City of Ramsey
Agenda
Regular Planning Commission
Thursday, May 4, 2017
7:00 pm
Council Chambers, 7550 Sunwood Drive NW

1. Call to Order

2. Citizen Input

3. Approve Agenda

4. Approve Minutes

1. Approve the April 6, 2017 Meeting Minutes

5. Public Hearing/Commission Business

1. Consider Approvals Related to a Request from Trott Brook Hall to Faciliate a Building Expansion at 17301 Nowthen Blvd NW (Project #17-03); Case of Trott Brook Hall
1. Conditional Use Permit
2. Site Plan
3. Minor Plat

2. Adopt Amended Resolutions #16-12-217 and #16-12-218 Relating to an Approved Variance to Lot Depth in Woodlands (Project #16-102); Case of Lennar Corporation

3. Consider Recommendations for Riverstone Addition Located Near Bunker Lake Boulevard and Puma Street; Case of Capstone Homes (Project No. 17-106)
1. Adopt Ordinance #17-06 Approving Zoning Amendment to Planned Unit Development (PUD)
2. Adopt Resolution #17-05-102 Approving Preliminary Plat

4. Review Architectural Design for Stonebrook Academy

5. Review Concept Plan for Sharp Industrial Building at 14251 Jaspar St NW; Case of Sharp and Associates

6. Comprehensive Plan Update Items

7. Commission/Staff Input

1. Zoning Bulletins

8. Adjournment

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

Regular Planning Commission **4. 1.**

Meeting Date: 05/04/2017

By: JoAnn Shaw, Community Development

Information

Title:

Approve the April 6, 2017 Meeting Minutes

Purpose/Background:

n/a

Notification:

Observations/Alternatives:

Funding Source:

Recommendation:

Action:

Attachments

04.06.17 Planning Minutes

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	JoAnn Shaw	04/28/2017 03:20 PM
Form Started By: JoAnn Shaw		Started On: 04/27/2017 02:50 PM
Final Approval Date: 04/28/2017		

PLANNING COMMISSION
CITY OF RAMSEY
ANOKA COUNTY
STATE OF MINNESOTA

The Ramsey Planning Commission conducted a regular meeting on Thursday, April 6, 2017, at the Ramsey Municipal Center, 7550 Sunwood Drive NW, Ramsey, Minnesota.

Members Present:	Chairperson Randy Bauer Commissioner Bruce Anderson Commissioner Ralph Brauer Commissioner Cheri Gengler Commissioner Cindy Nosan Commissioner Patrick Surma
Members Absent:	Commissioner Gary VanScoy
Also Present:	Community Development Director Timothy Gladhill City Planner Chris Anderson

1. CALL TO ORDER

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

2. CITIZEN INPUT

Chairperson Bauer welcomed newly appointed Commissioner Cheri Gengler to the Planning Commission.

3. APPROVAL OF AGENDA

Motion by Commissioner Anderson, seconded by Commissioner Surma, to approve the agenda as presented.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Surma, Brauer, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

4. APPROVE PLANNING COMMISSION MINUTES

4.01: Approve the Following Planning Commission Minutes:

4.01.1: Planning Commission Meeting Minutes Dated March 2, 2017

Commissioner Surma requested a change on Page 11 of the minutes stating his comment should read the Coburn's parking lot did not have adequate parking, especially during peak times and that businesses there were negatively impacted on weekends.

Motion by Commissioner Anderson, seconded by Commissioner Nosan, to approve the following minutes as amended: Planning Commission Meeting Minutes dated March 2, 2017.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Nosan, Brauer, and Surma. Voting No: None. Abstain: Commissioner Gengler. Absent: Commissioner VanScoy.

5. PUBLIC HEARINGS/COMMISSION BUSINESS

5.01: Public Hearing: Consider Request for a Variance to Accessory Building Setback Requirements (Project #17-13); Case of Steve Roeder

Public Hearing

Chairperson Bauer called the public hearing to order at 7:02 p.m.

Presentation

City Planner Anderson presented the staff report stating the City has received an application from Steve and Christine Roeder (the "Applicant") requesting a variance to the minimum side corner yard setback on the property located at 15359 Zumi Court NW (the "Subject Property") to allow a six (6) foot setback. This matter was originally brought to the City's attention through the Code Enforcement program as the Applicant had begun work without a permit. Staff reviewed the request in further detail, noting staff received five letters of support from neighboring property owners and recommended approval of the variance request.

Citizen Input

Christine Roeder, 15359 Zumi Court NW, thanked the Commission for their consideration. She stated her yard was very limited in size and noted the shed placement was selected because this was the only flat portion of the yard. She explained she had spoken with all of her neighbors and all had supported the shed placement.

Greg Thomas, 15346 Zumi Court NW, indicated he approved of the shed stating it was professionally done. He encouraged the Planning Commission to support the proposed variance.

Mark Emil, 15311 Yakima Street NW, stated he supported the shed noting the Roeder's had a very nice privacy fence.

Parker Vaughn, 15350 Yakima Street NW, questioned if there were any safety concerns with the shed placement. City Planner Anderson discussed the City setbacks and stated staff does not believe the shed placement was a safety issue.

Chairperson Bauer stated the letters of support from the Roeder's neighbors will be part of the public record.

Motion by Commissioner Brauer, seconded by Commissioner Surma, to close the public hearing.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Brauer, Surma, Anderson, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

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

Commission Business

Commissioner Nosan stated she supported the variance, but asked how a homeowner was supposed to know where setbacks and easements were located on their property. City Planner Anderson commented it was always best to contact the City first prior to constructing a shed or placing a fence on their property.

Motion by Commissioner Brauer, seconded by Commissioner Anderson, to adopt Resolution #17-04-081 approving favorable Findings of Fact #0979.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Brauer, Anderson, Gengler, Nosan, and Surma. Voting No: None. Absent: Commissioner VanScoy.

Motion by Commissioner Brauer, seconded by Commissioner Surma, to adopt Resolution #17-04-082 granting a variance to the corner side yard setback.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Brauer, Surma, Anderson, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

5.02: Public Hearing: Consider Request for a Variance and Preliminary Plat Approval of Homestead Road Subdivision Located at 7131 166th Avenue NW (Project #16-32); Case of CTW Group, Inc.

Public Hearing

Chairperson Bauer called the public hearing to order at 7:17 p.m.

Presentation

City Planner Anderson presented the staff report stating the City has received an application from CTW Group, Inc. (the "Applicant") seeking a variance to lot depth standards and preliminary plat approval for a proposed three (3) lot subdivision on the property located at 7131 166th Ave NW (the "Subject Property"). The Planning Commission reviewed the Sketch Plan at their November 3, 2016 meeting. There is an existing dwelling on the proposed Lot 2 that would remain with

two (2) new, buildable lots being created, one on each side of the existing dwelling. Staff reviewed the request in further detail and recommended approval of a variance and the preliminary plat for the Homestead Road subdivision.

Citizen Input

Alexander Delendik, representative for Homestead Road, stated he specialized in the rehabilitation of properties. He explained the previous owners were trying to subdivide the 8 acres into five lots. He believed that his plan was a better fit for the neighborhood. He reported he was working with the City, the watershed district and the neighbors to ensure this was a positive development for the community.

Motion by Commissioner Anderson, seconded by Commissioner Surma, to close the public hearing.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Surma, Brauer, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

Chairperson Bauer closed the public hearing closed at 7:26 p.m.

Commission Business

Motion by Commissioner Anderson, seconded by Commissioner Surma, to adopt Resolution #17-04-077 approving favorable Findings of Fact.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Surma, Brauer, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

Motion by Commissioner Anderson, seconded by Commissioner Brauer, to adopt Resolution #17-04-078 granting a Variance to lot depth for Lots 1 & 3, Block 1 contingent upon approval of the Preliminary Plat.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Brauer, Gengler, Nosan, and Surma. Voting No: None. Absent: Commissioner VanScoy.

Motion by Commissioner Anderson, seconded by Commissioner Nosan, to recommend that City Council approve the Preliminary Plat contingent upon compliance with the Staff Review Letter.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Nosan, Brauer, Gengler, and Surma. Voting No: None. Absent: Commissioner VanScoy.

5.03: Consider Preliminary Plat and Zoning Amendment for Covenant Meadows (Project #17-102); Case of Eric Thomsen

Presentation

City Planner Anderson presented the staff report stating the purpose of this case is to review an application for a Rezoning of the Subject Project from R-1 Rural Developing to Planned Unit Development (PUD) and Preliminary Plat. The site is generally located south of Trott Brook and west of Germanium Street and is identified as PID 02-32-25-44-0004. The Applicant has proposed to subdivide the approximately thirty-eight (38) acre Subject Property into twelve (12) single family homes that would be serviced by individual private utilities. The Preliminary Plat proposes deeding approximately fifteen (15) of the thirty-eight (38) acres to the City as the public benefit in relation to the PUD application. The proposed fifteen (15) acres straddles both sides of the Trott Brook, has steep slopes, and is also considered to be high quality natural open space. Staff reviewed the request in further detail with the Commission and recommended approval of the Preliminary Plat and Zoning Amendment for Covenant Meadows.

Commission Business

Chairperson Bauer commented on the worksession meeting that was held between the Planning Commission, the applicant, potential buyers and neighboring property owners. It was deemed the area on either side of Trott Brook would be deeded to the City of Ramsey in order to properly protect this property. He then discussed the action being requested of the Commission.

Commissioner Anderson questioned how much property would be deeded to the City on each side of Trott Brook.

City Planner Anderson estimated the depth of the land to be 750 feet.

Commissioner Anderson asked if there would be a way to mark the property line in order to keep adjacent property owners out.

City Planner Anderson explained that the City could put markers in place for this conservation easement.

Commissioner Brauer thanked all who were involved in the worksession meeting tonight for providing input and for participating. He suggested the purchase agreements denote the location of the conservation easement to ensure homeowners are not cutting into this land.

Commissioner Nosan questioned what the City would do with the land surrounding Trott Brook. She wanted to be sure the land was not turned into a park.

Community Development Director Gladhill stated the City could draft language within the deed to ensure this land does not become a park.

Motion by Commissioner Anderson, seconded by Commissioner Surma, to recommend City Council adopt Ordinance #17-05 rezoning the Subject Property from R-1 Residential (Rural Developing) to PUD (Planned Unit Development).

Further discussion

Commissioner Nosan stated she would prefer not to make the lots quite so small given the fact this would increase the number of lots and therefore increase traffic. She explained she would prefer to have 2 or 2.5 acre lots.

Commissioner Brauer commented he shared this same concern as well. He feared that this development would set the tone for future developments along Trott Brook. However, if the lots were smaller in order to protect the brook, this was another matter. He recommended the Planning Commission review the Comprehensive Plan in order to address the total preservation of Trott Brook.

Commissioner Anderson stated the properties to the east were one acre in size, which was not too far out of alignment with the proposed development. He explained he supported the preservation of the 15 acres along Trott Brook and for this reason, he was willing to compromise on the lot size.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Surma, Brauer, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

Motion by Commissioner Anderson, seconded by Commissioner Nosan, to recommend City Council adopt Resolution #17-04-083 granting Preliminary Plat approval of Covenant Meadows, contingent upon compliance with the Staff Review Letter dated February 24, 2017.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Nosan, Brauer, Gengler, and Surma. Voting No: None. Absent: Commissioner VanScoy.

5.04: Consider Sketch Plan Review for Riverstone Addition located near Bunker Lake Boulevard and Puma Street; Case of Capstone Homes (Project No. 17-106)

Presentation

Community Development Director Gladhill presented the staff report stating the purpose of this case is to review a sketch plan for a 293-lot subdivision (245 detached single-family and 48 townhomes). Please note that this has been revised from when the Planning Commission last saw the concept (originally closer to 350 lots; a number of the townhome lots have been removed. A Sketch Plan affords the Planning Commission the opportunity to review a project before it enters the official Preliminary Plat stage. The Preliminary Plat (future step) is the most important step in the review process and gives the project 'entitlement' to the project. Staff reviewed the plan in detail with the Commission and requested feedback on the sketch plan.

Commission Business

Commissioner Brauer believed this was an impressive application. He commended the developer and landowner for putting together a detailed packet of information for the Planning Commission.

Steve Bona, Capstone Homes, thanked the Commission for their time and consideration. He commented on the minor changes that had been made to the Riverstone Addition for engineering purposes. He discussed the trails, parks and walkability of the development noting these would very attractive amenities to the community.

Commissioner Anderson questioned why the number of units within the development had been reduced.

Mr. Bona explained that several large ponds had been added to the development which reduced the number of buildable lots.

Commissioner Nosan stated she was very excited for this development and believed this would be a fantastic product for the City of Ramsey.

Chairperson Bauer questioned when construction would begin for this development.

Mr. Bona anticipated he would be breaking ground on August 1st and would begin constructing houses yet this fall. He explained that Capstone would be holding a grand opening for the development in the spring of 2018.

Chairperson Bauer asked what the price range would be for the new housing units.

Mr. Bona stated the villas and housing units would range in price from $250,000 to $350,000.

Commissioner Surma questioned if the developer had done any research on building standards for homes close to railroad tracks.

Mr. Bona indicated he had researched this and reported his team was investigating the building standards for this project. He explained he would be constructing a 12-foot berm which would be landscaped along the southern boundary.

5.05: Green Valley Greenhouse Land Use Planning and Comprehensive Plan Designation

Presentation

Community Development Director Gladhill presented the Staff Report stating the purpose of this case is to receive a presentation from Green Valley Greenhouse regarding their future expansion plans. The Comprehensive Plan Steering Committee, outside of this request, desires to discuss the appropriate future land use designation. The use currently operates as a Conditional Use Permit in the R-1 Residential District (low density residential). The request for future expansion

planning magnifies the need to discuss this topic. Staff reviewed the request in further detail and requested feedback from the Commission.

Commission Business

Brad Wolf, Green Valley Greenhouse, explained he was one of the owners of Green Valley Greenhouse. He thanked staff for their assistance with this Planning Case and described how he was working to plan for the future.

Chairperson Bauer asked when the outdoor growing or additional greenhouses would be added.

Mr. Wolf estimated this would occur in 2018 at the earliest. He stated the growth would occur in one or two acres of land at a time.

Chairperson Bauer stated he would like to amend an existing zone versus allowing a conditional use permit for the greenhouse in the R-1 zoning district.

Community Development Director Gladhill explained staff could investigate this further. He encouraged the Commission to keep in mind that this land may not always be a greenhouse and an adaptive reuse has to be considered.

Commissioner Anderson agreed that it was a stretch to have the greenhouse as a conditional use in the R-1 zoning district.

Eric Thomsen, 6210 Green Valley Road, stated he has been neighbors to Green Valley Greenhouse for over 30 years. He understood the business was growing and in need of more space. He explained he supported the proposed project.

5.06: Consider Architectural Recommendations for Aeon Ramsey Housing Development

Presentation

Community Development Director Gladhill presented the staff report stating in May 2016, the Planning Commission reviewed a concept for a new apartment building to be located in The COR. The City Council entered into a Purchase Agreement with Aeon for a parcel north of The Draw Park and Amphitheater. The project has secured financing, and is about to enter into the design stage. Before design, Staff desires to discuss architecture recommendations, since the project is located in The COR.

Commission Business

Leslie Rearing, Project Manager with Aeon, provided the Commission with a presentation on the preliminary Site Plan. She reviewed the location of the units, parking lot and greenspace. The building elevations were described and it was noted the first-floor units would have walkout

patios. She reported she was in the schematic design phase at this time and welcomed input from the Commission.

Chairperson Bauer asked if there would be any underground parking.

Ms. Rearing indicated all parking would be located on surface lots.

Chairperson Bauer questioned how many units would be constructed.

Ms. Rearing stated she was proposing to build 54 units.

Commissioner Anderson inquired what the rental rates would be.

Ms. Rearing commented the two bedroom units would rent for $1,000 per month. The four bedroom units would be $1,600 per month.

Commissioner Anderson stated he was not super thrilled about the color scheme. He recommended the color scheme more closely match the other buildings within The COR.

Commissioner Nosan was pleased that the ground level units would have patios. She asked if residents would have to qualify for the affordable units.

Ms. Rearing reported this was the case.

5.07: Review Oakwood Development Concept (Levin Property)

Presentation

Community Development Director Gladhill presented the staff report stating the purpose of this case is to review a concept proposed by Oakwood Development for a property north of Estates of Silver Oaks located along Highway 47. This is for presentation and discussion only. Staff has not completed an official review. This project would require a Comprehensive Plan Amendment to expand the Metropolitan Urban Service Area (MUSA). Staff is awaiting final decision by the Metropolitan Council on two similar amendments (Brookfield 8th Addition; Woodlands 4th Addition) to see how that might impact this request.

Commission Business

Commissioner Anderson expressed concern with the fact that this development would only have one entrance/exit. He asked how long the cul-de-sac would be.

Community Development Director Gladhill reported the cul-de-sac would not exceed 600 feet. He then reviewed the ways homeowners would be able to access this subdivision.

John Peterson, developer for Oakwood Development, thanked staff for their assistance with this project. He explained his property was right at the MUSA boundary. He stated his original intent was to create 13 lots served by municipal water and sewer. However, after speaking with his neighbor it was determined the Levin's were interested in developing their property as well. He described how his plans have changed in order to keep the cul-de-sac less than 600 feet, to reduce the need for fill and to preserve trees. He noted the barn onsite was being demolished.

Commissioner Surma asked who would be the builder for this project.

Mr. Peterson explained he would serve as the developer and reported the seven lots would be sold to builders.

Commissioner Nosan recommended the three-acre lot having the driveway moved to the north. She stated she was supportive of the development overall.

5.08: Public Hearing: Consider Ordinance #17-04 Amending Irrigation Requirements (Project #17-104)

Public Hearing

Chairperson Bauer called the public hearing to order at 8:58 p.m.

Presentation

City Planner Anderson presented the staff report stating during the early part of this year, the Environmental Policy Board (EPB) discussed a potential ordinance amendment regarding irrigation requirements for multi-family and commercial/industrial developments. The intention originally was simply to eliminate the City Code requirement that in-ground irrigation systems be installed in all multi-family and commercial/industrial projects. However, based on information received at their January meeting from a guest speaker, the EPB directed Staff to revise the Ordinance so that it also stipulates that *if* an irrigation system is installed (including single family parcels), it shall be equipped with a rain sensor (per state statute) as well as one or more water efficient technologies. This could include, but would not be limited to, a smart controller, soil moisture sensor(s), and/or an evapotranspiration (ET) sensor(s). This provides enough flexibility so that as future advances in water efficient irrigation technologies are developed, it will not require additional ordinance amendments. Staff reviewed the request further with the Commission and recommended approval.

Citizen Input

Commissioner Nosan asked if a residential homeowner needed a permit to install an irrigation system.

City Planner Anderson stated this was required by the State of Minnesota.

Motion by Commissioner Anderson, seconded by Commissioner Surma, to close the public hearing.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Surma, Brauer, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

Chairperson Bauer closed the public hearing closed at 9:02 p.m.

Commission Business

Motion by Commissioner Anderson, seconded by Commissioner Surma, to recommend that City Council adopt Ordinance #17-04 eliminating the requirement for in-ground irrigation systems in any zoning district and requiring any newly installed irrigation system to have one or more water efficient technologies.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Surma, Brauer, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

5.09: Appoint Ad-Hoc Subcommittee Members to Update Housing Plans

Presentation

Community Development Director Gladhill presented the staff report stating the purpose of this case is to authorize the Planning Commission to re-establish an Ad-Hoc Subcommittee to update various Housing Plans for the City. This structure was used to create the City's Housing Assistance Policy. A Housing Plan is a required component of the 2040 Comprehensive Plan Update. Staff requested the Commission appoint two Planning Commissioners to the Ad-Hoc Housing Committee to assist in updating the City's Housing Plan.

Commission Business

Motion by Commissioner Brauer, seconded by Commissioner Gengler, to appoint Cindy Nosan and Randy Bauer to the Ad-Hoc Housing Subcommittee to assist in updating the City's Housing Plan.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Brauer, Gengler, Anderson, Nosan, and Surma. Voting No: None. Absent: Commissioner VanScoy.

6. COMPREHENSIVE PLAN UPDATE ITEMS

6.01: Review Format and Content for April 10 Comprehensive Plan Update Workshop (Transportation Plan; Parks and Recreation Plan)

Community Development Director Gladhill discussed the materials that would be presented to the public at the April 10th Comprehensive Plan Community Workshop. It was noted the focus at this workshop would be the Transportation Plan and the Parks and Recreation Plan.

6.02: Review Preliminary Feedback from Highway 10 Summit and Discuss Corridor Improvement Plan Next Steps

Community Development Director Gladhill provided the Commission with a brief update on the Highway 10 Summit held on March 16th.

7. COMMISSION / STAFF INPUT

7.01: Zoning Bulletins

Zoning Bulletins were noted.

8. ADJOURNMENT

Motion by Commissioner Anderson, seconded by Commissioner Surma, to adjourn the meeting.

Motion Carried. Voting Yes: Chairperson Bauer, Commissioners Anderson, Surma, Brauer, Gengler, and Nosan. Voting No: None. Absent: Commissioner VanScoy.

The regular meeting of the Planning Commission adjourned at 9:13 p.m.

Respectfully submitted,

_____
Tim Gladhill
Community Development Director

ATTEST:

_____
JoAnn Shaw
Community Development Assistant

Drafted by Heidi Guenther
TimeSaver Off Site Secretarial, Inc.

Regular Planning Commission **5. 1.**

Meeting Date: 05/04/2017

By: Chris Anderson, Community Development

Information

Title:

Consider Approvals Related to a Request from Trott Brook Hall to Faciliate a Building Expansion at 17301 Nowthen Blvd NW (Project #17-03); Case of Trott Brook Hall

1. Conditional Use Permit
2. Site Plan
3. Minor Plat

Purpose/Background:

The City has received an application from representatives of Trott Brook Hall (the "Applicant") for a Conditional Use Permit, Minor Plat and Site Plan to facilitate an expansion to their existing building located at 17301 Nowthen Blvd NW. The Minor Plat will consolidate the existing church parcel (17301 Nowthen Blvd NW), the adjacent parcel (17325 Nowthen Blvd NW), and a portion of 17455 Nowthen Blvd NW into one parcel to accommodate the proposed building expansion (together known as the "Subject Property"). The Conditional Use Permit addresses the religious institution in the R-1 Residential District,

Notification:

Staff attempted to notify all Property Owners within a 700 foot radius of the Subject Property of the Public Hearing via Standard US Mail. The Public Hearing was also published in the City's official newsletter, the Anoka County Union Herald.

Observations/Alternatives:

Conditional Use Permit

The existing church predates the requirement for a Conditional Use Permit (CUP). As part of the expansion request, the Applicant has applied for a Conditional Use Permit to bring the Subject Property into compliance with current City Code standards. Staff has no objection to the requested CUP.

Minor Plat

The proposed subdivision does not include public utilities nor the construction of new roads but rather is a consolidation of additional land into the Applicant's current site to accommodate their proposed building and parking expansion. Therefore, this is being processed as a Minor Plat. The Applicant has acquired the parcel to their north (17325 Nowthen Blvd) and has an agreement in place to acquire a portion of the land generally known as 17455 Nowthen Blvd NW that will be inoroporated into their property. The proposed plat meets all bulk standards. Slight modifications to the easements are needed (providing at least a sixteen and a half foot [16.5'] easement around the wetland perimeter for example). A Development Agreement will be required and will outline the applicable Development Fees due with the plat.

Site Plan

The proposed Site Plat is being reviewed under the B-1 General Business District standards as they more closely resemble the use on the Subject Property than the residential district standards. The building expansion appears to meet all minimum setbacks from property boundaries, wetlands and stormwater ponds. The proposed parking lot expansion appears to encroach on the required setback from public road right-of-way and will need to be adjusted.

The Applicant has been in communication with Anoka County Highway Department staff to discuss the access

points for the project. As part of the improvements, the Applicant will be eliminating the existing, southern access point, creating an egress only access point approximately in the center of the new lot, and creating an ingress/egress access point at the northern boundary of the new lot. City Staff has submitted the plan set to Anoka County Highway staff also for formal comment but as of the writing of this case, have not received comments back. Based on earlier discussions with the Applicant, the northern access point will straddle the property boundary between Lots 1 & 2, which will require a cross-access easement. There is also an existing driveway serving another lot that is to be modified to connect with the proposed northern access to eliminate two access points directly adjacent to one another.

The submittal did not include any building elevations. At this time, it is unknown specifically what the proposed exterior wall finishes will be. Staff will continue to work with the Applicant regarding exterior finishes and seek color elevations prior to bringing forward to the City Council.

Due to both the expansion of parking area and the building, additional landscaping is required. Presently, there is no proposed landscaping with the plan set. The Staff Review Letter outlines the minimum requirements for the Applicant and Staff will continue to work with them to ensure the minimum standards are met.

Alternatives.

Alternative 1. Recommend approval of the CUP, Minor Plat, and Site Plan contingent upon compliance with the Staff Review Letter. The church has been operating in this location for a number of years with no known issues. The proposed building expansion complies with all building setbacks as does the plat. Staff supports this alternative.

Alternative 2. Do not recommend approval of the CUP, Minor Plat and Site Plan. As long as the revisions outlined in the Staff Review Letter are incorporated into the plan set, Staff sees no reason not to approve these requests. Staff does not support this alternative.

Funding Source:

All costs associated with this request are the responsibility of the Applicant.

Recommendation:

Staff recommends approving the requested CUP, Minor Plat, and Site Plan.

Action:

Motion to recommend City Council adopt Resolution #17-05-101 approving a CUP, Minor Plat and Site Plan associated with a proposed expansion of Trott Brook Hall, subject to approval as to legal form by the City Attorney.

Attachments

DRAFT Resolution #17-05-101
Site Location Map
Preliminary Plat
Plan Set
Staff Review Letter

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/28/2017 02:48 PM
Form Started By: Chris Anderson		Started On: 04/27/2017 12:00 PM
Final Approval Date: 04/28/2017		

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

RESOLUTION #17-05-101

A RESOLUTION APPROVING A CONDITIONAL USE PERMIT ALLOWING THE OPERATION OF A RELIGIOUS INSTITUTION IN THE R-1 RESIDENTIAL DISTRICT, SITE PLAN FOR EXPANSION OF AN EXISTING FACILITY, AND FINAL PLAT FOR TROTT BROOK ADDITION

WHEREAS, Trott Brook Hall (the "Permittee") has properly applied for a Conditional Use Permit, Site Plan, and Sketch Plan and Final Plat to operate a religious institution in the R-1 Residential District, to expand their existing facility, and to incorporate portions of three (3) parcels into one to accommodate the facility expansion on portions of the property legally described as:

That part of the Southwest Quarter of the Southeast Quarter of Section 3, Township 32, Range 25, Described as follows: Beginning at the southwest corner of said Quarter Quarter, thence north along west line thereof 346.5 feet, thence east parallel with south line of said Quarter Quarter, 132 feet, thence south parallel with west line thereof to said south line, thence west along said south line 132 feet to point of beginning, except north 10 feet thereof, except road subject to easement of record, Anoka County, Minnesota

-and-

The Southwest Quarter of Southeast Quarter of Section 3, Township 32, Range 25, except that part described as follows: Commencing at southwest corner of said Quarter Quarter, thence north along west line thereof 346.5 feet to point "A", thence continue north along said west line 86 feet, thence east parallel with south line of said Quarter Quarter 162 feet, thence south parallel with said west line 86 feet, thence west parallel with said south line to a point on a line drawn easterly from said point "A" and 132 feet east of said west line, thence south parallel with said west line to said south line, thence west along said south line 132 feet to point of beginning, also except that part described as follows: commencing at southwest corner of said Quarter Quarter, thence north assumed bearing along west line thereof 678.76 feet, thence north 77 degrees 26 minutes east 877.80 feet to point of beginning, thence north 4 degrees 04 minutes west 181.32 feet, thence north 85 degrees 56 minutes east 320 feet, thence south 4 degrees 04 minutes east 198 feet, thence south 85 degrees 56 minutes west 320 feet, thence north 4 degrees 04 minutes west 16.68 feet to point of beginning, except road subject to easement of record, Anoka County, Minnesota

-and-

That part of Southwest Quarter of Southeast Quarter of Section 3, Township 32, Range 25, described as follows: Beginning at a point on west line of said Quarter Quarter, 336.50 feet north of Southwest Corner thereof, thence northerly along said west line 86 feet, thence east parallel with south line of said Quarter Quarter, 162 feet, thence south

parallel with said west line 86 feet, thence westerly parallel with said south line to point of beginning, except road, subject to easement of record, Anoka County, Minnesota

-Or upon recording-

Lot 1, Block 1, Trott Brook Addition

(the "Subject Property"); and

WHEREAS, the City of Ramsey received an application for Sketch Plan, Site Plan, Conditional Use Permit, and Final Plat on April 6, 2017.

WHEREAS, that the Applicant appeared before the Planning Commission for a public hearing pursuant to Section 117-51 (Conditional Use Permits) of the Ramsey City Code on May 4, 2017, and that said public hearing was properly advertised and that the minutes of said public hearing are hereby incorporated by reference.

WHEREAS, that the Subject Property is currently located in the R-1 Residential (MUSA) zoning district.

WHEREAS, that the surrounding parcels are also zoned R-1 Residential (MUSA).

WHEREAS , that the Subject Property is presently approximately 0.94 acres in size and after the proposed Trott Brook Addition Minor Plat, the Subject Property will be approximately 3.71 acres in size.

WHEREAS, that a Minor Plat and Site Plan are being processed concurrently with the conditional use permit.

WHEREAS, that, given the business nature of churches (size, traffic, structure and parking needs), the B-1 Business zoning district development standards and fees, which are a better representation of this type of use, will be utilized in reviewing this application.

WHEREAS, that a religious institution exists on the Subject Property and is considered lawful, non-conforming as it predates the City's current zoning standard of a conditional use in a residential district.

WHEREAS, that per MN Stat. 462-357 Subd. 1 (e), lawful, non-conforming uses cannot be expanded unless otherwise provided under applicable laws and ordinances.

WHEREAS, that this conditional use permit will make the church operation a conforming use.

WHEREAS, that the church operation will/will not be unduly dangerous or detrimental to persons residing or working in the vicinity of the use, or to the public welfare.

WHEREAS, that the church operation will/will not substantially adversely impair the use, enjoyment or market value of any of the surrounding properties.

WHEREAS, that the church operation will/will not be maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and will/will not change the essential character of the area.

WHEREAS, that the church operation will/will not be hazardous to existing or future neighboring uses.

WHEREAS, that the church operation will/will not impact essential public facilities and services, such as highways, streets, police and fire protection.

WHEREAS, that the church operation will/will not create excessive additional requirements at public cost for public facilities and services and will/will not be detrimental to the economic welfare of the community.

WHEREAS, that the church operation will/will not involve uses, activities and equipment that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare or odors.

WHEREAS, the Planning Commission met on May 4, 2017 and conducted a public hearing and recommended City Council approve/deny the request; and

WHEREAS, on May 23, 2017, the Ramsey City Council reviewed the request.

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

That the Ramsey City Council hereby grants approval of a Conditional Use Permit (the "Permit"), Site Plan, and Final Plat for TROTT BROOK ADDITION (the "Plat") in accordance with relevant City Codes and authorizes the Mayor and City Clerk to sign on behalf of the City contingent upon the following conditions:

1. That this **Permit** shall be perpetual in its duration so long as the conditions imposed herein are complied with.

2. That the permitted uses on the **Subject Property** shall be limited to a religious institution and its associated activities.

3. That this **Permit** shall remain in effect for all of the **Subject Property**. The **Permittee** may expand the building footprint as depicted in Exhibit A without requiring any amendments to this **Permit** but shall not exempt the **Permittee** from any other applicable City Code and Building Code requirements, including, but not necessarily limited to, site plan and building permit review.

4. That no external activities, other than vehicles entering and exiting the **Subject Property**, may occur prior to 7:00 a.m. and after 10:00 p.m., unless otherwise provided through permitting or licensing under applicable City Code. All external activities, regardless of when they occur, shall be subject to the nuisance regulations in City Code.

5. That the **Permittee** shall be responsible for all City of Ramsey (the "City") costs incurred in administering and enforcing this **Permit**.

6. The **City** shall have the right to inspect the premises for compliance and safety purposes annually or at any time, upon reasonable request. In the event the **Permittee** is determined to be in violation of any of the conditions set forth herein, the **City** shall give the **Permittee** written notice of the violation. The **Permittee** shall be given 30 days to correct the violation and submit a written response to the notice.

7. **Permittee** entering into a Development Agreement with the **City**.

8. Compliance with the **City** Staff Review Letter dated April 28, 2017.

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

and the following voted against the same:

and the following abstained:

and the following were absent:

whereupon said resolution was declared duly passed and adopted by the Ramsey City Council, this the 23rd day of May, 2017.

Trott Brook Hall hereby acknowledges receipt of this **Permit** and that they have reviewed the conditions of this **Permit** and have agreed that they will comply with the terms of this **Permit**.

By:_____

Its:_____

STATE OF MINNESOTA)
) SS.
COUNTY OF _____)

The foregoing was acknowledged before me this _____ day of _____, _____by _____ the _____of Trott Brook Hall, a Minnesota non-profit corporation, on behalf of the corporation.

_____
Notary Public

CITY OF RAMSEY:

By:_____ By:_____
Mayor City Clerk

STATE OF MINNESOTA)
) ss.
COUNTY OF ANOKA)

On this ____ day of _____, _____, before me, a Notary Public, personally appeared Sarah Strommen and JoAnn M. Thieling, to me personally known, who, being each by me duly sworn did say that they are respectively the Mayor and City Clerk of the City of Ramsey, the Municipal Corporation named in the foregoing instrument, and seal affixed to said instrument is the corporate seal of said Municipal Corporation, and the said instrument was signed and sealed on behalf of said Municipal Corporation by authority of its City Council and said Sarah Strommen and JoAnn M. Thieling acknowledge said instrument to be the free act and deed of said Municipal Corporation.

_____
Notary Public

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

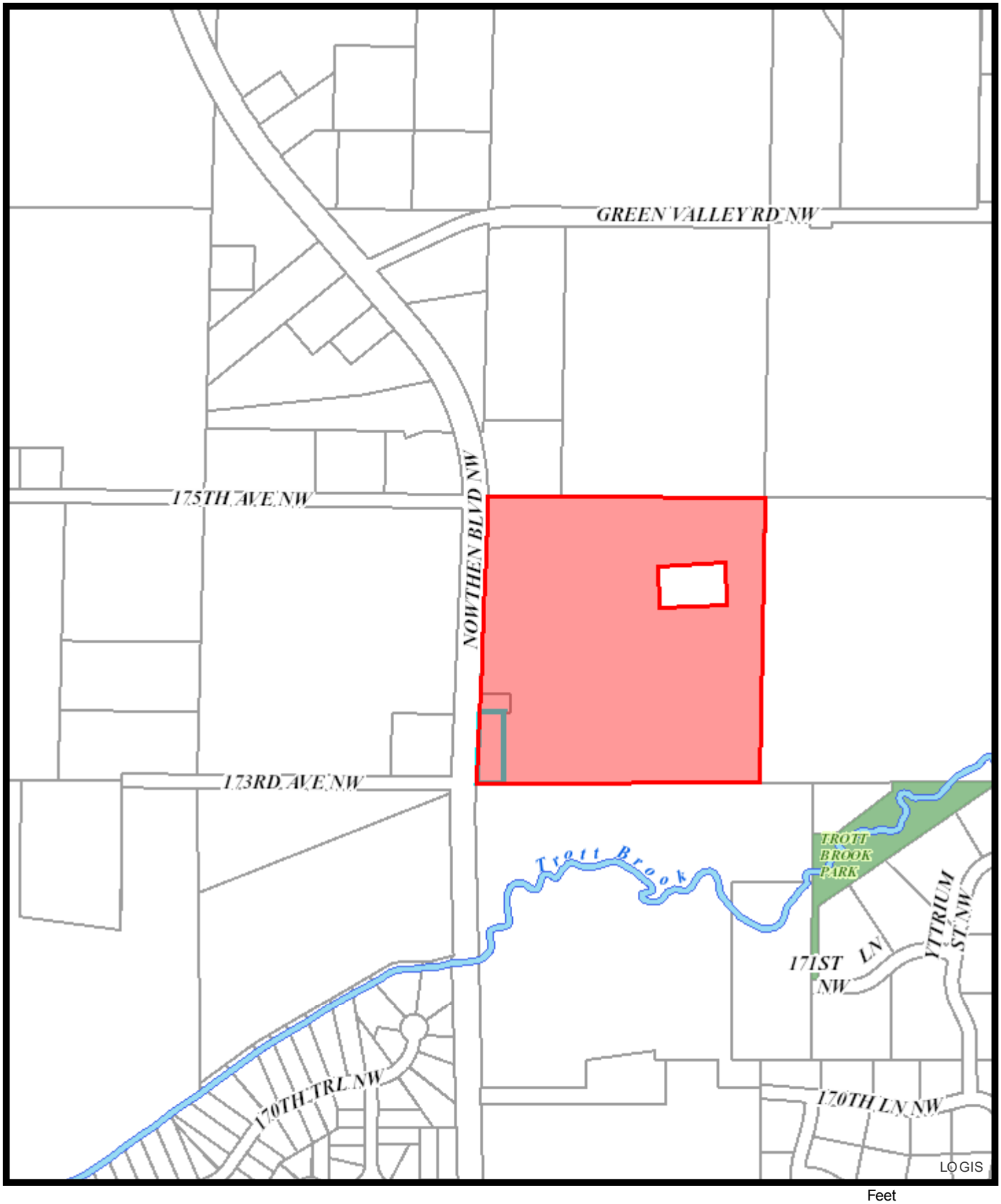
This document reviewed by:
Ratwik, Roszak & Maloney
730 Second Ave. S., Suite 300
Minneapolis, MN 55402

Exhibit A

(NO)THE
887.21
887.40
887.37
886.00
886.30
885.76
885.26
END B612 CURB W/2' BEAVER TAIL (TYP)
887.20
884.00
883.49
884.20
882.78
882.28
880.30
25'-12" HDPE @ 4.00%
12" APRON INV 876.5
CB RE 880.10 IE 877.50
879.70
881.00
885.15
879.30
879.30 EOF 8' WIDE OVERFLOW WEIR
B612 CONC CURB (TYP)
884.90
881.00
883.10
884.20
884.70
884.90
885.10
885.15
END B612 CURB W/2' BEAVER TAIL (TYP)
885.66
885.50
885.90
880.20
880.70
886.30
886.32
886.20
886.40
886.60
886.80
879.20
879.50 DOOR
877.90
878.90
878.32
WETLAND FILL 1,386 S.F.
PROPOSED BUILDING EXPANSION 1,944 SQ.FT.
DEPRESS BACK OF CURB TO 1/2" HEIGHT AT WALKWAY
886.85
886.35TC
886.15
END B612 CURB W/2' BEAVER TAIL (TYP)
EXISTING 57" DIA CMP CULVERT
EDGE OF WETLAND AS DELINEATED
PROPOSED SEPTIC AREA
CURB DRAIN & RIP RAP SWALE
END B612 CURB W/2' BEAVER TAIL (TYP)
EXISTING BITUMINOUS TO REMAIN
WET LAND
REMOVE DRIVEWAY AND CULVERT; GRADE DITCH TO MATCH EXISTING DITCH SLOPE
EXISTING BITUMINOUS TO REMAIN
FUTURE (1) STOREY ACTIVITY CENTER
HARD SURFACE PLAY
TOP OF WALL 880.20
880.70
880.32
879.80
879.35
879.50
879.35
879.20
879.50 DOOR
877.90
TOP OF WALL 880.20
PROPOSED RETAINING WALL
*VERIFY DOOR LOCATION & ELEVATION W/ARCHITECHT

03-32-25-43-0002
17301 NOWTHEN BLVD NW

Site Location Map



Feet
0 155310 620 930 1,240

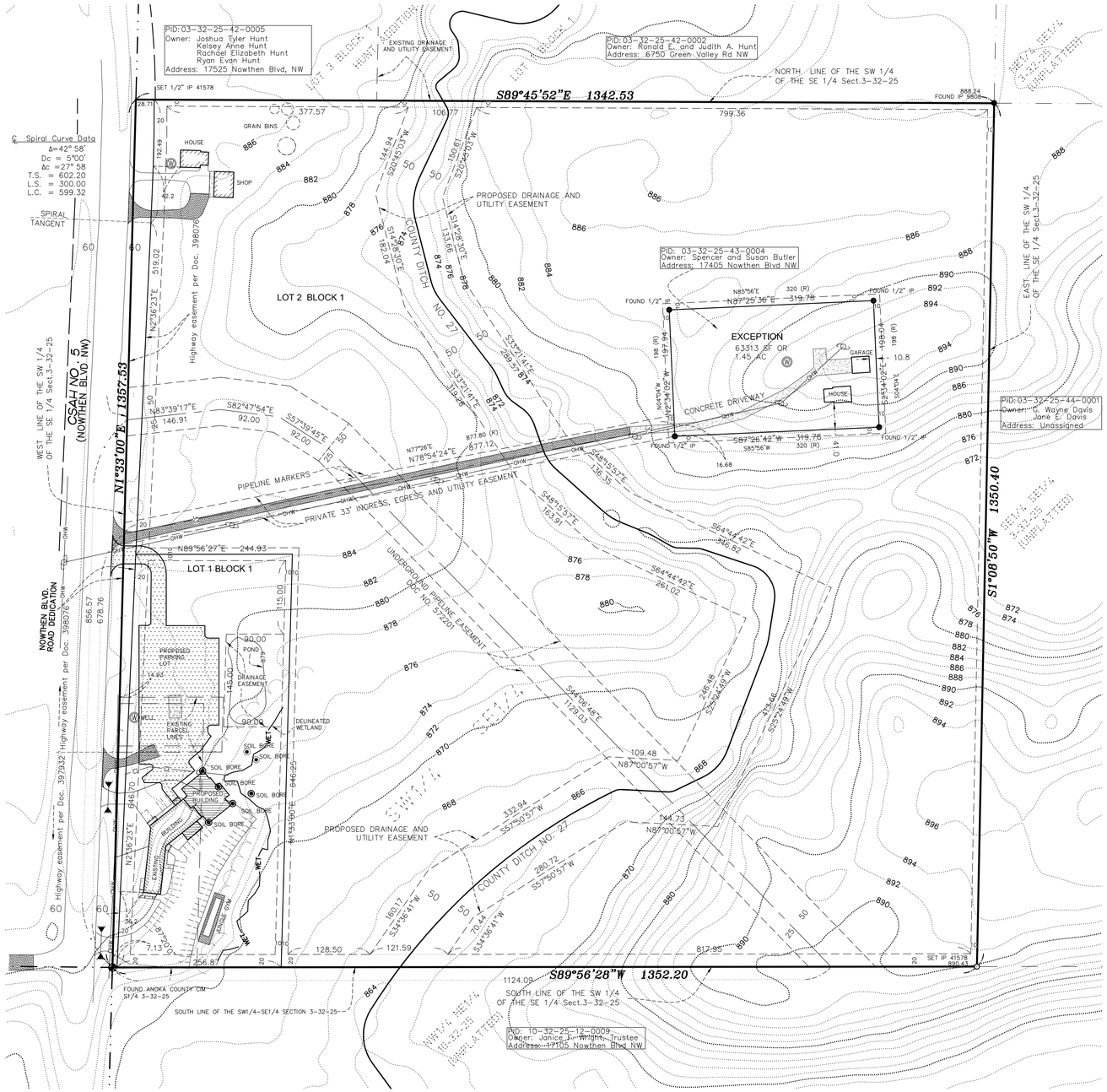
Print Date: April 20, 2017

PRELIMINARY PLAT

~of~ BROOK HALL

~for~ Trott Brook Church

City of Ramsey
County of Anoka
Sec. 3; Twp. 32, Rng. 25



LEGAL DESCRIPTION

The Southwest Quarter THE Southeast Quarter of Section 3, Township 32, Range 25, Anoka County, Minnesota.

EXCEPT

That part of the Southwest Quarter of the Southeast Quarter of Section 3, Township 32, Range 25 in Anoka County, Minnesota, described as follows: Commencing at the Southwest corner of said Southwest Quarter of the Southeast Quarter; thence North (assumed bearing) on the West line of said Southwest Quarter of the Southeast Quarter a distance of 678.76 feet; thence North 77 degrees 26 minutes East at a distance of 877.80 feet to the point of beginning of land to be described, hereinafter referred to as point "A"; thence North 4 degrees 04 minutes West a distance of 181.32 feet; thence North 85 degrees 56 minutes East a distance of 320 feet; thence South 4 degrees 04 minutes East a distance of 198 feet; thence South 85 degrees 56 minutes West a distance of 320 feet; thence North 4 degrees 04 minutes West a distance of 16.68 feet to the point of beginning;

PROPERTY OWNERS

Ronald E. Hunt and Judith A. Hunt
17455 Nowthen Blvd, NW
Ramsey, MN 55303
Parcel ID: 03-32-25-43-0001

Trott Brook Hall
17325 and 17301 Nowthen Blvd, NW
Ramsey, MN 55303
Parcel ID: 03-32-25-43-0003
and
Parcel ID: 03-32-25-43-0002

NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 03/14/17.
- Bearings shown are on Anoka County coordinates.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- Contours are LIDAR and field spot verified for accuracy.
- Location of County Ditch No. 27 is an approximation using geo-referenced satellite photo, contour data and spot checked with field data.
- Site Plan information is provided by others.

LEGEND

- DENOTES IRON MONUMENT FOUND AS LABELED
- DENOTES IRON MONUMENT SET, MARKED RLS# 41578
- DENOTES ANOKA COUNTY CAST IRON MONUMENT
- DENOTES AIR CONDITIONING UNIT
- DENOTES BOLLARD
- DENOTES CABLE PEDESTAL
- DENOTES ELECTRICAL BOX
- x 952.36 DENOTES EXISTING SPOT ELEVATION
- DENOTES FIBER OPTIC BOX
- DENOTES GAS METER
- DENOTES GUY WIRE
- DENOTES POWER POLE
- DENOTES SANITARY SEWER MANHOLE
- DENOTES SIGN
- DENOTES SOIL BORING. (BY OTHERS)
- DENOTES STORM SEWER APRON
- DENOTES STORM SEWER MANHOLE
- DENOTES TELEPHONE PEDESTAL
- DENOTES TELEPHONE MANHOLE
- DENOTES UTILITY BOX
- DENOTES WATER SHUT OFF
- DENOTES WATER VALVE
- DENOTES WELL
- DENOTES WET LAND
- DENOTES WOVEN WIRE FENCE
- DENOTES WOOD FENCE
- DENOTES LIDAR CONTOURS
- DENOTES TREE LINE
- DENOTES RESTRICTED ACCESS
- DENOTES OVERHEAD WIRE
- DENOTES BUILDING SETBACK LINE
- DENOTES BITUMINOUS SURFACE
- DENOTES CONCRETE SURFACE
- DENOTES GRAVEL SURFACE

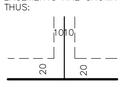
BENCHMARK

ANOKA COUNTY BENCHMARK NO. 3078
ELEVATION 867.97 (NAVD88)

AREAS

TOTAL PARCEL: 40.42 ACRES
LOT 1: 3.71 ACRES
LOT 2: 36.10 ACRES
NOWTHEN BLVD DEDICATION: 0.61 ACRES

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN AS THUS:

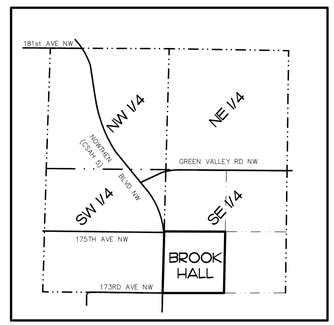


STREET

BEING 10 FEET IN WIDTH ADJOINING SIDE AND REAR LOT LINES AND 20 FEET IN WIDTH ADJOINING ROADWAY LINES UNLESS OTHER WISE SHOWN ON THIS PLAT

VICINITY MAP

SEC. 3, TWP. 32, RNG. 25



ANOKA COUNTY, MINNESOTA
(NO SCALE)

GRAPHIC SCALE

100 0 50 100 200 400

1 INCH = 100FEET

NORTH

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

JASON E. RUD
Date: 04/05/17 License No. 41578

JOB NO: 16753	DATE: 04/05/17	SCANNED ☐
REVISIONS	DRAWN BY: JSE	CHECK BY: JER

NO.	DATE	DESCRIPTION	BY
1			
2			
3			

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

16753 PP

TROTT BROOK HALL

TITLE SHEET, EXISTING CONDITIONS & REMOVALS PLAN

RAMSEY, MINNESOTA

GENERAL NOTES

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF EXISTING UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UTILITIES AS NECESSARY TO AVOID DAMAGE TO THESE UTILITIES.

CALL "811" FOR EXISTING UTILITIES LOCATIONS PRIOR TO ANY EXCAVATIONS.

THE CONTRACTOR SHALL FIELD VERIFY SIZE, ELEVATION, AND LOCATION OF EXISTING SANITARY SEWER, STORM SEWER, AND WATER MAIN AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO THE START OF INSTALLATIONS.

INSTALLATIONS SHALL CONFORM TO THE CITY STANDARD SPECIFICATIONS AND DETAIL PLATES.

THE CONTRACTOR SHALL NOTIFY CITY PUBLIC WORKS DEPARTMENT A MINIMUM OF 24 HOURS PRIOR TO THE INTERRUPTION OF ANY SEWER OR WATER SERVICES TO EXISTING HOMES OR BUSINESSES.

STORAGE OF MATERIALS OR EQUIPMENT SHALL NOT BE ALLOWED ON PUBLIC STREETS OR WITHIN PUBLIC RIGHT-OF-WAY.

NOTIFY CITY A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

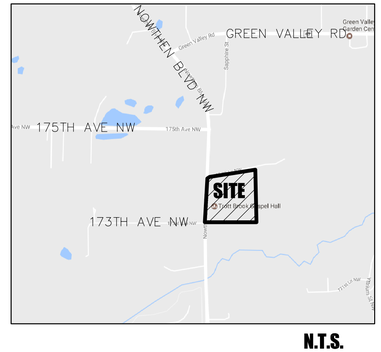
ALL ELECTRIC, TELEPHONE, AND GAS EXTENSIONS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.

LEGEND*

OHW	EXISTING OVERHEAD ELECTRIC		PROPOSED WATER PIPE
TEL	EXISTING UNDERGROUND TELEPHONE		PROPOSED SANITARY SEWER PIPE
CBL	EXISTING UNDERGROUND CABLE		PROPOSED STORM SEWER PIPE
T	EXISTING TELEPHONE PEDESTAL		PROPOSED DRAINTILE AND CLEAN-OUT
E	EXISTING ELECTRICAL PEDESTAL	ELEC	PROPOSED ELECTRIC SERVICE *
C	EXISTING CABLE PEDESTAL	GAS	PROPOSED GAS SERVICE *
	EXISTING UTILITY POLE	TEL	PROPOSED TELEPHONE SERVICE *
	EXISTING LIGHT POLE	D	PROPOSED STORM MANHOLE
>>	EXISTING STORM SEWER		PROPOSED CATCH BASIN
I	EXISTING WATER MAIN		PROPOSED FLARED-END SECTION
>	EXISTING SANITARY SEWER		PROPOSED GATE VALVE
FM	EXISTING FORCEMAIN		PROPOSED HYDRANT
D	EXISTING STORM MANHOLE	S	PROPOSED SANITARY SEWER MANHOLE
	EXISTING CATCH BASIN	928 / 930	PROPOSED CONTOUR
	EXISTING FLARED-END SECTION	920.60	PROPOSED SPOT ELEVATION (GUTTERLINE, BITUMINOUS SURFACE, OR GROUND SURFACE UNLESS OTHERWISE INDICATED)
	EXISTING GATE VALVE	S	PROPOSED SILT FENCE
	EXISTING HYDRANT	4.0%	PROPOSED DIRECTION OF DRAINAGE
W	EXISTING WELL		PROPOSED BITUMINOUS
S	EXISTING SANITARY SEWER MANHOLE		PROPOSED CONCRETE
930 / 928	EXISTING CONTOUR		PROPOSED RIP-RAP
× 920.99 GE	EXISTING SPOT ELEVATION		PROPOSED FILTRATION MEDIA
× 907.42 BIT	EXISTING SPOT ELEVATION (MATCH INTO ELEVATION)		PROPOSED INLET PROTECTION
	EXISTING BITUMINOUS		PROPOSED HEAVY-DUTY PAVEMENT
	EXISTING BITUMINOUS (TO BE REMOVED)		PROPOSED ENKAMAT
	EXISTING TREES		
	EXISTING TREES (TO BE REMOVED)		
	EXISTING RETAINING WALL		
x	EXISTING FENCE		
WET	EXISTING WETLAND		

* STANDARD LEGEND – SOME ITEMS NOT INCLUDED ON THESE PLANS

VICINITY MAP



N.T.S.

SHEET INDEX

C1 TITLE SHEET, EXISTING CONDITIONS & REMOVALS
C2 CIVIL SITE PLAN
C3 GRADING, DRAINAGE & EROSION CONTROL PLAN
C4 DETAILS
C5.1 STORMWATER POLLUTION PREVENTION PLAN
C5.2 STORMWATER POLLUTION PREVENTION PLAN

Know what's below. Call before you dig.

DRAWN BY:	DESIGN BY:
R.W.	C.W.P.
CHCKD BY:	PROJ. NO.
C.W.P.	15-1591

ORIGINAL DATE: MARCH 9, 2017

DATE	REVISION DESCRIPTION

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.

PRELIMINARY

CHARLES W. PLOWE LIC. NO. 48227

DATE: 04.05.2017

TROTT BROOK HALL
RAMSEY, MINNESOTA
TITLE SHEET,EXISTING CONDITIONS & REMOVALS PLAN

PREPARED FOR:
BRAD DUCOMMUN

SITE PLANNING & ENGINEERING
PLOWE ENGINEERING, INC.
6776 LAKE DRIVE
SUITE 110
LINO LAKES, MN 55014
PHONE: (651) 361-8210
FAX: (651) 361-8701

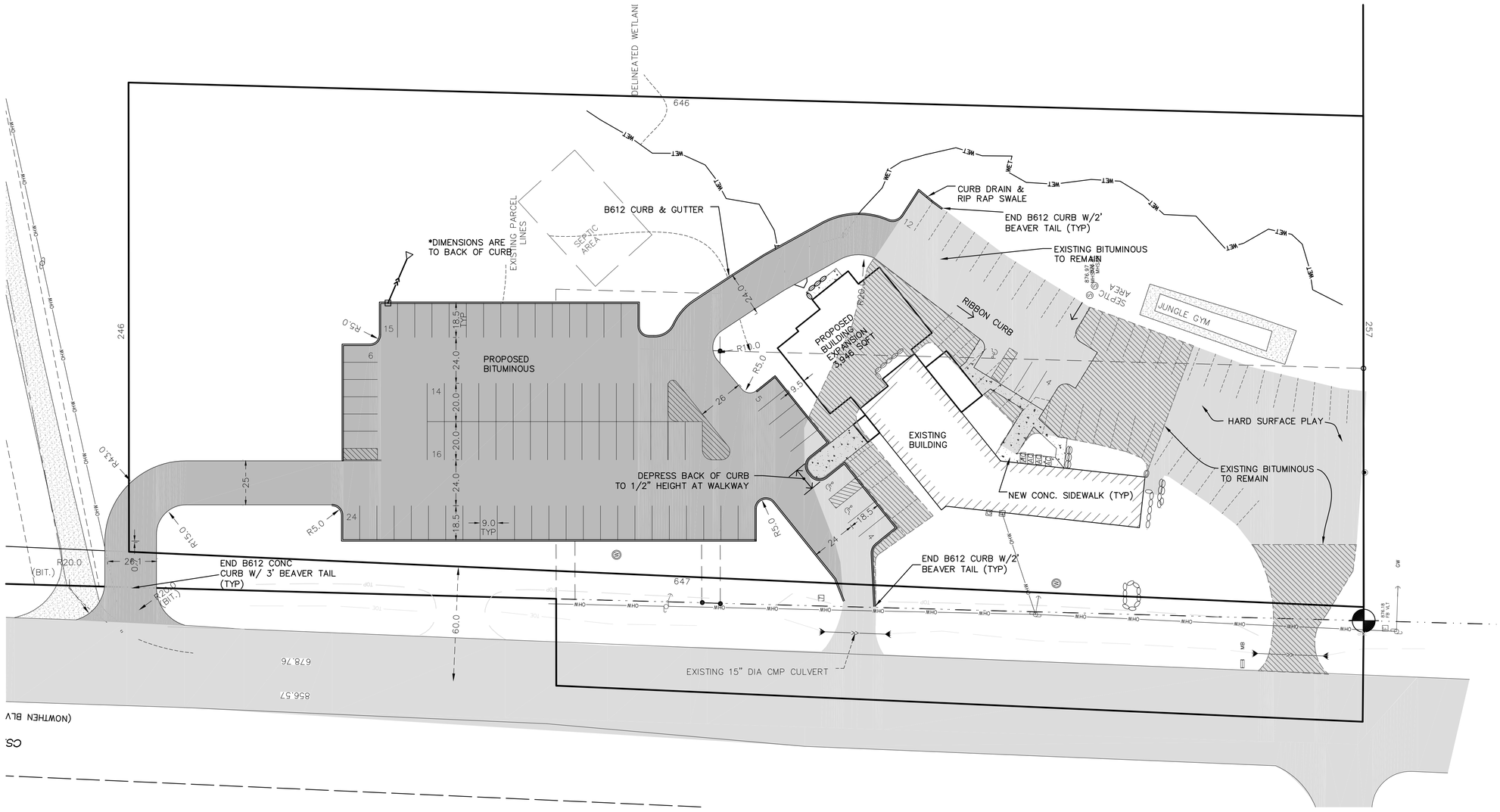
NORTH

0 15 30

1 INCH = 30 FEET

C1

S:\Active\Trott Brook\16-1565_TROTT BROOK\16-1565_CAD\16-1565_BASE_3_v30_Assessor.dwg 4/5/2017



SURFACE AREAS (WITHIN SITE BOUNDARIES)

EXISTING	
PERVIOUS	112,208 SF
IMPERVIOUS	45,463 SF
TOTAL AREA	157,671 SF
PERCENT IMPERVIOUS	28.8%

PROPOSED	
PERVIOUS	96,897 SF
IMPERVIOUS	60,774 SF
TOTAL AREA	157,671 SF
PERCENT IMPERVIOUS	38.5%

811 Know what's **below.** **Call** before you dig.

CIVIL SITE PLAN
TROTT BROOK HALL

DRAWN BY: R.W.	DESIGN BY: C.W.P.
CHCKD BY: C.W.P.	PROJ. NO. 16-1665
ORIGINAL DATE: MARCH 9, 2017	

DATE	REVISION DESCRIPTION

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.

PRELIMINARY

CHARLES W. PLOWE

DATE: 04.05.2017 LIC. NO. 16227

TROTT BROOK HALL
RAMSEY, MINNESOTA
SITE PLAN

PREPARED FOR:
BRAD DUCOMMUN

SITE PLANNING
& ENGINEERING
PLOWE
ENGINEERING, INC.
6776 LAKE DRIVE
SUITE 110
LINO LAKES, MN 55014
PHONE: (651) 361-8210
FAX: (651) 361-8701

NORTH

0 15 30

1 INCH = 30 FEET

C2

C:\Users\cwp\Documents\16-1665_TROTT BROOK\16-1665_CADD\16-1665_BASE_1_CSD_xxxxxx.dwg 4/5/2017

GRADING, DRAINAGE & EROSION CONTROL NOTES

PRIOR TO ANY GRADING OPERATIONS, THE CONTRACTOR SHALL PROVIDE WIMCO INLET PROTECTION (OR OTHER APPROVED EQUAL) FOR ALL STORM SEWER INLETS THAT WILL RECEIVE RUN-OFF FROM CONSTRUCTION ACTIVITIES .

CONTRACTOR TO PROVIDE TOPSOIL STOCKPILES AT LOCATION DESIGNATED BY OWNER. PLACE STOCKPILES AS FAR FROM DRAINAGE WAYS AS POSSIBLE. PROVIDE SILT FENCE AT DOWNSTREAM SIDE OF STOCKPILE LOCATIONS. IF STOCKPILE IS TO BE IN-PLACE LONGER THAN 7 DAYS, PROVIDE SEED AND MULCH.

THE CONTRACTOR SHALL PROVIDE ALL SOD, SEED, MULCH AND FERTILIZER WHICH SHALL CONFORM WITH THE FOLLOWING MNDOT SPECIFICATIONS AS MODIFIED BELOW.

ITEM	MNDOT SPECIFICATION/NOTES
SOD	3878
SEED **	3876
* FOR TURF ESTABLISHMENT	
COMMERCIAL TURF	MNDOT MIX 25-131 (220 LBS/ACRE)
RESIDENTIAL TURF	MNDOT MIX 25-131 (120 LBS/ACRE)
TEMPORARY FALL COVER	MNDOT MIX 21-112 (100 LBS/ACRE)
SPRING/SUMMER	MNDOT MIX 21-111 (100 LBS/ACRE)
SOIL-BUILDING COVER	MNDOT MIX 21-113 (110 LBS/ACRE)
1-2 YEARS COVER	MNDOT MIX 22-111 (30.5 LBS/ACRE)
2-5 YEARS COVER	MNDOT MIX 22-112 (40 LBS/ACRE)
MULCH	3882 (TYPE 1 - DISC ANCHORED)
FERTILIZER	3881
WOOD FIBER BLANKET	3885 (CATEGORY 2)

* MOW A MINIMUM OF:
RESIDENTIAL TURF - ONCE PER 2 WEEKS
COMMERCIAL TURF - ONCE PER 4 WEEKS

** SEEDED AREAS SHALL BE EITHER MULCHED OR COVERED BY FIBROUS BLANKETS TO PROTECT SEEDS AND LIMIT EROSION.

ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS OR IMPLEMENTED IN THE FIELD SHALL BE IN ACCORDANCE WITH THE CITY AND NPDES PHASE II PERMIT REQUIREMENTS, AND THE MPCA'S "PROTECTING WATER QUALITY IN URBAN AREAS BEST MANAGEMENT PRACTICES FOR MINNESOTA."

THE CONTRACTOR SHALL PROVIDE DESIGNATED CONCRETE TRUCK WASHOUT AREA WITH APPROPRIATE SIGNAGE. WASHOUT AREA IS TO BE A MINIMUM OF 50' FROM STORM DRAINS, DITCHES, PONDS, OR OTHER STORMWATER FEATURES. ALL LIQUID AND SOLID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER (E.G. COMPACTED CLAY LINER, IMPERMEABLE GEO-MEMBRANE). AFTER WASTE CONCRETE IS SET, BREAK-UP AND DISPOSE OF PROPERLY.

THE CONTRACTOR SHALL MAINTAIN SILT FENCE, INCLUDING THE REMOVAL OF ACCUMULATED SEDIMENT, THROUGH COMPLETION OF BUILDING CONSTRUCTION. SILT FENCE TO BE REMOVED ONLY AFTER COMPLETION OF BUILDING CONSTRUCTION AND UPON ESTABLISHMENT OF VEGETATION.

THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO ALL ADJACENT PROPERTY LINES AND MAKE SURE THE EROSION CONTROL PRACTICES IN-PLACE IN THOSE AREAS PREVENT MIGRATION OF SEDIMENT ONTO ADJACENT PROPERTIES.

THE CONTRACTOR SHALL PROVIDE WOOD FIBER BLANKET FOR ALL AREAS OF CONCENTRATED FLOW AND FOR ALL SLOPES 3:1 OR GREATER.

IF ANY SLOPES APPEAR TO BE FAILING, THE CONTRACTOR SHALL PROVIDE ADDITIONAL SILT FENCE, BIOROLLS AND EROSION CONTROL BLANKET AS NEEDED.

THE CONTRACTOR SHALL FINAL GRADE SWALE AREAS UPON STABILIZATION OF UPSTREAM AREAS.

THE CONTRACTOR SHALL SOD ALL DISTURBED DRAINAGE AREAS, INCLUDING SWALES, OVERFLOWS, AROUND STORM SEWER FLARED-END SECTIONS, AND OFF-STREET CATCH BASINS.

UPON GRADING COMPLETION THE CONTRACTOR SHALL PROVIDE NATIVE TOPSOIL, SEED, AND MULCH ANCHORED WITH A STRAIGHT SET DISC WITHIN 48 HOURS OF FINAL GRADING.

EXCESS SOIL SHOULD BE TREATED LIKE OTHER EXPOSED SOIL AND STABILIZED WITHIN 72 HOURS. ANY SOIL STOCKPILES ARE TO HAVE SILT FENCE PLACED ON DOWNSTREAM SIDES AND SHALL NOT BE PLACED IN SURFACE WATERS.

ADJACENT STREETS SHALL BE KEPT CLEAN OF CONSTRUCTION MATERIALS, DIRT, AND OTHER UNDESIRABLE MATERIALS. WHEN MATERIALS OR DEBRIS HAVE WASHED/FLOWED ONTO ADJACENT STREETS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO SWEEP/SCRAPE STREETS AS NECESSARY OR AS DIRECTED BY THE CITY.

CURB & BITUMINOUS NOTES

REMOVAL AND DISPOSAL OF EXISTING STREET MATERIALS AS REQUIRED FOR CONSTRUCTION IS CONSIDERED INCIDENTAL.

SAW-CUT EXISTING BITUMINOUS AND CONCRETE CURB TO PROVIDE BUTT-JOINT.

RESTORE DISTURBED STREET TO EXISTING OR BETTER SECTION.

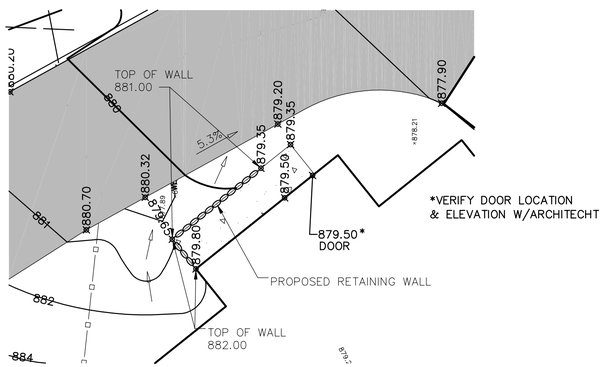
BACKFILLING OF CURB IS INCIDENTAL TO CURB INSTALLATION.

FOUR INCHES OF CLASS 5 UNDER CURB IS INCIDENTAL TO CURB INSTALLATION.

CURB ENDS SHALL TERMINATE IN A THREE-FOOT BEAVER TAIL.

PROPOSED ELEVATIONS ARE CURB GUTTER LINE OR BITUMINOUS SURFACE UNLESS OTHERWISE NOTED.

811 Know what's below. Call before you dig.



DETAIL A
(SCALE 1"=10')

GRADING & DRAINAGE PLAN
TROTT BROOK

DRAWN BY: R.W.	DESIGN BY: C.W.P.
CHCKD BY: C.W.P.	PROJ. NO. 16-1665
ORIGINAL DATE: MARCH 9, 2017	

DATE	REVISION DESCRIPTION

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.

PRELIMINARY

CHARLES W. PLOWE

DATE: 04.05.2017 LIC. NO. 16227

TROTT BROOK
RAMSEY, MINNESOTA
GRADING & DRAINAGE PLAN

PREPARED FOR:
BRAD DUCOMMUN

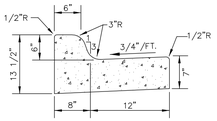
SITE PLANNING & ENGINEERING
PLOWE ENGINEERING, INC.
6776 LAKE DRIVE
SUITE 110
LINO LAKES, MN 55014
PHONE: (651) 361-8210
FAX: (651) 361-8701

NORTH
0 15 30
1 INCH = 30 FEET

C3

C:\plowe\cad\16proj\16-1665 TROTT BROOK\16-1665 GRADE 3.DWG xrefs: 4/6/2017

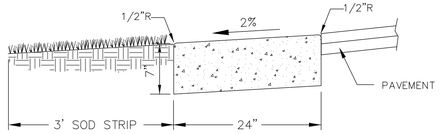
PROVIDE 4" CLASS 5 UNDER CURB (TYP)



NOTE: FOR MECHANICALLY LAID CURB, SHOE MAY BE TILTED.

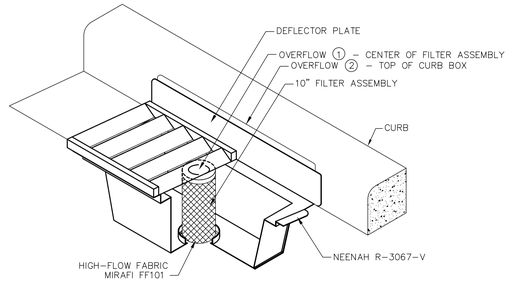
B612 CONCRETE CURB & GUTTER

NOT TO SCALE



CONCRETE RIBBON CURB

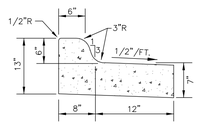
NOT TO SCALE



WIMCO INLET PROTECTION

NOT TO SCALE

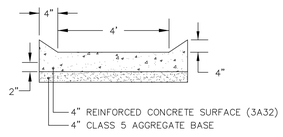
PROVIDE 4" CLASS 5 UNDER CURB (TYP)



NOTE: FOR MECHANICALLY LAID CURB, SHOE MAY BE TILTED.

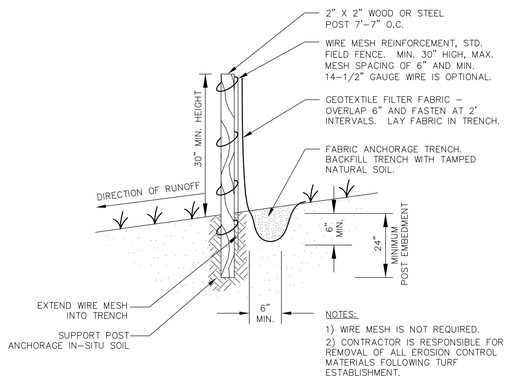
B612 CONCRETE CURB & GUTTER (TIP-OUT)

NOT TO SCALE



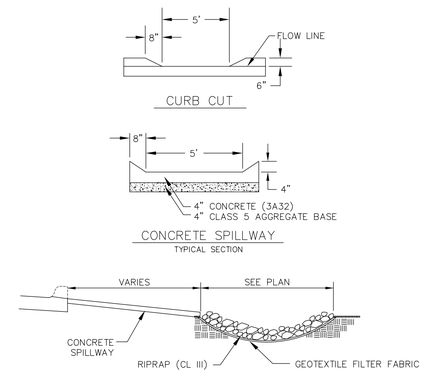
CONCRETE SPILLWAY

NOT TO SCALE



SILT FENCE

NOT TO SCALE



CURB DRAIN OPENING

NOT TO SCALE

DETAILS
TROTT BROOK HALL

DRAWN BY:	DESIGN BY:
R.W.	C.W.P.
CHCKD BY:	PROJ. NO.
C.W.P.	16-1655

ORIGINAL DATE: MARCH 9, 2017

DATE	REVISION DESCRIPTION

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.

PRELIMINARY

CHARLES W. PLOWE LIC. NO. 16227

DATE: 04.05.2017

TROTT BROOK HALL
RAMSEY, MINNESOTA
DETAILS

PREPARED FOR:
BRAD DUCOMMUN

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6776 LAKE DRIVE
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FAX: (651) 361-8701

C4

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PART II.C. – TERMINATION OF COVERAGE

1. TERMINATION OF COVERAGE WHEN CONSTRUCTION IS COMPLETE: ALL PERMITTEE(S) MUST SUBMIT A NOTICE OF TERMINATION (NOT) TO THE MPCA ON A FORM PROVIDED BY THE COMMISSIONER WITHIN 30 DAYS AFTER ALL ACTIVITIES REQUIRED FOR FINAL STABILIZATION (SEE PART IV.G.) ARE COMPLETE. THE PERMITTEE(S)' COVERAGE UNDER THIS PERMIT TERMINATES AT MIDNIGHT ON THE SUBMISSION DATE OF THE NOT.

2. TERMINATION OF COVERAGE WHEN TRANSFER OF OWNERSHIP OCCURS: ALL PERMITTEE(S) MUST SUBMIT A NOT ON A FORM PROVIDED BY THE COMMISSIONER WITHIN 30 DAYS AFTER SELLING OR OTHERWISE LEGALLY TRANSFERRING THE ENTIRE SITE, INCLUDING PERMIT RESPONSIBILITY FOR ROADS (E.G., STREET SWEEPING) AND STORMWATER INFRASTRUCTURE FINAL CLEAN OUT, OR TRANSFERRING PORTIONS OF A SITE TO ANOTHER PARTY. THE PERMITTEE(S)' COVERAGE UNDER THIS PERMIT TERMINATES AT MIDNIGHT ON THE SUBMISSION DATE OF THE NOT.

3. PERMITTEE(S) MAY TERMINATE PERMIT COVERAGE PRIOR TO COMPLETION OF ALL CONSTRUCTION ACTIVITY IF ALL OF THE FOLLOWING CONDITIONS ARE MET. AFTER THE PERMIT IS TERMINATED UNDER THIS PART, IF THERE IS ANY SUBSEQUENT DEVELOPMENT ON THE REMAINING PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY WAS NOT COMPLETE, NEW PERMIT COVERAGE MUST BE OBTAINED IF THE SUBSEQUENT DEVELOPMENT ITSELF OR AS PART OF THE REMAINING COMMON PLAN OF DEVELOPMENT OR SALE WILL RESULT IN LAND DISTURBING ACTIVITIES OF ONE (1) OR MORE ACRES IN SIZE.

A. CONSTRUCTION ACTIVITY HAS CEASED FOR AT LEAST 90 DAYS.

B. AT LEAST 90 PERCENT (BY AREA) OF ALL ORIGINALLY PROPOSED CONSTRUCTION ACTIVITY HAS BEEN COMPLETED AND PERMANENT COVER ESTABLISHED ON THOSE AREAS.

C. ON AREAS WHERE CONSTRUCTION ACTIVITY IS NOT COMPLETE, PERMANENT COVER HAS BEEN ESTABLISHED.

D. THE SITE IS IN COMPLIANCE WITH PART IV.G.2. AND PART IV.G.3. AND WHERE APPLICABLE, PART IV.G.4. OR PART IV.G.5.

4. PERMITTEE(S) MAY TERMINATE COVERAGE UPON APPROVAL BY THE MPCA IF INFORMATION IS SUBMITTED TO THE MPCA DOCUMENTING THAT TERMINATION IS APPROPRIATE BECAUSE THE PROJECT IS CANCELED.

PART III.A.3 – TRAINING DOCUMENTATION

TRAINING DOCUMENTATION: THE PERMITTEE(S) SHALL ENSURE THE INDIVIDUALS IDENTIFIED IN PART III.F. HAVE BEEN TRAINED IN ACCORDANCE WITH THIS PERMIT'S TRAINING REQUIREMENTS. THE PERMITTEE(S) SHALL ENSURE THE TRAINING IS RECORDED IN OR WITH THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS THE PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. DOCUMENTATION SHALL INCLUDE:

A. NAMES OF THE PERSONNEL ASSOCIATED WITH THIS PROJECT THAT ARE REQUIRED TO BE TRAINED PER PART III.F.1. OF THIS PERMIT.

B. DATES OF TRAINING AND NAME OF INSTRUCTOR(S) AND ENTITY PROVIDING TRAINING.

C. CONTENT OF TRAINING COURSE OR WORKSHOP INCLUDING THE NUMBER OF HOURS OF TRAINING.

PART III.B – SWPPP AMENDMENTS

THE PERMITTEE(S) MUST AMEND THE SWPPP AS NECESSARY TO INCLUDE ADDITIONAL REQUIREMENTS, SUCH AS ADDITIONAL OR MODIFIED BMPS THAT ARE DESIGNED TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER:

1. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS THAT HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS.

2. INSPECTIONS OR INVESTIGATIONS BY SITE OWNER OR OPERATORS, USEPA OR MPCA OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS OR THAT THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES (E.G., NUISANCE CONDITIONS AS DEFINED IN MINN. R. 7050.0210, SUBP. 2).

3. THE SWPPP IS NOT ACHIEVING THE GENERAL OBJECTIVES OF MINIMIZING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR THE SWPPP IS NOT CONSISTENT WITH THE TERMS AND CONDITIONS OF THIS PERMIT.

4. AT ANY TIME AFTER PERMIT COVERAGE IS EFFECTIVE, THE MPCA MAY DETERMINE THAT THE PROJECT'S STORMWATER DISCHARGES MAY CAUSE, HAVE REASONABLE POTENTIAL TO CAUSE, OR CONTRIBUTE TO NON–ATTAINMENT OF ANY APPLICABLE WATER QUALITY STANDARD, OR THAT THE SWPPP DOES NOT INCORPORATE THE APPLICABLE REQUIREMENTS IN PART III.A.8., (IMPAIRED WATERS AND TMDLS). IF A WATER QUALITY STANDARD CHANGES DURING THE TERM OF THIS PERMIT, THE MPCA WILL MAKE A DETERMINATION AS TO WHETHER A MODIFICATION OF THE SWPPP IS NECESSARY TO ADDRESS THE NEW STANDARD. IF THE MPCA MAKES SUCH DETERMINATION(S) OR ANY OF THE DETERMINATIONS IN PARTS III.B.1.–3., THE MPCA WILL NOTIFY THE PERMITTEE(S) IN WRITING. IN RESPONSE, THE PERMITTEE(S) MUST AMEND THE SWPPP TO ADDRESS THE IDENTIFIED CONCERNS AND SUBMIT INFORMATION REQUESTED BY THE MPCA, WHICH MAY INCLUDE AN INDIVIDUAL PERMIT APPLICATION. IF THE MPCA'S WRITTEN NOTIFICATION REQUIRES A RESPONSE, FAILURE TO RESPOND WITHIN THE SPECIFIED TIMEFRAME CONSTITUTES A PERMIT VIOLATION.

PART III.C. – TEMPORARY SEDIMENT BASINS

WHERE FIVE (5) OR MORE ACRES OF DISTURBED SOIL DRAIN TO A COMMON LOCATION, THE PERMITTEE(S) MUST PROVIDE A TEMPORARY SEDIMENT BASIN TO PROVIDE TREATMENT TO 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 FIVE (5) ACRES DRAINING TO A COMMON LOCATION. THE PERMITTEE(S) IS/ARE ENCOURAGED, BUT NOT REQUIRED, TO INSTALL TEMPORARY SEDIMENT BASINS WHERE APPROPRIATE IN AREAS WITH STEEP SLOPES OR HIGHLY ERODIBLE SOILS EVEN IF LESS THAN FIVE (5) ACRES DRAINS TO ONE AREA. 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 THE CALCULATION IN PART III.C.1. 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 (SEE PART IV.B.5.).
4. SEDIMENT BASINS MUST BE SITUATED OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONE REQUIRED UNDER APPENDIX A.C.3, AND MUST BE DESIGNED TO AVOID DRAINING WATER FROM WETLANDS UNLESS THE IMPACT TO THE WETLAND IS IN COMPLIANCE WITH THE REQUIREMENTS OF APPENDIX A, PART D.

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, THE PERMITTEE(S) MUST CONSIDER PUBLIC SAFETY AND MAY CONSIDER FACTORS SUCH AS SITE SOILS, SLOPE, AND AVAILABLE AREA ON SITE. THIS DETERMINATION OF INFEASIBILITY MUST BE DOCUMENTED IN THE SWPPP PRE PART III.A.5.

PART III.E – 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 PERMITTEE(S) 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 AS OUTLINED IN PART II.C. THIS DOES NOT INCLUDE ANY RECORDS AFTER SUBMITTAL OF

1. THE FINAL SWPPP
2. ANY OTHER STORMWATER RELATED PERMITS REQUIRED FOR THE PROJECT
3. RECORDS OF ALL INSPECTION AND MAINTENANCE CONDUCTED DURING CONSTRUCTION (PART IV.E. INSPECTIONS AND MAINTENANCE)

PART III.E – RECORD RETENTION (CONT)

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 AND

5. ALL REQUIRED CALCULATIONS FOR DESIGN OF THE TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

PART III.F. – TRAINING REQUIREMENTS

THE PERMITTEE(S) SHALL ENSURE THE FOLLOWING INDIVIDUALS IDENTIFIED IN THIS PART HAVE BEEN TRAINED IN ACCORDANCE WITH THIS PERMIT'S TRAINING REQUIREMENTS.

1. WHO MUST BE TRAINED:
   A. INDIVIDUAL(S) PREPARING THE SWPPP FOR THE PROJECT

   B. INDIVIDUAL(S) OVERSEEING IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP AND INDIVIDUAL(S) PERFORMING INSPECTIONS AS REQUIRED IN PART IV.E. ONE OF THESE INDIVIDUAL(S) MUST BE AVAILABLE FOR AN ONSITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY THE MPCA.

   C. INDIVIDUAL(S) PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS. AT LEAST ONE INDIVIDUAL ON A PROJECT MUST BE TRAINED IN THESE JOB DUTIES.

2. TRAINING CONTENT: THE CONTENT AND EXTENT OF TRAINING MUST BE COMMENSURATE WITH THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES WITH REGARD TO ACTIVITIES COVERED UNDER THIS PERMIT FOR THE PROJECT. AT LEAST ONE INDIVIDUAL PRESENT ON THE PERMITTED PROJECT SITE (OR AVAILABLE TO THE PROJECT SITE IN 72 HOURS) MUST BE TRAINED IN THE JOB DUTIES DESCRIBED IN PART III.F.1.B. AND PART III.F.1.C.

3. THE PERMITTEE(S) SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT. AN UPDATE REFRESHER–TRAINING MUST BE ATTENDED EVERY THREE (3) YEARS STARTING THREE (3) YEARS FROM THE ISSUANCE DATE OF THIS PERMIT.

IV.B. EROSION PREVENTION PRACTICES

1. THE PERMITTEE(S) MUST PLAN FOR AND IMPLEMENT 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 TO COMPLY WITH THIS PERMIT AND PROTECT WATERS OF THE STATE. 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. THE PERMITTEE(S) MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT THAT HAVE STEEP SLOPES. FOR THOSE SLOPED AREAS WHICH MUST BE DISTURBED, THE PERMITTEE(S) MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES (E.G., SLOPE DRAINING AND TERRACING).

2. THE PERMITTEE(S) MUST STABILIZE ALL EXPOSED SOIL AREAS (INCLUDING STOCKPILES). 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 7 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.

3. IF USING STORMWATER CONVEYANCE CHANNELS, THE PERMITTEE(S) MUST DESIGN THE CHANNELS TO ROUTE WATER AROUND UNSTABILIZED AREAS ON THE SITE AND TO REDUCE EROSION, UNLESS INFEASIBLE. THE PERMITTEE(S) MUST USE EROSION CONTROLS AND VELOCITY DISSIPATION DEVICES SUCH AS CHECK DAMS, SEDIMENT TRAPS, RIPRAP, OR GROUTED RIPRAP AT OUTLETS WITHIN AND ALONG THE LENGTH OF ANY CONSTRUCTED STORMWATER CONVEYANCE CHANNEL, AND AT ANY OUTLET, TO PROVIDE A NON–EROSIVE FLOW VELOCITY, TO MINIMIZE EROSION OF CHANNELS AND THEIR EMBANKMENTS, OUTLETS, ADJACENT STREAM BANKS, SLOPES, AND DOWNSTREAM WATERS DURING DISCHARGE CONDITIONS.

4. THE PERMITTEE(S) MUST STABILIZE 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. STABILIZATION OF THE LAST 200 LINEAL FEET MUST BE COMPLETED WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE.

THE PERMITTEE(S) SHALL COMPLETE STABILIZATION OF THE REMAINING PORTIONS OF ANY TEMPORARY OR PERMANENT DITCHES OR SWALES WITHIN 7 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.

5. PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.

6. UNLESS INFEASIBLE DUE TO LACK OF PERVIOUS OR VEGETATED AREAS, THE PERMITTEE(S) MUST DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS OF THE SITE (INCLUDING ANY NATURAL BUFFERS) IN ORDER TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION. THE PERMITTEE(S) MUST USE VELOCITY DISSIPATION DEVICES IF NECESSARY TO PREVENT EROSION WHEN DIRECTING STORMWATER TO VEGETATED AREAS.

PART IV.C. – SEDIMENT CONTROL PRACTICES

1. THE PERMITTEE(S) MUST EMPLOY SEDIMENT CONTROL PRACTICES AS NECESSARY TO MINIMIZE SEDIMENT FROM ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS. A. TEMPORARY OR PERMANENT DRAINAGE DITCHES AND SEDIMENT BASINS THAT ARE DESIGNED AS PART OF

   A SEDIMENT CONTAINMENT SYSTEM (E.G., DITCHES WITH ROCK–CHECK DAMS) REQUIRE SEDIMENT CONTROL PRACTICES ONLY AS APPROPRIATE FOR SITE CONDITIONS.

   B. IF THE DOWN GRADIENT SEDIMENT CONTROLS ARE OVERLOADED (BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE REQUIREMENT), THE PERMITTEE(S) MUST INSTALL ADDITIONAL UPGRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPS TO ELIMINATE THE OVERLOADING, AND THE SWPPP MUST BE AMENDED TO IDENTIFY THESE ADDITIONAL PRACTICES AS REQUIRED IN PART III.B 1.–3.

2. 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 IN ACCORDANCE WITH PART IV.G.

3. THE PERMITTEE(S) SHALL RE–INSTALL ALL SEDIMENT CONTROL PRACTICES THAT HAVE BEEN ADJUSTED OR REMOVED TO ACCOMMODATE SHORT–TERM ACTIVITIES SUCH AS CLEARING OR GRUBBING, OR PASSAGE OF VEHICLES, IMMEDIATELY AFTER THE SHORT–TERM ACTIVITY HAS BEEN COMPLETED. THE PERMITTEE(S) SHALL COMPLETE ANY SHORT–TERM ACTIVITY THAT REQUIRES REMOVAL OF SEDIMENT CONTROL PRACTICES AS QUICKLY AS POSSIBLE. THE PERMITTEE(S) MUST RE–INSTALL SEDIMENT CONTROL PRACTICES BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT–TERM ACTIVITY IS NOT COMPLETE.

4. 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(S) OR THE JURISDICTIONAL AUTHORITY (E.G., CITY/COUNTY/TOWNSHIP/MNDOT ENGINEER).THE PERMITTEE(S) MUST DOCUMENT THE NEED FOR REMOVAL IN THE SWPPP.

5. 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.

6. WHERE VEHICLE TRAFFIC LEAVES ANY PART OF THE SITE (OR ONTO PAVED ROADS WITHIN THE SITE):

   A. THE PERMITTEE(S) MUST INSTALL 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.

   B. THE PERMITTEE(S) MUST USE STREET SWEEPING IF SUCH VEHICLE TRACKING BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET (SEE PART IV.E.5.D.).

7. THE PERMITTEE(S) MUST INSTALL TEMPORARY SEDIMENTATION BASINS AS REQUIRED IN PART III.C. OF THIS PERMIT.

PART IV.D. – DEWATERING AND BASIN DRAINING

1. THE PERMITTEE(S) MUST DISCHARGE TURBID OR SEDIMENT–LADEN WATERS RELATED TO DEWATERING OR BASIN DRAINING (E.G., PUMPED DISCHARGES, TRENCH/DITCH CUTS FOR DRAINAGE) TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE PROJECT SITE UNLESS INFEASIBLE. THE PERMITTEE(S) MAY DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASINS 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 (SEE MINN. R. 7050.0210, SUBP. 2) 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 THE PERMITTEE(S) MUST DISCHARGE WATER THAT CONTAINS OIL OR GREASE, THE PERMITTEE(S) MUST USE AN OIL–WATER SEPARATOR OR SUITABLE FILTRATION DEVICE (E.G. CARTRIDGE FILTERS, ABSORBENTS PADS) PRIOR TO DISCHARGING THE WATER. THE PERMITTEE(S) MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES.

2. 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.

3. IF THE PERMITTEE(S) IS/ARE USING FILTERS WITH BACKWASH WATER, THE PERMITTEE(S) MUST HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWASH WATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE PERMITTEE(S) MAY DISCHARGE BACKWASH WATER TO THE SANITARY SEWER IF PERMISSION IS GRANTED BY THE SANITARY SEWER AUTHORITY. THE PERMITTEE(S) MUST REPLACE AND CLEAN THE FILTER MEDIA USED IN DEWATERING DEVICES WHEN REQUIRED TO RETAIN ADEQUATE FUNCTION

PART IV.E. – INSPECTIONS AND MAINTENANCE

1. THE PERMITTEE(S) MUST ENSURE THAT A TRAINED PERSON (AS IDENTIFIED IN PART III.A.3.A.) WILL 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.

2. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED WITHIN 24 HOURS IN WRITING AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP IN ACCORDANCE WITH PART III.E. 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 AS REQUIRED IN PART III.B. WITHIN SEVEN (7) CALENDAR DAYS.

3. INSPECTION FREQUENCY ADJUSTMENT

   A. 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.

   B. 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.

   C. 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.

4. THE PERMITTEE(S) IS/ARE RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMPS, AS WELL AS ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS, UNTIL ANOTHER PERMITTEE HAS OBTAINED COVERAGE UNDER THIS PERMIT ACCORDING TO PART II.B.5. OR THE PROJECT HAS UNDERGONE FINAL STABILIZATION, AND AN NOT HAS BEEN SUBMITTED TO THE MPCA.

