



FEASIBILITY REPORT

2018 STREET AND UTILITY IMPROVEMENT PROJECT

City of Circle Pines
Anoka County, Minnesota

AUGUST 8, 2017

Prepared for:
City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014

WSB PROJECT NO. 01507-720



FEASIBILITY REPORT

2018 STREET AND UTILITY IMPROVEMENT PROJECT

FOR THE
CITY OF CIRCLE PINES, MINNESOTA

August 8, 2017

Prepared By:





August 8, 2017

Mr. Patrick Antonen
City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014

Re: Feasibility Report
2018 Street and Utility Improvement Project
City of Circle Pines, MN
WSB Project No. 01507-720

Dear Mr. Antonen:

Transmitted herewith for your review is a feasibility report which addresses the street and utility improvements proposed for 2018. The streets with proposed improvements include segments of East Road, Center Road, Crossway Drive, Park Drive, Park Drive West, Park Drive East, and Pine Drive.

We are available at your convenience to discuss this report. Please don't hesitate to contact me at (763) 512-5257 if you have any questions regarding this report.

Sincerely,

WSB & Associates, Inc.

A handwritten signature in black ink, appearing to read "Eric Eckman".

Eric Eckman, PE
Project Manager

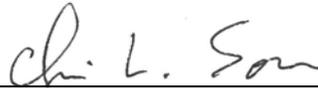
Enclosure

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CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota.

Prepared By:

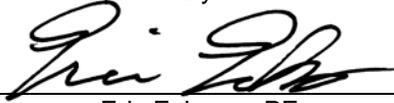


Christopher L. Sonmor, PE

Date: August 8, 2017

Lic. No. 44599

Quality Control Review Completed By:



Eric Eckman, PE

Date: August 8, 2017

Lic. No. 49954

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1. EXECUTIVE SUMMARY

The 2018 Street and Utility Improvement Project includes roadway reconstruction and utility improvements for East Road, Center Road, Crossway Drive, Park Drive, Park Drive East, Park Drive West, and Pine Drive. The streets total approximately 1.71 miles and includes curb and gutter, sanitary sewer, watermain, and storm sewer facilities. This project was initiated as part of the Long-Term Streets Plan which was passed by the City Council in 2007.

In 2011, WSB prepared an updated Pavement Management Report, which re-evaluated the condition of the City's street system, and developed a Capital Improvement Plan (CIP) to reconstruct the remaining City streets that are in "poor" condition. The streets within the current project area were rated "poor" and are slated to be the next area reconstructed in Circle Pines. Along with the street reconstruction, utility replacement is recommended due to the age and current condition of the utilities. Sanitary sewer inflow and infiltration issues in the City result in increased fees the City pays to the Metropolitan Council for wastewater treatment. The existing condition of the sanitary sewer pipe varies between fair and poor with cracked segments, root intrusion, sagging, and mineral deposits at joints. Utility replacements are also more cost-effective when completed as part of a larger roadway project. Completing utility replacement with roadway replacement will also align the lifecycles between the roadway and utility systems.

It is proposed that all of the streets within the project area will be reconstructed to a width of 32 feet measured from face of curb to face of curb. Currently streets vary in width, but most are approximately 33 feet wide. A street width of 32 feet will allow for parking on one side of the street only. The new roadways will be constructed with 6 inches of Class 5 aggregate, 3-1/2 inches of bituminous pavement, and B618 curb and gutter. Typical street widths are shown in **Figure 12 of Appendix A**.

Utility improvements include the replacement of approximately 7,600 feet of ductile iron pipe (DIP) watermain, 6,100 feet of vitrified clay pipe (VCP) sanitary sewer, 139 sewer and water services, and the removal and replacement of 2,700 feet of storm sewer pipe.

Improvements to the storm sewer system include replacing the current storm sewer within the right-of-way and adding additional catch basins and pipe to better accommodate stormwater runoff. The segment of East Road from Center Road to Pine Drive and Pine Drive from East Road to Lake Drive are part of the Municipal State Aid System (MSAS). These segments will have a tighter spacing on catch basins to meet spread-run requirements in order to obtain State Aid funding for the drainage improvements to these segments. As part of the project, piping for a future underground infiltration area proposed in Center Park will be installed in order to minimize future impacts along the western portion of Crossway Drive. The infiltration system is anticipated to meet the permitting requirements of the Rice Creek Watershed District (RCWD).

A neighborhood meeting was held on July 27, 2017, which was attended by approximately 70 residents. In general, residents were not opposed to the project and asked several questions related to impacts to their property while construction is occurring. Comment cards were distributed during the meeting to the residents and were asked to be returned within the next week to the City. The comment cards from the meeting can be seen in **Appendix E**. There are several drainage concerns that were identified by residents along multiple street segments that will be looked into and addressed.

The total estimated project cost for the 2018 Street and Utility Improvement Project is \$4,940,802. These costs include a 10% contingency and 25% indirect costs for legal, engineering, administrative, and financing costs. The project is proposed to be funded through the Street Reconstruction Fund, Special Assessments, Sanitary Sewer Enterprise Fund, Water Enterprise Fund, Storm Water Enterprise Fund, and State Aid Funding. The City will sell bonds for the project to fund the project upfront and then pay back the bond using the City's Street Reconstruction Fund, special assessments, and enterprise funds from sewer and water user fees.

The City's 2016 assessment policy consists of two alternatives, a flat and equal assessment rate for residential property and a cost per front-foot for non-residential property. Corner properties will be assessed on only one side of the lot. The current residential rate for street reconstruction is \$4,380 per benefitting residential property. These rates are proposed to be increased by 5% for 2018 based on anticipated increased project costs, inflation, and information utilized from special benefit appraisals for the proposed project scope. The City will fund the remainder of the street improvement costs and 100% of utility improvement costs.

The resulting rates for street reconstruction residential is \$4,600 per property.

The project is proposed to be completed, including all restoration items and the first lift of bituminous pavement, in 2018. The final lift of bituminous pavement is proposed to be placed in June 2019.

The work will be scheduled to minimize the area disturbed by construction to the area where the work is currently taking place. The contractor will have to complete utility or street construction on one phase before starting the work on the next phase. This phasing will improve access for the residents on the project during construction.

The project is feasible, necessary, and cost-effective from an engineering standpoint and should be constructed as proposed herein.

2. INTRODUCTION

2.1 Authorization

On April 25, 2017, the City of Circle Pines City Council authorized the preparation of an engineering feasibility report for the 2018 Street and Utility Improvement Project.

2.2 Scope

This project consists of street and utility improvements of Park Drive West, Park Drive East, Park Drive, Crossway Drive, East Road, and one segment of Center Road and Pine Drive. The project area can be seen in **Figures 1 and 2** of **Appendix A**. In addition to the street and utility improvements, a stormwater management system is proposed to be constructed in the City park located between Center Road and Park Drive as part of a future project.

The objectives of this report are to identify long-term and cost-effective solutions, which address the aging roadways and utilities within the noted project area, while attending to the aesthetic considerations of the existing neighborhood. This feasibility report includes an evaluation of the pavement, sanitary sewer, watermain, and storm sewer along with providing an estimated improvement cost for the work.

2.3 Data Available

Information and materials used in the preparation of this report include the following:

- City of Circle Pines record drawings
- City of Circle Pines topographic maps
- Field observations of the area
- Televising reports of the sanitary sewer system
- 2011 Pavement Management Program, WSB& Associates, Inc., dated October 2011
- Geotechnical Evaluation Report, WSB & Associates, Inc., dated June 30, 2017

2.4 Project Location

The project is located in the northern portion of the City of Circle Pines, south of North Road and north of Lake Drive. The project includes the following roadways:

- Park Drive West
- Park Drive East
- Park Drive
- East Road
- Crossway Drive
- Center Road (from Crossway Drive to East Road)
- Pine Drive (from Lake Drive and East Road)

The project area is shown on **Figures 1 and 2** of **Appendix A** of this report.

2.5 Project History

On April 25, 2017, the Circle Pines City Council authorized the preparation of an engineering feasibility report for the 2018 Street and Utility Improvement Project.

This project is part of the Long-Term Streets Plan which was passed by the Circle Pines City Council in 2007. This Plan identified the condition of all City streets and gave a general time-frame for repairing deteriorating streets over the next 20 years. This is the City's fifth reconstruction project. The following conditions have been identified within this project area:

- Deterioration of the existing street conditions including alligator cracking, edge cracking, transverse cracking, longitudinal cracking, block cracking, and settled curb and gutter.
- Existing roadways are exhibiting drainage problems due to inadequate storm sewer and roadway grades. This is accelerating the deterioration of the roadways within the project area.
- Existing vitrified clay pipe and reinforced concrete pipe sanitary sewer and cast iron watermain are over approximately 50 years in age and are starting to exhibit deterioration problems. Severe sewer sags and root intrusion have been identified via sanitary sewer televising videos.

As a result, the City Council provided funding through their Street Reconstruction Funds and utility funds for the complete reconstruction of the aforementioned streets. The City will sell bonds for the project and utilize these funds to pay back the bond.

3. EXISTING CONDITIONS

3.1 Streets

All roads within the project area are approximately 33 feet wide (face of curb to face of curb) with surmountable concrete curb and gutter. The existing right-of-way width for all the streets in the project area is 60 feet, except for the intersection of Park Drive, Park Drive West, and Park Drive East. The right-of-way contains retaining walls, trees, and numerous other landscaping improvements located within 2 to 3 feet of the curb and gutter in some areas. The existing cross sections are shown on **Figure 12** in **Appendix A**.

WSB completed a visual inspection and rated the streets in the subject area as part of the 2011 Pavement Management Program. The streets were then classified as “poor”.

In June 2017, a total of 9 soil borings and 2 hand augers were completed within the project area. Bituminous thickness ranged from 3 to 5 inches with 0 to 7 inches of Class 5 mixed with sand. The existing subbase soils are fine-grained and silty sands. More data on the pavement conditions can be found in **Appendix D**.

These streets are experiencing pavement failure in the form of alligator cracking, block cracking, edge cracking, longitudinal cracking, and transverse cracking. These characteristics are related to the age of the roadways, continuous traffic loadings, and general wear and tear on the roadways. Additional distresses include curb settlement and aging pavement patching.

Below are pictures of the existing condition of the roadways.



Photo 1: Intersection of Park Drive West and Park Drive East



Photo 2: Intersection of East Road and Center Road



Photo 3: Intersection of East Road and Inner Drive



Photo 4: Intersection of Crossway Drive and Park Drive



Photo 5: Center Park – Area where underground stormwater treatment may be constructed

3.2 Sanitary Sewer

There is an existing 36-inch RCP sanitary sewer main regulated by the Metropolitan Council that serves a large part of the project area. The Metropolitan Council sewer main currently runs through Park Drive East and Center Park. From Center Park, it goes west on Crossway Drive then south on Center Drive to East Road. This 36-inch main will remain in place. The Metropolitan Council has indicated that there are no plans to replace or rehabilitate this stretch of sewer within the next 10 years.

The City's sanitary sewer system, throughout the remaining project area, consists of 8-inch and 15-inch vitrified clay pipes (VCP). The sanitary sewer system was installed in 1967. With its age, the pipe has reached its life expectancy and should be replaced.

Flows from the entire project area flow to the south and east, and ultimately discharge into the 36-inch Metropolitan Council regulated line.

The sanitary sewer system has been inspected with a specially designed television camera. The internal condition of the pipe was found to vary between fair and poor with cracked segments, root intrusion, sagging, and mineral deposits at joints. Several segments were found to be in sagging condition.

The existing sanitary sewer map can be found in **Figure 3 of Appendix A**.

3.3 Watermain

The existing watermain in the project area was installed in 1960 (57 years old) and consists of 6-inch, 8-inch, 10-inch, and 12-inch ductile iron pipes (DIP). In general, the system has provided good service; however, watermain breaks can become more frequent as these mains extend past 40 years of service. The friction head loss in DIP pipe greatly increases as it ages. This causes a decrease in pressure and lower flow rates.

Service records do not indicate recent issues with the watermain. Some hydrants are located in inconvenient areas and would be relocated as a part of the utility construction.

The existing watermain map can be found in **Figure 4 of Appendix A**.

3.4 Storm Sewer

Existing storm sewer consists of a reinforced concrete pipe system within the City rights-of-way and drainage and utility easements. Runoff from the roadway and adjacent areas within the project area is collected and conveyed off-site at the following locations:

- Intersection of Edge Drive and East Road – Existing system goes north
- Intersection of Inner Drive (west leg) and East Road – Existing system goes north
- Intersection of East Road and Center Road – Existing system goes west on East Road
- Discharges to an existing ditch on the south side of Stardust Boulevard. west of Center Road

Currently, all stormwater runoff from the project area is being discharged without any stormwater treatment or rate control.

All storm sewers within the project area convey stormwater runoff via pipes ranging in size from 12-inches up to 48-inches in diameter.

The existing storm sewer map can be found in **Figure 5 of Appendix A**.

4. PROPOSED IMPROVEMENTS

4.1 Streets and Pedestrian Facilities

Based on visual inspections and budgetary constraints, it is proposed to complete the following improvements in 2018 in order to improve the design strength of the street pavement and extend the life of the street and utilities. Street reconstruction is proposed for the following roadway segments:

- East Road – from Center Road to Edge Drive (State Aid route)
- Pine Drive – from East Road to Lake Drive (State Aid route)
- Center Road – from Crossway Drive to East Road
- Crossway Drive
- Park Drive
- Park Drive East and West

Roadway replacement will improve the design strength of the pavement system and provide a street surface with an extended life expectancy.

The proposed street width is 32 feet measured from the face of curb to face of curb. This allows for two drive lanes and parking on one side of the street only.

The proposed street improvements include replacement of the concrete curb and gutter, bituminous pavement, and subgrade corrections. Based on recommendations from the Geotechnical Report dated June 30, 2017, a street section of 3-1/2 inches of bituminous pavement and 6 inches of aggregate base will be used. All roadways will be designed to a 10-ton standard.

The intersection of Park Drive West and Park Drive East is proposed to be realigned bringing Park Drive East in at a 90-degree angle to Park Drive West. Doing so will eliminate the amount of impervious surface at the intersection, it will reduce the width of the pedestrian crossing at the intersection, and will be less confusing for motorists coming to the intersection in all directions. The proposed new alignment can be found on **Figure 13** in **Appendix A**.

Safety concerns have been noted by residents in the area. Pedestrian improvements and traffic calming techniques were analyzed. The improvements analyzed include: reduced width roadways, street bump outs at the pedestrian crossing, blinking pedestrian signs, in-pavement LED crossing lights, a striped bike/pedestrian lane, add street lighting at the pedestrian crossing on Park Drive, and roadway and parking lane striping. With input from staff and City Council discussions, it is recommended to reduce roadway widths, install lighting at the Park Drive pedestrian crossing, and install blinking pedestrian signs at the Park Drive crossing.

Safety concerns have been raised at the 5-legged intersection of Crossway Drive, Pine Drive, and East Road. As part of the project improvements, the curb radii are proposed to be tightened up to provide better intersection control. There was internal discussion with City staff to abandon the segment of Crossway Drive between Park Drive and Pine Drive. If this option is to be pursued, additional traffic analysis would need to be completed to determine the impacts on the surrounding roadways which was not part of the scope for this report. The proposed intersection improvements can be found in **Figure 14** in **Appendix A**.

The option of constructing a sidewalk along the roadways is not being considered due to the high cost, significant property impacts, and maintenance for the area. Based on input from City staff along with the residents who attended the public information meeting, a sidewalk was not supported as a need for pedestrian use. The roadways also have adequate room for pedestrians if the 32-foot-wide roadway is selected.

The project will require removing the majority of the trees and vegetation within the right-of-way for the street and utility construction. Removal of the trees and vegetation will also improve sight distance for drivers on the curved segments of the roadway and for residents entering or exiting their driveways. The images below show the potential improvements of sight distance by removing trees in the right-of-way.



Photo 6: Pre-construction



Photo 7: Post-construction

Restoration, required due to the improvements, will utilize existing topsoil that is native to the site. As part of the project, the contractor will have a 45-day maintenance period following sod placement or seeding and the residents will be encouraged to water to help establish their lawn. All trees that are removed will not be replaced. Residents that have trees that will be removed outside of the right-of-way will have the option of having a tree planted outside of the right-of-way following sod placement. This is to increase sight distance and safety along the project.

4.2 Sanitary Sewer

Replacement of most of the sanitary sewer system is recommended due to the deterioration of the existing main line. The existing 8-inch and 15-inch VCP sanitary sewer mains in all segments of the project are proposed to be replaced with 8-inch and 15-inch PVC (polyvinyl chloride) pipe.

It is proposed to replace all VCP sanitary sewer main in the street and individual services within the project to the road right-of-way by open-cut construction. Only the 36-inch Metropolitan Council line will be left in service. All of the existing services to the 36-inch main will be replaced.

The City has had high rates of inflow and infiltration (I/I), specifically in the older areas of the City. Replacement of the main will assist in eliminating I/I from the system. The City pays additional fees to the Metropolitan Council Environmental Services (MCES) to treat this additional water that is in the system. Eliminating I/I will reduce the fees the City must pay to MCES.

Sanitary sewer service replacement is anticipated to cause significant impacts to trees located near services; however, joint trench construction with water services will minimize tree impacts. A replacement tree will be provided for each property where tree removal for sewer service installation is required. Property owners will be notified in advance if their tree(s) are to be removed. Adjustments to the length of the service to be replaced, in order to eliminate removing a tree(s), will be made on a case-by-case basis during construction.

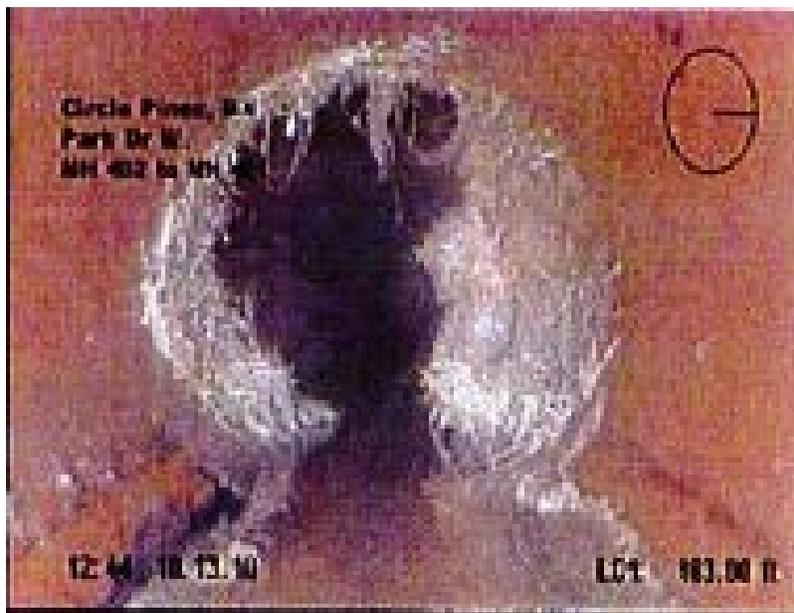


Photo 8: Sanitary Sewer Televising Screen Shot

The proposed sanitary sewer improvements are shown on **Figures 6, 7, and 8** of **Appendix A**.

4.3 Watermain

The proposed watermain improvements consist of replacing the existing 6-inch DIP watermain with 8-inch PVC pipe and replacing the 10-inch and 12-inch CIP watermain with 10-inch and 12-inch PVC pipe. Increasing pipe sizes from 6 to 8 inches improves the delivery of potable water and provides fire flow volume at reasonable pressure and quantity. In addition, the replacement of the service taps and lines will increase the pressure by providing service pipes that are free of corrosion and internal flow resistance. Watermain is also proposed along Crossway Drive between Park Drive and Pine Drive in order to create a looped system in this area.

An option to connect the watermain between Park Drive East and Pine Drive should also be considered to create an additional watermain loop in the area. Directional drilling may be utilized in order to minimize impacts along North Road. Costs for this work are not included in this report.

The replacement of sanitary sewer at the existing depths will result in the watermain being partially or entirely exposed. This will provide a timely opportunity for improvements to the water distribution system before significant problems are experienced. The existing water services are proposed to be replaced with 1-inch HDPE services. The service replacement is anticipated to cause significant impacts to trees located near services; however, joint trench construction with sewer services will minimize tree impacts. Property owners will be notified in advance if their tree(s) are to be removed. Adjustments to the length of the service to be replaced in order to eliminate removing a tree(s) will be made on a case-by-case basis during construction.

