

3800 Laverne Avenue North  
Lake Elmo, MN 55042

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www.lakeelmo.org

## **NOTICE OF MEETING**

The City of Lake Elmo  
Planning Commission will conduct a meeting on

**Monday July 9, 2018**

**at 7:00 p.m.**

## **AGENDA**

1. Pledge of Allegiance
2. Approve Agenda
3. Approve Minutes
  - a. May 30, 2018
  - b. June 4, 2018
  - c. June 18, 2018
4. Public Hearings
  - a. **CONDITIONAL USE PERMIT AND VARIANCE REQUESTS.** A request by Verizon Wireless, 10801 Bush Lake Road, Bloomington, MN 55438, for a conditional use permit for a proposed 125-foot monopole telecommunications tower and nine foot lightning rod for a total 134-foot above ground level tower and variances from the required maximum height standards; setback; and expiration dates of permit, variances, and conditional use permit. 11351 Upper 33<sup>rd</sup> Street North PID #13.029.21.31.0018.
  - b. **ZONING TEXT AMENDMENT.** A request by the City of Lake Elmo for a zoning text amendment to add language which will further define and clarify Home Occupations as an accessory use in the City.
  - c. **ZONING TEXT AMENDMENT.** A request by the City of Lake Elmo for a zoning text amendment to update and remove language for the City's Environmental Performance chapter. Updates will clarify the mitigation plan for tree removal as well as the removal of language requiring the installation of screening measures for parking lots.
5. Business Items
  - a. **FINAL PLAT PLANS.** A request from Pulte Group, 7500 Flying Cloud Drive, Suite 670 for the second addition which consists of 29 single family lots.
6. Communications
  - a. City Council Updates – None
  - b. Staff Updates
    - a. Upcoming Meetings:
      - July 23, 2018
      - August 15, 2018
7. Adjourn

\*\*\*Note: Every effort will be made to accommodate person or persons that need special considerations to attend this meeting due to a health condition or disability. Please contact the Lake Elmo City Clerk if you are in need of special accommodations.



**City of Lake Elmo  
Planning Commission Meeting  
Minutes of May 30, 2018**

Chairman Dodson called to order the meeting of the Lake Elmo Planning Commission at 7:00 p.m.

**COMMISSIONERS PRESENT:** Pearce, Emerson, Johnson, Dodson, Lundquist, Dorschner, Weeks, & Hartley

**COMMISSIONERS ABSENT:** Kreimer

**STAFF PRESENT:** Planning Director Becker and City Administrator Handt

**Approve Agenda:**

M/S/P: Dorschner/Lundquist, move to approve agenda as presented, ***Vote: 7-0, motion carried unanimously.***

**Approve Minutes:** May 7, 2018

M/S/P: Hartley/Lundquist, move to approve the May 7, 2018 minutes as amended, ***Vote: 7-0, motion carried unanimously.***

**Public Hearing – Final Plat and Planned Unit development and PUD Plans**

Becker started her presentation regarding the Final Plat and PUD Plans for OP4 Boulder Ponds 3<sup>rd</sup> and final phase of the residential areas. This application consists of 33 single family detached residential units and 1 outlot PID #04.029.21.32.0038. There are a few changes from preliminary plat. Lot 17 is being platted as a larger lot with some of the other lots being smaller. The intent is to come back at a future date to amend the PUD and add additional lots where that larger lot is. That is not being considered at this time.

There are other revisions since preliminary plat. One of those is that there are decreased lot widths. There are 15 lots that do not meet the 60 ft. minimum lot width and two that do not meet the rear yard requirement of 30 feet. There was no indication of flexibility for minimum lot width with the resolution of preliminary plat approval. There were many of the lots outside of 3<sup>rd</sup> addition that did not meet the minimum lot width. The Developer will be required to submit a lot book to demonstrate that the homes will work on the lots. The landscape plan was revised to remove some items from outlot J which is actually in 2<sup>nd</sup> addition. The items that were removed were not a

condition of approval. The preliminary plat showed construction of turn lanes on Hudson Blvd. A recommended condition of approval is that this be done before building permits are issued for 3<sup>rd</sup> addition. The driveway for Lot 6 Block 2 must access Jade Trail N. In regards to landscaping, the required number of trees is not met. There needs to be additional buffering and screening north of trail.

Steph Griffin, Excelsior Group, stated that the plan with the larger lot is to come back to add make that into 3 lots that would be consistent with the rest of the development. If they cannot move forward or it isn't approved, it would be sold as one larger lot.

Dorschner is wondering why those additional lots are not being platted now and why they needed to make the width of the other lots narrower. Griffin stated that the product that they are doing in 3<sup>rd</sup> addition is market driven and they are HOA maintained yards. Griffin stated that did not bring those forward now as it is a timing issue. The builder wants to move forward with the development, and those lots will require a PUD Amendment which will take more time.

Public Hearing opened at 7:19 pm

No one spoke and there were no written comments.

Public Hearing closed at 7:20 pm

M/S/P: Hartley/Lundquist, move to recommend approval of the Boulder Ponds 3<sup>rd</sup> Addition Final Plat and Final PUD Plan with 13 conditions of approval as drafted by Staff based on the findings listed in the Staff Report, **Vote: 7-0, motion carried unanimously.**

### **Public Hearing – Comprehensive Plan 2040 Update**

Becker stated that there have been some significant changes since the last public hearing. The Urban Reserve category has been removed and replaced with a combination of Low, Medium and High Density Residential. There have been new chapters distributed including chapter 7, the transportation plan, chapter 8 surface water, Chapter 9 wastewater and chapter 10 the water plan. There were also updates to the land use chapter, housing chapter and implementation chapter. The plan is due to the Met Council by December 31, 2018. Before it is submitted, it needs to go through adjacent jurisdictional review. It can take up to 6 months to get comments back so they are looking for feedback to move this along to the City Council to get approval to submit for adjacent jurisdictional review.

Jennifer Haskamp, Swanson Haskamp Consulting, will present to the Planning Commission the changes from the last meeting. The new sections provided all have to do with infrastructure. The water and transportation sections had to also be updated to reflect the changes to the other chapters because all of the projections have to carry

through to all chapters. With the removal of the urban reserve, it was a bit of a balancing act to make the infrastructure and the numbers work. Some of the density needed to be removed from the Village area due to capacity issues. Taking out the urban reserve brings the numbers to the 23,735 population that was in the 2030 plan which is the maxed out number. In the rural area, there are about 500 households planned for in this planning period. When the urban reserve came out, adjustments had to be made in the staging plan to accommodate for the infrastructure.

Haskamp talked about the transportation plan. A number of maps demonstrated the planned capacity, the future connections and the bikeway and trail system. Dodson asked if there were action items that the City would be doing to accommodate future transportation. Haskamp stated that the existing County Roads can support the planned growth. That's the East/West and North/South County roads. The City has planned for 5<sup>th</sup> Street which will be a primary connector road that will serve the planning area. The implementation section talks about some of those improvements and how to implement them. The 2 new major roadways will be 5<sup>th</sup> street and the Village Parkway.

In the surface water, water supply & wastewater chapters the projections must match up with population, household and employment forecasts contained in the Land Use Chapter. These chapters are the technical implementation of the land use and housing chapters. Portions of the Local surface water plan were updated, but it needs to be fully updated to comply with state statute. The wastewater is pretty straight forward and is from a regional system perspective. The individual treatment systems also have to be addressed in the plan as well as the community systems.

Dorschner asked about the staging areas because there would be infrastructure required. Haskamp stated that if the City allows development to occur outside the current staging area, it could impact land that is in the current stage. That can be a problem when land owners in current stage feels they have certain entitlement.

Dodson asked why the density in the Village needed to be reduced and move to the southern area. Haskamp stated it is a two part answer. The total unit count is the issue. The Engineer had planned for a certain number of units in the village area and once the urban reserve was added back in, the number was over what the engineer had planned for in the Village.

Hartley is wondering if the analysis was done from the perspective that once the City moves to stage 3, all of stage 2 is completed. Haskamp stated that it is her understanding that the analysis was done with a unit cap in the Village Planning area that did not equate to a number of units that were in the MUSA area. There were parcels in the MUSA that did not have density assigned to them.

Pearce is wondering why there is a difference in density in the Village area vs. the I94 area. Haskamp stated that the 2030 plan had differences and they are carrying that



through. Becker stated that in addition there is limited capacity in the Village Area, so there is already a unit capacity problem.

Dodson asked about the commercial properties and how those SAC units are counted. Haskamp stated that since the MOU expired, those SAC units are irrelevant and only count towards the required employment numbers.

Lundquist asked about the article in the source that talks about the Village area consisting of new commercial and high density, and an overlay consisting of an Old Village District, Elmo Station District, and Civic District. There is no longer a green belt buffer required around the Village area as there was in the 2030 plan. Haskamp stated it is in the balanced growth and development chapter. Lundquist feels strongly that the green belt buffer should be kept. Haskamp stated that it is not to eliminate the green belt, but to look at how to make connections. There is a proposed green network map that shows where open space and trails should make connection that essentially accomplishes what the buffer from the last plan set out to do. Additionally, most of the properties in which the buffer from the last plan was located have been developed.

Dodson asked how the City will implement the affordable housing requirement. Haskamp stated that the zoning will accomplish that. High density, Village Mixed Use and Mixed Use Commercial all comply with affordable housing.

Dorschner is wondering why RS is allowed to have 2 dwelling units in unsewered, but not sewer. Becker stated that it is the same land use designation for sewer vs unsewered, so the standards should be the same. Dorschner is also wondering about the percentages in the south planning area it only comes to 52%. Haskamp stated that when urban reserve was taken out, the percentages were probably not adjusted for.

Dodson asked about the airport safety zones and if it changes the density along those areas. Haskamp stated that the runway protection zone does not encroach into the Village Planning Area. The safety zones will likely have different criteria, but they have not been established yet. Those areas are in the last stage of the planning area and would be at 2035 plus, except for the commercial area.

Hartley is wondering if there are existing requirements for safety zones A & B. Haskamp stated that she doesn't think the City has an overlay district for that. Hartley is asking if there are currently requirements for the safety zones that the MAC enforces. Haskamp stated that there are things that are strongly encouraged, but not requirements.

There was some discussion about the wastewater services chapter and what type of growth the current system will support.

Lundquist asked about the storm water runoff and flooding and there is no reference to pollution. Should there be something in there regarding the PFC and pollution of Lake

Elmo Lake and the cleanup. Haskamp stated that they are required to list the impaired waters. Haskamp stated that this document is supposed to serve more as an executive summary vs work program. The surface water management plan serves as the implementation. That plan needs to be updated, but it is a large document.

Becker stated that the water supply plan is basically the DNR permit. It was submitted to the DNR in December 2017 with the population numbers from the 2015 system statement. The DNR has not reviewed the application yet. The population projections have been revised and it has been resubmitted to the DNR.

Public Hearing resumed at 8:34 pm

Jim Ogren, 11790 Little Bluestem Ct, is wondering how the determination was done to decide what property would be low density and what property would be medium density that was taken out of urban reserve. Ogren thinks that the higher densities should be the ones closer to downtown.

Haskamp stated that there is a unit constraint in the Village Planning area. All of the urban reserve parcels were given the low density designation with the exception of the property that is along the CSAH 14 realignment. This was given the medium density designation because it will be along a major roadway.

Stephanie Lorang, 9918 7<sup>th</sup> Street, is concerned about the new mixed use business park designation, especially in regards to the land directly across from Savona. This was previously guided as Urban Medium Density. Lorang is concerned because there is no zoning for this new category and they don't know what could be allowed there. The density would change from 4-8 units per acre with UMD to 6-10 units per acre.

Becker stated that in the 2030 Comprehensive Plan, the parcel referenced was actually guided as mixed use. That parcel is a little different and per the 2030 Comprehensive Plan could develop as medium density or if it developed with adjoining parcels could develop as straight commercial. The project that was referenced, did not need a Comprehensive Plan Amendment because of that provision. Haskamp stated that at the 6-10 unit per acre density, you would not end up with a multi-story apartment building. The unit count would not work. It is more likely to be townhomes or row homes.

Ann Bucheck, 2301 Legion Ave, is wondering about the 35 foot height restriction and if that is still in place. Bucheck would like to encourage the City to require the buffering in the Village Planning area. Bucheck is wondering why the center of the Village area has changed from a combination of residential and commercial to just commercial. Haskamp stated that it is guided for Village Mixed Use which is a combination of residential and commercial which is what it was guided in the 2030 plan. Bucheck is encouraging the City to not include truck terminals in the business park. Bucheck would like to see something included about maintaining the existing farms, providing a

healthy water supply, not draining the aquifers, and use of private sewer systems. Bucheck is wondering if there should be talk about a historic district as there are a number of buildings and homes that have been here for many years. Bucheck would strongly encourage the City to eliminate Tax Increment Financing. Bucheck would like to see the rate and volume standards restored to what they were in the past because we will have problems with this much development.

Jackie McNamara, 10321 10<sup>th</sup> Street, is glad that the reserve property designation was eliminated. McNamara would like clarification for her farm and the system capacity. She would like to know if a developer is interested in the property if sewer could be brought in from one direction or the other. Handt stated that the sewer is a long distance from this property and the developer would need to pay to have it brought to the property. Everything to the West of Keats is on one interceptor, and everything to the East of Keats is on the other interceptor. The Lift station for the area East of Keats is at Lake Elmo Ave and Hudson. There is a trunk service line that runs up Lake Elmo Ave to the Village, but that is not designed to serve other areas.

David Screaton, 711 Manning Ave, owns the property that has the possible airport impact. He would like to see the map updated to show the existing and proposed runway.

Public Hearing closed at 9:01 pm

Dodson is thinking that the Planning Commission should have a resolution for each chapter that is voted on and any concerns can be listed in the minutes.

M/S/P: Dodson/Lundquist, move to accept Chapter 1 of the Comprehensive Plan as presented and recommend for City Council approval, **Vote: 7-0, motion carried unanimously.**

M/S/P: Dorschner/Johnson, move to accept Chapter 2 of the Comprehensive Plan as presented and recommend for City Council approval, **Vote: 7-0, motion carried unanimously.**

M/S/F: Lundquist/Johnson, move to amend Chapter 3 to include a greenbelt buffer around the Village to still be denoted on the map, **Vote: 1-6, motion failed.**

Dorschner feels there is a lot of buffers and green built in with the trails. Dorschner doesn't want to be handcuffed by putting a boundary around a certain area when the City doesn't know how that area will develop. Johnson doesn't feel that having that specifically on the map would be helpful. Hartley feels that if it is applied inside the MUSA, it forces more density somewhere else. Weeks stated that the greenbelt was from the previous comprehensive plan and was not very well defined.

M/S/F: Pearce/Lundquist, move to amend Chapter 3 of the Comprehensive Plan to change the guidance of the property North of 5<sup>th</sup> Street and East of Keats to Medium Density Residential, **Vote: 2-5, motion failed.**

Dorschner does not support the motion because he does not feel it will be harmful to the surrounding property owners. It is across a main arterial street, and the same concerns were raised by this development on the other side with an apartment building. The numbers have to be met, and if this property is changed, the density will need to be moved. Weeks stated that the sewered areas need to be developed with densities to pay for the infrastructure. The mixed use is to help invite commercial and allow some flexibility. Handt pointed out that the line for 5<sup>th</sup> Street is on the map arbitrarily. The City will not know exactly where 5<sup>th</sup> Street will be built until the development comes through.

M/S/P: Dodson/Dorschner, move to amend Chapter 3 of the Comprehensive Plan to include both proposed and existing flyways on the map, **Vote: 7-0, motion carried unanimously.**

M/S/P: Dorschner/Johnson, move to accept Chapter 3 of the Comprehensive Plan as amended and recommend for City Council approval, **Vote: 6-1, motion carried with Lundquist voting nay. Lundquist would like the 2 amendments included and for the City Council to be aware of them.**

M/S/P: Dorschner/Johnson, move to approve Chapter 4 of the Comprehensive Plan as presented and recommend for City Council approval, **Vote: 7-0, motion carried unanimously.**

M/S/P: Hartley/Dodson, move to approve Chapter 5 of the Comprehensive Plan as presented and recommend for City Council approval, **Vote: 7-0, motion carried unanimously.**

M/S/P: Lundquist/Dorschner, move to approve Chapter 6 of the Comprehensive Plan as presented and recommend for City Council approval, **Vote: 7-0, motion carried unanimously.**

M/S/P: Lundquist/Hartley, move to approve Chapter 7 of the Comprehensive Plan as presented and recommend for City Council approval, **Vote: 7-0, motion carried unanimously.**

M/S/P: Dorschner/Lundquist, move to approve Chapter 8 of the Comprehensive Plan as presented and recommend for City Council approval, **Vote: 7-0, motion carried unanimously.**

M/S/P: Lundquist/Dorschner, move to approve Chapter 9 of the Comprehensive Plan as presented and recommend for City Council approval, ***Vote: 7-0, motion carried unanimously.***

M/S/P: Lundquist/Dorschner, move to approve Chapter 10 of the Comprehensive Plan as presented and recommend for City Council approval, ***Vote: 7-0, motion carried unanimously.***

M/S/P: Dodson/Hartley, move to change the term ISSTS to SSTS for the community septs and would like it spelled out vs an acronym, ***Vote: 7-0, motion carried unanimously.***

M/S/P: Johnson/Dodson, move to conduct an ongoing review of chapter 150 in light of the recent water issues, ***Vote: 7-0, motion carried unanimously.***

M/S/P: Dorschner/Hartley, move to approve Chapter 11 of the Comprehensive Plan as amended and recommend for City Council approval, ***Vote: 7-0, motion carried unanimously.***

M/S/P: Hartley/Dodson, move to recommend approval of the Comprehensive Plan as amended and recommend for City Council approval for adjacent jurisdictional review, ***Vote: 7-0, motion carried unanimously.***

The Planning Commission thanked the consultant for all of their time to come up with a plan that is very well done.

#### **Business Item – Self Storage facility discussion**

Becker started her presentation regarding self-service storage. Should self-service storage be removed as an allowed use within the Business Park and Commercial Zoning districts? With the 2040 draft plan, this use would not be consistent. It would not provide the number of jobs necessary per acre. It might be more appropriate for the Mixed Use Commercial.

Dorschner is concerned that with the existing self-storage business, how many more we need. This use takes up a lot of land for the tax base that we get out of it. Hartley stated that as a City, we want to maximize the value of our commercial land. Johnson stated that the storage facilities typically are interim uses that turn into something else down the road of more value.

Weeks is wondering if it is taken out of that part of the code and the existing ones become non-conforming can they come in for a variance for expansion. Becker stated that they would not be allowed to expand because you cannot do a use variance. They

have, however, indicated with the site plan submitted with their Conditional Use Permit, where future buildings could be located. They would be allowed to expand per this site plan.

Dorschner stated that self-service storage facilities do not employ many people, so to meet employment numbers and bring vitality to Lake Elmo, this use is not the way to do it.

Dodson is leaning towards adding additional standards. Becker does not understand how adding standards would address the concerns regarding low tax base and low employment rates.

Weeks feels that the Comprehensive Plan is trying to help the City in terms of tax base and employment, which would be a good thing for the City. Weeks feels that if it is taken out of the code, they could look at possibly adding to the mixed use possibly in a smaller area, or not at all. Johnson is concerned about not allowing certain types of businesses based on certain criteria.

#### **City Council Updates – May 15, 2018 Meeting**

- a. 2040 Comprehensive Plan Extension Request
- b. Golf Cart Ordinance – passed
- c. Accessory Structure update – passed
- d. Variance 9369 Jane Road – passed
- e. Easton Village 4<sup>th</sup> Final Plat and Developer Agreement - passed

#### **Staff Updates**

- 1. Upcoming Meetings
  - f. June 4, 2018
  - g. June 18, 2018

Meeting adjourned at 10:09 pm

Respectfully submitted,

Joan Ziertman  
Planning Program Assistant



**City of Lake Elmo  
Planning Commission Meeting  
Minutes of June 4, 2018**

Chairman Dodson called to order the meeting of the Lake Elmo Planning Commission at 7:00 p.m.

**COMMISSIONERS PRESENT:** Emerson, Kreimer, Dodson, Lundquist, Weeks, & Hartley

**COMMISSIONERS ABSENT:** Pearce, Dorschner & Johnson

**STAFF PRESENT:** Planning Director Becker

**Approve Agenda:**

M/S/P: Lundquist/Hartley, move to approve agenda as presented, ***Vote: 6-0, motion carried unanimously.***

**Public Hearing – Final Plat and Planned Unit development PUD Plans and Easement Vacation**

Becker started her presentation regarding the final plat and final PUD plans for the Royal Golf 2<sup>nd</sup> addition. This addition is for 64 residential lots, including 22 traditional single family detached lots and 38 villa lots for detached single family townhomes. One change from the preliminary plat is that some of the original single family lots are being changed to villa lots and generally the neighbors are in favor of this change.

Becker went through some of the points of this development including that the density is consistent with the preliminary plat. The outlots that will be city owned must be dedicated to the City at the time of the plat being recorded. The developer is reducing the number of trees being planted and has agreed to pay the City \$500 of parkland dedication for each required tree not planted. Most of the conditions of approval are conditions from preliminary plat not yet met. There is also a request for an easement vacation, and new easements will be put in place.

Weeks asked about the restrictive covenant on outlot B. Becker stated that is a city owned outlot and it is just to ensure there is no grading or anything that disturbs the natural vegetation.

Hartley asked if there is a conservation easement, does the City understand that to protect those easements, they will need to be monitored at least once a year. Becker

clarified that they are allowed to place a restrictive covenant as approved by the City; it does not necessarily have to be a conservation easement.

Dodson asked about the size of the Villa lots and if they could go smaller to get density numbers up. Becker stated that is as small as they can go per the approved preliminary plan. Weeks asked about the comment that there was significant testimony that 20<sup>th</sup> Street is already dangerous without additional traffic. Weeks stated that when she drives that road it is pretty quiet. Lundquist stated that part of the issue is that there is no shoulder, so walking and biking is dangerous.

Hartley is wondering if condition of approval 19 and 26 are redundant. Becker stated that this is the resolution that was already passed and is just being stated what the progress on the preliminary conditions are.

Dodson asked about the HOA and sub HOA's. He is concerned if separate villas have their own HOA boards. Becker doesn't think that is something the city can govern.

Dodson asked the developer about the HOA's. Jim Felton, Royal Golf, stated that it is structured that way because they are different types of products with different levels of maintenance and they are separated by streets. Felton stated that they are already in place for phase I. The HOA's will be added to with each phase.

Public Hearing opened at 7:27 pm

No one spoke and there were no written comments.

Public Hearing closed at 7:28 pm

Lundquist thinks the development is phenomenal and the plan looks on target.

Hartley stated that his concern is the swapping out of one density of housing for another. Becker stated that the preliminary plans have been revised to reflect the change. Weeks stated that the villa product might be selling better.

M/S/P: Lundquist/Kreimer, move to recommend approval of the Royal Golf Club at Lake Elmo 2<sup>nd</sup> Addition Final Plat and PUD Plans based on the findings of fact and conditions outlined in the staff report, ***Vote: 6-0, motion carried unanimously.***

M/S/P: Lundquist/Kreimer, move to recommend approval of the easement vacation request to vacate an existing drainage and utility easements over Outlots R, P and O, subject to condition of approval, ***Vote: 6-0, motion carried unanimously.***

**Public Hearing – Zoning Text Amendment, Preliminary and Final Plat, Zoning Map Amendment and Conditional Use Permit**



Becker stated that at the request of the applicant, the proposed bus terminal is being tabled, but the public hearing should be opened and not closed. The applicant plans to come back to the June 18<sup>th</sup> meeting.

Public Hearing opened at 7:35 pm

M/S/P: Kreimer/Dodson, move to keep the public hearing for the bus terminal open until the June 18<sup>th</sup> meeting, **Vote: 6-0, motion carried unanimously.**

### **Public Hearing – Preliminary Plat and Zoning Map Amendment**

Becker started her presentation regarding the Preliminary Plat and Zoning Map Amendment for a ten unit single family detached home development to be called Wyndham Village as well as a Zoning Map Amendment to rezone the property from Rural Single Family Residential to Urban Low Density Residential. The existing home that is currently on the site will move to a new location and 9 new single family lots will be created. The biggest concern with the previous sketch plan was the lack of usable back yards on some of the lots with the 66 foot NSP easement that runs in the back of some lots. This reduced the number of lots on the sketch plan from 13 to 10 lots. This reduced the density from 2.17 to 1.67 units per acre.

The property is located in the greenbelt corridor. There is no specific width, but the map would indicate approximately a 200 foot width. The width was increased from 40 to 80 feet from the previous sketch plan and it is close to the buffer for Northport. The landscape plan has not been approved yet, but it is a condition of approval that the landscape plan be approved before the recording of final plat. Staff is recommending that park dedication be met with fees. There is a trail that will connect that the Northport development. The engineer has recommended a number of issues including that the amount of ROW being dedicated be expanded and that written permission be obtained for the stormwater discharge going to adjacent property. MAC is recommending that a disclosure statement be given to new home buyers about potential noise and location to the airport.

Generally the lot dimensions and bulk requirements are met with the exception of one lot that does not meet the 70 foot width requirement for this zone. It is a recommended condition of approval that the lot meet the minimum requirement. There is a Zoning Map Amendment requested to rezone the property from RS to Village Low Density. The surrounding properties are low density residential, with the minimum density requirements of 2-4 units per acre. This property would not meet the density requirements for this zone with the decreased densities so Staff is recommending that this property be rezoned to V-LDR.

Kreimer is wondering if staff has discussed the lot width for that one lot. He is ok with it being smaller. Becker stated that the developer was ok with it being a condition of approval. If they don't make the change, it would be a platting variance.

Hartley asked about the MAC's letter requiring keeping the water retention ponds free of water fowl. If this is shared with Northport, that becomes very difficult and it is also owned by the City. This sounds like the City would be on the hook to chase the geese out of there. Becker stated that it is a recommendation, not a requirement and it is the same with Northport and Easton Village. Dodson stated that he remembers that the ponds are designed with steep slopes to discourage water fowl. The open fields would have attracted even more water fowl than the ponds would.

Public Hearing opened at 7:50 pm

Kevin Schroepfer, 11520 30<sup>th</sup> Street, owns property directly to the west of this development. Schroepfer provided information from previous meetings. Schroepfer is wondering why the applicant is requesting a different zone tonight than the one that was proposed with the Comprehensive Plan Amendment. Becker stated they are proposed to be rezoned to VLDR. There was a greenbelt buffer that was shown on the Southern portion of this development. The February 20<sup>th</sup> City Council meeting packet had a recommended condition of approval of having a green belt on the Southern portion of this parcel. The buffer was determined to be 80 feet. If you look at the preliminary plat, the green belt buffer does not appear to be included in lot #7 and would need to be added. Becker stated that if the City Council wants to see the buffer included on lot #7, they can make that a condition of approval. The Comprehensive Plan shows all of lot #7 being a Village green space corridor. There is no buffer on the West Side or North Side of lot #7. Should these areas have buffers since it is the perimeter of the proposed development? For the lots that abut the greenway, there should be a 20 foot setback. Schroepfer would like disclosure statements to lots 8, 9 and 10 regarding the NSP easement and the restrictions that creates for those lots. Schroepfer stated that the driveway for lot 7 running across the gas easement could create a problem in the future with that lot not having access to their property if that needs to be dug up.

Rich Coppersmith, 3075 Lisbon Ave N, is wondering if this development is approved, will he also be able to develop his property. Becker stated that all property owners have the right to apply to develop their property under the guidelines of the City. Dodson stated that for 1 acre, it is typically not worth the expense because there are fees associated with developing. Becker stated that she would have to review the property more closely to determine what the density requirements would be and if it would meet all City requirements.

Public Hearing closed at 8:06 pm

Emerson asked about the 20 foot setbacks to the green belt. Becker stated that is referencing the Urban districts that is different than Village Low Density.

Dodson is wondering how the sewer connection will be done with that gas line easement. Becker stated that is why a condition is that written permission be granted for any utilities across that. Weeks stated that this seems consistent with nearby development. Dodson stated that there are many challenges with this property and they have done a good job accommodating those challenges.

M/S/P: Kreimer/Hartley, move to recommend approval of the proposed Zoning Map Amendment to rezone 11580 30<sup>th</sup> Street North from Rural Single Family to Village Urban Low Density Residential, ***Vote: 6-0, motion carried unanimously.***

M/S/P: Kreimer/Hartley, move to recommend approval of the Wyndham Village Preliminary Plat subject to staff recommended findings and conditions of approval, ***Vote: 6-0, motion carried unanimously.***

#### **City Council Updates – None**

#### **Staff Updates**

1. Upcoming Meetings
  - a. June 18, 2018
  - b. July 9, 2018

Meeting adjourned at 8:20 pm

Respectfully submitted,

Joan Ziertman  
Planning Program Assistant



**City of Lake Elmo  
Planning Commission Meeting  
Minutes of June 18, 2018**

Chairman Dorschner called to order the meeting of the Lake Elmo Planning Commission at 7:00 p.m.

**COMMISSIONERS PRESENT:** Emerson, Pearce, Dorschner, Weeks, & Hartley

**COMMISSIONERS ABSENT:** Kreimer, Dodson, Lundquist & Johnson

**STAFF PRESENT:** Planning Director Becker & City Administrator Handt

**Approve Agenda:**

M/S/P: Weeks/Hartley, move to approve agenda as presented, ***Vote: 5-0, motion carried unanimously.***

Commissioner Emerson joined the audience as this topic could be considered a conflict of interest.

**Public Hearing – Zoning Text Amendment, Preliminary and Final Plat, Zoning Map Amendment and Conditional Use Permit**

Becker started her presentation regarding the ZMA, Preliminary and Final Plat, Bus Terminal Ordinance ZTA and Conditional Use Permit application from Stillwater Area Schools. This application is to rezone a portion of the subject property to Business Park, Preliminary and Final Plat to subdivide the property located at 11530 Hudson Blvd, ZTA to allow “bus terminal” as a conditionally permitted principal use within Business Park Zoning district and a conditional use permit to operate a school district transportation center on the subject property.

The first thing that needs to be considered is the zoning map amendment. The preliminary and final plat application cannot be approved without that. The request is to change the zoning from rural development transitional to Business Park for 11 acres of the subject property.

This property is in the MUSA area and the applicant needs to provide a plan of how to bring sewer to the site. The applicant would be responsible to bring sewer and water to the site at their cost and there might be easements that would need to be obtained. The application did not address the extension of utilities.

The Zoning Text Amendment request is to allow “bus terminals” as a conditionally permitted principal use on properties zoned Business Park. If approved, the applicant would seek a conditional use permit to authorize a permanent bus terminal on the subject property. Currently local transit is not an allowed use in any of the zoning districts. In determining if this use should be added in the business park zoning, we would look to the Comprehensive Plan.

While this use would create approximately 200 jobs on the 11 acres, the jobs being created don’t really fit in the category of jobs that this land use category is intended to have. This use does not fit the category of “high quality site and building architectural design”. Additionally it would not add to increased revenues for the community as it would be tax exempt. The use does not necessarily provide a harmonious transition to residential development as most business activities are conducted outside and there is a significant amount of traffic at peak times.

While not recommended by staff, if this application was permitted to move forward, the City would want to create standards. If this use is allowed to move forward, staff is recommending that standards be implemented to limit the use to this site only.

There is an 8000 gallon fuel tank to be relocated to the existing facility. Bulk storage over 2000 gallons may be approved by Council if not detrimental to health safety and general welfare. There are some zoning requirements specific to this and MPCA requirements. The bus washing area will need expected sewer capacity for wastewater.

Becker went through the recommended findings for denial. Staff is recommending denial based on these findings. Becker did not go through the findings for approval but stated if the Planning Commission does recommend approval, there should be conditions of approval.

Hartley asked where the location of the sewer is that would need to be run to the property. Becker showed the maps that depict the locations.

Brian Zeller, Greystone Commercial, representing Terry Emerson, has been working to find a developer interested in the whole 70 acre parcel for 4 years. When they first starting looking, this parcel was not considered commercial. They have pre-paid over \$500,000 to bring water to the site. This development would also build a new frontage road to a future controlled intersection.

Kristin Hoeheisel, Stillwater School District, stated that with the growth in Lake Elmo, there will be many more students to provide for. The school district did previously occupy this site and they were a good neighbor. The School district wants to work collaboratively with the community.

Dorschner is wondering why the school district is specifically interested in this site vs. expanding in some other location like Oak Park Heights. Hoeheisel stated that Stillwater School District serves approximately 150 square miles and their central location is off of I94. This property, location and building is a good fit for the school district.

Hartley clarified that it is not gasoline stored on site but diesel fuel. This is significant because gasoline is more dangerous than diesel fuel.

Public Hearing opened at 7:45 pm

No one spoke and there were no written comments.

Public Hearing closed at 7:46 pm

M/S/P: Weeks/Hartley, move to recommend approval of the request from Stillwater Area Public Schools for a Zoning Map Amendment to rezone Lot 1 Block 1, Four Corners from Rural Development Transitional to Business Park, **Vote: 4-0, motion carried unanimously.**

M/S/P: Weeks/Hartley, move to recommend approval of the request from Terry Emerson for the Four Corners preliminary and final plat to subdivide the property located at 11530 Hudson Blvd N in to Lot 1, Block 1, Four Corners, along with three separate outlots with the recommended conditions from staff, **Vote: 4-0, motion carried unanimously.**

Weeks feels that even though 11 acres will become tax exempt, she feels there is a greater benefit to the City and the area. Weeks stated that this would bring municipal services to this area at no cost to the City which might encourage more businesses to come to the area. Weeks stated that trips per day in comparison, Vali Hi drive-in has 800 spots. Weeks feels that the impact of the traffic for this area seems pretty small.

Hartley stated that there may come a time where the value of the land increases and this usage no longer fits. This is a relatively low impact installation that could be torn down and used for something else in the future. Hartley's only reservation is that governmental agencies do not respond to market changes as much as private entities.

Pearce feels the benefits outweigh the negatives. Dorschner also feels there is a lot of benefit and the infrastructure will be put in place which will make things move faster. Dorschner feels that in the scheme of things, 11 acres is not a lot of land.

M/S/P: Weeks/Pearce, move to recommend approval of the request from Stillwater Area Public Schools for a Zoning Text Amendment to allow a local transit as a conditional use within the Business Park zoning district with the standards as outlined in the staff report, **Vote: 4-0, motion carried unanimously.**

Hartley wants the definition to distinguish that this use is not for pickup or drop off of passengers. Dorschner feels that the standards really limit where the use would go anyway. Becker stated that it something that would go in the standards and the public hearing notice did not specify looking at the definition. Hartley stated that either place would be appropriate as long as it is included. Weeks thinks it is already covered with the school district language.

M/S/P: Weeks/Hartley, move to recommend approval of the request from Stillwater Area Public Schools for a Conditional Use Permit to allow a school district transportation center at the property located at Lot 1, Block 1, Four Corners with the conditions as recommended by Staff, ***Vote: 4-0, motion carried unanimously.***

There was discussion of if the parking lot should be paved or gravel. Becker stated that it is a standard of the zoning code that any parking lot be paved. The school district can ask for a variance from that standard if they wish. That request would require a separate application and public hearing.

#### **Public Hearing – Variance Request 8990 Lake Jane Trail**

Becker stated that the applicant has requested that this item be tabled.

Public Hearing opened at 8:27 pm

No one spoke and there were no written comments.

Public Hearing closed at 8:27 pm

#### **Public Hearing – General Planned Unit Development (PUD) Concept Plan – Camping World and Gander Outdoors**

Becker stated that the applicant has requested that this item be tabled.

Public Hearing opened at 8:28 pm

No one spoke and there were no written comments.

Public Hearing closed at 8:28 pm

M/S/P: Hartley/Weeks, move to table this item until a complete application has been received, ***Vote: 4-0, motion carried unanimously.***

#### **Public Hearing – General Planned Unit Development (PUD) Concept Plan 11530 Hudson Blvd**

Becker started her presentation regarding a request from Terry Emerson for a General Planned Unit Development (PUD) Concept Plan for a 15.77 acre commercial development which includes a park and ride and commercial development in the southeast corner of 11530 Hudson Blvd. The zoning would be both commercial and convenience commercial. The applicant has requested a PUD because it is proposing to have more than one building on one lot.

The applicant is asking to construct a park and ride facility on outlot C along with a commercial development to the North on outlot B. While a park and ride is not a commercial use, with this use, there is potential to attract more businesses. The park and ride proposes 550 parking spots, including 12 handicap parking spaces, electric charging stations, bike racks, overhead canopy and a restroom building. This property is in the MUSA and therefore municipal services would be required.

Generally this application seems to be consistent with the commercial and convenience commercial zoning districts. There is not enough information provided to determine a complete analysis if the requirements have been met. One thing that is obvious is that the park and ride parcel would be over on impervious surface of 60% maximum. There is a 20% open space requirement, but the applicant can come back and demonstrate what amenities are being provided in exchange for the flexibility of the plan.

This development will change the alignment of Hudson Blvd which is desirable by the City. An easement will need to be obtained from the North property owner as the realignment at Manning extends past the property line. There are 3 access points, with one being shared which will need to change to a right-in/right-out and center median as well as turn lanes. Water is available at Hunter's Crossing, but easements will need to be obtained across adjacent properties.

Pearce is wondering why no trail or pedestrian access is required. Becker stated that the engineer has required one to the North. Pearce is wondering if the stoplight would be part of this development. Becker stated that this development might trigger the traffic light. Handt stated that if it was determined that this development triggered a signal light, the developer would pay for it. Hartley is wondering if because this is a PUD, a lot of this is negotiated as part of the developer agreement. Becker stated that it is negotiated up front as conditions of approval. Dorschner is wondering if infrastructure including the road realignment could be considered an amenity. Becker stated that those things are a requirement of any development, so that is not unique. Hartley would argue that the road realignment would be an amenity. Handt stated that it is standard practice to require developers to put the road where they need to be.

Brian Zeller, Greystone Commercial, representing Terry Emerson, stated that it is fully anticipated by the property owner that the stoplight will be needed, but it is at least 2 years out. Zeller would argue that anyone that benefits, should share the cost.



M/S/P: Hartley/Weeks, move to recommend approval of the Four Corners 2<sup>nd</sup> addition PUD Concept Plan as requested by Terry Emerson for the southwest corner of 11530 Hudson Boulevard with recommended conditions of approval, ***Vote: 4-0, motion carried unanimously.***

There was some discussion of the cost share of the traffic light and how that would work. It would be the expectation of the city that those be paid for by the developer.

#### **Public Hearing – Zoning Text Amendment – remove self-storage facilities**

This item is proposing the removal of self-storage facilities as an allowed use within the Commercial and Business Park zoning districts.

Public Hearing opened at 9:05 pm

No one spoke and there were no written comments.

Public Hearing closed at 9:05 pm

M/S/P: Weeks/Hartley, move to recommend removal of self-storage facilities as an allowed use within the Commercial and Business Park zoning Districts, ***Vote: 4-0, motion carried unanimously.***

M/S/P: Weeks/, move to reconsider the approval for the PUD Concept Plan as requested by Terry Emerson so that the public hearing can be held, ***Vote: 4-0, motion carried unanimously.***

Public Hearing opened at 9:09 pm

No one spoke and there were no written comments.

Public Hearing closed at 9:09 pm

M/S/P: Weeks/Hartley, move to recommend approval of the Four Corners 2<sup>nd</sup> addition PUD Concept Plan as requested by Terry Emerson for the southwest corner of 11530 Hudson Boulevard with recommended conditions of approval, ***Vote: 4-0, motion carried unanimously.***

#### **City Council Updates – None**

#### **Staff Updates**

1. Upcoming Meetings

- a. July 9, 2018
- b. July 23, 2018

Meeting adjourned at 9:10 pm

Respectfully submitted,

Joan Ziertman  
Planning Program Assistant

DRAFT



## STAFF REPORT

DATE: 7/9/2018

AGENDA ITEM: 4A

CASE #

**TO:** Planning Commission

**FROM:** Emily Becker, Planning Director

**ITEM:** Verizon Wireless Telecommunications Tower Conditional Use Permit – 11351 Upper 33<sup>rd</sup> St N

**REVIEWED BY:** Garrett Lysiak, P.E., OWL Engineering and EMC Test Labs, Inc.  
Jack Griffin, City Engineer  
Kristina Handt, City Administrator

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### **BACKGROUND:**

The Planning Commission is being asked to consider a request from Verizon Wireless Communications for a Conditional Use Permit to install a new 125-foot telecommunications tower with a nine-foot lightning rod on the property located at 11351 Upper 33<sup>rd</sup> Street North. The proposed tower is the second facility that has been submitted under the Wireless Communications Ordinance that was adopted in 2009. As per the ordinance, the City has retained the services of a consulting engineer to review the plans for compliance with these requirements. With the recommendation from the City's consulting engineer, Staff is recommending approval of the Conditional Use Permit and variance requests.

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### **GENERAL INFORMATION:**

*Applicant:* Verizon Wireless, 10801 Bush Lake Rd, Bloomington, MN 55438

*Property Owners:* City of Lake Elmo

*Location:* 11351 Upper 33<sup>rd</sup> Street North (PID# 13.029.21.31.0018)

*Request:* Conditional Use Permit – Wireless Communications Facility

*Existing Land Use:* Stormwater Pond, Wooded Area

*Existing Zoning:* PF – Public Facility

*Surrounding Land Use:* East: Northern Natural Gas parcel (vacant) PF – Public Facilities, West: Single Family Residential; South: Reid Park (PF – Public Facilities); North

*Comprehensive Plan:* Public/Park

*Proposed Zoning:* No Change

*History:* The property was previously vacant land and was bought by the City

*Deadline for Action:* Application Complete – 6/4/2018  
 60 Day Deadline – 08/03/2018  
 Extension Letter Mailed – No  
 120 Day Deadline – N/A

*Applicable Regulations:* 150.110 – Wireless Communications Facilities  
 154.106 – Conditional Use Permits

## **REQUEST DETAILS/ANALYSIS:**

### **CONDITIONAL USE PERMIT**

**Request.** The City of Lake Elmo has received a request from Verizon Wireless Communications for a Conditional Use Permit to construct a new 125-foot high wireless communications tower with a 9-foot lightning rod on the property located at 11351 Upper 33<sup>rd</sup> Street North. The proposed location is owned by the City, and a large portion of it is used for stormwater purposes to serve the Village Downtown area. The tower site is proposed to be located approximately 520 feet from the north property line (620 feet from Upper 33<sup>rd</sup> Street North), approximately 45.5 feet from the east property line, and approximately 400 feet from the south property line.

**Lease Agreement Required.** If approved by Council, the applicant will enter in to a lease agreement to lease a 36 by 32 piece of land in the location described above. This space would provide room for the tower itself, an equipment platform, generator, and future LP tank. Access to the site would be gained via the private drive from Upper 33<sup>rd</sup> Street. The applicant has indicated a 20-foot wide access and utilities easement on the site plan.

**Third Party Review.** The applicant has provided detailed drawings depicting the location of the tower and accessory equipment in addition to a statement concerning compliance with the City's Wireless Communications Facility ordinance. Because this statement of compliance includes nearly all of the text from the ordinance, Staff has not attached the City's regulations as a separate document for review by the Commission. Under the ordinance, the City may request assistance in reviewing the tower proposal by a third-party expert, which was done in this case. The City has hired Garrett Lysiak of OWL Engineering, which is a communications consulting engineering firm, to review the proposal for compliance with the City's requirements. The consultant's report is attached to this memorandum with his associated attachments and supporting documentation.

### **Federal Aviation Administration (FAA) and Federal Communications Commission (FCC)**

**Authorization.** It is required per ordinance that the applicant provide FAA approval or documentation that FAA approval is not required. The applicant has provided a determination of no hazard to air navigation, attached to this report. The applicant is also required to provide and has provided radio station authorization from the FCC.

**Structural Compliance Letter.** The applicant has submitted a letter of structural compliance that indicates that the tower is designed for a Basic Wind Speed of 85 miles per hour (mph) (115 mph Ultimate) with no ice and 50 mph with ¾" radial ice and is designed to support three carriers. This letter indicates that if the wind speed were to increase beyond the design wind speed, it is highly unlikely to fail, and if it did, the most likely location of the failure would be within the upper portion of the wind shaft. The letter also indicates that the fall radius for the monopole design is less than 41 feet.

**Design.** The applicant has provided photo simulations of the tower from both Upper 33<sup>rd</sup> Street North and adjacent residential properties. It is of monopole design as required in ordinance and is grey in



color. The applicant has shown that the monopole is designed to accommodate two additional providers as required by Code.

**Proof of Need.** The applicant is required to submit a coverage/interference analysis and capacity analysis that demonstrates the need for a new facility, in addition to other information as noted in the ordinance. This documentation and analysis has been reviewed by the City's consultant, and his opinion is that the applicant has met the threshold for documenting the need for a new tower. The consultant's report is attached to this memorandum.

Verizon has indicated in its application that they have seen tremendous growth in network data usage due to 4G or LTE technology. The proposed site's objectives are to improve the levels of coverage in the City of Lake Elmo, as the area has limited coverage and is currently served by Verizon Wireless sites that are located over four miles outside of town, and to provide capacity offload to the existing Verizon Wireless site called Northdale (its east-facing sector), which is currently in exhaust. Attached maps show that Lake Elmo is situated in an area with very poor coverage currently. The applicant has also provided a Best Server coverage plot, which shows that a new site will overtake an existing high traffic area and offload the existing sector.

**Alternate Locations.** One of the key provisions in the Wireless Communications Facility ordinance is a section that establishes location requirements for new facilities, which also includes a site ranking analysis that must be observed. In order of preference, new facilities are encouraged to be located: 1) on existing towers, 2) on existing structures, 3) on existing buildings four stories or higher, 4) on utility poles over 75 feet in height, 5) on public lands and facilities, and finally 6) on private property in the City.

The applicant has addressed these preferences by trying the following alternatives:

- 1) Co-locate on the existing water tower at Langly Court North.
  - After discussing with the City, it was determined that the water tank is at full capacity and would not provide sufficient room for Verizon's equipment. Verizon also considered placing a monopole next to the existing water tower, but due to the proximity to the water tower, the antenna orientations on the proposed site would be very restrictive and pointed in such a way that reflections coming from the tower would be minimized, and this would prevent the monopole from serving in certain areas that were targeted for coverage.
- 2) VFW Ballfield.
- 3) "City Hall Clock Tower"
  - Would provide less benefit to the network and a lower coverage footprint than a location downtown and would require a higher tower height
- 4) "Soccer Field Light Pole."
  - Would provide less benefit to the network and a lower coverage footprint than a location downtown and would require a higher tower height.

**Co-Location Requirements.** The Wireless Communications Facilities ordinances states that wireless communications services shall be located on existing towers or structures which exceed 35 feet in height and which are located within the potential service area for the site being proposed by the applicant. In the event that co-location is not possible, the applicant must demonstrate that a good faith effort to co-locate on existing towers and structures was made but an agreement cannot be made. Due to the aforementioned efforts to determine alternate sites by Verizon Wireless, Staff believes that a good faith effort was in fact made. Co-location requirements may be waived by Council if it is determined that antennae and/or tower accessory equipment would cause the

structural capacity of an existing or approved tower or structure to be exceeded; if the antennae and/or tower equipment would cause interference materially impacting the usability of existing antennae or tower accessory equipment; if existing or approved towers and buildings within the applicant's search radius cannot or will not accommodate the antennae and/or tower accessory equipment at a height necessary to function reasonably as documented by a qualified radio frequency engineer; and/or other unforeseen reasons make it infeasible to locate the antennae and/or tower accessory equipment upon an existing or approved tower or building.

**Prohibited Areas.** This section of the code prohibits towers from being located on smaller residential parcels, within open space or conservation easements, within airport impact zones, or in any open space preservation district. The proposed site does not fall within any of these prohibited areas.

**Application and Review Procedures.** An applicant for a new tower must submit specific information as required by this section of the code. Of these requirements, the applicant has not presented a five-year plan for facilities in the community, and has not submitted a landscape plan that provides screening from the accessory equipment building. Staff is not recommending that either of these be required with the present application because Verizon has also submitted an additional wireless communications facilities application to place six 96" panel antennas on top of the water tank located at Ideal Avenue and 34<sup>th</sup> Street North and for reasons explained below in the Landscaping section of this report.

**Adverse Effects.** Although the tower will be visible to adjacent properties, it is in an area that is heavily wooded and is surrounded by screening. Easton Village as well as a larger parcel with a single family parcel is to the east.

**Landscaping.** Although required as part of the code, the applicant is not proposing additional landscaping, and Staff is recommending that this not be required. The site is heavily wooded, and as shown in the proposed images attached to this report, the tower would be well screened from Upper 33<sup>rd</sup> Street North and adjacent residential properties.

**Wireless Communications Tower Agreement.** The applicant will need to enter into an agreement with the City concerning the proposed tower consistent with this section of the code. This agreement will be required before construction may begin.

**Minimum Conditions.** The City Code includes several conditions as listed in the code that must be met by the applicant. The applicant has already met a number of these items through the application process.