5. THE PERMITTEE(S) MUST INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS AND POLLUTION PREVENTION MANAGEMENT MEASURES TO ENSURE INTEGRITY AND EFFECTIVENESS DURING ALL ROUTINE AND POST–RAINFALL EVENT INSPECTIONS. 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. THE PERMITTEE(S) MUST INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

   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 (SEE PART IV.D.).

   C. SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION DURING EACH INSPECTION. THE PERMITTEE(S) MUST REMOVE

SITE SPECIFIC INFORMATION

PROJECT NAME

TROTT BROOK HALL

PROJECT LOCATION

17301 NOWTHEN BLVD NW, RAMSEY, MN 55303
LATITUDE: 45.285201
LONGITUDE: -93.439523

PROJECT OWNER

TROTT BROOK CHURCH

CONSTRUCTION ACTIVITY DESCRIPTION

THE PROJECT INCLUDES THE CONSTRUCTION OF AN ADDITION ON THE EXISTING BUILDING AND A NEW PARKING LOT EXPANSION. EXISTING SOILS TYPES CONSIST OF FINE AND MEDIUM SANDS WITH SOME TRACES OF SAND WITH SILT.

SITE AREAS

	BEFORE CONSTRUCTION	AFTER CONSTRUCTION
TOTAL SITE AREA	3.62 ACRES	
TOTAL ESTIMATED IMPERVIOUS	1.04 ACRES	1.40 ACRES
TOTAL ESTIMATED PERVIOUS	2.58 ACRES	2.22 ACRES

TOTAL DISTURBED AREA

1.81 ACRES

RECEIVING WATERS WITHIN ONE MILE

NAME OF WATER BODY	TYPE OF WATER BODY	SPECIAL WATER	IMPAIRED WATER
ON-SITE POND	POND	NO	NO
ON-SITE WETLANDS	WETLAND	NO	NO
CO. DITCH NO.27	CREEK	NO	NO
OFF-SITE PONDS	POND	NO	NO
FISH LAKE	LAKE	NO	NO

SITE MAP AND DESIGN CALCULATIONS

SEE STORM WATER DRAINAGE REPORT FOR QUANTIFICATION OF STORM WATER MANAGEMENT REQUIREMENTS AND DRAINAGE AREA MAPS.

SOILS, SLOPES, VEGETATION

SOIL TYPE(S): SEE "CONSTRUCTION ACTIVITY DESCRIPTION" FOR LIST OF SOILS TYPES.

SLOPES: PROPOSED SLOPES WILL BE GENERALLY MODERATE AND ARE NOT EXPECTED TO EXCEED 3:1.

VEGETATION: SEED AND MULCH IS PROPOSED FOR DISTURBED AREAS.

PERSON WHO PREPARED SWPPP ("DESIGNER")

CHARLES W. PLOWE
PLOWE ENGINEERING, INC.
6776 LAKE DRIVE
LINO LAKES MN 55014
(651) 361-8200

PERSON WHO WILL OVERSEE IMPLEMENTATION OF SWPPP ("CONTRACTOR")

TBD

PERSON(S) WHO WILL INSPECT ON-SITE ESC MEASURES ("INSPECTOR")

TBD

TRAINING DOCUMENTATION

DOCUMENTATION MUST ACCOMPANY THE SWPPP INDICATING THAT THE INDIVIDUALS IDENTIFIED IN PART III.F. HAVE BEEN TRAINED IN ACCORDANCE WITH THE REQUIREMENTS OF PART III.F. DOCUMENTATION SHALL INCLUDE:

A. NAMES OF THE PERSONNEL ASSOCIATED WITH THIS PROJECT THAT ARE REQUIRED TO BE TRAINED PER PART III.F.1. OF THIS PERMIT.

B. DATES OF TRAINING AND NAME OF INSTRUCTOR(S) AND ENTITY PROVIDING TRAINING.

C. CONTENT OF TRAINING COURSE OR WORKSHOP INCLUDING THE NUMBER OF HOURS OF TRAINING.

SITE SEQUENCING & ESC NOTES

PRIOR TO ANY LAND-DISTURBING ACTIVITY, THE CONTRACTOR SHALL INSTALL SILT FENCE AS SHOWN ON PLAN. ADDITIONAL SILT FENCE MAY BE NECESSARY IF LOCAL CONDITIONS REQUIRE. SILT FENCE SHALL REMAIN IN-PLACE UNTIL THE FINAL STABILIZATION HAS BEEN ESTABLISHED IN ACCORDANCE WITH PART IV.G.

THE CONTRACTOR SHALL PERFORM SITE GRADING ON AN AREA-BY-AREA BASIS TO MINIMIZE UNSTABILIZED AREAS. AS EACH AREA IS COMPLETED, ALL EXPOSED SOILS MUST HAVE TEMPORARY EROSION CONTROL PROTECTION OR PERMANENT COVER WITHIN SEVEN (7) DAYS.

THE CONTRACTOR SHALL PROVIDE ALL SOD, SEED, MULCH AND FERTILIZER WHICH SHALL CONFORM WITH THE FOLLOWING MNDOT SPECIFICATIONS AS MODIFIED BELOW.

ITEM	MNDOT SPECIFICATION/NOTES
SOD	3878
SEED **	3876
* FOR TURF ESTABLISHMENT	
COMMERCIAL TURF	MNDOT MIX 25-131 (220 LBS/ACRE)
RESIDENTIAL TURF	MNDOT MIX 25-131 (120 LBS/ACRE)
TEMPORARY FALL COVER	MNDOT MIX 21-112 (100 LBS/ACRE)
SPRING/SUMMER	MNDOT MIX 21-111 (100 LBS/ACRE)
SOIL-BUILDING COVER	MNDOT MIX 21-113 (110 LBS/ACRE)
1-2 YEARS COVER	MNDOT MIX 22-111 (30.5 LBS/ACRE)
2-5 YEARS COVER	MNDOT MIX 22-112 (40 LBS/ACRE)
MULCH	3882 (TYPE 1 - DISC ANCHORED)
FERTILIZER	3881
WOOD FIBER BLANKET	3885 (CATEGORY 2)

* MOW A MINIMUM OF:
RESIDENTIAL TURF - ONCE PER 2 WEEKS
COMMERCIAL TURF - ONCE PER 4 WEEKS

** SEEDED AREAS SHALL BE EITHER MULCHED OR COVERED BY FIBROUS BLANKETS TO PROTECT SEEDS AND LIMIT EROSION.

TEMPORARY OR PERMANENT MULCH MUST BE UNIFORMLY APPLIED BY MECHANICAL OR HYDRAULIC MEANS AND STABILIZED BY DISC-ANCHORING OR USE OF HYDRAULIC SOIL STABILIZERS.

ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS OR IMPLEMENTED IN THE FIELD SHALL BE IN ACCORDANCE WITH THE CITY AND NPDES PHASE II PERMIT REQUIREMENTS, AND THE MPCA'S "PROTECTING WATER QUALITY IN URBAN AREAS BEST MANAGEMENT PRACTICES FOR MINNESOTA."

THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO ALL ADJACENT PROPERTY LINES AND MAKE SURE THE EROSION CONTROL PRACTICES INPLACE IN THOSE AREAS PREVENT MIGRATION OF SEDIMENT ONTO ADJACENT PROPERTIES.

THE CONTRACTOR SHALL MAINTAIN SILT FENCE, INCLUDING THE REMOVAL OF ACCUMULATED SEDIMENT, THROUGH COMPLETION OF BUILDING CONSTRUCTION. SILT FENCE TO BE REMOVED ONLY AFTER COMPLETION OF BUILDING CONSTRUCTION AND UPON ESTABLISHMENT OF VEGETATION.

THE CONTRACTOR SHALL PROVIDE WOOD FIBER BLANKET FOR ALL AREAS OF CONCENTRATED FLOW AND FOR ALL SLOPES 3:1 OR GREATER.

PROTECT ALL STORM WATER MANAGEMENT FACILITIES FROM CONSTRUCTION RUN-OFF. CONTRACTOR TO INSTALL AND CONSTRUCT SAID FACILITIES ONCE SITE HAS BEEN STABILIZED.

IF ANY SLOPES APPEAR TO BE FAILING, THE CONTRACTOR SHALL PROVIDE ADDITIONAL SILT FENCE, BIOROLLS AND EROSION CONTROL BLANKET AS NEEDED.

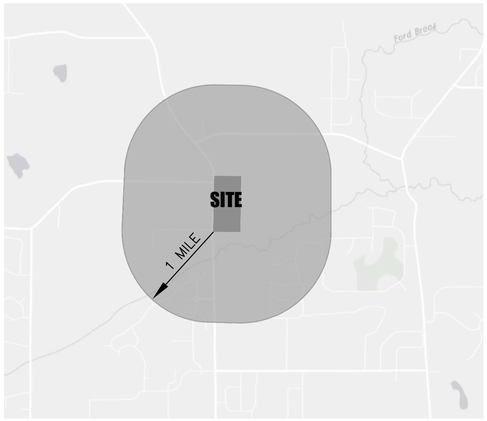
THE CONTRACTOR SHALL FINAL GRADE SWALE AREAS UPON STABILIZATION OF UPSTREAM AREAS.

UPON GRADING COMPLETION THE CONTRACTOR SHALL PROVIDE NATIVE TOPSOIL, SEED, AND MULCH ANCHORED WITH A STRAIGHT SET DISC WITHIN 48 HOURS OF FINAL GRADING.

EXCESS SOIL SHOULD BE TREATED LIKE OTHER EXPOSED SOIL AND STABILIZED WITHIN 72 HOURS. ANY SOIL STOCKPILES ARE TO HAVE SILT FENCE PLACED ON DOWNSTREAM SIDES AND SHALL NOT BE PLACED IN SURFACE WATERS.

ADJACENT STREETS SHALL BE KEPT CLEAN OF CONSTRUCTION MATERIALS, DIRT, AND OTHER UNDESIRABLE MATERIALS. WHEN MATERIALS OR DEBRIS HAVE WASHED/FLOWED ONTO ADJACENT STREETS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO SWEEP/SCRAPE STREETS AS NECESSARY OR AS DIRECTED BY THE CITY.

MAP OF SURFACE WATERS



NO IMPAIRED WATERS WITHIN ONE MILE.

C.1 DURING CONSTRUCTION

A. ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

B. TEMPORARY SEDIMENT BASIN REQUIREMENTS DESCRIBED IN PART III.B.1-5 MUST BE USED FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5) OR MORE ACRES DISTURBED AT ONE TIME.

C.2 POST CONSTRUCTION.

THE WATER QUALITY VOLUME THAT MUST BE TREATED BY THE PROJECT PERMANENT STORMWATER MANAGEMENT SYSTEM DESCRIBED IN PART III.C. SHALL BE ONE (1) INCH OF RUNOFF FROM THE NEW IMPERVIOUS SURFACES CREATED BY THE PROJECT. WHERE SITE CONDITIONS ALLOW, AT LEAST ½ INCH OF WATER QUALITY VOLUME MUST BE INFILTRATED. SEE PART III.C.2 FOR MORE INFORMATION ON INFILTRATION DESIGN AND APPROPRIATE SITE CONDITIONS. IF IT IS DETERMINED THAT SITE CONDITIONS ARE NOT APPROPRIATE FOR INFILTRATION (E.G. LACK OF 3 FT. OF SEPARATION TO SEASONALLY SATURATED GROUND WATER, PROXIMITY TO BEDROCK, CONTAMINATED SOILS) THE REASONS SHOULD BE DOCUMENTED IN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE PROJECT. INFILTRATION IS NOT REQUIRED IN HYDROLOGIC SOIL GROUP D SOILS.

STORM WATER POLLUTION PREVENTION PLAN
TROTT BROOK HALL

DRAWN BY:	DESIGN BY:
R.W.	C.W.P.
CHCKD BY:	PROJ. NO.
C.W.P.	16-1665

ORIGINAL DATE:
MARCH 9, 2017

DATE	REVISION DESCRIPTION

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.

CHARLES W. PLOWE
DATE: 04.05.2017 LIC. NO. 16227

TROTT BROOK HALL
RAMESY, MINNESOTA
STORM WATER POLLUTION PREVENTION PLAN

PREPARED FOR:
BRAD DUCOMMUN

SITE PLANNING & ENGINEERING
PLOWE ENGINEERING, INC.
6776 LAKE DRIVE
SUITE 110
LINO LAKES, MN 55014
PHONE: (651) 361-8210
FAX: (651) 361-8701

C5.2

C:\Users\cwp\Desktop\16-1665_TROTT BROOK\16-1665-CAD\16-1665_BASE_3_C5D_storm.dwg 4/5/2017

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	APRIL 28, 2017	**PROJECT ADDRESS**	17301 NOWTHEN BLVD NW
PROJECT. TITLE	TROTT BROOK HALL: CUP, SITE PLAN, SKETCH PLAN, FINAL PLAT		
ESCROW #	115649		
DEPARTMENT:	Community Development: Planning Division		
TECHNICAL REVIEWER:	Name: Chris Anderson Phone: 763-433-9817 Email: canderson@cityoframsey.com		

Conditional Use Permit, Sketch Plan, Final Plat, and Site Plan Review

We offer the following comments regarding the Conditional Use Permit (CUP), Sketch Plan, Final Plat and Site Plan submittal for Trott Brook Hall as it relates to the City's Zoning Code. The plan set consists of seven (7) sheets; a Preliminary Plat prepared by E.G. Rud & Sons, Inc., dated April 5, 2017 and Civil Engineering Plans prepared by Plowe Engineering, Inc. and dated March 9, 2017 (C1, C2, C3, C4, C5.1, and C5.2). Religious institutions more closely function like commercial uses do and thus, the B-1 Business District standards are being applied to the plan review for this project.

Staff provides the following comments on the Plan Set that require revision:

Preliminary Plat Sheet:

1. Add subdivision name to sheet.
2. Provide square footage of each lot being created (under Ares, acreage is provided but not square footage).
3. Parking and maneuvering areas are required to have a twenty (20) foot setback from public road right-of-way. It does not appear that proposed parking area meets this setback. Adjust the location of the parking/maneuvering area to meet minimum setback and include setback measurement on plan set.
4. Existing driveway that serves the dwelling on the Exception must be modified to connect to the proposed northern access for Lot 1. This was discussed during a pre-application meeting between City Staff and the Applicant.
5. Add note about future one (1) story activity center to this plan sheet to match C3.
6. Provide a calculation of acreage being added to the Church's property. This calculation is necessary to determine the applicable development fees.

C2:

1. Existing driveway that serves the dwelling on the Exception must be modified to connect to the proposed northern access for Lot 1. This was discussed during a pre-application meeting between City Staff and the Applicant.
2. A cross-access easement is required for the proposed northern access as it straddles the boundary of Lots 1 and 2.
3. Parking and maneuvering areas are required to have a twenty (20) foot setback from public road right-of-way. It does not appear that proposed parking area meets this setback. Adjust the location of the parking/maneuvering area to meet minimum setback and include setback measurement on plan set.
4. Septic location must be protected throughout construction. Add that note (and barrier) to plan set.
5. Septic system must be evaluated to ensure sufficient capacity to accommodate the proposed building expansion.
6. The building expansion may require fire suppression. Coordinate with the Building Official for this determination.
7. Add note about future one (1) story activity center to this plan sheet to match C3.

C3:

1. Existing driveway that serves the dwelling on the Exception must be modified to connect to the proposed northern access for Lot 1. This was discussed during a pre-application meeting between City Staff and the Applicant.
2. A cross-access easement is required for the proposed northern access as it straddles the boundary of Lots 1 and 2.
3. Parking and maneuvering areas are required to have a twenty (20) foot setback from public road right-of-way. It does not appear that proposed parking area meets this setback. Adjust the location of the parking/maneuvering area to meet minimum setback and include setback measurement on plan set.
4. Septic location must be protected throughout construction. Add that note (and barrier) to plan set.

Staff provides the following comments for general review of applications:

Conditional Use Permit

The submittal includes an application for a Conditional Use Permit for (CUP) for A religious institution is considered a Conditional Use in the R-1 Residential District. A religious institution has been in operation on the site prior to this zoning standard. City Staff have no objection to the CUP and have included the proposed Site Plan as an exhibit in the document to also allow for potential future expansion as shown to occur without requiring an amendment to the CUP (still subject to all permitting requirements thought).

Sketch Plan and Final Plat

General. The project proposes to subdivide portions of three (3) lots into two (2) to accommodate an expansion of Trott Brook Hall. As part of the request, an application for a Conditional Use Permit (CUP) has been submitted to address the expansion of a lawful, non-conforming use. The building expansion and parking improvements are being reviewed using the B-1 General Business District standards as those are more closely aligned with the use on the property than the R-1 Residential standards. A Final Plat sheet is still

Zoning. The properties are all zoned R-1 Residential (MUSA). The Minor Plat will result in two (2) lots, both of which exceed the minimum thresholds for size and width. The lot with the religious institution also meets the minimum standards of the B-1 General Business District.

Streets and Access. The project site will continue to be accessed from CSAH 5. Two existing accesses will be removed as part of the project with a new egress only access proposed centered on Lot 1 and a new ingress/egress access proposed straddling the boundary between Lots 1 & 2. The northern access will require a Cross-Access Easement recorded against both lots. Additionally, as was discussed in one of the pre-application meetings, the existing private driveway will need to be modified to connect to the northern access to CSAH 5 rather than continuing to have its own, separate access. The plans have been sent to Anoka County Highway Department staff for official review and comment.

Grading and Drainage Plans. Please see Engineering Comments with regard to grading and drainage. Please note that Engineering Comments will be provided as an addendum to this Staff Review Letter.

Easements. Drainage and utility easements shall be provided for both lots. Drainage and utility easements shall be ten (10) feet in width adjacent to road right-of-way and unplatted areas and five (5) feet along all common lot lines being platted. Additionally, drainage and utility easements are required around all wetlands and stormwater ponds. The easement shall be a minimum of sixteen and a half feet (16.5 feet) in width.

Development Fees. Development Fees will be due with the Plat including, but not limited to, Park Dedication, Trail Development, and Stormwater Management. These fees are collected at the time the Final Plat is recorded and at the rate in effect when the plat is recorded. The fees will be based on the acreage being added to the Church property to facilitate the expansion project.

Development Agreement: An executed Development Agreement will be required prior to releasing the plat for recording.

Site Plan

General. The project proposes an expansion of approximately 3,950 square feet off the northeastern wall of the existing building. Sheet C3 also includes an area noted as a future one (1) story activity center. This addition should be noted on the other applicable plan sheets as well

(Preliminary Plat, and C2). There were no building elevations submitted for the proposed expansion and thus, exterior materials and height are not known at this time.

Exterior Finish. City Code Section 117-114 (B-1 General Business District) outlines acceptable exterior wall finishes, which include face brick, stucco, glass, wood, natural stone, specifically designed pre-cast concrete units whose surfaces have been integrally treated with an applied decorative material or texture, or other materials as approved by the City. It is unknown what the proposed exterior materials are for the building addition. This information must be provided. Note that matching the materials of the existing building would be supported by City Staff even if not included in the list of acceptable wall finishes.

Building, Parking, and Maneuvering Setbacks. The proposed building expansion appears to be meet or exceed all required setbacks. This also applied to the future expansion for the one (1) story activity center. All proposed parking and maneuvering areas must be setback from the road right-of-way at least twenty (20) feet. It appears that the proposed parking area will need to be adjusted slightly to comply with this setback requirement. That measurement should also be shown on the plan set.

Wetland and Stormwater Pond Setbacks. Both wetlands and stormwater ponds require a sixteen and a half foot (16.5 feet) permanent setback around them. This area must be encumbered with a drainage and utility easement. The setback and easement should be identified on the plan set.

Landscaping. One (1) tree per 1,000 square feet of building footprint is required along with one (1) tree for every ten (10) new parking stalls. It appears that there are eighty (80) new parking stalls proposed and 3,946 square feet of building expansion. A total of ten (10) new trees shall be provided as part of the project focused primarily around the parking lot. Trees shall be a minimum of two and a half inches (2.5") in diameter (deciduous) or six (6) feet in height (coniferous) and there should be a mix of both coniferous and deciduous trees installed. A landscaping plan, including planting details, shall be provided.

Other Permits. The proposed project will disturbed an acre or more of land and includes a wetland delineation. A permit from the Lower Rum River Watershed Management Organization will be required and a copy of which must be submitted to the City.

Regular Planning Commission **5. 2.**

Meeting Date: 05/04/2017

By: Chris Anderson, Community Development

Information

Title:

Adopt Amended Resolutions #16-12-217 and #16-12-218 Relating to an Approved Variance to Lot Depth in Woodlands (Project #16-102); Case of Lennar Corporation

Purpose/Background:

In December of 2016, the Planning Commission adopted Resolutions #16-12-217 and #16-12-218 approving Findings of Fact favorable to Lennar Corporation (the "Applicant") and granting a Variance to the lot depth standard for a lot in the Woodlands subdivision. The Applicant is acquiring land from an adjacent property owner and that land was subject to the Preliminary Plat process as it had not previously been reviewed as part of the overall Woodlands site. Thus, the lot and block numbering sequence as part of the preliminary plat did not match the numbering sequence of the final plat. The purpose of this case is strictly administrative in nature as the specified legal description for the lot that was granted a variance has changed with the proposed final plat. Both the Findings of Fact and Variance reference Lot 2, Block 1 Woodlands 4th Addition; with the submittal of the final plat application, the lot is now legally described as Lot 15, Block 3. There are no changes to the terms of the documents themselves.

Notification:

Notification is not required for an administrative amendment to these resultions.

Observations/Alternatives:

Funding Source:

All costs associated with this request are the responsibility of the Applicant.

Recommendation:

Staff recommends approving the amended resolutions to update the legal description of the lot in question to match the final plat.

Action:

Motion to approve the amendment to Resolutions #16-12-217 and #16-12-218 to correct the legal description to Lot 15, Block 3 Woodlands 4th Addition to match the final plat.

Attachments

Site Location Map

Purchase Parcel

Variance Exhibit from Applicant

Woodlands 4th Addition Final Plat

Updated Resolution #16-12-217

Updated Resolution #16-12-218

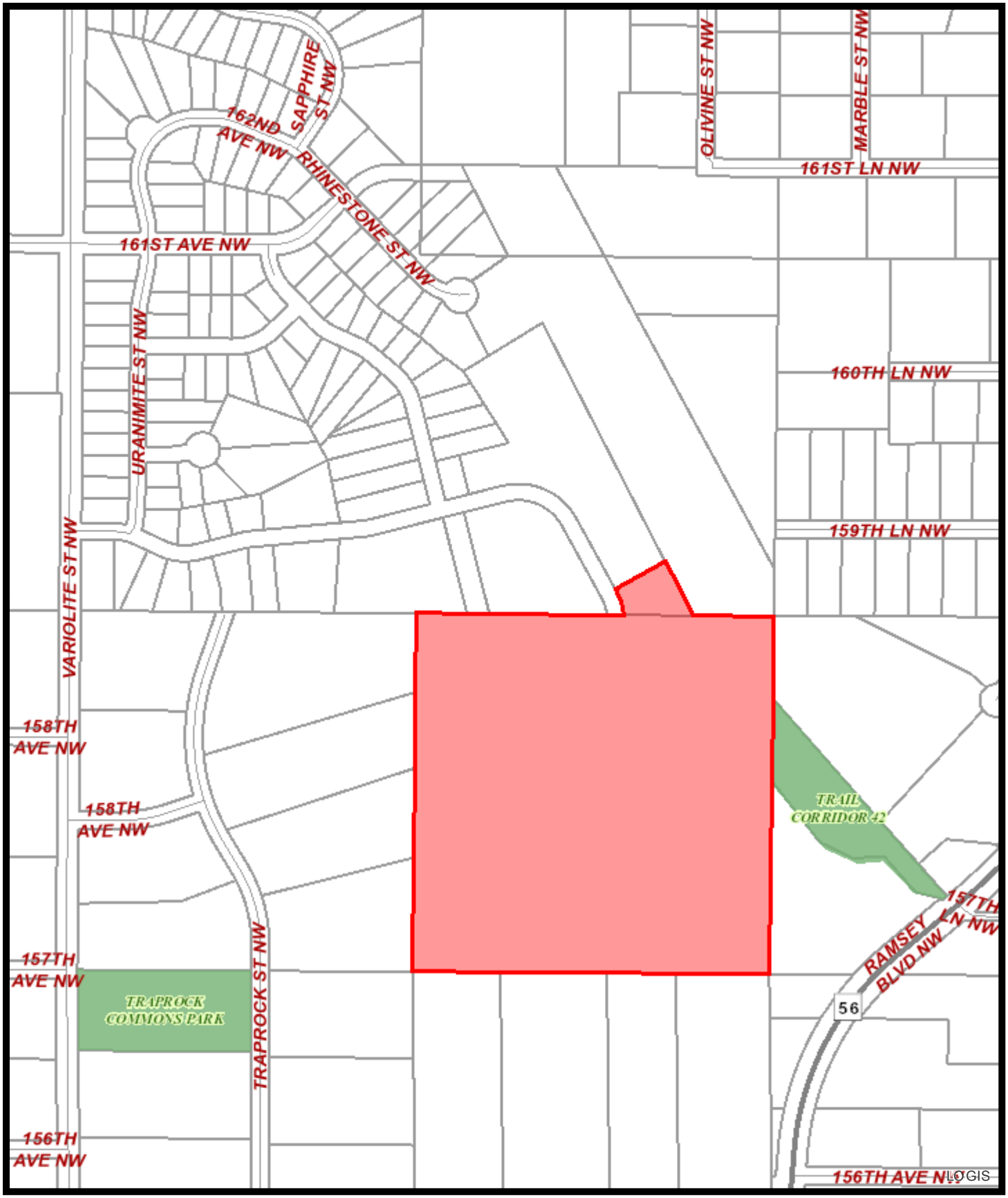
Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/28/2017 02:46 PM

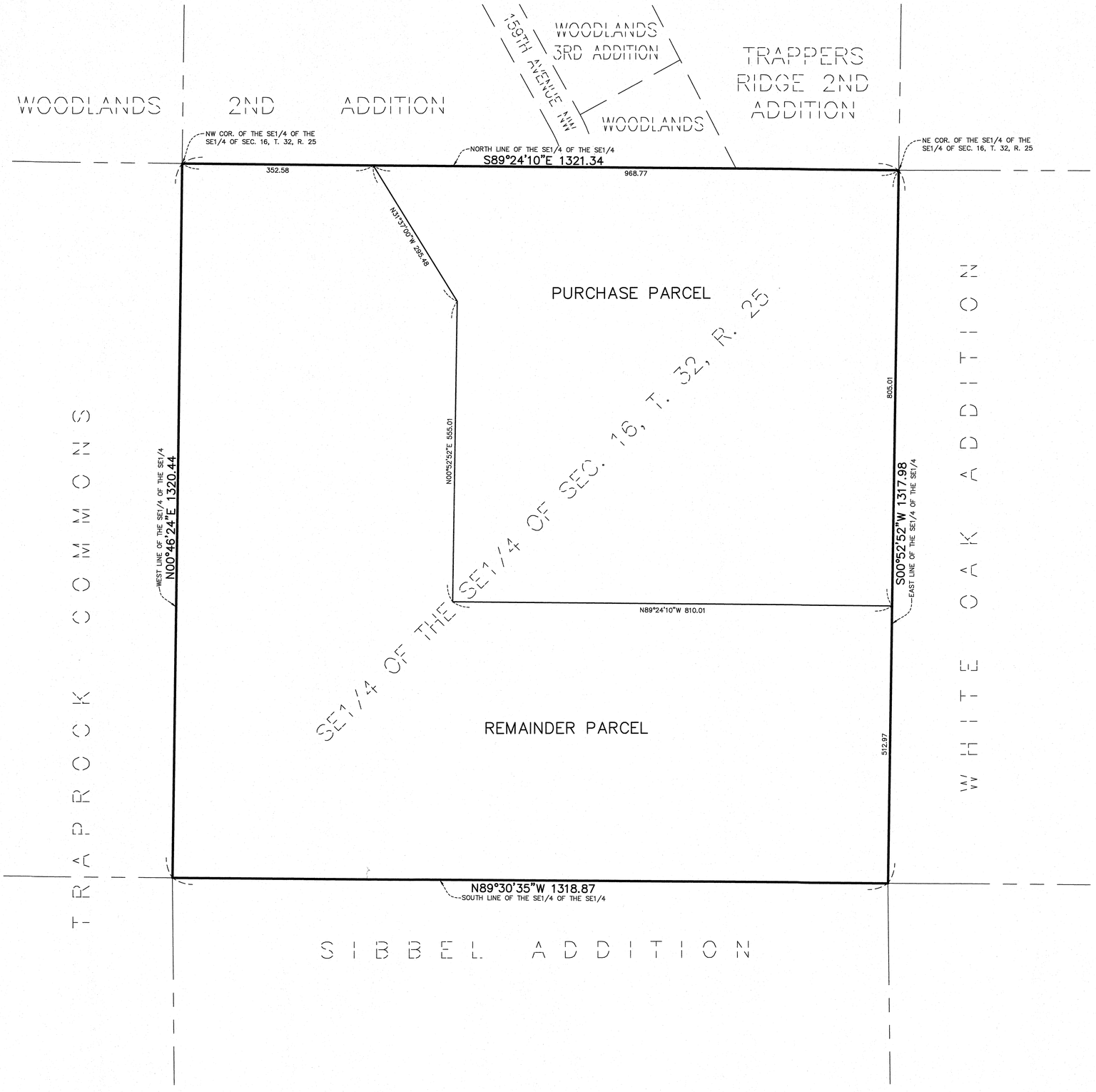
Form Started By: Chris Anderson Started On: 04/27/2017 08:09 AM

Final Approval Date: 04/28/2017

Site Location Map



Print Date: November 16, 2016



OVERALL PROPERTY DESCRIPTION

The Southeast Quarter of the Southeast Quarter of Section 16, Township 32, Range 25, Anoka County, Minnesota.

PURCHASE PARCEL DESCRIPTION

That part of the Southeast Quarter of the Southeast Quarter of Section 16, Township 32, Range 25, Anoka County, Minnesota, described as follows:

Commencing at the northwest corner of said Southeast Quarter of the Southeast Quarter; thence on an assumed bearing of South 89 degrees 24 minutes 10 seconds East, along the north line of said Southeast Quarter of the Southeast Quarter, a distance of 352.58 feet to the point of beginning of the land to be described; thence continuing South 89 degrees 24 minutes 10 seconds East, along said north line, a distance of 968.77 feet to the northeast corner of said Southeast Quarter of the Southeast Quarter; thence South 00 degrees 52 minutes 52 seconds West, along the east line of said Southeast Quarter of the Southeast Quarter, a distance of 805.01 feet; thence North 89 degrees 24 minutes 10 seconds West a distance of 810.01 feet; thence North 00 degrees 52 minutes 52 seconds East a distance of 555.01 feet; thence North 31 degrees 37 minutes 00 seconds West a distance of 295.48 feet to the point of beginning.

REMAINDER PARCEL DESCRIPTION

The Southeast Quarter of the Southeast Quarter of Section 16, Township 32, Range 25, Anoka County, Minnesota, EXCEPT that part described as follows:

Commencing at the northwest corner of said Southeast Quarter of the Southeast Quarter; thence on an assumed bearing of South 89 degrees 24 minutes 10 seconds East, along the north line of said Southeast Quarter of the Southeast Quarter, a distance of 352.58 feet to the point of beginning of the land to be described; thence continuing South 89 degrees 24 minutes 10 seconds East, along said north line, a distance of 968.77 feet to the northeast corner of said Southeast Quarter of the Southeast Quarter; thence South 00 degrees 52 minutes 52 seconds West, along the east line of said Southeast Quarter of the Southeast Quarter, a distance of 805.01 feet; thence North 89 degrees 24 minutes 10 seconds West a distance of 810.01 feet; thence North 00 degrees 52 minutes 52 seconds East a distance of 555.01 feet; thence North 31 degrees 37 minutes 00 seconds West a distance of 295.48 feet to the point of beginning.

NOTES

1. Subject property's address is 4335 Alpine Drive Northwest, Ramsey, MN, its property identification number is 16-32-25-44-0001.
2. The bearing system is based on the North line of the Southeast Quarter of the Southeast Quarter of Section 16, Township 32, Range 25, which is assumed to bear South 89 degrees 24 minutes 10 seconds East.
3. No specific title search for existence or non-existence of recorded or un-recorded easements has been conducted by the surveyor as a part of this survey. Only easements per the recorded plat are shown.
4. The gross area of the subject property is 39.979 Acres
   or 1,741,477 square feet.
   The gross area of the purchase parcel is 15.425 Acres
   or 671,902 square feet.
   The gross area of the remainder parcel is 24.554 Acres
   or 1,069,575 square feet.

SURVEYOR'S CERTIFICATE

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. That this survey does not purport to show all improvements, easements or encroachments, to the property except as shown thereon.

Signed this 16th day of August, 2016

Marcus F. Hampton MN Lic. No. 47481

James R. Hill, Inc.
PLANNERS / ENGINEERS / SURVEYORS
2500 W. Cty. Rd. 42, Suite 120, Burnsville, MN 55337
PHONE: (952)890-6044 FAX: (952)890-6244

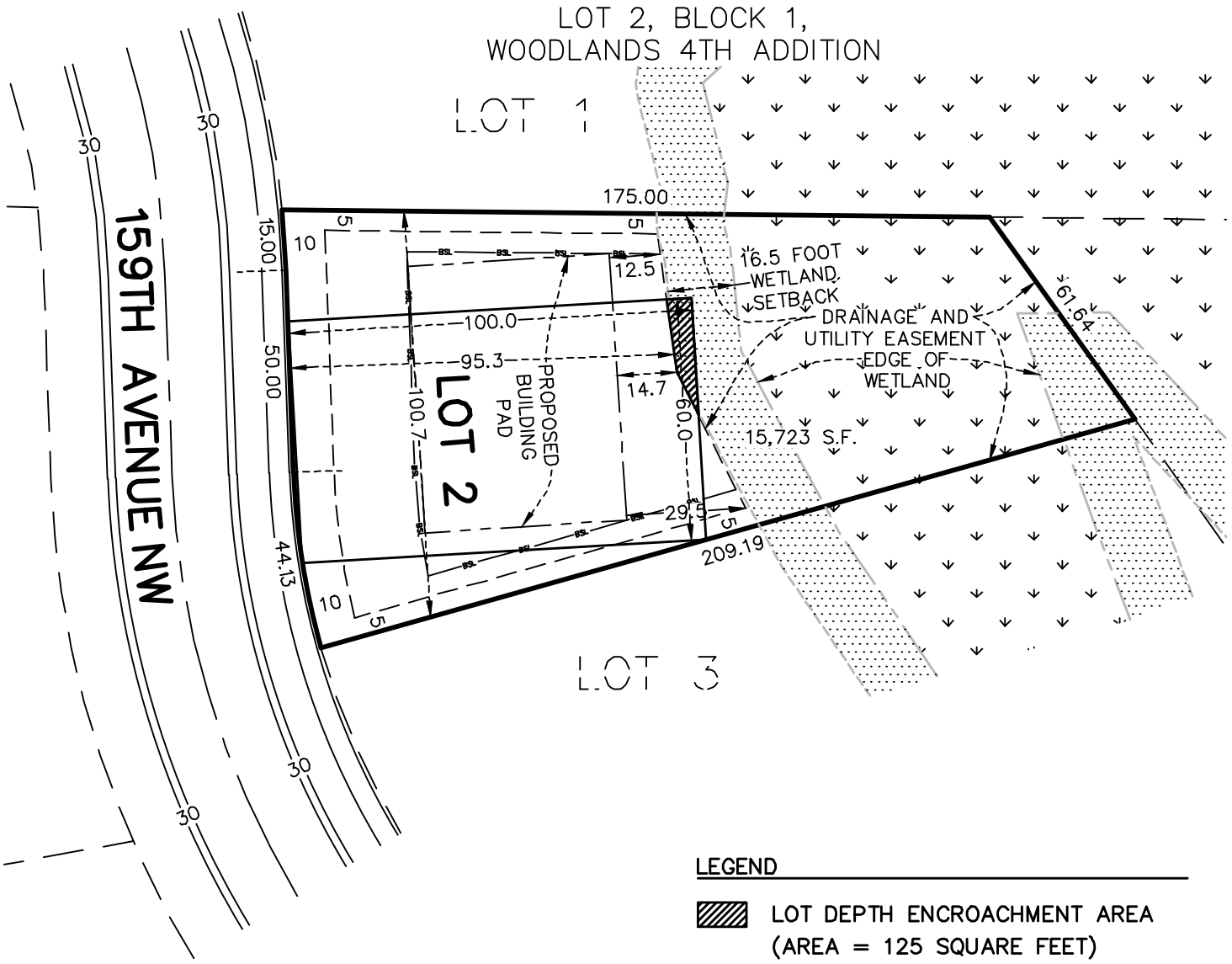
St. Hilaire Property
RAMSEY, MINNESOTA
Boundary Survey
FOR
Lennar Corporation

DRAWN BY	PLM
DATE	8/16/2016
REVISIONS	8/17/16 Purchase parcel bdry
CAD FILE	23253-30skt
PROJECT NO.	23253-30
SHEET	1 OF 1

F:\Civil 3D Projects\23253-30\23253-30skt.dwg - 8/17/2016 12:47PM

LOT DEPTH VARIANCE EXHIBIT

For: LENNAR



LEGEND

LOT DEPTH ENCROACHMENT AREA
(AREA = 125 SQUARE FEET)

N

Scale: 1"=40'

MINIMUM SETBACKS	
FRONT	30 FEET
SIDE (HOUSE)	10 FEET
SIDE (GARAGE)	6 FEET
REAR	30 FEET
WETLAND	16.5 FEET

DRAWN BY	PLM
DATE	11/10/16
REVISIONS	
CAD FILE	23253-30skt-1.dwg
PROJECT NO.	23253-30
	PAGE 1 OF 1

James R. Hill, Inc.
PLANNERS / ENGINEERS / SURVEYORS
2500 W. Cty. Rd. 42, Suite 120, Burnsville, MN 55337
PHONE: (952)890-6044 FAX: (952)890-6244

WOODLANDS 4TH ADDITION

CITY OF RAMSEY
COUNTY OF ANOKA
SEC. 16, T. 32, R. 25

KNOW ALL PERSONS BY THESE PRESENTS: That U.S. Home Corporation, a Delaware corporation, owner of the following described property:

Outlot B, WOODLANDS, according to the recorded plat thereof, Anoka County, Minnesota.

And

Outlot B, WOODLANDS 2ND ADDITION, according to the recorded plat thereof, Anoka County, Minnesota.

And

Outlot A, WOODLANDS 3RD ADDITION, according to the recorded plat thereof, Anoka County, Minnesota.

And

That part of the Southeast Quarter of the Southeast Quarter of Section 16, Township 32, Range 25, Anoka County, Minnesota, described as follows:

Commencing at the northwest corner of said Southeast Quarter of the Southeast Quarter; thence on an assumed bearing of South 89 degrees 24 minutes 10 seconds East, along the north line of said Southeast Quarter of the Southeast Quarter, a distance of 352.58 feet to the point of beginning of the land to be described; thence continuing South 89 degrees 24 minutes 10 seconds East, along said north line, a distance of 968.77 feet to the northeast corner of said Southeast Quarter of the Southeast Quarter; thence South 00 degrees 52 minutes 52 seconds West, along the east line of said Southeast Quarter of the Southeast Quarter, a distance of 805.01 feet; thence North 89 degrees 24 minutes 10 seconds West a distance of 810.01 feet; thence North 00 degrees 52 minutes 52 seconds East a distance of 555.01 feet; thence North 31 degrees 37 minutes 00 seconds West a distance of 295.48 feet to the point of beginning.

Has caused the same to be surveyed and platted as WOODLANDS 4TH ADDITION and does hereby dedicate to the public for public use the public ways and the drainage and utility easements as created on this plat.

In witness whereof said U.S. Home Corporation, a Delaware corporation, has caused these presents to be signed by its proper officer this _____ day of _____, 20____.

U.S. Home Corporation

By: _____
Jonathan A. Aune, Vice President

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on _____ day of _____, 20_____ by Jonathan A. Aune, Vice President of U.S. Home Corporation, a Delaware corporation, on behalf of the corporation.

_____ _____
_____ County, _____

My commission expires _____

I Marcus F. Hampton do hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been, or will be correctly set within one year; that all water boundaries and wet lands, as defined in 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_____.

_____
Marcus F. Hampton, Licensed Land Surveyor, Minnesota License No. 47481

STATE OF MINNESOTA

COUNTY OF _____

This instrument was acknowledged before me on this _____ day of _____, 20____ by Marcus F. Hampton.

_____ _____
_____ County, _____

My commission expires January 31, 20 ____

CITY COUNCIL, CITY OF RAMSEY, MINNESOTA

This plat of WOODLANDS 3RD ADDITION was approved and accepted by the City Council of the City of Ramsey, Minnesota at a regular meeting thereof held this _____ day of _____, 20___, and said plat is in compliance with the provisions of Minnesota Statutes, Section 505.03, Subd. 2.

City Council, City of Ramsey, Minnesota

By: _____ _____
Mayor Clerk

N

SCALE IN FEET
0 100 200 300

BEARINGS ARE BASED ON THE NORTH LINE OF SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SEC. 16, T. 32, R. 25, WHICH IS ASSUMED TO HAVE A BEARING OF S 89°24'10" E.

● DENOTES 1/2 INCH IRON MONUMENT FOUND

○ DENOTES SET 1/2 INCH IRON MONUMENT WITH CAP MARKED R.L.S. NO. 47481

DENOTES WETLAND DELINEATED BY KJOLHAUG ENVIRONMENTAL SERVICES COMPANY, JULY 2014

ANOKA COUNTY SURVEYOR

I hereby certify that in accordance with Minnesota Statutes, Section 505.021, Subd. 11, this plat has been reviewed and approved this _____ day of _____, 20___.

_____
Larry D. Hoium, Anoka County Surveyor

ANOKA COUNTY AUDITOR/TREASURER

Pursuant to Minnesota Statutes, Section 505.021, Subd. 9, taxes payable in the year 20 ____ on the land hereinbefore described have been paid. Also, pursuant to Minnesota Statutes, Section 272.12, there are no delinquent taxes and transfer entered this _____ day of _____, 20___.

_____
Property Tax Administrator

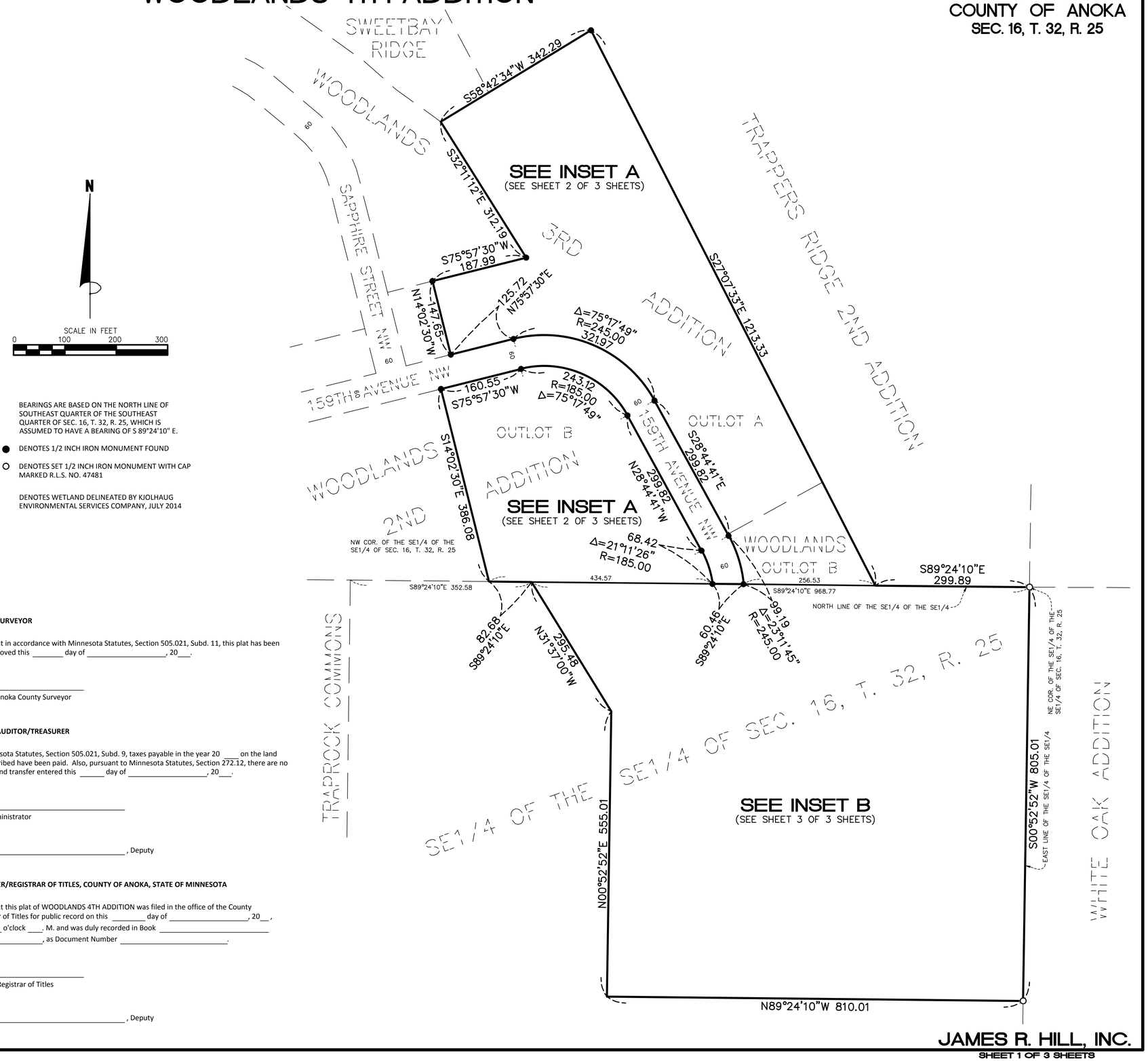
By: _____, Deputy

COUNTY RECORDER/REGISTRAR OF TITLES, COUNTY OF ANOKA, STATE OF MINNESOTA

I hereby certify that this plat of WOODLANDS 4TH ADDITION was filed in the office of the County Recorder/Registrar of Titles for public record on this _____ day of _____, 20__, at _____ o'clock ___. M. and was duly recorded in Book _____ Page _____, as Document Number _____.

_____
County Recorder/Registrar of Titles

By: _____, Deputy



JAMES R. HILL, INC.

WOODLANDS 4TH ADDITION

CITY OF RAMSEY
COUNTY OF ANOKA
SEC. 16, T. 32, R. 25

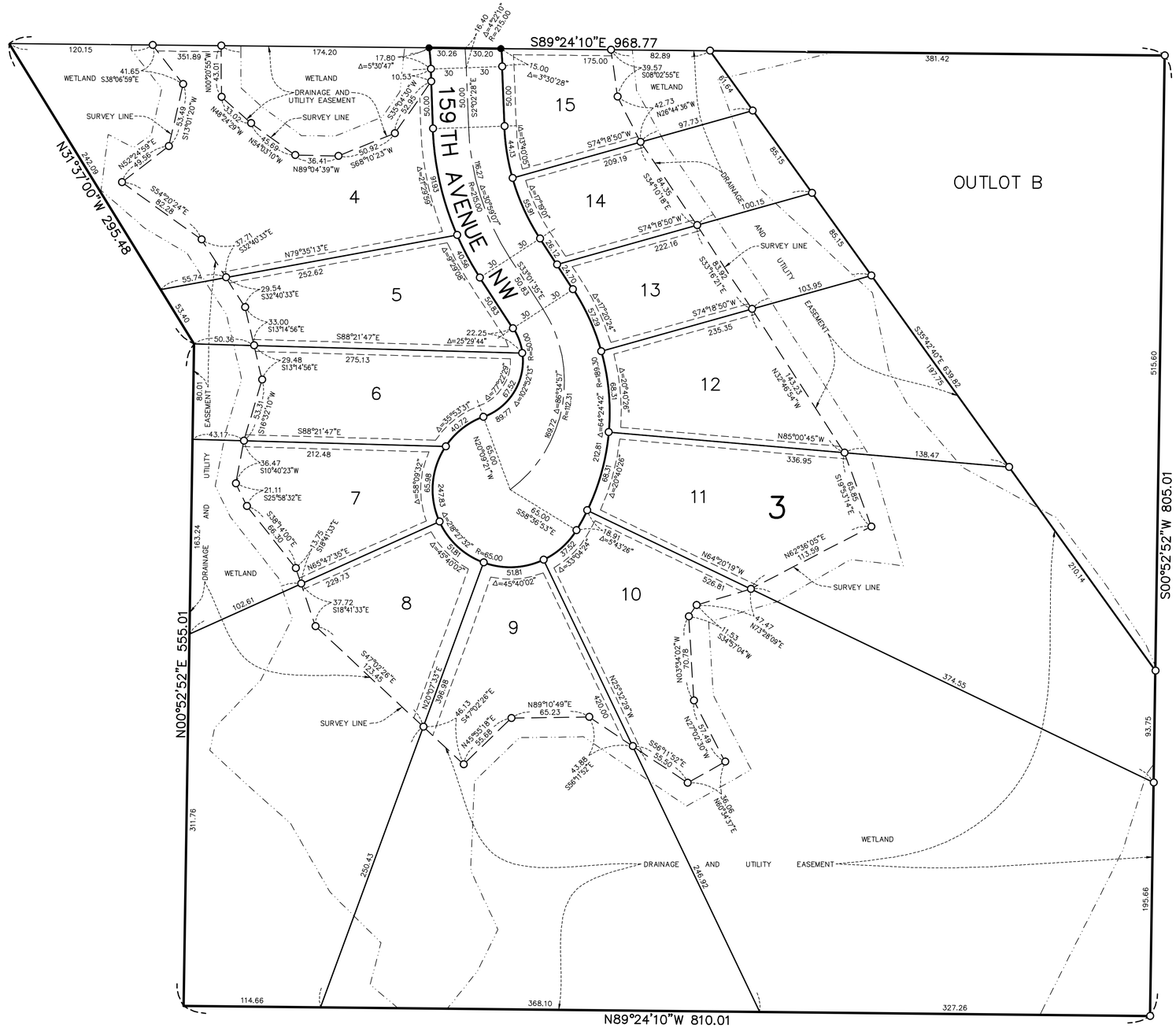
INSET A

S27°07'33"E 1213.33
130.75
105.02
80.03
80.03
80.03
DRAINAGE AND UTILITY EASEMENT
SURVEY LINE
WETLAND
191.97
33.89
OUTLOT A
164.42
164.19
S89°24'10"E 245.89
S89°24'10"E 256.53
S29°38'39"E 41.87
S7°49'44"E 47.20
N48°07'49"E 70.69
S89°24'10"E
33.79
N28°47'40"W
30.46
Δ=7°07'20"
N29°08'02"W 80.00
N61°51'19"E 210.19
S61°51'19"W 212.45
S61°51'19"W 214.72
S61°51'19"W 216.98
N29°08'02"W 80.00
80.00
80.00

WOODLANDS 4TH ADDITION

CITY OF RAMSEY
COUNTY OF ANOKA
SEC. 16, T. 32, R. 25

INSET B



N

SCALE IN FEET
0 100 200 300

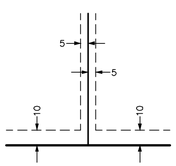
BEARINGS ARE BASED ON THE NORTH LINE OF SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SEC. 16, T. 32, R. 25, WHICH IS ASSUMED TO HAVE A BEARING OF S 89°24'10" E.

● DENOTES 1/2 INCH IRON MONUMENT FOUND

○ DENOTES SET 1/2 INCH IRON MONUMENT WITH CAP MARKED R.L.S. NO. 47481

DENOTES WETLAND DELINEATED BY KJOLHAUG ENVIRONMENTAL SERVICES COMPANY, JULY 2014

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



DRAINAGE AND UTILITY EASEMENTS BEING 5 FEET IN WIDTH, UNLESS OTHERWISE INDICATED, ADJOINING LOT LINES, AND BEING 10 FEET IN WIDTH, UNLESS OTHERWISE INDICATED, ADJOINING RIGHT OF WAY LINES, AS SHOWN ON THE PLAT.

JAMES R. HILL, INC.

Commissioner Van Scoy introduced the following resolution and moved for its adoption:

RESOLUTION #16-12-217

A RESOLUTION ADOPTING FINDINGS OF FACT #0973 RELATING TO A REQUEST FOR A VARIANCE TO LOT DEPTH FOR PROPOSED LOT ~~2~~15, BLOCK ~~1~~3 RELATED TO THE ~~PRELIMINARY~~ PLAT OF WOODLANDS 4TH ADDITION.

WHEREAS, Lennar Corporation, hereinafter referred to as "Applicant", properly applied to the City of Ramsey (the "City") for a variance to lot depth standards for development of portions of the property legally described as follows:

Outlot B, Woodlands Addition, Anoka County, Minnesota; and

That part of the Southeast Quarter of the Southeast Quarter of Section 16, Township 32, Range 25, Anoka County, Minnesota, described as follows:

Commencing at the northwest corner of said Southeast Quarter of the Southeast Quarter; thence on an assumed bearing of South 89 degrees 24 minutes 10 seconds East, along the north line of said Southeast Quarter of the Southeast Quarter, a distance of 352.58 feet to the point of beginning of the land to be described; thence continuing South 89 degrees 24 minutes 10 seconds East, along said north line, a distance of 968.77 feet to the northeast corner of said Southeast Quarter of the Southeast Quarter; thence South 00 degrees 52 minutes 52 seconds West, along the east line of said Southeast Quarter of the Southeast Quarter, a distance of 805.01 feet; thence North 89 degrees 24 minutes 10 seconds West a distance of 810.01 feet; thence North 00 degrees 52 minutes 52 seconds East a distance of 555.01 feet; thence North 31 degrees 37 minutes 00 seconds West a distance of 295.48 feet to the point of beginning.

-or upon recording of the final plat-

Lot 15, Block 3 Woodlands 4th Addition

(the "Subject Property"); and

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF RAMSEY PLANNING, as follows:

1) That the Applicant appeared before the Planning Commission for a public hearing pursuant to Section 117-53 (Variances) of the Ramsey City Code on December 1, 2016, and that said public hearing was properly advertised, and that the minutes of said public hearing are hereby incorporated as a part of these findings by reference.

2) That the Subject Property is zoned R-1 Residential (MUSA) and the Applicant has made proper application to the City to plat portions of the Subject Property into thirteen (13) single family residential lots.

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3) That newly created lots are required to have a depth of 100 feet for a continuous width of sixty (60) feet that is not encumbered by wetland, wetland setback area, or floodway.

4) That the Applicant has applied for a variance to the lot depth standard for Lot 2, Block 1 of the proposed Preliminary Plat of Woodlands 4th Addition.

~~4)~~5) That the final plat of Woodlands 4th Addition identifies the legal description as Lot 15, Block 3.

~~5)~~6) That the Environmental Policy Board reviewed the request at their November 21, 2016 meeting.

~~6)~~7) That as proposed, Lot 2 Block 1 does meet the spirit or intent of the lot depth ordinance for providing additional side yard space necessary to adequately provide area for future property improvements.

~~7)~~8) That economic circumstances alone do not create the practical difficulties.

~~8)~~9) That the plight is due to circumstances unique to the Subject Property.

~~9)~~10) That the plight is not created by the Applicant.

~~10)~~11) That, if granted, the variance will not alter the locality's essential character.

~~11)~~12) That, if granted, the variance will not impair an adequate supply of light and air to adjacent property.

~~12)~~13) That, if granted, the variance will not have the effect of allowing a use that is prohibited in the applicable zoning district.

~~13)~~14) That, if granted, the variance will not unreasonably increase the congestion on the public street.

~~14)~~15) That, if granted, the variance will not adversely impact the degree of public health, safety and general welfare provided for in the Ramsey City Code.

~~15)~~16) That, if granted, the variance will not diminish established property values within the neighborhood.

~~16)~~17) That, if granted, the variance requested is the minimum variance necessary to accomplish the intended purpose of the Applicant.

~~17)~~18) That the unique circumstances on the Subject Property do not result from the actions of the Applicant.

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~~18)~~19) That, if granted, the variance will not grant the Applicant any special privilege that is denied to the owners of other land in the same district.

~~19)~~20) That a twenty-five (25) foot setback, if applied, would eliminate the encroachment, unlike previous requests that have been denied.

~~20)~~21) That the shape of wetland boundary is fairly square and parallel to the house pad compared to previous requests that have been denied, which maximizes developable area.

~~21)~~22) That the actual encroachment is much less than previous requests that have been denied.

~~22)~~23) That the lot is shown with a standard house pad and is not relying on a restricted size house pad or a specific home model unlike past requests that have been denied.

24) That there is additional buildable area beyond the 60'x100' area.

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

Chairperson Bauer
Commissioner Van Scoy
Commissioner Surma
Commissioner Anderson
Commissioner Nosan

and the following voted against the same:

Commissioner Brauer

and the following abstained:

None

and the following were absent:

None

whereupon said resolution was declared duly passed and adopted by the Ramsey Planning Commission this the 1st day of December, 2016.

_____
Chairperson

ATTEST:

_____
City Clerk

Commissioner Van Scoy introduced the following resolution and moved for its adoption:

RESOLUTION #16-12-218

A RESOLUTION APPROVING THE ISSUANCE OF A VARIANCE TO LOT DEPTH FOR LOT ~~2~~ 15 BLOCK ~~1~~ 3 OF WOODLANDS 4TH ADDITION AND DECLARING TERMS OF SAME.

WHEREAS, Lennar Corporation, hereinafter referred to as "Applicant", properly applied for a variance from the lot depth standard prescribed in Section 117-614, Subd. (h)(11) on portions of the property legally described as follows:

Outlot B, Woodlands Addition, Anoka County, Minnesota; and

That part of the Southeast Quarter of the Southeast Quarter of Section 16, Township 32, Range 25, Anoka County, Minnesota, described as follows:

Commencing at the northwest corner of said Southeast Quarter of the Southeast Quarter; thence on an assumed bearing of South 89 degrees 24 minutes 10 seconds East, along the north line of said Southeast Quarter of the Southeast Quarter, a distance of 352.58 feet to the point of beginning of the land to be described; thence continuing South 89 degrees 24 minutes 10 seconds East, along said north line, a distance of 968.77 feet to the northeast corner of said Southeast Quarter of the Southeast Quarter; thence South 00 degrees 52 minutes 52 seconds West, along the east line of said Southeast Quarter of the Southeast Quarter, a distance of 805.01 feet; thence North 89 degrees 24 minutes 10 seconds West a distance of 810.01 feet; thence North 00 degrees 52 minutes 52 seconds East a distance of 555.01 feet; thence North 31 degrees 37 minutes 00 seconds West a distance of 295.48 feet to the point of beginning.

-or upon recording-

Lot 15, Block 3 Woodlands 4th Addition

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(the "Subject Property"); and

WHEREAS, the Planning Commission met on December 1, 2016, conducted the public hearing and adopted Findings of Fact #0973 relating to the request for a variance from the maximum cul-de-sac length on the Subject Property.

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

1. Based on Findings of Fact #0970, a variance to the lot depth standards, as established in Section 117-614, Subd. (h)(11) of the Ramsey City Code, is hereby granted/denied for the **Subject Property**.

2. The variance allows/denies for a parcel that does not meet the requirement of 100 feet for a width of 60 feet that is not encumbered by wetland, wetland setback area, floodway, or other unbuildable areas.

3. No construction of any building shall commence without the issuance of a building permit.

4. The **Permittee** shall be responsible for all **City** costs incurred in administering and enforcing this variance if approved.

5. This variance, if approved, shall automatically become null and void if it is not initiated within twelve (12) months of the date of approval, unless an extension is granted at the written request of the **Permittee**. Approval of the plat of Woodlands 4th Addition shall be considered as initiation of the variance.

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

Chairperson Bauer
Commissioner Van Scoy
Commissioner Nosan
Commissioner Surma

and the following voted against the same:

Commissioner Anderson
Commissioner Brauer

and the following abstained:

None

and the following were absent:

None

Whereupon said resolution was declared duly adopted by the Ramsey Planning Commission this the 1st day of December, 2016.

PERMITTEE

Lennar Corporation, hereby acknowledges receipt of this variance and that they have reviewed the terms of the variance and have agreed that they will comply with the terms of the variance.

By: _____

Its: _____

STATE OF MINNESOTA)
) ss.
COUNTY OF ANOKA)

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

_____
Notary Public

CITY OF RAMSEY:

By: _____ _____
Planning Commission Chairperson City Clerk

STATE OF MINNESOTA)
) ss.
COUNTY OF ANOKA)

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

_____
Notary Public

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

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

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

Regular Planning Commission **5. 3.**

Meeting Date: 05/04/2017

By: Tim Gladhill, Community Development

Information

Title:

Consider Recommendations for Riverstone Addition Located Near Bunker Lake Boulevard and Puma Street; Case of Capstone Homes (Project No. 17-106)

1. Adopt Ordinance #17-06 Approving Zoning Amendment to Planned Unit Development (PUD)
2. Adopt Resolution #17-05-102 Approving Preliminary Plat

Purpose/Background:

The purpose of this case is to review a Preliminary Plat for a 293 lot subdivision (245 detached single-family and 48 townhomes). The Preliminary Plat also requires the approval of a Planned Unit Development (PUD).

Notification:

Staff attempted to notify all Property Owners within 700 feet of the Subject Property of the Preliminary Plat Review.

Observations/Alternatives:

There are a number of layers to the review of this project. Please see the attached review letter for specific review. Topics include, but are not limited to, the following:

- Comprehensive Plan
- Zoning and Subdivision Code
- Collector/Arterial Streets/Cost Share
- Park Dedication

This case will be revised on Monday, May 1 to include final versions of Ordinance #17-06 and Resolution #17-05-102.

Funding Source:

All costs associated with processing the Application are the responsibility of the Developer. Interior infrastructure as part of the project area are the responsibility of the Developer. The Developer is responsible for standard Development Fees.

Regarding the collector infrastructure (Bunker Lake Boulevard and Puma Street) that will serve multiple developments, please see the March 28 City Council Work Session for more information regarding proposed cost-share and assessment arrangements.

Recommendation:

Staff recommends approval of Ordinance #17-06 and Resolution #17-05-102.

Action:

Motion to recommend that the City Council adopt Ordinance #17-06 and Resolution #17-05-102 approving the Preliminary Plat for Riverstone Addition.

(Staff Note: can be a single motion for both documents)

Attachments

Site Location Map
Plan Set
Capstone Supplemental Submittal
Environmental Assessment Worksheet
Staff Review Letter

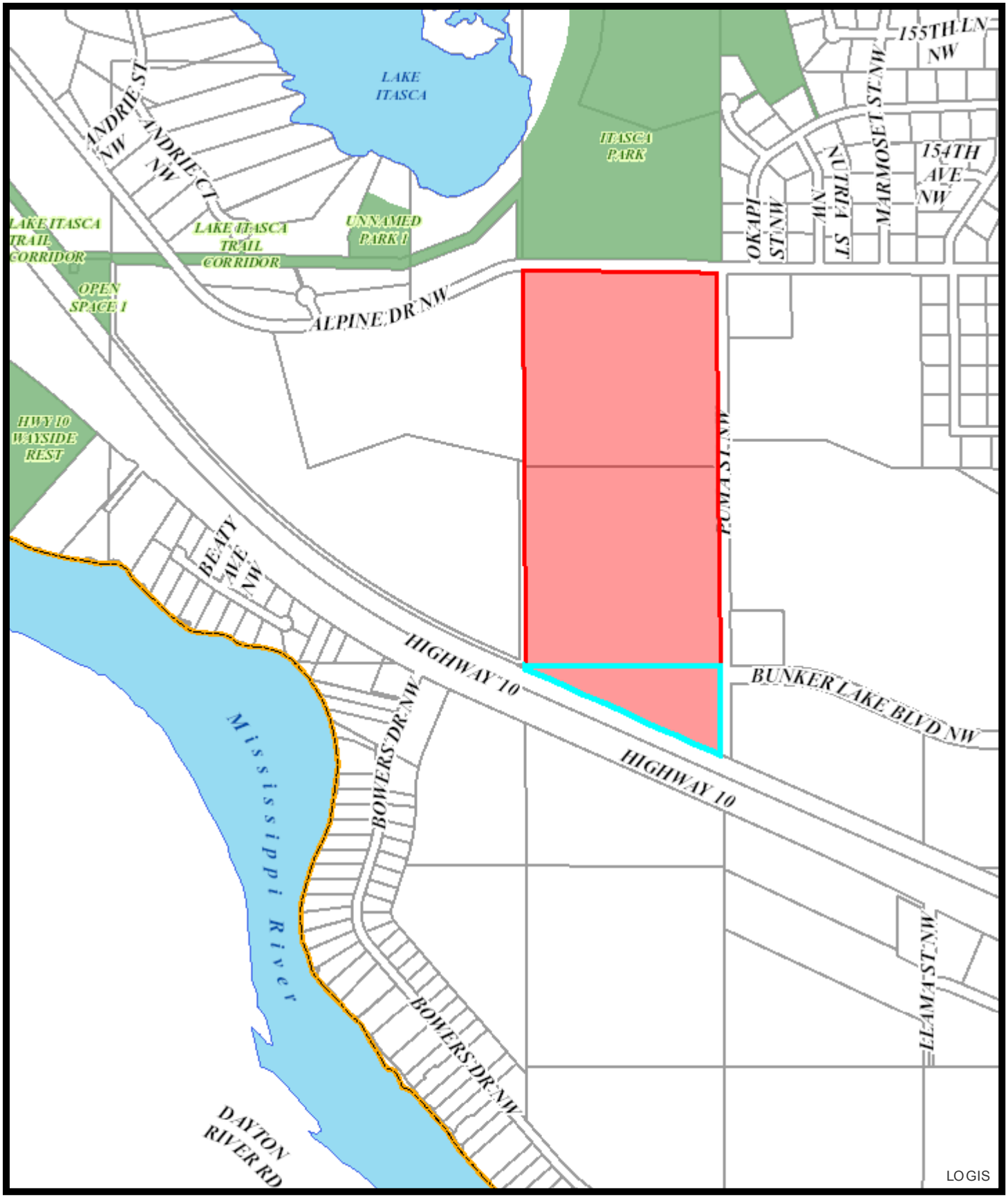
Form Review

Inbox	Reviewed By	Date
Kurt Ulrich	JoAnn Shaw	04/28/2017 03:22 PM
Form Started By: Tim Gladhill		Started On: 04/28/2017 08:08 AM
Final Approval Date: 04/28/2017		

29-32-25-22-0004

Site Location Map

Riverstone



Feet

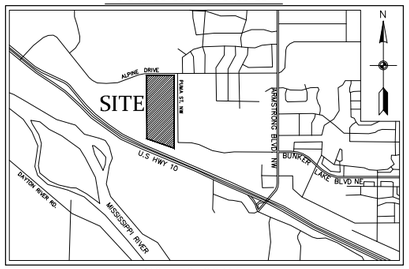
0 215430 860 1,290 1,720

Print Date: March 10, 2017

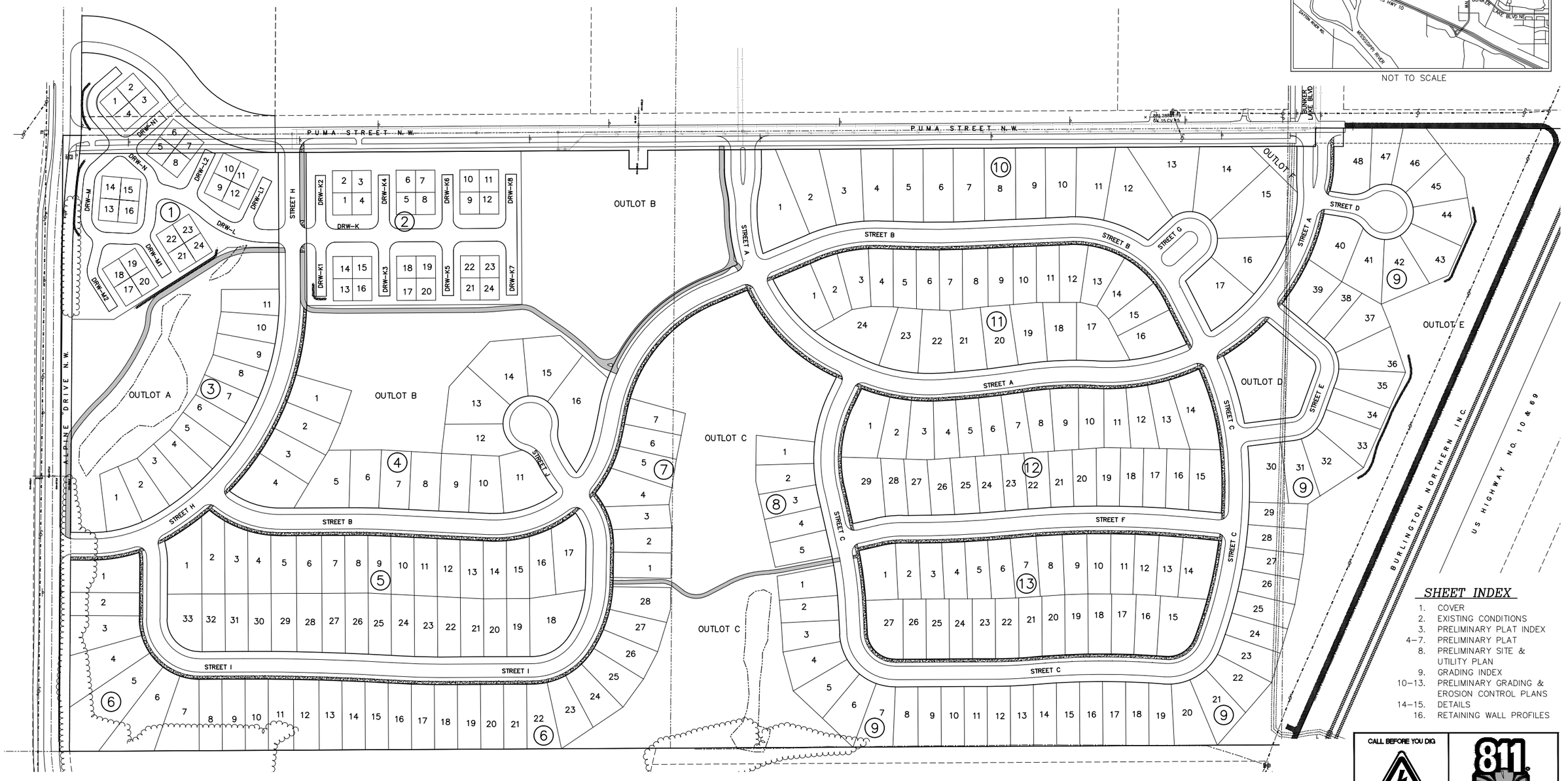
RIVERSTONE

RAMSEY, MINNESOTA

VICINITY MAP



NOT TO SCALE



SHEET INDEX

1. COVER
2. EXISTING CONDITIONS
3. PRELIMINARY PLAT INDEX
4–7. PRELIMINARY PLAT
8. PRELIMINARY SITE & UTILITY PLAN
9. GRADING INDEX
10–13. PRELIMINARY GRADING & EROSION CONTROL PLANS
14–15. DETAILS
16. RETAINING WALL PROFILES

CALL BEFORE YOU DIG

811

Know what's **below.** **Call** before you dig.

The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."

BENCHMARK

1. Anoka County Benchmark No. 3076 Elev.= 890.186 (NAVD 88)
2. Anoka County Benchmark No. 2078 Elev.= 899.499 (NAVD 88)

N

0 50 100 200

(IN FEET)

Carlson McCain

• environmental
• engineering
• surveying

3890 Pheasant Ridge Drive NE, Suite 100
Blaine, MN 55449
Phone: (763) 489-7900
Fax: (763) 489-7959
www.carlsonmccain.com

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

Print Name: Brian J. Krystofiak, P.E.
Signature: DRAFT
Date: 3/08/17 License #: 25063

Drawn: ADB
Designed: BJK
Date: 3/08/17

Revisions:
1.

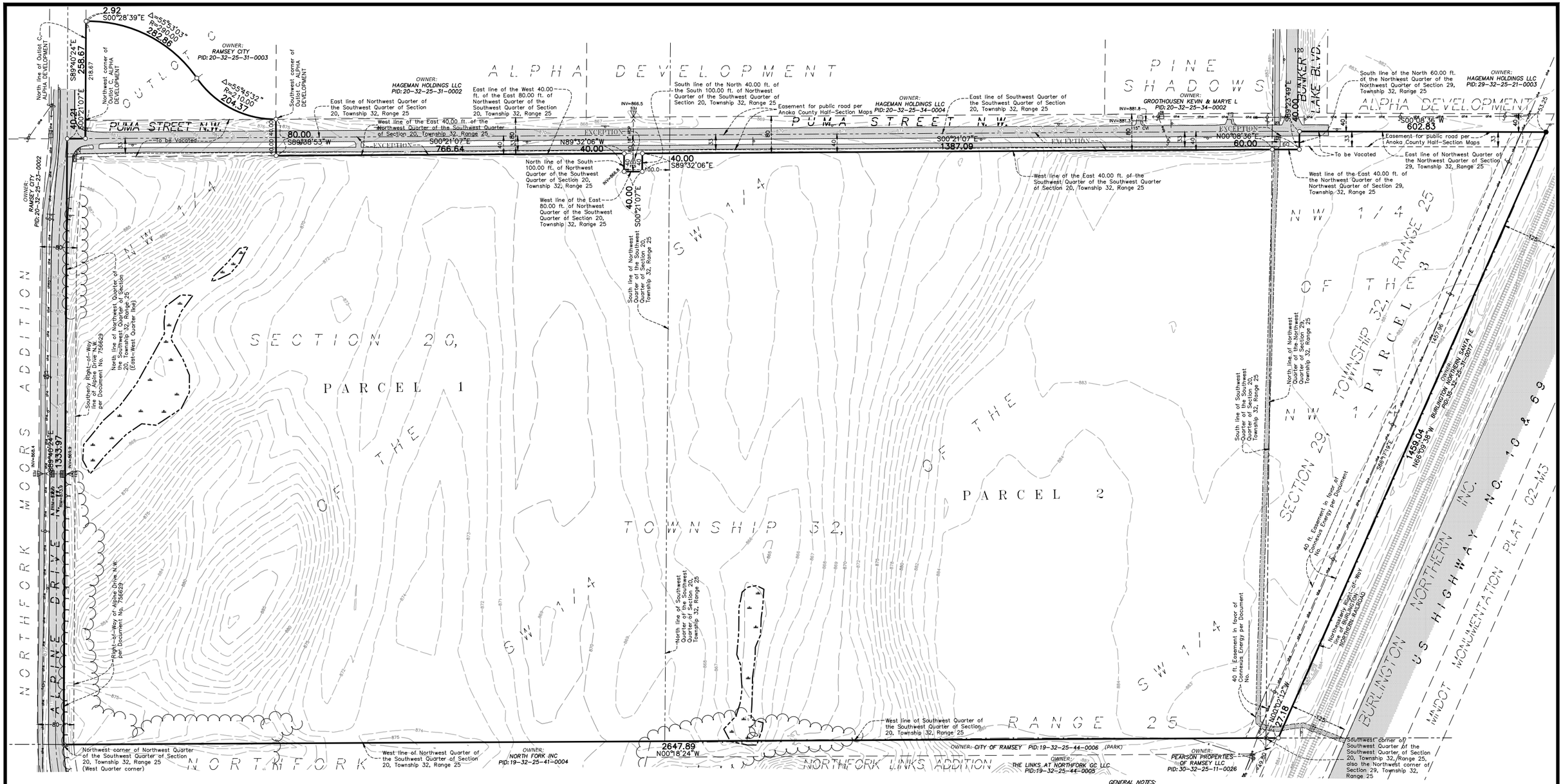
RIVERSTONE DEVELOPMENT, LLC.
14015 Sunfish Lake B, Suite 400
Ramsey, MN 55303

RIVERSTONE
Ramsey, MN

COVER SHEET

1 of 16

Save Date: 03/10/17 I:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\engineering\preliminary\6435_cover.dwg



Parcel Description:
(Per Schedule A of Title Commitment No. 1273, with a commitment date of October 12th, 2016 at 7:30 A.M., prepared by Old Republic National Title Insurance Company)

Parcel 1:
The Northwest Quarter of Southwest Quarter of Section 20, Township 32, Range 25, Anoka County, Minnesota. EXCEPT the East 40.00 feet of said Northwest Quarter of Southwest Quarter lying southerly of the southerly right of way line of Alpine Drive as described in Document No. 756629.
AND ALSO EXCEPT the North 40.00 feet of the South 100.00 feet of the West 40.00 feet of the East 80.00 feet of said Northwest Quarter of Southwest Quarter.

Parcel 2:
The Southwest Quarter of Southwest Quarter of Section 20, Township 32, Range 25, Anoka County, Minnesota, EXCEPT the East 40.00 feet thereof.

Parcel 3:
The Northwest Quarter of Northwest Quarter of Section 29, Township 32, Range 25, Anoka County, Minnesota, lying northeasterly of the northeasterly right of way line of Burlington Northern Railroad, EXCEPT the North 60.00 feet of the East 40.00 feet of said Northwest Quarter of Northwest Quarter.

(Proposed Legal Description, subject to City approved parcel subdivision)
That part of Outlot C, ALPHA DEVELOPMENT, according to the recorded plat thereof, Anoka County, Minnesota lying westerly and northwesterly of the following described line:

Commencing at the Northwest corner of said Outlot C; thence South 89 degrees 40 minutes 24 seconds East, assumed bearing, along the North line of said Outlot C, a distance of 218.67 feet to the point of beginning of the line to be described; thence South 00 degrees 28 minutes 39 seconds East, 2.92 feet; thence southwesterly 282.86 feet along a tangential curve concave to the northwest, having a radius of 290.00 feet and a central angle of 55 degrees 53 minutes 03 seconds to a point of reverse curvature; thence continuing southwesterly 204.37 feet along a reverse curve concave to the southeast, having a radius of 210.00 feet and a central angle of 55 degrees 45 minutes 32 seconds to the Southwest corner of said Outlot C and said line there terminating.

(Proposed Legal Description, subject to City approved Right-of-Way Vacation)
That part of Puma Street Northwest, as created and dedicated in the plat of ALPHA DEVELOPMENT, according to the recorded plat thereof, Anoka County, Minnesota, lying southerly of the westerly extension of the north line of Outlot C, said plat, and lying northerly of the following described line:

Beginning at the southwest corner of said Outlot C; thence South 89 degrees 38 minutes 53 seconds West, 80.00 feet, assuming the North line of said Outlot C has a bearing of South 89 degrees 40 minutes 24 seconds East, and said line there terminating.

And

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LEGEND

- ◉ – Denotes Anoka County Cast Iron Monument
- ● – Denotes Found Iron Monument
- ○ – Denotes Set Iron Pipe, Marked with RLS 40361
- –o– – Denotes Miscellaneous Sign
- □ – Denotes Electric Box
- ▨ or ⊘ – Denotes Catch Basin
- ⊙ ELEC – Denotes Electric Meter
- □ – Denotes Telephone Box
- ⊘ UTIL – Denotes Utility Pole
- △ FES – Denotes Flared End Section
- ▣ – Denotes Hand Hole
- ——— – Denotes Overhead Electric
- ——>>—— – Denotes Storm Sewer
- — x — x — – Denotes Existing Fence as noted
- WETLAND – Denotes Wetland delineated by Kjolhaug Environmental Services Company in 2016
- Denotes Gravel Surface
- Denotes Bituminous Surface
- Denotes Existing 1 Ft. Contour
- Denotes Existing 5 Ft. Contour

0 50 100 200 (IN FEET)

GENERAL NOTES:

1. The field work for this survey was completed on November 28th, 2016.
2. Bearings shown hereon are based on the North line of Outlot C, ALPHA DEVELOPMENT, according to the recorded plat thereof, Anoka County, Minnesota, which is assumed to bear South 89 degrees 40 minutes 24 seconds East.
3. BENCHMARK: Anoka County Benchmark No. 3076 Elevation= 890.186 (NAVD 88)
4. Surveyed property contains ±3,934,125 sq.ft. (±90.32 acres).
5. Wetlands shown hereon were delineated by Kjolhaug Environmental Services Company in 2016.
6. Above ground utilities have been field located as shown. Underground utilities shown hereon are those which were field marked by utility companies responding to Gopher State One Call, Ticket No. 162941258 and 162941314, dated 10/20/2016 or were taken from utility plans provided by the City of Ramsey. All underground locations shown hereon are APPROXIMATE. Prior to any excavations or digging, contact Gopher State One Call for an on-site location (651-454-0002).

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

Print Name: Thomas R. Balluff, L.S.
Signature: D R A F T
Date: 3/8/2017 License #: 40361

DRAWN BY: JAB
ISSUE DATE: 3/8/2017
FILE NO: 1308

Revisions:

RIVERSTONE DEVELOPMENT, LLC
14015 Sunfish Lake B, Suite 400
Ramsey, MN, 55303

RIVERSTONE
Ramsey, Minnesota

EXISTING CONDITIONS

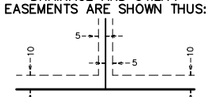
Save Date: 03/09/2017 F:\Jobs\6421 - 6440\6435 - ramsey site\cad c3d\survey\6435_exist.dwg

RIVERSTONE

SITE DATA

TOTAL SITE AREA	**±90.32 AC.**	**TOTAL MULTI-FAMILY AREA**	**±7.38 AC.**
TOTAL ROW AREA	**±16.77 AC.**	NUMBER OF LOTS	48
TOTAL OUTLOT AREA	**±20.67 AC.**	NUMBER OF COMMON AREA LOTS	2
OUTLOT A	±2.73 AC.	MULTI-FAMILY LOT SIZE	±2,016 S.F.
OUTLOT B	±6.20 AC.	**TOTAL SINGLE FAMILY AREA**	**±45.50 AC.**
OUTLOT C	±6.39 AC.	NUMBER OF LOTS	245
OUTLOT D	±0.66 AC.	SMALLEST LOT	±6,056 S.F.
OUTLOT E	±4.58 AC.	LARGEST LOT	±19,592 S.F.
OUTLOT F	±0.11 AC.	AVERAGE LOT	±8,090 S.F.
TOTAL LOT AREA	**±52.88 AC.**	**EXISTING ZONING**	**R-1, R-2, R-3, B-2**
TOTAL NUMBER OF LOTS	**293**	**PROPOSED ZONING**	**PUD**
(SINGLE FAMILY AND MULTI-FAMILY LOTS)		**UTILITIES**	**AVAILABLE**
		GROSS DENSITY	**3.24**
		(SINGLE FAMILY + MULTI-FAMILY LOTS/ TOTAL SITE AREA)	

PROPOSED DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



being 5 feet in width, and adjoining side lot lines, and 10 feet in width and adjoining right of way lines and rear lot lines unless otherwise shown on this plat.

BENCHMARK

1. Anoka County Benchmark No. 3076 Elev.= 890.186 (NAVD 88)
2. Anoka County Benchmark No. 2078 Elev.= 899.499 (NAVD 88)

LEGEND

- ◉ – Denotes Anoka County Monument
- ● – Denotes Found Iron Monument
- ○ – Denotes 5/8 inch by 14 inch rebar, marked with RLS 40361

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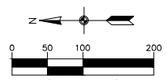

(SCALE IN FEET)

LEGAL DESCRIPTION

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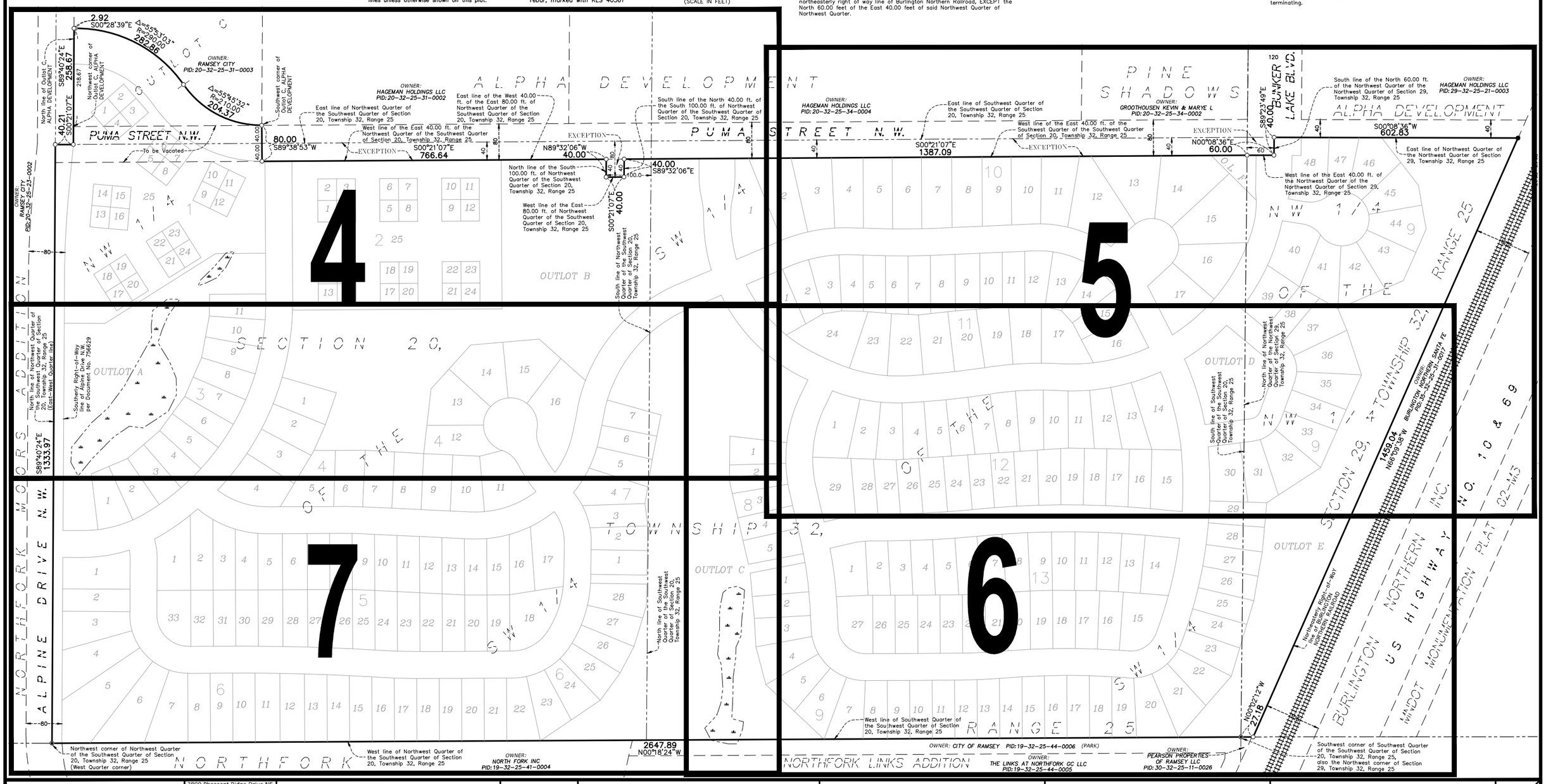

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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota

Print Name: Thomas R. Balluff, L.S.
Signature: D R A F T
Date: 03/08/2017 License #: 40361

DRAWN BY: JAB
ISSUE DATE: 03/08/2017
FILE NO: 1308

Revisions:

RIVERSTONE DEVELOPMENT, LLC
14015 Sunfish Lake B, Suite 400
Ramsey, MN, 55303

RIVERSTONE
Ramsey, MN

PRELIMINARY PLAT INDEX

Save Date: 03/10/17 F:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\survey\6435_prpindex.dwg

LEGEND

- ◉ – Denotes Anoka County Monument
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Bearings shown hereon are based on the North line of Outlot C, ALPHA DEVELOPMENT, according to the recorded plat thereof, Anoka County, Minnesota, which is assumed to bear South 89 degrees 40 minutes 24 seconds East.

0 25 50 100
(SCALE IN FEET)

THORK MOORS ADDITION

ALPINE DRIVE N.W.

ALPINE DRIVE N. W. 889.6

S89°40'24"E 1333.97

North line of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25 (East-West Quarter line)

Southerly Right-of-Way line of Alpine Drive N.W. per Document No. 756629

OWNER: RAMSEY CITY PID: 20-32-25-24-0002

196.3 R=2186.71

461.8

S00°21'07"E 40.21

S89°40'24"E 258.67

North line of Outlot C, ALPHA DEVELOPMENT

Northwest corner of Outlot C, ALPHA DEVELOPMENT

2.92 S00°28'39"E

PUMA STREET N.W.

Δ=55°43'03" R=290.00 282.86

243.8 R=250.00

Δ=55°45'32" R=210.00 204.37

243.3 R=250.00

OWNER: RAMSEY CITY PID: 20-32-25-31-0003

ALPHA DEVELOPMENT

Southwest corner of Outlot C, ALPHA DEVELOPMENT

OWNER: HAGEMAN HOLDINGS LLC PID: 20-32-25-31-0002

PUMA STREET N.W.