A temporary water system will be set up to provide water service for the duration of utility installation along each street within the project area.

Irrigation lines that are affected by the construction will also be replaced or repaired as part of the project.

The proposed water system improvements are shown on **Figures 6, 7, and 8 of Appendix A.**

4.4 Storm Sewer and Storm Water Management

Proposed replacement of the sanitary sewer will result in the existing storm sewer being partially or entirely exposed. This provides a timely opportunity to reconstruct the storm sewer system which will help align the life cycle between the utility and the roadway.

The existing storm sewer does not provide adequate inlet capacity and pipe sizes for storm water for the 10-year design storm event, which is the typical design standard for new storm sewer systems. The proposed storm sewer within the project area will be designed in accordance with the City's standard for a 10-year storm event.

With the segment of East Road from Center Drive to Pine Drive being a State Aid roadway, that segment will be designed to meet the requirements of the MnDOT Design Manual. Inlets will be spaced closer together to meet spread-run requirements of a State Aid design and the pipes will be sized for a 10-year design storm.

Circle Pines will be the permitting agency for the project and currently follow the RCWD requirements. As the project does not propose to create new impervious area, it falls under the RCWD exemption for public linear projects and is not subject to stormwater management requirements under Rule C.

The current proposal is to construct the necessary piping along Crossway Drive for an underground infiltration system in Center Park, located west of Park Drive, which could be constructed at a later date. This underground system would be pumped from the creek on the south side of Stardust Boulevard and utilize the existing lift station that is part of the Stardust infiltration system. Doing so would reduce the infiltration deficit that the City currently has with Rice Creek Watershed District from past projects.

This system will be able to provide an adequate amount of infiltration and may be able to gain additional credits based on the actual performance of the system. This project will need to be monitored over the first 3 years of operation to see at what rate the infiltration system is working before the credits will be applied to the City.

The proposed stormwater improvements are shown on **Figured 9, 10, and 11** of **Appendix A**.

4.5 Permits and Approvals

Reconstruction of the roadways will disturb over one acre and will require a National Pollution Discharge Elimination Systems (NPDES) General Storm Water Permit (MNR 100001) that must be obtained by the City of Circle Pines from the Minnesota Pollution Control Agency (MPCA).

The reconstruction of the existing watermain will require a permit from the Minnesota Department of Health (MDH). No permit is required from the MPCA for the sanitary sewer replacement since additional flows are not being introduced to the sanitary sewer system.

Since there are a number of sanitary sewer service connections to the 36-inch interceptor line, authorization from the Metropolitan Council will be required prior to reconnecting services.

Since the project proposes to remove and replace impervious surfaces, a City permit for stormwater management will be required for the project. At a minimum, City adopted ordinance for storm water management and erosion control will apply to the project. The City may also review the permit application for wetlands and floodplain issues.

4.6 Right-of-Way / Easements

It is anticipated that all work will take place within the existing roadway right-of-way or within existing drainage and utility easements. Additional right-of-way or easement acquisition is not expected to be needed to construct the project as proposed.

4.7 Detour Routes / Project Phasing

The project will require significant excavation and disposal of excess material from the existing street area and import of significant volumes of select granular borrow, aggregate base, and bituminous mixture to construct the new streets. This effort will require closing the roads at times throughout the project area.

This project will need to be phased so that reconstruction at Pine Drive will not begin until after school lets out in the spring. At a minimum, the aggregate base will need to be placed prior to school commencing in the fall.

4.8 Gas Main

The City of Circle Pines owns and operates Centennial Utilities, a natural gas distribution company. All roadways within the project area have existing 2-inch steel line, 3-inch steel line, or 2-inch plastic lines approximately 15 feet from the roadway centerline that are within the roadway surface or under the curb. The gas main typically is at a depth of 36 inches and ¾-inch diameter steel services provide natural gas to the residents along each street.

Centennial Utilities will remove and replace the existing steel lines and services with plastic pipe. Pipeline replacement is anticipated to be completed in the spring prior to street and utility construction. The existing steel lines and services will be removed or abandoned in place by the contractor once the utility construction takes place.

4.9 Private Utilities

It is anticipated that coordination will need to take place with private utility companies in order to construct the project as proposed. A utility coordination meeting will be held to determine how to construct this project while minimizing impacts to the existing private utilities. Follow-up meetings and coordination between utility companies will take place during the design phase to ensure that all possible utility conflicts are addressed prior to construction.

All private utility companies that have aerial utilities will be contacted to review their facilities to ensure that it is at the proper height and is not a safety concern.

5. FINANCING

5.1 Opinion of Probable Construction Cost

Detailed breakdowns of the Opinion of Probable Cost for the construction are included in **Appendix B**. The opinion of cost incorporates the construction costs experienced in the surrounding area during 2016 and includes a 10% contingency factor. Administrative costs are projected at 25% of the construction cost and include engineering, legal, financing, and administrative costs. Table 1 below provides a summary of the estimated project costs:

Table 1 – 2018 Street and Utility Improvement Cost Summary of Cost	
	Total
Schedule A – Surface Improvements	\$1,953,784
Schedule B – Sanitary Sewer Improvements	\$979,016
Schedule C – Watermain Improvements	\$982,603
Schedule D – Storm Sewer Improvements	\$1,025,399
Total	\$4,940,802

5.2 Funding Sources

The City's current assessment policy consists of two alternatives, a flat and equal assessment rate for residential and a cost per front-foot for non-residential. The residential rate for street reconstruction is currently \$4,380 and is proposed to increase 5% to \$4,600 per benefitting residential property. The City's non-residential rate does not apply on this project since all the parcels are residential.

The City will fund the remainder of the street improvement costs and 100% of utility improvement costs with a combination of Enterprise Funds and available State Aid funding. There is \$126,000 in the State Aid Fund and will have an estimated \$146,000 in additional funding per year. This will allow a total of \$418,000 with the potential to utilize future State Aid funding as needed. The State Aid funding eligible amount is \$455,528 for the surface improvements and \$263,509 for the storm sewer improvements. Homes on corner lots are assessed as one unit on a street where they have their driveway or address on the street to be reconstructed. The City owned properties within the project area will not be assessed, but they were factored into the rate calculation for the proposed assessment rate. A proposed assessment roll is included in **Appendix C** of this report along with an Assessment Map ID highlighting the benefitting properties. The proposed special assessment calculations for benefitting properties are shown in Table 2 below. This includes eight City owned properties which will not be assessed, but are utilized in calculating the assessment rate for the project.

Table 2 – Assessment Calculations	
Street Improvement Assessment	
Schedule A Road Reconstruction	
Assessable Units	148
Assessment Rate	\$4,600
Total Recovered Through Assessment	\$680,800

Funding for the project is proposed to come from the Street Reconstruction Fund, Water / Sewer Enterprise Funds, Storm Sewer Enterprise Fund, and Special Assessments to benefitting properties as shown in Table 3 below.

Table 3 – 2018 Street and Utility Improvement Project Proposed Funding	
Funding Source	Total
Special Assessments	\$680,800
Street Reconstruction Fund	\$1,272,984
Sanitary Sewer Enterprise Fund	\$979,016
Watermain Enterprise Fund	\$982,603
Storm Water Enterprise Fund	\$1,025,399
Total Funding	\$4,940,802

6. PROJECT SCHEDULE

The proposed schedule for this improvement project is as follows for construction to occur in 2018:

Phase 1 – Feasibility Report

City Council Authorizes Feasibility Study.....	April 25, 2017
Survey Work.....	June 2017
Public Informational Meeting.....	July 27, 2017
City Council Accepts Feasibility Report and Sets Public Hearing Date	August 8, 2017
Hold Public Hearing / Authorize Preparation of Final Plans and Specifications.....	September 12, 2017

Phase 2 – Final Design

Final Design	September - December 2017
City Council Approves Plans / Authorizes Ad for Bids.....	December 2017
Receive Contractor Bids	January 2018
Award Contract	February / March 2018

Phase 3 – Construction

Preconstruction Meeting	May 2018
Public Informational Meeting (with Contractor).....	May 2018
Begin Construction.....	May - June 2018
Substantial Completion	October 2018
Assessment Hearing	October 2018
Final Completion (Final Lift of Bituminous Wear Course).....	Spring 2019

Note: The schedule assumes all private utility and gas main relocation work would be complete prior to the start of construction.

7. FEASIBILITY AND RECOMMENDATION

The 2018 Street and Utility Improvement Project includes roadway reconstruction and utility replacement on the following road segments:

- East Road – from Center Road to Edge Drive (State Aid route)
- Pine Drive – from East Road to Lake Drive (State Aid route)
- Center Road – from Crossway Drive to East Road
- Crossway Drive
- Park Drive
- Park Drive East and West

The street totals approximately 1.7 miles and includes curb and gutter, sanitary sewer (with the exception of the areas that have the 36-inch Metropolitan Council main), watermain, storm sewer facilities, and new service connections.

All streets will be reconstructed to a width of 32-feet with B618 curb and gutter. This will allow for parking on one side of the street only.

Utility improvements include the replacement of sanitary sewer, watermain, sewer and water services, and the installation of a new storm sewer drainage system.

The total estimated cost for the 2018 Street and Utility Improvement Project including roadway improvements, pedestrian improvements, and utility improvements is **\$4,940,802**. Proposed funding for the project is provided through a combination of Special Assessments to benefitting properties, Street Reconstruction Funds, Water / Sewer Enterprise Funds, and Storm Sewer Enterprise Funds.

The funding level anticipated through the levy of Special Assessments to benefitting property owners is **\$680,800**.

This project is deemed feasible and necessary from an engineering standpoint because the deterioration of the existing streets and utilities warrant full replacement. Replacing the utilities at the same time as reconstructing the roadway aligns the life expectancies of both the roadway and utilities. It is recommended to proceed with the improvements as outlined in this report.

APPENDIX A

Figure 1: Location Map

Figure 2: Project Area

Figure 3: Existing Sanitary Sewer

Figure 4: Existing Watermain

Figure 5: Existing Storm Sewer

Figures 6-8: Proposed Water & Sanitary Sewer

Figures 9-11: Proposed Storm Sewer

Figure 12: Typical Sections

Figure 13: Intersection Realignment at Park Drive East & West

Figure 14: Intersection Improvements at Crossway Drive, Pine Drive & East Road

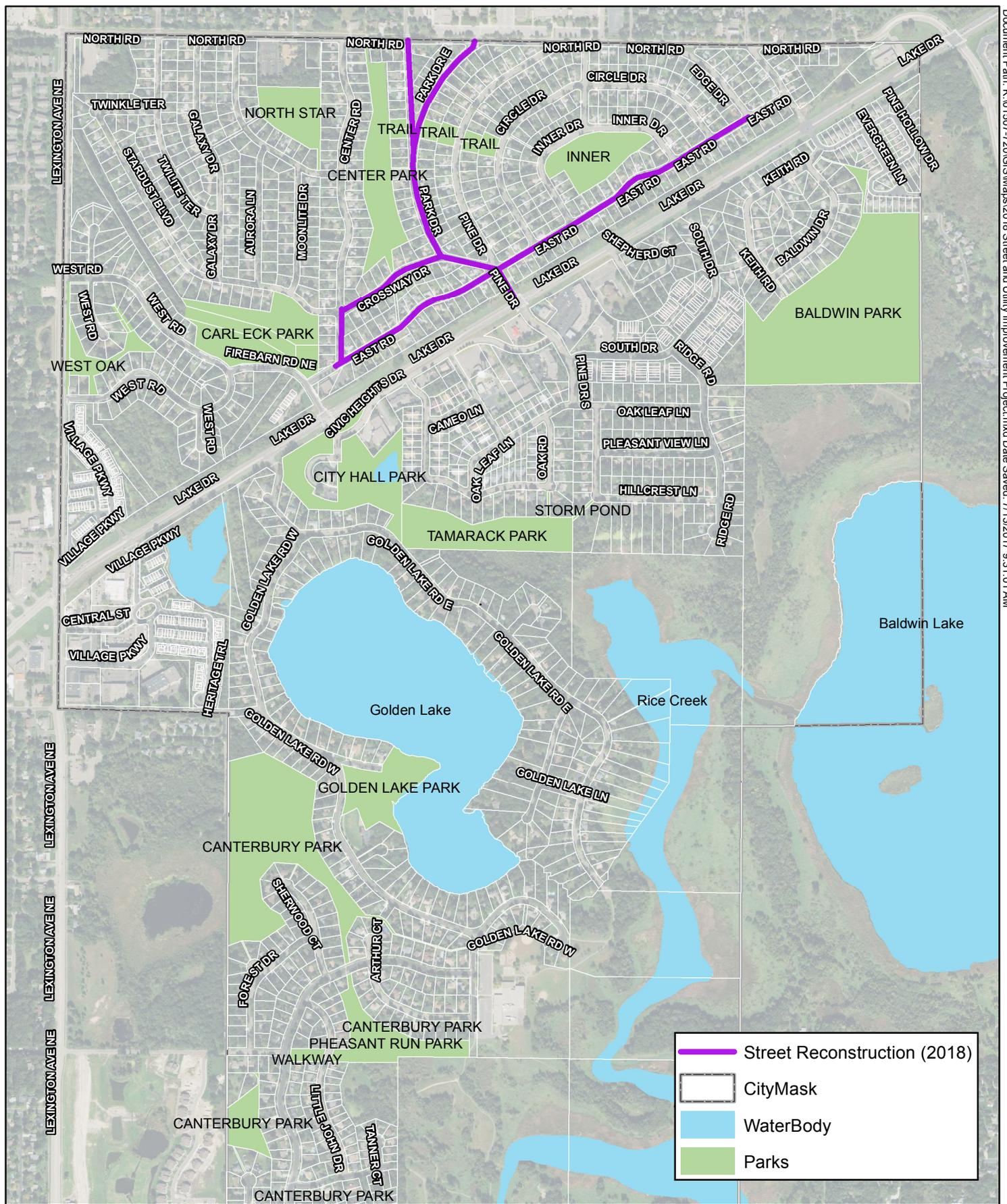


Figure 1: Location Map
 2018 Street and Utility Improvement Project
 City of Circle Pines



0 1,000
 Feet
 1 inch = 1,000 feet



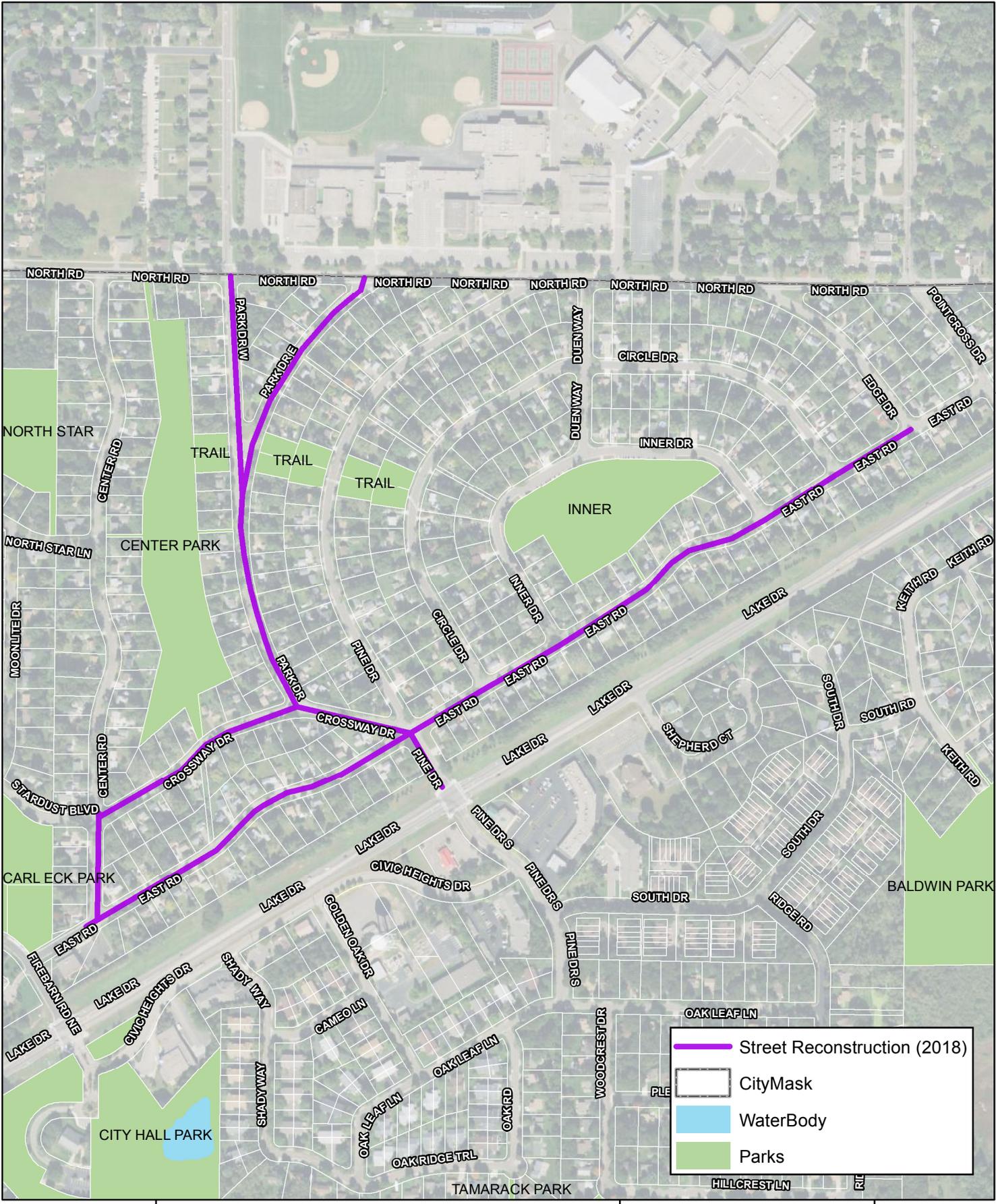
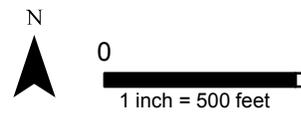


Figure 2: Project Area
 2018 Street and Utility Improvement Project
 City of Circle Pines



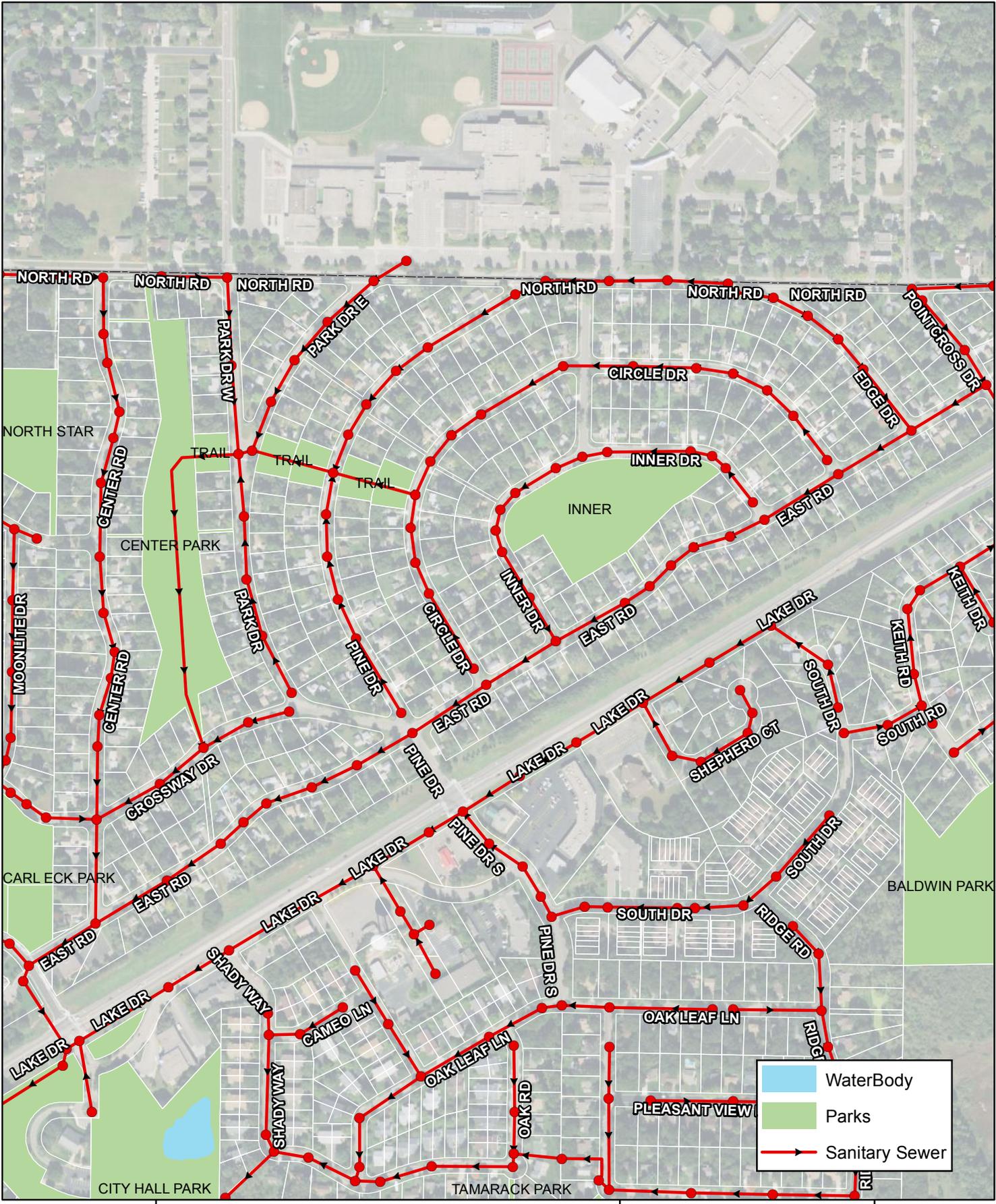
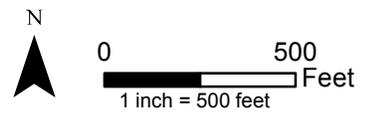


Figure 3: Existing Sanitary Sewer
 2018 Street and Utility Improvement Project
 City of Circle Pines



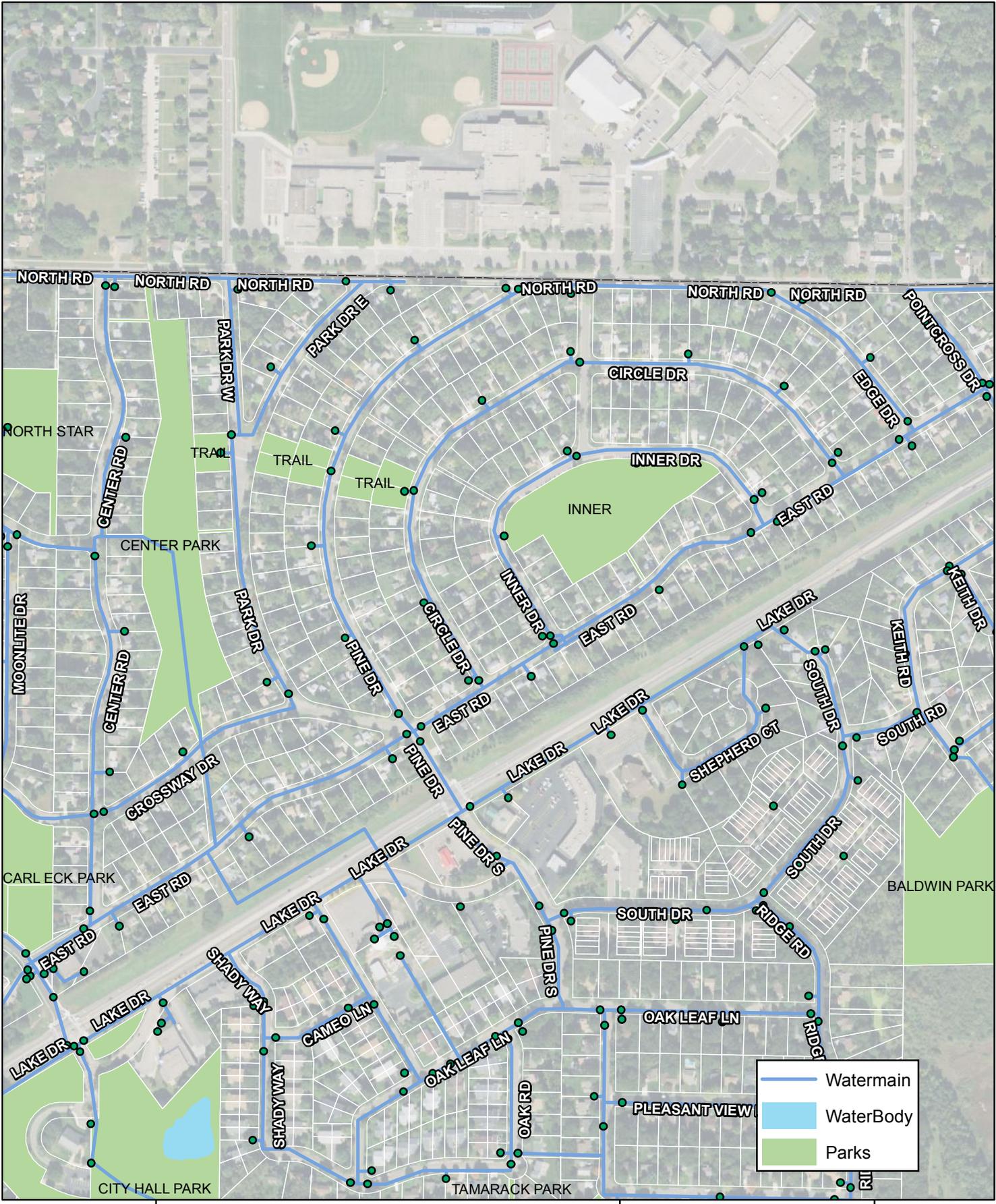
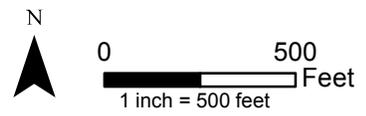
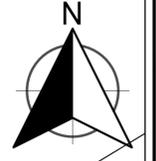
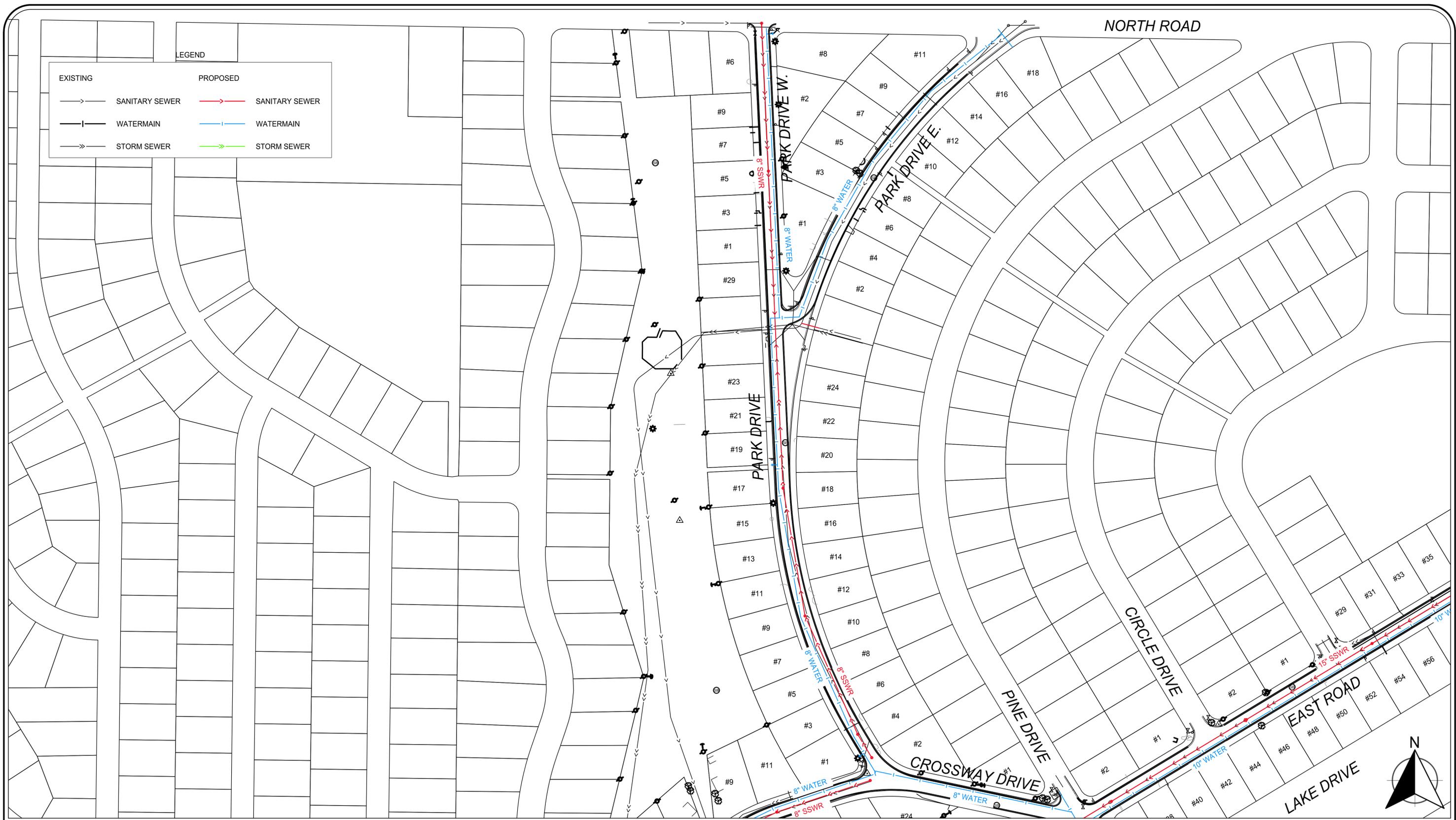


Figure 4: Existing Watermain
2018 Street and Utility Improvement Project
City of Circle Pines



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EXISTING		PROPOSED	
	SANITARY SEWER		SANITARY SEWER
	WATERMAIN		WATERMAIN
	STORM SEWER		STORM SEWER



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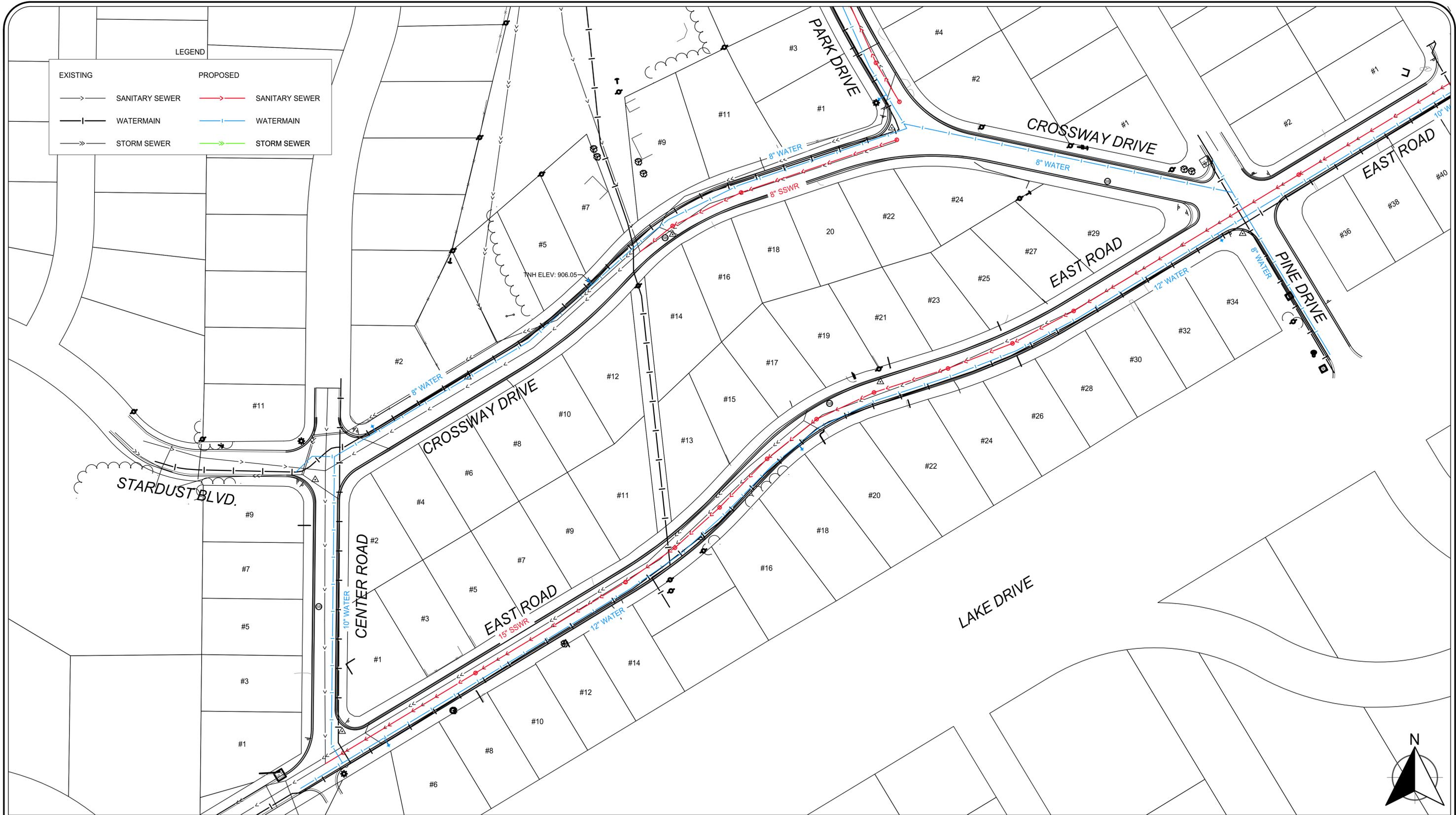
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WSB Project No. 01507-720
 Scale = 100:1
 7/27/2017

Figure 6

LEGEND

EXISTING		PROPOSED	
	SANITARY SEWER		SANITARY SEWER
	WATERMAIN		WATERMAIN
	STORM SEWER		STORM SEWER



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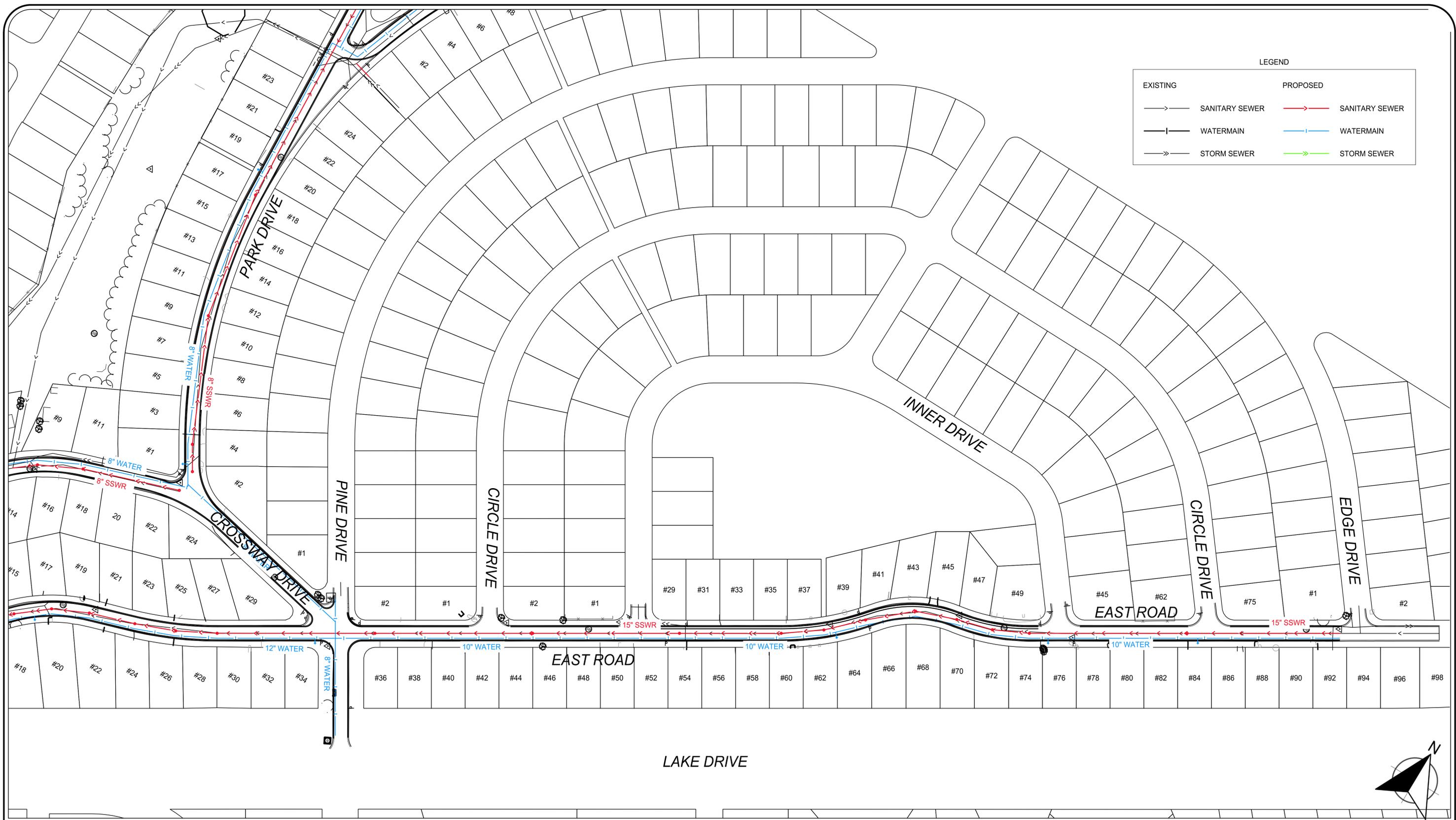
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 CONCEPT WATER & SANITARY SEWER PLAN

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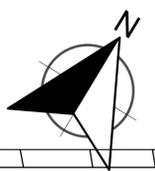
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Figure 7

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EXISTING		PROPOSED	
	SANITARY SEWER		SANITARY SEWER
	WATERMAIN		WATERMAIN
	STORM SEWER		STORM SEWER



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Figure 8

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LEGEND

EXISTING		PROPOSED	
	SANITARY SEWER		SANITARY SEWER
	WATERMAIN		WATERMAIN
	STORM SEWER		STORM SEWER



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 STORM SEWER PLAN

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 Scale = 100:1
 7/27/2017

Figure 9

LEGEND

EXISTING		PROPOSED	
	SANITARY SEWER		SANITARY SEWER
	WATERMAIN		WATERMAIN
	STORM SEWER		STORM SEWER



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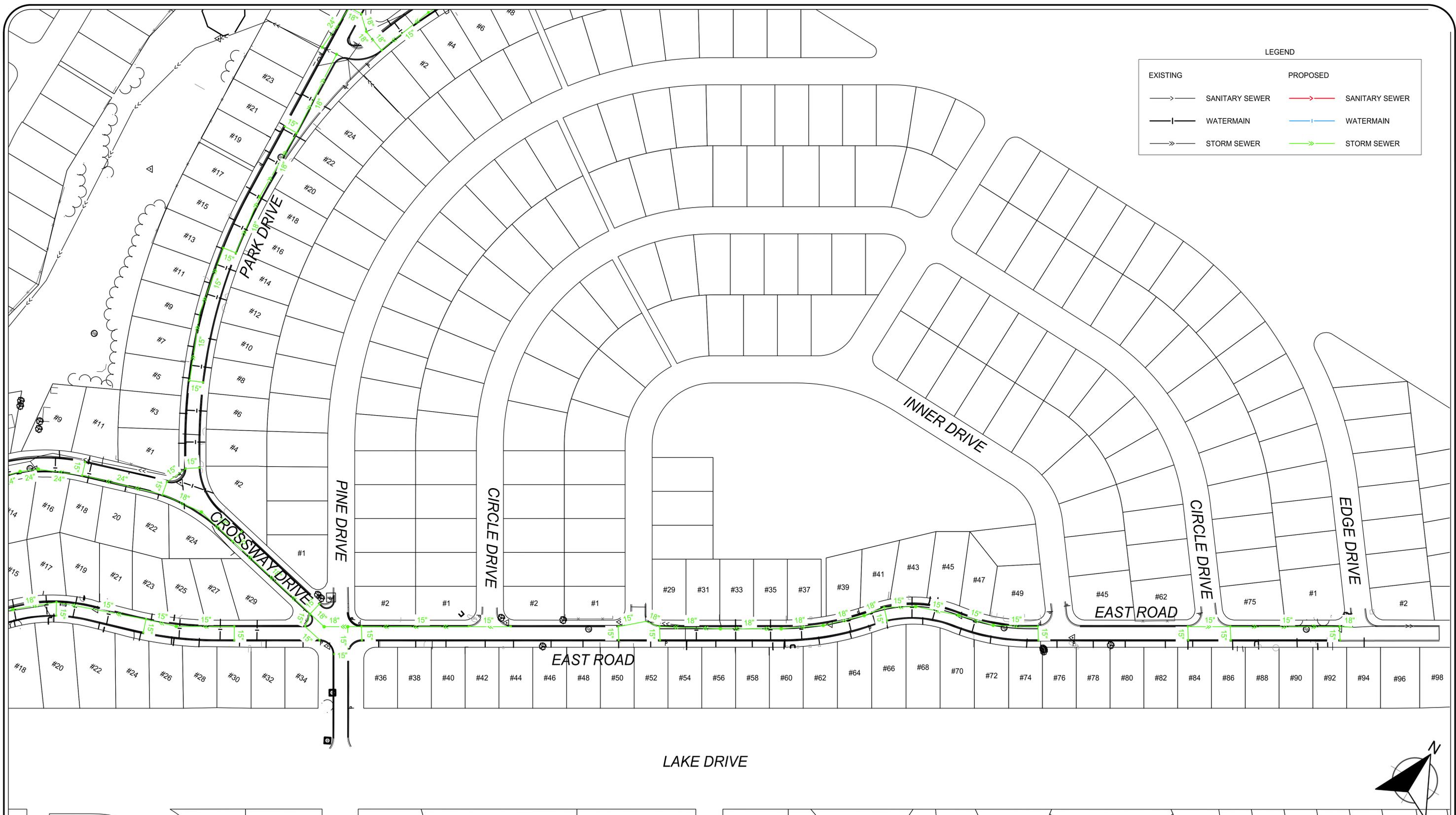
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 STORM SEWER PLAN
 CIRCLE PINES, MINNESOTA

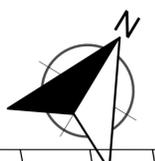
WSB Project No. 01507-720
 Scale = 60:1
 7/27/2017

Figure 10

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EXISTING		PROPOSED	
	SANITARY SEWER		SANITARY SEWER
	WATERMAIN		WATERMAIN
	STORM SEWER		STORM SEWER



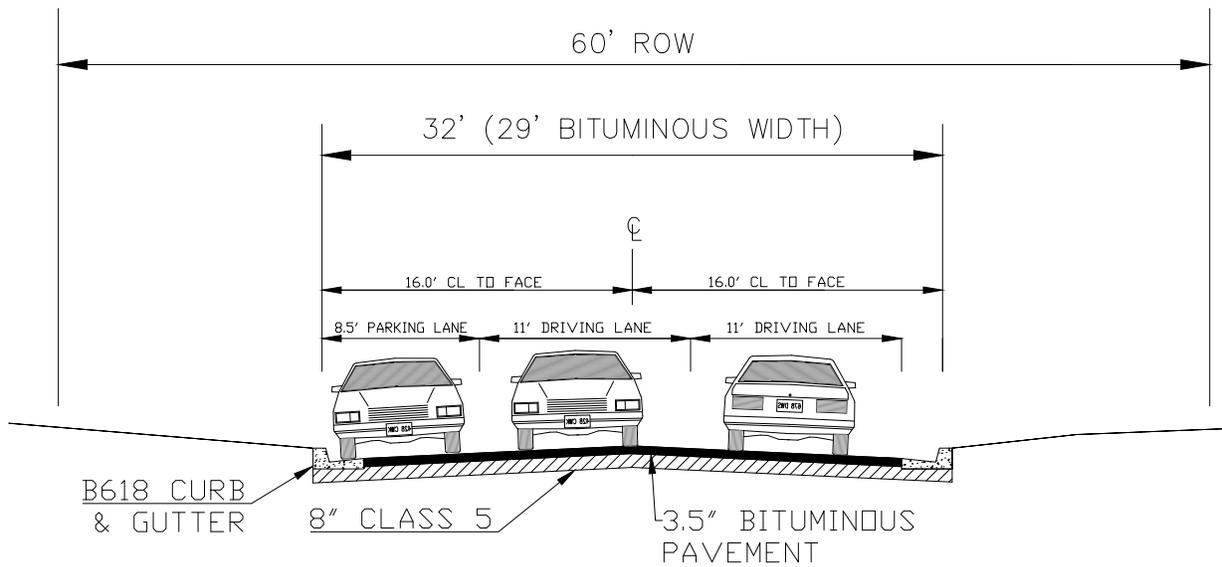
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 STORM SEWER PLAN**

CIRCLE PINES, MINNESOTA

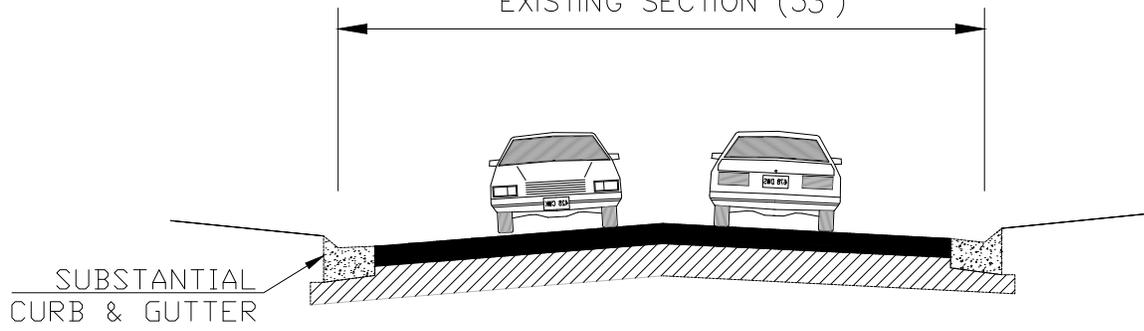
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Figure 11



PROPOSED TYPICAL SECTION

EXISTING SECTION (33')



EXISTING CONDITIONS



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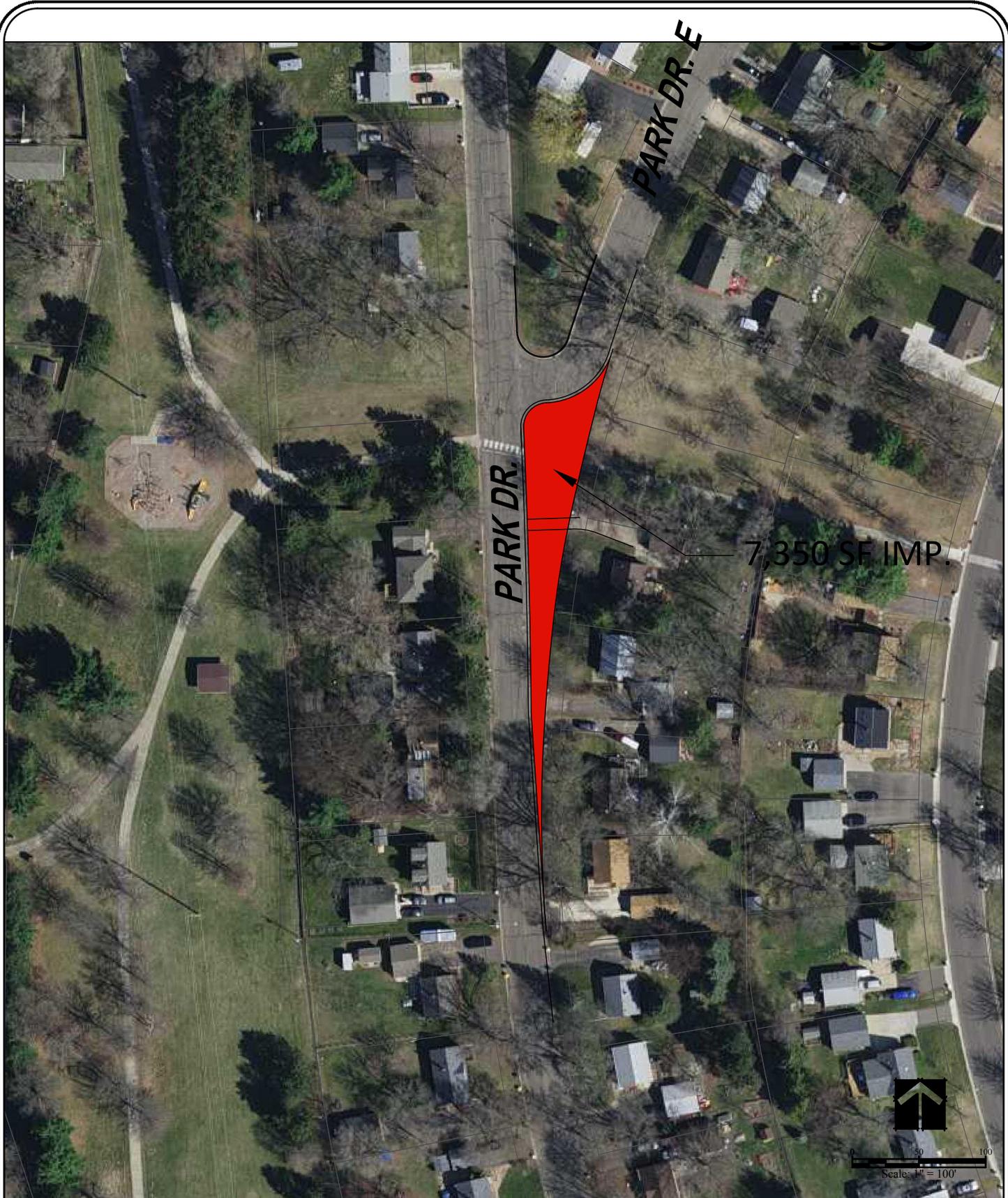
City of

CIRCLE PINES

August 8, 2017
 WSB Project No.1507-72

FIGURE

12



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2018 STREET IMP.
 WYE INTERSECTION
 REALIGNMENT
 CIRCLE PINES, MN

WSB Project No. 01507-720

DATE
 August 8, 2017

FIG. 13



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**2018 STREET IMP.
 5-LEGGED INTERSECTION
 IMPROVEMENTS
 CIRCLE PINES, MN**

WSB Project No. 01507-720

DATE
 August 8, 2017

FIG. 14

APPENDIX B
Opinion of Probable Cost

Opinion of Probable Cost

WSB Project: 2018 Street and Utility Reconstruction Project
 Project Location: City of Circle Pines
 WSB Project No: 01507-720

Designed By: KLK
 Checked By: EME
 Date: 8/3/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Unit Price	Total Estimated Cost
A.1 SURFACE IMPROVEMENTS						
1	2021.501	MOBILIZATION	LUMP SUM	1	\$51,900.00	\$51,900.00
2	2101.502	CLEARING	TREE	81	\$225.00	\$18,225.00
3	2101.507	GRUBBING	TREE	81	\$200.00	\$16,200.00
4	2104.501	REMOVE CURB AND GUTTER	LIN FT	12,809	\$4.00	\$51,236.00
5	2104.503	REMOVE CONCRETE WALK	SQ FT	523	\$1.75	\$915.25
6	2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ FT	16,316	\$1.75	\$28,553.66
7	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	21,801	\$2.50	\$54,501.67
8	2104.509	REMOVE SIGN	EACH	27	\$30.00	\$810.00
9	2104.511	SAWING CONCRETE PAVEMENT	LIN FT	552	\$3.00	\$1,656.00
10	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	1,516	\$2.50	\$3,790.00
11	2104.523	SALVAGE MAIL BOX AND SUPPORT	EACH	96	\$35.00	\$3,360.00
12	2104.601	SALVAGE AND REINSTALL LANDSCAPE STRUCTURES	LUMP SUM	1	\$50,000.00	\$50,000.00
13	2105.501	COMMON EXCAVATION (P)	CU YD	5,603	\$11.00	\$61,635.44
14	2105.507	SUBGRADE EXCAVATION (EV)	CU YD	450	\$11.00	\$4,950.00
15	2105.522	SELECT GRANULAR BORROW (CV)	CU YD	450	\$11.00	\$4,950.00
16	2112.501	SUBGRADE PREPERATION	ROAD STA	70.0	\$100.00	\$7,000.00
17	2211.501	AGGREGATE BASE CLASS 5	TON	5,413	\$15.00	\$81,193.35
18	2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)	TON	1,440	\$64.00	\$92,157.38
19	2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (2,C)	TON	1,920	\$64.00	\$122,876.50
20	2504.602	SPRINKLER SYSTEM REPAIR	EACH	27	\$350.00	\$9,450.00
21	2504.602	ADJUST VALVE BOX	EACH	6	\$150.00	\$900.00
22	2506.522	ADJUST FRAME AND RING CASTING	EACH	83	\$300.00	\$24,900.00
23	2521.501	4" CONCRETE WALK	SQ FT	523	\$5.00	\$2,615.00
24	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	12,053	\$12.00	\$144,636.00
25	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	1,813	\$70.00	\$126,905.14
26	2531.618	TRUNCATED DOMES	SQ FT	80	\$43.00	\$3,440.00
27	2540.602	MAIL BOX	EACH	105	\$250.00	\$26,250.00
28	2540.602	MAIL BOX (TEMPORARY)	EACH	105	\$35.00	\$3,675.00
29	2563.601	TRAFFIC CONTROL	LUMP SUM	1	\$10,000.00	\$10,000.00
30	2564.602	SALVAGE AND REINSTALL SIGN	EACH	18	\$130.00	\$2,340.00
31	2571.501	CONIFEROUS TREE	TREE	41	\$300.00	\$12,150.00
32	2571.502	DECIDUOUS TREE	TREE	41	\$300.00	\$12,150.00
33	2573.540	BIOROLL	LIN FT	2,300	\$3.00	\$6,900.00
34	2573.602	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	\$4,050.00	\$4,050.00
35	2575.505	SODDING TYPE LAWN (INCL. TOPSOIL & FERT.)	SQ YD	9,632	\$4.50	\$43,345.00
36	2582.660	12" SOLID LINE WHITE - SPECIAL	LF	14	\$1.75	\$24.50
SUBTOTAL SCHEDULE A - SURFACE IMPROVEMENTS						\$1,089,640.88
+ 10% CONTINGENCY COST						\$108,964.09
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$1,198,604.97
+ 25% INDIRECT COST						\$299,651.24
TOTAL SCHEDULE A.2 - SURFACE IMPROVEMENTS						\$1,498,256.21
A.2 SURFACE IMPROVEMENTS (Pine Drive)						
37	2021.501	MOBILIZATION	LUMP SUM	1	\$3,700.00	\$3,700.00
38	2101.502	CLEARING	TREE	4	\$225.00	\$900.00
39	2101.507	GRUBBING	TREE	4	\$200.00	\$800.00
40	2104.501	REMOVE CURB AND GUTTER	LIN FT	673	\$4.00	\$2,692.00
41	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	1,782	\$2.50	\$4,455.28
42	2104.509	REMOVE SIGN	EACH	6	\$30.00	\$180.00
43	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	78	\$2.50	\$195.00
44	2105.501	COMMON EXCAVATION (P)	CU YD	644	\$11.00	\$7,082.78
45	2112.501	SUBGRADE PREPERATION	ROAD STA	3.5	\$100.00	\$350.00
46	2211.501	AGGREGATE BASE CLASS 5	TON	491	\$15.00	\$7,359.45
47	2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)	TON	132	\$64.00	\$8,448.18
48	2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (2,C)	TON	176	\$64.00	\$11,264.24
49	2504.602	ADJUST VALVE BOX	EACH	4	\$150.00	\$600.00
50	2506.522	ADJUST FRAME AND RING CASTING	EACH	1	\$300.00	\$300.00
51	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	591	\$12.00	\$7,092.00
52	2563.601	TRAFFIC CONTROL	LUMP SUM	1	\$10,000.00	\$10,000.00
53	2564.602	SALVAGE AND REINSTALL SIGN	EACH	6	\$130.00	\$780.00
54	2571.501	CONIFEROUS TREE	TREE	2	\$300.00	\$600.00
55	2571.502	DECIDUOUS TREE	TREE	2	\$300.00	\$600.00
56	2573.540	BIOROLL	LIN FT	300	\$3.00	\$900.00
57	2573.602	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	\$4,500.00	\$4,500.00
58	2575.505	SODDING TYPE LAWN (INCL. TOPSOIL & FERT.)	SQ YD	657	\$4.50	\$2,955.00
59	2582.660	12" SOLID LINE WHITE - SPECIAL	LF	14	\$1.75	\$24.50
SUBTOTAL SCHEDULE A - SURFACE IMPROVEMENTS						\$75,778.43
+ 10% CONTINGENCY COST						\$7,577.84
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$83,356.27
+ 25% INDIRECT COST						\$20,839.07
TOTAL SCHEDULE A.2 - SURFACE IMPROVEMENTS						\$104,195.34

Opinion of Probable Cost

WSB Project: 2018 Street and Utility Reconstruction Project
 Project Location: City of Circle Pines
 WSB Project No: 01507-720

Designed By: KLK
 Checked By: EME
 Date: 8/3/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Unit Price	Total Estimated Cost
A.3 SURFACE IMPROVEMENTS (East Road)						
60	2021.501	MOBILIZATION	LUMP SUM	1	\$12,200.00	\$12,200.00
61	2101.502	CLEARING	TREE	15	\$225.00	\$3,375.00
62	2101.507	GRUBBING	TREE	15	\$200.00	\$3,000.00
63	2104.501	REMOVE CURB AND GUTTER	LIN FT	2,793	\$4.00	\$11,172.00
64	2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ FT	2,880	\$1.75	\$5,040.00
64	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	5,343	\$2.50	\$13,358.06
65	2104.509	REMOVE SIGN	EACH	3	\$30.00	\$90.00
66	2104.511	SAWING CONCRETE PAVEMENT	LIN FT	288	\$3.00	\$864.00
67	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	304	\$2.50	\$760.00
68	2104.523	SALVAGE MAIL BOX AND SUPPORT	EACH	17	\$35.00	\$595.00
69	2105.501	COMMON EXCAVATION (P)	CU YD	1,988	\$9.00	\$17,891.67
70	2105.507	SUBGRADE EXCAVATION (EV)	CU YD	50	\$9.00	\$450.00
71	2105.522	SELECT GRANULAR BORROW (CV)	CU YD	50	\$11.00	\$550.00
72	2112.501	SUBGRADE PREPERATION	ROAD STA	14.0	\$100.00	\$1,400.00
73	2211.501	AGGREGATE BASE CLASS 5	TON	1,879	\$15.00	\$28,179.38
74	2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)	TON	424	\$64.00	\$27,149.53
75	2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (2,C)	TON	566	\$64.00	\$36,199.37
76	2504.602	SPRINKLER SYSTEM REPAIR	EACH	3	\$350.00	\$1,050.00
77	2504.602	ADJUST VALVE BOX	EACH	2	\$150.00	\$300.00
78	2506.522	ADJUST FRAME AND RING CASTING	EACH	7	\$300.00	\$2,100.00
79	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	2,793	\$12.00	\$33,516.00
80	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	320	\$70.00	\$22,400.00
81	2540.602	MAIL BOX	EACH	17	\$250.00	\$4,250.00
82	2540.602	MAIL BOX (TEMPORARY)	EACH	17	\$35.00	\$595.00
83	2563.601	TRAFFIC CONTROL	LUMP SUM	1	\$1,000.00	\$1,000.00
84	2564.602	SALVAGE AND REINSTALL SIGN	EACH	3	\$130.00	\$390.00
85	2571.501	CONIFEROUS TREE	TREE	15	\$300.00	\$4,500.00
86	2571.502	DECIDUOUS TREE	TREE	15	\$300.00	\$4,500.00
87	2573.540	BIOROLL	LIN FT	1,400	\$3.00	\$4,200.00
88	2573.602	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	\$450.00	\$450.00
89	2575.505	SODDING TYPE LAWN (INCL. TOPSOIL & FERT.)	SQ YD	3,103	\$4.50	\$13,965.00
90	2582.660	12" SOLID LINE WHITE - SPECIAL	LF	14	\$1.75	\$24.50
SUBTOTAL SCHEDULE A - SURFACE IMPROVEMENTS						\$255,514.50
+ 10% CONTINGENCY COST						\$25,551.45
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$281,065.95
+ 25% INDIRECT COST						\$70,266.49
TOTAL SCHEDULE A - SURFACE IMPROVEMENTS						\$351,332.44
B. SANITARY SEWER IMPROVEMENTS						
91	2021.501	MOBILIZATION	LUMP SUM	1	\$35,700.00	\$35,700.00
92	2104.501	REMOVE SEWER PIPE (SANITARY)	LIN FT	6,177	\$2.20	\$13,589.40
93	2104.509	REMOVE SANITARY SEWER SERVICE	EACH	139	\$30.00	\$4,170.00
94	2104.509	REMOVE MANHOLE (SANITARY)	EACH	28	\$450.00	\$12,600.00
95	2105.601	DEWATERING	LUMP SUM	1	\$25,000.00	\$25,000.00
96	2451.511	COARSE FILTER AGGREGATE (CV)	CU YD	500	\$40.00	\$20,000.00
97	2503.602	CONNECT TO EXISTING SANITARY SEWER (MAIN)	EACH	39	\$600.00	\$23,400.00
98	2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	5	\$1,400.00	\$7,000.00
99	2503.602	CONNECT TO EXISTING SANITARY SEWER SERVICE	EACH	100	\$300.00	\$30,000.00
100	2503.602	CHIMNEY SEALS	EACH	31	\$250.00	\$7,750.00
101	2503.602	8"X6" PVC WYE	EACH	40	\$400.00	\$16,000.00
102	2503.602	15"X6" PVC WYE	EACH	99	\$550.00	\$54,450.00
103	2503.603	6" PVC PIPE SEWER - SDR 26	LIN FT	4,170	\$28.00	\$116,760.00
104	2503.603	TELEWISE SANITARY SEWER	LIN FT	6,115	\$0.80	\$4,892.00
105	2503.603	8" PVC PIPE SEWER - SDR 26	LIN FT	2,300	\$42.00	\$96,600.00
106	2503.603	15" PVC PIPE SEWER - SDR 26	LIN FT	3,674	\$50.00	\$183,700.00
107	2506.516	CASTING ASSEMBLY	EACH	31	\$625.00	\$19,375.00
108	2506.603	CONST 48" DIA SAN SEWER MANHOLE	LIN FT	465	\$165.00	\$76,725.00
SUBTOTAL SCHEDULE B - SANITARY SEWER IMPROVEMENTS						\$712,011.40
+ 10% CONTINGENCY COST						\$71,201.14
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$783,212.54
+ 25% INDIRECT COST						\$195,803.14
TOTAL SCHEDULE B - SANITARY SEWER IMPROVEMENTS						\$979,015.68

Opinion of Probable Cost

WSB Project: 2018 Street and Utility Reconstruction Project
 Project Location: City of Circle Pines
 WSB Project No: 01507-720

Designed By: KLK
 Checked By: EME
 Date: 8/3/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Unit Price	Total Estimated Cost
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C. WATER MAIN IMPROVEMENTS

109	2021.501	MOBILIZATION	LUMP SUM	1	\$35,800.00	\$35,800.00
110	2104.501	REMOVE WATER MAIN	LIN FT	8,597	\$4.00	\$34,388.00
111	2104.509	REMOVE WATER SERVICE AND CURB BOX	EACH	139	\$54.00	\$7,506.00
112	2104.509	REMOVE HYDRANT	EACH	11	\$350.00	\$3,850.00
113	2104.509	REMOVE GATE VALVE & BOX	EACH	23	\$150.00	\$3,450.00
114	2504.601	TEMPORARY WATER SERVICE	LUMP SUM	1	\$60,000.00	\$60,000.00
115	2504.602	CONNECT TO EXISTING WATER MAIN	EACH	7	\$1,400.00	\$9,800.00
116	2504.602	CONNECT TO EXISTING WATER SERVICE	EACH	139	\$250.00	\$34,750.00
117	2504.602	1" CORPORATION STOP	EACH	139	\$300.00	\$41,700.00
118	2504.602	6" GATE VALVE AND BOX	EACH	11	\$1,400.00	\$15,400.00
119	2504.602	8" GATE VALVE AND BOX	EACH	8	\$1,800.00	\$14,400.00
120	2504.602	12" GATE VALVE AND BOX	EACH	4	\$3,300.00	\$13,200.00
121	2504.602	1" CURB STOP & BOX	EACH	139	\$380.00	\$52,820.00
122	2504.602	HYDRANT ASSEMBLY	EACH	11	\$4,500.00	\$49,500.00
123	2504.603	6" WATER MAIN - PVC C900	LIN FT	150	\$29.00	\$4,350.00
124	2504.603	8" WATER MAIN - PVC C900	LIN FT	4,238	\$32.00	\$135,616.00
125	2504.603	12" WATER MAIN - PVC C900	LIN FT	4,130	\$36.00	\$148,680.00
126	2504.603	1" WATER SERVICE	LIN FT	4,170	\$13.00	\$54,210.00
127	2504.608	DUCTILE IRON FITTINGS	POUND	5,000	\$6.20	\$31,000.00
SUBTOTAL SCHEDULE C - WATER MAIN IMPROVEMENTS						\$714,620.00
+ 10% CONTINGENCY COST						\$71,462.00
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$786,082.00
+ 25% INDIRECT COST						\$196,520.50
TOTAL SCHEDULE C - WATER MAIN IMPROVEMENTS						\$982,602.50

D.1 STORM SEWER IMPROVEMENTS

128	2021.501	MOBILIZATION	LUMP SUM	1	\$27,800.00	\$27,800.00
129	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	1,610	\$12.00	\$19,320.00
130	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	22	\$400.00	\$8,800.00
131	2503.511	15" RC PIPE SEWER CLASS V	LIN FT	3,387	\$36.00	\$121,932.00
132	2503.511	18" RC PIPE SEWER CLASS V	LIN FT	1,609	\$46.00	\$74,014.00
133	2503.511	24" RC PIPE SEWER CLASS III	LIN FT	964	\$49.00	\$47,236.00
134	2501.521	44" SPAN RC PIPE-ARCH CULV CL IIA	LIN FT	180	\$85.00	\$15,300.00
135	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	5	\$650.00	\$3,250.00
136	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	EACH	28	\$2,300.00	\$64,400.00
137	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020	EACH	17	\$3,800.00	\$64,600.00
138	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 72-4020	EACH	11	\$5,500.00	\$60,500.00
137	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL (2'X3'	EACH	11	\$2,200.00	\$24,200.00
138	2506.516	CASTING ASSEMBLY	EACH	60	\$650.00	\$39,000.00
139	2573.602	INLET PROTECTION	EACH	66	\$175.00	\$11,550.00
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$554,102.00
+ 10% CONTINGENCY COST						\$55,410.20
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$609,512.20
+ 25% INDIRECT COST						\$152,378.05
TOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$761,890.25

D.2 STORM SEWER IMPROVEMENTS (Pine Drive)

139	2021.501	MOBILIZATION	LUMP SUM	1	\$2,300.00	\$2,300.00
140	2503.511	15" RC PIPE SEWER CLASS V	LIN FT	264	\$41.00	\$10,824.00
141	2503.511	18" RC PIPE SEWER CLASS V	LIN FT	125	\$46.00	\$5,750.00
142	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	EACH	2	\$2,300.00	\$4,600.00
143	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL (2'X3'	EACH	8	\$2,200.00	\$17,600.00
144	2506.516	CASTING ASSEMBLY	EACH	10	\$650.00	\$6,500.00
145	2573.602	INLET PROTECTION	EACH	10	\$175.00	\$1,750.00
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$45,274.00
+ 10% CONTINGENCY COST						\$4,527.40
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$49,801.40
+ 25% INDIRECT COST						\$12,450.35
TOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$62,251.75

Opinion of Probable Cost

WSB Project: 2018 Street and Utility Reconstruction Project
Project Location: City of Circle Pines
WSB Project No: 01507-720

Designed By: KLK
Checked By: EME
Date: 8/3/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Unit Price	Total Estimated Cost
D.3 STORM SEWER IMPROVEMENTS (East Road)						
146	2021.501	MOBILIZATION	LUMP SUM	1	\$7,400.00	\$7,400.00
147	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	925	\$12.00	\$11,100.00
148	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	10	\$400.00	\$4,000.00
149	2503.511	15" RC PIPE SEWER CLASS V	LIN FT	604	\$41.00	\$24,764.00
150	2503.511	18" RC PIPE SEWER CLASS V	LIN FT	267	\$46.00	\$12,282.00
151	2503.511	24" RC PIPE SEWER CLASS III	LIN FT	602	\$49.00	\$29,498.00
152	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1	\$650.00	\$650.00
153	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	EACH	7	\$2,300.00	\$16,100.00
154	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020	EACH	3	\$3,800.00	\$11,400.00
155	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 72-4020	EACH	1	\$5,500.00	\$5,500.00
154	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL (2'X3'	EACH	7	\$2,200.00	\$15,400.00
155	2506.516	CASTING ASSEMBLY	EACH	19	\$650.00	\$12,350.00
156	2573.602	INLET PROTECTION	EACH	19	\$175.00	\$3,325.00
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$146,369.00
+ 10% CONTINGENCY COST						\$14,636.90
SUBTOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$161,005.90
+ 25% INDIRECT COST						\$40,251.48
TOTAL SCHEDULE D - STORM SEWER IMPROVEMENTS						\$201,257.38

CONSTRUCTION SUMMARY

A.1: Surface Improvements	\$1,498,256
A.2: Surface Improvements	\$104,195
A.3: Surface Improvements	\$351,332
Surface Improvements Total	\$1,953,784
B: Sanitary Sewer Improvements	\$979,016
C: Watermain Improvements	\$982,603
D.1: Storm Sewer Improvements	\$761,890
D.2: Storm Sewer Improvements	\$62,252
D.3: Storm Sewer Improvements	\$201,257
Storm Sewer Improvements Total	\$1,025,399
Total For Recommended Construction	\$4,940,802

APPENDIX C

**Figure 15: Assessment Map ID
Assessment Roll**

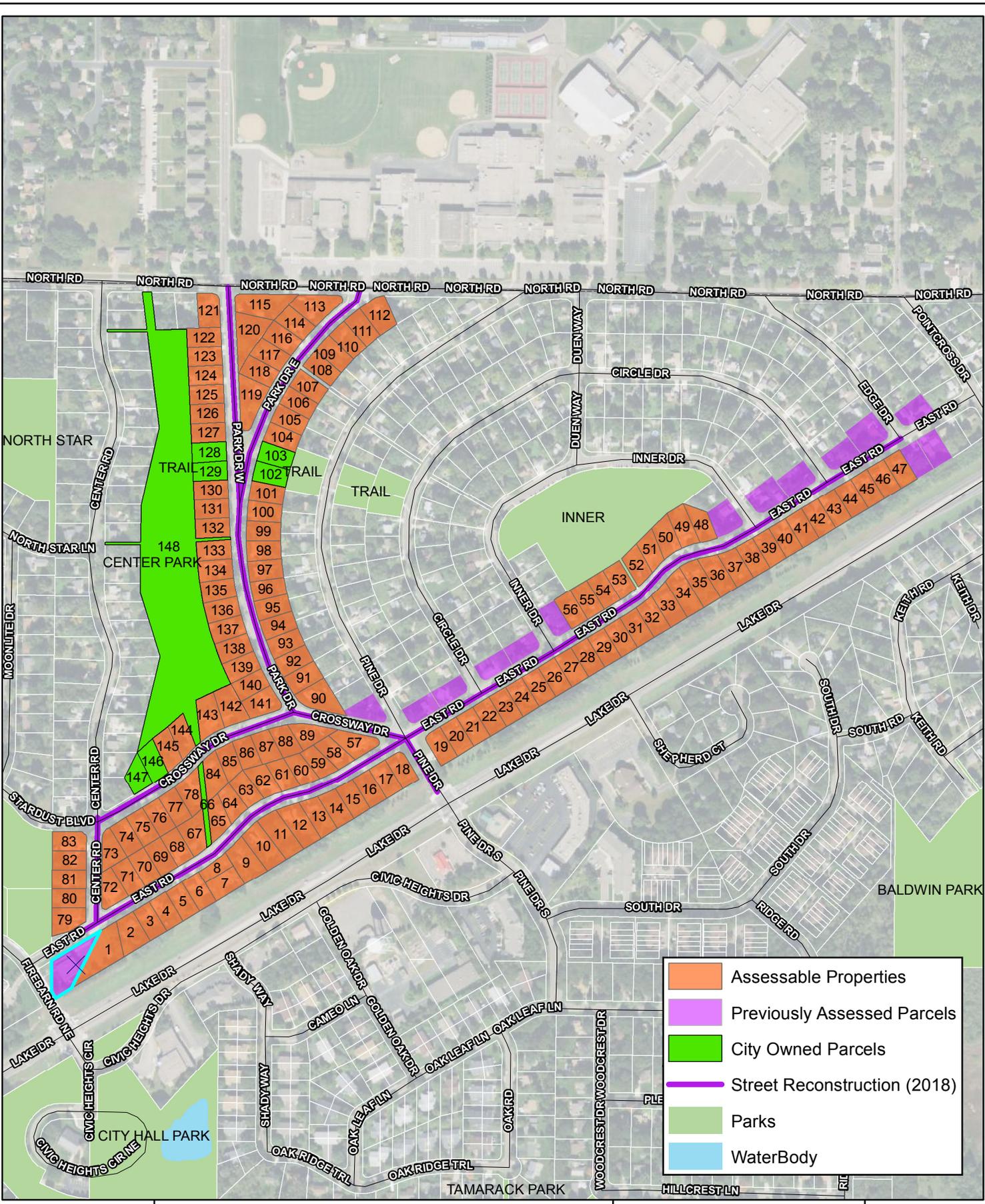
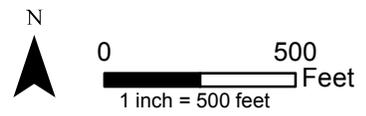


Figure 15 - Assessment Map
 2018 Street and Utility Improvement Project
 City of Circle Pines



Preliminary Assessment Roll

WSB Project:	2018 Street and Utility Improvement Project	Assessment Policy: 4,600 (Full Reconstruct)
Project Location:	City of Circle Pines	Total Surface Improvement Cost: \$1,953,784.00
WSB Project No.:	1507-720	Unit Assessment: \$4,600
Date:	9/22/2015	Assessable Units: 148

Map Id	Parcel Address	Parcel Owner	Parcel Owner Address	Units	Proposed Assessment
1		CIRCLE PINES CITY OF	200 CIVIC HEIGHTS CIR,CIRCLE PINES,MN,55014	1	4600
2	6 EAST RD	DOUBEK DENNIS J & MARY R	PO BOX 104,CIRCLE PINES,MN,55014	1	4600
3	8 EAST RD	GENZLER DONNA	PO BOX 164,CIRCLE PINES,MN,55014	1	4600
4	10 EAST RD	CARBERT MICHAEL P	10 EAST RD,CIRCLE PINES,MN,55014	1	4600
5	12 EAST RD	KELLEY KAREN	12 EAST RD,CIRCLE PINES,MN,55014	1	4600
6	14 EAST RD	WOLFBAUER JOSEPH R II	8860 SYNDICATE AVE,LEXINGTON,MN,55014	1	4600
7		CONNEXUS ENERGY	14601 RAMSEY BLVD,RAMSEY,MN,55303	1	4600
8		CONNEXUS ENERGY	14601 RAMSEY BLVD,RAMSEY,MN,55303	1	4600
9	16 EAST RD	BURNS WILLIAM	16 EAST RD,CIRCLE PINES,MN,55014	1	4600
10	18 EAST RD	ROBSON GORDON T & J M	18 EAST RD,CIRCLE PINES,MN,55014	1	4600
11	20 EAST RD	LINDE DAVID J & MARY K	20 EAST RD,CIRCLE PINES,MN,55014	1	4600
12	22 EAST RD	JAMES JEREMY L & JEANETTE L	22 EAST RD,CIRCLE PINES,MN,55014	1	4600
13	24 EAST RD	LEE STANTON H & JUDITH A	9 EAST RD,CIRCLE PINES,MN,55014	1	4600
14	26 EAST RD	ORSON PAUL	1534 BAYWOOD DR,WEST FARGO,ND,58078	1	4600
15	28 EAST RD	JOHNSEN BRANDON	28 EAST RD,CIRCLE PINES,MN,55014	1	4600
16	30 EAST RD	BERG HELEN E	30 EAST RD,CIRCLE PINES,MN,55014	1	4600
17	32 EAST RD	BISILA DONALD E & H E	32 EAST RD,CIRCLE PINES,MN,55014	1	4600
18	34 EAST RD	MALMSTEDT STEVEN A	34 EAST RD,CIRCLE PINES,MN,55014	1	4600
19	36 EAST RD	FRENCH SCOTT L & NATALIE G	3 TUDOR DR,TRENTON,NJ,8690	1	4600
20	38 EAST RD	LAWRY BARBARA	38 EAST RD,CIRCLE PINES,MN,55014	1	4600
21	40 EAST RD	C&T PROPERTIES	40 EAST RD,CIRCLE PINES,MN,55014	1	4600
22	42 EAST RD	PROVIDENT FUNDING ASSOCIATES LP	1235 N DUTTON AVE STE E,SANTA ROSA,CA,95401	1	4600
23	44 EAST RD	NYGAARD JAMES W JR & I G	44 EAST RD,CIRCLE PINES,MN,55014	1	4600
24	46 EAST RD	REVIER MICHAEL & CHRISTINE	46 EAST RD,CIRCLE PINES,MN,55014	1	4600
25	48 EAST RD	AHLVERS DEVENY	8332 PENN AVE N,MPLS,MN,55444	1	4600
26	50 EAST RD	WHITE TERESA L	50 EAST RD,CIRCLE PINES,MN,55014	1	4600
27	52 EAST RD	SCHNEIDER ROBERT W & H E	52 EAST RD,CIRCLE PINES,MN,55014	1	4600
28	54 EAST RD	COBURN KAREN FAYE & JAMES DEAN	54 EAST RD,CIRCLE PINES,MN,55014	1	4600
29	56 EAST RD	BANGERT RICK	56 EAST RD,CIRCLE PINES,MN,55014	1	4600
30	58 EAST RD	DIEMERT GEORGE	58 EAST RD,CIRCLE PINES,MN,55014	1	4600
31	60 EAST RD	THOMPSON RODNEY O & K M	60 EAST RD,CIRCLE PINES,MN,55014	1	4600
32	62 EAST RD	KUEHN WILLIAM	62 EAST RD,CIRCLE PINES,MN,55014	1	4600
33	64 EAST RD	MORTENSON VICKI L	64 EAST RD,CIRCLE PINES,MN,55014	1	4600
34	66 EAST RD	THILGEN JOSEPH	66 EAST RD,CIRCLE PINES,MN,55014	1	4600
35	68 EAST RD	ULRICH EMILY	68 EAST RD,CIRCLE PINES,MN,55014	1	4600
36	70 EAST RD	ANDERSON DAVID A	70 EAST RD,CIRCLE PINES,MN,55014	1	4600
37	72 EAST RD	SKARTVEDT REVAK JULIE	72 EAST RD,CIRCLE PINES,MN,55014	1	4600
38	74 EAST RD	OLSON KENNETH L & KIMBERLY A	74 EAST RD,CIRCLE PINES,MN,55014	1	4600
39	76 EAST RD	PEARSON CHERYL A	76 EAST RD,CIRCLE PINES,MN,55014	1	4600

Preliminary Assessment Roll

WSB Project:	2018 Street and Utility Improvement Project	Assessment Policy: 4,600 (Full Reconstruct)
Project Location:	City of Circle Pines	Total Surface Improvement Cost: \$1,953,784.00
WSB Project No.:	1507-720	Unit Assessment: \$4,600
Date: 9/22/2015		Assessable Units: 148

Map Id	Parcel Address	Parcel Owner	Parcel Owner Address	Units	Proposed Assessment
40	78 EAST RD	ZIEROTH BENHART A & M A	78 EAST RD,CIRCLE PINES,MN,55014	1	4600
41	80 EAST RD	SCHROOTEN DONALD A & G M	80 EAST RD,CIRCLE PINES,MN,55014	1	4600
42	82 EAST RD	BLOCK COURTNEY V	82 EAST RD,CIRCLE PINES,MN,55014	1	4600
43	84 EAST RD	REIERSON WAYNE D	84 EAST RD,CIRCLE PINES,MN,55014	1	4600
44	86 EAST RD	ENGLUND TIMOTHY J	86 EAST RD,CIRCLE PINES,MN,55014	1	4600
45	88 EAST RD	MORTGAGE ELECTRONIC REG SYSTEM	7105 CORPORATE DR PTX C 35,PLANO,TX,75024	1	4600
46	90 EAST RD	HOFFHEIN RANDY J & MICHELLE R	90 EAST RD,CIRCLE PINES,MN,55014	1	4600
47	92 EAST RD	GRAUPMAN JOHN C	92 EAST RD,CIRCLE PINES,MN,55014	1	4600
48	47 EAST RD	BALL PERRY D JR	47 EAST RD,CIRCLE PINES,MN,55014	1	4600
49	45 EAST RD	DRIVER LEE E & DEBRA A	45 EAST RD,CIRCLE PINES,MN,55014	1	4600
50	43 EAST RD	BRANDT CRYSTAL	43 EAST RD,CIRCLE PINES,MN,55014	1	4600
51	41 EAST RD	CLAUSON MATTHEW	41 EAST RD,CIRCLE PINES,MN,55014	1	4600
52	39 EAST RD	PRATT NICHALIS	39 EAST RD,CIRCLE PINES,MN,55014	1	4600
53	37 EAST RD	GUTHRIE BARTON L	37 EAST RD,CIRCLE PINES,MN,55014	1	4600
54	35 EAST RD	HABEN MARLYS E	35 EAST RD,CIRCLE PINES,MN,55014	1	4600
55	33 EAST RD	HESSE JOHN D	PO BOX 92,CIRCLE PINES,MN,55014	1	4600
56	31 EAST RD	NOREN NEAL & NANCY	31 EAST RD,CIRCLE PINES,MN,55014	1	4600
57	26 CROSSWAY DR	BISHOP HARRY E & M C	26 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
58	27 EAST RD	HOSKINS JOSEPH A & MECHTEL M R	27 EAST RD,CIRCLE PINES,MN,55014	1	4600
59	25 EAST RD	ZIEGLER WILLIAM & CYNTHIA	25 EAST RD,CIRCLE PINES,MN,55014	1	4600
60	23 EAST RD	JONES LEROY T & J L	23 EAST RD,CIRCLE PINES,MN,55014	1	4600
61	21 EAST RD	SAUMER ROBERT	21 EAST RD,CIRCLE PINES,MN,55014	1	4600
62	19 EAST RD	COLEMAN GERALD J	19 EAST RD,CIRCLE PINES,MN,55014	1	4600
63	17 EAST RD	DEBLIECK JOSEPH R & KAREN M	17 EAST RD,CIRCLE PINES,MN,55014	1	4600
64	15 EAST RD	PEREZ MARGARITO	15 EAST RD,CIRCLE PINES,MN,55014	1	4600
65	13 EAST RD	ELLER JAY D & PATRICIA J	13 EAST RD,CIRCLE PINES,MN,55014	1	4600
66		CIRCLE PINES CITY OF	200 CIVIC HEIGHTS CIR,CIRCLE PINES,MN,55014	1	4600
67	11 EAST RD	BONNELL BETTY J	11 EAST RD,CIRCLE PINES,MN,55014	1	4600
68	9 EAST RD	LEE STANTON H & J A	9 EAST RD,CIRCLE PINES,MN,55014	1	4600
69	7 EAST RD	KENNEDY CHARLES B & C A	7 EAST RD,CIRCLE PINES,MN,55014	1	4600
70	5 EAST RD	TIMKO JANELLE C & BENJAMIN C	5 EAST RD,CIRCLE PINES,MN,55014	1	4600
71	3 EAST RD	TAPP ROBERT R	3 EAST RD BOX 191,CIRCLE PINES,MN,55014	1	4600
72	1 EAST RD	FJELD RANDY L	1 EAST RD,CIRCLE PINES,MN,55014	1	4600
73	2 CROSSWAY DR	DURUSHIA GERRY	2 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
74	4 CROSSWAY DR	LA VALLEE LONNIE W & C S	PO BOX 183,CIRCLE PINES,MN,55014	1	4600
75	6 CROSSWAY DR	DOMEK LEONARD A & DONNA M	6 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
76	8 CROSSWAY DR	KOCH ERIC	8 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
77	10 CROSSWAY DR	LINDWALL GREGORY	10 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
78	12 CROSSWAY DR	SCHMID TANYA	12 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600

Preliminary Assessment Roll

WSB Project:	2018 Street and Utility Improvement Project	Assessment Policy: 4,600 (Full Reconstruct)
Project Location:	City of Circle Pines	Total Surface Improvement Cost: \$1,953,784.00
WSB Project No.:	1507-720	Unit Assessment: \$4,600
Date:	9/22/2015	Assessable Units: 148

Map Id	Parcel Address	Parcel Owner	Parcel Owner Address	Units	Proposed Assessment
79	1 CENTER RD	FORSLUND CHAD	1 CENTER RD,CIRCLE PINES,MN,55014	1	4600
80	3 CENTER RD	LEVESSEUR CHRISTINE	698 77TH ST,LINO LAKES,MN,55014	1	4600
81	5 CENTER RD	LANNON DENNIS E	5 CENTER RD,CIRCLE PINES,MN,55014	1	4600
82	7 CENTER RD	MECHTEL RICHARD J	7 CENTER ROAD,CIRCLE PINES,MN,55014	1	4600
83	9 CENTER RD	AUREN DANNY R	9 CENTER RD,CIRCLE PINES,MN,55014	1	4600
84	14 CROSSWAY DR	MORTIMORE KEITH A & A	14 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
85	16 CROSSWAY DR	WILKINSON DAVID A & C A	16 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
86	18 CROSSWAY DR	AMUNDSON STEVEN J & L S	18 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
87	20 CROSSWAY DR	JOHNSON MATTHEW M & HEATHER L	20 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
88	22 CROSSWAY DR	DIRONCA DOUGLAS J	22 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
89	24 CROSSWAY DR	VAN BEEK AMY	24 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
90	2 PARK DR	LIND ROBERT D & R M	2 PARK DR,CIRCLE PINES,MN,55014	1	4600
91	4 PARK DR	LEVERCOM ROCKY J	4 PARK DR,CIRCLE PINES,MN,55014	1	4600
92	6 PARK DR	THOLKES ANDREA	6 PARK DR,CIRCLE PINES,MN,55014	1	4600
93	8 PARK DR	RYAN LINDA & HANSON CATHERINE	8 PARK DR,CIRCLE PINES,MN,55014	1	4600
94	10 PARK DR	PEMBROKE DAWN	10 PARK DR,CIRCLE PINES,MN,55014	1	4600
95	12 PARK DR	BAVIER SUSAN	12 PARK DR,CIRCLE PINES,MN,55014	1	4600
96	14 PARK DR	KASHMARK K & LETOURNEAU K	14 PARK DR,CIRCLE PINES,MN,55014	1	4600
97	16 PARK DR	WEISS JAMES B & GROMASKI ANNE	16 PARK DR,CIRCLE PINES,MN,55014	1	4600
98	18 PARK DR	BANICK DANIEL	18 PARK DR,CIRCLE PINES,MN,55014	1	4600
99	20 PARK DR	JONAK ANTHONY	11440 ASH AVENUE, #1,BRAINERD,MN,56401	1	4600
100	22 PARK DR	MAGER ANDREW	22 PARK DR,CIRCLE PINES,MN,55014	1	4600
101	24 PARK DR	RICE CHRISTOPHER	24 PARK DR,CIRCLE PINES,MN,55014	1	4600
102		CIRCLE PINES CITY OF	200 CIVIC HEIGHTS CIR,CIRCLE PINES,MN,55014	1	4600
103		CIRCLE PINES CITY OF	200 CIVIC HEIGHTS CIR,CIRCLE PINES,MN,55014	1	4600
104	2 PARK DR E	STENSTROM J & GULBRANDSON B	2 PARK DR E,CIRCLE PINES,MN,55014	1	4600
105	4 PARK DR E	ZIEGLER KURT	4 PARK DR E,CIRCLE PINES,MN,55014	1	4600
106	6 PARK DR E	BETTINGER JAMES E & B A	6 PARK DR E,CIRCLE PINES,MN,55014	1	4600
107	8 PARK DR E	GREENE CHERI	8 PARK DR E,CIRCLE PINES,MN,55014	1	4600
108	10 PARK DR E	BISKEY GREGORY	4919 125TH AVE NE,BLAINE,MN,55449	1	4600
109	12 PARK DR E	KIRSCH RALPH H & DORIS E	12 PARK DR E,CIRCLE PINES,MN,55014	1	4600
110	14 PARK DR E	MYHRE JOSEPH E	14 PARK DR E,CIRCLE PINES,MN,55014	1	4600
111	16 PARK DR E	CROSBY HEATHER	16 PARK DR E,CIRCLE PINES,MN,55014	1	4600
112	18 PARK DR E	SANDBAKKEN LEROY P & D	18 PARK DR E,CIRCLE PINES,MN,55014	1	4600
113	11 PARK DR E	BJORGAARD JEROME R & R J	11 PARK DR E,CIRCLE PINES,MN,55014	1	4600
114	9 PARK DR E	DEUTSCHE BANK TRUST CO AMERICAS	535 77TH ST,LINO LAKES,MN,55014	1	4600
115	8 NORTH RD	LEGRAND MICHAEL W & JEAN B	8 NORTH RD,CIRCLE PINES,MN,55014	1	4600
116	7 PARK DR E	LAWRY EDWARD J & VICKI C	7 PARK DR E,CIRCLE PINES,MN,55014	1	4600
117	5 PARK DR E	CLIFT RONALD A & CAROL J	5 PARK DR E,CIRCLE PINES,MN,55014	1	4600

Preliminary Assessment Roll

WSB Project:	2018 Street and Utility Improvement Project	Assessment Policy: 4,600 (Full Reconstruct)
Project Location:	City of Circle Pines	Total Surface Improvement Cost: \$1,953,784.00
WSB Project No.:	1507-720	Unit Assessment: \$4,600
Date: 9/22/2015		Assessable Units: 148

Map Id	Parcel Address	Parcel Owner	Parcel Owner Address	Units	Proposed Assessment
118	3 PARK DR E	AASLAND JAMES A & CYNTHIA R	3 PARK DR E,CIRCLE PINES,MN,55014	1	4600
119	1 PARK DR E	MUELLER ALLEN	1 PARK DR,CIRCLE PINES,MN,55014	1	4600
120	2 PARK DR W	FULTON DAVID C & ERIN E	2 PARK DR W,CIRCLE PINES,MN,55014	1	4600
121	6 NORTH RD	TUMA CHARLES	6 NORTH RD,CIRCLE PINES,MN,55014	1	4600
122	9 PARK DR W	PIRNER DAMIAN	9 PARK DR W,CIRCLE PINES,MN,55014	1	4600
123	7 PARK DR W	JORDAN JUNE L	7 PARK DR W,CIRCLE PINES,MN,55014	1	4600
124	5 PARK DR W	BERTSCH JASON	5 PARK DR W,CIRCLE PINES,MN,55014	1	4600
125	3 PARK DR W	PLESS D A & BUTTERFIELD Y M	3 PARK DRIVE W,CIRCLE PINES,MN,55014	1	4600
126	1 PARK DR W	SALO HAROLD E	812 GLADOLIA DR,AUBURNDALE,FL,33823	1	4600
127	29 PARK DR W	KOTY GERALDINE E	29 PARK DR,CIRCLE PINES,MN,55014	1	4600
128		CIRCLE PINES CITY OF	9201 LEXINGTON AVE N,CIRCLE PINES,MN,55014	1	4600
129		CIRCLE PINES CITY OF	9201 LEXINGTON AVE N,CIRCLE PINES,MN,55014	1	4600
130	23 PARK DR	SCHWEIGERT MICHAEL C & WENDY M	23 PARK DR,CIRCLE PINES,MN,55014	1	4600
131	21 PARK DR	WOLF BRIAN	21 PARK DR,CIRCLE PINES,MN,55014	1	4600
132	19 PARK DR	MCANINCH LLOYD L & D N C	19 PARK DR,CIRCLE PINES,MN,55014	1	4600
133	17 PARK DR	KUCERA LESLIE A & C E	17 PARK DR,CIRCLE PINES,MN,55014	1	4600
134	15 PARK DR	REHBEIN DEBRA	4918 107TH AVE NE,CIRCLE PINES,MN,55014	1	4600
135	13 PARK DR	DOYLE C L & KULAS M C	13 PARK DR,CIRCLE PINES,MN,55014	1	4600
136	11 PARK DR	HARRIS BRIAN F	11 PARK DR,CIRCLE PINES,MN,55014	1	4600
137	9 PARK DR	HALVERSON B L	9 PARK DR,CIRCLE PINES,MN,55014	1	4600
138	7 PARK DR	SEVERSON FLOYD W & EVA L	7 PARK DR,CIRCLE PINES,MN,55014	1	4600
139	5 PARK DR	SATHER DARYL L & L	5 PARK DR,CIRCLE PINES,MN,55014	1	4600
140	3 PARK DR	DUGDALE SCOTT A	3 PARK DR,CIRCLE PINES,MN,55014	1	4600
141	1 PARK DR	GRUE DERALD & SHEILA J	1 PARK DR,CIRCLE PINES,MN,55014	1	4600
142	11 CROSSWAY DR	PANKRATZ JAY V & DANIELLE L	11 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
143	9 CROSSWAY DR	GREGORI SARAH	9 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
144	7 CROSSWAY DR	STREHLO MARK L	7 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
145	5 CROSSWAY DR	TRUDEAU DANIEL E & TINA M	5 CROSSWAY DR,CIRCLE PINES,MN,55014	1	4600
146		CIRCLE PINES CITY OF	200 CIVIC HEIGHTS CIR,CIRCLE PINES,MN,55014	1	4600
147		CIRCLE PINES CITY OF	200 CIVIC HEIGHTS CIR,CIRCLE PINES,MN,55014	1	4600
148		CIRCLE PINES CITY OF	9201 LEXINGTON N,CIRCLE PINES,MN,55014	1	4600

APPENDIX D
Geotechnical Report



City of

CIRCLE PINES

GEOTECHNICAL REPORT

2018 STREET IMPROVEMENTS
CIRCLE PINES, MINNESOTA

JUNE 30, 2017

Prepared for:
City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014

WSB PROJECT NO. 010191-000



GEOTECHNICAL REPORT

**2018 STREET IMPROVEMENTS
CIRCLE PINES, MINNESOTA**

**FOR
CITY OF CIRCLE PINES, MINNESOTA**

June 30, 2017



CERTIFICATION

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



Darin E. Hyatt, PE

Date: June 30, 2017

Lic. No. 41316



June 30, 2017

Mr. Patrick Antonen
City Administrator
City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014

Re: Geotechnical Report
2018 Street Improvements
Circle Pines, Minnesota
WSB Project No.: 010191-000

We have conducted a geotechnical subsurface exploration program for the above referenced project. This report contains our soil boring logs, an evaluation of the conditions encountered in the borings and our recommendations for subgrade preparation, underground utility installation, and other geotechnical related design and construction considerations.

If you have any questions concerning this report or our recommendations, or for construction material testing for this project, please call us at (952) 737-4660.

Sincerely,

WSB & Associates, Inc.

A handwritten signature in blue ink, appearing to read "Darin Hyatt". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Darin Hyatt, PE
Senior Geotechnical Engineer

A handwritten signature in blue ink, appearing to read "Mark Osborn". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mark Osborn, PE
Geotechnical Project Engineer

Attachment

DEH/tw

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TITLE SHEET

CERTIFICATION SHEET

LETTER OF TRANSMITTAL

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Appendix A

Soil Boring Exhibit

Logs of Test Borings

Symbols and Terminology on Test Boring Log

Notice to Report Users Boring Log Information

Unified Soil Classification System (USCS)

1. INTRODUCTION

1.1 Project Location

The proposed roadway improvements will be located along portions of East Road, Center Road, Crossway Drive and Park Drive in Circle Pines, Minnesota.

Borings were completed through the existing pavement sections. The approximate boring locations can be found on the Soil Boring Exhibit in **Appendix A**.

1.2 Project Description

It is proposed to install new utilities along these alignments. After backfilling the utilities, new roadways will be constructed. The new roadways will be urban two lane bituminous roads, reconstructed to about the same horizontal and vertical alignments as the existing ones.

Underground utilities will consist of watermain, sanitary, and storm sewers. These utilities are expected to be placed within 20 feet of final grade.

Infiltration ponds are planned in Center Park. One will be located in the northern part of the park and one in the southern part of the park.

WSB has developed recommendations for this project in consideration of the proposed layout, loadings, and configurations as understood at this time. WSB must be made aware of the revised or additional information in order to evaluate the recommendations for continued applicability.

1.3 Purpose and Project Scope of Services

Mr. Patrick Antonen with the City of Circle Pines authorized this work on May 30, 2017. In order to assist the design team in preparing plans and specifications, we have developed recommendations for estimated infiltration rates, pavement and utility subgrade preparation and pavement thicknesses. As such, we have completed a subsurface exploration program and prepared a geotechnical report for the referenced site. This stated purpose was a significant factor in determining the scope and level of service provided. Should the purpose of the report change the report immediately ceases to be valid and use of it without WSB's prior review and written authorization shall be at the user's sole risk.

Our authorized scope of work has been limited to:

1. Mobilization / Demobilization of a Truck Mounted Drill Rig.
2. Clearing underground utilities utilizing the Gopher State One Call.
3. Drilling nine standard penetration borings to a depth of about 25 feet each.
4. Completing two hand auger borings to a depth of about 5 feet each.
5. Sealing the borings per Minnesota Department of Health procedures.
6. Perform soil classification and analysis.
7. Review of readily available project information and geologic data.
8. Providing this geotechnical report containing:
 - a. Summary of our findings.
 - b. Discussion of subsurface soil and groundwater conditions and how they may affect the proposed pavements and utilities.
 - c. Estimated R-value of the soils.
 - d. A discussion of soils for use as structural fill and site fill.
 - e. Estimated infiltration rates.

2. PROCEDURES

2.1 Boring Layout and Soil Sampling Procedures

WSB recommended the boring depths and selected the desired locations. Our field crew staked the boring locations and elevations using existing site features as guides. The as drilled boring locations were surveyed using Global Positioning System (GPS) information. The approximate boring locations are shown on the Soil Boring Exhibit in **Appendix A** which is an aerial photo.

We drilled the borings on June 9 and 12, 2017, with a truck-mounted CME-55 drill rig operated by a two-person crew. The drill crew advanced the borings using continuous hollow stem augers. Drilling methods, crew chief, depths, sampling interval, casing usage, groundwater observations, test data, and other drilling information are indicated on the boring logs.

Generally, the drill crew sampled the soil in advance of the auger tip at two and one-half foot (2½') intervals of a depth to fifteen feet (15') and then at five foot (5') intervals thereafter. The soil samples were obtained using a split-barrel sampler which was driven into the ground during standard penetration tests in accordance with ASTM D 1586, Standard Method of Penetration Test and Split-Barrel Sampling of Soils.

A bucket type hand auger was used to obtain subsurface information at Borings HAB-10 and HAB-11.

The materials encountered were described on field logs and representative samples were containerized, and transported to our laboratory for further examination and testing.

The samples were visually examined to estimate the distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We classified the soils according to type using the Unified Soil Classification System (USCS). A chart describing the Unified Soil Classification System is included in **Appendix A**.

2.2 Groundwater Measurements and Borehole Abandonment

The drill crew observed the borings for free groundwater while drilling and after completion. These observations and measurements are noted on the boring logs. The crew then backfilled the borings with soil cuttings to comply with Minnesota Department of Health regulations.

2.3 Boring Log Procedures and Qualifications

The subsurface conditions encountered by the test borings are illustrated on the Logs of Test Borings in **Appendix A**. Similar soils were grouped into the strata shown on the boring logs, and the appropriate estimated USCS classification symbols were also added. The depths and thickness of the subsurface strata indicated on the boring logs were estimated from the drilling results.

The transition between materials (horizontal and vertical) is approximate and is usually far more gradual than shown. Information on actual subsurface conditions exists only at the specific locations indicated and is relevant only to the time exploration was performed. Subsurface conditions and groundwater levels at other locations may differ from conditions found at the indicated locations. The nature and extent of these conditions would not become evident until exposed by construction excavation. These stratification lines were used for our analytical purposes and, due to the aforementioned limitations, should not be used as a basis of design or construction cost estimates.

3. EXPLORATION RESULTS

3.1 Site and Geology

The standard penetration test borings were performed on existing roadway alignments and the two hand auger borings were performed in Center Park.

The Anoka County Geologic Atlas indicated the surficial geology of the area is mostly Glacial Lake Anoka deposits. These deposits consist primarily of very fine to medium grained sands. At depth, sediments may contain interbedded silt and silty clay layers. These sediments may also be interbedded with sand and gravel deposits from meltwater streams.

3.2 Subsurface Soil and Groundwater Conditions

The boring profile generally consisted of a pavement section and fill materials and fill overlying naturally deposited sands. The hand auger borings encountered about 2 feet of dark brown to black silty sand over sand that was fine grained and brown.

Pavement Section

The bituminous thickness ranged from about 3 to 5 inches and averaged about 3 ½ inches. A discernable aggregate layer was observed in many of the borings. With sand subgrades it can be difficult to identify an aggregate base layer through a relatively small diameter bore hole. Although likely present, an aggregate base layer was not identified in Borings PB-1, PB-6, PB-8 and PB-9. Where encountered the aggregate base ranged from about 6 to 7 inches and averaged about 6 ½ inches.

Fill

Below the pavement section, all the borings encountered fill materials that ranged in depth from about 8 to 13 feet. The fill consisted mostly of sands that were reddish brown and brown and moist.

Naturally Deposited Soils

Underlying the fill, our borings encountered and terminated in glacial outwash. The glacial outwash consisted of sand that was fine-grained, various shades of brown and moist before becoming wet or waterbearing.

3.3 Strength Characteristics

The penetration resistance N-values of the materials encountered were recorded during drilling and are indicated as blows per foot (BPF). Those values provide an indication of soil strength characteristics and are located on the boring log sheets. Also, visual-manual classification techniques and apparent moisture contents were also utilized to make an engineering judgment of the consistency of the materials.

Table 1 presents a summary of the penetration resistances in the unfrozen soils for the standard penetration test borings completed and remarks regarding the material strengths of the soils.

Table 1: Penetration Resistances

Soil Type	Classification	Penetration Resistances	Remarks
Fill	SP, SP-SM	3 to 24 BPF Avg. ≈ 8 BPF	Variable compaction
Outwash	SP	3 to 31 BPF Avg. ≈ 10 BPF	Very loose to dense Generally loose

* The fill was mostly frozen at the time of drilling

The preceding is a generalized description of soil conditions at this site. Variations from the generalized profile exist and should be assessed from the boring logs, the normal geologic character of the deposits, and the soils uncovered during site excavation.

3.4 Groundwater Conditions

WSB took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of the report.

Table 2 below is a summary of the estimated water levels encountered at our borings.

Table 2: Groundwater Measurements

Boring No.	Ground Surface Elevation	Depth to Groundwater after Drilling	Estimated Groundwater Elevation*
PB-1	910.0	23	887
PB-2	912.4	n/o	888 ½
PB-3	910.4	22	888 ½
PB-4	909.7	22 ½	888 ½
PB-5	910.7	22	889
PB-6	904.2	15	890
PB-7	900.2	12	888 ½
PB-8	907.8	21	887
PB-9	904.6	21	884

n/o – indicates ground water was not observed.

* - Elevations are rounded to the highest ½ foot.

Groundwater was encountered at elevations between 884 and 890 in the borings. It should be noted that our borings were not left open long enough to allow for groundwater stabilization. However, sand soils are generally permeable and based on the above observations and the moisture content apparent in the penetration test samples it is our opinion that groundwater levels likely range from about 888 to 890.

Note that groundwater levels may fluctuate due to seasonal variations (e.g. precipitation, snowmelt and rainfall) and/or other factors not evident at the time of measurement.

4. ENGINEERING ANALYSIS AND RECOMMENDATIONS

4.1 Discussion

Based on our borings it is our opinion that the proposed utilities and pavement can be supported on the soils encountered in the borings.

It is our opinion that groundwater could be encountered by excavations at this site and could affect construction of underground utilities. Dewatering should be anticipated for excavations near elevations 890 and lower.

The sand soils encountered in our hand auger borings appear to be conducive to infiltration.

4.2 Utilities

Invert elevations are anticipated to be within 20 feet of existing grades and we anticipate the subgrade soils for the utilities will consist chiefly of sand. Underground utilities are expected to be installed by backhoes completing the excavations and placing pipe and backfills. Soil compactors should be used to compact the fill in thin even lifts to the specified densities.

4.3 Backfill and Fill Selection and Compaction

It is our opinion the onsite sand soils may be reused as backfill and fill provided they are moisture conditioned and can be compacted to their specified densities. Any wet soils excavated would need to be dried before reuse as an engineered fill. Backfills with cobbles larger than six inches (6") should not come in contact with utilities. We recommend that sandy soils be moisture conditioned to meet compaction specifications as determined from their standard Proctor tests (ASTM D-698). Sand fill should be spread in thin lifts (<12 inches depending on compaction equipment) to allow for full depth compaction. Table 3 indicates the recommended compaction levels.

Table 3: Recommended Level of Compaction for Backfill and Fill

Area	Percent of Standard Proctor Maximum Dry Density
Pavement: Within 3 feet of top of subgrade Within 3 foot perimeter of structures such as manholes	100
Pavement: Greater than 3 feet below top of subgrade	95
Utility Trench (unless within 3 feet of pavement subgrade)	95
Landscaping (non-structural)	90

4.4 Dewatering

Dewatering may be required for placement of underground utilities. The predominate soils encountered were sands and sands with silt. Where such soils exist and the excavation only extends 1 to 2 feet below groundwater, it is our opinion that it can be drawn down with sumps dug alongside the trench. Deeper excavations below groundwater in sand soils will likely require sand point dewatering system.

4.5 Pavement Areas

After removal of the existing pavement section, we recommend the subgrade be surface compacted and proof-rolled with a loaded dump truck to help identify areas that may require corrective action such as scarifying, diking, additional compaction or sub-excavations. We also recommend a proof-roll be performed again on the aggregate base just prior to placement of the bituminous pavement.

Table 4 below presents the approximate pavement section thickness and subgrade soils that were encountered within the borings.

Table 4: Roadway Soil Boring Profiles

Boring No.	Bituminous Thickness (inches)	Aggregate Base Thickness (inches)	Subgrade Soils (Upper 4 feet)
PB-1	5	ND	Fill: Sand with silt; Sand
PB-2	3	6	Fill: Sand
PB-3	3	6	Fill: Sand
PB-4	3	7	Fill: Sand
PB-5	3	6	Fill: Sand
PB-6	3	ND	Fill: Sand
PB-7	4	7	Fill: Sand
PB-8	4	ND	Fill: Sand; Sand with silt
PB-9	3	ND	Fill: Sand

ND – Not Discernable

Once the site has been prepared as recommended, we anticipate the subgrade will consist of a mixture of sands and sands with silt. The MnDOT Flexible Pavement Design Guidance Memo from June 2014, indicates soils such as those anticipated have an estimated R-value of 70.

Based on our experience, we recommend an estimated R-value of 50 be used for design of roadways at this site. We have assumed that the volume and distribution of vehicles using these most of roadways will have 20-year flexible ESAL's less than 75,000. However, it is our understanding that portions of East Road and Pine Drive will be State Aid roads. Along the higher traffic volume state aid portions of the project, we estimate the 20-year flexible ESAL's will be less than 300,000.

We recommend a pavement section consist of 3 ½ inches of bituminous over 6 inches of aggregate base.

Within several years after initial paving, some thermal shrinkage cracks will develop. We recommend routine maintenance be performed to improve pavement performance and increase pavement life. Pavement should be sealed with a liquid bitumen sealer to retard water intrusion into the base course and subgrade. Localized patch failures may also develop where trucks or buses turn on the pavement. When these occur, they should be cut out and patch repaired. Periodic seal coating should also be applied, to preserve the longevity of the pavement.

4.6 Infiltration Ponds

Two hand auger borings (HAB-10 and HAB-11) were completed in Center Park in the vicinity of potential infiltration ponds. Those borings initially encountered about 2 feet of silty sand (ASTM Symbol SM) that was dark brown to black. Below the silty sand, sand (SP) that was fine-grained, brown and moist was encountered to the borings termination depth of about 5 feet.

Based on an online version of the Design Infiltration Rates Table (last modified on May 22, 2017) from the Minnesota Storm Water Manual, silty sand falls in to Hydrologic Soil Group B and has a recommended infiltration rate of 0.45 inches per hour while sand falls in Hydrologic Soil Group A and has a recommend infiltration rate of 0.80 inches per hour.

4.7 Construction Considerations

Good surface drainage should be maintained throughout the work. Under no circumstances should fill be placed into standing water.

Soil corrections at this site for pavement subgrades may not be continuous in all areas. We recommend tapering the fills back to native soils at a ten to one (10:1) slope.

4.8 Construction Safety

All excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P "Excavations and Trenches". This document states that excavation safety is the responsibility of the contractor. Reference to this OSHA requirement should be included in the job specifications.

The responsibility to provide safe working conditions on this site, for earthwork, building construction, or any associated operations is solely that of the contractor. This responsibility is not borne in any manner by WSB.

4.9 Cold Weather Construction

It is our understanding that construction is unlikely to occur during the winter months. However, if the construction does continue into the winter months we recommend the following guidelines.

Only unfrozen fill should be used. Placement of fill *must not be permitted* on frozen soil.

4.10 Field Observation and Testing

The soil conditions illustrated on the Logs of Test Borings in **Appendix A** are indicative of the conditions only at the boring locations. For this reason, we recommend that all excavations at this site be observed by a soils engineer or technician prior to fill or backfill placement or construction of any foundation elements to determine if the soils are capable of supporting the fill backfill and/or foundation loads. These observations are necessary to judge if all unsuitable materials have been removed from within the planned construction area and an appropriate degree of lateral oversize has been provided.

WSB also recommends a representative number of field density tests be taken in all engineered fill and backfill placed to aid in judging its suitability. Fill placement and compaction should be monitored and tested to determine that the resulting fill and backfill conforms to specified density, strength or compressibility requirements. Prior to use, any proposed fill and backfill material should be submitted to the WSB laboratory for testing to verify compliance with recommendations and project specifications.

Dynamic Cone Penetrometer (DCP) tests can be completed in the aggregate base in lieu of density testing. We recommend following MnDOT Specification 2211-3.

WSB would be pleased to provide the necessary field observation, monitoring and testing services during construction.

4.11 Plan Review and Remarks

The observations, recommendations and conclusions described in this report are based primarily on information provided to WSB, obtained from our subsurface exploration, our experience, several necessary assumptions and the scope of service developed for this project and are for the sole use of our client. We recommend that WSB be retained to perform a review of final design drawing and specifications to evaluate that the geotechnical engineering report has not been misinterpreted. Should there be any changes in the design or location of the structures related to this project or if there are any uncertainties in the report we should be notified. We would be pleased to review any project changes and modify the recommendations in this report (if necessary) or provide any clarification in writing.

The entire report should be kept together; for example, boring logs should not be removed and placed in the specifications separately.

The boring logs and related information included in this report are indicators of the subsurface conditions only at the specific locations indicated on the Soil Boring Exhibit and times noted on the Logs of Test Boring sheets in **Appendix A**. The subsurface conditions, including groundwater levels, at other locations on the site may differ significantly from conditions that existed at the time of sampling and at the boring locations.

The test borings were put down by WSB solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.

WSB has not performed any observations, investigations, studies or testing that is not specifically listed in the scope of service. WSB shall not be liable for failing to discover any condition whose discovery required the performance of services not authorized by the Agreement.

5. STANDARD OF CARE

The recommendations and opinions contained in this report are based on our professional judgment. The soil testing and geotechnical engineering services performed for this project have been performed with the level of skill and diligence ordinarily exercised by reputable members of the same profession under similar circumstances, at the same time and in the same or a similar locale. No warranty, either express or implied, is made.

APPENDIX A

Soil Boring Exhibit
Log of Test Borings
Symbols and Terminology on Test Boring Log
Notice to Report Users Boring Log Information
Unified Soil Classification Sheet (USCS)



LOG OF TEST BORING

PROJECT NAME: 2018 Improvements
 CLIENT/WSB #: R-010191-000

PROJECT LOCATION: Circle Pines, MN
 SURFACE ELEVATION: 906.8 ft

BORING NUMBER HAB-10
 PAGE 1 OF 1

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
1	906	SILTY SAND, fine grained with Organic fines, black, moist	SM	Topsoil								
		SILTY SAND, fine grained, dark brown, moist	SM	Outwash								
2	905	SAND, fine grained, brown, moist	SP									
3	904											
4	903											
5	902											
6	901											
7	900	End of Boring 5.0 ft.										
8	899											
9	898											
10	897											
11	896											
12	895											
13	894											
14	893											
15	892											
16	891											
17	890											
18	889											
19	888											
20	887											
21	886											
22	885											
23	884											
24	883											
25	882											
26	881											

WATER LEVEL MEASUREMENTS

START: 6/27/2017

END: 6/27/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
6/27/2017	10:00 am	5			None		HAB 0' - 5'	J. Tatro	DEH
								Notes: 4" Bucket Auger	

WSB BORING LOG - WSB.GDT - 6/30/17 10:10 - K:\010191-000\GEO\TECH-CM\2018 IMPROVEMENTS, CIRCLE PINES.MN.GPJ



LOG OF TEST BORING

PROJECT NAME: 2018 Improvements
 CLIENT/WSB #: R-010191-000

PROJECT LOCATION: Circle Pines, MN
 SURFACE ELEVATION: 908.6 ft

BORING NUMBER HAB-11
 PAGE 1 OF 1

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
1	908	SAND, fine grained, brown, moist	SP	Outwash								
2	907											
3	906											
4	905											
5	904	End of Boring 5.0 ft.										
6	903											
7	902											
8	901											
9	900											
10	899											
11	898											
12	897											
13	896											
14	895											
15	894											
16	893											
17	892											
18	891											
19	890											
20	889											
21	888											
22	887											
23	886											
24	885											
25	884											
26	883											

WSB BORING LOG - WSB.GDT - 6/30/17 10:10 - K:\010191-000\GEO\TECH-CM\2018 IMPROVEMENTS, CIRCLE PINES.MN.GPJ

WATER LEVEL MEASUREMENTS

START: 6/27/2017

END: 6/27/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
6/27/2017	10:30 am	5			None		HAB 0' - 5'	J. Tatro	DEH
								Notes: 4" Bucket Auger	



LOG OF TEST BORING

PROJECT NAME: 2018 Improvements
 CLIENT/WSB #: R-010191-000

PROJECT LOCATION: Circle Pines, MN
 SURFACE ELEVATION: 910 ft

BORING NUMBER PB-1
 PAGE 1 OF 1

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
							No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	909	BITUMINOUS 5" FILL, mostly Sand with Silt, dark brown		Pavement Section Fill			1	HSA				
2	908	FILL, mostly fine grained Sand, brown, tan, reddish brown			7		2	SB				
3	907											
4	906											
5	905											
6	904											
7	903											
8	902											
9	901	SAND, fine grained, brown, moist to water bearing at 23', loose to medium dense to dense	SP	Outwash	7		3	SB				
10	900											
11	899											
12	898											
13	897											
14	896											
15	895											
16	894											
17	893	End of Boring 26.0 ft.					4	SB				
18	892											
19	891											
20	890											
21	889											
22	888											
23	887											
24	886											
25	885											
26	884											

WSB BORING LOG - WSB.GDT - 6/30/17 10:10 - K:\010191-000\GEOTECH-CM\2018 IMPROVEMENTS, CIRCLE PINES.MN.GPJ

WATER LEVEL MEASUREMENTS

START: 6/09/2017 END: 6/09/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
6/09/2017	10:35 am	24.5	26		23.0	887	3 1/4" HSA 0' - 24.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

BORING NUMBER PB-4

PROJECT NAME: 2018 Improvements
CLIENT/WSB #: R-010191-000

PROJECT LOCATION: Circle Pines, MN
SURFACE ELEVATION: 909.7 ft

PAGE 1 OF 1

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS							
							No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)				
1	909	BITUMINOUS 3" AGGREGATE BASE 7" FILL, mostly fine grained Sand, reddish brown, brown, tan		Pavement Section			1	HSA								
2	908						2	SB								
3	907						22									
4	906															
5	905															
6	904									24	3	SB				
7	903															
8	902									10	4	SB				
9	901	SAND, fine grained, tan, moist, loose to medium dense	SP	Outwash												
10	900						5	5	SB							
11	899															
12	898															
13	897									14	6	SB				
14	896															
15	895															
16	894									11	7	SB				
17	893															
18	892															
19	891															
20	890	SAND, fine grained, brown, wet to water bearing at 21 1/2', medium dense to loose	SP													
21	889						16	8	SB							
22	888															
23	887															
24	886															
25	885															
26	884									6	9	SB				
		End of Boring 26.0 ft.														

WSB BORING LOG - WSB.GDT - 6/30/17 10:10 - K:\010191-000\GEO\TECH-CM\2018 IMPROVEMENTS, CIRCLE PINES, MN.GPJ

WATER LEVEL MEASUREMENTS

START: 6/09/2017 END: 6/09/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
6/09/2017	1:45 pm	24.5	26		21.5	888.2	3 1/4" HSA 0' - 24.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

BORING NUMBER PB-5

PROJECT NAME: 2018 Improvements
CLIENT/WSB #: R-010191-000

PROJECT LOCATION: Circle Pines, MN
SURFACE ELEVATION: 910.7 ft

PAGE 1 OF 1

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS						
							No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)			
1	910	BITUMINOUS 3" AGGREGATE BASE 6" FILL, mostly fine grained Sand, dark brown, reddish brown, brown		Pavement Section Fill			1	HSA							
2	909						2	SB							
3	908						10								
4	907														
5	906														
6	905								14	3	SB				
7	904														
8	903									9	4	SB			
9	902														
10	901														
11	900	SAND, fine grained, tan, moist, loose	SP	Outwash			8	5	SB						
12	899														
13	898								5	6	SB				
14	897														
15	896														
16	895								5	7	SB				
17	894														
18	893														
19	892														
20	891						SAND, fine grained, brown, wet to water bearing at 22', loose to very loose	SP				10	8	SB	
21	890														
22	889														
23	888														
24	887														
25	886														
26	885	End of Boring 26.0 ft.					4	9	SB						

WSB BORING LOG - WSB.GDT - 6/30/17 10:10 - K:\010191-000\GEOTECH-CM\2018 IMPROVEMENTS, CIRCLE PINES, MN.GPJ

WATER LEVEL MEASUREMENTS

START: 6/09/2017 END: 6/09/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
6/09/2017	2:50 pm	24.5	26		22.0	888.7	3 1/4" HSA 0' - 24.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 Improvements
 CLIENT/WSB #: R-010191-000

PROJECT LOCATION: Circle Pines, MN
 SURFACE ELEVATION: 904.2 ft

BORING NUMBER PB-6
 PAGE 1 OF 1

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
							No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	903	BITUMINOUS 3" FILL, mostly fine grained Sand, reddish brown, brown		Pavement Section Fill	9		1	HSA				
2	902						2	SB				
3	901						3	SB				
4	900						4	SB				
5	899						7	SB				
6	898											
7	897											
8	896											
9	895						SAND, fine grained, tan, moist, medium dense	SP	Outwash	12		5
10	894											
11	893											
12	892	SAND, fine grained, brown, moist to water bearing at 15', loose	SP		10		6	SB				
13	891											
14	890											
15	889											
16	888											
17	887											
18	886											
19	885											
20	884											
21	883											
22	882											
23	881											
24	880											
25	879											
26	878				6		9	SB				
		End of Boring 26.0 ft.										

WSB BORING LOG - WSB.GDT - 6/30/17 10:10 - K:\010191-000\GEO\TECH-CM\2018 IMPROVEMENTS, CIRCLE PINES, MN.GPJ

WATER LEVEL MEASUREMENTS

START: 6/12/2017

END: 6/12/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
6/12/2017	10:40 am	24.5	26		15.0	889.2	3 1/4" HSA 0' - 24.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

BORING NUMBER PB-8

PROJECT NAME: 2018 Improvements
 CLIENT/WSB #: R-010191-000

PROJECT LOCATION: Circle Pines, MN
 SURFACE ELEVATION: 907.8 ft

PAGE 1 OF 1

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
							No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	907	BITUMINOUS 4" FILL, a mixture of fine grained Sand and Sand with Silt, reddish brown, brown		Pavement Section Fill	10		1	HSA				
2	906						2	SB				
3	905						3	SB				
4	904						4	SB				
5	903						5	SB				
6	902						6	SB				
7	901						7	SB				
8	900						8	SB				
9	899						9	SB				
10	898						SAND, fine grained, tan, moist, loose to medium dense	SP	Outwash	26	▽	5
11	897	6	SB									
12	896	7	SB									
13	895	8	SB									
14	894	9	SB									
15	893	10	SB									
16	892	11	SB									
17	891	12	SB									
18	890	13	SB									
19	889	14	SB									
20	888	SAND, fine grained, grayish brown, wet to water bearing at 21', medium dense to loose	SP		8		15	SB				
21	887						16	SB				
22	886						17	SB				
23	885						18	SB				
24	884						19	SB				
25	883						20	SB				
26	882	End of Boring 26.0 ft.										

WSB BORING LOG - WSB.GDT - 6/30/17 10:10 - K:\010191-000\GEOTECH-CM\2018 IMPROVEMENTS, CIRCLE PINES, MN.GPJ

WATER LEVEL MEASUREMENTS

START: 6/12/2017

END: 6/12/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
6/12/2017	12:50 pm	24.5	26		21.0	886.8	3 1/4" HSA 0' - 24.5'	J. Tatro	DAJ
								Notes:	



SYMBOLS AND TERMINOLOGY ON TEST BORING LOG

SYMBOLS			
Drilling and Sampling		Laboratory Testing	
Symbol	Description	Symbol	Description
HSA	3-1/4" LD. Hollow stem auger	W	Water content, % (ASTM** D2216)
_FA	4", 6" or 10" diameter flight auger	D	Dry density, pcf
_HA	2", 4", or 6" hand auger	LL	Liquid limit (ASTM D4318)
_DC	2-1/2", 4", 5", or 6" steel drive casing	PL	Plastic limit (ASTM D4318)
_RC	Size A, B or N rotary casing		
PD	Pipe drill or cleanout tube		-Inserts in last column (Qu or RQD)-
CS	Continuous split barrel sampling	Qu	Unconfined compressive strength, psf (ASTM D2166)
DM	Drilling mud	Pq	Penetrometer reading, tsf (ASTM D1558)
JW	Jetting water	Ts	Torvane reading, tsf
SB	2" O.D. split barrel sampling	G	Specific gravity (ASTM D854)
_L	2-1/2" or 3-1/2" O.D. SB liner sampler	SL	Shrinkage limits (ASTM D427)
_T	2" or 3" thin walled tube sample	OC	Organic content-combustion method (ASTM D2974)
3TP	3" thin walled tube using pitcher sampler	SP	Swell pressure, tsf (ASTM D4546)
_TO	2" or 3" thin walled tube using Osterberg sampler	PS	Percent swell under pressure (ASTM D4546)
W	Wash sample	FS	Free swell, % (ASTM D4546)
B	Bag sample	SS	Shrink swell, % (ASTM D4546)
P	Test pit sample	pH	Hydrogen ion content-Meter Method (ASTM D4972)
_Q	BQ, NQ, or PQ wire line system	SC	Sulfate content, parts/million or mg/l
_X	AX, BX, or NX double tube barrel	CC	Chloride content, parts/million or mg/l
N	Standard penetration test, blows per foot	C*	One dimensional consolidation (ASTM D2435)
CR	Core recovery, percent	Qc*	Triaxial compression (ASSTM D2850 and D4767)
WL	Water level	D.S.*	Direct Shear (ASTM D3080)
▼	Water level	K*	Coefficient of permeability, cm/sec (ASTM D2434)
NMR	No measurement recorded, primarily due to presence of drilling or coring fluid.	P*	Pinhole test (ASTM D4647)
		DH*	Double hydrometer (ASTM D4221)
		MA*	Particle size analysis (ASTM D422)
		R	Laboratory electrical resistivity, ohm-cm (ASTM G57)
		E*	Pressuremeter deformation modulus, tsf (ASTM D4719)
		PM*	Pressuremeter test (ASTM D4719)
		VS*	Field vane shear (ASTM D2573)
		IR*	Infiltrometer test (ASTM D3385)
		RQD	Rock quality designation, percent
			*Results shown on attached data sheet or graph
			**ASTM designates American Society for Testing and Materials

TERMINOLOGY							
Particle Sizes				Soil layering and Moisture			
Type	Size Range	Term	Visual Observation				
Boulders	> 12"	Lamination	Up to 1/4" thick stratum				
Cobbles	3" – 12"	Varved	Altering laminations of any combination of clay, silt, fine sand, or colors				
Coarse gravel	3/4" – 3"	Lenses	Small pockets of different soils in a soil mass				
Fine gravel	#4 sieve – 3/4"	Stratified	Altering layers of varying materials or colors				
Coarse sand	#4 - #10 sieve	Layer	1/4" to 12" thick stratum				
Medium sand	#10-#40 sieve	Dry	Powdery, no noticeable water				
Fine sand	#40-#200 sieve	Moist	Damp, below saturation				
Silt	100% passing #200 sieve and > 0.005mm	Waterbearing	Pervious soil below water				
Clay	100% passing #200 sieve and < 0.005mm	Wet	Saturated, above liquid limit				
Gravel Content				Standard Penetration Resistance			
Coarse-Grained Soils		Fine-Grained Soils		Cohesionless Soils		Cohesive Soils	
% Gravel	Description	% Gravel	Description	N-Value	Relative Density	N-Value	Consistency
2-15	A little gravel	< 5	Trace of gravel	0-4	Very loose	0-4	Very soft
16-49	With gravel	5-15	A little gravel	5-10	Loose	5-8	Soft
		16-30	With gravel	11-30	Medium dense	9-15	Firm
		31-49	Gravelly	31-50	Dense	16-30	Hard
				> 50	Very dense	> 30	Very hard



NOTICE TO REPORT USERS BORING LOG INFORMATION

Subsurface Profiles

The subsurface stratification lines on the graphic representation of the test borings show an approximate boundary between soil types or rock. The transition between materials is approximate and is usually far more gradual than shown. Estimating excavation depths, soil volumes and other computations relying on the subsurface strata may not be possible to any degree of accuracy.

Water Level

WSB & Associates, Inc. took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of this report. The groundwater level may fluctuate due to seasonal variations caused by precipitation, snowmelt, rainfalls, construction or remediation activities, and/or other factors not evident at the time of measurement.

The actual determination of the subsurface water level is an interpretative process. Subsurface water level may not be accurately depicted by the levels indicated on the boring logs. Normally, a subsurface exploration obtains general information regarding subsurface features for design purposes. An accurate determination of subsurface water levels is not possible with a typical scope of work. The use of the subsurface water level information provided for estimating purposes or other site review can present a moderate to high risk of error.

The following information is obtained in the field and noted under "Water Level Measurements" at the bottom of the log.

Sampled Depth: The lowest depth of soil sampling at the time a water level measurement is taken.

Casing Depth: The depth to the bottom of the casing or hollow-stem auger at the time of water level measurement.

Cave-In Depth: The depth at which the measuring tape stops in the bore hole.

Water Level: The point in the bore hole at which free-standing water is encountered by a measuring tape dropped from the surface inside the casing.

Drilling Fluid Level: Similar to the water level, except the liquid in the bore hole is a drilling fluid.

Obstruction Depths

Obstructions and/or obstruction depths may be noted on the boring logs. Obstruction indicates the sampling equipment encountered resistance to penetration. It must be realized that continuation of drilling, the use of other drilling equipment or further exploration may provide information other than that depicted on the logs. The correlation of obstruction depths on the log with construction features such as rock excavation, foundation depths, or buried debris cannot normally be determined with any degree of accuracy. For example, penetration of weathered rock by soil sampling equipment may not correlate with removal by certain types of construction equipment. Using this information for estimating purposes often results in a high degree of misinterpretation.

Accurately identifying the obstruction or estimating depths where hard rock is present over the site requires a scope of service beyond the normal geotechnical exploration program. The risk of using the information noted on the boring logs for estimating purposes must be understood.



UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
Clean Gravels (Less than 5% fines)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
Clean Sands (Less than 5% fines)		
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

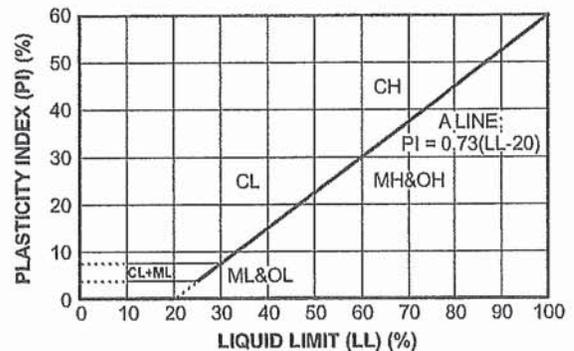
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent GW, GP, SW, SP
 More than 12 percent GM, GC, SM, SC
 5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX E

Neighborhood Meeting Comment Cards



City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name Cassandra Pearson (Jonak) + Justin Pearson Phone (763) 843-5270
Address 20 Park Dr E-Mail Cassandra2587@gmail.com
City _____ State _____ Zip _____

General Comments:

We have many lilacs that will likely be in the way.
Also have a retaining wall by our driveway that
we don't ~~need~~ need replaced however there is a flat area
in front we would like back

Signature

Date

7/27/17

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name DARYL & LEONA SATHER Phone (763) 786-0895
Address 5 PARK DRIVE E-Mail _____
City CIRCLE PINES State MN Zip 55014

General Comments:

Due to ~~our~~ Husband's handicap we need to be able to get out and in to our home often.

Can we get permission to park in Cento Park right behind our home - We have gate thru fence to park.

Our driveway I think is a little wider and would like it to be as wide when done as it is now.

Signature Leona Sather Date 7/27/17

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name Melissa and Kurt Ziegler Phone (612) 790-4300
Address 4 Park Dr. E. E-Mail _____
City Circle Pines State MN Zip 55014

General Comments:

From 2, 4 and 6 Park Dr. E. there is flooding during heavy rain storms. It takes awhile for the rain to drain after the storm is over. It may get fixed once the drainage and sewer lines are replaced. But it definitely needs to be fixed.

Speed bumps would help reduce speeding traffic on Park Dr. to Park Dr. west by Center Park especially. People speed 40-50 miles an hour on the straightaway

What is the start and stop time of construction on a daily basis?

Will the curb be flat when you drive off the street into the driveway? Because right now there is a bump and sometimes the ball hitch on our vehicle hits the street.

Signature Melissa Ziegler Date 7/27/17

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name Paul ORSON Phone (612) 325 2899
Address 26 East Road E-Mail paulorson@comcast.net
City _____ State _____ Zip 55014

General Comments:

West side Driveway 3 layers of 4" Landscape
block

Signature Paul Orson Date 7/27/17

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



City of

CIRCLE PINES

**City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017**

**2018 Street and Utility Improvement Project
WSB Project No. 1507-72**

COMMENT CARD

Name Cindy Asland Phone (763) 786-7324
 Address 3 Park Dr. E. E-Mail Caas74@gmail.com
 City Circle Pines State Mn. Zip 55014

General Comments:

I am concerned about my driveways. It is flat (no hill) so I am concerned about flooding. Will the road be higher or lower, so the rain water will not flood my basement. I have a truck under garage.

also ~ I would like to keep my trees in front. It gives us shade in the front. I do not have central air.

Signature Cindy Asland Date 7-27-17

Return to the City of Circle Pines
 200 Civic Heights Circle
 Circle Pines, MN 55014



City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017

2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name DONALD BISILA Phone (763) 284-0094
Address 32 EAST ROAD E-Mail _____
City CIRCLE PINES State MN Zip 55014

General Comments:

IF TREES BY STREET NEED TO BE REMOVED
I WOULD LIKE SOME OF THE WOOD

ALSO OUR GAS LINE FROM THE HOUSE TO
THE STREET IS THE NEW PLASTIC PIPE (DOWNS 9002
APPROX)

Signature Donald Bisila Date 7/27/2017

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



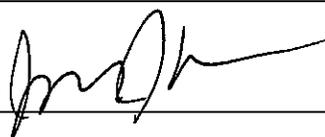
City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name Josh Hesse Phone (612) 423-2241
Address 1 East Rd E-Mail jhesse@cyberspace.org
City CIRCLE PINES State MN Zip 55014

General Comments:

Concern about Driveway/Patio "Prominence" (3 ft high)
That encroches on right-of-way for Center Rd.

Signature  Date 7-27-2017

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



City of
CIRCLE PINES

**City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017**

**2018 Street and Utility Improvement Project
WSB Project No. 1507-72**

COMMENT CARD

Name Vikki Mortenson Phone (763) 843-9339
Address 64 East Road E-Mail vgeribear@comcast.net
City _____ State MN Zip _____

General Comments:

Have disabled person in household - not able to walk long
distances - need access to driveway.

"free"

Signature _____ Date _____

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



City of
CIRCLE PINES

**City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017**

**2018 Street and Utility Improvement Project
WSB Project No. 1507-72**

COMMENT CARD

Name Daryl Sather Phone (763) 786-0595
Address 5 PARK DRIVE E-Mail _____
City Circle Pines State _____ Zip _____

General Comments:

Visually impaired + needs to go
to Doctor 2 or 3 times a week.

Signature _____ Date _____

Return to the City of Circle Pines
200 Civic Heights Circle
Circle Pines, MN 55014



City of

CIRCLE PINES

**City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017**

**2018 Street and Utility Improvement Project
WSB Project No. 1507-72**

COMMENT CARD

Name Mortimore's (Keith + Ann) Phone (763) 786-4867
Address 14 Crossway Dr. E-Mail _____
City Circle Pines State MN Zip 55014-1646

General Comments:

- ① We have special issues Re: my husband walking far.
- ② Utility pole at end of our driveway,
- ③ Have an AVON biz. need to have a UPS delivery every 2 wks + to be able to get out to make deliveries -
would like to know if I have to quit selling AVON or what.

Signature Ann Mortimous Date 7-27-17

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200 Civic Heights Circle
Circle Pines, MN 55014



City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name RON + CAROL CLIFT Phone (763) 784-5496
Address 5 PARK DRIVE EAST E-Mail (leave message)
City C.P. State MN Zip _____

General Comments:

~~XXXXXXXXXX~~

~~XXXXXXXXXX~~

HAVE LANDSCAPE WALL ON PART OF EASEMENT. NEED TO
HAVE SOMEONE COME OUT AND TELL US WHAT OUR
OPTIONS ARE.

Signature _____ Date _____

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City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name Jeremy + Kendra Gannucci Phone (763) 221-5928
Address G Park Dr E E-Mail _____
City Circle Pines State MN Zip 55014

General Comments:

Our street floods sometimes. Hopefully the new drains solve this. I would like to get a new driveway if we can afford it. Either way, I would like to make it wider. Our retaining walls and stairway are in the right-of-way. We aren't attached to any of them, so if we have to replace them, that's fine but we would probably move them. I would like to heat my driveway and the lip if I can afford it. I would like to get a different mailbox post when they get moved. It's shared with two of my neighbors. The biggest thing I can think of is that I want to dig out the dirt between us and #4 and I want to do it in the right order with the road project. Thanks!! P.S. We're in favor of changing the Park Dr E & W V to make crossing easier for pedestrians.

Signature Jeremy Gannucci Date 8/1/17

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Circle Pines, MN 55014



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COMMENT CARD

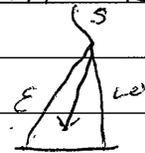
Name ALLEN AND Rudine Mueller Phone (763) 784-8910
Address 1 PARK DR. E. E-Mail bigalmueller@comcast.net
City CIRCLE PINE State MINNESOTA Zip 55014

General Comments:

STREET POOLING ON THE STREET BY OUR HOUSE ON
THE EAST SIDE,

WE HAVE A CAMPER THAT WE DRIVE UP THE LAWN
FROM THE SOUTH END. CAN THERE BE A FLATTER
CURB THERE SO WE CAN DRIVE OVER IT?

HOPE YOU UNDERSTAND MY DRAWING



WHEN IT COMES TO THE SOIL BEING WATERED AFTER
WARD - THE WEST SIDE IS REALLY BIG - THE EAST
SIDE IS BIG, BUT NOT A BAD. IT IS SAID TO WATER
IN THE MORNING BUT WE DON'T HAVE WATER PRESSURE
TO DO IT ALL, WE WOULD HAVE TO WATER ONE SIDE
A DAY. WE NEED SUGGESTIONS ON HOW WE CAN GET
EVERY PART WATERED IN TIME SO IT DOESN'T DIE.

Signature Allen & Rudine Mueller Date July 28, 2017

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200 Civic Heights Circle
Circle Pines, MN 55014



City of Circle Pines
Public Informational Meeting
Thursday, July 27, 2017
2018 Street and Utility Improvement Project
WSB Project No. 1507-72

COMMENT CARD

Name Joe + Karen DeBlicek Phone (63) 221-3497
Address 17 East Rd E-Mail jbtt1@msn.com
City Circle Pines State MN Zip 55014

General Comments:

We have problems with the storm drains in front of our house, 17 East Rd, along with 20 East Rd across the street during any heavy rain storm. The drains get clogged easily and the street fills with water and if we don't get out and clean ~~out~~ them out our neighbor at 19 East Rd's garage and basement fill with water. 19 East Rd has a tuck under garage so the driveway slants toward the house and the drain at the bottom is not enough for a heavy rain. We also have a problem in the winter with this area not draining in front of our houses so we end up with a large icy patch. Can we improve the overall drainage? Is there a way to help out 19 East so his garage and home don't constantly take on water?

Signature Joe DeBlicek Date 7-31-17

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200 Civic Heights Circle
Circle Pines, MN 55014

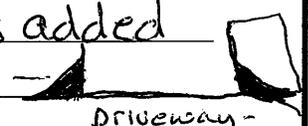


City of Circle Pines
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WSB Project No. 1507-72

COMMENT CARD

Name Robert & Rose Lind Phone (763) 786-9893
Address 2 Park Dr. E-Mail bobaroza2000@yahoo.com
City Circle Pines State MN Zip 55014

General Comments:

1. We have standing water in front of driveway. Would like side aprons added

Add  Driveway -  add
2. Landscaping:
 - A. Flower garden on left front corner of front yard. (Remove and Replace)
 - B. Right side of driveway - Landscaped block wall w/ white rock. (Remove & Replace)
 - C. Try to avoid removing lilacs and right side of driveway on street.
(Approx 122' long)
Please do not go back from ^(curb) street more than 5-6' if possible, to save lilacs.

over →

Signature Rosa Lind Date 7-29-17

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Circle Pines, MN 55014



City of Circle Pines
Public Informational Meeting
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COMMENT CARD

Name WILL ZIEGLER Phone (763) 274-9808
Address 25 EAST ROAD E-Mail ZIEGLERS@CIRCLEPINES@GMAIL.COM
City CIRCLE PINES State MN Zip 55014

General Comments:

IRRIGATION SYSTEM, 4 HEADS ALONG CURB-
WILL REMOVE HEADS + MARK LINES

MAIN CONCERN IS LARGE SPRUCE TREE IN YARD.
50% OF ROOT ZONE HAS BEEN UNDER CONCRETE OR
BLOCKED BY FOUNDATION FROM THE TIME THE
TREE WAS PLANTED (ACCORDING TO LONG TIME
RESIDENCE). MY CONCERN IS WITH THE WORK
ALONG THE BOULEVARD + THE SHALLOW ROOT
STRUCTURE THE TREE WILL NOT SURVIVE THE LOSS
OF 50% OF THE ROOTS IN THE 'GREEN SPACE'
I AM NOT OPPOSED TO REMOVING THE TREE + LOOK-
FORWARD TO DISCUSSING FURTHER. THANK YOU

Signature Will Ziegler Date 7/30/17

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