Church/Public
- Open Space
- Water

WITS REALTY

MASTER PLAN

HANOVER, MN

LOUCKS

JANUARY 3, 2019

LOUCKS PROJECT #: 03128.0A.00

A

CONCEPT

River Town Villas

OF HANOVER

River Town Villas

OF HANOVER

Vision for the project:

Build a small community of high quality, beautifully crafted single-level detached villas near the heart of downtown Hanover.

Initial concept: 18 single-level detached villas

- **Location:** 4.3 acre parcel located at 11218 Church St NE
- **Style:** Single-level, luxury villas - both basement and patio home options. 2 to 3 different floor plans and 2 to 3 unique exterior styles with multiple color/texture options
- **Size:** 2-3BR, 2-3BA with 1500 to 2800 sq ft depending on style and basement option
- **Target Buyer**: Aging population looking for single-level living as well as younger singles and families looking for affordability and convenience of single-level with opportunity to expand into lower level as needed for more space.
- **Exclusive Builder Partner:** (All builds) Bellin Construction www.bellinconstruction.com
- **Investor/Developer** Wits Land Company, an affiliate of Wits Realty Group www.witsrealty.com
- **Engineering and Land Construction -** Loucks Associates

River Town Villas
OF HANOVER

Location:

North of Church St and the Wits Realty Building, West of Main St. Between existing single family residences and construction company to the NW.

River Town Villas

OF HANOVER

River Town Villas

OF HANOVER

Development Assumptions:

- 25’ min setback from garage face to curb
- Structure pad dimension 40’ front, 60’ deep
- 20’ front building setback
- 15’ total side yard setback (5’ garage/10’ home)
- 30’ min rear yard setback
- 35’ setback to Church Street
- Guest parking scattered throughout development
- 26’ private drive with hammer head style turnaround
- 2 stormwater basins - SE and NW corners
- 2 car garages

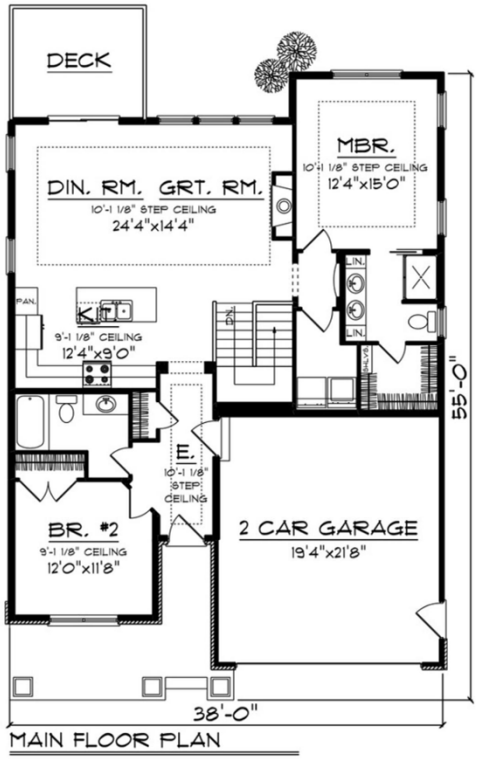
River Town Villas
OF HANOVER

Cohesive color palette and architectural styling with enough combinations to preserve distinction (not cookie cutter)

Brick or Better Exterior Fronts:

- Stone & Brick
- Board and Batten
- Shakes
- Cement Siding
- Corbels
- Shutters
- Break up peaks with multiple depths/textures
- Decorative Garage doors

River Town Villas
OF HANOVER



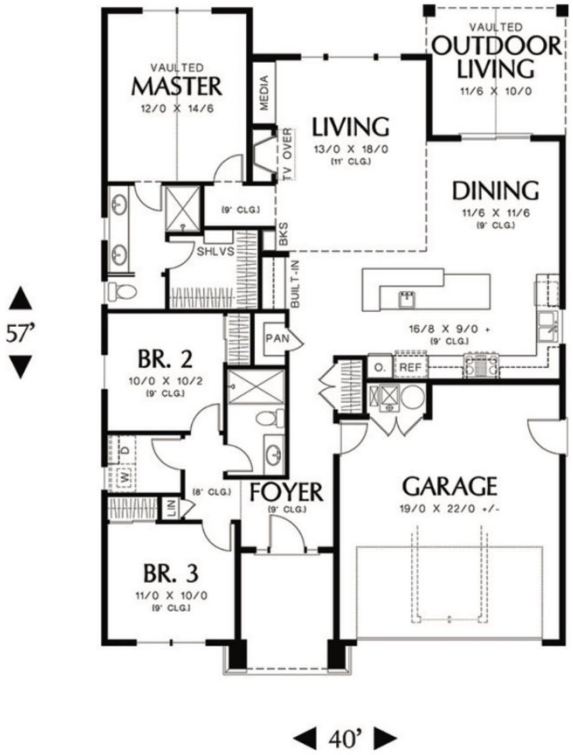
MAIN FLOOR PLAN

Cohesive feel but flexible options to meet a diverse set of needs:

Considering 2 and 3 BR units

Approximately 50/50 mix of patio homes and single level with basement. Several basements may be walkout where elevations allow.

Higher than Hanover median home price of $270k yet within market appropriate range of $325k to $425k depending on size/style ($375k Ave).



River Town Villas
OF HANOVER

BUILDING with BELLIN
• CREATING CUSTOM SPACES •

Experienced Local Builder

River Town Villas
OF HANOVER

Example Finishes and Look Inside