**Recommended Findings.** The proposed use will be subject to the recently revised required findings for conditional uses, which include the following:

- 1) The proposed use will not be detrimental to or endanger the public health, safety, comfort, convenience or general welfare of the neighborhood or the city. *The tower has been engineered to withstand high winds and has a fall zone that will not cause it to fall on an adjacent property.*
- 2) The use or development conforms to the City of Lake Elmo Comprehensive Plan. *The property is guided for and zoned for public facilities, in which wireless communication facilities are an allowed use.*
- 3) The use or development is compatible with the existing neighborhood. *The wireless communication facility will be screened with existing trees.*



- 4) The proposed use meets all specific development standards for such use listed in Article 7 of this Chapter. *The proposed use meets almost all requirements of the City's Wireless Communications Facilities ordinance except for the required height and setback from property lines, for which the applicant has requested variances.*
- 5) If the proposed use is in a flood plain management or shoreland area, the proposed use meets all the specific standards for such use listed in Chapter 150, §150.250 through 150.257 (Shoreland Regulations) and Chapter 152 (Flood Plain Management). *The proposed use is not in a flood plain management or shoreland area.*
- 6) The proposed use will be designed, constructed, operated and maintained so as to be compatible in appearance with the existing or intended character of the general vicinity and will not change the essential character of that area. *The proposed tower will be heavily screened by existing trees and will not change the essential character of the neighborhood.*
- 7) The proposed use will not be hazardous or create a nuisance as defined under this Chapter to existing or future neighboring uses. *The proposed use will be setback further from the property line than the fall zone and so will not be hazardous. It will be well screened and fenced so as to not create a nuisance and discourage climbing.*
- 8) The proposed use will be served adequately by essential public facilities and services, including streets, police and fire protection, drainage structures, refuse disposal, water and sewer systems and schools or will be served adequately by such facilities and services provided by the persons or agencies responsible for the establishment of the proposed use. *The proposed use has adequate access, and the Fire Department has reviewed the application and does not see an issue, as access can be achieved if need be through the fence.*
- 9) The proposed use will not create excessive additional requirements at public cost for public facilities and services and will not be detrimental to the economic welfare of the community. *The City will enter in to a lease agreement for which it will receive a negotiated amount.*
- 10) The proposed use will not involve uses, activities, processes, materials, equipment and conditions of operation that will be detrimental to any persons, property or the general welfare because of excessive production of traffic, noise, smoke, fumes, glare or odors. *The proposed use will not create excessive production of traffic, noise, smoke, fumes, glare or odors.*
- 11) Vehicular approaches to the property, where present, will not create traffic congestion or interfere with traffic on surrounding public thoroughfares. *There is an existing access road that will be utilized until such time the cul-de-sac providing connection from Easton Village is constructed.*
- 12) The proposed use will not result in the destruction, loss or damage of a natural or scenic feature of major importance. *The proposed use will not result in in any destruction, loss or damage or a natural or scenic feature of major importance.*

**Recommended Conditions.** In reviewing this list, Staff finds that the applicant will be able to comply with the required findings in order to issue a conditional use permit. Please note that the Staff recommendation includes the following conditions of approval:

- 1) The applicant shall enter into a wireless communications tower agreement that addresses all items listed in Section 150.121 of the Lake Elmo City Code addressing wireless

- communications facilities with the City prior to the issuance of a building permit for the proposed facility.
- 2) The applicant must submit proof of liability and worker's compensation insurance.
  - 3) Monopole shall be constructed of, or treated with, corrosive resistant material.
  - 4) An agreement providing for co-location and 6-month removal of unused and/or obsolete towers shall be attached and become part of the permit.
  - 5) The addition of antennas and associated equipment of an additional provider to an existing permitted tower shall be considered co-location and shall require a zoning permit and site plan approval. An amendment to a conditional use permit shall typically not be required.
  - 6) All towers shall be reasonably protected against unauthorized climbing. The area around the base of the tower and guy wire anchors shall be enclosed by a fence with a minimum height of 6 feet with a locked gate.
  - 7) All obsolete or unused towers and accompanying facilities shall be removed within 6 months of the cessation of operations at the site unless a time extension is approved by the City. After the facilities are removed, the site shall be restored to its original or an improved state which includes removal of all concrete to 6 feet below normal grade and surrounding area returned to normal grading. Electronic equipment shall not be removed in advance of removal of obsolete or unused towers. To ensure compliance, the applicant must submit a performance bond or letter of credit in an amount sufficient to cover all removal costs as determined by the city prior to the issuance of a building permit for the facility. Failure to remove the structure shall be cause for the city to remove the tower and associated equipment and assess the cost against the required bonding or letter of credit instrument.
  - 8) The city shall conduct a final inspection of the site to ensure that all requirements of the City Code and all conditions of approval attached as part of the wireless communications permit are met prior to the start of operation of the facility.
  - 9) For installations of a facility in an area that could potentially be accessed by the public (including rooftop installations or other locations that would be considered public versus occupational) a radio frequency hazard analysis and a yearly report must be submitted before December 31 of each year showing the results of on-site measurements at the site. A registered professional engineer hired by the provider must sign these measurements and report. At a minimum, the report must document any changes to the site over the course of the previous year.
  - 10) All lighting associated with the facility shall comply with the City's lighting ordinance. The wireless communications tower shall not be illuminated by artificial means, as it is not required by the Federal Aviation Administration.
  - 11) The area around the base of the tower and guy wire anchors shall be enclosed by a fence with a minimum height of six feet with a locked gate.
  - 12) Building permits shall be applied for and issued before any construction is started.
  - 13) The applicant shall be compliant with all other minimum conditions outlined in Section 150.123 of the Lake Elmo City Code addressing wireless communications facilities.
  - 14) The applicant shall enter in to a lease agreement approved by Council for both this site and the water tower site at the corner of Ideal Avenue North and 34<sup>th</sup> Street North.
  - 15) The applicant shall design the accessory equipment building to accommodate any additional equipment that may be needed by additional carriers on the tower.

## VARIANCE REQUESTS



**Requests.** The applicant is requesting three variances:

1) *Maximum height*

- The maximum allowed tower height in the PF – Public Facilities District is 125 feet. The applicant is proposing a 125-foot tower with a 9-foot lightning rod. The applicant has indicated that if the tower and lightning rod did not exceed 125 feet, the tower height would decrease the antenna's centerline and its effectiveness. The lightning rod is for safety reasons to divert lightning during a lightning event. Visually, the rod is not generally not visible against the sky. The wireless communications facilities ordinance states that Council may increase the maximum height of a wireless communications facility by 50 feet within the public facilities district provided that an applicant is able to demonstrate a need for a higher facility and/or the additional height will serve a public interest in allowing fewer towers to serve a given area. Staff believes that this provision has been met.

2) *Setback from property line*

- Towers are required to be setback a distance equal to the tower height from all property lines, and all accessory structures are required to be setback at least twenty feet from all side yards and rear property lines. The center of the tower to the property line to the east is setback 45.5 feet and so does not meet this standard by 88.5 feet. This standard is met from all other property lines, as the tower is setback approximately 520 feet from the north property line, 400 feet from the south property line, and 680 feet from the west property line. As noted earlier in the report, the fall zone for this tower is 41 feet, and so this setback should not pose a safety hazard. Additionally, the existing house on the property to the east is setback approximately 245 feet from the western property line. As for accessory structures and equipment, the pad mounted transformer is setback approximately 16 feet from the property line, the generator is setback 24 feet from the property line, and the equipment platform is setback approximately 23 feet from the property line.

3) *Expiration date of conditional use permit and variance*

- The applicant has indicated on the application that there is a lengthy construction process involving ordering of materials, procuring general contractors, and constraints with construction seasons and so is requesting a variance from the standard in the Zoning Code which states that a variance shall expire if work does not commence within twelve months of the date granting such variance. While there is a provision that allows extension requests for up to one year after this expiration date, the applicant would like to ensure that this extension will be granted and so is requesting this variance. The Zoning Code also states that if substantial construction has not taken place within 12 months of the date on which the conditional use permit was granted, the permit is void except that, on application, the Council, after receiving recommendation from the Planning Commission, may extend the permit for such additional period as it deems appropriate.

**Recommended Findings.** An applicant must establish and demonstrate compliance with the variance criteria set forth in Lake Elmo City Code Section 154.017 before an exception or modification to city code requirements can be granted. These criteria are listed below, along with comments from Staff regarding applicability of these criteria to the applicant's request.

- 1) **Practical Difficulties.** A variance to the provision of this chapter may be granted by the Board of Adjustment upon the application by the owner of the affected property where the strict enforcement of this chapter would cause practical difficulties because of circumstances unique to

the individual property under consideration and then only when it is demonstrated that such actions will be in keeping with the spirit and intent of this chapter. Definition of practical difficulties - "Practical difficulties" as used in connection with the granting of a variance, means that the property owner proposes to use the property in a reasonable manner not permitted by an official control. *A majority of the site is used for the City for stormwater ponding, and so this is the only site on the parcel that would be suitable to construct the monopole. The applicant has reviewed a number of alternatives to the site and found this to be the most suitable.*

- 2) **Unique Circumstances.** The plight of the landowner is due to circumstances unique to the property not created by the landowner. *The parcel is unique in that most of it is being used for stormwater ponding for the downtown area. The property became a stormwater pond prior to it being considered a location for a monopole. Lowering the height of the tower would decrease its effectiveness, and the lightning rod is needed for safety reasons.*
- 3) **Character of Locality.** The proposed variance will not alter the essential character of the locality in which the property in question is located. *The monopole will be well screened from the public right-of-way and adjacent properties. The additional height of the lightning rod will not be visible against the sky.*
- 4) **Adjacent Properties and Traffic.** The proposed variance will not impair an adequate supply of light and air to properties adjacent to the property in question or substantially increase the congestion of the public streets or substantially diminish or impair property values within the neighborhood. *The proposed monopole will do none effect the supply of air and light, increase congestion or impair property values within the neighborhood.*

#### **OPTIONS:**

- Recommend approval of the conditional use permit and variance with recommended conditions of approval.
- Recommend approval of the conditional use permit and not recommend some or all of requested variances with the condition that the plans be amended to conform to appropriate standards, providing findings for denial.
- Do not recommend approval of conditional use permit or variance requests providing findings for denial.

#### **RECOMMENDATION:**

Staff is recommending that the Planning Commission recommend approval of the request from Verizon Wireless for a Conditional Use Permit to install a new 125-foot telecommunications tower with 9-foot lightning rod on the site property located at 11351 Upper 33<sup>rd</sup> Street North with recommended conditions of approval.

***"Move to recommend approval of the request from Verizon Wireless for a Conditional Use Permit to install a new 125-foot telecommunications tower with 9-foot lightning rod on the site property located at 11351 Upper 33rd Street North with recommended conditions of approval."***

Staff also recommends that the Planning Commission recommend approval of the requests from Verizon Wireless for a variance from the maximum height requirement, minimum setback requirement, and conditional use permit and variance expiration dates.

***"Move to recommend approval of the request from Verizon Wireless for a variance from the maximum height requirement, minimum setback requirement, and conditional use permit and variance expiration dates."***

**ATTACHMENTS:**

1. Report from OWL Engineering (Garrett Lysiak) with Attachments
2. Application and Cover Letter
3. Narrative
4. Plans
5. Topo Map
6. Site Analysis
7. Photo Simulations
8. FAA Approval
9. FCC Approval





**OWL ENGINEERING & EMC TEST LABS, INC.**

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CONSULTING COMMUNICATIONS ENGINEERS • EMC TEST LABORATORIES

5844 Hamline Avenue North, Shoreview, MN 55126  
651-784-7445 • Fax 651-784-7541

**REPORT REGARDING CONSTRUCTION  
OF A 134-FOOT COMMUNICATIONS TOWER**

**AT 33<sup>RD</sup> CIRCLE NORTH**

**LAKE ELMO, MINNESOTA**

**FOR VERIZON WIRELESS**

**PREPARED BY:**

**GARRETT G. LYSIAK, P.E.**

**JUNE 27, 2018**



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## EXECUTIVE SUMMARY

The City of Lake Elmo Ordinance for wireless telecommunications towers requires the demonstration of a need (gap in coverage) or a showing of need for the proposal. This analysis demonstrates the proof of need requirement is satisfied. This new tower will eliminate both coverage and capacity problems. It would provide the required Personal Communication System ("PCS") coverage to eliminate the present existing poor coverage area for the expanded service.

There are no existing towers identified that could provide the required coverage and eliminate the predicted coverage gap. All towers in the nearby area were examined and none were found that could be used. Due to the lack of any existing towers or support structures in the vicinity, the new site would need to locate very near to the proposed location in order to fill the coverage gap.

There is no evidence to show this new tower will cause interference to the present frequencies and any Public Safety or City communications systems. There is no demonstrated RF Radiation hazard to the public, even when other additional PCS systems are added to the study.

As required by the ordinance, this tower will accommodate additional communications systems, and it complies with all the structural requirements of the ordinance.

The required drop zone on 100% of the height of the proposed tower to the property boundary lines is not met. However, the applicant has requested a variance of the requirement. They submitted an engineering report that shows the predicted failure height would be approximately 41-feet and I concur with this analysis.



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## **Engineering Statement**

The documents submitted by TechScope Wireless on behalf of Verizon to The City of Lake Elmo for a new 134-foot tower were reviewed for compliance with the technical requirements of the zoning ordinance. The site is located at 33<sup>rd</sup> Circle North, Lake Elmo, MN. The site location was plotted on a USGS 7.5 minute map (Figure 1 "Site Map"). In addition, an aerial photograph is included to show the proposed site location and the surrounding area (Figure 2 "Aerial Site Map").

## **Airspace Study**

Figure 3 shows the proximity to the Lake Elmo Airport. The proposed tower site was examined for any impact on the local airspace and airports. The tower height is proposed to be under 200-feet and is therefore not usually required to get Federal Aviation Administration (FAA) or Federal Communications Commission (FCC) approval, unless it is located near an airport. The proposed tower is less than one-mile from Lake Elmo Airport runways, and therefore an FAA study is required. Verizon applied for an aeronautical study and was granted an approval by the FAA. Since the FAA has already approved the monopole, the impact on private airport facilities was examined since they are not normally protected by them.

Figure 4 shows the airspace map and shows that there was no impact since there are no private facilities in the area.

## **Existing Tower Sites**

A search of both FCC and FAA databases was performed to determine the location of any potential alternate locations for the proposed monopole. Figure 5 shows the results of this search. The four nearest towers were reviewed as possible substitutes for the proposed tower. They are:

1. STC Management site is 2.7, outside search area.
2. State of MN tower is only 40-feet high.
3. Existing Verizon site already used.
4. Site was never constructed, cancelled.

Figure 6 shows the location of the identified nearby towers. All of the above towers are outside of the Search Ring and they would not provide the required signal levels to eliminate the coverage gap.



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## **Site Construction**

The site construction plans show the tower that is planned for this project. The tower drawings supplied show compliance with the requirements of ANSI<sup>1</sup>/TIA<sup>2</sup>-222-G standard which requires loading for:

1. Exposure C to the standard.
2. 90 mph basic wind, with no radial ice.
3. 50 mph basic wind with 1/2" of radial ice. (ice is considered to increase in thickness with height)
4. The tower is designed to withstand the Ultimate Wind Speed for this area of 115 mph

§150.120(D) (setbacks) requires at least a 100% setback or 134-feet from the nearest property line. The proposed tower is approximately 46-feet from the nearest property line. Verizon submitted a structural engineering study in support of a variance request to this setback requirement. This engineering, shown in Figure 7, states "minimum overall safety factor of 25%" is designed with the proposed loading on the tower."

It also states, "Should the wind speed increase beyond the capacity of the built-in safety factors, to the point of failure of one or more structural elements, the most likely location of the failure would be within the upper portion of the monopole shaft. Assuming that the wind pressure profile is similar to that used to design the monopole, the monopole will buckle at the location of the highest combined stress ratio within the upper portion. This is likely to result in the portion of the monopole above leaning over and remaining in a permanently deformed condition." My review concurs with this analysis.

The proposal shows that the tower is currently designed to accommodate two additional antenna systems antennas. This will eliminate the need for an additional new tower in the vicinity for some time.

## **Coverage Study**

In reviewing the submitted data it was determined that (Verizon) has designed its communications facilities in the Lake Elmo area with several surrounding sites providing area wide coverage. During my initial inspection of the application, it was determined that several keys pieces of information were missing and were required to analyze the predicted and existing coverage of the Verizon system. The information was provided and

<sup>1</sup> American National Standards Institute

<sup>2</sup> Telecommunications Industry Association





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I was able to complete my analysis of the application. Figure 8a shows the predicted coverage area with the new monopole. Figure 8b shows the area with the proposed monopole removed from the analysis and the predicted coverage gap is identified. Figure 8c shows the coverage with the tower height reduced to 80-feet and will not eliminate the predicted coverage gap.

## Interference Study

A search was performed using the FCC frequency database<sup>3</sup> to determine the frequency and location of any city or county public safety facilities within one-mile from the proposed tower location. Using all the identified frequencies either utilized by the city or county, an intermodulation (interference) study was performed to determine if any predicted interference products would be generated by the proposed Verizon Wireless facility. The results of the study indicate that there are no interference products predicted to be generated that would cause interference to any of the identified protected frequencies.

The study shows that there are no predicted (low order) interference intermodulation products generated from combinations of existing and proposed channels at this site. When the proposed communications facility is constructed, antenna separation, antenna pattern directionality properties and equipment filtering will further reduce the potential of intermodulation induced interference. This analysis is a mathematical study and will not account for interference mitigation that will occur due to the differences in technologies and equipment configurations and filtering. This study assumes a worst-case scenario using as many as four transmitters operating simultaneously (which is a rare occurrence).

Additionally, due to the high frequencies used on this new facility there is no predicted interference to occur on any other communication devices such as televisions, personal computers, telephones, garage door openers, security systems, and other electronic equipment.

In summary, the use of good engineering and installation practices should mitigate any interference to any nearby existing communications systems or any additional future systems on the tower and it is my opinion that the Verizon Wireless system frequencies should not cause any harmful interference problems to any of the existing City or County communications systems and is in compliance with §150.120(i) of the ordinance.

## RF Radiation Analysis

Using the data submitted by Verizon Wireless we performed a "Worst-Case" radiation analysis to determine the amount of RF energy that would be present at the base of the tower. In making our calculations, we assumed that all of the RF energy generated by the

<sup>3</sup> Federal Communications Commission, Wireless Telecommunications Bureau – "Universal Licensing System"



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facility would be directed downward and three separate antennas at maximum power levels were used for the calculations. This is not the real world situation since the antennas used by PCS systems are designed to radiate towards the horizon.

Additionally, calculations were performed including any future antenna systems on the tower and added to the total RF exposure level.

However, using this analysis method I was able to determine that the maximum level of RF radiation reaching the ground (head height) at the tower base is less than 20 percent of the ANSI standard value for the general public exposure limit and as such is not classified as an RF radiation hazard. This proposal satisfies the current Federal guidelines for RF Exposure<sup>4</sup>.

## Summary

The review of the proposed Verizon tower indicates that:

- It would provide the required wireless system coverage to eliminate the present existing poor coverage area and provide enhanced existing coverage.
- The site is not predicted to cause any interference products to any protected frequency in the area and is not predicted to be an RF radiation hazard.
- The tower is designed to accommodate two additional communications systems.
- The proposal complies with the structural requirements of the ordinance.
- Due to the lack of any existing towers or adequate support structures in the vicinity, the site would need to locate very near to the proposed location to fill the coverage gap.

Respectfully submitted,

Garrett G. Lysiak, P.E.

<sup>4</sup> FCC Office of Engineering and Technology Bulletin OET-65 Edition 97-01



(WHITE BEAR  
LAKE EAST)

092° 53' 26.9164" W  
045° 00' 56.6908" N

(STILLWATER)

HUDSON QUADRANGLE  
MINNESOTA  
TOPOGRAPHIC SERIES

(SOMERSET  
SOUTH)

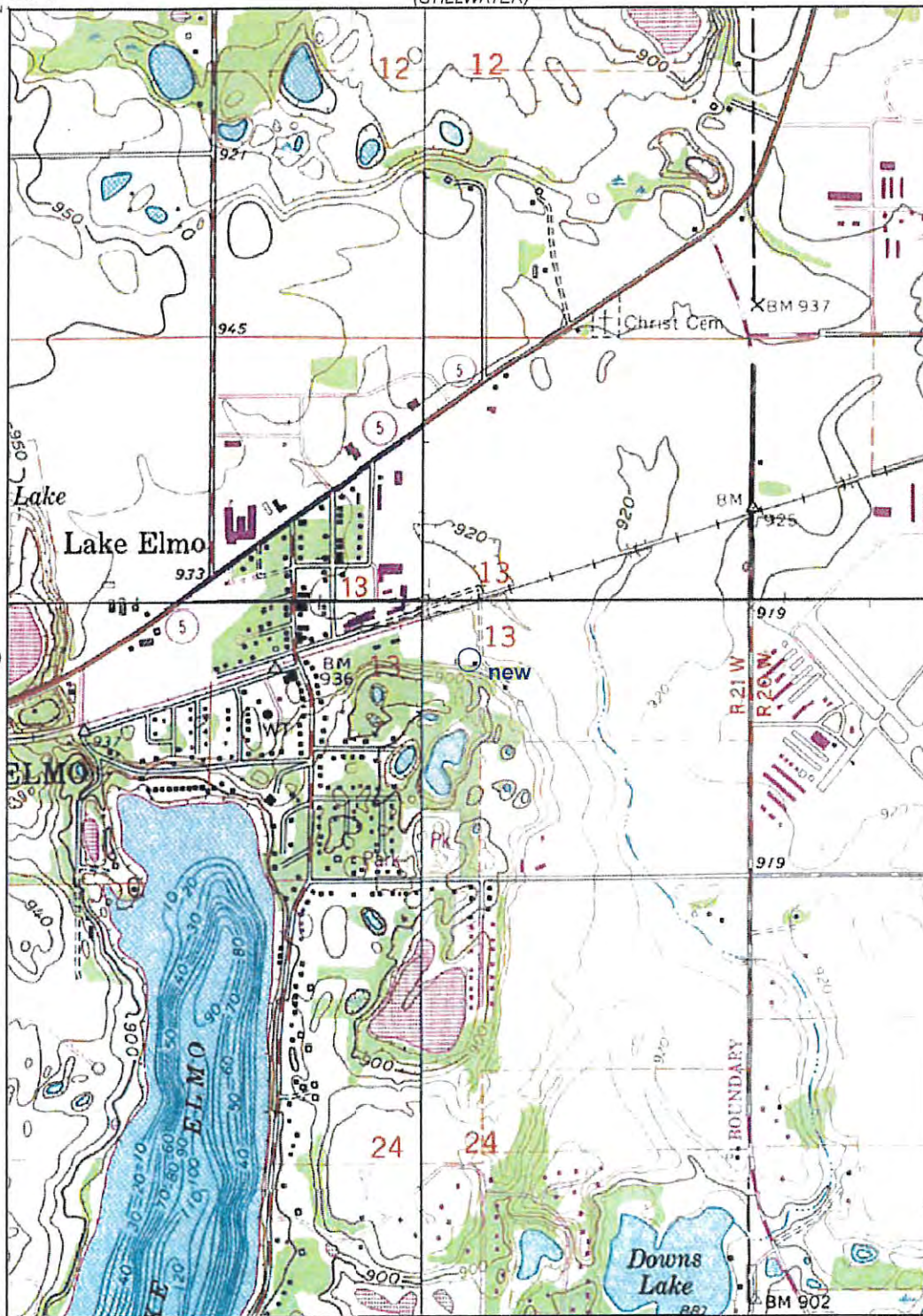
092° 51' 21.0353" W  
045° 00' 56.6908" N

(LAKE ELMO)

(NORTHLINE)

(ST PAUL PARK)

(RIVER FALLS  
WEST)



Declination

(PRESCOTT)  
SCALE 1:18056

0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7

Miles

0 1000

Yards

0 1

Kilometer

GN 0° 05' E  
MN 0° 07' W

CONTOUR INTERVAL 10 FT  
[BASE MAP VERTICAL DATUM]

HUDSON, MN  
JAN 1, 1993

**FIGURE 1 - SITE MAP**



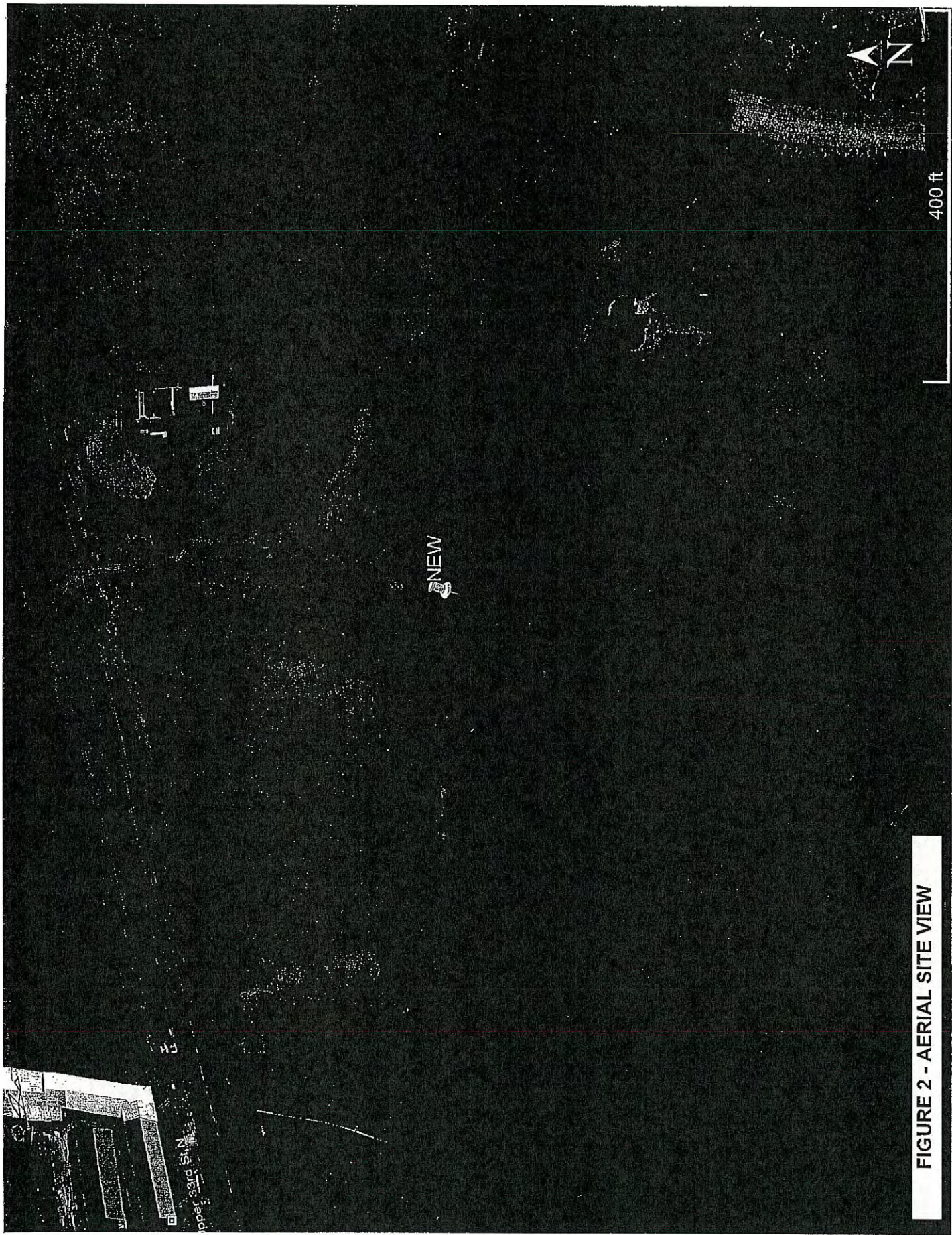


FIGURE 2 - AERIAL SITE VIEW

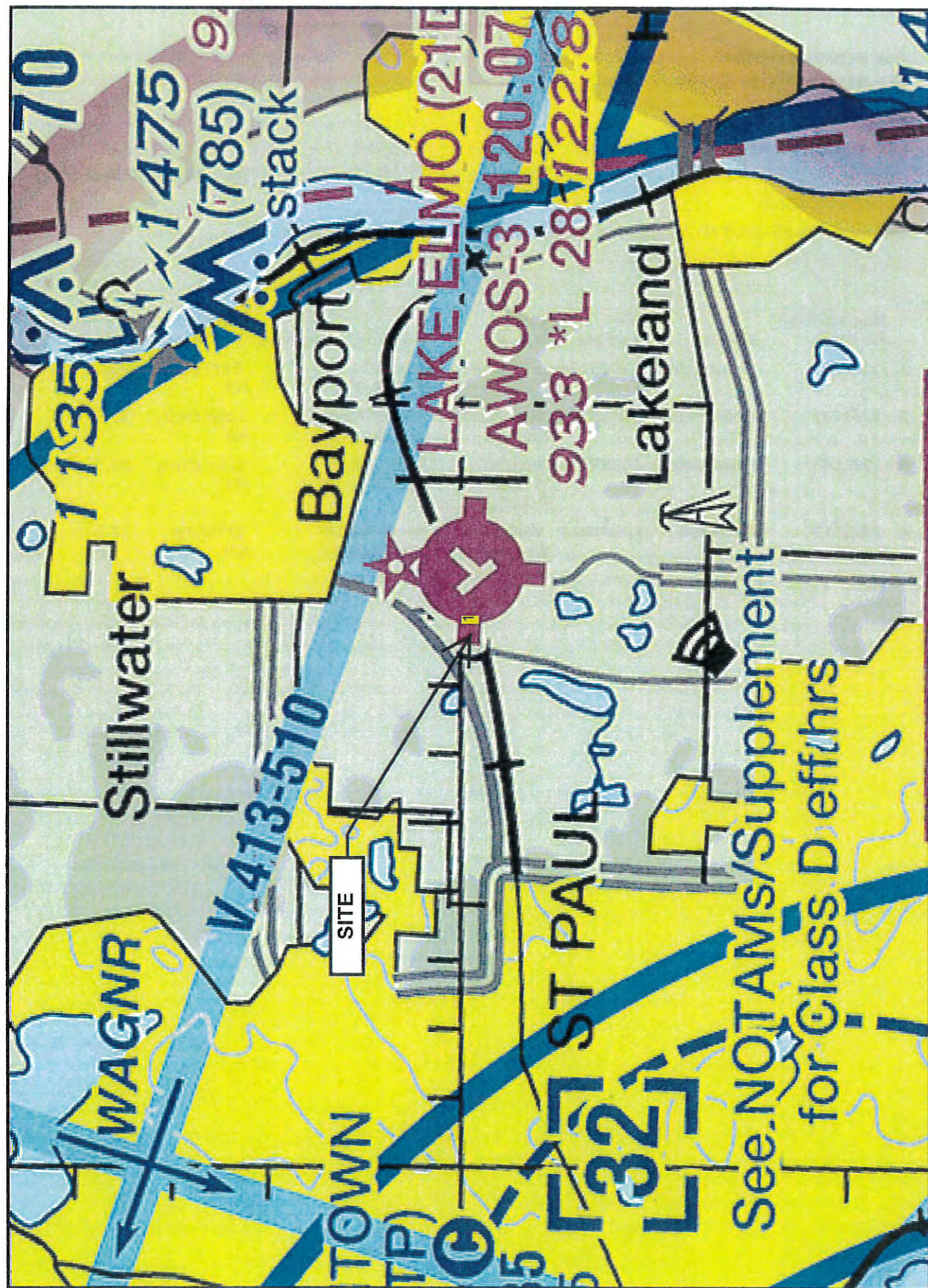




FIGURE 3 - PROXIMITY TO AIRPORT



FIGURE 4 - AIRSPACE MAP





## FIGURE 5 - EXISTING TOWER SEARCH

ASR Registration Search

### Registration Search Results

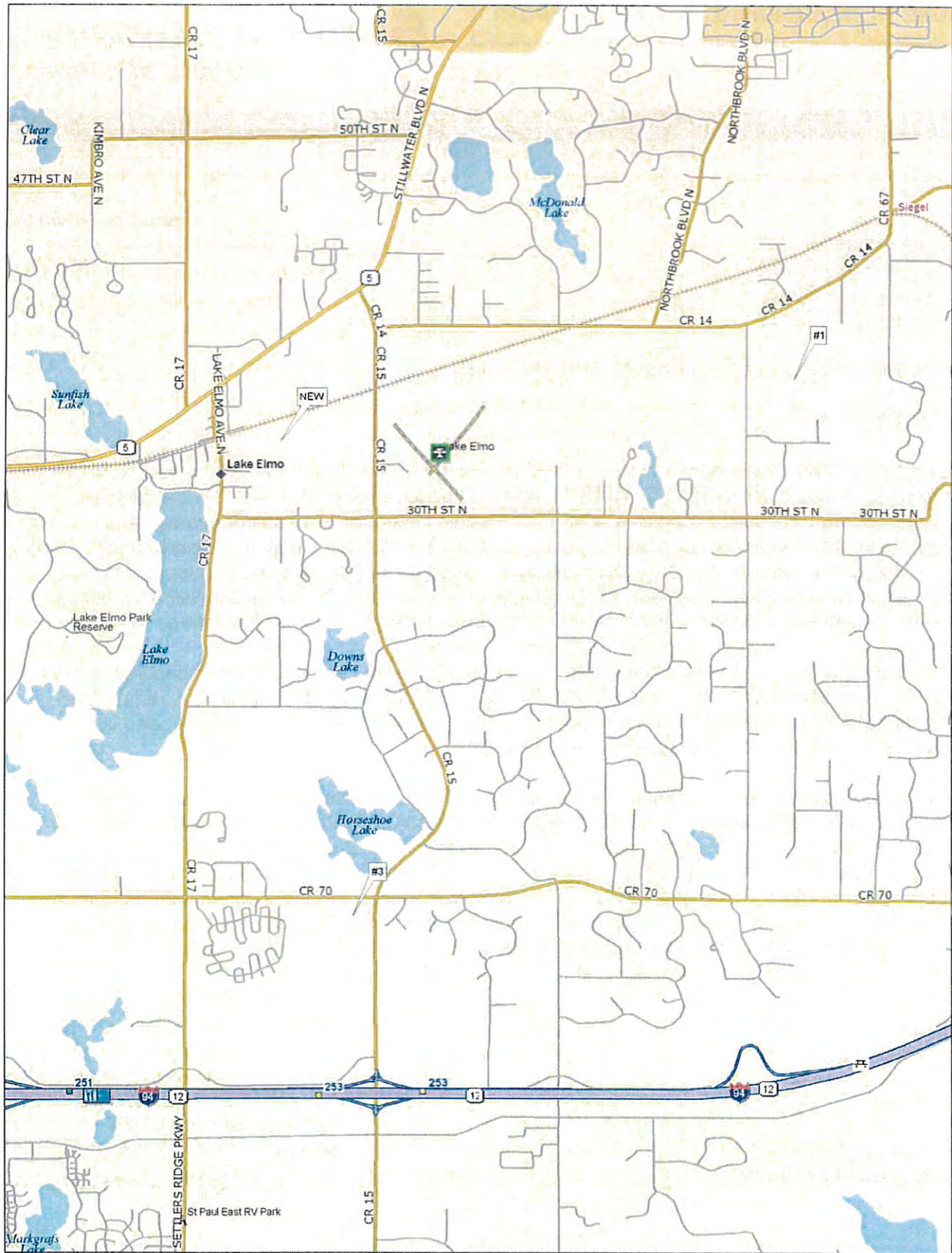
Displayed Results

**PA** = Pending Application(s)

#### Specified Search

Latitude='44-59-54.3 N', Longitude='92-52-23.5 W', Radius=4.8 Kilometers

	Registration Number	Status	File Number	Owner Name	Latitude/Longitude	Structure City/State	Overall Height Above Ground (AGL)
1	1004586	Constructed	A1025229	STC Five LLC	45-00-11.1N 092-49-03.0W	BAYTOWN, MN	33.2
2	1261231	Constructed	A0618383	Minnesota, State of	45-00-00.5N 092-51-17.5W	Lake Elmo, MN	11.3
3	1291646	Constructed	A0989054	Verizon Wireless (VAW) LLC	44-57-41.7N 092-51-53.8W	Lake Elmo, MN	39.0
4	1295513	Cancelled	A0941024	Verizon Wireless (VAW) LLC	44-59-13.1N 092-49-08.6W	Stillwater, MN	39.3



**FIGURE 6 - EXISTING TOWERS**

TN  
MH (0.4°W)

Scale 1 : 43,750  
1" = 3,645.8 ft Data Zoom 12-2



**FIGURE 7 - ENGINEERING FALL ZONE REPORT**

**Sabre Industries™**  
Towers and Poles

February 28, 2018

Mr. Brian Schriener  
Design 1 of Eden Prairie  
9973 Valley View Road  
Eden Prairie, MN 55344

RE: Proposed 125' Sabre Monopole for MIN Tickle, MN

Dear Mr. Schriener,

Upon receipt of order, we propose to design and supply the above referenced Sabre monopole for a Basic Wind Speed of 89 mph (115 mph Ultimate) with no ice and 50 mph with 3/4" radial ice, Structure Class II, Exposure Category C and Topographic Category 1 in accordance with the Telecommunications Industry Association Standard ANSI/TIA-222-G, "Structural Standard for Antenna Supporting Structures and Antennas". The monopole is to be designed to support three carriers, as shown on Design 1 drawing T-1, Revision F dated 12-6-17. The design will account for the two future carriers consisting of the same equipment as the initial carrier (Verizon).

When designed according to this standard, the wind pressures and steel strength capacities include several safety factors, resulting in an overall minimum safety factor of 25%. Therefore, it is highly unlikely that the monopole will fail structurally in a wind event where the design wind speed is exceeded within the range of the built-in safety factors.

Should the wind speed increase beyond the capacity of the built-in safety factors, to the point of failure of one or more structural elements, the most likely location of the failure would be within the upper portion of the monopole shaft. Assuming that the wind pressure profile is similar to that used to design the monopole, the monopole will buckle at the location of the highest combined stress ratio within the upper portion. This is likely to result in the portion of the monopole above leaning over and remaining in a permanently deformed condition. ***Please note that this letter only applies to the above referenced monopole designed and manufactured by Sabre Towers & Poles.*** The fall radius for the monopole design described above is less than 41 feet.

Sincerely,

Keith J. Tindall, P.E.  
Vice President of Engineering

**PROFESSIONAL ENGINEER**

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 KEITH J. TINDALL

Signature 

Date 2/28/18 License # 26342



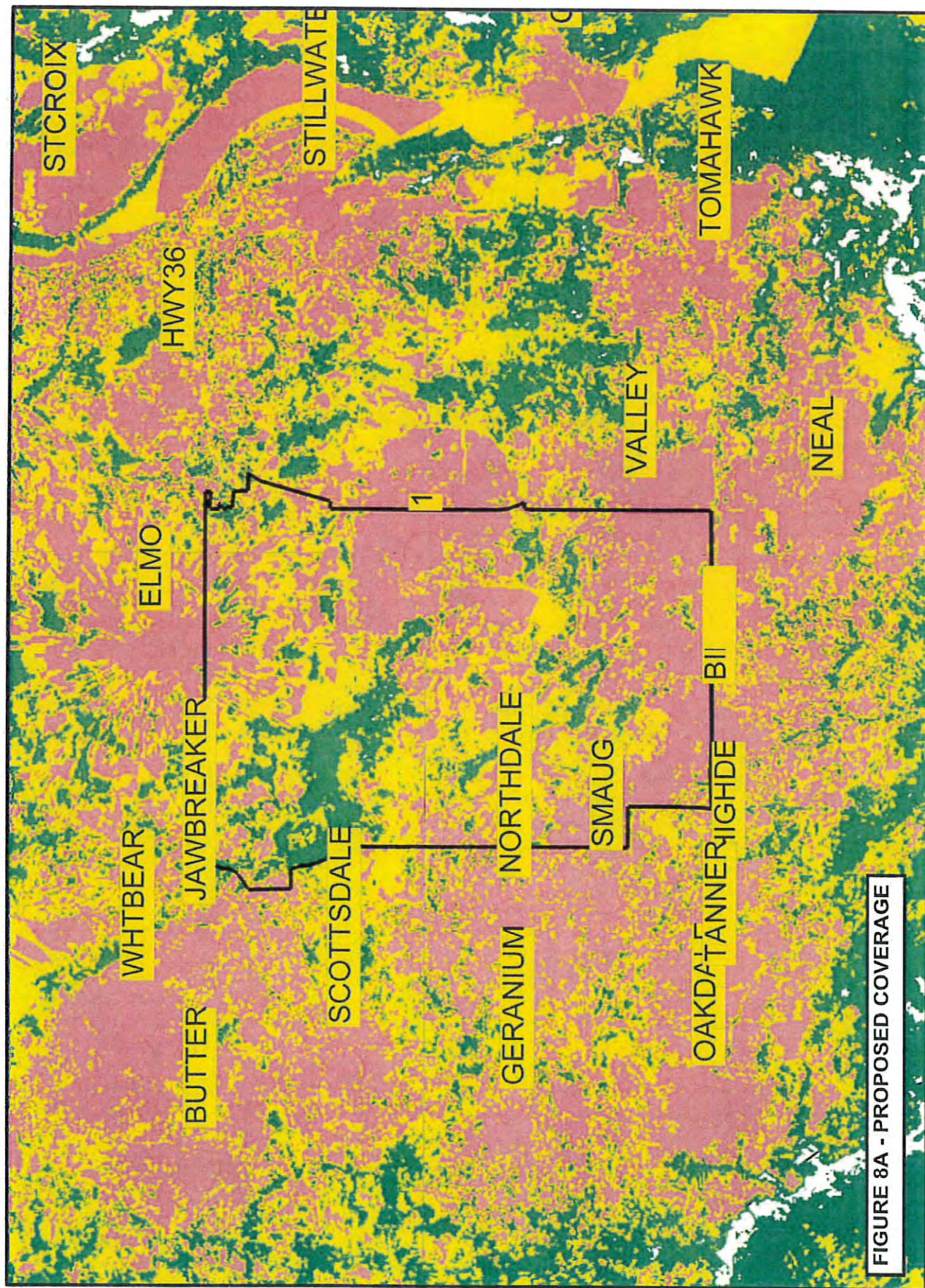


FIGURE 8A - PROPOSED COVERAGE



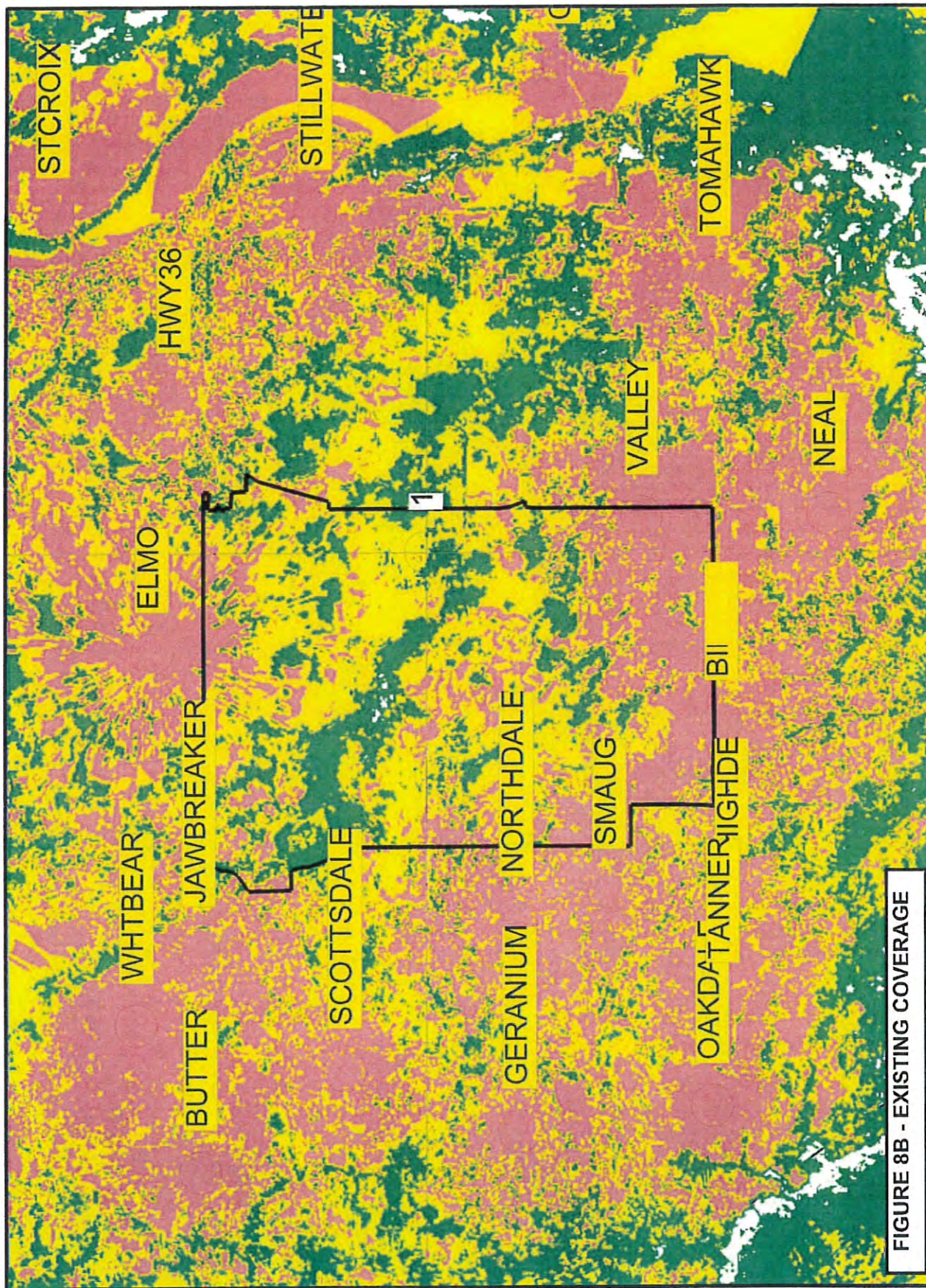
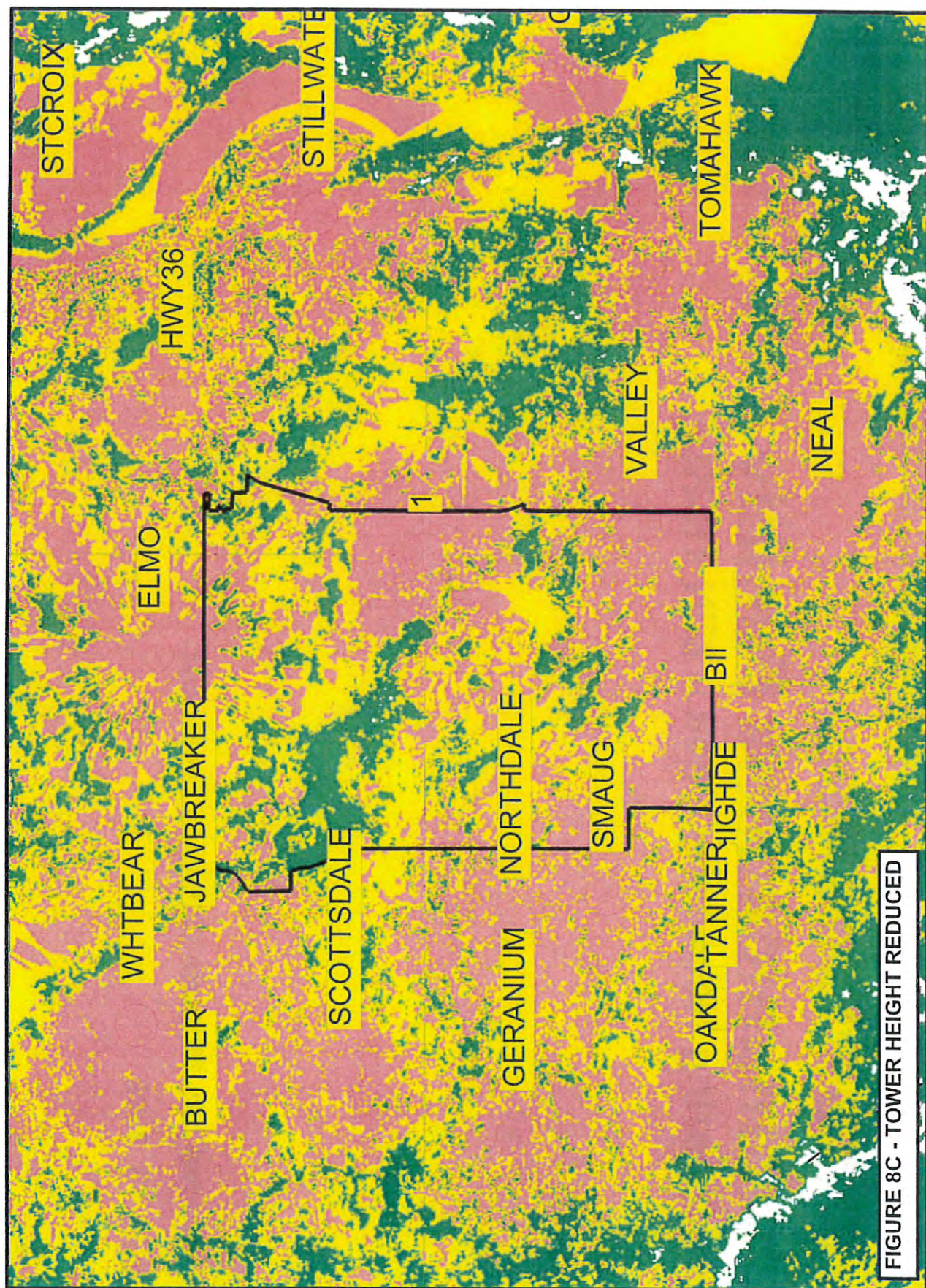


FIGURE 8B - EXISTING COVERAGE







# **Verizon Wireless Communications Facility Engineering Necessity Case – MIN TICKLE**

**Prepared by: Mihaela Oxley, RF Engineer**

**June 13, 2018**



# Project Need Overview:

The primary objective for this project is to improve service quality for residences and businesses in the city of Lake Elmo, MN along Highway 5. High inter site distances and the combined effect of varying terrain elevation and vegetation in the area prevent effective propagation of a signal with newer technologies. Detail is provided on slides 7-8 supporting this issue.

Our engineering data shows that the target area is also experiencing 4G data overloads. The existing MIN NORTHDALE site is located 4.5 miles West from the proposed project and its coverage area is shown in red on the map on page 9. The existing MIN VALLEY RANCH site is located 2.5 miles South from the proposed project and its coverage area is shown in green on page 9. These existing sites need to have some of the area they cover moved onto another site to allow it to keep performing well. The proposed project would provide capacity offload to the existing sites by taking over their cell edge coverage in the city center along Highway 5, as well as the residential area along the highway.

Additional details and explanations follow in this presentation.



## Introduction:

Coverage and/or capacity deficiencies are the two main drivers that prompt the need for a new wireless communications facility (WCF). Most WCF provide a mixture of both capacity and coverage for the benefit of the end user.

**Coverage** describes the existence or lack of wireless service in an area. The request for improved service often comes from our customers or emergency services personnel that have no service or poor service. Coverage used to refer to the ability to make or place a call in vehicles, however, as usage patterns have shifted, coverage is now determined based on whether or not sufficient WCF exist to provide a reliable signal inside of buildings and residential areas, as well. Historically, when wireless was still in its infancy, coverage was the primary means to measure the effectiveness of the network in a given area.

**Capacity** is the metric used to determine if sufficient wireless resources exist and is now the primary means to measure how a community's wireless needs are being addressed. "Five bars" no longer means guaranteed coverage and capacity because each WCF has a limited amount of resources to handle voice calls, data connections and data volume. When these limits are reached and the WCF becomes overloaded (meaning there is more demand than signal to service it), the user experience quickly degrades preventing customers from making/receiving calls or getting applications to run. A WCF short on capacity could also make internet connections time out or delay information to emergency response personnel.





## Explanation of Wireless Coverage



**Coverage** is best shown via coverage maps. RF engineers use tools that take into account terrain, vegetation, building types, and WCF specifics to model the existing coverage and prediction what we expect to see with the addition of a proposed WCF.

Coverage also changes depending on which frequencies are used. Most phones today use 3G at 800 MHz or 4G at 700 MHz spectrum which are considered low frequencies. Low frequencies can travel further distances than the higher 1900 MHz and 2100 MHz frequencies now being employed due to increased capacity demands. Operating at higher frequencies makes it necessary for carriers to install substantially more wireless facilities to achieve the same coverage as one tower operating on the lower frequencies.



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## Explanation of Wireless Capacity



**Capacity** is the amount of resources that a WCF has to service customer demand. Verizon utilizes sophisticated programs and customer feedback to monitor current usage trends and to forecast future needs. Because it takes an average of 2-3 years to complete a WCF, we have to start the process of adding a new WCF several years in advance of when the WCF will be needed.

**Location, Location, Location.** A good capacity WCF needs to be in the center of a user population which insures that traffic is evenly distributed around the WCF. A typical WCF is configured into three sectors (like a pie cut into three pieces), with each slice (sector) having 33% of the WCF resources. If one sector is under-utilized, it's resources can not necessarily be diverted to another sector. Therefore, optimal performance is only obtained when all three sectors have an even traffic distribution.





