Feasibility Report

Emerson Ave Street Improvements
City of Mendota Heights, Minnesota

City Project No. 202306
TKDA Project No. 20210.000
November 3, 2023

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

Larry Poppler
Professional Engineer

Date: November 3, 2023 License Number: 41005

TKDA
444 Cedar Street, Suite 1500
Saint Paul, MN 55101

Summary

Emerson Ave Street Improvements:

Pavement rehabilitation, concrete curb and gutter repair, manhole and catch basin adjustment, storm sewer improvement, water main replacement, and appurtenant work on the following areas:

- Emerson Ave (from Wachtler Ave to Sylvandale Rd)
- Sylvandale Rd (from Emerson Ave to Maple Park Dr)
- Sylvandale Court S
- Sylvandale Court N
- Laura Street
- Laura Court
- Ivy Falls Court
- Maple Park Dr (from Sylvandale Rd to Ivy Hill Dr)
- Ivy Hill Dr (from Dodd Road to Butler Ave W)
- Ivy Hills Park

Emerson Ave Street Improvements	Pavement Reclamation	Select Curb Replacement	Walk Improvements	Storm Sewer Improvements	SPRWS Improvements
Emerson Ave	X	X		X	X
Sylvandale Rd	X	X		X	X
Sylvandale Ct S	X	X		X	X
Sylvandale Ct N	X	X		X	X
Laura St/Ct	X	X		X	X
Ivy Falls Ct	X	X		X	X
Maple Park Dr	X	X		X	X
Ivy Hills Dr	X	X		X	X
Ivy Hills Park	X		X		

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Feasibility Report

Emerson Ave Street Improvements
Prepared for City of Mendota Heights, Minnesota

Introduction

On August 16, 2022, the City of Mendota Heights adopted Resolution 2022-63 ordering the preparation of a feasibility report for street improvements on Emerson Ave, Sylvandale Rd, Maple Park Dr, and Ivy Hills Dr for the following described areas:

- Emerson Ave (from Wachtler Ave to Sylvandale Rd)
- Sylvandale Rd (from Emerson Ave to Maple Park Dr)
- Sylvandale Court S
- Sylvandale Court
- Laura Street
- Laura Court
- Ivy Falls Court
- Maple Park Dr (from Sylvandale Rd to Ivy Hill Dr)
- Ivy Hill Dr (from Dodd Road to Butler Ave W)

Improvements are located within the following section, township, and range:

- S13 T28N R23W
- S24 T28N R23W

These areas are described on the following plats:

- Emerson Ave
  - Cherry Hills Addition
  - Ivy Falls West Addition
  - Ivy Falls West 2nd Addition
  - Ivy Falls Creek Addition
- Sylvandale Rd
  - Bauer's Acrelots
  - Ivy Falls Addition
  - Ivy Falls 2nd Addition
- Sylvandale Ct S/Sylvandale Ct/Laura Ct/Ivy Falls Ct
  - Ivy Falls 2nd Addition
- Maple Park Dr/Ivy Hill Dr
  - Clapp-Thomssen Ivy Hill
  - Ivy Keep North

This report evaluates the feasible street improvements for all project areas listed above. All existing infrastructure elements were evaluated, improvements recommended, cost estimates of the proposed improvements prepared, and funding strategies developed in this report. Based on the analysis of the existing conditions, the following improvements are recommended:

Background

The City of Mendota Heights utilizes a multi-year pavement management plan to prioritize the infrastructure improvement needs within the city. Street improvement needs are summarized within the Street Improvement Plan (SIP). The Street Improvement Plan suggests improvements to the following streets:

Emerson Ave, Sylvandale Rd, Sylvandale Court S, Sylvandale Court, Laura Street/Court, Ivy Falls Court, Maple Park Dr, Ivy Hill Dr.

The proposed improvement recommended for all Streets is pavement reclamation.

Existing Conditions

According to the City's SIP and City records, all aforementioned streets are subject for improvements. Over time the City of Mendota Heights Public Works Department has maintained streets with chip sealing, crack sealing, hot patching, and partial overlays several times in the years since construction.

Many factors have accounted for roadway deterioration including the following:

- Age
- Weather (freeze/thaw cycle)
- Salt and chemical ice/snow treatment
- Traffic volume and heavy vehicle loading
- Underlying soil conditions
- Roadway pavement section
- Surface and subsurface water drainage
- Traffic volumes

Figure 1: Emerson Ave (east)

Below is all the observations and measurements taken on the streets proposed for improvements:

Emerson Ave

Emerson Avenue is an east/west roadway that connects Wachtler Avenue to Sylvandale Road. There are a total of 17 residential properties on Emerson Ave of which 9 have direct access to Emerson Ave.

Street: The road width is approximately 35' from the back of curb (BOC) to BOC. Curb and gutter exist on the roadway. The pavement was observed to have widespread fatigue cracking and signs of frost cracking indicated by the large longitudinal cracking seen along the alignment. The road has been patched in many places due to utility repairs or pavement distress.

Drainage: The street section currently drains to catch basins and storm sewer along the road. There is a high point near the intersection of Medora Rd. West of Medora flows west to Wachtler Road. East of Medora water flows east to Sylvandale Road.

Curb and Gutter: Emerson Ave currently utilizes B618 concrete curb and gutter. Curb is in good to fair condition with some settling.

Utilities: Emerson Ave has water service provided from SPRWS. There is currently a combination of 6" cast iron and 8" ductile iron water mains on the street. Other utilities in the area include overhead and underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Some power poles and communication boxes are prevalent along the north edge of the road. Emerson Ave is currently served by sanitary sewer running approximately down the center of the road.

Sylvandale Road

Sylvandale Road is an east/west roadway that connecting Emerson Avenue to Maple Park Dr with traffic counts of nearly 500 vehicles per day. There are a total of 25 residential properties on Sylvandale Road of which 19 have direct access to Sylvandale Road.

Street: The road width is approximately 35’ from the BOC to BOC. Curb and gutter exist on the roadway. The pavement was observed to have widespread fatigue cracking and has been patched in many locations.

Drainage: The street section currently drains to catch basins and storm sewer along the road. There is a low point near a creek. The road between Emerson Avenue and Ivy Falls Ave drain to this location. North of Ivy Falls Ave water flows north to Maple Park Drive.

Curb and Gutter: Sylvandale Road currently utilizes B618 concrete curb and gutter. Curb is in good to fair condition with some settling.

Utilities: Sylvandale Road has water service provided from SPRWS. There is currently a 6” or 8” cast iron main on the street. Other utilities in the area include overhead and underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Power and communication boxes are prevalent along the north edge of the road. Sylvandale Road is currently served by sanitary sewer running approximately down the center of the road.

Sylvandale Court S

Sylvandale Court S is an east/west cul-de-sac connected to Sylvandale Road. There are a total of 4 residential properties on Sylvandale Court S all of which have direct access to Sylvandale Court S.

Street: The road width is approximately 35’ from the BOC to BOC. Curb and gutter exist on the roadway. The pavement was observed to have fatigue cracking and has been patched multiple times.

Drainage: The street section currently drains to catch basins and storm sewer along the road. The road slopes from west to east and drains to Sylvandale Road.

Curb and Gutter: Sylvandale Court S currently utilizes B618 concrete curb and gutter. Curb and gutter is in fair condition with a few panels that should be replaced during construction.

Figure 2: Sylvandale Court S

Utilities: Sylvandale Court S has water service provided from SPRWS. There is currently a 6” cast iron main on the street. Other utilities in the area include underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Sylvandale Court S is currently served by sanitary sewer running approximately down the center of the road.

Sylvandale Court

Sylvandale Court is a cul-de-sac connected to Sylvandale Road. There are a total of 7 residential properties on Sylvandale Court all of which have direct access.

Street: The road width is approximately 35’ from the BOC to BOC. Curb and gutter exist on the roadway. At the time of inspection, the pavement appeared to have been previously hot patched, chip sealed, and joint sealed in failing areas. The pavement was observed to have fatigue cracking and several patches.

Drainage: The street section currently drains to catch basins and storm sewer along the road. The road slopes from west to east and drains to Sylvandale Road.

Curb and Gutter: Sylvandale Court currently utilizes B618 concrete curb and gutter. Existing curb is in fair condition and will need some panel replacement.

Utilities: Sylvandale Court has water service provided from SPRWS. There is currently a 6" cast iron main on the street. Other utilities in the area include underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Some power and communication boxes are prevalent along the edge of the road. Sylvandale Court is currently served by sanitary sewer running approximately down the center of the road.

Laura Street and Laura Court

Laura Street and Laura Court are parts of a cul-de-sac connected to Sylvandale Road. There are a total of 13 residential properties on Laura Street 13 of which have direct access to Laura Street.

Street: The road width is approximately 35' from the BOC to BOC. Curb and gutter exist on the roadway. At the time of inspection, the pavement appeared to have been previously hot patched, chip sealed, and joint sealed in failing areas. The pavement was observed to have fatigue cracking and several patches.

Drainage: The street section currently drains to catch basins and storm sewer along the road. The road drains to a low point near where the road makes a 90-degree turn. Some roadway ponding has been noted near the cul-de-sac bulb.

Curb and Gutter: Laura Street currently utilizes B618 concrete curb and gutter. Curb condition is below average and has panels that will need to be replaced.

Utilities: Laura Street has water service provided from SPRWS. There is currently a 6" cast iron main on the street. Other utilities in the area include underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Some power communication boxes are prevalent along the edge of the road. Laura Street is currently served by sanitary sewer running approximately down the center of the road.

Ivy Falls Court

Ivy Falls Court is a cul-de-sac connected to Sylvandale Road. There are a total of 8 residential properties on Ivy Falls Court all of which have direct access to Ivy Falls Court.

Street: The road width is approximately 35' from the BOC to BOC. Curb and gutter exist on the roadway. The pavement was observed to have widespread fatigue cracking and signs of frost cracking indicated by the large longitudinal cracking seen along the alignment and has many patches.

Drainage: The street section currently drains to catch basins and storm sewer along the road. The road slopes from east to west, flowing from Sylvandale Road to an outlet in the cul-de-sac bulb.

Curb and Gutter: Ivy Falls Court currently utilizes B618 concrete curb and gutter. Curb is in fair condition with some deterioration of the joints and some panels that will need to be replaced.

Utilities: Ivy Falls Court has water service provided from SPRWS. There is currently a 6" cast iron main on the street. Other utilities in the area include underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Some power and communication boxes are prevalent along the edge of the road. Ivy Falls Court is currently served by sanitary sewer running approximately down the center of the road.

Maple Park Drive

Maple Park Drive is an east/west roadway connects Sylvandale Road to Ivy Hill. Maple Park Drive serves single family residential, multi-family residential and a park. There are a total of 7 single family residential properties on Maple Park Drive all which have direct access to Emerson Ave. There are 3 multi-family properties connected to Maple Park Drive.

Street: The road width is approximately 35' from the BOC to BOC. Curb and gutter exist on the roadway. At the time of inspection, the pavement appeared to have been previously hot patched, chip sealed, and joint sealed in failing areas. The pavement was observed to have widespread fatigue cracking and a number of patches. The pavement just west of the intersection of Sylvandale Road is in very poor condition.

Drainage: The street section currently drains to catch basins and storm sewer along the road. The roadway slopes from east to west with an outlet to a pond in Ivy Hills Park. Poor drainage near the area of Sylvandale Road is contributing to pavement deterioration.

Curb and Gutter: Maple Park Drive currently utilizes B618 concrete curb and gutter. Curb is in fair condition with some joint deterioration and settling panels that will need to be replaced.

Utilities: Maple Park Drive has water service provided from SPRWS. There is currently a 6" cast iron main on the street. Other utilities in the area include overhead and underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Some power poles and communication boxes are prevalent along the edge of the road. Maple Park Drive is currently served by sanitary sewer running approximately down the center of the road.

Ivy Hill Drive

Ivy Hill Drive is a northwest/southeast roadway connects Butler Ave to TH 149 (Dodd Road). Ivy Hill Drive serves single family residential, multi-family residential. There is a total of 1 single family residential property on Ivy Hill Drive with direct access to Ivy Hill Drive. There are 8 multi-family properties connected to Ivy Hill Drive.

Street: The road width is approximately 35' from the BOC to BOC. Curb and gutter exist on the roadway. At the time of inspection, the pavement appeared to have been previously hot patched, chip sealed, and joint sealed in failing areas. The pavement was observed to have widespread fatigue cracking and several patches.

Drainage: The street section currently drains to catch basins and storm sewer along the road. The roadway slopes from east to west with an outlet in a pond in Ivy Hills Park.

Curb and Gutter: Ivy Hill Drive currently utilizes B618 concrete curb and gutter. Curb is in fair condition with some cracking, joint deterioration and settling.

Utilities: Ivy Hill Drive has water service provided from SPRWS. There is currently a 6" or 8" cast iron main on the street. Other utilities in the area include overhead and underground power, gas, underground cable and communication, City of Mendota Heights storm sewer. Some power and communication boxes are prevalent along the edge of the road. Ivy Hill Drive is currently served by sanitary sewer running approximately down the center of the road.

Ivy Hills Park

Ivy Hills park is situated north of Maple Park Drive with Residential properties surrounding it. It has a parking area with access from Butler Avenue west of Ivy Hill Drive.

Parking**:** The parking lot is adjacent to tennis courts and shows signs of significant fatigue cracking in the pavement.

Walks: There are existing trails that enter the parking lot from the east along Butler Ave and south into the park that have non-compliant ADA ramps.

Geotechnical Exploration: Proposed pavement improvements provided in this section of the report were developed in conjunction with our geotechnical engineering partners Braun Intertec (Braun). Braun took a total of 19 soil borings and 19 pavement corings to investigate the proposed improvement areas.

Braun found that pavement depths ranged from 3.5 to 6.5 inches and aggregate base ranged from 4 to 14.5 inches. Below, displayed on Table 1, are the depths of bituminous and aggregate measured from the soil borings and pavement corings. A copy of the geotechnical report and soil borings is available in Exhibit 7 in the appendix.

Table 1: Boring and Coring Logs

Roadway	Location	Bituminous Thickness (in)	Apparent Aggregate Base Thickness (in)	Core Condition	Subgrade Soil Type
Emerson Ave	ST-1	4	4.25	Debonding at 2 1/4 inches, high deterioration throughout	Poorly Graded Sand (SP), Sandy Lean Clay (CL) and Silty Sand (SM)
	ST-2	4	6.75	Good Condition	Clayey Sand (SC) and Silty Sand (SM)
	ST-3	3.5	7.75	Good Condition	Sandy Lean Clay (CL)
Clement St	ST-4	5.5	8.75	Low severity stripping in upper 2 inches of core	Sandy Lean Clay (CL) and Silty Sand (SM)
Sylvandale Ct S	ST-5	3.75	11.25	Highly deteriorated, bottom of core crumbled during coring process	Clayey Sand (SC) and Silty Sand (SM)
Sylvandale Rd	ST-6	6.25	10.75	Low severity stripping throughout, debonding at 4 inches	Silty Sand (SM) and Sandy Lean Clay (CL)
	ST-8	5.25	6	Good Condition	Silty Sand (SM) and Sandy Lean Clay (CL)
	ST-11	6.5	6.5	High deterioration, bottom half of core disintegrated during core retrieval	Silty Sand (SM)
	ST-13	6	5	Moderate severity stripping throughout	Silty Sand (SM) and Poorly Graded Sand with Silt (SP-SM)
Sylvandale Ct N	ST-7	5.5	11.5	Moderate to high deterioration	Silty Sand (SM) and Sandy Lean Clay (CL)
Laura St	ST-9	5.25	3.75	Low to moderate severity stripping throughout	Clayey Sand (SC)
Laura Ct	ST-10	4.75	9.25	Debonded at 2 inches, heavy stripping from 1.5 to 3.5 inches	Clayey Sand (SC)
Ivy Falls Ct	ST-12	4.5	7.5	Moderate severity stripping throughout	Clayey Sand (SC) and Sandy Lean Clay (CL)
Maple Park Dr	ST-14	5	7	Good Condition	Clayey Sand (SC) and Sandy Lean Clay (CL)
	ST-15	5.5	8	Low to moderate severity stripping throughout	Clayey Sand (SC), Poorly Graded sand with silt (SP-SM) and Sandy Lean Clay (CL)
	ST-16	5	7	High deterioration, horizontal and vertical cracking throughout core	Silty Sand (SM) and Poorly Graded Sand with Silt (SP-SM)
Ivy Hill Dr	ST-17	4.75	11.25	Good Condition	Poorly Graded Sand with silt (SP-SM) and Clayey Sand (SC)
	ST-18	4.5	14.5	Moderate deterioration with cracking below 2 inches	Poorly graded sand with silt (SP-SM), Clayey Sand (SC), Sandy lean clay (CL) and Silty Sand (SM)
	ST-19	4.5	4	Good Condition	Silty Sand (SM) and Sandy Lean Clay (CL)

Proposed Improvements

Streets: Considering the existing condition, deterioration factors, and geotechnical investigation, pavement reclamation is proposed for all streets. Pavement reclamation is recommended as a 7-ton design. Reclamation is recommended because the aggregate base beneath this roadway section is in good condition and no roadway width changes are proposed. Full reconstruction was also evaluated, but because majority of the utilities and concrete curb are in fair condition, this option is not necessary.

Because the roads are generally in the same condition and have similar distress, the same reclamation is recommended for all roads and parking lot of Ivy Hills Park.

Figure 3: Reclaim and curb replacement (City of Mendota Heights Marie Avenue Project 2020)

Full depth reclamation will provide a new structural aggregate base and disrupt the existing frost heaving that has breached the existing aggregate base and bituminous surface. This improvement will provide a new paving surface that should last 30 to 40 years (with future routine maintenance and mill and overlay improvements). A variable depth reclamation as the recommended provides a uniform street section and longer lasting results with a lower cost than full reconstruction. Mixing of crushed rock and aggregate base may be needed in areas to meet specifications. To make room for the new bituminous section, the reclaimed material will be graded and compacted to a depth of 4” below finish grade after reclamation and excess material is removed. A proposed typical section for the proposed reclamation is shown in Exhibit 3.

The City should consider traffic calming approaches along Emerson Ave, Sylvandale Road, Maple Park Drive, and Ivy Hill Drive. Because no off-street pedestrian facility is available, any narrowing of the road should be careful to accommodate pedestrians. Options could include adding curb bump outs that are still traversable by pedestrians and do not impact roadway drainage. Resident feedback indicated a concern with a loss of parking so any changes should minimize losses to parking. No geometric changes to the streets are recommended based on evaluation of options. Adding a centerline stripe or other striping could be considered for traffic calming. This defines the lanes, which in turn defines parking along the street.

Several private parking bays are located along various streets within the project area. The condition of these parking bays is similar or worse than the condition of the roadway and should be considered for replacement. Separately the costs for improvements to the parking bays has been calculated. It is recommended that these parking bays be replaced as driveway replacement and costs assessed to the benefitting properties.

Table 2 provides geotechnical recommendations gathered from the geotechnical report (Exhibit 7) and collaboration with Braun.

Table 2: Pavement Improvement Recommendations

Roadway	Reclamation Depth (in)	Section Depth (in)	Reclaimed Aggregate Base (in)	Non-wearing Course	Wearing Course
ALL	11	10	6	2" SPWEA330C	2" SPWEA330C

Sidewalk and Trails: The neighborhood streets within the project area do not include pedestrian trails or sidewalks. The resident questionnaire asked questions about adding on-street or off-street pedestrian facilities. Overwhelmingly, the neighborhood was against adding pedestrian facilities. Resident comments include that the street is wide enough and the traffic is low enough that they feel comfortable walking within the street.

Currently no trail crossing exists between the existing trail west of Wachtler Ave to Emerson Ave. We recommend adding an ADA accessible crossing at this location to improve the connections between the neighborhood and this trail. Costs are included for this work in the estimate.

Figure 4: Reclaim and curb replacement (City of Mendota Heights Marie Avenue Project 2020)

In Ivy Hills park, new ADA compliant ramps should be installed on the east and south sides of the parking lot on the existing trails.

MNDOT is proposing to modify the existing pedestrian crossing at TH 149 (Dodd Road) and Emerson Ave near Somerset Heights Elementary School. We recommend a Rectangular Rapid Flashing Beacon (RRFB) be installed at this crossing to improve pedestrian safety across Dodd Road. This will be coordinated with the MNDOT sidewalk project.

Curb and Gutter: Existing curb and gutter will remain in place except for curb that is impacted by watermain construction, damaged, settled, or not draining properly. The existing curb will be inspected and marked for removal prior to construction. It is typical to see between 20% to 30% curb replacement for residential roadways of this age due to settlement or cracking, however many of the streets appeared to have curb that was in excellent condition. Replacement curb would match the existing curb style.

For the purposes of this report and estimates, the Table 3 describes the curb replacement percentages used for calculation of project costs and scope.

Figure 5: Spot curb replacement (City of Mendota Heights Ivy Falls Project 2021)

Table 3: Curb Replacement Percentage

Curb Replacement Percentage	
All Roads	30%

In addition to damaged curb and gutter replacement, other curb and gutter would be replaced as necessary because it would be removed for watermain replacement. The quantity for this curb and gutter replacement has been calculated separately and will be paid for as a cost of the watermain replacement.

Curb and gutter deficient at residential driveways will be spot repaired on an as needed basis. Residential concrete driveways impacted will be replaced with 6" concrete over 6" aggregate base. Residential bituminous driveways will be replaced with 3" of bituminous over 6" of aggregate base. Turf disturbed as a part of the curb and driveway replacement process will be restored with 4" of topsoil and sod.

Utilities: It is recommended that all the manhole and catch basin rings be replaced as a part of the pavement project. It is typical to re-set all manhole and catch basin grades to match the new grades of the roadway to improve drivability and drainage. In addition to the adjustment rings, outdated and damaged manhole and catch basin casting assemblies will be replaced with modern castings. Storm sewer manholes and catch basins and sanitary manholes will be adjusted with all new concrete rings. Sanitary sewer manholes will be recast with all new concrete rings and infiltration prevention products to limit inflow and infiltration into the sanitary system.

Figure 6: Roadway low point along Sylvandale Road with patching

Watermain: Saint Paul Regional Water Service (SPRWS) plans on replacing a large amount of watermain on this project shown in Exhibit 8. This would include new hydrants and gate valves. Since the watermain is 8 feet deep, replacement will have impacts to curb, driveway, and yards. The cost estimate includes watermain replacement and restoration of curbs, driveways, and yards. Other, gate valve boxes and curb stop boxes within the project limits will be adjusted under the direction of SPRWS. Damaged valve and curb stop boxes will be repaired with new parts according to SPRWS standards. SPRWS would also like to install anodes for cathodic protection on existing ductile iron watermains.

Drainage: Since no significant changes to the roadway width are proposed we recommend continued usage of the existing storm system. Drainage concerns were noted at the intersection of Laura Court and Laura Street, near the intersection of Sylvandale Road and Maple Park Drive and at the roadway low point along Sylvandale Road west of Laura Street. These areas will be evaluated for the best solutions that may include grade changes to the road, storm sewer modifications or installation of drain tile below the road surface.

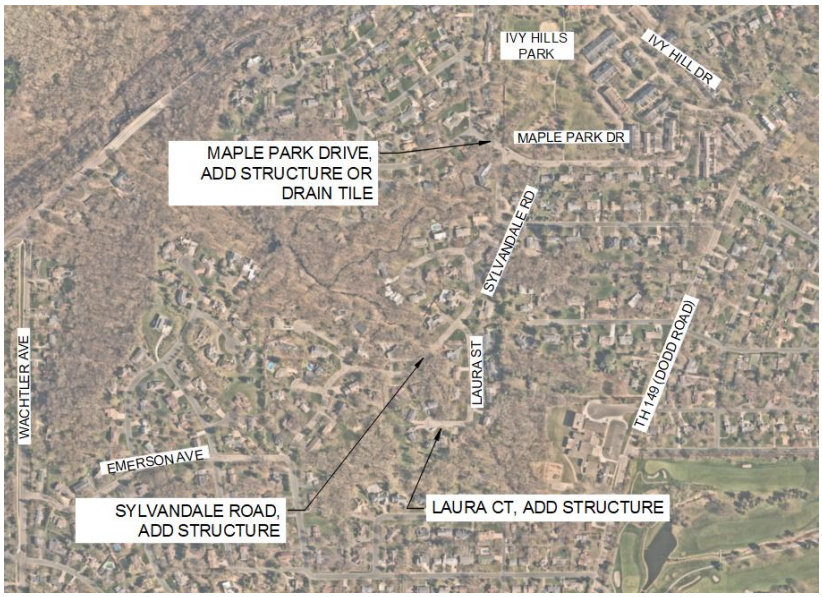

Figure 7: Recommended drainage improvements

Resident and Business Input

On October 27, 2022, an informational letter and questionnaire were sent to the 157 property owners in the Emerson Avenue project area to inform them of the project. The questionnaires asked several questions including drainage issues, tree issues, and traffic comments.

Of the 157 questionnaires sent out, 74 were returned for a rate of 47%. The key issues noted from the questionnaire were parking and pedestrian safety issues. Responses also included localized drainage concerns and traffic safety issues (speeds/sightlines). Residents overall did not favor adding a pedestrian path or marking off a pedestrian path on the side of the street and were concerned about the loss of parking associated with both options.

The letters, questionnaires, and responses (and summary) are shown in Exhibit 2.

Project Funding

Estimated costs:

The following costs were prepared for the recommended reclamation for the project area. An Engineer's Estimates (Exhibit 4) was prepared and is subject to change depending on the final design of the project, required easements and/or right-of-way, soil conditions, bids received, and actual work performed. The cost estimate includes indirect cost for City administration, design engineering, construction engineering, legal support, fiscal support, interest during construction, assessment roll preparation, and contingencies encountered during design and construction. Table 4 provides a summary of the estimated project construction and indirect costs for the reclamation improvements.

Table 4: Project Cost

Project Total	**Total Estimated Costs**
Street Improvements	$ 1,531,295
Indirect Costs for Street Improvements (20%)*	$ 306,259
Total Costs for Street Improvements	**$ 1,837,554**
Private Parking Bays	$ 36,175
Total Costs for Private Parking Bays	**$ 36,175**
Park Improvements	$ 56,178
Indirect Costs Park Improvements (20%)*	$ 11,236
Total Costs for Park Improvements	**$ 67,414**
Storm Sewer Improvements	$ 69,350
Water Improvements	$ 8,400
Sanitary Improvements	$ 39,150
Total Cost for Utility Improvements	**$ 116,900**
Saint Paul Regional Water Service Watermain Replacement	$ 1,471,245
Indirect Costs for SPRWS (15%)	$ 220,687
Total Cost for SPRWS Improvements	**$ 1,691,931**
Total Improvement Cost	$ 3,211,793
Total Indirect Costs for City*	$ 538,181
Total Cost	**$ 3,749,974**
Rounded Total Cost	**$ 3,750,000**

*Indirect costs include legal, engineering, administration, and finance

Assessment Policy:

Per the City's Assessment Policy, benefiting properties shall be assessed 50% of the street improvement costs. The remaining 50% shall be paid through the Street Capital Improvement Fund. The term of the assessment is proposed to be 10 years for reclamation projects. The interest rate for the term has not yet been set and will be provided as the process moves forward. The interest rate was assumed to be 6% for the purpose of this report.

The improvements are proposed to be assessed on a unit basis. Assessments would be levied to the benefiting properties as per the Assessment Policy adopted by the Mendota Heights City Council on June 16, 1992, and as amended. See Exhibit 5 for the preliminary assessment roll and Exhibit 6 for the preliminary assessment map. Private streets are considered access points or driveways within the improvement area and are therefore assessed as a part of the project. These properties benefit from the improvement because the property owners use the improved roadways to access their property.

Figure 7 Sylvandale Road and Ivy Falls Ct, looking toward Ivy Falls Ave.

The improvement area proposed to be assessed is every lot, piece, and parcel within the City limits benefiting from the street improvements, whether abutting or not, within the following described areas located within Section 13 and 24, Township 28N, Range 23W, as described on the following plats:

- Emerson Ave
  - Cherry Hills Addition
  - Ivy Falls West Addition
  - Ivy Falls West 2nd Addition
  - Ivy Falls Creek Addition
- Sylvandale Rd
  - Bauer's Acrelots
  - Ivy Falls Addition
  - Ivy Falls 2nd Addition
- Sylvandale Ct S/Sylvandale Ct/Laura Ct/Ivy Falls Ct
  - Ivy Falls 2nd Addition
- Maple Park Dr/Ivy Hill Dr
  - Clapp-Thomssen Ivy Hill
  - Ivy Keep North

Assessment Calculation and Estimation:

The assessable amount is divided by the number of units. For those properties that are sub-dividable, more units may be assigned based on the City Land Use Code (100 linear feet of frontage and 15,000 square feet of area). The preliminary assessment calculation is derived from taking the overall assessable project costs, multiplying by 50%, and then dividing by the number of units within the project area (including City assigned units). The multi-unit properties have smaller lots within a larger common area. The total number of units was calculated based on the common area frontage and then divided by the number of multi-unit properties. Costs for the reconstruction of the private bays are separately added to the benefitting properties and shown in the assessment roll. The number of units are shown in the preliminary assessment roll and includes a total of 107.5 Units. Table 5 displays the assessment calculation and estimation.

Table 5: Assessment Calculation

Assessment Calculation	Total
Total Project Cost	$ 3,750,000
Assessable Amount	$ 1,837,554
Assessment Amount (50% of Assessable Amount)	$ 918,777
Total Units - Residential*	104
Assessment - Residential	$ 888,863.46
Total Units - City of Mendota Heights*	3.5
City Assigned Assessment Amount	$ 29,913.67
Total Units	107.5
Unit Assessment (Assessable amount/ XX Units)	$ 8,546.76
Total Assessment Amount	**$ 8,547**
Total Multi-Unit Assessment Amount**	**$ 4,151**
*1 unit = 100 frontage feet	
**Assessment for multi-unit dwellings computed based on total frontage divided by number of dwellings. Private parking bay work added to townhouse assessment	

Funding Sources:

Funding sources for this project are proposed to come from municipal levy, assessments, and utility funds. Table 6 summarizes the funding sources.

Table 6: Project Funding

Funding Source	Project Total
Municipal Levy	$ 918,777
City Assessment (Municipal Levy)	$ 29,914
Total Municipal Levy	**$ 948,691**
Residential Assessments (50%)	$ 888,863
Private Parking Bay Assessments	$ 36,175
Park Fund	$ 67,414
Utility Fund - Storm Sewer	$ 69,350
Utility Fund - Sanitary	$ 39,150
Utility Fund - Water	$ 8,400
Saint Paul Regional Water Services	$ 1,691,931
Total	**$ 3,749,974**

The total project cost is estimated at $3,749,974. It is presumed that the City would secure bonding for the Municipal Levy and Assessment portions of the project ($948,691). The assessment amount of $888,863 is equivalent to 48.4% of the bond amount. Minnesota Statutes Chapter 429 Special Assessment Bond Issue requires that a minimum of 20% of the total bond issue amount be recovered through special assessments.

Preliminary Project Schedule

Table 7 outlines a project schedule to substantially complete the assessable project in 2024.

Table 7: Preliminary Project Schedule

Activity	Date
Authorize Preparation of Feasibility Report	August 16, 2022
Accept Feasibility Report	November 2023
Neighborhood Meeting	November 2023
Public Hearing / Order Improvements	December 2023
Accept Plans and Specifications and Authorize Bidding	March 2023
Award Contract	May 2024
Commencement of Construction	June 2024
Substantial Completion of Construction	September 2024
Assessment Hearing / Certify Assessments to County	October 2024
Warranty Inspection	June 2025

Conclusion and Recommendation

The recommended street improvements will produce a uniform and stable, long-lasting roadway for the residents and businesses of Mendota Heights as well as reduce maintenance time and cost while also increasing roadway longevity. The total estimated cost of the recommended improvements is $3,749,974. A portion of this project is proposed to be assessed to the benefiting property owners and the remainder through other funding sources. In accordance with the City's Assessment policy, the preliminary assessment for the recommended improvement is calculated at $8,547 per unit.

As the project is designed and competitively bid, the calculated assessment amount will be updated leading up to the adoption of the assessment roll. The improvements are necessary to allow for safe and reliable street and utility services within the City of Mendota Heights. The project will be competitively bid to allow for a cost-effective improvement. The feasibility study has provided an overall analysis of the feasible improvements for consideration within this project area. Therefore, the proposed improvements within the areas outlined in this report are necessary, cost effective, and feasible from an engineering standpoint.

EXHIBIT 1:
Resident and Business Input

QUESTIONNAIRE RESPONSES

CITY OF MENDOTA HEIGHTS
PROJECT: Emerson Avenue Street Improvements
PROJECT #: 202306

Questionnaire Date: 10/27/2022
Questionnaire Due Date: 11/26/2021
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Percent Returned: 47%

General Information			Water		Private Utilities		Private wiring, private pipes		Traffic Pedestrian Issues			Path			Parking/Path							Access needs/delivery	Other Issues
Address		Returned Survey	water on your site		Private under Utilities		Private wiring, private pipes				Comments	Build Ped Path			Remove Parking be an Issue?			On-street Path		Which side for path		Comments on Path	Access needs/delivery	Other Issues
			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
777	Emerson Avenue	1		1	1				1		It seems like cars often are going faster than the posted limit		1				Unsure if removing parking would be an issue	1			1	I wonder if reducing speed in some way may be more beneficial in providing pedestrian safety		We had filled out the questionnaire, rather quickly, and hadn't considered all aspects of the proposed project. In our responses, we had indicated some questions regarding the proposed project, but don't think our opposition came across. We have since received a flyer from an anonymous source raising concerns about the proposed project. I do question the validity of some of the facts that are mentioned in the flyer. Nonetheless, it does raise questions for us. With the amount of traffic on Emerson Avenue and the perceived speeds at which cars move, we have significant concern about losing one lane of traffic in the form of a parking shoulder. We are also deeply concerned about losing any of our front yard. In addition to the Xcel energy junction box in our front yard, as well as Comcast cable and CenturyLink phone lines on the property easement, we do have a sprinkler system that extends right up to the curb. Our suspicion is that all of these would be at least somewhat affected in order to make room for the propose walking path. We're not sure that the walking path that has been suggested is the correct answer, especially since there doesn't seem to be a problem. As it stands, at this point, with the questions we have, we would have to say that we are opposed to adding a walking path as an improvement to the needed upcoming street resurfacing. However as the study continues and if more information is provided as to how it would affect the neighborhood and our properties, certainly we may reconsider.
781	Emerson Ave.	1		1	1		1		1		There have been accidents in front of my house as cars come down a very steep hill and Emerson curves toward Wachtler. People already use this street to cut through to Dodd Road and Somerset Golf Course. I have to be very careful backing out of my driveway into traffic. It has been an ongoing traffic problem. A path would only add immeasurably to already dangerous conditions.		1		1		Parking removal would positively be horrendous.		1			Absolutely not for a pedestrian path. There should never be a path made. A terrible idea. Neither side of the roadway is conductive to a pedestrian path. I am shocked anyone would consider putting a pedestrian path on our street. There is no room. It is totally unnecessary and would be a disaster on many levels. I vehemently oppose any pedestrian path. We would lose on street parking. We would be subject to more traffic and cyclists who are not from the neighborhood. It is already dangerous to back down my hill of a driveway into a descending hill where cars often speed by.	I do not have a business	Ascending traffic rounding the curve from Wachtler is invisible to me, as I stated earlier. Accidents have happened in front of my house. I have slid into traffic during snow storms. I can't believe that intelligent minds would even consider this path. I have lived here since we built the house in 1984. At one point, neighbors approached Judge Carolan to get a stop sign installed at the top of the hill, to control the traffic, to add to the problems that already exist is madness. Not to mention the disastrous effect that this project would have on my property values; and the influx of people I do not know having access to my property. You are taking a street that is already overused and adding to the problem. You are asking me to pay $6,000 for a path that would crater my property values, invade my privacy, compromise my security, deprive me of on-street parking, exacerbate pre-existing long term traffic volumes, excessive speeds, visibility, parking. I vehemently oppose any on-or-off street version of any walking path. There is absolutely no need for one. This is a terrible, unnecessary imposition on the enjoyment of my property in Mendota Heights. I do not understand why anyone of reason would want this. I invite the city engineers to visit me at my property to view the actual site and hazards about which I am speaking. I would be glad to show them the inadvisability of a path on these properties. I built in Mendota Heights for many reasons: for the beauty of the area and the beauty of my lot, privacy, quality neighborhoods, respect for natural beauty. All of that would be destroyed by the tearing up of my front yard. My house would be difficult to sell at market value as I am a senior citizen perhaps, needing to sell. Who would want to purchase a "Mendota Hts" home chopped up in front, on a busy, overburdened not-private street? In addition, I have steps which lead to the street, would those be torn out to accommodate bikers and pedestrians; and at whose expense would those be redone in order for me to reach my mailbox?

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784	Emerson Avenue	1		1		1	1		1		Emerson Ave - excessive speeds, vehicles miss turns due to road striping, steep hill from Wachtler to Knollwood Lane (on Emerson Ave) needs priority winter salting - many cards slide backwards		1		1		Most definitely an issue - houses on Emerson closest to Wachtler regularly have 3-8 cars per house and we cannot park on adjacent Wachtler or Knollwood which is too steep a climb all winter to reach on foot. Additionally, Knollwood residents already park there - no room! We need parking, better thank sidewalk not if road needs widening		1	1		1) on Emerson Ave. cars slide down this hill in winter frontwards and backwards. Narrowing street is not a good idea. Salting priority! 2) Simply striping road will solve a lot and save $, 3) this road is already super busy and too fast. Encouraging more bikers and peds a bad idea.	residential access - daily commutes.	Retaining wall close to street if street widened - what is being done to slow traffic? Narrowing street is not a good option - speed bumps, striping road, and speed signs needed.
791	Emerson Avenue	1		1		1	1		1			1			1		Path only if on street parking or options for temp. parking is made available.				1	We do not agree with eliminating on street parking. This is not a good option for homeowners, who have visitors. What other alternatives have been explored?		Have a dog fence. What other options have been explored? Eliminating parking and reclaiming access property does not seem reasonable for ownership for a plan that would benefit many, yet negatively impact select few property owners. What were the traffic options when Emerson Ave. was a cul-de-sac - a closed road with no access to Wentworth?
662	Ivy Falls Court	1		1	1				1		Sylvandale to Ivy Falls Court. It is an uncontrolled 3-way and people drive really fast on Sylvandale	1				1		1		1	1	Path -either just very excided to have this built. For family walks & bike rides. This is a wonderful idea! Let's do it!	No business needs. Just getting to and from home.	Please get the pedestrian path approved. It would be a great addition to an already great neighborhood.
662	Ivy Falls Court	1		1	1						Sylvandale definitely has some traffic in the afternoons. Speed is always a concern with some of the visibility around the curves	1				1		1				A separate path from the street would be best. It seems like different area would make sense, for one side and other areas, the other side unfortunately. I would prefer the road does not get wider. If possible, fitting a trail into the existing road width would be best.	N/A	Invisibile fence. I have four mature ash trees near the roadway on my property that I would like to preserve through the project. They have been treated since 2018. Thanks.
667	Ivy Falls Court	1		1	1		1		1		Between Ivy Falls Court and Emerson the road is winding and can be difficult to walk w/o concerns of vehicles. This is the only spot traffic causes issues of pedestrians.		1			1			1			I don't think the traffic is significant enough to warrant a path. I frequently walk this area with my dog and only have concerns on Sylvandale between Ivy Falls Ct and Emerson because of the winding road		
672	Ivy Falls Court	1	1		1		1			1			1		1				1	1		We walk the proposed path several times per week and do not see the need for a pedestrian lane.		Water after big rain storms - a rare event.
678	Ivy Falls Court	1		1	1			1		1			1			1		1				I do not notice a great amount of traffic, roads are wide enough to accommodate current use.		Lawn irrigation system planned for spring 2023.
682	Ivy Falls Court	1		1	1		1			1			1		1				1			Not need in my area		
1094	Ivy Hill Drive	1		1		1		1		1		1				1		1						

QUESTIONNAIRE RESPONSES

CITY OF MENDOTA HEIGHTS
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			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
1098	Ivy Hill Drive	1		1						1		1				1		1				Not sure which side. I think it would be an asset to the neighborhood and connect to the rest of the biking/walking paths.		Not sure about private under utilities or wiring.
1102	Ivy Hill Drive	1										1				1		1		1		My wife and I run (with our 2 daughters on this exact path between Ivy Hill Drive & Wachtler; there are a number of blind turns that cars sometimes race by with (especially at the foot of the big hill before Sylvandale turns onto Emerson in the proposed		
1104	Ivy Hill Drive	1		1	1			1		1		1				1		1			1		I do not own a business. Local traffic mostly uses, Maple Park Dr - Sylvandale Road- Sibley Memorial Hwy	
1111	Ivy Hill Drive	1		1						1		1					I don't know about removing parking, those homeowners would be best to answer this	1				Don't know which side path should be on. I would like the path as I walk and ride my bike in that neighborhood.	N/A	Private under ground utilities - don't know I live in a townhouse assn. Our management co is Sharper Management. Thank you for sending the questionnaire out.
1125	Ivy Hill Drive	1		1	1		1			1			1			1						I would feel most comfortable not wasting the money on an unnecessary structure - not needed, please save us the $!		I am strongly opposed to an unknown assessment amount
1131	Ivy Hill Drive	1		1						1			1		1				1	1		If necessary, I don't see a need for it		HOA will have answer for underground utilities and will respond to other questions
1132	Ivy Hill Drive	1	1		1			1		1		1			1			1					None	Standing water after almost any rain or melting event. Poor drainage from neighbors yard (see map).
1138	Ivy Hill Drive	1		1						1		1			1			1			1			
1144	Ivy Hill Drive	1		1						1							Path doesn't affect me					not sure which side to build	I receive a delivery of needed medical	Part of Townhome Association
1145	Ivy Hill Drive	1		1		1		1		1			1			1			1		1	Not worth spending money	No seasonal concerns. Just need to leave/return home everyday	
1147	Ivy Hill Drive	1	1							1			1				N/A					I walk in the area you are surveying so infrequently that I really have no comment regarding the path. On-street path - n/a which side n/a. I do think the speed limit from Maple Park to Wachtler should be 20 mph and that the limit should be enforced.	N/A	Standing water after big rain storms that affects my structure. Pooled on property my association is responsible for maintaining. The HOA, Ivy keep I moved a drain grate in 2021 where the "x" is on the drawing. Water still pools for a while after heavy down pours, but not as badly as prior to the grate being moved. Ivy Keep I HOA will address private underground utilities. I'd like a rough estimate of the amount of the assessment and the exact date it will be due, as soon as possible.
1149	Ivy Hill Drive	1		1	1		1		1		Maple Park Drive near Ivy Falls Park has a lot of speeding traffic		1			1	I would feel comfortable with the path, but I don't feel that it is needed.	1							Private wiring - possibly for yard lighting. I am an association board member for a group of townhomes near Maple Park Drive & Ivy Hill Drive. I am responding on behalf of all our members regarding the irrigation lines and possible electric wires in the r-o-w. Many of our individual homeowners here will not have knowledge of all our buried utilities and may not respond appropriately. For questions, please contact me or Diane at 611 Maple Park Dr.
1150	Ivy Hill Drive	1		1		1		1		1								1				Not sure, it's not my street. Has a study been completed to check pedestrian usage. Unknown if removal of parking would be an issue - not my street. Path - this is not area I use.		Road seems ok to me on Ivy Hill Drive. I'm part of an assocation. Most of us are on a fixed income. Not anxious for any assessments.

QUESTIONNAIRE RESPONSES

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			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
1161	Ivy Hill Drive	1		1	1		1			1			1		1				1			Neither side - don't agree with path - I walk the proposed area a lot. I feel there is plenty of space for cars and pedestrians. The traffic is light and not a problem at all for walking		Ivy Hill Town House Association has 25-30 curbside sprinklers
1179	Ivy Hill Drive	1		1	1		1		1		Cars are regularly speeding through the stop sign at the intersection of Ivy Hill Drive and Maple Park Drive.		1		1		Potentially yes, although not in the ?		1	1			Residential area	Occasionally, water on the interior circular drive to the garage at the rear of the townhomes. Underground utilities - I don't know but the Ivy Hill Townhome assn. is responding further. I think the answer is yes, but they may not be in the r-o-w.
1181	Ivy Hill Drive	1							1		People must walk in street which I feel is a hazard. In addition, there are few if any streetlights so area is dark and hazardous to divers and walkers.	1				1	Cars could park on opposite side.	1	1			More safe than now but still not safe. Whichever side is less disruptive to existing housing. I moved to Mendota Heights in 2015. I love Mendota Heights except for lack of sidewalks (paths) and lighting. I moved here from Mpls and walked all over, I miss that. The lighting is atrocious and dangerous.	N/A	Rain runs down Ivy Hill. Other areas are part of our association. Do not know if have underground irrigation or private wiring.
1344	Knollwood Lane	1		1	1		1		1		Traffic on Emerson Avenue is a safety concern for all pedestrians and bikers. Drivers frequently exceed the speed limit making it an incredibly dangerous road. There is nothing in the current street design to calm traffic.	1				1	Everyone has a driveway - parking isn't allowed on winter nights anyway		1			Either side would work would highly support off-street but anything would be an improvement. Our family wholeheartedly supports the addition of a path - both to narrow the roadway and to provide a safe, pedestrian and biking area. Trying to walk or bike up the Emerson hill with small children is terrifying with traffic. There are too many blind spots with the hill and curve of the road.	No concern with access	Thank you for considering options to calm traffic and create safe places for residents of Mendota Heights to run, walk, bike, and enjoy trails in our city! Another plus for the path would be a safe walking route to Somerset Elementary and parks.
1349	Knollwood Lane	1		1			1		1		Excessive speed on Emerson	1				1		1			1			
1372	Knollwood Lane	1	1		1			1	1		Fast cars on Emerson		1			1			1		1	Tight curve just East of Wachtler is dangerous		Standing water after big rain storms and in the spring -during snow melt
669	Laura Court	1	1		1			1	1		Cars will at times travel above posted speed limit when using Emerson to get to/from Dodd and pass through neighborhood - Wentworth and 13 are too far away so people use neighborhood as short cut	1				1		1		1		A pedestrian lane would be a welcome addition - both children and older adults walking in neighborhood would make use of it. I don't live along Sylvandale and would not be affected but the loss of street parking would affect those homeowners a lot.	We have the usual deliveries at random times like most people who utilize e-commerce.	Standing water after big rain storms, in the spring -during snow melt and after almost any rain or melting event. Driveway across street is slightly elevated and blocks flow of water to storm drain so - it collects along curb line on opposite side of street from us. We have a wet area in back yard where ground slopes down away from house; this is far from street and most likely not impacted by project, but thought I would mention it. Wet area where both yards of adjoining houses drain to. We would be interested in a curb cut that would allow a rain garden; however there is very little slope on our street so this may no be feasible.
670	Laura Court	1	1		1		1			1		1				1		1			1		After almost any rain or melting event. Puddles right in front of our mailbox. I see no reason for Laura Street or Laura Court to be torn up. Quiet streets with little traffic.
675	Laura Court	1		1	1		1			1		1				1		1			1	I am in favor.	Nothing in particular	None

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676	Laura Court	1			1					1		1				1	I don't think eliminating parking would be an issue, as most people do not park on this curvy road.		1	1		I think it would be a great addition to the neighborhood to have an off street pedestrian path.	We live in a cul-de-sac, so would need to have some sort of exit or alternative so that we could leave. Home deliveries would be affected, but that would be a minor inconvenience.	In the spring -during snow melt. We tend to get ice build up in front of our driveway. Not sure about private wiring.
1278	Laura Street	1			1			1		1			1		1				1					After big rain storms & in the spring - during snow melt. Started after new home was built behind our home.
1294	Laura Street	1	1		1					1			1		1				1			Path neither side - not an issue. Not needed	Worried about access in and out of neighborhood during construction. Very limited options.	After big rain storms - in the spring during snow melt. During summer there are few if any issues adding a bike/walk will create issues. Just not needed the volume of walkers & bikers contradict the need and expense of this.
1299	Laura Street	1		1	1					1			1		1				1			Neither side. We think it would be too dangerous to have a path. Instead, please consider a stop sign for all at additional intersections on Sylvandale.	None	The street is too windy, with too little light for a path. Again, please consider additional stop signs.
1313	Laura Street	1		1	1			1		1			1		1				1			Neither side for a path is acceptable. It is apparent the on-street path is unworkable. Taking up to 12 feet away from an already narrow, sometimes hilly and curvy road that barely accommodates two cars in its present state will not make the road safer for either pedestrians or vehicles. Removal of on-street parking would create additional hazards for example work vehicles (e.g. remodelers, yard service, etc.) would likely have to park a distance away from the properties they are serving which will only create more issues for drivers, pedestrians in the neighborhood, as wells as the workers, themselves. It is unlikely anyone seriously thinks an on-street path is viable. Therefore, what is really being proposed is a walking path that will cut across private properties. This, too, is an unacceptable proposal. The expense of adding an unnecessary path is fiscally irresponsible and fraught with issues and questions that were not even alluded to in the documentation. These include but are not limited to;) 1) While no specific mention is made of a walking path assessment, it seems likely there would be one. Based on the map provided and the length of the path, one can only assume the assessment would be substantial for property owners	We do have lawn maintenance and snow removal contracts that may be impacted by this proposed work. Garbage collection and mail and package delivery would be impacted, as well.	If pedestrian and vehicle safety is one of the concerns being addressed, I would like to see a 3 way stop sign added at the intersection of Sylvandale/Clement and Emerson. Numerous times I have seen someone turning left from Clement onto Emerson and cut the corner - at speed- directly into on-coming traffic.

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1313	Laura Street																					2) there would be disruption to property (e.g., sprinklers, tree that would need to be removed, driveways) to accommodate a path - who pays for the needed modifications? 3) What are the insurance implications for the homeowners if someone falls or is injured on the walking path that crosses their property? and 4) who will be responsible for keeping the path clear of snow in the winter, leaves in the fall, or other path maintenance? Is this yet another expense and added responsibility for the homeowner? My family has lived in this neighborhood since 1978. We have walked through the neighborhood all these year without a path...and without an issue. We have always been proud of the secluded, almost rural, nature of this area. To add walking paths either on the street or on property would be likely to negatively impact property values; create potential security issues with increased foot traffic from non-neighborhood people coming in to "walk the path;" and, overall, would change the aesthetics of what this neighborhood is and has been. In particular, the loss of mature trees, bushes, gardens would really change the landscape.		
1313	Laura Street																					I would add, as well, that the curious timing of this survey gives an appearance that the City is trying to push something through without a lot of input. This is an incredibly busy time of year for families. The cursory information provided and the limited time to respond to address very impactful proposals is disappointing. Additional, while not directly stated, it's almost implied that those who do not respons will be counted as being in agreement with the poposed changes. On the surface, the proposal may seem like a good idea, However, it is actually very disruptive and costly to those impacted. If this proposal does move to the next phase, it is imparative that there be a well-publicized (via US mail, email, social media and website) community meeting to which all neighbors in the area are invited to ask questions and air their concerns.		
580	Maple Park Drive	1		1	1				1			1					Removing parking may be a problem			1		No sidewalks		Would appreciate having the irrigation marked and missed! Maybe other private wiring
582	Maple Park Drive	1								1	Very low traffic in this area and no speeding.		1		1		Removing parking along the street would be a problem for contractors working on the homes		1					

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			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
583	Maple Park Drive	1		1	1					1		1				1		1		1		Want it to be carefully marked for pedestrians - Good idea.	Daily mail & general package delivery is off driveway off Maple Park Drive	Private underground utilities owned & managed by Townhome Assn.
596	Maple Park Drive	1		1				1		1			1		1				1			Ped path which side - n/a		Private underground utilities owned & managed by Townhome Assn.
598	Maple Park Drive	1	1			1		1		1			1		1				1	1		Is the path a sidewalk or a lane? What would proposed path add to the project?		Water in the spring - during snow melt - only in backyard swale. A pedestrian path (or sidewalk) on Dodd Road would be a welcome addition. A sidewalk would be much safer!
603	Maple Park Drive	1		1	1			1	1		Excessive speed along Maple Park Drive	1				1		1		1				
610	Maple Park Drive	1		1		1		1	1		We have a lot of pedestrians, including ourselves, that use the roadway for walks to the park and school. People drive fast down Maple Park Drive between Sylvandale & Dodd	1			1			1		1		Pedestrian path - only if it did not result in lost parking. I am quite concerned about the loss of off street parking. However, overall our family loves the idea of a path to help keep folks safe.	No specific concerns, as long as we have some way of getting in and out	I would have like to see a longer comment period. I opened this letter right before we left on a vacation and I just realized my comments are late already. I also think this short comment period may result in fewer comments. Lastly, please consider providing a way to submit feedback digitally. An interactive survey, like the bike plan, would solicit much more valuable comments. Paper formats like this on are limiting and inefficient.
611	Maple Park Drive	1		1	1			1	1		Excessive speed - Maple Park is used as a short cut to Dodd Road		1		1				1			I don't see the need for the path. It's hilly and we seldom see walkers in the area. I would prefer to spend the investment on areas that need a path - Delaware, Dodd, etc.	There is the weekly trash pickup and yard maintenance.	By checking with the townhouse association board you can have the irrigation systems flagged. They also know about drainage issues.
622	Maple Park Drive	1		1		1		1	1		Sometimes it feels like excessive speed/volume down Maple Park Drive. Kids trying to go to the playground, so many pedestrians.	1				1		1				Not sure which side path should be on. Great idea! We all love walking in our neighborhood.	N/A	After big rain storms and in the spring - during snow melt. Water near our garage - driveway needs to be replaced, water pools after rain and in spring. Thank you!
632	Maple Park Drive	1		1		1		1		1	Speeding is the only issue. Kids playing all over the neighborhood.		1		1				1			Neither side for the path. We do not need a pedestrian path. There is plenty of room and I do not want to lose parking on the street.		What would we do with family gatherings, where would people park. I completely disagree with this proposal. We love our neighborhood, please do not change anything.
635	Maple Park Drive	1		1		1		1		1			1		1				1			On-street path would be too dangerous. Which side - don't understand question. A pedestrian path running along side moving vehicles is a dangerous situation.	Mail man - USPS daily delivery. Trash removal on Wednesdays.	

QUESTIONNAIRE RESPONSES

CITY OF MENDOTA HEIGHTS
PROJECT: Emerson Avenue Street Improvements
PROJECT #: 202306

Questionnaire Date: 10/27/2022
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			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
642	Maple Park Drive	1		1	1		1			1			1		1				1			No path of any kind on either side. I do not approve of any type of walking path or bike path anywhere near or on my property. I am in no position to bear the responsibility of snow removal and maintenance of the proposed path.	Construction will disrupt not only the flow of traffic and block access to my property but also the ability to work remotely. A resident is dependent on strong internet access at all times of the day as a result of its employer residing out of the U.S. and underground construction will put internet wires at risk of damage and therefore inhibit internet connections. Due to the location of Highway 13 & Dodd Road, Maple Park Drive is a frequently travelled road, therefore construction will disrupt the flow of traffic as the flow will be congested and thus affect access to my property on Maple Park Drive. Maple Park Drive is adjacent to a park. