



FEASIBILITY REPORT

MISSISSIPPI DRIVE AREA STREET &
UTILITY PROJECT

CHAMPLIN | HENNEPIN COUNTY | MINNESOTA

November 13, 2023

Prepared for:

City of Champlin
11955 Champlin Drive
Champlin, MN 55316

CITY PROJECT NO. 22402
WSB PROJECT NO. 023250-000



November 13, 2023

Honorable Mayor and City Council
City of Champlin
11955 Champlin Drive
Champlin, MN 55316

Re: Feasibility Report
Mississippi Drive Area Street & Utility Project
City Project No. 22402
WSB Project No. 023250-000

Dear Honorable Mayor and City Council Members:

The enclosed feasibility report identifies the recommended improvements, estimated cost, and proposed funding for street and utility improvements of the residential streets of Mississippi Dr N, Idaho Ave N, Hampshire Ave N, Hampshire Cir N, Florida Ave N, Douglas Dr N, Edgewood Ct N, Porter Dr, Porter Cir N, Colorado Ave N, Adair Ave N, Shepard Ln N, Shepard Cir N, Riverview Ln N, Riverview Entry N, Riverview Cir N, Welcome Ln N, Welcome Cir N, Welcome Ave N, and Vera Cruz Ave N.

The project is proposed to be funded by special assessments to benefitting properties and City funding sources including the Capital Improvement Revolving Fund, Storm Sewer Fund, Sewer Revenue Fund, Water Revenue Fund, and Street Light Revenue Fund.

I am available at your convenience to discuss this report. If you have any questions, please do not hesitate to call me at 612.219.3500.

Sincerely,

WSB

Jennifer Edison, PE
Project Manager

Attachments

cc: Bret Heitkamp, City Administrator
Heather Nelson, PE, City Engineer

kkp

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Feasibility Report

Mississippi Drive Area Street & Utility Project

City Project No. 22402

City of Champlin, MN

WSB Project No. 023250-000

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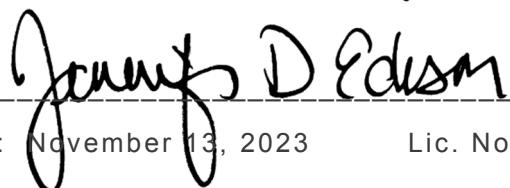
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- Neighborhood Meeting Summary

Certification Sheet

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.

Jennifer Edison, PE



Date: November 13, 2023 Lic. No. 51721

Quality Control Review Completed By:

Monica Heil, PE



Date: November 13, 2023 Lic. No. 47497

1. Executive Summary

The City's Capital Improvement Plan identifies the reconstruction of the residential streets of:

- Mississippi Dr N
- Idaho Ave N
- Hampshire Ave N
- Hampshire Cir N
- Florida Ave N
- Edgewood Ct N
- Douglas Dr N
- Porter Dr
- Porter Cir N
- Colorado Ave N
- Adair Ave N
- Shepard Ln N
- Shepard Cir N
- Riverview Ln N
- Riverview Entry N
- Riverview Cir N
- Welcome Ln N
- Welcome Cir N
- Welcome Ave N
- Vera Cruz Ave

These streets are experiencing deterioration with general pavement failure due to cracking and settlement. The residential streets in the project area were originally constructed between 1973 and 1987. Street seal coating was completed within the project area in 2010. The total length of the streets is approximately 3.6 miles.

Based on the pavement condition and a geotechnical evaluation, the proposed improvements include street reconstruction by full depth reclamation, including supplementing with additional aggregate base to obtain a sufficient aggregate depth to reconstruct the roadway. Curb and gutter will be replaced only where there are significant cracks or settlements, all other transverse cracks will be saw and sealed. The existing bituminous curb and gutter will be removed on Douglas Dr N. The existing street layout and widths will be maintained. Pedestrian ramps in the project area that are not currently compliant with ADA standards will be upgraded.

Storm sewer improvements are proposed to improve drainage conditions. Water quality treatment structures are proposed in key locations to provide some water quality treatment that balances right-of-way space limitations, cost, and maintenance.

Existing street lighting was reviewed against current City standards and is proposed to be replaced to the current City design standard and policy consisting of LED residential lighting.

Stop signs will be replaced with new round posts. Street signs will be installed on top of the stop signs. All other impacted signs will be salvaged and reinstalled. No new mailboxes are proposed with the project.

Sanitary sewer manholes were overall in good condition and will receive a frame and ring casting adjustment to match the proposed pavement surface. Chimney seals will be installed in all sanitary sewer manholes.

Watermain gate valve bolts will be replaced with stainless steel bolts that are more resistant to corrosion. City staff have reviewed all curb stops within the project area. The City standard is that any curb stop located within a driveway shall have Ford Meter A-1 lids to provide access and protect the curb stop. Any non-functioning or damaged curb stops will be repaired with the project. If the curb stop is in the yard area, the yard will be restored with the project. If the curb stop is within the driveway, the driveway will be sawcut around the curb stop and replaced in kind. A section of watermain located at the intersection of Welcome Cir N and Welcome Ln N and along Mississippi Dr N south of Riverview Entry N will be replaced due to previous watermain breaks in the area.

Figure 1 in **Appendix A** is a project location map for the street improvements.

The total estimated project cost for the project is **\$5,562,072** and includes a 10% contingency and 15% indirect costs for legal, engineering, administrative, and financing costs. The project is proposed to be funded with special assessments to benefitting property owners and City funding sources including the Capital Improvement Revolving Fund, Storm Sewer Fund, Sewer Revenue Fund, Water Revenue Fund, and Street Light Revenue Fund. The project is proposed to be completed in 2024.

The proposed improvements are feasible, necessary, and cost effective from an engineering standpoint and should be constructed as proposed herein.

2. Introduction

2.1 Authorization

The City's 2024 Capital Improvement Plan identifies the rehabilitation of the areas of Mississippi Dr N, Idaho Ave N, Hampshire Ave N, Hampshire Cir N, Florida Ave N, Edgewood Ct N, Douglas Dr N, Porter Dr, Porter Cir N, Colorado Ave N, Adair Ave N, Shepard Ln N, Shepard Cir N, Riverview Ln N, Riverview Entry N, Riverview Cir N, Welcome Ln N, Welcome Cir N, Welcome Ave N, and Vera Cruz Ave N.

The City Council authorized preparation of a feasibility study on June 12, 2023, to review the condition of bituminous streets, drainage, sanitary sewer, watermain, and street lighting and verify compliance with City Standards. This project is designated as Improvement Project 22402. A project location map is shown in **Figure 1** in **Appendix A**.

2.2 Scope

The scope for this report includes reviewing streets within the project limits for pavement condition, public utility needs, and ADA compliance.

The scope for this project also includes reviewing the capacity of the existing storm sewer throughout the area and identifying necessary drainage improvements and opportunities for water quality improvement.

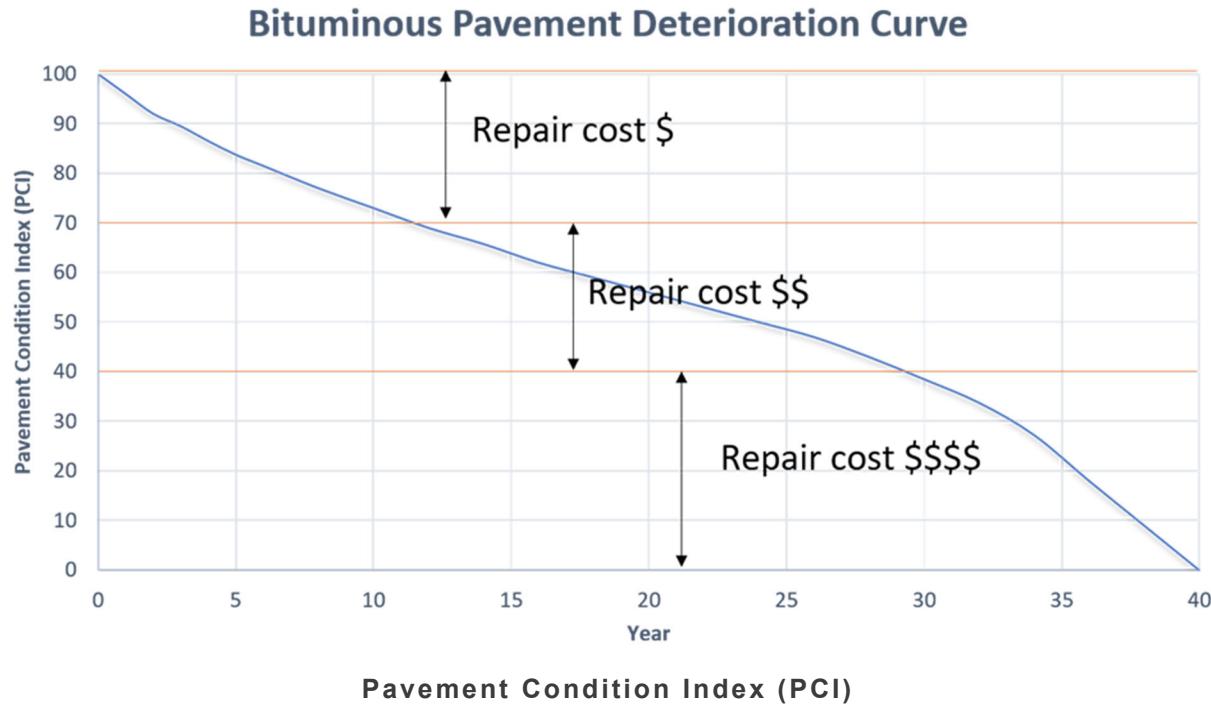
2.3 Pavement Management

The City of Champlin contracts with a private independent pavement management company, Goodpointe Technology Inc., to rate the condition of the City's streets. These ratings are completed on a three-year cycle with one third (1/3) of the City rated each year. The pavement rating, known as Pavement Condition Index (PCI), ranks pavements on a scale according to the amount of pavement deterioration that is visually evident. This information is one factor that is used in developing the City's Capital Improvement Plan and prioritization of projects.

2.3.1 Pavement Life Cycle

All pavements will deteriorate over time. Typically, the pavement deterioration accelerates as it reaches the end of its lifespan. At first very few distresses are present, and the pavements stay in relatively good condition. As the pavement ages, more distresses develop, and the pavement deterioration is compounded. For instance, once a crack occurs, it is then easier for water to infiltrate the asphalt layer, penetrating the aggregate base and weakening the subgrade. This cycle is exacerbated by the freeze and thaw cycles. Some examples of typical pavement distresses include transverse and longitudinal cracking, block cracking, and alligator cracking.

The existing bituminous pavement condition for the streets in this study have been observed, deteriorations identified, and each street has been assigned a PCI value. The calculation of the PCI value for an individual street takes into account the area of distresses encountered as well as the severity of each distress. An evaluation has been completed on the local streets identified to be reviewed, and the calculations of the PCI are based on the data and methods as described in the "Pavement Maintenance Management System" prepared by the U.S. Army Corps of Engineers.



3. Existing Conditions

3.1 Surface

Streets in the project area are residential streets and were constructed between 1973 and 1987.

Improvements since initial construction have been both nonstructural and structural with the most recent improvement being a seal coat of the entire project area in 2010.

The streets were most recently rated in 2020 and 2021 with the PCI values shown in **Table 1** below.

Table 1

| Existing PCI Values | |
|------------------------------------|-------------------|
| Street | PCI (2020 & 2021) |
| Mississippi Dr N (West Section) | 48-67 |
| Idaho Ave N | 46 |
| Hampshire Ave N | 31-53 |
| Hampshire Cir N | 69 |
| Florida Ave | 56 |
| Edgewood Ct N | 61-76 |
| Porter Dr | 50-74 |
| Porter Cir N | 78 |
| Colorado Ave N | 95 |
| Adair Ave N | 81 |
| Mississippi Dr N (Central Section) | 61-89 |
| Shepard Ln N | 76 |
| Shepard Cir N | 88 |
| Riverview Ln N | 86 |
| Riverview Entry N | 80 |
| Riverview Cir N | 88 |
| Welcome Ln N | 83-86 |
| Welcome Cir N | 71 |
| Welcome Ave N | 78-79 |
| Vera Cruz Ave N | 76 |
| Mississippi Dr N (East Section) | 77-94 |

The existing bituminous surface conditions in general exhibit surface deterioration with significant cracking and settlement areas. It is becoming brittle due to age and general wear and tear and is showing signs of accelerated deterioration. Pavement corings were obtained to determine the most cost-effective pavement rehabilitation improvement. Examples of the existing bituminous pavement are shown on **Figure 5** in **Appendix A**.

A pavement Coring Report was completed by WSB in August of 2023. Bituminous roadway cores were taken throughout the project. Pavement thicknesses range from 1.75 inches to 4.50 inches with 2 inches to 11 inches of aggregate base. A large number of cores indicated raveling in the base course layer, which indicates that section of pavement contained loose gravel and was beginning to fall apart. The Coring Report can be found in **Appendix D**.

A Geotechnical Report was completed by American Engineering Testing (AET). Pavement thicknesses range from 2.5 inches to 3 inches with 4 to 6 inches of aggregate base. The underlaying soils are primarily sandy fill overlying granular soils. The Geotechnical Report can be found in **Appendix D**.

3.1.1 Roadway Alignment

The majority of the residential streets have typical vertical and horizontal alignments for a residential neighborhood.

Adair Ave N intersects West River Road at a skewed angle. Due to the skewed geometry of the intersection, there are safety concerns with access to and from West River Rd from Adair Ave N. City staff have expressed interest in realigning this intersection to eliminate the skew. The realignment will require additional right-of-way.

3.1.2 Right-of-Way

The existing rights-of-way widths for the project are 50-65 feet.

3.1.3 Street Section

Edgewood Ct N, Porter Cir N, and Porter Dr from Edgewood Ct N to 12018 Porter Dr in the designated project area have an existing street width of 31-32 feet and consist of an urban section with surmountable curb and gutter. Douglas Dr N in the designated project area has an existing street width of 25 feet and consists of an urban section with bituminous curb and gutter. All other roads in the designated project area have an existing street width of 31-32 feet and consist of an urban section with B618 curb and gutter.

3.2 Drainage

Storm sewers currently exist in the project area. Drainage from the project area is conveyed by storm drains and storm sewer pipes to the Mississippi River via eight outfalls. There is one small swale in the project area, in West River Park, that allows for some infiltration and water quality treatment of stormwater in the project area. The remainder of the drainage flows untreated to the Mississippi River.

The existing storm sewer system was analyzed for both pipe capacity and spread, which is the distance water encroaches into the roadway during a storm event. The criteria used for evaluation are as follows:

- Spread: Design for an 8-foot dry lane in the middle of the road, allowing one car to pass, during the 3-year storm event.
- Pipe Capacity: Design capacity for the 10-year storm event.

Neither of these criteria are required under current regulatory mechanisms; however, it gives the City a baseline from which to make decisions about stormwater improvements. Based on these criteria, additional catch basins and storm sewer pipe replacement would be proposed in select portions of the project area as discussed in Section 4.2. No known drainage issues have been identified within the project area; however, there are long segments of streets containing minimal catch basin inlets.

Storm sewer inspections revealed that two of the outfalls are cracked and that multiple catch basins are deteriorating.

3.3 Watermain

Watermain exists throughout the project area consisting of six-inch and sixteen-inch ductile iron pipe constructed between 1973 and 1987. According to the City's utility department, there have not been significant maintenance needs for the existing watermain due to limited watermain breaks or operational issues except for a break at the intersection of Welcome Cir N and Welcome Ln N and another on Mississippi Dr N south of Riverview Entry N. Maintenance on gate valves in this area has shown that gate valves are in fair to good condition throughout the project area.

3.4 Sanitary Sewer

Sanitary sewer throughout the project area was constructed between 1973 and 1987. The existing sewer pipe is 8" PVC. Along Mississippi Dr N, Welcome Ln N, and Welcome Ave N there is a 4" force main, with a lift station along Mississippi Dr N south of Riverview Entry N. Sanitary sewer manholes are in fair to good condition throughout the project area with minimal ring and frame damage.

3.5 Street Lighting

Streetlights exist within the project area. Lighting is located at street intersections and mid-block. The majority of the streetlights are owned by Xcel Energy, with eight city-owned lights located on Edgewood Ct N, Porter Circ N, Porter Dr, and in West River Park. There is also one at the end of Mississippi Dr N near the intersection of Welcome Ave N.

3.6 Sidewalks and Trails

There are no existing sidewalks within this project site.

There are two off-street bituminous trails within the project limits:

- An 8-ft bituminous trail connects Edgewood Ct N and two points along Porter Dr to West River Park. The pedestrian ramps on this trail segment are ADA compliant.
- An 8-ft bituminous trail connects the northwestern end of Mississippi Dr N to Shores Park. Two pedestrian ramps on this trail segment are currently noncompliant and will require new ramps.

3.6.1 Three Rivers Park District West Mississippi Regional Trail

The Three Rivers Park District plans to extend the West Mississippi Regional Trail along the southern side of W River Road adjacent to the project area. The construction of this trail is contingent on collaboration between the City of Champlin, Hennepin County, and Three Rivers Park District and is not anticipated to impact the design of this project.

3.7 Criteria for Investigating

The streets identified to be reviewed for improvements will be reviewed against current City standards and policy where applicable.

3.7.1 Streets

Bituminous seal coating is a street maintenance effort that is completed on streets with a PCI typically ranging from 60 to 100. Recently, several cities in the metro have experienced pavement issues with seal coats and are currently reviewing the practice to determine the effects of seal coating on pavement. Until more definitive findings are available, seal coating as a maintenance practice has been placed on hold.

For this project, mill and overlay is a rehabilitation effort that is completed on streets with a PCI ranging from 60 to 90. Mill and overlays are not practical on streets where the existing bituminous section is less than three and a half inches because a standard two-inch mill and overlay would remove all of the existing pavement section. This would not leave enough remaining pavement to provide a base for the overlay.

Reclamation or reconstruction are street reconstruction efforts that are completed on streets with a PCI ranging from 0 to 60.

PCI ratings are not the only factors in determining a street rehabilitation method. The geotechnical analysis provides a more detailed measure of the pavement layer condition, bonding and structural integrity and the resulting improvement method. Geotechnical analysis provides a recommendation for pavement section and soil corrections needed on the project based on MnDOT FlexPave granular equivalency.

3.7.2 Drainage

West Mississippi Watershed Management Commission Standards and MS4 permit standards will be utilized for storm water management and water quality design.

3.7.3 Watermain

Ten State Standards will be utilized for watermain design.

3.7.4 Sanitary Sewer

Ten State Standards will be utilized for sanitary sewer design.

3.7.5 Street Lighting

Current City policy and practice for street light improvements utilize a decorative post with a lantern style luminaire. The standard streetlight for this project's residential area utilizes the St. Paul streetlight spaced 250-350 feet according to City street lighting policy. The standard streetlight for major street intersections utilizes a 30-foot pole and 200-watt luminaire. Luminaires are light-emitting diodes (LEDs).

3.7.6 Sidewalks and Trails

In accordance with the Americans with Disabilities Act (ADA), all pedestrian curb ramps within the project area must be reconstructed to current ADA standards.

4. Proposed Improvements

4.1 Streets

Based on the pavement analysis identified in the Geotechnical Report and the Pavement Coring Forensic Report, the project area is proposed to undergo a reconstruction by full depth reclamation. Damaged existing curb will be removed and replaced in-kind with new curb and gutter. All functioning curb with transverse cracking will be saw and sealed to protect the curb from further damage. Bituminous curb and gutter shall be removed. The existing street width will be maintained.

A preliminary layout for all street improvements is shown on **Figure 2** in **Appendix A**.

4.1.1 Roadway Alignment

The proposed improvements will maintain the existing vertical and horizontal alignments of the majority of the streets within the project area.

The intersection of Adair Ave N and West River Rd is proposed to be realigned from a skewed intersection to a T-style intersection to decrease safety concerns and provide better sightlines and access to and from West River Rd from Adair Ave N. In order to minimize right-of-way and utility impacts, the alignment of Adair Ave N is proposed to be made of 175' horizontal curves. While this does not meet MnDOT and AASHTO standards, due to slow speeds as vehicles enter and exit the intersection, it was determined that the proposed curves would be acceptable. Coordination with Hennepin County will be needed to ensure proper approvals. The proposed realignment is shown on **Figure 3** in **Appendix A**.

4.1.2 Right-of-Way

The majority of proposed improvements are located within the platted right-of-way. No permanent easements will be required.

The realignment of Adair Ave N will require right-of-way. Discussions with impacted property owners are proposed to happen during final design.

4.1.3 Street Section

The proposed street typical section consists of two lifts of bituminous pavement totaling four and one-half (4 ½) inches constructed on six (6) inches of aggregate base. The depth of existing aggregate base does not meet the current standard street section for the City. Therefore, following the full depth reclamation process, the reclaimed aggregate material shall be removed and the underlying material excavated to a depth sufficient to install a full pavement section including six (6) inches of aggregate base gravel and four and one-half (4.5) inches of bituminous. This section satisfies both the recommendations of the geotechnical report and the City's pavement section standards. Curb will be evaluated, and spot curb replacement is proposed to repair cracked or settled sections of curb as needed. The existing street layout and widths will be maintained.

The proposed street typical sections are shown on **Figure 4** in **Appendix A**.

Stop signs will be replaced with new round posts. Street signs will be installed on top of the stop signs. All other impacted signs will be salvaged and reinstalled.

Yard areas disturbed will be replaced with sod or hydroseed, depending on the area of the disturbance.

Only existing mailboxes impacted by spot curb or utility work will be salvaged and reinstalled. Temporary mailboxes are not anticipated for the project.

4.2 Drainage

Storm sewer improvements are proposed for the residential streets within the project area. Improvements include replacing or constructing storm sewer pipe and structures to improve drainage conditions within the project area, particularly at low points. Flanking inlet structures will be added near low points where the current inlet capacity is insufficient. All circular castings will be replaced with square castings. Any new structures will have the City's standard rectangular castings.

To meet the criteria listed in Section 3.2, the following approximate quantities of storm sewer infrastructure would be required:

- Spread: 25 catch basins and an associated 170 linear feet of storm sewer pipe
- Pipe Capacity: 3600 linear feet of storm sewer pipe and an associated 20 catch basins
- Valley gutters: Additionally, to remove the three existing valley gutters throughout the project area, approximately 905 linear feet of storm sewer pipe and 8 storm sewer structures would be required.

Through conversations with the City, priority areas were identified for the installation of additional catch basins to decrease spread and improve inlet capacity. Because there are no known drainage issues in the project area related to pipe capacity, the vast majority of existing pipes will remain in place. Those locations with existing valley gutters will receive new valley gutters as a part of the improvements.

Storm structure inspections identified seventeen structures and two flared ends in need of repair or replacement. Based on the condition and other proposed improvements, two structures are proposed for repair and the remainder (including the flared ends) for replacement.

Under the MS4 rules, linear projects reconstruction more than one acre of impervious are required to provide water quality treatment for a water volume equal to one-half inch over all new and fully reconstructed impervious surface areas. The project area was reviewed for potential new BMP locations. Right-of-way to construct new BMPs within the project area is limited and many of the adjacent properties are privately owned. The potential BMP location considered was the expansion of the

existing swale in West River Park. Only a small portion of the project's impervious surface (1.4 acres or 9.5%) drains to the swale; however expansion will be maximized to the extent practical in final design.

Although additional volume reduction is very limited in the project area, water quality treatment structures are proposed in key locations to provide some water quality treatment that balances limited right-of-way, cost, and maintenance.

4.3 Sanitary Sewer and Watermain

The existing sanitary sewer manhole structures are in good condition and will receive a frame and ring casting adjustment to match the proposed pavement surface. Chimney seals will be installed in all sanitary sewer manholes.

Watermain gate valves will be adjusted to match the proposed pavement surface. Gate valve bolts will be replaced with stainless steel bolts to prevent corrosion. City staff have reviewed all curb stops within the project area. City standard is that any curb stop located within a driveway shall have Ford Meter A-1 lids to provide access and protect the curb stop. Any non-functioning or damaged curb stops will be repaired with the project. If the curb stop is in the yard area, the yard will be restored with the project. If the curb stop is within the driveway, the driveway will be sawcut around the curb stop and replaced in kind.