# Explanation of Wireless Data Growth

## Wireless Data Growth

Each year Verizon sees large increases in how much data its customers need. As the resolution of the pictures we send increases, the quality of the video we watch improves and the complexity of the applications grow, we commonly see tremendous growth year-over-year. A few examples below:

- "The average North American smartphone user will consume 48 GB of data per month in 2023, up from just 5.2 GB per month in 2016 and 7.1 GB per month in 2017" (*Ericsson Mobility Report, November 2017*)
- "Data traffic grew 6% between Q3 2016 and Q3 2017" (*Ericsson Mobility Report, November 2017*)
- "Around 52 percent of American households are now wireless only for voice service." (*CDC's 2016 Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December*)
- In 2016, wireless data traffic reached yet another record high. In all, traffic totaled 13.72 trillion MBs – the equivalent of 1.58 million years of streaming HD video – an increase of 4.07 trillion megabytes over 2015. Over the past two years, data use has increased 238 percent. (*2017 CTIA Wireless Snapshot, May 2017 & Based on estimates from U.S. Cellular Monthly Data Usage Estimate tool, available at <https://www.uscellular.com/data/data-estimator.html>*)

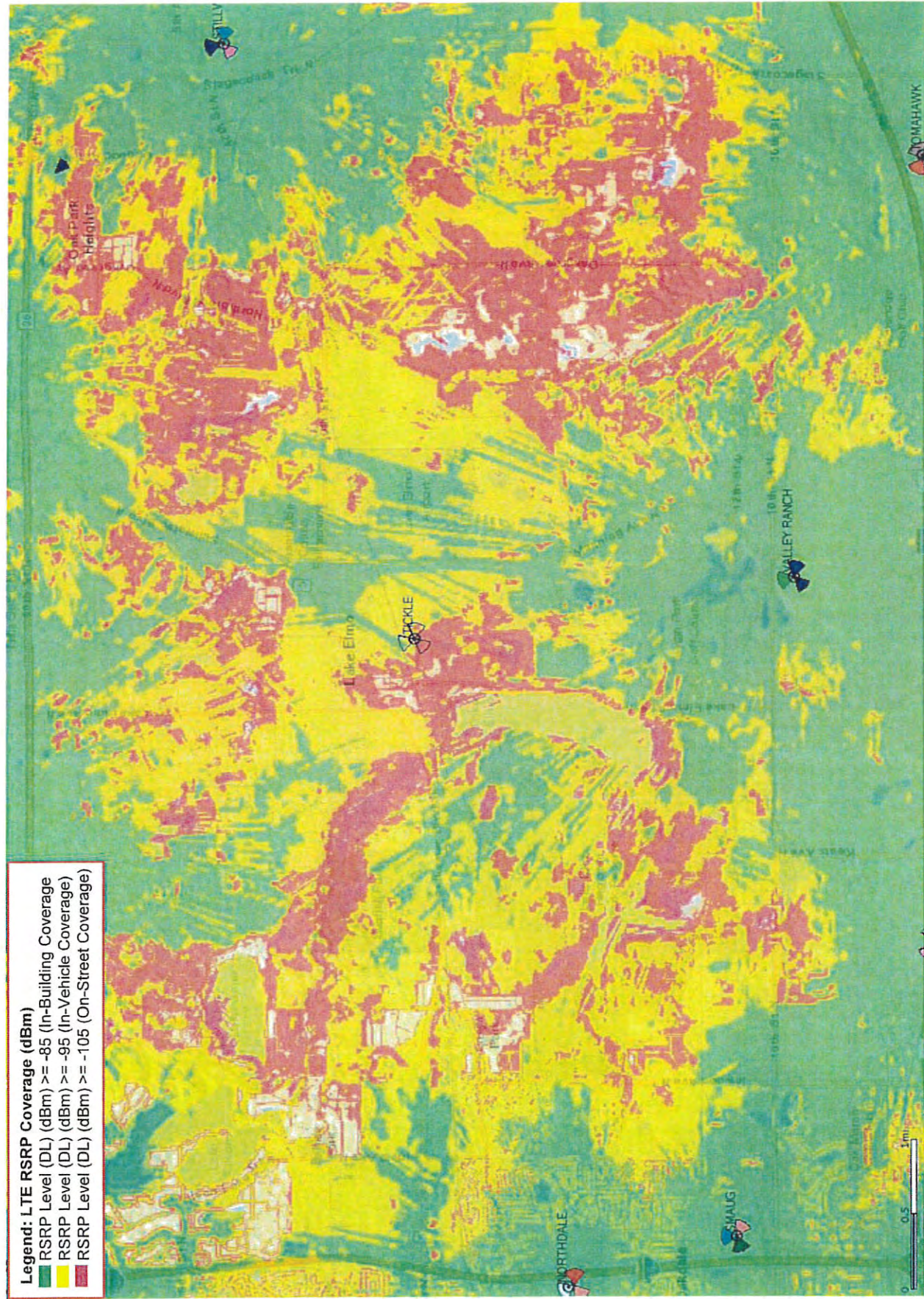
Machine to Machine communications will also increase the data burden on wireless networks, as over the next five (5) years more and more services that improve our safety and make our lives easier will be available over the wireless infrastructure, such as:

- Cars that notify 911 when an airbag deploys.
- "Driverless" cars needing traffic data and maps to reach your destination as quickly as possible.
- Medical monitors that will alert us should a loved one neglect taking their prescription drugs.
- Home alarms that notify you when your child arrives home from school.
- Smart street lights that notify the city when they are not working.
- City garbage cans that let people know when they need to be emptied.
- Tracking watches will aid in finding lost Alzheimer patients.



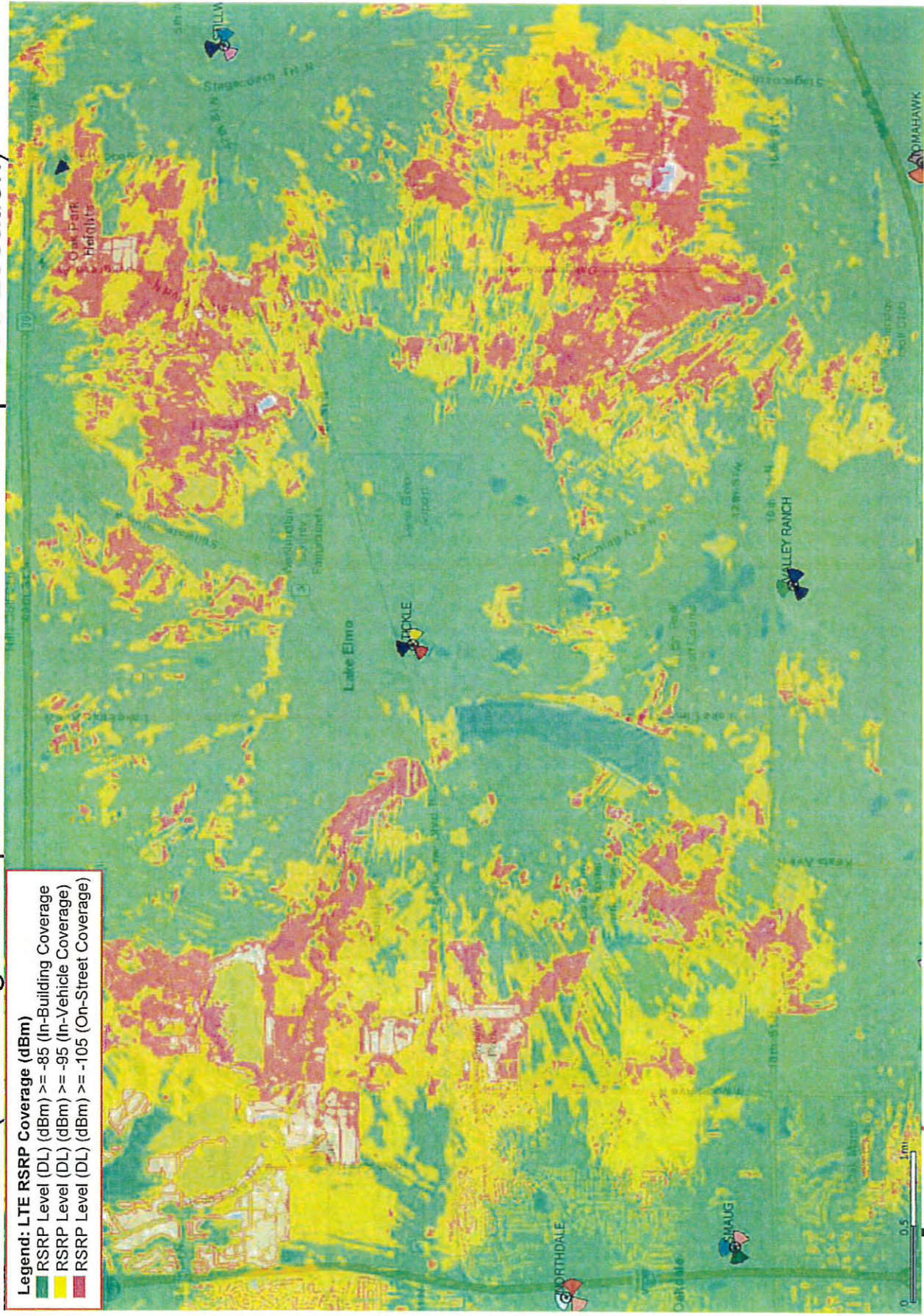


# Existing Coverage Levels





# Expected Coverage Levels (Including the Impact of the MIN TICKLE Proposed Location)





## Existing Serving Sector Maps

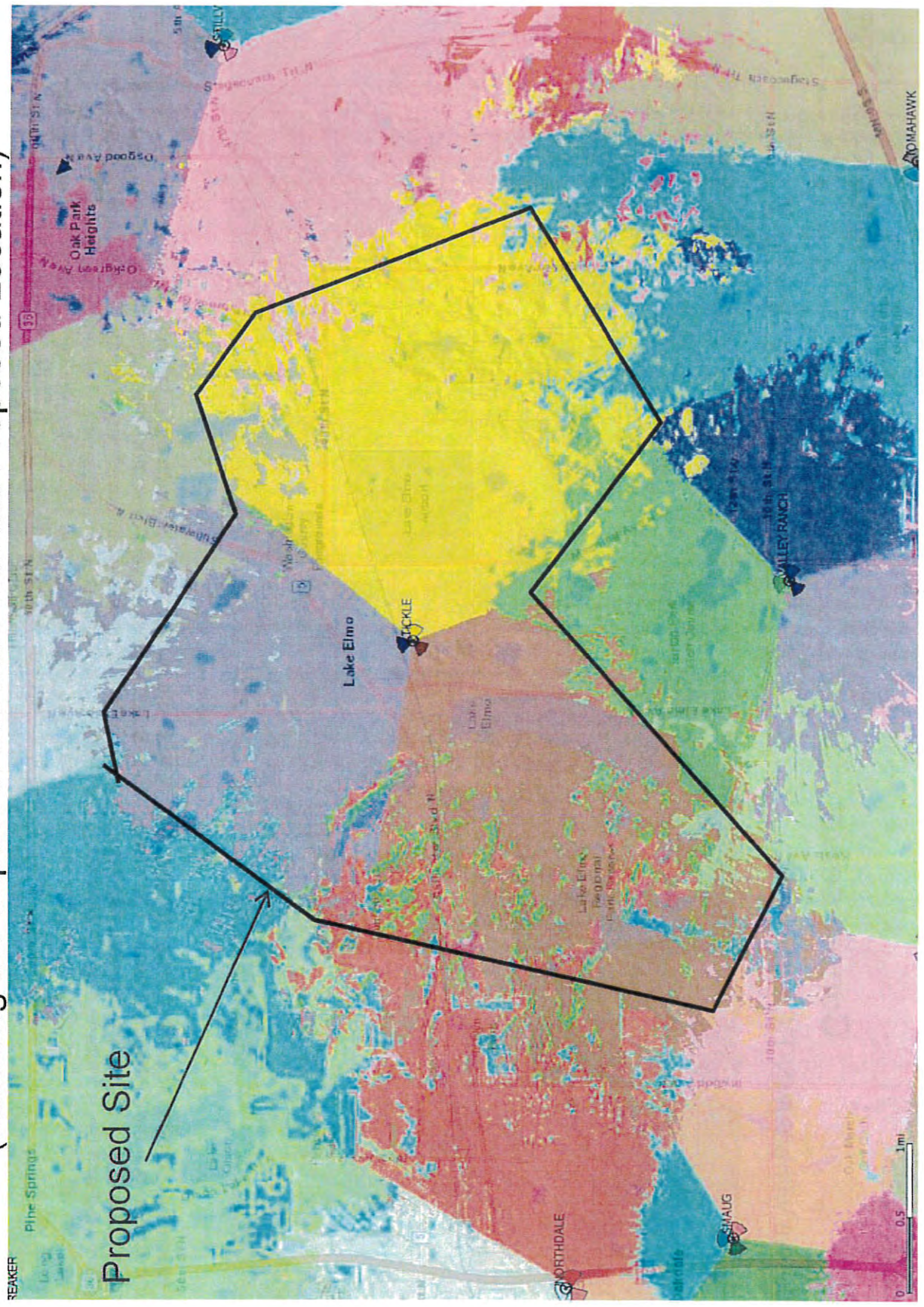


**verizon**

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# Expected Serving Sector Maps (Including the Impact of the MIN TICKLE Proposed Location)





# Serving Sector Maps - Before and After Side-By-Side

Current server  
Best Server without MIN TICKLE



Proposed Site  
Best Server with MIN TICKLE



The expected coverage footprint of the proposed MIN TICKLE site shown on the map on the right will improve both capacity and coverage for our customers in the highlighted area. The plots above show the best servers or sectors that cover this area, with each sector shown in a different color. The left map shows what sectors currently cover this area, with the overloaded sector of MIN NORTHDALE showing in red on the west and the northern sector of MIN VALLEY RANCH shown in green to the south. The right map shows the area the new proposed site will cover in grey, yellow and brown. This proposed site will improve service by providing the necessary capacity to support the growth we are seeing in 4G data traffic. The area around the proposed site will see much better service. If the site is not built in this area, customers will see data speeds and new 4G voice service start to quickly degrade as the existing sites overload.



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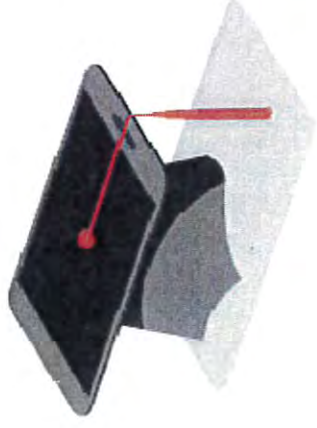


# Alternate Historical Candidates

- In November of 2015, two options were discussed for MIN Tickle, a light pole and a stealth tower on the ballfield grounds. The monopole was preferred, and both Site Sketches were submitted to the city for approval
  - On January 15, 2016, the city notified KGI that the ballfield location would not work.
  - On January 16, 2016, KGI was asked to attend and make a presentation at the 2/16/16 City Council meeting stating history of each proposed location along with an RF representative in attendance who could speak to network needs and RF data for each proposed location. Mihaela and Karyn attended the meeting and presented documentation to back up the ball field candidate and why that location was preferred by Verizon
  - City Council confirmed they would not support the ball field location, and that they would prefer Verizon's tower to be located at the drainage field. KGI and the city discussed the current location, and a site walk was scheduled for 4/1/16
  - Verizon then proceeded with FAA to determine whether or not the new proposed location would be suitable and would satisfy the antenna height requirement for adequate coverage
  - On 6/17/16, FAA No Hazard Determination was received.



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We believe technology can help solve our biggest social problems.

We're working with innovators, community leaders, non-profits, universities and our peers to address some of the unmet challenges in education, healthcare and energy management.

Learn more about our corporate social responsibility at [www.verizon.com](http://www.verizon.com).



**verizon**✓

31 May 2018

City of Lake Elmo  
Attn: Emily Becker, Planning Director  
3880 Laverne Ave N  
Lake Elmo, MN 55042

RE: Conditional Use Permit Application and variance for proposed 134' Telecommunications Tower  
33<sup>rd</sup> Circle N., Lake Elmo, MN

Dear Ms. Becker,

On behalf of Verizon Wireless, I am submitting a Conditional Use Permit and Setback Variance application for a proposed 125' monopole telecommunications tower and 9' lightning rod for a total of 134' AGL.

**PURPOSE:**

Verizon Wireless seeks a Conditional Use Permit per the requirements of Zoning Code. The tower is proposed within a City-owned parcel located along 33<sup>rd</sup> Circle North, Lake Elmo, Washington County.

**LOCATION SELECTION:**

The proposed tower location was selected by Verizon due to its favorability in meeting the company's radio frequency objective, providing a capacity off-load serving the surrounding community. It is my hope that the Planning Commission and City Council members would approve this proposal, thus helping to provide a consistency of coverage and capacity to the community.

It should be noted that Verizon did seek out collocation opportunities, but there were no feasible existing structures identified within the RF search area.

It is my understanding that the proposed 134' monopole tower would comply with the provisions set forth in the Tower Ordinance of the City of Lake Elmo.

Enclosed please find:

- 1) Conditional Use Permit Application Form
- 2) Variance Application Form
- 3) Set of scaled construction drawings to include:
  - a. Land survey
  - b. Tower elevation
  - c. Site plan
- 4) Address Labels from Washington County
- 5) FCC Licensing Documentation
- 6) FAA Approval
- 7) Written Statement of Information
- 8) Photo Simulations
- 9) Exterior paint colors (see photo simulation)
- 10) Structural Compliance Letter / Fall Letter



- 11) Area Served / Proof of Need Documentation
- 12) Landscape Plan (not applicable)
- 13) Applicable fees

**Written Statement of Information Regarding Proposal**

Contact Information of Owner:

City of Lake Elmo  
3800 Laverne Ave N  
Lake Elmo, MN 55042  
Attn: Kristina Handt, City Administrator  
[khandt@lakeelmo.org](mailto:khandt@lakeelmo.org)  
651-747-3905

Verizon Wireless  
10801 Bush Lake Road  
Bloomington, MN 55438  
Ron Reiter 612-720-0052

Agent: Karyn O'Brien  
KGI Wireless / TechScape Wireless  
323 N Cedar St  
Chaska, MN 55318  
952-288-8130  
[kobrien@techscapewireless.com](mailto:kobrien@techscapewireless.com)

List of Site Data:

Along 33<sup>rd</sup> Circle N  
Lake Elmo, MN 55042  
Washington County  
Coordinates: 44 59 54.28N, -92 52 23.47  
PID 1302921310018  
W1/2 Sec 13 Twp 29N Rge 21W

I appreciate your consideration of the Conditional Use Permit and Variance applications, as well as the opportunity to present optimal service for Verizon Wireless subscribers in the area. Please do not hesitate to contact me if you have any additional questions regarding the proposed tower or if you require any further items to thoroughly review this application.

Very Sincerely,

Karyn O'Brien  
TechScape Wireless  
952.288.8130  
[kobrien@techscapewireless.com](mailto:kobrien@techscapewireless.com)

Date Received: \_\_\_\_\_  
Received By: \_\_\_\_\_  
Permit #: \_\_\_\_\_



651-747-3900  
3800 Laverne Avenue North  
Lake Elmo, MN 55042

## LAND USE APPLICATION

- ☐ Comprehensive Plan ☐ Zoning District Amend ☐ Zoning Text Amend ☐ Variance\*(see below) ☐ Zoning Appeal
- ☒ Conditional Use Permit (C.U.P.) ☐ Flood Plain C.U.P. ☐ Interim Use Permit (I.U.P.) ☐ Excavating/Grading
- ☐ Lot Line Adjustment ☐ Minor Subdivision ☐ Residential Subdivision Sketch/Concept Plan
- ☐ PUD Concept Plan ☐ PUD Preliminary Plan ☐ PUD Final Plan ☐ Wireless Communications

Applicant: **Verizon Wireless**

Address: **10801 Bush Lake Rd. Bloomington, MN 55438**

Phone # **952-288-8130**

Email Address: **kobrien@techscapewireless.com**

Fee Owner: **City of Lake Elmo**

Address: **3800 Laverne Ave N. Lake Elmo, MN 55042**

Phone # **641-747-3900**

Email Address: **khandt@lakeelmo.org**

Property Location (Address): **11351 Upper 33rd St. N. Lake Elmo, MN 55042**

(Complete (long) Legal Description: **That part of the W 1/2 of Sec 13, Twp 29N.**

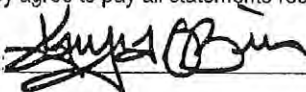
**Please see survey attached with construction drawings for full property description**

PID#: **1302921310018**

Detailed Reason for Request: **To permit a 125' wireless communication tower with a 9' lightning rod for a total of 134' and associated ground equipment compound for Verizon Wireless.**

\*Variance Requests: As outlined in Section 301.060 C. of the Lake Elmo Municipal Code, the applicant must demonstrate practical difficulties before a variance can be granted. The practical difficulties related to this application are as follows:  
**Verizon seeks a variance to the expiration date of the Conditional Use Permit, requesting an initial 12-month extension due to lengthy construction process involving ordering of materials, procuring general contractors and constraints typical with construction seasons**

In signing this application, I hereby acknowledge that I have read and fully understand the applicable provisions of the Zoning ordinance and current administrative procedures. I further acknowledge the fee explanation as outlined in the application procedures and hereby agree to pay all statements received from the City pertaining to additional application expense.

Signature of applicant: 

Date: **5/29/18**

Signature of fee owner: \_\_\_\_\_

Date: \_\_\_\_\_



Date Received: \_\_\_\_\_  
Received By: \_\_\_\_\_  
Permit #: \_\_\_\_\_



651-747-3900  
3800 Laverne Avenue North  
Lake Elmo, MN 55042

## LAND USE APPLICATION

- ☐ Comprehensive Plan ☐ Zoning District Amend ☐ Zoning Text Amend ☒ Variance\*(see below) ☐ Zoning Appeal
- ☐ Conditional Use Permit (C.U.P.) ☐ Flood Plain C.U.P. ☐ Interim Use Permit (I.U.P.) ☐ Excavating/Grading
- ☐ Lot Line Adjustment ☐ Minor Subdivision ☐ Residential Subdivision Sketch/Concept Plan
- ☐ PUD Concept Plan ☐ PUD Preliminary Plan ☐ PUD Final Plan ☐ Wireless Communications

Applicant: Verizon Wireless  
Address: 10801 Bush Lake Road, Bloomington, MN 55438  
Phone #: 952-288-8130  
Email Address: kobrien@techscapewireless.com

Fee Owner: City of Lake Elmo  
Address: 3800 Laverne Ave N, Lake Elmo, MN 55402  
Phone #: 651-747-3905  
Email Address: khandt@lakeelmo.org

Property Location (Address): Along 33rd Circle N.  
(Complete (long) Legal Description: W 1/2 Sec 13 Twp 29 Rge 21

PID#: 1302921310018

Detailed Reason for Request: Variance from side setback for proposed tower to 45'-5" from 134'  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*Variance Requests: As outlined in Section 301.060 C. of the Lake Elmo Municipal Code, the applicant must demonstrate practical difficulties before a variance can be granted. The practical difficulties related to this application are as follows:  
The proposed tower location is the only area on the parcel suitable for building. It is tucked  
away in a treed area and on higher ground. The rest of the parcel is used by the City as drainage  
overflow and therefore, it must remain unimpeded.

In signing this application, I hereby acknowledge that I have read and fully understand the applicable provisions of the Zoning ordinance and current administrative procedures. I further acknowledge the fee explanation as outlined in the application procedures and hereby agree to pay all statements received from the City pertaining to additional application expense.

Signature of applicant:  Date: 5/29/2018

Signature of fee owner: \_\_\_\_\_ Date: \_\_\_\_\_



## **RF Justification for Proposed Site – Project Name MIN TICKLE**

A handwritten signature in black ink, appearing to read "Mihaela Oxley", written in a cursive style.

**Mihaela Oxley**  
**Radio Frequency Design Engineer**

This document is intended to explain the need for the Verizon Wireless site named MIN TICKLE, proposed to be constructed at the drainage facility at 11351 Upper 33<sup>rd</sup> St. N. in the city of Lake Elmo, MN 55042. The first part of the document will provide an overview of what drives the need to expand the Verizon Wireless network and will describe the concepts of coverage and capacity including examples of how these concepts are used to identify the need for the MIN TICKLE project. The second part of this document will present alternate locations that were analyzed and the reasons why the proposed site is ultimately the best location for a new cell site.

Also included in this document are maps that will evidence the need for the proposed MIN TICKLE Verizon Wireless site. As shown in these maps as well as in the analysis, the network planning activities are thorough and the location of a new cell site is deliberate in such a way that it will guarantee a positive addition to the network by means of balancing traffic between existing and new cell sites as well as adding coverage in those areas that are most needed for our customers. Verizon Wireless is committed to improving our network so that we can provide our customers with the best possible network experience.

### **Introduction**

Within the last years, Verizon Wireless has seen a tremendous growth in network data usage. With the birth of 4G or LTE technology, a cell phone has evolved from being just a voice communications device to being a portable mini-computer that can be used for both voice calls, as well as video calls, and that can also be used for email, social media, navigation, gaming, music and much more. With the availability of LTE networks, the applications have also evolved where having a reliable and fast network connection is key to the utilization of the specific application. Take for example any website or applications that provide video services. These demand high data throughput speeds in order to allow the user to download video in real time and not experience any delays or blocking while viewing the content.

The challenges that any mobile carrier encounters is to ensure that not only are the customers able to connect to the network, but also that their connections are reliable and fast. This results in two main drivers for new cell site installations: the first one is coverage, while the second one is capacity.



**Network coverage** is the most important concept in wireless communications as it relates to the ability of a user to connect to the network. There are a lot of factors that have an impact on the coverage signal strength experienced by an user such as the distance between the user and the cell site, terrain in the area between the user and the serving cell site or any obstructions in this path (man-made or natural). Verizon Wireless provides the most expansive network in the US covering more square footage with our LTE network than any other carrier. It is our priority to maintain this competitive advantage and keep expanding our coverage so that we can serve our customers anywhere they go. If there are areas identified as having insufficient coverage, a new cell site will be needed in the area. In this document the concept of network coverage will be illustrated by means of Received Signal Reference Power (RSRP) maps.

**Network capacity** is an important concept that relates to the user experience in terms of throughput speeds. Not only does Verizon Wireless want to guarantee that our customers are able to connect in as many areas as possible, but also that our customers connections are reliable and fast. When a user connects to the network, their device connects to one specific cell site (and more specifically to a certain sector of a cell site) that is located in their proximity. The user is allocated resources on the cell site as well as a specific frequency spectrum that will be available for the user's transmission and reception of data. The more frequency spectrum available, the faster the speeds that the user device will be experiencing. The user will share the serving site's resources and available spectrum with other users that are using their devices. The more and more users try connecting to the network and using their devices, the more resources are utilized at the serving site. If the number of users is high, the serving site can reach its capacity and will no longer be able to accept new user connections. Also, if the serving cell site is running at or near capacity, the users that did manage to connect will experience very slow data speeds or could even lose their connections. Verizon Wireless monitors each cell site's performance and if a cell site's sector speeds are below a certain threshold, the sector is considered exhausting and in need of capacity offload.

Capacity offload is achieved by building new cell sites that will take over some of the traffic on the exhausting cell site's sector. The location of the new cell site needs to be chosen carefully such that enough separation is maintained between the exhausting sector and the new site to minimize interference. At the same time the new cell site needs to be close enough to a specific identified area that is driving a high amount of traffic on the existing exhausting cell site's sector. This will guarantee that the new cell site will be able to take over that traffic and thus offload the existing exhausting site. The concept of network capacity will be illustrated in this document by means of best server maps.

### **MIN TICKLE Project**

The MIN TICKLE project has two objectives: first is to improve the levels of coverage in the city of Lake Elmo. This area has limited coverage and is currently served by Verizon Wireless sites that are located over 4 miles outside of town. The second objective is to provide capacity offload to the existing Verizon Wireless site called Northdale, and more specifically its East-facing sector, which is currently in exhaust. By satisfying these two objectives we will ensure that Verizon Wireless users will have access to a high-quality connection. This document will illustrate how the proposed MIN TICKLE site will help meet the



two objectives. In the analysis, two types of maps will be shown, each using different metrics: Reference Signal Received Power (RSRP) and Best Server coverage plots.

**Reference Signal Received Power (RSRP)** is a metric used to measure the strength of a signal received by a device and it is measured in dBm. Different RSRP levels translate into different probabilities that a user will be able to connect and maintain a reliable connection to the network. Typically there are 3 levels of RSRP that are referred to as good, fair and poor coverage. Typical RSRP values corresponding to the three levels are: RSRP > -85 dBm is considered "good" coverage and correspond to areas where devices both outdoors and indoors will be able to establish and maintain reliable connections. RSRP between -85 and -95 dBm is considered "fair" coverage and corresponds to areas where users will be able to establish and maintain connections outdoors, but indoor connections may be compromised. RSRP between -95 and -105 dBm is where all connections may be unreliable, especially indoors, or in areas surrounded by obstructions and foliage. Areas where the RSRP is lower than -105 dBm usually corresponds to areas where connections will be highly unlikely indoors or in areas with a lot of foliage.

The following map shows the existing RSRP (**Figure 1**) in the area surrounding the proposed site without the simulated effect of the proposed site. As can be seen in the figure, the city of Lake Elmo is situated in an area with fair and poor coverage, with several pockets of unreliable (below poor) coverage.



## MIN TICKLE NEW BUILD

### PROJECT INFORMATION

SITE NAME: MIN TICKLE  
SITE ADDRESS: 33RD CIRCLE N.  
LAKE ELMO, MN 55042  
COUNTY: WASHINGTON  
LATITUDE: N 44° 59' 54.28" (NAD83)  
LONGITUDE: W 92° 52' 23.47" (NAD83)  
DRAWING BASED ON  
SITE DATA FORM DATED: 07-12-17  
BUILDING TYPE: IIB  
SITE AREA: 36' X 32' = 1152 S.F.

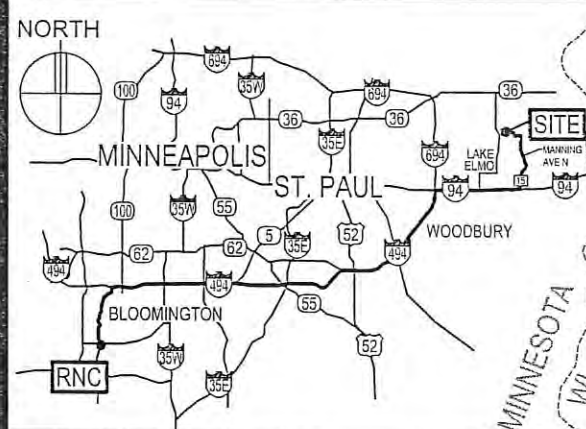
### ISSUE SUMMARY

REV.	DESCRIPTION	SHEET OR DETAIL
A	ISSUED FOR REVIEW 07-10-17	ALL
B	ISSUED FOR OWNER APPROVAL 10-05-17	ALL
C	ISSUED FOR DIST. BOX REVISION 10-13-17	ALL
D	ISSUED FOR ACCESS REVISION 11-14-17	ALL
F	ISSUED FOR ACCESS ADJUSTMENT 12-06-17	ALL

### SHEET INDEX

SHEET	SHEET DESCRIPTION
T-1	PROJECT INFORMATION, TOWER ELEVATION, & SHEET INDEX
A-1	SITE PLAN, DETAIL INDEX AND GRADING PLAN
A-2	ENLARGED SITE PLAN
A-3	ANTENNA & EQUIPMENT KEYS
A-4	CABLE BRIDGE PLAN, MOUNTING DETAILS, NOTES, & PHOTO
A-5	OUTLINE SPECIFICATIONS
G-1	GROUNDING NOTES
G-2	GROUNDING PLAN & GROUNDING DETAIL INDEX
U-1	UTILITY PLANS & PULLBOX LOCATION PLAN
-	SURVEY (2 SHEETS)

### AREA MAP



DIRECTIONS FROM BLOOMINGTON RNC:  
HEAD NORTH ON BUSH LAKE RD FOR 3.7 MILES, USE THE 2ND FROM THE LEFT LANE TO TURN LEFT ONTO E BUSH LAKE RD. TURN RIGHT TO MERGE ONTO I-494 E AND AFTER 6.7 MILES, KEEP LEFT AND STAY ON I-494 E FOR 16 MILES. TAKE EXIT 588 TO MERGE ONTO I-94 E AND GO 4.6 MILES. TAKE EXIT 253 AND TO TURN LEFT ONTO COUNTY RD 15/MANNING AVE N. AFTER 3.6 MILES, TURN LEFT ONTO 32ND ST N AND TURN LEFT TO STAY ON 32ND ST N. CONTINUE AROUND THE BEND AND TAKE ANOTHER LEFT ONTO 33RD CR N. SITE WILL BE AT THE END OF THE CUL-DE-SAC.

### VICINITY MAP



### DEPARTMENTAL APPROVALS

	NAME	DATE
RF ENGINEER	MIHEALA OXLEY	07-12-17
OPERATIONS MANAGER	JONATHAN FOWLER	07-10-17
CONSTRUCTION ENGINEER	STEVE COLLIN	07-11-17

### LESSOR / LICENSOR APPROVAL

SIGNATURE	PRINTED NAME	DATE
LESSOR / LICENSOR: PLEASE CHECK THE APPROPRIATE BOX BELOW		
<input type="checkbox"/> NO CHANGES.	<input type="checkbox"/> CHANGES NEEDED. SEE COMMENTS.	

### CONTACTS

LESSOR / LICENSOR: CITY OF LAKE ELMO  
3800 LAVERNE AVE N  
LAKE ELMO, MN 55042  
KRISTINA HANDT (651) 747-3905  
LESSEE: VERIZON WIRELESS  
10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
RON REITER (612) 720-0052  
POWER UTILITY COMPANY CONTACT: XCEL ENERGY  
1518 CHESTNUT AVENUE  
MINNEAPOLIS, MN 55403  
KELSEY LOOMIS (651) 779-3154

TELCO UTILITY COMPANY CONTACT: T.B.D.

ARCHITECT: DESIGN 1 ARCHITECTS LLC  
9973 VALLEY VIEW ROAD  
EDEN PRAIRIE, MN 55344  
(952) 903-9299

SURVEYOR: WIDSETH SMITH NOLTING  
610 FILLMORE STREET - PO BOX 1028  
ALEXANDRIA, MN 56308-1028  
320-762-8149

STRUCTURAL ENGINEER: N/A

GEOTECHNICAL ENGINEER: T.B.D.

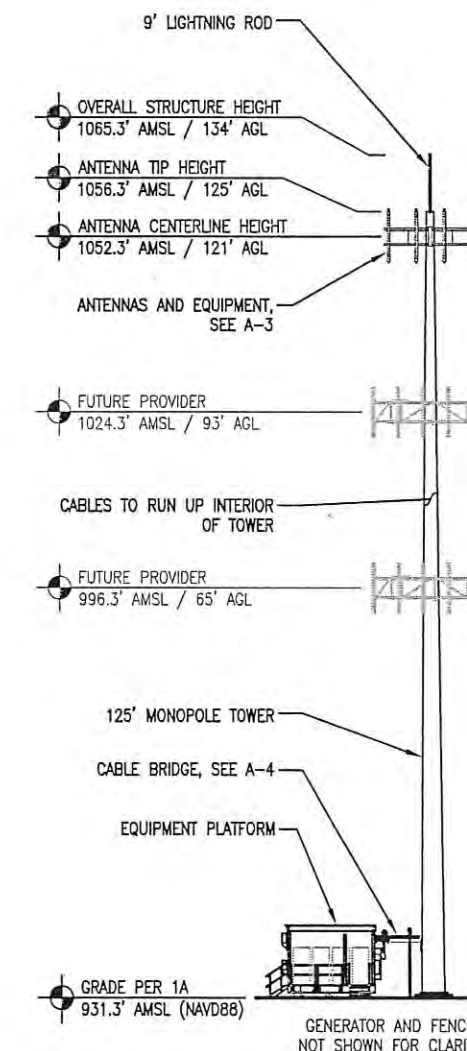
### TOWER ELEVATION

#### NOTE:

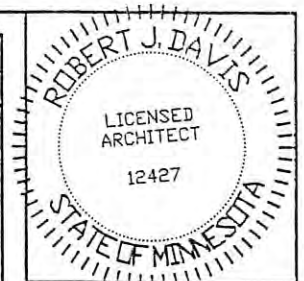
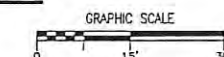
1.) TOWER TO BE ERECTED AND INSTALLED IN ACCORDANCE WITH TOWER MANUFACTURER'S DRAWINGS NOT INCLUDED WITH THIS PACKAGE. DISCREPANCIES BETWEEN TOWER DRAWINGS AND ARCHITECTURAL DRAWINGS TO BE REPORTED TO VERIZON WIRELESS AND THE ARCHITECT IMMEDIATELY.

2.) TOWER FOUNDATION, PLATFORM FOUNDATION, GENERATOR FOUNDATION, AND THE ACCESS DRIVE TO BE EXCAVATED AND CONSTRUCTED IN ACCORDANCE WITH RECOMMENDATIONS AND SPECIFICATIONS OF THE GEOTECHNICAL REPORT WHICH IS NOT INCLUDED IN THIS PACKAGE. DISCREPANCIES BETWEEN THE REPORT AND THE OTHER DOCUMENTS TO BE IMMEDIATELY REPORTED TO VERIZON WIRELESS AND THE ARCHITECT.

3.) CONTRACTOR TO ENSURE TIP OF ANTENNAS DO NOT EXCEED TOWER HEIGHT.



1 NORTH ELEVATION  
SCALE: 1" = 30'



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of Minnesota.  
ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*  
Date: 12-06-17



9973 VALLEY VIEW RD.  
EDEN PRAIRIE, MN 55344  
(952) 903-9299  
WWW.DESIGN1EP.COM



10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
(612) 720-0052

PROJECT  
20141122104  
LOC. CODE: 311232

MIN  
TICKLE

33RD CIRCLE N.  
LAKE ELMO, MN 55042

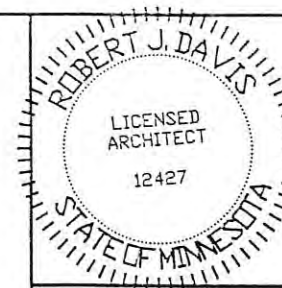
SHEET CONTENTS:  
CONTACTS  
ISSUE SUMMARY  
SHEET INDEX  
DEPARTMENTAL APPROVALS  
LESSOR APPROVAL  
PROJECT INFORMATION  
AREA & VICINITY MAPS  
GENERAL NOTES

DRAWN BY: DJS  
DATE: 06-29-17  
CHECKED BY: MJS  
REV. A 07-10-17  
REV. B 10-05-17  
REV. C 10-13-17  
REV. D 11-14-17  
REV. E 12-01-17  
REV. F 12-06-17

T-1







I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of Minnesota, ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*

12-06-17  
Date:

**DESIGN 1**

9973 VALLEY VIEW RD.  
EDEN PRAIRIE, MN 55344  
(952) 903-9299  
WWW.DESIGN1EP.COM

**verizon**

10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
(612) 720-0052

PROJECT  
20141122104  
LOC. CODE: 311232

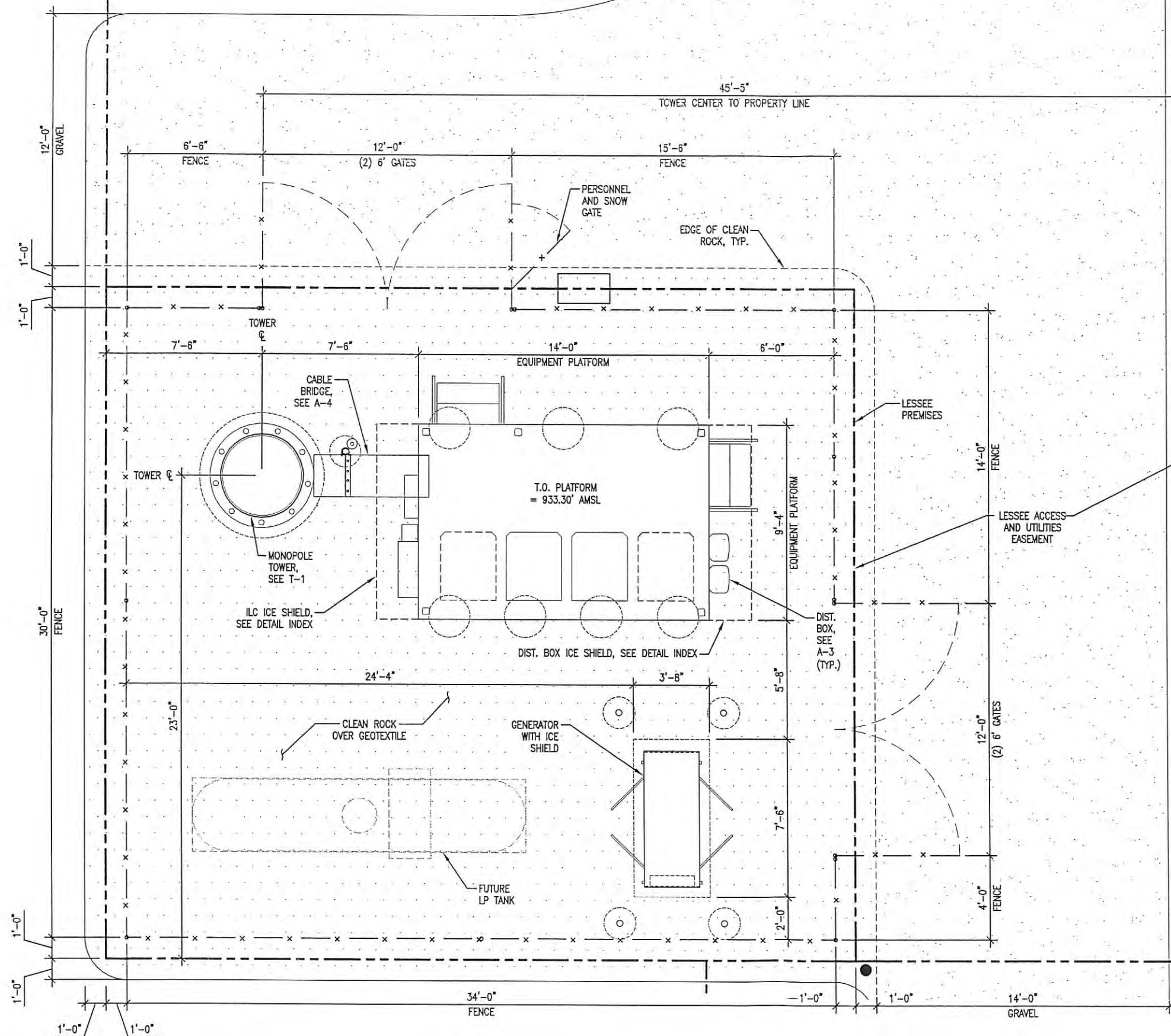
MIN  
TICKLE

33RD CIRCLE N.  
LAKE ELMO, MN 55042

SHEET CONTENTS:  
ENLARGED SITE PLAN

DRAWN BY:	DJS
DATE:	06-29-17
CHECKED BY:	MJS
REV. A	07-10-17
REV. B	10-05-17
REV. C	10-13-17
REV. D	11-14-17
REV. E	12-01-17
REV. F	12-06-17

A-2

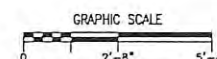


NOTE:  
CONTRACTOR TO COORDINATE PUBLIC AND PRIVATE UTILITY LOCATES PRIOR TO CONSTRUCTION START. NOTIFY THE ARCHITECT AND THE VZW CONSTRUCTION ENGINEER IMMEDIATELY OF ANY UTILITY LINE ISSUES.

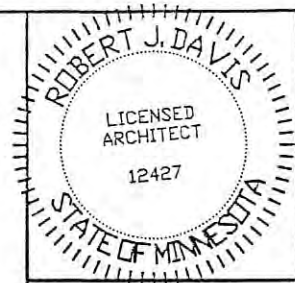
NOTE:  
EQUIPMENT PLATFORM PROVIDED ASSEMBLED WITH GUARD RAILS, ILC (INTEGRATED LOAD CENTER), CANOPY AND LIGHT FIXTURE. CONTRACTOR TO PROVIDE ADEQUATE LIFTING EQUIPMENT FOR PICKING AND SETTING ON FOUNDATION.

EXISTING PROPERTY LINE, TYP.

1 ENLARGED SITE PLAN  
SCALE: 3/16" = 1'-0"







I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of Minnesota.  
ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*

12-06-17

Date:



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EDEN PRAIRIE, MN 55344  
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10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
(612) 720-0052

PROJECT  
20141122104  
LOC. CODE: 311232

MIN  
TICKLE

33RD CIRCLE N.  
LAKE ELMO, MN 55042

SHEET CONTENTS:  
ANTENNA KEY  
EQUIPMENT KEY

DRAWN BY: DJS  
DATE: 06-29-17  
CHECKED BY: MJS  
REV. A 07-10-17  
REV. B 10-05-17  
REV. C 10-13-17  
REV. D 11-14-17  
REV. E 12-01-17  
REV. F 12-06-17

A-3

ANTENNA KEY													EQUIPMENT KEY			
	AZIMUTH	POSITION	FUNCTION	QTY	MANUFACTURER	MODEL	MOD TYPE	ANTENNA LENGTH	ANTENNA TIP	ANTENNA CENTER	ELEC DOWNTILT	MECH DOWNTILT	QTY	MANUFACTURER	MODEL	RRU PORT
"X" SECTOR	340°	2.1	Tx/RX0	1	COMMSCOPE	NHH-65C-R2B	700 +45	96.0"	125'	121'	0°	0°	1	ERICSSON	4449	1
	-	2.2	Tx/RX1	-	-	2ND PORT	700 -45	-	-	-	-	-	-	-	-	2
	-	2.3	Tx/RX0	-	-	3RD PORT	AWS +45	-	-	-	0°	-	1	ERICSSON	8843	1
	-	2.4	Tx/RX1	-	-	4TH PORT	AWS -45	-	-	-	-	-	-	-	-	4
	-	2.5	Tx/RX2	-	-	5TH PORT	AWS +45	-	-	-	0°	-	-	ERICSSON	8843	1
	-	2.6	Tx/RX3	-	-	6TH PORT	AWS -45	-	-	-	-	-	-	-	-	4
	340°	3.1	Tx/RX2	1	COMMSCOPE	NHH-65C-R2B	700 +45	96.0"	125'	121'	0°	0°	-	ERICSSON	4449	3
	-	3.2	Tx/RX3	-	-	2ND PORT	700 -45	-	-	-	-	-	-	-	-	4
	-	3.3	Tx/RX0	-	-	3RD PORT	PCS +45	-	-	-	0°	-	1	ERICSSON	8843	1
	-	3.4	Tx/RX1	-	-	4TH PORT	PCS -45	-	-	-	-	-	-	-	-	4
	-	3.5	Tx/RX2	-	-	5TH PORT	PCS +45	-	-	-	0°	-	-	ERICSSON	8843	1
	-	3.6	Tx/RX3	-	-	6TH PORT	PCS -45	-	-	-	-	-	-	-	-	4
"Y" SECTOR	100°	2.1	Tx/RX0	1	COMMSCOPE	NHH-65C-R2B	700 +45	96.0"	125'	121'	0°	0°	1	ERICSSON	4449	1
	-	2.2	Tx/RX1	-	-	2ND PORT	700 -45	-	-	-	-	-	-	-	-	2
	-	2.3	Tx/RX0	-	-	3RD PORT	AWS +45	-	-	-	0°	-	1	ERICSSON	8843	1
	-	2.4	Tx/RX1	-	-	4TH PORT	AWS -45	-	-	-	-	-	-	-	-	4
	-	2.5	Tx/RX2	-	-	5TH PORT	AWS +45	-	-	-	0°	-	-	ERICSSON	8843	1
	-	2.6	Tx/RX3	-	-	6TH PORT	AWS -45	-	-	-	-	-	-	-	-	4
	100°	3.1	Tx/RX2	1	COMMSCOPE	NHH-65C-R2B	700 +45	96.0"	125'	121'	0°	0°	-	ERICSSON	4449	3
	-	3.2	Tx/RX3	-	-	2ND PORT	700 -45	-	-	-	-	-	-	-	-	4
	-	3.3	Tx/RX0	-	-	3RD PORT	PCS +45	-	-	-	0°	-	1	ERICSSON	8843	1
	-	3.4	Tx/RX1	-	-	4TH PORT	PCS -45	-	-	-	-	-	-	-	-	4
	-	3.5	Tx/RX2	-	-	5TH PORT	PCS +45	-	-	-	0°	-	-	ERICSSON	8843	1
	-	3.6	Tx/RX3	-	-	6TH PORT	PCS -45	-	-	-	-	-	-	-	-	4
"Z" SECTOR	220°	2.1	Tx/RX0	1	COMMSCOPE	NHH-65C-R2B	700 +45	96.0"	125'	121'	0°	0°	1	ERICSSON	4449	1
	-	2.2	Tx/RX1	-	-	2ND PORT	700 -45	-	-	-	-	-	-	-	-	2
	-	2.3	Tx/RX0	-	-	3RD PORT	AWS +45	-	-	-	0°	-	1	ERICSSON	8843	1
	-	2.4	Tx/RX1	-	-	4TH PORT	AWS -45	-	-	-	-	-	-	-	-	4
	-	2.5	Tx/RX2	-	-	5TH PORT	AWS +45	-	-	-	0°	-	-	ERICSSON	8843	1
	-	2.6	Tx/RX3	-	-	6TH PORT	AWS -45	-	-	-	-	-	-	-	-	4
	220°	3.1	Tx/RX2	1	COMMSCOPE	NHH-65C-R2B	700 +45	96.0"	125'	121'	0°	0°	-	ERICSSON	4449	3
	-	3.2	Tx/RX3	-	-	2ND PORT	700 -45	-	-	-	-	-	-	-	-	4
	-	3.3	Tx/RX0	-	-	3RD PORT	PCS +45	-	-	-	0°	-	1	ERICSSON	8843	1
	-	3.4	Tx/RX1	-	-	4TH PORT	PCS -45	-	-	-	-	-	-	-	-	4
	-	3.5	Tx/RX2	-	-	5TH PORT	PCS +45	-	-	-	0°	-	-	ERICSSON	8843	1
	-	3.6	Tx/RX3	-	-	6TH PORT	PCS -45	-	-	-	-	-	-	-	-	4

PROPOSED ADDITIONAL:

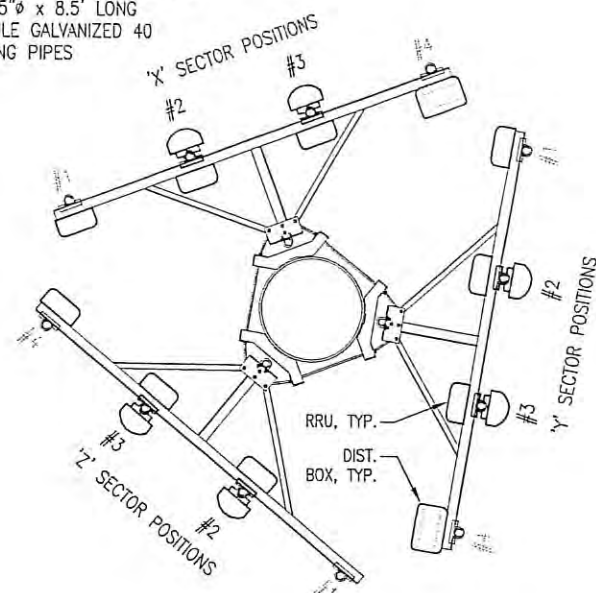
- (2) DISTRIBUTION BOXES, #DB-C1-12C-24AB-OZ (ON PLATFORM)  
(3) 6-12 HYBRID CABLE, ROSENBERGER #HL-9612150  
(2) DISTRIBUTION BOXES, #DB-C1-12C-24AB-OZ (ON TOWER)  
(36) RET JUMPER CABLE, ERICSSON #AIGS 2.0 RET (12 EACH PER SECTOR)  
(12) COMMSCOPE HYBRID JUMPER, MODEL HFT412-4S29-15 (DIST. BOX TO RRU)  
(36) COMMSCOPE JUMPER, MODEL LDF4-50A, FOAM 1/2 DIA (RRU TO ANTENNA)

CABLE LENGTHS  
RAD CENTER = 121'  
CABLE BRIDGE = 6'  
PLATFORM = 14'  
EXTRA = 9'  
TOTAL = 150'

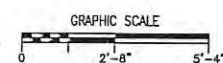
1 ANTENNA KEY  
SCALE: NONE

2 EQUIPMENT KEY  
SCALE: NONE

NOTE:  
T-FRAME MAKE AND MODEL  
T.B.D. CONTRACTOR TO SUPPLY:  
(12) 2.5"Ø x 8.5' LONG  
SCHEDULE GALVANIZED 40  
MOUNTING PIPES



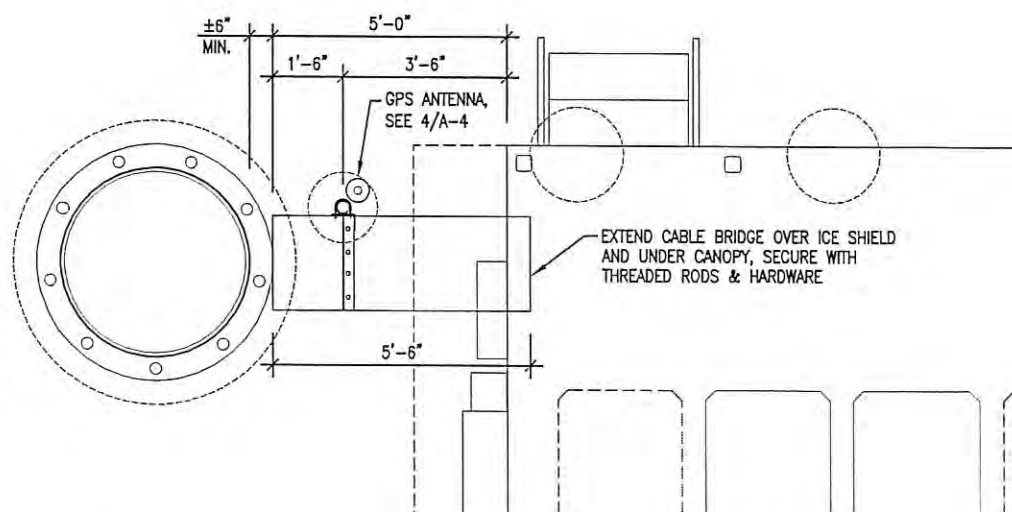
1 ANTENNA MOUNTING DETAIL  
SCALE: 3/16" = 1'-0"



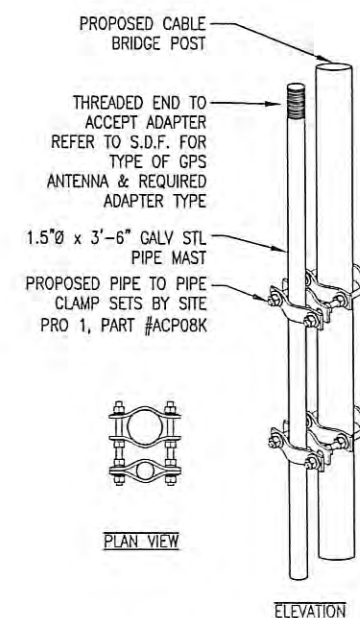
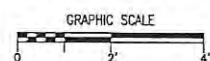
2 SITE PHOTO  
SCALE: LOOKING SOUTH

NOTE:  
CONTRACTOR TO ENSURE CABLES DO  
NOT ENTER THE FRONT OF CABINET  
TOP HAT TO ACCOMMODATE VZW  
OPERATIONS TENT DEPLOYMENT,  
COORDINATE WITH VZW CE.