East line of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

West line of the East 40.00 ft. of the Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

80.00 S89°38'53"W

EXCEPTION

S00°21'07"E 766.64

East line of the West 40.00 ft. of the East 80.00 ft. of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

EXCEPTION 40.00 N89°32'06"W

North line of the South 100.00 ft. of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

West line of the East 80.00 ft. of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

S89°32'06"E 40.00

South line of the North 40.00 ft. of the South 100.00 ft. of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

40.00 S00°21'07"E

(To be Vacated)

1 25 ±118,251 sq.ft. Drainage & Utility Easement (Over all of Lot 25, Block 1)

2 25 ±106,330 sq.ft. Drainage & Utility Easement (Over all of Lot 25, Block 2)

OUTLOT A ±118,973 sq.ft. Drainage & Utility Easement (Over all of Outlot A)

OUTLOT B ±269,973 sq.ft. Drainage & Utility Easement (Over all of Outlot B)

SECTION 20, TOWNSHIP 32,

STREET A

STREET B

STREET H

STREET J

ALLEY

SEE SHEET 5

SEE SHEET 7

Carlson McCain • environmental • engineering • surveying	3890 Pheasant Ridge Drive NE, Suite 100 Blaine, MN 55449 Phone: (763) 489-7900 Fax: (763) 489-7959 www.carlsonmccain.com	I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota	Print Name: Thomas R. Balluff, L.S. Signature: D R A F T Date: 03/08/2017 License #: 40361	DRAWN BY: JAB ISSUE DATE: 03/08/2017 FILE NO: 1308	Revisions:	**RIVERSTONE DEVELOPMENT, LLC** 14015 Sunfish Lake B, Suite 400 Ramsey, MN, 55303	**RIVERSTONE** Ramsey, MN	**PRELIMINARY PLAT**	4 of 16

Issue Date: 03/10/17 F:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\survey\6435_prp.dwg

LEGEND

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0 25 50 100 (SCALE IN FEET)

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ALPHA DEVELOPMENT
OWNER: HAGEMAN HOLDINGS LLC
PID:20-32-25-34-0004

PINE SHADOWS
OWNER: GROOTHOUSEN KEVIN & MARYE L
PID:20-32-25-34-0002

BUNKER LAKE BL.VD.

ALPHA DEVELOPMENT
OWNER: HAGEMAN HOLDINGS LLC
PID:29-32-25-21-0003

PUMA STREET N.W.
S00°21'07"E
1387.09

East line of Southwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

West line of the East 40.00 ft. of the Southwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

EXCEPTION

West line of the East 40.00 ft. of the Northwest Quarter of the Northwest Quarter of Section 29, Township 32, Range 25

EXCEPTION
N00°08'36"E
60.00

South line of the North 60.00 ft. of the Northwest Quarter of the Northwest Quarter of Section 29, Township 32, Range 25

PUMA STREET N.W.
S00°08'36"W
602.83

East line of Northwest Quarter of the Northwest Quarter of Section 29, Township 32, Range 25

Easement for public road per Anoka County Half-Section Maps (To be Vacated)

S89°23'49"E 40.00

Drainage & Utility Easement

STREET B
STREET C
STREET D
STREET E
STREET F
STREET G
STREET A

OUTLOT D
±28,544 sq.ft.

OUTLOT E
±199,714 sq.ft.
Drainage & Utility Easement
(Over all of Outlot E)

OUTLOT F
±4,941 sq.ft.

SECTION 29, T.32, R.25 OF THE NORTHERN TOWNSHIP

BURLINGTON NORTHERN SANTA FE
OWNER:
PID:35-32-25-31-0017

1459.04
N66°09'55"W

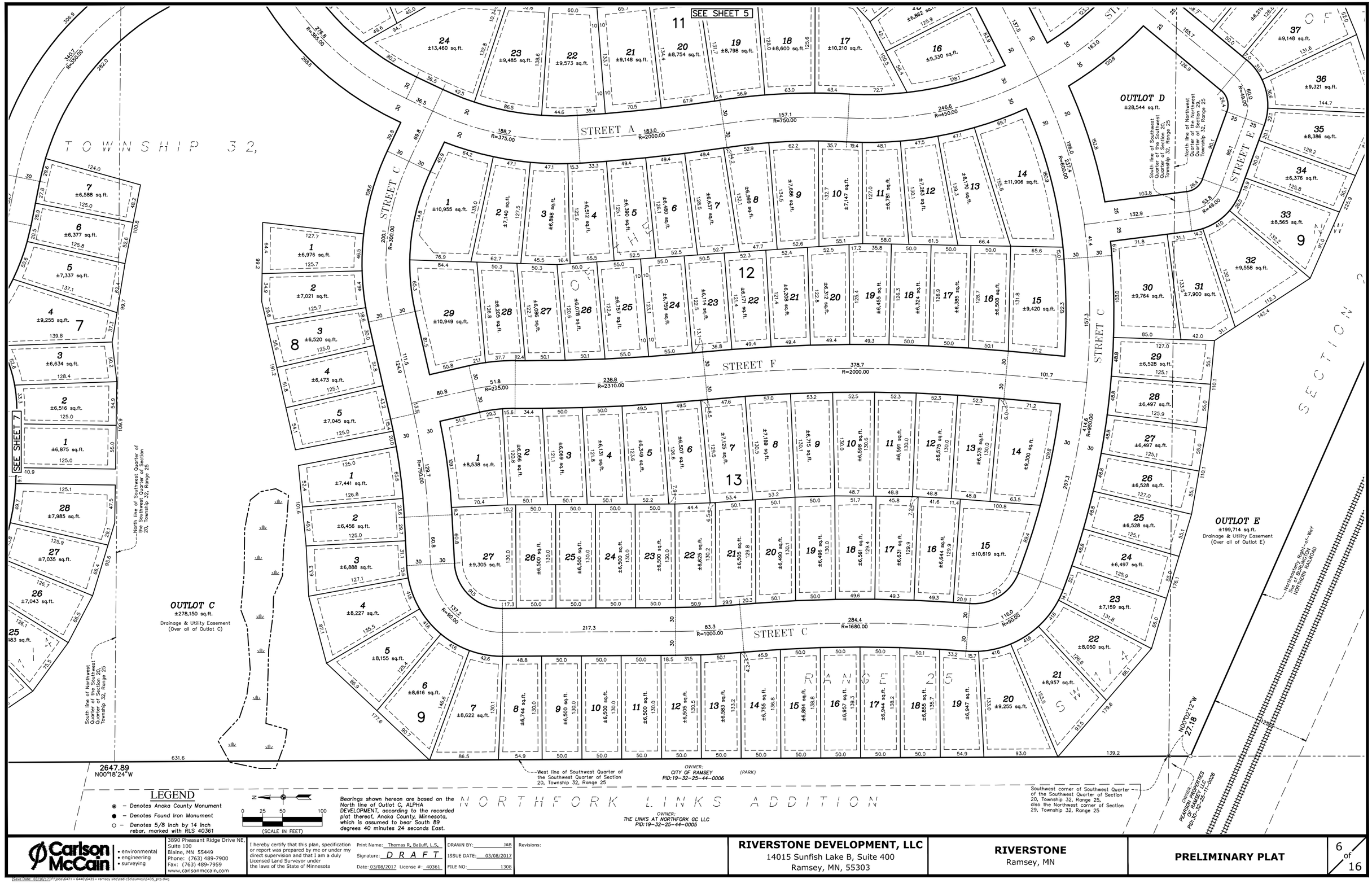
BURLINGTON NORTHERN INC.
MNDOT MONUMENTATION PLAT 02-M3
U.S. HIGHWAY 169

SEE SHEET 4

SEE SHEET 6

Carlson McCain • environmental • engineering • surveying	3890 Pheasant Ridge Drive NE, Suite 100 Blaine, MN 55449 Phone: (763) 489-7900 Fax: (763) 489-7959 www.carlsonmccain.com	I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota	Print Name: Thomas R. Balluff, L.S. Signature: D R A F T Date: 03/08/2017 License #: 40361	DRAWN BY: JAB ISSUE DATE: 03/08/2017 FILE NO: 1308	Revisions:	**RIVERSTONE DEVELOPMENT, LLC** 14015 Sunfish Lake B, Suite 400 Ramsey, MN, 55303	**RIVERSTONE** Ramsey, MN **PRELIMINARY PLAT** 5 of 16

Save Date: 03/10/17 F:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\survey\6435_prp.dwg



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RIVERSTONE
Ramsey, MN

PRELIMINARY PLAT

6 of 16

Save Date: 03/10/17 F:\jobs\6471 + 6440\6435 + ramsey site\cad c3d\survey\6435_prp.dwg

SEE SHEET 4

NORTHFORK MOORS

ALPINE DRIVE N.W.

ALPINE DRIVE N. W. 889.6

Southerly Right-of-Way line of Alpine Drive N.W. per Document No. 756629

North line of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25 (East-West Quarter line)

S89°40'24"E 1333.97

461.8

OUTLOT A
±118,973 sq.ft.
Drainage & Utility Easement (Over all of Outlot A)

STREET H

STREET B

STREET I

STREET J

TOWNSHIP 32,

1	±7,913 sq.ft.	125.0	
2	±7,289 sq.ft.	130.8	
3	±6,875 sq.ft.	125.0	
4	±6,875 sq.ft.	127.7	
5	±6,875 sq.ft.	125.0	
6	±6,875 sq.ft.	127.7	
7	±6,875 sq.ft.	125.0	
8	±6,875 sq.ft.	127.7	
9	±6,875 sq.ft.	125.0	
10	±6,875 sq.ft.	127.7	
1	±8,564 sq.ft.	125.0	
2	±8,606 sq.ft.	124.8	
3	±8,446 sq.ft.	124.3	
4	±11,795 sq.ft.	118.1	
4	±10,420 sq.ft.	125.1	
5	±8,235 sq.ft.	126.3	
7	±8,188 sq.ft.	125.6	
8	±8,146 sq.ft.	125.0	
9	±8,125 sq.ft.	125.0	
10	±8,505 sq.ft.	124.1	
11	±11,379 sq.ft.	124.9	
12	±9,479 sq.ft.	124.7	
13	±11,744 sq.ft.	126.3	
14	±12,007 sq.ft.	126.3	
15	±12,209 sq.ft.	125.6	
16	±17,841 sq.ft.	143.7	
1	±11,105 sq.ft.	150.0	
2	±7,500 sq.ft.	150.0	
3	±9,870 sq.ft.	161.3	
4	±12,920 sq.ft.	209.5	
5	±19,592 sq.ft.	229.6	
6	±14,418 sq.ft.	171.3	
7	±11,003 sq.ft.	154.3	
1	±10,563 sq.ft.	167.1	
2	±8,526 sq.ft.	157.8	
3	±7,282 sq.ft.	135.8	
4	±6,496 sq.ft.	125.9	
5	±6,881 sq.ft.	125.0	
6	±6,875 sq.ft.	125.0	
7	±6,250 sq.ft.	125.0	
8	±6,249 sq.ft.	124.8	
9	±6,255 sq.ft.	125.2	
10	±6,261 sq.ft.	125.3	
11	±6,266 sq.ft.	125.4	
12	±6,270 sq.ft.	125.4	
13	±6,274 sq.ft.	125.5	
14	±6,241 sq.ft.	125.4	
15	±6,447 sq.ft.	134.0	
16	±7,223 sq.ft.	143.3	
17	±10,764 sq.ft.	81.4	
33	±8,383 sq.ft.	125.0	
32	±6,250 sq.ft.	125.0	
31	±6,250 sq.ft.	125.0	
30	±6,258 sq.ft.	125.4	
29	±6,920 sq.ft.	126.4	
28	±6,990 sq.ft.	127.9	
27	±6,444 sq.ft.	128.9	
5			
26	±5,554 sq.ft.	132.4	
25	±6,621 sq.ft.	132.6	
24	±6,635 sq.ft.	132.6	
23	±6,598 sq.ft.	131.0	
22	±6,483 sq.ft.	128.3	
21	±6,345 sq.ft.	125.5	
20	±6,277 sq.ft.	125.5	
19	±6,277 sq.ft.	125.5	
18	±12,257 sq.ft.	109.2	
7	±6,588 sq.ft.	125.0	
6	±6,377 sq.ft.	125.8	
5	±7,337 sq.ft.	137.1	
4	±9,255 sq.ft.	139.8	
3	±6,634 sq.ft.	128.4	
2	±6,516 sq.ft.	125.0	
1	±6,875 sq.ft.	125.0	
28	±7,985 sq.ft.	125.1	
27	±7,035 sq.ft.	125.9	
26	±7,043 sq.ft.	126.7	
25	±7,483 sq.ft.	126.1	
24	±7,602 sq.ft.	129.2	
23	±8,266 sq.ft.	126.5	
22	±8,427 sq.ft.	91.9	

OUTLOT C
±278,150 sq.ft.
Drainage & Utility Easement (Over all of Outlot C)

Drainage & Utility Easement

Drainage & Utility Easement

Drainage & Utility Easement

Drainage & Utility Easement

Northwest corner of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25 (West Quarter corner)

West line of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

North line of Southwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

South line of Northwest Quarter of the Southwest Quarter of Section 20, Township 32, Range 25

2647.89
N00°18'24"W

OWNER:
NORTH FORK INC
PID:19-32-25-41-0004

NORTH FORK

LEGEND

◉ – Denotes Anoka County Monument
● – Denotes Found Iron Monument
○ – Denotes 5/8 inch by 14 inch rebar, marked with RLS 40361

0 25 50 100
(SCALE IN FEET)

Bearings shown hereon are based on the North line of Outlot C, ALPHA DEVELOPMENT, according to the recorded plat thereof, Anoka County, Minnesota, which is assumed to bear South 89 degrees 40 minutes 24 seconds East.

SEE SHEET 6

Carlson McCain
• environmental
• engineering
• surveying

3890 Pheasant Ridge Drive NE, Suite 100
Blaine, MN 55449
Phone: (763) 489-7900
Fax: (763) 489-7959
www.carlsonmccain.com

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

Print Name: Thomas R. Balluff, L.S.
Signature: D R A F T
Date: 03/08/2017 License #: 40361

DRAWN BY: JAB
ISSUE DATE: 03/08/2017
FILE NO: 1308

Revisions:

RIVERSTONE DEVELOPMENT, LLC
14015 Sunfish Lake B, Suite 400
Ramsey, MN, 55303

RIVERSTONE
Ramsey, MN

PRELIMINARY PLAT

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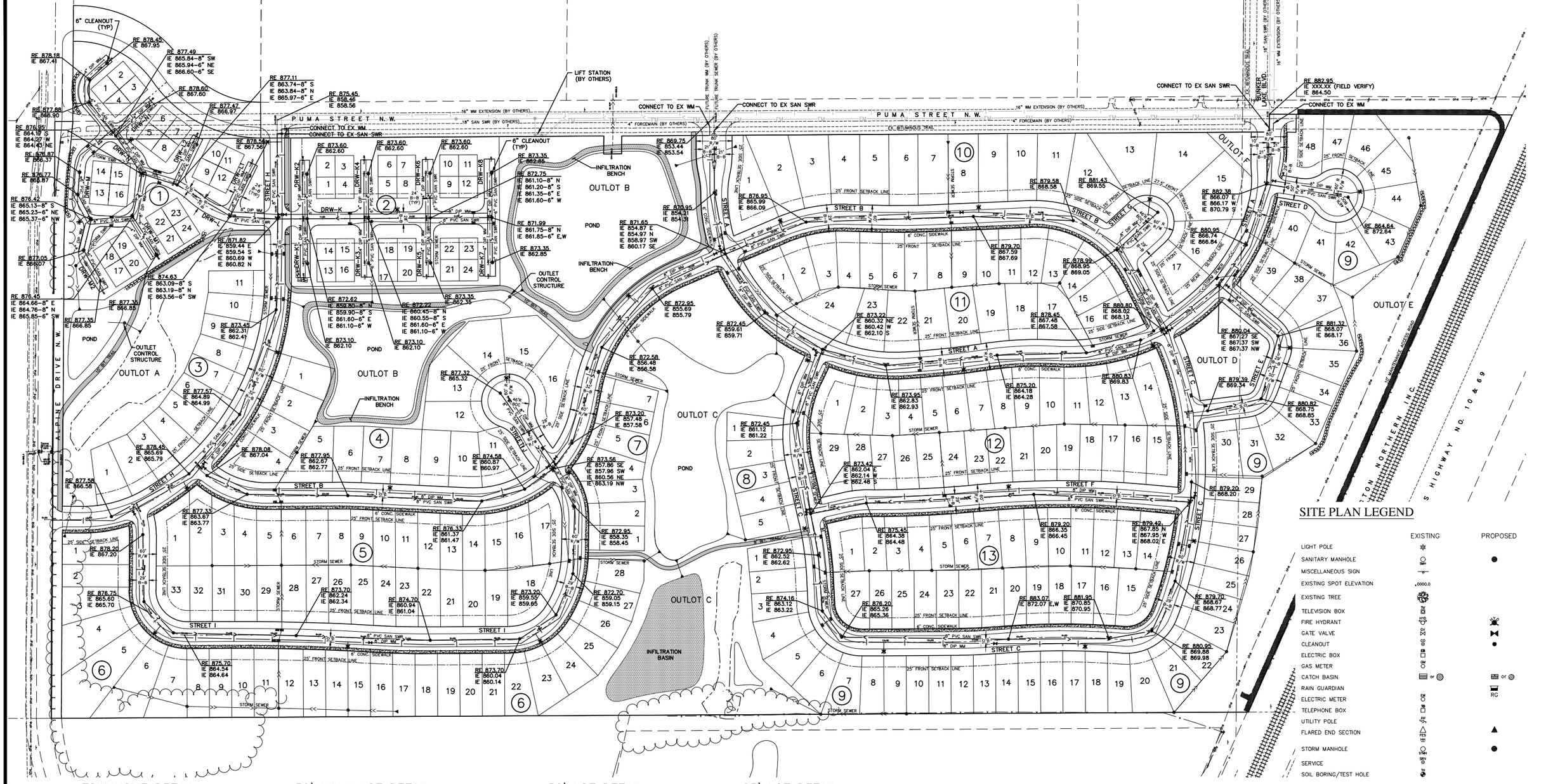

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Print Name: Brian J. Krystofiak, P.E.
Signature: DRAFT
Date: 3/08/17 License #: 25063

Drawn: ADB
Designed: BJK
Date: 3/08/17

Revisions:
1.

RIVERSTONE DEVELOPMENT, LLC.
14015 Sunfish Lake B, Suite 400
Ramsey, MN 55303

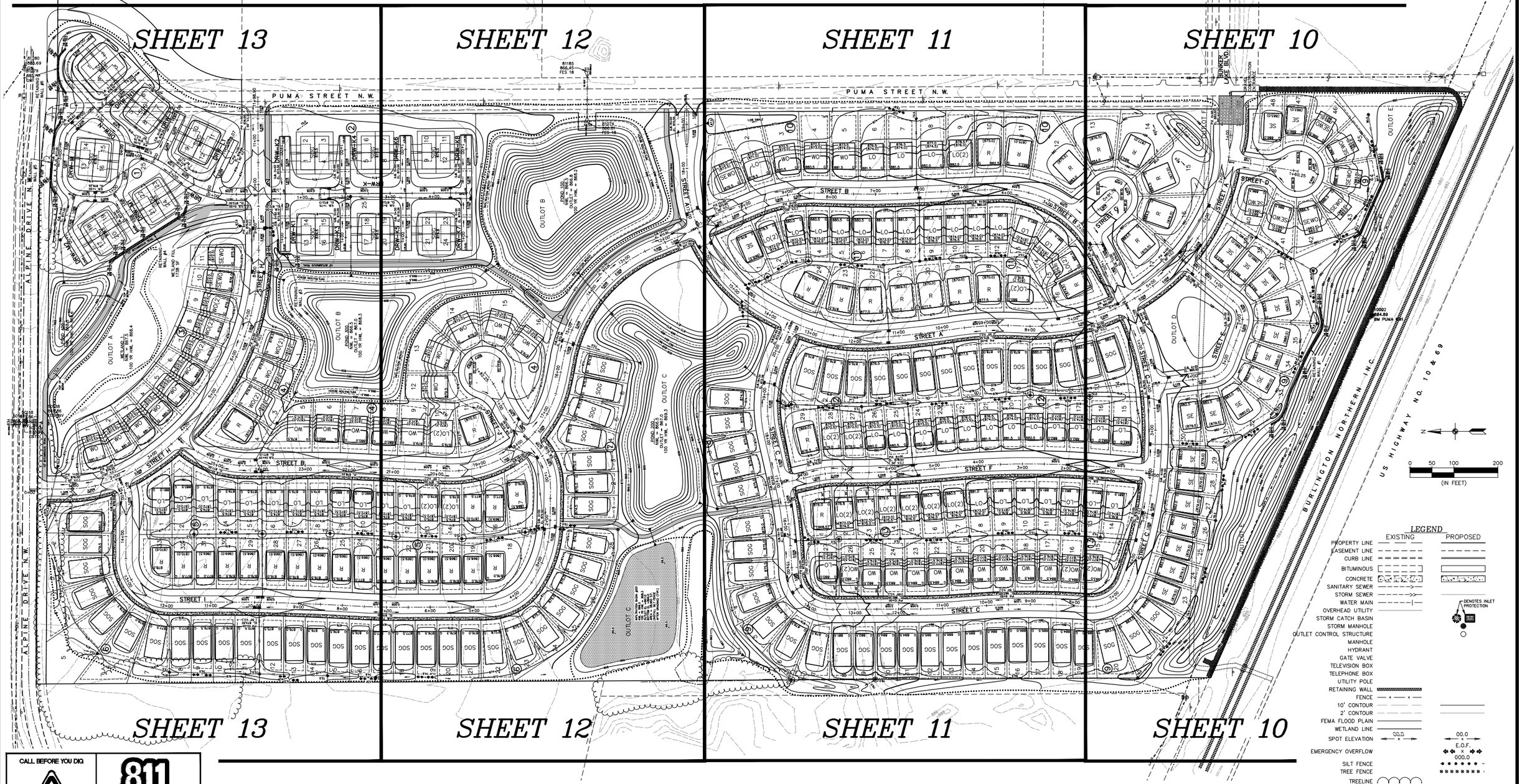
RIVERSTONE
Ramsey, MN

PRELIMINARY SITE & UTILITY PLAN

8 of 16

[Save Date: 03/10/17] I:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\engineering\preliminary\6435_site.dwg

SHEET 13 | SHEET 12 | SHEET 11 | SHEET 10



SEE SHEET 11

STREET A

STREET B

STREET C

STREET D

STREET E

STREET G

BUNKER LAKE BLVD.

GRAVEL CONSTRUCTION ENTRANCE

OUTLOT D

OUTLOT E

OUTLOT F

RETAINING WALL #1

RETAINING WALL #2

BURLINGTON NORTHERN INC.

US HIGHWAY NO. 10 & 69

N

0 25 50 100
(IN FEET)

BENCHMARK

1. Anoka County Benchmark No. 3076
   Elev.= 890.186 (NAVD 88)
2. Anoka County Benchmark No. 2078
   Elev.= 899.499 (NAVD 88)

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Drawn:
Designed: BJK
Date: 3/08/17

Revisions:
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RIVERSTONE DEVELOPMENT, LLC.
14015 Sunfish Lake B, Suite 400
Ramsey, MN 55303

RIVERSTONE
Ramsey, MN

PRELIMINARY GRADING & EROSION CONTROL PLAN

Save Date: 03/10/17 T:\jobs\6421 - 6440\6435 - Ramsey site\cad c3d\engineering\preliminary\6435_gr.dwg

BENCHMARK

1. Anoka County Benchmark No. 3076 Elev.= 890.186 (NAVD 88)
2. Anoka County Benchmark No. 2078 Elev.= 899.499 (NAVD 88)

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Ramsey, MN 55303

RIVERSTONE
Ramsey, MN

PRELIMINARY GRADING & EROSION CONTROL PLAN

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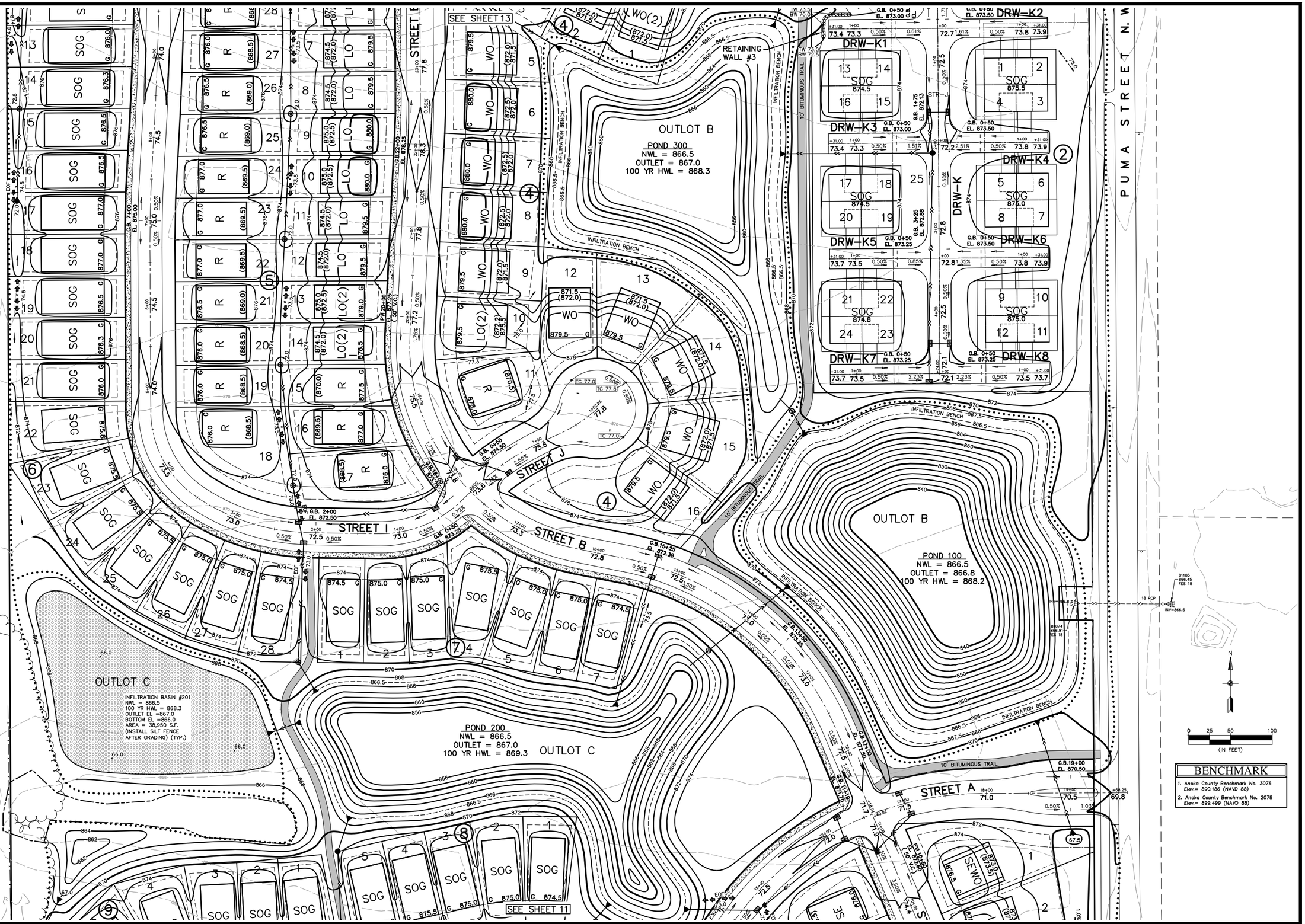

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   Elev.= 899.499 (NAVD 88)

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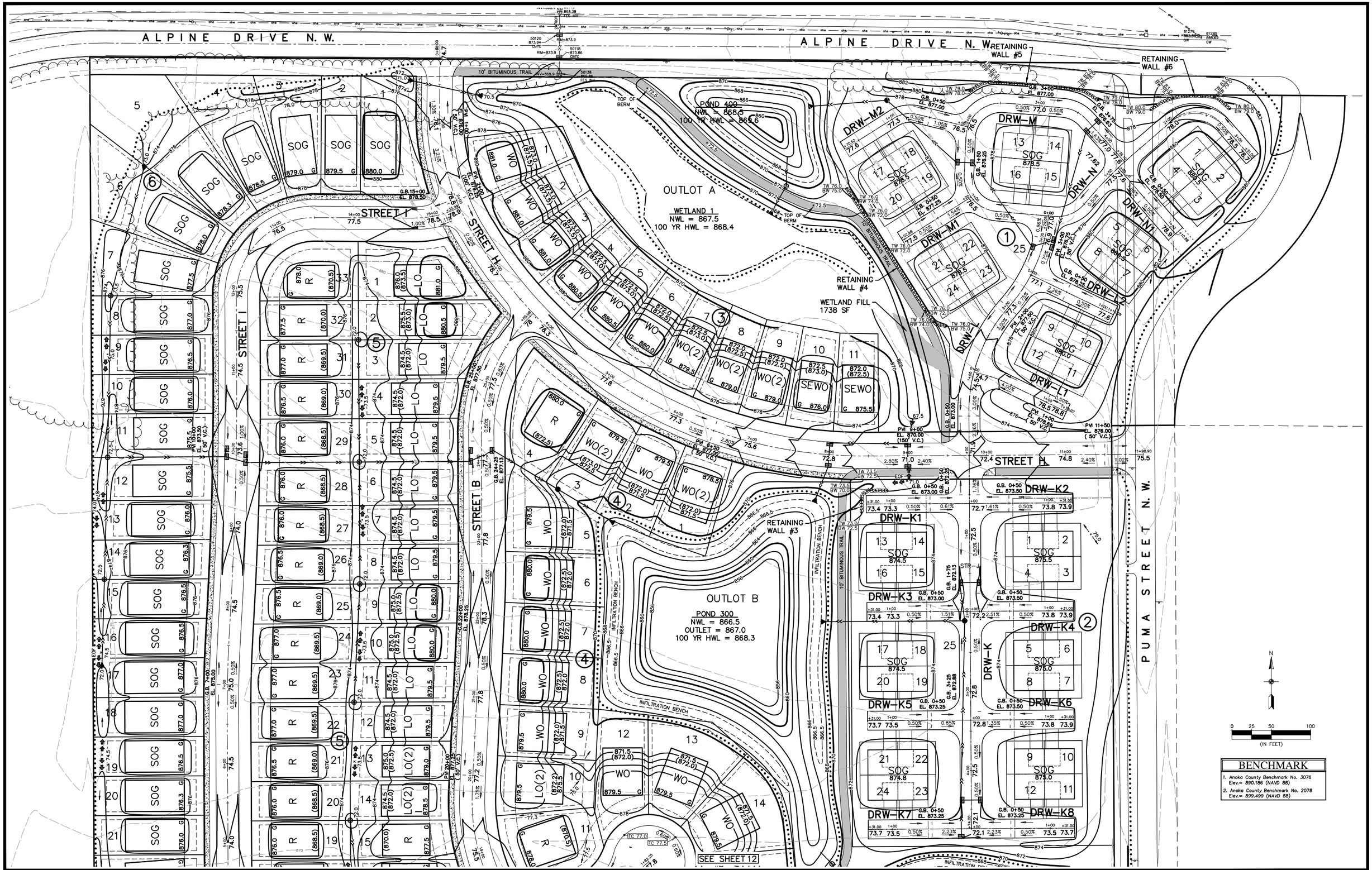

BENCHMARK

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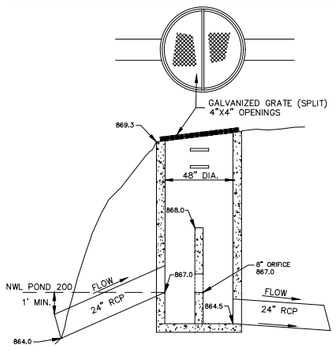
RIVERSTONE
Ramsey, MN

PRELIMINARY GRADING & EROSION CONTROL PLAN

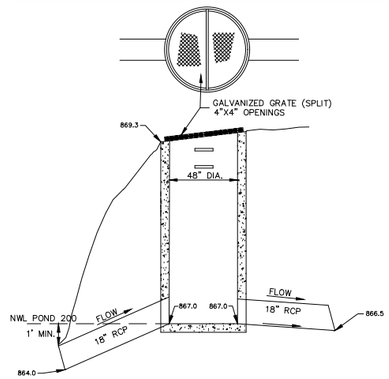
13 of 16

[Save Date: 03/10/17] T:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\engineering\preliminary\6435_gr.dwg

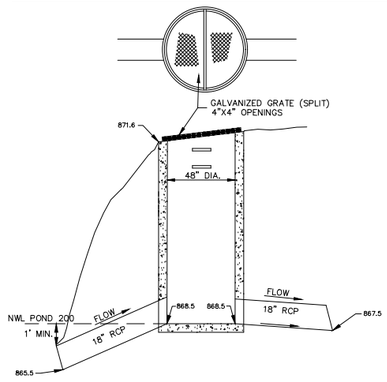
OUTLET CONTROL STRUCTURE POND 200



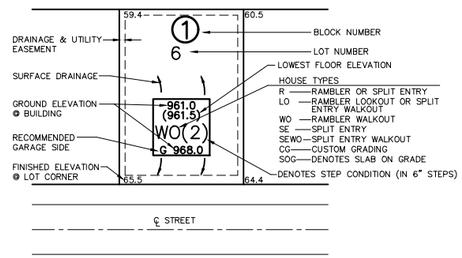
OUTLET CONTROL STRUCTURE POND 300



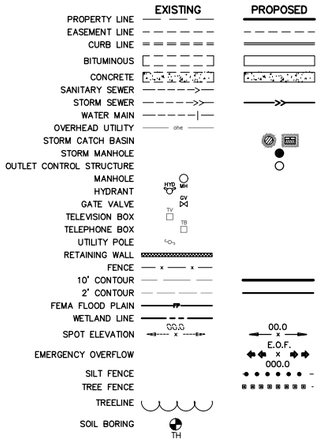
OUTLET CONTROL STRUCTURE POND 400



GRADING PLAN LOT KEY

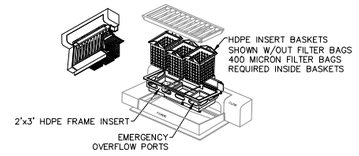


LEGEND



INFRASAFE – 2'x3' DEBRIS COLLECTION DEVICE

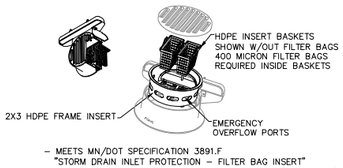
AS MANUFACTURED BY ROYAL ENVIRONMENTAL SYSTEMS



- MEETS MN/DOT SPECIFICATION 3891.F "STORM DRAIN INLET PROTECTION – FILTER BAG INSERT"
- DESIGNED FOR NEENAH R–3067 OR R–3290 SERIES

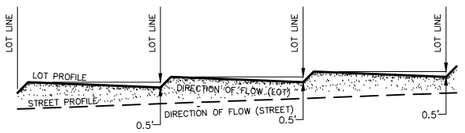
INFRASAFE – 27" DEBRIS COLLECTION DEVICE

AS MANUFACTURED BY ROYAL ENVIRONMENTAL SERVICES



- MEETS MN/DOT SPECIFICATION 3891.F "STORM DRAIN INLET PROTECTION – FILTER BAG INSERT"
- DESIGNED FOR NEENAH R–3250–A OR R–3250–1 (MNDOT 801) FRAME CASTING

LOT BENCHING DETAIL



TURF ESTABLISHMENT

TURF ESTABLISHMENT SHALL APPLY TO ALL DISTURBED AREAS AND SHALL BE ACCORDING TO MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (2005) EXCEPT AS MODIFIED BELOW.

TURF ESTABLISHMENT SHALL OCCUR AS SOON AS POSSIBLE BUT IN NO CASE MORE THAN 14 DAYS.

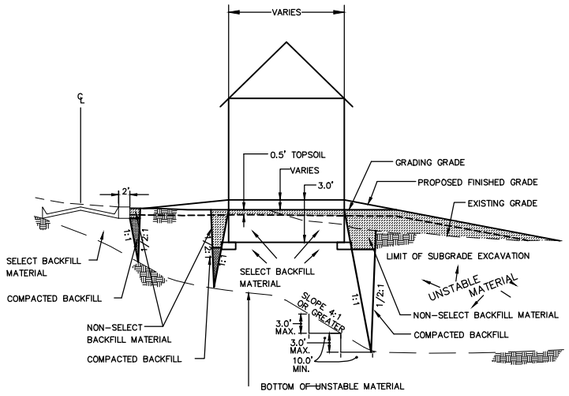
SEED: MnDOT MIXTURE 250 AT 70 POUNDS PER ACRE.

DORMANT SEED: SHALL BE APPLIED AT TWICE THE NORMAL RATE AFTER NOVEMBER 1ST.

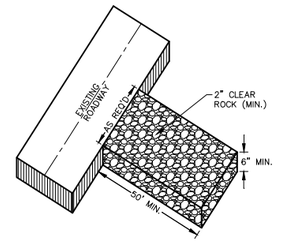
MULCH: TYPE 1 AT 2 TONS PER ACRE (DISK ANCHORED).

FERTILIZER: TYPE 24–12–24 AT 300 POUNDS PER ACRE.

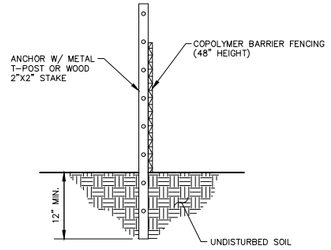
SUBGRADE CORRECTION



ROCK CONSTRUCTION ENTRANCE



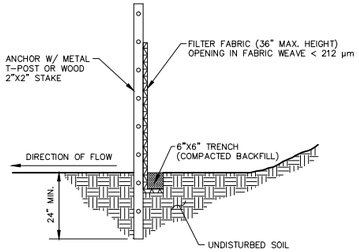
TREE FENCE



NOTES:

1. TREE FENCING SHALL BE PLACED A MINIMUM OF 1 FOOT PER CALIPER INCH OF TREE DIAMETER FROM TREE(S) THAT IS/ARE TO BE SAVED.
2. ANCHOR POST MAY BE SPACED UP TO 10 FEET APART.
3. SECURELY ATTACH TREE FENCE TO ANCHOR POSTS W/ MINIMUM OF TWO ATTACHMENTS PER POST.
4. SEE MNDOT SPECIFICATION 2572.

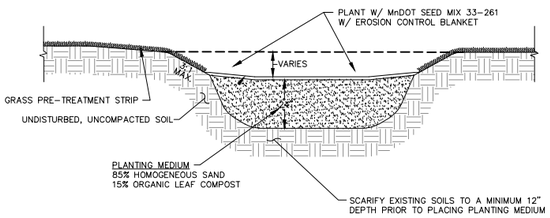
SILT FENCE



NOTES:

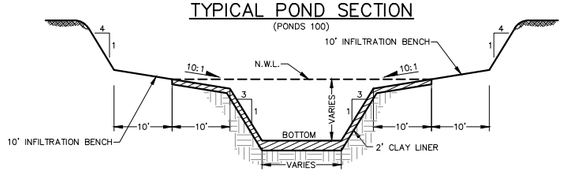
1. DIG A 6"X6" TRENCH ALONG THE INTENDED SILT FENCE LINE.
2. DRIVE ALL ANCHOR POSTS INTO THE GROUND AT THE DOWNHILL SIDE OF THE TRENCH.
3. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART.
4. LAY OUT SILT FENCE ALONG THE UPHILL SIDE OF THE ANCHOR POSTS AND BACK FILL 6"X6" TRENCH.
5. SECURELY ATTACH SILT FENCE TO ANCHOR POSTS W/ MINIMUM OF THREE ATTACHMENTS PER POST.
6. SEE MNDOT SPECIFICATIONS 2573 & 3886.

INFILTRATION BASIN



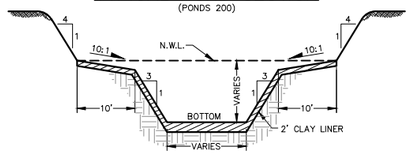
TYPICAL POND SECTION

(PONDS 100)



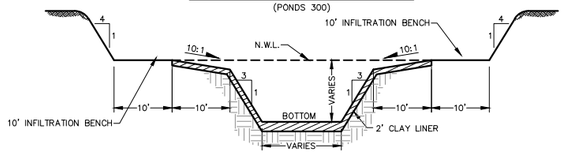
TYPICAL POND SECTION

(PONDS 200)



TYPICAL POND SECTION

(PONDS 300)



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Signature: DRAFT
Date: 3/08/17 License #: 25063

Drawn:
Designed: BJK
Date: 3/08/17

Revisions:
1.

RIVERSTONE DEVELOPMENT, LLC.
14015 Sunfish Lake B, Suite 400
Ramsey, MN 55303

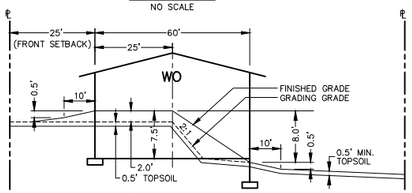
RIVERSTONE
Ramsey, MN

DETAILS

Save Date: 03/10/17 I:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\engineering\preliminary\6435_details.dwg

65' LOTS

WALKOUT
NO SCALE



LOOKOUT
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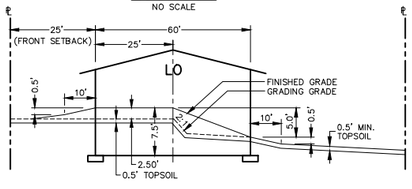

MODIFIED WALKOUT
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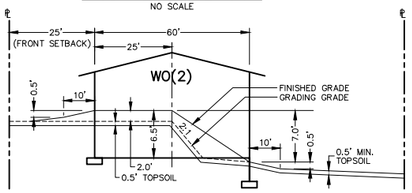

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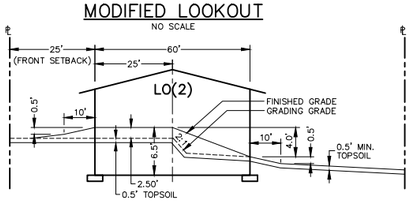

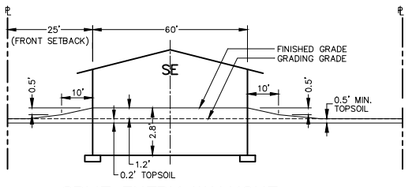

RAMBLER
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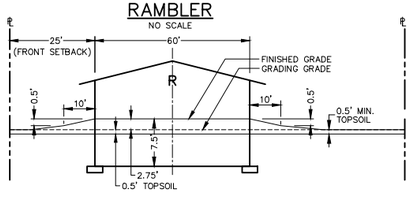
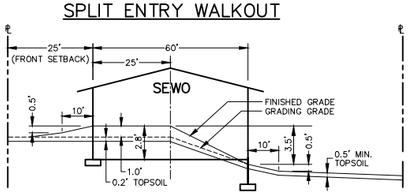
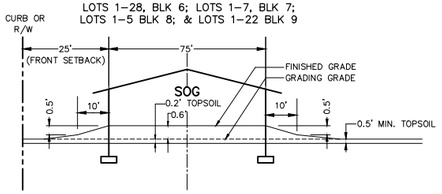
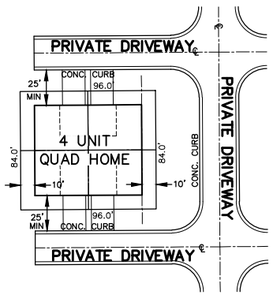


SPLIT ENTRY WALKOUT

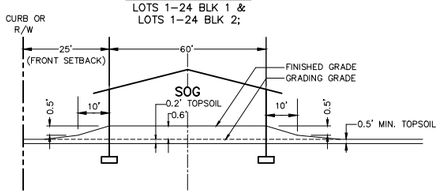


50' VILLAS
SINGLE FAMILY HOLDOWNS
LOTS 1–28, BLK 6; LOTS 1–7, BLK 7;
LOTS 1–5 BLK 8; & LOTS 1–22 BLK 9

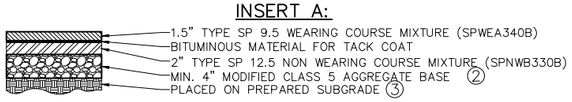




QUAD HOMES
LOTS 1–24 BLK 1 &
LOTS 1–24 BLK 2;



INSERT A:

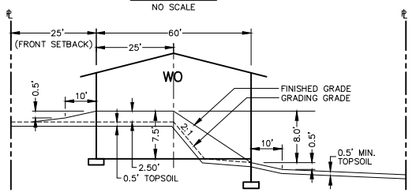


REFERENCE NOTES:

1. GRADE TO MATCH EXISTING SURFACE MINIMUM 4" COMMON TOPSOIL BORROW IN BOULEVARDS. SEE CITY PLATE No. ERO–6
2. CLASS 5 GRADATION IS MODIFIED PER CITY PLATE No. STR–26
3. CONTRACTOR SHALL SCARIFY AND COMPACT, ACCORDING TO THE SPECIFIED DENSITY METHOD, THE TOP 12 INCHES OF MATERIAL PRIOR TO PLACING ANY FILL MATERIALS OR CLASS 5 AGGREGATE BASE.
4. ALL SIDEWALKS SHALL BE 6" THICK, 6' WIDE, PLACED ON PREPARED SUBGRADE.
5. CONCRETE CURB AND GUTTER PER PLAN. SEE CITY PLATE No. STR–1.

50' LOTS

WALKOUT
NO SCALE



LOOKOUT
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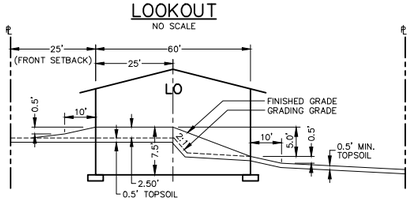
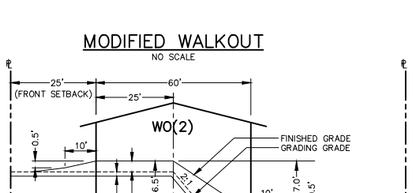


MODIFIED WALKOUT
NO SCALE



MODIFIED LOOKOUT
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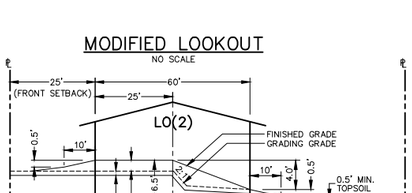
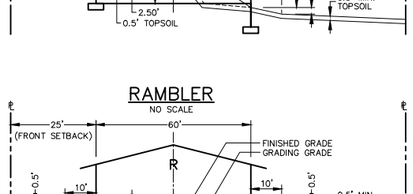
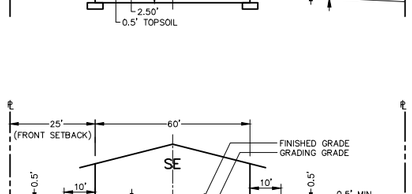


RAMBLER
NO SCALE





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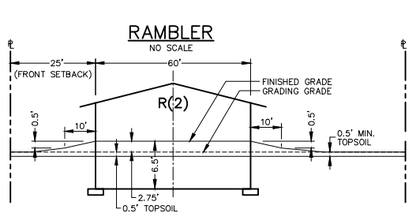
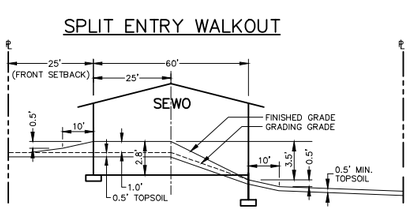
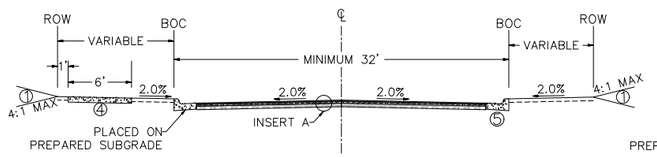


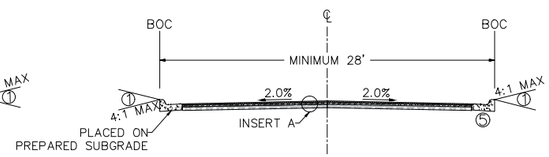
SPLIT ENTRY WALKOUT



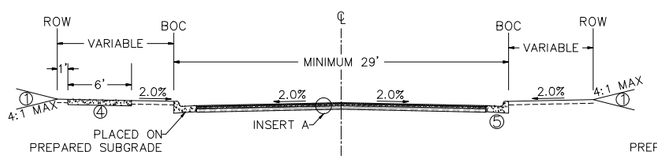
32' – URBAN STREET
NOTE: NOT TO SCALE



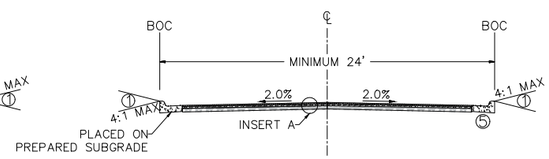
28' – PRIVATE STREET
NOTE: NOT TO SCALE



29' – URBAN STREET
NOTE: NOT TO SCALE



24' – PRIVATE STREET
NOTE: NOT TO SCALE



Carlson McCain
• environmental
• engineering
• surveying

3890 Pheasant Ridge Drive NE, Suite 100
Blaine, MN 55449
Phone: (763) 489-7900
Fax: (763) 489-7959
www.carlsonmccain.com

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

Print Name: Brian J. Krystofiak, P.E.
Signature: DRAFT
Date: 3/08/17 License #: 25063

Drawn:
Designed: BJK
Date: 3/08/17

Revisions:
1.

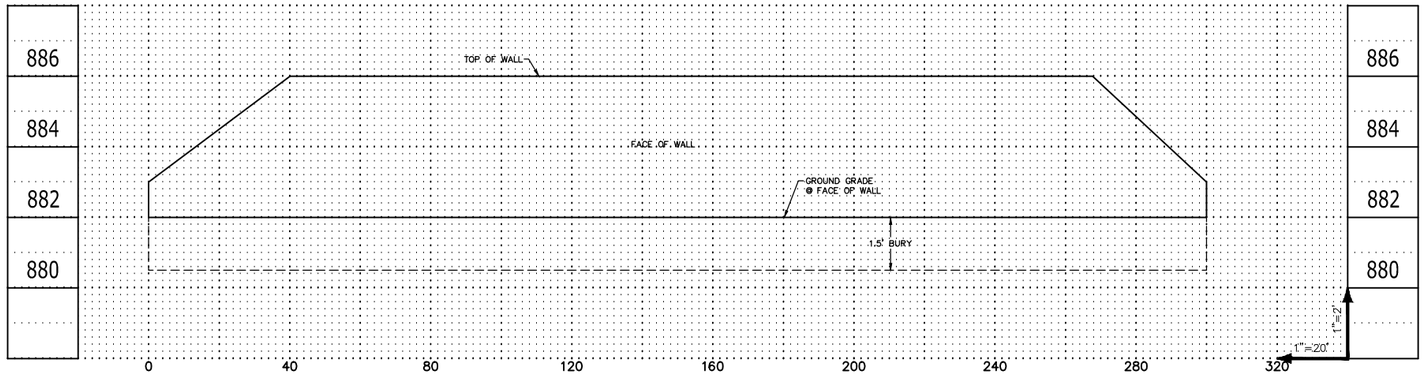
RIVERSTONE DEVELOPMENT, LLC.
14015 Sunfish Lake B, Suite 400
Ramsey, MN 55303

RIVERSTONE
Ramsey, MN

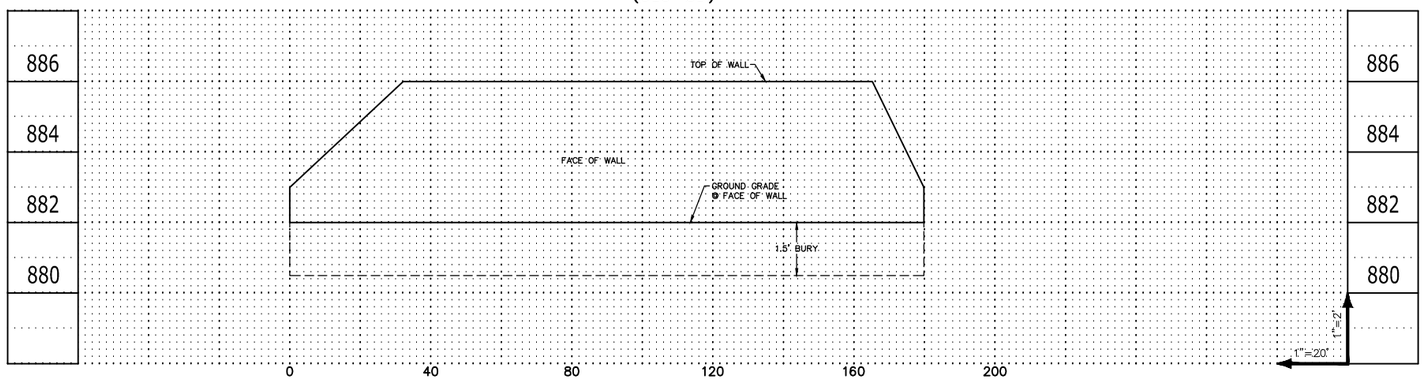
DETAILS

Save Date: 03/10/17 I:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\engineering\preliminary\6435_details.dwg

MODULAR RETAINING WALL #1
(1542 SF)



MODULAR RETAINING WALL #2
(919 SF)



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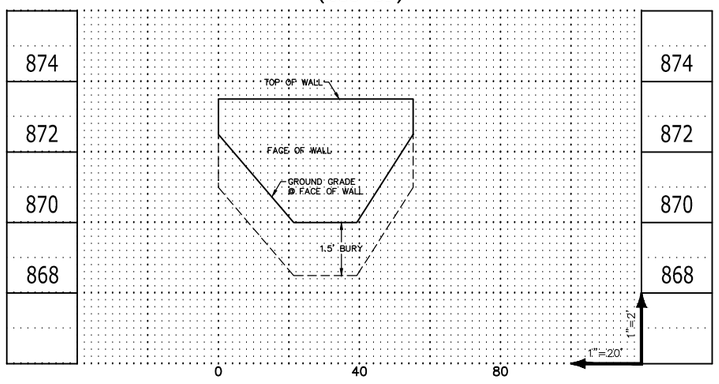

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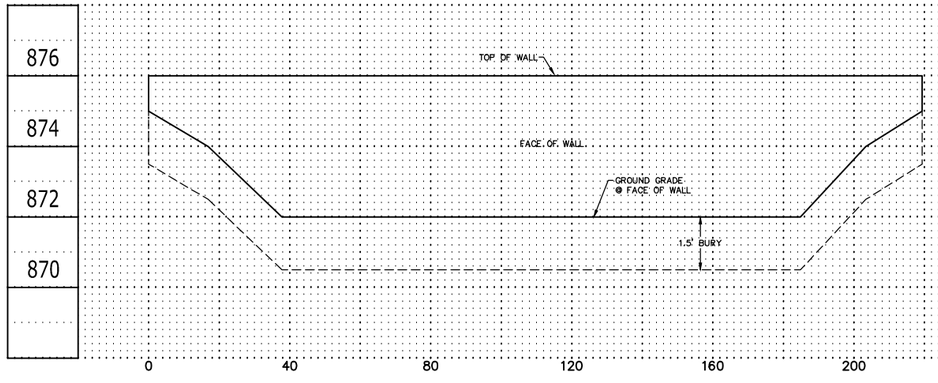

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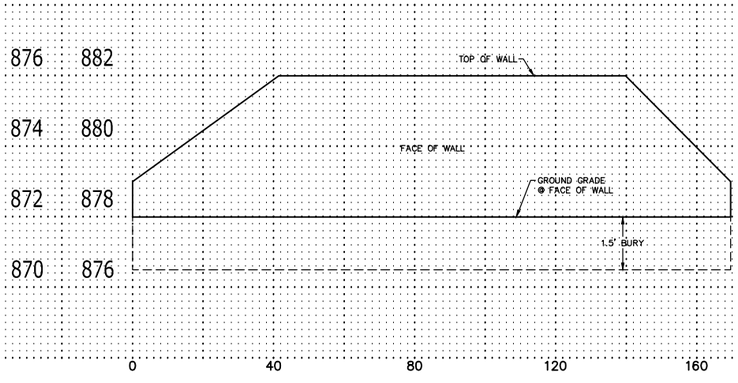
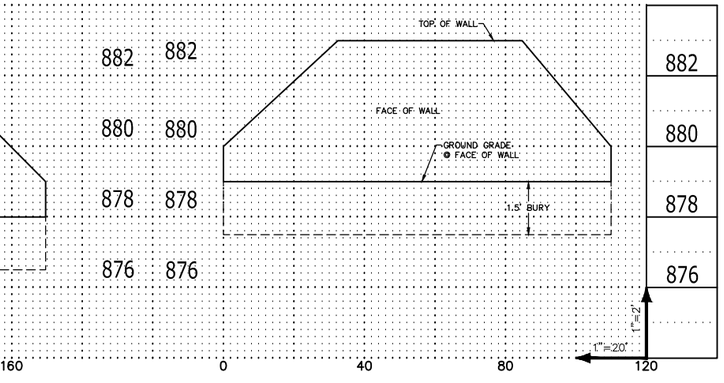
(830 SF)



MODULAR RETAINING WALL #6
(525 SF)



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Phone: (763) 489-7900
Fax: (763) 489-7959
www.carlsonmccain.com

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

Print Name: Brian J. Krystofiak, P.E.
Signature: DRAFT
Date: 3/08/17 License #: 25063

Drawn: BJK
Designed: BJK
Date: 3/08/17

Revisions:
1.

RIVERSTONE DEVELOPMENT, LLC.
14015 Sunfish Lake B, Suite 400
Ramsey, MN 55303

RIVERSTONE
Ramsey, MN

RETAINING WALL PROFILES

Save Date: 03/10/17 I:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\engineering\preliminary\6435_details.dwg

April 6, 2017

Tim Gladhill
Community Development Director
City of Ramsey
7550 Sunwood Drive NW
Ramsey, MN 55303

Dear Tim –

Per previous discussions regarding the Riverstone Project at Pearson Farm, we have designed the preliminary plat using 29 foot roads with unrestricted parking on the low traffic roads. This is a common standard in many growing cities throughout the metro area, to have 28 foot or 29 foot roads. This standard has worked for emergency vehicles, school buses, snow plows and other large vehicles. Enclosed are the City specifications from our recent new communities in Blaine, Dayton, Eden Prairie, Lino Lakes and Otsego:

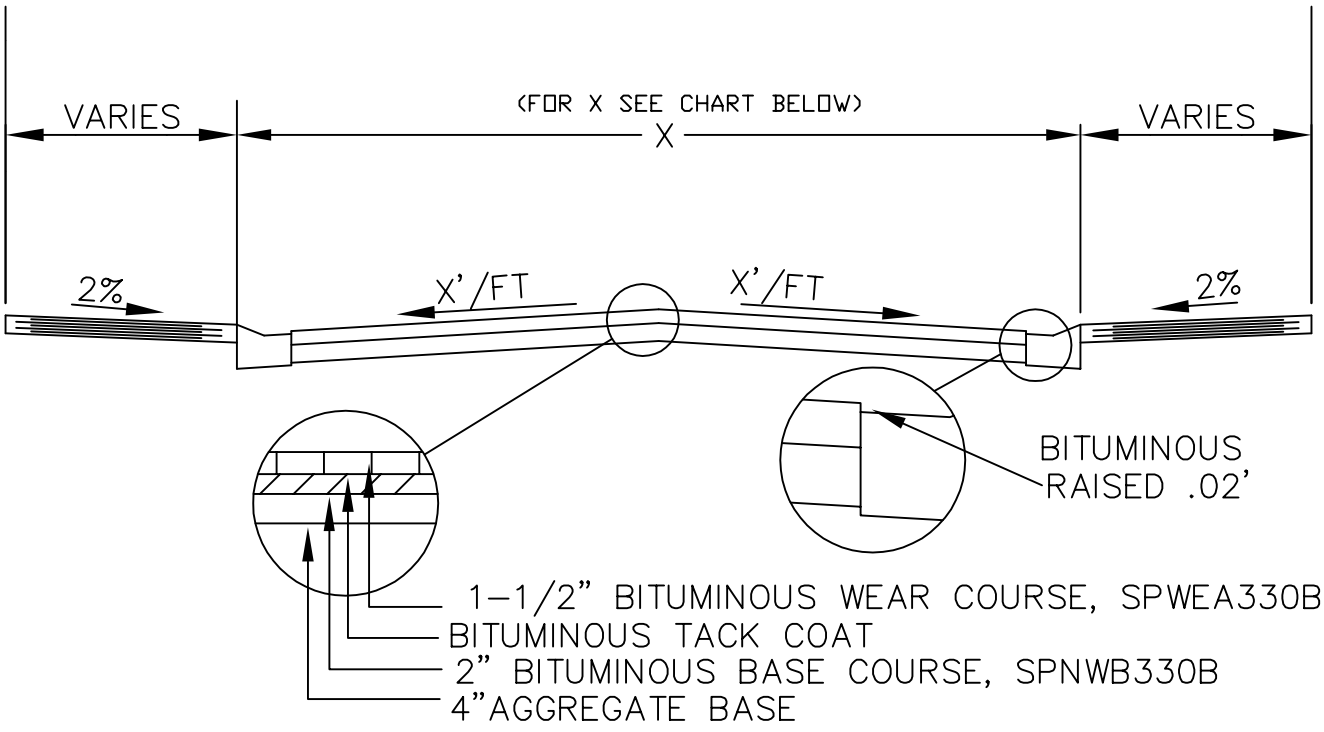
- Eden Prairie 28' BB one side parking
- Otsego 28' BB one side parking
- Lino Lakes 28' BB one side parking
- Dayton 28' BB one side parking
- Blaine 29' BB unrestricted parking

The Riverstone preliminary plat shows 29-foot road widths within the perimeter of the project on low traffic roads. The proposed 29 foot roads will primarily be utilized by residents and guests of the project and will not carry significant traffic. Road A and portions of Road B will remain at the current City standard as these roads will carry more traffic. The 60' right of way standard remains unchanged, and the intersections of the low traffic roads could be widened if necessary, to accommodate the turning radius of larger vehicles.

The reduced width (compared to the Ramsey standard) will create a safer and more desirable neighborhood for the residents, in addition to reducing the impervious surface throughout. Reduction of the pavement footprint will have a calming effect on traffic flow and increase boulevard green space in the community. This creates a safer environment for pedestrians. Cost reduction is not the driving force for the reduced street width. Instead, the overall community safety and improved aesthetic appeal is most important.

We are grateful to the City of Ramsey for its continued partnership with Capstone Homes to bring high quality housing to the residents for Ramsey and we thank you in advance for considering the proposal of Riverstone.

Capstone Homes, Inc.
14015 Sunfish Lake Blvd NW, Suite 400
Ramsey, MN 55303
Office: (763) 427-3090 Fax: (763) 712 -9060

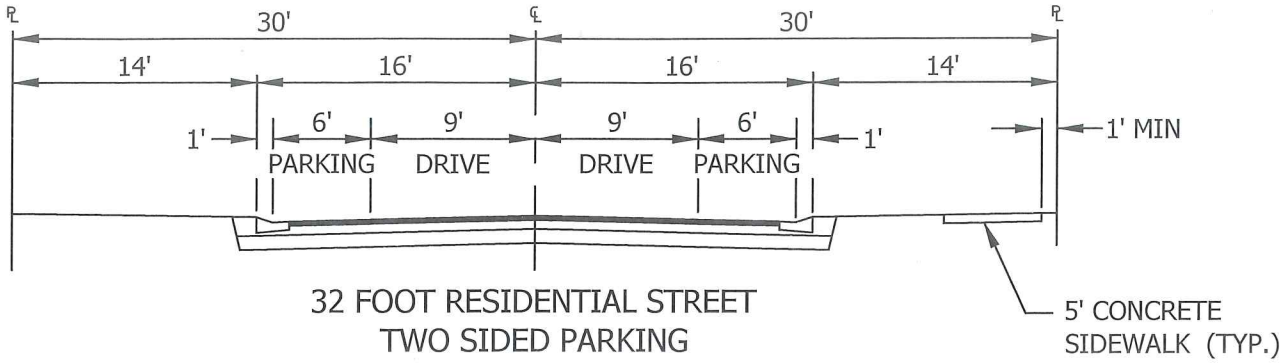


ROAD WIDTH AT 2% SLOPE	31'	29'	24'	22'
WEAR CL=TC	+.17'	+.15'	+.10'	+.08'
BASE CL=TC	+.05'	+.03'	-.03	-.05'
CL-5 CL=TC	-.12'	-.14'	-.20'	-.22'
SUBGRADE CL=TC	-.45'	-.47'	-.53'	-.55'

ROAD WIDTH AT 3% SLOPE	31'	29'	24'	22'
WEAR CL=TC	+.31'	+.28'	+.20'	+.17'
BASE CL=TC	+.19'	+.16'	+.08'	+.05'
CL-5 CL=TC	+.02'	-.01'	-.09'	-.12'
SUBGRADE CL=TC	-.31'	-.34'	-42'	-.45'

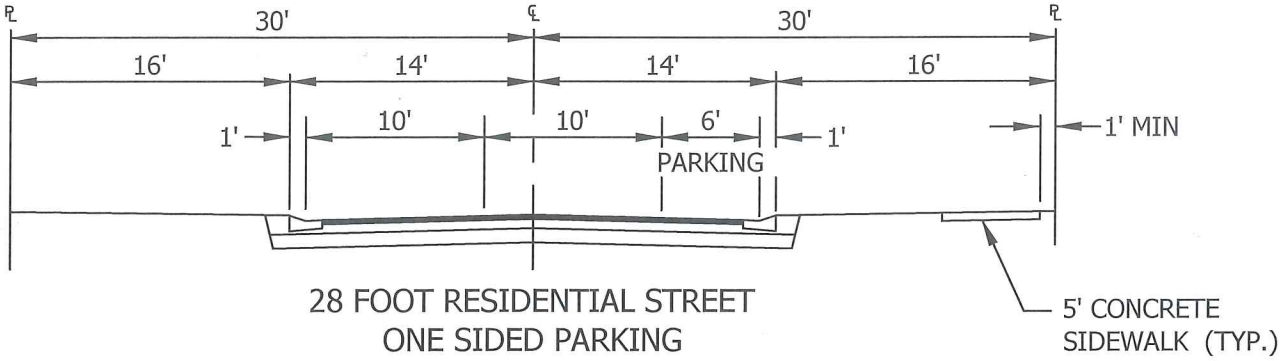
TYPICAL STREET SECTION WITH D312 CURBING

Plate No. ST-9



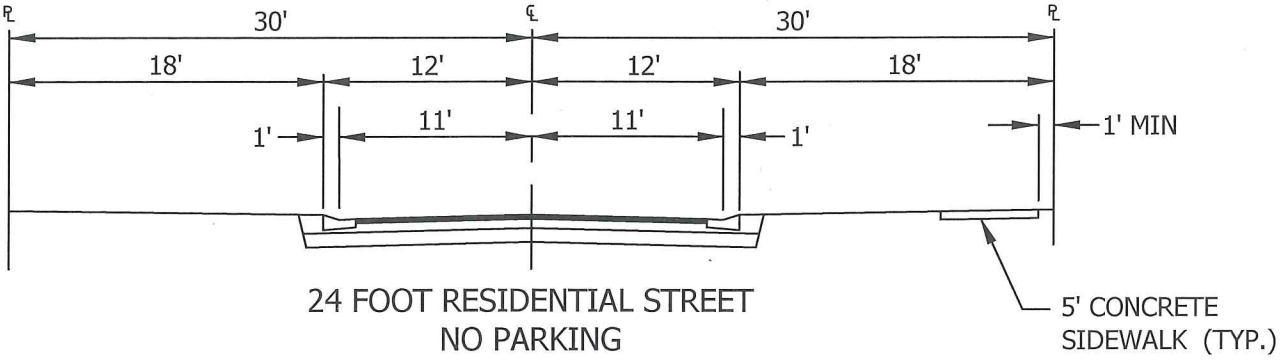
32 FOOT RESIDENTIAL STREET
TWO SIDED PARKING

5' CONCRETE SIDEWALK (TYP.)



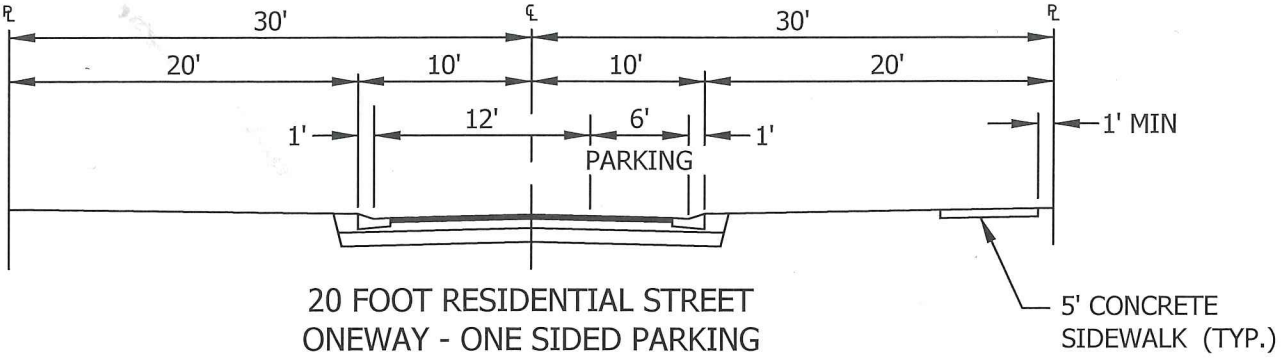
28 FOOT RESIDENTIAL STREET
ONE SIDED PARKING

5' CONCRETE SIDEWALK (TYP.)



24 FOOT RESIDENTIAL STREET
NO PARKING

5' CONCRETE SIDEWALK (TYP.)



20 FOOT RESIDENTIAL STREET
ONEWAY - ONE SIDED PARKING

5' CONCRETE SIDEWALK (TYP.)

CITY OF DAYTON
Two Rivers, One Community

RESIDENTIAL STREET DIMENSIONS

LAST REVISION:
MAR 2017

PLATE NO.
STR-05A

CITY OF EDEN PRAIRIE

TYPICAL MINIMUM ROADWAY SECTION

ROAD TYPE	RIGHT-OF-WAY (FEET)	ROADWAY WIDTH BACK-BACK (FEET)		8 ft. BITUMINOUS TRAIL AND / OR 5 ft. X 5 in. SIDEWALK	ENTRANCE SPACING
RESIDENTIAL [1]	50	28	1.5" SPWEA230B (5) 2" SPNWB240B 8" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)*	AS REQUIRED	MINIMUM 150 FEET WITHIN INTERSECTIONS
COLLECTOR	60	32	1.5" SPWEA__40B** (5) 2" SPNWB__30B** 10" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)*	AS REQUIRED	MINIMUM 150 FEET WITHIN INTERSECTIONS
INDUSTRIAL [4]	70-100	37-52	2" SPWEA__40B** (5) 4" SPNWB__30B** 10" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)*	AS REQUIRED	MINIMUM 150 FEET WITHIN INTERSECTIONS
COMMERCIAL [4]	100 [2]	52	2" SPWEA__40B** (5) 4" SPNWB__30B** 10" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)*	BOTH SIDES	MINIMUM 600 FEET BETWEEN FULL INTERSECTIONS
MSA TYPICAL	110	2@28 [3]	3" SPWEA__40B* (5) 3" SPNWB__30B** 4" SPNWB__30B** 12" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)*	BOTH SIDES	MINIMUM 600 FEET BETWEEN FULL INTERSECTIONS

1. CUL-DE-SAC REQUIREMENTS,
   RIGHT-OF-WAY RADIUS 50 FEET,
   ROADWAY RADIUS 39 FEET TO BACK OF CURB
2. AT MAJOR INTERSECTIONS INCREASE TO 120 FEET
3. FOUR LANE DIVIDED WITH 18 FEET MEDIAN
4. FINAL DESIGN DEPENDENT UPON TRAFFIC VOLUME AND SOIL FACTORS
5. AFTER 1 FREEZE - THAW CYCLE OR SECOND YEAR

** TO BE DETERMINED BY PAVEMENT DESIGN FOR ESALS

GENERAL SPECIFICATIONS

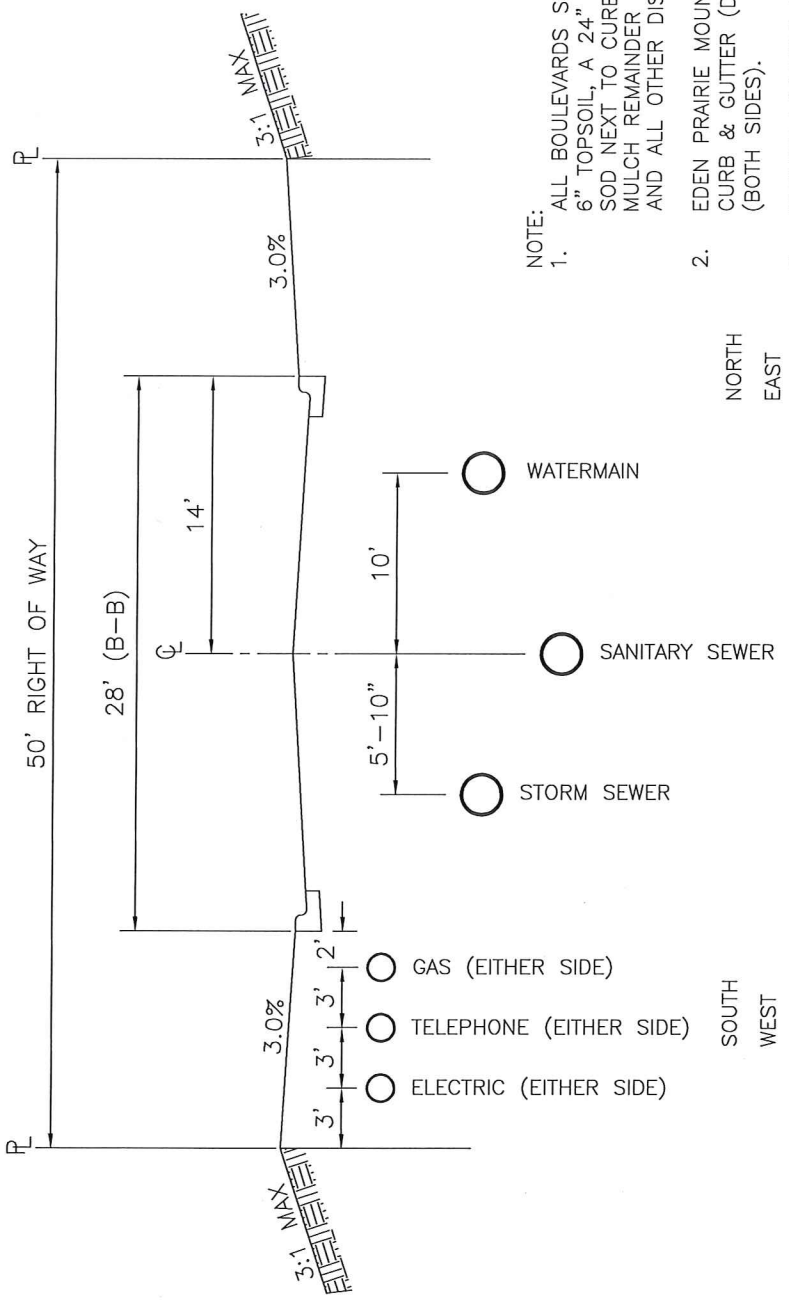
MnDOT 2360 SPECIFICATIONS SHALL APPLY

MAXIMUM GRADE = 8.0%; MINIMUM GRADE = 0.5%

RADIUS ON CURB RETURNS MINIMUM 20'

* RECYCLED CL.5 MAY BE USED WITH THE CITY ENGINEER'S APPROVAL AND IN ACCORDANCE WITH CITY SPECIFICIATIONS

R-1



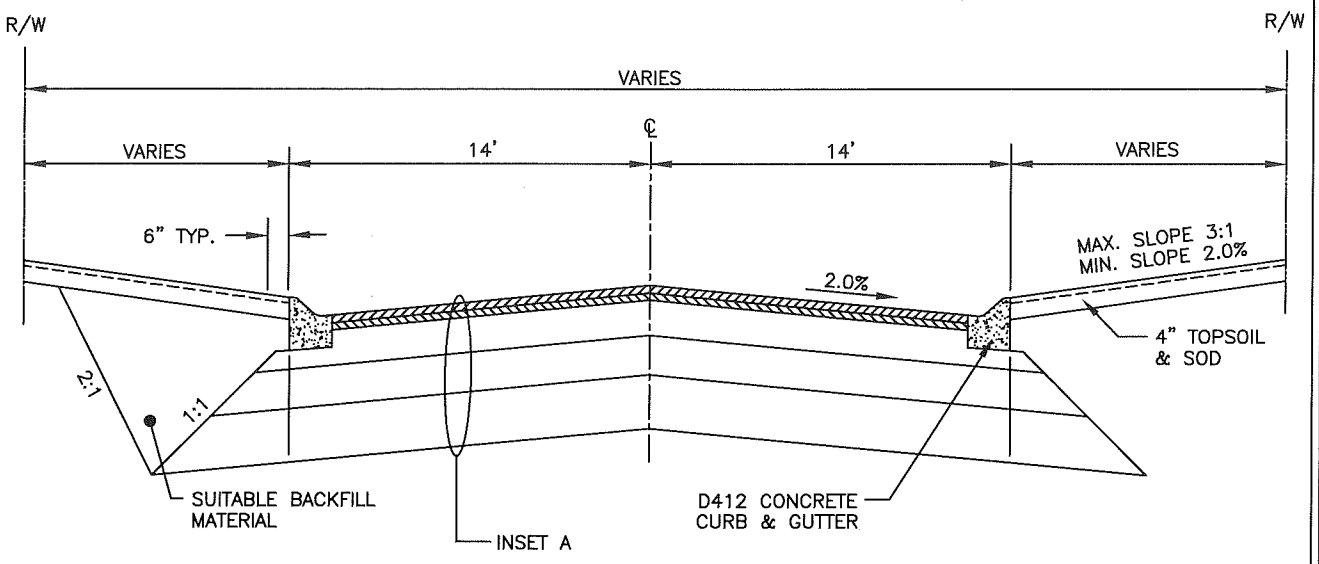
NOTE:

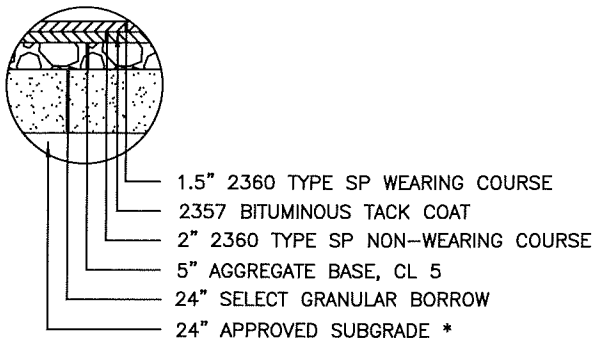
1. ALL BOULEVARDS SHALL HAVE 6" TOPSOIL, A 24" STRIP OF SOD NEXT TO CURB, SEED AND MULCH REMAINDER OF BOULEVARD AND ALL OTHER DISTURBED AREAS.
2. EDEN PRAIRIE MOUNTABLE CONCRETE CURB & GUTTER (DETAIL R-11) (BOTH SIDES).
3. TRENCH LOCATION FOR UTILITIES MAY BE MODIFIED WHEN JOINT TRENCHING IS IMPLEMENTED.
4. CROWN SHALL BE 2" ABOVE TOP OF MOUNTABLE CURB. WHERE 'B' TYPE CURB IS USED, THE CROWN ELEVATION SHALL BE EQUAL TO TOP OF CURB.

CITY OF EDEN PRAIRIE, MINNESOTA

RESIDENTIAL - MINOR SECTION

DEPARTMENT OF ENGINEERING **R-2**





INSET A

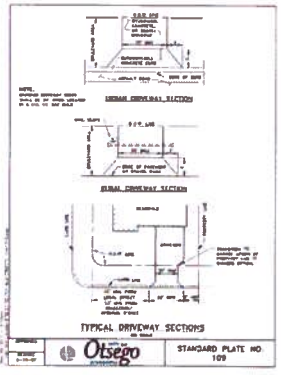
* THIS WORK SHALL INCLUDE OVER TURNING THE SOIL IN WET CONDITIONS TO DRY SUBGRADE MATERIAL (INCIDENTAL).

CITY OF LINO LAKES

PUD TYPICAL SECTION (URBAN STREET)

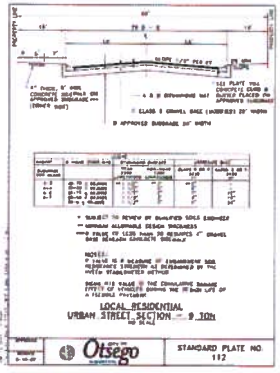
JUNE 2016

GEN-1 PUD



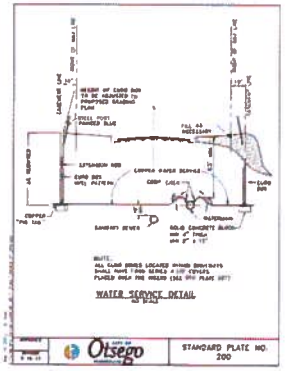
TYPICAL DRIVEWAY SECTIONS

Otsego — STANDARD PLATE NO. 109



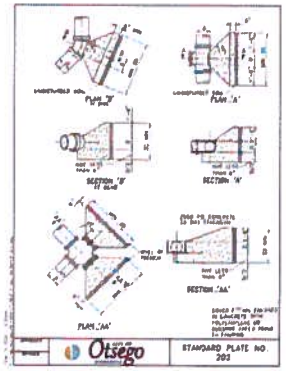
LOCAL RESIDENTIAL
URBAN STREET SECTION — 9 TON

Otsego — STANDARD PLATE NO. 112

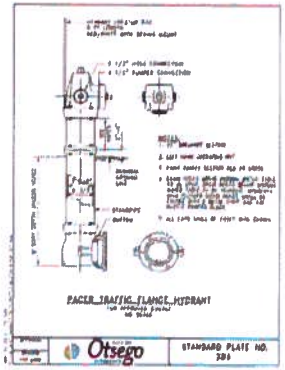


WATER SERVICE DETAIL

Otsego — STANDARD PLATE NO. 200

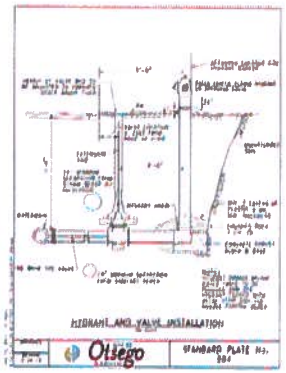


Otsego — STANDARD PLATE NO. 203



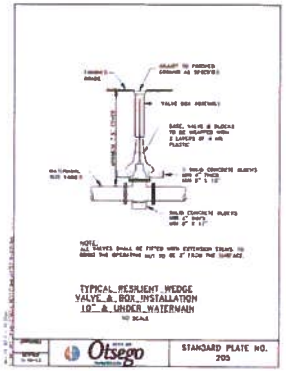
PACER TRAFFIC FLANGE HYDRANT

Otsego — STANDARD PLATE NO. 204



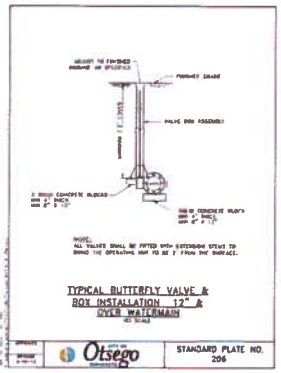
HYDRANT AND VALVE INSTALLATION

Otsego — STANDARD PLATE NO. 204



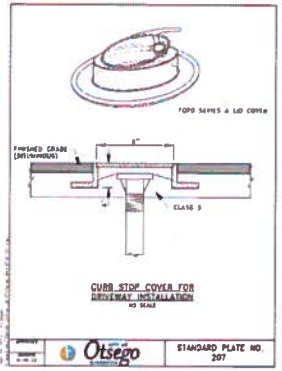
TYPICAL RESILIENT WEDGE
VALVE & BOX INSTALLATION
10" & UNDER WATERMAIN

Otsego — STANDARD PLATE NO. 205



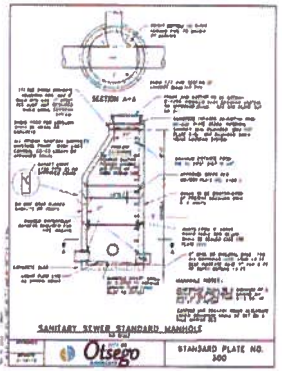
TYPICAL BUTTERFLY VALVE &
BOX INSTALLATION 12" &
OVER WATERMAIN

Otsego — STANDARD PLATE NO. 206



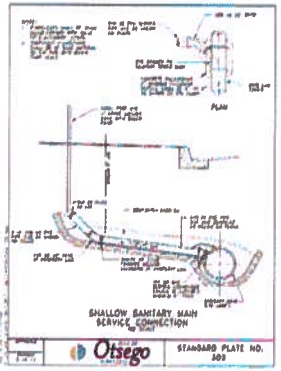
CURB STOP COVER FOR
DRIVEWAY INSTALLATION

Otsego — STANDARD PLATE NO. 207



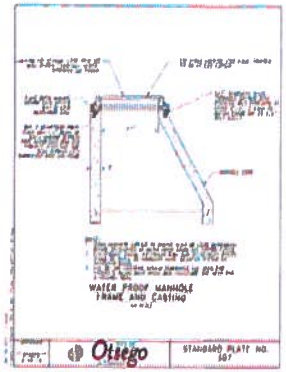
SANITARY SEWER STANDARD MANHOLES

Otsego — STANDARD PLATE NO. 300



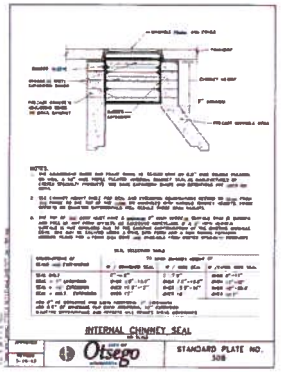
SHALLOW SANITARY MAIN
SERVICE CONNECTION

Otsego — STANDARD PLATE NO. 303



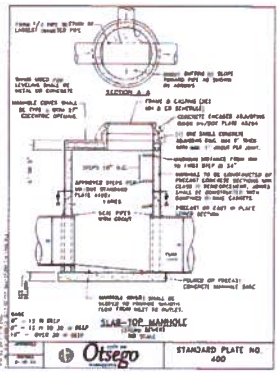
WATER PROOF MANHOLE
FRAME AND CASTING

Otsego — STANDARD PLATE NO. 307



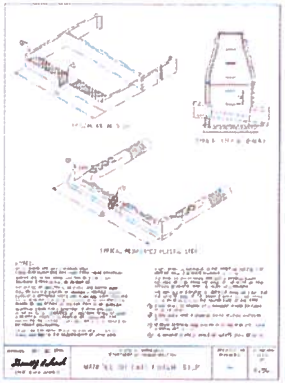
INTERNAL CHIMNEY SEAL

Otsego — STANDARD PLATE NO. 308

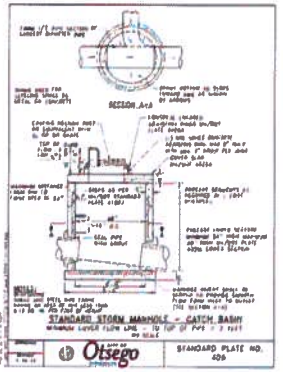


SLAB-TOP MANHOLE

Otsego — STANDARD PLATE NO. 400

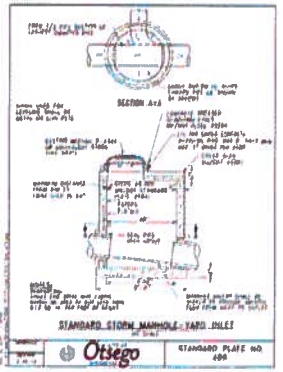


Otsego — STANDARD PLATE NO. 401



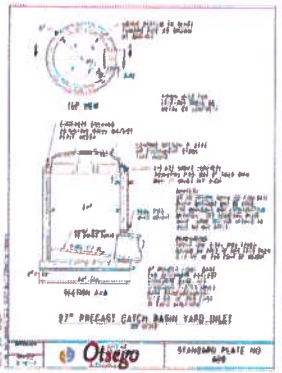
STANDARD STORM MANHOLE - CATCH BASIN

Otsego — STANDARD PLATE NO. 405



STANDARD STORM MANHOLE - YARD INLET

Otsego — STANDARD PLATE NO. 406



27" PRECAST CATCH BASIN YARD INLET

Otsego — STANDARD PLATE NO. 409

PIONEER engineering

CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS

2422 Enterprise Drive
Mendota Heights, MN 55120

(651) 681-1914
Fax: 681-9488
www.pioneereng.com

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.

Name: [illegible]
Reg. No. 19810 Date 01-13-15

Revisions
1 05-05-15 City Comments

Date 01-13-15
Designed RKLAW
Drawn RAW

OTSEGO STANDARD PLATES

MERIDIAN LAND COMPANY
3610 AMERICAN BLVD.
BLOOMINGTON, MINNESOTA 55431

WILDFLOWER MEADOW 3rd ADDITION
OTSEGO, MINNESOTA

7 of 8

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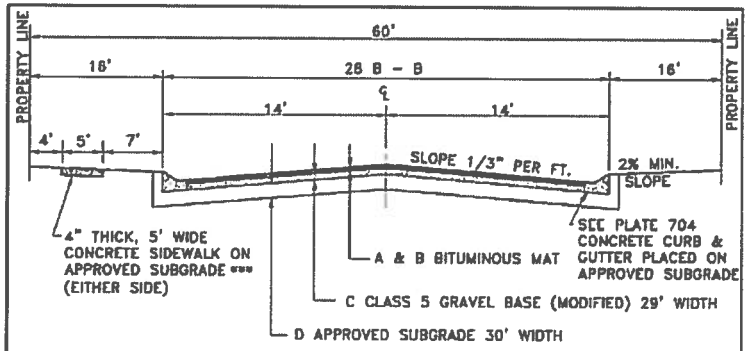


LEGEND					
AASHTP	R VALUE SIGMA N18	BITUMINOUS SURFACE		AGGREGATE BASE	
SUBGRADE SOIL CLASS		WEAR 2350 LVWE450309	NON-WEAR 2350 LVNW350308	CLASS 5 OR 6 3138 C*	CLASS 3 OR 4 3138 D*
A-3	(R-70 ≤ 90,000)	** 1 1/2"	** 2"	** 5"	-
A-4	(R-20 ≤ 90,000)	1 1/2"	2"	5"	-
A-6	(R-15 ≤ 90,000)	1 1/2"	2"	5"	12"
A-7	(R-10 ≤ 90,000)	1 1/2"	2"	6"	18"
	(R-5 ≤ 90,000)	1 1/2"	2"	8"	24"

* SUBJECT TO REVIEW BY QUALIFIED SOILS ENGINEER

** MINIMUM ALLOWABLE DESIGN THICKNESS

***R VALUE OF LESS THAN 20 REQUIRES 4" GRAVEL BASE BENEATH CONCRETE SIDEWALK

NOTES:
R VALUE IS A MEASURE OF EMBANKMENT SOIL RESISTANCE STRENGTH AS DETERMINED BY THE HVEEM STABILOMETER METHOD

SIGMA N18 VALUE IS THE CUMULATIVE DAMAGE EFFECT OF VEHICLES DURING THE DESIGN LIFE OF A FLEXIBLE PAVEMENT.

LOCAL RESIDENTIAL URBAN STREET SECTION – 9 TON

NO SCALE

APPROVED

REVISED 5-10-07

CITY OF Otsego MINNESOTA

STANDARD PLATE NO. 112

Mar 18, 2013 - 9:30am
K:\Local_Gov\Otsego\OTSEGO_REV'13\engr\STREETS\Str1-112.dwg

April 27, 2017

Tim Gladhill
Community Development Director
City of Ramsey
7550 Sunwood Drive NW
Ramsey, MN 55303

RE: Pedestrian Crossing Proposal, UPDATED

Dear Tim –

During our planning sessions with the City of Ramsey, Capstone Homes has been asked to take into account pedestrian safety along Alpine Drive. After exploring options to provide increased safety to pedestrians, we would like to propose installation of a solar powered pedestrian crossing where the Lake Itasca Park Trail will cross at Alpine Drive.

The Pedestrian Crossing proposed would include:

- Installation of 2 polls (on both sides of the street) that each have:
  - A pedestrian crossing sign
  - A double-sided flashing beacon
- The flashing beacons on each poll would be solar powered so electricity would not need to be supplied to the device.
- The flashing beacons on each poll would be push-button activated by the pedestrian.
- Painted stripes on the street between the polls.
- Installation of 2 additional polls at determined distance away from crossing that each have:
  - Directional flashing beacon
  - Pedestrian crossing sign
  - "Prepare to stop when flashing" sign

We feel that this application along Alpine Drive will provide more than adequate safety for the pedestrians in the neighborhood. We have included in this proposal an example of a pedestrian crossing on a fairly busy road in Maple Grove. The pedestrian crossing in Maple Grove on County Road 47 and Dallas Lane North allows local neighborhood residents to safely access their community park. It is a very similar application to the one we are proposing along Alpine Drive.

As we've mentioned previously, we are grateful to the City of Ramsey for its continued partnership with Capstone Homes to bring high quality housing to the residents for Ramsey and we thank you in advance for considering this pedestrian crossing proposal for Riverstone.

Regards,

Stephen Bona
Vice President of Land Management

Capstone Homes, Inc.
14015 Sunfish Lake Blvd NW, Suite 400
Ramsey, MN 55303
Office: (763) 427-3090 Fax: (763) 712 -9060

April 19, 2017

Tim Gladhill
Community Development Director
City of Ramsey
7550 Sunwood Drive NW
Ramsey, MN 55303

Dear Tim –

Upon review of our initial marketing plan for Riverstone, we would like to propose additional signage to help improve marketing exposure in an effort to draw traffic to the project.

We understand from previous conversations that the City is planning to install signs on Armstrong and Bunker Lake to promote the COR West and that Capstone will be included in that advertising, so we will not request an individual sign at that location.

There are three areas surrounding the property where we would like to have signs. We have attached a map with sign locations identified. The locations are labeled A-D as indicated below for identification purposes.

- Berm Signage along Highway 10 - Two (2) Flat signs
    - One (1) similar in size to the North Fork sign attached, on the southeast corner (A)
    - One (1) 8'x9' on the southwest corner (B)
- One 8'x9' sign at the entrance to Riverstone on Puma at Bunker Lake Boulevard (C)
- One double-sided 8'x9' directional sign on Alpine at Puma (D)

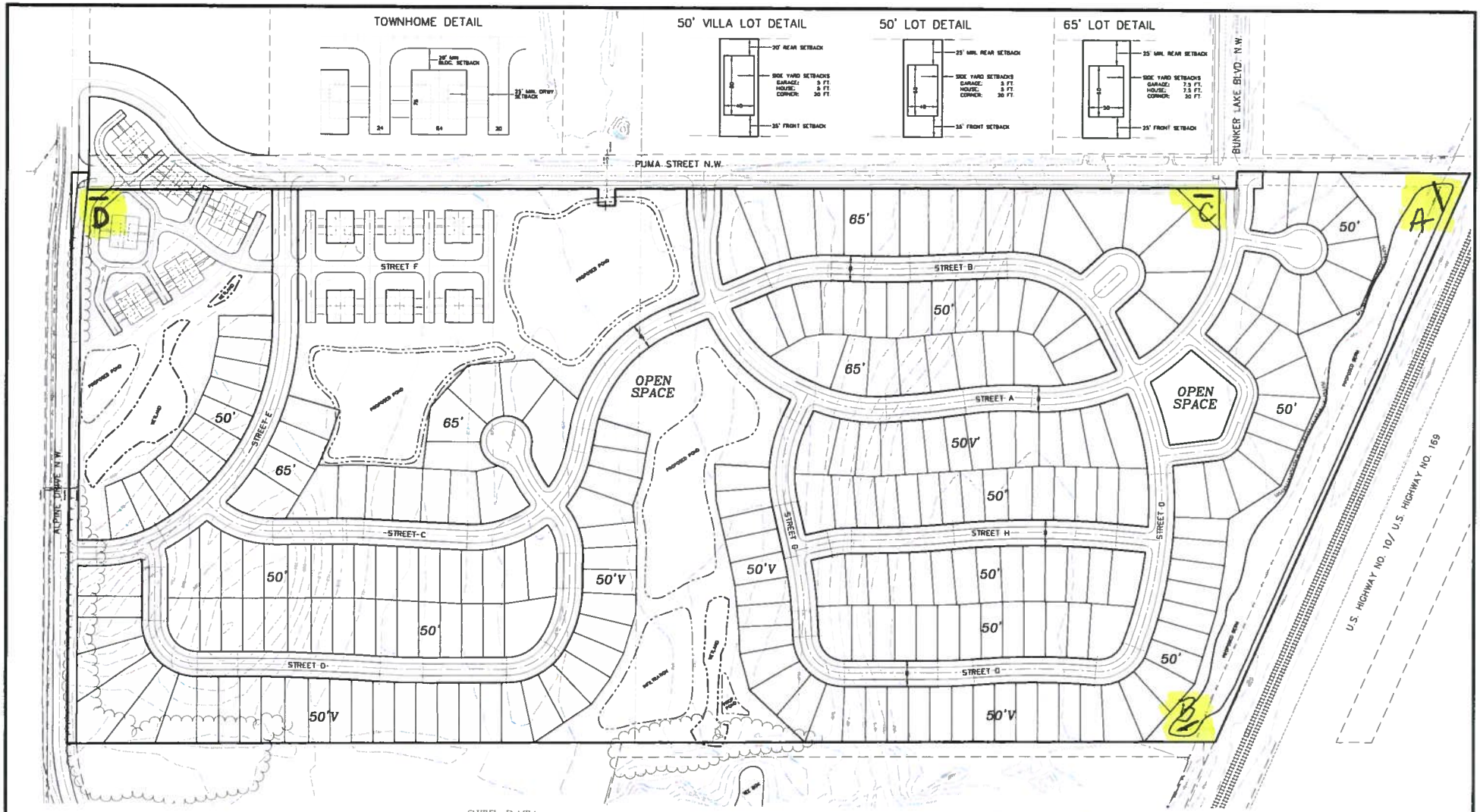
Signs in each of these locations will improve our exposure and allow potential residents to find us effectively. The daily traffic along Highway 10 will identify Riverstone to passersby. However, because they are travelling at posted speeds, multiple V signs along the berm are necessary to reach drivers from both directions. The berm signs will each have unique information. A sign on the north side of the property on Alpine at Puma will give directional information to our entrance. A sign at Bunker Lake Boulevard and Puma will let buyers know they have reached their destination.

Capstone Homes is grateful to have the opportunity to work with the City of Ramsey to bring high quality housing to the residents of Ramsey and we thank you in advance for considering this sign proposal for Riverstone.

Regards,

Stephen Bona
Vice President of Land Management

Capstone Homes, Inc.
14015 Sunfish Lake Blvd NW, Suite 400
Ramsey, MN 55303
Office: (763) 427-3090 Fax: (763) 712 -9060



SITE DATA

TOTAL AREA	±88.44 AC.	SETBACK DATA	
TOTAL NUMBER OF LOTS	293	50' S.F. - SIDE	5 FT.
50' S.F.	128	65' S.F. - SIDE	7.5 FT.
65' S.F.	41	50' VILLAS - SIDE	5 FT.
50' VILLAS	76	FRONT (ALL)	25 FT.
TOWNHOMES	48	REAR	20 FT. MIN.

SOUTH HALF DATA

TOTAL NUMBER OF LOTS	150	SETBACK DATA:	
50' S.F.	84	50' S.F. - SIDE	5 FT.
65' S.F.	25	65' S.F. - SIDE	7.5 FT.
50' VILLAS	41	50' VILLAS - SIDE	5 FT.
		FRONT (ALL)	25 FT.
		REAR	20 FT. MIN.

(IN FEET)

Carlson McCain
+ environmental
+ engineering
+ surveying
3890 Pheasant Ridge Drive NE, Suite 100
Blaine, MN 55449
Phone: (763) 489-7900
Fax: (763) 489-7959
www.carlsonmccain.com

DRAWN BY: CE
ISSUE DATE: 02/09/17
FILE NO: 333

Revisions:
1. Layout. 02/09/17
2. Layout. 02/21/17
3. Layout. 02/22/17

CAPSTONE HOMES
14015 Sunfish Lake Blvd. - Suite 400
Ramsey, MN 55303

PEARSON FARM
Ramsey, Minnesota

CONCEPT PLAN

1 of 1

STOP
C

Puma St
D

NORTHFORK
BANQUET FACILITIES
Available Seating to 275
The Links at Northfork
18 Hole Public Golf Course • Range
GolfTheLinks.com
1 MI. • TU N RIGHT ON ALPINE DRIVE

Sample Billboard

Sample
8x9

Riverstone

HOME PACKAGES
FROM THE $250s

EXIT AT
ARMSTRONG

CAPSTONE
HOMES
LIC. NO. BC637318

763-458-2498 | capstonehomes-mn.com

Pearson Farm Residential Development

Environmental Assessment Worksheet

Draft, March 10, 2017

Responsible Governmental Unit (RGU)

City of Ramsey
Community Development
7550 Sunwood Drive NW
Ramsey, Minnesota 55303
http://www.cityoframsey.com/

City of Ramsey
Community Development
7550 Sunwood Drive NW
Ramsey, Minnesota 55303
http://www.cityoframsey.com/

Memo

To: Minnesota Environmental Quality Board
Environmental Review Distribution List

From: Tim Gladhill, Community Development Director

Date: March X, 2017

Subject: Pearson Farm Residential Development EAW

As the Responsible Governmental Unit (RGU), the City of Lake Ramsey is issuing this Environmental Assessment Worksheet (EAW) for the Pearson Farm Residential Development. The public comment period on this EAW begins when the public notice is published in the Minnesota Environmental Quality Board (EQB) Monitor on March X, 2017. A press release or public notice has been submitted for publication in the Anoka County Union Herald. Public comments on this EAW will be accepted by the City of Ramsey until 4:30pm on _____, 2017.

Environmental Assessment Worksheet (EAW)

Pearson Farm Residential Development

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Environmental Assessment Worksheet (EAW)

Pearson Farm Residential Development

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at: http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project Title: **Pearson Farm Residential Development**

2. Proposer:	Eagle Cove Land Company	**RGU:**	City of Ramsey
Contact person:	Stephen Bona	Contact person:	Tim Gladhill
Title:	Development Manager	Title:	Community Development Dir.
Address:	14015 Sunfish Lake Blvd.	Address:	7550 Sunwood Drive NW
	Ramsey, MN 55303		Ramsey, MN 55303
Phone:	(763) 427-3090	Phone:	(763) 433-9826
Fax:	(763) 712-9060	Fax:	(763) 433-9848
Email	stephen@capstonehomes-mn.com	Email	tgladhill@cityoframsey.com

4. Reason for EAW Preparation

Required:
- ☐ EIS Scoping
- ☑ Mandatory EAW

Discretionary:
- ☐ Citizen petition
- ☐ RGU discretion
- ☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):
Minnesota Rules Part 4410.4300, Subp. 19.c (Residential development)

5. Project Location

County: Anoka County, Minnesota
City/Township: City of Ramsey
PLS Location (¼, ¼, Section, Township, Range): part of SW ¼ of Section 20 and part of NW ¼ of NW ¼ of Section 29, T32N, R25W
Watershed (81 major watershed scale): Mississippi River Twin Cities (20)
GPS Coordinates: 45.244662, -93.488471
Tax Parcel Number(s): 20-32-25-32-0001, 20-32-25-33-0001, 29-32-25-22-0004, 20-32-25-31-0003

At a minimum attach each of the following to the EAW:

- *County map showing the general location of the project;*
- *U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and*
- *Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.*

6. Project Description

a. Provide the brief project summary to be published in the EQB Monitor, (approximately 50 words).

The Pearson Farm Residential Development is proposed on 89.44 acres of land in southwestern Anoka County. The project will include up to 246 detached single-family homes and 98 attached townhome units. Site development will include installation of municipal sewer and water, mass grading, and stormwater features.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

The Pearson Farm Residential Development is proposed on 89.44 acres of land in the southwestern part of the City of Ramsey, Anoka County, Minnesota (**Figure 1**). The project area is dominated by cropland and has a history of agricultural use. The project is located in Sections 20 and 29, T32N, R25W (**Figure 2**). The project area is bordered on the north by Alpine Drive NW; on the east by Puma Street NW; on the south by the Burlington Northern Railroad and U.S. Highway 10/169, and the west by the Links at Northfork Golf Course.

The project will include up to 246 single-family homes and 98 townhome units, installation of municipal sewer and water, mass grading, and stormwater features. The project will convert approximately 85.48 acres of annually-tilled cropland and small areas of trees to streets, homes, lawns, landscaping, and stormwater features (**Figures 3 and 4**). The project will include about 20.60 acres of open space and stormwater features. The project area includes 1.02 acres of wetland distributed among three small basins. The two largest wetlands will be preserved and protected by buffers. The smallest wetland, which covers only 0.04 acre (1,738 square feet), will be eliminated by site grading necessary to create an emergency overflow for the largest wetland on the site.

The site includes sandy soils, 18 feet of topographic relief, and mostly gradual slopes. Graded ditch slopes along the south side of Alpine Drive NW range up to 20% (5:1), but the steepest natural slopes on the site are 12% and they cover only about a third acre. The site will be mass graded to install utilities, streets, residential building pads, and stormwater features. The southern edge of the site will include a raised berm to buffer the townhomes from the Burlington Northern railroad.

Approximately 4.4 acres in the northwest part of the site is located within 1,000 feet of Lake Itasca, which is Minnesota DNR (MN DNR) pubic water 2-110P.

Single-family lots will generally range from 50- to 65-feet wide and from 120 to 230 feet deep. Public streets are expected to be 28 feet wide and located within 60-foot rights-of-ways, except in two locations, where the right-of-way is proposed to narrow to 50 to allow for more open space. Trails will connect to neighborhood open spaces and Puma Street NW. Sidewalks will be constructed on one side of municipal streets. The development will operate under a homeowners' association.

Development of the project area will involve installation of public and private infrastructure, including streets, trails, municipal water and sanitary sewer, stormwater systems, electrical lines, and telephone lines. The project area will be served by City of Ramsey fire and police services and by the Anoka-Hennepin School District.

It is anticipated that construction of the development will start in summer 2017 and be phased over 5 to 10 years, depending on market conditions. Construction will generally be phased from the southeast to the northwest based on the extension of municipal water and sewer, which will be extended from the intersection of Puma Street NW and Bunker Lake Blvd NW, at the southeastern edge of the site. The number of phases will be determined by market demand and absorption. Infrastructure will be installed at the initiation of each construction phase. In most cases, streets, water main, and sanitary sewer will only be installed to serve the upcoming phase of construction. It may be necessary to initiate stormwater system construction at the start of each construction phase to properly treat stormwater and minimize potential effects of stormwater runoff.

c. *Project magnitude:*

Table 1. Project Magnitude

Characteristic	Number of Units
Total Project Acreage	89.44
Linear project length	NA
Number and type of residential units	246 (single-family detached)
Number and type of residential units	98 (multi-family attached)
Commercial building area (square feet)	0
Industrial building area (square feet)	0
Institutional building area (square feet)	0
Other uses – specify (acres)	NA
Structure height(s) (feet)	20-35

d. *Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.*

The purpose of the Pearson Farm Residential Development is to provide a residential development with a variety of housing types in proximity to transportation corridors and open spaces. The project will be carried out by a private entity.

e. Are future stages of this development including development on any other property planned or likely to happen? ☐ Yes ☑ No
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

Future stages are not planned or likely.

f. Is this project a subsequent stage of an earlier project? ☐ Yes ☑ No
If yes, briefly describe the past development, timeline and any past environmental review.

The project is not a subsequent stage of an earlier project.

7. Cover Types

Estimate the acreage of the site with each of the following cover types before and after development:

Table 2. Cover Types

Land Cover	Before (acres)[1]	After (acres)[2]
Cropland	85.48	0.00
Tree rows	1.82	0.96
Grassland	0.81	0.94
Wetlands	1.02	0.98
Lawn and landscaping	0.00	62.52
Impervious surface (developed)	0.31	14.54
Stormwater features	0.00	9.50
Totals	89.44	89.44

[1] Existing impervious surface includes part of Puma Street NW.

[2] After development wetland acreage assumes about 0.04 acre (1,738 square feet) of onsite wetlands will be impacted and will not require replacement.

Existing cover types are shown on **Figure 5**. Delineated wetlands are shown on **Figure 6**.

8. Permits and Approvals Required

List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.

Table 3. Permits and Approvals Required

Unit of Government	Type of Application	Status
City of Ramsey	EAW Decision	To be applied for
City of Ramsey	Comprehensive Plan Amendment	To be applied for
City of Ramsey	Rezoning	To be applied for
City of Ramsey	Concept Plan Approval	Submitted
City of Ramsey	Plat Approval	To be applied for
City of Ramsey	PUD Approval	To be applied for
City of Ramsey	Grading Permit	To be applied for
City of Ramsey	Building Permit	To be applied for
City of Ramsey	Stormwater Management and Erosion Control Approval	To be applied for
City of Ramsey	Municipal Water Connection Permit	To be applied for
City of Ramsey	Sanitary Sewer Connection Permit	To be applied for
Lower Rum River WMO	WCA Wetland Boundary/Type Determination	Approved
Lower Rum River WMO	WCA De minimis Exemption	To be applied for
Lower Rum River WMO	Watershed Permit	To be applied for
Metropolitan Council	Comprehensive Plan Amendment	Submitted
Minnesota Department of Health	Water Main Extension Approval	To be applied for
Minnesota Department of Natural Resources	Water Appropriation Permit	To be applied for
Minnesota Pollution Control Agency	NPDES/SDS General Permit	To be applied for
Minnesota Pollution Control Agency	Sanitary Sewer Extension Approval	To be applied for
U. S. Army Corps of Engineers	Wetland Delineation Concurrence / Jurisdictional Determination	Submitted
U. S. Army Corps of Engineers	Confirmation of RGP-003-MN Coverage	To be applied for

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

9. Land Use

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

The project area has been in agricultural use since at least the 1930s. Crops grown on the site during 2016 include corn, soybeans, wheat and sorghum. Itasca Park, which is owned by the City of Ramsey, is located north of the project area, covers about 61 acres, and adjoins the southeast shore of Lake Itasca. Other surrounding land uses include residential to the northeast, agricultural cropland and one isolated residence to the east; the Burlington Northern Railroad, U.S. Highway 10/169, cropland, and commercial development to the south; and the Links at Northfork golf course and open grassland to the west (**Figure 7**).

Farmland ratings for soils mapped in the project area are listed in **Table 4** under **Item 10b** of this EAW. Of the five soil map units present in the project area, none are considered prime farmland, prime farmland if drained, or farmland of statewide importance.

ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

The City of Ramsey 2030 Comprehensive Plan shows the planned land use of the site as Low Density Residential (LDR, average of 4 lots/net acre), Medium Density Residential (MDR, average of 7 units/acre), High Density Residential (HDR, average of 15 units/acre), and Commercial. The City of Ramsey Master Park and Trail Plan shows 2030 Park System Plan shows proposed trails running east-west through northern and southern parts of the site. Mapping prepared by the Minnesota DNR shows Metro Conservation Corridors and Regionally Significant Ecological Areas (RSEA) in the vicinity of the project. These general planning areas for conservation and ecological management area centered on Itasca Lake and the Mississippi River.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Zoning Overview

The City of Ramsey Zoning Map mirrors the City of Ramsey 2030 Comprehensive Plan for the project area. It shows the project area zoned for R-1 (Low-Density Residential [MUSA]), R-2 (Medium-Density Residential), R-3 (High-Density Residential), and B-2 (Business District). The Mississippi River Corridor Critical Area, which is overseen by the Minnesota DNR, and the Mississippi National River & Recreation Area, which is overseen by the National Park Service, is located southwest of the project area, across U.S. Highway 10/169. The project area does not fall in or near a wild and scenic river or an agricultural preserve. Shoreland overlay districts and floodplains are discussed below.

Shorelands

The shoreland overlay district of Lake Itasca (DNR public water 2-110P) extends over approximately 193,605 square feet (4.4 acres) in the northwestern part of the site (**Figure 8**). Lake Itasca has a Natural Environment shoreland classification and is located 600 to 1,000 feet north of the site. Lake Itasca is a shallow lake that covers about 130 acres. It has an Ordinary High Water (OHW) level of 871.4 feet (NGVD 29 Datum).

Development in shorelands is regulated under the City of Ramsey Shoreland Management Overlay District Ordinance (Section 117-221 to 117-229) and Minnesota Rules Part 6120. The Minnesota state legislature has delegated authority for regulation of development in shorelands of public waters to local government units as a means to preserve and enhance the quality of surface waters, conserve the economic and natural environmental values of shorelands, and provide for the wise use of waters and related land resources.

Shoreland is defined as land located within 1,000 feet from the OHW of a lake. However, the definition in the City of Ramsey City code and at MN Rules 6120.2500, Subp. 15 states that the "limits of shorelands may be reduced whenever the waters involved are bounded by topographic divides which extend landward from the waters for lesser distances and when approved by the [DNR] commissioner."

The shoreland on the project area is eligible to be reduced because Alpine Drive NW functions as a drainage divide. The project area will not drain north or affect Lake Itasca. The project area drains east through a culvert under Puma Street NW. Although a culvert exists under Alpine Drive NW at the north end of the site, the control elevation in the culvert is 870.4 feet. This control elevation is higher than the elevation of nearby delineated wetland boundaries and 0.7 feet higher than the wetland's 1% frequency flood elevation, which is 869.7 feet. Given these elevations, the proposed development is not predicted to affect Lake Itasca.

Floodplains

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map Number 27003C0280E, dated December 16, 2015, shows an unnumbered Zone A 1% frequency floodplain of Lake Itasca located north of site and north of Alpine Drive NW (**Figure 8**). Flood Zone A includes special flood hazard areas subject to inundation by the 1% annual chance of flood. The Lake Itasca floodplain is outside the project area. The floodplain of the Mississippi River is located about 1,350 feet southwest of the project area, and at an elevation about 15 feet lower than the project area.

An analysis of Lake Itasca water levels under existing and future land uses was conducted for a previous development. That analysis showed that Lake Itasca does not outlet during 100-year snowmelt and rainfall events, but modeled water levels came close to reaching the outlet on the south side of the lake, so the City of Ramsey proposed to install an outlet for the lake. The City assumed that any outlet elevation would be above the OHW of 871.4 feet and the approximate 100-year flood elevation of 871.0 feet.

The proposed project will not affect the floodplain of Lake Itasca or the floodplain of the Mississippi River. The project will avoid floodplain impacts and comply with Lower Rum River Watershed Management Organization (LRRWMO) Stormwater Standards that require lowest floor elevations to be at least 3 feet above the highest anticipated groundwater table and 2 feet above the 100-year flood elevation, or 1 foot above the emergency overflow, whichever is greater.

b. *Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.*

The project is compatible with surrounding land uses, which include parkland, grassland, golf course, cropland, and residential. The City of Ramsey 2030 Comprehensive Plan guides the project area for Low Density Residential (LDR, average of 4 lots/net acre), Medium Density Residential (MDR, average of 7 units/acre), High Density Residential (HDR, average of 15 units/acre), and Commercial. The project area is currently zoned R-1 (Low-Density Residential [MUSA]), R-2 (Medium-Density Residential), R-3 (High-Density Residential), and B-2 (Business District). Although the proposed residential development is only partially compatible with the existing Comprehensive Plan and zoning, the project is designed to be compatible with nearby land uses, as discussed under **Item 9c** below.

c. *Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.*

The project will require a Comprehensive Plan Amendment to guide the site for LDR-Low Density Residential, which is intended for an average density of 4 units/acre. The proposed project has a gross density of 3.27 to 3.85 units/acre and a net density of 3.31 to 3.89 units/acre. The project area will be rezoned from a mix of uses to PUD-Planned Unit Development. The proposed project is compatible with the proposed land use, zoning, and surrounding land uses. Land use conflicts are not anticipated.

10. Geology, Soils and Topography / Land Forms

a. *Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.*

The Geologic Atlas of Anoka County, Minnesota (University of Minnesota Geological Survey 2011 and Minnesota DNR 2016) indicates the surficial geology of the area is characterized by terrace sand and gravelly sand that is located above the floodplain. The bedrock geology of the site falls in the Tunnel City Group and is dominantly quartz sandstone.

The estimated depth to bedrock in the project area, based on the Geologic Atlas, generally ranges between 100 and 250 feet. As indicated under **Item 11.a.ii**, the depth to bedrock in three nearby domestic wells ranged between 107 and 116 feet, and the depth to static groundwater in five nearby wells ranged between 28 to 41 feet.

Sinkholes and karst lands are not known to occur in western Anoka County where the project is located. Minnesota Karst Lands and Sinkhole Mapping prepared by Calvin Alexander and others (2006) does not shows karst lands or sinkholes in or near the project area.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

The Web Soil Survey indicates the project area includes five soil mapping units that consist of mostly loamy sands (**Table 4, Figure 9**).

Table 4. Soil Classifications

Symbol	Soil Name	% of Area	% Hydric	Hydric Category	Farmland Category
D20A	Isan-Isan, frequently ponded, complex, 0-2% slopes	8.1	95	Predominantly hydric	Not prime farmland
D67A	Hubbard loamy sand, Mississippi River Valley, 0-2% slopes	55.1	1	Predominantly non-hydric	Not prime farmland
D67B	Hubbard loamy sand, Mississippi River Valley, 2-6% slopes	5.7	3	Predominantly non-hydric	Not prime farmland
D67C	Hubbard loamy sand, Mississippi River Valley, 6-12% slopes	13.4	0	Non-hydric	Not prime farmland
Dp	Duelm loamy sand, 0-2% slopes	17.7	7	Predominantly non-hydric	Not prime farmland

These soils have varying levels of limitations for dwelling units and local streets due to factors such as depth to saturated zone, frost action, ponding, and slope. Depth to saturation limitations are often associated with wetlands, which are addressed under **Item 11.a.i** below. Soils in the project area are generally considered slightly to moderately susceptible to the sheet and rill erosion by water, as indicated by slopes and K factors that range between 0.0 and 0.50.

Grading operations for residential development construction are expected to affect about 87 acres and involve movement of about 475,000 cubic yards of soil to construct streets, residential building pads, and stormwater features. Grading is expected to avoid disturbance of wetlands and trees that will be preserved, which cover about two acres within the project area.

Elevations in the project area range from 887 feet above mean sea level at the highest point in the northeast part of the project to 868 feet at the lowest onsite wetland. Review of two-foot contour mapping indicates the site has less than an acre of slopes that equal or exceed 12% and the site does not include any bluffs. Soils mapping does not classify any parts of site as having slopes of 12% or more (**Table 4, Figure 9**).

Development of the project area will disturb more than one acre of land and therefore will require application for coverage under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Permit administered by the Minnesota Pollution Control Agency (MPCA) prior to initiation of earthwork. In compliance with the General NPDES Permit for construction activities, the project proponent and construction contractor will need to implement Best Management Practices (BMPs) to reduce erosion and sedimentation and stabilize exposed soils after construction. Erosion and sedimentation control BMPs related to stormwater runoff are discussed in greater detail within **Item 11.b.ii**.

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils *and topography/land forms and potential effects described in EAW Item 10.*

11. Water Resources

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

The project area includes three wetlands that were delineated by Kjolhaug Environmental Services on October 6, 2016 (**Figure 6, Table 5)**. Of the three wetlands, only Wetland 1 corresponds to a wetland location shown on National Wetlands Inventory (NWI) mapping (**Figure 10**). All three wetlands correspond to locations of predominantly hydric Isan soils (**Figure 9, Table 4**). There are no listed or mapped trout streams/lakes, wildlife lakes, migratory waterfowl feeding/resting lakes, or outstanding resource value waters in or near the project area.

Delineated wetland boundaries have been approved by the Lower Rum River Watershed Management Organization (LRRWMO) and wetland boundary approval from the U.S. Army Corps of Engineers (USACE) is pending. The LRRWMO is the local government unit administering the Minnesota Wetland Conservation Action (WCA). **Appendix A** includes the LRRWMO notice of decision approving the wetland boundary and type determinations. The site does not include any MN DNR public waters, public waters wetlands, or public watercourses.

Table 5. Wetlands on the Pearson Farm Residential Development site

Map ID	Acres Onsite	Classification			Dominant Vegetation
		Circ. 39	Cowardin	Eggers and Reed	
1	0.34	1	PEMAf	Seasonally flooded basin	Soybeans, reed canary grass
2	0.64	1	PEMAf	Seasonally flooded basin	Stunted corn, green bulrush
3	0.04	1	PEMAf	Seasonally flooded basin	Stunted corn
Total	1.02				

Impaired waters listed by the Minnesota Pollution Control Agency (MPCA) and located within 1 mile of the site include the Mississippi River (07010206-567), which is impaired for mercury and PCBs in fish tissue between the Crow River and the northwestern limits of the City of Anoka.

ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

Depth to groundwater varies across the project area. Depth to surficial groundwater may be as little as one foot in the wetlands on the site during the spring. Depth to static groundwater levels based on domestic water wells located near the project area ranges from 28 to 41 feet (**Table 6, Appendix B**). Geotechnical borings completed by Northern Technologies on December 30, 2016, indicate the depth to groundwater ranged from about 4.5 to 18.5 feet below existing grade. This correlates to an approximate elevation range of 858.5 to 874.5 feet. Groundwater was at elevations of 858.5 to 860.5 feet in most of the borings where groundwater was encountered. The project area does not fall within a MDH wellhead protection area. Although a number of groundwater wells are located near the site, review of the Minnesota County Well Index did not identify any wells located onsite.

Table 6. Domestic Water Wells located near the Pearson Farm site

Well No.	Surface Elevation (feet)	Depth (feet)	Cased Depth (feet)	Depth to		Location (Direction from Site)	Aquifer
				Static Water Level (feet)	Bedrock (feet)		
541778	883	66	63	28	--	Southwest	Tunnel City-Wonewoc
227345	883	75	71	30	--	Southwest	Tunnel City-Wonewoc
430232	883	338	294	30	116	East	Tunnel City-Wonewoc
783804	885	155	113	28	107	Northeast	Tunnel City-Wonewoc
227037	886	156	141	41	110	Northeast	Tunnel City-Wonewoc

The project will be served by the City of Ramsey municipal water supply. The City has eight water supply wells that are all located at least one mile east of the project area.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

The project is expected to produce normal domestic wastewater that is typical of residential developments. The project will not include industrial wastewater production or onsite wastewater treatment.

Sanitary wastewater production for the project was estimated using methods described in the Sewer Availability Charge (SAC) Procedure Manual (Metropolitan Council 2017). Metropolitan Council has established 274 gallons per day (GPD) as the average daily wastewater production from a typical residential unit. Based on this residential equivalent, the project is expected to generate a maximum of 94,256 gallons of wastewater per day. An 18-inch sanitary sewer line will be extended from Bunker Lake Boulevard and Puma Street to serve the development area. The project will require installation of a sanitary sewer lift station along Puma Street to serve roughly the northern two-thirds of the site. The southern third of the site will be served by a gravity sanitary sewer main that will drain to Puma Street.

Domestic wastewater from the project will be routed through the City of Ramsey sanitary sewer system and ultimately to the Metropolitan Wastewater Treatment Plant (MWWTP) located on the Mississippi River near Pig's Eye Lake in St. Paul. With the capacity to treat 251 million gallons of wastewater per day (MGD), this is the largest wastewater treatment facility in Minnesota. The MWWTP is owned and operated by Metropolitan Council. The Metropolitan Council's 2040 Water Resources Policy Plan includes a specific plan to serve the region's projected growth through 2040 and a general plan to serve the region's growth far beyond 2040. The City of Ramsey and Metropolitan Council have planned for increased capacity to convey and treat sanitary wastewater. The proposed project is not expected to require expansion of wastewater treatment infrastructure or raise wastewater treatment capacity concerns.

2) *If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.*

Wastewater will not be discharged to subsurface sewage treatment systems.

3) *If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.*

Wastewater will be treated in the MWWTP described above and then discharged to the Mississippi River. The MWWTP is an advanced secondary wastewater treatment plant located on the east bank of the Mississippi River, approximately three miles south of downtown St. Paul. The plant began treating wastewater and incinerating sewage sludges in 1938. Treatment capability is maintained during times of flood by a levee and floodwall that protect the plant treatment area.

The plant uses an activated sludge process to remove phosphorus and ammonia nitrogen from wastewater prior to discharge to the Mississippi River. Sludge is processed by thickening, centrifugal dewatering, and fluidbed incineration with energy recovery (steam and electricity). These processing facilities were completed in 2004 as part of a major rehabilitation and upgrade program at the plant. At that time, six outdated multiple hearth incinerators were replaced with three fluid bed sludge incinerators, state-of-the-art air pollution control systems and an alkaline stabilization system that produces biosolids for agricultural utilization. Ash from incineration is disposed of in a landfill.

ii. *Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major*

downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

Pre-Construction Site Runoff

Soils in the project area are quite sandy and most precipitation likely infiltrates into the soils, resulting in little surface runoff. Surface runoff from the project area under existing conditions likely contains some sediment pesticides, fertilizers, and other nutrients. Existing runoff drains overland from the project area to local wetlands. Nearly the entire project area drains east through a culvert under Puma Street NW. From the culvert, runoff drains through an intermittent drainageway and wetlands to a point about 1.4 miles downstream from the project area, where the drainageway ends. Runoff appears to infiltrate into the ground at that location. Although the region contains highly permeable soils, some surface runoff may reach the Mississippi River during extreme runoff events.

Post-Construction Site Runoff

Compliance with LRRWMO, City of Ramsey, and NPDES requirements will minimize and mitigate potential adverse effects on receiving waters. Project development will change the land use from agricultural to residential use. This land use change is expected to have mixed effects on runoff water volume and quality. Residential development may reduce concentrations of agricultural chemicals, but may increase the loading of suspended solids during construction. Other typical components of impervious surface runoff, such as hydrocarbons and heavy metals, may also increase. Post-development runoff water quality will be typical of suburban developments, and will likely be slightly degraded by pollutants carried in runoff from streets, roofs, and driveways.

Residential project construction will add about 14.5 acres of impervious surface, consisting of streets, homes, and driveways. The increased impervious surface area is expected to increase in urban runoff pollutants and the volume of runoff during significant storm events. However, it is anticipated that stormwater rate and volume controls that comply with City of Ramsey and LRRWMO requirements will limit increases in runoff volume and associated pollutant transport to large storm events that occur infrequently. The creation of stormwater ponds and infiltration basins is expected to mitigate potential adverse effects from the increase in impervious surface.

The project will include approximately 6.5 acres of stormwater ponds and infiltration areas in compliance City of Ramsey and LRRWMO requirements (**Figures 3, 4 and 8**). The proposed design also includes excavation of a deep 3-acre pond. The deep pond will connect to the storm sewer system and discharge to the east under Puma Street NW, but it will not be designed as a stormwater pond and is not required to meet stormwater treatment requirements. However, the deep pond will serve some infiltration functions.

Section 117-392 of the of Ramsey City Code requires permanent stormwater pollution controls, including: (1) infiltrating or retaining the first inch of precipitation over the impervious surface of the site; (2) retaining the post-construction runoff volume onsite for the 95th percentile storm; and (3) no increase in the post-construction rate, volume, and duration of runoff over existing conditions for the

one- and two-year storms. Section 117-394 of the City Code protects natural wetlands from the discharge of stormwater without appropriate treatment for water quality and runoff quantity control. The minimum treatment required for discharge to wetlands is to meet NURP Guidelines, which include a dead storage treatment pond volume at least equal to the runoff from a 2.5 inch storm over the entire contributing area assuming full development, an average pool depth of more than 3, and a maximum depth of 10 feet. LRRWMO Stormwater Standards require stormwater basins designed to store the volume of the 100-year storm; stormwater treatment to NURP standards prior to discharge to a lake, stream, wetland, or offsite; and infiltration of a runoff volume equal to 1 inch from all impervious surfaces onsite.

Potential adverse effects of runoff volume and quality will be mitigated by the construction of stormwater basins designed to manage peak runoff rates, runoff volume, and water quality. Impervious surface runoff from storm events will be retained in four stormwater ponds and one or two infiltration basins until it is discharged at or below existing peak runoff rates. Wetlands on the site provide potential for additional runoff storage and infiltration. Treated stormwater runoff from the site will be routed east under Puma Street NW into an existing intermittent drainageway, and eventually into the City's storm sewer system that ultimately reaches the Mississippi River. Proposed discharge flow rates will be equal to or less than the existing flow rates.

Stormwater ponds designed to NURP criteria are considered effective in removing sediment, pollutants, and nutrients, as discussed in Protecting Water Quality in Urban Areas: Best Management Practices for Dealing with Storm Water Runoff from Urban, Suburban and Developing Areas of Minnesota (MPCA 2000). The NURP research projects conducted by the U.S. EPA concluded that 90% removal of total suspended solids was an attainable goal, and that significant removal of other pollutants, such as phosphorus, was also achievable. Although nutrient removal efficiency varies with site conditions, well-designed wet ponds and constructed wetland treatment systems are effective in removing sediment and associated pollutants, such as trace metals, nutrients and hydrocarbons. Stormwater basins also remove or treat oxygen-demanding substances, bacteria and dissolved nutrients.

Other BMPs such as vegetative buffer strips are expected to filter sediment and nutrients from runoff before it reaches wetlands and surface waters, mitigating potential effects on water quality. LRRWMO Wetland Protection Standards require establishment of native vegetation within a 16.5-foot-wide buffer strip around wetland boundaries. Temporary sediment basins will be necessary to comply with the MPCA General Stormwater Permit for Construction Activity and to manage stormwater discharge during construction.

Stormwater and Erosion Control BMPs

Because project construction will involve disturbance of more than one acre of land, the project proponent will be required to apply to the MPCA for coverage under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Permit prior to initiating earthwork on the site. BMPs will be employed during construction to reduce erosion and sediment loading of stormwater runoff. Inspection of BMPs will be required after each rainfall exceeding 0.5 inches in 24 hours, and on a routine basis every 7 days. The NPDES permit will also

require perimeter sediment control maintenance and sediment removal. BMPs to be implemented during construction include:

1. Construction of temporary sediment basins in the locations proposed for stormwater ponding, and development of these basins for permanent use following construction.
2. Installation of silt fence and other perimeter erosion controls prior to initiation of earthwork and maintenance of these controls until viable turf or ground cover is established on exposed areas.
3. Periodic street cleaning and installation of a rock construction entrance to reduce tracking of dirt onto public streets.
4. Stabilization of exposed soils within the time limits specified in the General NPDES permit.
5. Energy dissipation, such as riprap, installed at storm sewer outfalls.
6. Use of cover crops, native seed mixes, sod, and landscaping to stabilize exposed surface soils after final grading.

Erosion control plans will be reviewed and accepted by the City of Ramsey and the LRRWMO prior to project construction. Potential adverse effects from construction-related sediment and erosion on water quality will be minimized by implementation of the above BMPs during and after construction.

iii. Water Appropriation. Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

Surface/Groundwater Appropriations and Dewatering

Project construction is expected to require dewatering and groundwater appropriation to facilitate installation of sanitary sewer and excavation of a deep 3-acre pond, but the project will not involve installation of new water wells. Project development will require a MN DNR water appropriation permit if dewatering required for installation of utilities exceeds 10,000 gallons/day or 1 million gallons/year. If construction dewatering does not exceed 50 million gallons in total and a duration of one year from the start of pumping, the project proponent will be eligible for coverage under the amended MN DNR General Permit 1997-0005 for temporary water appropriations. Although the extent and duration of construction dewatering that may be necessary is currently unknown, construction dewatering is expected to be unnecessary or temporary. Groundwater appropriated for construction dewatering will be discharged to temporary sediment basins within the project area. It is not anticipated that construction dewatering will be extensive or continue long enough to affect nearby domestic water wells.

Well Abandonment

The project area does not include any existing wells, as indicated from review of the site, the project survey, and the Minnesota County Well Index. The project is not expected to involve well abandonment.

Connection to a Public Water Supply

The project will be connected to the City of Ramsey municipal water supply. The City of Ramsey draws its public water supply from the Tunnel City-Wonewoc aquifer. The City currently maintains eight municipal wells that are all located at least one mile east of the project area (**Table 7**). These existing wells have a combined permitted capacity to pump 6,800 million gallons of water per year (MGY).

Table 7. City of Ramsey Municipal Water Appropriation Permits

Permit No.	Well No.	Permitted Volume (MGY)	Max Use 2010-2015 (MGY)
1985-6005	161441	850	141.611
1985-6005	416183	850	5.462
1985-6005	580303	850	164.864
1985-6005	580313	850	194.032
1985-6005	593672	850	79.897
1985-6005	706840	850	138.082
1985-6005	743832	850	118.526
1985-6005	743833	850	117.421
Total		6,800	959.895

During 2010-2015, these wells used a maximum of 960 million gallons per year. Based on past use and permitted capacity, the existing municipal wells have sufficient surplus capacity to serve the proposed project. A 16-inch trunk water main will be extended from Bunker Lake Boulevard and Puma Street to serve the development area. Water flow, pressure, and storage will be adequate to serve the development area. As indicated under **Item 11.a.ii**, the project is not located in or near a wellhead protection area.

iv. Surface Waters

a) Wetlands. Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.

Background

Wetlands in and near the project area are generally regulated by the Lower Rum River Watershed Management Organization (LRRWMO), which administers the Minnesota Wetland Conservation Act (WCA) in the project area; the U.S. Army Corps of Engineers (USACE), which administers Section 404 of the Federal Clean Water Act (CWA). The project area includes three delineated wetlands that are identified on **Figure 6**.

Physical Effects and Alterations

Construction of an emergency overflow from Wetland 2 is expected to result in physical effects that will eliminate the existing wetland hydrology of Wetland 3. Wetland 3 is a 1,738-square-foot Type 1 seasonally-flooded, farmed wetland that was dominated by stunted corn at the time of the wetland delineation. The proposed 1,738 square feet of wetland impact falls below the 2,500-square-foot de minimis exemption threshold, which applies to wetlands in a 50 to 80 percent area (e.g., Anoka County) under the Minnesota Wetland Conservation Act "except for type 3, 4, 5, or 8 wetland or white cedar and tamarack wetland, outside of the shoreland wetland protection zone and inside the 11-county metropolitan area." (MN Rules 8420.0420, Subp. 8(2)(b). The proposed wetland impact also falls below the 5,000-square-foot wetland sequencing/compensatory mitigation threshold administered by the U.S. Army Corps of Engineers under RGP-003-MN, General Condition 1.

The other wetlands on the site will be avoided. LRRWMO Wetland Protection Standards will require establishment of native vegetation within a 16.5-foot-wide buffer strip around these wetlands.

b) Other Surface Waters. Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

The proposed project is not expected to affect other surface water features such as lakes, streams, ponds, intermittent channels, or county/judicial ditches. The Mississippi River is located approximately 1,400 feet southwest of the project and will not be affected by the project. The site does not include other surface waters and the proposed project will not affect any MN DNR pubic waters. Although the National Hydrography Dataset shows a flowline running southeast through Wetlands 2 and 3, across the northeastern part of the site, this flowline was not observed in the field during the wetland delineation. Field investigation of this area found that it was dominated by corn with areas of green bulrush and intermittent inundation. The area did not include a drainage channel.

12. Contamination / Hazardous Materials / Wastes

a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed

landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

The project area has been used as cropland since at least the 1930s. The site is not known to include environmental hazards and the agricultural land use history suggests a low potential for environmental contamination. The project area is not known to include previous building sites, disposal areas, storage tanks, pipelines, or utility corridors. Carlson McCain completed a Phase I Environmental Site Assessment for the property in November, 2016, and did not identify recognized environmental conditions their assessment.

A review of the MPCA's "What's in My Neighborhood" (WIMN) database identified one Leak Site in close proximity to the proposed project. Leak Site 6487 is located about 400 feet southwest of the project, across the Burlington Northern Railroad and Highway 10/169. The leak involved the release of an unknown quantity of diesel fuel on the David Nathe Farm. The leak was discovered on June 28, 1993, reported to the MPCA on June 30, 1993. The leak site closed by the MPCA on April 24, 1996. Available information suggests the site was properly investigated and that the site does not affect the project area.

b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

Project construction activities will generate wastes typical of residential development operations. Most solid waste is expected to include organics, paper, other waste, and plastic (**Table 8**).

Table 8. Estimated Solid Waste Composition

Waste Type	Estimated %
Organic	31.0
Paper	24.5
Other	18.3
Plastic	17.9
Hazardous	0.4
Metal	4.5
Glass	2.2
Electronics	1.2
Total	100.0

Source: 2013 Statewide Waste Characterization (Burns & McDonnell for MPCA 2013).

Neither the construction process nor the proposed residential development is expected to generate substantial solid or hazardous wastes, solid animal manure, sludge, or ash. The construction

contractor will be required to dispose of wastes generated at the site during construction using approved methods and facilities. The contractor will minimize and mitigate adverse effects from solid waste generation and storage by recycling construction waste to the degree practicable. Brush and tree waste generated by construction will likely be chipped or otherwise recycled rather than burned on site.

Residents and in the new development will contract individually with waste haulers for solid waste collection and recycling services under the City's open trash and recycling collection system, which uses eight licensed waste haulers. Curbside recycling, including paper, plastics, glass, and metals is available to City of Ramsey residents through their solid waste collector. Participation in the recycling program by future residents of the project area is expected to reduce the volume of solid waste generated by the project.

Solid waste generated in the City of Ramsey that is not recycled or hazardous is delivered to the Elk River Resource Recovery Station. The Elk River Energy Recovery Station convert refuse derived fuel (RDF) from mixed municipal waste into energy. Using waste to generate electricity provides an efficient disposal method for garbage and prevents garbage from going to landfills.

c. *Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.*

Development of the project area is not expected to generate or require storage of substantial amounts of hazardous wastes or materials. Future residential development is expected to result in the storage or generation of small amounts of typical household cleaners, paints, lubricants, and small engine fuels over time. Petroleum storage tanks and commercial petroleum-based businesses are not proposed in the project area.

d. *Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.*

Normal construction and household hazardous wastes are anticipated. Toxic or hazardous materials such as fuel for construction equipment and materials used in the construction of homes (paint, adhesives, stains, contaminated rags, acids, bases, herbicides, and pesticides) will likely be used during site preparation and home construction. Spills of these materials is not likely to occur, but a substantial spill could notification of the Minnesota Duty Officer. Contractors and builders will be responsible for proper management and disposal of wastes generated during construction. Homeowners will be responsible for management and disposal of hazardous waste thereafter. Homeowners will be able to dispose of household hazardous waste at the Anoka County Household Hazardous Waste Facility.

13. Fish, Wildlife, Plant Communities and Sensitive Ecological Resources (Rare Features)

a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

Fish and wildlife resources on and near the site are related to the composition, quality, size, and connectivity of plant communities such as cultivated cropland, wetlands, woodlands, and grasslands. Vegetative cover types on the project area were mapped based on aerial photography, the wetland delineation, and field reviews (**Figure 5**). The project area is roughly 96% cropland, 2% tree rows, 1% wetland, and 1% grassland. Habitats in the project area are likely used by wildlife adapted to agricultural and suburban environments, such as white-tailed deer, songbirds, small mammals, and amphibians.

The project area falls in the Anoka Sandplain Ecological Subsection of the MN DNR Ecological Classification System and the Anoka Sand Plain and Mississippi Valley Outwash of the Level IV Ecoregion of the U.S. EPA. This area consists of a flat, sandy lake plain and terraces along the Mississippi River. The area includes row crops, small grains, suburban development, wetlands, woodlands.

Most of the project area has limited wildlife habitat value because it is occupied by annually tilled agricultural crops. Cropland consisted of corn, soybeans, and wheat during 2016. Wetlands in the project area were dominated by stunted crops, reed canary grass, and green bulrush (**see Table 5**). Tree rows included elm, aspen, boxelder, pines, and red cedar. Grassy field edges were dominated by smooth brome, and Kentucky bluegrass.

*b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (**LA-732**) and/or correspondence number (**ERDB 2017____**) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.*

The MN DNR queried the Natural Heritage Inventory System (NHIS) to assess whether known locations of rare plant or animal species or other significant natural features are known to occur within an approximate one-mile radius of the project area (**Appendix C**). Kjolhaug Environmental Services also queried a licensed copy of the NHIS database. The NHIS review identified six records of rare species and sensitive natural communities.

Observations of Blanding's turtles (*Emydoidea blandingii*), a state threatened reptile, were recorded in 1989 and 1995 at locations north and east of the project area. One observation occurred on or near the Itasca Park and the other occurred in an area that currently includes a mix of cropland, suburban development, and wetland.

Blanding's turtles prefer calm shallow water, rich aquatic vegetation, and select open grassy uplands with sandy soils for nesting. The project area includes potential Blanding's turtle habitat consisting of wetlands and sandy soils, but does not include much grassland. The best Blanding's turtle habitat

includes wetland complexes larger than 10 acres that are surrounded by open sandy uplands. Blanding's turtles do not typically lay eggs under forest cover.

Other rare feature records included three observations of the black sandshell mussel (*Ligumia recta*), and one record of a silver maple floodplain forest. These features were found along the Mississippi River. The black sandshell is a state-listed special concern species. None of the NHIS records represent federally threatened and endangered species.

Online information on rare species information maintained by the U.S. Fish and Wildlife Service (USFWS) was also reviewed for the project area. The project area falls within the occupied range of the federally threatened northern long-eared bat (*Myotis septentrionalis*). The northern long-eared bat (NLEB) roosts and forages in forests during spring and summer and hibernates in caves and mines during winter., sometimes swarming in wooded areas near caves in autumn. The USFWS listed the NLEB as threatened under the Federal Endangered Species Act (ESA) on April 2, 2015. Although the project area includes about 1.8 acres of woodland and is located in the white-nose syndrome zone defined under the Final 4(d) Rule, there are no known incidental, breeding, or hibernacula records of NLEBs occurring within one mile of the project area.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

Project development is expected to convert about 85.5 acres of cropland and 0.9 acres of trees to residential land uses, including roads, homes, lawns, landscaping, and stormwater ponding. The project may affect the number and type of wildlife species in the area, but changes in wildlife abundance are not expected to be regionally significant. The existing croplands provide wildlife food, but have limited value as wildlife cover. Wildlife species that depend on agricultural cropland will be displaced by the project. The project will likely have short-term negative effects and long-term positive effects on species adapted to suburban habitats. Non-migratory species with small home ranges such as small mammals may experience more adverse effects, including mortality during project construction.

Development of the project area is not expected to have substantial effects on rare species and sensitive natural communities. Four of the six rare occurrences identified during the MN DNR NHIS review were associated with the Mississippi River, which is south of the project area and will not be physically affected by the project. These include three occurrences of black sandshell and one record of a silver maple floodplain forest.

The project may have effects on Blanding's turtles that may occur in the area. To minimize potential adverse effects on turtles and their mobility, the project will avoid most wetlands, implement stringent sediment and erosion controls, consider the use of surmountable curbs on roadways, and consider using erosion control materials constructed of organic fibers rather than plastic.

The project is not considered likely to affect the northern long-eared bat (NLEB) because the project area includes mostly cropland, few trees, which is not considered characteristically suitable NLEB

habitat. The white nose syndrome buffer zone map and the Minnesota NLEB bat occurrence maps available from the USFWS and the MN DNR indicate there are no NLEB maternity roost colonies or hibernacula known to occur within 1 mile of the project area.

Although project construction could be expected to slightly increase the potential for the spread of invasive and weedy species, the project area has been disturbed by agricultural use for decades. BMPs may include the cleaning of construction equipment before transport, which might reduce the potential spread of invasive species.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

Measures to minimize and mitigate adverse effects on wildlife include the preservation of about 1 acre of wetlands, about 1 acre of trees, establishment of native grassland buffers along wetland edges, and creation of approximately 9.5 acres of stormwater features.

14. Historic Properties

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

A search of the historical property information database was requested from the Minnesota State Historic Preservation Office (SHPO) for the project area to assess whether known historic structures or archaeological sites exist in the project vicinity. The SHPO queried the Minnesota Archaeological Inventory and Historic Structures Inventory, and did not identify any archaeological sites or historic structures known to exist in the project vicinity. Correspondence from the SHPO is included in **Appendix D**.

The project site has relatively flat topography and a history of agricultural tillage, which suggests the site has relatively low potential for undiscovered intact archaeological material. Although the potential for project effects on historic and archaeological resources has not been investigated in detail, the initial cultural resource screening did not identify potential for effects on known historic resources.

15. Visual

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

There are no scenic views or vistas located on or adjacent to the project area. Substantial effects on visual resources are not anticipated in conjunction with project development. Project development is expected to result in routine effects on visual resources. The project will not involve installation of intense lights that would cause glare, nor will it include industries that would emit vapor plumes.

16. Air

a. Stationary source emissions. Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

The proposed project does not include heavy industrial facilities or stationary source air emissions.

b. Vehicle emissions. Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

The proposed project will generate increased traffic, which will generate a relatively small corresponding increase in carbon monoxide, carbon dioxide and other vehicle-related air emissions. Project development is expected to have a negligible effect on air quality. The project does not include air quality monitoring, modeling, or measures to mitigate effects on air quality.

c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

The project is not expected to generate dust or odors at levels considered unusual for suburban development construction practices. Odors, noise, or dust produced during construction is expected to be consistent with applicable regulations of the MPCA and local governments. Dust, odors, and noise levels are expected to be slightly higher during project construction than project operations.

The construction process is expected to generate some fugitive dust, but dust is not expected to be generated in objectionable quantities. The dust receptors nearest to the project area include the residential areas northeast and east of the site. Odors routinely generated during construction will be typical of those associated with construction activity, such as exhaust from diesel and gasoline powered construction equipment.

Consideration will be given to suppression of airborne dust by application of water if fugitive dust generation during site grading exceeds levels typically expected during normal construction practices.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise

levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

It is anticipated that local noise levels will temporarily increase during project construction, but noise levels are expected to be at or near existing levels after construction is complete. Noise levels on and adjacent to the project area will vary considerably during construction, depending on the amount of construction that occurs simultaneously, the time of operation, and the distance between construction equipment and receptors. The noise receptors nearest to the project area include the residential areas northeast and east of the site. Noise generated by construction equipment and residential building construction will be limited primarily to daylight hours when noise levels are commonly higher than at night.

18. Transportation

a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

Spack Consulting completed a Traffic Impact Study to estimate the trips generated by the proposed residential development and evaluate the potential need for transportation or roadway improvements. The complete Traffic Impact Analysis is included in **Appendix E**.

Existing and Proposed Parking Spaces

The project area does not include any parking stalls under existing conditions. The proposed 246 single-family lots and 98 multi-family homes will include off-street parking and garages to accommodate parking for the residential units.

Estimated Traffic Generation

Trip generation was estimated using the methodology outlined in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition (2012). Future trip generation estimates were based on traffic generated by 246 single-family and 98 multi-family residential units. The residential development is expected to generate a total of 2,912 average daily trips, including 1,456 vehicles entering the site and 1,456 vehicles exiting the site (**Table 9**).

Table 9. Project Trip Generation Estimates

Land Use	ITE Code	No. of Units	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
Single-family detached housing	210	246	2,342	46	138	184	155	91	246
Multi-family attached housing	230	98	570	7	36	43	34	17	51
Total		344	2,912	53	174	227	189	108	297

Spack Consulting has completed trip generation studies in the Twin Cities Metropolitan Area and found local trip generation rates for residential uses to be lower than the comparable ITE rates. For the purposes of this study, ITE trip generation rates were used to provide a conservatively high estimate.

The peak hour traffic in the study area occurs between 4:45 and 5:45PM. Based on recent traffic counts, it is expected that traffic from the project will also peak during this time. Within this peak hour, the residential project is expected to generate 297 trips, consisting of 189 entering vehicles and 108 exiting vehicles. The Traffic Impact Study included in **Appendix E** provides a full description and analysis of the peak hour traffic and traffic recommendations.

Availability of Transit and Alternative Transportation

The Ramsey Metro Transit Station is located about 1.5 miles southeast of the project area along the railroad and Highway 10/169. The station includes a park and ride lot and access to the Northstar Commuter Rail Line. The Northstar Line offers service between Big Lake and downtown Minneapolis, stopping at stations in Elk River, Ramsey, Anoka, Coon Rapids and Fridley.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: http://www.dot.state.mn.us/accessmanagement/resources.html) or a similar local guidance.

Effects on Traffic and Roadways

The Traffic Impact Study concluded that the proposed project will have minimal effects on adjacent public roads and that nearby intersections will continue to operate at an overall Level of Service (LOS) A (**Appendix E**). The principle findings of the Traffic Impact Study are:

1. All Study intersections are all well within their capacity range and the proposed development traffic is not predicted to cause significant delays or congestion on the local roadway system.
2. Study area intersections, as described in the Traffic Impact Study, are expected to continue to operate at an overall LOS A during the AM and PM peak hours.
3. The proposed site access points are sufficient to service the expected site generated traffic.

The Traffic Impact Study analyzed the extended traffic forecast to the year 2040. The extended forecast included traffic generated by the proposed project and background traffic growth. Under this forecast, all intersections continue to operate at an acceptable LOS during peak hours of operation causing minimal effects on adjacent public roadways and intersections.

The traffic that will be generated by the proposed project does not raise capacity or safety concerns. Traffic generated by the project will have little effect on the regional transportation system. Intersections surrounding the site will continue to operate at acceptable levels of service with the addition of traffic generated by the proposed project.

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

The Traffic Impact Study concluded that the study area intersections and roadways have sufficient capacity to accommodate the expected daily and peak hour trips. The study predicted that the existing road network surrounding the project area will safely and efficiently accommodate the traffic generated by the proposed development without safety or capacity improvements.

The Traffic Impact Study included a review of the MnDOT Access Management Manual and related turn treatment warrants. Due to the speed limits along Puma Street and Alpine Drive being lower than 45 MPH, turn lane treatments are not warranted. If the speed limits along Puma Street or Alpine Drive is increased to 45 MPH or higher the Turn-Lane Warrants should be re-evaluated. The City of Ramsey and the project proponent will coordinate the necessary details to address street improvements at these locations. The full turn lane analysis is provided near the back of **Appendix E.**

The project will include internal sidewalks to help facilitate safe pedestrian, bicycle, and traffic mobility within the residential project and the adjoining sidewalk/trail network. An addition of a sidewalk/trail along the southern side Alpine Drive should be considered stretching from the site access to the Puma Street and Alpine Drive intersection. An additional crosswalk should also be considered, connecting pedestrians north to the existing sidewalk/trail along the northern side of Alpine Drive. The addition of internal sidewalk/trail connections will help improve safety and stimulate use of alternative modes of transportation, lowering the overall number of vehicle trips expected at the site. The detailed Traffic Impact Study includes a full description of the existing and future traffic, with recommendations for the proposed project (**Appendix E**).

19. Cumulative Potential Effects

Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items.

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

It is anticipated that the project area will develop over the next 5 to 10 years, but the actual timing of development could vary depending on the demand for housing and market conditions. Other projects are expected to develop in the City of Ramsey during this time period. These projects and their geographic locations are described under **Item 19.b** below.

b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

The City of Ramsey is reviewing and has recently approved several other development projects that are located 0.15 to 4.4 miles from the Pearson Farm development site (**Table 10**). These projects range from a trailer sales display lot to a 141-lot residential subdivision.

Table 10. Other Projects in the City of Ramsey

Name	Description	Status	Distance/Direction from Pearson Farm
Northfork Alpine Addition	4 rural single-family residential lots	Approved	0.15 mile west/northwest
Pearson Bowers Drive	13 rural single-family residential lots	Under review	0.6 mile south
Brookview Addition	11 rural single-family residential lots	Under review	4.4 miles northeast
Rum River on the Green	2 rural single-family residential lots	Approved	4.1 miles northeast
Sunwood Village	47 unit apartment building	Approved	1.0 mile east-southeast
McDonald's	Restaurant	Approved	0.9 mile east-southeast
COR Three North Commons	13 sewered single-family residential lots	Approved	1 mile east
Woodlands	85 sewered single-family residential lots	Partially approved	1.7 miles northeast
Harvest Estates	44 sewered single-family residential lots	Approved	3.6 miles east
Brookfield Subdivision	141 sewered single-family residential lots	Partially approved	2.9 miles northeast
Vistas North Commons	12 sewered single-family residential lots	Under review	0.9 mile east-southeast
Stonebrook Academy	Early childhood learning	Under review	1.1 mile east-southeast
Aeon Housing	40-60 unit apartment building	Under review	1.4 miles east-southeast
Regency Commons	Self-storage facility	Under review	1.8 miles east
Station	77 townhome units	Approved	1.7 miles east-southeast
Parkview East	121 unit apartment building	Approved	1.7 miles east-southeast
M & G Trailers	Display lot	Approved	1.5 miles east-southeast

c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

Reasonably foreseeable future projects may combine with the proposed project to result in cumulative effects on municipal infrastructure and natural resources. The potential for cumulative effects varies with the type of resource affected and the geographic area of impact.

Potential cumulative effects on public infrastructure relate to municipal water supply systems, sanitary sewer conveyance and treatment systems, stormwater management systems, and traffic and transportation systems. The City of Ramsey has planned for continued growth and expanded infrastructure system capacity to address these effects and serve anticipated future projects. The City of Ramsey will consider the timing and staging of other development proposals within the context of

the Comprehensive Plan and related growth management tools at the time that such proposals are brought forward. Over time, much of Ramsey may develop into a combination of residential, commercial, and public uses. Consequently, cumulative effects on public infrastructure are not expected to be significant.

Potential cumulative effects of anticipated future projects on natural resources depend largely on the type, density, and location of future developments. Potential effects on natural resources such as wetlands and wildlife habitat typically vary with project location and the extent of habitat diversity. Effects of the project on wetlands, vegetation communities, and wildlife resources may combine with effects of nearby or nearly concurrent projects in a manner that results in local and subtle cumulative effects. Cumulative effects of suburban development on natural resources can include the loss of agricultural land and the loss and fragmentation of wildlife habitat. Surface water runoff from the project area will infiltrate into the soil and some treated runoff may discharge to the Mississippi River. However, the highly-regulated nature of stormwater runoff and the ubiquitous implementation of BMPs to control erosion and sedimentation is expected to minimize cumulative effects of post-development runoff on downstream waters. The policies and regulations set forth by the City of Ramsey, the Lower Rum River Watershed Management Organization, and other government agencies provide the impetus for certain mitigation measures discussed in this EAW. These mitigation measures will help ensure the minimization of cumulative effects on the environment and the capacity for municipal services.

20. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

No other additional environmental effects are anticipated as a result of development of the project area. Potential environmental effects have been addressed in **Items 1** through **19**.

RGU CERTIFICATION.

(The Environmental Quality Board will only accept SIGNED Environmental Assessment Worksheets for public notice in the EQB Monitor.)

I hereby certify that:

- *The information contained in this document is accurate and complete to the best of my knowledge.*
- *The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.*
- *Copies of this EAW are being sent to the entire EQB distribution list.*

Signature _____ Date _____

Title _____

Figures 1 – 10

Pearson Farm Residential Development EAW

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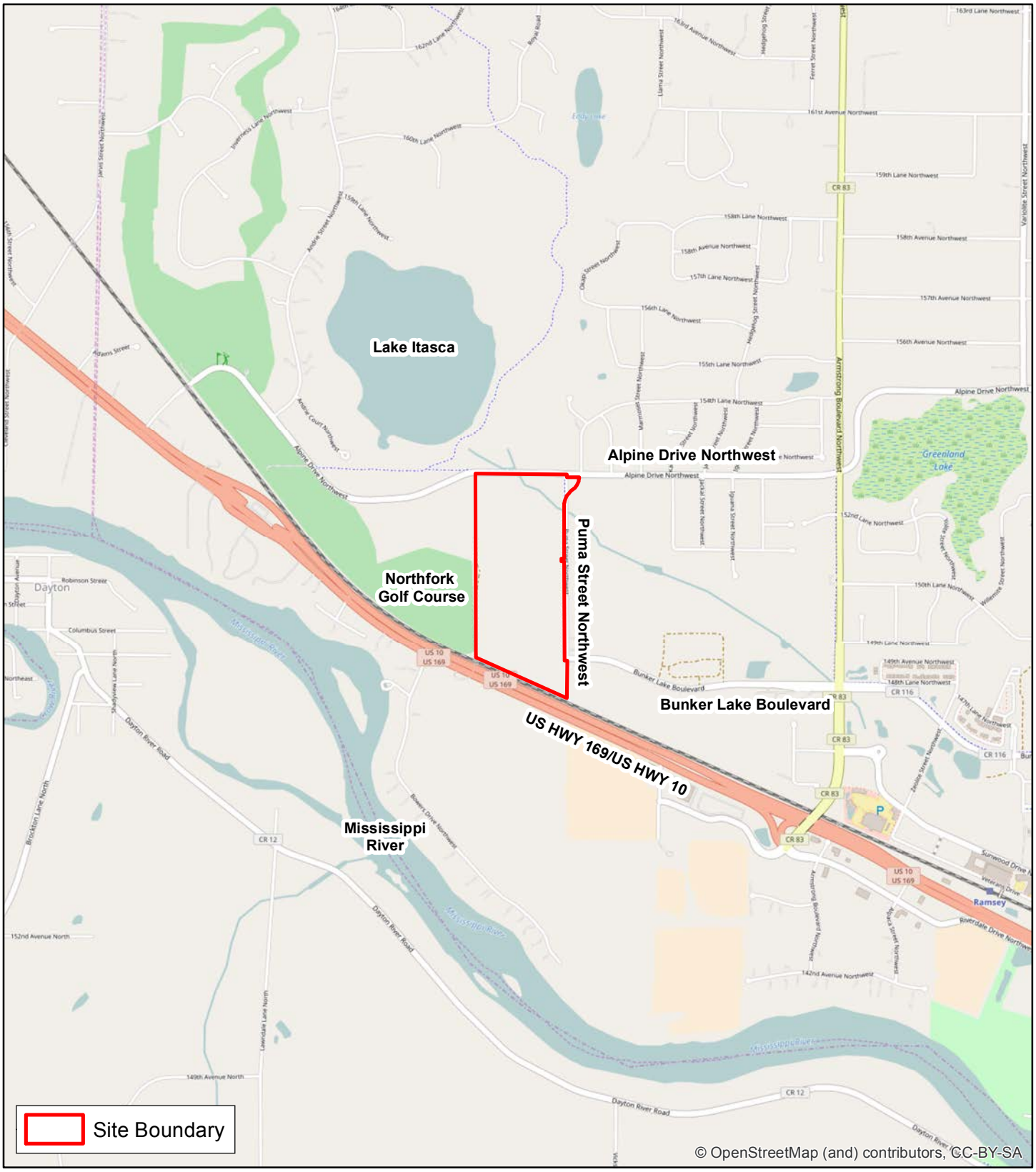

Figure 1 - Site Location

N

0 2,000 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: ESRI Streets Basemap

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

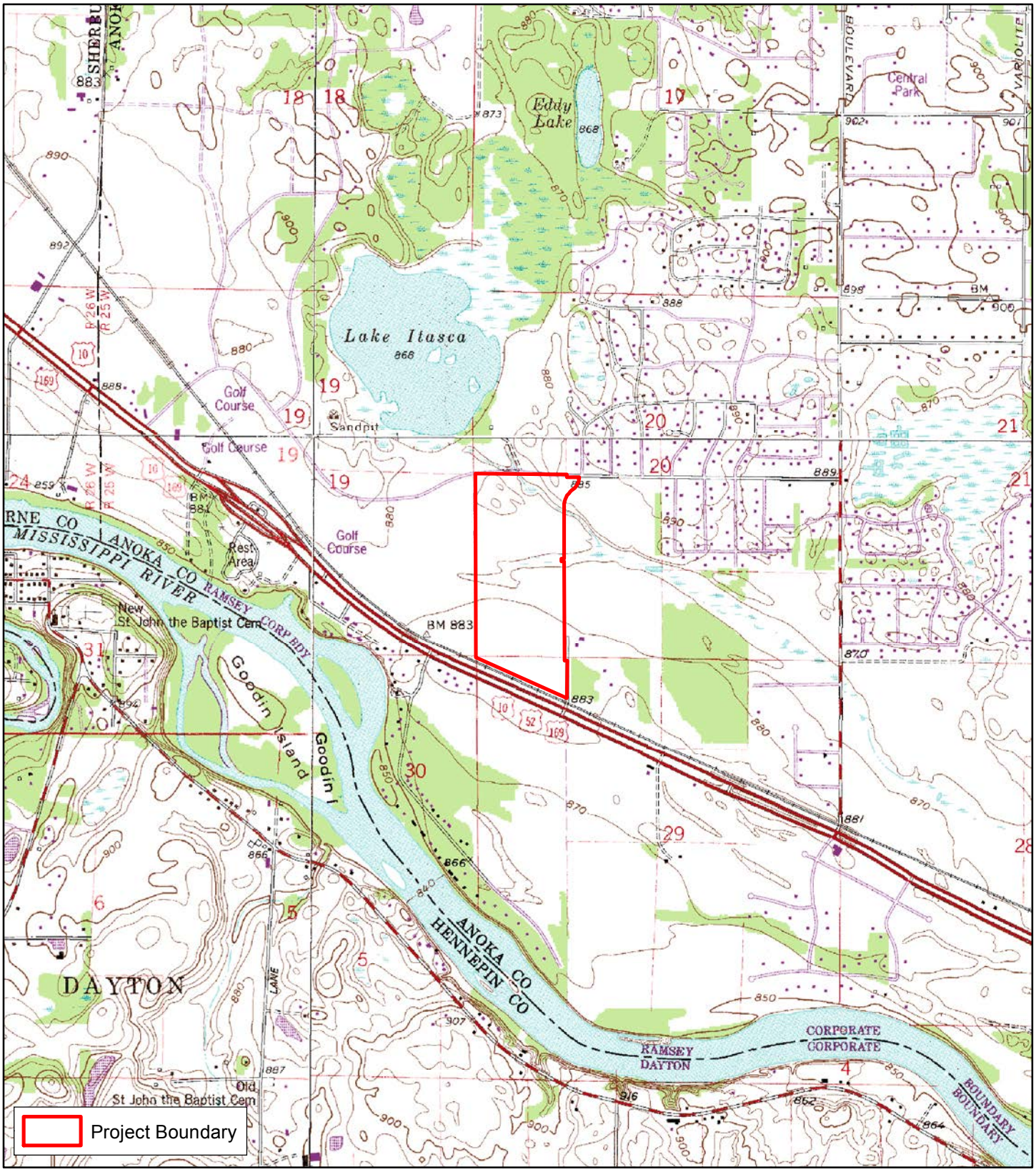

Figure 2 - USGS Topography

N

0 2,000 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MnGeo, ESRI Imagery Basemap

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

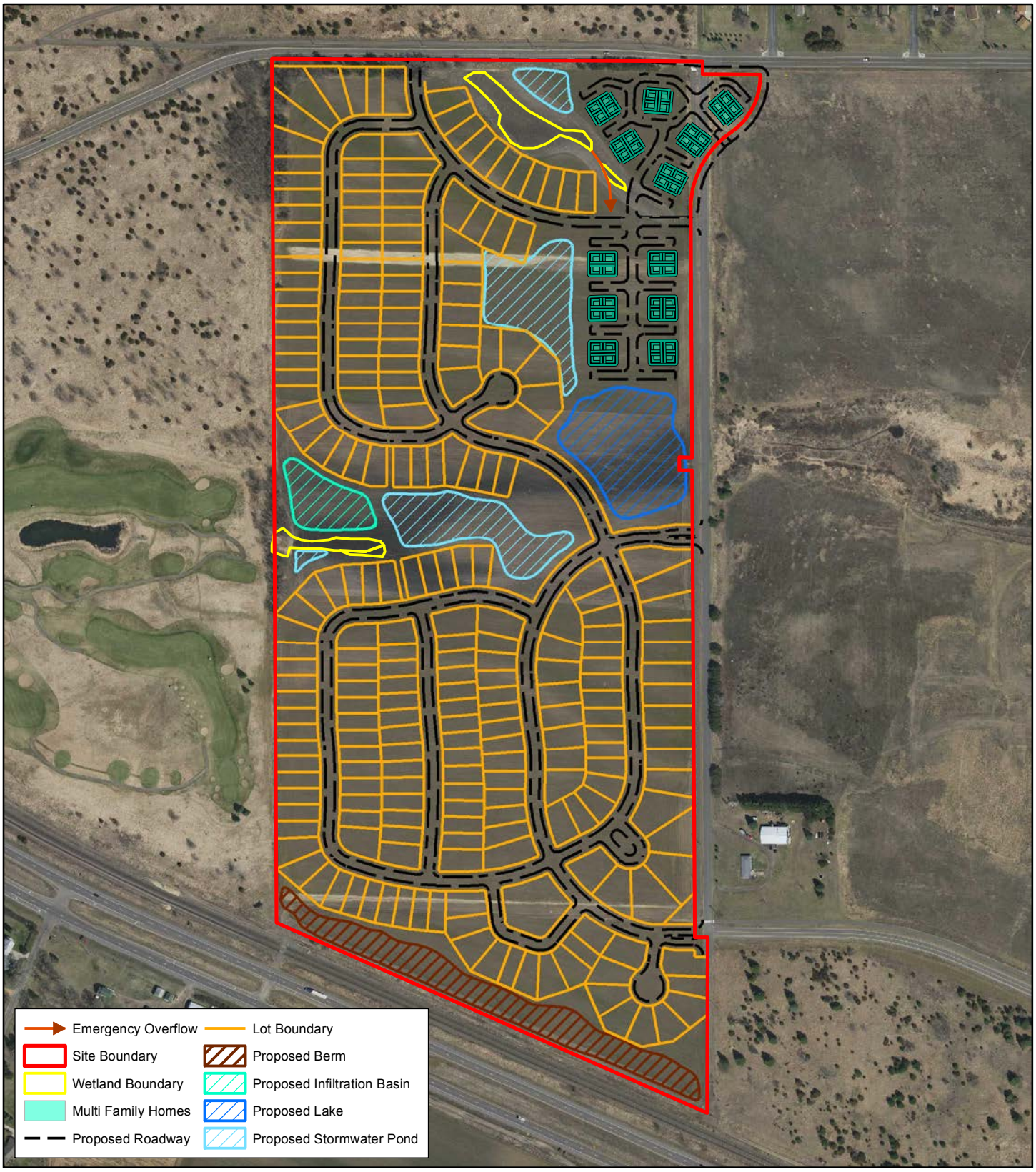

Figure 3 - Proposed Site Plan

N

0 425 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: Minnesota DNR (2013), USFWS

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

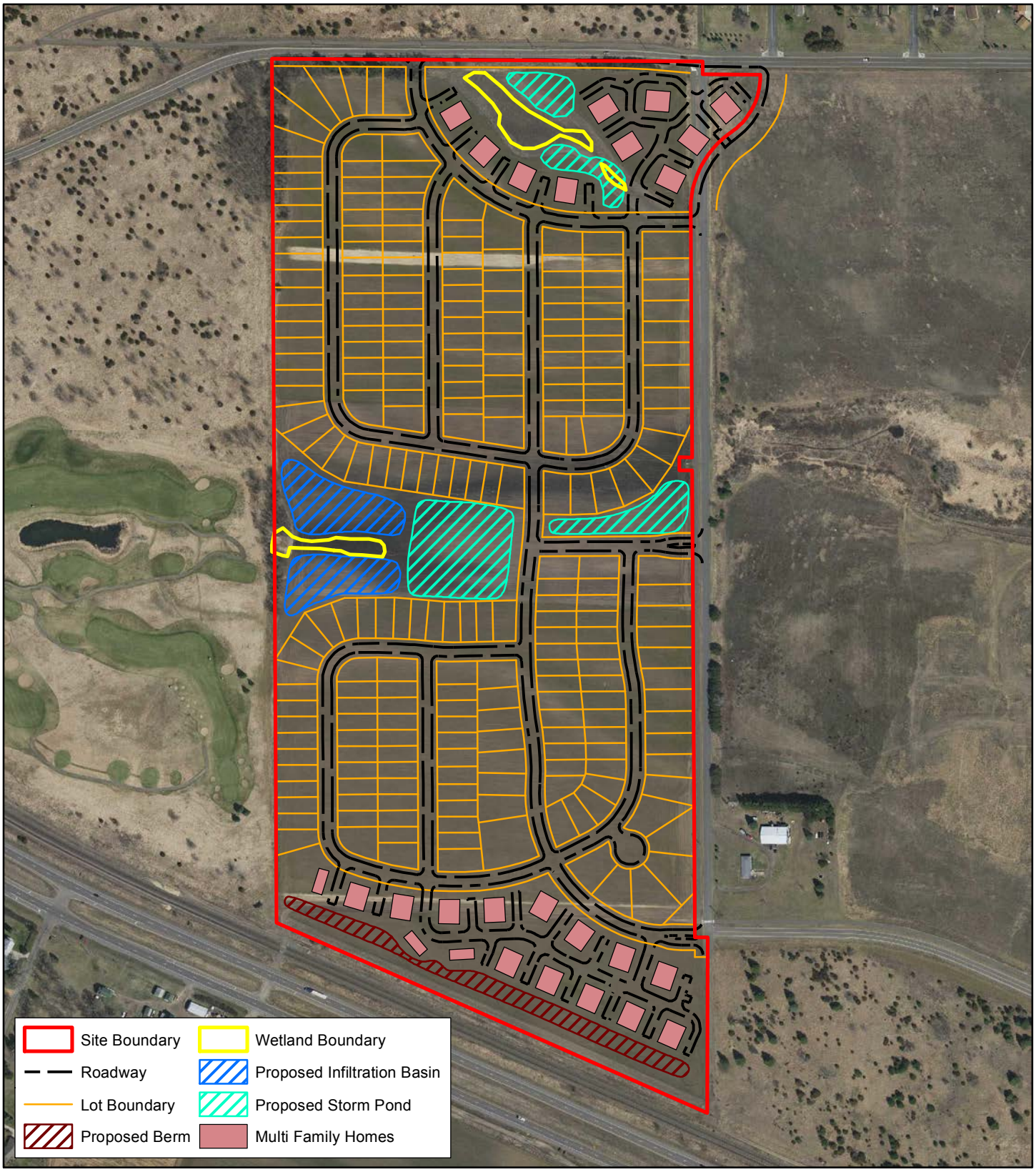

Figure 4 - Maximum Density Site Plan

N

0 425 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: Minnesota DNR (2013), USFWS

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

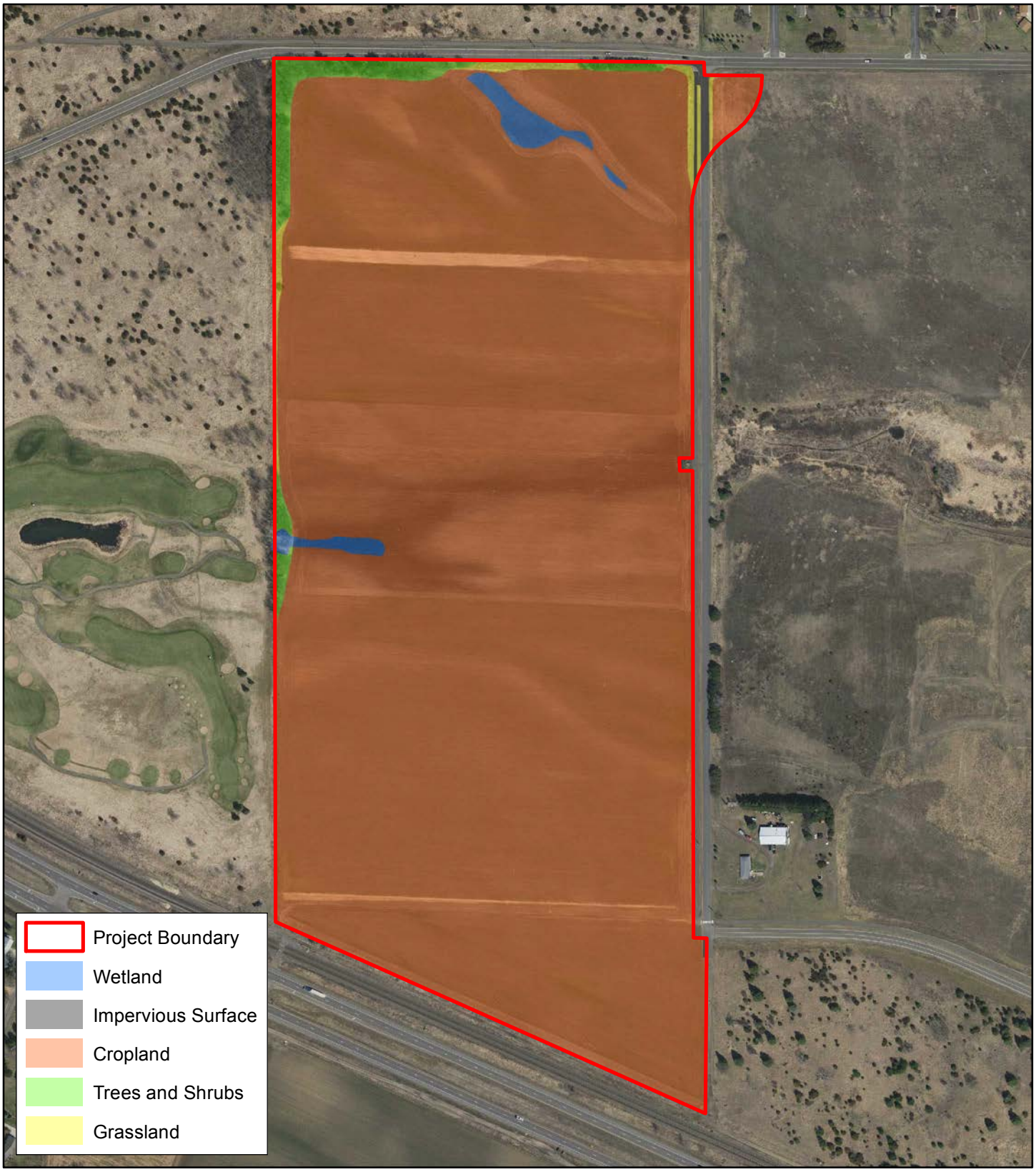

Figure 5 - Existing Cover Types

N

0 425 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: USDA, NRCS

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

Figure 6 - Delineated Wetlands and Waters

N

0 1,000 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: Minnesota DNR

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

Figure 7 - Existing Land Use

N

0 1,000 Feet

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: USGS

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

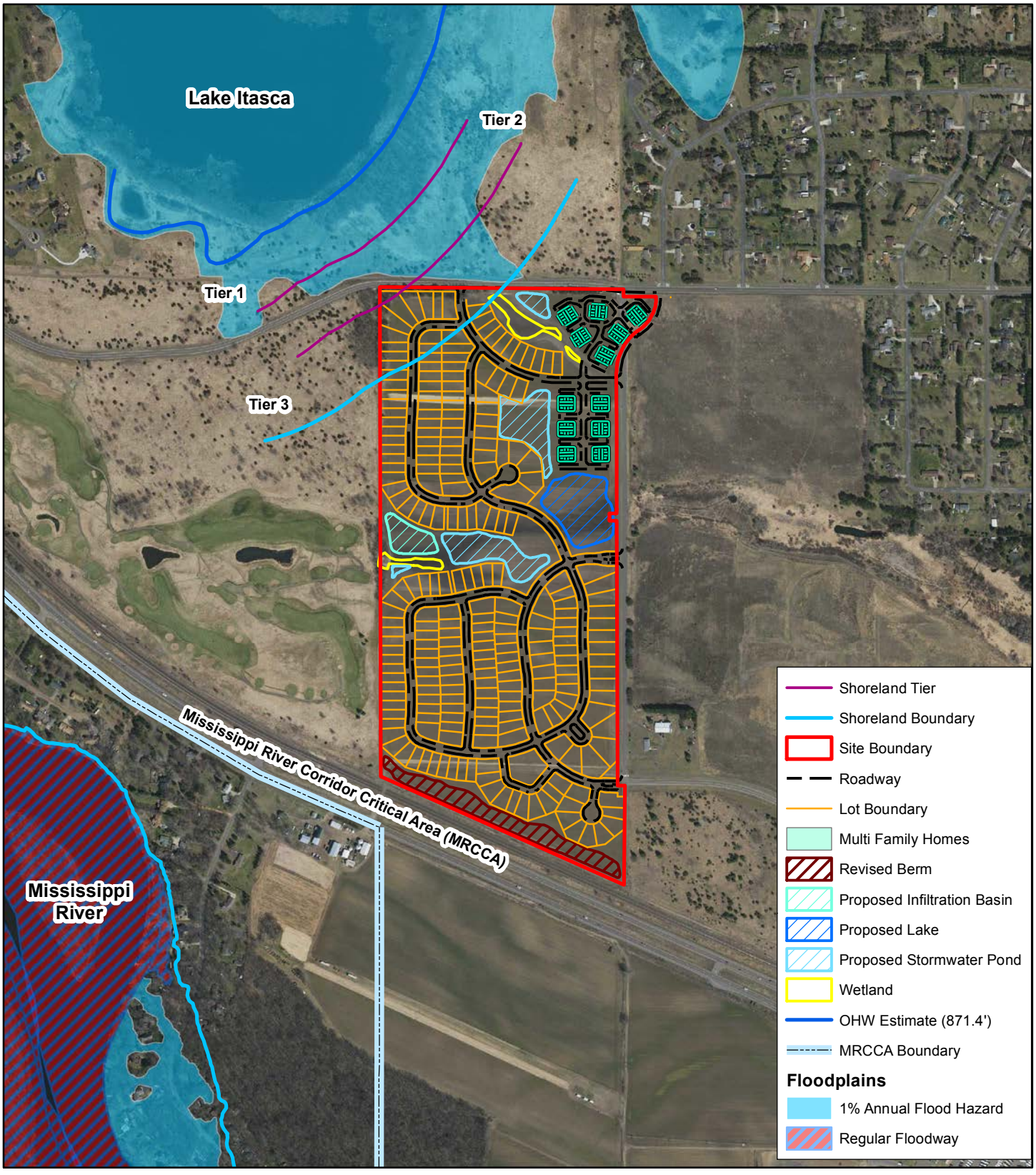

Figure 8 - Shorelands and Floodplains

N

0 750 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MnGeo, ESRI Imagery Basemap

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

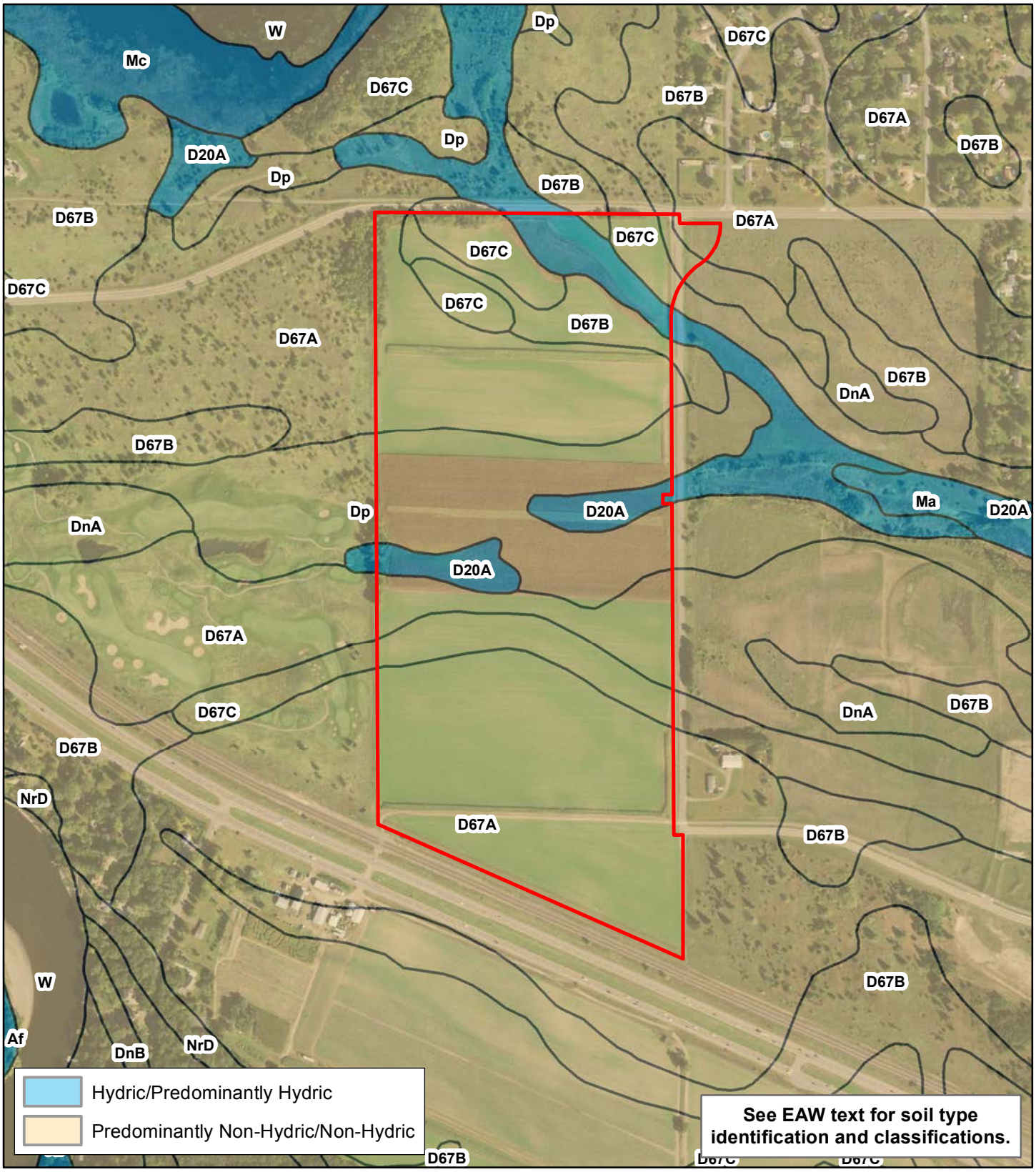

Figure 9 - Soil Types

N

0 600 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MnGeo, ESRI Imagery Basemap

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

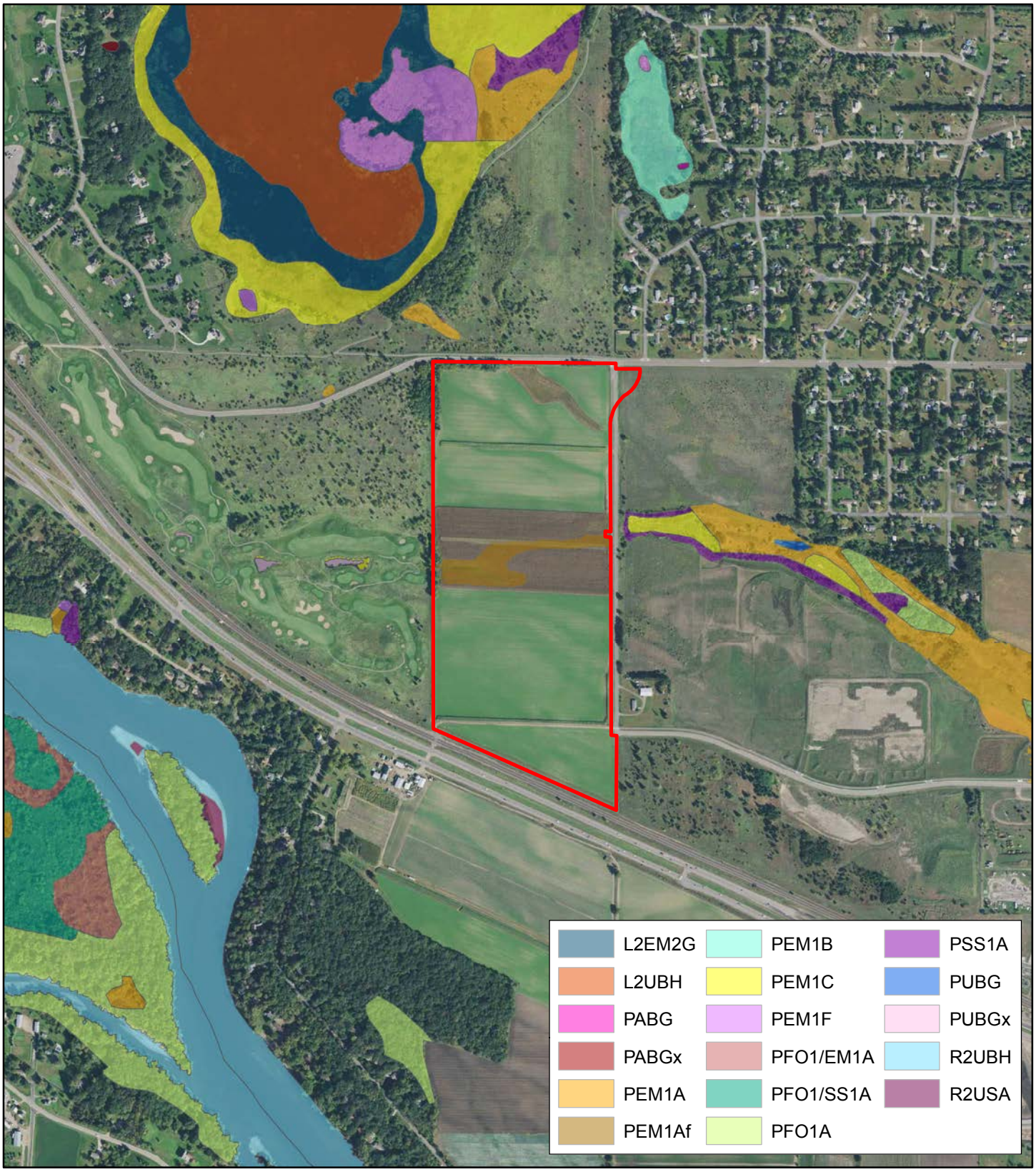

Figure 10 - National Wetlands Inventory

N

0 1,000 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MnGeo, ESRI Imagery Basemap

Pearson Farm Residential Development (KES 2017-004)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

Appendix A
Wetland Delineation Approval

Pearson Farm Residential Development EAW

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LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION
ANDOVER - ANOKA - RAMSEY
2015 First Avenue • Anoka, MN 55303

November 21, 2016

Mr. Stephen Bona
Capstone Homes
14015 Sunfish Lake Blvd. NW
Ramsey, MN 55303

Subject: LRRWMO Permit #2016-19 ~ Pearson Property - **Wetland Boundary & Type** ~ Ramsey

Dear Mr. Bona,

The LRRWMO, at its November 17, 2016 meeting, addressed the permit indicated above.