Corroded gate valve bolts and non-functioning curb stops are two critical points where watermain leaks and failures could occur. By repairing these with the project, it likely will extend the need for full replacement of the watermain system as watermain pipe typically lasts 70-100 years. The existing watermain is currently 36-50 years old with two breaks in the project area at the intersection of Welcome Cir N and Welcome Ln N and another on Mississippi Dr N south of Riverview Entry N. The sections with breaks will be replaced as part of this work.

No other utility improvements on the sanitary sewer or watermain systems have been identified to be completed with the project.

4.4 Street Lighting

Residential streetlights are proposed to be the St Paul streetlight spaced according to City policy. The lights will be placed at intersections, spaced 250-350 feet typically on alternating sides of the street, according to City policy. The lights in West River Park will also be replaced. The proposed St Paul streetlight is shown on **Figure 6** in **Appendix A**. Intersection streetlights at intersections on W River Rd will consist of a square pole that is 30 feet tall with a shoe box luminaire. The proposed pole and luminaire are shown on **Figure 7** in **Appendix A**.

Street light conductors will be placed in a conduit and buried behind the curb line.

4.5 Sidewalks and Trails

All non-ADA-compliant pedestrian curb ramps within the project area are proposed to be improved to meet the current ADA standards.

4.6 Permits/Approvals

The anticipated permits and approvals required from the respective regulatory agencies are listed below:

| | |
|-------------------------------------|-----------------------|
| • MN Pollution Control Agency NPDES | Erosion/Stormwater |
| • Hennepin County | Right-of-Way |
| • DNR | Work in Public Waters |
| • USACE | Section 404 |

5. Financing

5.1 Opinion of Probable Cost

The total project cost is estimated at **\$5,562,072** and includes all proposed improvements as well as a 10% contingency factor and 15% for indirect project costs, which includes engineering, legal, administrative, and financing costs. A detailed Opinion of Probable Cost can be found in **Appendix B**.

Costs for potential right-of-way acquisition for the Adair Ave realignment improvements are not included in the Opinion of Probable Cost and will be determined during final design.

The Opinion of Probable Cost is summarized as follows:

| Mississippi Drive Area Street & Utility Project | |
|--|-----------------------|
| Opinion of Probable Cost | |
| | Estimated Cost |
| Surface Improvements | \$3,409,725 |
| Drainage Improvements | \$441,896 |
| Sanitary Sewer Improvements | \$132,460 |
| Watermain Improvements | \$359,197 |
| Electrical Improvements | \$892,692 |
| Adair Ave Realignment Improvements | \$326,102 |
| TOTAL | \$5,562,072 |

5.2 Funding

The proposed funding for the improvements consists of a combination City funds and special assessments to benefitting properties. Assessments will be levied to the benefitting properties as outlined in Minnesota Statute 429 and the City's assessment policy. The residential properties are proposed to be assessed according to the 2024 Typical Lot Fee Schedule or up to 50% of the project cost for the improvement constructed. Each lot will be assessed only for the applicable improvements.

Corner lots are proposed to be assessed based on the shorter side frontage of the lot fronting the street to be improved per City practice.

Commercial properties are proposed to be assessed 100% of the actual project cost on a front foot basis as defined in the assessment policy.

The proposed improvements consist of the following assessment rates:

| <u>Lot Fee Category</u> | <u>Lot Fee (per unit)</u> | <u>No. of Lots</u> |
|--|----------------------------------|---------------------------|
| Reclaim and Pave Street (Residential) | \$4,560.00 | 302 |
| Streetlights | \$1,120.00 | 302 |

| <u>Lot Fee Category</u> | <u>Lot Fee (per front foot)</u> | <u>Total Frontage</u> |
|---|-------------------------------------|---------------------------|
| Reclaim and Pave Street (Commercial) | \$150.00 | 152 |

The assessment term is proposed to be 5 years with an interest rate that will be set at the assessment hearing using the prime rate in effect on August 1, 2024, plus one percent. There are 303 parcels proposed to be assessed within the project area. A preliminary assessment roll identifying proposed assessments is located in **Appendix C**.

Other funding sources for the project include the Capital Improvement Revolving Fund, Storm Sewer Fund, Sewer Revenue Fund, Water Revenue Fund, and Street Light Revenue Fund.

The project funding is summarized as follows:

| Mississippi Drive Street & Utility Project Project Funding Summary | |
|---|-------------------------|
| Funding Source | Proposed Funding |
| Special Assessments | \$1,738,160 |
| Capital Improvement Fund | \$2,335,907 |
| City Storm Revenue Fund | \$441,896 |
| City Sewer Revenue Fund | \$132,460 |
| City Water Revenue Fund | \$359,197 |
| City Street Lighting Fund | \$554,452 |
| TOTAL | \$5,562,072 |

6. Legal Description

The legal description for the Mississippi Drive Street & Utility Project is:

All parcels adjacent to Mississippi Dr N, Idaho Ave N, Hampshire Ave N, Hampshire Cir N, Florida Ave N, Edgewood Ct N, Douglas Dr N, Porter Dr, Porter Cir N, Colorado Ave N, Adair Ave N, Shepard Ln N, Shepard Cir N, Riverview Ln N, Riverview Entry N, Riverview Cir N, Welcome Ln N, Welcome Cir N, Welcome Ave N, and Vera Cruz Ave N, City of Champlin, Hennepin County, Minnesota.

7. Neighborhood Meeting

A Neighborhood Open House for the Mississippi Drive Area Street & Utility Project was held on October 25, 2023. Preliminary information was presented to attendees regarding the proposed improvements, costs, funding, schedule, and impacts associated with the project. Residents were encouraged to email the City's general email with any comments on the project. A summary of correspondence received, and questions and answers provided at the Open House, is included in **Appendix E**.



8. Project Schedule

The proposed schedule for this improvement is as follows:

| Task Number | Task Description | Completion Date |
|-------------|---|------------------------------|
| 1 | City Approves Consultant Contract | June 12, 2023 |
| 2 | City Authorizes Feasibility Report | June 12, 2023 |
| 3 | Neighborhood Information Meeting | October 25, 2023 |
| 4 | City Receives Feasibility Report | November 13, 2023 |
| 5 | Public Hearing | November 13, 2023 |
| 6 | Final Design | November 2023 – January 2024 |
| 7 | Advertise for Bids | February 2024 |
| 8 | Award Contract | March 2024 |
| 9 | Neighborhood Meeting Prior to Start of Construction | May/June 2024 |
| 10 | Construction | June 2024 – September 2024 |
| 11 | Substantial Completion | September 2024 |
| 12 | Assessment Hearing | October 2024 |
| 13 | Final Completion | June 2025 |
| 14 | First Payment Due with 2025 Taxes | May 2025 |

9. Conclusions and Recommendations

1. The identified streets have experienced surface deterioration with significant cracking and settlement areas.
2. The City's Pavement Management Program includes pavement ratings that identify street reconstruction as the best rehabilitative measure for the project area. Pavement analysis by soil borings identified pavement section deterioration. Based on the above factors, the recommended pavement rehabilitation method for the project area is a pavement reconstruction by full depth reclamation with spot curb replacement.
3. It is the recommendation of WSB and City staff that the City Council accepts this feasibility report and call for a public hearing on the proposed improvements consistent with Minnesota State Statute No. 429 governing public improvements. Based on the information contained within this report, the proposed improvements as described can be considered to be necessary, cost-effective, and feasible from an engineering standpoint.

Appendix A

Figure 1 – Project Location Map

Figure 2 – Preliminary Layout

Figure 3 – Adair Realignment Exhibit

Figure 4 – Typical Sections

Figure 5 – Existing Pavement Examples

Figure 6 – Residential Street Light

Figure 7 – Major Intersection Street Light



LEGEND

 PROJECT LOCATION



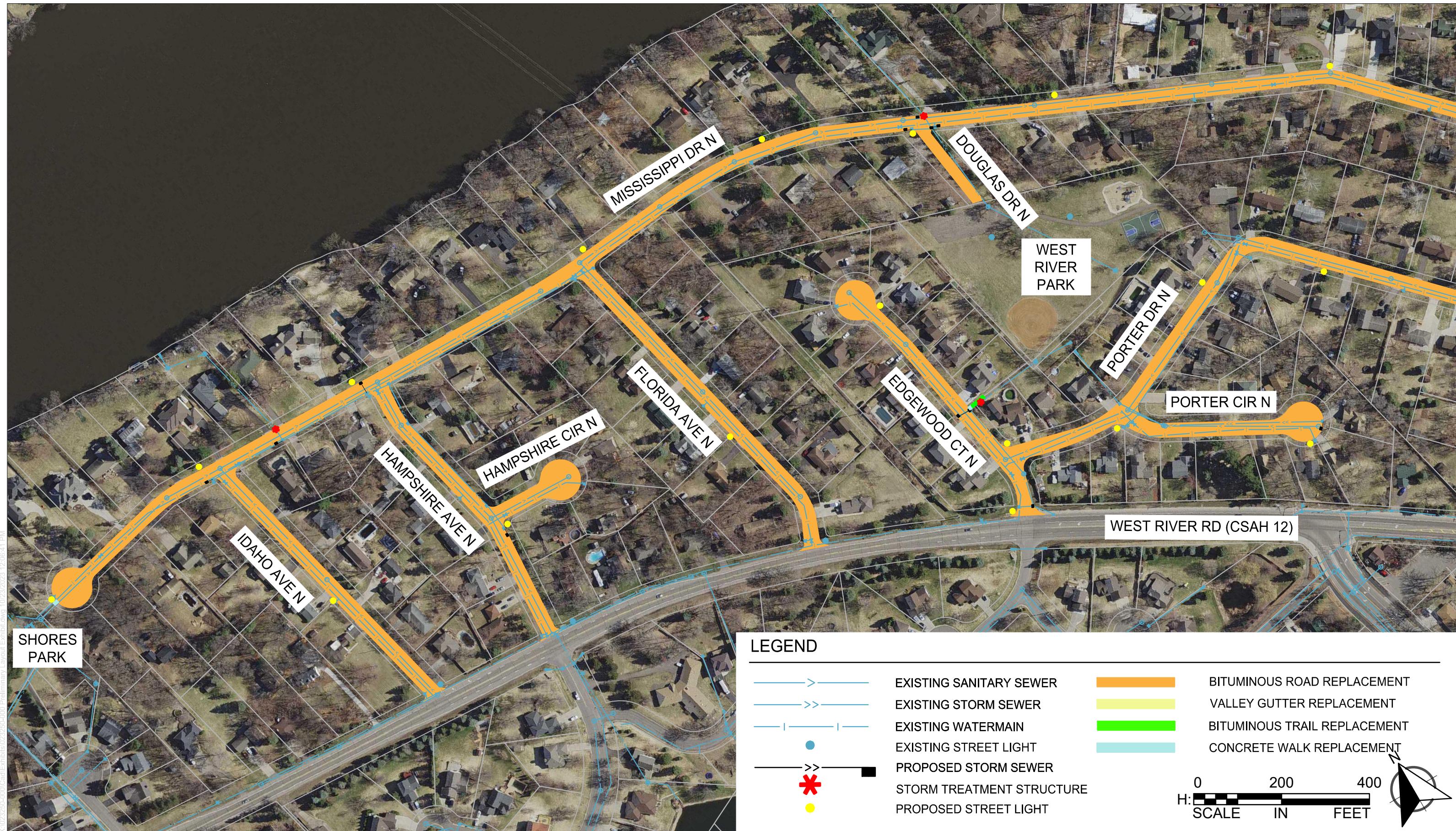
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SCALE IN



WSB PROJECT NO.:
023250-000

MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
FIGURE 1 - PROJECT LOCATION MAP
CITY OF CHAMPLIN, MN





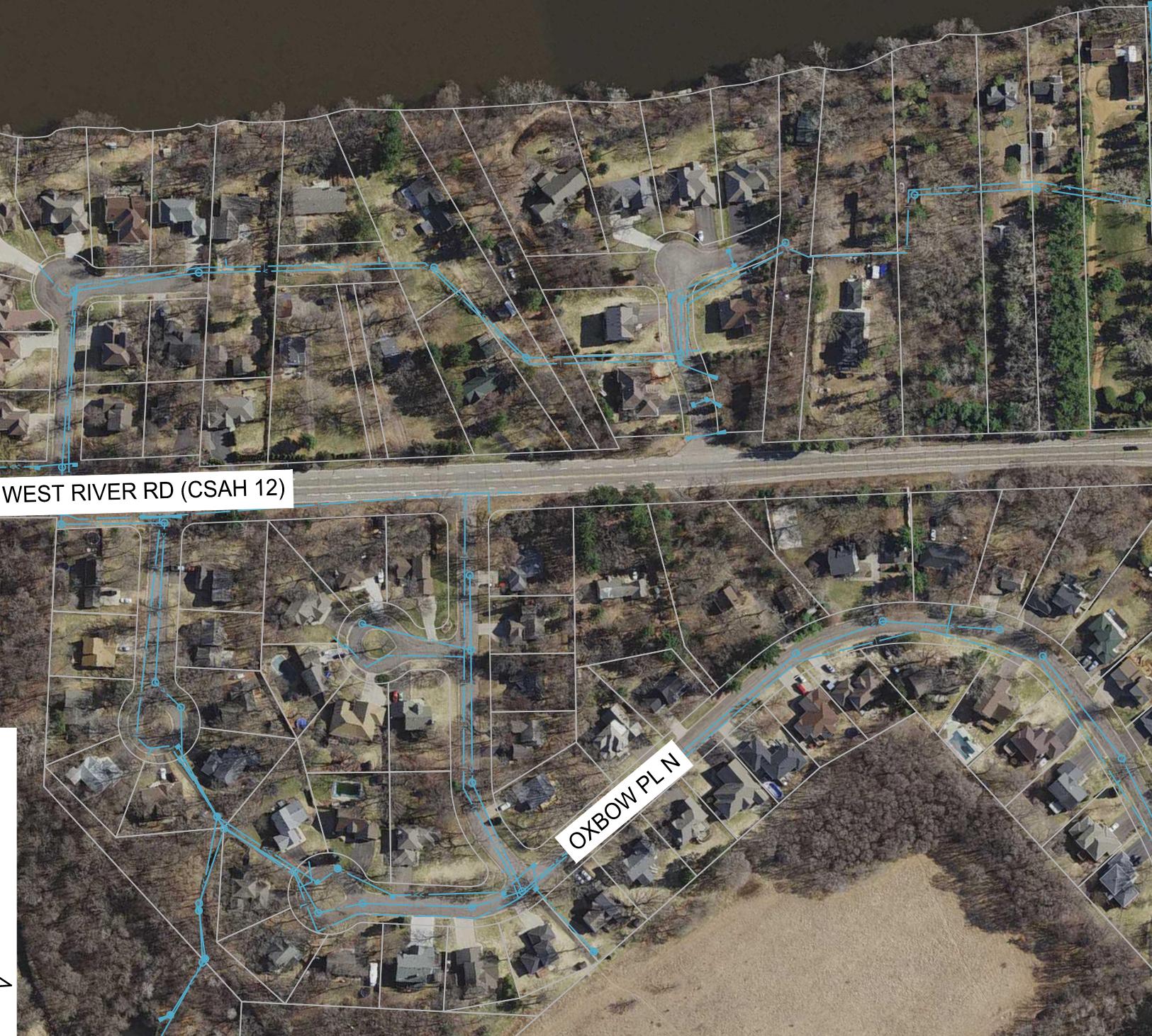




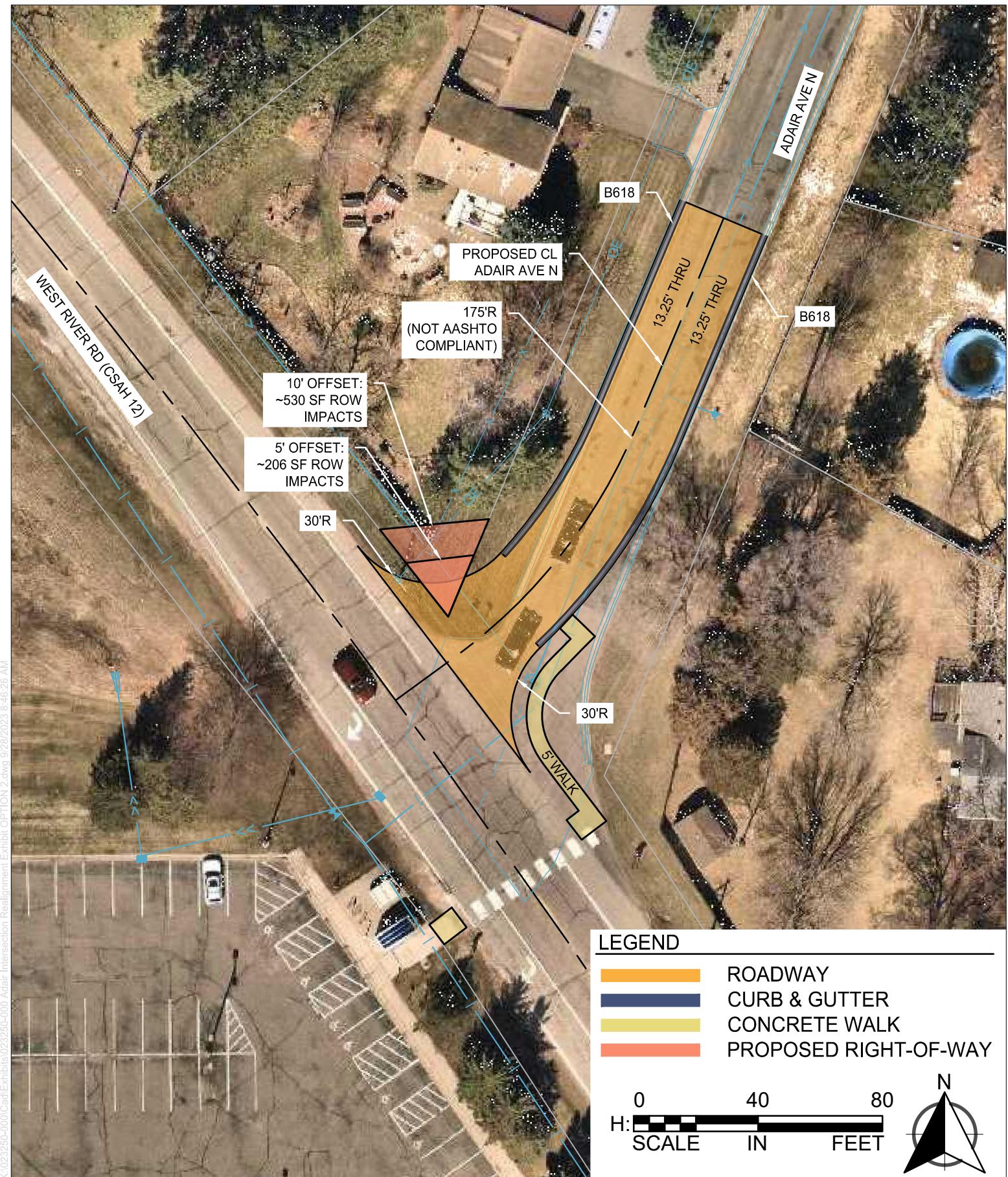
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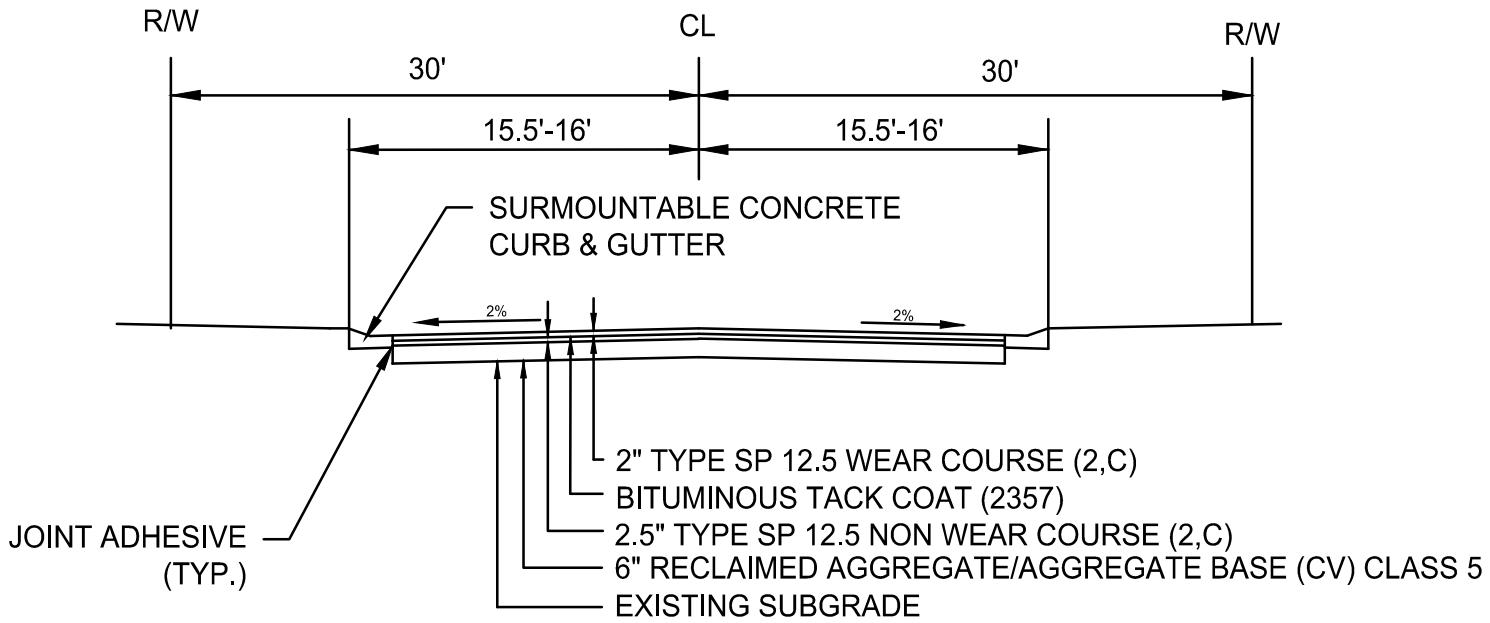
| | | | |
|-------|---------------------------|-------|------------------------------|
| —>— | EXISTING SANITARY SEWER | —>— | BITUMINOUS ROAD REPLACEMENT |
| —>>— | EXISTING STORM SEWER | —>— | VALLEY GUTTER REPLACEMENT |
| — — — | EXISTING WATERMAIN | — — — | BITUMINOUS TRAIL REPLACEMENT |
| ● | EXISTING STREET LIGHT | — — — | CONCRETE WALK REPLACEMENT |
| —>>— | PROPOSED STORM SEWER | | |
| | STORM TREATMENT STRUCTURE | | |
| ● | PROPOSED STREET LIGHT | | |

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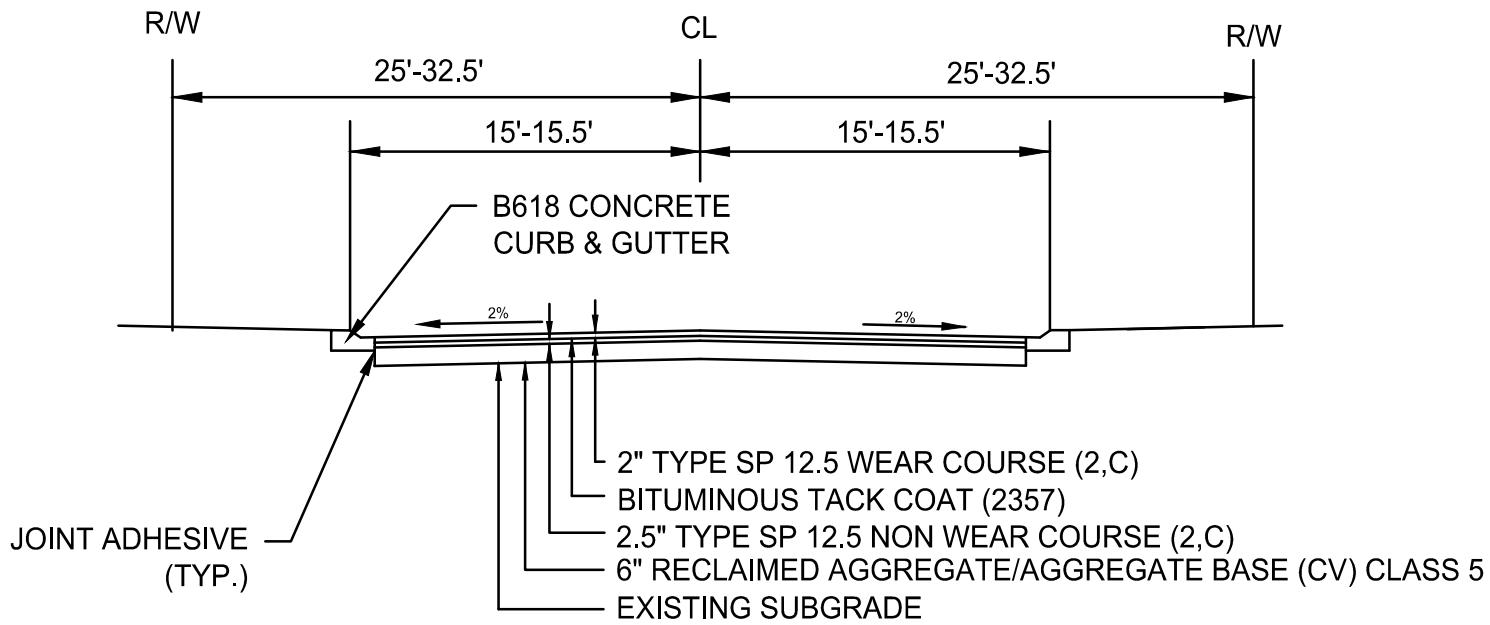


MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
FIGURE 2 - PRELIMINARY LAYOUT
CITY OF CHAMPLIN, MN

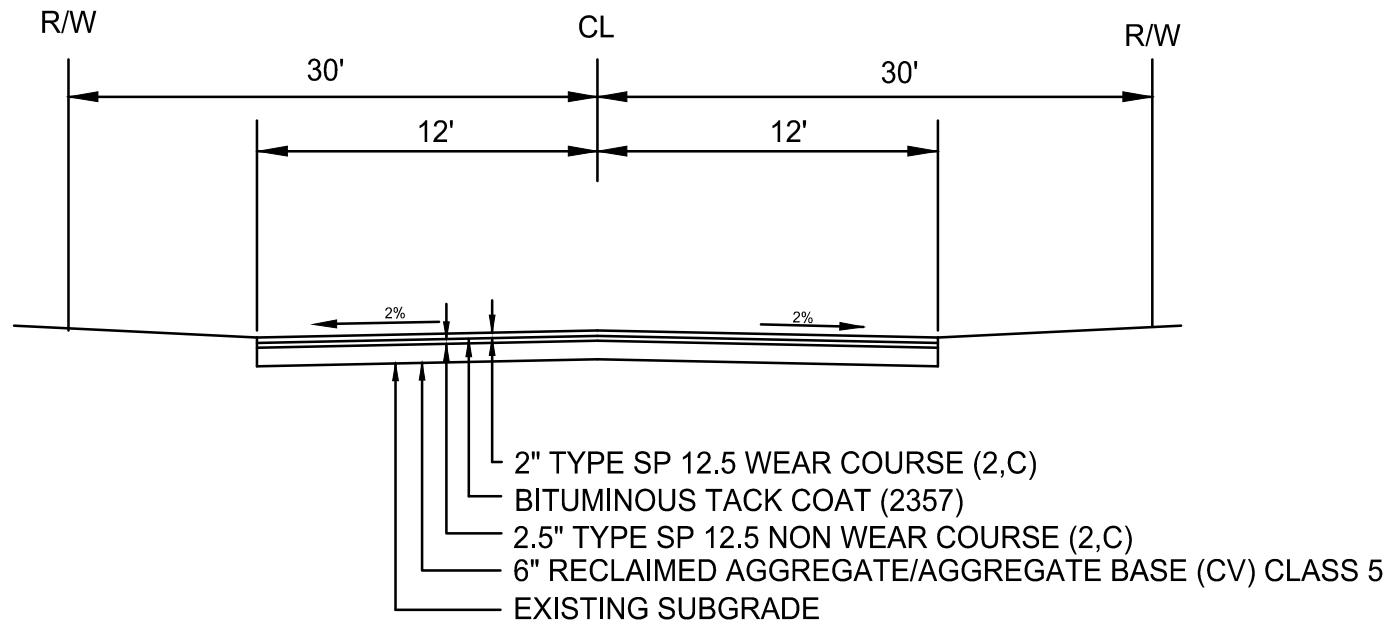




FULL DEPTH RECLAMATION WITH SPOT CURB REPLACEMENT
PORTER CIR N, EDGEWOOD CT N, AND PORTER DR FROM EDGEWOOD CT N TO 12018
PORTER DR



FULL DEPTH RECLAMATION WITH SPOT CURB REPLACEMENT
VERA CRUZ AVE N, WELCOME AVE N, WELCOME LN N, WELCOME CIR N, RIVERVIEW CIR,
RIVERVIEW ENTRY N, RIVERVIEW LN N, SHEPARD CIR N, SHEPARD LN N, ADAIR AVE N,
PORTER DR FROM 12018 PORTER DR TO ADAIR AVE N, COLORADO AVE N, FLORIDA AVE N,
HAMPSHIRE CIR N, HAMPSHIRE AVE, IDAHO AVE N, AND MISSISSIPPI DR N



FULL DEPTH RECLAMATION WITH BITUMINOUS CURB REMOVAL
DOUGLAS DR N



MISSISSIPPI DR N



FLORIDA AVE N



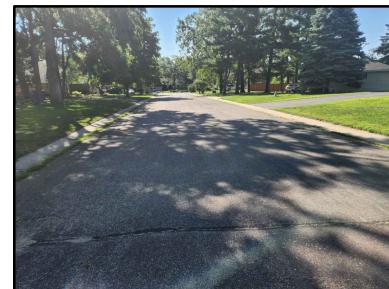
COLORADO AVE N



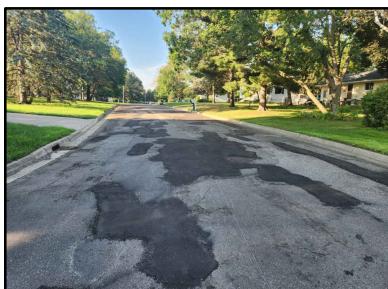
IDAHO AVE N



DOUGLAS DR N



PORTER CIR N



HAMPSHIRE AVE N



ADAIR AVE N



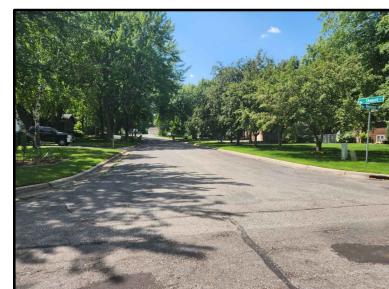
SHEPARD LN N



HAMPSHIRE CIR N



PORTER DR N



SHEPARD CIR N



RIVERVIEW LN N



WELCOME CIR N



RIVERVIEW ENTRY N



WELCOME AVE N



RIVERVIEW CIR N



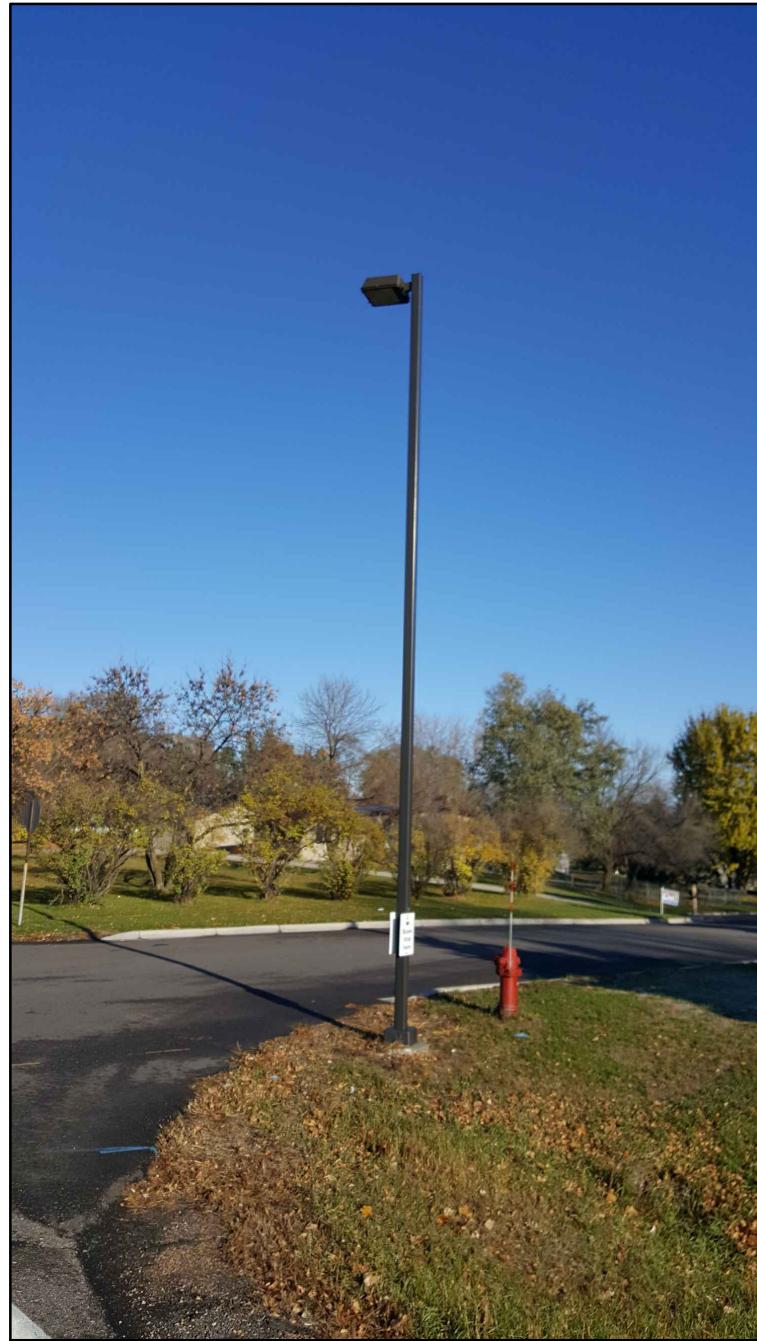
VERA CRUZ AVE N



WELCOME LN N



MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
FIGURE 6 - RESIDENTIAL STREET LIGHT
CITY OF CHAMPLIN, MN





Appendix B

Opinion of Probable Cost

OPINION OF PROBABLE COST

WSB Project: MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
 Project Location: CITY OF CHAMPLIN, MN
 City Project No.: 22402
 WSB Project No: 023250-000

Design By: HRD
 Checked By: JDE
 Date: 10/23/2023

| Item No. | MnDOT Specification No. | Description | Unit | Estimated Total Quantity | Estimated Unit Price | Estimated Total Cost |
|--------------------------------|-------------------------|--|------|--------------------------|----------------------|--|
| A. SURFACE IMPROVEMENTS | | | | | | |
| 1 | 2021.501 | MOBILIZATION | LS | 1 | \$ 196,000.00 | \$ 196,000.00 |
| 2 | 2104.502 | REMOVE SIGN | EACH | 14 | \$ 45.00 | \$ 630.00 |
| 3 | 2104.502 | SALVAGE SIGN | EACH | 10 | \$ 45.00 | \$ 450.00 |
| 4 | 2104.502 | SALVAGE MAIL BOX SUPPORT | EACH | 26 | \$ 110.00 | \$ 2,860.00 |
| 5 | 2104.503 | SAWING CONCRETE PAVEMENT (FULL DEPTH) | LF | 818 | \$ 4.00 | \$ 3,272.00 |
| 6 | 2104.503 | SAWING BIT PAVEMENT (FULL DEPTH) | LF | 936 | \$ 4.00 | \$ 3,744.00 |
| 7 | 2104.503 | REMOVE CURB & GUTTER | LF | 6426 | \$ 7.00 | \$ 44,982.00 |
| 8 | 2104.503 | REMOVE CONCRETE GUTTER | LF | 139 | \$ 10.00 | \$ 1,390.00 |
| 9 | 2104.504 | REMOVE CONCRETE DRIVEWAY PAVEMENT | SY | 1773 | \$ 10.00 | \$ 17,730.00 |
| 10 | 2104.504 | REMOVE BITUMINOUS DRIVEWAY PAVEMENT | SY | 388 | \$ 8.00 | \$ 3,104.00 |
| 11 | 2104.518 | REMOVE BITUMINOUS WALK | SF | 136 | \$ 3.00 | \$ 408.00 |
| 12 | 2104.601 | SALVAGE AND REINSTALL LANDSCAPE STRUCTURES | LS | 1 | \$ 11,100.00 | \$ 11,100.00 |
| 13 | 2104.618 | SALVAGE BRICK PAVERS | SF | 180 | \$ 8.00 | \$ 1,440.00 |
| 14 | 2106.507 | EXCAVATION - COMMON (P) | CY | 4858 | \$ 30.00 | \$ 145,740.00 |
| 15 | 2112.519 | SUBGRADE PREPARATION | RDST | 189 | \$ 325.00 | \$ 61,425.00 |
| 16 | 2123.610 | STREET SWEEPER (WITH PICKUP BROOM) | HOUR | 180 | \$ 100.00 | \$ 18,000.00 |
| 17 | 2123.610 | UTILITY CREW | HOUR | 18 | \$ 600.00 | \$ 10,800.00 |
| 18 | 2130.523 | WATER | MGAL | 240 | \$ 50.00 | \$ 12,000.00 |
| 19 | 2211.507 | AGGREGATE BASE (CV) CLASS 5 (P) | CY | 40 | \$ 10.00 | \$ 400.00 |
| 20 | 2215.504 | FULL DEPTH RECLAMATION | SY | 59545 | \$ 3.00 | \$ 178,635.00 |
| 21 | 2215.507 | HAUL FULL DEPTH RECLAMATION (LV) | CY | 10731 | \$ 15.00 | \$ 160,965.00 |
| 22 | 2331.603 | JOINT ADHESIVE | LF | 40320 | \$ 1.00 | \$ 40,320.00 |
| 23 | 2360.504 | TYPE SP 9.5 WEAR CRS MIX(2,B)3.0" THICK | SY | 368 | \$ 30.00 | \$ 11,040.00 |
| 24 | 2360.504 | TYPE SP 9.5 WEAR CRS MIX(2,B)4.0" THICK | SY | 20 | \$ 35.00 | \$ 700.00 |
| 25 | 2360.509 | TYPE SP 12.5 WEARING COURSE MIX (2;C) | TON | 6729 | \$ 90.00 | \$ 605,610.00 |
| 26 | 2360.509 | TYPE SP 12.5 NON WEAR COURSE MIX (2;C) | TON | 8411 | \$ 90.00 | \$ 756,990.00 |
| 27 | 2504.602 | IRRIGATION SYSTEM REPAIR | EACH | 78 | \$ 195.00 | \$ 15,210.00 |
| 28 | 2521.518 | 6" CONCRETE WALK | SF | 104 | \$ 20.00 | \$ 2,080.00 |
| 29 | 2521.518 | 3" BITUMINOUS WALK | SF | 32 | \$ 3.00 | \$ 96.00 |
| 30 | 2531.503 | CONCRETE CURB & GUTTER DESIGN SPECIAL | LF | 429 | \$ 27.00 | \$ 11,583.00 |
| 31 | 2531.503 | CONCRETE CURB & GUTTER DESIGN B618 | LF | 5997 | \$ 27.00 | \$ 161,919.00 |
| 32 | 2531.504 | 6" CONCRETE DRIVEWAY PAVEMENT | SY | 1773 | \$ 60.00 | \$ 106,380.00 |
| 33 | 2531.618 | TRUNCATED DOMES | SF | 32 | \$ 70.00 | \$ 2,240.00 |
| 34 | 2540.602 | INSTALL MAIL BOX SUPPORT | EACH | 25 | \$ 190.00 | \$ 4,750.00 |
| 35 | 2540.618 | INSTALL BRICK PAVERS | SF | 180 | \$ 10.00 | \$ 1,800.00 |
| 36 | 2563.601 | TRAFFIC CONTROL | LS | 1 | \$ 10,000.00 | \$ 10,000.00 |
| 37 | 2564.502 | INSTALL SIGN | EACH | 10 | \$ 140.00 | \$ 1,400.00 |
| 38 | 2564.518 | SIGN PANELS TYPE C | SF | 126 | \$ 50.00 | \$ 6,300.00 |
| 39 | 2572.503 | CLEAN ROOT CUTTING | LF | 100 | \$ 10.00 | \$ 1,000.00 |
| 40 | 2573.501 | STABILIZED CONSTRUCTION EXIT | LS | 1 | \$ 10,000.00 | \$ 10,000.00 |
| 41 | 2573.502 | STORM DRAIN INLET PROTECTION | EACH | 96 | \$ 170.00 | \$ 16,320.00 |
| 42 | 2573.503 | SILT FENCE; TYPE MS | LF | 1200 | \$ 2.00 | \$ 2,400.00 |
| 43 | 2573.503 | SEDIMENT CONTROL LOG TYPE WOOD FIBER | LF | 2500 | \$ 3.00 | \$ 7,500.00 |
| 44 | 2574.507 | COMMON TOPSOIL BORROW | CY | 275 | \$ 20.00 | \$ 5,500.00 |
| 45 | 2574.508 | FERTILIZER TYPE 3 | LB | 84 | \$ 2.00 | \$ 168.00 |
| 46 | 2575.504 | SODDING TYPE LAWN | SY | 1149 | \$ 20.00 | \$ 22,980.00 |
| 47 | 2575.508 | HYDRAULIC STABILIZED FIBER MATRIX | LB | 712 | \$ 2.00 | \$ 1,424.00 |
| 48 | 2575.523 | WATER | MGAL | 26 | \$ 55.00 | \$ 1,430.00 |
| 49 | 2575.604 | SITE RESTORATION | SY | 1322 | \$ 10.00 | \$ 13,220.00 |
| | | | | | | CONSTRUCTION TOTAL \$ 2,695,435.00 |
| | | | | | | CONTINGENCY TOTAL (10%) \$ 269,543.50 |
| | | | | | | SUBTOTAL \$ 2,964,978.50 |
| | | | | | | INDIRECT COST TOTAL (15%) \$ 444,746.78 |
| | | | | | | TOTAL \$ 3,409,725.28 |

OPINION OF PROBABLE COST

WSB Project: MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
Project Location: CITY OF CHAMPLIN, MN
City Project No.: 22402
WSB Project No: 023250-000

Design By: HRD
Checked By: JDE
Date: 10/23/2023

OPINION OF PROBABLE COST

WSB Project: MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
 Project Location: CITY OF CHAMPLIN, MN
 City Project No.: 22402
 WSB Project No: 023250-000

Design By: HRD
 Checked By: JDE
 Date: 10/23/2023

| Item No. | MnDOT Specification No. | Description | Unit | Estimated Total Quantity | Estimated Unit Price | Estimated Total Cost |
|----------------------------------|-------------------------|--|------|--------------------------|----------------------|--|
| D. WATERMAIN IMPROVEMENTS | | | | | | |
| 71 | 2104.502 | REMOVE GATE VALVE & BOX | EACH | 4 | \$ 1,300.00 | \$ 5,200.00 |
| 72 | 2104.502 | REMOVE HYDRANT | EACH | 2 | \$ 1,300.00 | \$ 2,600.00 |
| 73 | 2104.503 | REMOVE WATER MAIN | L F | 48 | \$ 10.00 | \$ 480.00 |
| 74 | 2106.607 | AGGREGATE BACKFILL (CV) | C Y | 50 | \$ 20.00 | \$ 1,000.00 |
| 75 | 2504.602 | CONNECT TO EXISTING WATER MAIN | EACH | 4 | \$ 1,200.00 | \$ 4,800.00 |
| 76 | 2504.602 | HYDRANT | EACH | 2 | \$ 5,200.00 | \$ 10,400.00 |
| 77 | 2504.602 | ADJUST GATE VALVE & BOX | EACH | 36 | \$ 400.00 | \$ 14,400.00 |
| 78 | 2504.602 | 6" GATE VALVE & BOX | EACH | 2 | \$ 4,000.00 | \$ 8,000.00 |
| 79 | 2504.602 | 8" GATE VALVE & BOX | EACH | 2 | \$ 5,000.00 | \$ 10,000.00 |
| 80 | 2504.602 | ADJUST CURB STOP | EACH | 5 | \$ 190.00 | \$ 950.00 |
| 81 | 2504.602 | RECONSTRUCT CURB STOP | EACH | 20 | \$ 2,000.00 | \$ 40,000.00 |
| 82 | 2504.602 | GATE VALVE BOLT REPLACEMENT | EACH | 40 | \$ 4,500.00 | \$ 180,000.00 |
| 83 | 2504.603 | 6" WATERMAIN DUCTILE IRON CL 52 | L F | 48 | \$ 90.00 | \$ 4,320.00 |
| 84 | 2506.602 | CASTING ASSEMBLY SPECIAL 1 | EACH | 6 | \$ 300.00 | \$ 1,800.00 |
| | | | | | | CONSTRUCTION TOTAL \$ 283,950.00 |
| | | | | | | CONTINGENCY TOTAL (10%) \$ 28,395.00 |
| | | | | | | SUBTOTAL \$ 312,345.00 |
| | | | | | | INDIRECT COST TOTAL (15%) \$ 46,851.75 |
| | | | | | | TOTAL \$ 359,196.75 |
| E. LIGHTING IMPROVEMENTS | | | | | | |
| 85 | 2104.502 | REMOVE LIGHTING UNIT | EACH | 7 | \$ 400.00 | \$ 2,800.00 |
| 86 | 2104.502 | REMOVE HANDHOLE | EACH | 1 | \$ 550.00 | \$ 550.00 |
| 87 | 2545.502 | LIGHT FOUNDATION DESIGN E MODIFIED | EACH | 40 | \$ 1,050.00 | \$ 42,000.00 |
| 88 | 2545.502 | SERVICE CABINET | EACH | 4 | \$ 6,400.00 | \$ 25,600.00 |
| 89 | 2545.502 | EQUIPMENT PAD | EACH | 4 | \$ 3,800.00 | \$ 15,200.00 |
| 90 | 2545.502 | HANDHOLE | EACH | 2 | \$ 2,400.00 | \$ 4,800.00 |
| 91 | 2545.503 | 2" NON-METALLIC CONDUIT | L F | 1955 | \$ 10.00 | \$ 19,550.00 |
| 92 | 2545.503 | 2" NON-METALLIC COND (DIRECTIONAL BORE) | L F | 17595 | \$ 15.00 | \$ 263,925.00 |
| 93 | 2545.503 | UNDERGROUND WIRE 1/C 8 AWG | L F | 78980 | \$ 2.00 | \$ 157,960.00 |
| 94 | 2545.601 | STREET LIGHTS (TO BE PURCHASED SEPARATELY) | LS | 1 | \$ 149,300.00 | \$ 149,300.00 |
| 95 | 2545.602 | INSTALL LIGHTING UNIT | EACH | 39 | \$ 600.00 | \$ 23,400.00 |
| 96 | 2545.602 | INSTALL LIGHTING UNIT SPECIAL | EACH | 1 | \$ 600.00 | \$ 600.00 |
| | | | | | | CONSTRUCTION TOTAL \$ 705,685.00 |
| | | | | | | CONTINGENCY TOTAL (10%) \$ 70,568.50 |
| | | | | | | SUBTOTAL \$ 776,253.50 |
| | | | | | | INDIRECT COST TOTAL (15%) \$ 116,438.03 |
| | | | | | | TOTAL \$ 892,691.53 |

OPINION OF PROBABLE COST

WSB Project: MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
 Project Location: CITY OF CHAMPLIN, MN
 City Project No.: 22402
 WSB Project No: 023250-000