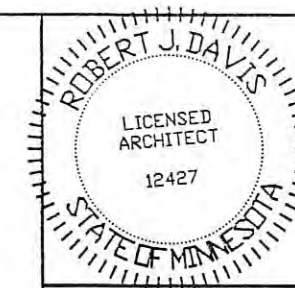
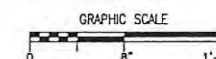
NOTE:  
CABLE BRIDGE SUPPORTS ARE REQUIRED  
AT INTERVALS NOT TO EXCEED 6'-0" WITH  
OVERHANG EXTENSIONS NOT TO EXCEED 1'-6"



3 CABLE BRIDGE PLAN  
SCALE: 1/4" = 1'-0"



4 GPS MOUNTING DETAIL  
SCALE: 3/4" = 1'-0"



I hereby certify that this plan,  
specification or report was  
prepared by me or under my direct  
supervision and that I am a duly  
registered Architect under  
the laws of the State of Minnesota.  
ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*

Date: 12-06-17

**DESIGN**

9973 VALLEY VIEW RD.  
EDEN PRAIRIE, MN 55344  
(952) 903-9299  
WWW.DESIGN1EP.COM

**verizon**

10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
(612) 720-0052

PROJECT  
20141122104  
LOC. CODE: 311232

MIN  
TICKLE

33RD CIRCLE N.  
LAKE ELMO, MN 55042

SHEET CONTENTS:  
SITE PHOTO  
CABLE BRIDGE PLAN  
ANTENNA MOUNTING DETAIL  
GPS MOUNTING DETAIL

DRAWN BY:	DJS
DATE:	06-29-17
CHECKED BY:	MJS
REV. A	07-10-17
REV. B	10-05-17
REV. C	10-13-17
REV. D	11-14-17
REV. E	12-01-17
REV. F	12-06-17

A-4



GENERAL CONDITIONS

00 0001 PERMITS  
Construction Permit shall be acquired by, or in the name of, Verizon Wireless, to be hereinafter referred to as the OWNER. Other permits shall be acquired by the Contractor.

00 0002 SURVEY FEES  
Survey shall be furnished by the Architect. Layout Staking shall be coordinated with the Surveyor per "Request For Quote", (RFQ).

01 0010 INSURANCE & BONDS  
Contractor is to furnish Insurance certificates for themselves and subcontractors. Contractor will provide any required Bonding. Contractor agrees to warranty the project for (1) one year after completion.

01 0400 SUPERVISION & COORDINATION  
Contractor shall provide supervision throughout the Project, coordinating the work of the Subcontractors, and delivery & installation of Owner-furnished items. Contractor's responsibilities include arranging & conducting of Underground Utilities Locates. Contractor shall comply with municipal, county, state and/or federal codes, including OSHA.

01 0600 TESTING  
Contractor is responsible for providing Agencies with sufficient notice to arrange for Test Samples (i.e.: Concrete Cylinders), and for Special Inspections.

01 2000 MEETINGS  
Contractor shall make themselves aware of, and attend, meetings with the Owner and/or Architect. Contractor is to attend a Pre-Construction Meeting of all parties involved, prior to the start of construction.

01 5100 TEMPORARY UTILITIES  
Contractor shall maintain the job site in a clean and orderly fashion, providing temporary sanitary facilities, waste disposal, and security (fence area or trailer module).

01 5300 EQUIPMENT RENTAL  
Contractor shall furnish equipment necessary to expedite work.

01 5900 FIELD OFFICES & SHEDS  
Contractor shall provide security (fence area or trailer module) for tools and materials that remain overnight on site.

01 7000 CLEAN UP & CLOSE OUT  
Contractor shall clean up the Site to the satisfaction of Owner. Contractor shall complete the items listed on the Owner's Punch List, and shall sign and return the List to the Owner. Contractor shall maintain a set of drawings during the job, on which changes shall be noted in red ink. A full set of redlined drawings (As-Builts) are to be given to the Architect at Job completion and submit "construction work complete memo" to Construction Engineer.

01 8000 TRUCKS & MILEAGE  
Contractor shall provide transportation for their own personnel.

01 8300 TRAVEL TIME & PER DIEM  
Contractor shall provide room and board for their own personnel, and reasonable time for traveling to & from job site.

01 9200 TAXES  
Contractor shall pay sales and/or use tax on materials and taxable services.

SITEWORK

02 1000 SITE PREPARATION  
Contractor is to mobilize within 7 calendar days of the Owner issuing a "START" document. Contractor will immediately report to Architect if any environmental considerations arise. Trees to be trimmed/removed as indicated on drawings, and remaining stumps to be removed. Site shall be scraped to a depth of 3" minimum to remove vegetative matter, and scrapings shall be stockpiled on site. Excess material to be disposed of in accordance with RFQ. A Perimeter Silt Fence is to be maintained for the duration of the work.

02 1100 ROAD IMPROVEMENT & CONSTRUCTION  
Contractor shall furnish materials for, and install, a twelve foot (12') wide gravel driveway from the road access to the work area, for truck and crane access to site. Base course shall be 6" deep, 3"+ crushed rock, topped with 3" deep, 1½" crushed rock, topped with 3" deep MN Class 5 (3/4" minus with binder) or Driveway Mix. Contractor shall furnish & install culverts as necessary to prevent ponding or washing-out from normal surface runoff. Road shall be graded smooth, and edges dressed, at job completion.

02 2000 EARTHWORK & EXCAVATION  
Excavation material shall be used for surface grading as necessary; excess to be stockpiled on site. Grading of site as shown on drawings. Excess material to be disposed of in accordance with RFQ. For dewatering excavated areas, contractor shall utilize sock or sediment filter for filtering of water discharge.

02 5000 PAVING & SURFACING  
Gravel paving shall be as described in 02 8000.

02 7800 POWER TO SITE  
Contractor shall coordinate the electrical service to the platform with the Utility Provider. Conduits shall include pull strings. Underground conduits shall be 2-1/2" Schedule 40 PVC, (schedule 80 PVC under roads and drives) Cable to be 3/0 THWN CU. Trenches shall be backfilled in a timely fashion, using a compactor, and including two (2) detectable ribbons; one each at 3" and 15" above conduit. Service shall be 200 amp, single phase, 120/240 volt. Service type shall be "General Time-Of-Day" if available, and meter base shall be approved by utility provider.

02 7900 TELCO TO SITE  
Contractor shall provide 2" schedule 40 PVC conduit, (schedule 80 PVC under roads and drives) with 'large sweep' elbows or 2" SDR-11 HDPE conduit for directional boring, & pull string for TELCO service as noted on plans. Cable to be fiber optic lines, source and provider T.B.O. Trenches shall be as in 02 7800.

02 8000 SITE IMPROVEMENTS  
Areas bounded by fence and adjacent to Equipment Platform shall receive polyethylene geotextile, 200 mesh woven, topped with 3" deep 3/4" to 1 1/2" clean rock (no fines), raked smooth.

02 8001 FENCING  
All fence materials and fittings shall be galvanized steel. Fence shall be 6'-0" high x 9 ga. X 2" chain link fabric, w/ 7 ga. bottom tension wire. Corner and Gate posts shall be 2 7/8" O.D. sch 40 steel pipe, driven 60" below grade. Line posts shall be 2 3/8" O.D. sch 40 steel pipe. Top Rails shall be 1 5/8" O.D. steel pipe. Gate frames shall be 1 5/8" O.D. welded pipe. Fence top shall be three (3) strands barbed wire to 7'-0" above grade, canted outward. Bracing shall be 3/8" truss rods and 1 5/8" O.D. pipe mid-rails at corners. Gate latch shall be commercial grade, "Cargo" or equal. Fabric shall extend to within 1" of finish grade. All fence materials shall be plastic black coated.

02 8500 IRRIGATION SYSTEMS  
N/A

02 9000 LANDSCAPING  
Contractor shall protect existing landscape elements that are not in the Scope of Work. Reasonable precautions shall be taken to assure the health of existing trees and shrubbery. If conflicts arise regarding the location of root systems, branch lines, etc., the Architect must be contacted prior to performing Work that may cause damage. Damage resulting from disregard of this Article shall be compensated by the Responsible Party and at a cost to be determined by the Property Owner, Architect, and Owner.

CONCRETE

03 1000 CONCRETE FORMWORK  
Concrete forms shall be dimension lumber, modular, or steel.

03 6000 GROUT  
N/A

03 8000 TOWER FOUNDATION  
Contractor shall arrange for delivery of anchors, and shall furnish and install materials per Tower Manufacturer Plans. Tower foundation concrete and reinforcing to be per tower manufacturer's specification, or 6% ±1% air entrained, 4,000 PSI @ 28 days, with Grade 60 (ASTM 615) reinforcing steel, whichever is greater. Contractor shall comply with the Owner's Standard CONSTRUCTION SPECIFICATIONS MINIMUM CONCRETE STANDARDS.

03 8001 CATHODIC PROTECTION  
N/A

03 9000 EQUIPMENT PLATFORM/GENERATOR FOUNDATION  
Contractor shall furnish & install materials for Equipment Platform/Generator foundation. Concrete shall be 6% ±1% air entrained, and 4,000 psi at 28 days. All reinforcing steel is to be Grade 60 (ASTM 615). Anchor bolts are furnished by Contractor. Contractor shall comply with the Owner's Standard CONSTRUCTION SPECIFICATIONS MINIMUM CONCRETE STANDARDS.

MASONRY  
N/A

METALS

05 0000 METALS  
Contractor will furnish and install structural and fabricated steel items not specifically furnished by Owner, and install Owner-furnished items. Structural steel shall be fabricated and erected per AISC specifications. Welding shall conform to AWS standards. Field welding shall be as shown on Shop Drawings, performed by AWS Certified Welders, and inspected as prescribed by the Structural Engineer. Steel shall be ASTM A992 OR A36, and 3/4" field bolts shall be A325. Temporary erecting bolts, clip hangers, and bracing shall be furnished by Contractor. Fabrications shall be shop welded if possible, and galvanized before delivery to site. Structural steel, and miscellaneous iron and steel, shall be hot dipped galvanized per ASTM A123 thickness grade 55. Fabricated iron and steel hardware shall be hot dipped galvanized per ASTM A153. Repair of damaged or uncoated galvanized surfaces shall be per ASTM A780.

WOOD & PLASTICS  
N/A

THERMAL & MOISTURE  
N/A

DOORS AND HARDWARE  
N/A

FINISHES  
N/A

SPECIAL CONSTRUCTION

13 1260 CABLE BRIDGE, CANOPY, & ICE SHIELDS  
Contractor shall furnish & install materials for the Cable Bridge as indicated on the drawings and Verizon Wireless Standard Details. Platform canopies are supplied by Equipment Platform Manufacturer. Contractor shall install canopy components shipped loose with the Equipment Platform. Contractor shall furnish & install materials for the Ice Shields as indicated on the Drawings & Verizon Wireless Standard Details.

13 1400 ANTENNA INSTALL  
Contractor shall install Owner's antennas and feed lines during erecting. Contractor shall test and certify feed lines per current VZW standards.

13 3423 TRANSPORT AND SET EQUIPMENT PLATFORM/GENERATOR  
Contractor shall provide crane(s) and/or truck for transporting, setting and erecting Equipment Platform/Generator per RFQ. Contractor shall install items shipped loose with the Equipment Platform/Generator including, but not limited to, the following: anchoring plates; exterior lighting; canopies; guardrails; and buss bar.

13 3613 TRANSPORT AND ERECT TOWER  
Contractor shall schedule delivery of Owner-furnished Tower, and provide cranes for unloading and erecting. Contractor shall ensure the existence of a 3/8" cable safety climb (DBI/Sala or equal) on the Tower.

MECHANICAL

15 4000 PLUMBING  
N/A

15 5000 HVAC  
N/A

ELECTRIC

16 5000 LIGHTING AND ELECTRICAL  
Contractor shall provide labor and materials as necessary to complete the work shown on Drawings including items shipped loose with the Equipment Platform/Generator assembly.

16 6000 GROUNDING  
Contractor shall make themselves familiar with and follow the current GROUNDING STANDARDS of VERIZON WIRELESS. Contractor shall perform work as shown on Grounding Plans. Any site-specific grounding issues not covered by the GROUNDING STANDARD are to be addressed by the Contractor to the Owner.

OWNER-FURNISHED EQUIPMENT & FEES  
EQUIPMENT PLATFORM  
GENERATOR  
MONOPOLE TOWER  
CABINETS  
COAX AND/OR CABLES  
ANTENNAS & DOWNTILT BRACKETS  
GPS  
BUILDING PERMIT FEES  
MATERIALS TESTING FEES  
SPECIAL INSPECTIONS FEES

CONTRACTOR-FURNISHED EQUIPMENT  
POWER TO SITE  
TELCO TO SITE  
CABLE BRIDGE & ICE SHIELDS  
GPS MOUNTING  
GROUNDING MATERIALS  
GRAVEL/ROCK SURFACING & FENCING  
CONNECTORS, BOOTS, & RELATED HARDWARE

SCOPE OF WORK:

CONTRACTOR SHALL PROVIDE MATERIALS, LABOR, TOOLS, TRANSPORTATION, SUPERVISION, ETC. TO FULLY EXECUTE WORK. WORK REQUIREMENTS ARE DETAILED ON THE DRAWINGS AND SPECIFICATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:

SITE PREPARATION  
SITE WORK AND GRAVEL DRIVEWAY  
EQUIPMENT PLATFORM, GENERATOR, & TOWER FOUNDATIONS  
SET PLATFORM, SET GENERATOR, & ERECT TOWER  
ROUTING OF GROUND, POWER, FIBER & ALARM  
SITE GROUNDING  
ELECTRICAL & TELEPHONE SERVICES  
INSTALL ANTENNAS & CABLES  
CABLE BRIDGE AND ICE SHIELDS  
ROCK SURFACING & FENCING  
GRADING AND TREE REMOVAL

Contractor to compare drawings against Owner's "Request for Quote", (RFQ). If discrepancies arise, Contractor shall verify with Owner that the RFQ supersedes the drawings.

<div><div>ROBERT J. DAVIS</div><div>LICENSED ARCHITECT</div><div>12427</div><div>STATE OF MINNESOTA</div></div>
<div>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of Minnesota.</div> <div>ROBERT J. DAVIS, Reg. No. 12427</div> <div><div>Signed: </div><div>12-06-17</div><div>Date:</div></div>
<div>DESIGN1</div> <div>9973 VALLEY VIEW RD. EDEN PRAIRIE, MN 55344 (952) 933-9299 WWW.DESIGN1EP.COM</div>
<div>verizon</div> <div>10801 BUSH LAKE ROAD BLOOMINGTON, MN 55438 (612) 720-0052</div>
<div>PROJECT</div> <div>20141122104</div> <div>LOC. CODE: 311232</div>
<div>MIN</div> <div>TICKLE</div>
<div>33RD CIRCLE N.</div> <div>LAKE ELMO, MN 55042</div>
<div>SHEET CONTENTS:</div> <div>OUTLINE SPECIFICATIONS</div>
<div>DRAWN BY: DJS</div>
<div>DATE: 06-29-17</div>
<div>CHECKED BY: MJS</div>
<div>REV. A 07-10-17</div>
<div>REV. B 10-05-17</div>
<div>REV. C 10-13-17</div>
<div>REV. D 11-14-17</div>
<div>REV. E 12-01-17</div>
<div>REV. F 12-06-17</div>
<div>A-5</div>



## GENERAL GROUNDING NOTES:

An external buried ground ring (Lead 1) shall be established around the equipment shelter and tower foundations. Lead 1 shall be kept 24" from foundations; if foundations are less than 48" apart, keep Lead 1 centered between them. If the tower base is over 20'-0" from the equipment shelter, a separate Lead 1 shall be established around each foundation, and the two Lead 1s shall be bonded with two parallel leads at least 6 feet apart horizontally. Connections between the two Lead 1s shall be bi-directional.

All subgrade connections shall be by exothermic weld, brazed weld, or gas-tight UL467-listed compression fittings pre-filled with anti-oxidant compound. Subgrade connections shall not be 'cold galvanize' coated.

Lead 1 shall be #2 solid bare tin-clad (SBTC) copper wire buried at local frost depth. Lead 1 bends shall be minimum 24" radius. 'Whip' lead bends may be of 12" radius.

Ground rods shall be galvanized steel, 5/8"Ø, spaced twenty feet apart, or as shown. Rods shall be kept min. 24 inches from foundations. Ground rods are required to be installed at their full specified length. Depth shall be as shown in Detail 11.1 in the Design 1 Standard Detail Booklet.

### SPECIAL CONSIDERATIONS FOR GROUND RODS:

When ground rods are not specified to be backfilled w/ Bentonite Slurry: If boulders, bedrock, or other obstructions prevent driving of ground rods, the Contractor will need to have drilling equipment bore a hole for ground rod placement. Hole to be backfilled w/ Bentonite Slurry.

When specified with slurried Bentonite encasement, drilling equipment will be used to be bore a hole for ground rod placement. Slurry shall be made from pelletized material ("Grounding Gravel"); powdered Bentonite is not allowed. If boulders, bedrock, or other obstructions are found, Contractor shall drill to the specified depth and provide Bentonite encasements.

Above-grade connections shall be by lugs w/ two-hole tongues unless noted otherwise, joined to solid leads by welding (T&B 54856BE "BROWN"), self-threading (RECOGNIZED, EM 2522DH.75.312), or 10,000psi crimping (BURNDY YA3C 2TC 14E2). Surfaces that are galvanized or coated shall have coating(s) removed prior to bolting. Bolts shall be stainless steel with flat washers on each side of the connection and a lock washer beneath the fastening nut. Star-tooth washers shall be used between lug & dissimilar metal (copper-to-steel, etc) but are not required between tin-clad CU lugs & tin-clad CU bus bars. Lug tongues shall be coated with anti-oxidant compound, and excess compound wiped clean after bolting. The connection shall then be coated with cold-galvanizing compound, or with color-matching paint.

Ground bars exposed to weather shall be tin-clad copper, and shall be clean of any oxidation prior to lug bolting.

Galvanized items shall have zinc removed within 1" of weld area, and below lug surface contact area. After welding or bolting, the joint shall be coated with cold galvanizing compound.

### Ground Bar leads

Ground bars are isolated electrically from tower bottoms and equipment shelters by their standoff mounts. Leads from each ground bar to the ground ring shall be a pair of #2 SBTC, each connected to Lead 1 bi-directionally with #2 SBTC 'jumpers'. Pairs of #2 SBTC may be required between ground bars. Leads shall be routed to ground bars as follows:

- \* The Main Ground Bar (MGB), typically mounted inside on the equipment shelter 'back' wall; or mounted to the equipment platform steel beam (location varies).
- \* The Port Ground Bars (PGB), mounted inside and outside on the equipment shelter walls beneath the transmission line port. Note: Transmission line grounds also attach to the PGBs.
- \* The Tower Ground Bar (TGB) mounted at the base of the tower. Note: Transmission line grounds also attach to the TGBs.

NOTE: Contractor shall confirm that TGBs exist at 75-foot vertical intervals on any guyed or self-support tower, and that transmission lines are grounded to each TGB. Only the bottom-most TGB is isolated from the tower steel frame; upper TGBs may use the tower steel frame as common ground, requiring no copper leads between TGBs.

### #2 SBTC Whip leads

"Whip" leads shall connect the buried external ground ring to the following items:

#### Monopole Towers:

- \* Three whips to flanges on the monopole base, at least 90° apart. If none are provided, attach to the baseplate or consult tower manufacturer.

#### Self-Support Towers:

- \* Two whips to flange(s) on each tower leg base. If none are provided, attach to the baseplate or consult tower manufacturer.

#### Guyed Towers:

- \* Two whips to flange(s) on the tower base. If none are provided, attach to the baseplate or consult tower manufacturer.
- \* Establish a Lead 1 within the fence enclosure of each guy anchor, at least 40 foot perimeter and having 4 ground rods.
- \* #2 SBTC leads shall extend up, and be clamped (bronze clamshell or equal), to any two guy wires. NEVER weld leads to the guy wires. The lead to the guy anchor 'hand' plate may be welded.

#### Fences:

Metallic fence within 25 feet of tower Lead 1, or within 6 feet of shelter lead 1, shall have whip leads as follows:

- \* Each corner post.
- \* Each pair of gate posts.
- \* Any line post over 20'-0" from a grounded post.
- \* Each gate leaf to its respective gatepost using braided strap (3/4", tin-clad copper w/ lug ends).
- \* Fences around guy anchors shall be grounded in similar fashion.

#### Fuel tanks:

NEVER WELD to any fuel enclosure. NEVER penetrate the fuel containment. Metal tanks shall have one whip lead attached. Use an approved clamp or two-hole lug on an available flange.

#### Equipment Shelter/Platform and Other General Requirements (including but not limited to):

- \* Extend new Lead 21B up to shelter halo, remaking two-way connections as needed. Generator-equipped shelters have 6 such connections. Connections within the shelter shall be by compression; NEVER weld inside the shelter.
- \* Each vertical support pipe of the exterior cable bridge. Bridge end shall be kept at least 6" from the tower structure. The cable bridge shall be jumpered to the vertical support pipes with #2 SBTC at each vertical support pipe.
- \* Opposite corners of the steel equipment platform.
- \* Opposite corners of the roof shield over the equipment shelter.
- \* Each HVAC unit shield, if separate (may be 'jumpered' to main roof shield).
- \* Each HVAC package unit.
- \* Commercial electric meter box.
- \* Generator receptacle, if present.
- \* Steel building skid, if shelter is metal frame.
- \* Each air intake or exhaust fan vent louver.
- \* Each generator vent hood or louver.
- \* Generator exhaust stack, external.
- \* Opposite corners of generator support frame, if separate from shelter.
- \* Generator fuel tank, if separate from generator unit.
- \* Host building rain gutter, downspouts, and roof flashings within 25 feet.
- \* Telco MPOP (Main Point of Presence), if external to equipment shelter.
- \* Within cable vaults, one each to the ladder and to the manhole rim.

Note: The door frame is connected to the interior ground halo, and need no separate connection to the external ground ring.

### Inspection & Testing

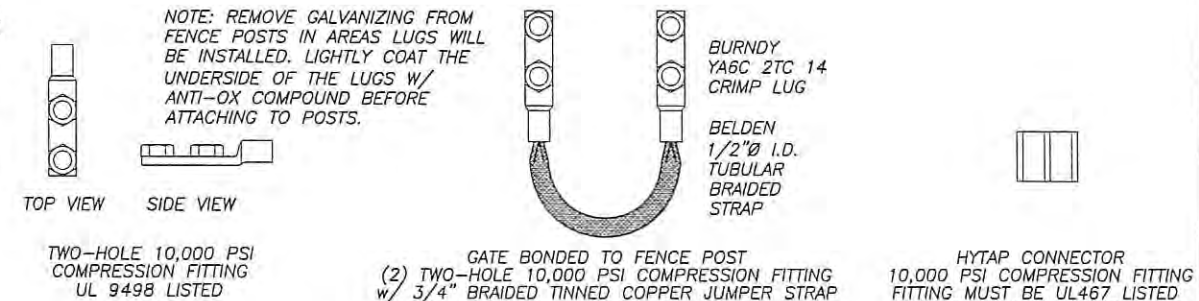
Test lead #1 and ground rods after installation but before backfilling or connecting to any other grounding, using the 3-point fall of potential method. Contractor to notify Verizon Wireless senior construction engineer at least 48 hours prior to testing. Document installation and test results with photographs.

## SYMBOL AND NOTE LEGEND

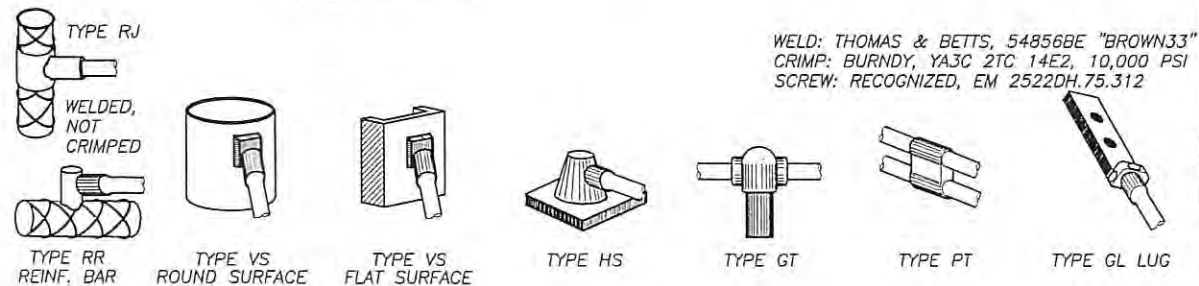
①	#2 SBTC AROUND SHELTER/PLATFORM, TOWER, OR GUY ANCHOR
⊕	5/8" X 10'-0" GALVANIZED STEEL GROUND ROD
⊙	TEST WELL PREFERRED LOCATION
----	#2 SBTC 'WHIP' LEAD
⑤	(2) #2 SBTC FROM MGB, PGB, OR TGB TO LEAD 1
⑤	AC HVAC UNIT
②13	BC BUILDING CORNER
⑤	BO BOLLARD
⑤	CBS CABLE BRIDGE SUPPORT POST
⑤	CL CAMLOK
④	EL ELECTRICAL SERVICE GROUND
④	EM COMMERCIAL ELECTRICAL METER
⑤	FAN GUY ANCHOR PLATE
⑤	FP FENCE POST
⑨0	GEN GENERATOR
⊖	GP GATE POST, 3/4" BRAID STRAP TO LEAF
⑤	GPS GPS UNIT
⑤	GUY GUY WIRE, MECH. CLAMP ONLY - NO WELDS
⑤	HL HOOD OR LOUVER
⑤	HB OUTSIDE OF HOFFMAN BOX
⑤	ILC INTEGRATED LOAD CENTER
⑤	MGB MAIN GROUND BAR
⑤	MU GENERATOR MUFFLER
⑤	PGB PORT GROUND BAR
⑤	RBR FOUNDATION REINFORCING
⑤	RS ROOF SHIELD
⑤	SB STEEL BEAM
⑤	SP STEEL POST
⑤	STP STEEL PLATFORM
⑤	TEL HOFFMAN BOX
⑤	TGB TOWER GROUND BAR
⑤	TWR TOWER BASE
⑤	VP DIESEL FUEL VENT PIPE

### Note:

Contractor to provide #2 solid bare tin-clad (SBTC) copper wire lead from #1 ground ring to air conditioner & ice shield if provided by VZW.



## 2 COMPRESSION CONNECTOR DETAILS SCALE: NTS

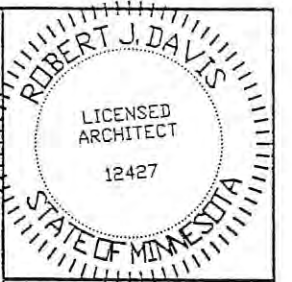


## 1 EXOTHERMIC WELD DETAILS SCALE: NTS

## LEAD IDENTIFICATION & DESCRIPTION:

1	RING, EXTERNAL BURIED w/ RODS	#2 SBTC
1A	RING, CONCRETE ENCASED	#2 SBTC
2	DEEP ANODE (TO IMPROVE CHMS)	ROD OR PIPE
3	RING TO BLDG STL FRAME	#2 SBTC
4	MAIN AC PANEL NEUTRAL BUS TO (2) GROUND RODS, ISOLATED FROM LEAD #1	NEC 250.66
5	RING TO GROUND BAR	(2) #2 SBTC
6	RING TO EXT MTL OBJECT	#2 SBTC
7	DEEP ANODE TO MGB	NSTD33-9
8	AC PANEL TO WATER METER	NEC 250.66
9	EXT WATER TO INT WATER PIPES	NSTD33-9
10	INT WATER PIPE TO MGB	NSTD33-9
11-12	NOT USED	
13	AC PANEL TO MGB	NSTD33-9
14	MGB/FGTB TO BLDG STL FRAME	#2/0 1-STR
14C	MGB/FGTB TO ROOF/WALL MTL PNL	#1/0 1-STR
15	MGB/FGTB TO FGB-HE SAME FLOOR	#2/0 1-STR
16	NOT USED	
16A	ECPCB TO CABLE ENTRY RACK	#1/0 1-STR
17	MGB TO CABLE SHIELDING	#6 1-STR
17A	ECPCB TO CABLE SHIELDING	#6 1-STR
17B	MGB/FGTB TO F-0 SPLICE SHELF	#1 1-STR
18	LOWEST MGB/FGTB TO HIGHEST FGB	#2/0 1-STR
19	LEAD 18 TO OTHER FGBs, <6'	#2/0 1-STR
20	MGB/FGTB TO BRANCH AC PNL	#6 1-STR
20A	NEAREST GRND TO DISCONNECT PNL	NEC 250.66
20B	GWB TO AC DISTR PNL	#6 1-STR
21	MGB/FGTB TO INT HALO	#2 1-STR
21A	INTERIOR 'GREEN' HALO	#2 1-STR
21B	INT HALO TO EXT RING	#2 SBTC
21C	INT HALO TO EQUIPMENT MTL	#6 1-STR
22	ROOF TOWER RING TO ROOF GRND	NFPA 780
23	MGB/FGTB TO ECPCB, SAME FLOOR	#1 1-STR
23A	MGB/FGTB TO CXR-HF LINR PROT	#6 1-STR
24	ECPCB TO EACH PROTECTOR ASSEMBLY	#6 1-STR
24A	LOWER PROT ASSY TO UPPER	#6 1-STR

25	RING TO NEAREST LIGHTNING ROD	#2 SBTC
26	LIGHTNING ROD SYS TO NEARBY MTL	NFPA 780
27	RING TO TOWER RING	(2) #2 SBTC
28	RING TO SHELTER RING	(2) #2 SBTC
29	BRANCH AC PNL TO BTY CHG FRM	NSTD33-11
30	BRANCH AC PNL TO OUTLETS	NSTD33-11
31	MGB/FGTB TO PWR, BTY FRAMES	#2/0 1-STR
32	#31 TO BATTERY CHARGER FRAME	#6 1-STR
33	#31 TO BATTERY RACK FRAME	#6 1-STR
34	#31 TO PCU FRAME	#6 1-STR
35	#31 TO DSU FRAME	#6 1-STR
36	#31 TO PDU FRAME	#6 1-STR
37	MGB/FGTB TO BTY RETURN	NSTD33-14.5
37A	MGB/FGTB TO RTN TERM CARR SUPP	#6 1-STR
38	FGTB TO PDU GB	#750MCM 1-STR
38A	FGTB TO PDU GB CARRIER SUPPLY	#2/0 1-STR
39	DC BUS DUCT TO NEXT SECTION	#6 1-STR
40	DC BUS DUCT TO MGB/FGTB	#6 1-STR
41A	MGB/FGTB TO #58	#2/0 1-STR
42-44	NOT USED	
45	MAIN AC PNL TO BRANCH AC PNL	NSTD33-11
46	BRANCH AC PNL TO DED OUTLET	NSTD33-11
47	FGTB TO INTEG FRM	#2 1-STR
48	LEAD #31 TO INTEG FRM	#6 1-STR
49	INTEG FRM TO EQUIP SHELF	BY FASTENERS
50	PDU BTY RET TO #51	#2/0 1-STR
51	#50 TO TRANS FRM ISO DC PWR	#6 1-STR
52	TRANS FRM FUSE TO FRM OR BAR	#3 1-STR
53A	MGB/FGTB TO PDF/BDFB	NSTD33-22
54	MGB/FGTB TO STATIC DEVICES	#6 1-STR
55	MGB/FGTB TO CABLE AT ENTRY	#6 1-STR
56	MGB/FGTB TO AC PWR RADIO XMTR	#6 1-STR
57A	MGB/FGTB TO CBL GRID/RUNWAY	#2/0 1-STR
58A	#41A TO AISLE FRAME	#2 1-STR
59A	#58A TO EACH SGL FRAME GRND	#6 1-STR
60-89	NOT USED	
90	GENERATOR FRAME TO EXT RING	#2 SBTC



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of Minnesota. ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*  
12-06-17  
Date:

**DESIGN 1**  
9973 VALLEY VIEW RD.  
EDEN PRAIRIE, MN 55344  
(952) 903-9299  
WWW.DESIGN1EP.COM

**verizon**  
10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
(612) 720-0052

PROJECT  
20141122104 -  
LOC. CODE: 311232

MIN  
TICKLE

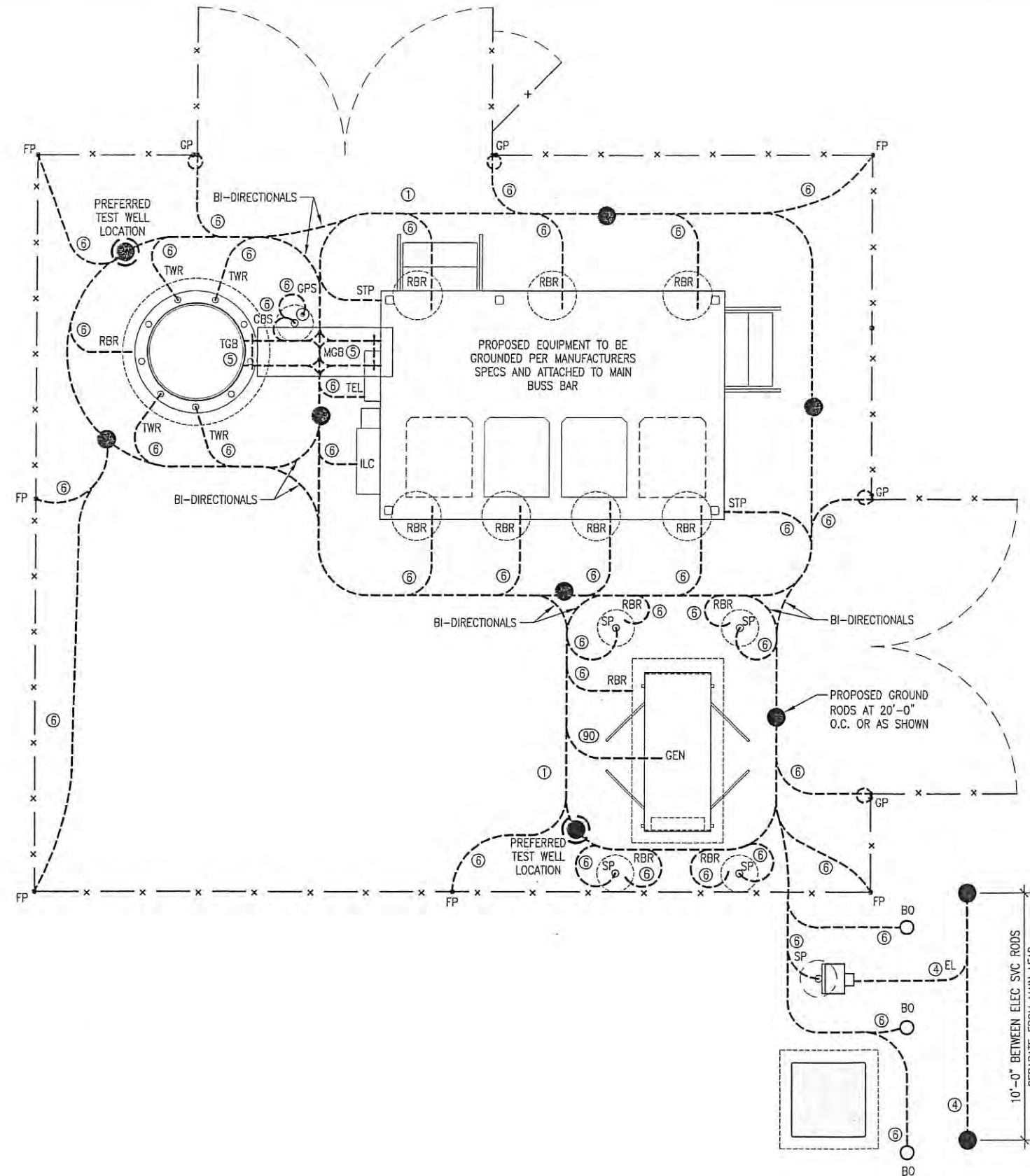
33RD CIRCLE N.  
LAKE ELMO, MN 55042

SHEET CONTENTS:  
GROUNDING NOTES

DRAWN BY:	DJS
DATE:	06-29-17
CHECKED BY:	MJS
REV. A	07-10-17
REV. B	10-05-17
REV. C	10-13-17
REV. D	11-14-17
REV. E	12-01-17
REV. F	12-06-17

G-1





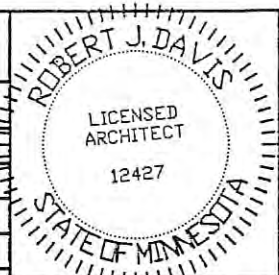
NOTE:  
CONTRACTOR SHALL ENSURE THAT EACH WHIP IS  
ROUTED TO LEAD 1 BY THE SHORTEST PATH, AND  
BENDS SHALL NOT BE LESS THAN 12" RADIUS

1 GROUNDING PLAN  
SCALE: NTS

NORTH

## GROUNDING DETAIL INDEX

DETAIL	DETAIL DESCRIPTION
PLATFORM	9'-4" X 14'-0" PLATFORM W/ CANOPY GROUNDING ELEVATIONS
11.1	TEST WELL DETAIL, GROUND RING & ROD DETAIL
11.3	REBAR GROUNDING DETAIL
11.4	CONDUIT DETAIL
11.5	TYPICAL GROUNDING CABLE BRIDGE DETAIL
11.6	TYPICAL TOWER GROUNDING DETAIL



I hereby certify that this plan,  
specification or report was  
prepared by me or under my direct  
supervision and that I am a duly  
registered Architect under  
the laws of the State of Minnesota.  
ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*  
Date: 12-06-17

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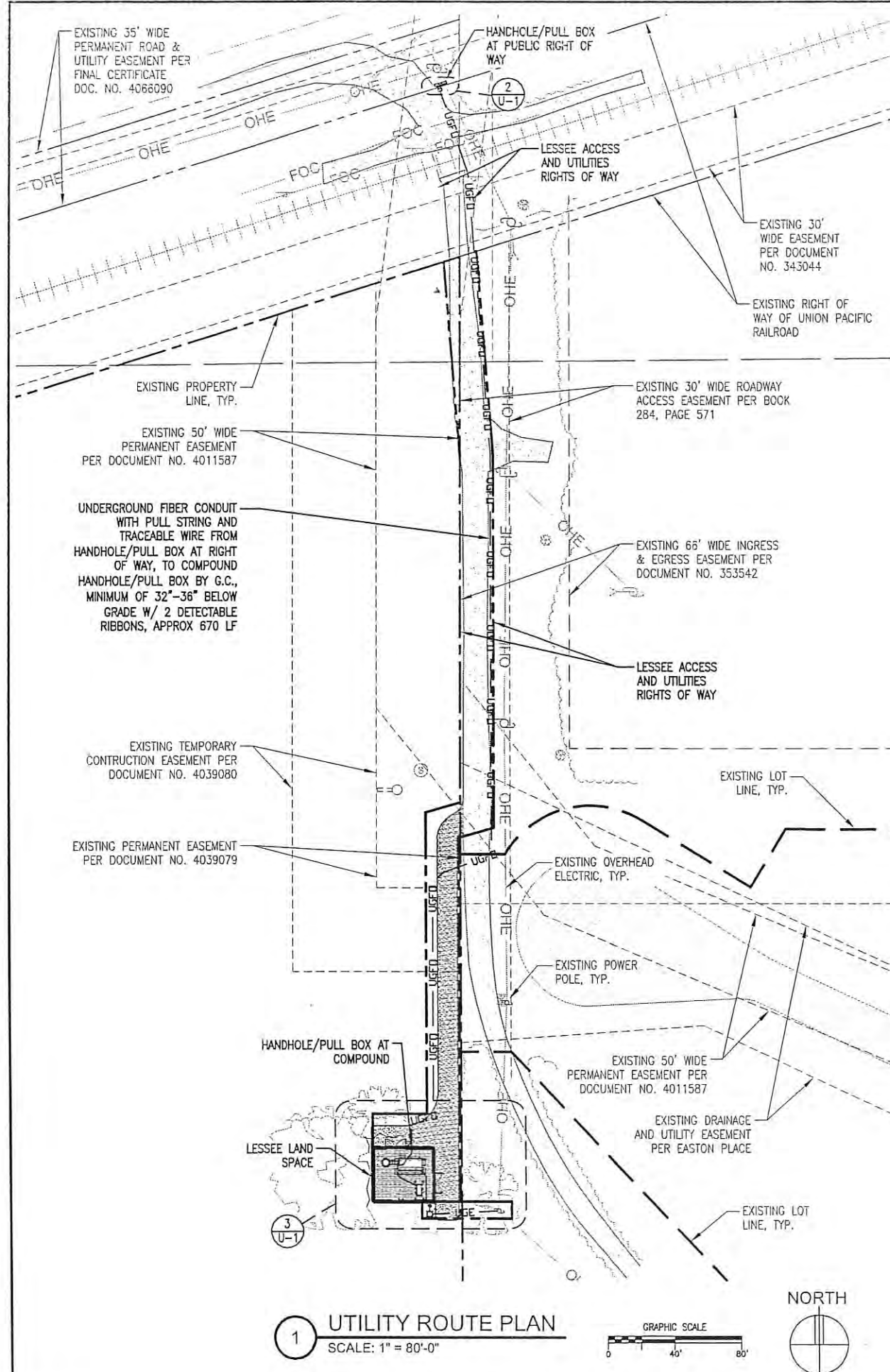
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20141122104  
LOC. CODE: 311232

MIN  
TICKLE

33RD CIRCLE N.  
LAKE ELMO, MN 55042

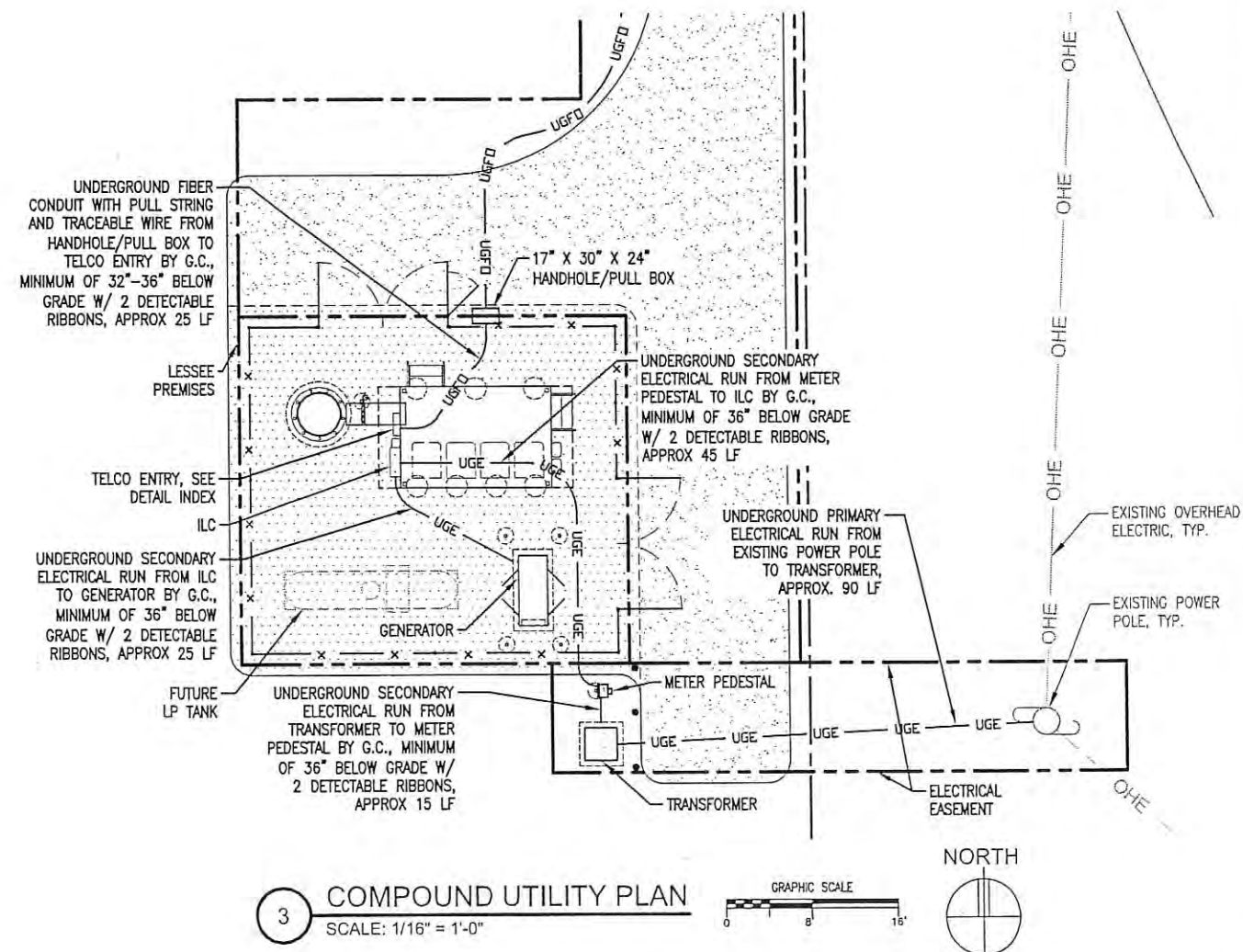
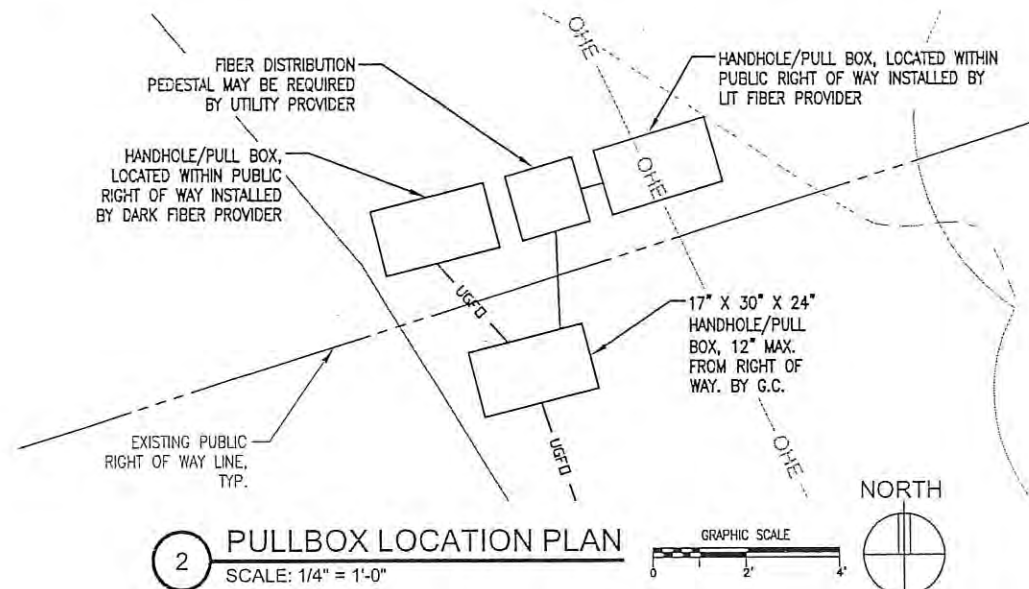
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GROUNDING PLAN  
GROUNDING DETAIL INDEX

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DATE:	06-29-17
CHECKED BY:	MJS
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REV. B	10-05-17
REV. C	10-13-17
REV. D	11-14-17
REV. E	12-01-17
REV. F	12-06-17

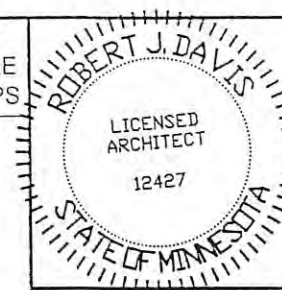


**NOTE:**

1. CONTRACTOR TO COORDINATE PUBLIC AND PRIVATE UTILITY LOCATES PRIOR TO CONSTRUCTION START. NOTIFY THE ARCHITECT AND THE VZW CONSTRUCTION ENGINEER IMMEDIATELY OF ANY UTILITY LINE ISSUES.
2. EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL UTILITIES ARE SHOWN. CONTRACTOR IS RESPONSIBLE TO NOT DAMAGE UNDERGROUND UTILITIES AND MUST CONDUCT BOTH PUBLIC AND PRIVATE UTILITY LOCATES BEFORE EXCAVATING.
3. CONTRACTOR SHALL RESTORE ALL AREAS, INCLUDING LANDSCAPE, DISTURBED BY CONSTRUCTION TO PRE-CONSTRUCTION CONDITIONS.



POWER TYPE:  
120/240V, SINGLE  
PHASE, 200 AMPS



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of Minnesota.  
ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*  
Date: 12-06-17

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20141122104  
LOC. CODE: 311232

MIN  
TICKLE

33RD CIRCLE N.  
LAKE ELMO, MN 55042

SHEET CONTENTS:  
UTILITY ROUTE PLAN  
PULLBOX LOCATION PLAN  
COMPOUND UTILITY PLAN

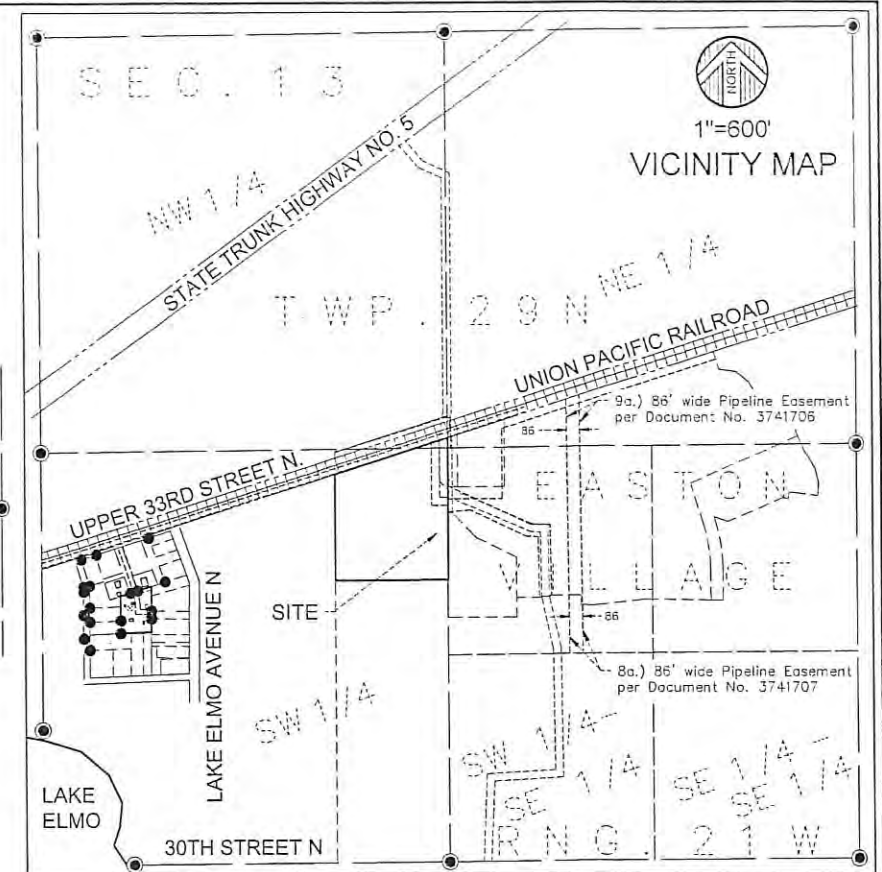
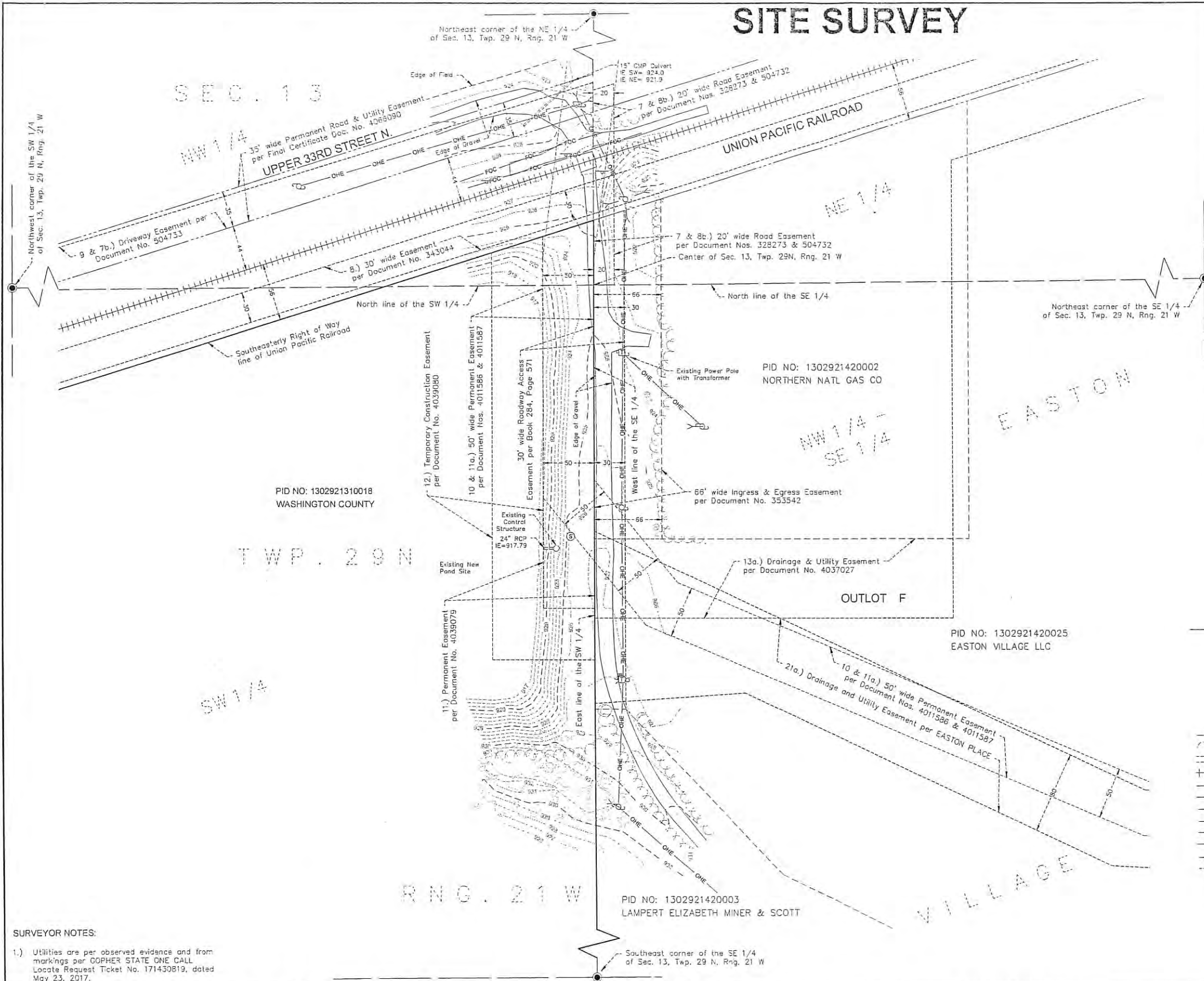
DRAWN BY: DJS  
DATE: 06-29-17  
CHECKED BY: MJS  
REV. A 07-10-17  
REV. B 10-05-17  
REV. C 10-13-17  
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REV. E 12-01-17  
REV. F 12-06-17

U-1






















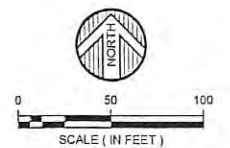
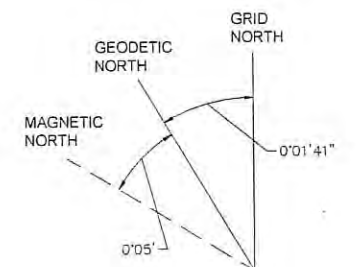


# SITE SURVEY



### LEGEND

- |   |                     |
|---|---------------------|
|  | SIGN                |
|  | MAILBOX             |
|  | GUY ANCHOR          |
|  | ELEC POLE           |
|  | TELE PEDESTAL       |
|  | TREE DECIDUOUS      |
|  | SANITARY MANHOLE    |
|  | EDGE OF FIELD       |
|  | EDGE OF WOODS       |
|  | CULVERT             |
|  | CENTERLINE RAILROAD |
|  | UNDERGROUND FIBER   |
|  | OVERHEAD ELEC       |
|  | RIGHT OF WAY LINE   |
|  | SECTION LINE        |
|  | QUARTER LINE        |
|  | SIXTEENTH LINE      |
|  | PARCEL LINE         |
|  | EASEMENT LINE       |
|  | GRAVEL SURFACE      |



ORIENTATION OF THIS BEARING SYSTEM IS  
BASED ON THE WASHINGTON COUNTY  
COORDINATE SYSTEM NAD83 (1985)

- = DENOTES A FOUND SECTION CORNER MONUMENT
- = DENOTES A FOUND IRON MONUMENT

© 2017 WIDSETH SMITH NOLTING

# DESIGN 1

SITE NAME:  
MINC TICKLE

Washington County, MN

No.	Date	REVISIONS						By	CHK	APP
FIELD WORK:		5/30/17	CHECKED BY: SMK			DRAWN BY:		SMK/JMB		

I HEREBY CERTIFY THAT THIS DOCUMENT 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.

I HEREBY CERTIFY THAT THIS DOCUMENT 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.

**PRELIMINARY**

DATE: 9/11/17      SHAWN M. KUPCHO, L.S.      LICENSE # 49021

FULL SCALE ON 22"x34"  
HALF SCALE ON 11"x17"

0494A1877.002



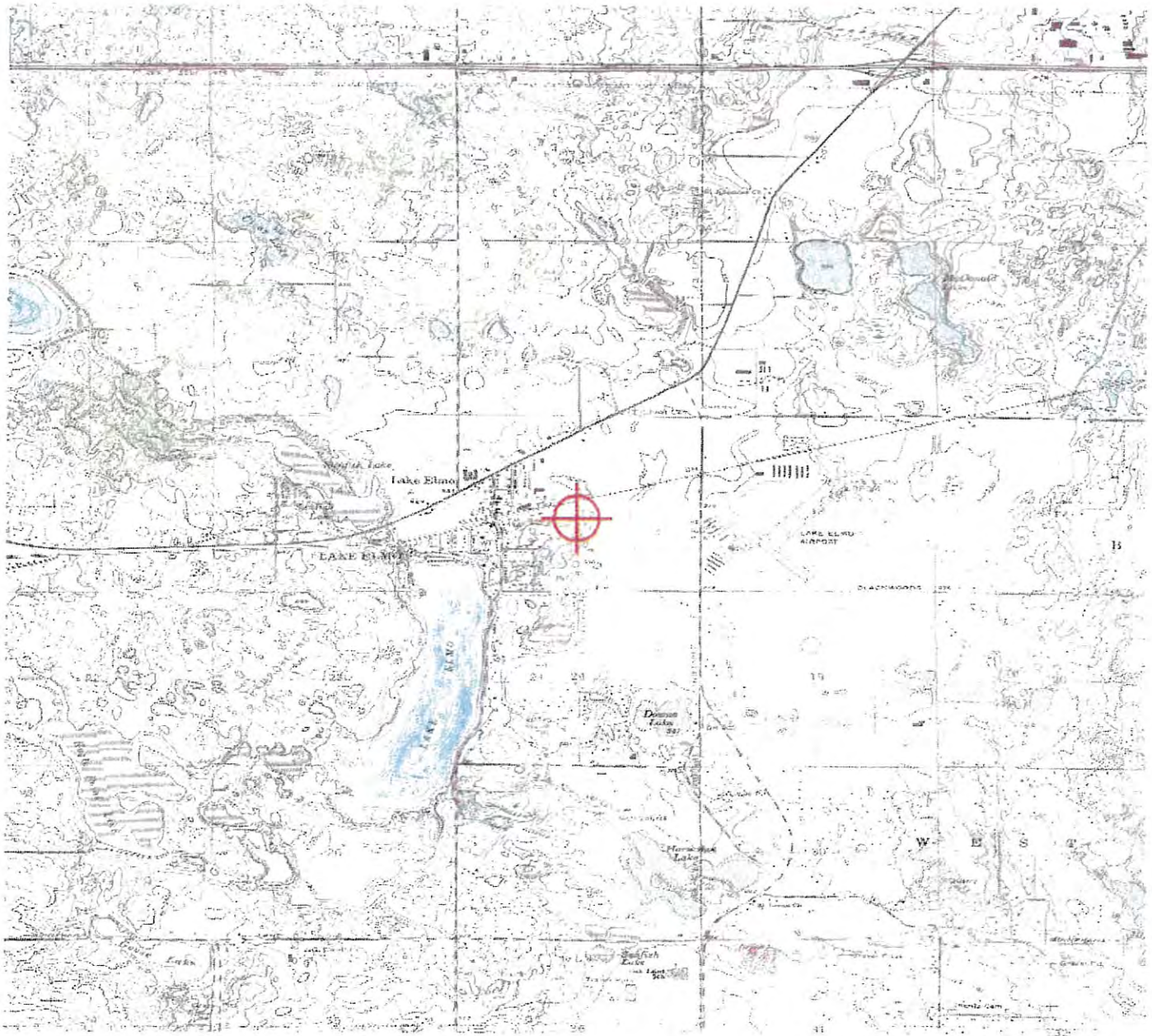
WIDSETH SMITH NOLTING

Engineering | Architecture | Surveying | Environmental

SHEET 2 OF 2 SHEETS

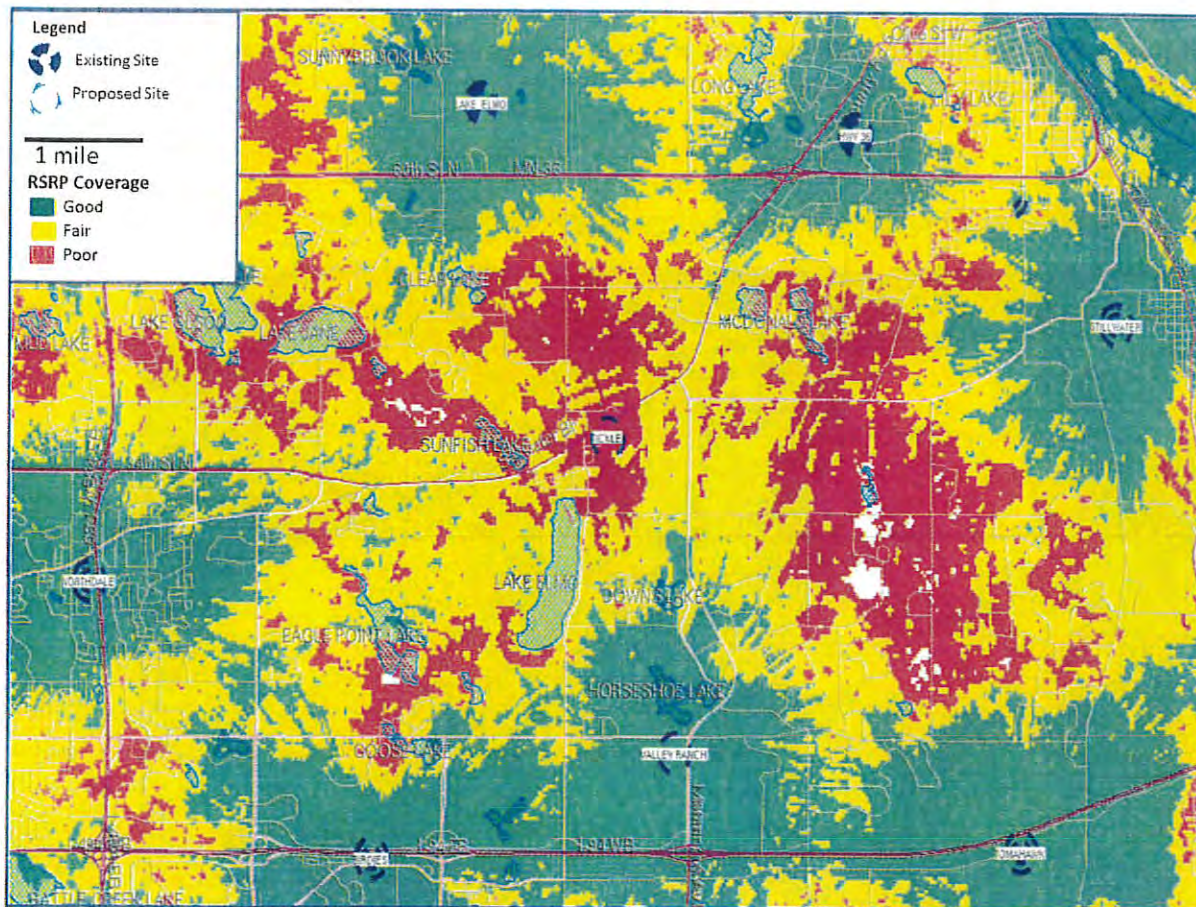


TOPO Map for ASN 2018-AGL-6010-OE





Existing RSRP Coverage in Area Surrounding Proposed Site (Cutoff > -105dBm)



**Figure 1: The above map shows the existing RSRP levels in the area surrounding the proposed MIN TICKLE site**

**Best server coverage plots** are used in capacity analysis and show where each of the cell sites serving in the area are dominant (also referred to as serving sites), and it is used to determine the traffic levels experienced by each site. Each cell site is generally composed of 3 or more sectors, each of which can handle a certain amount of connections. If the area served by a specific sector of a site is large and covers several high traffic areas such as neighborhoods, commercial areas, sport centers, schools or highways, the experience of a user connected to that sector will generally be degraded. This is due to the fact that the server might be running at full capacity at the given time when the user is trying to connect and use its phone or smart device. Best server analysis allows us to pin point specific high data traffic areas in the serving footprint of a site's sector and propose a new cell site that will overtake the high traffic area and thus will offload the overloaded existing sector. The new cell site will serve mainly the high traffic area, while the existing site will be focused to still cover the remainder of its coverage footprint outside the high traffic area. In other cases, if an existing site is covering a large geographical area, expanding over several miles, a new site will be needed to allow the area to be divided amongst the existing and the new site. This will result in better coverage at the edge of the coverage footprint of the existing site, as well as better data speeds for our customers.



Figure 2 below shows the Best Server map for the area around the proposed site MIN TICKLE without the simulated effect of the new site. Of note is the East facing sector of NORTHDALE as well as the North facing sector of VALLEY RANCH where both sectors serve a large geographical area comprised of residential traffic, highways as well as lakes.

**Existing Best Server Coverage Plot in Area Surrounding Proposed Site (Cutoff > -105dBm)**

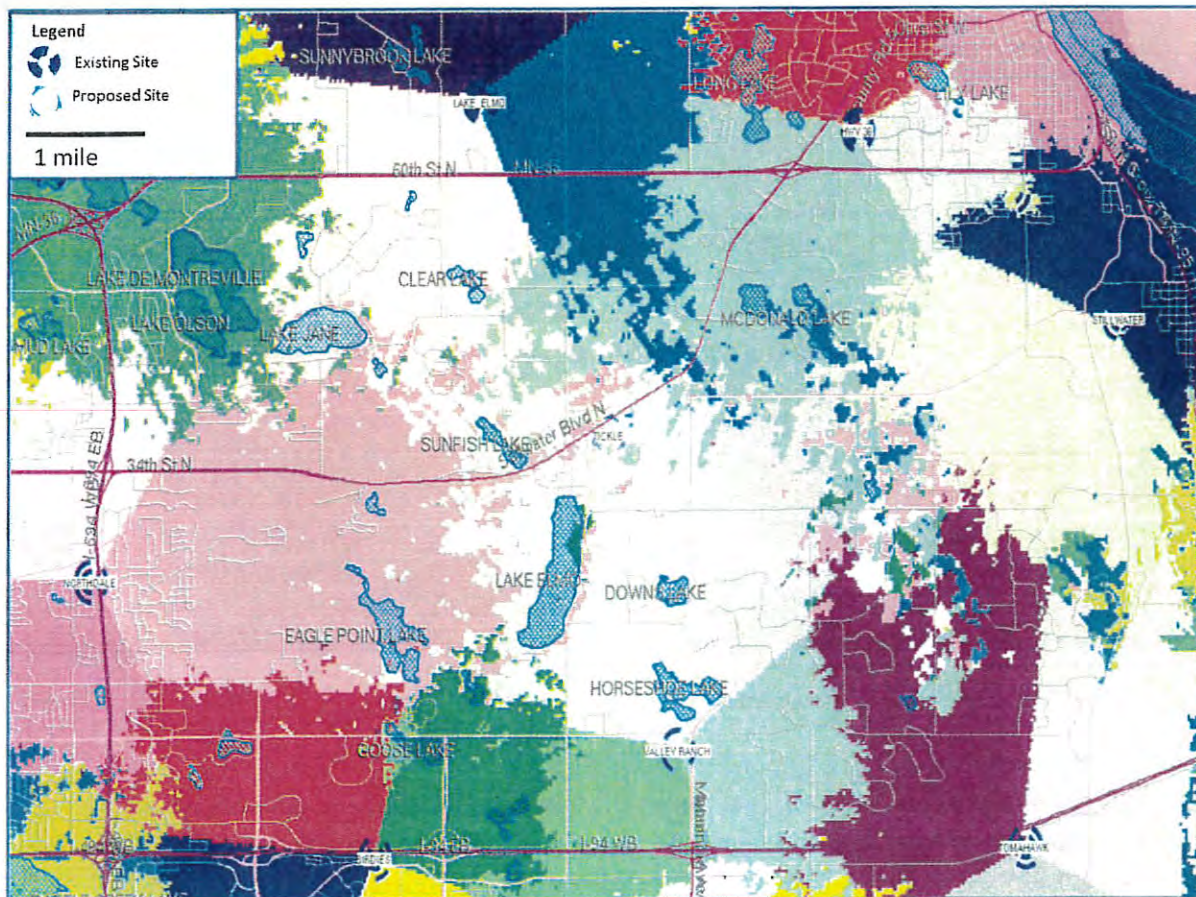


Figure 2: This map shows the existing Best Server coverage plot in the area surrounding the proposed site. Each color on the map is associated with a sector of a Verizon Wireless site, representing the serving area of that sector



The following two maps will show the effect of the proposed MIN TICKLE site. Figure 3 will show the expected effect on RSRP coverage, while Figure 4 will show the expected effect in terms of Best Server distribution. As can be seen with the addition of the MIN TICKLE site most of the areas in the city of Lake Elmo and especially downtown are expected to have good coverage, where now they are served with poor coverage levels. The entire Highway 5 will see a tremendous improvement in coverage from poor to good coverage levels which will have a positive effect on customers travelling along the highway.

In the Best Server map (Figure 4) we notice that the MIN TICKLE site will take over traffic in most of the city of Lake Elmo, and more specifically in the downtown area, the Lake Elmo Airport, Highway 5 and also the area surrounding Lake Elmo. This will have an effect on the data speeds and thus user experience for all users in the areas shown in the map and more specifically those users travelling on Highway 5, around Lake Elmo or in the city of Lake Elmo.

#### Expected RSRP Coverage in Area Surrounding Proposed Site (Cutoff > -105dBm)

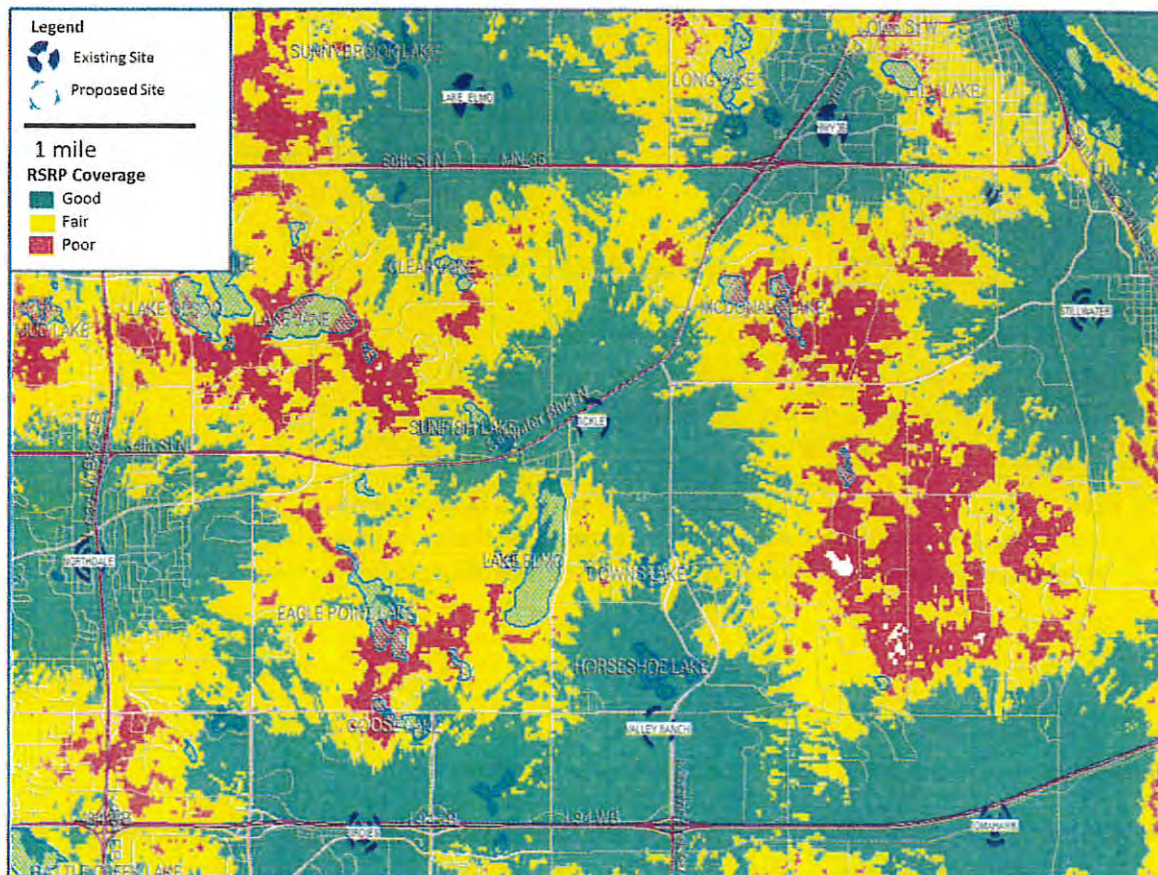


Figure 3: The above map shows the existing RSRP levels in the area surrounding the proposed MIN TICKLE site, including the simulated effect of the MIN TICKLE site



**Expected Best Server Coverage Plot in Area Surrounding Proposed Site (Cutoff > -105dBm)**

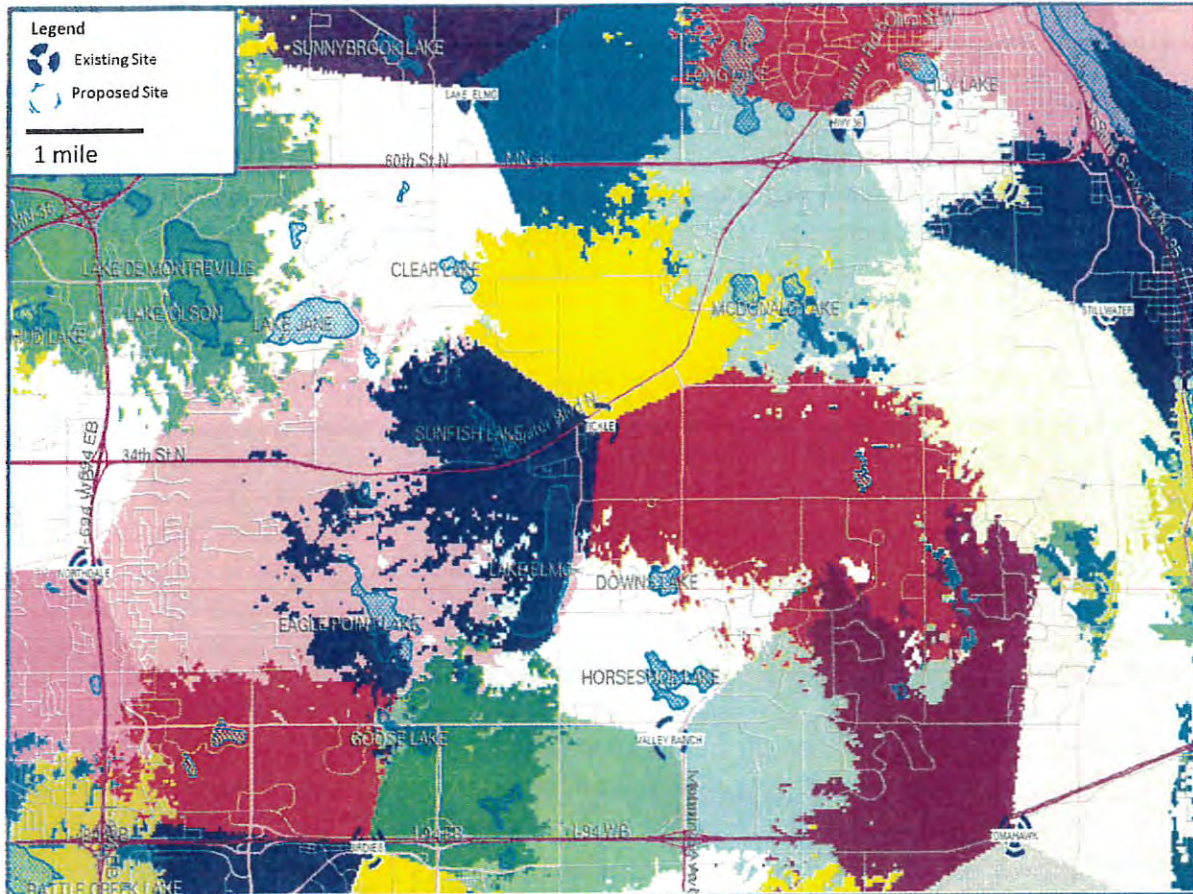


Figure 4: This map shows the existing Best Server coverage plot in the area surrounding the proposed site, including the simulated effect of the proposed site. Each color on the map is associated with a sector of a Verizon Wireless site, representing the serving area of that sector.

### Alternate Locations

Verizon Wireless has been working since 2014 on a new site that will improve coverage in the City of Lake Elmo and especially in downtown. Verizon Wireless completes a thorough analysis of possible locations for a new cell site. In this analysis, Verizon Wireless also attempts to work with the communities and owners of existing cell sites or structure to co-locate if the location would help meet the objectives of the project. This has been the case with the MIN TICKLE project where an attempt was made to co-locate on the existing water tower at Langly Ct N. After discussing with the City, it was decided that the water tank is at full capacity and would not provide sufficient room for Verizon Wireless' equipment. Since this determination was made, Verizon has been working with the City to find a suitable alternative for a new tower.



The map in Figure 5 shows the alternate locations that were considered for a new cell tower.



Figure 5: Search Area Map and Alternatives for New Cell Towers

The first alternate location ‘#1 City Water Tank Site for new Monopole’ was a monopole next to the existing water tower. While the location would work in terms of distance to existing Verizon Wireless towers and traffic distribution, because of the proximity of the water tower, the azimuths (antenna orientations) on the proposed site MIN TICKLE would be very restrictive and pointed in such a way that the reflections coming from the water tower can be minimized. The restrictive azimuths would also prevent MIN TICKLE from serving in certain areas that area targeted for coverage. In addition, similar sites that are in the close proximity of a water tower have shown degradation in performance of the site and thus degradation in customer experience.

Other alternative locations that were analyzed were Alternate #3 ‘City Hall Clock Tower’, as well as alternate #4 ‘Soccer Field Light Pole’. A tower located at either of Alternate #3 or Alternate #4 would provide less benefit to the network than the primary site candidate #2 VFW Ball Field Lightpole because of their location being further to the north at the edge of the City of Lake Elmo downtown. A tower at Alternate #3 or Alternate #4 of the same height as the primary Alternate #2 would provide a lower coverage footprint to the south of Highway 5 and around the lake of Lake Elmo. The expected best server map including the simulated effect of a tower at Alternate #3 is shown in Figure 6 below. As can be seen in the figure, if the MIN TICKLE site would be located at this location, it would not provide dominant coverage around the lake of Lake Elmo. This would also mean that less capacity offload would be provided to the existing Northdale and Valley Ranch sites. Similar behavior is expected of a tower that would be located at Alternate #4. Alternate #3 City Hall Clock Tower and Alternate #4 Soccer Field Light Pole would require a higher tower height (approximately 130’), in order to provide the same



Moreover, if the proposed tower type at the Alternate #3 and Alternate #4 needs to be of stealth design such that the antenna would not be visible to the outside, the design would place the radio transmitters on the ground, increasing the distance from transmitter to the antenna. This means that the overall system line losses will be higher and the total transmission power out of the antennas will be lower. The direct result of this will be a decreased coverage footprint of the site.

[illegible]

9



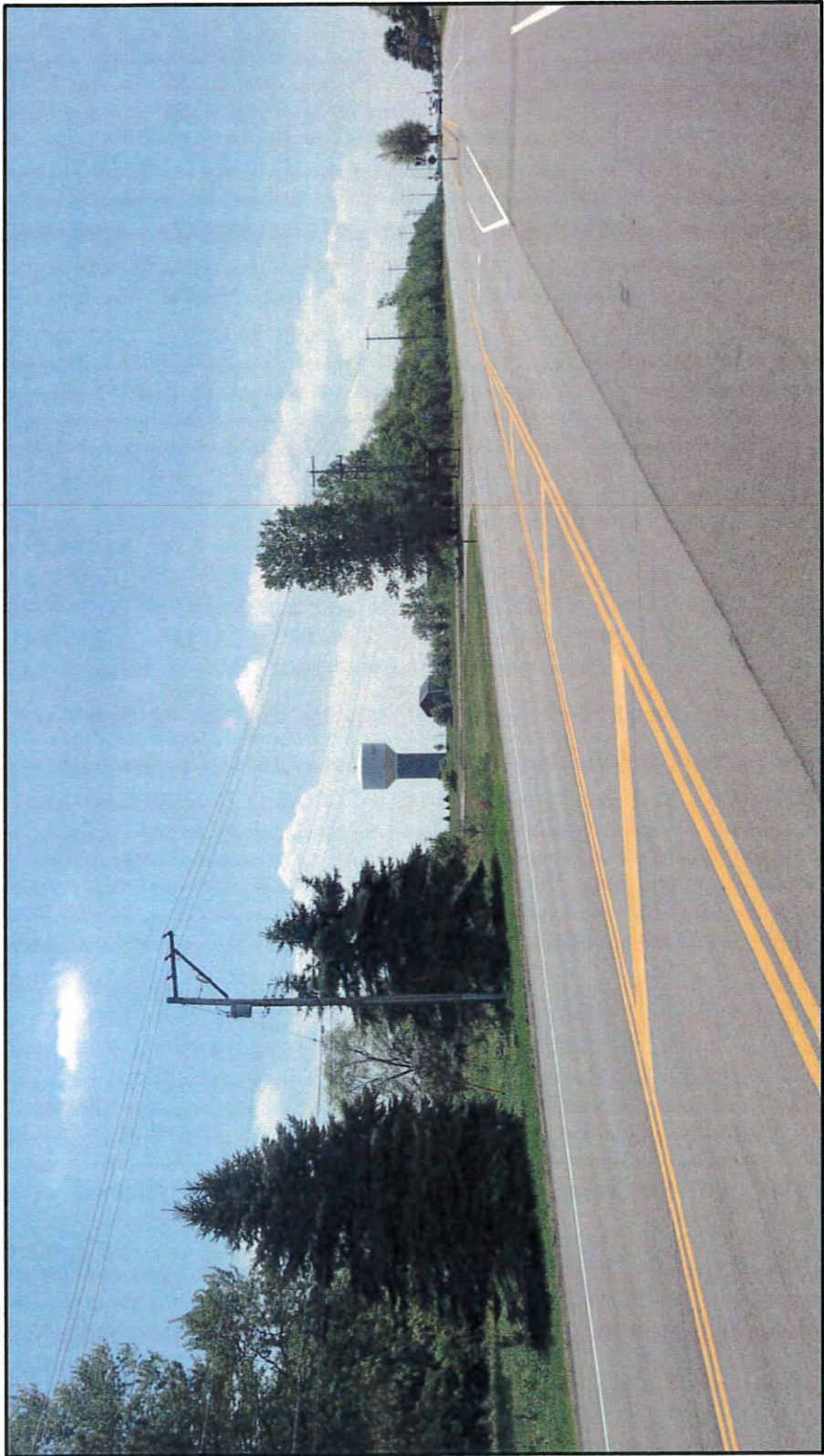


1 AERIAL KEY  
 SCALE: 1" = 50'





1 EXISTING PHOTO  
VIEWED SOUTHEAST



PROJECT: 20141112995  
MINC  
BALROG  
IDEAL AVENUE  
LAKE ELMO, MN 55042

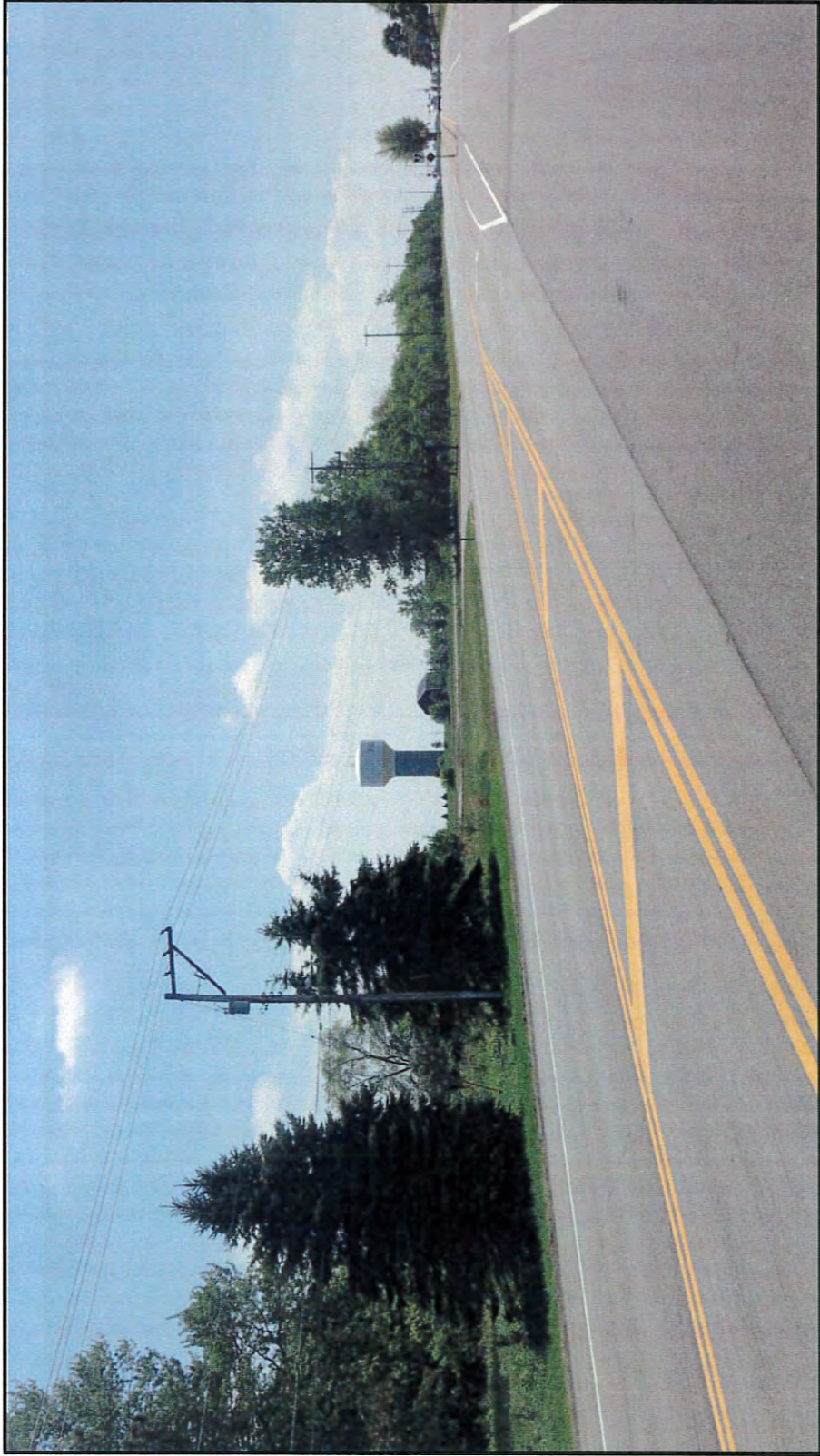
VERIZON  
WIRELESS  
10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
(612) 720-0052

DESIGN 1  
9973 VALLEY VIEW ROAD  
EDEN PRAIRIE, MN 55344  
(952) 963-9299  
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PS-1A  
v.1  
DRAWN BY: MJS  
DATE: 05-29-18



1 PROPOSED IMAGE  
VIEWED SOUTHEAST



PROJECT: 20141112995  
MINC  
BALROG  
IDEAL AVENUE  
LAKE ELMO, MN 55042

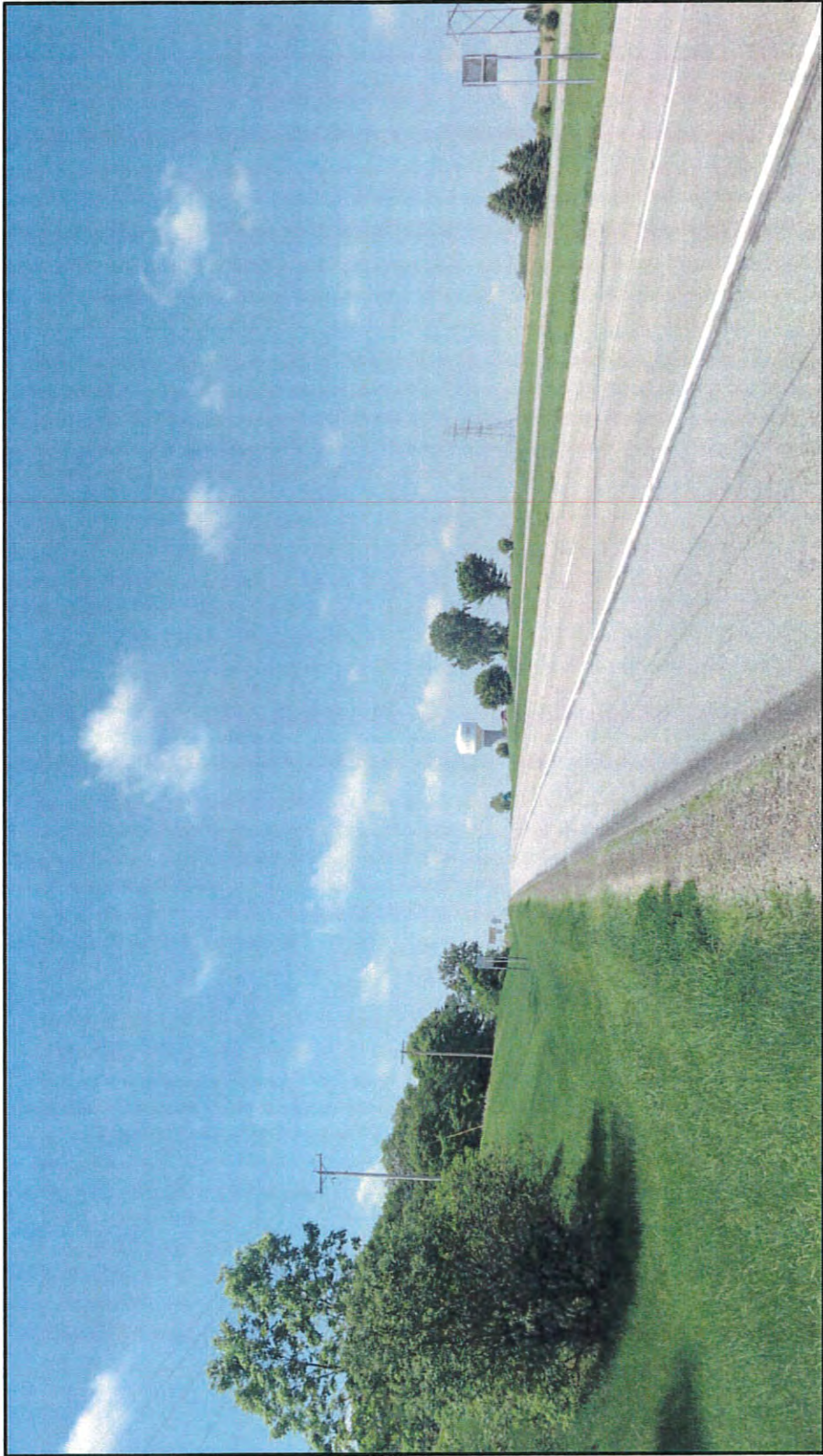
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WIRELESS  
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v.1



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IDEAL AVENUE  
LAKE ELMO, MN 55042

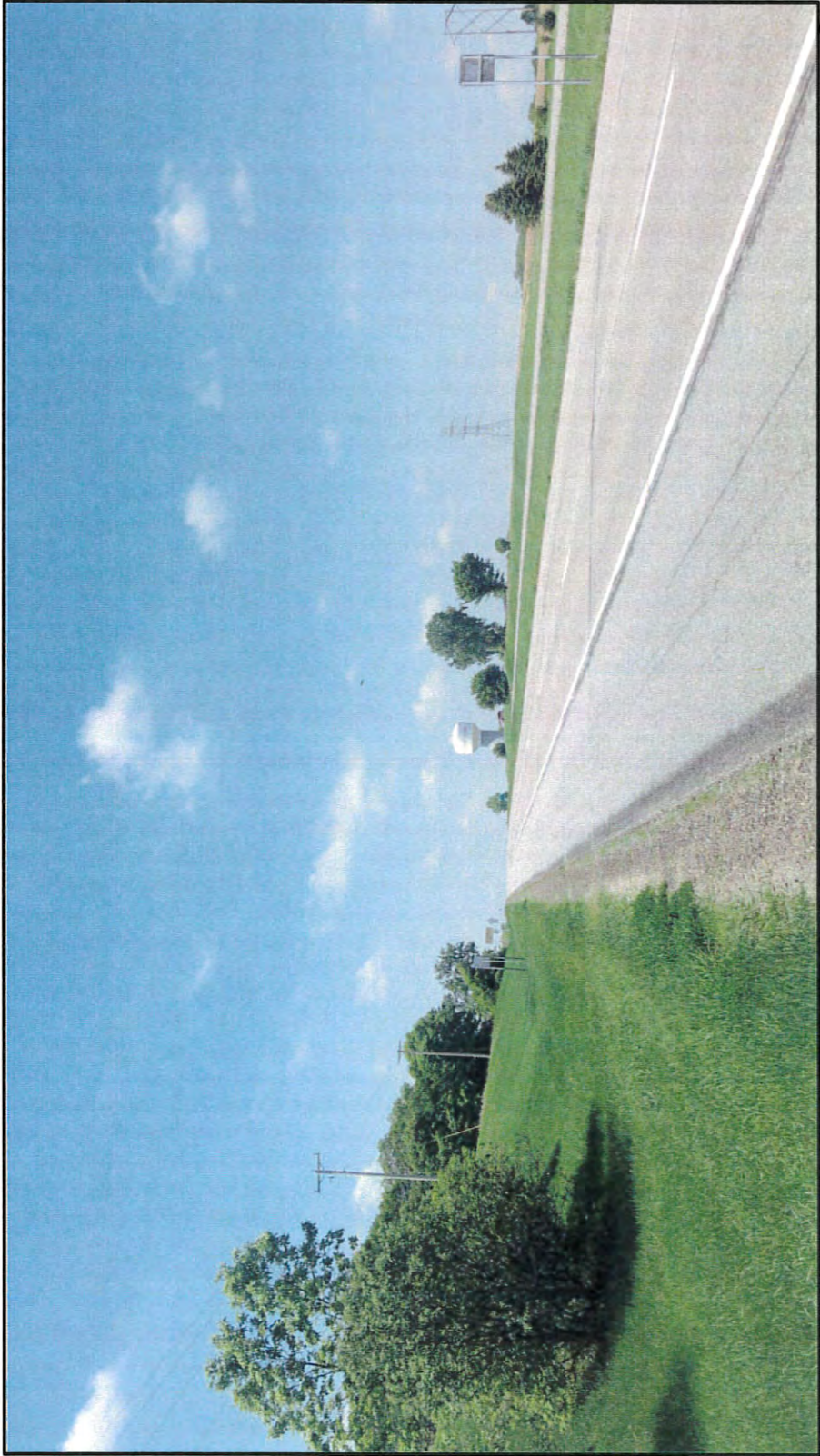
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WIRELESS  
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PS-2A  
DATE: 05-29-18  
DRAWN BY: MJS  
v.1



1 PROPOSED IMAGE  
VIEWED NORTHWEST



PROJECT: 20141112995  
MINC  
BALROG  
IDEAL AVENUE  
LAKE ELMO, MN 55042

VERIZON  
WIRELESS  
10801 BUSH LAKE ROAD  
BLOOMINGTON, MN 55438  
(612) 720-0052

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9873 VALLEY VIEW ROAD  
EDEN PRAIRIE, MN 55344  
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DATE: 05-29-18

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**Federal Communications Commission  
Wireless Telecommunications Bureau**

**RADIO STATION AUTHORIZATION**

**LICENSEE:** VERIZON WIRELESS (VAW) LLC

**ATTN:** REGULATORY  
VERIZON WIRELESS (VAW) LLC  
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING  
ALPHARETTA, GA 30022

<b>Call Sign</b> KNKA219	<b>File Number</b>
<b>Radio Service</b> CL - Cellular	
<b>Market Number</b> CMA015	<b>Channel Block</b> B
<b>Sub-Market Designator</b> 0	

**FCC Registration Number (FRN):** 0003800507

<b>Market Name</b> Minneapolis-St. Paul, MN-WI
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<b>Grant Date</b> 08-26-2014	<b>Effective Date</b> 11-04-2016	<b>Expiration Date</b> 10-01-2024	<b>Five Yr Build-Out Date</b>	<b>Print Date</b>
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**Site Information:**

<b>Location</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Ground Elevation (meters)</b>	<b>Structure Hgt to Tip (meters)</b>	<b>Antenna Structure Registration No.</b>
2	44-43-54.9 N	093-08-08.8 W	292.3	56.7	

**Address:** 14950 CHIPPENDALE RD.  
**City:** ROSEMOUNT **County:** DAKOTA **State:** MN **Construction Deadline:**

**Antenna: 4**

**Maximum Transmitting ERP in Watts:** 140.820

<b>Azimuth(from true north)</b>	<b>0</b>	<b>45</b>	<b>90</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>
<b>Antenna Height AAT (meters)</b>	69.700	84.200	73.600	67.100	60.500	46.100	52.600	76.700
<b>Transmitting ERP (watts)</b>	209.760	63.350	0.870	0.460	0.580	0.460	27.020	170.500

**Antenna: 5**

**Maximum Transmitting ERP in Watts:** 140.820

<b>Azimuth(from true north)</b>	<b>0</b>	<b>45</b>	<b>90</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>
<b>Antenna Height AAT (meters)</b>	69.700	84.200	73.500	67.100	60.500	46.100	52.700	76.700
<b>Transmitting ERP (watts)</b>	3.020	69.170	234.390	181.940	28.180	0.500	0.500	0.500

**Antenna: 6**

**Maximum Transmitting ERP in Watts:** 140.820

<b>Azimuth(from true north)</b>	<b>0</b>	<b>45</b>	<b>90</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>
<b>Antenna Height AAT (meters)</b>	69.700	84.200	73.600	67.100	60.500	46.100	52.700	76.700
<b>Transmitting ERP (watts)</b>	0.200	0.200	0.200	4.500	49.320	100.690	48.190	2.840

**Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	45-09-37.9 N	093-01-39.8 W	277.1	50.9	1023107

Address: 7050 CATER LAKE RD

City: Hugo County: ANOKA State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.600	38.800	26.200	29.000	41.800	43.800	51.700	50.200
Transmitting ERP (watts)	199.720	72.510	6.920	0.430	0.430	4.170	4.710	169.990

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.600	38.800	26.200	29.000	41.800	43.800	51.700	50.200
Transmitting ERP (watts)	7.980	79.840	200.550	159.300	37.340	3.410	0.420	0.540

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.600	38.800	26.200	29.000	41.800	43.800	51.700	50.200
Transmitting ERP (watts)	1.240	0.380	1.300	18.370	113.270	192.360	105.710	14.930

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
5	45-11-12.9 N	093-33-00.9 W	293.5	80.2	1023048

Address: SUNSHINE PARK MAIN ST

City: ROGERS County: HENNEPIN State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	93.700	100.000	101.500	86.400	77.500	69.900	80.000	85.000
Transmitting ERP (watts)	226.180	68.300	0.940	0.490	0.620	0.490	29.140	183.840

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	93.700	100.000	101.500	86.400	77.500	69.900	80.000	85.000
Transmitting ERP (watts)	2.910	37.410	43.580	49.440	23.020	0.470	0.470	0.470

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	93.700	100.000	101.500	86.400	77.500	69.900	80.000	85.000
Transmitting ERP (watts)	0.180	0.180	0.180	4.020	44.080	90.000	43.080	2.540



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	45-03-10.0 N	093-49-54.0 W	286.5	148.4	1022990
Address: (Deland) COUNTY STATE HWY 14					
City: FRANKLIN County: WRIGHT State: MN Construction Deadline:					

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.200	133.200	129.500	137.100	134.300	129.500	128.400	140.900
Transmitting ERP (watts)	33.960	3.100	0.250	0.250	0.250	1.590	22.440	70.960

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.200	133.200	129.500	137.100	134.300	129.500	128.400	140.900
Transmitting ERP (watts)	3.390	33.040	61.870	22.580	1.820	0.290	0.290	0.290

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.200	133.200	129.500	137.100	134.300	129.500	128.400	140.900
Transmitting ERP (watts)	0.290	0.290	0.730	12.910	93.540	102.570	18.660	0.690

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
7	45-32-40.8 N	092-58-20.4 W	281.9	149.3	1023116
Address: (North Branch) 0.3 Miles East on CR 30 410th Street					
City: North Branch County: CHISAGO State: MN Construction Deadline:					

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	146.100	167.400	159.900	155.200	150.200	144.600	136.000	140.800
Transmitting ERP (watts)	138.040	69.180	8.970	0.690	0.280	1.380	16.980	91.200

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	149.900	168.000	160.500	155.800	151.100	145.200	136.600	141.400
Transmitting ERP (watts)	0.160	1.450	19.500	79.430	19.500	1.410	0.180	0.150

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	151.500	172.500	165.000	160.400	155.700	149.800	141.200	146.000
Transmitting ERP (watts)	0.270	0.280	2.510	33.880	138.040	33.880	2.450	0.310

Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
8	45-02-10.9 N	092-20-59.7 W	349.9	152.1	1023118

Address: 4.35 MI N

City: BALDWIN County: ST. CROIX State: WI Construction Deadline:

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	159.100	130.400	132.900	119.100	129.900	153.200	164.300	164.900
Transmitting ERP (watts)	0.300	0.330	0.300	0.380	0.300	0.330	0.300	141.250

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	166.600	137.900	140.400	126.600	137.400	160.600	171.800	172.400
Transmitting ERP (watts)	16.220	15.490	15.140	15.140	15.850	15.490	15.850	15.850

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
9	44-37-52.9 N	093-20-42.8 W	335.3	105.8	1022988

Address: VERNON AVENUE

City: LAKEVILLE County: SCOTT State: MN Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.600	66.100	84.600	65.400	44.900	72.300	90.500	88.000
Transmitting ERP (watts)	32.970	8.480	0.290	0.100	0.100	0.100	3.870	26.800

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	157.500	124.000	142.500	123.400	102.800	130.200	148.400	145.900
Transmitting ERP (watts)	0.150	4.050	14.360	11.150	1.440	0.100	0.100	0.100

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	157.500	124.000	142.500	123.400	102.800	130.200	148.400	145.900
Transmitting ERP (watts)	0.100	0.100	0.100	0.570	7.360	15.390	6.870	0.440

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	44-46-40.9 N	093-44-49.9 W	292.6	148.7	1026274

Address: 8810 Highway 212

City: COLOGNE County: CARVER State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	144.200	139.000	175.700	184.900	170.700	145.500	141.400	142.800
Transmitting ERP (watts)	103.970	52.110	6.710	0.520	0.210	10.40	12.790	68.690



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	44-46-40.9 N	093-44-49.9 W	292.6	148.7	1026274

Address: 8810 Highway 212

City: COLOGNE County: CARVER State: MN Construction Deadline:

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	144.200	139.000	175.700	184.900	170.700	145.500	141.400	142.800
Transmitting ERP (watts)	7.590	48.980	85.110	47.860	7.080	0.580	0.170	0.630

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	143.600	138.400	175.100	184.300	170.000	144.900	140.800	142.200
Transmitting ERP (watts)	1.820	0.210	0.550	8.730	57.700	105.000	81.510	22.450

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
11	45-15-49.0 N	093-20-42.0 W	272.8	61.0	1023117

Address: NE OF INT OF ROUND LAKE

City: ANDOVER County: ANOKA State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	56.700	56.600	57.100	59.900	68.500	65.300	64.500	55.700
Transmitting ERP (watts)	90.000	32.680	3.120	0.190	0.190	1.880	20.150	76.600

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	56.700	56.600	57.100	59.900	68.500	65.300	64.500	55.700
Transmitting ERP (watts)	5.440	54.370	136.560	108.480	25.430	2.320	0.290	0.440

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	56.700	56.600	57.100	59.900	68.500	65.300	64.500	55.700
Transmitting ERP (watts)	0.900	0.280	0.950	13.370	82.440	140.000	76.940	10.870

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	45-11-47.9 N	093-57-31.9 W	317.0	94.2	1023111

Address: 2.47 MI SE

City: MAPLE LAKE County: WRIGHT State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	100.200	109.000	107.200	118.800	108.400	106.300	89.800	97.400
Transmitting ERP (watts)	26.740	14.030	0.950	0.100	0.100	0.100	1.140	13.400



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	45-11-47.9 N	093-57-31.9 W	317.0	94.2	1023111

Address: 2.47 MI SE

City: MAPLE LAKE County: WRIGHT State: MN Construction Deadline:

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	100.200	109.000	107.200	118.800	108.400	106.300	89.800	97.400
Transmitting ERP (watts)	0.630	14.520	49.210	38.200	5.920	0.100	0.100	0.100

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	100.200	109.000	107.200	118.800	108.400	106.300	89.800	97.400
Transmitting ERP (watts)	0.360	0.360	0.360	10.660	47.870	165.990	134.920	21.880

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	57.800	63.400	53.200	50.200	56.800	57.900	58.100	58.000
Transmitting ERP (watts)	41.960	159.530	126.720	22.530	2.010	0.360	0.360	3.410

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	55.700	61.300	51.100	48.100	54.700	55.800	55.900	55.800
Transmitting ERP (watts)	0.360	2.870	28.020	131.060	176.800	75.420	8.270	0.630

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	57.800	63.400	53.200	50.200	56.800	57.900	58.100	57.900
Transmitting ERP (watts)	1.270	0.440	0.440	0.440	0.440	3.350	17.530	22.140

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300
Transmitting ERP (watts)	80.940	24.440	0.340	0.180	0.220	0.180	10.430	65.790



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
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16	44-44-33.9 N	092-53-36.7 W	274.9	39.6	
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Address: 1800 W 4th Street

City: Hasting County: DAKOTA State: MN Construction Deadline:

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.800	37.700	47.800	44.300	28.400	34.000	26.200	65.300

Transmitting ERP (watts)	0.650	14.860	50.360	39.090	6.050	0.110	0.110	0.110
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Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	46.600	53.600	63.600	60.100	44.200	49.900	42.100	81.200

Transmitting ERP (watts)	0.200	0.200	0.200	4.470	49.060	100.160	47.940	2.820
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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
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18	44-40-43.0 N	093-36-31.0 W	285.0	107.3	1023110
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Address: 4255 185th St. West

City: Jordan County: SCOTT State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	115.800	69.000	54.800	57.800	60.100	63.100	85.400	79.300

Transmitting ERP (watts)	44.690	13.500	0.190	0.100	0.120	0.100	5.760	36.320
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Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.600	81.800	67.600	70.600	72.900	75.900	98.400	92.100

Transmitting ERP (watts)	1.130	25.890	87.720	68.090	10.550	0.190	0.190	0.190
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Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	112.700	66.000	51.800	54.700	57.000	60.000	82.500	76.300

Transmitting ERP (watts)	0.360	0.360	0.360	8.040	88.160	180.000	86.150	5.070
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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
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20	45-07-23.6 N	092-16-22.5 W	368.5	125.9	1227107
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Address: 2618 County Road S

City: Emerald County: ST. CROIX State: WI Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	141.800	125.100	139.600	142.500	116.000	140.500	172.500	156.300

Transmitting ERP (watts)	5.830	6.500	0.780	0.100	0.100	0.220	4.310	6.500
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Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	45-07-23.6 N	092-16-22.5 W	368.5	125.9	1227107

Address: 2618 County Road S

City: Emerald County: ST. CROIX State: WI Construction Deadline:

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	141.800	125.100	139.600	142.500	116.000	140.500	172.500	156.300
Transmitting ERP (watts)	0.410	12.570	22.690	21.620	7.660	0.500	0.100	0.100

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	141.800	125.100	139.600	142.500	116.000	140.500	172.500	156.300
Transmitting ERP (watts)	0.670	0.200	0.230	5.570	41.080	91.040	57.640	9.780

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
21	45-07-32.0 N	092-35-26.4 W	315.2	60.7	1206290

Address: 1820 110th Street

City: New Richmond County: ST. CROIX State: WI Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.300	64.300	65.300	61.900	71.400	94.300	109.100	84.900
Transmitting ERP (watts)	3.010	0.250	0.100	0.100	0.160	1.290	12.270	21.830

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.300	64.300	65.300	61.900	71.400	94.300	109.100	84.900
Transmitting ERP (watts)	3.660	24.890	50.000	26.300	3.850	0.200	0.100	0.190

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.300	64.300	65.300	61.900	71.400	94.300	109.100	84.900
Transmitting ERP (watts)	0.150	0.150	0.910	10.890	54.340	69.210	23.080	2.430

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	45-20-41.7 N	093-14-00.8 W	279.8	60.9	1228419

Address: 20675 NE Highway 65

City: East Bethel County: ANOKA State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	38.400	40.800	45.500	45.400	46.600	48.900	45.700	39.500
Transmitting ERP (watts)	27.860	16.660	2.690	0.110	0.100	0.110	2.560	15.770



Licensee Name: VERIZON WIRELESS (VAW) LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	45-20-41.7 N	093-14-00.8 W	279.8	60.9	1228419

Address: 20675 NE Highway 65

City: East Bethel County: ANOKA State: MN Construction Deadline:

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	38.400	40.800	45.500	45.400	46.600	48.900	45.700	39.500
Transmitting ERP (watts)	0.870	10.330	51.520	65.610	21.880	2.300	0.140	0.140

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	38.400	40.800	45.500	45.400	46.600	48.900	45.700	39.500
Transmitting ERP (watts)	1.030	0.140	0.140	2.020	19.860	64.420	52.970	11.560

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
23	45-03-56.0 N	092-12-13.6 W	379.2	91.1	1226245

Address: 1408 300th St.

City: Glenwood City County: ST. CROIX State: WI Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	96.800	139.300	153.400	135.000	100.800	89.800	112.600	117.300
Transmitting ERP (watts)	48.980	19.490	2.340	0.200	0.200	0.230	2.000	17.820

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	96.800	139.300	153.400	135.000	100.800	89.800	112.600	117.300
Transmitting ERP (watts)	0.150	0.420	4.940	37.290	47.390	6.860	0.530	0.150

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	96.800	139.300	153.400	135.000	100.800	89.800	112.600	117.300
Transmitting ERP (watts)	4.480	0.210	0.200	0.990	11.450	62.430	89.730	37.150

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	44-34-22.7 N	093-17-37.9 W	344.5	80.7	1203787

Address: 11236 Deuce Rd.

City: Elko County: SCOTT State: MN Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	87.200	112.300	100.100	100.100	86.900	68.500	88.000	89.100
Transmitting ERP (watts)	30.270	6.610	0.590	0.100	0.100	0.130	11.350	36.820



Licensee Name: VERIZON WIRELESS (VAW) LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	44-34-22.7 N	093-17-37.9 W	344.5	80.7	1203787

Address: 11236 Deuce Rd.

City: Elko County: SCOTT State: MN Construction Deadline:

**Antenna: 5**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	87.200	112.300	100.100	100.100	86.900	68.500	88.000	89.100
Transmitting ERP (watts)	5.860	39.820	80.000	42.080	6.150	0.320	0.160	0.310

**Antenna: 6**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	87.200	112.300	100.100	100.100	86.900	68.500	88.000	89.100
Transmitting ERP (watts)	0.100	0.100	0.200	2.920	10.560	12.310	5.750	0.620

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
26	45-39-16.4 N	092-58-44.5 W	285.6	60.4	1226303

Address: 48520 Gallant Avenue

City: Rush County: CHISAGO State: MN Construction Deadline:

**Antenna: 4**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	50.600	73.700	72.100	89.600	59.600	50.000	50.600	52.200
Transmitting ERP (watts)	37.530	14.320	1.490	0.100	0.100	0.540	7.740	31.540

**Antenna: 5**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	50.600	73.700	72.100	89.600	59.600	50.000	50.600	52.200
Transmitting ERP (watts)	1.540	14.890	46.450	37.150	7.850	0.680	0.100	0.100

**Antenna: 6**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	50.600	73.700	72.100	89.600	59.600	50.000	50.600	52.200
Transmitting ERP (watts)	0.210	0.100	0.220	3.850	25.760	49.890	25.530	3.640

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	45-15-09.3 N	094-05-35.0 W	322.2	57.9	

Address: (Annandale) 9938 State Hwy 55 NW, P.O. Box 340

City: Annandale County: WRIGHT State: MN Construction Deadline:

**Antenna: 2**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.500	50.700	51.700	47.700	45.800	44.700	36.100	39.000
Transmitting ERP (watts)	35.480	1.550	0.350	0.350	0.780	0.800	117.490	158.490



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	45-15-09.3 N	094-05-35.0 W	322.2	57.9	

Address: (Annandale) 9938 State Hwy 55 NW, P.O. Box 340

City: Annandale County: WRIGHT State: MN Construction Deadline:

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.500	50.700	51.700	47.700	45.800	44.700	36.100	39.000
Transmitting ERP (watts)	42.660	204.170	147.910	18.200	0.600	0.450	0.450	2.570

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.500	50.700	51.700	47.700	45.800	44.700	36.100	39.000
Transmitting ERP (watts)	0.450	0.520	6.920	89.130	223.870	89.130	6.920	0.450

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
28	44-34-33.0 N	092-57-30.0 W	320.0	79.2	1244093

Address: 25734 Rochester Road

City: Randolph County: DAKOTA State: MN Construction Deadline: 12-29-2005

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	123.000	122.300	108.400	109.700	103.600	118.400	97.100	116.600
Transmitting ERP (watts)	36.480	34.050	4.390	0.320	0.100	0.100	0.440	5.780

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	92.500	91.800	78.000	79.200	73.100	88.000	66.600	86.100
Transmitting ERP (watts)	0.100	0.570	1.700	1.380	1.390	1.270	0.270	0.100

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	123.000	122.300	108.400	109.700	103.600	118.400	97.100	116.600
Transmitting ERP (watts)	4.390	0.320	0.100	0.100	0.440	5.780	36.480	34.050

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
30	45-00-22.9 N	093-23-57.8 W	282.5	60.5	

Address: 2510 Mendelssohn Avenue North

City: Golden Valley County: HENNEPIN State: MN Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	57.100	66.500	59.300	62.900	53.500	38.600	26.800	38.000
Transmitting ERP (watts)	83.770	28.390	2.590	0.180	0.180	1.130	14.230	66.540



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
30	45-00-22.9 N	093-23-57.8 W	282.5	60.5	

Address: 2510 Mendelssohn Avenue North

City: Golden Valley County: HENNEPIN State: MN Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.600	57.000	49.900	53.400	44.000	29.100	17.400
Transmitting ERP (watts)	3.120	31.170	51.390	50.030	18.970	1.040	0.260

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.600	57.000	49.900	53.400	44.000	29.100	17.400
Transmitting ERP (watts)	5.100	5.420	6.300	9.730	13.160	11.920	8.280

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.600	57.000	49.900	53.400	44.000	29.100	17.400
Transmitting ERP (watts)	5.100	5.420	6.300	9.730	13.160	11.920	8.280

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
31	44-57-40.9 N	093-14-38.8 W	255.1	47.5	

Address: 2112A Minnehaha Avenue South

City: Minneapolis County: HENNEPIN State: MN Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	1.800	-8.300	5.700	14.300	28.700	7.900	-2.800
Transmitting ERP (watts)	77.290	12.540	9.210	0.210	0.210	0.950	27.430

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.500	19.400	33.400	42.000	56.500	35.600	24.900
Transmitting ERP (watts)	2.440	26.740	64.140	10.890	0.970	0.130	0.130

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	1.800	-8.300	5.700	14.300	28.700	7.900	-2.800
Transmitting ERP (watts)	0.210	0.210	1.730	33.740	99.580	68.890	8.090

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	1.800	-8.300	5.700	14.300	28.700	7.900	-2.800
Transmitting ERP (watts)	0.210	0.210	1.730	33.740	99.580	68.890	8.090

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
32	44-53-22.0 N	092-22-22.0 W	367.3	60.0	

Address: 183 Hwy 63

City: Baldwin County: ST. CROIX State: WI Construction Deadline: 06-12-2010

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	79.500	61.700	70.400	64.800	100.500	82.200	105.600
Transmitting ERP (watts)	51.290	1.830	0.430	0.430	0.540	18.200	154.830

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	79.500	61.700	70.400	64.800	100.500	82.200	105.600
Transmitting ERP (watts)	51.290	1.830	0.430	0.430	0.540	18.200	154.830



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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
32	44-53-22.0 N	092-22-22.0 W	367.3	60.0	

Address: 183 Hwy 63

City: Baldwin County: ST. CROIX State: WI Construction Deadline: 06-12-2010

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	79.500	61.700	70.400	64.800	100.500	82.200	105.600	91.900
Transmitting ERP (watts)	44.670	199.530	162.180	19.500	0.720	0.430	0.430	2.140

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	79.500	61.700	70.400	64.800	100.500	82.200	105.600	91.900
Transmitting ERP (watts)	0.420	1.480	9.330	4.440	1.660	4.140	8.320	1.490

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	45-21-04.9 N	093-54-43.6 W	309.1	57.0	

Address: Barton Ave. & County Rd. 111

City: Silver Creek Townshi County: WRIGHT State: MN Construction Deadline: 06-12-2010

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	66.800	69.800	77.600	72.600	60.000	52.500	59.800	68.000
Transmitting ERP (watts)	97.040	9.060	0.340	0.340	0.340	4.140	65.610	164.790

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	66.800	69.800	77.600	72.600	60.000	52.500	59.800	68.000
Transmitting ERP (watts)	14.030	108.880	164.790	57.140	1.690	0.340	0.340	0.340

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	66.800	69.800	77.600	72.600	60.000	52.500	59.800	68.000
Transmitting ERP (watts)	0.460	0.340	0.910	35.230	146.870	137.070	26.120	0.340

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	44-54-08.9 N	092-51-55.6 W	320.3	42.3	

Address: 11380 Lake Rd.

City: Woodbury County: WASHINGTON State: MN Construction Deadline: 06-12-2010

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.800	101.600	71.600	73.600	61.300	83.400	73.100	45.000
Transmitting ERP (watts)	85.690	25.880	0.360	0.190	0.240	0.190	11.040	69.650



Licensee Name: VERIZON WIRELESS (VAW) LLC

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Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	44-54-08.9 N	092-51-55.6 W	320.3	42.1	
Address: 11380 Lake Rd					
City: Woodbury County: WASHINGTON State: MN Construction Deadline: 06-12-2010					

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.800	101.600	71.600	73.600	61.300	83.400	73.100	45.000
Transmitting ERP (watts)	0.190	23.410	63.000	51.800	10.080	0.190	0.190	0.190

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.800	101.600	71.600	73.600	61.300	83.400	73.100	45.000
Transmitting ERP (watts)	0.190	20.190	0.190	4.200	46.020	93.950	44.970	2.650

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
36	45-05-03.0 N	094-11-19.4 W	323.4	39.0	
Address: 357 Broadway Avenue North					
City: Cokato County: WRIGHT State: MN Construction Deadline: 06-19-2010					

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.800	50.300	51.100	50.400	39.900	40.100	36.200	46.400
Transmitting ERP (watts)	168.270	260.620	39.450	6.700	1.280	0.600	3.360	18.450

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.800	50.300	51.100	50.400	39.900	40.100	36.200	46.400
Transmitting ERP (watts)	3.260	17.910	163.310	252.930	38.280	6.500	1.240	0.580

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.800	50.300	51.100	50.400	39.900	40.100	36.200	46.400
Transmitting ERP (watts)	1.870	0.190	0.140	0.480	3.410	13.430	17.100	7.530

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	44-48-39.0 N	093-19-35.3 W	253.6	19.8	
Address: (Franco site) 3515 West Old Shakopee Rd					
City: Bloomington County: HENNEPIN State: MN Construction Deadline: 02-03-2012					

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	6.600	21.200	20.000	-10.000	-9.900	5.900	46.500	-2.300
Transmitting ERP (watts)	161.060	64.120	4.980	0.560	0.560	0.560	4.980	64.120



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	44-48-39.0 N	093-19-35.3 W	253.6	19.8	

Address: (Franco site) 3515 West Old Shakopee Rd

City: Bloomington County: HENNEPIN State: MN Construction Deadline: 02-03-2012

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	6.600	21.200	20.000	-10.000	-9.900	5.900	46.500	-2.300
Transmitting ERP (watts)	0.700	12.500	106.410	143.550	32.140	1.400	0.560	0.560

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	6.600	21.200	20.000	-10.000	-9.900	5.900	46.500	-2.300
Transmitting ERP (watts)	0.750	0.560	0.560	3.210	53.330	255.270	184.930	22.750

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
38	45-28-16.1 N	092-58-43.1 W	277.1	102.4	1063919

Address: (South Branch site) 6350 360TH STREET

City: NORTH BRANCH County: CHISAGO State: MN Construction Deadline: 02-03-2012

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.100	105.500	82.200	89.000	89.400	84.200	79.800	76.100
Transmitting ERP (watts)	245.820	59.070	5.370	0.600	0.600	1.110	7.760	85.380

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.100	105.500	82.200	89.000	89.400	84.200	79.800	76.100
Transmitting ERP (watts)	7.580	65.170	169.420	122.870	24.310	2.090	0.380	0.380

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.100	105.500	82.200	89.000	89.400	84.200	79.800	76.100
Transmitting ERP (watts)	0.600	0.600	1.800	19.940	168.070	215.530	28.160	2.200

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
39	45-15-23.4 N	092-51-19.8 W	293.2	60.6	

Address: (Scandia) 12270 Scandia Trail North

City: New Scandia County: WASHINGTON State: MN Construction Deadline: 07-12-2012

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	72.400	70.000	47.800	89.100	59.100	64.700	74.700	75.100
Transmitting ERP (watts)	186.210	38.020	1.320	0.480	0.480	0.560	20.420	144.540



Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKA219

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
39	45-15-23.4 N	092-51-19.8 W	293.2	60.6	
Address: (Scandia) 12270 Scandia Trail North					
City: New Scandia County: WASHINGTON State: MN Construction Deadline: 07-12-2012					

**Antenna: 2**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	72.400	70.000	47.800	89.100	59.100	64.700	74.700
Transmitting ERP (watts)	2.380	52.480	218.780	162.180	19.050	0.660	0.560

**Antenna: 3**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	72.400	70.000	47.800	89.100	59.100	64.700	74.700
Transmitting ERP (watts)	0.560	0.560	0.560	7.940	104.710	239.880	100.000

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
40	44-36-02.8 N	093-48-48.1 W	305.3	58.6	
Address: (MNMI_Belle Plaine site) 14500 Blakely trail					
City: Belle Plaine County: SCOTT State: MN Construction Deadline: 04-11-2014					

**Antenna: 1**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.000	121.600	64.900	56.400	64.500	86.300	77.800
Transmitting ERP (watts)	0.620	0.620	0.620	2.310	62.230	242.100	159.960

**Antenna: 2**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	52.200	98.700	42.000	33.500	41.600	63.400	55.000
Transmitting ERP (watts)	346.740	91.200	3.850	0.810	0.810	0.810	4.030

**Antenna: 3**

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)

	45	90	135	180	225	270	315
Antenna Height AAT (meters)	52.200	98.700	42.000	33.500	41.600	63.400	55.000
Transmitting ERP (watts)	0.810	13.960	197.240	291.740	34.280	1.160	0.810

**Control Points:**

**Control Pt. No. 2**

Address: 500 West Dove Road

City: Southlake County: TARRANT State: TX Telephone Number: (800)264-6620

**Waivers/Conditions:**

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2018-AGL-6010-OE

Issued Date: 04/18/2018

Network Regulatory  
Verizon Wireless (VAW) LLC  
5055 North Point Pkwy  
NP2NE Network Engineering  
Alpharetta, GA 30022

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Monopole MIN Tickle - B (2446367)
Location:	Lake Elmo, MN
Latitude:	44-59-54.28N NAD 83
Longitude:	92-52-23.47W
Heights:	931 feet site elevation (SE) 134 feet above ground level (AGL) 1065 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- ☐ At least 10 days prior to start of construction (7460-2, Part 1)  
☒ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

**See attachment for additional condition(s) or information.**

To coordinate frequency activation and verify that no interference is caused to FAA facilities, prior to beginning any transmission from the site you must contact Kevin Nagel, Southeast MN SSC Manager, 651-312-8871 .

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 1.

This determination expires on 10/18/2019 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination of No Hazard is granted provided the following conditional statement is included in the proponent's construction permit or license to radiate:

Upon receipt of notification from the Federal Communications Commission that harmful interference is being caused by the licensee's (permittee's) transmitter, the licensee (permittee) shall either immediately reduce the power to the point of no interference, cease operation, or take such immediate corrective action as is necessary to eliminate the harmful interference. This condition expires after 1 year of interference-free operation.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (718) 553-2611, or [angelique.eersteling@faa.gov](mailto:angelique.eersteling@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-AGL-6010-OE.



**Signature Control No: 360999521-362995087**

Angelique Eersteling  
Technician

( DNE )

Attachment(s)

Additional Information

Frequency Data

Map(s)

cc: FCC

### **Additional information for ASN 2018-AGL-6010-OE**

Upon receipt of notification from the Federal Communications Commission that harmful interference is being caused by the licensee's (permittee's) transmitter, the licensee (permittee) shall either immediately reduce the power to the point of no interference, cease operation or take such immediate corrective action as is necessary to eliminate the harmful interference.

This condition expires after 1 year of interference-free operation. FAA facilities critical to aviation safety are located less than 1 nm from your proposed transmitter site. You may cause harmful interference to these facilities if your equipment meets only minimum FCC standards for spurious emissions. Before you begin any transmission from your facility, contact Southeast MN SSC Manager, 651-312-8871 to arrange procedures to verify that no interference is caused.

FCC requirements in: 47 CFR 73.44 (c) (AM Broadcast) 47 CFR 22.907 (c) (Fixed Cellular) 47 CFR 21.106 (c) (Common Carrier Fixed Microwave) 47 CFR 74.23 (a) Broadcast Auxiliary Transmitters) 47 CFR 94.71 (d) (operational fixed service frequency). Indicate that the licensees may need to employ extra filtering or take other measures if their transmissions disrupt other services. The commission requires its licensees to cooperate fully with other Federal agencies (users in other services) in this case the FAA to eliminate any harmful interference covered by the above requirement.



Frequency Data for ASN 2018-AGL-6010-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W



## STAFF REPORT

DATE: July 9, 2018

**REGULAR**

ITEM #: 4b

**MOTION**

**TO:** Planning Commission  
**FROM:** Ben Prchal, City Planner  
**AGENDA ITEM:** Home Occupation Ordinance  
**REVIEWED BY:** Emily Becker, Planning Director

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### **BACKGROUND:**

A home occupation ordinance is on the Planning Commission's Work Plan for 2018. Standards for a home occupation are only provided through the definition of "Home Occupation," and the Planning Commission had expressed there should be actual standards provided in the zoning code. Below is Lake Elmo's Definition for a Home Occupation.

**HOME OCCUPATION.** Any gainful occupation or profession engaged in by the occupant, only, of a dwelling when carried on within a dwelling unit or in an accessory building, provided that no signs other than those normally utilized in a residential district are present, that no stock in trade over 1,000 cubic feet is stored on the premises, that no over-the-counter retail sales are involved unless ancillary to the permitted business, and that entrance to the home occupation is or can be gained from within the structure. Uses include professional office, hair salons serving no more than 2 customers at a time, or teaching limited to no more than 3 students at any time, and other uses which do not create a nuisance as outlined in Chapter 96 of this Code. A **HOME OCCUPATION** shall not be interpreted to include tourist homes, restaurants, disorderly house as defined by M.S. § 609.33, Subd. 1, as it may be amended from time to time, or similar uses. No **HOME OCCUPATION** shall be permitted that creates the need for more than 3 parking spaces at any given time in addition to the parking spaces required by the occupants. **HOME OCCUPATIONS** shall not be carried on except between the hours of 7:00 a.m. and 10:00 p.m.

**Home Occupation Signs.** Signs identifying only the name and occupation of the resident. Home occupation signs shall be non-illuminated, flush-mounted to a wall of the residence, and shall not exceed two (2) square feet in area.

### **PROPOSAL DETAILS/ANALYSIS:**

#### **The following explains amendments to the proposed ordinance:**

**Exterior Storage** - It was common between communities not to allow outside storage associated with the home occupation. *The drafted language does not allow for exterior storage.*

**Little Canada** - There shall be no external storage of equipment

**Stillwater** - No outside storage or display of products, equipment or merchandise is permitted



**Hours of Operation** – Many of the communities had set times in which the operator could perform activities associated with the home occupation. The Lake Elmo definition had set the time from 7:00 Am – 10:00 Pm. Staff is not suggesting a change to this section, as it is comparable to other communities.

**Little Canada** – no work from 10pm to 7 am - 15 hours

**Stillwater** - limits time from 7am to 8pm – 13 hours

**St. Paul** – They have no limit on hours

**Orono** - ... accessible to the public shall be limited to the hours between 8:00 a.m. and 7:00 p.m.- 11 hours

**FISCAL IMPACT:**

Staff does not foresee a fiscal impact.

**COMMENTS AND RECOMMENDATION**

Staff recommends that the planning commission recommend adoption of an ordinance adding standards for home occupations.

*“Motion to recommend approval of an ordinance amending the definition and adding standards for home occupations.”*

**OPTIONS**

- Recommend approval of the Home Occupation Ordinance as it is written
- Recommend approval of the Home Occupation Ordinance with amendments
- Recommend no change to the zoning code in regards to the Home Occupation

**ATTACHMENTS**

- Ord. 08- Home Occupation Ordinance.

CITY OF LAKE ELMO  
COUNTY OF WASHINGTON  
STATE OF MINNESOTA

ORDINANCE NO. 08-199

AN ORDINANCE AMENDING THE LAKE ELMO CITY ZONING CODE OF  
ORDINANCES BY ADDING ADDITIONAL STANDARDS AND LANGUAGE FOR  
WIND GENERATOR SYSTEMS.

SECTION 1. The City Council of the City of Lake Elmo hereby amends Title I: General Provisions; Chapter 11: Definitions 11.01 by amending the definition of Home Occupation:

***HOME OCCUPATION.** Any gainful occupation or profession engaged in by the occupant(s); ~~only, and up to one non-occupant employee~~ of a dwelling when carried on within a dwelling unit or in an accessory building, provided that no signs other than those ~~normally utilized in a residential district~~ allowed by the City's sign regulations regarding home occupations are present., that no stock in trade over 1,000 cubic feet is stored on the premises, that no over-the-counter retail sales are involved unless ancillary to the permitted business, and that entrance to the home occupation is or can be gained from within the structure. Uses include professional office, hair salons serving no more than 2 customers at a time, or teaching limited to no more than 3 students at any time, and other uses which do not create a nuisance as outlined in Chapter 96 of this Code. A **HOME OCCUPATION** shall not be interpreted to include tourist homes, restaurants, disorderly house as defined by M.S. § 609.33, Subd. 1, as it may be amended from time to time, or similar uses. No **HOME OCCUPATION** shall be permitted that creates the need for more than 3 parking spaces at any given time in addition to the parking spaces required by the occupants. **HOME OCCUPATIONS** shall not be carried on except between the hours of 7:00 a.m. and 10:00 p.m.*

SECTION 2. The City Council of the City of Lake Elmo hereby amends Title XV: Land Usage; Chapter 154: Zoning Code; Article II; Section 154.012; Subd. (B) (12) Home Occupations by amending the language as follows:

*Home Occupations. Any gainful occupation or profession engaged in by the occupant(s) ~~only, and up to one non-occupant employee~~ of a dwelling when carried on within a dwelling unit or in an accessory building, provided that no signs other than those ~~normally utilized in a residential district~~ are allowed by the City's sign regulations regarding home occupations are present., that no stock in trade over 1000 cubic feet is stored on the premises, that no over-the-counter retail sales are involved unless ancillary to the permitted business, and that entrance to the home occupation is or can be gained from within the structure. Uses include professional office, hair salons serving no more than 2 customers at a time, or teaching limited to no more than 3 students at any time, and other uses which do not create a nuisance as outlined in Chapter 96 of this code. A home occupation shall not be interpreted to include tourist homes, restaurants, disorderly house as defined by M.S. §609.33, Subd. 1, as it may be amended from time to time, or similar uses. No home occupation shall be permitted that creates the need for more than 3 parking spaces at any given time in addition to the parking spaces at any given time in addition to the parking spaces required by the occupants. Home occupations shall not be carried on except between the hours of 7:00 a.m. and 10:00 p.m.*



**SECTION 3. The City Council of the City of Lake Elmo hereby amends Title XV: Land Usage; Chapter 154: Zoning Code; Article IX; to amend Section 154.310 Standards for Accessory Uses by adding the following:**

E. Home Occupations shall be considered a permitted accessory use with a Certificate of Zoning Compliance. The purpose of the home occupation standards is to ensure that the activities are clearly secondary to the intended use of the dwelling and to ensure that the business is compatatble with surrounding residential uses. All home occupations must comply with the criteria set forth below.

1. Certificate of Zoning Compliance.

- a. A certificate of zoning compliance is required for all home occupations. The certificate of zoning compliance application shall include information on the type of business, hours of operation, number of parking spaces created/needed, amount (in cubic feet) of stock in trade stored (if any), site plan showing location of business operation, and information on ancillary sales (if applicable). The City shall maintain the right to revoke such certificates of zoning compliance if the home occupation is in violation of any portion of the City Code.

2. Home Occupations.

- a. A home occupation may include but is not limited to

1. Home office.
2. Hair salons not serving more than two customers at a time.
3. Teaching, though limited to no more than three students at any time
4. Other uses which do not alter the character of the locality, do not create a nuisance as outlined in Chapter 96 of the City Code, and are legally allowed by local, state, and federal law.

- b. Home occupations shall not be interpreted to include

1. Tourist homes.
2. Restaurants.
3. Disorderly house as defined by M.S. 609.33, subd. 1, as it may be amended from time to time, or similar uses.
4. Medical or dental clinics.
5. Contracting, excavating, welding or machine shops.
6. Tow truck services, the storage of automobehiles not owned by the occupants of the property, or maintenance of automobiles not owned by the occupants of the property.

7. Sale or use of hazardous materials.
8. Adult establishments as defined in Chapter 113.
9. Any overnight activities shall not be permitted.

### 3. *Operation Requirements*

- a. The home occupation shall be clearly incidental and subordinate to the residential use of the premises, and shall result in no incompatibility or disturbance to the surrounding area.
- b. Activities associated with the permitted home occupation may only be conducted between the hours of 7:00 a.m. and 10:00 p.m..
- c. No over the counter retail sales may be made unless ancillary to the permitted business
- d. There shall not be more than one employee who does not customarily reside on the property affiliated with the Home Occupation.
- e. The use shall not create a nuisance as defined by chapter 96.

### 4. *Site Requirements*

- a. Exterior alterations or modifications that change the residential character or appearance of the dwelling unit or accessory structure to that of a commercial nature shall be prohibited.
- b. Interior alterations or modifications shall not eliminate all of the bathrooms, sleeping areas, or kitchen(s).
- c. Signage. Home Occupations are allowed signage in accordance with Sections §154.212 (G) (1) (a) and (K) (10).
- d. The operation shall not create a demand for more than 3 parking spaces at any given time, and no parking for the business shall be on-street. Off-street parking shall be on a durable parking surface such as asphalt, concrete, etc. The off-street parking area required for the principal residential use shall be retained exclusively for the principal use.
- e. Exterior Storage. No outside storage or display of products, equipment or merchandise is permitted.
- f. No stock in trade over 1,000 cubic feet shall be stored on the premises.



**SECTION 5. Effective Date.** This ordinance shall become effective immediately upon adoption and publication in the official newspaper of the City of Lake Elmo.

**SECTION 6. Adoption Date.** This Ordinance 08-\_\_\_\_ was adopted on this \_\_\_\_\_ day of \_\_\_\_ 2018, by a vote of \_\_\_\_ Ayes and \_\_\_\_ Nays.

**LAKE ELMO CITY COUNCIL**

\_\_\_\_\_  
Mike Pearson, Mayor

ATTEST:

\_\_\_\_\_  
Julie Johnson, City Clerk

This Ordinance 08-\_\_\_\_ was published on the \_\_\_\_ day of \_\_\_\_\_, 2018.

**STAFF REPORT**

DATE: July 9, 2018

**REGULAR**

ITEM #: 4c

**TO:** Planning Commission  
**FROM:** Ben Prchal, City Planner  
**AGENDA ITEM:** Environmental Performance Standards – Ordinance Amendment  
**REVIEWED BY:** Emily Becker, Planning Director

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**BACKGROUND:**

Chapter 154.250 addresses the City's expectations for environmental performance. This chapter essentially has two sections which lays out standards for tree preservation/replacement and landscaping requirements. The tree preservation plan applies to developments within any zoning district except single family residential lots or clearing or cutting of trees for purposes of forestry operations. It also applies to any grading or excavation project resulting in the movement of greater than 400 cubic yards of material per acre. Planning staff has been applying these standards to new growth and development throughout the City. After working through some of the newer developments and gaining feedback from the City's new landscape architect, staff has noticed portions of the code should be updated for clarification. Therefore, Staff is proposing some amendments to tree preservation/replacement requirements and landscaping requirements. Additionally, it was communicated by Council that the City's parking lot screening requirements were over burdensome and should be reanalyzed.

**ISSUE BEFORE THE COMMISSION:**

This report is intended to review newly proposed language for tree preservation and mitigation requirements as well as the removal of language relating to landscaping the perimeter of parking lots. The commission is being asked to review new and added language for tree replacement and landscaping requirements around parking lots.

**Tree Preservation**

- Language has been added to the definition of significant trees and specimen trees.
- Mitigation plan: trees must be planted in appropriate areas within the development
- Tree Replacement Calculation: the section was summarized to improve clarification within subsection b.
- Exceptions: exceptions may be requested through the variance process. Subsection 2 gives council and other the guidelines for acceptable types of mitigation. Payment, woodland management practice, or planting trees on City property.
- Penalty: When significant trees are removed from a site that was not noted on the plans it will result in a one-to-one replacement penalty regardless if it is over the 30% allowance.



**Comparison to Other Cities.** The following outlines “tree preservation” practices of other cities.

**Forest Lake** – Different zoning districts have different allowable percentages of removal. They also offer a type of replacement similar to our proposal but smaller in size.

<i>Size of Tree Damaged or Destroyed</i>	<i>Number of Replacement Trees</i>		
	<i>Category A</i>	<i>Category B</i>	<i>Category C</i>
Coniferous, 12 to 24 feet high	1	2	4
Coniferous, 24 feet or higher	2	4	8
Hardwood deciduous, 6 to 20 inches diameter	1	2	4
Softwood deciduous, 20 to 30 inches diameter	1	2	4
Softwood deciduous, greater than 30 inches diameter	2	4	8

The applicant shall be responsible for furnishing and installing 1 Category A tree, 2 Category B replacement trees, or 4 Category C replacement trees for every 125 square feet of significant woodland damaged or destroyed, or any increment thereof. (Their categories are further defined in the code). They may also pay a fee in lieu of physical replacement. Their percentage of allowed removal is determined by the district. For example rural residential is 30% but “urban” districts are 50%.

**Mahtomedi** - In heavily wooded areas, tree replacement shall be at a rate of one tree replaced for each 3 significant trees lost. In areas which are not heavily wooded a replacement rate of one-to-one shall be used. Significant trees are defined as coniferous trees six feet or more in height, and deciduous trees are defined as trees eight inches or more in diameter.

**Stillwater** - For private lot development, there is a one-to-one replacement standard for all significant trees removed over 35%. They also allow a fee to be paid when tree replacement is not feasible. Trees removed for utilities and easements are replaced on a standard of 10 per acre. Significant tree means a tree measuring at least six inches in diameter at 54 inches above the base.

**Woodbury** – Woodbury allows for three options for tree replacement. There are multiple factors that require tree replacement, but diameter inches over 30% must be replaced. The applicant may replace the trees within the development per the replacement schedule, plant replacement trees on City property (under direction of parks director), or pay the City a fee based on diameter inches required for replacement.

Common Trees are replaced at a rate of 1/8<sup>th</sup> diameter inches removed.

Coniferous/Evergreen are replaced at a rate of 1/4<sup>th</sup> diameter inches removed.

Hardwood Trees are replaced at a rate of 1/2 the diameter inches removed.

Significant trees are defined by the same standard as Lake Elmo. Essentially Lake Elmo’s code is almost the same as Woodbury’s with a few exceptions.

## **Landscaping around parking lots**

After reviewing a proposed parking lots within the City, concern has been raised relating to the screening requirements of parking lots. The main point of concern was that the screening would inhibit pedestrian and vehicle views, potentially raising safety issues. Similar language relating to screening requirements is also found in the Lake Elmo Design Guidelines and Standards Manual.

It is important to keep in mind that the removal of this language would apply to any area within the City. Varying screening requirements are commonly seen in other City ordinances.

**Forest Lake:** For parking lots adjacent the public realm, one shade tree planted evenly at 15 to 20 feet, screening consisting of or combination of decorative fence/wall or landscape berm. For non-public realm, a high quality privacy fencing with landscaped screening shall be installed between parking lots and residential uses.

**Mahtomedi:** Requires plantings, berms, or fencing no less than 3 feet in height. Parking lots may be screened with a fence or wall between four to six feet in height.

**Stillwater:** Landscaping shall be provided in new parking lot construction and reconstruction when abutting property located in residential districts shall be separated from such property by a wall, planter or a view-obscuring fence; or a raised landscaped mound of earth, sand stones or the like; or by a permanently maintained compact evergreen hedge; or a combination of any of the preceding treatments.

**Mounds View:** All open, nonresidential, off-street parking areas of five (5) or more spaces shall be screened and landscaped from abutting or surrounding residential districts in compliance with subdivision 1103.08(6) of this Title. (1988 Code §40.07).

**Chaska:** Off-street open parking areas containing six (6) or more spaces, and all loading facilities shall be screened from public streets which ... Height of screening shall be at least four (4) feet but no more than six (6) feet above level of parking lot, and shall be ten (10) feet above the loading facility. Minimum opacity shall be 75 percent year round.

### **Lake Elmo Zoning Code**

A. *Perimeter Parking Lot Landscaping.* Parking areas shall be screened from public streets and sidewalks, public open space, and adjacent residential properties. The perimeter of parking areas shall be screened as follows:

1. A landscaped frontage strip at least five (5) feet wide shall be provided between parking areas and public streets, sidewalks, or paths. If a parking area contains over one hundred (100) spaces, the frontage strip shall be increased to eight (8) feet in width.
  - a. ~~Within the frontage strip, screening shall consist of either a masonry wall, fence, berm, or hedge or combination that forms a screen a minimum of three and one-half (3.5) and a maximum of four (4) feet in height, and not less than fifty percent (50%) opaque on a year-round basis.~~
  - b. Trees shall be planted at a minimum of one deciduous tree per fifty (50) linear feet within the frontage strip.



### Design Standards Manual

If the City opts to remove the above language, the following language should also be removed from Lake Elmo Design Guidelines and Standards Manual.

#### Commercial/Business Park

- f. Parking areas should be screened from view of public streets by means of grading and/or landscaping.
- g. Parking areas should be screened from adjacent structures with landscaping strips not exceeding 4 feet in height in order to ensure pedestrian safety.

#### Village Mixed Use

- f. Surface parking areas should be screened from view of public streets by means of grading and/or landscaping.

### **FISCAL IMPACT:**

The City is not expected to be impacted financially with amendments to either section.

### **STAFF RECOMMENDATIONS:**

#### Tree Preservation:

*Staff is recommending that the Commission recommend approval of the proposed amendments to the tree preservation Ordinance.*

***“Move to recommend approval of the amended language pertaining to tree replacement”***

#### Perimeter Parking lot screening:

*Staff does not recommend removing language pertaining to parking lot screening. All other communities which staff looked towards for guidance has some form of screening requirements for parking lots.*

*However, the commission may wish to recommend amendments that make screening requirements less burdensome.*

***“Move to make no change pertaining to parking lot screening requirements”***

### **OPTIONS:**

The Commission may:

- Recommend approval of Staff-recommended amendments as they apply to tree preservation and recommend no change to parking lot screening requirements.
- Amend Staff-recommended amendments for tree preservation and parking lot screening requirements.
- Recommend that no amendments be made for tree preservation or parking lot screening requirements.

### **ATTACHMENTS:**

- Ord. 08-XXX (Proposed Language adjustments for Tree Preservation, Landscape Requirements, and Parking Lot Screening Requirements)

**CITY OF LAKE ELMO  
COUNTY OF WASHINGTON  
STATE OF MINNESOTA**

**ORDINANCE NO. 08-\_\_**

**AN ORDINANCE AMENDING THE LAKE ELMO CITY CODE OF ORDINANCES BY  
ADDING ADDITIONAL STANDARDS FOR LANDSCAPING STANDARDS**

**SECTION 1. The City Council of the City of Lake Elmo hereby amends Title XV: Land Usage; Chapter 154: Zoning Code; Article VIII Environmental Performance; Section 154.257; Subd. (C) (6) and (9) by amending the following:**

**§ 154.257 TREE PRESERVATION.**

- A. Purpose. Within the City of Lake Elmo, trees and woodlands are considered a valuable asset to the community. The City places a priority on protecting this asset and finds that it is in the best interest to regulate the development and alteration of wooded areas within the community. All builders, developers and subdividers shall comply with all the provisions in the Zoning Code which address the preservation of existing significant trees. All builders, developers and subdividers are encouraged to preserve all healthy trees of significant value even if the trees do not meet the size requirements to be considered significant trees.
- B. Definitions. The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this subsection, except where the context clearly indicates a different meaning:

Common Tree. Includes Ash, Aspen, Basswood, Box Elder, Catalpa, Cottonwood, Elm, Hackberry, Locust, Poplar, Silver Maple, Willow and any other tree not defined as a hardwood deciduous tree or a coniferous/evergreen tree.

Coniferous/Evergreen Tree. A wood plant, which, at maturity, is at least twelve (12) feet or more in height, having foliage on the outermost portion of the branches year-round. Tamaracks are included as a coniferous tree species.

Critical Root Zone (CRZ). An imaginary circle surrounding the tree trunk with a radius distance of one (1) foot per one (1) inch of tree diameter. E.g. a twenty-inch diameter has a critical root zone with a radius of twenty (20) feet.

Deciduous Hardwood Tree. Includes Birch, Cherry, Hickory, Ironwood, Hard Maples, Oak and Walnut.

Diameter Breast Height (DBH). The diameter of trees at breast height, measured 4 ½ feet (54 inches) above the ground.

Drip Line. The farthest distance away from the trunk of a tree that rain or dew will fall directly to the ground from the leaves or the branches of the tree.



Nuisance Tree. (1) Any living or standing tree or part thereof infected to any degree with a shade tree disease or shade tree pest; (2) Any logs, stumps, branches, firewood or other part of dead or dying tree(s) infected with a shade tree disease or shade tree pest unless properly treated; and (3) Any standing dead trees or limbs which may threaten human health or property.

Shade Tree Disease. Dutch elm disease (*Ophiostoma ulmi* or *Ophiostoma novo-ulmi*), oak wilt (*Ceratocystis fagacearum*) or any other tree disease of epidemic nature.

Significant Tree. A healthy tree measuring a minimum of six (6) inches in diameter for hardwood deciduous trees, 19 ft. in height or eight (8) inches in diameter for coniferous/evergreen trees, or twelve (12) inches in diameter for common trees, as defined herein.

Specimen Tree. A healthy, deciduous hardwood tree measuring equal to or greater than thirty (30) inches in diameter breast height or a healthy coniferous/evergreen tree measuring equal to or greater than twenty-five (25) feet in height.

Tree Preservation Plan. A plan prepared by a certified landscape architect or forester indicating all of the significant trees in the proposed development or parcel. The Tree Preservation Plan includes a tree inventory which includes the size, species, and location of all significant trees proposed to be saved and removed on the area of development, and the measures proposed to protect the significant trees to be saved.

Woodland Evaluation Report. A report prepared by a certified landscape architect, forester, or land surveyor indicating the general location, condition, and species of significant trees on a parcel planned for future development or grading activity. The report must demonstrate that there will be no impact to existing significant trees as part of the development or grading activity. Finally, the report must include the measures proposed to protect significant trees on the site.

### C. Tree Preservation Standards for Developing Properties

#### 1. Applicability.

- a. A Tree Preservation Plan, or suitable alternatives as determined by the City, shall be submitted and approved for the following activities:
  - i. New Development in Any Zoning District. A Tree Preservation Plan shall be required as part of any development or subdivision application.
  - ii. Any grading or excavation project that result in the movement of greater than 400 cubic yards of material per acre of site per §151.017.
  - iii. If the applicant is able to demonstrate that the proposed development or major grading activity includes no impact to the significant trees on the site, then the applicant may be exempt from the requirement to submit a Tree Preservation Plan. It is the responsibility of the applicant to demonstrate that there are no impacts to significant trees through a Woodland Evaluation Report or some other form of tree survey or study.

- b. A Tree Preservation Plan is not required for the following activities:
  - i. This section does not apply to the issuance of a development approval for a single-family residence on an existing platted lot of record.
  - ii. This section does not apply to the harvesting of trees. For purposes of this section, “harvesting” means cutting or clearing trees for purposes relating to forestry operations, as defined in §154.012. “Harvesting” does not include the clearing of land for purposes of development, even where the trees are sold for purposes of creating lumber for related purposes.
- 2. Tree Preservation Plan. All applicants shall submit a tree preservation plan prepared by a certified forester or landscape architect in accordance with the provisions of this section. During the review of an application for a building permit, grading permit or Preliminary Plat, the tree preservation plan will be reviewed according to the best layout to preserve significant trees and the efforts of the subdivider to mitigate damage to significant trees.
- 3. Tree Preservation Plan Requirements. The Tree Preservation Plan shall be a separate plan sheet(s) that includes the following information:
  - a. The name(s), certification(s), telephone number(s) and address(es) of the person(s) responsible for tree preservation during the course of the development project.
  - b. Tree Inventory. The Tree Preservation Plan must include a Tree Inventory through one of the following methods:
    - i. Tree Inventory Individual. An individual inventory including an identification system linked to metal field tags located four and one-half (4.5) feet from grade on all significant trees must be identified on a plan sheet in both graphic and tabular form.
    - ii. Tree Inventory Sampling. In cases of sites with large tracts of significant trees, the City may approve the use of a sampling inventory for all or portions of a site as an alternative to an individual inventory. The sampling inventory must include the methodology for sampling, identification ribbon around the perimeter of the sampling areas, and metal field tags located four and one-half (4.5) feet from grade on all significant trees in the sampling area. Within the sampling area, the quantity, size, species, health and location of all significant trees must be identified on a plan sheet in both graphic and tabular form. Based on sampling, total estimates and locations of healthy significant trees shall be provided.
    - iii. Tree Inventory Combination. With the approval of the City, sites that include both large tracts of significant trees and areas of individual significant trees may utilize a combination of the individual and sampling inventory methods.



- c. Trees that were planted as part of a commercial business such as a tree farm or nursery do not need to be inventoried on an individual tree basis. A general description of the trees and an outer boundary of the planted area must be provided. The burden of proof shall be on the applicant to provide evidence to support the finding that the trees were planted as part of a commercial business.
  - d. A listing of healthy significant trees inventoried in subsection (b) above. Dead, diseased or dying trees do not need to be included in the totals.
  - e. A listing of the healthy significant trees removed, identified by the metal field tag or some other form of identification used in the tree inventory in subsection (b) above.
  - f. A listing of the healthy significant trees to remain, identified by the metal field tag or some other form of identification used in the tree inventory in subsection (b) above.
  - g. Outer boundary of all contiguous wooded areas, with a general description of trees not meeting the significant tree size threshold.
  - h. Locations of the proposed buildings, structures, or impervious surfaces.
  - i. Delineation of all areas to be graded and limits of land disturbance.
  - j. Identification of all significant trees proposed to be removed within the construction area. These significant trees should be identified in both graphic and tabular form.
  - k. Measures to protect significant trees.
  - l. Size, species, number and location of all replacement trees proposed to be planted on the property in accordance with the Mitigation Plan, if necessary.
  - m. Signature of the person(s) preparing the plan.
4. Implementation. All sites shall be staked, as depicted in the approved Tree Preservation Plan, and the required tree protection fencing shall be installed around the critical root zone before land disturbance is to commence. The City shall inspect the construction site prior to the beginning of the land disturbance to ensure that protective fencing and other protective measures are in place. No encroachment, land disturbance, trenching, filling, compaction, or change in soil chemistry shall occur within the fenced areas protecting the critical root zone of the trees to be saved.
  5. Allowable Tree Removal. Up to thirty (30) percent of the diameter inches of significant trees on any parcel of land being developed may be removed without replacement requirements. Replacement according to the Tree Replacement Schedule is required when removal exceeds more than thirty (30) percent of the total significant tree diameter inches. The following types of trees do not need to be included as part of the tally of tree removals:
    - a. Dead, diseased, or dying trees;

- b. Trees that are transplanted from the site to another appropriate area within the city;
  - c. Trees that were planted as part of a commercial business, such as a tree farm or nursery; or
  - d. Trees that were planted by the current property owner. In making such a determination, the City shall consider consistency of the age of the trees, any patterns in the location of trees, historical aerial photography and evidence of intentional planting such as invoices, formal planting plans or cost sharing agreements.
6. Mitigation Plan.
- a. In any development or grading project where the allowable tree removal is exceeded, the applicant shall mitigate the tree loss by either: by planting replacement trees in appropriate areas within the development in accordance with the Tree Replacement Schedule.
    - ~~i. Planting replacement trees in appropriate areas within the development in accordance with the Tree Replacement Schedule;~~
    - ~~ii. Planting replacement trees on City property under the direction of the Public Works Superintendent; or~~
    - ~~iii. Some combination of above subsections (i) and (ii) to total the equivalent number of replacement trees to meet the Mitigation Plan.~~
  - b. The form of mitigation to be provided by the applicant shall be determined by the City.
  - c. The planting of trees for mitigation on residential projects shall be in addition to any other landscape requirements of the City.
  - d. All trees, with the exception of ornamental trees, planted as landscaping on commercial or mixed-use projects may be counted towards tree replacement requirements.
7. Tree Replacement Calculations. Thirty (30) percent of the total diameter inches of significant trees on the site may be removed without replacement. Any percentage over 30 shall be replaced. ~~The allowable thirty (30) percent removal is first credited to the common trees removed, then the conifers, and lastly the hardwood species.~~ The following calculation procedure must be used to determine tree replacement requirements:
- a. Tally the total number of diameter inches of all significant trees on the site.
  - b. ~~Calculate thirty (30) percent of the total diameter inches of significant trees on the site. This is the allowable tree removal limit, or the number of inches that can be removed without replacement. A calculation must be provided which breaks out the number of inches removed for hardwood, evergreen/deciduous, and common trees. The 30% removal figure applies to each category individually and trees are replaced according to the Tree Replacement Schedule in subsection 8.~~



- ~~e. Tally the total diameter inches of common trees that will be removed and subtract this number from the allowable tree removal limit.~~
  - ~~d. If there are any allowable inches left, tally the total diameter inches of conifer/evergreen tree species that will be removed and subtract this number from the remaining allowable inches.~~
  - ~~e. If there are any allowable inches left, tally the total diameter inches of hardwood deciduous tree species that will be removed and subtract this number from the remaining allowable inches.~~
  - ~~f. If at any point in the above calculation procedure (a-e) the number of inches to be removed exceeds the thirty (30) percent allowable removal limit, the remaining inches of removal above the allowable limit must be replaced according to the Tree Replacement Schedule in subsection 8.~~
8. Tree Replacement Schedule. Tree removals over the allowable tree removal limit on the parcel shall be replaced according to the following schedule:
- a. Common tree species shall be replaced with new trees at a rate of one-fourth (1/4) the diameter inches removed.
  - b. Coniferous/evergreen tree species shall be replaced with new coniferous or evergreen trees at a rate of one-half (1/2) the diameter inches removed. Since coniferous species are often sold by height rather than diameter inch, the following conversion formula can be used:
    - i.  $\text{Height of Replacement Coniferous Tree} / 2 = \text{Diameter Inches of Credit}$
  - c. Hardwood deciduous tree species shall be replaced with new hardwood deciduous trees at a rate of (1/2) the diameter inches removed.
  - ~~d. Replacement Tree Size. Replacement trees must be a minimum of one (1) inch in diameter.~~
9. Species Requirement. The City must approve all species used for tree replacement. Ornamental trees are not acceptable for use as replacement trees. Where ten or more replacement trees are required, not more than thirty (30) percent of the replacement trees shall be of the same species of tree. Native species are encouraged, and hardiness and salt tolerance should be considered where applicable.
10. Warranty Requirement. Any replacement tree which is not alive or healthy, as determined by the City, or which subsequently dies due to construction activity within two (2) years after the date of project closure shall be removed by the applicant and replaced with a new healthy tree meeting the same minimum size requirement within eight (8) months of removal.
11. Protective Measures. The Tree Preservation Plan shall identify and require the following measures to be utilized to protect significant trees planned for preservation:



- a. Installation of snow fencing or polyethylene laminate safety netting placed at the drip line or at the perimeter of the critical root zone, whichever is greater, of significant trees, specimen trees and significant woodlands to be preserved. No grade change, construction activity, or storage of materials shall occur within this fenced in area.
  - b. Identification of any oak trees requiring pruning between April 15 and July 1. Any oak trees so pruned shall be required to have any cut areas sealed with an appropriate nontoxic tree wound sealant.
  - c. Prevention of change in soil chemistry due to concrete washout and leakage or spillage of toxic materials, such as fuels or paints.
  - d. Removal of any nuisance trees located in areas to be preserved.
12. Compliance with the Tree Preservation Plan. The applicant shall implement the Tree Preservation Plan prior to and during any construction. The tree protection measures shall remain in place until all land disturbance and construction activity is terminated or until a request to remove the tree protection measures is made to, and approved by, the City.
- a. No significant trees shall be removed until a tree preservation plan is approved and except in accordance with the approved Tree Preservation Plan.
  - b. The City shall have the right to inspect the development and/or building site in order to determine compliance with the approved Tree Preservation Plan. The City shall determine whether the Tree Preservation Plan has been met.
  - c. Irreparable Damage. Where the City determines that irreparable damage has occurred to a healthy significant tree that is designated to be preserved as part of the Tree Preservation Plan, the tree shall be removed and placed, and protective fencing shall be provided.
  - e.d. Instances where a significant tree(s) is removed due to development or disturbed, which was not noted on the landscaping or tree removal plan will result in a one to one replacement penalty regardless if it is over the 30% allowance.
- D. Specimen Trees. The removal of any specimen trees on a property located in any of the urban zoning districts shall require a special permit and be subject to the Tree Replacement Schedule for the purpose of mitigating great tree loss.
- E. Financial Security. In cases where mitigation or tree replacement is required, the City may require that a financial security, in a form acceptable to the City, be provided as part of a development agreement or applicable permit to ensure compliance and performance of the Mitigation Plan. The financial security will be released to the applicant upon verification by the City that the Mitigation Plan was followed, and that all replacement trees are planted and in a reasonable state of health. The financial security may be used to replace any replacement trees that have become damaged or diseased after planting.
- F. Exceptions



1. *Exception Standards.* Notwithstanding the City's desire to accomplish tree preservation and protection goals, there may be instances where these goals are in conflict with other City objectives. These conflicts will most likely occur on small, heavily-wooded parcels. ~~At the discretion of the City Council Developers may ask for exceptions~~ Through the variance process as indicated in 154.109. Exceptions may be granted if all of the following conditions exist:
  - a. The subject parcel is five (5) acres in size or less;
  - a. It is not feasible to combine the subject parcel with adjacent parcels that could use the parcel as required green space;
  - b. Strict adherence to the Tree Preservation Ordinance would prevent reasonable development that is consistent with the Comprehensive Plan and desirable to the City on the parcel; and
  - c. The exception requested is the minimum needed to accomplish the desired development.
2. *Reduced Mitigation for Exceptions.* If an exception is granted, relief from the requirements of the ordinance may take the form of reduced mitigation requirements, greater allowable tree removal, higher thresholds for determining significant trees, or any combination of the above. The City Council will determine which form of relief best balances the objectives of the City and tree preservation. The Council may require payment of park dedication fees; woodland management practices; or planting of replacement trees on City property under direction of the Public Works Director as a condition of variance approval.

(Ord. 08-077, passed 5-07-2013)

**SECTION 2. The City Council of the City of Lake Elmo hereby amends Title XV: Land Usage; Chapter 154: Zoning Code; Article VIII; Environmental Performance Standards; 154.258 to add Section 154.258 Sudb. E (1) a. Perimeter Parking Lot Landscaping. The language shall read as follows:**

**§ 154.258 LANDSCAPE REQUIREMENTS.**

All development sites shall be landscaped as provided in this section in order to control erosion and runoff, moderate extremes of temperature and provide shade, aid in energy conservation, preserve habitat, provide visual softening of, especially, urban development, and generally enhance the quality of the physical environment within the city.

- A. *Landscape Plan Required.* A landscaping plan is required for all new commercial, industrial, institutional, and multi-family development, all planned unit developments, and all subdivisions, with the exception of minor subdivisions, as defined in Chapter 154. The landscape plan shall be prepared by a certified landscape architect and include the following:

1. The location, size, quantity, and species of all existing and proposed plant materials.
2. Methods for protecting existing trees and other landscape material, consistent with §154.257.
3. Structural and ground cover materials.
4. Provisions for irrigation and other water supplies.
5. Details and cross sections of all required screening.
6. Special planning instructions.

B. *Design Considerations.* The following design concepts and requirements shall be considered when developing a landscape plan.

1. To the maximum extent possible, the landscape plan shall incorporate existing trees and other vegetation on the site.
2. Landscaped areas should be of adequate size to allow proper plant growth, protect plantings from vehicular and pedestrian traffic, and provide adequate areas for plant maintenance.
3. A variety of trees and shrubs should be used to provide visual interest year round. No more than fifty percent (50%) of the required number of trees and shrubs may consist of any one species. A minimum of twenty-five percent (25%) of the required number of trees shall be deciduous shade trees, and a minimum of twenty-five percent (25%) shall be coniferous trees. Ornamental trees may be used when applied towards landscaping requirements. However, the number of trees shall not exceed 15% of the required amount.
4. Final slopes greater than 3:1 will not be permitted without special treatment such as terracing, retaining walls, or special ground covers.
5. All plant materials, except trees planted per the Tree Replacement Schedule, shall meet the following minimum size standards in Table 6-1. Trees planted per the Tree Replacement Schedule shall meet the minimum requirements outlined in Section 154.257 (C) (8) (d.).



**Table 6-1. Minimum Size Standards for Landscape Materials**

Plant Type	Minimum size at planting
Trees:	
Evergreen	6 feet in height
Deciduous – shade	2.5 inches caliper, measured 6 inches from base
Deciduous - ornamental	2 inches caliper, measured 6 inches from base
Shrubs:	
Evergreen	# 5 container*
Deciduous	# 5 container*
Shrubs used for screening (evergreen or deciduous)	# 5 container*

\* Approximately 5 gallons. See American Standards for Nursery Stock, ANSI 260.1-2004 for exact specifications.

\* This table and its requirements do not apply to the tree replacement schedule

6. As an alternative to the minimum standards for landscape materials, a landscape plan prepared by a qualified professional certifying that said plan will meet the intent of this Section may be submitted.

C. *Landscaping of Setback Areas.* All required setbacks not occupied by buildings, parking, paths or plazas shall be landscaped with turf grass, native grass, trees, shrubs, vines, perennial flowering plants, and surrounding pervious ground cover.

1. A minimum of one (1) tree shall be planted for every fifty (50) feet of street frontage, lake shore or stream frontage, or fraction thereof.
  - a. Trees adjacent to streets shall be planted within the front yard and may be arranged in a cluster or placed at regular intervals to best complement existing landscape design patterns in the area.
  - b. Salt tolerance and root structure should be considered when selecting tree species adjacent to streets, sidewalks and parking areas.
  - c. Where property abuts a lake or stream, trees shall be planted at intervals of no more than fifty (50) feet along the shoreline, except where natural vegetation is sufficient to meet this requirement.
2. In addition to the requirements of C.1 above, a minimum of five (5) trees shall be planted for every one (1) acre of land that is ~~developed or~~ disturbed by development activity. Such trees may be used for parking lot landscaping or screening as specified in subsections D and E below.

D. *Interior Parking Lot Landscaping.* The purpose of interior parking lot landscaping is to minimize the expansive appearance of parking lots and provide shaded parking areas. Landscaping shall consist of planting islands, medians and borders, comprising the required planting area specified under item (1) below.

1. At least five (5) percent of the interior area of parking lots with more than thirty (30) spaces shall be devoted to landscape planting areas. Areas may consist of islands or corner planting beds.

2. Shade trees shall be provided within the interior of parking lots (in islands or corner planting beds) in accordance with the following table:

**Table 6-2. Minimum Required Tree Planting for Parking Lots**

Number of Parking Spaces	Minimum Required Tree Planting
0 – 30	None required
31 - 100	1 tree per 10 spaces or fraction thereof
101+	1 tree per 15 spaces or fraction thereof

- E. *Perimeter Parking Lot Landscaping.* Parking areas shall be screened from public streets and sidewalks, public open space, and adjacent residential properties. The perimeter of parking areas shall be screened as follows:
1. A landscaped frontage strip at least five (5) feet wide shall be provided between parking areas and public streets, sidewalks, or paths. If a parking area contains over one hundred (100) spaces, the frontage strip shall be increased to eight (8) feet in width.
    - ~~a. Within the frontage strip, screening shall consist of either a masonry wall, fence, berm, or hedge or combination that forms a screen a minimum of three and one-half (3.5) and a maximum of four (4) feet in height, and not less than fifty percent (50%) opaque on a year-round basis.~~
    - b.a. Trees shall be planted at a minimum of one deciduous tree per fifty (50) linear feet within the frontage strip.
  2. Alongside and rear property lines abutting residential properties or districts, screening shall be provided, consisting of either a masonry wall, fence or berm in combination with landscape material that forms a screen a minimum of four (4) feet in height, a maximum of six (6) feet in height, and not less than ninety percent (90%) opaque on a year-round basis. Landscape material shall include trees, planted at a minimum of one deciduous or coniferous tree per forty (40) linear feet along the property line.
- F. *Screening.* Screening shall be used to provide visual and noise separation of intensive uses from less intensive uses. Where screening is required in the City Code between uses or districts, it shall consist of either a masonry wall or fence in combination with landscape material that forms a screen at least six (6) feet in height, and not less than ninety percent (90%) opaque on a year-round basis. Landscape material shall include trees, planted at a minimum of one deciduous or coniferous tree per forty (40) linear feet along the property line. Additional landscape material such as shade trees or trellises may be required to partially screen views from above.
- G. *Maintenance and Installation of Materials.* Installation and maintenance of all landscape materials shall comply with the following standards:
1. All landscape materials shall be installed to current industry standards.
  2. Irrigation or other water supply adequate to support the specified plant materials shall be provided.



3. All required landscaping and screening features shall be kept free of refuse and debris.
4. All landscape materials shall be guaranteed for two (2) years. Any landscape material that dies or becomes diseased before the end of the second (2nd) year after installation shall be replaced by the developer.
5. Continuing maintenance and replacement of landscape materials shall be the responsibility of the property owner beyond two years of initial installation.

H. *Financial Security.* The City will require that a financial security, in a form acceptable to the City, be provided as part of a development agreement or applicable permit to ensure compliance and performance of the Landscape Plan. The financial security will be released to the applicant upon verification by the City that the Landscape Plan was followed, and that all landscape materials are planted and in a reasonable state of health. The financial security may be used to replace any landscape materials that have become damaged or diseased after planting. Adequate security must be retained to ensure performance for at least two years after the installations have been completed.

(Ord. 08-087, passed 8-20-2013)

**SECTION 3. Effective Date.** This ordinance shall become effective immediately upon adoption and publication in the official newspaper of the City of Lake Elmo.

**SECTION 4. Adoption Date.** This Ordinance 08-\_\_\_\_ was adopted on this \_\_\_\_\_ day of \_\_\_\_\_ 2018, by a vote of \_\_\_\_ Ayes and \_\_\_\_ Nays.

**LAKE ELMO CITY COUNCIL**

\_\_\_\_\_  
Mike Pearson, Mayor

ATTEST:

\_\_\_\_\_  
Julie Johnson, City Clerk

This Ordinance 08-\_\_\_\_ was published on the \_\_\_\_\_ day of \_\_\_\_\_, 2018.



## STAFF REPORT

DATE: 7/9/2018  
BUSINESS ITEM  
ITEM #: 5A  
MOTION

**TO:** Planning Commission  
**FROM:** Emily Becker, Planning Director  
**ITEM:** Northport 2<sup>nd</sup> Addition Final Plat  
**REVIEWED BY:** Jack Griffin, City Engineer

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### **BACKGROUND:**

The Planning Commission is being asked to consider a Final Plat request from Pulte Homes of MN LLC for the 2<sup>nd</sup> Addition of Northport, a planned 104 unit residential development. The 2<sup>nd</sup> Addition includes 29 single family lots that are located within a 22.34 acre area to the northwest of Northport 1<sup>st</sup> Addition. Staff is recommending approval of the request subject to compliance with the conditions listed in this report.

### **ISSUE BEFORE COMMISSION:**

The Commission is being asked to recommend approval or denial of the Final Plat request for the 2<sup>nd</sup> Addition of based on its consistency with the approved Preliminary Plat.

### **PROPOSAL DETAILS/ANALYSIS:**

#### **General Information.**

*Applicant:* Pulte Homes of MN LLC, 7500 Flying Cloud Drive, Ste 670, Eden Prairie, MN 55344 (will act as both developer of the property and builder of homes)

*Property Owners:* Pulte Homes of MN LLC, 7500 Flying Cloud Drive, Ste 670, Eden Prairie, MN 55344

*Location:* PID# 13.029.21.44.0042

*Request:* Application for final plat approval of a 29 unit residential subdivision to be named Northport 2<sup>nd</sup> Addition

*Zoning:* LDR – Limited Density Residential

*Surrounding:* North – Easton Village (LDR – Limited Density Residential); West – Reid Park (PF – Public and Quasi Public Open Space; South – Heritage Farms (Open Space Development); East – Lake Elmo Airport (Baytown Township).

*Comp. Plan:* Village Urban Low Density Residential (1.5 - 2.49 units per acre)

*History:* Property was included in Village Planning Area boundary and municipal sewer service area as defined in the 2013 Village Land Use Plan. Site has historically



been used for farming activities, including the growing of agricultural crops. Sketch Plan review by Planning Commission on 06/30/2014. A Comprehensive Plan Amendment was approved on 7/15/2014 by Resolution 2014-60, and Preliminary Plat was approved on 9/16/2014 by Resolution 2014-74. Preliminary plans revised 12/01/2014. Final Plat of 1<sup>st</sup> Addition (approving 36 units) approved on September 5, 2017 by Resolution 2017-089.

*Action Deadline:* Application Complete – 6/5/2018  
60 Day Deadline – 8/4/2018  
Extension Letter Mailed – No  
120 Day Deadline – N/A

*Regulations:* Chapter 153 – Subdivision Regulations  
Article 10 – Urban Residential Districts (LDR)  
§150.270 Storm Water, Erosion, and Sediment Control

### **Consistency with Preliminary Plat.**

It was previously discussed with the approval of the 1<sup>st</sup> Addition Final Plat that the approved Preliminary Plat was updated to address Engineering comments. Dimensional standards generally stayed the same and there was a connection to the McLeod property to accommodate future development. Eyebrow islands were also added.

### **Outlots.**

- Outlot B (as shown on the Final Plat) will be homeowners' (HOA)-owned, and the developer has indicated that it will include a play structure.
- Outlot A is
- There will be an outlot to the north of the houses north of Lower 31<sup>st</sup> Street, as indicated per the preliminary plans, that will need be platted with the final plat of 2<sup>nd</sup> Addition to be used for stormwater purposes.

**Right-of-Way.** There is 1.02 acres of non-arterial right-of-way being dedicated.

**Parkland.** The developer met the City's parkland dedication requirements through the deeding of Outlot C, which is now an extension of Reid Park. The developer is not responsible for additional park fees or improvements for the entire development, including this addition.

**Engineering Comments.** The City Engineer comments can be reviewed in the attached Northport 2<sup>nd</sup> Addition Final Plat review memo dated July 2, 2018. It is a recommended condition of approval that these comments be addressed, and many of the comments are recommended as separate conditions of approval in order to more effectively outline these requirements.

**Metropolitan Airports Commission (MAC) Comments.** Due to MAC's review comments regarding the 1<sup>st</sup> Addition, it was a condition of approval that the applicant provide a disclosure statement to all first homeowners in the development advising of the airport and associated over-flights, and all builders shall be encouraged to incorporate interior noise reduction measures in to single family residential structures within the subdivision based on the Metropolitan Council's Builder Guide. Staff recommends that this be a condition of approval for the 2<sup>nd</sup> Addition as well.

**Building Official/Public Safety Review.** The Building Official and Fire Chief reviewed the proposed Final Plat and have verified that the fire hydrant locations and spacing are in compliance

with applicable codes and standards. The on-street parking and signage will be dictated by the city parking ordinance.

**Access.** There is a connection to 30<sup>th</sup> Street via Village Parkway, a minor collector road that will serve as the primary access and circulation route for the development, extending from 30<sup>th</sup> Street to Easton Village.

**Landscape Plans.** The City's Landscape Architect reviewed the landscape plans, and the report is attached. There are 11 tree discrepancies that need to be corrected, and the trees should be spaced further apart. Trees that do not fit the larger spacing can be moved to the buffer areas. Further, there are a number of utility conflicts that need to be corrected. It is a recommended condition of approval that the landscape plans be updated per these comments and resubmitted and approved by the City.

**Buffering.** A condition of the Comprehensive Plan Amendment previously approved by adoption of Resolution 2014-60 was that additional buffering and screening be provided along the southwest portion of the property, particularly the east boundary of the McLeod property. Trees have been proposed to provide screening, and an infiltration area will provide a buffer. It was a condition of approval of the 1<sup>st</sup> Addition that the landscape plans for that addition are not to include landscaping within Outlot C so as to not interfere with any amendments needed to that infiltration area to accommodate potential development of the McLeod parcel. Therefore, the landscape plans for a future addition will need to include this infiltration area. Additionally, the Comprehensive Plan designates a buffer area on the south and east side of this development, though this buffer does not apply to this addition.

**Streets.** The street names do not adhere to the recently amended street naming policy in that they have the direction prefix of Upper and Lower, but they are consistent with the 1<sup>st</sup> Addition Final Plat and preliminary plat.

All local streets provide a 60 foot right-of-way and are 28 feet wide, which will allow for on-street parking on both sides. There will be no parking allowed in the eyebrows.

**Final Plat Approval Process.** The City's subdivision ordinance establishes the procedure for obtaining final subdivision approval, in which case a final plat may only be reviewed after the City takes action on a preliminary plat. As long as the final plat is consistent with the preliminary approval, it must be approved by the City. Please note that the City's approval of the Preliminary Plat did include a series of conditions that must be met by the applicant, which are addressed in the "Review and Analysis" section below. There are no public hearing requirements for a final plat.

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In order to provide the Planning Commission with an update concerning the conditions associated with the preliminary plat for Northport (formerly known as Village Park Preserve), Staff has prepared the following:

**Preliminary Plat Conditions as designated by Resolution 2014-74 – With Staff Update  
Comments (updated information in bold italics):**

- 1) The Metropolitan Council must approve the Comprehensive Plan Amendment for the Holliday parcel in advance of the City's consideration of an application for Final Plat for the Village Park Preserve Subdivision. ***Comments: The Metropolitan Council approved the Comprehensive Plan Amendment for the Holliday parcel on September 23, 2014.***
- 2) In advance of Final Plat application, the applicant shall provide adequate title evidence satisfactory of the City Attorney. ***Comments: This condition was met with the 1<sup>st</sup> Addition.***



- 3) All required modifications to the plans as requested by the City Engineer in a review memorandum dated September 4, 2014 shall be incorporated into the plans prior to consideration of a Final Plat. **Comments: *The preliminary plans have been updated and approved by the City Engineer. It is a recommended condition of approval that all required modifications to the Final Plat and plans as requested.***
- 4) The Preliminary Plat approval is conditioned upon the applicant meeting all minimum City standards and design requirements. **Comments: *See above.***
- 5) The developer shall follow all of the rules and regulations spelled out in the Wetland Conservation Act, and shall acquire the needed permits from Valley Branch Watershed District prior to the commencement of any grading or development activity on the site. **Comments: *The Applicant obtained Valley Branch Watershed District approval on July 13, 2017. It is a recommended condition of approval that these rules and regulations be followed.***
- 6) Related to the proposed storm water discharge to the south, the Applicant must provide written permission from all property owners of the affected parcels located south of the proposed 30<sup>th</sup> Street culvert consenting to the discharge location, volume and rate(s) in advance of submitting Final Plat. **Comments: *The applicant has provided a Drainage and Utility Easement, Temporary Construction Easement, and Right-of-Way easement from the McLeod property, as well as a Temporary Construction Easement from the Krueger property with the 1<sup>st</sup> Addition.***
- 7) The Applicant shall be responsible for the submission of final plans and the construction of all improvements within the 30<sup>th</sup> Street right-of-way as required by the City and further described in the review memorandum from the City Engineer dated September 4, 2014. **Comments: *This condition is not applicable to this addition.***
- 8) The Applicant shall observe all right-of-way and other requirements included in a review memorandum from Washington County dated September 3, 2014. **Comment: *This condition does not apply to this addition.***
- 9) The Landscape Plan shall be updated per the recommendations of the City's Landscape Consultant, described in a memo dated September 4, 2014. Tree protection measures for trees intended to be saved according to the submitted Tree Survey must be included in the Final Landscape Plan. **Comments: *It is a recommended condition of approval that the Applicant obtain City approval for the Landscape Plans.***
- 10) The Applicant must enter into a separate grading agreement with the City prior to the commencement of any grading activity in advance of Final Plat and plan approval. The City Engineer shall review any grading plan that is submitted in advance of Final Plat, and said plan shall document extent of any proposed grading on the site. **Comment: *Grading will be addressed in the Development Agreement that will likely be approved concurrently with Final Plat.***
- 11) The Applicant shall install an additional row of trees in the rear of Lots 1-3, Block 1 to provide additional screening for the eastern boundary of the McLeod property to satisfy the condition of approval related to the requested Comprehensive Plan Amendment. **Comments: *As previously mentioned, it was a condition of approval of the 1st Addition that the landscape plans for that***

*addition are not to include landscaping within Outlot C so as not to interfere with any amendments needed to that infiltration area to accommodate potential development of the McLeod parcel. Therefore, the landscape plans for a future addition will need to include this additional row of trees.*

- 12) The developer shall obtain all required permits from Northern Natural Gas to perform construction work over the gas line that runs from north to south across the site. ***Comments: The final plans have been approved by Northern Natural Gas, and the easement agreement is ready to be signed. It is a recommended condition of approval that the Applicant execute this easement for the 2<sup>nd</sup> Addition.***
- 13) The developer shall submit a letter from the Metropolitan Airports Commission agreeing to design of stormwater facilities acceptable to the City prior to submitting the Final Plat application. ***Comments. The MAC provided a letter dated December 5, 2014 to the City which indicates that while they do not advocate the construction of open-water retention ponds in close proximity to their airports due to their potential to attract and/or sustain hazardous wildlife, that they acknowledge both the engineering challenges on the development site that make the sole use of dry ponds or infiltration basins to accommodate the upstream developed flows and the surface water runoff from on-site development impractical and the efforts being made by the City to design and construct a regional stormwater retention system to reduce the volume and rate of unmitigated stormwater flowing to parcels in the immediate vicinity of the airport.***

**Recommended Findings.** Staff is recommending that the Planning Commission consider the following findings with regards to the proposed Northport 2<sup>nd</sup> Addition Final Plat:

- 1) That all the requirements of City Code Section 153.07 related to the Final Plan and Final Plat have been met by the Applicant.
- 2) That the proposed Final Plat for Northport 2<sup>nd</sup> Addition consists of the creation of 29 single-family detached residential structures.
- 3) That the Northport 2<sup>nd</sup> Addition Final Plat is generally consistent with the Preliminary Plat and Plans as approved by the City of Lake Elmo on September 16, 2014 and as amended on September 6, 2017.
- 4) That the Northport 2<sup>nd</sup> Addition Final Plat is consistent with the Lake Elmo Comprehensive Plan and the Future Land Use Map for this area.
- 5) That the Northport 2<sup>nd</sup> Addition Final Plat complies with the City's Urban Low Density Residential zoning district regulations.
- 6) That the Northport 2<sup>nd</sup> Addition Final Plat complies with all other applicable zoning requirements, including the City's landscaping, storm water, sediment and erosion control and other ordinances with the exception of issues identified in the July 9, 2018 Staff report to the Planning Commission.
- 7) That the Northport 2<sup>nd</sup> Addition Final Plat complies with the City's subdivision ordinance.



- 8) That the Northport 2<sup>nd</sup> Addition Final Plat is generally consistent with the City's engineering standards with the exception of necessary plan revisions outlined by the City Engineer in his review comments to the City regarding Northport 2<sup>nd</sup> Addition Final Plat dated July 2, 2018.

**Recommended Conditions of Approval.** Staff is recommending certain conditions that have been specifically identified as part of the final plat review and that have not otherwise been addressed by the applicant, be addressed as part of the Planning Commission's recommendation to the City Council. The City Engineer's review letter does identify several issues that need to be addressed by the developer in order for the City to deem the final plans complete. Staff is recommending that City Officials not sign the final plat mylars until the City's construction plan review is finalized and all necessary easements are documented on the final plat.

Based on the above Staff report and analysis, Staff is recommending approval of the final plat with several conditions intended to address the outstanding issues noted above and to further clarify the City's expectations in order for the developer to proceed with the recording of the final plat.

- 1) Final grading, drainage, and erosion control plans, sanitary and storm water management plans, landscape plans, and street and utility construction plans shall be reviewed and approved by the City Engineer and applicable Staff prior to the recording of the Final Plat. All changes and modifications to the plans requested by the City Engineer in the memorandums addressing Northport 2<sup>nd</sup> Addition Final Plat dated July 2, 2018 shall be incorporated into these documents before they are approved. Final Construction Plans and Specifications must be prepared in accordance with the City approved Preliminary Plans and in accordance with the City Engineering Design Standards Manual dated March 20, 2017 using City details, plan notes, and specifications.
- 2) All easements as requested by the City Engineer and Public Works Department shall be documented on the Final Plat prior to its execution by City Officials. A drainage and utility easement should be dedicated over all of Outlot A.
- 3) The Northport 2<sup>nd</sup> Addition final plat shall include an outlot including the Pond #4SE to be dedicated to the City for ongoing operation and maintenance.
- 4) Final plat approval shall be contingent upon either removing Lot 10, Block 2 and Lot 1, Block 3, or adding a temporary cul-de-sac per City detail 807B at the street termination point for Upper 31<sup>st</sup> Street North.
- 5) No building permits, including model home permits, may be accepted and issued by the City until for the 2<sup>nd</sup> Addition until all grading and storm water facilities are fully completed and verified by as-built shots for all Northport preliminary plan areas, including final grading adjacent to Easton Village, the storm sewer outfall pipe south of 30<sup>th</sup> Street, the construction of 30<sup>th</sup> Street box culvert extension, and the 30<sup>th</sup> Street turn lane improvements.
- 6) Final plat approval shall be contingent on the plans including a bituminous trail connection to Reid Park.
- 7) All off-site easements as required and approved by the City Engineer and Public Works Director shall be documented on the Final Plat prior to release of the Final Plat for recording.

- 8) Prior to the execution of the Final Plat by City officials, the Developer shall enter into a Developer's Agreement acceptable to the City Attorney and approved by the City Council that delineates who is responsible for the design, construction, and payment of the required improvements for the Village Park Preserve Final Plat with financial guarantees therefore.
- 9) The Landscape Plans must be updated plans and approved by the City's Landscape Architect. All utility conflicts must be removed.
- 10) A Landscape License Agreement shall be executed for the maintenance of right-of-ways prior to release of the final plat by City Officials.
- 11) The applicant shall provide a disclosure statement to all first homeowners in the development advising of the airport and associated over-flights, and all builders shall be encouraged to incorporate interior noise reduction measures into single family residential structures within the subdivision based on the Metropolitan Council's Builder Guide.
- 12) The Applicant shall provide the City with a copy of the Northern Natural Gas permit and abide by any conditions of approval.
- 13) The developer shall follow all of the rules and regulations spelled out in the Wetland Conservation Act.

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**RECOMMENDATION:**

Staff recommends that the Planning Commission recommend approval of the Northport 2<sup>nd</sup> Addition Final Plat with conditions of approval as listed in the Staff report. Suggested motion:

***“Move to recommend approval of the Northport 2<sup>nd</sup> Addition Final Plat with the conditions of approval as drafted by Staff”***

**ATTACHMENTS:**

1. Final Plat and Landscape Plans
2. City Engineer Review Memo dated July 2, 2018
3. Landscape Review Memo



Date Received: \_\_\_\_\_  
Received By: \_\_\_\_\_  
LU File #: \_\_\_\_\_



651-747-3900  
3800 Laverne Avenue North  
Lake Elmo, MN 55042

## FINAL PLAT APPLICATION

Applicant: PULTE GROUP - CHAD ONSGARD  
Address: 7500 FLYING CLOUD DRIVE STE 670  
Phone #: 952-229-0723  
Email Address: CHAD. ONSGARD@PULTEGROUP.COM

Fee Owner: SEE ABOVE  
Address: \_\_\_\_\_  
Phone #: \_\_\_\_\_  
Email Address: \_\_\_\_\_

Property Location (Address): 30TH STREET N (WEST OF AIRPORT) (MANNING AVE  
Complete (long) Legal Description: SEE FINAL PLAT

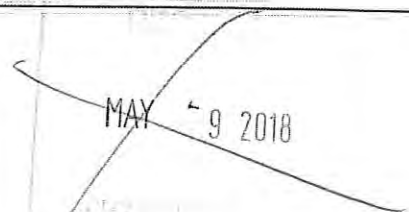
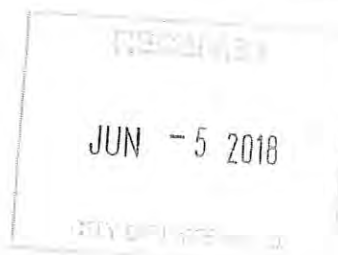
PID#: 1302921440042

General information of proposed subdivision: NORTHPORT 2ND ADDITION - UTILITY INSTALLATION  
STREET CONSTRUCTION, ETC...

In signing this application, I hereby acknowledge that I have read and fully understand the applicable provisions of the Zoning Ordinance and current administrative procedures. I further acknowledge the fee explanation as outlined in the application procedures and hereby agree to pay all statements received from the City pertaining to additional application expense.

Signature of applicant: Chad Onsgard Date: 6-5-18

Fee Owner Signature Chad Onsgard Date: 6-5-18



# NORTHPORT 2ND ADDITION

Lake Elmo, Minnesota

Project #

72905-326-200

Date

June 4, 2018

Prepared for:

**PULTE GROUP**

Prepared by:

**Sathre-Bergquist, Inc.**

7500 Office Ridge Circle, Ste 325  
Eden Prairie, MN 55344

150 Broadway Ave. S.  
MN 55391

Wayzata,

Contact: Paul Heuer  
tel: 612-280-6506

Contact: David Pemberton  
tel: 952-476-6000

BLOCK 1	GROSS AREA				WETLAND AREA		NET AREA			WIDTH @ SETBACK		
Lot 1	10,192	s.f.	0.23	acres	0	s.f.	10,192	s.f.	0.23	acres	65	+/- l.f.
Lot 2	9,212	s.f.	0.21	acres	0	s.f.	9,212	s.f.	0.21	acres	65	+/- l.f.
Lot 3	8,336	s.f.	0.19	acres	0	s.f.	8,336	s.f.	0.19	acres	65	+/- l.f.
Lot 4	9,209	s.f.	0.21	acres	0	s.f.	9,209	s.f.	0.21	acres	64.7	+/- l.f.
Lot 5	8,506	s.f.	0.20	acres	0	s.f.	8,506	s.f.	0.20	acres	65	+/- l.f.
Lot 6	8,508	s.f.	0.20	acres	0	s.f.	8,508	s.f.	0.20	acres	65.3	+/- l.f.
Lot 7	13,847	s.f.	0.32	acres	0	s.f.	13,847	s.f.	0.32	acres	80.1	+/- l.f.
Total	67,810	s.f.	1.56	acres	0	s.f.	67,810	s.f.	1.56	acres		

BLOCK 2	GROSS AREA				WETLAND AREA		NET AREA			WIDTH @ SETBACK		
Lot 1	24,997	s.f.	0.57	acres	0	s.f.	24,997	s.f.	0.57	acres	116.8	+/- l.f.
Lot 2	18,444	s.f.	0.42	acres	0	s.f.	18,444	s.f.	0.42	acres	65	+/- l.f.
Lot 3	14,408	s.f.	0.33	acres	0	s.f.	14,408	s.f.	0.33	acres	65	+/- l.f.
Lot 4	13,149	s.f.	0.30	acres	0	s.f.	13,149	s.f.	0.30	acres	65	+/- l.f.
Lot 5	13,382	s.f.	0.31	acres	0	s.f.	13,382	s.f.	0.31	acres	65	+/- l.f.
Lot 6	14,443	s.f.	0.33	acres	0	s.f.	14,443	s.f.	0.33	acres	65	+/- l.f.
Lot 7	19,840	s.f.	0.46	acres	0	s.f.	19,840	s.f.	0.46	acres	71.1	+/- l.f.
Lot 8	31,158	s.f.	0.72	acres	0	s.f.	31,158	s.f.	0.72	acres	78	+/- l.f.
Lot 9	13,945	s.f.	0.32	acres	0	s.f.	13,945	s.f.	0.32	acres	73.6	+/- l.f.
Lot 10	11,476	s.f.	0.26	acres	0	s.f.	11,476	s.f.	0.26	acres	70.5	+/- l.f.
Total	175,242	s.f.	4.02	acres	0	s.f.	175,242	s.f.	4.02	acres		

BLOCK 3	GROSS AREA				WETLAND AREA		NET AREA			WIDTH @ SETBACK		
Lot 1	11,758	s.f.	0.27	acres	0	s.f.	11,758	s.f.	0.27	acres	114.5	+/- l.f.
Lot 2	11,495	s.f.	0.26	acres	0	s.f.	11,495	s.f.	0.26	acres	112.2	+/- l.f.
Lot 3	8,732	s.f.	0.20	acres	0	s.f.	8,732	s.f.	0.20	acres	69.5	+/- l.f.
Lot 4	12,867	s.f.	0.30	acres	0	s.f.	12,867	s.f.	0.30	acres	121.8	+/- l.f.
Lot 5	13,245	s.f.	0.30	acres	0	s.f.	13,245	s.f.	0.30	acres	131.6	+/- l.f.
Lot 6	9,721	s.f.	0.22	acres	0	s.f.	9,721	s.f.	0.22	acres	83	+/- l.f.
Lot 7	9,672	s.f.	0.22	acres	0	s.f.	9,672	s.f.	0.22	acres	88.3	+/- l.f.
Lot 8	9,048	s.f.	0.21	acres	0	s.f.	9,048	s.f.	0.21	acres	65	+/- l.f.
Lot 9	8,990	s.f.	0.21	acres	0	s.f.	8,990	s.f.	0.21	acres	65	+/- l.f.
Lot 10	8,853	s.f.	0.20	acres	0	s.f.	8,853	s.f.	0.20	acres	65	+/- l.f.
Lot 11	9,010	s.f.	0.21	acres	0	s.f.	9,010	s.f.	0.21	acres	65	+/- l.f.
Lot 12	9,538	s.f.	0.22	acres	0	s.f.	9,538	s.f.	0.22	acres	72.3	+/- l.f.
Total	122,929	s.f.	2.82	acres	0	s.f.	122,929	s.f.	2.82	acres		

OUTLOT	GROSS AREA				WETLAND AREA		NET AREA		
A	543,547	s.f.	12.48	acres	0	s.f.	543,547	s.f.	12.48 acres
B	19,131	s.f.	0.44	acres	0	s.f.	19,131	s.f.	0.44 acres
Total	562,678	s.f.	12.92	acres	0	s.f.	562,678	s.f.	12.92 acres

R/W	GROSS AREA				WETLAND AREA		NET AREA		
	44,333	s.f.	1.02	acres	0	s.f.	44,333	s.f.	1.02 acres

TOTAL	GROSS AREA				WETLAND AREA		NET AREA		
	972,992	s.f.	22.34	acres	0	s.f.	972,992	s.f.	22.34 acres



# NORTHPORT 2ND ADDITION

KNOW ALL PERSONS BY THESE PRESENTS: That Pulte Homes of Minnesota, LLC, a Minnesota limited liability company, fee owner, of the following described property situated in the County of Washington, State of Minnesota, to wit:

Outlot B and Outlot G, NORTHPORT.

Have caused the same to be surveyed and platted as NORTHPORT and do hereby dedicate to the public for public use the public ways, as shown on the plat, and also the drainage and utility easements as created by this plat.

In witness whereof said Pulte Homes of Minnesota, LLC, a Minnesota limited liability company, has caused these presents to be signed by Eric Padget, Vice President on this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

By: Pulte Homes of Minnesota, LLC

\_\_\_\_\_  
Eric Padget, Vice President

STATE OF MINNESOTA, COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me on this \_\_\_\_\_ day of \_\_\_\_\_, 2018, by Eric Padget, Vice President of Pulte Homes of Minnesota, LLC, a Minnesota limited liability company, on behalf of the company.

Notary Public, \_\_\_\_\_ County, Minnesota      \_\_\_\_\_ Printed Name      My Commission Expires: \_\_\_\_\_

## SURVEYORS CERTIFICATION

I, David B. Pemberton 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 the plat; that all monuments depicted on the plat have been set, 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 \_\_\_\_\_, 2018.

\_\_\_\_\_  
David B. Pemberton, Licensed Land Surveyor  
Minnesota License No. 40344

STATE OF MINNESOTA, COUNTY OF HENNEPIN

This instrument was acknowledged before me on this \_\_\_\_\_ day of \_\_\_\_\_, 2018, by David B. Pemberton, Licensed Land Surveyor, Minnesota License No. 40344.

Notary Public, Hennepin County, Minnesota      \_\_\_\_\_ Printed Name      My Commission Expires: \_\_\_\_\_

LAKE ELMO, MINNESOTA PLANNING COMMISSION

Approved by the Planning Commission of the City of Lake Elmo, Minnesota, on this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

Signed: \_\_\_\_\_  
Chair, Planning Commission

Signed: \_\_\_\_\_  
Secretary, Planning Commission

LAKE ELMO, MINNESOTA

This plat of NORTHPORT 2ND ADDITION was approved by the City Council of the City of Lake Elmo, Minnesota on this \_\_\_\_\_ day of \_\_\_\_\_, 2018, and hereby certifies compliance with all requirements as set forth in Minnesota Statutes, Section 505.03, Subd. 2.

Signed: CITY OF LAKE ELMO

By: \_\_\_\_\_  
Mayor

By: \_\_\_\_\_  
Clerk

COUNTY SURVEYOR

Pursuant to Chapter 820, Laws of Minnesota, 1971, and in accordance with Minnesota Statutes, Section 505.021, Subd. 11, this plat has been reviewed and approved this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

By: \_\_\_\_\_  
Washington County Surveyor

By: \_\_\_\_\_

COUNTY AUDITOR/TREASURER

Pursuant to Minnesota Statutes, Section 505.021, Subd. 9, and Section 272.12, taxes payable in the year 2018, on the real estate hereinbefore described, have been paid; and there are no delinquent taxes, and transfer has been entered on this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

By: \_\_\_\_\_  
Washington County Auditor/Treasurer

By: \_\_\_\_\_  
Deputy

COUNTY RECORDER

Document Number \_\_\_\_\_

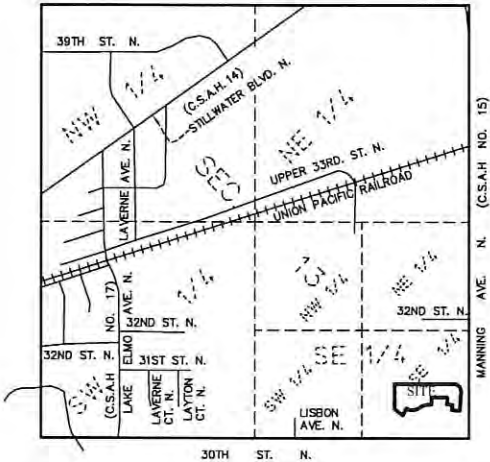
I hereby certify that this instrument was recorded in the Office of the County Recorder for record on this \_\_\_\_\_ day of \_\_\_\_\_, 2018, at \_\_\_\_\_ o'clock \_\_\_\_\_ M. and was duly recorded in Washington County Records.

By: \_\_\_\_\_  
Washington County Recorder

By: \_\_\_\_\_  
Deputy

## LOCATION MAP

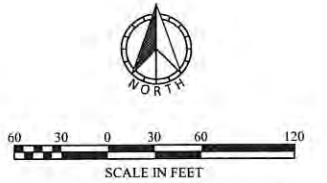
SECTION 13, TWP. 29N., RGE. 21W.  
(NOT TO SCALE)



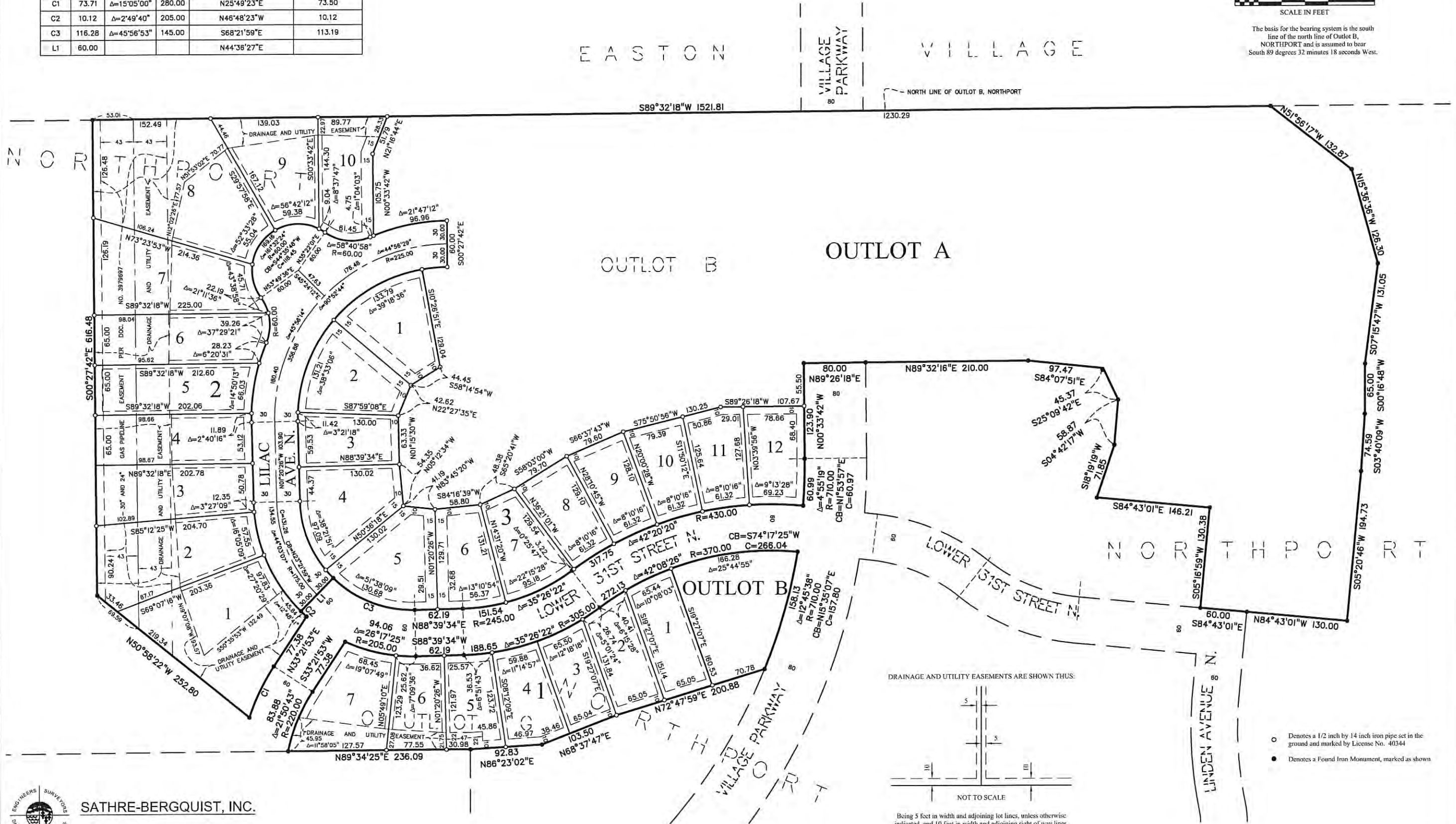
SATHRE-BERGQUIST, INC.

# NORTHPORT 2ND ADDITION

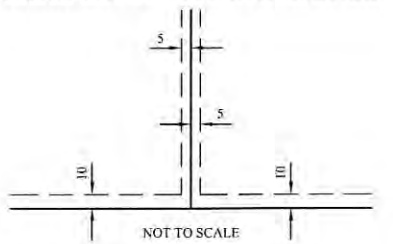
CURVE AND LINE TABLE					
TAG #	LENGTH	DELTA	RADIUS	BEARING/ CHORD BEARING	CHORD DISTANCE
C1	73.71	$\Delta=15^{\circ}05'00''$	280.00	N25°49'23"E	73.50
C2	10.12	$\Delta=2^{\circ}49'40''$	205.00	N46°48'23"W	10.12
C3	116.28	$\Delta=45^{\circ}56'53''$	145.00	S68°21'59"E	113.19
L1	60.00			N44°36'27"E	



The basis for the bearing system is the south line of the north line of Outlot B, NORTHPORT and is assumed to bear South 89 degrees 32 minutes 18 seconds West.



DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



Being 5 feet in width and adjoining lot lines, unless otherwise indicated, and 10 feet in width and adjoining right of way lines, unless otherwise indicated, as shown on the plat.

- Denotes a 1/2 inch by 14 inch iron pipe set in the ground and marked by License No. 40344
- Denotes a Found Iron Monument, marked as shown



SATHRE-BERGQUIST, INC.



## MEMORANDUM

# FOCUS ENGINEERING, inc.

Cara Geheren, P.E.	651.300.4261
Jack Griffin, P.E.	651.300.4264
Ryan Stempski, P.E.	651.300.4267
Chad Isakson, P.E.	651.300.4283

Date: July 2, 2018

To: Emily Becker, City Planner  
Cc: Chad Isakson, P.E., Assistant City Engineer  
From: Jack Griffin, P.E., City Engineer

Re: Northport 2nd Addition – Final Plat  
Engineering Review Comments

An engineering review has been completed for Northport 2nd Addition. Final Plat/Construction Plans were received on June 7, 2018. The review consisted of the following documentation prepared by Sathre-Bergquist, Inc.:

- Northport 2nd Addition Final Plat received June 5, 2018. No print/preparation date.
- Northport 2nd Addition Construction Plans dated June 1, 2018.
- Northport 2nd Addition Specifications dated June 4, 2018.
- Northport 2nd Addition Landscape Plans dated June 6, 2018, prepared by Norby & Associates.

**STATUS/FINDINGS:** Engineering review comments have been provided in two separate memos; one for Final Plat approval, and one to assist with the completion of the final Construction Plans. Please see the following review comments relating to the Final Plat application.

### FINAL PLAT: NORTHPORT 2ND ADDITION

- Final Plat approval should be contingent upon Northport 2nd Addition including the Pond #4SE Outlot with the Outlot dedicated to the City for ongoing operation and maintenance.
- Final Plat approval should be contingent upon the Final Plat including a drainage and utility easement over all of Outlot A, 2nd Addition.
- Final Plat approval should be contingent upon the Final Plat either removing Lot 10, Block 2 and Lot 1, Block 3, or adding a temporary cul-de-sac per City detail 807B at the street termination point for Upper 31st Street.
- No building permits, including model home building permits, may be accepted and issued by the City for the 2nd Addition until all grading and storm water facilities are fully completed and verified by as-built shots for all Northport preliminary plan areas, including final grading adjacent to Easton Village, the storm sewer outfall pipe south of 30th Street, the construction of the 30th Street box culvert extension, and the 30th Street turn lane improvements.
- Final Plat approval should be contingent on the plans including a bituminous trail connection to Reid Park.
- Final Construction Plans and Specifications must be prepared in accordance with the City Engineering Design Standards Manual dated March 2017, using City details, plan notes and specifications and meeting City Engineering Design Guidelines.
- Final Construction Plans and Specifications must be revised in accordance with the Construction Plan engineering review memorandum dated July 2, 2018.
- All easements as requested by the City Engineer and Public Works department shall be documented on the Final Plat prior to the release of the Final Plat for recording.
- The Final Plat shall not be recorded until final construction plan approval is granted.

- All off-site temporary construction easements and/or drainage and utility easements as required by the City Engineer and Public Works Director must be provided in the City standard form of easement agreement and signed by all parties prior to the release of the Final Plat for recording.
- No construction for Northport 2nd Addition may begin until the applicant has received City Engineer approval for the Final Construction Plans; the applicant has obtained and submitted to the City all applicable permits, easements and permissions needed for the project; and a preconstruction meeting has been held by the City's engineering department.





**To:** Emily Becker, City of Lake Elmo Planning Director  
**From:** Lucius Jonett, Wenck Landscape Architect  
**Date:** June 21, 2018  
**Subject:** City of Lake Elmo Landscape Plan Review  
Northport 2<sup>nd</sup> Addition, Review #1

**Submittals**

- Phase 2 Landscape Plans, dated June 6, 2018, received June 18, 2018.

**Location:** Northwest quadrant of the intersection of 30th Street North & Manning Avenue North, Lake Elmo, MN

**Land Use Category:** Village Urban Low Density

**Surrounding Land Use Concerns:** The area to west on the northern portion of the plat is designated as parkland.

**Special landscape provisions in addition to the zoning code:** Greenbelt buffer is required on the south and east sides of the plat.

**Emily Becker**  
 Planning Director  
 City of Lake Elmo  
 June 21, 2018



**Tree Preservation:**

A tree survey/preservation plan has been previously submitted, including a tree inventory showing individual trees that are exempt, removed and saved. The allowable tree removal limit is not exceeded, therefore no mitigation plan or replacement trees are required.

	Entire Site	
Total Caliper Inches of Significant Trees On-Site:	467.5	Cal Inches
Common Trees	367.5	
Conifer/Evergreen Trees	0	
Hardwood Trees	100	
Significant Inches Removed On-Site	83	Cal Inches
Common Trees	83	
Conifer/Evergreen Trees	0	
Hardwood Trees	0	
Tree Removal Limits (30% Significant Inches Removed On-Site)	140.25	Cal Inches
Subtract Common Tree Removals	83	
Subtract Conifer/Evergreen Tree Removals	0	
Subtract Hardwood Tree Removals	0	
Removals in excess of 30% allowance	0.00	Cal Inches
Removals in Excess of Allowance	0.0	Cal Inches
Conifer Removals in Excess of 30% Allowance	0.0	
Hardwood Removals in Excess of 30% Allowance	0.0	
Conifer Tree Replacement Needed (1/2 the dia inches removed)	0.0	Cal Inches
Hardwood Tree Replacement Needed (1/2 the dia inches removed)	0.0	Cal Inches
<b>Conifer Tree Replacement Required @ 3" per 6' Tall Tree</b>	<b>0</b>	<b># Trees</b>
<b>Hardwood Tree Replacement Required @ 2.5" per Tree</b>	<b>0</b>	<b># Trees</b>

Tree replacement is not required because less than thirty (30) percent of the diameter inches of significant trees surveyed will be removed.



### **Landscape Requirements:**

The phase 2 landscape plans are consistent with the approved preliminary plat and phase 1 landscape plans and meet the code required number of trees.

	Master Plan (Code Required)	Phase 1 Proposed	Phase 2 Required	Phase 2 Proposed	
Street frontage	13770		1500		Lineal Feet
Lake Shore	0				Lineal Feet
Stream Frontage	0				Lineal Feet
Total Linear Feet	13770		1500		Lineal Feet
/50 Feet = Required Frontage Trees	276	142	30	72	Trees
Development or Disturbed Area	-		560320		SF
Development or Disturbed Area	51.0		12.9		Acres
x5 = Required Development Trees	255	184	65	33	Trees
Required Mitigation Trees	0				
<b>Required Number of Trees</b>	<b>531</b>		<b>95</b>		
<b>Total Trees to Date</b>		<b>326</b>		<b>105</b>	<b>431</b>

1. A minimum one (1) tree is proposed for every fifty (50) feet of street frontage.
2. A minimum of five (5) trees are proposed to be planted for every one (1) acre of land that is developed or disturbed by development activity.

The master plan and phase 1 landscape plans meet the minimum of twenty-five percent (25%) of the required number of trees shall be deciduous shade trees and a minimum of twenty-five percent (25%) of the required number of trees coniferous trees. The phase 2 landscape plans on their own are slightly short of the 25% coniferous tree requirement, but the running total satisfies both deciduous shade and coniferous tree minimums. No issue.

Master Plan	Qty	% Composition	
Deciduous Shade Trees	360	73%	>25% required
Coniferous Trees	136	27%	>25% required
Ornamental Trees*	35		

**Tree Count 496**

1st Addition	Qty	% Composition	
Deciduous Shade Trees	233	71%	>25% required
Coniferous Trees	93	29%	>25% required
Ornamental Trees*	23		

**Tree Count 326**

2nd Addition	Qty	% Composition	
Deciduous Shade Trees	80	76%	>25% required
Coniferous Trees	25	24%	>25% required
Ornamental Trees*	4		

**Tree Count 105**

*\*Ornamental Trees are not included in totals*

Phase 1 & 2 Total	Qty	% Composition	
Deciduous Shade Trees	313	73%	>25% required
Coniferous Trees	118	27%	>25% required
Ornamental Trees*			

**Tree Count 431**

**Emily Becker**  
Planning Director  
City of Lake Elmo  
June 21, 2018



- A. A landscape plan has been submitted that does meet all requirements.
- B. Screening – a greenbelt buffer with screening is required on the south side of the overall development, including the south side portion of phase 2 that abuts private property, and is shown on the landscape plans. The screening design meets City requirements.

**Special Landscape Considerations:**

- A. Village Parkway Collector – The development is along Village Parkway.
  - a. Phase 2 does not front Village Parkway so the landscape plan does meet all requirements.

**Findings:**

- 1. The following discrepancies between the plant schedules and what is shown on plan are:
  - a. Plant schedules should be labeled Phase 2
  - b. There is an 11 tree discrepancy that should be corrected:
    - i. The total of 67 trees does not match what is listed in the table
    - ii. Autumn blaze maple calls for 14 in the tables and 15 are shown on the plan
    - iii. Deborah Schwedler maple calls for 2 in the tables and 4 are shown on the plan
    - iv. White oak calls for 17 in the tables and 3 are shown on the plan
- 2. Trees are shown approximately 25' to 30' apart in areas of the plans (along Liberty Court North and some of the sections of Lower 31<sup>st</sup> Street North. Street trees should be spaced at least 35' apart to match the approved Phase 1 landscape plans (Upper 31<sup>st</sup> Street North) more closely. Trees that do not fit the larger spacing can be moved to buffer areas.

**Recommendation:**

It is recommended that a condition of approval include:

- 1. Submit a revised landscape plan addressing the findings listed above.

Sincerely,

A handwritten signature in cursive script that reads 'Lucius Jonett'.

Lucius Jonett, PLA (MN)  
Wenck Associates, Inc.  
City of Lake Elmo Municipal Landscape Architect



## Upland Dry Prairie Mix

Common Name	Scientific Name	% of Mix	PLS
<b>GRASS</b>			
Side-Oats Gramma	<i>Bouteloua curtipendula</i>	35.0	5.25 lbs./ac.
Blue Grama	<i>Bouteloua gracilis</i>	5.0	0.75 lbs./ac.
Canada Wild Rye	<i>Elymus canadensis</i>	9.3	1.39 lbs./ac.
Junegrass	<i>Koeleria macrantha</i>	1.3	0.19 lbs./ac.
Little Bluestem	<i>Schizachyrium scoparium</i>	26.0	3.90 lbs./ac.
Prairie Dropseed	<i>Sporobolus heterolepis</i>	3.5	0.53 lbs./ac.
<b>FORBS</b>			
Prairie Onion	<i>Allium stellatum</i>	1.0	0.15 lbs./ac.
Leadplant	<i>Amorpha canescens</i>	0.5	0.08 lbs./ac.
Butterfly Milkweed	<i>Asclepias tuberosa</i>	0.3	0.04 lbs./ac.
Smooth Blue Aster	<i>Aster laevis</i>	0.5	0.08 lbs./ac.
Sky-Blue Aster	<i>Aster oolentangiensis</i>	0.5	0.08 lbs./ac.
Partridge Pea	<i>Chamaecrista fasciculata</i>	3.3	0.49 lbs./ac.
White Prairie Clover	<i>Dalea candida</i>	3.0	0.45 lbs./ac.
Purple Prairie Clover	<i>Dalea purpureum</i>	4.0	0.60 lbs./ac.
Wild Bergamot	<i>Monarda fistulosa</i>	0.8	0.11 lbs./ac.
Prairie Cinquefoil	<i>Potentilla arguta</i>	0.5	0.08 lbs./ac.
Long-Headed Coneflower	<i>Ratibida columnifera</i>	0.8	0.11 lbs./ac.
Black Eyed Susan	<i>Rudbeckia hirta</i>	3.0	0.45 lbs./ac.
Old Field Goldenrod	<i>Solidago nemoralis</i>	0.3	0.04 lbs./ac.
Showy Goldenrod	<i>Solidago speciosa</i>	0.5	0.08 lbs./ac.
Hoary Vervain	<i>Verbena stricta</i>	1.3	0.19 lbs./ac.
		<b>100.0</b>	<b>15.00 lbs./ac.</b>

## Wet Mesic Prairie Mix

Common Name	Scientific Name	% of Mix	PLS
<b>GRASS</b>			
Big Bluestem	<i>Andropogon gerardii</i>	18.0	2.70 lbs./ac.
Blue-Joint Grass	<i>Calamagrostis canadensis</i>	0.5	0.08 lbs./ac.
Fox Sedge	<i>Carex vulpinoidea</i>	2.0	0.30 lbs./ac.
Virginia Wild Rye	<i>Elymus virginicus</i>	23.5	3.53 lbs./ac.
Reed Manna Grass	<i>Glyceria grandis</i>	2.0	0.30 lbs./ac.
Switchgrass	<i>Panicum virgatum</i>	5.0	0.75 lbs./ac.
Little Bluestem	<i>Schizachyrium scoparium</i>	4.0	0.60 lbs./ac.
Indian Grass	<i>Sorghastrum nutans</i>	20.0	3.00 lbs./ac.
Prairie Cord Grass	<i>Spartina pectinata</i>	5.0	0.75 lbs./ac.
<b>FORBS</b>			
Marsh Milkweed	<i>Asclepias incarnata</i>	2.3	0.34 lbs./ac.
New England Aster	<i>Aster novae-angliae</i>	0.5	0.08 lbs./ac.
Canada Milk Vetch	<i>Astragalus canadensis</i>	2.5	0.38 lbs./ac.
Canada Tick Trefoil	<i>Desmodium canadense</i>	0.8	0.11 lbs./ac.
Boneset	<i>Eupatorium perfoliatum</i>	0.5	0.08 lbs./ac.
Sneezeweed	<i>Helenium autumnale</i>	0.5	0.08 lbs./ac.
Common Ox-Eye	<i>Heliopsis helianthoides</i>	2.5	0.38 lbs./ac.
Prairie Blazing Star	<i>Liatris pycnostachya</i>	1.3	0.19 lbs./ac.
Monkey Flower	<i>Mimulus ringens</i>	1.3	0.19 lbs./ac.
Obedient Plant	<i>Physostegia virginiana</i>	1.0	0.15 lbs./ac.
Yellow Coneflower	<i>Ratibida pinnata</i>	1.3	0.19 lbs./ac.
Black Eyed Susan	<i>Rudbeckia hirta</i>	1.3	0.19 lbs./ac.
Purple Meadow Rue	<i>Thalictrum dasycarpum</i>	0.8	0.11 lbs./ac.
Blue Vervain	<i>Verbena hastata</i>	2.3	0.34 lbs./ac.
Ironweed	<i>Vernonia fasciculata</i>	1.5	0.23 lbs./ac.
		<b>100.0</b>	<b>15.00 lbs./ac.</b>

## Upland Grass Mix

Common Name	Scientific Name	% of Mix	PLS
<b>GRASS</b>			
Side-Oats Gramma	<i>Bouteloua curtipendula</i>	30.0	3.00 lbs./ac.
Blue Grama	<i>Bouteloua gracilis</i>	10.0	1.00 lbs./ac.
Silky Wild Rye	<i>Elymus villosus</i>	10.0	1.00 lbs./ac.
Junegrass	<i>Koeleria macrantha</i>	2.0	0.20 lbs./ac.
Little Bluestem	<i>Schizachyrium scoparium</i>	43.0	4.30 lbs./ac.
Prairie Dropseed	<i>Sporobolus heterolepis</i>	5.0	0.50 lbs./ac.
		<b>100.0</b>	<b>10.00 lbs./ac.</b>

## SOURCE

All seed will be purchased from Minnesota Native Landscapes.  
Minnesota Native Landscapes  
8740 77th St NE  
Osage, MN 55362

## EXECUTION

### Ground Preparation

Prior to seeding, the Contractor shall spray the proposed seeding area with a non-selective glyphosate herbicide such as Round-Up. Approximately three to four weeks later the site should be cultivated using a deep-tine plow and then disked to produce a smooth firm seed bed. Allow weeds to germinate and grow. When weed seeds and roots have reached a height of 2-4 inches, the site should again be sprayed with a second herbicide application. Wait 10 days and then shallow till the soil to a depth of 1 inch. Tilling deeper will bring additional weed seeds to the surface.

Once the area to be planted has been properly prepared, the Contractor shall commence with seeding.

## NATIVE SEEDING

A. Native plant community seeding can take place during two periods of the year. The first window of opportunity is from the time the site preparation work is concluded in the spring, until approximately July 15. The second period is in the fall between October 1st and freeze-up. The latter is considered a dormant seeding and the seedlings do not germinate until late spring of the following growing season. It is recommended that the native seeding be conducted in June and early July.

B. All native grass seed should be applied with a Truax native seed drill, at a rate as specified according to individual specifications PLS (pure live seed) per acre. In areas too narrow or steep for equipment, grass seed may be hand broadcast. Cover crop shall be applied after Native Mix has been seeded.

C. Raking or dragging and rolling shall follow all seeding to insure good soil contact.

D. The Contractor shall mulch all seeded areas with clean straw or marsh hay at a rate of 2 tons/acre and shall be disc anchored into place.

## MAINTENANCE

### Year 1

During the first season, the seeded area shall be cut back approximately once each month to prevent the production of weed seeds and to reduce shade on the maturing native plantings. When the seeded area has reached a height of 8-10 inches, a flail-type mower shall be used to cut weeds and native plantings to a height of 4-6 inches. Rotary mowers and sickle bar mowers are not acceptable. In no case shall the seeded area be allowed to exceed 10 inches in height during the first season.

Pulling weeds is not recommended as this can uproot small, undeveloped native seedlings. Spot spray thistle, reed canary grass and any other problematic weeds.

### Year 2

In the spring of the second season, the plantings should be mowed again. Mowing should occur approximately 3-4 times during the second season. If weeds continue to persist during the second year additional mowings may be required. Do not let weeds go to seed. Seeded areas shall not be burned during the second year.

### Year 3

Spot spray perennial weeds if necessary.

### Years 4-5

Continue spot treatment spray of weeds and conduct burning (3-5 year rotation) alternate spring and fall

### Invasive Species Control

Certain species of perennial weeds may need to be controlled by spot treating with a herbicide for sufficient control. Perennial weeds may be canary grass, smooth brome, quack grass, purple loosestrife and Canada thistle. Canada thistle should be spot treated as soon as clumps appear to avoid the need to spray large areas.

Grass-specific herbicides shall be used to control reed canary grass; however they are not to be used near open water.

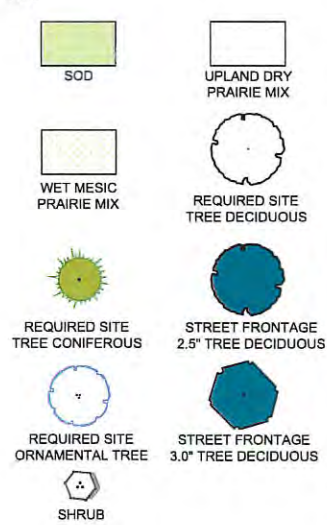
## PHASE 1 PLANT MATERIALS SCHEDULE

KEY	COMMON NAME	BOTANICAL NAME	QTY.	SIZE	NOTES
<b>OVERSTORY TREES</b>					
HL	Shayne Honeylocust	<i>Gleditsia inaequalis</i> 'Sycolor'	1	2.5" BB	straight single leader
PE	Princeton Elm	<i>Ulmus americana</i> 'Princeton'	2	2.5" BB	straight single leader
RM	Autumn Blaze Maple	<i>Acer x freemanii</i> 'Jeffersred'	1	2.5" BB	straight single leader
DM	Deborah Schneider Maple	<i>Acer platanoides</i> 'Deborah'	1	2.5" BB	straight single leader
WO	White Oak	<i>Quercus alba</i>	3	2.5" BB	straight single leader
<b>CONIFEROUS TREES</b>					
BH	Black Hills Spruce	<i>Picea glauca densata</i>	8	6" BB	
NP	Norway Pine	<i>Pinus resinosa</i>	3	6" BB	
TA	American Larch	<i>Larix laricina</i>	5	#10 Pot	
WP	White Pine	<i>Pinus strobus</i>	9	6" BB	
<b>ORNAMENTAL TREES</b>					
SB	Autumn Brilliance Serviceberry	<i>Amelanchier x grandiflora</i> 'Autumn Brilliance'	3	6" BB	multi-stem
CC	Corallburst Crabapple	<i>Malus 'Corallcole'</i>	1	2.5" BB	straight single leader
<b>SHRUBS</b>					
AC	American Cranberry	<i>Viburnum trilobum</i>	5	#6 Pot	
AH	American Hazelnut	<i>Corylus americana</i>	3	#6 Pot	
BC	Black Chokeberry	<i>Aronia melanocarpa</i> 'elata'	5	#6 Pot	
<b>PERENNIALS</b>					
AJ	Autumn Joy Sedum	<i>Sedum x 'Autumn Joy'</i>	42	#1 Pot	
CM	Kil Kil Camellia	<i>Nyssa sylvatica</i> 'Kil Kil'	40	#1 Pot	
GR	Goldsturm Rudbeckia	<i>Rudbeckia 'Goldsturm'</i>	38	#1 Pot	
LB	Little Bluestem	<i>Schizachyrium scoparium</i>	13	#1 Pot	
MY	Moonshine Yarrow	<i>Achillea 'Moonshine'</i>	36	#1 Pot	

## PHASE 1 PLANTING MATERIAL SCHEDULE: STREET FRONTAGE

KEY	COMMON NAME	BOTANICAL NAME	QTY.	SIZE	NOTES
<b>TREES</b>					
AL	American Linden	<i>Tilia americana</i>	10	2.5" BB	Straight single leader
DM	Deborah Schneider Maple	<i>Acer platanoides</i> 'Deborah'	1	2.5" BB	Straight single leader
HA	Honeyberry	<i>Calla occidentalis</i>	12	2.5" BB	Straight single leader
HL	Imperial Honeylocust	<i>Gleditsia inaequalis</i> 'Imperial'	15	2.5" BB	Straight single leader
RM	Autumn Blaze Maple	<i>Acer x freemanii</i> 'Jeffersred'	14	2.5" BB	Straight single leader
RD	Red Oak	<i>Quercus rubra</i>	14	2.5" BB	Straight single leader
WO	White Oak	<i>Quercus alba</i>	14	2.5" BB	Straight single leader
			<b>TOTAL</b>	<b>70</b>	

## KEY



## NOTES:

ALL TREES SHALL HAVE A MINIMUM DEPTH OF 6" HARDWOOD BARK MULCH 6" DIAMETER RING AROUND THE BASE OF THE TREE. KEEP MULCH OFF TREE TRUNK.

ALL TREES TO BE FIELD STAKED PRIOR TO INSTALLATION. LANDSCAPE CONTRACTOR TO COORDINATE FIELD REVIEW OF PROPOSED TREE LOCATIONS WITH CITY AND PROJECT LANDSCAPE ARCHITECTS PRIOR TO ANY TREE INSTALLATION.

ALL STREET FRONTAGE TREE PITS AND BACK FILL SHALL BE FREE OF CLASS V OR SIMILAR MATERIAL. TREES ARE TO BE BACKFILLED WITH MNDOT 3877 F SOIL.

MINIMUM OF 2 ROWS OF SOD BEHIND CURB.

AREAS WITH SIDEWALKS SHALL BE SODDED FROM BACK OF CURB TO SIDEWALK. SOD SHALL MEET MNDOT 3878 C SPECIFICATION FOR SALT TOLERANCE.

ALL RESIDENTIAL LOTS SHALL BE TEMPORARILY SEEDDED WITH UPLAND GRASS MIX.

ALL OUTLOTS SHALL BE PERMANENTLY SEEDDED WITH UPLAND DRY PRAIRIE MIX WITH EXCEPTION TO OUTLOTS TO BE SODDED AS SHOWN IN PLAN.

TREE CALCULATIONS ARE BASED UPON CITY CODE AND ONE TREE EQUALS 2.5 CALIPER TREE INCHES. FOR TREES SMALLER THAN 2.5 CALIPER TREE INCHES MULTIPLE TREES USED TO GET EQUAL CALIPER TREE INCHES.

ALL SOD INSTALLED ON VILLAGE PARKWAY N SHALL MEET MNDOT 3878 C SPECIFICATION FOR SALT TOLERANCE.

IF THERE ARE DISCREPANCIES IN PLANT COUNT BETWEEN THE SCHEDULE AND PLANS, PLANS TAKE PRECEDENCE.

DRAWING NAME	NO.	BY	DATE	REVISIONS
Landscape Plan	5	NM	12-11-14	Plantings Adjusted for Sidewalk
DRAWN BY	6	NM	12-12-14	New House Layout
MK	7	NM	12-15-14	Realigned Street Trees
CHECKED BY	8	TW	11-29-16	Revise entry & ground cover
KN	9	TW	12-14-16	Add future monument, irrigation service
DATE	10	TW	7-19-17	Update per new base
06/06/18	14	MK	1-5-18	Update per city comments

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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 registered Landscape Architect under the laws of the State of Minnesota.

Signed:

Date: 06-06-18 Registration #: 20144



Norby & Associates  
Landscape Architects, Inc.  
100 East Second St. Suite 200 Chaska, MN 55318  
(952) 361-0644 / www.norbylandscape.com

## CITY PROJECT NO.

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LAKE ELMO,  
MINNESOTA

## PHASE 2 LANDSCAPE PLAN

NORTHPORT

PULTE GROUP

## FILE NO.

3120-047

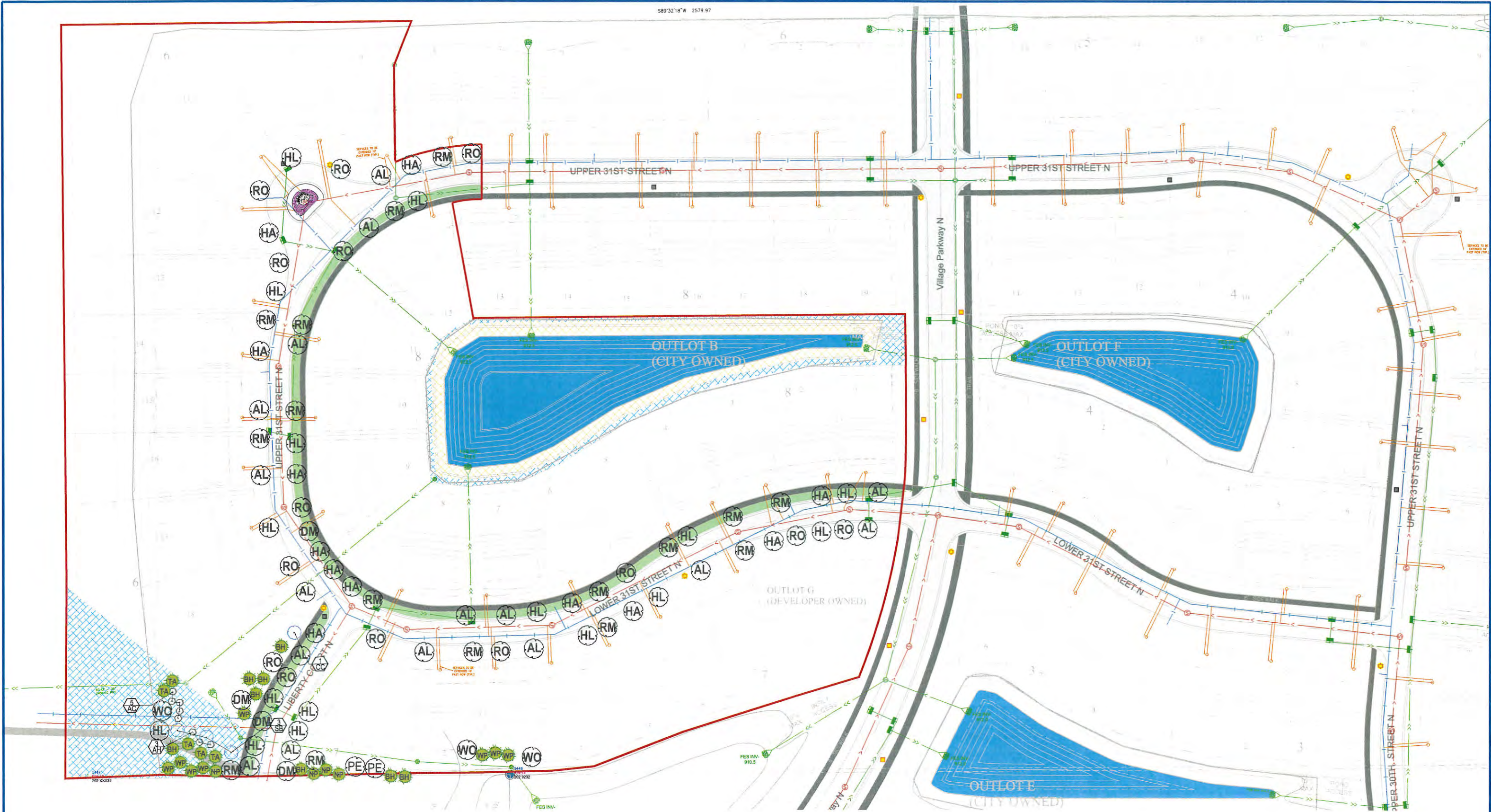
LP1

LP5

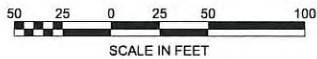
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SCALE IN FEET







1 PHASE 2 SITE PLANTING  
2 1"=50'-0"



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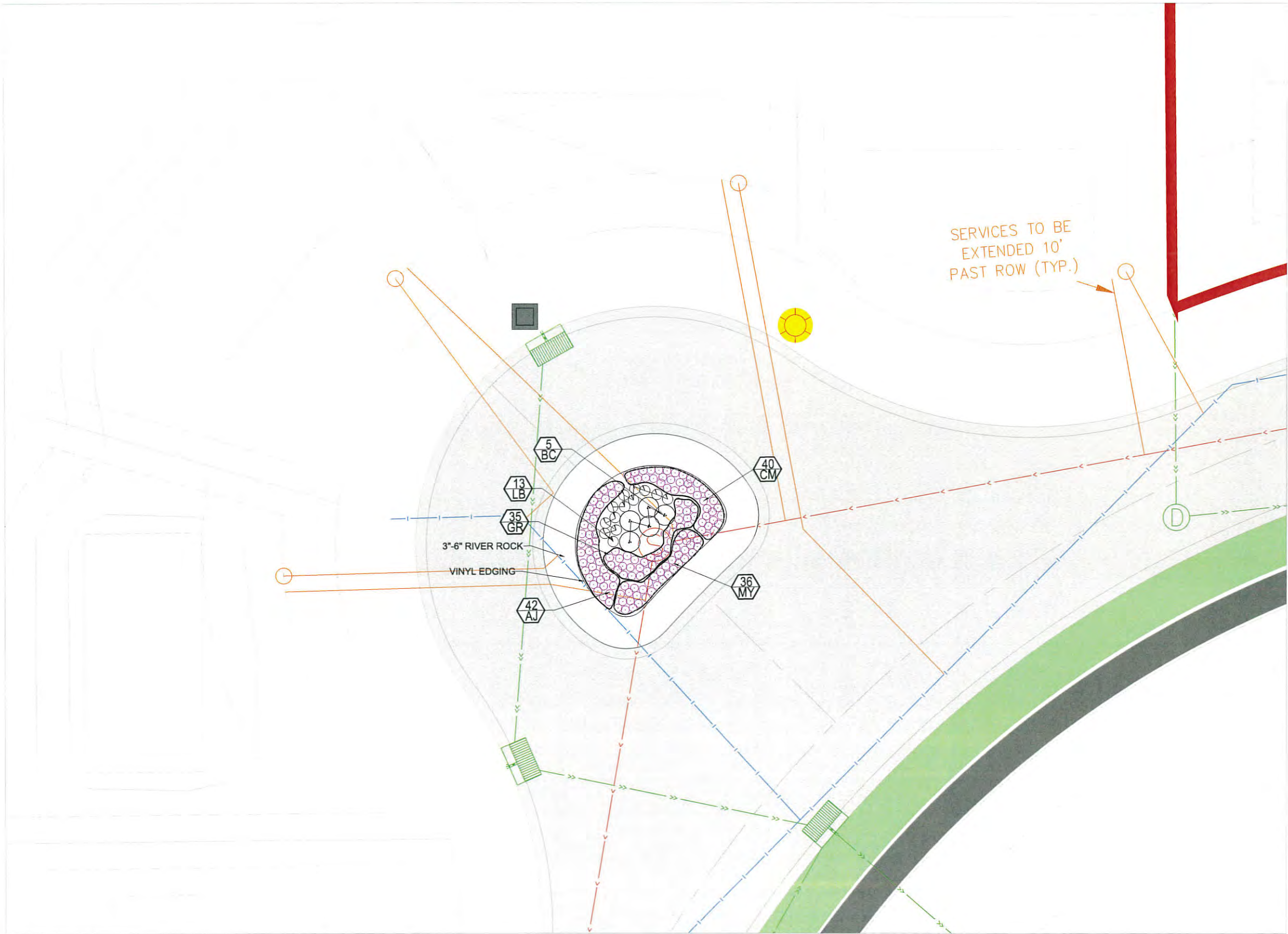
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CITY PROJECT NO.  
LAKE ELMO,  
MINNESOTA

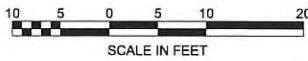
PHASE 2 LANDSCAPE PLAN  
NORTHPORT  
PULTE GROUP

FILE NO.  
3120-047  
LP2  
LP5





1 PHASE 2 ISLAND PLANTINGS  
3 1"=10'-0"



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CITY PROJECT NO.  
LAKE ELMO,  
MINNESOTA

PHASE 2 LANDSCAPE PLAN  
NORTHPORT  
PULTE GROUP

FILE NO.  
3120-047  
LP3  
LP5



STANDARD PLAN NOTES  
LANDSCAPE PLANS

- Contractor must contact Gopher State One Call 811 ([www.gopherstateonecall.org](http://www.gopherstateonecall.org)) prior to tree staking and planting operations to verify underground utilities. Where private utilities exist on-site the Contractor is required to have those located as well.
- Plant materials shall meet American Standard for Nursery Stock: ANSI Z60.1, latest edition.
- No plant substitutions shall be made without the prior written authorization from the City.
- All tree locations to be field staked prior to installation. Contractor to coordinate field review of proposed tree locations with the City and Project Landscape Architect prior to any tree installation.
- All plants shall be planted immediately upon arrival to project site. No plant material is to be left overnight on the project site without being installed unless written approval by City.
- All trees, shrubs, perennials, turf lawn and native seeding to have a two-year warranty beginning upon written acceptance by the City. Defective plants as determined by the City shall be replaced within 30 days of notice during the growing season, and replacement materials shall receive the same two year warranty until plants are successfully established.
- Contractor to protect and maintain all plantings and plant beds, including protection from wildlife, weeding, re-mulching, fertilization, irrigation and all other typical forms of horticultural care until the end of the warranty period as determined and approved by City.
- All plants installed and maintained on City property shall be in accordance with City of Lake Elmo Bee-Safe Resolution No. 2015-13.
- An irrigation system or other water supply adequate to support the specified plant materials shall be provided.

APRIL 2017



CITY OF LAKE ELMO

STANDARD DRAWING NO.  
LP2.0  
LAKE ELMO



CITY OF LAKE ELMO

STANDARD DRAWING NO.  
LP2.1  
LAKE ELMO

APRIL 2017

- Notes:
- Refer to specification 329000 for additional requirements.
  - Amend Planting Soil with MnDOT 3881 B.4 Type 4 Natural Based Fertilizer and MnDOT 3896C or 3896G Additives
  - Mulch ring for individually planted trees shall be a minimum diameter of 4-feet.
  - Remove all nursery twine at trunk at time of planting.
  - No staking allowed unless requested and granted in writing by City.

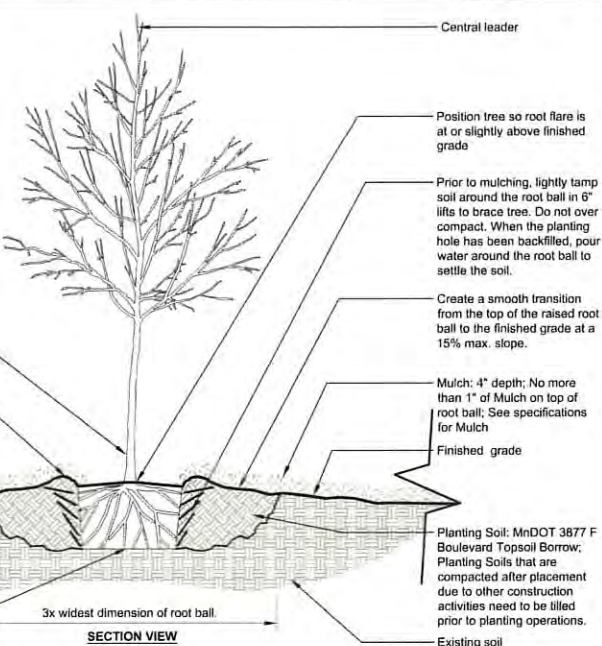
Trunk caliper shall meet ANSI Z60.1 latest edition for root ball size

Round-topped soil berm 4" high x 8" wide above root ball surface shall be constructed around the root ball; Berm shall begin at root ball periphery

Bottom of root ball rests on existing or re-compacted soil

LP2.1

DECIDUOUS TREE



CITY OF LAKE ELMO

STANDARD DRAWING NO.  
LP2.3  
LAKE ELMO

APRIL 2017

- Notes:
- Refer to specification 329000 for additional requirements.
  - Amend Planting Soil with MnDOT 3881 B.4 Type 4 Natural Based Fertilizer and MnDOT 3896C or 3896G Additives
  - Mulch ring for individually planted trees shall be a minimum diameter of 6-feet or to extent of lower limbs whichever is greater.
  - Remove all nursery twine at trunk at time of planting.
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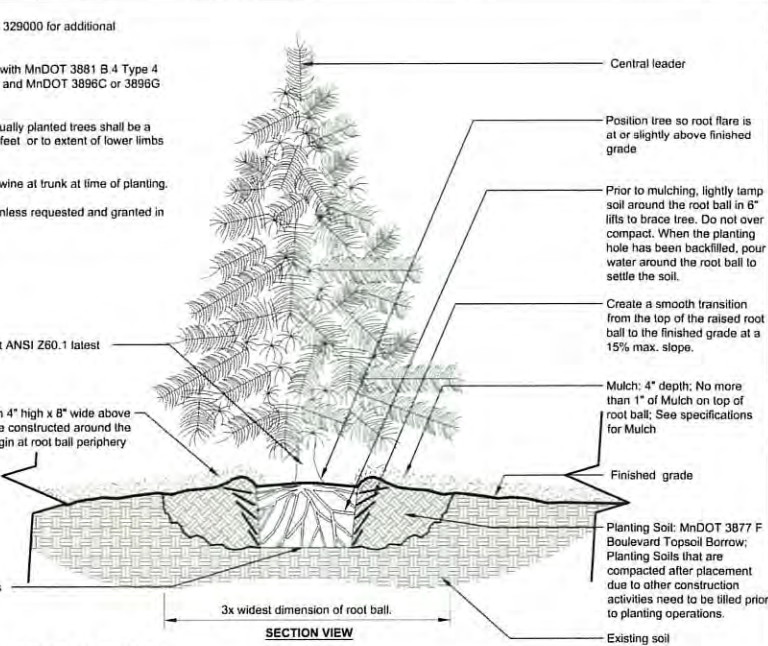
Trunk caliper shall meet ANSI Z60.1 latest edition for root ball size

Round-topped soil berm 4" high x 8" wide above root ball surface shall be constructed around the root ball; Berm shall begin at root ball periphery

Bottom of root ball rests on existing or re-compacted soil

LP2.3

CONIFEROUS TREE



CITY OF LAKE ELMO

STANDARD DRAWING NO.  
LP2.2  
LAKE ELMO

APRIL 2017

- Notes:
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  - Remove all nursery twine at trunk at time of planting.
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Trunk caliper shall meet ANSI Z60.1 latest edition for root ball size

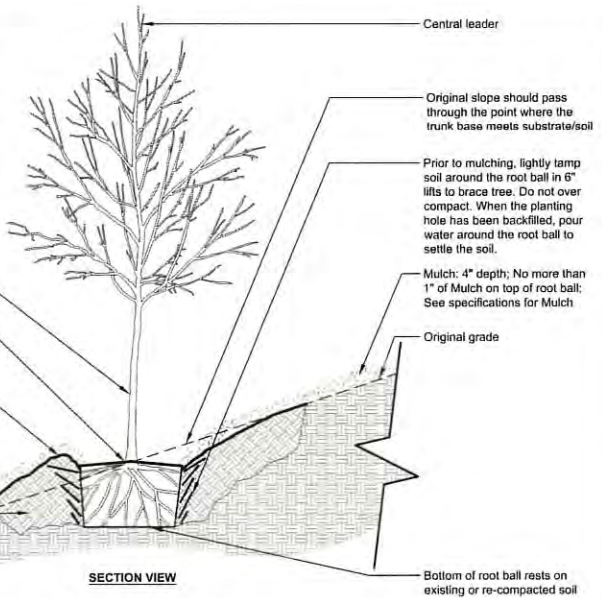
Position tree so root flare is at or slightly above finished grade

Round-topped soil berm 4" high x 8" wide above root ball surface shall be centered on the downhill side of the root ball for 240°; Berm shall begin at root ball periphery

Planting Soil: MnDOT 3877 F Boulevard Topsoil Borrow; Planting Soils that are compacted after placement due to other construction activities need to be tilled prior to planting operations.

LP2.2

DECIDUOUS TREE ON SLOPE 5% TO 50%



CITY OF LAKE ELMO

STANDARD DRAWING NO.  
LP2.4  
LAKE ELMO

APRIL 2017

- Notes:
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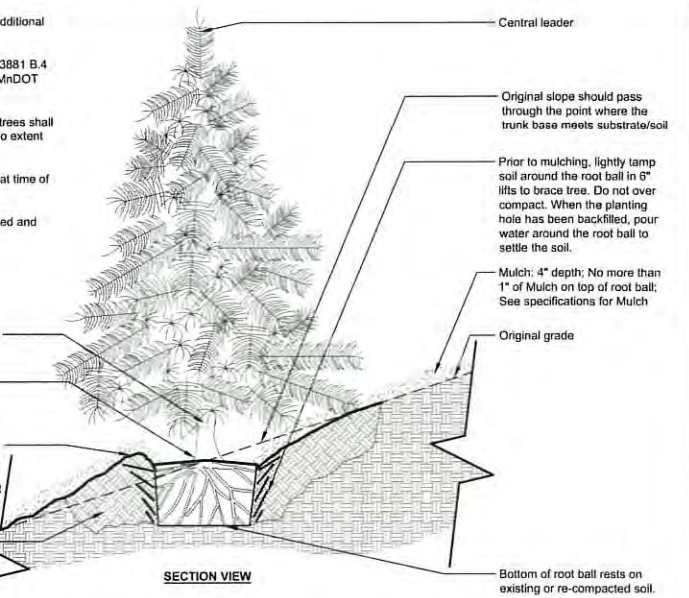
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LP2.4

CONIFEROUS TREE ON SLOPE 5% TO 50%



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Signed: Date: 6/6/18 Registration #: 00000000000000000000000000000000



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CITY PROJECT NO.  
LAKE ELMO,  
MINNESOTA

PHASE 2 LANDSCAPE PLAN  
NORTHPORT  
PULTE GROUP

FILE NO.  
3120-047  
LP4  
LP5



STANDARD PLAN NOTES  
LANDSCAPE PLANS

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8. All plants installed and maintained on City property shall be in accordance with City of Lake Elmo Bee-Safe Resolution No. 2015-13.
9. An irrigation system or other water supply adequate to support the specified plant materials shall be provided.

APRIL 2017



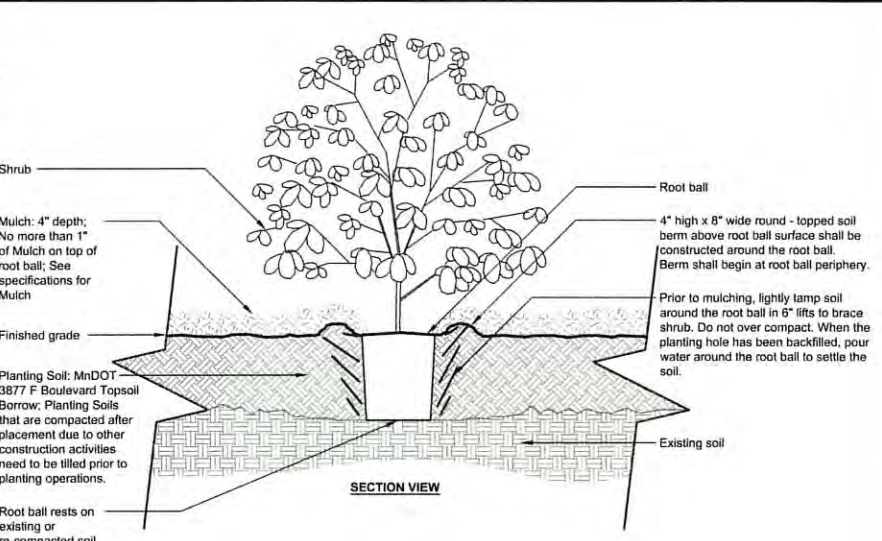
CITY OF LAKE ELMO

STANDARD DRAWING NO.  
LP2.0  
LAKE ELMO



CITY OF LAKE ELMO

APRIL 2017

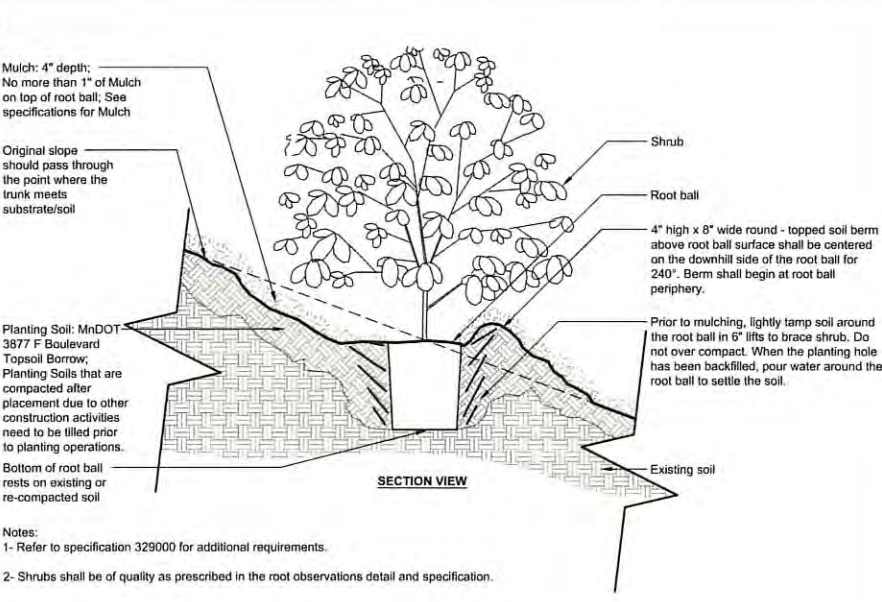


SHRUB



CITY OF LAKE ELMO

APRIL 2017

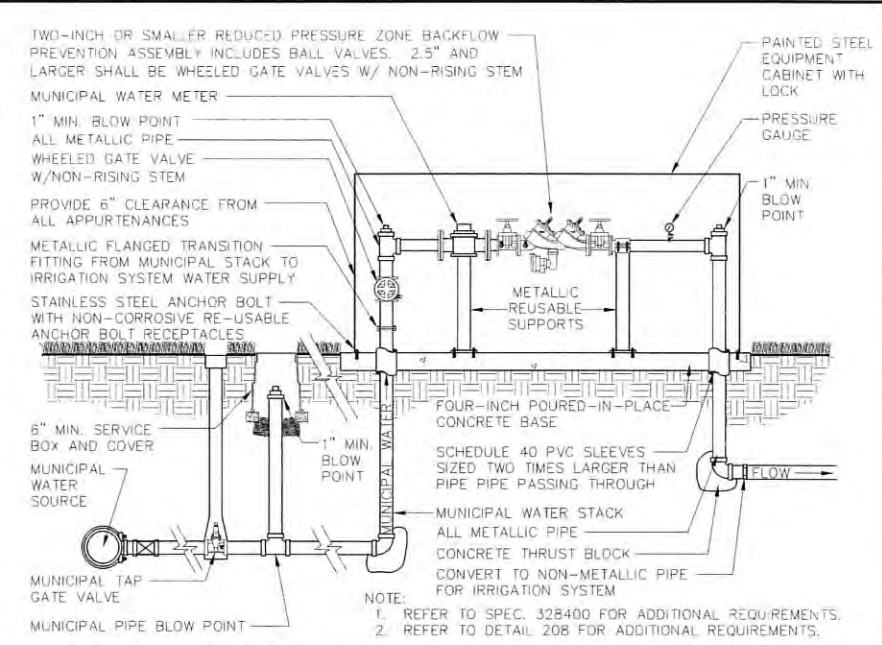


SHRUB ON SLOPE 5% TO 50%



CITY OF LAKE ELMO

APRIL 2017

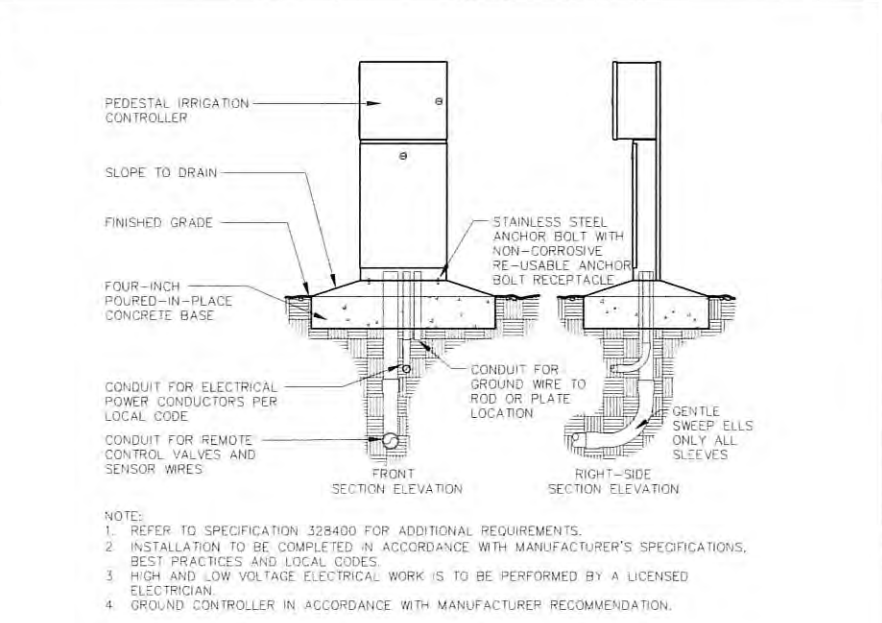


IRRIGATION WATER SUPPLY (MUNICIPAL)



CITY OF LAKE ELMO

APRIL 2017



2-WIRE PEDESTAL IRRIGATION CONTROLLER

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Signed \_\_\_\_\_  
Date 05-06-18 Registration # 110



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CITY PROJECT NO.  
LAKE ELMO, MINNESOTA

PHASE 2 LANDSCAPE PLAN  
NORTHPORT  
PULTE GROUP

FILE NO.  
3120-047  
LP5  
LP5