The Board has taken action to approve the wetland boundary and type as indicated on the attached Notice of Decision.

If you have any questions regarding this process, please contact Ms. Karen Wold of Barr Engineering. Good luck with your project.

Sincerely,

Todd Haas
Chair

Enclosure: Notice of Decision
Approved Permit Application #2016-19

cc: Melissa Barrett, Kjolhaug Env. Serv.
Bruce Westby, City of Ramsey Engineer
Chris Lord, Anoka Conservation District
Karen Wold, Barr Engineering
LRRWMO
TEP Agencies
Becky Wozney, Anoka Conservation District
Becky Horton, MnDNR Div. of Ecological & Water Resources
Kate Drewry, MnDNR Water
Ben Meyer, MN Board of Water & Soil Resources
Andrew Beaudet, U.S. Army Corps of Engineers
Marissa Vine, U.S. Army Corps of Engineers

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit (LGU)	Address
Lower Rum River WMO (LRRWMO)	**2015 First Avenue** **Anoka, MN 55303**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
Stephen Bona, Capstone Homes Inc.	**Pearson Property**	**10/17/16**	**2016-19**

☒ Attach site locator map.

Type of Decision:

☒ Wetland Boundary or Type ☐ No-Loss ☐ Exemption ☐ Sequencing
☐ Replacement Plan ☐ Banking Plan

Technical Evaluation Panel (TEP) Findings and Recommendation (if any):

☐ Approve ☐ Approve with conditions ☐ Deny

Summary (or attach): **no TEP Findings Report, see below for TEP communication**

2. LOCAL GOVERNMENT UNIT DECISION

Date of Decision: **11/17/16**

☒ Approved ☐ Approved with conditions (include below) ☐ Denied

LGU Findings and Conclusions (attach additional sheets as necessary):

On behalf of Capstone Homes, Kjolhaug Environmental submitted a wetland delineation report and a joint application request for wetland boundary and type concurrence for the Pearson property in Section 20 & 29, Township 32N, Range 25W in the City of Ramsey, within Anoka County.

Two wetlands were delineated within the evaluation area both of which were identified as Type 1 (PEMBf/PEMA) farmed seasonally flooded basins.

The wetland delineation report and a Notice of Application were provided to the TEP on 10/26/16 with a 15-business day comment period.

A site review was conducted on 10/21/16 with Ben Carlson (Kjolhaug) and Karen Wold (Barr Engineering for the LRRWMO) and wetland boundaries were revised on both wetlands. A revised wetland delineation figure was submitted on 10/25/16 which was provided to the TEP with the Notice of Application on 10/26/16.

The revised wetland boundaries and types were found to be accurate, based on the requirements of the 1987 USACE Wetland Delineation Manual, the 2010 Midwest Regional Supplement, and the 2015 Guidance for Submittal of Delineation Reports to the USACE and WCA LGU in Minnesota, Version 2.0.

The comment period ended on 11/16/16 and no additional comments were received.

The wetland boundaries and types are approved.

For Replacement Plans using credits from the State Wetland Bank:

Bank Account #	Bank Service Area	County	Credits Approved for Withdrawal (sq. ft. or nearest .01 acre)

Replacement Plan Approval Conditions. In addition to any conditions specified by the LGU, the approval of a Wetland Replacement Plan is conditional upon the following:

☐ **Financial Assurance:** For project-specific replacement that is not in-advance, a financial assurance specified by the LGU must be submitted to the LGU in accordance with MN Rule 8420.0522, Subp. 9 (List amount and type in LGU Findings).

☐ **Deed Recording:** For project-specific replacement, evidence must be provided to the LGU that the BWSR "Declaration of Restrictions and Covenants" and "Consent to Replacement Wetland" forms have been filed with the county recorder's office in which the replacement wetland is located.

☐ **Credit Withdrawal:** For replacement consisting of wetland bank credits, confirmation that BWSR has withdrawn the credits from the state wetland bank as specified in the approved replacement plan.

Wetlands may not be impacted until all applicable conditions have been met!

LGU Authorized Signature:

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 5 provides notice that a decision was made by the LGU under the Wetland Conservation Act as specified above. If additional details on the decision exist, they have been provided to the landowner and are available from the LGU upon request.

Name **Todd Haas**	Title **Chairman**	
Signature	Date **11/17/16**	Phone Number and E-mail **763/755-5100** **thaas@andovermn.gov**

THIS DECISION ONLY APPLIES TO THE MINNESOTA WETLAND CONSERVATION ACT. Additional approvals or permits from local, state, and federal agencies may be required. Check with all appropriate authorities before commencing work in or near wetlands.

Applicants proceed at their own risk if work authorized by this decision is started before the time period for appeal (30 days) has expired. If this decision is reversed or revised under appeal, the applicant may be responsible for restoring or replacing all wetland impacts.

This decision is valid for five years from the date of decision unless a longer period is advised by the TEP and specified in this notice of decision.

3. APPEAL OF THIS DECISION

Pursuant to MN Rule 8420.0905, any appeal of this decision can only be commenced by mailing a petition for appeal, including applicable fee, within thirty (30) calendar days of the date of the mailing of this Notice to the following as indicated:

Check one:

☐ Appeal of an LGU staff decision. Send petition and $_____ fee (if applicable) to:	☒ Appeal of LGU governing body decision. Send petition and $500 filing fee to: Executive Director Minnesota Board of Water and Soil Resources 520 Lafayette Road North St. Paul, MN 55155

4. LIST OF ADDRESSEES

☒ SWCD TEP member: **Becky Wozney**
☒ BWSR TEP member: **Dennis Rodacker and Ben Meyer**
☒ DNR TEP member: **Becky Horton, Kate Drewry**
☒ WD or WMO (if applicable): **Todd Haas (LRRWMO), Carla Wirth (Timesaver), Bob Obermeyer and Deb Burt (Barr Engineering Co.)**
☒ City Contact for LRRWMO permitting **Bruce Westby (City of Ramsey)**
☒ Applicant and Landowner (if different) **Stephen Bona (Capstone Homes Inc.), Ben Carlson and Melissa Barrett (Kjolhaug Environmental)**
☒ Corps of Engineers Project Manager**Andrew Beaudet and Marissa Vine**
☐ BWSR Wetland Bank Coordinator (wetland bank plan decisions only)

5. MAILING INFORMATION

➢For a list of BWSR TEP representatives: www.bwsr.state.mn.us/aboutbwsr/workareas/WCA_areas.pdf

➢For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➢Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol. Div. Ecol. Resources 2115 Birchmont Beach Rd. NE Bemidji, MN 56601	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1201 E. Hwy. 2 Grand Rapids, MN 55744	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1200 Warner Road St. Paul, MN 55106	Reg. Env. Assess. Ecol. Div. Ecol. Resources 261 Hwy. 15 South New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➢For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687 or send to:

US Army Corps of Engineers
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➢For Wetland Bank Plan applications, also send a copy of the application to:

Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

6. ATTACHMENTS

In addition to the site locator map, list any other attachments:
☒ **wetland delineation map**
☐

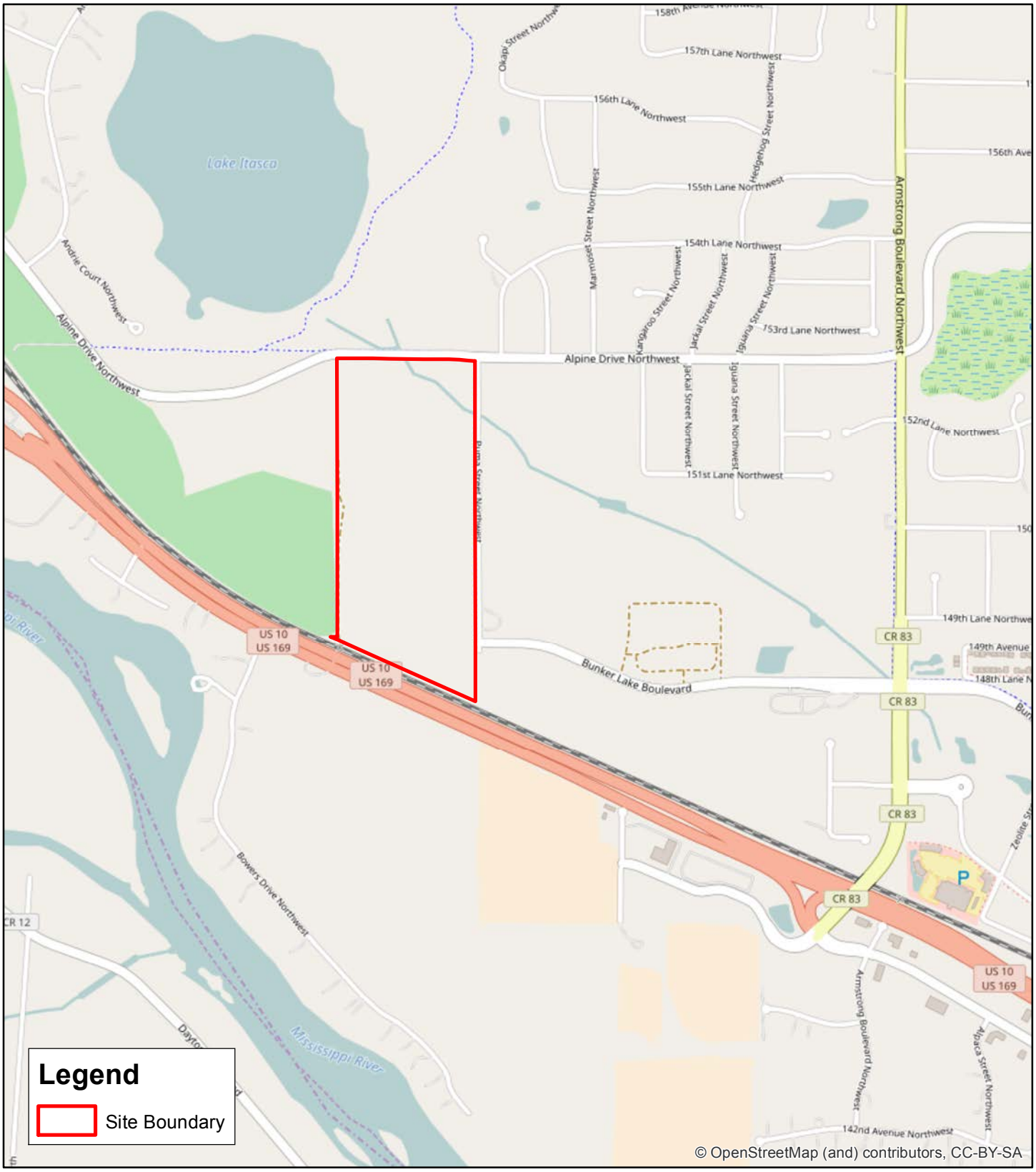


Figure 1 - Site Location

N

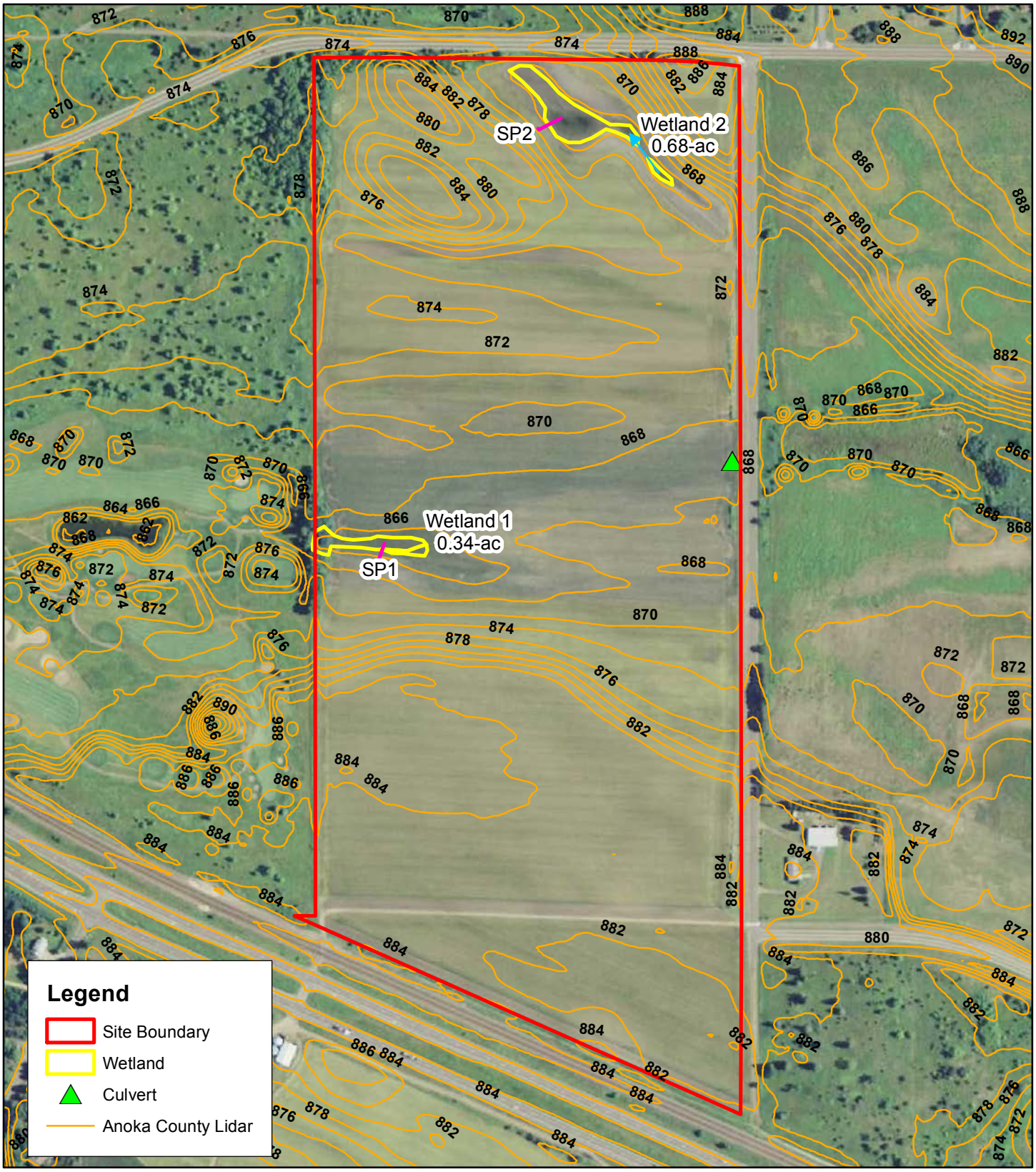
0 2,000 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: ESRI Streets Basemap

Pearson Property (KES 2016-167)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



Revised Figure 2 - Existing Conditions (2013 FSA Photo) per 10/21/2016 TEP Review

N

0 500 Feet

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: Minnesota DNR (2013), USFWS

Pearson Property (KES 2016-167)
Ramsey, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

City Authorization: Ramsey Date Received: 10-17-16 Permit No: 16-19

Lower Rum River Watershed Management Organization ("LRRWMO")

Andover—Anoka—Coon Rapids—Ramsey

2015 First Avenue • Anoka, MN 55303

PERMIT APPLICATION

The $100.00 application fee and the $700.00 escrow deposit must accompany this permit application. Applications for projects involving wetlands and/or involving a Wetland Replacement Plans must include an additional $75 application fee plus an escrow deposit as determined in accordance with Attachment D.

Permits are to be processed at the same time as the site plan, preliminary plat or other city land use or building application submitted to the city in which the work or project is located.

Project Name: Pearson Property

Address/Location: S9 T32N R25W Ramsey, MN

Project Description/Purpose: Wetland Delineation Review

Stephen Bona	Melissa Barrett — Kjolhaug Env. Serv.
Name of Applicant (Site Owner or Property Owner)	**Applicant's Contact — Organization Name**
14015 Sunfish Lake Blvd NW	26105 Wild Rose Lane
Address	**Address**
Ramsey, MN 55303	Shorewood, MN, 55331
City, State, Zip	**City, State, Zip**
(651) 271-4951	(952) 401-8757
Phone — Fax	**Phone — Fax**
Stephen.bona@gmail.com	Melissa@kjolhaugenv.com
Email	**Email**

Submittal Requirements

Complete applications are to be submitted as per attachments A (Permit Requirements), B (Office Procedure), C (LRRWMO Permit Standards). Projects involving wetlands and/or involving a Wetland Replacement Plan have special notice requirements and require submittal of four copies (4) and an electronic copy of all wetland-related submittal materials.

PROJECT SUBMITTALS (check all that apply):

- ☐ **GRADING PLAN:** Including existing and proposed contours and boundaries of all wetlands and surface waters.
- ☐ **STORM SEWER/ DRAINAGE PLAN:** Including all permanent drainage features and all permanent water quality features.
- ☐ **STORM DRAINAGE CALCULATIONS:** Design computations as required by the LRRWMO (see attachment C).
- ☐ **EROSION CONTROL PLAN:** Including all temporary measures proposed to retain all sediment on site.
- ☑ **MITIGATION PLAN*/WETLAND DETERMINATION:** Quality level of mitigated wetland(s) shall be determined by the LRRWMO.
- ☐ **REQUEST FOR EXEMPTION UNDER THE WETLAND CONSERVATION ACT (WCA)**
- ☐ **OTHER**

****NOTE: Four copies of permit submittals are required for projects involving wetland replacement plans.***

City Authorization: _____ Date Received: _____ Permit No: 16-19

Lower Rum River Watershed Management Organization ("LRRWMO")

Andover—Anoka—Coon Rapids—Ramsey

2015 First Avenue • Anoka, MN 55303

START OF PROJECT: _____	EST. COMPLETION DATE: _____	APPROVAL DATE: 11/17/16

By signing this Permit Application, the undersigned consents and agrees on behalf of the Applicant that:

1. The permit application fee is non-refundable. Escrow deposits will be held by the LRRWMO until the project has been completed and all conditions of issuance of the permit are satisfied. The Applicant is responsible for all expenses incurred by the LRRWMO in the processing, administration and enforcement of the permit application and permit. The escrow deposit will be used to reimburse the LRRWMO for all expenses incurred by the LRRWMO in processing, administering and enforcing the permit application and permit, including engineering, legal and other consultant costs. If such expenses exceed the escrow deposit, the LRRWMO will bill the Applicant or Permittee for such excess amount and payment will be due within twenty (20) days of mailing the invoice. Timely payment of such invoices is a condition of all permits and work may be stopped on the project for failure to make payments when due.

2. The undersigned, its agents, principal, assigns and/or representatives (hereinafter "Permittee") shall abide by all the standard conditions and special terms and conditions of the LRRWMO.

3. Any work that violates the terms of the permit may result in the LRRWMO or the City in which the work is being done immediately causing the work on the project relating to the permit to cease and desist. All work on the project shall cease until the permit conditions are met and approved by the LRRWMO and/or the City in which the work is being done.

4. The Permittee agrees to be bound by the terms of the LRRWMO permit requirements, final permit, standard conditions and special conditions required by the LRRWMO for approval of the permit. The undersigned has the authority to bind the permit holder, the owner of the property and/or any entity performing work on the property pursuant to the terms of LRRWMO permit, and shall be responsible for complying with terms of the LRRWMO permit.

"I certify that I have thoroughly read and understand the above information."

Alan R Pearson — Signature of property owner or designated Agent (no agent without a letter of authority)

10/17/16 — Date

Stephen A. Bova — Signature of applicant if different from property owner

10/17/16 — Date

Alan Pearson — Print Signer's name

Stephen A. Bova — Print Signer's name

SIGNATURE OF LRRWMO CHAIRMAN: ** _____

NOTE: Subject to conditions recommended by Bob Obermeyer, Barr Engineering (see attached)

PERMIT IS NOT VALID IF PROJECT HAS NOT STARTED WITHIN ONE YEAR FROM DATE OF APPROVAL

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
180 FIFTH STREET EAST, SUITE 700
ST. PAUL MINNESOTA 55101-1678

10/24/2016

REPLY TO
ATTENTION OF
Operations
Regulatory (MVP-2016-03719-MLV)

THIS IS NOT A PERMIT

Melissa Barrett
Kjolhaug Environmental
26105 Wild Rose Lane
Shorewood, MN 55331

Dear Ms. Barrett:

We have received your submittal described below. You may contact the Project Manager with questions regarding the evaluation process. The Project Manager may request additional information necessary to evaluate your submittal.

File Number: MVP-2016-03719-MLV

Applicant: Capstone Homes - Steve Bona

Project Name: Pearson Property

Received Date: 10/17/2016

Project Manager: Marissa Vine
651-290-5362

Additional information about the St. Paul District Regulatory Program, including the new Clean Water Rule, can be found on our web site at http://www.mvp.usace.army.mil/missions/regulatory.

Please note that initiating work in waters of the United States prior to receiving Department of the Army authorization could constitute a violation of Federal law. If you have any questions, please contact the Project Manager.

Thank you.

U.S. Army Corps of Engineers
St. Paul District
Regulatory Branch

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Appendix B

Well Logs

Pearson Farm Residential Development EAW

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Minnesota Unique Well Number

541778

County Anoka
Quad Anoka
Quad ID 120B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING REPORT

Minnesota Statutes Chapter 1031

Entry Date 08/05/1997
Update Date 02/14/2014
Received Date

Well Name	Township	Range	Dir	Section	Subsection
PEARSON,	32	25	W	30	AABACD

Elevation 883 ft. **Elev. Method** 7.5 minute topographic map (+/- 5 feet)

Address

Well 8846 10 SH W RAMSEY MN 55303

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
SAND	0	23	BROWN	SOFT
CLAY & ROCKS	23	43	BROWN	SOFT
SAND	43	66	GRAY	SOFT
CLAY FIRM	66	66	GRAY	

Remarks

Well Depth 66 ft. **Depth Completed** 66 ft. **Date Well Completed** 08/24/1994

Drill Method Non-specified Rotary **Drill Fluid** Bentonite

Use domestic **Status** Active

Well Hydrofractured? Yes ☐ No ☐ **From** **To**

Casing Type Single casing **Joint** Threaded
Drive Shoe? Yes ☐ No ☒ **Above/Below**

Casing Diameter	Weight	Hole Diameter
4 in. To 63 ft.	10.7 lbs./ft.	8.7 in. To 30 ft.
		6.2 in. To 66 ft.

Open Hole From ft. To ft.

Screen? ☒ **Type** stainless **Make** JOHNSON 304

Diameter	Slot/Gauze	Length	Set	
4.5 in.	18	4 ft.	62 ft.	66 ft.

Static Water Level

28 ft. land surface Measure 08/24/1994

Pumping Level (below land surface)

48 ft. 3 hrs. Pumping at 40 g.p.m.

Wellhead Completion

Pitless adapter manufacturer BAKER Model SNAPPY

☒ Casing Protection ☒ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☒ Yes ☐ No ☐ Not Specified

Material	Amount	From	To
bentonite	0.8 Cubic yards	ft.	60 ft.

Nearest Known Source of Contamination

50 feet South Direction Septic tank/drain field Type

Well disinfected upon completion? ☒ Yes ☐ No

Pump ☐ Not Installed Date Installed 01/10/1994

Manufacturer's name RED JACKET

Model Number 100CNS1- HP 1 Volt 230

Length of drop pipe 42 ft Capacity 18 g.p. Typ Submersible

Abandoned

Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

Variance

Was a variance granted from the MDH for this well? ☐ Yes ☐ No

Miscellaneous

First Bedrock Aquifer Quat. buried
Last Strat clay-gray Depth to Bedrock ft
Located by Minnesota Geological Survey
Locate Method Digitization (Screen) - Map (1:24,000)
System UTM - Mad83, Zone 15, Meters X 461347 Y 5009793
Unique Number Verification Address verification Inpute Date 07/03/2008

Angled Drill Hole

Well Contractor

Renner E.H. Well | 71015 | SCHAFFER, R.
Licensee Business | Lic. or Reg. No. | Name of Driller

Minnesota Unique Well Number

227345

County Anoka
Quad Anoka
Quad ID 120B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING REPORT

Minnesota Statutes Chapter 1031

Entry Date 04/15/1991
Update Date 02/14/2014
Received Date

Well Name	Township	Range	Dir	Section	Subsection
PEARSON,	32	25	W	30	AAABCA

Elevation 883 ft. **Elev. Method** 7.5 minute topographic map (+/- 5 feet)

Address

C/W 8846 10 HY NW RAMSEY MN 55303

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
SAND	0	10	BROWN	
GRAVEL & SAND	10	15	YELLOW	
CLAY & GRAVEL	15	60	BROWN	
GRAVEL	60	75	BROWN	

Remarks

WELL LOCATION: SOUTH SIDE OF HIGHWAY 10 & EAST OF PUMA

Well Depth 75 ft. **Depth Completed** 75 ft. **Date Well Completed** 12/13/1972

Drill Method **Drill Fluid**

Use domestic **Status** Active

Well Hydrofractured? Yes ☐ No ☐ **From** **To**

Casing Type Single casing **Joint** Threaded
Drive Shoe? Yes ☐ No ☐ **Above/Below** 0 ft.

Casing Diameter **Weight**
4 in. To 71 ft. lbs./ft.

Open Hole From ft. To ft.

Screen? ☒ **Type** stainless **Make** JOHNSON

Diameter	Slot/Gauze	Length	Set
4 in.	20	4 ft.	ft. ft.

Static Water Level
30 ft. land surface Measure 12/13/1972

Pumping Level (below land surface)
40 ft. hrs. Pumping at 17 g.p.m.

Wellhead Completion
Pitless adapter manufacturer BAKER Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☐ Yes ☐ No ☒ Not Specified

Nearest Known Source of Contamination
feet Direction Type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed 12/00/1972
Manufacturer's name AERMOTOR
Model Number HP 0.75 Volt
Length of drop pipe 50 ft Capacity 12 g.p. Typ Submersible

Abandoned
Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance
Was a variance granted from the MDH for this well? ☐ Yes ☐ No

Miscellaneous
First Bedrock Aquifer Quat. buried
Last Strat gravel (+larger)-brown Depth to Bedrock ft
Located by Minnesota Geological Survey
Locate Method Digitized - scale 1:24,000 or larger (Digitizing Table)
System UTM - Mad83, Zone 15, Meters X 461304 Y 5009799
Unique Number Verification Address verification Inpute Date 01/01/1990

Angled Drill Hole

Well Contractor

Licensee Business	Lic. or Reg. No.	Name of Driller
Renner E.H. & Sons	27015	LEDBETTER, B.

Minnesota Unique Well Number

430232

County Anoka
Quad Anoka
Quad ID 120B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING REPORT

Minnesota Statutes Chapter 1031

Entry Date 04/15/1991
Update Date 08/18/2014
Received Date

Well Name	Township	Range	Dir	Section	Subsection
MCINNIS, DAN	32	25	W	20	CDCCCA

Elevation 883 ft. **Elev. Method** 7.5 minute topographic map (+/- 5 feet)

Address

Well 14915 PUMA ST NW RAMSEY MN 55303

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
SAND	0	27	BROWN	SOFT
CLAY	27	30	BROWN	SOFT
SAND & GRAVEL	30	51	BROWN	SOFT
CLAY & GRAVEL	51	93	BROWN	HARD
CLAY	93	116	GRAY	MEDIUM
SANDROCK & SHALE	116	131	YEL/BRN	HARD
SHALE & SANDROCK	131	140	WHITE	SOFT
SANDROCK & SHALE	140	176	PNK/GRN	SOFT
SANDROCK & SHALE	176	276	GREEN	SOFT
SANDROCK & SHALE	276	338	BRN/GRN	HARD

Remarks

Well Depth	Depth Completed	Date Well Completed
338 ft.	338 ft.	03/17/1988

Drill Method Non-specified Rotary **Drill Fluid** Bentonite

Use domestic **Status** Active

Well Hydrofractured? Yes ☐ No ☐ **From** **To**

Casing Type Single casing **Joint**
Drive Shoe? Yes ☒ No ☐ **Above/Below** 1 ft.

Casing Diameter	Weight	Hole Diameter
4 in. To 294 ft.	11 lbs./ft.	6.2 in. To 294 ft.
		4 in. To 338 ft.

Open Hole From 294 ft. To 338 ft.

Screen? ☐ **Type** **Make**

Static Water Level
30 ft. land surface Measure 03/17/1988

Pumping Level (below land surface)
100 ft. 3 hrs. Pumping at 50 g.p.m.

Wellhead Completion
Pitless adapter manufacturer MONITOR Model 8PL41UCI
☐ Casing Protection ☒ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☒ Yes ☐ No ☐ Not Specified

Material	Amount	From	To
cuttings		0 ft.	194 ft.

Nearest Known Source of Contamination
75 feet East Direction Septic tank/drain field Type
Well disinfected upon completion? ☒ Yes ☐ No

Pump ☐ Not Installed Date Installed 03/21/1988
Manufacturer's name MEYERS
Model Number B352BM- HP 0.5 Volt 230
Length of drop pipe 60 ft Capacity 10 g.p. Typ Submersible

Abandoned
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

Variance
Was a variance granted from the MDH for this well? ☐ Yes ☐ No

Miscellaneous
First Bedrock St.Lawrence-Tunnel City Aquifer Wonewoc
Last Strat Wonewoc Sandstone Depth to Bedrock 116 ft
Located by Minnesota Geological Survey
Locate Method Digitized - scale 1:24,000 or larger (Digitizing Table)
System UTM - Mad83, Zone 15, Meters X 461892 Y 5009911
Unique Number Verification Address verification Inpute Date 01/01/1990

Angled Drill Hole

Well Contractor
Mork Well Co. 02133 LAWRENCE, R.
Licensee Business Lic. or Reg. No. Name of Driller

Minnesota Unique Well Number

783804

County Anoka
Quad Anoka
Quad ID 120B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING REPORT

Minnesota Statutes Chapter 1031

Entry Date 09/30/2011
Update Date 08/18/2014
Received Date 12/05/2011

Well Name	Township	Range	Dir	Section	Subsection
WIEHLE, SCOTT	32	25	W	20	BDCCAC

Elevation 885 ft. **Elev. Method** 7.5 minute topographic map (+/- 5 feet)

Address

C/W 15310 OKAPI ST NW RAMSEY MN 553037004

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
SAND	0	54	BROWN	SOFT
CLAY	54	62	BROWN	SOFT
GRAVEL	62	65	BROWN	SOFT
CLAY	65	107	BROWN	SOFT
SHALE	107	155	VARIED	SOFT

Remarks

OLD WELL ON PROPERTY GAMMA LOGGED 9-30-2011. UNIQUE NO. 272037.

NEAREST CONTAMINATION: TYPE= FLOOR DRAIN.

Well Depth 155 ft. **Depth Completed** 155 ft. **Date Well Completed** 08/26/2011

Drill Method Non-specified Rotary **Drill Fluid** Bentonite

Use domestic **Status** Active

Well Hydrofractured? Yes ☐ No ☒ **From** **To**

Casing Type Single casing **Joint** Glued

Drive Shoe? Yes ☐ No ☒ **Above/Below**

Casing Diameter	Weight	Hole Diameter
4 in. To 113 ft.	lbs./ft.	7.7 in. To 113 ft.
		6.5 in. To 155 ft.

Open Hole From 113 ft. To 155 ft.

Screen? ☐ **Type** **Make**

Static Water Level

28 ft. land surface Measure null

Pumping Level (below land surface)

60 ft. 1 hrs. Pumping at 60 g.p.m.

Wellhead Completion

Pitless adapter manufacturer AQUASEAL Model T-SERIES

☐ Casing Protection ☒ 12 in. above grade

☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☒ Yes ☐ No ☐ Not Specified

Material	Amount	From	To
neat cement	3 Sacks	103 ft.	113 ft.
bentonite	6 Sacks	ft.	103 ft.

Nearest Known Source of Contamination

52 feet East Direction Other Type

Well disinfected upon completion? ☒ Yes ☐ No

Pump ☐ Not Installed Date Installed

Manufacturer's name GOULDS

Model Number 18GS10 HP 1 Volt 230

Length of drop pipe 60 ft Capacity g.p. Typ Submersible

Abandoned

Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance

Was a variance granted from the MDH for this well? ☐ Yes ☒ No

Miscellaneous

First Bedrock Tunnel City Group Aquifer Tunnel City

Last Strat Tunnel City Group Depth to Bedrock 107 ft

Located by Minnesota Geological Survey

Locate Method Digitization (Screen) - Map (1:12,000)

System UTM - Mad83, Zone 15, Meters X 461928 Y 5010727

Unique Number Verification Information from Inpute Date 09/30/2011

Angled Drill Hole

Well Contractor

Mork Well Co., Inc. 1877 RICKE, G.

Licensee Business Lic. or Reg. No. Name of Driller

Minnesota Unique Well Number

272037

County Anoka
Quad Anoka
Quad ID 120B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING REPORT

Minnesota Statutes Chapter 1031

Entry Date 09/30/2011
Update Date 08/18/2014
Received Date

Well Name	Township	Range	Dir	Section	Subsection
WIEHELE, DEB	32	25	W	20	BDCCAC

Elevation 886 ft. **Elev. Method** 7.5 minute topographic map (+/- 5 feet)

Address

C/W 15310 OKAPI ST NW RAMSEY MN 553037004

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
SAND	0	60		
GRAVEL & CLAY	60	110		
GRAVEL & CLAY	110	126		
SANDROCK	126	156		

Remarks

GAMMA LOGGED 9-20-2011. LOGGED FOR ANOKA CO. ATLAS AND MDH.

Well Depth 156 ft. **Depth Completed** 156 ft. **Date Well Completed** 07/30/1974

Drill Method **Drill Fluid**

Use domestic **Status** Inactive

Well Hydrofractured? Yes ☐ No ☐ **From** **To**

Casing Type Single casing **Joint**

Drive Shoe? Yes ☐ No ☐ **Above/Below**

Casing Diameter	Weight	Hole Diameter
4 in. To 141 ft.	lbs./ft.	4 in. To 156 ft.

Open Hole From 141 ft. To 156 ft.

Screen? ☐ **Type** **Make**

Static Water Level

41 ft. land surface Measure 09/30/2011

Pumping Level (below land surface)

Wellhead Completion

Pitless adapter manufacturer Model

☐ Casing Protection ☐ 12 in. above grade

☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☐ Yes ☐ No ☒ Not Specified

Nearest Known Source of Contamination

feet Direction Type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Manufacturer's name

Model Number HP Volt

Length of drop pipe ft Capacity g.p. Typ

Abandoned

Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance

Was a variance granted from the MDH for this well? ☐ Yes ☐ No

Miscellaneous

First Bedrock Tunnel City Group Aquifer Tunnel City

Last Strat Tunnel City Group Depth to Bedrock 110 ft

Located by Minnesota Geological Survey

Locate Method Digitization (Screen) - Map (1:12,000)

System UTM - Mad83, Zone 15, Meters X 461922 Y 5010728

Unique Number Verification Information from Inpute Date 09/30/2011

Angled Drill Hole

Well Contractor

Licensee Business Lic. or Reg. No. Name of Driller

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Appendix C

Minnesota DNR Natural Heritage Information System Report

Pearson Farm Residential Development EAW

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The DNR NHIS Report is expected to be available by March 17

Appendix D

State Historic Preservation Office Response

Pearson Farm Residential Development EAW

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From: Thomas Cinadr [mailto:thomas.cinadr@mnhs.org]
Sent: Thursday, February 02, 2017 8:46 AM
To: Andrew Krinke <Andrew@kjolhaugenv.com>
Subject: Re: SHPO Request

THIS EMAIL IS NOT A PROJECT CLEARANCE.

This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.

No archaeological sites or historic structures were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested.

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson in Review and Compliance @ 651-259-3455 or by email at kelly.graggjohnson@mnhs.org.

The Minnesota SHPO Survey Manuals and Database Metadata and Contractor Lists can be found at **http://www.mnhs.org/shpo/survey/inventories.htm**

Tom Cinadr
Survey and Information Management Coordinator
Minnesota Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. West
St. Paul, MN 55102

651-259-3453

On Wed, Feb 1, 2017 at 1:12 PM, Andrew Krinke <Andrew@kjolhaugenv.com> wrote:

Hi Tom,

We are requesting a historical property information/database search for a 88.4-acre site located in the southwest quarter of Section 20, T32N, R25W, Ramsey, Anoka County, Minnesota. The site corresponds to Anoka County PIN 203225320001, 203225330001, and 293225220004 and the Lat/Long coordinates of the site are 45.243891, -93.488493.

We are requesting this search because the Pearson Farm Residential Development is proposed on this property. The Pearson Farm Residential Development project will include 246 single-family lots and 98 townhomes. Site development will include mass grading and the site will be served by municipal sewer and water. . The project area is dominated by annually tilled cropland, but includes three farmed wetlands and some field edges with trees and grassland.

Attached please find a USGS topography site location map and a shapefile to support this request. I would appreciate your prompt attention to this review.

Thank you,

Andrew Krinke
Kjolhaug Environmental Services Company
26105 Wild Rose Lane
Shorewood, MN 55331
Office: 952-401-8757
Cell: 612-704-6743
Andrew@kjolhaugenv.com

Appendix E
Traffic Impact Study

Pearson Farm Residential Development EAW

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Spack CONSULTING
ENGINEERING TRAFFIC FORWARD

Traffic Impact Study

Pearson Farm Residential Development
Ramsey, Minnesota

I hereby certify this report was prepared by me or under my direct supervision, and I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

By: _____
Vern Swing, P.E.
License No. 41417

Date: March 10, 2017_____

Executive Summary

Background: The Pearson Farms Development is proposed for construction on the vacant land bounded by Puma Street, Alpine Drive, Trunk Highway (TH) 10, and Links at Northfork Golf Course in Ramsey, Minnesota. This development will include 344 total residential units (98 townhomes and 246 single family homes). The purpose of this study is to determine the traffic impacts associated with the build out of the proposed development on the study intersections.

Results: The principal findings of this traffic study are:

- The proposed expansion is expected to generate approximately 2,912 new trips during an average weekday (1,456 entering and 1,456 exiting), approximately 227 new trips during the a.m. peak hour (53 entering and 174 exiting) and approximately 297 new trips during the p.m. peak hour (189 entering and 108 exiting).
- The existing study intersections operate with acceptable delays and vehicle queues today.
- The study intersections are expected to operate acceptably during the 2040 no-build and build scenarios.
- Left turn lanes are not warranted based on the expected 2040 build year volumes and mainline speeds.
- Right turn lane warrants are not fulfilled due to the mainline speeds remaining below 45 MPH, which is consistent for neighborhood streets, however, the right turn lane volume thresholds were reached by the estimated 2040 Build volumes.

Recommendations: The following items are recommended based on the analyses contained in this study:

- No additional intersection mitigation is required to help improve capacity.
- If the speed limits along Puma Street or Alpine Drive are increased to 45 MPH or higher, re-evaluate the Turn-Lane Warrants.
- Construct a new sidewalk/trail along the southern edge of Alpine Drive connecting the proposed access to the existing Alpine Drive/Puma Street intersection. The addition of a north/south crosswalk should also be considered at this intersection to help promote safe crossing to the existing northern sidewalk/trail.
- Ensure the proposed internal sidewalks connect to the external sidewalk/trail system.
- Work with Metro Transit or their affiliates to improve transit options within the project area as the closest existing transit is located roughly 1.5 miles away at Ramsey Station and Platform.

This study is based upon a concept plan from January 6, 2017. Assuming the general characteristics of the proposed development remain approximately the same as documented, minor changes in the final design are not expected to alter the results or recommendations of this study.

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1. Introduction

a. Proposed Development

The Pearson Farm Development is proposing to construct a new residential development located on the vacant land bounded by Puma Street, Alpine Drive, Trunk Highway (TH) 10, and Links at Northfork Golf Course in Ramsey, Minnesota. The development is currently proposed to include 98 townhomes and 246 single family homes for a total of 344 units.

For the purposes of this study, the development is expected to be fully built and occupied by the 2040 forecast year.

b. Purpose of Study

The purpose of this study is to:

i. Examine the existing operations of the surrounding study intersections.
ii. Forecast the amount of traffic expected to be generated by the proposed development.
iii. Determine the traffic impacts associated with the build out of the proposed development.

The traffic impacts are studied on the roads and intersections where significant impact is anticipated and improvements are recommended where mitigation is needed. For those not familiar with the general concepts and terms associated with traffic engineering, *The Language of Traffic Engineering* guide is included in the Appendix.

c. Study Objectives

The objectives of this study are:

i. Document how the study intersections and roadways currently operate.
ii. Forecast the amount of traffic expected to be generated by the proposed development.
iii. Determine how the study intersections and roadways will operate in the future AM and PM peak hours with the proposed development.
iv. Recommend appropriate mitigation and operation measures to improve operations if deficiencies are identified within the development or on the study intersections.

The study intersections closest to the proposed development were chosen for review as these will experience the greatest impact from traffic associated with the development. The study intersections include:

i. Alpine Drive/Puma Street
ii. Bunker Lake Boulevard/Puma Street
iii. Alpine Drive/Site Access
iv. Puma Street/Site Access

2. Existing Conditions

a. Corridor Characteristics

As mentioned, the proposed site is located to the west of Puma Street, south of Alpine Drive, and north of Trunk Highway (TH) 10 in Ramsey, Minnesota. Table 1 shows the characteristics of the key roadway corridors around this site and within the study area.

Table 1 – Study Corridor Characteristics

Name[1]	Designation	Speed Limit	Lanes	Transit[2]	Peds/ Bicycles
Bunker Lake Boulevard (MSAS 12)	Minor Collector	30 mph	2 undivided	None	Sidewalk on north side
Puma Street (MSAS 109)	Local Street	30 mph	2 undivided	None	Sidewalk on west side
Alpine Drive (MSAS 112)	Minor Collector	40 mph	2 undivided	None	Sidewalk on north side

[1] MSAS = Municipal State Aid Street

[2] Transit routes are available roughly 1.5 miles away at Ramsey Station & Platform

b. Traffic Volumes

48-hour intersection videos were collected at the existing study intersections under normal weekday conditions in February 2017. Using these videos, 24-hour turning movement counts were created by averaging the two days to smooth out any single day anomalies and create a typical day.

Based on these averages, the AM and PM peaks were determined to be 7:00 AM to 8:00AM and 4:45PM to 5:45 PM. The averaged turning movement counts from these two peak hours were used at the study intersections for analysis. The turning movement count data from the counts are contained in fifteen minute intervals in the Appendix.

Based on the Weekday turning movement volumes, the current daily traffic volumes on each study corridor are:

i. 38 vehicles per day on Bunker Lake Boulevard.
ii. 100 vehicles per day on Puma Street.
iii. 1,100 vehicles per day on Alpine Drive.

3. Forecasted Traffic

a. Site Traffic Forecasting

The *Institute of Transportation Engineers (ITE)* provides the *Trip Generation Manual, 9th Edition*, the standard document for determining expected traffic for proposed land uses. Using this ITE information, trip generation forecasts can be made for the development site.

The ITE manual compiles studies from across the country to provide a national average traffic for various land uses. For the proposed residential development, the designation of Single Family Homes and Townhomes were used. Based on information supplied in the site plan, the development is currently proposed to include 98 townhomes and 246 single family homes for a total of 344 units. With this information, the expected trip generation was completed based on the full build out of the development.

The resultant new trips generated by the proposed development are shown in Table 2. A detailed trip generation table showing the exact breakdowns is provided in the Appendix.

Table 2 – New Trip Generation

Land Use Code – Source	Description & Size	Daily		AM Peak Hour		PM Peak Hour	
		Total In	Total Out	Total In	Total Out	Total In	Total Out
210	Single Family Home	1,171	1,171	46	138	155	91
230	Townhomes	285	285	7	36	34	17
TOTAL		**1,456**	**1,456**	**53**	**174**	**189**	**108**

A trip distribution pattern was developed for the site generated traffic going to and from the proposed development. This pattern is based on the existing traffic volumes, access locations, location of major roadways leading to and from the site, and prior studies within the project area. The general trip distribution pattern for this study is:

i. 22 percent of the site generated traffic to/from the west on Alpine Drive.
ii. 78 percent of the site generated traffic to/from the east on Alpine Drive and Bunker Lake Boulevard.

Traffic generated by the development of the site was assigned to the area roadways per this distribution pattern.

b. Non-site Traffic Forecasting

To forecast future traffic volumes for the year 2040 in the study area outside of the proposed development's traffic, additional trip generations were considered based on proposed developments within the project area. These trip generations were based on a prior study completed by Bolton & Menk analyzing the Future

Business Park, which included a preliminary look at the Pearson Farm Development. Using this study the total acreage of the new proposed land uses were determined and their corresponding trip generations were completed. The proposed developments and trip generations can be found in the Appendix.

Applying the background growth rate and surrounding development trip generations to the existing traffic volumes established the 2040 No-Build forecasts.

c. Total Traffic

Traffic forecasts were developed for the 2040 Build scenarios by adding the traffic generated by the proposed development to the non-site forecast volumes. Peak hour forecasts are shown in the Appendix.

4. Analyses

a. *Intersection Vehicular Analysis*

The scenarios analyzed in this study for both the a.m. and p.m. peak hours were the existing, 2040 No-Build, and 2040 Build scenarios. Capacity analyses are performed for the study intersections to determine if they need improvements such as turn lanes or an upgrade in traffic control. It should be noted that for the No-Build and Build scenarios it is assumed Puma Street will be realigned on the north end to line up with Okapai Street as shown in the site plan in the Appendix.

The existing and forecasted turning movement volumes along with the existing intersection configurations and traffic control were used to develop the average delay per intersection in each study scenario. The delay calculations were done in accordance with the *Highway Capacity Manual 6th Edition* using the Vistro software package. The full calculations for each study scenario, including Level of Service (LOS) grades and queue lengths, are included in the Appendix. Also, included in the Appendix is a guide explaining the Level of Service grade concept.

Chart 1 (a.m. peak hour) and Chart 2 (p.m. peak hour) show the 95th percentile queue lengths on the busiest stop sign controlled approach at intersections with side street stop sign control. Average delays are not calculated for intersections with side street stop sign control because the vast majority of vehicles going through the intersection are on the main roadway and have zero delay, which leads to low overall average delays. At side street stop sign controlled approaches to busy roadways, the average delay for all the vehicles on the approach often exceeds 60 seconds. This can be the case for a few vehicles waiting at the stop sign where improvements would not be justified for the low traffic volume. In general, vehicle queuing of five cars or more is considered unreasonable and could warrant mitigation.

Chart 1 – A.M. Peak Hour Queues: Side-Street Stop-Controlled Intersections

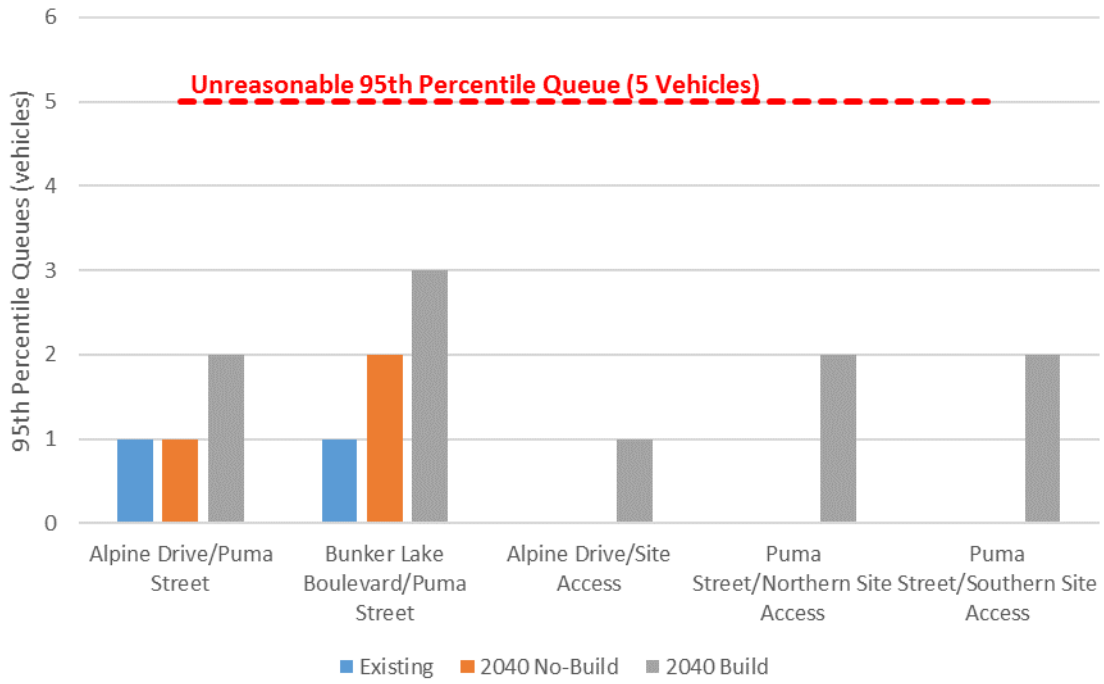
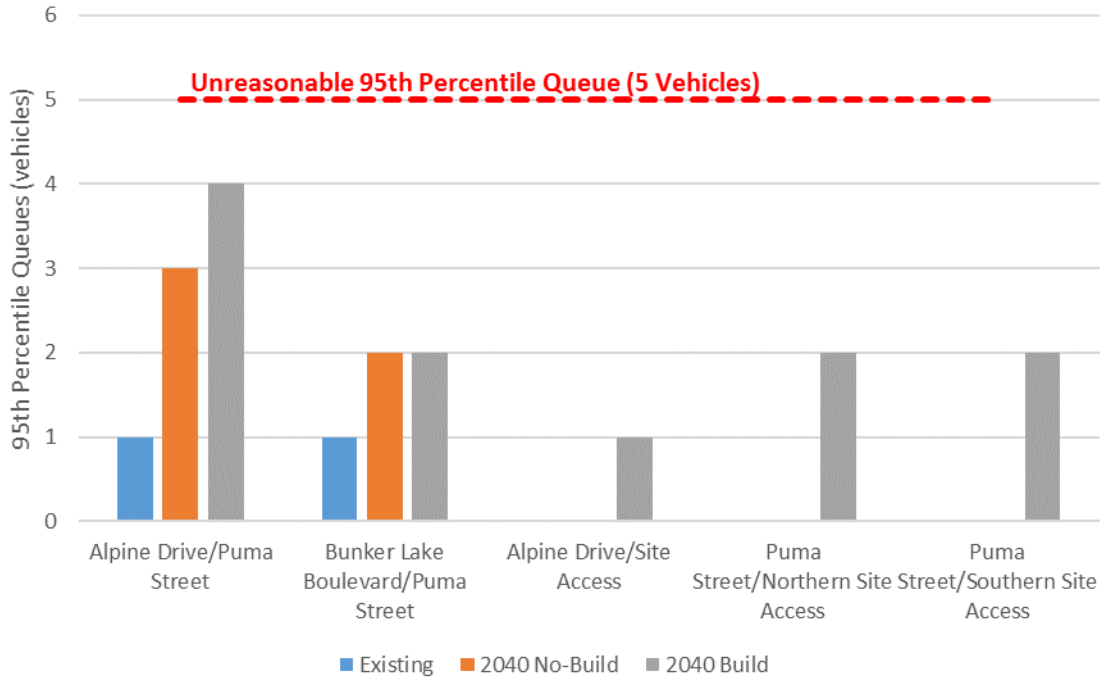


Chart 2 – P.M. Peak Hour Queues: Side-Street Stop-Controlled Intersections



b. Vehicular Mitigation Analysis

The above analyses indicate all study intersections are forecast to operate acceptably under all scenarios, including with the addition of traffic generated by the proposed addition of the Pearson Farm Development. As Charts 1 and Chart 2 show, the existing, no-build, and build queues stay consistent and well below the standard thresholds. All 95th percentile queues remain at or below four vehicles per approach at all study intersections. These results suggest that the addition of the Pearson Farm Development will not adversely impact the traffic operations at the study intersections. No mitigation is required at these intersections to help improve capacity.

With the existing low speed along Alpine Drive and Puma Street, the Turn-Lane Warrants published by MnDOT will not be fulfilled, as a 45 MPH minimum speed limit is not present on either roadway. The 30 MPH speed limit is consistent for a neighborhood street. A preliminary Turn-Lane Warrant analysis was completed based on volumes alone and ignoring the 45 MPH minimum speed requirement.

The daily total traffic entering and exiting the site accesses based on the collected turning movement counts, surrounding development trip generations, and the site trip generation were estimated as follows:

i. Southern site access at Bunker Lake Boulevard – 970 Vehicles per day
ii. Center site access onto Puma Street – 920 Vehicles per day
iii. Northern site access onto Puma Street – 680 Vehicles per day
iv. Site access onto Alpine Drive – 350 Vehicles per day

Main Line ADTs are roughly:

i. Puma Street – 4,400 Vehicles per day
ii. Alpine Drive – 2,700 Vehicles per day

Based on these estimated volumes and the criteria published in Warrant 9 (Vehicular Volume Warrant) from the *MnDOT Access Management Manual's Turn-Lane Warrants for Undivided Highways*, Table 3, below, was created. This table shows the estimated mainline and access volumes and the corresponding MnDOT Warrant thresholds.

Table 3 – New Trip Generation

Intersection	Left Turn Lane		Right Turn Lane	
	Street ADT	Access ADT	Street ADT	Access ADT
Southern site access at Bunker Lake Boulevard	4,400	970	4,400	970
Center site access onto Puma Street	4,400	920	4,400	920
Northern site access onto Puma Street	4,400	680	4,400	680
Site access onto Alpine Drive	2,700	350	2,700	350
Criteria	**4,000 – 4,999 -or- 1,500 – 2,999**	**> 1,000 -or- > 1,500**	**> 1,500**	**> 100**

As Table 3 shows, left-turn lanes are not warranted based on the estimated 2040 Build volumes while the right-turn lane warrant is satisfied. Again, these values are based upon a 45 MPH speed limit, which is not present on either Alpine Drive or Puma Street. If the speed along these streets are raised to 45 MPH or higher the Turn-Lane Warrants should be re-assessed.

It should be noted that this analysis did not consider modification to Armstrong Boulevard & Bunker Lake Boulevard as the prior Future Business Park Traffic Memorandum completed by Bolton & Menk already defined necessary upgrades for the intersection that would be required for proper traffic flow through the intersection.

c. Concept Site Plan & Multi-Modal Review

The concept site plan contained in the Appendix was reviewed to determine what changes are recommended, if any, to the proposed Pearson Farm Development. Following are key transportation elements of the concept site plan that should be implemented:

i. **Car Circulation**: The proposed site plan provides sufficient vehicle circulation with four accesses spaced evenly throughout the development. These accesses allow vehicles multiple options for entering and exiting the development which will help spread traffic more evenly throughout the site

ii. **Bicycle and pedestrian infrastructure:** An additional sidewalk/trail should be considered along the southern side of Alpine Drive from the proposed site access to the intersection of Alpine Drive and Puma Street. At this intersection, an additional crosswalk should be considered, connecting pedestrians north to the existing sidewalk/trail along the northern side of Alpine Drive. This new sidewalk/trail connection will provide a safe crossing and clear route for pedestrians and bicyclist to connect to the existing infrastructure. The existing trail along the western side of Puma Street will be lengthened to the southern edge of the development and an additional leg will be brought into the development at the Center Site Access location on Puma Street. This segment will stretch to the internal park to the north. Additional internal sidewalks will also be provided on one side of each street within the development and

should connect to the existing sidewalk/trail along Puma Street, as well as the proposed additional sidewalk/trail along the southern side of Alpine Drive.

iii. **Adjacent Transit:** The addition of transit near the Pearson Farm Development should be considered. Having access to other modes of travel is often seen as an amenity and a general benefit to a site, while helping to reduce the overall number of vehicles throughout the study area.

5. Conclusions and Recommendations

The traffic impacts and operation of the proposed Pearson Farm Development were thoroughly studied and the principal findings are:

- The proposed expansion is expected to generate approximately 2,912 new trips during an average weekday (1,456 entering and 1,456 exiting), approximately 227 new trips during the a.m. peak hour (53 entering and 174 exiting) and approximately 297 new trips during the p.m. peak hour (189 entering and 108 exiting).
- The existing study intersections operate with acceptable delays and vehicle queues today.
- The study intersections are expected to operate acceptably during the 2040 no-build and build scenarios.
- Left turn lanes are not warranted based on the expected 2040 build year volumes and mainline speeds.
- Right turn lane warrants are not fulfilled due to the mainline speeds remaining below 45 MPH, which is consistent for neighborhood streets, however, the right turn lane volume thresholds were reached by the estimated 2040 Build volumes.

The following recommendations are made based on the above findings:

- No additional intersection mitigation is required to help improve capacity.
- If the speed limits along Puma Street or Alpine Drive are increased to 45 MPH or higher, re-evaluate the Turn-Lane warrants.
- Construct a new sidewalk/trail along the southern edge of Alpine Drive connecting the proposed access to the existing Alpine Drive/Puma Street intersection. The addition of a north/south crosswalk should also be considered at this intersection to help promote safe crossing to the existing northern sidewalk/trail.
- Ensure the proposed internal sidewalks connect to the external sidewalk/trail system.
- Work with Metro Transit or their affiliates to improve transit options within the project area as the closest existing transit is located roughly 1.5 miles away at Ramsey Station and Platform.

6. Appendix

A. Site Plan

B. The Language of Traffic Engineering

C. Traffic Counts

D. Trip Generation Tables

E. Peak Hour Volumes

F. Level of Service (LOS)

G. Capacity Analysis Backup

- AM Existing
- PM Existing
- AM 2040 No-Build
- PM 2040 No-Build
- AM 2040 Build
- PM 2040 Build

TOWNHOME DETAIL

50' VILLA LOT DETAIL

50' LOT DETAIL

65' LOT DETAIL

SITE DATA

TOTAL AREA	±88.44 AC.	SETBACK DATA:	
TOTAL NUMBER OF LOTS	344	50' S.F. – SIDE	5 FT.
50' S.F.	111	65' S.F. – SIDE	7.5 FT.
65' S.F.	48	50' VILLAS – SIDE	5 FT.
50' VILLAS	87	FRONT (ALL)	25 FT.
TOWNHOMES	98	REAR	20 FT. MIN.

SOUTH HALF DATA

TOTAL NUMBER OF LOTS	172	SETBACK DATA:	
50' S.F.	55	50' S.F. – SIDE	5 FT.
65' S.F.	24	65' S.F. – SIDE	7.5 FT.
50' VILLAS	35	50' VILLAS – SIDE	5 FT.
TOWNHOMES	58	FRONT (ALL)	25 FT.
		REAR	20 FT. MIN.

N

0 50 100 200

(IN FEET)

Carlson McCain
• environmental
• engineering
• surveying

3890 Pheasant Ridge Drive NE, Suite 100
Blaine, MN 55449
Phone: (763) 489-7900
Fax: (763) 489-7959
www.carlsonmccain.com

DRAWN BY: C#
ISSUE DATE: 01/06/17
FILE NO: XXX

Revisions:

CAPSTONE HOMES
14015 Sunfish Lake Blvd. - Suite 400
Ramsey, MN 55303

PEARSON FARM
Ramsey, Minnesota

CONCEPT PLAN

1 of 1

Save Date: 01/06/17 | F:\jobs\6421 - 6440\6435 - ramsey site\cad c3d\survey\6435_layout 4.dwg

The Language of Traffic Engineering

Traffic Engineering, and Traffic Engineers, often use technical terms or jargon that may be confusing or tough to understand even within the context of a sentence. Key terms and acronyms that can generally be found in all types of traffic studies are defined in this document.

Types of Studies

Access Management – The practice of government agencies limiting the amount of intersections (both public roadway crossings and private driveways) along a roadway corridor based on the function of the roadway to improve safety and mobility while streamlining access.

Corridor Study – A transportation review and analysis of the existing and future traffic operations of a roadway segment. Varies in length from a couple blocks to a few miles and typically covers all modes of travel.

Intersection Control Evaluation (ICE) Report – A document that examines and determines the most appropriate type of control (stop sign, signal, roundabout, or other) at one or more intersections.

Safety Study – An examination of crash records to identify potential trends, issues, and problem intersections/ corridors. Usually includes potential mitigation options expected to decrease crash rates in the future.

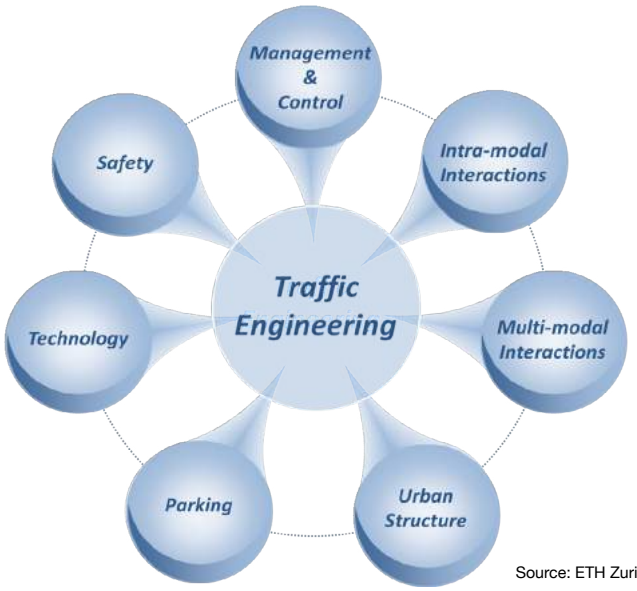
Speed Study – A review of existing travel speeds and the corridor characteristics to determine if speeding is an issue, the appropriate speed to post as the limit, and/or areas to provide reduced speed warnings.

Traffic Impact Study (TIS) – A document that addresses the expected traffic impacts of a development and, if necessary, mitigation options that will reduce or eliminate negative impacts. Also referred to as a Traffic Impact Analysis.

Transportation Plan – A document developed by a government agency to take inventory of their transportation network, identify concerns or issues and lay out the path for improvement of the system.

Travel Demand Management Plan (TDMP) – A plan that documents the existing infrastructure around a site, including transit and non-motorized vehicle options, and develops measures to be implemented to encourage those alternative modes of travel.

Warrant Evaluation – Review of traffic volumes and other characteristics at an intersection against thresholds to determine if a traffic signal or other traffic control option is needed/warranted.



Source: ETH Zurich

Traffic Engineering is a branch of civil engineering that focuses on the safe and efficient movement of people and vehicles. It is part science and part art, requiring not only technical skills for analysis but an understanding of motivations in choosing travel routes.

Key Organizations

AASHTO – American Association of State Highway and Transportation Officials. A nonprofit, nonpartisan association representing transportation departments with a primary goal of fostering the development, operation, and maintenance of an integrated national transportation system.

DOT – Department of Transportation. Government organizations within federal and state agencies dedicated to serving the transportation needs of the community and typically responsible for study, design, operation, and maintenance of all facets of transportation.

FHWA – Federal Highway Administration. An agency within the US Department of Transportation that supports State and local governments in the design, construction, and maintenance of the highway system.

ITE – Institute of Transportation Engineers. An international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs.

Results

85th Percentile Speed – Speed at which 85 percent of drivers are traveling at or below. Speed limits are typically set at the 85th percentile speed.

95th Percentile Queue – The distance, generally measured in feet or number of vehicles, which will be exceeded in a lane, typically at an intersection, only five percent of the time. Usually used to help determine intersection turn lane lengths.

Control Delay – The total amount of time a motorist takes to get through a road segment or intersection minus the time it would take without stopping due to traffic controls (like stop signs or traffic signals). Control delay includes decelerating and accelerating back to full driving speed.

Functional Classification – the grouping of streets and highways into categories according to their characteristics and emphasis on mobility or access. Generally, categories include arterials (emphasizing mobility and fast travel), local roads (emphasizing access to adjoining properties), and collector roads (emphasizing a balance between the two and usually connecting arterials to local roads).

Intersection Delay – The average amount of time, usually expressed in seconds, experienced by any vehicle traveling through an intersection.

Level of Service (LOS) – Qualitative measure of traffic operations related to the amount of average delay experienced. Expressed in letter grades with LOS A representing the best operations with little to no delay and LOS F representing the worst operations with excessive delays and congestion.

Measures of Effectiveness – Performance measures that define how well traffic is moving along a corridor or thru an intersection. The common MOEs are travel time, corridor speed, delay, and queues.

Mitigation – Measures intended to reduce the impact of a development or improve an identified traffic issue by either improving capacity (like adding lanes) or reducing demand (like encouraging carpooling).

Queue – Length of line of cars waiting at an intersection or at a bottleneck in a corridor, typically measured for each individual lane of traffic in feet or number of vehicles.

Volume to Capacity (v/c) ratio – the number of vehicles through an intersection or roadway segment in a specific amount of time divided by the expected capacity of the road. Less than 1.0 indicates available capacity and above 1.0 indicates more vehicles than can be accommodated. Typically, a v/c ratio above 0.85 suggests operational issues.

Trip Generation – The amount of vehicle traffic generated by a land use. One trip is equal to one vehicle traveling from an origin to a destination (traveling to and from work equals two trips).

Warrants – Criteria based on volumes and other Measures of Effectiveness for determining when all way stop signs, roundabouts, traffic signals, or other type of control should be installed.

Important Manuals/Guides

HCM – Highway Capacity Manual (released by the Transportation Research Board, or TRB). The guide for engineers and planners to assess traffic and environmental effects of highway projects. This manual presents the foundation of traffic analysis procedures in the US.

MUTCD – Manual of Uniform Traffic Control Devices. A document that sets minimum standards and provides guidance to ensure uniformity of traffic control devices (such as messages, location, size, shapes, and colors) across the nation. All roads are subject to its jurisdiction.

HSM – Highway Safety Manual (released by AASHTO). A guide that presents a variety of methods for quantitatively estimating crash frequency or severity.

Resources

MUTCD, 2009 Edition, published by FHWA

Highway Capacity Manual, HCM2010

Highway Safety Manual, HSM

About This Brief

Spack Consulting prepared this brief as part of our company's vision to significantly improve the practice of traffic engineering and transportation planning. Transportation professionals from around the world have assisted us in developing this document. We are providing this brief under the Creative Commons Attribution License. Feel free to use-modify-share this guide, but please give us some credit in your document. To request our whole series of Design Briefs and to be included on our distribution list for new materials, please email mspack@spackconsulting.com. And please reach out if you have any comments or questions related to this Design Brief.

Traffic Data Inc

PO Box 16269
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	4
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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03:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
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05:45 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	4
Total	0	0	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	0	0	3	0	0	3	19
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06:30 AM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	6	0	0	6	14
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Total	0	0	0	0	0	0	0	0	30	0	0	30	0	1	0	0	0	1	0	0	29	3	0	32	63

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Oxford Street & Fairmount Avenue
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Groups Printed- Cars + - Trucks

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08:45 AM	0	0	0	0	0	0	0	0	9	0	0	9	0	1	0	1	0	2	0	0	11	0	0	11	22
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09:15 AM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	7	0	0	7	14
09:30 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	2	1	0	3	6
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01:00 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	1	0	0	0	1	0	0	8	0	0	8	17
01:15 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	1	0	0	0	1	0	0	7	0	0	7	16
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Total	0	0	0	0	0	0	0	1	28	0	0	29	0	5	0	1	0	6	0	0	26	1	0	27	62

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Oxford Street & Fairmount Avenue
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Groups Printed- Cars + - Trucks

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Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
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02:15 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	2	0	1	0	3	0	0	3	0	0	3	14
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Total	0	0	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	0	0	0	19	0	0	19	39

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Groups Printed- Cars + - Trucks

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
09:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
09:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3	1	0	4	7
09:30 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	5
09:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
Total	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	10	1	0	11	20
10:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
10:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
10:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	7	0	0	7	10
11:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
11:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	2	0	0	2	5
11:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	5	0	0	5	10
Grand Total	0	0	0	0	0	0	0	5	510	0	0	515	0	27	0	7	0	34	0	0	529	27	1	557	1106
Apprch %	0	0	0	0	0		0	1	99	0	0		0	79.4	0	20.6	0		0	0	95	4.8	0.2		
Total %	0	0	0	0	0	0	0	0.5	46.1	0	0	46.6	0	2.4	0	0.6	0	3.1	0	0	47.8	2.4	0.1	50.4	
Cars +	0	0	0	0	0	0	0	5	500	0	0	505	0	21	0	6	0	27	0	0	519	27	1	547	1079
% Cars +	0	0	0	0	0	0	0	100	98	0	0	98.1	0	77.8	0	85.7	0	79.4	0	0	98.1	100	100	98.2	97.6
Trucks	0	0	0	0	0	0	0	0	10	0	0	10	0	6	0	1	0	7	0	0	10	0	0	10	27
% Trucks	0	0	0	0	0	0	0	0	2	0	0	1.9	0	22.2	0	14.3	0	20.6	0	0	1.9	0	0	1.8	2.4

Traffic Data Inc
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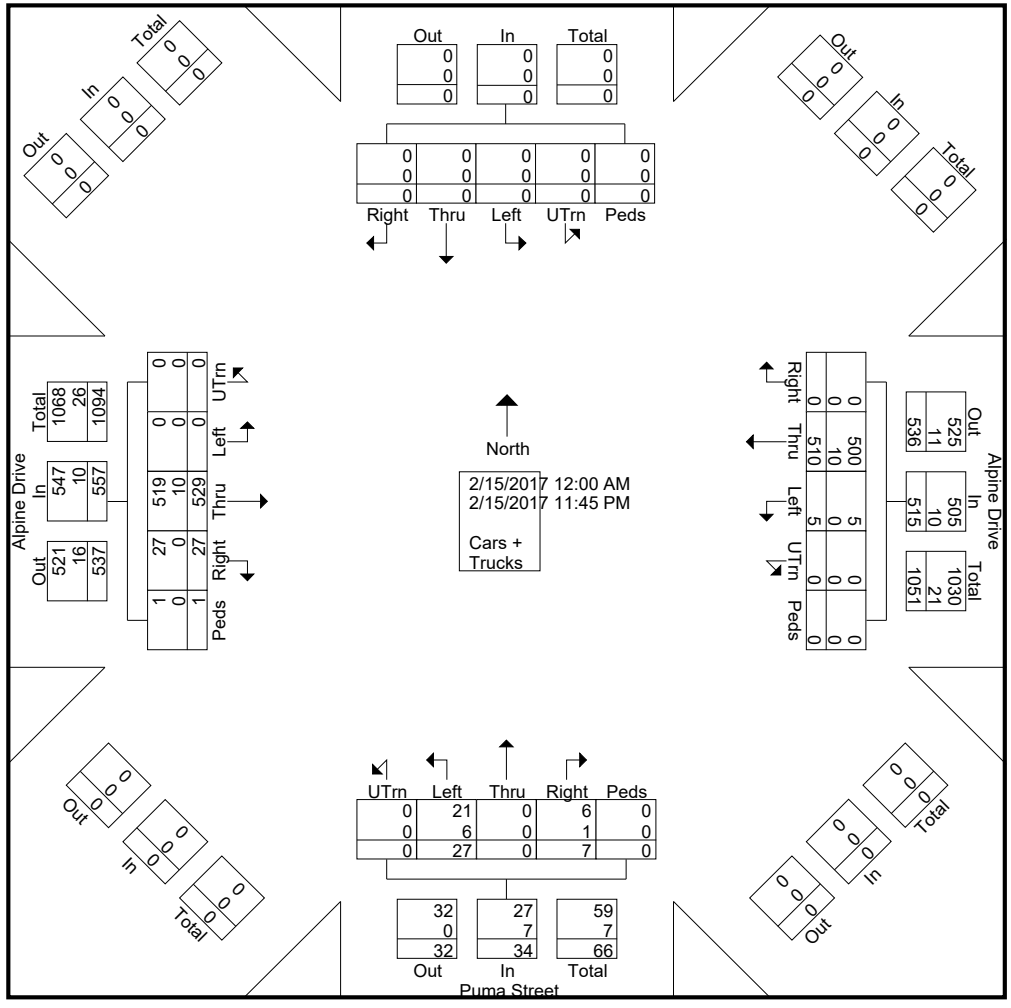
Oxford Street & Fairmount Avenue
Saint Paul, MN



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Oxford Street & Fairmount Avenue
Saint Paul, MN

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:15 AM																									
07:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	23	2	0	25	35
07:30 AM	0	0	0	0	0	0	0	0	**13**	0	0	**13**	0	0	0	0	0	0	0	0	10	2	0	12	25
07:45 AM	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	12	2	0	14	24
08:00 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	**1**	0	**1**	0	0	11	0	0	11	18
Total Volume	0	0	0	0	0	0	0	0	39	0	0	39	0	0	0	1	0	1	0	0	56	6	0	62	102
% App. Total	0	0	0	0	0		0	0	100	0	0		0	0	0	100	0		0	0	90.3	9.7	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.000	.000	.000	.250	.000	.250	.000	.000	.609	.750	.000	.620	.729
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 12:30 PM																									
12:30 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	**2**	0	0	0	**2**	0	0	**9**	**1**	0	**10**	15
12:45 PM	0	0	0	0	0	0	0	0	7	0	0	7	0	1	0	0	0	1	0	0	8	0	0	8	16
01:00 PM	0	0	0	0	0	0	0	0	**8**	0	0	**8**	0	1	0	0	0	1	0	0	8	0	0	8	**17**
01:15 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	1	0	0	0	1	0	0	7	0	0	7	16
Total Volume	0	0	0	0	0	0	0	0	26	0	0	26	0	5	0	0	0	5	0	0	32	1	0	33	64
% App. Total	0	0	0	0	0		0	0	100	0	0		0	100	0	0	0		0	0	97	3	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.813	.000	.000	.813	.000	.625	.000	.000	.000	.625	.000	.000	.889	.250	.000	.825	.941
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 04:45 PM																									
04:45 PM	0	0	0	0	0	0	0	**1**	11	0	0	12	0	0	0	0	0	0	0	0	15	**1**	0	16	28
05:00 PM	0	0	0	0	0	0	0	0	10	0	0	10	0	**2**	0	**1**	0	**3**	0	0	17	0	**1**	**18**	31
05:15 PM	0	0	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	0	0	0	**18**	0	0	18	**32**
05:30 PM	0	0	0	0	0	0	0	0	**15**	0	0	**15**	0	2	0	0	0	2	0	0	14	0	0	14	31
Total Volume	0	0	0	0	0	0	0	2	49	0	0	51	0	4	0	1	0	5	0	0	64	1	1	66	122
% App. Total	0	0	0	0	0		0	3.9	96.1	0	0		0	80	0	20	0		0	0	97	1.5	1.5		
PHF	.000	.000	.000	.000	.000	.000	.000	.500	.817	.000	.000	.850	.000	.500	.000	.250	.000	.417	.000	.000	.889	.250	.250	.917	.953

Traffic Data Inc
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
01:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
01:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
02:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
02:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	7
03:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
03:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	2	0	0	2	7
04:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	5
05:30 AM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
05:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
Total	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	0	6	0	0	6	18
06:00 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	5	0	0	5	11
06:15 AM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	1	1	0	2	9
06:30 AM	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	8	0	0	8	18
06:45 AM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	6	1	0	7	16
Total	0	0	0	0	0	0	0	0	32	0	0	32	0	0	0	0	0	0	0	0	20	2	0	22	54

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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	12	0	0	12	0	1	0	0	0	1	0	0	11	0	0	11	24
07:15 AM	0	0	0	0	0	0	0	0	11	0	0	11	0	1	0	0	0	1	0	0	14	0	0	14	26
07:30 AM	0	0	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	0	0	17	1	0	18	31
07:45 AM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	13	4	0	17	24
Total	0	0	0	0	0	0	0	0	43	0	0	43	0	2	0	0	0	2	0	0	55	5	0	60	105
08:00 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	12	0	0	12	15
08:15 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	7	1	0	8	14
08:30 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	11	2	0	13	19
08:45 AM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	8	0	0	8	15
Total	0	0	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	0	0	0	38	3	0	41	63
09:00 AM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	8	0	0	8	17
09:15 AM	0	0	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	0	0	5	0	0	5	12
09:30 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	1	0	4	8
09:45 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	1	0	0	5	0	0	5	9
Total	0	0	0	0	0	0	0	1	22	0	0	23	0	0	0	1	0	1	0	0	21	1	0	22	46
10:00 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	1	0	0	0	1	0	0	8	1	0	9	15
10:15 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	8	0	0	8	13
10:30 AM	0	0	0	0	0	0	0	1	4	0	0	5	0	1	0	0	0	1	0	0	2	0	0	2	8
10:45 AM	0	0	0	0	0	0	1	0	3	0	0	4	0	1	0	0	0	1	0	0	9	0	0	9	14
Total	0	0	0	0	0	0	1	1	17	0	0	19	0	3	0	0	0	3	0	0	27	1	0	28	50
11:00 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	6	1	0	7	13
11:15 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	1	1	0	0	5	0	0	5	11
11:30 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	5
11:45 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	1	0	0	0	1	0	0	6	0	0	6	13
Total	0	0	0	0	0	0	0	0	21	0	0	21	0	1	0	0	1	2	0	0	18	1	0	19	42
12:00 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	8	1	0	9	11
12:15 PM	0	0	0	0	0	0	0	0	5	0	1	6	0	1	0	0	1	2	0	0	2	0	0	2	10
12:30 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	7	0	0	7	13
12:45 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	4	0	0	4	7
Total	0	0	0	0	0	0	0	0	16	0	1	17	0	1	0	0	1	2	0	0	21	1	0	22	41
01:00 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	2	0	0	0	2	0	0	10	0	0	10	18
01:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	1	0	0	0	1	0	0	8	1	0	9	13
01:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	0	1	0	0	6	0	0	6	9
01:45 PM	0	0	0	0	0	0	0	1	5	0	0	6	0	1	0	1	0	2	0	0	9	0	0	9	17
Total	0	0	0	0	0	0	0	1	16	0	0	17	0	5	0	1	0	6	0	0	33	1	0	34	57

Traffic Data Inc
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	10	0	0	10	0	2	0	0	0	2	0	0	6	0	0	6	18
02:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	1	0	0	7	1	0	8	10
02:30 PM	0	0	0	0	0	0	0	1	8	0	0	9	0	1	0	1	0	2	0	0	6	0	0	6	17
02:45 PM	0	0	0	0	0	0	0	0	7	0	0	7	0	1	0	1	0	2	0	0	9	2	0	11	20
Total	0	0	0	0	0	0	0	1	26	0	0	27	0	5	0	2	0	7	0	0	28	3	0	31	65
03:00 PM	0	0	0	0	0	0	0	0	11	0	0	11	0	1	0	0	0	1	0	0	6	2	0	8	20
03:15 PM	0	0	0	0	0	0	0	0	7	0	0	7	0	2	0	0	0	2	0	0	10	1	0	11	20
03:30 PM	0	0	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	0	0	15	0	0	15	26
03:45 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	1	0	0	0	1	0	0	10	0	0	10	19
Total	0	0	0	0	0	0	0	0	37	0	0	37	0	4	0	0	0	4	0	0	41	3	0	44	85
04:00 PM	0	0	0	0	0	0	0	1	18	0	0	19	0	2	0	0	0	2	0	0	14	1	0	15	36
04:15 PM	0	0	0	0	0	0	0	0	13	0	0	13	0	3	0	0	0	3	0	0	13	0	0	13	29
04:30 PM	0	0	0	0	0	0	0	0	21	0	0	21	0	1	0	0	0	1	0	0	8	0	0	8	30
04:45 PM	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	0	14	2	0	16	28
Total	0	0	0	0	0	0	0	1	64	0	0	65	0	6	0	0	0	6	0	0	49	3	0	52	123
05:00 PM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	2	2	0	0	15	1	0	16	27
05:15 PM	0	0	0	0	0	0	0	0	12	0	0	12	0	1	0	0	0	1	0	0	13	1	0	14	27
05:30 PM	0	0	0	0	0	0	0	0	18	0	0	18	0	2	0	0	0	2	0	0	14	1	0	15	35
05:45 PM	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	20	1	0	21	31
Total	0	0	0	0	0	0	0	0	49	0	0	49	0	3	0	0	2	5	0	0	62	4	0	66	120
06:00 PM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	16	1	0	17	26
06:15 PM	0	0	0	0	0	0	1	0	7	0	0	8	0	0	0	0	0	0	0	0	11	0	0	11	19
06:30 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	3	0	0	0	3	0	0	6	1	0	7	16
06:45 PM	0	0	0	0	0	0	0	0	5	0	0	5	0	1	0	0	0	1	0	0	6	0	0	6	12
Total	0	0	0	0	0	0	1	0	27	0	0	28	0	4	0	0	0	4	0	0	39	2	0	41	73
07:00 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	7
07:15 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	8	0	0	8	16
07:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	6	0	0	6	8
07:45 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	7	0	0	7	10
Total	0	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	0	0	24	0	0	24	41
08:00 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3	0	0	3	6
08:15 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	6	0	0	6	12
08:30 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	7
08:45 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Total	0	0	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	0	0	0	12	0	0	12	31

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 1 - Alpine Dr & Puma St, 2-16-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
09:00 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	5	0	0	5	9
09:15 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	0	1	0	0	5	0	0	5	8
09:30 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	5	0	0	5	11
09:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	4	0	0	4	6
Total	0	0	0	0	0	0	0	0	14	0	0	14	0	1	0	0	0	1	0	0	19	0	0	19	34
10:00 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	4
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
10:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
10:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	5	0	0	5	6
Total	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	11	0	0	11	16
11:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
11:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	7	0	0	7	9
Grand Total	0	0	0	0	0	0	2	5	478	0	1	486	0	35	0	4	4	43	0	0	539	30	0	569	1098
Apprch %	0	0	0	0	0		0.4	1	98.4	0	0.2		0	81.4	0	9.3	9.3		0	0	94.7	5.3	0		
Total %	0	0	0	0	0	0	0.2	0.5	43.5	0	0.1	44.3	0	3.2	0	0.4	0.4	3.9	0	0	49.1	2.7	0	51.8	
Cars +	0	0	0	0	0	0	1	5	468	0	1	475	0	33	0	4	1	38	0	0	526	30	0	556	1069
% Cars +	0	0	0	0	0	0	50	100	97.9	0	100	97.7	0	94.3	0	100	25	88.4	0	0	97.6	100	0	97.7	97.4
Trucks	0	0	0	0	0	0	1	0	10	0	0	11	0	2	0	0	3	5	0	0	13	0	0	13	29
% Trucks	0	0	0	0	0	0	50	0	2.1	0	0	2.3	0	5.7	0	0	75	11.6	0	0	2.4	0	0	2.3	2.6

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

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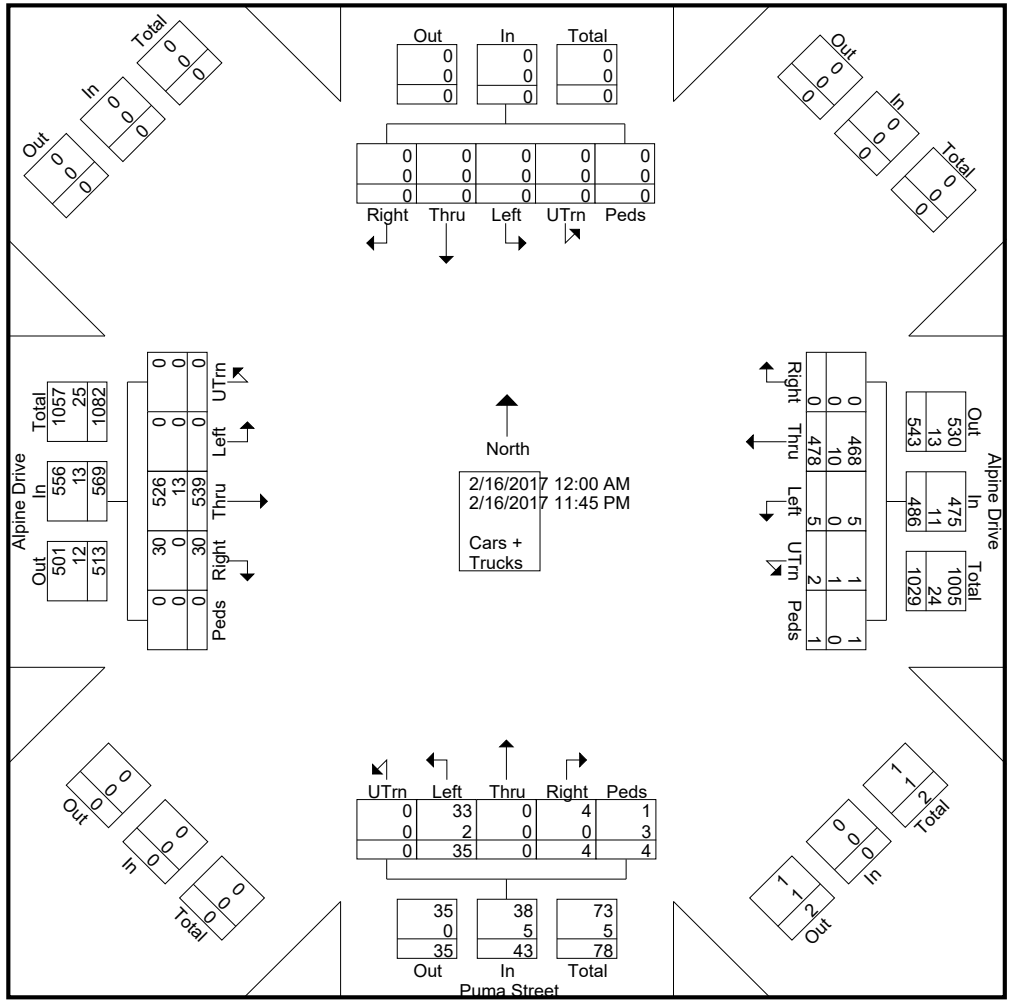
Oxford Street & Fairmount Avenue
Saint Paul, MN



Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 1 - Alpine Dr & Puma St, 2-16-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

	Southbound						Alpine Drive Westbound						Puma Street Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:00 AM																									
07:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**12**	**0**	1	0	0	0	1	0	0	11	0	0	11	24
07:15 AM	0	0	0	0	0	0	0	0	11	0	0	11	0	1	0	0	0	1	0	0	14	0	0	14	26
07:30 AM	0	0	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	0	0	**17**	1	0	**18**	**31**
07:45 AM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	13	**4**	0	17	24
Total Volume	0	0	0	0	0	0	0	0	43	0	0	43	0	2	0	0	0	2	0	0	55	5	0	60	105
% App. Total	0	0	0	0	0		0	0	100	0	0		0	100	0	0	0		0	0	91.7	8.3	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.827	.000	.000	.827	.000	.500	.000	.000	.000	.500	.000	.000	.809	.313	.000	.833	.847
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 01:00 PM																									
01:00 PM	0	0	0	0	0	0	0	0	**6**	0	0	**6**	0	**2**	0	0	0	**2**	0	0	**10**	0	0	**10**	**18**
01:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	1	0	0	0	1	0	0	8	**1**	0	9	13
01:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	0	1	0	0	6	0	0	6	9
01:45 PM	0	0	0	0	0	0	0	**1**	5	0	0	6	0	1	0	**1**	0	2	0	0	9	0	0	9	17
Total Volume	0	0	0	0	0	0	0	1	16	0	0	17	0	5	0	1	0	6	0	0	33	1	0	34	57
% App. Total	0	0	0	0	0		0	5.9	94.1	0	0		0	83.3	0	16.7	0		0	0	97.1	2.9	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.667	.000	.000	.708	.000	.625	.000	.250	.000	.750	.000	.000	.825	.250	.000	.850	.792
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 04:00 PM																									
04:00 PM	0	0	0	0	0	0	0	**1**	18	0	0	19	0	2	0	0	0	2	0	0	**14**	1	0	15	**36**
04:15 PM	0	0	0	0	0	0	0	0	13	0	0	13	0	**3**	0	0	0	**3**	0	0	13	0	0	13	29
04:30 PM	0	0	0	0	0	0	0	0	**21**	0	0	**21**	0	1	0	0	0	1	0	0	8	0	0	8	30
04:45 PM	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	0	14	**2**	0	**16**	28
Total Volume	0	0	0	0	0	0	0	1	64	0	0	65	0	6	0	0	0	6	0	0	49	3	0	52	123
% App. Total	0	0	0	0	0		0	1.5	98.5	0	0		0	100	0	0	0		0	0	94.2	5.8	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.762	.000	.000	.774	.000	.500	.000	.000	.000	.500	.000	.000	.875	.375	.000	.813	.854

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 2 - Bunker Lake Blvd & Puma St, 2-15-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	2	0	0	0	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	3	0	0	0	3	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 2 - Bunker Lake Blvd & Puma St, 2-15-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	7	0	0	0	7	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8
08:00 AM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	0	0	3	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	6
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Data Inc
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	0	2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	4	0	0	0	4	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	1	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	7
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
09:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	20	0	0	0	20	0	0	0	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	35
Apprch %	0	100	0	0	0		0	0	0	100	0		0	0	0	0	0		0	0	0	0	0		
Total %	0	57.1	0	0	0	57.1	0	0	0	42.9	0	42.9	0	0	0	0	0	0	0	0	0	0	0	0	
Cars +	0	20	0	0	0	20	0	0	0	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	32
% Cars +	0	100	0	0	0	100	0	0	0	80	0	80	0	0	0	0	0	0	0	0	0	0	0	0	91.4
Trucks	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
% Trucks	0	0	0	0	0	0	0	0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	0	0	8.6

Traffic Data Inc
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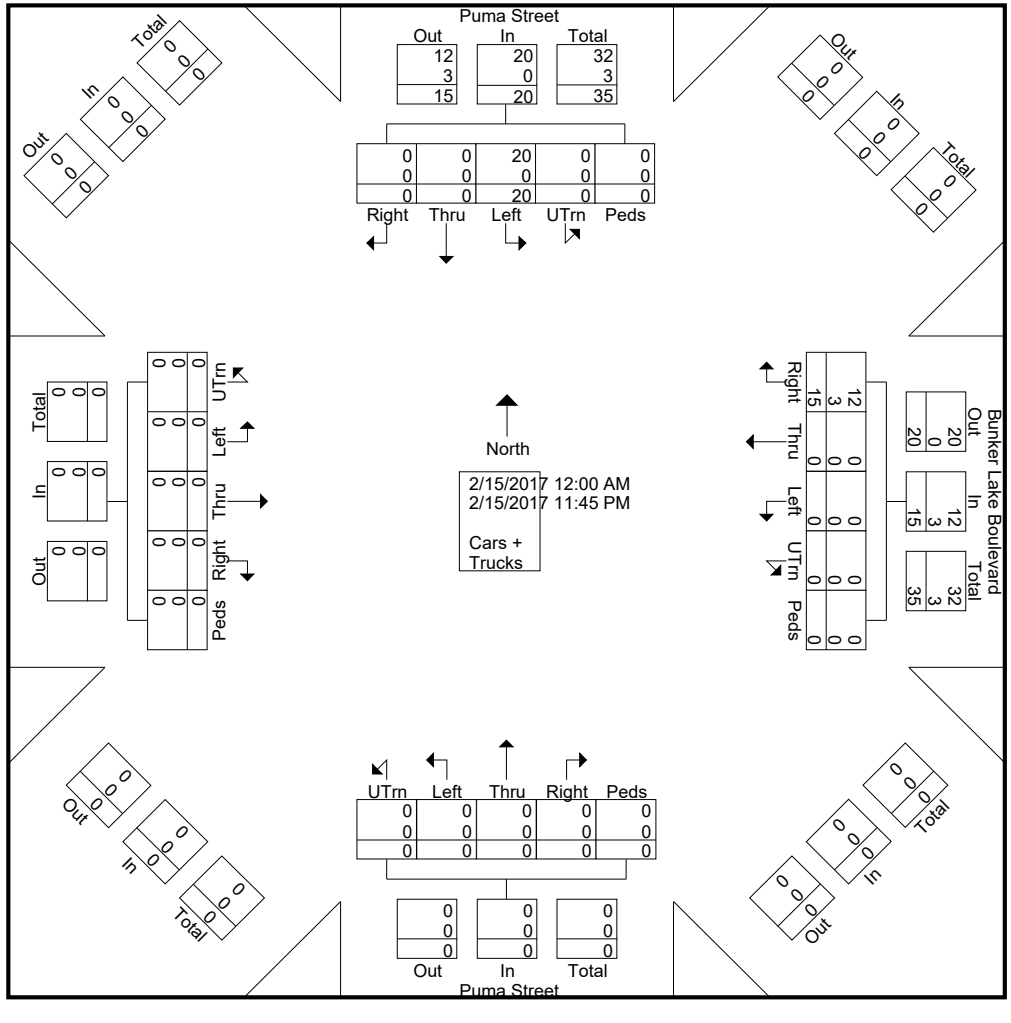
Oxford Street & Fairmount Avenue
Saint Paul, MN



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File Name : 2 - Bunker Lake Blvd & Puma St, 2-15-17
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Oxford Street & Fairmount Avenue
Saint Paul, MN

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 06:45 AM																									
06:45 AM	**0**	₂	0	0	0	₂	0	0	0	₁	0	₁	0	0	0	0	0	0	0	0	0	0	0	0	**3**
07:00 AM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	6	0	0	0	6	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	8
% App. Total	0	100	0	0	0		0	0	0	100	0		0	0	0	0	0		0	0	0	0	0		
PHF	.000	.750	.000	.000	.000	.750	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.667
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 10:00 AM																									
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 04:45 PM																									
04:45 PM	0	**2**	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	**3**
05:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	3	0	0	0	3	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	9
% App. Total	0	100	0	0	0		0	0	0	100	0		0	0	0	0	0		0	0	0	0	0		
PHF	.000	.375	.000	.000	.000	.375	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750

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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 2 - Bunker Lake Blvd & Puma St, 2-16-17
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	0	5	0	0	0	5	1	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	8
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 2 - Bunker Lake Blvd & Puma St, 2-16-17
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
03:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0	2	0	0	0	0	0	0	3
03:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	2	0	0	0	2	0	1	0	3	0	4	0	0	1	1	0	2	0	0	0	0	0	0	8
04:00 PM	0	2	0	0	0	2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
04:15 PM	0	1	0	0	0	1	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	5	0	0	0	5	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	11
05:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	2	0	0	0	2	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	4	0	0	0	4	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
09:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	22	0	0	0	22	1	1	0	15	0	17	0	0	1	1	0	2	0	0	0	0	0	0	41
Apprch %	0	100	0	0	0		5.9	5.9	0	88.2	0		0	0	50	50	0		0	0	0	0	0		
Total %	0	53.7	0	0	0	53.7	2.4	2.4	0	36.6	0	41.5	0	0	2.4	2.4	0	4.9	0	0	0	0	0	0	
Cars +	0	22	0	0	0	22	1	1	0	13	0	15	0	0	1	1	0	2	0	0	0	0	0	0	39
% Cars +	0	100	0	0	0	100	100	100	0	86.7	0	88.2	0	0	100	100	0	100	0	0	0	0	0	0	95.1
Trucks	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% Trucks	0	0	0	0	0	0	0	0	0	13.3	0	11.8	0	0	0	0	0	0	0	0	0	0	0	0	4.9

Traffic Data Inc
PO Box 16269
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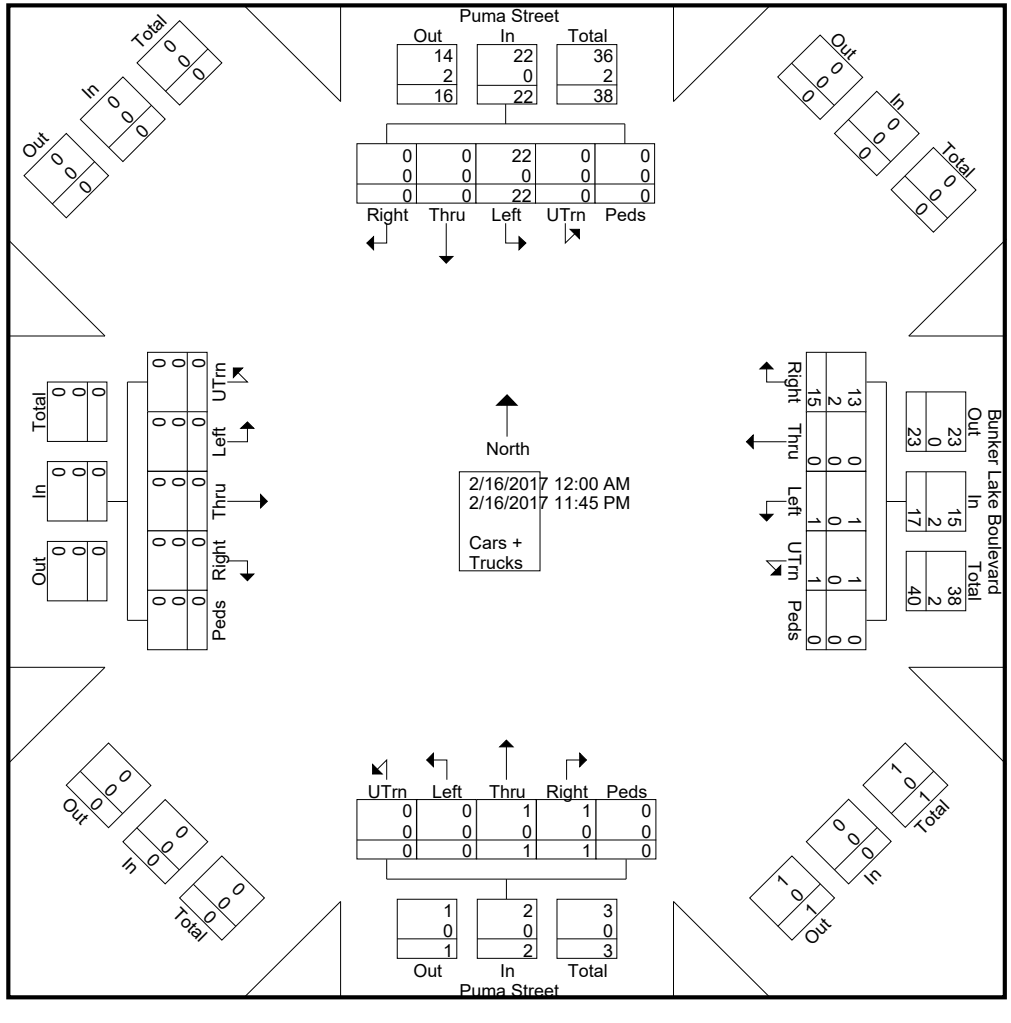
Oxford Street & Fairmount Avenue
Saint Paul, MN



Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 2 - Bunker Lake Blvd & Puma St, 2-16-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

	Puma Street Southbound						Bunker Lake Boulevard Westbound						Puma Street Northbound						Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:00 AM																									
07:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	5	0	0	0	**5**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
Total Volume	0	5	0	0	0	5	1	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	8
% App. Total	0	100	0	0	0		33.3	0	0	66.7	0		0	0	0	0	0		0	0	0	0	0		
PHF	.000	.250	.000	.000	.000	.250	.250	.000	.000	.500	.000	.750	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.400
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 10:00 AM																									
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 03:30 PM																									
03:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	**1**	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00 PM	0	**2**	0	0	0	**2**	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**4**
04:15 PM	0	1	0	0	0	1	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	4
Total Volume	0	4	0	0	0	4	0	1	0	6	0	7	0	0	0	0	0	0	0	0	0	0	0	0	11
% App. Total	0	100	0	0	0		0	14.3	0	85.7	0		0	0	0	0	0		0	0	0	0	0		
PHF	.000	.500	.000	.000	.000	.500	.000	.250	.000	.500	.000	.583	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.688

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 3 - Alpine Dr & Okapi, 2-15-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
02:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
02:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	0	0	4	5
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 AM	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	3
Total	0	0	0	1	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	1	0	0	1	4
04:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
04:15 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:30 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	2	0	0	2	10
05:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
05:30 AM	0	1	0	0	0	1	0	0	8	0	0	8	0	0	0	0	0	0	0	0	1	0	0	1	10
05:45 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	4
Total	0	1	0	0	0	1	0	0	16	0	0	16	0	0	0	0	0	0	0	0	2	0	0	2	19
06:00 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	4	0	0	4	10
06:15 AM	0	3	0	0	0	3	0	0	4	0	0	4	0	0	0	0	0	0	0	0	8	0	0	8	15
06:30 AM	0	1	0	0	1	2	0	0	8	0	0	8	0	0	0	0	0	0	0	0	9	0	0	9	19
06:45 AM	0	2	0	0	0	2	0	0	10	0	0	10	0	0	0	0	0	0	0	0	10	0	0	10	22
Total	0	6	0	0	1	7	0	0	28	0	0	28	0	0	0	0	0	0	0	0	31	0	0	31	66

Traffic Data Inc
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St. Louis Park, MN 55416

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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	5	0	0	5	14
07:15 AM	0	0	0	2	0	2	0	0	8	0	0	8	0	0	0	0	0	0	0	0	21	0	0	21	31
07:30 AM	0	2	0	0	0	2	0	0	13	1	0	14	0	0	0	0	0	0	0	0	12	0	0	12	28
07:45 AM	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	12	0	0	12	22
Total	0	2	0	2	0	4	0	0	40	1	0	41	0	0	0	0	0	0	0	0	50	0	0	50	95
08:00 AM	0	1	0	0	0	1	0	0	5	0	0	5	0	0	0	0	0	0	0	0	11	0	0	11	17
08:15 AM	0	2	0	0	0	2	0	0	6	0	0	6	0	0	0	0	0	0	0	0	7	0	0	7	15
08:30 AM	0	0	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	0	0	0	15	0	0	15	22
08:45 AM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	12	0	0	12	21
Total	0	3	0	0	0	3	0	0	26	1	0	27	0	0	0	0	0	0	0	0	45	0	0	45	75
09:00 AM	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	8	0	0	8	18
09:15 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	7	0	0	7	13
09:30 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	2	0	0	2	6
09:45 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	7
Total	0	0	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	0	0	0	20	0	0	20	44
10:00 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	2	0	0	2	5
10:15 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	3	0	0	3	8
10:30 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	6	0	0	6	11
10:45 AM	0	1	0	0	0	1	0	0	6	0	0	6	0	0	0	0	0	0	0	1	7	0	0	8	15
Total	0	1	0	0	0	1	0	0	19	0	0	19	0	0	0	0	0	0	0	1	18	0	0	19	39
11:00 AM	0	1	0	0	1	2	0	0	4	0	0	4	0	0	0	0	0	0	0	0	4	0	0	4	10
11:15 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	6	0	0	6	11
11:30 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	8	0	0	8	14
11:45 AM	0	0	0	1	0	1	0	0	13	0	0	13	0	0	0	0	0	0	0	1	8	0	0	9	23
Total	0	1	0	1	1	3	0	0	28	0	0	28	0	0	0	0	0	0	0	1	26	0	0	27	58
12:00 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	4	0	0	4	8
12:15 PM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	8	0	0	8	15
12:30 PM	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	9	0	0	9	12
12:45 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	8	0	0	8	14
Total	0	0	0	0	0	0	0	0	19	1	0	20	0	0	0	0	0	0	0	0	29	0	0	29	49
01:00 PM	0	3	0	0	0	3	0	0	10	0	0	10	0	0	0	0	0	0	0	0	8	0	0	8	21
01:15 PM	0	0	0	0	1	1	0	0	7	0	0	7	0	0	0	0	0	0	0	0	6	0	0	6	14
01:30 PM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	4	0	0	4	11
01:45 PM	0	0	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	0	1	9	0	0	10	16
Total	0	3	0	0	1	4	0	0	29	1	0	30	0	0	0	0	0	0	0	1	27	0	0	28	62

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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	6	0	0	6	10
02:15 PM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	5	0	0	5	12
02:30 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	8	0	0	8	16
02:45 PM	0	0	0	1	0	1	0	0	13	1	0	14	0	0	0	0	0	0	0	0	12	0	0	12	27
Total	0	0	0	1	0	1	0	0	32	1	0	33	0	0	0	0	0	0	0	0	31	0	0	31	65
03:00 PM	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	7	0	0	7	17
03:15 PM	0	1	0	0	0	1	0	0	9	1	0	10	0	0	0	0	0	0	0	0	9	0	0	9	20
03:30 PM	0	0	0	0	0	0	0	0	6	2	0	8	0	0	0	0	0	0	0	0	9	0	0	9	17
03:45 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	15	0	0	15	23
Total	0	1	0	0	0	1	0	0	33	3	0	36	0	0	0	0	0	0	0	0	40	0	0	40	77
04:00 PM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	13	0	0	13	18
04:15 PM	0	1	0	1	0	2	0	0	15	0	0	15	0	0	0	0	0	0	0	0	12	0	0	12	29
04:30 PM	0	0	0	0	0	0	0	0	15	2	0	17	0	0	0	0	0	0	0	0	10	0	0	10	27
04:45 PM	0	0	0	1	0	1	0	0	11	0	0	11	0	0	0	0	0	0	0	0	13	0	0	13	25
Total	0	1	0	2	0	3	0	0	46	2	0	48	0	0	0	0	0	0	0	0	48	0	0	48	99
05:00 PM	0	0	0	1	0	1	0	0	10	1	0	11	0	0	0	0	0	0	0	1	18	0	0	19	31
05:15 PM	0	0	0	0	0	0	0	0	13	2	0	15	0	0	0	0	0	0	0	1	18	0	0	19	34
05:30 PM	0	0	0	1	1	2	0	0	15	0	0	15	0	0	0	0	0	0	0	0	14	0	0	14	31
05:45 PM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	13	0	0	13	21
Total	0	0	0	2	1	3	0	0	46	3	0	49	0	0	0	0	0	0	0	2	63	0	0	65	117
06:00 PM	0	0	0	1	0	1	0	0	8	0	0	8	0	0	0	0	0	0	0	1	8	0	0	9	18
06:15 PM	0	0	0	0	0	0	0	0	14	1	0	15	0	0	0	0	0	0	0	0	14	0	0	14	29
06:30 PM	0	0	0	1	0	1	0	0	9	1	0	10	0	0	0	0	0	0	0	0	7	0	0	7	18
06:45 PM	0	0	0	1	0	1	0	0	10	0	0	10	0	0	0	0	0	0	0	0	7	0	0	7	18
Total	0	0	0	3	0	3	0	0	41	2	0	43	0	0	0	0	0	0	0	1	36	0	0	37	83
07:00 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	7	0	0	7	9
07:15 PM	0	1	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	0	0	0	4	0	0	4	8
07:30 PM	0	0	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	0	0	5	0	0	5	11
07:45 PM	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	0	0	3	0	0	3	11
Total	0	1	0	0	0	1	0	0	17	2	0	19	0	0	0	0	0	0	0	0	19	0	0	19	39
08:00 PM	0	1	0	0	0	1	0	0	3	2	0	5	0	0	0	0	0	0	0	0	5	0	0	5	11
08:15 PM	0	1	0	0	0	1	0	0	7	0	0	7	0	0	0	0	0	0	0	0	1	0	0	1	9
08:30 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	7	0	0	7	11
08:45 PM	0	1	0	0	0	1	0	0	6	0	0	6	0	0	0	0	0	0	0	0	6	0	0	6	13
Total	0	3	0	0	0	3	0	0	20	2	0	22	0	0	0	0	0	0	0	0	19	0	0	19	44

Traffic Data Inc
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
09:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
09:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	1	5	0	0	6	9
09:30 PM	0	0	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	0	0	1	0	0	1	6
09:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
Total	0	0	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	0	0	1	12	0	0	13	23
10:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
10:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
10:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	7	0	0	7	10
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
11:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	2	0	0	2	5
11:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	5	0	0	5	9
Grand Total	0	23	0	13	4	40	0	0	493	20	0	513	0	0	0	0	0	0	0	7	535	0	0	542	1095
Apprch %	0	57.5	0	32.5	10		0	0	96.1	3.9	0		0	0	0	0	0		0	1.3	98.7	0	0		
Total %	0	2.1	0	1.2	0.4	3.7	0	0	45	1.8	0	46.8	0	0	0	0	0	0	0	0.6	48.9	0	0	49.5	
Cars +	0	22	0	13	4	39	0	0	479	20	0	499	0	0	0	0	0	0	0	7	525	0	0	532	1070
% Cars +	0	95.7	0	100	100	97.5	0	0	97.2	100	0	97.3	0	0	0	0	0	0	0	100	98.1	0	0	98.2	97.7
Trucks	0	1	0	0	0	1	0	0	14	0	0	14	0	0	0	0	0	0	0	0	10	0	0	10	25
% Trucks	0	4.3	0	0	0	2.5	0	0	2.8	0	0	2.7	0	0	0	0	0	0	0	0	1.9	0	0	1.8	2.3

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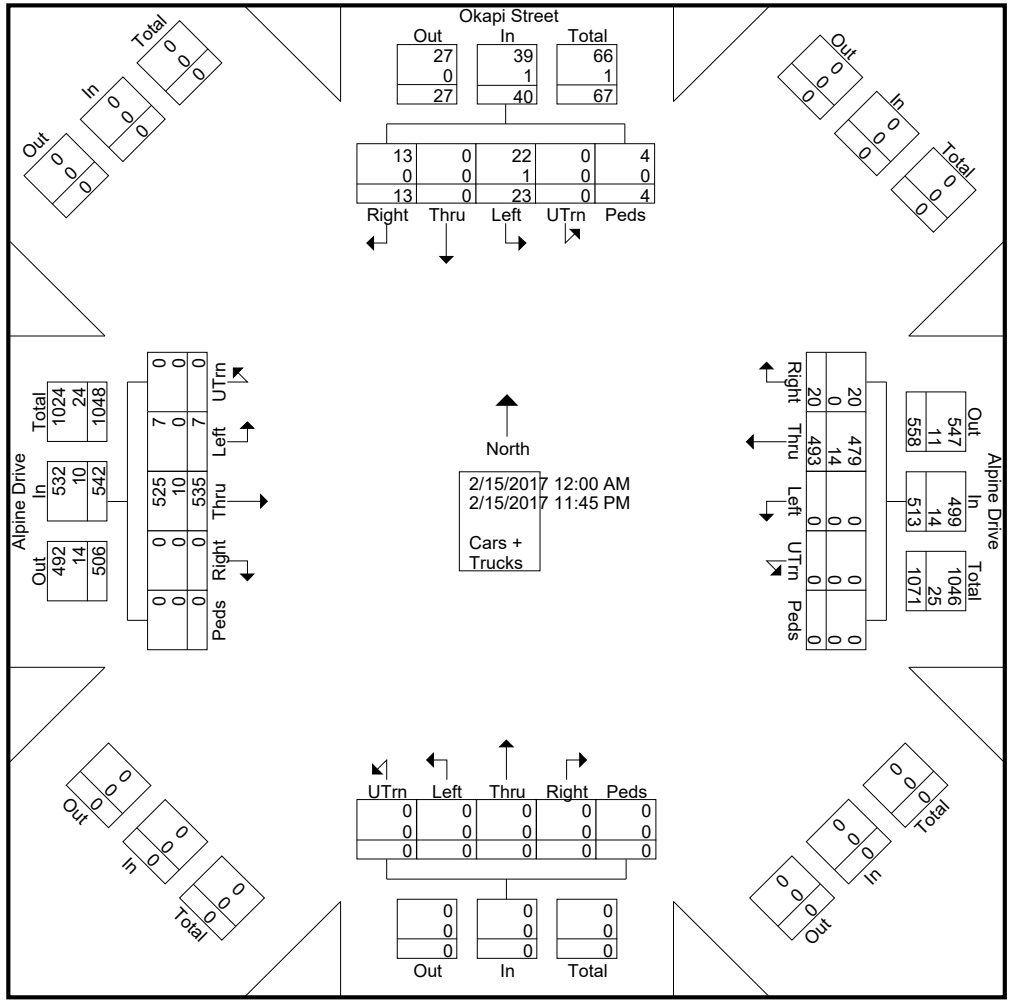
Oxford Street & Fairmount Avenue
Saint Paul, MN



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File Name : 3 - Alpine Dr & Okapi, 2-15-17
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Oxford Street & Fairmount Avenue
Saint Paul, MN

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:15 AM																									
07:15 AM	**0**	**0**	**0**	2	0	2	0	0	8	0	0	8	0	0	0	0	0	0	0	0	21	0	0	21	**31**
07:30 AM	0	**2**	0	0	0	2	0	0	**13**	**1**	0	**14**	0	0	0	0	0	0	0	0	12	0	0	12	28
07:45 AM	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	12	0	0	12	22
08:00 AM	0	1	0	0	0	1	0	0	5	0	0	5	0	0	0	0	0	0	0	0	11	0	0	11	17
Total Volume	0	3	0	2	0	5	0	0	36	1	0	37	0	0	0	0	0	0	0	0	56	0	0	56	98
% App. Total	0	60	0	40	0		0	0	97.3	2.7	0		0	0	0	0	0		0	0	100	0	0		
PHF	.000	.375	.000	.250	.000	.625	.000	.000	.692	.250	.000	.661	.000	.000	.000	.000	.000	.000	.000	.000	.667	.000	.000	.667	.790
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 12:15 PM																									
12:15 PM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	8	0	0	8	15
12:30 PM	0	0	0	0	0	0	0	0	2	**1**	0	3	0	0	0	0	0	0	0	0	**9**	0	0	**9**	12
12:45 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	8	0	0	8	14
01:00 PM	0	**3**	0	0	0	**3**	0	0	**10**	0	0	**10**	0	0	0	0	0	0	0	0	8	0	0	8	**21**
Total Volume	0	3	0	0	0	3	0	0	25	1	0	26	0	0	0	0	0	0	0	0	33	0	0	33	62
% App. Total	0	100	0	0	0		0	0	96.2	3.8	0		0	0	0	0	0		0	0	100	0	0		
PHF	.000	.250	.000	.000	.000	.250	.000	.000	.625	.250	.000	.650	.000	.000	.000	.000	.000	.000	.000	.000	.917	.000	.000	.917	.738
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 04:45 PM																									
04:45 PM	0	0	0	**1**	0	1	0	0	11	0	0	11	0	0	0	0	0	0	0	0	13	0	0	13	25
05:00 PM	0	0	0	1	0	1	0	0	10	1	0	11	0	0	0	0	0	0	0	**1**	**18**	0	0	**19**	31
05:15 PM	0	0	0	0	0	0	0	0	13	**2**	0	**15**	0	0	0	0	0	0	0	1	18	0	0	19	**34**
05:30 PM	0	0	0	1	**1**	**2**	0	0	**15**	0	0	15	0	0	0	0	0	0	0	0	14	0	0	14	31
Total Volume	0	0	0	3	1	4	0	0	49	3	0	52	0	0	0	0	0	0	0	2	63	0	0	65	121
% App. Total	0	0	0	75	25		0	0	94.2	5.8	0		0	0	0	0	0		0	3.1	96.9	0	0		
PHF	.000	.000	.000	.750	.250	.500	.000	.000	.817	.375	.000	.867	.000	.000	.000	.000	.000	.000	.000	.500	.875	.000	.000	.855	.890

Traffic Data Inc

PO Box 16269
St. Louis Park, MN 55416

File Name : 3 - Alpine Dr & Okapi, 2-16-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
01:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
01:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
02:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
02:30 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
02:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	3	0	0	3	8
03:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
03:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 AM	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	1	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	2	0	0	2	7
04:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 AM	0	1	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	6
05:30 AM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
05:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	0	0	4	5
Total	0	1	0	0	0	1	0	0	14	0	0	14	0	0	0	0	0	0	0	0	6	0	0	6	21
06:00 AM	0	1	0	0	0	1	0	0	6	0	0	6	0	0	0	0	0	0	0	0	5	0	0	5	12
06:15 AM	0	2	0	0	0	2	0	0	6	0	0	6	0	0	0	0	0	0	0	0	9	0	0	9	17
06:30 AM	0	2	0	0	0	2	0	0	10	0	0	10	0	0	0	0	0	0	0	0	10	0	0	10	22
06:45 AM	0	1	0	0	0	1	0	0	10	0	0	10	0	0	0	0	0	0	0	0	5	0	0	5	16
Total	0	6	0	0	0	6	0	0	32	0	0	32	0	0	0	0	0	0	0	0	29	0	0	29	67

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 3 - Alpine Dr & Okapi, 2-16-17
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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	0	12	0	0	12	24
07:15 AM	0	1	0	1	0	2	0	0	10	0	0	10	0	0	0	0	0	0	0	0	15	0	0	15	27
07:30 AM	0	2	0	0	0	2	0	0	13	1	0	14	0	0	0	0	0	0	0	0	14	0	0	14	30
07:45 AM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	14	0	0	14	22
Total	0	3	0	1	0	4	0	0	43	1	0	44	0	0	0	0	0	0	0	0	55	0	0	55	103
08:00 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	12	0	0	12	15
08:15 AM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	7	0	0	7	13
08:30 AM	0	0	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	0	0	0	11	0	0	11	18
08:45 AM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	8	0	0	8	15
Total	0	0	0	0	0	0	0	0	22	1	0	23	0	0	0	0	0	0	0	0	38	0	0	38	61
09:00 AM	0	0	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	8	0	0	8	17
09:15 AM	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	5	0	0	5	12
09:30 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	7
09:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	6	0	0	6	8
Total	0	0	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	0	0	0	22	0	0	22	44
10:00 AM	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	0	0	7	0	0	7	15
10:15 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	8	0	0	8	13
10:30 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	1	0	0	1	6
10:45 AM	0	0	0	0	1	1	0	0	5	0	0	5	0	0	0	0	0	0	0	0	7	0	0	7	13
Total	0	0	0	0	1	1	0	0	22	1	0	23	0	0	0	0	0	0	0	0	23	0	0	23	47
11:00 AM	0	1	0	0	0	1	0	0	6	0	0	6	0	0	0	0	0	0	0	0	6	0	0	6	13
11:15 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	5	0	0	5	10
11:30 AM	0	0	0	0	1	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	6
11:45 AM	0	0	0	1	0	1	0	0	6	2	0	8	0	0	0	0	0	0	0	0	5	0	0	5	14
Total	0	1	0	1	1	3	0	0	21	2	0	23	0	0	0	0	0	0	0	0	17	0	0	17	43
12:00 PM	0	0	0	0	1	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	8	0	0	8	11
12:15 PM	0	0	0	0	1	1	0	0	5	0	0	5	0	0	0	0	0	0	0	0	2	0	0	2	8
12:30 PM	0	0	0	0	1	1	0	0	6	0	0	6	0	0	0	0	0	0	0	0	6	0	0	6	13
12:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	5	0	0	5	7
Total	0	0	0	0	3	3	0	0	15	0	0	15	0	0	0	0	0	0	0	0	21	0	0	21	39
01:00 PM	0	0	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	0	0	5	0	0	5	16
01:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	7	0	0	7	10
01:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	6	0	0	7	9
01:45 PM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	1	9	0	0	10	15
Total	0	0	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	0	2	27	0	0	29	50

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

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Oxford Street & Fairmount Avenue
Saint Paul, MN

Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	0	0	5	0	0	5	16
02:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	7	0	0	7	8
02:30 PM	0	1	0	0	0	1	0	0	9	0	0	9	0	0	0	0	0	0	0	0	6	0	0	6	16
02:45 PM	0	0	0	0	1	1	0	0	6	0	0	6	0	0	0	0	0	0	0	0	11	0	0	11	18
Total	0	1	0	0	1	2	0	0	27	0	0	27	0	0	0	0	0	0	0	0	29	0	0	29	58
03:00 PM	0	0	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	0	1	6	0	0	7	18
03:15 PM	0	1	0	1	0	2	0	0	6	0	0	6	0	0	0	0	0	0	0	0	10	0	0	10	18
03:30 PM	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	0	12	0	0	12	24
03:45 PM	0	1	0	0	0	1	0	0	8	1	0	9	0	0	0	0	0	0	0	0	12	0	0	12	22
Total	0	2	0	1	0	3	0	0	37	1	0	38	0	0	0	0	0	0	0	1	40	0	0	41	82
04:00 PM	0	1	0	0	0	1	0	0	19	0	0	19	0	0	0	0	0	0	0	1	13	0	0	14	34
04:15 PM	0	1	0	0	0	1	0	0	14	1	0	15	0	0	0	0	0	0	0	0	13	0	0	13	29
04:30 PM	0	0	0	0	0	0	0	0	19	1	0	20	0	0	0	0	0	0	0	0	7	0	0	7	27
04:45 PM	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	1	14	0	0	15	27
Total	0	2	0	0	0	2	0	0	64	2	0	66	0	0	0	0	0	0	0	2	47	0	0	49	117
05:00 PM	0	0	0	0	0	0	0	0	10	3	0	13	0	0	0	0	2	2	0	0	9	0	0	9	24
05:15 PM	0	0	0	2	0	2	0	0	11	1	0	12	0	0	0	0	0	0	0	0	16	0	0	16	30
05:30 PM	0	0	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	0	0	14	0	0	14	32
05:45 PM	0	0	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	0	0	0	19	0	0	19	30
Total	0	0	0	2	0	2	0	0	49	5	0	54	0	0	0	0	2	2	0	0	58	0	0	58	116
06:00 PM	0	0	0	0	0	0	0	0	9	3	0	12	0	0	0	0	0	0	0	0	16	0	0	16	28
06:15 PM	0	1	0	1	0	2	0	0	9	0	0	9	0	0	0	0	0	0	0	1	12	0	0	13	24
06:30 PM	0	0	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	0	0	0	6	0	0	6	13
06:45 PM	0	1	0	0	0	1	0	0	5	0	0	5	0	0	0	0	0	0	0	0	6	0	0	6	12
Total	0	2	0	1	0	3	0	0	29	4	0	33	0	0	0	0	0	0	0	1	40	0	0	41	77
07:00 PM	0	0	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	0	0	3	0	0	3	8
07:15 PM	0	0	0	0	0	0	0	0	8	2	0	10	0	0	0	0	0	0	0	0	8	0	0	8	18
07:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	6	0	0	6	8
07:45 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	7	0	0	7	11
Total	0	0	0	0	0	0	0	0	18	3	0	21	0	0	0	0	0	0	0	0	24	0	0	24	45
08:00 PM	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	0	3	0	0	3	7
08:15 PM	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	0	0	6	0	0	6	14
08:30 PM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	4	0	0	4	9
08:45 PM	0	0	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
Total	0	0	0	0	0	0	0	0	21	3	0	24	0	0	0	0	0	0	0	0	13	0	0	13	37

Traffic Data Inc
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File Name : 3 - Alpine Dr & Okapi, 2-16-17
Site Code : 1
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Oxford Street & Fairmount Avenue
Saint Paul, MN

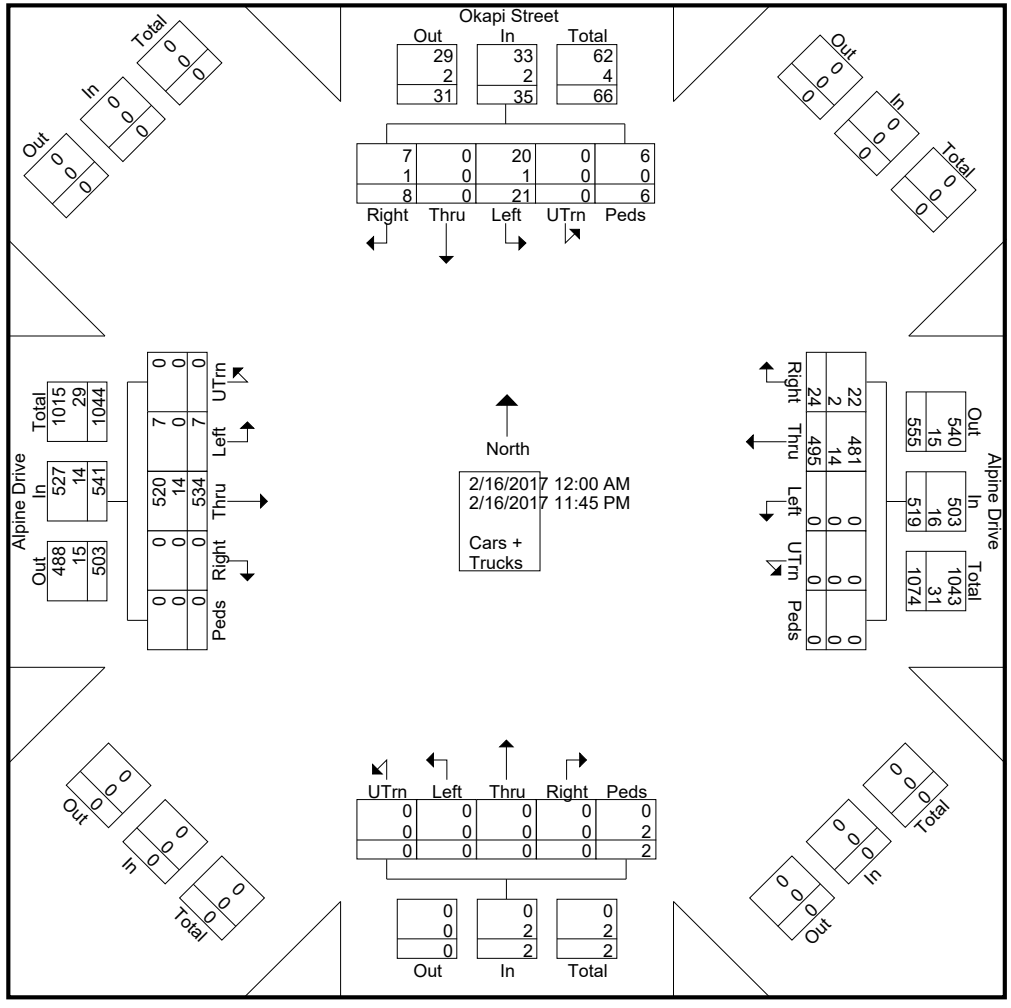
Groups Printed- Cars + - Trucks

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
09:00 PM	0	0	0	1	0	1	0	0	3	0	0	3	0	0	0	0	0	0	0	1	3	0	0	4	8
09:15 PM	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	7	0	0	7	9
09:30 PM	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	0	0	3	0	0	3	11
09:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	5	0	0	5	7
Total	0	1	0	1	0	2	0	0	13	1	0	14	0	0	0	0	0	0	0	1	18	0	0	19	35
10:00 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	4
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
10:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	1	0	0	1	3
10:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	0	0	4	5
Total	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	10	0	0	10	16
11:00 PM	0	2	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	5
11:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total	0	2	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	9	0	0	9	13
Grand Total	0	21	0	8	6	35	0	0	495	24	0	519	0	0	0	0	2	2	0	7	534	0	0	541	1097
Apprch %	0	60	0	22.9	17.1		0	0	95.4	4.6	0		0	0	0	0	100		0	1.3	98.7	0	0		
Total %	0	1.9	0	0.7	0.5	3.2	0	0	45.1	2.2	0	47.3	0	0	0	0	0.2	0.2	0	0.6	48.7	0	0	49.3	
Cars +	0	20	0	7	6	33	0	0	481	22	0	503	0	0	0	0	0	0	0	7	520	0	0	527	1063
% Cars +	0	95.2	0	87.5	100	94.3	0	0	97.2	91.7	0	96.9	0	0	0	0	0	0	0	100	97.4	0	0	97.4	96.9
Trucks	0	1	0	1	0	2	0	0	14	2	0	16	0	0	0	0	2	2	0	0	14	0	0	14	34
% Trucks	0	4.8	0	12.5	0	5.7	0	0	2.8	8.3	0	3.1	0	0	0	0	100	100	0	0	2.6	0	0	2.6	3.1

Traffic Data Inc
PO Box 16269
St. Louis Park, MN 55416

File Name : 3 - Alpine Dr & Okapi, 2-16-17
Site Code : 1
Start Date : 2/16/2017
Page No : 5

Oxford Street & Fairmount Avenue
Saint Paul, MN



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St. Louis Park, MN 55416

File Name : 3 - Alpine Dr & Okapi, 2-16-17
Site Code : 1
Start Date : 2/16/2017
Page No : 6

Oxford Street & Fairmount Avenue
Saint Paul, MN

	Okapi Street Southbound						Alpine Drive Westbound						Northbound						Alpine Drive Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:00 AM																									
07:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**12**	**24**
07:15 AM	**0**	**1**	**0**	1	0	2	0	0	10	0	0	10	0	0	0	0	0	0	0	0	15	0	0	15	27
07:30 AM	0	**2**	0	0	0	2	0	0	**13**	**1**	0	**14**	0	0	0	0	0	0	0	0	14	0	0	14	**30**
07:45 AM	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	14	0	0	14	22
Total Volume	0	3	0	1	0	4	0	0	43	1	0	44	0	0	0	0	0	0	0	0	55	0	0	55	103
% App. Total	0	75	0	25	0		0	0	97.7	2.3	0		0	0	0	0	0		0	0	100	0	0		
PHF	.000	.375	.000	.250	.000	.500	.000	.000	.827	.250	.000	.786	.000	.000	.000	.000	.000	.000	.000	.000	.917	.000	.000	.917	.858
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 01:00 PM																									
01:00 PM	0	0	0	0	0	0	0	0	**11**	0	0	**11**	0	0	0	0	0	0	0	0	5	0	0	5	**16**
01:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	7	0	0	7	10
01:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	**1**	6	0	0	7	9
01:45 PM	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	1	**9**	0	0	**10**	15
Total Volume	0	0	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	0	2	27	0	0	29	50
% App. Total	0	0	0	0	0		0	0	100	0	0		0	0	0	0	0		0	6.9	93.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.477	.000	.000	.477	.000	.000	.000	.000	.000	.000	.000	.500	.750	.000	.000	.725	.781
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 05:15 PM																									
05:15 PM	0	0	0	**2**	0	**2**	0	0	11	1	0	12	0	0	0	0	0	0	0	0	16	0	0	16	30
05:30 PM	0	0	0	0	0	0	0	0	**18**	0	0	**18**	0	0	0	0	0	0	0	0	14	0	0	14	**32**
05:45 PM	0	0	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	0	0	0	**19**	0	0	**19**	30
06:00 PM	0	0	0	0	0	0	0	0	9	**3**	0	12	0	0	0	0	0	0	0	0	16	0	0	16	28
Total Volume	0	0	0	2	0	2	0	0	48	5	0	53	0	0	0	0	0	0	0	0	65	0	0	65	120
% App. Total	0	0	0	100	0		0	0	90.6	9.4	0		0	0	0	0	0		0	0	100	0	0		
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.667	.417	.000	.736	.000	.000	.000	.000	.000	.000	.000	.000	.855	.000	.000	.855	.938

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Table D1
Forecasted Trip Generation

Weekday Daily Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	DAILY RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS	
							ENTER	EXIT
Single Family Home	210	Units	246.0	9.52	50%	50%	1,171	1,171
Townhomes	230	Units	98.0	5.81	50%	50%	285	285
Total							**1,456**	**1,456**

AM Peak Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS	
							ENTER	EXIT
Single Family Home	210	Units	246.0	0.75	25%	75%	46	138
Townhomes	230	Units	98.0	0.44	17%	83%	7	36
Total							**53**	**174**

PM Peak Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS	
							ENTER	EXIT
Single Family Home	210	Units	246.0	1.00	63%	37%	155	91
Townhomes	230	Units	98.0	0.52	67%	33%	34	17
Total							**189**	**108**

NOTES:

1. **All trip generation rates based on "Trip Generation", Institute of Transportation Engineers, 9th Edition unless otherwise noted.**
2. **A.M. Trip Generation is for the peak hour of adjacent street traffic (one hour between 7 and 9 a.m.).**
3. **P.M. Trip Generation is for the peak hour of adjacent street traffic (one hour between 4 and 6 p.m.).**

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Table D2
Forecasted Trip Generation
South of Bunker

Weekday Daily Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	DAILY RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	45.1	61.17	50%	50%	1,380	1,380
Total								

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	45.1	8.20	83%	17%	307	63
Total							**307**	**63**

PM Peak Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	45.1	8.53	21%	79%	81	304
Total							**81**	**304**

NOTES:

1. **All trip generation rates based on "Trip Generation", Institute of Transportation Engineers, 9th Edition unless otherwise noted.**
2. **AM Peak Trip Generation is for the AM Peak Hour.**
3. **PM Peak Trip Generation is for the Peak Hour of Generator**

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Table D3
Forecasted Trip Generation
North of Bunker

Weekday Daily Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	DAILY RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	37.2	61.17	50%	50%	1,137	1,137
Total							**1,137**	**1,137**

AM Peak Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	37.2	8.20	83%	17%	253	52
Total							**253**	**52**

PM Peak Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	37.2	8.53	21%	79%	67	250
Total							**67**	**250**

NOTES:

1. **All trip generation rates based on "Trip Generation", Institute of Transportation Engineers, 9th Edition unless otherwise noted.**
2. **AM Peak Trip Generation is for the AM Peak Hour.**
3. **PM Peak Trip Generation is for the Peak Hour of Generator**

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Table D4
Forecasted Trip Generation
East of Puma

Weekday Daily Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	DAILY RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	32.0	61.17	50%	50%	979	979
Single Family Detached Housing	210	Acres	34.6	26.04	50%	50%	451	451
Total								

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	32.0	8.20	83%	17%	218	45
Single Family Detached Housing	210	Acres	34.6	2.06	31%	69%	22	49
Total							**240**	**94**

PM Peak Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PEAK RATE	ENTER PERCENT	EXIT PERCENT	NEW TRIPS ENTER	NEW TRIPS EXIT
Industrial Park	130	Acres	32.0	8.53	21%	79%	57	216
Single Family Detached Housing	210	Acres	34.6	2.74	66%	34%	63	32
Total							**120**	**248**

1. **All trip generation rates based on "Trip Generation", Institute of Transportation Engineers, 9th Edition unless otherwise noted.**
2. **AM Peak Trip Generation is for the AM Peak Hour.**
3. **PM Peak Trip Generation is for the Peak Hour of Generator**

AM Peak Volumes

Figure 1: Existing Peak Volumes

- **AM Peak Hour on top, PM Peak Hour on bottom**

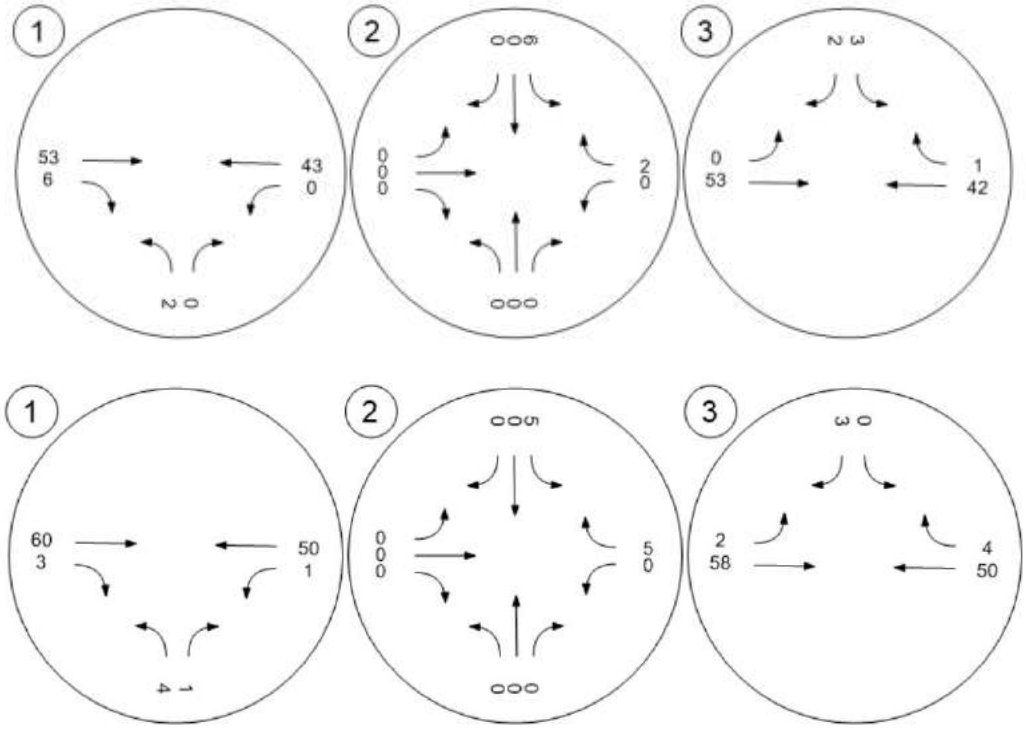


Figure 2: 2018 No-Build Peak Volumes

- **AM Peak Hour on top, PM Peak Hour on bottom**

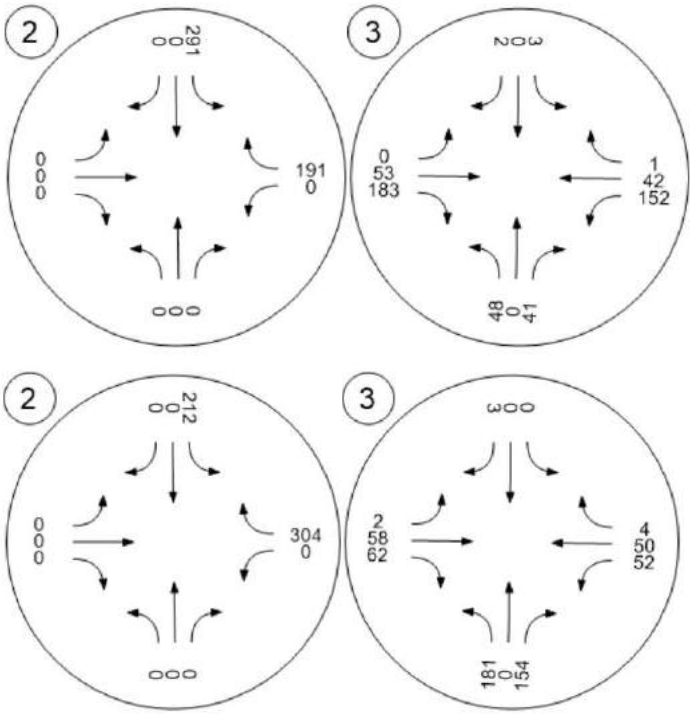


Figure 3: 2018 Build Peak Volumes

- **AM Peak Hour on top, PM Peak Hour on bottom**

Level of Service (LOS)

Level of Service (LOS) is a qualitative description, similar to typical school grades, that traffic engineers use to communicate how good or bad traffic operations are on a corridor, intersection, or interchange.

Common Factors

Traffic can be a hard thing to quantify as everyone has a different tolerance for congestion. What seems excessively long to one person may seem good enough for another. These differences are readily apparent when comparing small towns or rural areas, where five cars an hour can be the norm, to big cities or downtowns, where less than hundred cars an hour, even in the middle of night, is rare.

To combat this issue and provide a consistent measuring tool for traffic studies, a "Level of Service" rating was developed. Level of Service ratings are based on the roadway or intersection characteristics and the amount of traffic. Just like grade school, LOS A represents the best traffic operations, where traffic flows freely. LOS F, on the other hand, represents failing operations, where the road or intersection is congested and running beyond maximum capacity. LOS E is typically considered "at capacity" which means the amount of traffic is right at the level the roadway or intersection can adequately accommodate. Using Level of Service letter grades provides an easy way to convey road operations to the general public and has been adopted across the United States.

Common Factors Impacting Level of Service

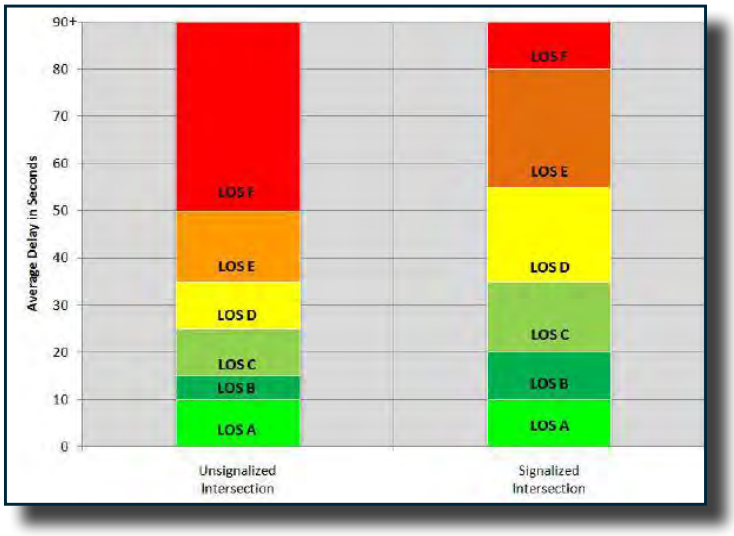
- **Number of Lanes.**
- **Traffic Volumes.**
- **Intersection Control (stop sign, signal, roundabout, interchange.)**
- **Amount of access on a corridor.**
- **Percentage of turning traffic.**
- **Traffic signal cycle length (green time devoted to each approach) and phasing (one green for all approach movements or separate green arrows.)**
- **Percentage of heavy trucks.**
- **Roadway Grades.**
- **Distribution of traffic within a peak hour as well as over the course of a day.**
- **Pedestrian activity.**
- **Bicycle activity.**

Level of Service criteria have been developed for multiple types of traffic operations including:

- Intersections
- Urban Corridors
- Freeways
- Transit Service
- Bicycle Operations
- Pedestrian Operations

The most common LOS criteria used is for car operations at intersections; both signalized and unsignalized. For an intersection Level of Service analysis, average delay for cars travelling through the intersection is used to determine the appropriate grade. A high delay results in a poor LOS rating and equates to poor operations. Similarly, low delay results in a good LOS rating and equates to good or great operations.

LOS can be determined for the intersection as a whole, or for individual movements. It is common during peak periods in major population areas for an intersection to have an acceptable overall LOS rating, but fail to achieve a good grade for individual movements.



LOS A

LOS C

LOS D = Acceptable

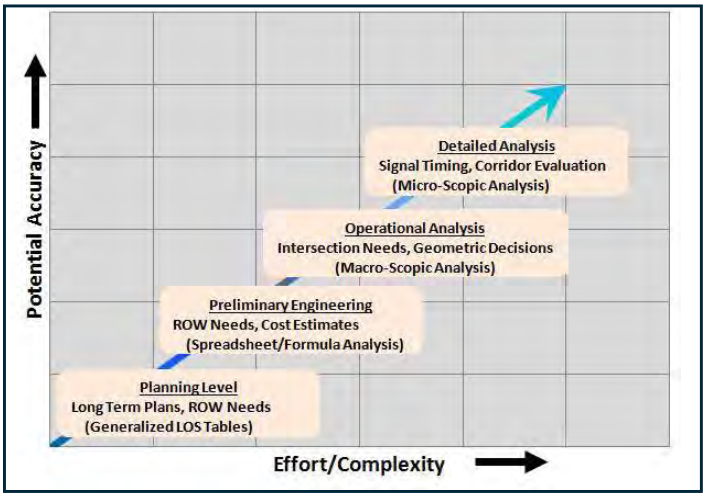
LOS F = Unacceptable

Source: City of San Jose, CA.

Although a Level of Service rating of A represents the best traffic operations, it is not always the most desirable. Providing LOS A for all corridors and all operations at all times would require a significant amount of land to be devoted to the road infrastructure, which makes it extremely costly to build and maintain. During non-peak times, like overnight, much of that infrastructure would sit unused.

On the opposite side of the spectrum, a Level of Service rating of E and F represent traffic operations close to breaking down, or that already have. These ratings mean high delays, long queues, and slow speeds, not to mention driver frustration. Instead of trying to achieve one or the other, government agencies try to strike a balance between providing acceptable operations, neither falling nor flowing too freely. Because of this, LOS D is typically considered the lowest LOS acceptable by government agencies and is reflective of a balanced approach between cost and benefit.

There are many tools and guidelines used to determine a roads Level of Service rating. Simple tools like generalized roadway capacities allow for planning-level efforts. While inexpensive and quick to complete, they are not as accurate as other options. More complicated tools, such as micro-simulations, provide more accurate results, but cost more and take more time. It is important to understand the trade-offs between the analysis types as well as the purpose of the study.



Source: Florida Deptarment of Transportation

Resources

- Highway Capacity Manual, fifth edition
- Nation Cooperative Highway Research Program Report 616; Multimodal Level of Service Analysis for Urban Streets
- http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_616.pdf
- Florida Department of Transportation Quality/Level of Service Handbook
- http://www.dot.state.fl.us/planning/systems/programs/sm/los/pdfs/2009FDOTQLOS_Handbook.pdf

About This Brief

Spack Consulting prepared this brief as part of our company's vision to significantly improve the practice of traffic engineering and transportation planning. Transportation professionals from around the world have assisted us in developing this document. We are providing this brief under the Creative Commons Attribution License. Feel free to use-modify-share this guide, but please give us some credit in your document. To request our whole series of Design Briefs and to be included on our distribution list for new materials, please email mspack@spackconsulting.com. And please reach out if you have any comments or questions related to this Design Brief.

Vistro File: C:\...\Pearson Farm Model.vistro
Report File: C:\Users\Jonah\Desktop\AM EXIST.pdf

Scenario 1 Existing AM Peak
3/7/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alpine Drive & Puma Street	Two-way stop	HCM 2010	NB Left	0.002	9.0	A
2	Puma Street & Bunker Lake Boulevard	Two-way stop	HCM 2010	SB Thru	0.000	9.0	A
3	Alpine Drive & Okapi Street	Two-way stop	HCM 2010	SB Left	0.005	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

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Intersection Level Of Service Report
Intersection 1: Alpine Drive & Puma Street

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2	0	53	6	0	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	53	6	0	43
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	13	2	0	11
Total Analysis Volume [veh/h]	2	0	53	6	0	43
Pedestrian Volume [ped/h]	0		0		0	

Appendix G: Capacity Analysis Backup

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Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.01	8.57	0.00	0.00	7.33	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.17	0.17	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.01		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.17					
Intersection LOS	A					

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Intersection Level Of Service Report
Intersection 2: Puma Street & Bunker Lake Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name											
Base Volume Input [veh/h]	0	0	0	6	0	0	0	0	0	0	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	6	0	0	0	0	0	0	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	2	0	0	0	0	0	0	1
Total Analysis Volume [veh/h]	0	0	0	6	0	0	0	0	0	0	2
Pedestrian Volume [ped/h]	0			0			0			0	

Appendix G: Capacity Analysis Backup

Generated with PTV VISTRO
Version 5.00-00

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.52	9.03	8.32	8.54	9.04	8.34	7.22	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A		A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.62			8.54			2.41			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.41											
Intersection LOS	A											

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Version 5.00-00

Spack CONSULTING

Intersection Level Of Service Report
Intersection 3: Alpine Drive & Okapi Street

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	2	0	53	42	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	2	0	53	42	1
Peak Hour Factor	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	16	12	0
Total Analysis Volume [veh/h]	4	2	0	62	49	1
Pedestrian Volume [ped/h]	0		0		0	

Appendix G: Capacity Analysis Backup

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Version 5.00-00

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Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.09	8.56	7.31	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.49	0.49	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.91		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	A					

Vistro File: C:\...\Pearson Farm Model.vistro
Report File: C:\Users\Jonah\Desktop\AM EXIST.pdf

Scenario 1 Existing AM Peak
3/7/2017

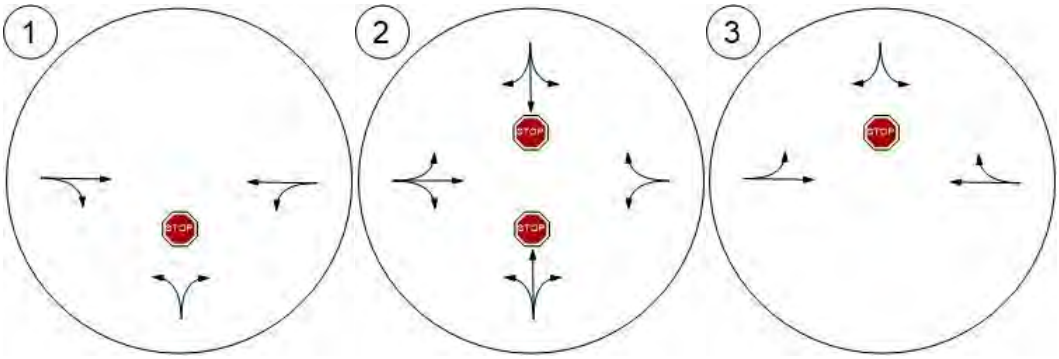
Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
1	Alpine Drive & Puma Street	2	0	53	6	0	43	104

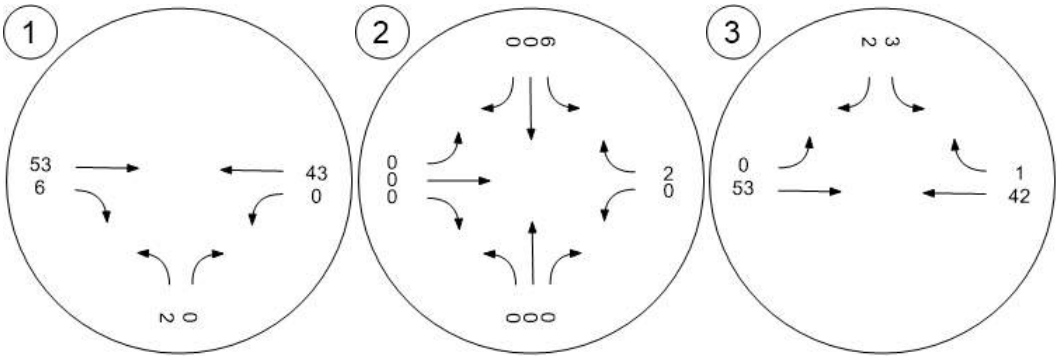
ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Right	
2	Puma Street & Bunker Lake Boulevard	0	0	0	6	0	0	0	0	0	0	2	8

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
3	Alpine Drive & Okapi Street	3	2	0	53	42	1	101

Lane Configuration and Traffic Control



Traffic Volume - Base Volume



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Version 5.00-00

Vistro File: C:\...\Pearson Farm Model.vistro
Report File: C:\Users\Jonah\Desktop\PM EXIST.pdf

Scenario 2 Existing PM Peak
3/7/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alpine Drive & Puma Street	Two-way stop	HCM 2010	NB Left	0.005	9.1	A
2	Puma Street & Bunker Lake Boulevard	Two-way stop	HCM 2010	SB Thru	0.000	9.0	A
3	Alpine Drive & Okapi Street	Two-way stop	HCM 2010	SB Left	0.000	9.2	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

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Spack CONSULTING

Intersection Level Of Service Report
Intersection 1: Alpine Drive & Puma Street

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	4	1	60	3	1	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	1	60	3	1	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	15	1	0	13
Total Analysis Volume [veh/h]	4	1	60	3	1	50
Pedestrian Volume [ped/h]	0		0		0	

Appendix G: Capacity Analysis Backup

Generated with PTV VISTRO
Version 5.00-00

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Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.10	8.61	0.00	0.00	7.34	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.02	0.02	0.00	0.00	0.10	0.10
95th-Percentile Queue Length [ft]	0.42	0.42	0.00	0.00	2.57	2.57
d_A, Approach Delay [s/veh]	9.00		0.00		0.14	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.44					
Intersection LOS	A					

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Version 5.00-00

Spack CONSULTING

Intersection Level Of Service Report
Intersection 2: Puma Street & Bunker Lake Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name											
Base Volume Input [veh/h]	0	0	0	5	0	0	0	0	0	0	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	5	0	0	0	0	0	0	0	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	0	0	0	0	0	0	1
Total Analysis Volume [veh/h]	0	0	0	5	0	0	0	0	0	0	0	5
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 5.00-00

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.53	9.04	8.32	8.55	9.05	8.35	7.23	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A		A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.37	0.37	0.37	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.63			8.55			2.41			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.27											
Intersection LOS	A											

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Version 5.00-00

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Intersection Level Of Service Report
Intersection 3: Alpine Drive & Okapi Street

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	3	2	58	50	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	2	58	50	4
Peak Hour Factor	0.9023	0.9023	0.9023	0.9023	0.9023	0.9023
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	16	14	1
Total Analysis Volume [veh/h]	0	3	2	64	55	4
Pedestrian Volume [ped/h]	0		0		0	

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Version 5.00-00

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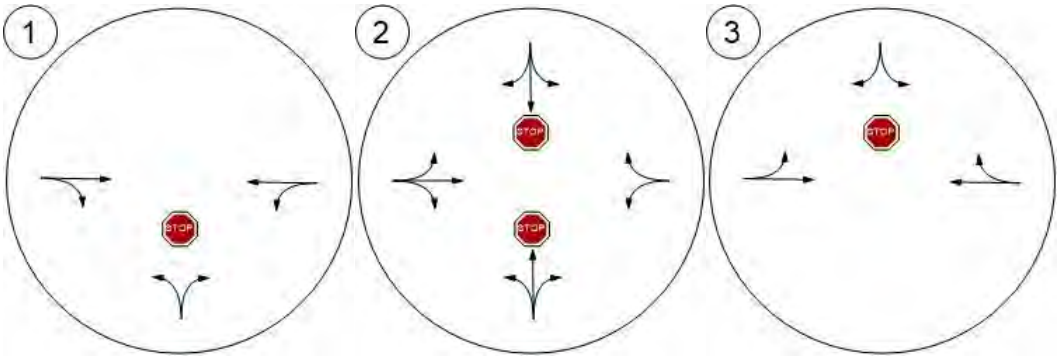
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

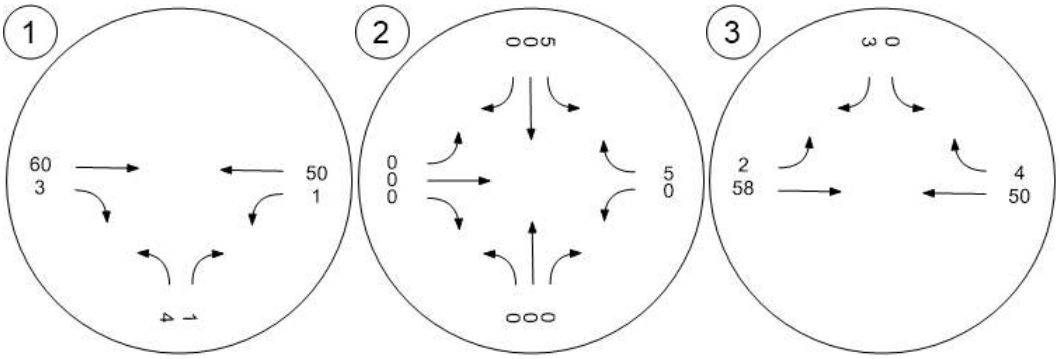
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.15	8.58	7.33	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.01	0.01	0.13	0.13	0.00	0.00
95th-Percentile Queue Length [ft]	0.22	0.22	3.34	3.34	0.00	0.00
d_A, Approach Delay [s/veh]	8.58		0.22		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.32					
Intersection LOS	A					

Lane Configuration and Traffic Control



Traffic Volume - Base Volume



Vistro File: C:\...\Pearson Farm Model.vistro
Report File: C:\...\2040_No-Build AM.pdf

Scenario 4 2040 No-Build_ AM Peak
3/7/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Puma Street & Bunker Lake Boulevard	Two-way stop	HCM 2010	SB Thru	0.000	11.5	B
3	Alpine Drive & Okapi/Puma Street	Two-way stop	HCM 2010	NB Thru	0.000	16.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

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Version 5.00-00

Spack CONSULTING

Intersection Level Of Service Report
Intersection 2: Puma Street & Bunker Lake Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name											
Base Volume Input [veh/h]	0	0	0	6	0	0	0	0	0	0	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	285	0	0	0	0	0	0	189
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	0	0	0	0	0	0	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	73	0	0	0	0	0	0	48
Total Analysis Volume [veh/h]	0	0	0	291	0	0	0	0	0	0	191
Pedestrian Volume [ped/h]	0			0			0			0	

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.06	10.11	8.32	11.02	11.50	10.71	7.60	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	B	A	B	B	B	A	A	A	A		A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.44	1.44	1.44	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	35.91	35.91	35.91	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.16			11.02			2.53			0.00		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	6.66											
Intersection LOS	B											

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Intersection Level Of Service Report
Intersection 3: Alpine Drive & Okapi/Puma Street

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	0	1	3	0	2	0	53	6	0	42	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	46	0	40	0	0	0	0	0	177	152	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	0	41	3	0	2	0	53	183	152	42	1
Peak Hour Factor	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	0	12	1	0	1	0	16	54	45	12	0
Total Analysis Volume [veh/h]	56	0	48	4	0	2	0	62	214	178	49	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00
d_M, Delay for Movement [s/veh]	16.20	16.55	10.87	15.44	16.38	8.64	7.31	0.00	0.00	8.25	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.75	0.75	0.75	0.04	0.04	0.04	0.00	0.00	0.00	0.64	0.64	0.64
95th-Percentile Queue Length [ft]	18.69	18.69	18.69	1.02	1.02	1.02	0.00	0.00	0.00	16.07	16.07	16.07
d_A, Approach Delay [s/veh]	13.74			13.18			0.00			6.44		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	4.85											
Intersection LOS	C											

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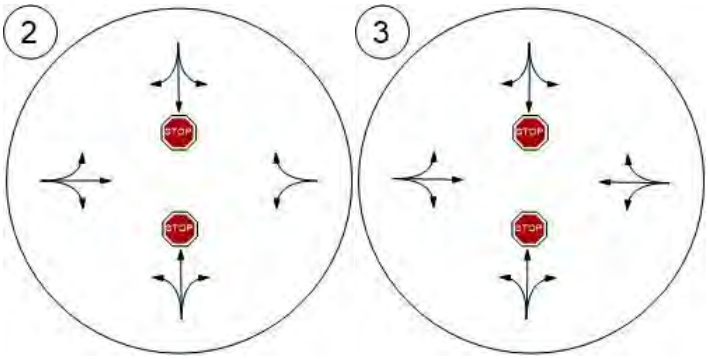
Lane Configuration and Traffic Control



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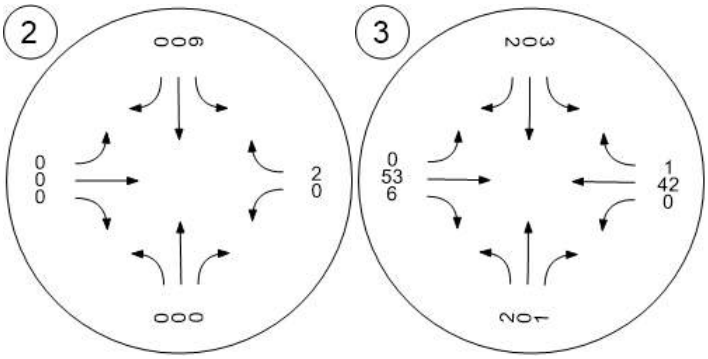
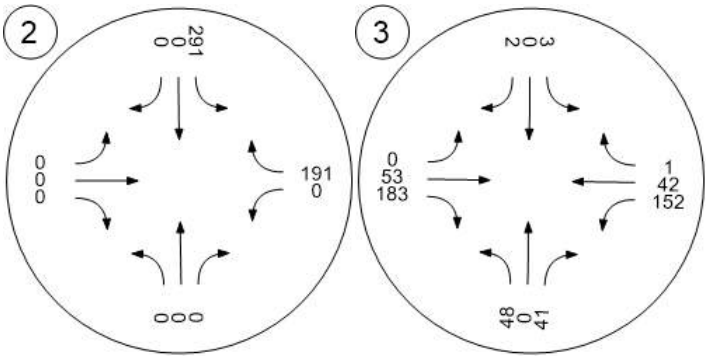
Traffic Volume - Base Volume



Traffic Volume - Future Total Volume



Vistro File: C:\...\Pearson Farm Model.vistro
Report File: C:\...\2040_No-Build PM.pdf

Scenario 5 2040 No-Build_ PM Peak
3/7/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Puma Street & Bunker Lake Boulevard	Two-way stop	HCM 2010	SB Thru	0.000	11.4	B
3	Alpine Drive & Okapi/Puma Street	Two-way stop	HCM 2010	NB Thru	0.000	14.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

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Intersection Level Of Service Report
Intersection 2: Puma Street & Bunker Lake Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name											
Base Volume Input [veh/h]	0	0	0	5	0	0	0	0	0	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	207	0	0	0	0	0	0	299
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	212	0	0	0	0	0	0	304
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	53	0	0	0	0	0	0	76
Total Analysis Volume [veh/h]	0	0	0	212	0	0	0	0	0	0	304
Pedestrian Volume [ped/h]	0			0			0			0	

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.42	10.91	8.32	10.96	11.41	10.57	7.86	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	B	A	B	B	B	A	A	A	A		A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.04	1.04	1.04	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	26.00	26.00	26.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.55			10.96			2.62			0.00		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	4.50											
Intersection LOS	B											

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Intersection Level Of Service Report
Intersection 3: Alpine Drive & Okapi/Puma Street

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	4	0	1	0	0	3	2	58	3	1	50	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	177	0	153	0	0	0	0	0	59	51	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	0	154	0	0	3	2	58	62	52	50	4
Peak Hour Factor	1.0000	1.0000	1.0000	0.9023	1.0000	0.9023	0.9023	0.9023	1.0000	1.0000	0.9023	0.9023
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	0	39	0	0	1	1	16	16	13	14	1
Total Analysis Volume [veh/h]	181	0	154	0	0	3	2	64	62	52	55	4
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	13.83	14.27	12.20	12.17	11.05	8.58	7.33	0.00	0.00	7.56	0.00	0.00
Movement LOS	B	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	2.18	2.18	2.18	0.01	0.01	0.01	0.27	0.27	0.27	0.25	0.25	0.25
95th-Percentile Queue Length [ft]	54.57	54.57	54.57	0.22	0.22	0.22	6.77	6.77	6.77	6.16	6.16	6.16
d_A, Approach Delay [s/veh]	13.08			8.58			0.11			3.54		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.35											
Intersection LOS	B											

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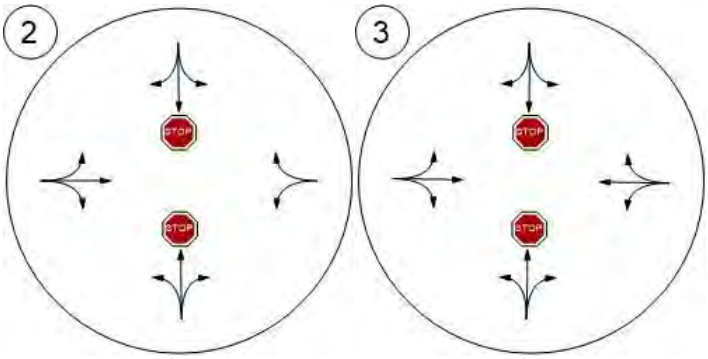
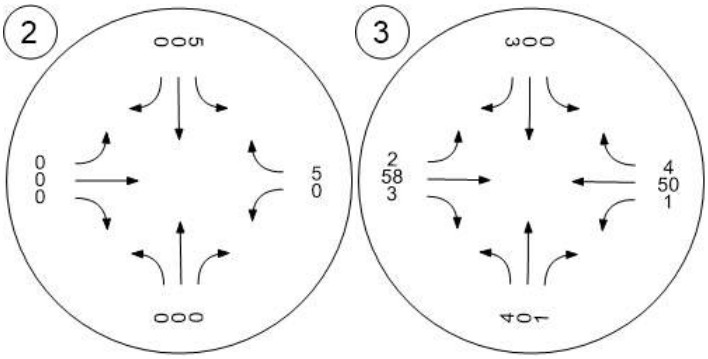
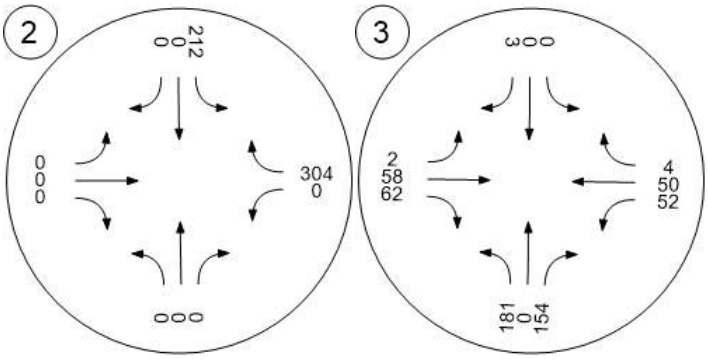
Lane Configuration and Traffic Control



Traffic Volume - Base Volume



Traffic Volume - Future Total Volume



Vistro File: C:\...\Pearson Farm Model.vistro
Report File: C:\...\2040_Build AM.pdf

Scenario 6 2040 Build_ AM Peak
3/7/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Puma Street & Bunker Lake Boulevard	Two-way stop	HCM 2010	SB Thru	0.000	14.0	B
3	Alpine Drive & Okapi Street	Two-way stop	HCM 2010	NB Thru	0.000	18.9	C
4	Puma Street & Northern Site Access	Two-way stop	HCM 2010	WB Left	0.071	14.9	B
5	Puma Street & Southern Site Access	Two-way stop	HCM 2010	WB Left	0.075	15.5	C
6	Alpine Drive & Site Access	Two-way stop	HCM 2010	NB Left	0.021	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

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Intersection Level Of Service Report
Intersection 2: Puma Street & Bunker Lake Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	6	0	0	0	0	0	0	0	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	357	0	4	11	31	0	0	19	201
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	363	0	4	11	31	0	0	19	203
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	91	0	1	3	8	0	0	5	51
Total Analysis Volume [veh/h]	0	0	0	363	0	4	11	31	0	0	19	203
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.46	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.62	10.74	8.45	13.54	13.99	12.82	7.69	0.00	0.00	7.28	0.00	0.00
Movement LOS	A	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	2.51	2.51	2.51	0.10	0.10	0.10	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	62.73	62.73	62.73	2.41	2.41	2.41	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.61			13.53			2.02			0.00		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	8.01											
Intersection LOS	B											

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Intersection Level Of Service Report
Intersection 3: Alpine Drive & Okapi Street

Control Type:	Two-way stop	Delay (sec / veh):	18.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	0	1	3	0	2	0	53	6	0	42	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	71	0	65	0	0	0	0	8	185	160	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	0	66	3	0	2	0	61	191	160	45	1
Peak Hour Factor	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534	0.8534
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	19	1	0	1	0	18	56	47	13	0
Total Analysis Volume [veh/h]	86	0	77	4	0	2	0	71	224	187	53	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00
d_M, Delay for Movement [s/veh]	18.62	18.94	12.74	16.83	17.18	8.69	7.32	0.00	0.00	8.33	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	1.43	1.43	1.43	0.05	0.05	0.05	0.00	0.00	0.00	0.70	0.70	0.70
95th-Percentile Queue Length [ft]	35.73	35.73	35.73	1.14	1.14	1.14	0.00	0.00	0.00	17.53	17.53	17.53
d_A, Approach Delay [s/veh]	15.84			14.12			0.00			6.47		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	5.99											
Intersection LOS	C											

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Intersection Level Of Service Report
Intersection 4: Puma Street & Northern Site Access

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.071

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2	0	6	4	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	102	71	50	291	5	14	0	31	28	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	104	71	56	295	5	14	0	31	28	0	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	26	18	14	74	1	4	0	8	7	0	5
Total Analysis Volume [veh/h]	6	104	71	56	295	5	14	0	31	28	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00	0.04	0.07	0.00	0.02
d_M, Delay for Movement [s/veh]	7.87	0.00	0.00	7.68	0.00	0.00	14.39	14.63	10.36	14.87	14.46	9.68
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	A
95th-Percentile Queue Length [veh]	0.50	0.50	0.50	1.01	1.01	1.01	0.25	0.25	0.25	0.31	0.31	0.31
95th-Percentile Queue Length [ft]	12.52	12.52	12.52	25.34	25.34	25.34	6.18	6.18	6.18	7.67	7.67	7.67
d_A, Approach Delay [s/veh]	0.26			1.21			11.61			12.70		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.55											
Intersection LOS	B											

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Intersection Level Of Service Report
Intersection 5: Puma Street & Southern Site Access

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.075

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2	0	0	6	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	135	71	50	292	7	25	0	41	28	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	137	71	50	298	7	25	0	41	28	0	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	34	18	13	75	2	6	0	10	7	0	5
Total Analysis Volume [veh/h]	6	137	71	50	298	7	25	0	41	28	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.04	0.00	0.00	0.06	0.00	0.06	0.08	0.00	0.02
d_M, Delay for Movement [s/veh]	7.88	0.00	0.00	7.74	0.00	0.00	15.10	15.28	10.76	15.49	14.81	9.94
Movement LOS	A	A	A	A	A	A	C	C	B	C	B	A
95th-Percentile Queue Length [veh]	0.61	0.61	0.61	1.05	1.05	1.05	0.40	0.40	0.40	0.33	0.33	0.33
95th-Percentile Queue Length [ft]	15.33	15.33	15.33	26.20	26.20	26.20	10.12	10.12	10.12	8.13	8.13	8.13
d_A, Approach Delay [s/veh]	0.22			1.09			12.41			13.18		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.76											
Intersection LOS	C											

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Intersection Level Of Service Report
Intersection 6: Alpine Drive & Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	61	0	0	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	8	185	4	3	71
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	8	246	4	3	125
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	62	1	1	31
Total Analysis Volume [veh/h]	13	8	246	4	3	125
Pedestrian Volume [ped/h]	0		0		0	

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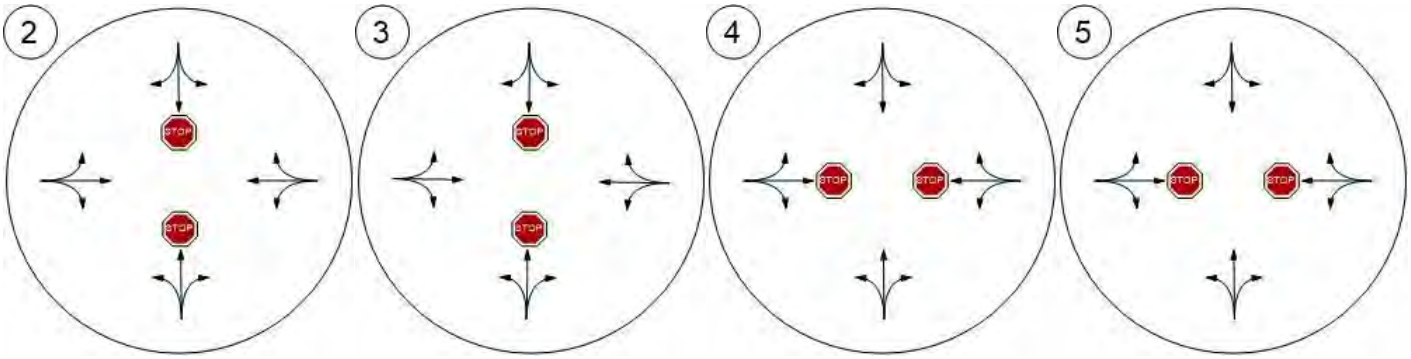
Intersection Settings

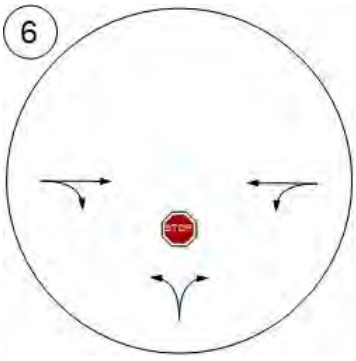
Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

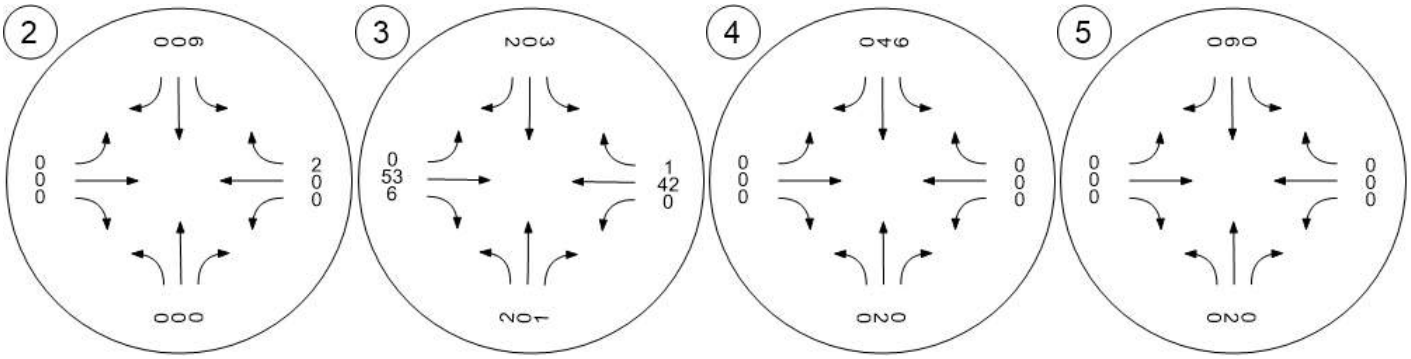
V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.96	9.72	0.00	0.00	7.74	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.00	0.00	0.32	0.32
95th-Percentile Queue Length [ft]	2.40	2.40	0.00	0.00	8.07	8.07
d_A, Approach Delay [s/veh]	10.49		0.00		0.18	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.61					
Intersection LOS	B					

Lane Configuration and Traffic Control





Traffic Volume - Base Volume



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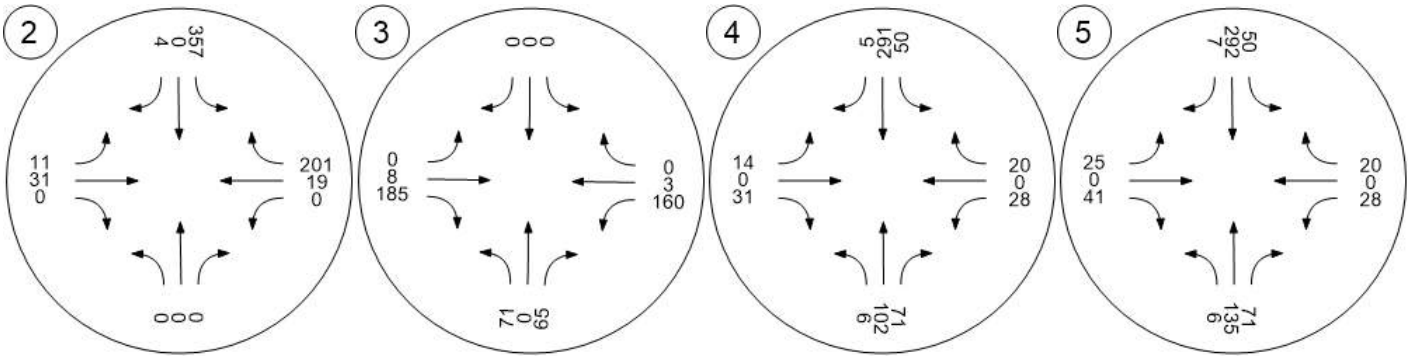
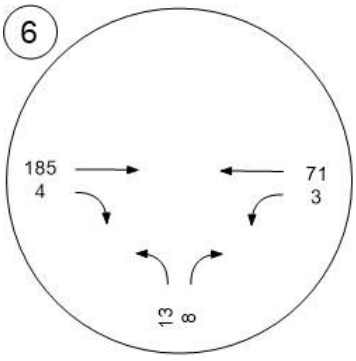
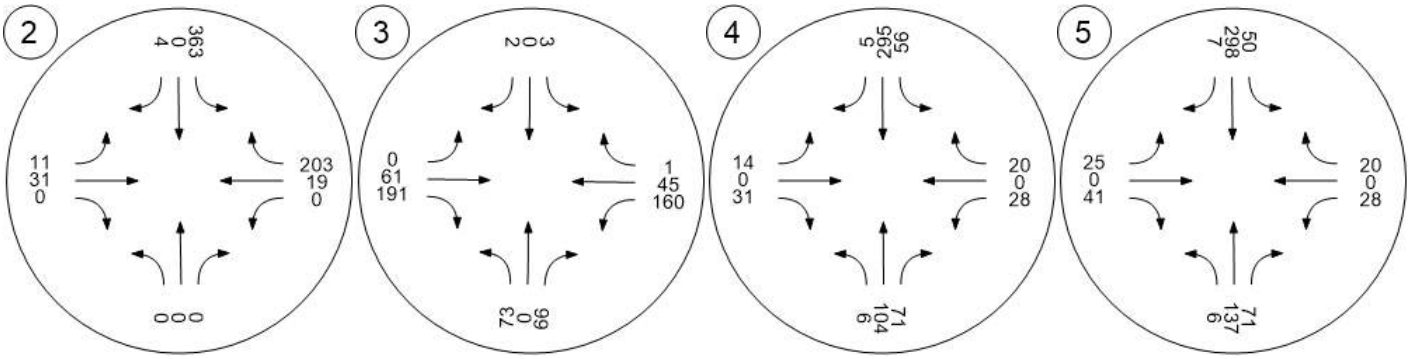
Traffic Volume - Net New Site Trips

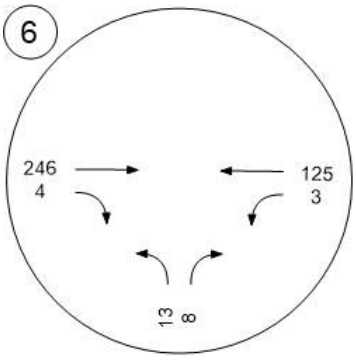




Scenario 6: 6 2040 Build_ AM Peak

Traffic Volume - Future Total Volume





Vistro File: C:\...\Pearson Farm Model.vistro
Report File: C:\...\2040_Build PM.pdf

Scenario 7 2040 Build_ PM Peak
3/7/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Puma Street & Bunker Lake Boulevard	Two-way stop	HCM 2010	SB Thru	0.000	14.2	B
3	Alpine Drive & Okapi Street	Two-way stop	HCM 2010	NB Thru	0.000	17.1	C
4	Puma Street & Northern Site Access	Two-way stop	HCM 2010	WB Left	0.177	16.1	C
5	Puma Street & Southern Site Access	Two-way stop	HCM 2010	WB Left	0.190	17.0	C
6	Alpine Drive & Site Access	Two-way stop	HCM 2010	NB Left	0.014	11.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

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Intersection Level Of Service Report
Intersection 2: Puma Street & Bunker Lake Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	5	0	0	0	0	0	0	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	251	0	14	7	19	0	0	67	344
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	256	0	14	7	19	0	0	67	349
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	64	0	4	2	5	0	0	17	87
Total Analysis Volume [veh/h]	0	0	0	256	0	14	7	19	0	0	67	349
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.38	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.49	12.17	8.40	13.78	14.17	12.96	8.17	0.00	0.00	7.25	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.90	1.90	1.90	0.07	0.07	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	47.61	47.61	47.61	1.74	1.74	1.74	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.35			13.73			2.20			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	5.29											
Intersection LOS	B											

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Intersection Level Of Service Report
Intersection 3: Alpine Drive & Okapi Street

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	4	0	1	0	0	3	2	58	3	1	50	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	193	0	169	0	0	0	0	5	88	78	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	197	0	170	0	0	3	2	63	91	79	59	4
Peak Hour Factor	1.0000	1.0000	1.0000	0.9023	1.0000	0.9023	0.9023	0.9023	1.0000	1.0000	0.9023	0.9023
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	0	43	0	0	1	1	17	23	20	16	1
Total Analysis Volume [veh/h]	197	0	170	0	0	3	2	70	91	79	65	4
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00
d_M, Delay for Movement [s/veh]	16.66	17.08	14.29	13.61	12.03	8.62	7.35	0.00	0.00	7.69	0.00	0.00
Movement LOS	C	C	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	3.05	3.05	3.05	0.01	0.01	0.01	0.36	0.36	0.36	0.35	0.35	0.35
95th-Percentile Queue Length [ft]	76.27	76.27	76.27	0.23	0.23	0.23	8.91	8.91	8.91	8.72	8.72	8.72
d_A, Approach Delay [s/veh]	15.56			8.62			0.09			4.10		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	9.34											
Intersection LOS	C											

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Intersection Level Of Service Report
Intersection 4: Puma Street & Northern Site Access

Control Type:	Two-way stop	Delay (sec / veh):	16.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.177

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	5	0	0	4	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	302	36	25	125	17	9	0	19	73	0	51
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	307	36	25	129	17	9	0	19	73	0	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	77	9	6	32	4	2	0	5	18	0	13
Total Analysis Volume [veh/h]	22	307	36	25	129	17	9	0	19	73	0	51
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.02	0.18	0.00	0.07
d_M, Delay for Movement [s/veh]	7.55	0.00	0.00	8.02	0.00	0.00	14.69	14.02	9.22	16.09	16.01	12.39
Movement LOS	A	A	A	A	A	A	B	B	A	C	C	B
95th-Percentile Queue Length [veh]	1.01	1.01	1.01	0.49	0.49	0.49	0.14	0.14	0.14	0.97	0.97	0.97
95th-Percentile Queue Length [ft]	25.37	25.37	25.37	12.23	12.23	12.23	3.48	3.48	3.48	24.26	24.26	24.26
d_A, Approach Delay [s/veh]	0.45			1.17			10.98			14.57		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.61											
Intersection LOS	C											

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Intersection Level Of Service Report
Intersection 5: Puma Street & Southern Site Access

Control Type:	Two-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.190

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	5	0	0	4	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	293	36	25	166	26	16	0	25	73	0	51
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	298	36	25	170	26	16	0	25	73	0	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	75	9	6	43	7	4	0	6	18	0	13
Total Analysis Volume [veh/h]	22	298	36	25	170	26	16	0	25	73	0	51
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.00	0.04	0.00	0.03	0.19	0.00	0.07
d_M, Delay for Movement [s/veh]	7.66	0.00	0.00	8.00	0.00	0.00	15.48	14.71	9.70	17.00	16.77	12.61
Movement LOS	A	A	A	A	A	A	C	B	A	C	C	B
95th-Percentile Queue Length [veh]	1.04	1.04	1.04	0.66	0.66	0.66	0.24	0.24	0.24	1.03	1.03	1.03
95th-Percentile Queue Length [ft]	25.94	25.94	25.94	16.42	16.42	16.42	5.92	5.92	5.92	25.78	25.78	25.78
d_A, Approach Delay [s/veh]	0.47			0.90			11.96			15.19		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	3.70											
Intersection LOS	C											

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Intersection Level Of Service Report
Intersection 6: Alpine Drive & Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	61	0	0	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	5	88	13	9	193
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	5	149	13	9	247
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	37	3	2	62
Total Analysis Volume [veh/h]	8	5	149	13	9	247
Pedestrian Volume [ped/h]	0		0		0	

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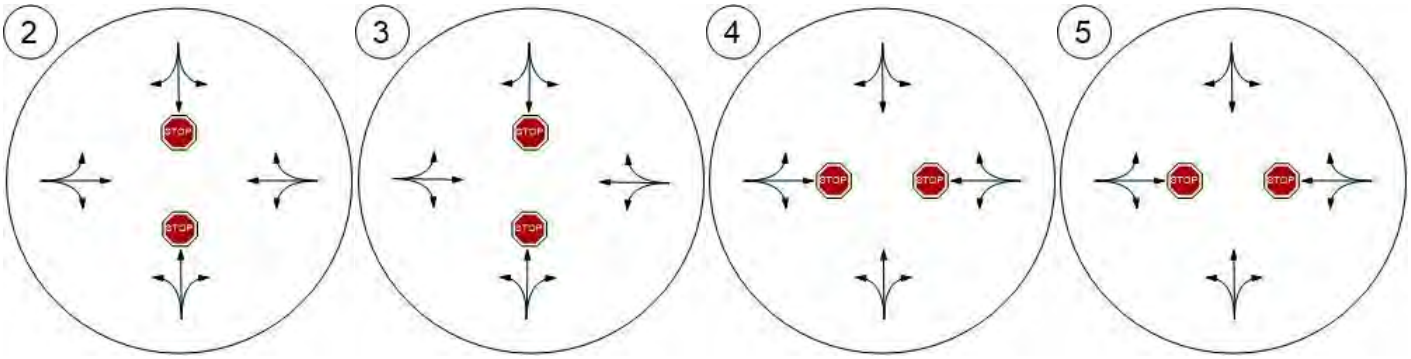
Intersection Settings

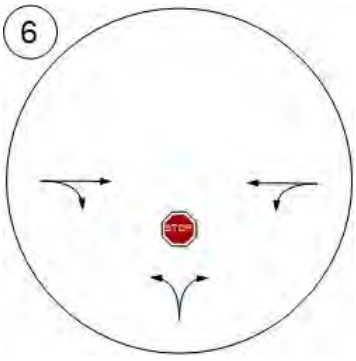
Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

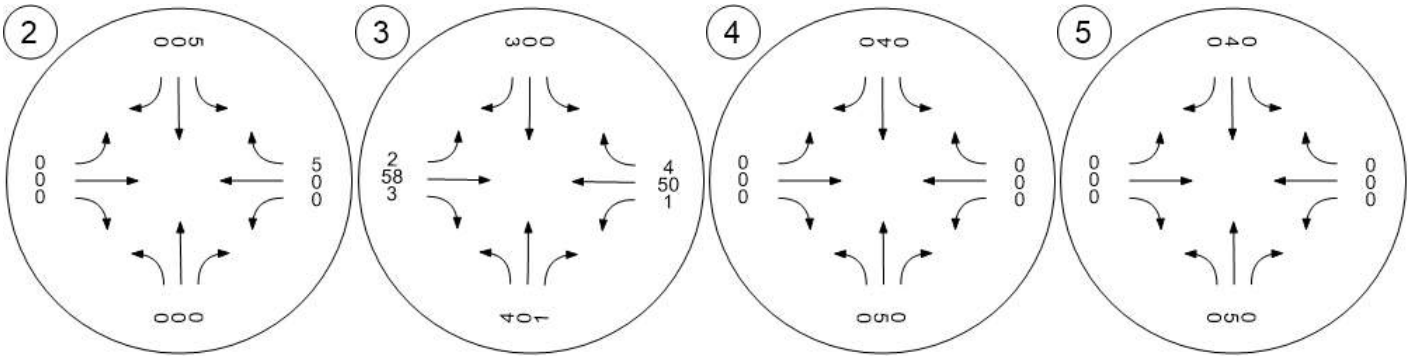
V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	11.26	9.15	0.00	0.00	7.56	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.06	0.06	0.00	0.00	0.66	0.66
95th-Percentile Queue Length [ft]	1.47	1.47	0.00	0.00	16.47	16.47
d_A, Approach Delay [s/veh]	10.45		0.00		0.27	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	B					

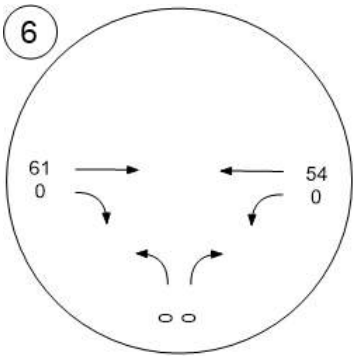
Lane Configuration and Traffic Control



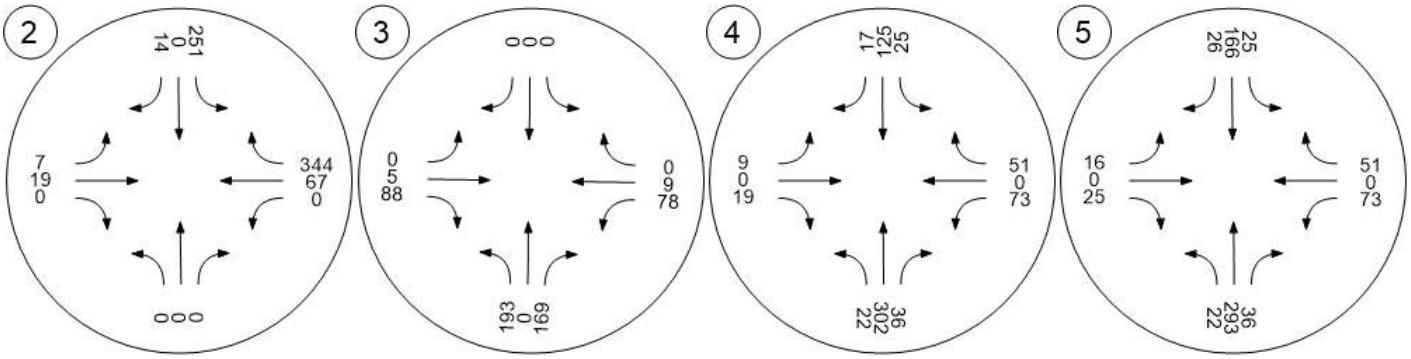


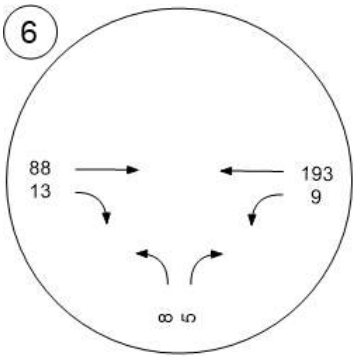
Traffic Volume - Base Volume



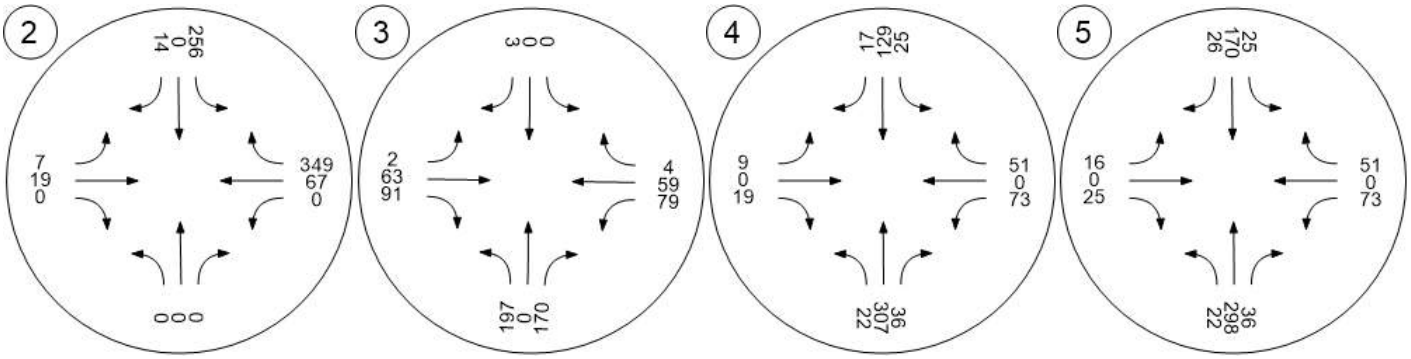


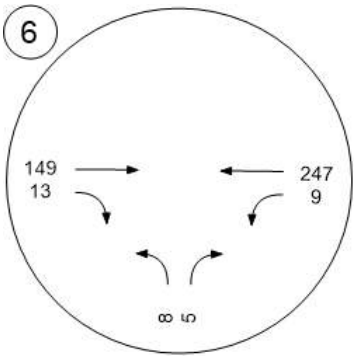
Traffic Volume - Net New Site Trips





Traffic Volume - Future Total Volume





CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	4/28/17	**PROJECT ADDRESS**	14800 BLOCK PUMA ST NW
PROJECT. TITLE	RIVERSTONE ADDITION (PRELIMINARY PLAT)		
PROJECT #	17-106		
DEPARTMENT:	Community Development – Planning Division		
TECHNICAL REVIEWER:	Name: Tim Gladhill, Community Development Director Phone: 763-433-9826 Email: tgladhill@cityoframsey.com		

We offer the following comments regarding your land use application. Staff is supportive of the proposed subdivision, subject to corrections to plans identified within this report and final review for compliance with future steps (Final Plat). This preliminary plat phase is the most significant approval step in the overall process. Preliminary Plat gives entitlement to the project, in which the City cannot reverse overall layout. The last step in the phase, Final Plat, simply approves construction documents and the Final Plat Sheet for recording and legal subdivision.

Comprehensive Plan

Action Item: *Comprehensive Plan Amendment required to change areas of High Density Residential and Commercial.*

The City Council already authorized a Comprehensive Plan Amendment for the 'Armstrong West' area. The amendment will now enter Metropolitan Council review. Upon approval of the Comprehensive Plan Amendment, the entire site will be guided as Medium Density Residential. Please note that approximately 90% of the project site is already guided in this manner. The Comprehensive Plan Amendment adjusts two (2) minor areas based off of previous land use planning. In 2013, the City embarked on a minor Small Area Plan commonly referred to as Armstrong West. The proposed project is consistent with policy direction from that planning effort. Results of that process are attached under separate cover.

The Comprehensive Plan defines Medium Density Residential as areas that are within the MUSA and intended to receive medium density housing including lower density multi-family housing and higher density single-family housing. Average density will be 6 units per acre [Zoning Code allows for range of 3 – 6 units per acre].

<u>The fact that the project requires an amendment to the Comprehensive Plan and Planned Unit Development affords the City certain discretion in approving/not approving the project.</u>

Permitted Uses

Action Item: *Zoning Amendment required to be consistent with Comprehensive Plan Amendment noted above. Staff recommends utilizing a Planned Unit Development (PUD) due to the overall master plan for the project to be discussed below.*

The project is being generally reviewed under the standards of the R-2 Residential District (this district implements the Medium Density Residential (MDR) designation of the Comprehensive Plan. The intent of the R-2 Residential District is to accommodate multiple dwellings at a density of three to seven dwelling units per acre and multiple-dwelling complexes within the 2002 MUSA. All lots created by subdivision located within the 2020 MUSA shall be serviced by sanitary sewer and municipal water. However, there are multiple residential types within the proposed project that make it difficult to apply one single zoning district to the project. Please note that one of the City's goal is to provide a variety of housing options for people at all life stages and income levels to encourage existing and future residents to stay in Ramsey throughout their lives and to achieve a balanced housing supply. One strategy identified in the Comprehensive Plan to achieve this is to continue to develop more affordable single family housing such as small-lot single family homes. The four (4) different types of housing proposed within the project include:

1. 65-foot-wide traditional single-family lot
2. 50-foot-wide traditional single-family lot
3. 50-foot-wide 'villa' lot (association maintained lawn care and snow removal)
4. 4-unit townhome building

Traditional Single-Family/Small-Lot Single Family Lots (65 foot width, 50 foot width)

Detached single-family lots are traditionally guided by the R-1 Residential District. However, the minimum lot width is 80 feet. The City has on multiple occasions allowed this style of development in the R-2 Residential District through the PUD process. Most recently, this was utilized for the Villages of Sunfish Lake Development (mid-2000s). These units do not meet the specific definition of detached townhomes in the R-2 Residential District, thus necessitating the need for a PUD, an appropriate tool.

Villa Lots

These would be classified as detached townhomes. The use is consistent with the R-2 Residential District. Please note that the definition of detached townhome within Zoning Code is slightly different than that of Building Code. Staff raises this point not to suggest any conflicts with the proposal, yet clarify for future steps (Building Permit Review).

Townhome Lots (Quad Units)

The use is consistent with the R-2 Residential District.

Layout

The following design standards are required for the various housing types proposed within the development. Please note that due to the variety of housing types, it is difficult to apply a single-set of layout standards to the project. Any perceived deviation to City Code appears to be reasonable with the utilization of a Planned Unit Development. A significant portion of the project area is being preserved for open space, a key component of a PUD Approval, and a requirement of the R-2 Residential District.

Continued on Next Page

Traditional Single-Family/Small Lot Single-Family and Villa Lots

Miscellaneous Standards	Attached and Detached Townhomes
Lot size	None
Minimum density (net)	3.0
Maximum density (net)	7.0
Lot width	None
Building setback from public street right-of-way	25 feet
Building setback from private street measured from back of curb	25 feet
Building setback from exterior development boundary line	30 feet 25 feet (detached)
Minimum separation between buildings, including any appurtenances thereto (i.e., patios, decks)	20 feet 15 feet (detached)
Parking node setback from exterior development boundary line	30 feet
Parking node setback from structure	15 feet
Maximum lot coverage	35%
Maximum building height (measured from mean ground level to mean gable)	35 feet
Accessory structure setback (measured from the development boundary line)	30 feet
Maximum number of units per structure	81 (detached)
Open space required	40% general open space 10% of which must be identifiable community space

The only deficiency in the above table would be the minimum separation between buildings. The Planning Commission and City Council have already seen this project in concept, and appeared generally supportive of the overall approach. The PUD appears to be an appropriate tool in this instance.

Continued on next page.

Townhome/Quad Units

Miscellaneous Standards	Twinhome or Quad
Lot size	7,000 square feet per dwelling unit
Minimum density (net)	3.0
Maximum density (net)	7.0
Lot width	50 feet
Front yard setback	30 feet
Side yard setback	10 feet
Side yard setback corner lot	30 feet
Side yard interior wall setback	0
Rear yard setback	30 feet
Maximum lot coverage for all principal and accessory buildings (excludes impervious or prepared surface)	35%
Maximum building height (measured from mean ground level to mean ground gable)	35 feet
Accessory structure setbacks:	
Front	30 feet or same as principal structure, which ever is greater
Rear	5 feet
Side	6 feet
Side corner	30 feet
Maximum number of units per structure	4

The only apparent deficiency to the above table is lot width, which is measured at approximately 45 feet. There appears to be sufficient space in the common area to widen the individual lots without impacting the proposed buildings themselves.

Action Item: Adjust the lot widths of the quad units to 50 feet.

Continued on next page.

Architectural Standards

Attached are proposed architectural renderings of the different models. Please note that with approval of the Preliminary Plat, the City is approving the following models as 'master plans'. So long as the models are in substantial compliance with the approved models. The Community Development Department will make a final determination on 'substantial compliance'. Models that are not in substantial compliance shall require the approval of the Planning Commission.

Street Widths and Design [section modified from Sketch Plan Review]

The proposed street widths are shown at twenty-nine (29) feet. Traditional City Streets in Ramsey are measured at thirty-two (32) foot widths. There are benefits and drawbacks for each scenario. City Staff needs policy direction from Planning Commission and City Council and cannot make a formal recommendation at this point. From a neighborhood design and traffic calming, the 29 foot width approach would be acceptable. However, the City's Public Safety and Public Works Maintenance Teams have expressed concern with this design due to maneuverability. The narrower road widths may require restricting parking to one side of the street.

The intersection of Street H and Alpine Drive is deficient in pedestrian safety. The current recommended strategy is a roundabout in this location and would include a cost share. The proposed intersection has been identified as a concern due to sight lines, geometry, and pedestrian safety. The intersection will also serve as an entrance to future Lake Itasca Park. City Staff and Developer have recently discussed alternative approaches.

The project also requires execution of the Armstrong West Arterial/Collector Infrastructure Project. The City Council has approved a Memorandum of Understanding (MOU) outlining cost obligations between impacted Property Owners and the City.

The proposed street between proposed Pearson Park (quasi-public park on Outlot C) and Lake Itasca Greenway (Outlot B) shall be modified to enhance pedestrian safety by introducing reduced width and smaller on-street parking bays (often referred to as 'chokers').

Action Item: *Amend the plan set to include a roundabout at the intersection of Street H and Alpine Drive –OR- propose an equivalent approach the improves sight line and pedestrian safety. City Staff has requested that the Developer consider a center median pedestrian safety improvement with enhanced pedestrian signalization.*

Action Item: *Amend the plan set to modify Street B as outlined above.*

Stormwater Pond

Based on projects with similar stormwater pond size and depth, Staff anticipates some concerns regarding safety to be raised by Planning Commission. We encourage you to be prepared to discuss stormwater safety, especially along public trails and compliance with stormwater regulations. Please refer to the Engineering Review Memo for specific regulations.

Development Fees

Standard Development Fees are due on the plat. The Developer has indicated a desire to obtain certain Park Dedication and Trail Development Fee Credit for the open space and trail areas.

Staff's recommendation is that trail easement and trail construction for the Lake Itasca Greenway internal to the site is eligible for Park Dedication Credit. Staff recommends a partial credit for the quasi-public park (Outlot C). The final details have not been ironed out, and will reviewed by the Parks and Recreation Commission on May 11. The City Council has noted that they would be open to additional options for parks and recreation.

Environmental Review

An Environmental Assessment Worksheet (EAW) is mandatory by the State of Minnesota for this project. The City Council has authorized the draft for public comment. A Public Comment Meeting is scheduled for Thursday, May 4 at 5:30 p.m. The City Council cannot act on the Preliminary Plat until it approves the final EAW.

Policy Document

During concept plan phase (unofficial review), the City prepared a Policy Document to guide discussions between Staff and Developer. This document is included as reference.

Planning and Zoning Approval Contingencies

1. Amend the lot widths for the quad/townhomes to fifty (50) feet.
2. A pedestrian crossing at the intersection of Street H and Alpine Drive must be added to a plan set. The crossing must be designed more than just a painted cross walk and a single-light pedestrian signal. These details must be finalized prior to Preliminary Plat approval by the City Council.
3. Street B shall be modified to a more pedestrian-friendly design given the adjacent parks and recreation space. Please propose a design based on recent discussions with City Staff.
4. A Master Park Dedication and Trail Development Fee Agreement Policy Framework must be approved along with City Council approval of the Preliminary Plat. The final agreement shall be approved with the Final Plat.
5. A final determination on street width will need to be made by the Planning Commission and City Council. Plan revisions may be required based on final approvals.

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	MARCH 29, 2017	**PROJECT ADDRESS**	WEST OF PUMA STREET, SOUTH OF ALPINE DRIVE
PROJECT. TITLE	RIVERSTONE		
ESCROW #	115626		
DEPARTMENT:	Engineering		
TECHNICAL REVIEWER:	Name: Leonard Linton Phone: 763 433-9834 Email: llinton@ci.ramsey.mn.us		

The Engineering Department offers the following comments regarding the Sketch Plan Exhibits for Riverstone. The submittal consists of 16 sheets prepared by Carlson McCain dated March 8, 2017. The submittal included a document with the stormwater summary and geotechnical report. This review also covers the draft EAW submitted for this project.

General comments:

1. **A legend must be shown on all sheets. All symbols used on that sheet must be added to the legend for the sheet. A scale must be shown on all sheets.**
2. All sidewalks in public right-of-way must be shown as 6 feet wide and 6 inches thick.
3. Class 5 shall meet the Ramsey modified gradation. This gradation must be included in the details.
4. Plan readability – Proposed sanitary sewer lines and symbols, and watermain lines and symbols must be the most prominent items on the sewer and water sheets. Proposed storm sewer lines and symbols must be the most prominent on the storm sewer sheets. Proposed curb lines, sidewalks and pedestrian ramps must be the most prominent lines on the street sheets. All other lines on the sheet must be screened so the lines and symbols for proposed features standout. This includes the symbols in the legends which must match the plan view in size, pattern, weight, and color.
5. **Underlying lines must be broken where they are under text boxes to enhance readability. Underlying text must be moved so there is not text on text.**
6. Move the typical street section to one of the Street/ Storm Sheets.
7. Add match lines and continuation notes to all sheets where part of the street is shown on a different page. Station numbers must be darker in plan view. Lines must be broken under the match lines.
8. Each pedestrian ramp requires a specific detail with walk/ trail width, ramp slope, landing pad slope, spot elevations and number of truncated domes.

9. Final plat documents must have plan and profiles for streets, sanitary sewer, storm sewer and watermain. Plan view must be shown for all pipes extending outside of the right-of-way.

Sheet Specific Comments:

Sheet 4:

1. A drainage and utility easement must be dedicated along Puma Street for the future Lift Station. See additional comments on utility plan.

Sheet 8:

1. The future lift station must be placed in a drainage and utility easement outside of the public right-of-way. The lift station must have a driveway access from Puma Street.
2. Water valves must be added mid-block near Lot 14, Block 9, Lot 8, Block 13, Lot 7, Blcok 12, Lot 14, Block 6, Lot 10, Block 5 and Lot 8, Block 11.
3. The manhole information for the structure near Lot 43, Block 9 is not correct. The rim and invert elevations are reversed. The invert elevation is lower than the downstream invert.
4. Rim and invert elevations are required on the proposed sanitary sewer in Puma Street. The responsibility for construction of this line and the lift station has not been determined; however, design information must be shown on this plan to ensure that the proposed line will function properly.
5. Watermain must be placed on the north side or east side of the road. The location must be changed adjacent to Block 6.
6. Sanitary sewer north of the lift station can be 8", not 18" diameter pipe.

Sheets 10-13:

1. The grading plan must be revised to achieve the following separation distances per the Lower Rum River Watershed Management Organization rules (LRRWMO).

   The lowest floor elevation of all development, including basements, must be at least 3 feet above the highest anticipated ground water table, 2 feet above the designated or designed 100-year flood elevation, or 1 foot above the emergency overflow, whichever is higher.

   This requirement may be waived if evidence that a lesser separation can be achieved is:
   - submitted and certified by a geotechnical engineer
   - reviewed and approved by the city engineer or other party designated by the city engineer, and
   - approved by the LRRWMO.

If this process is pursued, the developer should consult with the LRRWMO Engineer before beginning the study to discuss acceptable methodologies.

Stormwater Management Plan:

1. The proposed conditions section states 27.3 acres of new impervious will be created. The next paragraph states 35 acres of new impervious will be created. The locations of these areas must be identified in plan view.
2. The proposed infiltration areas do not meet the LRRWMO criteria for infiltration as outlined below:
    a. The volume to be infiltrated must be retained in the basin prior to any discharge leaving the basin. The large infiltration basin does not retain any water prior to discharge leaving the pond.
    b. The bottom of the basin must be at least 3 feet above the ground water level, The infiltration benches do not meet this separation requirement.
3. If water will be discharged directly to the infiltration area then allowed to overflow to the pond, then a sump manhole or water quality treatment structure must be installed up stream of the infiltration basin to capture sediment and debris.
4. Soil borings are required in the area of the infiltration practices to verify the soils are suitable for infiltration.
5. Water cannot be directly discharged to the wetland. It must be treated as noted above.
6. Detailed procedures for constructing the infiltration basins and bringing them online will be required in the final plans.
7. The narrative indicates 0.04 acres of wetlands will be lost. Wetland sequencing must be provided to document this loss. If this area is larger than the de-minimus then mitigation must be provided.
8. The table on page 4 lists Highway 10 as a discharge point. Drainage from this area does not reach Highway 10. The railroad tracks block flow to the south.
9. The title of the HydroCAD models must be revised to include the project name and designate Existing or Proposed conditions.
10. The rainfall used in the model must indicate Ramsey, not Andover.
11. The normal water level of the ponds is 866, the soils report indicates the groundwater level was 858 – 860. This is 6 – 8 feet below the normal water level and could result in dry dusty ponds. This possibility must be evaluated during development of the final plans.
12. The ponds must be less than 10 feet deep to comply with the recommended guidelines in the Minnesota Stormwater Manual.
13. A Minimal Impact Design (MIDS) model or P8 model must be submitted showing the water quality improvements provided by the stormwater system.
14. Staff downloaded the De Minimus calculation form and worked through it. This part of Ramsey is in the 2,500 sq. ft. exemption area. The proposed impact is 1,742 sq. ft. This is under the threshold; however, this wetland was described as seasonally flooded type. Staff looked at the several aerial photos from different years in GIS and measured the apparent area of the north east wetland for 1997. There were over 1.2 acres that appear to be wet. The delineation lists the area of this wetland as 0.68 acres.

The De Minimus form states that the historic impacts + the proposed impacts exceed the de minimus then the exemption cannot be claimed. Staff feels the request for exemption needs further investigation before we accept it. The request must also be reviewed by the wetland specialists at the LRRWMO as part of the approval process for the exception.

Geotechnical Report:

1. The logs indicate loose to very loose sands at depth in each boring. The report must be revised to indicate how these loose to very loose sands should be addressed under the future pavements. The City must maintain the roads and requires that the subgrade be as uniform as possible to prevent differential settlement of the pavements.

Draft EAW:

The following comments were generated after reviewing the draft EAW.

Page 7 - Utility phasing needs to be clarified. The southernmost streets can be served with sewer from Bunker Lake Boulevard. The remainder of the development will send sewage to a lift station. The responsibility for construction of the lift station must be identified.

Page 8 - The tabulation lists a loss of 0.4 acres of wetland. Commentary needs to be added justifying this loss, ie. De Minimus exemption. See comments above regarding supporting the exemption.

Page 31 - The list of permits must be updated. McDonalds has withdrawn their permit application.

Page 74 - The traffic study states turn lanes are not required on the existing roadways. Historically projects of this size in Ramsey have needed some traffic modifications. The traffic study commentary should be expanded to show the justification for not adding turn lanes.

Page 85 - Revise the comment on transit. Ramsey is served by the Northstar Commuter Rail Line. Transit directly serving this development is not likely.

Page 90 - The traffic data count sheets need to be updated. The file name lists Ramsey streets while the page header lists a St. Paul intersection.

Page 128 - The diagrams do not accurately reflect the inplace roadways at the modeled intersections. The southern leg of diagram 2 does not exist and should not be shown.

Page 130 - The picture does not show the location of all of the diagrams listed on the page. The comments on the diagrams generally apply to all of the pages in the report.

Page 167 - Diagram 3 lists minimal traffic from the existing neighborhood to the north. It shows the trips heading west. It also shows 181 vehicles making the north to west movement. This is not intuitive. The Alpine Drive –TH10 intersection is to the west and is not a good connection for going east on TH10. There are no plans for future employment or businesses along Alpine Drive west of the project site, so there are not apparent destinations in this direction.

Memorandum

To: Capstone Homes

CC: Bruce Westby

From: Leonard Linton

Date: April 24, 2017

Re: Minimum floor elevation requirements for Riverstone

Capstone Homes is proposing a new housing development west of Puma Street between the BNSF railroad tracks and Alpine Drive. The City issued Sketch Plan comments at the end of March 2017, noting that the proposed basement floors were lower than the emergency overflow elevations and requiring that the grading plan be revised to meet the Lower Rum River Watershed Management Organization (LRRWMO) separation distance requirements noted below:

The lowest floor elevation of all development, including basements, must be at least 3 feet above the highest anticipated ground water table, 2 feet above the designated or designed 100-year flood elevation, or 1 foot above the emergency overflow, whichever is higher.

The City contacted the LRRWMO engineer regarding the developers concerns about the impact of this requirement on the project. The LRRWMO engineer provided guidance that has been used on other projects to determine the appropriate separation between groundwater elevations and basement floors. The variance process requires the following steps:

- Submittal of documentation prepared and certified by a geotechnical engineer. The required documentation is based on the attached report.
- Documentation reviewed and approved by the City Engineer
- Documentation approved by the LRRWMO.

The documentation needs to contain the following information:

1. Depth to the water table and an estimation of the water table's seasonally high elevation.

2. Type of aquifer materials – e.g. clay, silt, sand, gravel

3. Information as to whether or not the water table is perched or is part of a deeper, thicker aquifer system.

4. An estimate of the flood elevation of the pond.

5. The distance of the proposed floor to the pond.

The attached document layout these steps in detail. The document contains 6 plots that must be used to determine the minimum depth to the water table from the bottom of the proposed floor slab.

The City has performed a preliminary analysis of the project using this method. We used Sheet 9 with boring locations that was provided to list existing grade, lowest floor and groundwater elevations. We observed that the ground elevation listed for boring 7 did not match the elevation at that location on Sheet 9. Please review this log and update as necessary. Generally it appears that groundwater level is below the lowest floor elevation. We did not reference the charts to make a complete determination.

Please prepare documentation to support your request for a variance to the lowest floor elevations as required by the LRRWMO. The report must include a narrative of the reason for requesting a variance and an engineer's opinion on the probability of groundwater entering the basement. A table that includes all of the lots with basements must be part of the report. The table must list the lot and block number, lowest floor elevation, nearest soil boring and groundwater elevation and applicable chart number from the attached guidance document. The report will be reviewed by the LRRWMO and the City and will become part of the permit memo.

CITY OF RAMSEY LAND USE APPLICATION
TECHNICAL REVIEW FILE

DATE	APRIL 14, 2017	**PROJECT ADDRESS**	TBD
PROJECT. TITLE	RIVERSTONE ADDITION		
ESCROW #	115626		
DEPARTMENT:	Community Development: Planning Division (Landscape Plan & Environmental Resources)		
TECHNICAL REVIEWER:	Name: Chris Anderson, City Planner Phone: 763-433-9817 Email: canderson@cityoframsey.com		

We offer the following comments regarding the Landscape Plan, prepared by Carlson McCain and dated March 8, 2017:

The City's Natural Resources Inventory (NRI) does not identify any natural areas over the roughly ninety (90) acres other than a small segment of an altered/non-native plant community. Furthermore, there is essentially no tree cover on the property other than a small portion in the northwest corner, which will be developed in a later phase of the overall project. Generally speaking, this project would convert agricultural cropland into residential homes and townhomes.

The project is being proposed as a Planned Unit Development (PUD) and includes smaller lot single family homes and townhomes. Traditionally, single family residential lots require two (2) trees per lot. While not every lot has two (2) trees, overall, the project is proposed landscaping in excess of that required by City Code. However, there appears to be a discrepancy in terms of the total number of trees proposed. Sheet L5 notes that 1,003 trees will be planted; however, when adding up quantities in the Overall Landscape Schedule, that totals 758 trees. This needs to be clarified.

The Landscape Plan does include plantings along a berm separating the homes from the railroad tracks, along some of the trails, and within a proposed small, neighborhood park. The Landscape Plan also is providing boulevard trees along all public streets, including Puma St, which is along the rear yard of many lots.

While not shown on the plans, City Staff and the Developer spoke about how the berm would be landscaped with ground cover. Staff has suggested that the berm be finished with a native seed mixture that is pollinator friendly and, in the long term, would require less intensive maintenance than if traditional turf grass were established. The Developer was open to this suggestion.

As proposed, the project includes landscaped medians. While Staff believes that this adds overall value to the project and enhances the streetscape, it will be critical to have Home Owners Association documents clearly specifying maintenance responsibilities. These documents will need to be reviewed and approved by the City.

Note that the proposed landscaping for the berm, along the trails and neighborhood park, as well as in some of the outlots (and even possibly some of the boulevard plantings) will need to be installed as a Stage I Improvement as they are not directly adjacent to a lot. Furthermore, these trees will be subject to a Maintenance Guarantee to ensure their survival for two (2) years after acceptance by the City.

It is anticipated that this overall subdivision will be phased in over a number of years. A greater review of landscaping for the subsequent additions will be conducted when those additions come forward. Similarly, the only tree cover existing is in the northwest corner of the site. At this time, a Tree Inventory is not critical but will need to be provided eventually. Finally, a phasing plan for the development as a whole, along with the landscaping, should be prepared so that there is no misunderstanding as to what landscaping is being installed with each addition of the project.

The Landscaping Plan is generally acceptable with the following required revisions:

Required Sheet Revisions

Sheet L1

- Suggested Plant List needs to be updated with species names.
- Identify proposed vegetation (ground cover) for the berm.
- Add note that no trees shall be planted within the Vision Clearance Triangle as defined in City Code Section 117-348 (g).
- Update label of US Highway NO. 10 & 169 (references 69).

Sheet L2

- Add note/label identifying all trees in center islands/medians and in outlots are to be privately maintained.
- Add note that no trees shall be planted within the Vision Clearance Triangle as defined in City Code Section 117-348 (g).

Sheet L3

- Add note/label identifying all trees in center islands/medians and in outlots are to be privately maintained.
- Add note that no trees shall be planted within the Vision Clearance Triangle as defined in City Code Section 117-348 (g).

Sheet L4

- Add note/label identifying all trees in center islands/medians and in outlots are to be privately maintained.
- Add note that no trees shall be planted within the Vision Clearance Triangle as defined in City Code Section 117-348 (g).

Sheet L5

- Add note/label identifying all trees in center islands/medians and in outlots are to be privately maintained.
- Add note that no trees shall be planted within the Vision Clearance Triangle as defined in City Code Section 117-348 (g).
- Revise Planting Detail to specify that the first set of primary roots shall be at finished grade and to only prune out dead/broken branches at time of planting.
- Topsoil meeting the City's specification shall be required for each lot. Copies of the load tickets shall be provided to the City. A topsoil inspection shall be requested and completed prior to installation of sod.
- No topsoil (or other fill) shall be placed within any wetland or wetland setback area.
- Reconcile the number of trees to be planted with the quantities shown in the Overall Planting Schedule.
- Advisory comment: irrigation system should include some sort of water efficient technology (e.g. soil moisture sensors, ET sensors, smart controller, etc.).

Regular Planning Commission **5. 4.**

Meeting Date: 05/04/2017

By: Tim Gladhill, Community Development

Information

Title:

Review Architectural Design for Stonebrook Academy

Purpose/Background:

The purpose of this case is to review the architectural design for Stonebrook Academy. The full site plan will be in front of the Planning Commission on June 1.

Notification:

Observations/Alternatives:

Funding Source:

Recommendation:

Staff received this submittal on Friday, April 28 and his not had the opportunity to review. In the interest in maintaining the review schedule, Staff is forwarding this for review. Architectural Review in advance of full Site Plan Review is an option/not required step in the review process for The COR (current policy).

Action:

Motion to approve/not approve the architectural design for Stonebrook Academy, subject to final review by the Community Development Department as to specific code compliance.

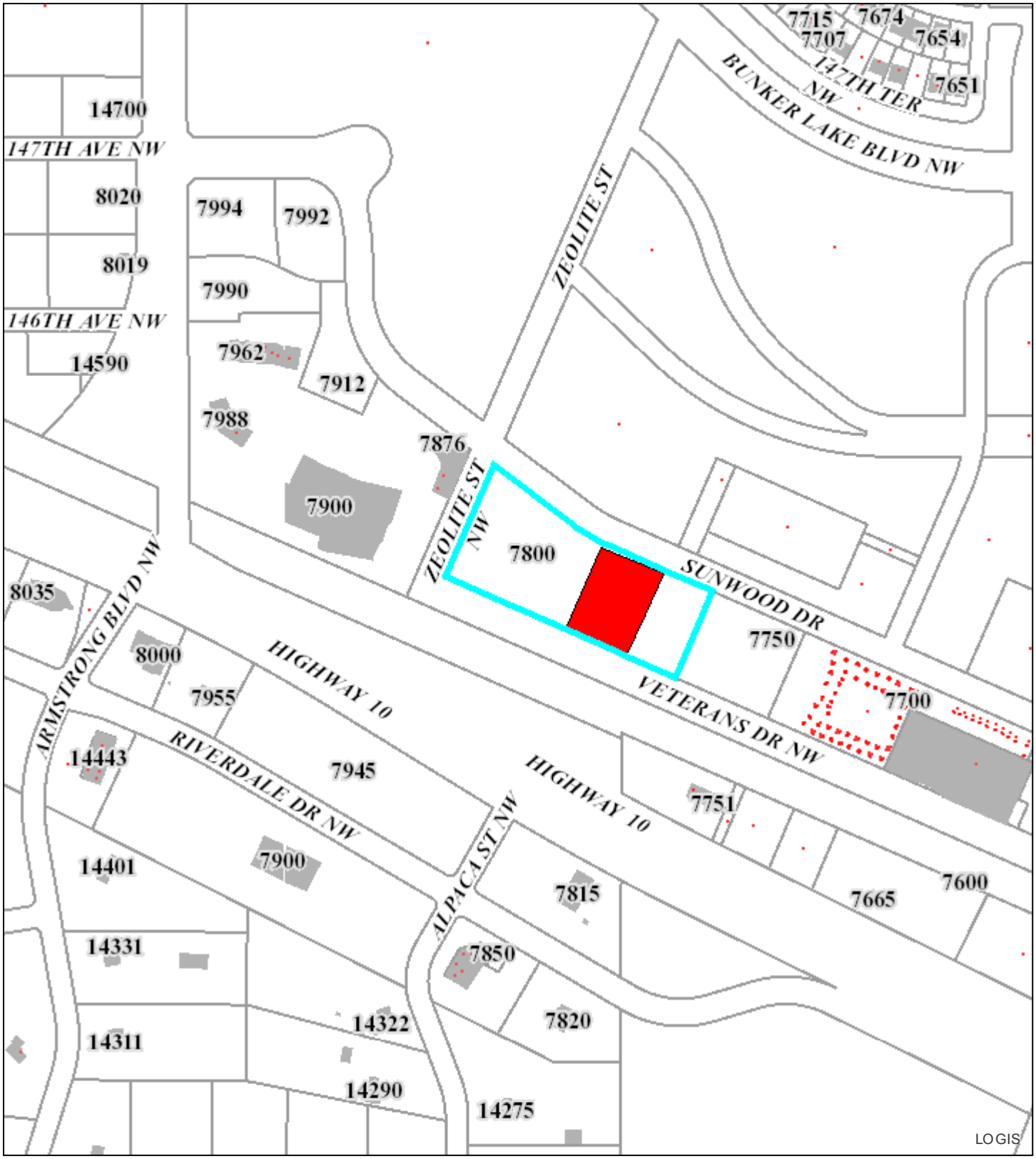
Attachments

Site Location Map

Architectural Review

Form Review

Inbox	Reviewed By	Date
Tim Gladhill (Originator)	Tim Gladhill	04/28/2017 02:41 PM
Form Started By: Tim Gladhill		Started On: 04/28/2017 01:59 PM
Final Approval Date: 04/28/2017		



City of RAMSEY

Stonebrook Academy

7800 SUNWOOD DR NW

28-32-25-23-0010

Legend

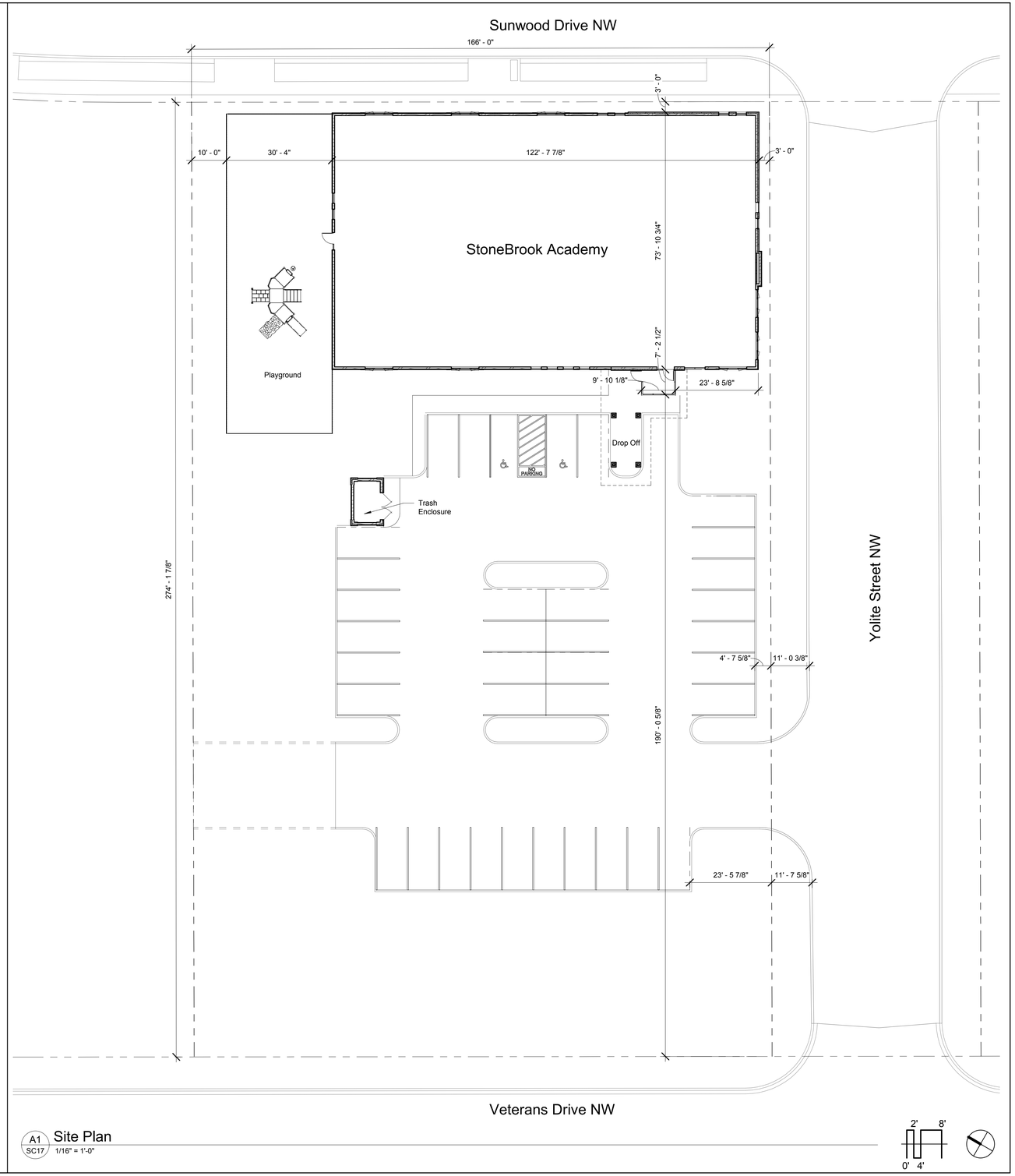
Site

Parcels

N

Print Date: April 28, 2017

0 700 1,400 Feet



A1 / SC17 Site Plan
1/16" = 1'-0"

NOT FOR CONSTRUCTION

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CNH ARCHITECTS
7300 WEST 147TH STREET, SUITE 504 APPLE VALLEY, MN 55124-7580 (952) 431-4433
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CNH NO.: 17018
DATE: 04/25/17
REVISIONS:

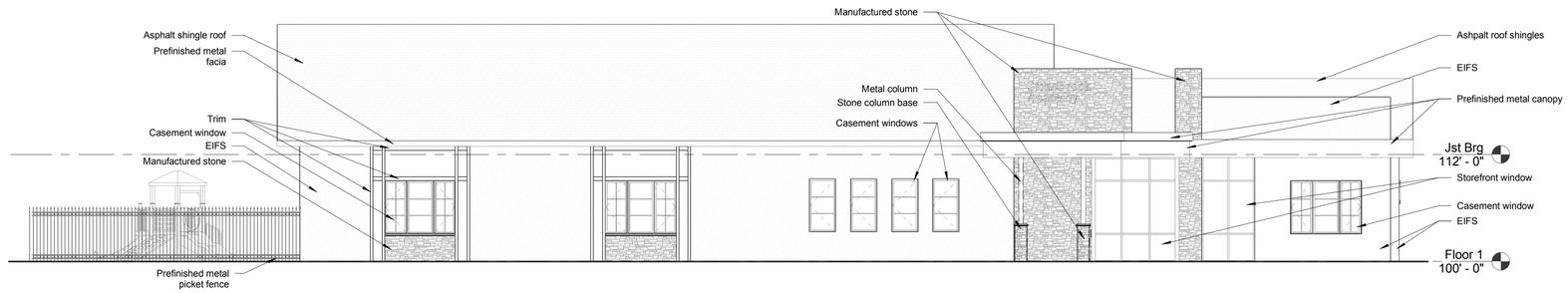
Stonebrook Academy
7800 Sunwood Drive
Ramsey, MN

Site Plan

SC17

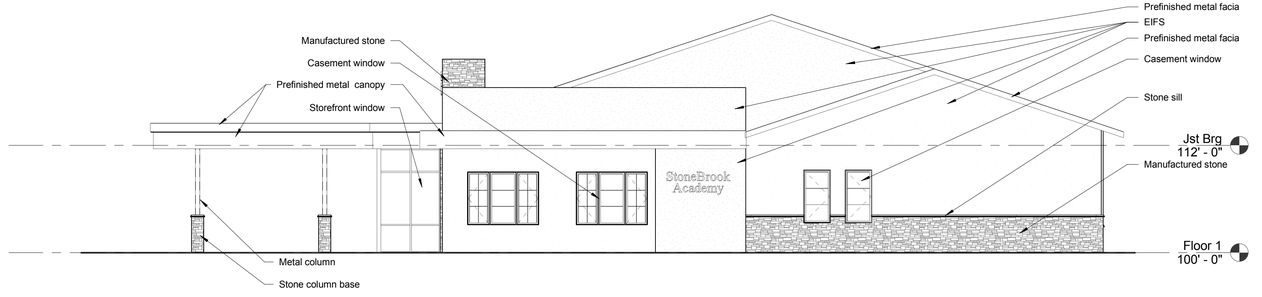
K4 / SC22 Preliminary North Elevation (View from Sunwood Drive)

1/8" = 1'-0"



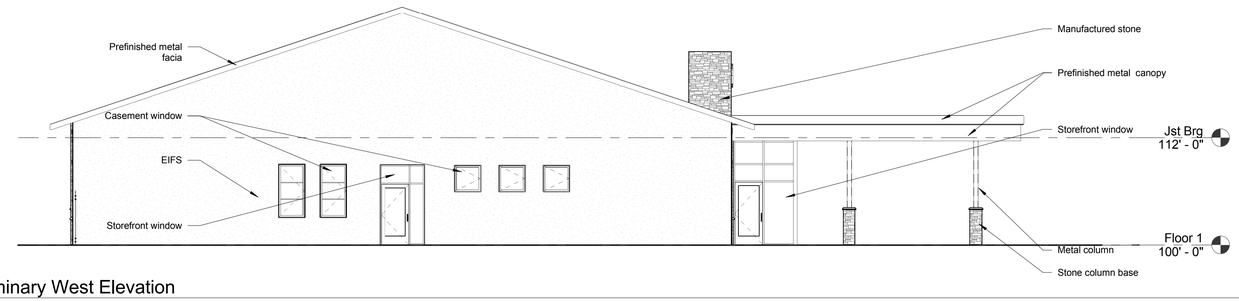
G4 / SC22 Preliminary South Elevation (View from Veterans Drive)

1/8" = 1'-0"



D6 / SC22 Preliminary East Elevation (View from Yolite Street)

1/8" = 1'-0"



A6 / SC22 Preliminary West Elevation

1/8" = 1'-0"

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REVISIONS:

Stonebrook Academy
7800 Sunwood Drive
Ramsey, MN

Preliminary Elevations

SC22

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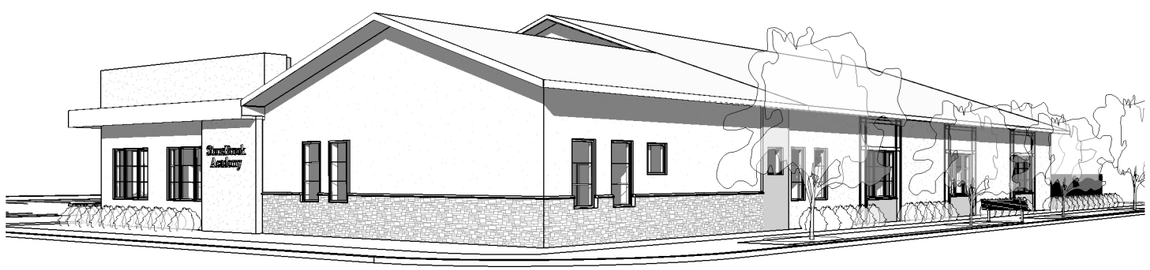
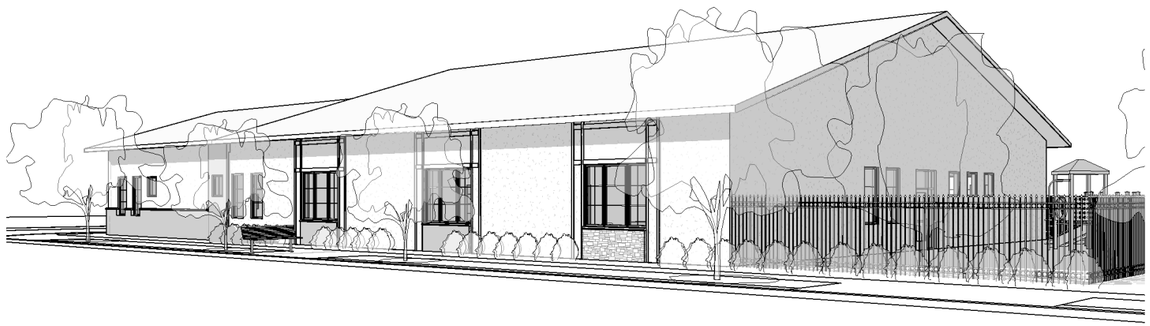


1 SC20 Northeast Perspective - Preliminary



2 SC20 Northwest Perspective - Preliminary

3 SC20 Southeast Perspective - Preliminary

4 SC20 Southwest Perspective - Preliminary

Stonebrook Academy - Preliminary Perspectives

Comm. No.: 17018
Date: 04/28/17

CNH ARCHITECTS

Stonebrook Academy - Preliminary Southeast Perspective

Comm. No.: 17018
Date: 04/28/17

CNH ARCHITECTS

Stonebrook Academy - Preliminary Northeast Perspective

Comm. No.: 17018
Date: 04/28/17

CNH ARCHITECTS

Regular Planning Commission **5. 5.**

Meeting Date: 05/04/2017

By: Tim Gladhill, Community Development

Information

Title:

Review Concept Plan for Sharp Industrial Building at 14251 Jaspar St NW; Case of Sharp and Associates

Purpose/Background:

The purpose of this case is to consider a concept plan for a new industrial development near the City's Public Work Campus. The Planning Commission previously reviewed this project under a different developer known as Platinum Properties. The main tenant of the current project remains Adrenaline Sports Center. The project is proposed on City-Owned land, so the Planning Commission is asked to review the concept prior to approval of a Purchase Agreement. The intended use appears to be generally in line with the Comprehensive Plan and Zoning Code.

Notification:

Observations/Alternatives:

Funding Source:

Recommendation:

Staff recommends that the City approve the attached concept plan for purposes of entering into a Purchase Agreement.

Action:

Motion to recommend that the City Council approve the attached concept plan for purposes of entering into a Purchase Agreement.

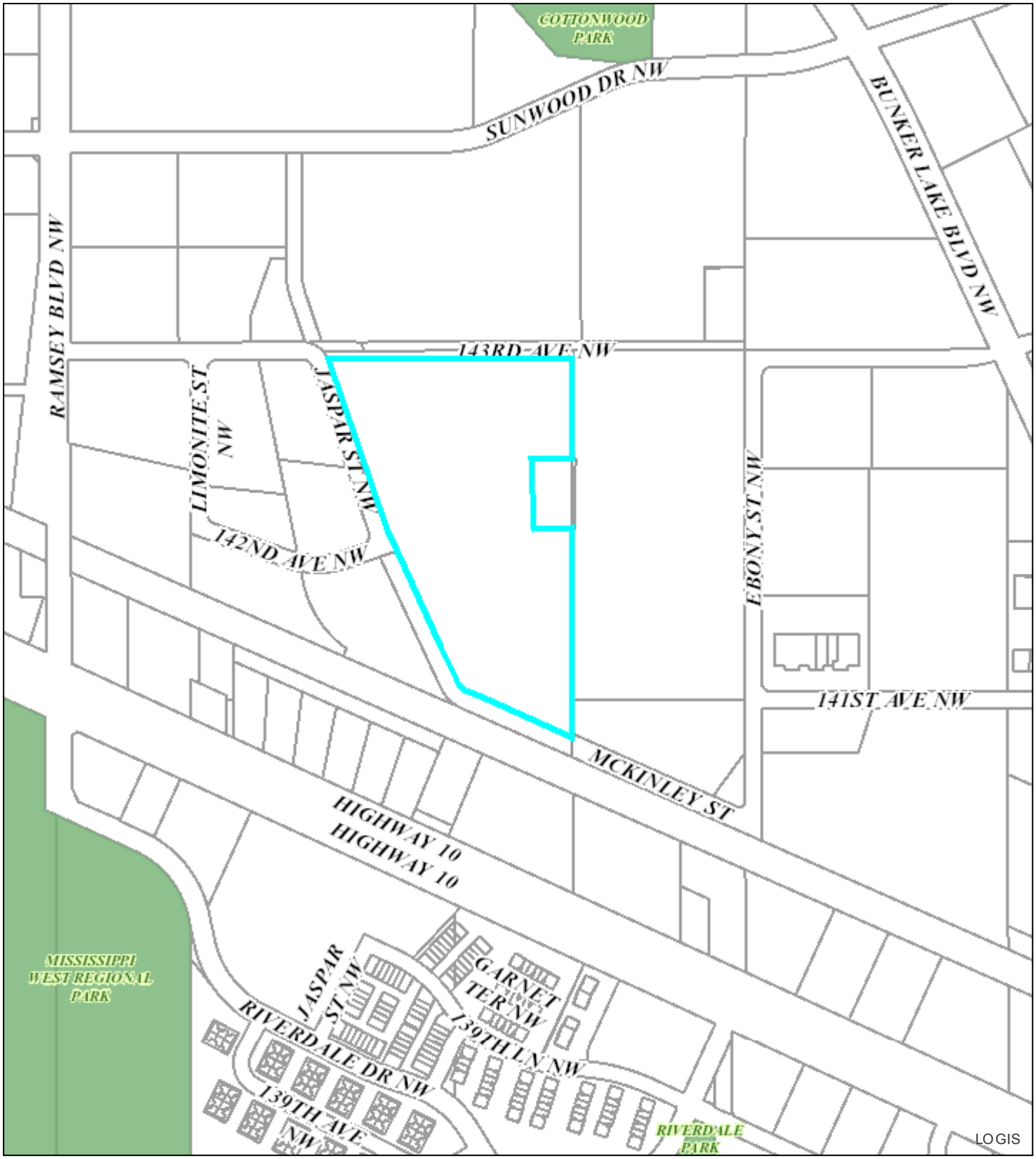
Attachments

Site Location Map

Concept Plan

Form Review

Inbox	Reviewed By	Date
Tim Gladhill (Originator)	Tim Gladhill	04/28/2017 02:41 PM
Form Started By: Tim Gladhill		Started On: 04/28/2017 02:21 PM
Final Approval Date: 04/28/2017		



City of RAMSEY

Sharp Industrial Park

27-32-25-34-0009

Legend

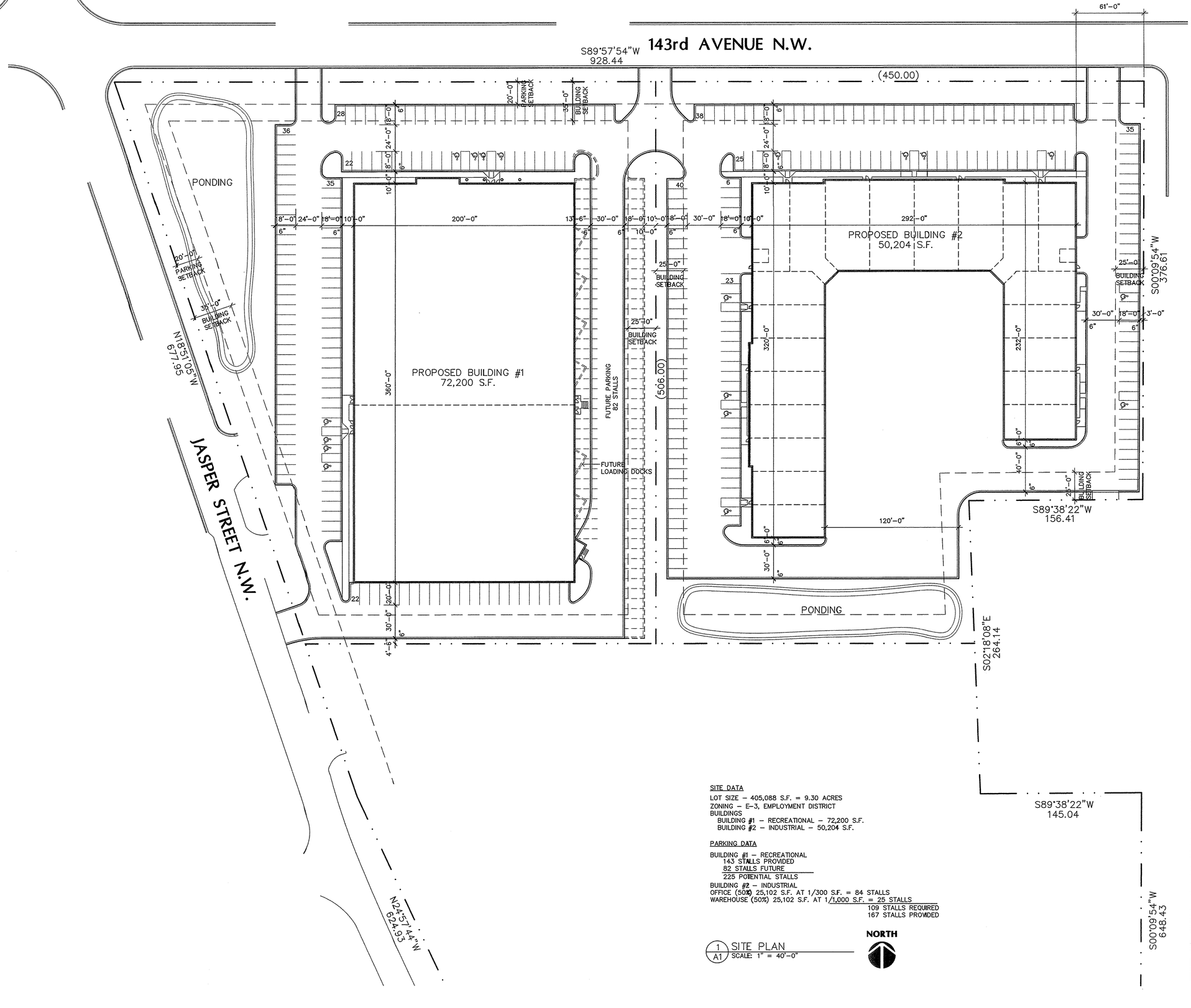
Site

Parcels

N

Print Date: April 28, 2017

0 900 1,800 Feet



1 A1 SITE PLAN
SCALE: 1" = 40'-0"

NORTH

SITE DATA

LOT SIZE – 405,088 S.F. = 9.30 ACRES
ZONING – E-3, EMPLOYMENT DISTRICT
BUILDINGS
BUILDING #1 – RECREATIONAL – 72,200 S.F.
BUILDING #2 – INDUSTRIAL – 50,204 S.F.

PARKING DATA

BUILDING #1 – RECREATIONAL
143 STALLS PROVIDED
82 STALLS FUTURE
225 POTENTIAL STALLS
BUILDING #2 – INDUSTRIAL
OFFICE (50%) 25,102 S.F. AT 1/300 S.F. = 84 STALLS
WAREHOUSE (50%) 25,102 S.F. AT 1/1,000 S.F. = 25 STALLS
109 STALLS REQUIRED
167 STALLS PROVIDED

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lampert@lampert-arch.com

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Ph (763) 425-2002
Fax (763) 425-6428

JASPER INDUSTRIAL PARK
Ramsey, Minnesota

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Project Designer: JAMES B
Drawn By: JRB
Checked By: LL
Revisions

4/21/17	PRELIMINARY

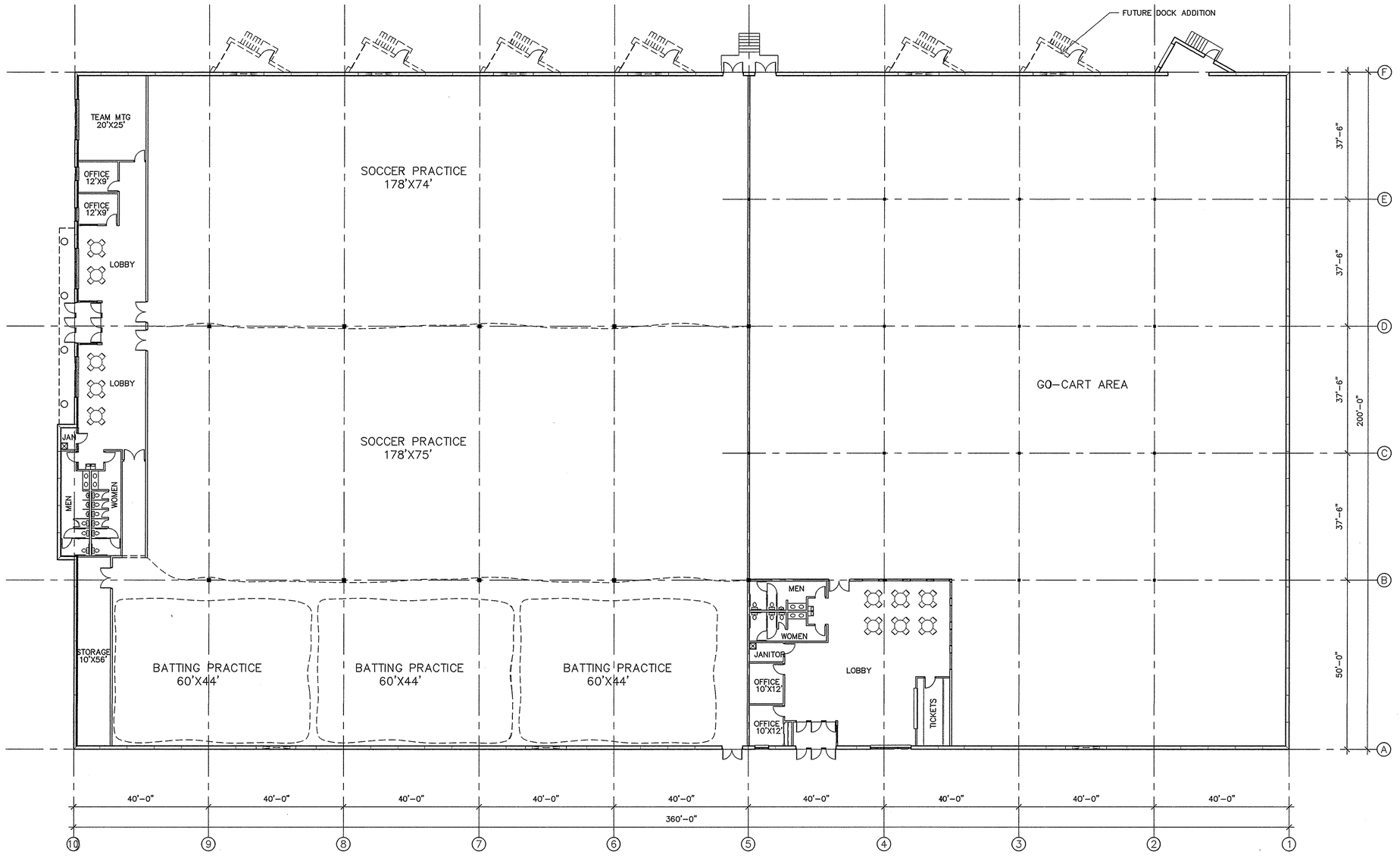
SITE PLAN

Sheet Number

A1

Project No. 170418-2

Filename: JASPER INDUSTRIAL BUILDING\JASPER REC BUILDING-A1



1/A2 FLOOR PLAN
SCALE: 1/16" = 1'-0"

NORTH

Filename: JASPER INDUSTRIAL BUILDING\JASPER REC BUILDING-A2

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Checked By: LL
Revisions

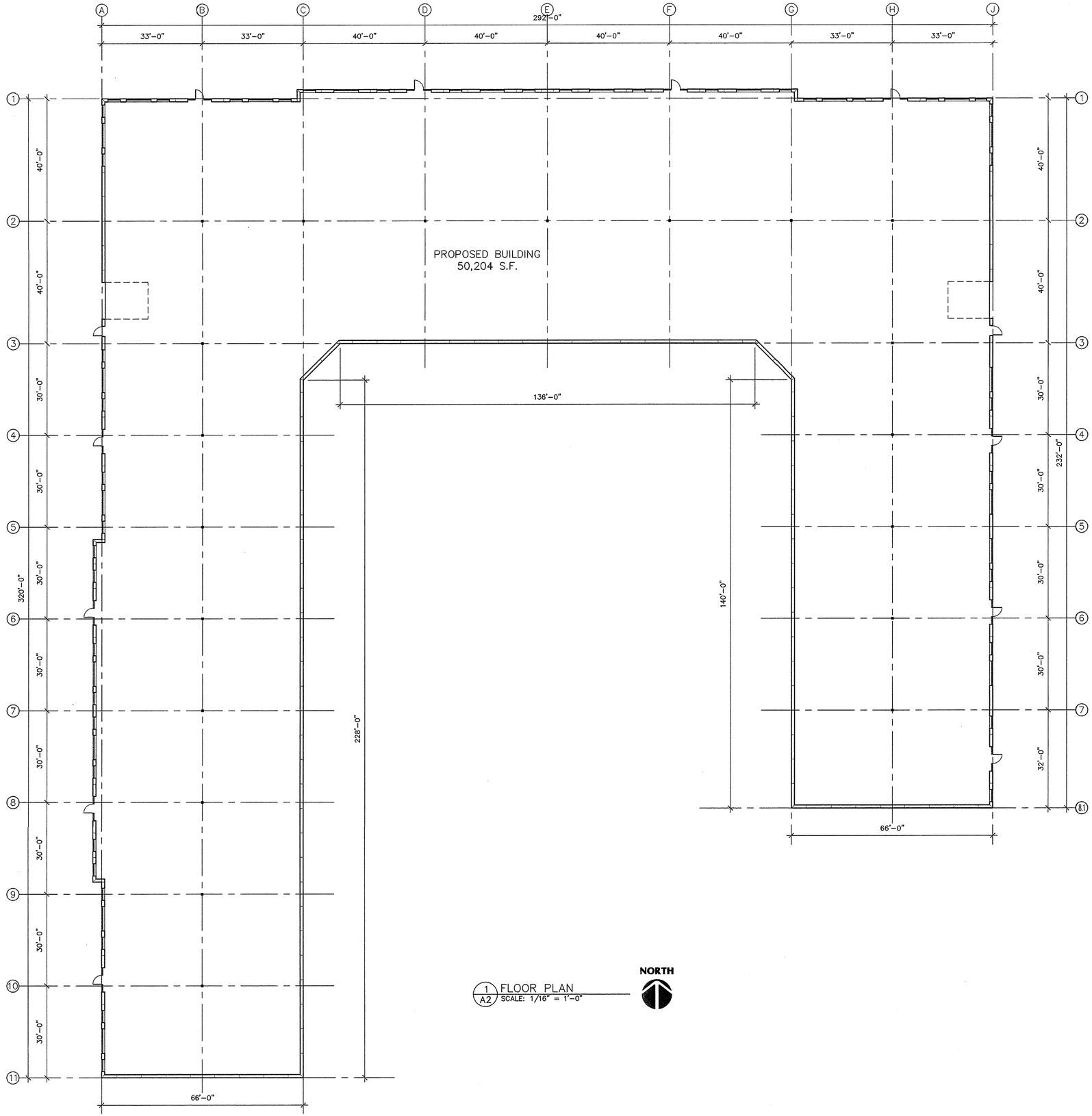
4/21/17	PRELIMINARY

FLOOR PLAN

Sheet Number

A2

Project No. 170418-2



1/A2 FLOOR PLAN
SCALE: 1/16" = 1'-0"

NORTH

Filename: JASPER INDUSTRIAL BUILDING\JASPER INDUSTRIAL-A2

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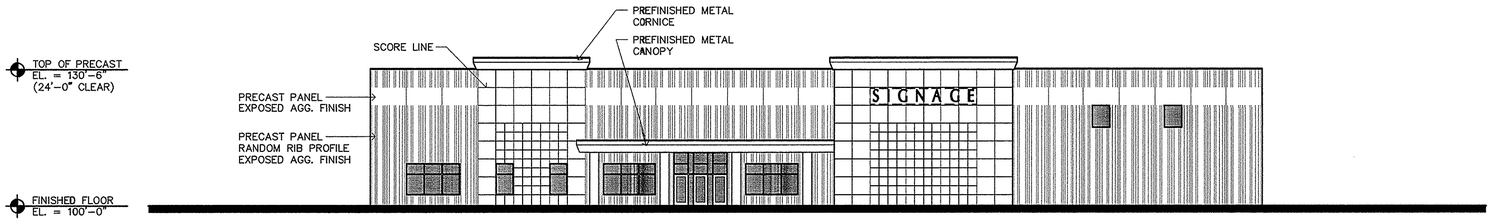
4/21/17	PRELIMINARY

FLOOR PLAN

Sheet Number

A2

Project No. 170418-2



1/A3 NORTH ELEVATION
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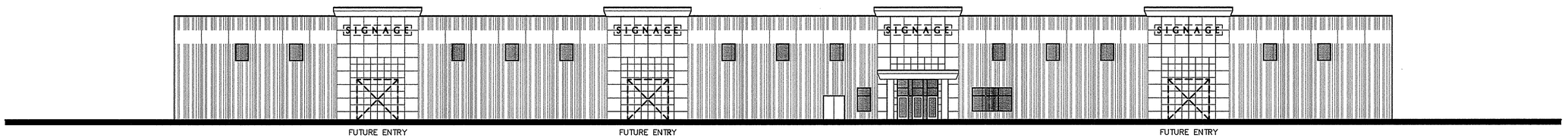

2/A3 WEST ELEVATION
SCALE: 1/16" = 1'-0"

Filename: JASPER INDUSTRIAL BUILDING\JASPER REC BUILDING-A3

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Checked By: LL
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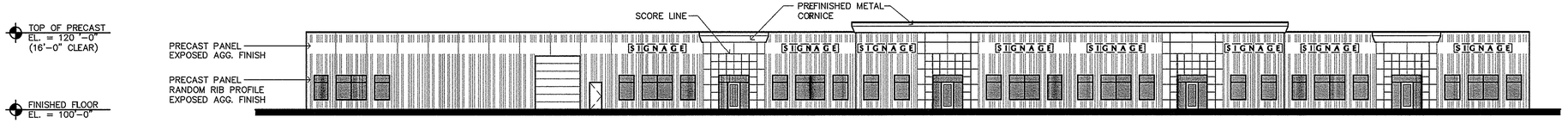
BUILDING ELEVATIONS

Sheet Number

A3

Project No. 170418-2



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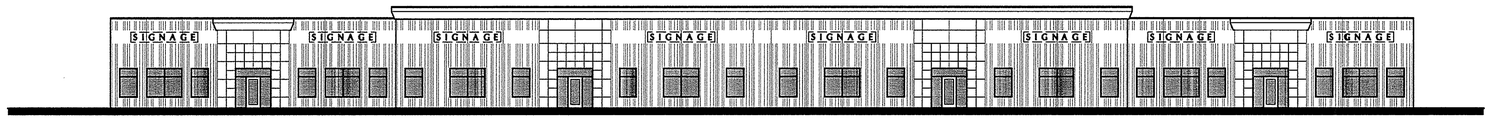

2 A3 NORTH ELEVATION
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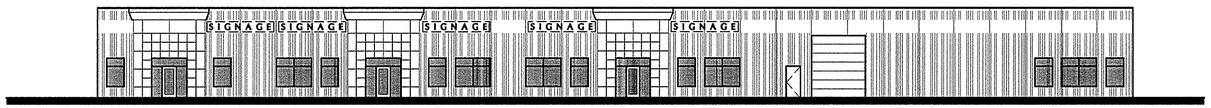

3 A3 EAST ELEVATION
SCALE: 1/16" = 1'-0"

Filename: JASPER INDUSTRIAL BUILDING\JASPER INDUSTRIAL-A3

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4/21/17	PRELIMINARY

BUILDING ELEVATIONS

Sheet Number

A3

Project No. 170418-2

Regular Planning Commission **7. 1.**

Meeting Date: 05/04/2017

By: JoAnn Shaw, Community Development

Information

Title:

Zoning Bulletins

Purpose/Background:

Enclosed are zoning periodicals for your review.

Notification:

Observations/Alternatives:

Funding Source:

Recommendation:

Action:

Attachments

Zoning Bulletins

Form Review

Inbox	Reviewed By	Date
Tim Gladhill	Tim Gladhill	04/28/2017 02:41 PM
Form Started By: JoAnn Shaw		Started On: 04/27/2017 02:49 PM
Final Approval Date: 04/28/2017		

QUINLAN™ March 25, 2017 | Volume 11 | Issue 6

Zoning Bulletin

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Special Exception—Based on residential neighbors' opposition testimony to monopole, zoning board denies wireless company's special exception application 5

Use—Zoning board approves town's proposed use of property as permitted "municipal use" 8

Special Exception—Opponents of proposed fuel station/convenience store contend zoning board improperly evaluated special exception application 9

Zoning News from Around the Nation 11

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Mat #41945581

Authority—County board of education issues zoning exemption for proposed use of property for charter school

School district argues statutory authority to issue such exemptions is limited to school districts and not provided to county boards of education

Citation: *San Jose Unified School District v. Santa Clara County Office of*

Contributors

Corey E. Burnham-Howard

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Education, 7 Cal. App. 5th 967, 213 Cal. Rptr. 3d 241 (6th Dist. 2017)

CALIFORNIA (01/24/17)—This case addressed the issue of whether California Government Code § 53094(b) authorizes county boards of education to issue zoning exemptions for charter schools. Section 53094(b) authorizes the "governing board of a school district" to issue zoning exemptions to a "proposed use of property by the school district."

The Background/Facts: In California, public education is provided by local school districts. Each county has a county office of education, which provides support services to the county's school districts. The county superintendent is the head of the county office of education. The county board of education, an elected governing body, is the governing board of the county office of education.

Since 1992, the California Legislature has authorized the creation of charter schools, which are part of the public school system, but which "offer an alternative to district-run schools." Under California Proposition 39, since 2000, school districts are required to share their facilities with charter schools so that charter school students have access to facilities "reasonably equivalent" to those available to other public school students.

Rocketship Education ("Rocketship") is a network of elementary charter schools. The Santa Clara County Board of Education (the "County Board") has granted Rocketship a countywide charter to operate up to 25 charter schools. Rocketship sought to locate one of those charter schools on property (the "Property") owned by the City of San Jose (the "City"). The Property was located in the San Jose Unified School District (the "District") and in the jurisdiction of the Santa Clara County Office of Education (the "County Office"). Use of the Property for a school was not permitted under the City's General Plan or the City's zoning ordinance. Under the City's General Plan, the Property was designated as open space, parklands, and habitat. Under the City's zoning ordinance, the Property was zoned light industrial. Rocketship requested that the County Board and the County Office exempt the Property from the City's General Plan and zoning ordinance pursuant to Government Code § 53094(b). Section 53094(b) authorizes the "governing board of a school district" to issue zoning exceptions to a "proposed use of property by the school district." In January 2013, the County Board approved a resolution (the "Resolution") exempting the Property from the City's General Plan and zoning ordinance pursuant to § 53094(b).

Thereafter the District filed a writ of mandate, seeking a rescission of the Resolution and a declaration that only school districts, not county boards of education, have the authority to invoke § 53094.

In March 2014, a trial court ruled that the County Board lacked the authority to invoke § 53094. The court concluded that school districts and county boards of education are "tasked with generally different responsibilities." Given those differences, the court concluded that the Legislature would have specifically stated an intent "to grant the power to override local zoning to county boards of education" if it had so intended. Since no such power was specifically stated in the statute, the court concluded that county boards of education lacked such power. The court directed the County Board to rescind the Resolution or take official action denying Rocketship's request for an exemption from local zoning requirements.

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The County Office, County Board, and Rocketship appealed.

DECISION: Judgment of Superior Court affirmed.

The Court of Appeal, Sixth District, California, held that county boards of education have no authority to issue zoning exemptions under § 53094.

In so holding, the court looked at the plain meaning of the statute, as well as the intention of the state Legislature in drafting it. Again, the language of § 53094 provides in relevant part: "the governing board of a school district . . . by a vote of two-thirds of its members, may render a city or county zoning ordinance inapplicable to a proposed use of property by the school district. . . ." At issue in this case was the meaning of the phrase "the governing board of a school district," and whether it included county boards of education. The County Office, County Board, and Rocketship contended that "the governing board of the school district" referred "to any public agency that operates public schools, including county boards of education." The District maintained that the language referred "more narrowly to the governing boards of local school districts, as they are described in the [state's] Education Code." (A number of provisions in the Education Code indicate that a county board of education is the governing board of a school district in only limited circumstances.)

Here, the Court of Appeal found that Government Code § 53094 was drafted with the recognition that school districts were to be treated uniquely (as compared to other local agencies) with regard to zoning because "school construction was subject to almost complete control by the state." The court found that, in enacting § 53094, the Legislature accorded to school districts "immunity from local regulation" in an effort "to prevent local interference with the state's sovereign activities of school construction and school location." In other words, "the Legislature intended to forestall local obstruction of state-sanctioned school construction and school location," said the court.

Here, the County Board had sought to use that immunity under § 53094 in connection Rocketship's proposed location of a charter school. The court rejected this attempt. It noted that "[w]hile county boards of education are authorized to issue charters and oversee charter schools, it is local school districts that are obligated to provide facilities to charter schools" (under the state's Education Code, § 47614, subd. (b).) Thus, noted the court, under the statute, the state had not tasked county boards of education with acquiring sites for charter schools. Moreover, to the extent county boards of education do acquire sites for charter school, the court said they are "not carrying out a sovereign activity on behalf of the state." Thus, the court concluded that it "follows, then, that empowering county boards of education to issue zoning exemptions for charter school facilities does not advance the purpose of section 53094—namely, preventing local interference with the state's sovereign activities." Accordingly, the court was convinced that, pursuant to legislative history and intent, § 53094 "does not authorize county boards of education to issue zoning exemptions for charter school facilities."

See also: *Hall v. City of Taft, 47 Cal. 2d 177, 302 P.2d 574 (1956).*

See also: *Town of Atherton v. Superior Court In and For San Mateo County, 159 Cal. App. 2d 417, 324 P.2d 328 (1st Dist. 1958).*

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Case Note:

In its decision, the court also rejected several other arguments proffered by the County Office, County Board, and Rocketship in support of their position.

Special Exception—Based on residential neighbors' opposition testimony to monopole, zoning board denies wireless company's special exception application

Wireless company appeals, arguing substantial evidence did not support zoning board's decision

Citation: *Northeast Pennsylvania SMSA Limited Partnership v. Throop Borough Zoning Hearing Board, 2017 WL 56124 (Pa. Commw. Ct. 2017)*

PENNSYLVANIA (01/05/17)—This case addressed the issue of whether a zoning hearing board erred when denying an application for a special exception use.

The Background/Facts: Northeast Pennsylvania SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon") sought to construct a wireless communications facility with a 120-foot monopole in the Throop Borough (the "Borough"). Verizon sought to construct the facility and monopole in an effort to improve poor wireless service in portions of the Borough. In furtherance of that effort, Verizon leased land (the "Property") in the Borough's Light Industrial (I-l) Zoning District. The Property was located adjacent to residential properties in a Residential Zoning District.

In March 2015, Verizon filed a zoning permit application (the "Application") to construct a new communications facility, including a 120-foot monopole on the Property. Verizon also sought a special exception to allow construction of the 120-foot monopole. Section 507(3)(d) of the Borough's Zoning Ordinance (the "Ordinance") permitted "[r]adio and television transmission or receiving towers" by special exception in the Borough's I-1 Zoning District.

The Borough's Zoning Hearing Board ("ZHB") held a hearing on the Application. At the hearing, Verizon presented expert testimony as to the planned construction materials and landscaping of the monopole, as well as the lack of alternative locations for the monopole to achieve coverage and reduce capacity issues. Several neighbors (the "Objectors") who owned residential property near the proposed facility and monopole also testified. The Objectors expressed their concern that the facility and monopole would result in depreciation of their property values, and expose the neighborhood to noise

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via a generator (that was to run up to 45 minutes twice monthly and during power outages).

Ultimately, the ZHB denied Verizon's request for a special exception. The ZHB noted that the Property was surrounded by residential neighborhoods and found that "the height of the proposed structure would not be in line with the character of those adjoining neighborhoods." The ZHB also recognized the concerns of the neighbors with regard to noise from an on-site generator.

Verizon appealed. A trial court affirmed the ZHB's decision denying Verizon's Application.

Verizon again appealed. On appeal, Verizon argued that substantial evidence did not support the ZHB's decision that Verizon's proposed use would substantially affect the community's health, safety, and welfare (a necessary finding to overcome a special exception use which is presumptively consistent with the health, safety and welfare of the community).

DECISION: Judgment of trial court reversed, and matter remanded.

The Commonwealth Court of Pennsylvania agreed with Verizon, holding that substantial evidence did not support the ZHB's decision that Verizon's proposed use would substantially affect the community's health, safety, and welfare. Accordingly, the court found that the ZHB erred in denying Verizon's special exception request.

In so holding, the court noted that "[a] special exception is neither special nor an exception, but a use expressly contemplated that evidences a legislative decision that the particular type of use is consistent with the zoning plan and presumptively consistent with the health, safety and welfare of the community." "A special exception is a permitted use to which the applicant is entitled if the applicant demonstrates compliance with the specific, objective requirements contained in a zoning ordinance and if the [ZHB] determines that the use would not adversely affect the community." Once the applicant (i.e., here, Verizon) shows that its application complies with the specific criteria delineated in the ordinance, it thus establishes that the proposal is presumptively consistent with the promotion of the public health, safety, and welfare, said the court. The burden, explained the court, then shifts to the objector (i.e., here, the Objectors) to overcome that presumption. "[A]n objector must prove to a high degree of probability that the impact from the proposed use will substantially affect the health, safety and welfare of the community to a greater extent than would be expected normally from that type of use," said the court.

Here, the court found that the Borough's Zoning Ordinance required that the ZHB grant an approval for a special exception if adequate evidence showed that the proposed use met both general and specific requirements (outlined in the Ordinance) for such use. "Although the ZHB did not expressly conclude that Verizon met its burden of proving that the proposed Facility would meet [the Zoning Ordinance's specific requirements related to fencing and boundary line setbacks,]" the court found that the ZHB must have so concluded "since the ZHB's conclusion was based solely upon the Facility's effect on the neighborhood, which is only relevant after the ZHB determined that Verizon met the Ordinance's objective special exception criteria." The court said that

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"[b]ecause the ZHB determined that Verizon satisfied the Ordinance's objective special exception requirements, Verizon's proposed Facility is a 'use that is expressly permitted by the [Ordinance], absent a showing [by the Objectors] of a detrimental effect on the community.' " Such evidence from the Objectors could not be "mere speculation," said the court; the Objectors "must prove to a high degree of probability that the impact from the proposed use will substantially affect the health, safety and welfare of the community to a greater extent than would be expected normally from that type of use."

Here, the court found that the Objectors failed to meet their burden, and offered only general, speculative testimony that the monopole's height and the generator's noise "would not be in line with the character of th[e] adjoining neighborhoods." "Therefore, absent substantial evidence of 'a high degree of probability that the impact from the [Facility would] substantially affect the health, safety and welfare of the community to a greater extent than would be expected normally from that type of use[,]' the ZHB was required by the Ordinance to grant the Application," concluded the court.

See also: *Blancett-Maddock v. City of Pittsburgh Zoning Bd. of Adjustment, 6 A.3d 595 (Pa. Commw. Ct. 2010).*

Case Note:

In its decision, the court noted that "protection of neighborhood aesthetics and property values are insufficient bases upon which to deny special exceptions."

Case Note:

In its decision, the court noted that a ZHB's interpretation of its own zoning ordinance is entitled to "great deference and weight." However, the court cautioned that, since a ZHB is not a legislative body, it "must not impose [its] concept of what the zoning ordinance should be, but rather . . . only . . . enforce the zoning ordinance in accordance with the applicable law." Here, the court found that the ZHB "departed from its function in determining whether the proposed use fell within the terms of the [Ordinance] and focused instead on implementing goals that it believed fell within the spirit of the [Ordinance]."

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Use—Zoning board approves town's proposed use of property as permitted "municipal use"

Neighbor contends proposed use may also be characterized as other, prohibited use, and argues that since both use categories may not be harmonized, use must be prohibited

Citation: *Estate of Robbins v. Town of Cumberland, 2017 ME 16, 2017 WL 370887 (Me. 2017)*

MAINE (01/26/17)—This case addressed the issue of whether a town's proposed development was permitted as a "municipal use" under the terms of the town's zoning ordinance.

The Background/Facts: In 2014, the Town of Cumberland (the "Town") purchased property (the "Property") located in Cumberland. The Property was located in the Low Density Residential zoning district (the "LDR zone"). In the spring of 2015, the Town submitted to the Cumberland Planning Board (the "Board") an application for site plan review for a proposed development involving Property. The Town stated that the purpose of the development was "to provide low-impact passive recreation along the Casco Bay shoreline for the residents of Cumberland." Specifically, on the Property, the Town sought to construct public access walking trails, construct a parking lot, and relocate an existing bathhouse.

The Town's Code Enforcement Officer (the "CEO") determined that the Town's proposed use was a "municipal use," which was permitted in the LDR zone. The Board agreed and approved the Town's application.

Thereafter, the Estate of Merrill P. Robbins (the "Estate"), which owned land abutting the Property, appealed the decision. The Estate argued that the Town's proposed development actually amounted to an "outdoor recreational facility," which was not a permitted use in the LDR.

The Town's Board of Adjustment and Appeals agreed with the CEO's interpretation and determined that the Town's proposed facility was permissible within the LDR zone as a "municipal use."

The Estate appealed to the Superior Court. The court affirmed the CEO's interpretation and the Board's decision. It concluded that "the plain language of the ordinance" supported the finding that the Town's proposed use of the Property was for a "municipal use," permitted in the LDR zone.

The Estate again appealed. The Estate contended that the Town's proposed use could be characterized as either "municipal use" or "outdoor recreational facility." The Town's zoning ordinance defined a "municipal use" as "[a]ny use or building maintained by the Town of Cumberland." It defined an "outdoor recreational facility," in pertinent part, as

"[a] place designed and equipped primarily for the conduct of nonmotor-

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ized outdoor sports, leisure-time activities, and other customary and usual recreational activities, excluding boat launching facilities, amusement parks, and campgrounds." The Estate argued that since "outdoor recreational facilities" were not permitted in the LDR, while "municipal uses" were permitted in the LDR, the Town's proposed use could not be harmonized under both categories of uses and must therefore be found to be an "outdoor recreational facility" and thus prohibited in the LDR zone.

DECISION: Judgment of Superior Court affirmed.

The Supreme Judicial Court of Maine held that, under the "clear and unambiguous" language of the Town's zoning ordinance, the Town's proposed use of the Property was a "municipal use," and was thus permitted in the LDR zone. In fact, looking at the language of the Town's zoning ordinance, the court found that "any use" by the Town would qualify as a "municipal use." There were "no carveouts or exceptions." Therefore, even though some uses that are "municipal" might be defined elsewhere in the ordinance, they would still qualify as "municipal uses." "[L]imiting permissible 'municipal uses' in the LDR zone to only those uses that are otherwise explicitly permitted within the zone," as the Estate had argued, would require the court to have to read additional language into the ordinance's provisions—which it could not do—explained the court.

Special Exception—Opponents of proposed fuel station/convenience store contend zoning board improperly evaluated special exception application

Opponents dispute both extent neighborhood must be defined and burden of proof of parties

Citation: *Attar v. DMS Tollgate, LLC, 2017 WL 366341 (Md. 2017)*

MARYLAND (01/23/17)—This case addressed the issue of whether and to what extent the boundaries of the neighborhood in which a proposed special exception use is to be located must be defined before the special exception can be approved. The case also addressed the extent of any burden of proof that opponents to a special exception must meet.

The Background/Facts: William and Mary Goff, along with DMS Tollgate, LLC, (collectively, the "Applicants") sought to operate a fuel service station with a convenience store ("Wawa") on property (the "Property") located in Baltimore County (the "County"). In furtherance of that, the Applicants applied to the County for a Special Exception. Under the County Zoning Regulations § 502.1(A), a special exception use is prohibited if it is: "detrimental to the health, safety or general welfare of the locality involved;" and "tend[s] to create congestion in roads, streets or alleys therein[.]"

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The County's Office of Administrative Hearings ("OAH") held a hearing on the Special Exception application. At that hearing, several individuals (the "Opponents") appeared in opposition to the Special Exception application. The Opponents testified how the proposed Wawa would "cause traffic congestion, a harmful environmental impact, and a detrimental effect upon the economic stability of the neighborhood." OAH found that those "impacts are inherent in the operation of a gasoline/convenience store," and granted the Special Exception with conditions.

The Opponents appealed. The County Board of Appeals (the "Board") affirmed, granting the Special Exception.

The Opponents again appealed. The circuit court affirmed the grant of the Special Exception.

The Opponents further appealed. The Court of Special Appeals affirmed the decision of the circuit court.

The Opponents once again appealed. On appeal, the Opponents argued that the Board erred when it failed to define the boundaries of the Wawa neighborhood. The Opponents maintained that an applicant for a special exception must establish the boundaries of the neighborhood, and that the Board's written decision had to satisfy Maryland law, requiring articulation of the facts found regarding the neighborhood's boundaries. The Opponents also argued that the Board erred when it assigned the burden of proof to the Opponents (as opposed to the Applicants) and then concluded that the Opponents' evidence failed to "rebut the presumption of validity of the Special Exception use in this case."

The Court's Decision: Judgment of Court of Special Appeals affirmed.

The Court of Appeals of Maryland rejected the Opponents' arguments and affirmed the grant of the Special Exception to the Applicants.

In its decision, the court first addressed the Opponents' argument that the Board was required to, and failed to, delineate the boundaries of the Wawa neighborhood before it could approve the Special Exception. The court acknowledged that the law required that the Board's task here, in evaluating the Special Exception application, was to "determine if there [was] or likely [would] be a detriment to the surrounding properties." Citing prior, related case law, the court explained that the description of those surrounding properties—or neighborhood—impacted by a special exception use "must be precise enough to enable a party or appellate court to comprehend the area that the Board considered." The Objectors had contended that the Board, in evaluating special exception applications, had to precisely delineate the affected neighborhood and its boundaries, such as it is required to do in rezoning matters. The court rejected that argument. The court said that such a precise delineation of the neighborhood was not required with regard to special exception evaluations because special exceptions, unlike rezoning matters, are presumed to be in the interest of the general welfare and enjoy a presumption of validity. The court reiterated that the area of the neighborhood affected by a special exception need only be described by the Board precisely enough so that a party or the court may comprehend the area. Here, reviewing the evidence in the record, as referenced in the Board's opinion, the court concluded

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that there was "ample evidence of record" for the court to "appreciate the area considered by the Board." The court found that the Board had referenced: testimony concerning roads and intersections surrounding the property; testimony regarding commercial development surrounding the property, including other gas stations within a one-mile radius from the Property; and testimony regarding the flood plain surrounding the property.

The court also rejected the Opponents' argument that the Board erred in assigning the burden of proof to the Opponents. The court said it was "undisputed that 'both the burden of production and the burden of persuasion on the issue of whether the special exception should be granted [ ]' fall on the applicant, whereby the applicant must persuade the Board 'by a preponderance of the evidence that the special exception will conform to all applicable requirements.' " Still, explained the court, "[w]hile an applicant for a special exception bears both the burden of persuasion and of production, the concurrent presumption in favor of a special exception applicant is not a mutually exclusive evidentiary burden." Rather, "the party favored by the presumption" (i.e., the Applicant) "is not relieved of the requirement of presenting evidence to establish a prima facie case as to those issues for which he bears the burden of proof if the adverse party sufficiently rebuts the presumption," said the court.

Here, the court found that the Opponents failed to "set forth sufficient evidence to indicate that the proposed fuel service station would have any adverse effects above and beyond those inherently associated with such use." Thus, here, the court found that the Board had "simply stated that, in light of the Applicants having presented sufficient evidence demonstrating compliance with BCZR § 502.1 and the general presumption of validity enjoyed by special exception uses, the evidence as a whole did not warrant denial of the petition for the special exception." The court concluded that the Board's opinion did not inappropriately assign the burden of proof to the Opponents; rather, the Board had properly opined that the evidence presented by the Opponents was not sufficient to rebut the presumption of the validity of a special exception.

See also: *Schultz v. Pritts, 291 Md. 1, 11, 432 A.2d 1319 (1981).*

See also: *Alviani v. Dixon, 365 Md. 95, 775 A.2d 1234 (2001).*

See also: *People's Counsel for Baltimore County, et al. v. Loyola College in Maryland, 406 Md. 54, 956 A.2d 166 (2008).*

Zoning News from Around the Nation

INDIANA

House Bill 1133, which "would have prevented local communities from banning Airbnb and similar services has failed at the Indiana General Assembly." Reportedly, lawmakers may move to consider the bill again.

Source: *IndyStar*; www.indystar.com

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MASSACHUSETTS

Cambridge City Councilors have reportedly modified existing zoning ordinances regarding medical marijuana dispensaries, permitting the establishment of potentially "five or six" new dispensaries in the city. The City Councilors also passed an amendment that increases the permitted distance between marijuana dispensaries from 1,500 to 1,800 feet.

Source: *The Harvard Crimson*; www.thecrimson.com

VIRGINIA

The state Senate has passed legislation—SB1292—"that would restrict the ability of Virginia localities from regulating equipment to boost wireless communications." The bill, which limits the ability of cities and counties to amend local zoning ordinances to regulate installation of "small-cell facilities" in public right-of-way, will now be considered in the House of Delegates.

Source: *Charlottesville Tomorrow*; www.cvilletomorrow.org

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QUINLAN™ April 10, 2017 | Volume 11 | Issue 7

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Vested Rights—After developer files application for conditional use variance, township adopts ordinance which prohibits use sought

Developer argues vested rights to variance under "time of application rule," but Township says developer's incomplete application failed to trigger rule

Citation: *Dunbar Homes, Inc. v. Zoning Board of Adjustment of the Township of Franklin, 2017 WL 586506 (N.J. Super. Ct. App. Div. 2017)*

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POSTMASTER: Send address changes to Zoning Bulletin, 610 Opperman Drive, P.O. Box 64526, St. Paul, MN 55164-0526.

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P.O. Box 64526
St. Paul, MN 55164-0526
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email: west.customerservice@thomsonreuters.com
ISSN 0514-7905
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NEW JERSEY (02/14/17)—This case addressed, as a matter of first impression, the issue of when a submission to a municipal planning board of an "application for development" triggers the time of application rule, which provides that regulations in effect "on the date of submission of an application for development" govern the review of the application.

The Background/Facts: Dunbar Homes, Inc. ("Dunbar") owned a garden apartment complex in the General Business ("GB") zone in the Township of Franklin (the "Township"). Dunbar sought to construct 55 additional apartments on 6.93 acres that it owned adjacent to the garden apartment complex. Because the Township's zoning ordinance required a minimum of 10 acres for garden apartments as a conditional use in the GB zone, Dunbar needed to seek a conditional use variance.

On May 27, 2013, Dunbar filed a submission with the Township's Planning Board, seeking a variance under New Jersey statutory law—N.J.S.A. 40:55D-70(d)(3) (the "(d)(3) variance"). (A (d)(3) variance may permit a "deviation from a specification or standard.") The next day, the Township introduced an ordinance that would delete "garden apartment developments" from permitted conditional uses in the GB zone (the "amendment ordinance"). The amendment ordinance became effective August 5, 2013.

On August 7, 2013, the Township's Senior Zoning Officer (the "ZO") notified Dunbar that it's application failed to include three items required by § 112-300 of the Township's Zoning and Subdivision Ordinance (the "Ordinance"): "[f]our additional copies of the site plan application, use variance application, site plans set and architectural set," "3 copies of the drainage calculations," and "[c]opy of submittal letter to [Department of Transportation]." The ZO also notified Dunbar that, pursuant to the newly adopted amendment ordinance—which deleted garden apartment developments from conditions uses allowed in the GB zone—Dunbar was now required to seek a (d)(1) variance, and not a (d)(3) variance. (A (d)(1) variance may permit "a use or principal structure in a district restricted against such use or principal structure.")

Dunbar appealed to the Township's Zoning Board of Adjustment (the "Board"). Dunbar argued that because it had submitted its application before the effective date of the amendment ordinance, only a (d)(3) variance was required. Dunbar pointed to New Jersey's "time of application rule." Pursuant to N.J.S.A. 40:55D-10.5, regulations in effect "on the date of submission of an application for development" govern the review of the application. Dunbar argued that its submission need not be "deemed complete" for the "time of application rule" to apply, but only had to be "a substantial, bona-fide application . . . which gives the Township sufficient notice of the application and an understanding of the development being proposed."

The Board affirmed the ZO's decision. It found that Dunbar's submission was not an "application for development" until October 29, 2013, when Dunbar provided the missing items required by § 112-300 of the Ordinance.

Dunbar appealed to superior court. The trial judge reversed the Board's resolution. The judge found that neither the Ordinance or New Jersey statutory law required "completeness" for a submission to qualify as an "application for development" protected under the "time of application rule."

The Township appealed.

DECISION: Judgment of Superior Court reversed.

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The Superior Court of New Jersey, Appellate Division, concluded that the "time of application rule" was not triggered in May 2013 when Dunbar first filed its submission for a (d)(3) variance. Although the court concluded that Dunbar's application for development "need not be complete" to trigger the time of application rule, the court found that to trigger the time of application rule, the application did have to include certain documents required by the Ordinance. Since Dunbar's application failed to include some of those Ordinance-required documents at the time of initial submission, the court concluded that Dunbar's application did not trigger the time of application rule prior to the effective date of the amendment ordinance.

In so holding, the court looked at the plain language of the statute and the legislative history of the statute and found that a submission for an "application for development" as used in N.J.S.A. 40:55D-10.5 "need not be a 'complete' application." Looking at New Jersey's Municipal Land Use Law ("MLUL"), the court found that the MLUL definition for "application for development," N.J.S.A. 40:55D-3, is "mandatory in construing the time of application rule" because the law requires "uniform and efficient procedures." The court found that the language of the MLUL's "application for development" definition made clear what a submission of an application must include to constitute an "application for development" protected by the time of application statute: "the application form and all accompanying documents required by ordinance for approval of a . . . site plan. . . conditional use, zoning variance or direction of the issuance of a permit." Thus, said the court, the documents that are necessary to satisfy this standard for a submission to constitute an "application for development" protected by the time of application rule are "dictated by the nature of the application(s) sought and the requirements for each application in effect at the time the submission is made."

See also: *Jai Sai Ram, LLC v. Planning/Zoning Bd. of Borough of South Toms River, 446 N.J. Super. 338, 141 A.3d 407 (App. Div. 2016), certification denied, 2016 WL 6301506 (N.J. 2016).*

See also: *Rumson Estates, Inc. v. Mayor & Council of Borough of Fair Haven, 177 N.J. 338, 828 A.2d 317 (2003).*

Case Note:

In its decision, the court acknowledged that N.J.S.A. 40:55D-10.3 does state that "[a]n application for development shall be complete for purposes of commencing the applicable time period for action by a municipal agency. . . ." (emphasis added). The court said that the "shall be complete" language defined "when the clock starts ticking for automatic approval provisions" related to a municipal agency's inaction after a complete application is submitted; it (completeness) did not define when the clock starts ticking for the time of application rule protections.

Case Note:

The court noted that should a municipal agency require additional information—above and beyond that required by the applicable ordinance—an application would not be deemed "incomplete" for purposes of time of application rule because it lacked that additional information. Only those documents required by the ordinance for submission are

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necessary for the submission to be deemed an "application for development" protected by the time of application rule, said the court.

Use—Township says property owner's vacation rentals of single-family home amount to prohibited "tourist home" use

Property owner maintains her use does not fit definition of "tourist home" and is permitted

Citation: *Shvekh v. Zoning Hearing Board of Stroud Township, 2017 WL 474028 (Pa. Commw. Ct. 2017)*

PENNSYLVANIA (02/06/17)—This case addressed the issue of whether the vacation rentals of a single-family home amounted to the use of the home as a "tourist home," prohibited under a township's zoning ordinance.

The Background/Facts: Irina Shvekh ("Shvekh") and her son-in-law owned a single-family home with five bedrooms (the "Property") in the Special and Recreational Zoning District ("S-1 District") in Stroud Township (the "Township"). The Property was being advertised on websites for vacation home rentals and had been rented 20 to 25 times. According to Shvekh and her daughter, their family occupied the Property approximately one week every month.

Following complaints from neighbors, in May 2015, the Township's Zoning Officer (the "ZO") issued a notice of violation to Shvekh. The notice asserted that the Property was being used as a "tourist home"—a use which was not permitted within the S-1 District, per the Township's Zoning Ordinance (the "Ordinance"). Under the Ordinance, the S-1 District permitted "single-family dwellings," but prohibited "hotels, motels, resorts, and other lodging services." The Ordinance defined a "tourist home" as "[a] dwelling in which at least one but no more than six rooms are offered for overnight accommodations for transient guests for compensation." The ZO opined that because the Property was rented out for short periods of time, it was being used as a tourist home.

Shvekh appealed the notice of violation to the Township's Zoning Hearing Board (the "Board"). Shvekh argued that she used the Property for "vacation rentals," which, under a "liberal construction of the Ordinance," was a permissible use of a "single-family dwelling." The Ordinance defined "single-family dwelling" as "[a] detached building, designed for or occupied exclusively by one family . . . ." The Ordinance defined "family" as: "Any individual, or two (2) or more persons related by blood, marriage, legal adoption, foster placement, or a group of not more than three (3) persons who need not be related by blood or marriage, living together in a dwelling unit."

The Board concluded that the Property was being used as a "tourist home" because the lease agreement Shvekh used with renters did not limit the renters to a single family or a group of no more than three unrelated persons.

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Shvekh appealed to the trial court. The court affirmed the Board's decision.

Shvekh again appealed. On appeal, she argued that, in holding that the Property was being used as a "tourist home," the Board misconstrued the Zoning Ordinance.

DECISION: Judgment of Court of Common Pleas reversed.

The Commonwealth Court of Pennsylvania agreed with Shvekh. The court held that the vacation rental of Shvekh's Property did not meet the definition of an unpermitted "tourist home." Rather, the court agreed with Shvekh that the vacation of her Property was permitted as a single-family use.

In so holding, the court acknowledged that in the concept of a single-family dwelling is "a certain expectation of relative stability and permanence in the composition of the familial unit." The court noted that since the Property was occupied at least once a month by the Shvekh and her family, it was not used in a "purely transient" way that would undermine that familial unit composition.

Further, looking at the language of the Ordinance, the court found that it did not define occupancy of a single-family dwelling in a way that precluded vacation rentals. More specifically, the court found no provision in the Ordinance that prohibited the owner of a single-family home—such as Shvekh—from "renting it out from time to time to vacationers." Moreover, the court found that the vacation rental of an entire home (such as Shvekh's rental of the Property) bore "no relation to the bedroom-by-bedroom rental that is the hallmark of a tourist home." The court found it clear that the ZO and the Board had sought to expand the definition of "tourist home" to include any short-term rental. The court admonished that a municipality "cannot advance a new and strained interpretation of its zoning ordinance in order to effect what it would like the ordinance to say without an amendment."

See also: *Albert v. Zoning Hearing Bd. of North Abington Tp., 578 Pa. 439, 854 A.2d 401 (2004).*

See also: *Marchenko v. Zoning Hearing Board of Pocono Township, 147 A.3d 947 (Pa. Commw. Ct. 2016).*

Authority—Board of zoning appeals grants special exception application subject to setback requirement

Applicant contends board exceeded authority in requiring setback distance greater than that set forth in zoning ordinance

Citation: *Flat Rock Wind, LLC v. Rush County Area Board of Zoning Appeals, 2017 WL 586487 (Ind. Ct. App. 2017)*

INDIANA (02/14/17)—This case addressed the issue of whether a board of zoning appeals exceeded its authority when it imposed a setback condition that was greater than the minimum setback distance specified in the county zoning ordinance.

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The Background/Facts: Flat Rock Wind, LLC ("Flat Rock") sought to develop a 180-megawatt commercial Wind Energy Conversion System ("WECS") located on more than 29,000 acres of land in Rush and Henry Counties. In March 2015, Flat Rock filed an application for approval of a special exception to the Rush County zoning ordinance (the "Zoning Ordinance") to construct and operate the portion of the WECS located in Rush County (the "County"). Under the Zoning Ordinance, a WECS is a special exception, subject to approval of the County's Board of Zoning Appeals ("BZA"). In the special exception application, Flat Rock certified that the proposed wind turbines would meet the Zoning Ordinance's requirement of a 1,000-foot setback from residential dwellings.

The BZA held public hearings on Flat Rock's application. At those hearings, landowners and "other remonstrators" provided evidence on the "adverse health effects and negative impact to property values resulting from Flat Rock's proposed WECS." Among other things, the remonstrators presented evidence of a paper by acoustical engineering experts that addressed "the long-term adverse health effects documented to result from residing in the proximity of a commercial wind turbine." In that paper, those experts "proposed increasing the distance between a rural residence and the current industrial grade wind turbines" to at least 3,280 feet. Relying on that paper, the remonstrators requested the BZA to impose, as a condition to any grant of Flat Rock's application, increased setback distances "to a much more safe distance of 2,640 feet" between the turbines and residences of non-participating owners (i.e., those who had not leased their land to Flat Rock). Eventually, the BZA approved Flat Rock's WECS special exception with a 2,300-foot setback condition (the "Setback Condition"), "as measured from the center of the WECS turbine to the property line of the non-participating property owner's land." The BZA found that setback distance was necessary "[i]n order to protect health and safety."

Flat Rock appealed the BZA's zoning decision to superior court. Among other things, Flat Rock argued that the BZA exceeded its authority when granting the WECS special exception subject to the Setback Condition, which was both greater and measured differently than the Zoning Ordinance's minimum setback requirement. Section 6.4.6.4.1 of the Zoning Ordinance provided that the distance from a "[r]esidential dwelling, measured from the center of the WECS to the nearest corner of the structure" must have a "minimum setback distance" of "one thousand (1,000) feet for nonparticipating landowners."

The trial court affirmed the BZA's zoning decision. The court concluded that the BZA acted "within its broad authority and discretion in imposing the Setback Condition . . . ," and that the substantial evidence in the recorded supported the Setback Condition.

Flat Rock again appealed. On appeal, Flat Rock argued that affirming the BZA's action would grant "the BZA carte blanche to re-write the Zoning Ordinance at the BZA's whim and has allowed the BZA to impose a poison pill condition that effectively kills a wind energy project that meets the objective setback requirements in the Zoning Ordinance." Flat Rock contended that because it met the "objective setback requirement" of 1,000 feet under Section 6.4.6.4.1 of the Zoning Ordinance, its petition should have been granted. Flat Rock argued that "to impose the Setback Condition now creates an illegal, arbitrary, and ad hoc situation that is 'non-uniformly measured only for Flat Rock's WECS project' and that creates ambiguity for future wind turbine investments."

DECISION: Judgment of superior court affirmed.

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Looking at the language of the Zoning Ordinance, the Court of Appeals of Indiana held that the BZA did not exceed its authority by creating the Setback Condition, as well as a new method for measuring that setback.

In so holding, the court noted that the Zoning Ordinance delegated to the BZA "the authority to interpret and enforce the [Z]oning [O]rdinance, as well as the exclusive power to hear and decide applications for special exceptions." The court noted that an applicant for a WECS special exception—such as Flat Rock here—bears the burden of satisfying both Section 10.2 of the Zoning Ordinance, which sets forth general criteria applicable to all special exceptions, and Section 6.4 of the Zoning Ordinance, which pertains specifically to the construction of WECS in Rush County. Section 10.2 of the Zoning Ordinance provides that the BZA is authorized "to decide such questions as are involved in determining whether special exceptions should be granted" and "to grant special exceptions with such conditions and safeguards as are appropriate under this ordinance, or to deny special exceptions when not in harmony with the purpose and intent of the ordinance." With regard to setback requirements, Section 6.4.6.4.1 of the Zoning Ordinance again provided that the distance from a "[r]esidential dwelling, measured from the center of the WECS to the nearest corner of the structure" must have a "minimum setback distance" of "one thousand (1,000) feet for nonparticipating landowners."

The Court of Appeals concluded that the BZA had the authority to impose "the enlarged Setback Condition," and that such authority derived "squarely" from Section 6.4.6.4.1 of the Zoning Ordinance by its reference to a "minimum setback distance." Further, the court found that Section 10.2 of the Zoning Ordinance "explicitly reinforce[d] the BZA's discretionary power under Section 6.4 while at the same time defining the boundaries of this discretion as the 'condition and safeguards as are appropriate under this ordinance or to deny special exceptions when not in harmony with the purpose and intent of this ordinance.' "

Finally, in response to Flat Rock's argument that there would be ambiguity for future wind turbine investments if the BZA was allowed to impose setback requirements greater than the objective requirements in the Zoning Ordinance, the court found that Flat Rock (and future wind turbine investors) was placed on notice by the insertion of the word "minimum" that the setback would be evaluated by the BZA in light of Section 10.2 of the Zoning Ordinance.

In summary, the court concluded that the BZA had the authority to view the Zoning Ordinance's siting setback as a "minimum" guideline, which was subject to "reasonable restrictions" to preserve the health and safety of the public. (Zoning Ordinance, Sec. 6.4.2 and Zoning Ordinance, Sec. 10.2). The court found that the BZA imposed the Setback Condition on Flat Rock's WECS to promote the Zoning Ordinance's and the WECS' special exception's stated purpose to promote the public interest.

See also: *Fulton County Advisory Plan Com'n v. Groninger, 810 N.E.2d 704 (Ind. 2004)*

Case Note:

Flat Rock had also argued that the trial court abused its discretion in permitting a group of landowners to intervene in the judicial proceedings. The Court of Appeals rejected that argument, finding that those intervening satisfied a legal three-part test required to intervene.

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Signs/Religion—Town denies church a permit for electronic sign

Church alleges violation of First Amendment and equal protection rights, as well as violation of federal Religious Land Use and Institutionalized Persons Act

Citation: *Signs for Jesus v. Town of Pembroke, 2017 DNH 16, 2017 WL 394493 (D.N.H. 2017)*

NEW HAMPSHIRE (01/27/17)—This case addressed the issue of whether the denial of a church's request for a permit to install an electronic sign on the church's property violated the church's First Amendment and equal protection rights under the United States Constitution and the New Hampshire Constitution, as well as the federal Religious Land Use and Institutionalized Persons Act (RLUIPA).

The Background/Facts: Hillside Baptist Church (the "Church") wanted to install an electronic sign next to the road on its property in the Town of Pembroke (the "Town"). The Church's property was located in a Limited Office ("LO") zoning district. Under the Town's sign ordinance, electronic signs are barred in the LO district, as well as all other districts in the Town except for the Commercial District. Two other electronic signs were located on the same road as the Church in districts that did not permit such signs. One of the signs was on property owned by a gas station and predated the adoption of the Town's sign ordinance. The second sign was on property owned by a public school—a political subdivision of the state over which the Town had no zoning authority.

In April 2015, the Church applied for a permit to install an electronic sign. The Town Code Enforcement Officer ("CEO") denied the Church's permit application because the proposed sign was to be erected in a district where electronic signs were prohibited.

The Church then filed an administrative appeal. The Town's Zoning Board of Adjustment (the "Board") rejected the Church's appeal, finding that, under the Town's sign ordinance, an electronic sign was not permitted at the Church's location.

The Church appealed to federal district court. The Church argued that the Board's denial of its request for an electronic sign permit violated: its First Amendment right to free speech; its First Amendment right to freely exercise its religion; its state and federal constitutional rights to equal protection; its Fourteenth Amendment right to procedural due process; and its rights under the undue burden and equal terms provisions of the federal.

Both the Church and the Town moved for summary judgment, asking the court to find there were no material issues of fact and to decide the matter in their favor on the law alone.

DECISION: Church's motion for summary judgment denied and Town's motion for summary judgment granted.

The United States District Court, District of New Hampshire, held that the Town, in denying the Church an electronic sign permit did not violate the First

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Amendment, or state and federal constitutional rights to equal protection, or the Church's constitutional due process rights, or RLUIPA's undue burden and equal terms provisions.

First addressing the Church's allegations that the electronic sign permit violated its right to free speech under the First Amendment, the court applied an intermediate scrutiny standard. The court explained that content-neutral regulations, such as the electronic sign ordinance, are subject only to intermediate scrutiny, which permits the government to "impose reasonable restrictions on the time, place, or manner of protected speech," so long as "they are narrowly tailored to serve a significant governmental interest, and . . . they leave open ample alternative channels for communication of the information." The Church had argued that the Town's decision to deny its request for an electronic sign was subject to strict scrutiny because it drew "speaker-based distinctions that improperly permit[ed] some speakers to have an electronic sign but not others." The court acknowledged that speaker-based laws demand strict scrutiny, but disagreed that strict scrutiny should be applied here. The court found that the distinction for grandfathered speakers (such as the gas station that had an electronic sign before the town enacted the sign ordinance) (per a state law that exempted all preexisting nonconforming uses of property from local zoning requirements) did not directly or indirectly regulate users on the basis of the content of affected speech, and therefore did not trigger strict scrutiny even though the sign ordinance treated some speakers differently from others. The court also found that the distinction for government land owners (like the public school that had an electronic sign) (per state law that exempts government land users from local zoning ordinances) similarly did not discriminate on the basis of content of affected speech and therefore did not warrant strict scrutiny.

The court concluded that the sign ordinance here survived intermediate scrutiny as it served the government interests of aesthetics and traffic safety, and did so without being "overinclusive" and burdening "substantially more speech than [was] necessary." The court found there were still "ample alternative channels for communication of the information" that the Church wished to convey—such as manually changeable signs.

Finding the Town's ban on electronic signs in certain zoning districts was valid and neutral, the court found there was no evidence that the ban targeted religion. Accordingly, the court also rejected the Church's argument that the Town's sign ordinance infringed on the Church's First Amendment right to the free exercise of religion.

The court also rejected the Church's claim that the electronic sign ban violated the Church's federal and state constitutional rights to equal protection when it denied the Church's request for an electronic sign while allowing the public school to keep its electronic sign. The court found that the Church's claims failed as a threshold matter because the Church and the public school were not similarly situated. The court explained that "[t]o establish a viable equal protection claim under either federal or state law, the Church must prove, among other things, that it was treated differently from other 'similarly situated' entities." The court found that the Church was not similarly situated to the public school because, unlike the Church, the public school was a subdivision of the State of New Hampshire that the Town had no authority to regulate, while the state had expressly empowered municipalities to regulate land uses by nongovernmental entities such as the Church.

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The court also rejected the Church's claims that the Town violated RLUIPA's substantial burden and equal terms provisions. The court explained that RLUIPA's substantial burden provision states that "[n]o government shall impose or implement a land use regulation in a manner that imposes a substantial burden on the religious exercise of a person, including a religious assembly or institution," unless doing so "is the least restrictive means of furthering [a] compelling governmental interest." (42 U.S.C.A. § 2000cc(a)(1).) The equal terms provision provides that "[n]o government shall impose or implement a land use regulation in a manner that treats a religious assembly or institution on less than equal terms with a nonreligious assembly or institution." (42 U.S.C.A. § 2000cc(b)(1).)

The court found the Town did not substantially burden the Church's religious exercise by denying it an electronic sign because the Church still had an existing sign at the same location, at the end of its driveway, whose message was capable of being changed manually. The court found "the Church's assertions that it lacked the manpower to change the sign every single day, and that occasional inclement weather is an impediment," were insufficient to amount to substantial burdens of the Church's religious exercise.

The court found that the Town did not violate RLUIPA's equal terms provision by denying the Church an electronic sign while allowing a nearby gas station and public school to have electronic signs. The court concluded that the Church failed to prove that it had been treated less well than "a similarly situated secular comparator." The gas station was not "valid comparator" as its sign was grandfathered—and the Church was "ineligible for grandfathering based on chronology, not religious identity." The public school also was not a "valid comparator" as the state prohibited the Town of power to regulate governmental land uses such as the public school, and the Church was not a governmental land use.

Finally, the court rejected the Church's due process claims, finding that the Church failed to allege that constitutionally adequate state law remedies—such as an ordinary zoning appeal of the Board's decision to state superior court—were unavailable.

Accordingly, the court granted summary judgment in favor of the Town.

See also: *Members of City Council of City of Los Angeles v. Taxpayers for Vincent, 466 U.S. 789, 104 S. Ct. 2118, 80 L. Ed. 2d 772 (1984).*

See also: *Naser Jewelers, Inc. v. City Of Concord, N.H., 513 F.3d 27 (1st Cir. 2008).*

See also: *Medeiros v. Vincent, 431 F.3d 25, 35 Envtl. L. Rep. 20251 (1st Cir. 2005).*

See also: *Vision Church v. Village of Long Grove, 468 F.3d 975 (7th Cir. 2006).*

See also: *Primera Iglesia Bautista Hispana of Boca Raton, Inc. v. Broward County, 450 F.3d 1295 (11th Cir. 2006).*

Case Note:

An appeal to this decision was filed on February 22, 2017, in the United States Court of Appeals, First Circuit.

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Zoning News from Around the Nation

KENTUCKY

The Kentucky House of Representatives has passed HB 72, which is aimed at discouraging "frivolous" appeals of zoning decisions. Under the bill, a plaintiff that challenges a zoning decision and loses in circuit court, would be unable to appeal the case to the Kentucky Court of Appeals without posting an appeal bond that could be as high as $100,000 to $250,000. The bill now heads to the state Senate for consideration.

Source: *Insider Louisville*; http://insiderlouisville.com

NEW YORK

The City of Buffalo's Common Council is considering legislation aimed at creating more affordable housing. No specific inclusionary zoning measure has been proposed, but any such legislation would reportedly "require the owners of new multiple-unit developments—especially those benefiting from public financing or tax breaks—to set aside a portion of their units as affordable housing or below market rate."

Source: *The Buffalo News*; https://buffalonews.com

VIRGINIA

The House of Delegates has passed House Bill 1766, which would allow "certain electric utility substations and other facilities to sidestep local planning and zoning approval." The bill "applies only to 138 kilovolt transmission lines that are almost exclusively used by Appalachian Power in their Southwestern Virginia service area. The Senate is considering a companion bill, Senate Bill 1110.

Source: *Richmond Times-Dispatch*; www.richmond.com

WASHINGTON

The state Senate passed Senate Bill 5212, which would "prohibit rules changing on a developer or home builder in the middle of their project." The bill would "vest building and permit applications for zoning, environmental and land-use regulations." The state House of Representatives will now consider the bill.

Source: *The Columbian*; www.columbian.com

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QUINLAN™ April 25, 2017 | Volume 11 | Issue 8

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Proceedings—Homeowners appeal grant of neighbor's variance by requesting a writ of mandamus

City argues challenge to variance decision must come by a petition for certiorari

Citation: *City of Cumming v. Flowers, 2017 WL 875041 (Ga. 2017)*

GEORGIA (03/06/17)—This case addressed the issue of whether a quasi-judicial decision of a zoning board may be appealed by certiorari

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POSTMASTER: Send address changes to Zoning Bulletin, 610 Opperman Drive, P.O. Box 64526, St. Paul, MN 55164-0526.

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P.O. Box 64526
St. Paul, MN 55164-0526
1-800-229-2084
email: west.customerservice@thomsonreuters.com
ISSN 0514-7905
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even if the local ordinance does not so provide. It also addressed whether local ordinances can create means of zoning appeal to the superior court that are not authorized by state statute.

The Background/Facts: Kerley Family Homes ("Kerley") was building townhouses on property it owned in the City of Cumming (the "City"). Apparently based on a surveyor mistake, Kerley discovered that it was constructing buildings closer to adjoining property than the City's Zoning Ordinance setback permitted. Kerley filed a variance application to change the required setback for some of the buildings on its property. After the City's Planning Board denied the variance application, the City's Board of Zoning Appeals ("BZA") granted it with several conditions.

Thereafter, neighboring homeowners (the "Homeowners") appealed the grant of the variance to superior court. The Homeowners complaint requested a writ of mandamus to compel the BZA "to comply with the law." The City, joined by Kerley (collectively, the "Defendants"), filed a motion to dismiss the Homeowners' complaint. The Defendants argued that the Homeowner's challenge to the variance decision was required under state statutory law—OCGA § 5-4-1—to come to the superior court by a petition for certiorari. Thus, the Defendants argued that since the Homeowners' action should be dismissed because the Homeowners erred in brining the challenge by a writ of mandamus.

OCGA § 5-4-1(a) provides that "[t]he writ of certiorari shall lie for the correction of errors committed by any inferior judicatory or any person exercising judicial powers, including the judge of the probate court, except in cases touching the probate of wills, granting letters testamentary, and of administration." Thus, "[c]ertiorari is not an appropriate remedy to review or obtain relief from the judgment, decision or action of an inferior judicatory or body rendered in the exercise of legislative, executive, or ministerial functions, as opposed to judicial or quasi-judicial powers."

The parties agreed to treat the motion to dismiss as a motion for summary judgment, and the superior court ultimately denied the summary judgment. In ruling that the Homeowners could proceed on their petition for mandamus, the superior court relied on the procedural direction of the Supreme Court of Georgia, which had, in prior case law, provided that "where the zoning ordinance does not provide a means of appeal from the denial of a request for a variance, the landowner travels to superior court by writ of mandamus" (the "local-ordinance requirement").

The Defendants appealed. They argued that "the local-ordinance requirement" was unfounded and asked the appeals court to "disapprove" it. The appeal was transferred to the Supreme Court of Georgia.

DECISION: Judgment of Superior Court reversed.

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The Supreme Court of Georgia agreed with the Defendants, concluding that the "local-ordinance requirement" must be disapproved. Local ordinances cannot create means of appeal to the superior court that are not authorized by statute, held the court. The court also held that an administrative zoning body's quasi-judicial decision comes within the scope of OCGA § 5-4-1 and thus is subject to appeal to the superior court by petition for certiorari only.

Prior to this holding, the local-ordinance requirement had directed that a BZA's quasi-judicial decision may be appealed by certiorari only if the City's Zoning Ordinance so provided. Under the local-ordinance requirement, when the zoning ordinance failed to prescribe a method for judicial review, mandamus was deemed to be the proper method to appeal a variance decision. The court determined that an evaluation of factors weighed "strongly in favor of disapproving the local-ordinance requirement." The court found that the local-ordinance requirement conflicted with OCGA § 5-4-1 and the court's interpretation and application of that statute in non-zoning contexts. "The most troubling consequence of the local-ordinance requirement," said the court, "is that it allows local ordinances to effectively preempt the general certiorari statute [OCGA § 5-4-1]." The court explained that "scheme does not comport with our Constitution, under which general laws are supreme over local ordinances, including in the field of zoning." "[J]ust as a local government cannot control by ordinance whether a direct appeal may be brought in the superior court, neither can a local government control by ordinance whether certiorari may be brought in the superior court under OCGA § 5-4-1," concluded the court.

With regard to the facts of the case at hand, the court found that the BZA's variance decision was quasi-judicial. The variance decision "required the zoning board to 'determine[ ] the facts and appl[y] the ordinance's legal standards to them,' which is a 'decision-making process . . . akin to a judicial act,' " found the court. The court additionally noted that the variance decision was clearly quasi-judicial here because the BZA's discretion was "tightly controlled by the ordinance." Whenever a variance issue was brought to the BZA, §§ 113-48 and 113-49 of the Zoning Ordinance required that the BZA "hold a hearing that is open to the public, give 'due notice to the aggrieved party' of the hearing, and inform all parties of its decision in writing within a reasonable time."

The Homeowners had argued that the BZA's decision was not quasi-judicial and thus not required to be appealed by petition for certiorari. The Homeowners had argued that because the BZA "disregarded" conditions of the Zoning Ordinance related to variances, the BZA "actually exercised their legislative power by granting a variance that was not permitted under the current zoning regulations." The Supreme Court of Georgia rejected that argument. The court noted that the BZA

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"may well have abused its discretion in concluding that all of the conditions were met and thus in granting the variance to Kerley, but that is a question of the correctness of the BZA's decision, not its nature." "A quasi-judicial decision does not become a legislative decision simply because it was wrong," said the court.

See also: *Haralson County v. Taylor Junkyard of Bremen, Inc., 291 Ga. 321, 729 S.E.2d 357 (2012).*

Case Note:

The Homeowners had also sought an injunction restraining and enjoining Kerley and the City from "violating the Zoning Ordinance." The Supreme Court of Georgia denied that injunction. It noted that an injunction is an equitable remedy available only when "no adequate remedy is provided at law." (OCGA § 9-5-1.) In this case, a petition for certiorari provided that adequate legal remedy, said the court.

Case Note:

The holdings in this case disapproved Dougherty County v. Webb, 256 Ga. 474, 350 S.E.2d 457 (1986) (disapproved of by, City of Cumming v. Flowers, 2017 WL 875041 (Ga. 2017)); Jackson v. Spalding County, 265 Ga. 792, 462 S.E.2d 361 (1995); Shockley v. Fayette County, 260 Ga. 489, 396 S.E.2d 883 (1990) (disapproved of by, City of Cumming v. Flowers, 2017 WL 875041 (Ga. 2017)); City of Atlanta v. Wansley Moving & Storage Co., 245 Ga. 794, 267 S.E.2d 234 (1980).

Preemption—State Commission permits waste oil treating plant in county, but county zoning laws prohibit plant

Parties dispute whether county zoning laws are preempted by state law governing oil and gas development

Citation: *Environmental Driven Solutions, LLC v. Dunn County, 2017 ND 45, 890 N.W.2d 841 (N.D. 2017)*

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NORTH DAKOTA (03/07/17)—This case addressed the issue of whether state laws regulating oil and gas development preempted county zoning laws with regard to the siting of a waste oil treating plant.

The Background/Facts: In August 2013, Environmental Driven Solutions, LLC ("EDS") received a permit from North Dakota's Industrial Commission (the "Commission") for a waste oil treating plant in Dunn County (the "County"). The permit allowed EDS to recycle and treat waste crude oil. The permit noted that the treating plant "must comply with all applicable local, state, and federal laws and regulations."

After EDS began constructing the plant, the County issued notices of "violation and order to abate." The County maintained that the treating plant could not be constructed on EDS' property because such a facility was not an allowed use in the zoning district in which the property was located. EDS then applied to the County to rezone the property, but the County rejected that application. EDS then applied for a conditional use permit, but that too was denied.

Eventually, EDS brought a legal action against the County. EDS asked the court to declare that the Commission, rather than the County, had jurisdiction to determine siting of the plant. The Commission intervened in the action.

Finding there were no material issues of fact in dispute, and deciding the matter on the law alone, the district court issued summary judgment in favor of EDS. The court concluded that the Commission had exclusive jurisdiction to determine the location of the oil and gas waste treating plant and that the County's zoning ordinances were preempted by state law governing oil and gas development.

The County appealed. The County argued that the Commission did "not have the power to permit oil waste treating facilities that are barred by a county's 'properly-enacted zoning ordinance and land use comprehensive plan.' "

DECISION: Judgment of district court affirmed.

The Supreme Court of North Dakota held that state laws regulating oil and gas development preempted county zoning laws, and that the Commission had the ultimate jurisdiction to determine siting of waste oil treating plants, including EDS' plant.

In so holding, the court explained that, as with federal preemption analysis, North Dakota law recognizes three forms of preemption: express preemption; field preemption; and conflict preemption. Describing express preemption and field preemption, the court said that a county ordinance contravenes state law: "(1) when there is an explicit state law or rule restraining the county's authority;" and "(2)

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when the industry or activity involved is already subject to substantial state control through broad, encompassing statutes or rules." The court described conflict preemption by noting that "a local governing body cannot validly enact a zoning ordinance that contravenes federal or state law." The court admitted that while it is not always clear "which type preemption is being considered," it is "clear that a local governing body's actions and decisions may be preempted by state or federal law."

Looking at the applicable state law here—Chapter 38-08, N.D.C.C., the "Act for the Control of Gas and Oil Resources," the court noted that law equipped the Commission "with comprehensive powers to regulate oil and gas development" in North Dakota. Section 38-08-04, N.D.C.C., provides in part:

> The commission has continuing jurisdiction and authority over all persons and property, public and private, necessary to enforce effectively the provisions of this chapter . . . [including] [t]o regulate . . . all other operations for the production of oil or gas[, and to] consider . . . safety of the location and road access to . . . treating plants . . . .

The court found section 38-08-04(2), N.D.C.C., to be unambiguous and to clearly provide that "the Commission has statutory authority to regulate treating plants." The court found it clear that "the North Dakota legislature intended that the North Dakota Industrial Commission would 'occupy the field' of the regulation of oil and gas waste treatment plants and, therefore, has exclusive jurisdiction of the issue of the location of oil and gas waste treating plants."

The County had argued that it had "shared jurisdiction" with the Commission "over the location of the treating plant based in part on the permit's requirement that the treating plant 'comply with all applicable local . . . laws and regulations.' " The court rejected that argument, saying that "the Commission's order nevertheless would supercede any county zoning requirements." Thus, the court concluded that, here, the County's zoning requirements were preempted by state law and the Commission's order in this case.

See also: *State ex rel. Stenehjem v. FreeEats.com, Inc., 2006 ND 84, 712 N.W.2d 828 (N.D. 2006).*

See also: *Ramsey County Farm Bureau v. Ramsey County, 2008 ND 175, 755 N.W.2d 920 (N.D. 2008).*

Case Note:

The County had also argued that, for various reasons, it was "better suited than the Commission to regulate the location of treating plants within the [C]ounty." The court responded, saying that "[p]ublic policy is declared by the legislature's action, and the public policy arguments raised by the County here are issues for the legislature to consider."

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Validity of Zoning Ordinance/Non-conforming Use—Zoning ordinance required exercise of any vested rights for non-conforming uses within one year of adoption of the zoning ordinance

Landowner with vested right for non-conforming use challenged the ordinance as unconstitutional as applied

Citation: *Southern States-Bartow County, Inc. v. Riverwood Farm Homeowners Association, 2017 WL 765890 (Ga. 2017)*

GEORGIA (02/27/17)—This case addressed the issue of whether a zoning ordinance that required exercise of any vested rights for non-conforming uses within one year of adoption of the zoning ordinance was unconstitutional as applied to a particular landowner.

The Background/Facts: Southern State-Bartow County, Inc. ("SSBC") owned property in Bartow County (the "County"). In 1989, SSBC filed an application with the Georgia Department of Natural Resources, Environmental Protection Division ("EPD"), to develop and operate a landfill on its property. In May 1990, SSBC requested from the County a certificate of zoning compliance indicating that the zoning district in which its property was located permitted the operation of a landfill. That zoning approval had been provided to the previous owners of SSBC's property. The County denied SSBC's request for a certificate of land use approval on the ground that the then-controlling zoning ordinance did not allow a landfill on the site. SSBC appealed (the "zoning litigation").

In the meantime, in 1991, the Supreme Court of Georgia declared the County's zoning ordinance invalid because it had not been enacted in accordance with the law. In September 1993, the County enacted a new zoning ordinance (the "Ordinance"). A provision of the Ordinance—Section 6.1.4—required exercise of any vested rights for non-conforming uses within one year of Ordinance adoption.

SSBC's zoning litigation continued until 1994, when the superior court concluded that, in the absence of a valid zoning ordinance in existence at the time of its application to the EPD (in 1989), SSBC

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acquired a vested right to obtain a certificate of the right to use its real property without county use restrictions. Thereafter, the County issued a certificate of zoning compliance to SSBC. For another 20 years, the County continued to issue certification letters confirming SSBC's vested right to use the property as a landfill.

Eventually, in 2013, the EPD finally issued a solid-waste handling permit to SSBC, allowing SSBC's property to be developed into a landfill. A group of private property owners (the "Landowners") then filed a legal action, asking the court to declare that the approved landfill violated the County zoning ordinances.

The trial court granted partial summary judgment in favor of the Landowners.

SSBC appealed. The Court of Appeals concluded, among other things, that: SSBC's vested right to use the land as a landfill was acquired as of the date of its May 1989 application to the EPD; and the vested right was governed by Section 6.1.4 of the Ordinance. The Court of Appeals concluded that, under the plain language of Section 6.1.4, SSBC's vested right had lapsed after SSBC failed to commence the non-conforming use of its property "within one year—or even within ten years—of the adoption of the [O]rdinance." SSBC had also argued that Section 6.1.4 was unconstitutional as applied to SSBC, and the Court of Appeals remanded the case to the trial court for it to consider that argument.

The trial court once again granted partial summary judgment in favor of the Landowners, concluding that SSBC's as-applied challenge was "unavailing in light of the fact that [SSBC] had not commenced the non-conforming use of its property for a decade after the enactment of the 1993 [O]rdinance."

SSBC again appealed, arguing that Section 6.1.4 was unconstitutional as applied to SSBC.

DECISION: Judgment of Superior Court reversed.

Agreeing with SSBC, the Supreme Court of Georgia held that Section 6.1.4 of the Ordinance, which required exercise of any vested rights for non-conforming uses within on year of the Ordinance adoption, was unconstitutional as applied to SSBC.

In so holding, the court explained that the Georgia Constitution "prohibits a legislative exercise of the police power that results in the passage of retrospective laws which injuriously affect the 'vested rights' of citizens." (See Ga. Const. of 1983, Art. I, Sec. I, Paragraph X.) That "prohibition against retroactive impairment of vested rights extends to the enactment of zoning regulations, which is an exercise of police powers," said the court. The court further explained that a law would be "unconstitutional in operating retrospectively" if it "takes

away or impairs vested rights acquired under existing laws or creates a new obligation, imposes a new duty, or attaches a new liability in respect to transactions or considerations already past."

Here, the court noted, SSBC had acquired a vested right for a nonconforming use of its County land in May 1989, and realized that right in September 1994. The court also noted that Section 6.1.4, which was enacted in 1993, applied to SSBC's previously-acquired vested right, and that Section 6.1.4 acted "to divest [SSBC] of its vested right." Based on those determinations, the court found its conclusion as to constitutionality here was "inescapable": "Section 6.1.4, as applied in this case, affects 'rights which accrued before it became operative' and 'impairs vested rights acquired under existing laws or creates a new obligation.' " Section 6.1.4 was "not a mere minimal condition on [SSBC's] vested rights which is permitted under Georgia law," but rather acted to eliminate a previously acquired vested right if the nonconforming use was not commenced within one year "irrespective of the intent of the vested right holder, any possible financial outlay, and, relevant here, the feasibility of use within that time frame." (Here, commencing use of the property as a landfill within the full year was "simply unfeasible.")

In summary, the court held that Section 6.1.4 could not "merely be read and applied prospectively," but rather, here, was "retrospective and injuriously impair[ed] [SSBC's] vested right to develop its land free from county use restriction."

See also: *DeKalb DeKalb County v. State, 270 Ga. 776, 512 S.E.2d 284 (1999).*

Power and Authority—Zoning board imposes condition on use of land, saying use does not run with the land and is allowed by current landowners only

Neighboring landowner challenges use as illegal and contends zoning board exceeded its authority with that condition

Citation: *Preston v. Zoning Board of Review of Town of Hopkinton, 2017 WL 752600 (R.I. 2017)*

RHODE ISLAND (02/27/17)—This case addressed the issue of whether a zoning board could impose a condition on the use of land dictating that the authorized use of the land did "not run with the land."

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The Background/Facts: Todd and Tina Sposato (the "Sposatos") owned property in a residential "R-1" zone in the Town of Hopkinton (the "Town"). The Sposatos owned four alpacas which they kept on their residential property. In May 2011, the Town's Zoning Officer ("ZO") issued to the Sposatos a notice of violation of the Town's Zoning Ordinance. The ZO had concluded that the alpacas were "farm animals," which were not permitted in an R-1 zone in the Town.

The Sposatos appealed the ZO's notice of violation to the Town's Zoning Board. The Sposatos argued that their alpacas were pets—or domestic animals—which were allowed in an R-1 zone. The Town's Zoning Board agreed, concluding that the alpacas were "domestic animals" permitted in the R-1 zone. However, the Zoning Board imposed four "conditions" on the Sposatos with respect to the continued presence of alpacas on the property, including a condition that "[t]he right to keep alpaca on [that] property does not run with the land; that is, if the Sposato's [sic] sell [their] property the next owners are not permitted to keep alpaca" (the "Condition").

The Sposatos' neighbor, Amber Preston ("Preston"), appealed the Zoning Board's decision. A justice of the Superior Court affirmed the Zoning Board's decision, concluding that "the keeping of alpacas as pets [is] an accessory use in an R-1 zone."

Preston again appealed.

DECISION: Judgment of superior court quashed, and matter remanded.

The Supreme Court of Rhode Island concluded that the Condition imposed by the Zoning Board—that the right to keep alpaca on the property did not run with the land—violated the Zoning Board's authority and "settled principles in the law of land use."

The court explained that it is "well settled that the law of zoning governs the use of the land itself, not those who occupy it." A zoning authority is not free to impose a condition on the use of land that does not run with the land, said the court. Rather, emphasized the court, zoning conditions, which are designed to regulate the land itself, must run with the land and must not be used to regulate the person who is exercising the use or be limited to specific individuals.

Accordingly, the court concluded that "the presence of so flawed a condition require[d] that the decision of the [Zoning Board] be vacated."

See also: *Olevson v. Zoning Bd. of Review of Town of Narragansett, 71 R.I. 303, 44 A.2d 720 (1945).*

Case Note:

In a footnote to its decision, the court noted that the Condition imposed on the

Sposatos here in effect granted a personal license.

Zoning News from Around the Nation

FLORIDA

The Florida Legislature is considering House Bill 17, which would "prohibit[ ] new laws or regulations on businesses, professions or occupations not specifically authorized by the general laws of Florida after July 1, 2017, and [would] nullif[y] all existing laws or regulations not specifically authorized by law on July 1, 2020." Reportedly, opponents of the bill cite the following examples of laws currently not specifically authorized by Florida law that would be abolished on July 1, 2020, under the proposed law: noise regulations on noise generated by businesses; medical marijuana siting and security regulations; adult entertainment/sexually oriented business regulation; height restrictions in municipal charters adopted by voters; parking of commercial vehicles in residential areas; and home-based business regulations such as traffic, parking, and employees not residing at the home. Proponents of the law argue that zoning is authorized by Florida statutory law, but opponents maintain such authority instead comes from the state Constitution.

Source: *Florida Today*; www.floridatoday.com

GEORGIA

The City of Atlanta is considering legislation that would amend zoning laws so as to allow "tiny homes"—which are homes defined as being 750 square feet or less. The proposed amendments would allow tiny homes in areas that already allow duplexes.

Source: *WABE*; http://news.wabe.org

WISCONSIN

Wisconsin lawmakers are reportedly considering a proposed Assembly Bill 109, which would "take[ ] away the provision for electors to vote on the opt-out [of county zoning] at an annual meeting or by referendum."

Source: *The Cambridge News*; www.hngnews.com

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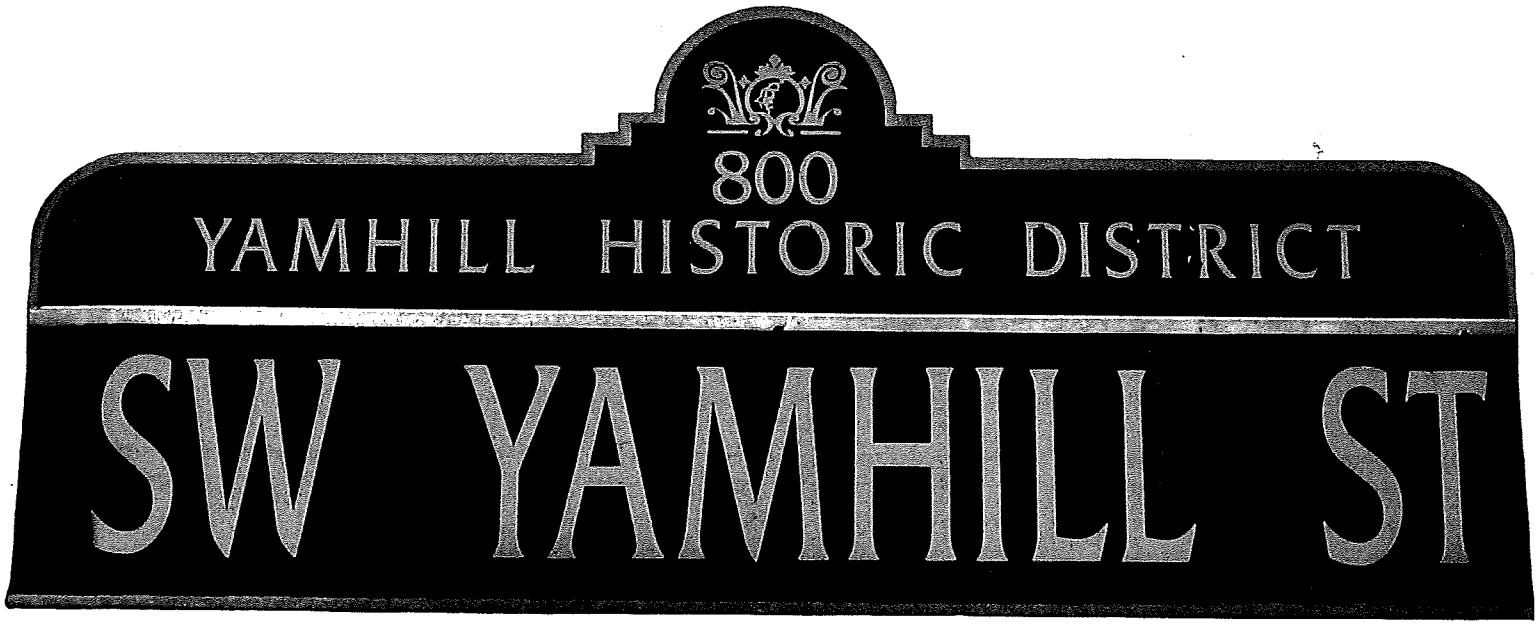
ZONING **PRACTICE** APRIL **2017**

AMERICAN PLANNING ASSOCIATION

ISSUE NUMBER 4

PRACTICE HISTORIC PRESERVATION



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Protecting Value Through Historic Preservation Regulations

By Lane Kendig

Most communities recognize the need to protect historic and cultural sites, buildings, or neighborhoods, yet many qualifying places remain vulnerable across the country.

Clearly, the preservation of a community's historic assets enhances the community's attractiveness as a place to live and work and assists in providing a unique character that differentiates it from its neighbors. As with any new regulation, though, historic preservation regulations can raise fears. For example, landowners commonly fear that these regulations may adversely affect property values and destroy their freedom to do as they wish with their property. While such fears are largely groundless, it is important in developing regulations to seek to address these concerns. The landowner's fears are best addressed by recognizing that preservation may require continued investment that needs to be offset by an enhanced property value.

PLANNING

Ideally, each jurisdiction would have a historic preservation chapter in its comprehensive plan that links preservation to community character and economic development. Where such plans do not exist, there needs to be a significant planning effort in coordination with historic zoning updates. In cities, planning generally focuses on historic neighborhoods or streets. In counties, the focus is more commonly on individual historic structures or historically or archaeologically significant sites. These present different challenges for zoning, as they may involve preserving land in its current agricultural or natural state as well as protecting buildings. With sites that are subject to development, it is more important to recognize owner concerns about economic value.

The traditional goal of historic preservation planning has been to add candidate buildings, sites, or districts to national or state historic registers. There are two distinct advantages of being listed on the National Register of Historic Places. First, Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of federally funded projects on historic properties. Second, commercial properties on the register are eligible for 20 percent federal tax credits. Meanwhile, state statues may provide additional incentives for historic preservation.

The research, planning, and public participation associated with adding properties to national or state registers is often time consuming and costly. Buildings must be carefully analyzed for age, style, or other historic elements. The federal rules are not that onerous, but historic preservation planning requires design or architectural expertise. This is not quickly learned on the job, so planners without this expertise need professional consultants or volunteer assistance.

For historic districts, additional work is necessary to define boundaries. With most zoning districts, boundaries follow differences in land use or lot size. Meanwhile, historic preservation focuses on individual properties meeting the historic guidelines. In practice, there are difficult choices to make about including non-historic buildings or vacant land in order to minimize having very irregular district boundaries. Inclusion can trigger property owners' fears and result in opponents. Too irregular a district reduces the protection on the edge of the district. Advocates for a purist approach to historic preservation can make this worse by stoking landowner fears that the regulations will be overly strict.

LANDOWNER CONCERNS

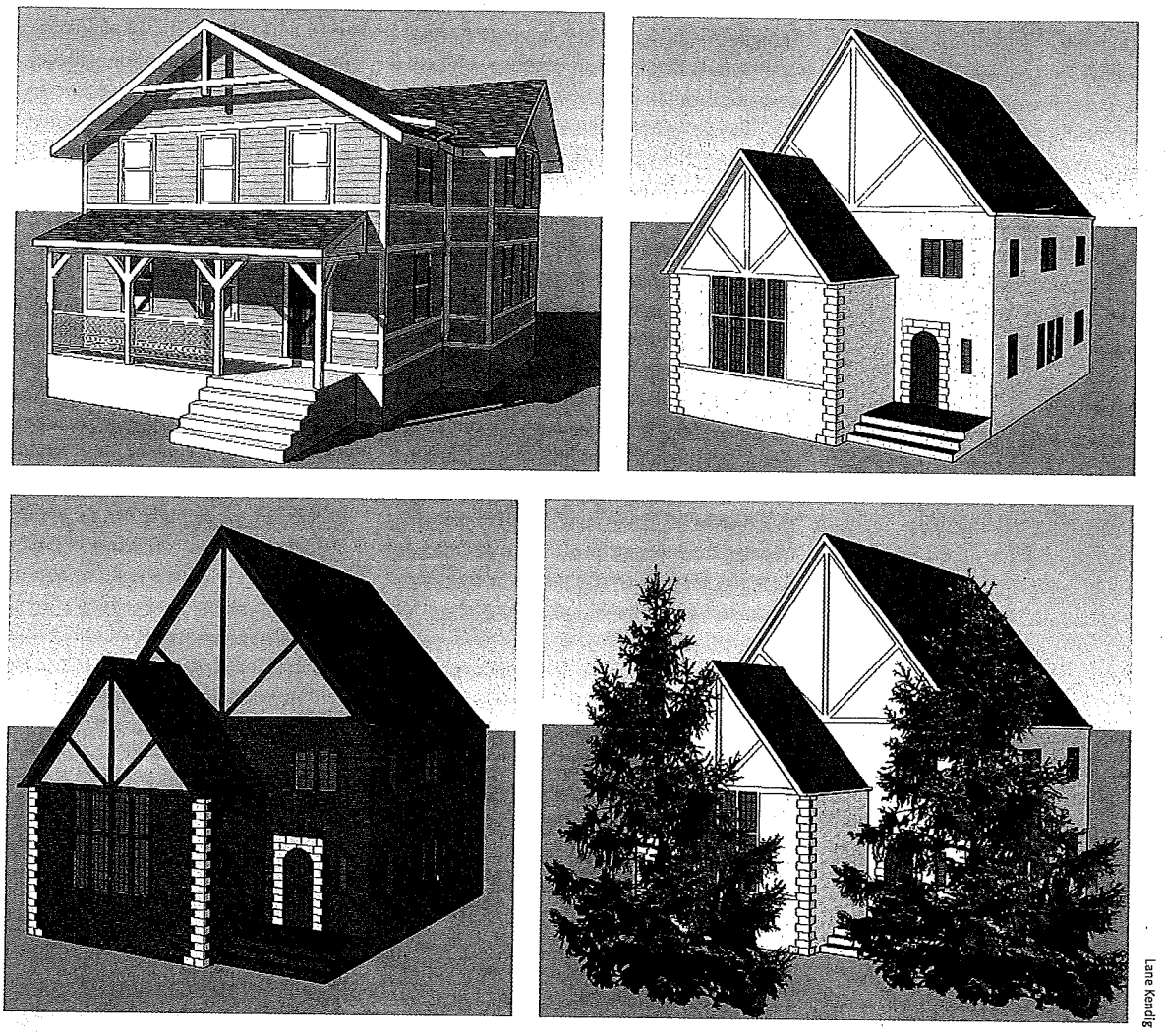
The primary concern of landowners is that historic preservation regulations will adversely affect the value of their property. The owners of non-historic buildings within a proposed historic district often fear regulations will impose major burdens on their property. For historic buildings one problem is that the interior may be unsuited to modern use. Another is that the building's maintenance costs may exceed economic returns.

Outside of urban areas, preservation of historic farms or estates typically requires the preservation of some surrounding land—which would otherwise be suitable for subdivision—and this can greatly alter property value. A means of preserving without reducing value is needed.

Old homes may be expensive to heat or cool, or to reconfigure for modern living needs. Large dwellings may be under pressure to convert to multiple residences because they have too much space for a single family. Small, older homes often require extensive remodeling or additions to adapt to modern lifestyles. Without regulatory protections, teardowns are common.

Old buildings of stone, brick, log, or wood frame may be very expensive to maintain. Landowners may be fearful that these costs cannot be offset by enhanced value under a historic designation. If these concerns are not addressed, owners will fight the designation and ultimately seek demolition.

Individual historic structures scattered in urban areas raise additional concerns. Commercial historic buildings are typically relatively small. When historic buildings are small in comparison to the size of the building that could be built if they were torn down, there may be considerable redevelopment pressure. For commercial historic buildings located in



Lane Kendig

In a historic district with houses similar to the stick Victorian at the top left, the Tudor at the top right is clearly out of character. What should be done if the building seeks an addition? Since it cannot feasibly be made to look like a stick Victorian, mitigation is necessary. A color change would draw less attention from the contributing historic homes (bottom left). And adding landscaping to screen the Tudor home from the street enhances the effect (bottom right).

residential neighborhoods, the designed use may be nonconforming under current zoning, which can limit property investment.

HISTORIC DISTRICTS

The historic district mapped to contiguous properties is the most common historic preservation zoning technique. Often jurisdictions apply these districts as an overlay to an existing base zoning district. Essential elements of a historic district are mapped boundaries, a description of the historic style, design guidelines, the appointment of a board to review and approve applications in the district, and criteria for approval.

District Boundaries

The boundaries are generally easy when all the buildings in a block or group of blocks are historic. The difficulties arise when buildings that do not meet the criteria for designation or vacant lots are interspersed with historic properties. Districts with vacant lots or non-historic buildings require design standards or guidelines that work for historic buildings, new construction, and non-historic buildings.

If the district cannot be mapped to whole blocks of historic properties, reduce the number of vacant or non-historic structures as much as possible, consistent with effective district boundaries. While there is a general rule to avoid spot zoning, it is possible exclude lots within a historic district because there is an existing reason for the exclusion and their inclusion is likely to create major issues for the landowners.

Style Description

The description of style should be straightforward. If it is a national register district, the district documentation will contain detailed information about the architectural styles in the district, materials, and other elements contributing to its historic merit. For a locally designated district there is a need for original classification work. The recommended

resource for this work is *A Field Guide to American Houses*, first published by Alfred A. Knopf in 1984 and revised in 2013. This book has numerous drawings, photos, and descriptions of the styles that can be used as the basis for the code language and in evaluation of existing buildings. It is important in doing this to specifically identify style or styles in the district. This makes it easy to review any proposed exterior change to determine if the changes are consistent.

Design Guidelines

Design standards and guidelines are intended to preserve the existing historic character and prevent any exterior activities that would destroy or be inconsistent with that style. The design rules for exterior modifications to historic properties should derive from the documentation of the historic styles in the district. They should address style, colors, materials, and landscape elements that create the district's character, while avoiding overtly subjective elements. The task of developing design standards and guidelines for new construction and non-historic buildings is more difficult.

Most current development has an architectural style that is neo-eclectic. The homes are modern interpretations of past styles like colonial, Tudor, or Victorian; while they have some historic style elements, they will never be like the historic structures. For new construction, what is needed is a detailed list of the elements that must be incorporated to conform to the desired historic character. The design rules should contain a list of mandatory elements and a group of optional elements, from which a certain number must be chosen. The jurisdiction should consult with local home builders to ensure the guidelines produce a compatible building that will be marketable in the neighborhood. With builder support it is easier to include vacant lots in a district.

Meanwhile, the development of design guidelines for existing non-historic buildings requires a very careful analysis of each such building in the district for style, materials, color, use, type of construction, massing, and existing condition. Condition is important because it provides information about the likelihood that a building will need permits that require the historic board's approval. An assessment of each such building should be developed using the same style and design elements used in the historic analysis. Formulate a design strategy for each type of non-historic building that might seek to add a room or do minor exterior work.

The design guidelines should provide clear policy to apply in approving applications for major repair or additions on these buildings. It a mistake to require them to choose between disinvestment and meeting impossibly expensive conversion costs. The experience with nonconforming uses is a cautionary lesson. Planners originally thought that nonconforming buildings would be torn down. History shows they rarely disappear, and they generally suffer from disinvestment that lowers all property values in the neighborhood. In drafting standards, a list of enhancements that have reasonable costs should be developed so landowners have several options. For example, a porch across the entire front is an expensive requirement, but adding some trim to a small existing porch is a more acceptable solution. Avoid requiring major facade and roof changes, as they are very expensive.

When style and massing are dramatically different, consider mitigation that seeks to hide the incompatibility. Two mitigation strategies are obvious: color change and landscaping. Painting eliminates a sharp color contrast that draws attention to the building's differences. Greenery can hide a multitude of sins because it represents a mass that screens the view of the building from the street. Requiring the planting of canopy trees and large evergreens in the front yard will screen the view of the upper stories of the building. Foundation plantings and understory trees can reduce the ground-level view. The sidebar includes language that can be used to provide the desired level of mitigation in the design guidelines.

Mitigation assumes that non-historic buildings are likely to remain. The idea is to provide actions that allow an owner to make needed exterior repairs or reinvest in the dwelling. It hides the incompatibility rather than eliminating it. These strategies do not involve major costs for a land owner. In all cases the effort to address incompatible buildings in the districts should be designed to encourage reinvestment to preserve the economic value of the district.

Developing design guidelines for commercial areas can be easier as the focus is on street-facing facades. Many historic commercial district buildings will be largely compatible, with only modest style or height differences. An analysis should look at block faces. If more than 15 percent of a block face is out of the style, the suitability for a historic district is questionable, and the community may want to consider design guidelines without a historic designation. An exception is a building whose facade was "modernized" in the last century. If the business community can be convinced that historic designation and restoring facades will enable the area to generate substantially more revenue, such restoration may be supported. Government grants to assist in the cost makes this more feasible.

For new buildings, only the street facade needs review. Height, general window proportions, floor to floor heights, colors, and materials are elements that should be the primary focus, as these can be addressed easily in new buildings. The cost of making a new building compatible should not be too great. Some style elements like terra cotta details are very expensive and should be avoided. Commercial uses often use false facades to produce a desired skyline, so this can be a reasonable approach to achieving a matching style.

Sample Mitigation Provisions

Mitigation. Lots XX, XX, and XX in the historic district have been identified as so different from the styles and character of the district that there is no practical means of making them compatible in style. When any such lot applies for a building permit that involves an increase in the floor area of the building or substantial structural repair, the historic preservation board may approve the application provided the following mitigation steps are undertaken:

1. One plant unit shall be planted in the front yard for every 1,600 square feet of land area in that front yard. The board shall count existing canopy trees and evergreen trees that are in good health and over 40 feet tall toward the requirements. The shrubs and understory trees shall be installed to maximize the screening of the lower levels of the building.
2. The building shall be painted in approved colors for the district to better match the adjoining buildings.

Administration

State statutes generally will specify the composition of a historic preservation board. It is critical that these boards have the technical capability to help landowners gain approval of an application that permits construction. Historic preservation requires architects or design professionals who have considerable experience in designing buildings and the skills to guide applicants to a satisfactory solution. Two other groups are desirable as members: builders and people who understand market dynamics and project financing. In large cities or urban counties, this expertise is likely to be available. In smaller cities and more rural areas, finding these people may be difficult. If the board does not have the expertise, the regulations should delegate reviews to staff and consultants.

Approval Criteria

The most basic approval criterion for proposed changes to historic structures, vacant land development, or improvements to existing nonhistoric structures is that the proposal would enhance the character of the historic district by meeting all required design criteria. If the proposal requests any exceptions from these design criteria, the regulations should require applicants to submit a detailed report indicating the economic, architectural, or other reasons for the deviation from strict adherence.

Demolition of an existing structure requires a different approach. One reason for approval would be that the structure is unsafe for habitation, and the cost of restoring it to a safe condition is so high that it is likely that the owner will let it continue to decline. In this case the historic board needs to explore with the owner whether there are things the jurisdiction can do that will alter the economics (see flexibility discussion below). To approve demolition, the board must find that denial would create a severe hardship and cause the structure to become blighted. That the owner can make more money through demolition is not an acceptable criterion for approval.

REGULATORY FLEXIBILITY

In many cases, historic districts will need to incorporate flexible zoning techniques to overcome landowner concerns about the impact of historic district designation on property values. These include flexible use permissions and incentives for maintenance.

Change of Use

If the existing use of a historic property fails to meet current demand, and rents do not support maintenance and reinvestment, consider allowing changes of use. Permitting large, older homes in a single-family district to be converted to two, three, or more residences is often a good solution. Jurisdictions can accomplish this by modifying the district density standard or incorporating special rules for historic structures in the district, allowing more units in those structures. Neighbors will need to be convinced that preserving the old homes is better than allowing disinvestment and teardowns.

For residential uses adjacent to downtown or on major streets where nonresidential uses are more valuable than housing, consider permitting the conversion of residential buildings to office or institutional uses. In these cases, additional parking may be necessary. This parking should be to the rear, where a drive or alley provides access. Parking in the front yards should be prohibited. If they are on the National Register, commercial structures may be eligible for a 20 percent tax credit, making preservation easier.

Sample Incentive Provisions

Pro forma: A pro forma shall be submitted by the developer justifying the proposed incentive. It shall document the costs of acquisition, improvements, and long-term maintenance. It shall indicate projected changes in revenue due any change in use. These costs shall be summarized and included in a proposed value with the change in use and density permitted. The pro forma shall demonstrate that the incentive provides additional revenue to pay for the maintenance and improvement costs and reasonable profit.

The planning director in conjunction with the historic commission or board shall evaluate the pro forma and its documentation to determine if the proposed incentive is adequate to persuade the landowner to invest but not so large as to provide increases in income over that of neighboring property. They are empowered to grant such incentives.

Brian Stansberry (Laurel-terrace-knoxville-tn1.jpg, Wikimedia CC BY 3.0)

This historic home in Knoxville, Tennessee, has been subdivided into apartments without undermining its contribution to the Fort Sanders Historic District.

URBAN HISTORIC SITES

Name	Existing Building Tsf*	Existing FAR	Zoned TDR	Site Area Tsf (Existing Building Tsf / Existing FAR)	Maximum Floor Area (Site Area x Zoned FAR)	TDRs (Maximum Floor Area—Existing building Tsf)
Oreo Factory	200	0.31	0.44	645	283.9	83.9
Richfield Mansion	13	0.40	1.00	32.5	32.5	19.5
5th Street Church	15	0.18	2.50	83.3	208.3	193.3

*Tsf = thousands of square feet

Incentives for Maintenance

Stone, brick, log, or wood frame structures often have high maintenance and upkeep costs. This is particularly true of rural buildings or where disinvestment has already occurred. The absence of insulation and obsolete heating, air conditioning, kitchen, and bath facilities are also potential costs associated with preservation. These costs may be addressed by a change in use; if not, other incentives are needed to encourage landowners to invest. The question becomes how much of an incentive should be provided. Incentives can include an increase of density on the property or transferable development rights (TDR). If this cannot be worked out before a district is created or a property designated, incorporate a process in the regulations to guide the historic board in evaluating the need for incentives on a case-by-case basis. Provide what is needed and don't offer too little or too much. See the sidebar on page 5 for an example.

SCATTERED-SITE PRESERVATION

Preserving individual historic structures and sites located outside of historic districts presents a distinct set of challenges. For these properties, existing development densities may be far below permissible densities for their zoning districts, and carefully calibrated incentives are necessary to gain landowner support for preservation.

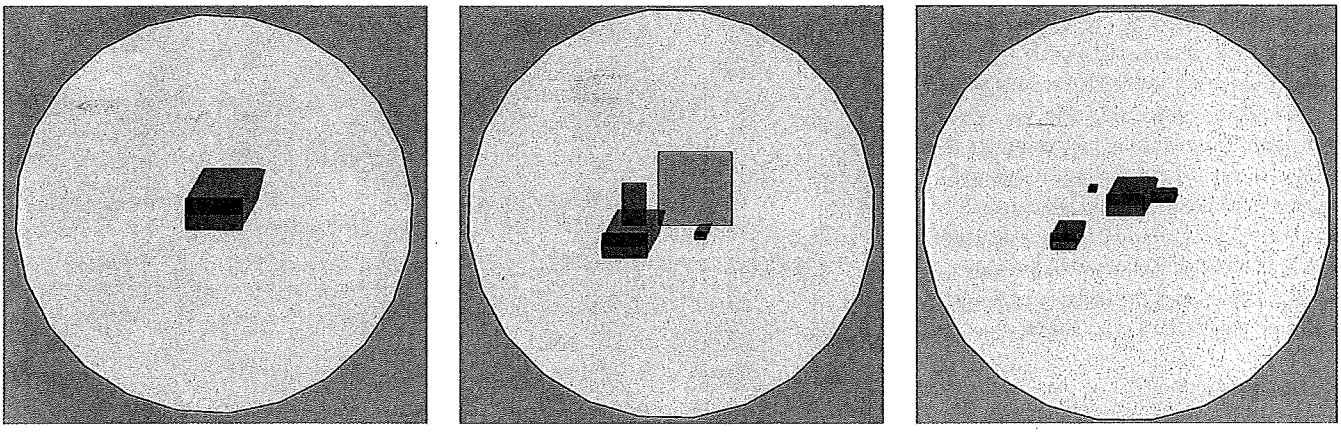
Urban Historic Structures

A common problem in urbanized areas is that individual historic structures often have floor areas well below the maximum permissible floor area or density of their zoning districts. For example, a historic structure with only 15 percent of the maximum floor area permitted creates a strong economic argument for demolition and redevelopment. The historic site is burdened by higher maintenance costs and less income potential compared to neighboring properties. TDR is the ideal tool for this situation, as upheld by the Supreme Court in *Penn Central Transp. Co. v. New York City,* 438 U.S. 104, 98 S. Ct. 2646, 57 L. Ed. 2d 631 (1978).

The table above illustrates how this system would work in a hypothetical community. The TDRs available are determined by subtracting the existing floor area of the site from the maximum permitted by the zoning. The measurements are in thousands of square feet, so one TDR is based on 1,000 square feet. To ensure a willing buyer and willing seller, the purchaser would be able to build 1,100 feet for each TDR.

Historic Sites

Historic sites require a different focus. The preservation of the historic buildings is only part of the job. Just preserving the buildings ignores their function and the setting for which they were built and robs visitors of the purpose and context of the historic site. Many



Left: A historic building (e.g., a plantation, homestead, leading citizen's home, or historic event). Middle: A historic building with important landscape and gardens. Right: A site with multiple historic buildings (e.g., farm, ranch, or plantation with multiple outbuildings).

Lane Kendig

of these sites are on largely rural or urban fringe sites.

A major part of a site's historic value is seeing the building in its historic setting of farmland, gardens, or yards. For example, a Greek revival plantation house with 10 acres of gardens surrounded by 200 acres of farmland needs at least the home and gardens to be preserved. If the grounds around the house and garden contained many mature live oaks or other large trees, this would be the critical area to preserve, while the farmland would not be as important.

Too often a historic building is preserved on an acre or so and surrounded by a subdivision of much smaller lots. This only preserves the home, but the site's value—mature trees and gardens that provided the historic context—is lost. The building simply becomes a large old home, and its visibility to the community lost in the subdivision. This sort of preservation does nothing to make it a historic attraction. Historic sites need to have surrounding land preserved as well as the buildings to provide the context of their original function to make it an attraction.

The illustrations on page 6 show several versions of historic sites. The idea is to preserve enough land to display them in context for visitors. Preserving the surrounding land lowers property value for development. Tools such as clustering, alternative uses, incentives, and TDR applied individually or in combination represent ways to restore the property's value. In suburban or rural environments, where the size of the property is adequate, clustering is an ideal tool to allow the needed open space to be protected without causing a loss of value.

How much land is needed for context? Key variables in determining this are historic use, ancillary buildings, vegetation, or type of event. In a forested area, a relatively small site that retains the trees to screen future uses will suffice. There is no definitive measure, but in general a radius of 200 to 500 feet is desirable. Trees, topography, property lines, existing homes on nearby property, and current use of surrounding land need to be evaluated in setting the protected area.

Also consider the approaches to the site via roads. Clustering allows the site to be protected as common open space while allowing the district's maximum density to be achieved. The size of the parcel is critical. If the protection area is no more than 30 percent of the site in suburban character areas, clustering is a viable option. Up to 50 percent open space will provide a suburban character. In estate character areas the percentage of open space is 45 to 65 percent. Clustering will be very difficult in urban areas unless the property is very large.

With smaller sites, additional incentives will be required. Consider permitting farm buildings to change uses; for example, the barn or other buildings may be converted to residential use to increase development value. Additional incentives may be needed to ensure maintenance. Since old farm buildings or homes may require costly work to make them habitable, a pro forma can be used to determine the degree of an incentive that is needed to achieve preservation. When a site is just slightly too small for clustering to work, the code could allow a 10 percent density increase as an incentive.

TDR is the most efficient way to provide an incentive when the property is too small for clustering to work. Allowing a 10 percent density bonus with the purchase of TDRs is typically workable. Clustering must be a permitted use in the district, not a conditional use. The ordinance should provide a receiving zone with five times the potential to use TDRs than there are TDRs available on the historic site so that there is an ample market for the TDRs. Ensuring a market for TDR also requires consideration of the value a seller wants and what a buyer is willing to pay. TDR works on a willing seller, willing buyer basis.

It works best when the buyer is willing to pay more than the seller asks. Permitting 1.1 units for each TDR is a way to ensure purchasers want to buy TDRs. TDR makes creating larger open areas around the historic site feasible.

CONCLUSIONS

In drafting historic preservation regulations, it is important to try to offset the concerns of the landowners with incentives. A variety of approaches can be used to address specific concerns. Allowing a change in use is a simple strategy that is widely adaptable. A more complex problem is addressing the concerns about the costs of preserving and maintaining structures, which requires very specific zoning regulations that enable landowners to recoup these costs.

Preserving historic sites in rural or urban fringe areas is a very different problem. When preserving a substantial amount of open land is essential to providing the historical context, regulations that allow or require clustering are important.

Finally, transfer of development rights is useful for preserving individual buildings in urban environments and for greenfield development.

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Lane Kendig is the founder and former president of Kendig Keast Collaborative. He has been practicing and writing about the relationship between community design, planning, and regulatory tools for more than 45 years. In addition to the recent books *Community Character* and its companion, *A Guide to Planning with Community Character*, Kendig is the author of *Performance Zoning* and the PAS reports *Too Big, Boring, or Ugly* and *Traffic Sheds, Rural Highway Capacity, and Growth Management.*

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Vol. 34, No. 4

Zoning Practice is a monthly publication of the American Planning Association. Subscriptions are available for $95 (U.S.) and $120 (foreign). James M. Drinan, JD, Chief Executive Officer; David Rouse, FAICP, Managing Director of Research and Advisory Services. Zoning Practice (ISSN 1548–0135) is produced at APA. Jim Schwab, FAICP, and David Morley, AICP, Editors; Julie Von Bergen, Senior Editor.

Missing and damaged print issues: Contact Customer Service, American Planning Association, 205 N. Michigan Ave., Suite 1200, Chicago, IL 60601 (312-431-9100 or subscriptions@planning.org) within 90 days of the publication date. Include the name of the publication, year, volume and issue number or month, and your name, mailing address, and membership number if applicable.

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