Design By: HRD
 Checked By: JDE
 Date: 10/23/2023

| Item No. | MnDOT Specification No. | Description | Unit | Estimated Total Quantity | Estimated Unit Price | Estimated Total Cost |
|---|-------------------------|--|------|--------------------------|----------------------|----------------------|
| F. ADAIR AVE REALIGNMENT IMPROVEMENTS | | | | | | |
| 97 | 2021.501 | MOBILIZATION | LS | 1 | \$ 12,300.00 | \$ 12,300.00 |
| 98 | 2101.502 | CLEARING | EACH | 3 | \$ 300.00 | \$ 900.00 |
| 99 | 2101.502 | GRUBBING | EACH | 3 | \$ 300.00 | \$ 900.00 |
| 100 | 2104.502 | SALVAGE WOOD POLE | EACH | 2 | \$ 500.00 | \$ 1,000.00 |
| 101 | 2104.502 | SALVAGE LIGHTING UNIT | EACH | 1 | \$ 700.00 | \$ 700.00 |
| 102 | 2104.502 | SALVAGE SIGN | EACH | 4 | \$ 150.00 | \$ 600.00 |
| 103 | 2104.503 | SAWING BIT PAVEMENT (FULL DEPTH) | L F | 132 | \$ 3.00 | \$ 396.00 |
| 104 | 2104.503 | REMOVE CURB & GUTTER | L F | 322 | \$ 4.00 | \$ 1,288.00 |
| 105 | 2104.503 | REMOVE BITUMINOUS CURB | L F | 92 | \$ 4.00 | \$ 368.00 |
| 106 | 2104.503 | SALVAGE FENCE | L F | 160 | \$ 30.00 | \$ 4,800.00 |
| 107 | 2104.504 | REMOVE BITUMINOUS PAVEMENT | S Y | 693 | \$ 8.00 | \$ 5,544.00 |
| 108 | 2104.518 | REMOVE CONCRETE WALK | S F | 75 | \$ 16.00 | \$ 1,200.00 |
| 109 | 2104.603 | REMOVE PAVEMENT MARKINGS | L F | 141 | \$ 5.00 | \$ 705.00 |
| 110 | 2106.507 | EXCAVATION - COMMON | C Y | 218 | \$ 29.00 | \$ 6,322.00 |
| 111 | 2106.507 | EXCAVATION - SUBGRADE | C Y | 238 | \$ 65.00 | \$ 15,470.00 |
| 112 | 2106.507 | SELECT GRANULAR EMBANKMENT (CV) | C Y | 238 | \$ 22.00 | \$ 5,236.00 |
| 113 | 2106.507 | COMMON EMBANKMENT (CV) | C Y | 10 | \$ 33.00 | \$ 330.00 |
| 114 | 2112.519 | SUBGRADE PREPARATION | RDST | 1.8 | \$ 325.00 | \$ 585.00 |
| 115 | 2123.610 | STREET SWEEPER (WITH PICKUP BROOM) | HOUR | 10 | \$ 100.00 | \$ 1,000.00 |
| 116 | 2123.610 | UTILITY CREW | HOUR | 20 | \$ 600.00 | \$ 12,000.00 |
| 117 | 2130.523 | WATER | MGAL | 5 | \$ 50.00 | \$ 250.00 |
| 118 | 2211.507 | AGGREGATE BASE (CV) CLASS 5 | C Y | 117 | \$ 10.00 | \$ 1,170.00 |
| 119 | 2331.603 | JOINT ADHESIVE | L F | 278 | \$ 1.00 | \$ 278.00 |
| 120 | 2360.509 | TYPE SP 12.5 WEARING COURSE MIX (2;C) | TON | 658 | \$ 90.00 | \$ 59,220.00 |
| 121 | 2360.509 | TYPE SP 12.5 NON WEAR COURSE MIX (2;C) | TON | 823 | \$ 85.00 | \$ 69,955.00 |
| 122 | 2504.602 | IRRIGATION SYSTEM REPAIR | EACH | 1 | \$ 200.00 | \$ 200.00 |
| 123 | 2521.518 | 4" CONCRETE WALK | S F | 380 | \$ 10.00 | \$ 3,800.00 |
| 124 | 2521.518 | 6" CONCRETE WALK | S F | 200 | \$ 16.00 | \$ 3,200.00 |
| 125 | 2531.503 | CONCRETE CURB & GUTTER DESIGN B618 | L F | 278 | \$ 27.00 | \$ 7,506.00 |
| 126 | 2531.618 | TRUNCATED DOMES | S F | 44 | \$ 70.00 | \$ 3,080.00 |
| 127 | 2545.602 | INSTALL LIGHTING UNIT | EACH | 1 | \$ 700.00 | \$ 700.00 |
| 128 | 2545.602 | INSTALL WOOD POLE | EACH | 2 | \$ 500.00 | \$ 1,000.00 |
| 129 | 2557.603 | INSTALL FENCE | L F | 160 | \$ 60.00 | \$ 9,600.00 |
| 130 | 2563.601 | TRAFFIC CONTROL | LS | 1 | \$ 5,000.00 | \$ 5,000.00 |
| 131 | 2564.502 | INSTALL SIGN | EACH | 4 | \$ 50.00 | \$ 200.00 |
| 132 | 2572.503 | CLEAN ROOT CUTTING | L F | 20 | \$ 11.00 | \$ 220.00 |
| 133 | 2573.501 | STABILIZED CONSTRUCTION EXIT | LS | 1 | \$ 1,000.00 | \$ 1,000.00 |
| 134 | 2573.502 | STORM DRAIN INLET PROTECTION | EACH | 1 | \$ 200.00 | \$ 200.00 |
| 135 | 2573.503 | SILT FENCE: TYPE MS | L F | 50 | \$ 2.00 | \$ 100.00 |
| 136 | 2573.503 | SEDIMENT CONTROL LOG TYPE WOOD FIBER | L F | 150 | \$ 3.00 | \$ 450.00 |
| 137 | 2574.507 | COMMON TOPSOIL BORROW | C Y | 76 | \$ 21.00 | \$ 1,596.00 |
| 138 | 2574.508 | FERTILIZER TYPE 3 | LB | 49 | \$ 2.00 | \$ 98.00 |
| 139 | 2575.504 | SODDING TYPE LAWN | S Y | 682 | \$ 19.00 | \$ 12,958.00 |
| 140 | 2575.508 | HYDRAULIC STABILIZED FIBER MATRIX | LB | 423 | \$ 2.00 | \$ 846.00 |
| 141 | 2575.523 | WATER | MGAL | 20 | \$ 56.00 | \$ 1,120.00 |
| 142 | 2582.503 | 4" SOLID LINE MULTI COMP | L F | 78 | \$ 1.00 | \$ 78.00 |
| 143 | 2582.503 | 4" BROKEN LINE MULTI COMP | L F | 15 | \$ 1.00 | \$ 15.00 |
| 144 | 2582.518 | CROSSWALK MULTI COMP | S F | 256 | \$ 9.00 | \$ 2,304.00 |
| CONSTRUCTION TOTAL \$ 257,788.00 | | | | | | |
| CONTINGENCY TOTAL (10%) \$ 25,778.80 | | | | | | |
| SUBTOTAL \$ 283,566.80 | | | | | | |
| INDIRECT COST TOTAL (15%) \$ 42,535.02 | | | | | | |
| TOTAL \$ 326,101.82 | | | | | | |
| GRAND TOTAL \$ 5,562,071.54 | | | | | | |

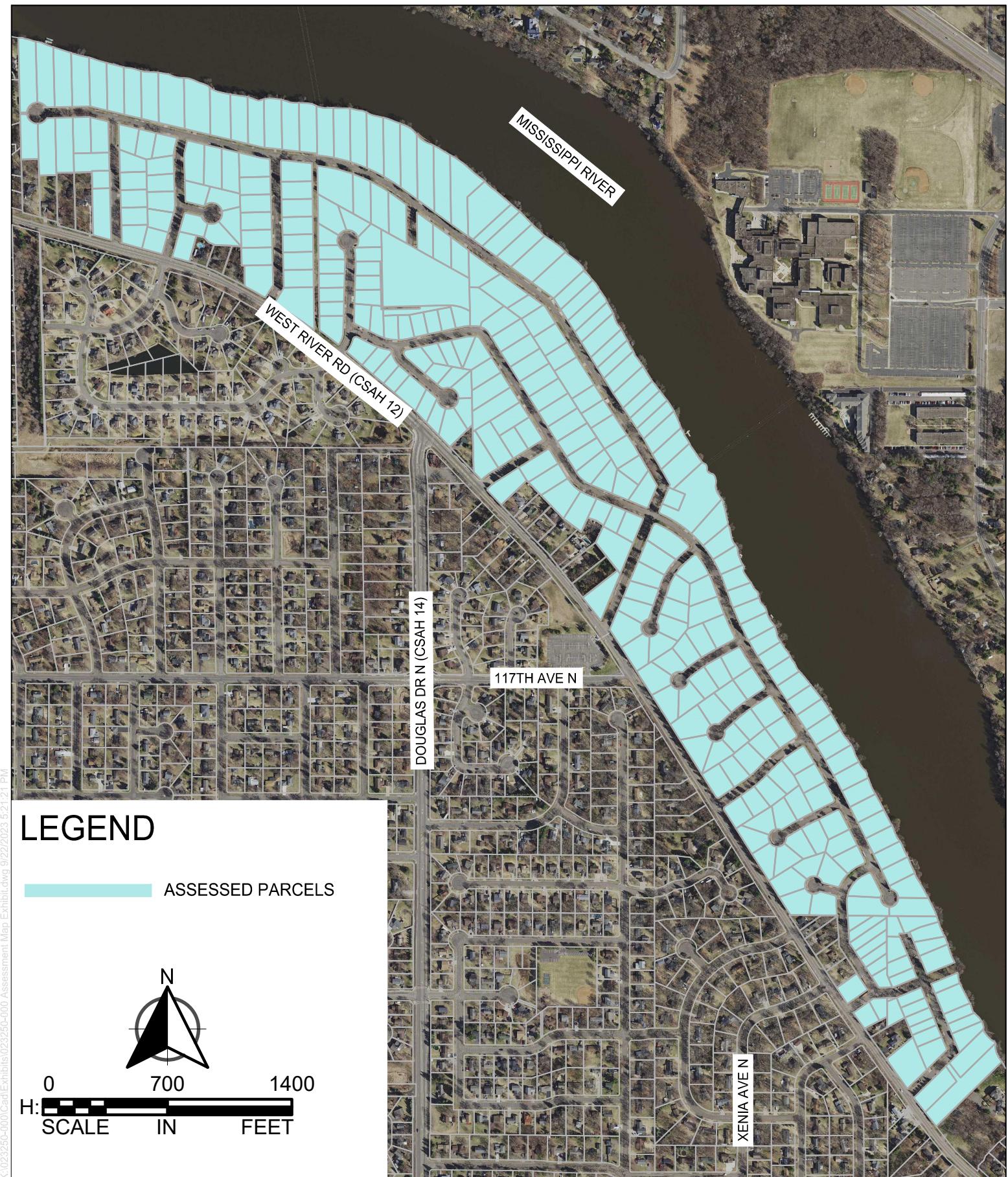
DISCLAIMER:

In review of this Opinion of Probable Cost, the Client understands that the Consultant has no control over the availability of labor, equipment or materials, market conditions, or the Contractor's method of pricing. This Opinion of Probable Cost is made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, expressed or implied, regarding the ultimate bids or negotiated cost of the Work.



Appendix C

Assessment Map Preliminary Assessment Roll



WSB PROJECT NO.:
023250-000

MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
PROPOSED ASSESSMENT MAP
CITY OF CHAMPLIN, MN





LEGEND

ASSESSED PARCELS



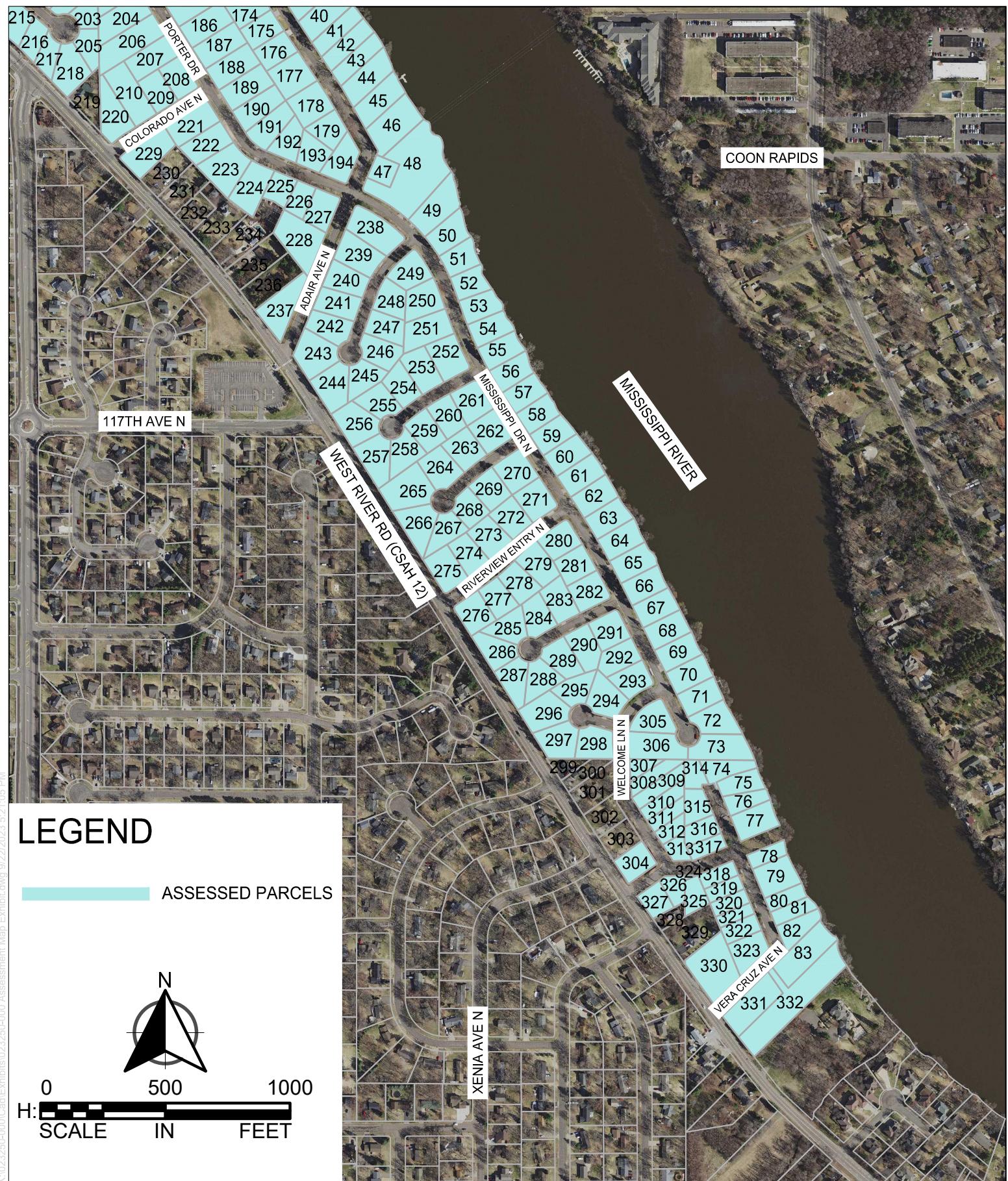
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SCALE IN FEET



WSB PROJECT NO.:
023250-000

MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT
PROPOSED ASSESSMENT MAP
CITY OF CHAMPLIN, MN





WSB PROJECT NO.:
023250-000



**PRELIMINARY ASSESSMENT ROLL
MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT**

| Preliminary Assessment Roll Mississippi Drive Area Street & Utility Project | | | | | | | | | | | | | NO. UNITS | RECLAIM AND PAVE STREET | STREET LIGHTS | FRONT FOOTAGE | FRONTAGE ASSESSMENT | PROPOSED ACTIVE ASSMTS |
|--|-----------------------------|------------------------------|--------|------------|----------|--------------------|-------------------------|----------|----|----------|-----------------|--------|------------|-------------------------|---------------|---------------|---------------------|------------------------|
| Date: 11/13/2023 | WSB Project No.: 023250-000 | ID | PID NO | OWNER NAME | BLDG_NUM | ADDRESS | MAILING ADDRESS | CITY | ST | ZIP CODE | USE | RESID. | \$4,560.00 | \$1,120.00 | \$1,120.00 | (LF) | \$150.00 | \$5,680.00 |
| 1 | 2912021130041 | DANELL GIBBINS/GRANT BISTRAM | | | 12208 | MISSISSIPPI DR N | 12208 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 2 | 2912021130055 | S A NEILSON & M A NEILSON | | | 12202 | MISSISSIPPI DR N | 12202 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 3 | 2912021130009 | JASON C JEPPESEN | | | 12198 | MISSISSIPPI DR N | 12198 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 4 | 2912021130008 | W J BROCK & C L BROCK | | | 12196 | MISSISSIPPI DR N | 12196 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 5 | 2912021130022 | RICHARD R/MARGARET K EBERLE | | | 12192 | MISSISSIPPI DR N | 12192 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 6 | 2912021130023 | D D & C A O'LOUGHLIN | | | 12188 | MISSISSIPPI DR N | 12188 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 7 | 2912021130024 | GAUVIN FAMILY REVOCABLE TRST | | | 12184 | MISSISSIPPI DR N | 12184 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 8 | 2912021130025 | P J ANDERSON & J A ANDERSON | | | 12180 | MISSISSIPPI DR N | 12180 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 9 | 2912021130028 | BARBARA J WATKINS | | | 12176 | MISSISSIPPI DR N | 12176 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 10 | 2912021140031 | J W & J F THOMSON | | | 12170 | MISSISSIPPI DR N | 12170 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 11 | 2912021140030 | S R LINDELL & K M LINDELL | | | 12164 | MISSISSIPPI DR N | 12164 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 12 | 2912021140018 | G S THOMSON & M L THURY | | | 12160 | MISSISSIPPI DR N | 12160 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 13 | 2912021140019 | LINDA E MOORE & RICK MOORE | | | 12154 | MISSISSIPPI DR N | 12154 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 14 | 2912021140020 | JACK R DURST | | | 12152 | MISSISSIPPI DR N | 12152 NO MISSISSIPPI DR | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 15 | 2912021140021 | T P KUFFEL & C W KUFFEL | | | 12148 | MISSISSIPPI DR N | 12148 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 16 | 2912021140022 | CHASKE OWEN & KELLIE OWEN | | | 12144 | MISSISSIPPI DR N | 12144 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 17 | 2912021140001 | CITY OF CHAMPLIN | | | 12140 | MISSISSIPPI DR N | 12001 HIGHWAY 52 | CHAMPLIN | MN | 55316 | LAND-COMMERCIAL | 0 | | | | | | \$0.00 |
| 18 | 2912021140002 | CURTIS FISKE | | | 12136 | MISSISSIPPI DR N | 12136 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 19 | 2912021140003 | BETH ANN MUSSER | | | 12132 | MISSISSIPPI DR N | 12132 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 20 | 2912021140004 | RASMUSSEN FAMILY REV LIV TR | | | 12128 | MISSISSIPPI DR N | 12128 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 21 | 2912021140005 | LINDA M STONE | | | 12122 | MISSISSIPPI DR N | 12122 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 22 | 2912021140006 | L BELMORE & C FISKE | | | 12118 | MISSISSIPPI DR N | 12118 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 23 | 2812021230001 | T J & A E CARLSON TRUSTEES | | | 12112 | MISSISSIPPI DR N | 12112 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 24 | 2812021230002 | J L FORSLUND & K L FORSLUND | | | 12106 | MISSISSIPPI DR N | 12106 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 25 | 2812021230006 | M F SCHWALENBERG ET AL TRS | | | 12100 | MISSISSIPPI DR N | 12100 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 26 | 2812021230005 | D L SHARP & Y R SHARP | | | 12060 | MISSISSIPPI DR N | 12060 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 27 | 2812021230001 | MAI YIA CHANG | | | 12054 | MISSISSIPPI DR N | 12054 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 28 | 2812021230002 | ROBERT WENHOLZ/GINA WENHOLZ | | | 12048 | MISSISSIPPI DR N | 12048 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 29 | 2812021230003 | J R BYRDZIAK & S K BYRDZIAK | | | 12042 | MISSISSIPPI DR N | 12042 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 30 | 2812021230004 | P WOODS & H WOODS | | | 12036 | MISSISSIPPI DR N | 12036 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 31 | 2812021230005 | G E & R S OLSON | | | 12018 | MISSISSIPPI DR N | 12018 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 32 | 2812021230067 | B BURNEVIK & M BURNEVIK | | | 12014 | MISSISSIPPI DR N | 12014 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 33 | 2812021230068 | JAMES HUTCHENS/MARY HUTCHENS | | | 12008 | MISSISSIPPI DR N | 12008 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 34 | 2812021230007 | JOHN V RYDEN | | | 12006 | MISSISSIPPI DR N | 12006 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 35 | 2812021230008 | MARLENE J ROBINSON TRUSTEE | | | 12000 | MISSISSIPPI DR N | 12000 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 36 | 2812021230009 | M H HALABI & N S HALABI | | | 11946 | MISSISSIPPI DR N | 11946 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 37 | 2812021230010 | LAWRENCE L BELMORE | | | 11940 | MISSISSIPPI DR N | 12118 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 38 | 2812021230011 | J A DESCHENE & K M DESCHENE | | | 11936 | MISSISSIPPI DR N | 11936 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 |
| 39 | 2812021230012 | G L ROMNESS & K L ROMNESS | | | 11930 | MISSISSIPPI DR N</ | | | | | | | | | | | | |

**PRELIMINARY ASSESSMENT ROLL
MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT**

| Date: 11/13/2023 | WSB Project No.: 023250-000 | OWNER NAME | BLDG_NUM | ADDRESS | MAILING ADDRESS | CITY | ZIP CODE | ST | USE | NO. UNITS | RECLAIM AND PAVE STREET \$4,560.00 | STREET LIGHTS \$1,120.00 | FRONT FOOTAGE (LF) | FRONTAGE ASSESSMENT \$150.00 | PROPOSED ACTIVE ASSMTS |
|------------------|-----------------------------|------------------------------|----------|------------------|-------------------------|-------------|----------|----|-------------|-----------|------------------------------------|--------------------------|--------------------|------------------------------|------------------------|
| 77 | 3312021130006 | J L ABEL & STACY L ABEL | 11450 | MISSISSIPPI DR N | 11450 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 78 | 3312021130005 | LESLIE JOANNE LEQUE | 11428 | MISSISSIPPI DR N | 11428 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 79 | 3312021130004 | GEORGE E ANDERSON ETAL | 11412 | MISSISSIPPI DR N | 11412 MISSISSIPPI DR | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 80 | 3312021130003 | DONNA J KLESCEWSKI | 11408 | MISSISSIPPI DR N | 11408 MISSISSIPPI DR | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 81 | 3312021130002 | JEFFREY D RADKE/LORI A RADKE | 11400 | MISSISSIPPI DR N | 11400 MISSISSIPPI DR | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 82 | 3312021130001 | K B PIERSON & B L PIERSON | 11350 | MISSISSIPPI DR N | 11350 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 83 | 3312021130040 | CHESTER J & MICHELLE C ORR | 11332 | MISSISSIPPI DR N | 11332 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 84 | 2912021130042 | BIALKE LIVING TRUST | 12209 | MISSISSIPPI DR N | 12209 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 85 | 2912021130054 | LONG NGUYEN | 12203 | MISSISSIPPI DR N | 12203 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 86 | 2912021130010 | S A MEYER & L R MEYER | 12197 | MISSISSIPPI DR N | 12197 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 87 | 2912021130056 | MICHAEL W & ANN MARIE MEYER | 12195 | MISSISSIPPI DR N | 12195 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 88 | 2912021130027 | B SCHUMACHER & K SCHUMACHER | 12191 | MISSISSIPPI DR N | 12191 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 89 | 2912021130058 | STANLEY J & JO ELLEN LESSIN | 12117 | IDAHO AVE N | 12117 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 94 | 2912021130059 | STEVE CHANDARATH | 12113 | IDAHO AVE N | 12113 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 95 | 2912021130002 | LYNN M KUSSKE | 12109 | IDAHO AVE N | 12109 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 96 | 2912021130013 | A J MIRANDA & K B MIRANDA | 12124 | IDAHO AVE NO | 12124 IDAHO AVE NO | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 97 | 2912021130014 | BEVERLY A KOBS | 12179 | MISSISSIPPI DR N | 12179 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 98 | 2912021130015 | JOSHUA M ELLIS | 12175 | MISSISSIPPI DR N | 12175 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 99 | 2912021130021 | S B HERMAN/A G MARTINEZ | 12120 | IDAHO AVE N | 12120 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 100 | 2912021130016 | C A & C K HEUER | 12117 | HAMPSHIRE AVE N | 12117 HAMPSHIRE AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 101 | 2912021130020 | T J THEISEN & K M THEISEN | 12114 | IDAHO AVE N | 12114 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 102 | 2912021130017 | T G HAGBERG & T L HAGBERG | 12113 | HAMPSHIRE AVE N | 12113 HAMPSHIRE AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 103 | 2912021130019 | B G & J L WOOD | 12110 | IDAHO AVE N | 12110 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 104 | 2912021130018 | NORMA I PAULSON | 12109 | HAMPSHIRE AVE N | 12109 HAMPSHIRE AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 105 | 2912021420008 | JEAN E JOSLYN | 12106 | IDAHO AVE N | 12106 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 106 | 2912021420005 | DWAYNE MEIER | 12105 | HAMPSHIRE AVE N | 517 W RIVER PKWY | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 107 | 2912021420007 | KRISTINA THIELEN | 12102 | IDAHO AVE N | 12102 IDAHO AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 108 | 2912021420006 | CAROLYN J KYRO | 12101 | HAMPSHIRE AVE N | 12101 HAMPSHIRE AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 109 | 2912021140013 | SANDRA MOBERG WALLS | 12124 | HAMPSHIRE AVE N | 12124 HAMPSHIRE AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 110 | 2912021140014 | BRYAN L KASSEN | 12165 | MISSISSIPPI DR N | 12165 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 111 | 2912021140015 | HILARY HANSEN & DARYL OLSON | 12163 | MISSISSIPPI DR N | 12163 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 112 | 2912021140028 | F A SUSSMAN & K L HOPKINS | 12153 | MISSISSIPPI DR N | 12153 MISSISSIPPI DR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 113 | 2912021140027 | ROBERT H & KIMBERLY A RICKER | 12041 | FLORIDA AVE N | 12041 FLORIDA AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 114 | 2912021140011 | L J PARNELL & E L PARNELL | 12120 | HAMPSHIRE AVE N | 12120 HAMPSHIRE AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 115 | 2912021140012 | LANGIE LIVING TRUST | 12116 | HAMPSHIRE CIR N | 910 WESTERN ST APT #203 | CHAMPLIN | MN 55303 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 116 | 2912021140026 | MARLYS H SHEARER | 12027 | FLORIDA AVE N | 12027 FLORIDA AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 117 | 2912021410005 | MATHEW DELFS & KATIE SIMON | 12112 | HAMPSHIRE CIR N | 12112 HAMPSHIRE CIR N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 118 | 2912021410020 | JOHN BANDY & PAIGE BANDY | 12025 | FLORIDA AVE N | 12025 FLORIDA AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 119 | 2912021410007 | LOREN R MACZIEWSKI | 12104 | HAMPSHIRE CIR N | 12104 HAMPSHIRE CIRCLE | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 120 | 2912021410006 | JW MCNALLAN FAMILY TRUST | 12108 | HAMPSHIRE CIR N | 13237 BITTERSWEET ST NW | COON RAPIDS | MN 55448 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 121 | 2912021410019 | T A SWANBERG & C R OTREMBA | 12017 | FLORIDA AVE N | 12017 FLORIDA AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 122 | 2912021410008 | MONICA SIMON | 12016 | HAMPSHIRE AVE N | 12016 HAMPSHIRE AVE N | CHAMPLIN | MN 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 126 | 2912021410018 | A D DAHLEN & K L DAHLEN | 12021 | FLORIDA AVE N | 12021 FLORIDA AVE N | CHAMPLIN | MN 55316 | | | | | | | | |

**PRELIMINARY ASSESSMENT ROLL
MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT**

| Date: 11/13/2023 | WSB Project No.: 023250-000 | OWNER NAME | BLDG_NUM | ADDRESS | MAILING ADDRESS | CITY | ZIP | ST | CODE | USE | NO. UNITS | RECLAIM AND PAVE STREET | STREET LIGHTS | FRONT FOOTAGE | FRONTAGE ASSESSMENT | PROPOSED ACTIVE ASSMTS |
|------------------|-----------------------------|------------------------------|----------|--------------------|-------------------------|-------------|-----|-------|------|-------------------------|-----------|-------------------------|---------------|---------------|---------------------|------------------------|
| ID | PID NO | | | | | | | | | | RESID. | \$4,560.00 | \$1,120.00 | (LF) | \$150.00 | |
| 160 | 2912021410049 | CITY OF CHAMPLIN | 50 | ADDRESS UNASSIGNED | 12001 JEFFERSON HIGHWAY | CHAMPLIN | MN | 55316 | | VACANT LAND-RESIDENTIAL | 0 | | | | | \$0.00 |
| 161 | 2912021410048 | CITY OF CHAMPLIN | 50 | ADDRESS UNASSIGNED | 12001 JEFFERSON HIGHWAY | CHAMPLIN | MN | 55316 | | VACANT LAND-RESIDENTIAL | 0 | | | | | \$0.00 |
| 162 | 2912021410025 | KEVIN URLAUB/BARBARA URLAUB | 12048 | PORTER DR | 12048 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 163 | 2912021410024 | K P WETZEL & S WETZEL | 12042 | PORTER DR | 12042 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 164 | 2912021410023 | RAVI LIMKAR | 12036 | PORTER DR | 10460 VERA CRUZ DR #1 | MINNEAPOLIS | MN | 55443 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 165 | 2812021320052 | MICHAEL Z HAGAN | 12030 | PORTER DR | 12030 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 166 | 2812021320051 | KAREN L JOHNSON | 12024 | PORTER DR | 12024 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 167 | 2812021320050 | DANNY J CLOVER | 12018 | PORTER DR | 12018 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 168 | 2812021320045 | H R BERGQUIST /D W BERGQUIST | 12051 | MISSISSIPPI DR N | 12051 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 169 | 2812021320021 | TRAVIS JOHN KOSKELA | 12033 | MISSISSIPPI DR N | 12033 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 170 | 2812021320019 | J & C BISTODEAU | 12027 | MISSISSIPPI DR N | 12027 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 171 | 2812021320022 | JONNY XAYPHANYA ET AL | 12007 | MISSISSIPPI DR N | 12007 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 172 | 2812021320016 | TRICIA M OIAN | 12001 | MISSISSIPPI DR N | 12001 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 173 | 2812021320020 | SANDRA L BLAIR | 11947 | MISSISSIPPI DR N | 11947 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 174 | 2812021320018 | CURTIS FISKE & L BELMORE | 11941 | MISSISSIPPI DR N | 12118 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 175 | 2812021320015 | DAVID A GUSTAFSON ETAL | 11927 | MISSISSIPPI DR N | 11927 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 176 | 2812021320017 | PHILIP & HEATHER ECHERT | 11919 | MISSISSIPPI DR N | 11919 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 177 | 2812021320046 | DAWN V DOTY | 11911 | MISSISSIPPI DR N | 11911 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 178 | 2812021320047 | S D JUNEAU & C JC JUNEAU | 11907 | MISSISSIPPI DR N | 11907 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 179 | 2812021330018 | JULIE MINGO | 11901 | MISSISSIPPI DR N | 11901 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 180 | 2812021320028 | WARREN L JOHNSON ETAL | 12012 | PORTER DR | 12012 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 181 | 2812021320029 | D R GRONEWOLD/S L GRONEWOLD | 12008 | PORTER DR | 12008 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 182 | 2812021320030 | TIMOTHY FREDRICKSON | 12004 | PORTER DR | 12004 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 183 | 2812021320031 | JOHN TAYLOR & ELENA TAYLOR | 12000 | PORTER DR | 12000 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 184 | 2812021320032 | JENNA E PETERSON | 11916 | PORTER DR | 11916 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 185 | 2812021320033 | LEE M MCKENNA | 11912 | PORTER DR | 11912 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 186 | 2812021320034 | RAMIRO F VALLE MORALES ET AL | 11908 | PORTER DR | 11908 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 187 | 2812021320035 | JOE D PAVEK & DARIN M PAVEK | 11842 | PORTER DR | 11842 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 188 | 2812021320036 | RAHWA A SOLOMON | 11836 | PORTER DR | 11836 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 189 | 2812021320027 | FRED A STEVENS | 11830 | PORTER DR | 11830 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 190 | 2812021330022 | BRIAN J DEGIDIO | 11824 | PORTER DR | 11824 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 191 | 2812021330021 | STUART KOZLENKO | 11818 | PORTER DR | 11818 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 192 | 2812021330020 | COLETTE ACKELSON | 11812 | PORTER DR | 11812 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 193 | 2812021330019 | JERI JOY | 11806 | PORTER DR | 11806 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 194 | 2812021330017 | P K WILSON & K D WILSON | 11724 | ADAIR AVE N | 11724 ADAIR AVE N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 195 | 2912021410047 | CRAIG MORAN & ASHLEY MORAN | 12037 | PORTER DR | 12037 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 196 | 2812021320061 | M BAH & M BRYANT-BAH | 12031 | PORTER DR | 12031 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 197 | 2812021320060 | DOROTHY K MING'ATE | 11920 | PORTER CIR N | 11920 PORTER CIR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 198 | 2812021320062 | SANDRA ASHWORTH CARLSON | 12025 | PORTER DR | 12025 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 199 | 2812021320059 | J MCLAUGHLIN & T MCLAUGHLIN | 11914 | PORTER CIR N | 11914 PORTER CIR N | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 200 | 2812021320063 | JAMES D SCHACK ET AL | 12019 | PORTER DR | 12019 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 201 | 2812021320064 | MARY C KAGE | 12007 | PORTER DR | 12007 PORTER DR | CHAMPLIN | MN | 55316 | | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680 |

**PRELIMINARY ASSESSMENT ROLL
MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT**

| Date: 11/13/2023 | WSB Project No.: 023250-000 | OWNER NAME | BLDG_NUM | ADDRESS | MAILING ADDRESS | CITY | ST | ZIP CODE | USE | NO. UNITS | RECLAIM AND PAVE STREET \$4,560.00 | STREET LIGHTS \$1,120.00 | FRONT FOOTAGE (LF) | FRONTAGE ASSESSMENT \$150.00 | PROPOSED ACTIVE ASSMTS |
|------------------|-----------------------------|------------------------------|----------|-------------------|------------------------|-------------|----|----------|-------------|-----------|------------------------------------|--------------------------|--------------------|------------------------------|------------------------|
| 244 | 2812021330037 | M STENQUIST & E STENQUIST JR | 5941 | SHEPARD LA N | 5941 SHEPARD LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 245 | 2812021340015 | DANIEL G KANE | 5933 | SHEPARD LA N | 5933 SHEPARD LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 246 | 2812021340016 | A FALATIC & M FALATIC | 5925 | SHEPARD LA N | 5925 SHEPARD LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 247 | 2812021340017 | D & G SATHER | 5917 | SHEPARD LA N | 5917 SHEPARD LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 248 | 2812021340018 | KENDALL R KANGAS | 5909 | SHEPARD LA N | 5909 SHEPARD LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 249 | 2812021340019 | RYAN SABAS & HALLEY SABAS | 11801 | MISSISSIPPI DR N | 11816 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 250 | 2812021340020 | K E GRIMM & C A GRIMM | 11749 | MISSISSIPPI DR N | 11749 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 251 | 2812021340021 | MICHAEL J WITZANY | 11741 | MISSISSIPPI DR N | 11741 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 252 | 2812021340022 | J W & A TAPLIN | 11733 | MISSISSIPPI DR N | 11733 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 253 | 2812021340023 | D J GREGOIRE & C L GREGOIRE | 5808 | SHEPARD CIR N | 5808 SHEPARD CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 254 | 2812021340024 | CASEY GREGOIRE | 5816 | SHEPARD CIR N | 5808 SHEPARD CIR | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 255 | 2812021340025 | IH2 PROPERTY ILLINOIS LP | 5824 | SHEPARD CIR N | 1717 MAIN ST STE 2000 | DALLAS | TX | 75201 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 256 | 2812021340026 | BRANDON GROMEK/JANET GROMEK | 5832 | SHEPARD CIR N | 5832 SHEPARD CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 257 | 3312021210017 | J THOMPSON & S THOMPSON | 5833 | SHEPARD CIR N | 5833 SHEPARD CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 258 | 3312021210018 | JODY E BROWN | 5825 | SHEPARD CIR N | 5825 SHEPARD CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 259 | 2812021340027 | MARK ZUBERT & ERIN ZUBERT | 5817 | SHEPARD CIR N | 5817 SHEPARD CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 260 | 2812021340028 | D & S CONAWAY | 5809 | SHEPARD CIR N | 5809 SHEPARD CIR | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 261 | 2812021340029 | JAMES G & NICOLE P BOSER | 11717 | MISSISSIPPI DR N | 11717 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 262 | 3312021210019 | AMY ADDINGTON | 11701 | MISSISSIPPI DR N | 11701 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 263 | 3312021210020 | J D BIDLER & A BIDLER | 5808 | RIVERVIEW LA N | 5808 RIVERVIEW LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 264 | 3312021210021 | D M SLATER & L A SLATER | 5816 | RIVERVIEW LA N | 5816 RIVERVIEW LN | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 265 | 3312021210022 | A J MACA & C G MACA | 5824 | RIVERVIEW LA N | 5824 RIVERVIEW LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 266 | 3312021210023 | CHRISTINE V VINEYARD REV TR | 5833 | RIVERVIEW LA N | 5833 RIVERVIEW LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 267 | 3312021210024 | D NIELSEN & R NIELSEN | 5825 | RIVERVIEW LA N | 5825 RIVERVIEW LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 268 | 3312021210025 | JOHN K GROBEL | 5817 | RIVERVIEW LA N | 5817 RIVERVIEW LA N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 269 | 3312021210026 | S D ALDOUS & R L ALDOUS | 5809 | RIVERVIEW LA N | 5809 RIVERVIEW LA | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 270 | 3312021210027 | R H AMERSON & N A AMERSON | 11649 | MISSISSIPPI DR N | 11649 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 271 | 3312021210028 | DOUGLAS M JOKINEN | 11641 | MISSISSIPPI DR N | 11641 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 272 | 3312021210029 | BRIAN P GEORGE | 5708 | RIVERVIEW ENTRY N | 5708 RIVERVIEW ENTRY N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 273 | 3312021210030 | KYLE HAYES & GWENDOLYN HAYES | 5716 | RIVERVIEW ENTRY N | 5716 RIVERVIEW ENTRY N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 274 | 3312021210031 | J E MAISTRovich & N A SKAGER | 5724 | RIVERVIEW ENTRY N | 5724 RIVERVIEW ENTRY N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 275 | 3312021210032 | M M BOCKO & L R BOCKO TRSTES | 5732 | RIVERVIEW ENTRY N | 5732 RIVERVIEW ENTRY N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 276 | 3312021210033 | C J & A I ZIMMERMAN | 5733 | RIVERVIEW ENTRY N | 5733 RIVERVIEW ENTRY N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 277 | 3312021210034 | THEP TRINH & BACH HO | 5725 | RIVERVIEW ENTRY N | 5725 RIVERVIEW ENTRY N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 278 | 3312021210035 | TERRANCE/JACQUELINE MUELLER | 5717 | RIVERVIEW ENTRY N | 5717 RIVERVIEW ENTRY N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 279 | 3312021210036 | ROBERT T ISHMAEL JR | 5709 | RIVERVIEW ENTRY N | 5709 RIVERVIEW ENTRY | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 280 | 3312021210037 | SILBERNICK PROPS LTD LIAB CO | 5701 | RIVERVIEW ENTRY N | 6729 HEMLOCK LA N | MAPLE GROVE | MN | 55369 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 281 | 3312021210038 | K S & M J MUNN | 11617 | MISSISSIPPI DR N | 11617 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 282 | 3312021210039 | AMY RANHEIM-CERISIER | 11601 | MISSISSIPPI DR N | 11601 MISSISSIPPI DR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 283 | 3312021210040 | DAVID THOMPSON | 5608 | RIVERVIEW CIR N | 5608 RIVERVIEW CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 284 | 3312021210041 | M E HAGBERG & B K HAGBERG | 5616 | RIVERVIEW CIR N | 5616 RIVERVIEW CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 285 | 3312021210042 | ADAM F LEHOCKY | 5624 | RIVERVIEW CIR N | 5624 RIVERVIEW CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 286 | 3312021210043 | SHAWNIA CARLSON | 5632 | RIVERVIEW CIR N | 5632 RIVERVIEW CIR N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | \$5,680.00 |
| 287 | 3312021210044 | LAUREN BRABEC & COLLIN BOOTH | 5633 | RIVERVIEW | | | | | | | | | | | |

| PRELIMINARY ASSESSMENT ROLL MISSISSIPPI DRIVE AREA STREET & UTILITY PROJECT | | | | | | | | | | | | | | | | | |
|--|---------------|--|-------|------------------|-----------------------|-------------|----|-------|----------------------|-----|----------------|--------------|--|-----|----------|-------------|----------------|
| Date: 11/13/2023 WSB Project No.: 023250-000 | | NO. RECLAIM AND STREET FRONT FRONTRAGE PROPOSED PID NO OWNER NAME BLDG_NUM ADDRESS MAILING ADDRESS CITY ZIP ST CODE USE UNITS PAVE STREET LIGHTS FOOTAGE ASSESSMENT ACTIVE RESID. \$4,560.00 \$1,120.00 (LF) \$150.00 ASSMTS | | | | | | | | | | | | | | | |
| 326 | 3312021240087 | GAGE MCDONALD/KATELYN NORTON | 11406 | WELCOME AVE N | 11406 WELCOME AVE N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 | |
| 327 | 3312021240086 | TIFFANY & LONNIE MATHEWS | 11412 | WEST RIVER RD | 11412 WEST RIVER RD | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 | |
| 330 | 3312021130042 | MAVERICKS PROPERTIES LLC | 11328 | WEST RIVER RD | 11328 WEST RIVER RD | CHAMPLIN | MN | 55316 | COMMERCIAL-PREFERRED | 0 | | | | 152 | \$150.00 | \$22,800.00 | |
| 331 | 3312021130020 | T L LENNANDER/J C LENNANDER | 11400 | VERA CRUZ AVE N | 11400 VERA CRUZ AVE N | CHAMPLIN | MN | 55316 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 | |
| 332 | 3312021130041 | D CHANDLER & C CHANDLER | 11320 | MISSISSIPPI DR N | 2217 22ND AVE NE | MINNEAPOLIS | MN | 55418 | RESIDENTIAL | 1 | \$4,560.00 | \$1,120.00 | | | | \$5,680.00 | |
| | | | | | | | | | | 302 | \$1,377,120.00 | \$338,240.00 | | | | \$150.00 | \$1,738,160.00 |



Appendix D

Coring Report

Geotechnical Report

Pavement Investigation Report

To: City of Champlin, Minnesota

Date: August 17, 2023

Re: Pavement Investigation
2024 Street Improvement Project
R-023250-000
Champlin, Minnesota

WSB is pleased to submit this report detailing the results of our field pavement investigation and recommendations for pavement rehabilitation.

Our field investigation included documenting the existing pavement conditions, obtaining pavement cores, power or hand auger drilling through any existing aggregate base, and measuring and visually classify both the aggregate base and the immediate underlying subbase or subgrade material.

Based on the field data obtained and summarized in our report, we are providing recommendations for reconstruction or rehabilitation techniques that we feel would be both viable and bring the most value to meet the project goals. The recommendations provided are based solely on our understanding of those goals. Therefore, other pavement rehabilitation techniques may also be feasible.

An aerial map with the approximate core locations and a summary table of the field data obtained at each location are presented in this report. Photographs of the pavement cores obtained, along with photographs of the existing pavement surface conditions at those locations can be found in the **Appendix**.

We appreciate the opportunity to provide our professional services as part of your project and we look forward to working with you again.

If you have any questions about this report or the recommendations it contains, please don't hesitate to contact us.

Sincerely,



Matt Henderson
Pavement Management
mhenderson@wsbeng.com
612.759.7218



Sam Lundquist
Pavement Management
slundquist@wsbeng.com
612.214.5949

Project Understanding:

We understand the City of Champlin is seeking to improve their existing bituminous pavements at multiple locations through reconstruction or rehabilitation construction techniques. We also understand our services were requested to aid the design team in preparing project plans and specifications. The proposed pavement rehabilitation area includes the road segments that received coring investigations. We assumed the roadways under consideration receive standard daily traffic for residential and rural areas.

Field Exploration:

WSB performed the field exploration outlined in this report on July 24, 2023. A total of twenty-three (23) locations were cored and bored within the proposed pavement rehabilitation area. The approximate locations investigated and presented in this report are shown in **Figure 1**.

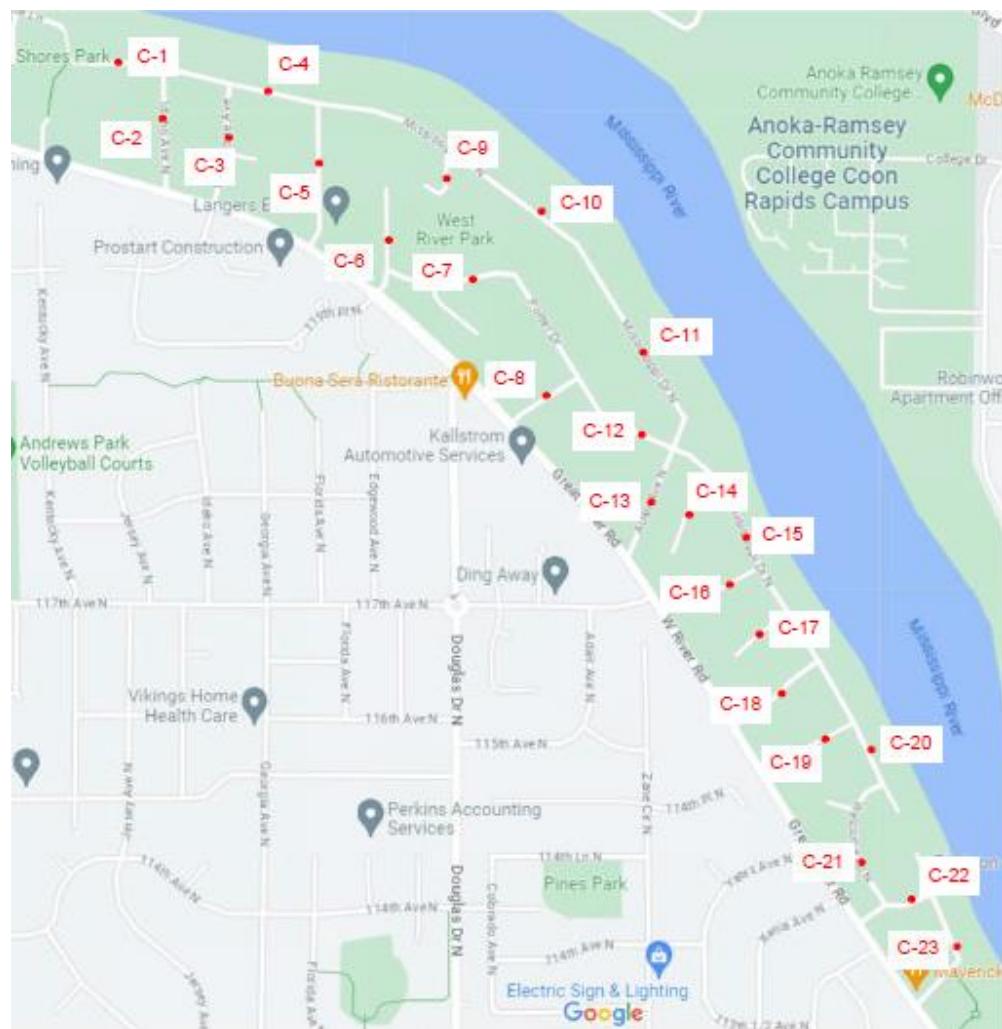


Figure 1: Core Location Map

Summary of Field Exploration:

The twenty-three (23) cores obtained had bituminous pavement depths ranging from 1.75 inches to 4.50 inches, with a wear or top lift ranging from 0.5" inches to 2.25 inches, and the base lift ranging from not present to 2 inches. The condition of each core and its apparent lifts of asphalt were classified based on condition, and the condition of the cores and lifts ranged from poor to good condition with poor cores exhibiting raveling and cracking. The majority of the cores were in poor condition with a select few locations showing pavement in good condition. The aggregate base thickness varied from location to location and appeared to be sand with gravel, brown in color, and ranged in depth from 2 inches to 11 inches. The subbase in general was identified as sand with trace gravel, dark brown, brown, or reddish brown in color. Location 1 differed from the rest with Black Silty Sand observed as the subgrade. The pavement exhibited various amounts of transverse and longitudinal cracking, patching, and surface raveling throughout. Refer to field notes in **Table 1 and Table 2** for more detailed information about the distresses and pavement sections at each sample location.

Table 1: Existing Pavement Observations

| Core ID | Location | Number of Lanes | Lane Width (ft) | Functional Classification | Curb and Gutter | Surface Distresses | Drainage Condition |
|---------|------------------|-----------------|-----------------|---------------------------|-----------------|---|--------------------|
| 1 | Mississippi Dr N | 2 | 14 | Residential Street | Yes | Raveling, Some Transverse Cracking | Good |
| 2 | Idaho Ave N | 2 | 14 | Residential Street | Yes | Patching, Some Transverse and Longitudinal Cracking | Good |
| 3 | Hampshire Ave | 2 | 14 | Residential Street | Yes | Patching, Some Transverse and Longitudinal Cracking | Good |
| 4 | Mississippi Dr N | 2 | 14 | Residential Street | Yes | Patching, Some Transverse and Longitudinal Cracking | Good |
| 5 | Florida Ave N | 2 | 14 | Residential Street | Yes | Patching, Some Transverse and Longitudinal Cracking | Good |
| 6 | Edgewood Ct N | 2 | 14 | Residential Street | Yes | Some Transverse Cracking | Good |
| 7 | Porter Dr | 2 | 14 | Residential Street | Yes | Some Transverse Cracking | Good |
| 8 | Colorado Ave N | 2 | 14 | Residential Street | Yes | Some Transverse Cracking | Good |
| 9 | Douglas Dr N | 2 | 14 | Residential Street | Yes | Some Transverse Cracking | Good |
| 10 | Mississippi Dr N | 2 | 14 | Residential Street | Yes | Patching, Some Transverse and Longitudinal Cracking | Good |

| Core ID | Location | Number of Lanes | Lane Width (ft) | Functional Classification | Curb and Gutter | Surface Distresses | Drainage Condition |
|---------|-------------------|-----------------|-----------------|---------------------------|-----------------|--|--------------------|
| 11 | Mississippi Dr N | 2 | 14 | Residential Street | Yes | Patching, Some Tranverse Cracking | Good |
| 12 | Porter Dr | 2 | 14 | Residential Street | Yes | Patching, Some Tranverse Cracking | Good |
| 13 | Adair Ave N | 2 | 14 | Residential Street | Yes | Patching, Potholes, Transverse and Longitudinal Cracking | Good |
| 14 | Shephard Ln N | 2 | 14 | Residential Street | Yes | Some Transverse and Longitudinal Cracking | Good |
| 15 | Mississippi Dr N | 2 | 14 | Residential Street | Yes | Patching, Some Tranverse Cracking | Good |
| 16 | Shephard Cir N | 2 | 14 | Residential Street | Yes | Some Transverse Cracking | Good |
| 17 | Riverview Ln N | 2 | 14 | Residential Street | Yes | Some Transverse Cracking | Good |
| 18 | Riverview Entry N | 2 | 14 | Residential Street | Yes | Patching, Transverse and Longitudinal Cracking | Good |
| 19 | Riverview Cir | 2 | 14 | Residential Street | Yes | Transverse and Longitudinal Cracking | Good |
| 20 | Mississippi Dr N | 2 | 14 | Residential Street | Yes | Patching, Transverse and Longitudinal Cracking | Good |

| Core ID | Location | Number of Lanes | Lane Width (ft) | Functional Classification | Curb and Gutter | Surface Distresses | Drainage Condition |
|---------|------------------|-----------------|-----------------|---------------------------|-----------------|---|--------------------|
| 21 | Welcome Ln N | 2 | 14 | Residential Street | Yes | Some Transverse and Longitudinal Cracking | Good |
| 22 | Welcome Ave N | 2 | 14 | Residential Street | Yes | Some Transverse and Longitudinal Cracking | Good |
| 23 | Mississippi Dr N | 2 | 14 | Residential Street | Yes | Some Transverse Cracking | Good |

Table 2: Existing Pavement Section Details

| Core ID | Location | Bituminous Depth (in) | Lift Thickness (in) and Condition | Base Depth and Type | Subbase or Subgrade Type |
|---------|------------------|-----------------------|--|-------------------------------|-------------------------------|
| 1 | Mississippi Dr N | 2.00 | 1.25" Wear 0.75" Base Poor, Raveling Throughout Core | 4", Sand with Gravel, Brown | Silty Sand, Black |
| 2 | Idaho Ave N | 2.50 | 0.75" Wear 1.75" Base Poor, Raveling Throughout Core | 5.5", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 3 | Hampshire Ave | 2.50 | 1.75" Wear .75" Base Fair, Raveling in Base Layer | 6", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |

| Core ID | Location | Bituminous Depth (in) | Lift Thickness (in) and Condition | Base Depth and Type | Subbase or Subgrade Type |
|---------|------------------|-----------------------|---|-------------------------------|---------------------------------------|
| 4 | Mississippi Dr N | 2.00 | 0.75" Wear 1.25" Base Poor, Raveling Throughout Core | 5", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 5 | Florida Ave N | 2.50 | 0.5" Wear 2" Base Poor, Raveling Throughout Core | 5.5", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 6 | Edgewood Ct N | 4.50 | 2" Wear 2.5" Base Poor, Raveling Throughout Core | 7", Sand with Gravel, Brown | Sand with Trace Gravel, Reddish Brown |
| 7 | Porter Dr | 3.50 | 1.5" Wear 2" Base Fair, Some Raveling in Base Layer | 5", Sand with Gravel, Brown | Sand with Trace Gravel, Reddish Brown |
| 8 | Colorado Ave N | 4.50 | 2.25" Wear 2.25" Base Good | 3.5", Sand with Gravel, Brown | Sand with Gravel, Dark Brown |
| 9 | Douglas Dr N | 2.50 | 2" Wear 0.5" Base Fair, Some Raveling in Base Layer | 3.5", Sand with Gravel, Brown | Sand with Trace Gravel, Reddish Brown |
| 10 | Mississippi Dr N | 2.50 | 1.25" Wear 1.25" Base Fair, Some Raveling in Base Layer | 4.5", Sand with Gravel, Brown | Sand with Gravel, Dark Brown |

| Core ID | Location | Bituminous Depth (in) | Lift Thickness (in) and Condition | Base Depth and Type | Subbase or Subgrade Type |
|---------|------------------|-----------------------|---|-------------------------------|------------------------------------|
| 11 | Mississippi Dr N | 2.75 | 1.5" Wear 1.25" Base Fair, Some Raveling in Base Layer | 5", Sand with Gravel, Brown | Sand with Trace Gravel, Dark Brown |
| 12 | Porter Dr | 2.00 | 2" Wear (1 Lift of Material) Good | 4.5", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 13 | Adair Ave N | 2.75 | 0.75" Wear 2" Base Poor, Raveling Throughout Core | 4", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 14 | Shephard Ln N | 2.00 | 2" Wear (1 Lift of Material) Good | 6", Sand with Gravel, Brown | Sand with Trace Gravel, Dark Brown |
| 15 | Mississippi Dr N | 3.00 | 1.75" Wear 1.25" Base Fair, Some Raveling in Base Layer | 5", Sand with Gravel, Brown | Sand with Trace Gravel, Dark Brown |
| 16 | Shephard Cir N | 3.50 | 1.5" Wear 2" Base Good | 8", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 17 | Riverview Ln N | 3.00 | 1.5" Wear 1.5" Base Good | 11", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |

| | | | | | |
|----|-------------------|------|---|-------------------------------|---------------------------------------|
| 18 | Riverview Entry N | 1.75 | 1" Wear 0.75" Base Poor, Raveling Throughout Core | 4", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 19 | Riverview Cir | 2.25 | 1.25" Wear 1" Base Fair, Some Raveling in Base Layer | 5", Sand with Gravel, Brown | Sand with Trace Gravel, Reddish Brown |
| 20 | Mississippi Dr N | 3.25 | 2.25" Wear (1 Lift of Material) Good | 6", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 21 | Welcome Ln N | 2.25 | 2.25" Wear (1 Lift of Material) Fair, Some Raveling in Base Layer | 3", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 22 | Welcome Ave N | 2.25 | 2.25" Wear (1 Lift of Material) Fair, Some Raveling in Base Layer | 2.5", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |
| 23 | Mississippi Dr N | 2.00 | 2" Wear (1 Lift of Material) Fair, Some Raveling in Base Layer | 3.5", Sand with Gravel, Brown | Sand with Trace Gravel, Brown |

Recommendations for Rehabilitation:

Based on the conditions of the existing bituminous pavement and the subsurface data gathered by WSB, we recommend two rehabilitation techniques be considered.

One option we recommend is a complete reconstruction. This would include the complete removal of the existing bituminous pavement and any unsuitable base or subbase material. Proper base and subbase material could then be placed before paving the streets with new asphalt. WSB recommends this option because several core locations revealed poor pavement conditions. Additionally, drainage improvements could be made to help combat some of the bottom-up raveling that has started in some locations of the investigated area. While investing in a new, properly designed aggregate base and subbase can be expensive, the added structural capacity and drainage will greatly increase the life of any new driving surface. This option provides a completely new road section made from mostly new materials.

Another option we recommend considering is a Full Depth Reclamation (FDR). This process involves grinding up the full section of existing bituminous and mixing it into the existing underlying base material. The resultant product acts as a new aggregate base layer providing direct support for new bituminous pavement. This rehabilitation technique can also help reduce bottom-up distresses caused by poor drainage. However, in areas where the pavement's aggregate base is deficient (less than 4"), other imported materials will likely need to be incorporated when grinding and mixing the materials on site. These additional materials can include additional gravel or stabilizing agents. Performing a FDR project will provide additional strength and uniformity to the aggregate base layer and remove any reflective cracking that might originate in the existing pavement section.

The deciding factor between these possible options may be largely dependent on the price difference at the time of bidding, project timelines, and contractor availability. While reconstruction projects are usually considered the costliest pavement repair, the price for a FDR project can vary greatly depending on the need to supplement the base material during the reclamation. Both options presented should provide a long-term pavement solution. Both recommended techniques would have similar maintenance requirements with the complete reconstruction option expected to have a slightly longer life expectancy.

Less costly rehabilitation options were considered but were ultimately deemed inappropriate for a variety of factors. For example, a mill and overlay project would not perform as intended due to the thin pavement section present at most locations and the presence of bottom-up raveling found throughout the site. While there were a few isolated areas where a mill and overlay project could be feasible, these locations are scattered throughout the investigation area. Specifying two different types of rehabilitation techniques to accommodate a few locations results in higher unit costs and usually does not provide the intended cost savings.

Key Considerations:

The import or export of any lacking base aggregates associated with the recommended rehabilitation techniques should be considered. The quantity needed will be highly dependent on designed profiles and structure limitations such as utility structures and any intersection or adjacent driveway tie in elevations. If requested, WSB can provide additional information and best practices on the rehabilitation techniques recommended. We can also offer additional analysis to help the City decide between the recommended alternatives if needed.

Any unstable base soils discovered during a test roll would likely require removal and replacement. Potential costs associated with these corrections should be anticipated.

Pavement Design:

Any new bituminous pavement section and pavement mix type should be designed and specified by a Civil Engineer with consideration of the loads, climate, desired life expectancy and other key factors. If requested, WSB can provide a pavement design for this project.

Limitations:

The field data presented should be considered approximate and only valid for the location investigated. We assumed smooth transitions of similar materials between locations when formulating the recommendations provided.

Our recommendations are based solely on the data obtained through our limited field investigations and our experience with similar reconstructive and rehabilitation work for the locale. We consider local contractor experience and industry costs associated with the various rehabilitation techniques available in conjunction with project specific details.

Appendix:

- Photographs of Cores
- Photographs of Existing Surface Condition

Appendix

Core 1



Core 1



Core 2



Core 2



Core 3



Core 3



Core 4



Core 4 (core surface photo not obtained)



Core 5



Core 5



Core 6



Core 6



Core 7



Core 7



Core 8



Core 8



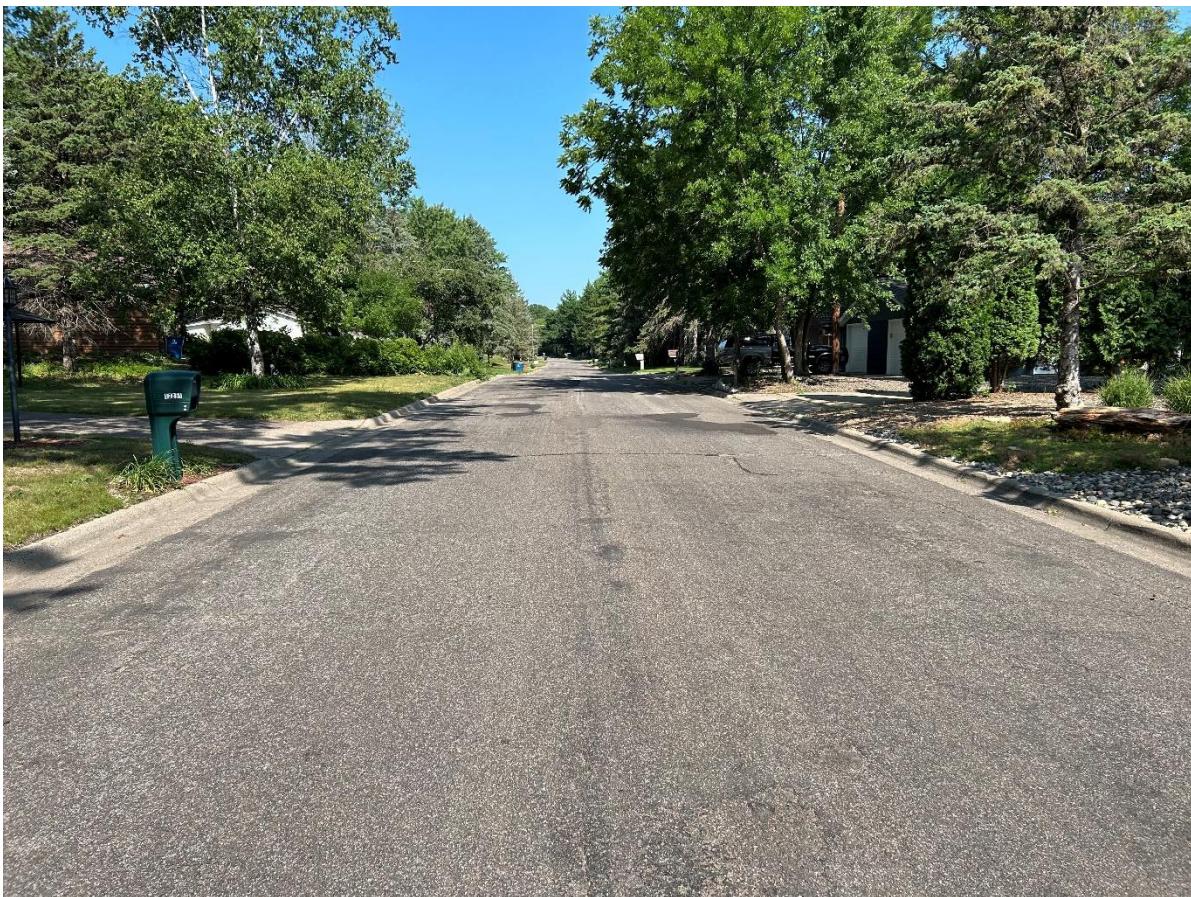
Core 9



Core 9



Core 10



Core 10



Core 11



Core 11



Core 12



Core 12



Core 13



Core 13



Core 14



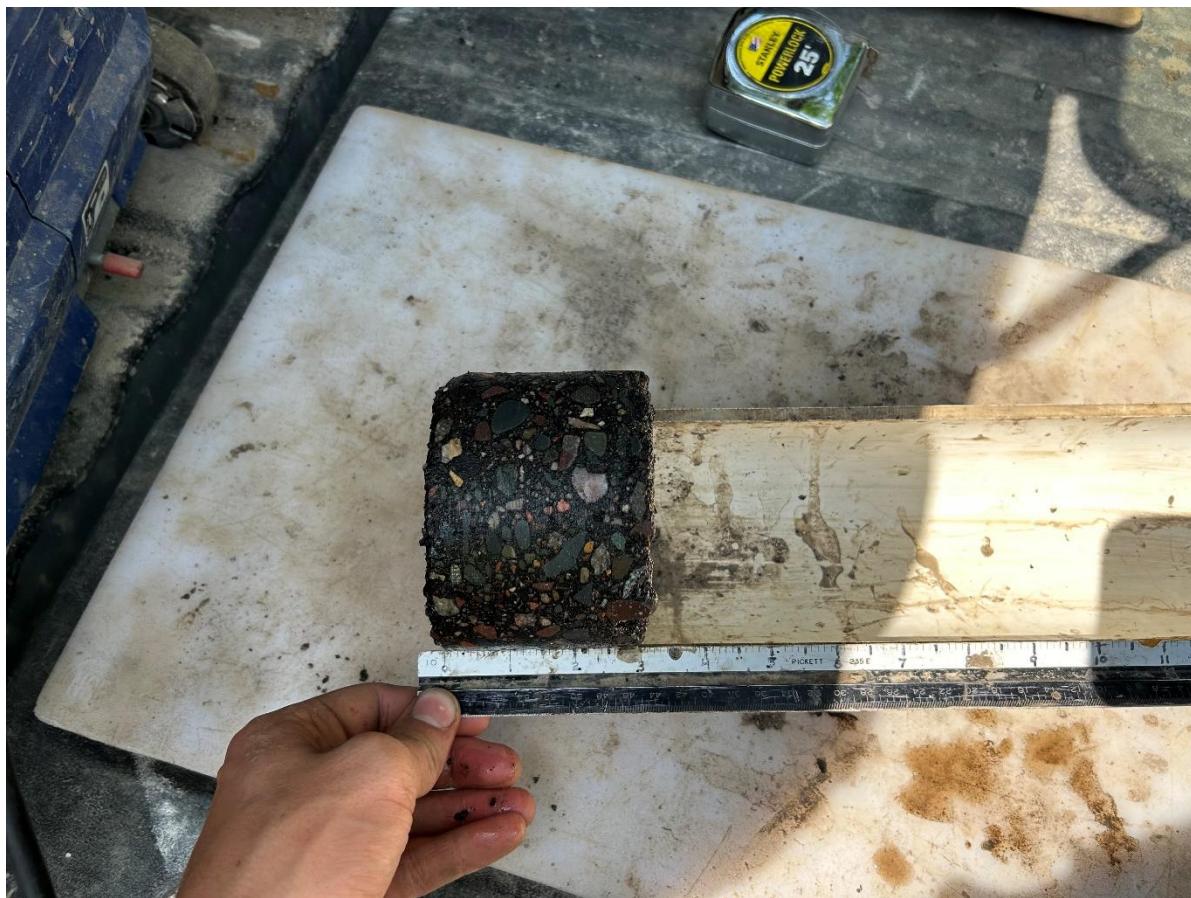
Core 14



Core 15



Core 15



Core 16



Core 16



Core 17



Core 17



Core 18



Core 18



Core 19



Core 19 (core length photo not obtained)



Core 20



Core 20



Core 21



Core 21



Core 22



Core 22 (core photos not obtained)

Core 23



Core 23





**REPORT OF
GEOTECHNICAL EXPLORATION**
2024 Champlin Street Improvements
Champlin, Minnesota

AET Project No. P-0024861

Date: October 2, 2023

Prepared for:

WSB, Inc.

Geotechnical • Materials
Forensic • Environmental
Building Technology
Petrography/Chemistry

American Engineering Testing
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October 2, 2023

WSB, Inc.
701 Xenia Avenue South, Suite 300
Minneapolis, Minnesota 55416

Attn: Jennifer Edison, PE

RE: Geotechnical Exploration
2024 Champlin Street Improvements
Champlin, Minnesota
AET Report No. P-0024861

Dear Ms. Edison:

American Engineering Testing, Inc. (AET) is pleased to present the results of our subsurface exploration program and geotechnical engineering review for your 2024 Champlin Street Improvements project in Champlin, Minnesota. These services were performed according to our proposal to you dated July 12, 2023.

We are submitting one electronic (.pdf) copy of the report to you.

Please contact me if you have any questions about the report. I can also be contacted for arranging construction observation and testing services.

Sincerely,
American Engineering Testing, Inc.



Robert J. Olson, PE (MN)
Area Manager
rolson@teamAET.com
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SIGNATURE PAGE

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Authored by:



Robert J. Olson, PE (MN)
Area Manager

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 Minnesota Statute Section 326.02 to 326.15

Name: Robert J. Olson

Date: October 2, 2023 License #: 45023

Reviewed by:



Robin L. Flickinger
Senior Engineer

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STANDARD SHEETS

Definitions Relating to Pavement Construction

APPENDIX A – Geotechnical Field Exploration and Testing

Boring Log Notes

Unified Soil Classification System

Figure 1 - Boring Locations

Subsurface Boring Logs

APPENDIX B – Geotechnical Report Limitations and Guidelines for Use

1.0 INTRODUCTION

The City of Champlin (City) is proposing to construct street improvements in 2024 on various streets in Champlin, Minnesota. To assist with planning and design, you have authorized American Engineering Testing, Inc. (AET) to conduct a subsurface exploration program at the site, conduct soil laboratory testing, and perform a geotechnical engineering review for the project. This report presents the results of the above services and provides our engineering recommendations based on this data.

2.0 SCOPE OF SERVICES

AET's services were performed according to our proposal to you dated July 12, 2023, which you authorized on July 31, 2023. The authorized scope consists of the following.

- Drilling 4 standard penetration test borings to depths ranging from 5 to 14½ feet each.
- Performing soil laboratory testing.
- Performing a geotechnical engineering review based on the data and preparing this report.

These services are intended for geotechnical purposes only. The scope is not intended to explore for the presence or extent of environmental contamination in the soil or groundwater.

3.0 PROJECT INFORMATION

The City is proposing to construct street improvements to the streets within the neighborhood that falls along Mississippi Drive from Idaho Avenue to Vera Cruz Avenue in 2024. The existing roads are residential 2-lane bituminous paved roads with curb and gutter. A future utility project within West River Park is also planned. The proposed street and utility project improvements have not been fully defined at the time of this report, however the street will be reconstructed to meet the requirements of the City.

These soil borings are supplemental to the pavement coring of the existing streets performed by WSB. The results of the pavement coring was not part of the scope of our investigation and was not reviewed by AET.

The above stated information represents our understanding of the proposed construction. This information is an integral part of our engineering review. It is important that you contact us if

there are changes from that described so that we can evaluate whether modifications to our recommendations are appropriate.

4.0 SUBSURFACE EXPLORATION AND TESTING

4.1 Field Exploration Program

The subsurface exploration program conducted for the project consisted of 4 standard penetration test borings. The client determined the number of borings, boring locations, and boring depths. The logs of the borings and details of the methods used appear in Appendix A. The logs contain information concerning soil layering, soil classification, geologic origins, and moisture condition. A density description or consistency is also noted for the natural soils, which is based on the standard penetration resistance (N-value).

The boring locations are shown on Figure 1 in Appendix A. The borings were located in the field by AET personnel by taping from nearby site features. Surface elevations were measured in the field by AET personnel using GPS. These elevations should be confirmed by the client's surveyor.

4.2 Laboratory Testing

The laboratory test program included moisture content testing of the fine grained (clayey) soils. The test results appear in Appendix A on the individual boring logs adjacent to the samples upon which they were performed.

5.0 SITE CONDITIONS

5.1 Surface Observations

The bituminous roadway surfaces are in poor condition. The roadways have curb and gutter with residential yards beyond the curb and gutter. The elevation of the roadway varies from 849.3 feet at Boring SB-3 to 853.1 feet at Boring SB-1. Driveways for residences connect to the roadway.

West River Park is an active park within the neighborhood of this project. The park is currently vegetated and consists of a baseball field, a basketball court, a playground, and a parking lot. The existing grading generally slopes downwards towards the center of the park and then slopes downward from south to north. The elevation of Boring SB-4 within the park was 864.8 feet.

5.2 Subsurface Soils/Geology feet

The site geology consists of fill or possible fill overlying coarse alluvium and till. The estimates of strength, compressibility and drainage given in the sections below are subjective in nature meant to give a generalized view of the soil properties.

5.2.1 Fill or Possible Fill

Fill or possible fill was encountered at the surface of Borings SB-1, SB-2, and SB-3. The fill or possible fill extended to the boring termination depth at about 6 feet beneath existing grade. The surface consisted of 2½ to 3 inches of bituminous pavement over 4 to 6 inches of gravel base. Beneath the gravel base, sand, silty sand, sand with silt, and clayey sand fill was encountered. Possible fill, which was identified as 'Coarse Alluvium or Fill', was encountered in SB-3 to the boring termination depth. We could not determine the geological origin based on the recovered samples. The fill or possible fill is judged to have moderate to high strength and low compressibility. The fill is moderately fast draining and is judged to have low to moderate frost susceptibility.

5.2.2 Topsoil

Topsoil was encountered at the surface of Boring SB-4 to a depth of about 1½ feet beneath existing grade. The topsoil consists primarily of silty sands with various amounts of organics. These soils are moderately slow draining and susceptible to freeze-thaw movements. Due to the presence of organics, we judge these soils to be moderately compressible.

5.2.3 Coarse Alluvium

Coarse alluvium soils were encountered below the topsoil in Boring SB-4. These soils were mostly classified as sands and silty sands with various amounts of gravel. These soils had an N-value of 10 blows per foot. These soils are judged to have moderate strength and compressibility. The sands are fast draining and slightly frost susceptible. The silty soils are slower draining materials and have moderate to high frost heave potential.

5.2.4 Till

Till soils were encountered in Boring SB-4. The till soils consist of very dense silty sands with various amounts of gravel. These soils had a N-value of 48 to 62 blows per foot. We judge the till to have high strength and low compressibility. These soils are slow draining and moderately frost susceptible.

5.3 Groundwater

Groundwater was not encountered in any of the borings at the time they were drilled. As the borings terminated in sandy soils, we judge the water level to be below the depth explored by our borings.

Groundwater levels fluctuate due to varying seasonal and annual rainfall and snow melt amounts, as well as other factors. The groundwater levels at the site will also be influenced by the level of the Mississippi River on the north side of the neighborhood. The Minnesota DNR “Lake and Flood Elevations Online” website shows the flood elevation for the Mississippi River to be about 841 feet in this area.

6.0 RECOMMENDATIONS

6.1 Definitions

The italicized words used in this section have specific definitions. These definitions are presented on the attached Standard Sheet entitled “Definitions Relating to Pavement Construction” or in ASTM Standards or MnDOT Specifications.

6.2 Existing Subgrade

Based on the available information and our experience, we estimate the existing subgrade soils to have a subgrade R-value of 30, based on the silty sands being the limiting soil type.

6.3 Subgrade Preparation

6.3.1 Subgrade Preparation

To prepare the pavement subgrades, we recommend removing the existing pavement and aggregate base. It may be possible to salvage the existing aggregate base for re-use. Consideration can also be given to reclaiming the existing bituminous and a portion of the aggregate base to obtain an approximate blend of 50% bituminous to 50% aggregate base. Based on the existing bituminous thickness of 3 inches the reclaim depth would be about 6 inches. The reclaimed material would have to be cut and stockpiled to maintain existing pavement grades.

Our borings indicate that the existing silty sand fill would comprise the subgrade. Any underlying soft or disturbed soils may also need to be removed and should be evaluated by AET geotechnical personnel. We recommend these soils be evaluated before any additional fill is placed. If soft or unstable soils are observed, then correction should be performed as needed.

by subcutting and replacing the inferior soils, or by in-place scarification, drying, and recompaction.

Following preparation and compaction of existing subgrade soils, fill can be placed as needed to re-attain subgrade elevation. Frozen soils should not be used as fill and new fill soils should not be placed over frozen subgrades. The fill should be similar to the existing subgrade soils and consist of silty sands to maintain similar support and frost heave characteristics.

The excavations required to remove the inferior soils should extend beyond the pavement edges or the backs of the curbs at least $\frac{1}{2}$ -foot for each vertical foot of fill needed to establish subgrade elevations in order to provide support of lateral loads through the fill.

All fill should be placed and compacted per the requirements of MnDOT Specification 2105.3F1 (Specified Density Method). This specification requires soils placed within the upper 3 feet of the subgrade be compacted to a minimum of 100% of its standard Proctor maximum dry unit weight (as defined in ASTM: D698) at water contents of 65% to 102% of their respective optimum water contents. A reduced minimum compaction level of 95% can be used below the upper 3 feet of the subgrade zone.

6.3.2 Compaction Subcut

After subcutting a foot below the bottom of the aggregate base, we recommend the soils be scarified and recompacted. The subgrade surface in the subcut should be compacted to improve density and provide a more consistent subgrade condition. We recommend the soils be compacted by a self-propelled roller having a minimum drum diameter of 3 feet. The compactor should make at least 4 passes over the entire excavation bottom before beginning fill placement for the compaction subcut. The subcut and base soils may need to be wetted prior to and during compaction and recompacted to a minimum of 100% of the Standard Proctor maximum dry density. Any *organic soils* exposed in this subcut excavation should be removed.

6.3.3 Test Roll and Sand Subbase

Consideration can be given to the placement of a drained *sand subbase* that would consist of free draining sand (SP). The sand would be drained to catch basins or a ditch section. This would improve pavement performance and extend pavement life; this would require removal of part of the subgrade soils to maintain present grades. Following the compaction subcut and prior to aggregate base or *sand subbase* placement, we recommend the subgrade soils be test-rolled (as described in the attached sheet) to determine if unstable zones exist. If unstable soils

are encountered, they should be subcut and replaced, or they should be scarified, dried, and recompacted until proper stability is achieved.

6.3.4 Tapers

It is important that any subgrade correction performed be tapered to minimize differential frost heave conditions. Where the soil type of the sand subgrade varies longitudinally, we recommend a 20:1 (H:V) taper to minimize differential frost heaving. We recommend 4:1 (H:V) horizontal tapers between the reconstructed roadway and any connections to existing streets.

6.4 Pavement Design

6.4.1 Estimated R-value

After completion of the subgrade preparation as presented above, and assuming the soils in the upper 3 feet of the subgrade will consist of well compacted granular silty sand soils, we estimate a subgrade R-value of 30 can be used for pavement design.

6.4.2 Section Thicknesses

The pavement design is intended for pavements which will experience light truck traffic (7-ton design load). The recommended pavement thicknesses, based on an R-value of 30 and a Gravel Equivalency (G.E.) of 12, are shown in Table 6.4.2 below. The pavement design thickness has been estimated using the MnDOT Flexible Pavement Design, R-Value Method.

Table 6.4.2 – Pavement Thickness Recommendations

| Pavement Course | Section Thickness (inches) and Design Mix |
|--|--|
| | Heavy Duty Areas |
| Bituminous Wear | 1½ - (Mix: SPWEA440F*) |
| Bituminous Wear | 2 - (Mix: SPWEB440F*) |
| Aggregate Base (MnDOT 3138 – 100% Crushed) | 6 |

*Recommended Asphalt Binder: PG 58V-34

We understand that the City of Champlin has a minimum pavement section thickness of 4½

inches of bituminous asphalt overlying 6 inches of aggregate base for residential roadways. The above pavement design will give a recommended minimum bituminous thickness of 3 inches, with construction tolerances of $\frac{1}{4}$ inch per lift. The Class 5 base material (100% crushed) should be compacted to at least 100% of its standard Proctor maximum dry density or to meet the penetration index criteria for Mn/DOT Dynamic Cone Penetrometer (DCP) tests. After the aggregate base has been placed, compacted and tested, it is the contractor's responsibility to maintain the base in suitable condition for paving. If the subgrade or aggregate base materials become saturated or contaminated by clayey soils, after testing, it may be rendered unsuitable for paving due to softness and pumping. This action would require remedial action before pavement can be placed.

A regular, annual program of maintenance must be performed to realize a pavement life of an estimated 20 years. Within one to three years after construction, shrinkage cracks will develop in the bituminous section due to loss of volatiles from the asphaltic cement, and due to thermal expansion and contraction of the pavement. Such cracks should be cleaned and sealed annually. Distressed areas may develop within three to five years. Such areas should be cut out and replaced expeditiously. Seal coating with an aggregate chip surface should also be applied periodically.

6.4.3 Bituminous Pavement Mix Design Considerations

Various bituminous mix designs and binder materials for pavements could be considered, specifically to resist thermal cracking and rutting. Binders with a designation of "F" generally have a greater initial cost than "B" or "C" binders, but they are more resistant to rutting and thermal cracking. If "B" or "C" binders are used, there will be an increased probability of thermal cracking compared to using an "F" binder. Thermal cracks tend to demand more maintenance and result in a reduced service life with greater long-term costs. The "F" binder is specified as PG 58V-34 in MNDOT's new oil criteria designation.

Also, we recommend that the wear course has a maximum of 10% (by weight) recycled asphalt products (RAP). The purpose of this is to limit the potential for thermal cracking while still providing adequate strength. If more than 10% of RAP is used in the bituminous mix, it will likely increase the total amount of asphaltic binder in the mix and could lead to further weakening and reduced service life of the pavement.

7.0 CONSTRUCTION CONSIDERATIONS

7.1 Potential Difficulties

7.1.1 Runoff Water in Excavation

Water can be expected to collect in the excavation bottom during times of inclement weather or snow melt. To allow observation of the excavation bottom, to reduce the potential for soil disturbance, and to facilitate filling operations, we recommend water be removed from within the excavation during construction. Based on the soils encountered, we anticipate the groundwater can be handled with conventional sump pumping.

7.1.2 Disturbance of Soils

The on-site soils can be disturbed under construction traffic, especially if the soils are wet. If soils become disturbed, they should be subcut to the underlying undisturbed soils. The subcut soils can then be dried and recompacted back into place, or they should be removed and replaced with drier imported fill.

7.1.3 Cobbles and Boulders

The soils at this site can include cobbles and boulders. This may make excavating procedures somewhat more difficult than normal if they are encountered.

7.2 Excavation Backsloping

If excavation faces are not retained, the excavations should maintain maximum allowable slopes in accordance with *OSHA Regulations (Standards 29 CFR), Part 1926, Subpart P, "Excavations"* (can be found on www.osha.gov). Even with the required OSHA sloping, water seepage or surface runoff can potentially induce sideslope erosion or sloughing which could require slope maintenance.

7.3 Observation and Testing

The recommendations in this report are based on the subsurface conditions found at our test boring locations. Since the soil conditions can be expected to vary away from the soil boring locations, we recommend on-site observation by a geotechnical engineer/technician during construction to evaluate these potential changes. Soil density testing should also be performed on new fill placed in order to document that project specifications for compaction have been satisfied.

8.0 ASTM STANDARDS

When we refer to an ASTM Standard in this report, we mean that our services were performed in general accordance with that standard. Compliance with any other standards referenced within the specified standard is neither inferred nor implied.

9.0 LIMITATIONS

Within the limitations of scope, budget, and schedule, we have endeavored to provide our services according to generally accepted geotechnical engineering practices at this time and location. Other than this, no warranty, express or implied, is intended.

Important information regarding risk management and proper use of this report is given in Appendix B entitled "Geotechnical Report Limitations and Guidelines for Use."

DEFINITIONS RELATING TO PAVEMENT CONSTRUCTION

Top of subgrade: Grade which contacts the bottom of the aggregate base layer.

Sand subbase: Uniform thickness sand layer placed as the top of subgrade which is intended to improve the frost and drainage characteristics of the pavement system by increasing drainage of excess water in the aggregate base and subbase, by reducing and “bridging” frost heaving, and by reducing spring thaw weakening effects.

Critical subgrade zone: The subgrade portion beneath and within three vertical feet of the top of subgrade. A sand subbase, if placed, would be considered the upper portion of the critical subgrade zone.

Suitable Grading Material: Mineral soil materials, typically from the project site, excluding the following: 1) soils which have an organic content exceeding 3%, 2) cohesive soils having a Liquid Limit exceeding 50%, 3) soils which include debris, cobbles, and/or boulders, and 4) soils which are considered acceptable from an environmental standpoint. The soil must also be capable of attaining the specified compaction level at its current water content or at a water content that can be reasonably scarified, blended, and moisture conditioned to a uniform water content in order to uniformly meet compaction requirements.

Granular Material: Soils meeting MnDOT Specification 3149.2B.1. This refers to granular soils which, of the portion passing the 1" sieve, contain less than 20% by weight passing the #200 sieve.

Select Granular Material: Soils meeting MnDOT Specification 3149.2B.2. This refers to granular soils which, of the portion passing the 1" sieve, contain less than 12% by weight passing the #200 sieve.

Select Granular Material (Super Sand): Soils meeting MnDOT Specification 3149.2B.3. This material is cleaner and coarser than Select Granular Material (see specification for specific requirements).

Compaction Subcut: Construction of a uniform thickness subcut below a designated grade to provide uniformity and compaction within the subcut zone. Replacement fill can be the materials subcut, although the reused soils should be blended to a uniform soil condition, moisture conditioned as needed to meet MnDOT Specification 2105.F; and re-compact per the Specified Density Method defined in MnDOT Specification 2105.3F.1.

Test Roll: A means of evaluating the near-surface stability of subgrade soils (usually non-granular). Suitability is determined by the depth of rutting or deflection caused by passage of heavy rubber-tired construction equipment, such as a loaded dump truck, over the test area. Yielding of less than 1" is normally considered acceptable, although engineering judgment may be applied depending on the equipment used, soil conditions present, and/or depth below final grade.

Unstable Soils: Subgrade soils which do not pass a test roll. Unstable soils typically have water content exceeding the *standard optimum water content* defined in ASTM:D698 (Standard Proctor test).

Organic Soils: Soils which have sufficient organic content such that the soils engineering properties are negatively affected (typically more than 3% organic content). These soils are usually black to dark brown in color.

Appendix A

Geotechnical Field Exploration and Testing
Boring Log Notes
Unified Soil Classification System
Figure 1 – Boring Locations
Subsurface Boring Logs

Appendix A

Geotechnical Field Exploration and Testing

Report No. P-0024861

A.1 FIELD EXPLORATION

The subsurface conditions at the site were explored by drilling and sampling four (4) standard penetration test borings. The locations of the borings appear on Figure 1, preceding the Subsurface Boring Logs in this appendix.

A.2 SAMPLING METHODS

A.2.1 Split-Spoon Samples (SS) - Calibrated to N_{60} Values

Standard penetration (split-spoon) samples were collected in general accordance with ASTM: D1586 with one primary modification. The ASTM test method consists of driving a 2-inch O.D. split-barrel sampler into the in-situ soil with a 140-pound hammer dropped from a height of 30 inches. The sampler is driven a total of 18 inches into the soil. After an initial set of 6 inches, the number of hammer blows to drive the sampler the final 12 inches is known as the standard penetration resistance or N -value. Our method uses a modified hammer weight, which is determined by measuring the system energy using a Pile Driving Analyzer (PDA) and an instrumented rod.

In the past, standard penetration N -value tests were performed using a rope and cathead for the lift and drop system. The energy transferred to the split-spoon sampler was typically limited to about 60% of its potential energy due to the friction inherent in this system. This converted energy then provides what is known as an N_{60} blow count.

The most recent drill rigs incorporate an automatic hammer lift and drop system, which has higher energy efficiency and subsequently results in lower N -values than the traditional N_{60} values. By using the PDA energy measurement equipment, we are able to determine actual energy generated by the drop hammer. With the various hammer systems available, we have found highly variable energies ranging from 55% to over 100%. Therefore, the intent of AET's hammer calibrations is to vary the hammer weight such that hammer energies lie within about 60% to 65% of the theoretical energy of a 140-pound weight falling 30 inches. The current ASTM procedure acknowledges the wide variation in N -values, stating that N -values of 100% or more have been observed. Although we have not yet determined the statistical measurement uncertainty of our calibrated method to date, we can state that the accuracy deviation of the N -values using this method is significantly better than the standard ASTM Method.

A.2.2 Disturbed Samples (DS)/Spin-up Samples (SU)

Sample types described as "DS" or "SU" on the boring logs are disturbed samples, which are taken from the flights of the auger. Because the auger disturbs the samples, possible soil layering and contact depths should be considered approximate.

A.2.3 Sampling Limitations

Unless actually observed in a sample, contacts between soil layers are estimated based on the spacing of samples and the action of drilling tools. Cobbles, boulders, and other large objects generally cannot be recovered from test borings, and they may be present in the ground even if they are not noted on the boring logs.

Determining the thickness of "topsoil" layers is usually limited, due to variations in topsoil definition, sample recovery, and other factors. Visual-manual description often relies on color for determination, and transitioning changes can account for significant variation in thickness judgment. Accordingly, the topsoil thickness presented on the logs should not be the sole basis for calculating topsoil stripping depths and volumes. If more accurate information is needed relating to thickness and topsoil quality definition, alternate methods of sample retrieval and testing should be employed.

A.3 CLASSIFICATION METHODS

Soil descriptions shown on the boring logs are based on the Unified Soil Classification (USC) system. The USC system is described in ASTM: D2487 and D2488. Where laboratory classification tests (sieve analysis or Atterberg Limits) have been performed, accurate classifications per ASTM: D2487 are possible. Otherwise, soil descriptions shown on the boring logs are visual-manual judgments. Charts are attached which provide information on the USC system, the descriptive terminology, and the symbols used on the boring logs.

The boring logs include descriptions of apparent geology. The geologic depositional origin of each soil layer is interpreted primarily by observation of the soil samples, which can be limited. Observations of the surrounding topography, vegetation, and development can sometimes aid this judgment.

Appendix A
Geotechnical Field Exploration and Testing
Report No. P-0024861

A.4 WATER LEVEL MEASUREMENTS

The groundwater level measurements are shown at the bottom of the boring logs. The following information appears under "Water Level Measurements" on the logs:

- ◆ Date and Time of measurement
- ◆ Sampled Depth: lowest depth of soil sampling at the time of measurement
- ◆ Casing Depth: depth to bottom of casing or hollow-stem auger at time of measurement
- ◆ Cave-in Depth: depth at which measuring tape stops in the borehole
- ◆ Water Level: depth in the borehole where free water is encountered
- ◆ Drilling Fluid Level: same as Water Level, except that the liquid in the borehole is drilling fluid

The true location of the water table at the boring locations may be different than the water levels measured in the boreholes. This is possible because there are several factors that can affect the water level measurements in the borehole. Some of these factors include: permeability of each soil layer in profile, presence of perched water, amount of time between water level readings, presence of drilling fluid, weather conditions, and use of borehole casing.

A.5 LABORATORY TEST METHODS

A.5.1 Water Content Tests

Conducted per AET Procedure 01-LAB-010, which is performed in general accordance with ASTM: D2216 and AASHTO: T265.

A.6 TEST STANDARD LIMITATIONS

Field and laboratory testing is done in general conformance with the described procedures. Compliance with any other standards referenced within the specified standard is neither inferred nor implied.

A.7 SAMPLE STORAGE

Unless notified to do otherwise, we routinely retain representative samples of the soils recovered from the borings for a period of 30 days.

EXPLORATION/CLASSIFICATION METHODS

SAMPLING METHODS

Split-Spoon Samples (SS)

Standard penetration (split-spoon) samples were collected in general accordance with ASTM:D1586. This method consists of driving a 2" O.D. split barrel sampler into the in-situ soil with a 140-pound hammer dropped from a height of 30". The sampler is driven a total of 18" into the soil. After an initial set of 6", the number of hammer blows to drive the sampler the final 12" is known as the standard penetration resistance or N-value.

Disturbed Samples (DS)/Spin-up Samples (SU)

Sample types described as "DS" or "SU" on the boring logs are disturbed samples, which are taken from the flights of the auger. Because the auger disturbs the samples, possible soil layering and contact depths should be considered approximate.

Sampling Limitations

Unless actually observed in a sample, contacts between soil layers are estimated based on the spacing of samples and the action of drilling tools. Cobbles, boulders, and other large objects generally cannot be recovered from test borings, and they may be present in the ground even if they are not noted on the boring logs.

CLASSIFICATION METHODS

Soil classifications shown on the boring logs are based on the Unified Soil Classification (USC) system. The USC system is described in ASTM:D2487 and D2488. Where laboratory classification tests (sieve analysis or Atterberg Limits) have been performed, accurate classifications per ASTM: D2487 are possible. Otherwise, soil classifications shown on the boring logs are visual-manual judgments. Charts are attached which provide information on the USC system, the descriptive terminology, and the symbols used on the boring logs.

The boring logs include descriptions of apparent geology. The geologic depositional origin of each soil layer is interpreted primarily by observation of the soil samples, which can be limited. Observations of the surrounding topography, vegetation, and development can sometimes aid this judgment.

WATER LEVEL MEASUREMENTS

The ground water level measurements are shown at the bottom of the boring logs. The following information appears under "Water Level Measurements" on the logs:

- Date and Time of measurement
- Sampled Depth: lowest depth of soil sampling at the time of measurement
- Casing Depth: depth to bottom of casing or hollow-stem auger at time of measurement
- Cave-in Depth: depth at which measuring tape stops in the borehole
- Water Level: depth in the borehole where free water is encountered
- Drilling Fluid Level: same as Water Level, except that the liquid in the borehole is drilling fluid

The true location of the water table at the boring locations may be different than the water levels measured in the boreholes. This is possible because there are several factors that can affect the water level measurements in the borehole. Some of these factors include: permeability of each soil layer in profile, presence of perched water, amount of time between water level readings, presence of drilling fluid, weather conditions, and use of borehole casing.

SAMPLE STORAGE

Unless notified to do otherwise, we routinely retain representative samples of the soils recovered from the borings for a period of 30 days.

BORING LOG NOTES

DRILLING AND SAMPLING SYMBOLS

| Symbol | Definition |
|----------|---|
| AR: | Sample of material obtained from cuttings blown out the top of the borehole during air rotary procedure. |
| B, H, N: | Size of flush-joint casing |
| CAS: | Pipe casing, number indicates nominal diameter in inches |
| COT: | Clean-out tube |
| DC: | Drive casing; number indicates diameter in inches |
| DM: | Drilling mud or bentonite slurry |
| DR: | Driller (initials) |
| DS: | Disturbed sample from auger flights |
| DP: | Direct push drilling; a 2.125 inch OD outer casing with an inner 1½ inch ID plastic tube is driven continuously into the ground. |
| FA: | Flight auger; number indicates outside diameter in inches |
| HA: | Hand auger; number indicates outside diameter |
| HSA: | Hollow stem auger; number indicates inside diameter in inches |
| LG: | Field logger (initials) |
| MC: | Column used to describe moisture condition of samples and for the ground water level symbols |
| N (BPF): | Standard penetration resistance (N-value) in blows per foot (see notes) |
| NQ: | NQ wireline core barrel |
| PQ: | PQ wireline core barrel |
| RDA: | Rotary drilling with compressed air and roller or drag bit. |
| RDF: | Rotary drilling with drilling fluid and roller or drag bit |
| REC: | In split-spoon (see notes), direct push and thin-walled tube sampling, the recovered length (in inches) of sample. In rock coring, the length of core recovered (expressed as percent of the total core run). Zero indicates no sample recovered. |
| SS: | Standard split-spoon sampler (steel; 1.5" is inside diameter; 2" outside diameter); unless indicated otherwise |
| SU | Spin-up sample from hollow stem auger |
| TW: | Thin-walled tube; number indicates inside diameter in inches |
| WASH: | Sample of material obtained by screening returning rotary drilling fluid or by which has collected inside the borehole after "falling" through drilling fluid |
| WH: | Sampler advanced by static weight of drill rod and hammer |
| WR: | Sampler advanced by static weight of drill rod |
| 94mm: | 94 millimeter wireline core barrel |
| ▽: | Water level directly measured in boring |
| ▽: | Estimated water level based solely on sample appearance |

TEST SYMBOLS

| Symbol | Definition |
|------------------|---|
| CONS: | One-dimensional consolidation test |
| DEN: | Dry density, pcf |
| DST: | Direct shear test |
| E: | Pressuremeter Modulus, tsf |
| HYD: | Hydrometer analysis |
| LL: | Liquid Limit, % |
| LP: | Pressuremeter Limit Pressure, tsf |
| OC: | Organic Content, % |
| PERM: | Coefficient of permeability (K) test; F - Field; L - Laboratory |
| PL: | Plastic Limit, % |
| q _p : | Pocket Penetrometer strength, tsf <u>(approximate)</u> |
| q _c : | Static cone bearing pressure, tsf |
| q _u : | Unconfined compressive strength, psf |
| R: | Electrical Resistivity, ohm-cms |
| RQD: | Rock Quality Designation of Rock Core, in percent (aggregate length of core pieces 4" or more in length as a percent of total core run) |
| SA: | Sieve analysis |
| TRX: | Triaxial compression test |
| VSR: | Vane shear strength, remolded (field), psf |
| VSU: | Vane shear strength, undisturbed (field), psf |
| WC: | Water content, as percent of dry weight |
| %-200: | Percent of material finer than #200 sieve |

STANDARD PENETRATION TEST NOTES

(Calibrated Hammer Weight)

The standard penetration test consists of driving a split-spoon sampler with a drop hammer (calibrated weight varies to provide N₆₀ values) and counting the number of blows applied in each of three 6" increments of penetration. If the sampler is driven less than 18" (usually in highly resistant material), permitted in ASTM: D1586, the blows for each complete 6" increment and for each partial increment is on the boring log. For partial increments, the number of blows is shown to the nearest 0.1' below the slash.

The length of sample recovered, as shown on the "REC" column, may be greater than the distance indicated in the N column. The disparity is because the N-value is recorded below the initial 6" set (unless partial penetration defined in ASTM: D1586 is encountered) whereas the length of sample recovered is for the entire sampler drive (which may even extend more than 18").

UNIFIED SOIL CLASSIFICATION SYSTEM

ASTM Designations: D 2487, D2488

AMERICAN
ENGINEERING
TESTING, INC.



| Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A | | | | | Soil Classification | | Notes |
|---|--|---|--|-------------------------|---------------------|-----------------------------------|--|
| | | | Group Symbol | Group Name ^B | | | |
| Coarse-Grained Soils More than 50% retained on No. 200 sieve (see Plasticity Chart below) | Gravels More than 50% coarse fraction retained on No. 4 sieve | Clean Gravels | $Cu \geq 4$ and $1 \leq Cc \leq 3^E$ | | GW | Well graded gravel ^F | ^A Based on the material passing the 3-in (75-mm) sieve. ^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name. ^C Gravels with 5 to 12% fines require dual symbols: |
| | | Less than 5% fines ^C | $Cu < 4$ and/or $1 < Cc > 3^E$ | | GP | Poorly graded gravel ^F | |
| | | Gravels with Fines more than 12% fines ^C | Fines classify as ML or MH | | GM | Silty gravel ^{F,G,H} | |
| | Sands 50% or more of coarse fraction passes No. 4 sieve | Clean Sands | $Cu \geq 6$ and $1 \leq Cc \leq 3^E$ | | SW | Well-graded sand ^I | ^D Sands with 5 to 12% fines require dual symbols: ^E SW-SM well-graded sand with silt ^F SW-SC well-graded sand with clay ^G SP-SM poorly graded sand with silt ^H SP-SC poorly graded sand with clay |
| | | Less than 5% fines ^D | $Cu < 6$ and/or $1 < Cc > 3^E$ | | SP | Poorly-graded sand ^I | |
| | | Sands with Fines more than 12% fines ^D | Fines classify as ML or MH | | SM | Silty sand ^{G,H,I} | |
| | Silts and Clays Liquid limit less than 50 (see Plasticity Chart below) | inorganic | $PI > 7$ and plots on or above "A" line ^J | | CL | Lean clay ^{K,L,M} | ^J $(D_{30})^2$ ^K Cu = D_{60}/D_{10} , Cc = $D_{10} \times D_{60}$ |
| | | | $PI < 4$ or plots below "A" line ^J | | ML | Silt ^{K,L,M} | |
| | | organic | Liquid limit—oven dried <0.75 | | OL | Organic clay ^{K,L,M,N} | ^L If soil contains $\geq 15\%$ sand, add "with sand" to group name. ^M If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM. |
| | | | Liquid limit – not dried | | | Organic silt ^{K,L,M,O} | |
| | | inorganic | PI plots on or above "A" line | | CH | Fat clay ^{K,L,M} | ^N If fines are organic, add "with organic fines" to group name. ^O If soil contains $\geq 15\%$ gravel, add "with gravel" to group name. |
| | | | PI plots below "A" line | | MH | Elastic silt ^{K,L,M,P} | |
| | | organic | Liquid limit—oven dried <0.75 | | OH | Organic clay ^{K,L,M,P} | ^P If Atterberg limits plot is hatched area, soil is a CL-ML silty clay. ^Q If soil contains 15 to 29% plus No. 200 add "with sand" or "with gravel", whichever is predominant. |
| | | | Liquid limit – not dried | | | Organic silt ^{K,L,M,Q} | |
| Highly organic soil | | | Primarily organic matter, dark in color, and organic in odor | | PT | Peat ^R | ^R Fiber Content description shown below. |
| | | | | | | | |

ADDITIONAL TERMINOLOGY NOTES USED BY AET FOR SOIL IDENTIFICATION AND DESCRIPTION

| Term | Grain Size | Particle Size | Term | Gravel Percentages | Term | Consistency of Plastic Soils | Term | Relative Density of Non-Plastic Soils |
|------------------------|---|---------------|-----------------|--|--------------|---------------------------------|--|---------------------------------------|
| Term | Moisture/Frost Condition (MC Column) | | Term | Percent | Term | N-Value, BPF | Term | N-Value, BPF |
| Boulders | Over 12" | | A Little Gravel | 3% - 14% | Very Soft | less than 2 | Very Loose | 0 - 4 |
| Cobbles | 3" to 12" | | With Gravel | 15% - 29% | Soft | 2 - 4 | Loose | 5 - 10 |
| Gravel | #4 sieve to 3" | | Gravelly | 30% - 50% | Firm | 5 - 8 | Medium Dense | 11 - 30 |
| Sand | #200 to #4 sieve | | | | Stiff | 9 - 15 | Dense | 31 - 50 |
| Fines (silt & clay) | Pass #200 sieve | | | | Very Stiff | 16 - 30 | Very Dense | Greater than 50 |
| | | | | | Hard | Greater than 30 | | |
| D (Dry): | Absence of moisture, dusty, dry to touch. | | Laminations: | Layers less than $\frac{1}{2}$ " thick of differing material or color. | Term | Peat Description | Organic Description (if no lab tests) | |
| M (Moist): | Damp, although free water not visible. Soil may still have a high water content (over "optimum"). | | | | Term | Fiber Content (Visual Estimate) | Soils are described as <u>organic</u> , if soil is not peat and is judged to have sufficient organic fines content to influence the Liquid Limit properties. | |
| W (Wet/ Waterbearing): | Free water visible, intended to describe non-plastic soils. Waterbearing usually relates to sands and sand with silt. | | Lenses: | Pockets or layers greater than $\frac{1}{2}$ " thick of differing material or color. | Fibric Peat: | Greater than 67% | <u>Slightly organic</u> used for borderline cases. | |
| F (Frozen): | Soil frozen | | | | Hemic Peat: | 33 - 67% | Root Inclusions | |
| | | | | | Sapric Peat: | Less than 33% | With roots: Judged to have sufficient quantity of roots to influence the soil properties. | |
| | | | | | | | Trace roots: Small roots present, but not judged to be in sufficient quantity to significantly affect soil properties. | |

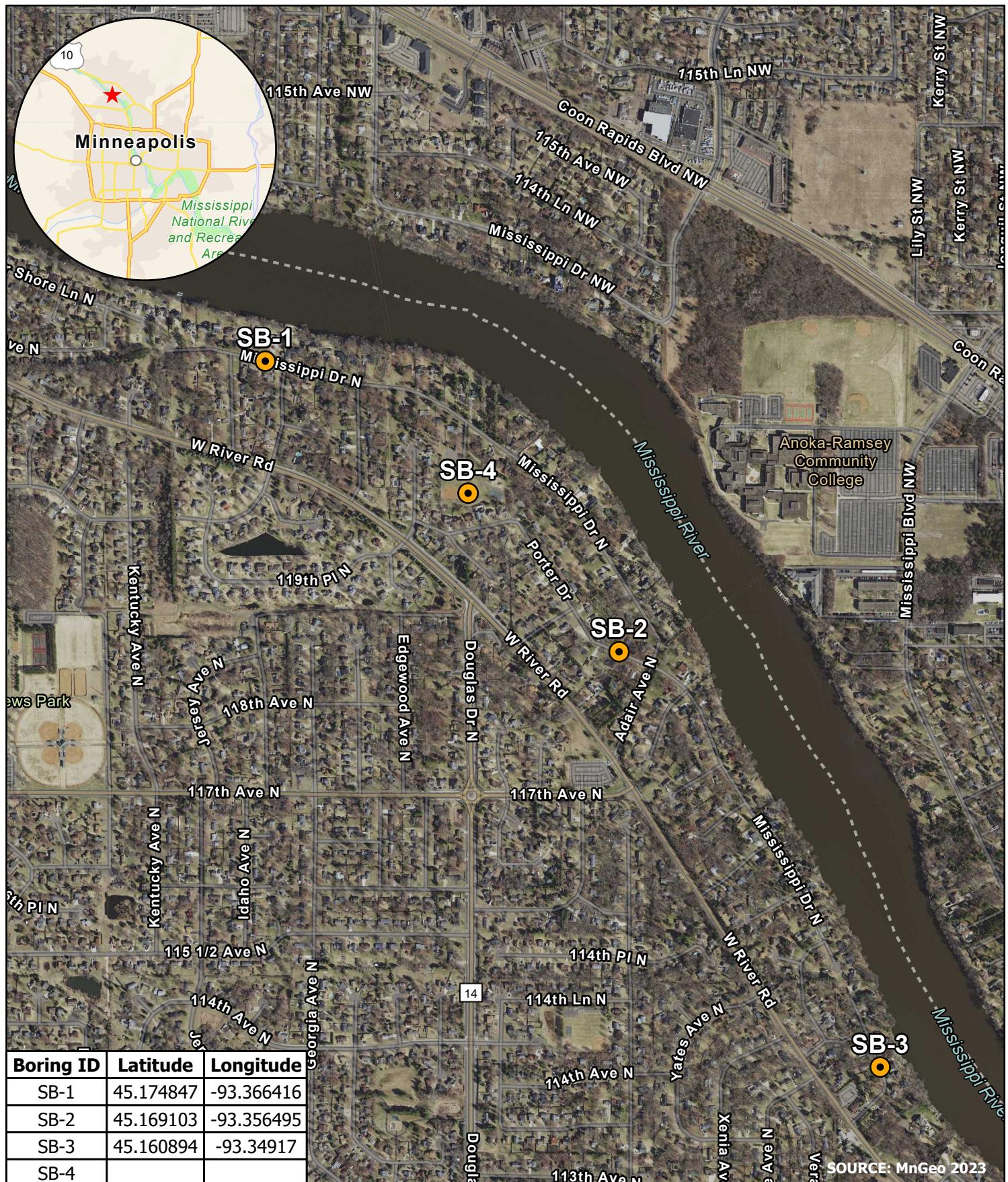


Figure 1
Boring Location Map

2024 Champlin Street Improvements
Champlin, MN

Date Prepared: September 22, 2023
AET Project No. P-0024861



SUBSURFACE BORING LOG

| AET No: P-0024861 | | Log of Boring No. SB-1 (p. 1 of 1) | | | | | | | | | | | | | | |
|---|---|---|------------|------------------|-----------------|------------------|--------------------------|----------------|---|----|--|--|--|--|--|--|
| Project: 2024 Champlin Street Improvements; Champlin, MN | | FIELD & LABORATORY TESTS | | | | | | | | | | | | | | |
| DEPTH IN FEET | Surface Elevation 853.1 MATERIAL DESCRIPTION | GEOLOGY | N | MC | SAMPLE TYPE | REC IN. | FIELD & LABORATORY TESTS | | | | | | | | | |
| | | | | | | | WC | DEN | LL | PL | | | | | | |
| 1 | 3" Bituminous pavement | FILL | 20 | M | SS | 14 | 10 | | | | | | | | | |
| | 6" Aggregate base course, brown | | | | | | | | | | | | | | | |
| | FILL, mostly clayey sand, dark brown | | | | | | | | | | | | | | | |
| | FILL, mostly silty sand, a little gravel, brown | | | | | | | | | | | | | | | |
| | FILL, mostly sand with silt, a little gravel, brown | | | | | | | | | | | | | | | |
| | END OF BORING | | | | | | | | | | | | | | | |
| *WD - Water level measured while drilling *AD - Water level measured at completion of drilling | | | | | | | | | | | | | | | | |
| DEPTH: DRILLING METHOD | | WATER LEVEL MEASUREMENTS | | | | | | | NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG | | | | | | | |
| 0-4½" 3.25" HSA | | DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL | | | | | | | | |
| | | 8/10/23 | *WD | | | | | None | | | | | | | | |
| | | 8/10/23 | *AD | | | 3.0 | | None | | | | | | | | |
| BORING COMPLETED: 8/10/23 | | | | | | | | | | | | | | | | |
| DR: BR LG: DR Rig: GRD751 | | | | | | | | | | | | | | | | |



SUBSURFACE BORING LOG

| AET No: <u>P-0024861</u> | | Log of Boring No. <u>SB-2 (p. 1 of 1)</u> | | FIELD & LABORATORY TESTS | | | | | | | | | | | | |
|---|--|---|------|--------------------------|-----------------|------------------|-------------------------|----------------|----|---|-------|--|--|--|--|--|
| Project: <u>2024 Champlin Street Improvements; Champlin, MN</u> | | FIELD & LABORATORY TESTS | | | | | | | | | | | | | | |
| DEPTH IN FEET | Surface Elevation <u>850.7</u> MATERIAL DESCRIPTION | GEOLOGY | N | MC | SAMPLE TYPE | REC IN. | WC DEN LL PL %#200 | | | | | | | | | |
| | | | | | | | WC | DEN | LL | PL | %#200 | | | | | |
| 1 | 3" Bituminous pavement | FILL | 29 | M | SS | 14 | | | | | | | | | | |
| | 6" Aggregate base course, brown | | | | | | | | | | | | | | | |
| | FILL, mixture of silty sand and sand with silt, a little gravel, brown | | | | | | | | | | | | | | | |
| | | | 17 | M | SS | 12 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | 15 | M | SS | 12 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 4 FILL, mostly sand, a little gravel and sand with silt, brown | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | |
| 6 END OF BORING | | | | | | | | | | | | | | | | |
| *WD - Water level measured while drilling *AD - Water level measured at completion of drilling | | | | | | | | | | | | | | | | |
| DEPTH: DRILLING METHOD | | WATER LEVEL MEASUREMENTS | | | | | | | | NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG | | | | | | |
| 0-4½" 3.25" HSA | | DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL | | | | | | | | |
| | | 8/10/23 | *WD | | | | | None | | | | | | | | |
| | | 8/10/23 | *AD | | | 3.0 | | None | | | | | | | | |
| BORING COMPLETED: 8/10/23 | | | | | | | | | | | | | | | | |
| DR: BR LG: DR Rig: GRD751 | | | | | | | | | | | | | | | | |



SUBSURFACE BORING LOG

| AET No: <u>P-0024861</u> | | Log of Boring No. <u>SB-3 (p. 1 of 1)</u> | | | | | | | | | | | | | |
|---|--|---|------------|---------------|----------------|---------------|----------------------|-------------|---|----|-------|--|--|--|--|
| Project: <u>2024 Champlin Street Improvements; Champlin, MN</u> | | FIELD & LABORATORY TESTS | | | | | | | | | | | | | |
| DEPTH IN FEET | Surface Elevation <u>849.3</u> MATERIAL DESCRIPTION | GEOLOGY | N | MC | SAMPLE TYPE | REC IN. | WC DEN LL PL %#200 | | | | | | | | |
| | | | | | | | WC | DEN | LL | PL | %#200 | | | | |
| 1 | 2½" Bituminous pavement | FILL | 28 | M | SS | 14 | | | | | | | | | |
| | 4" Aggregate base course | | | | | | | | | | | | | | |
| | FILL, mixture of sand and silty sand, a little gravel, brown, a little dark brown | | | | | | | | | | | | | | |
| | FILL, mostly sand, a little gravel, brown | | 12 | M | SS | 12 | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | FILL, mostly silty sand, a little gravel, trace roots, dark brown and brown | | 4 | M | SS | 12 | | | | | | | | | |
| 5 | SILTY SAND, a little gravel, fine to medium grained, brown, moist, very loose (SM) (possible fill) | COARSE ALLUVIUM OR FILL | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 6 | END OF BORING | | | | | | | | | | | | | | |
| *WD - Water level measured while drilling *AD - Water level measured at completion of drilling | | | | | | | | | | | | | | | |
| DEPTH: DRILLING METHOD | | WATER LEVEL MEASUREMENTS | | | | | | | NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG | | | | | | |
| 0-4½" 3.25" HSA | | DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL | | | | | | | |
| | | 8/10/23 | *WD | | | | | None | | | | | | | |
| | | 8/10/23 | *AD | | | 3.0 | | None | | | | | | | |
| BORING COMPLETED: 8/10/23 | | | | | | | | | | | | | | | |
| DR: BR LG: DR Rig: GRD751 | | | | | | | | | | | | | | | |

SUBSURFACE BORING LOG

| AET No: P-0024861 | | Log of Boring No. SB-4 (p. 1 of 1) | | FIELD & LABORATORY TESTS | | | | | | | |
|---|--|---|------------|--------------------------|-----------------|------------------|-------------------------|----------------|---|----|-------|
| Project: 2024 Champlin Street Improvements; Champlin, MN | | FIELD & LABORATORY TESTS | | | | | | | | | |
| DEPTH IN FEET | Surface Elevation 864.8 MATERIAL DESCRIPTION | GEOLOGY | N | MC | SAMPLE TYPE | REC IN. | WC DEN LL PL %#200 | | | | |
| | | | | | | | WC | DEN | LL | PL | %#200 |
| 1 | SILTY SAND, trace roots, fine to medium grained, dark brown, moist, loose (SM) | TOPSOIL | 10 | M | SS | 13 | | | | | |
| 2 | SILTY SAND, a little gravel, fine to medium grained, brown, moist, loose (SM) | COARSE ALLUVIUM | 10 | M | SS | 12 | | | | | |
| 3 | SAND, a little gravel, fine to medium grained, brown, moist, loose (SP) | | | | | | | | | | |
| 4 | SILTY SAND WITH GRAVEL, reddish brown, moist, very dense (SM) | TILL | 62 | M | SS | 2 | | | | | |
| 5 | | | 62 | M | SS | 10 | | | | | |
| 6 | | | 53 | M | SS | 14 | | | | | |
| 7 | SILTY SAND, a little gravel, reddish brown, moist, very dense to dense (SM) | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| END OF BORING | | | | | | | | | | | |
| *WD - Water level measured while drilling *AD - Water level measured at completion of drilling | | | | | | | | | | | |
| DEPTH: DRILLING METHOD | | WATER LEVEL MEASUREMENTS | | | | | | | NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG | | |
| 0-13' 3.25" HSA | | DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL | | | |
| | | 8/10/23 | *WD | | | | | None | | | |
| | | 8/10/23 | *AD | | | 4.0 | | None | | | |
| BORING COMPLETED: 8/10/23 | | | | | | | | | | | |
| DR: BR LG: DR Rig: GRD751 | | | | | | | | | | | |

Report of Geotechnical Exploration
2024 Champlin Street Improvements, Champlin, Minnesota
October 2, 2023
AET Report No. P-0024861



Appendix B

Geotechnical Report Limitations and Guidelines for Use

Appendix B

Geotechnical Report Limitations and Guidelines for Use

Report No. P-0024861

B.1 REFERENCE

This appendix provides information to help you manage your risks relating to subsurface problems which are caused by construction delays, cost overruns, claims, and disputes. This information was developed and provided by GBA¹, of which, we are a member firm.

B.2 RISK MANAGEMENT INFORMATION

B.2.1 Understand the Geotechnical Engineering Services Provided for this Report

Geotechnical engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical engineering services is typically a geotechnical engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

B.2.2 Geotechnical Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared solely for the client.

Likewise, geotechnical engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. If you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

¹ Geoprofessional Business Association, 15800 Crabbs Branch Way Suite 300, Rockville, MD 20855
Telephone: 301/565-2733: www.geoprofessional.org, 2019

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B.2.3 Read the Full Report

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. Read and refer to the report in full.

B.2.4 You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, always inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

B.2.5 Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed. The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

B.2.6 This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations only after observing actual subsurface conditions exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.

B.2.7 This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

B.2.8 Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical engineering report, along with any attachments or appendices, with your contract documents, but be certain to note conspicuously that you’ve included the material

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for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, only from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and be sure to allow enough time to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

B.2.9 Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. Read these provisions closely. Ask questions. Your geotechnical engineer should respond fully and frankly.

B.2.10 Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical engineering study. For that reason, a geotechnical engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Unanticipated subsurface environmental problems have led to project failures. If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

B.2.11 Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. Geotechnical engineers are not building-envelope or mold specialists.



Appendix E

Neighborhood Meeting Summary

Mississippi Drive Area Street and Utility Project

Informational Meeting

City Project No. 22402

WSB Project No. 023250-000

19 Residents Attended in Person, 5 Via Zoom attended

| Public Comments From 10/25/2023 Informational Meeting | |
|--|--|
| Comment | Response |
| How do you determine where to start? | Based on the contractors means and method on how they can get this project done on a timely manner that the City provides. |
| Why is it necessary to have this improvement now? | The area was not planned to be worked until later, but due to the number of hours Public Works has inputted to fill in pothole and the number of bituminous materials it has been agreed upon to move this area into priority. Also based on comparison the area was in worse condition than most streets in Champlin. |
| Are the underground cables involving the City? | The City is not involved with the underground cables, but we do notify the small utility companies when an improvement is taking place. |
| Is the parking lot, for the park, getting paved? | The parking lot is not included with the project. There is a separate CIP for the parks system that should include this parking lot. |
| What is the plan for Adair Ave? | The plan does involve some realignment of the intersection. We are currently working on detailing this area. |
| Who paid for the recoating of West River Road? | Hennepin County |
| When will it be determined what curbs will be replaced? | The Construction Manager and a few inspectors will go out in the spring to mark up the curbs. |
| Will there be any competitive bids to reduce the cost? | The City does follow the public bidding process and go with the lowest bidder, unless noted otherwise. |
| Is the technology being improved at all? | Yes, overtime we have learned a lot about pavement and in turn we are building much tougher street than 10 -15 years ago. |
| What does a unit consist of for assessments? | A unit is one parcel. |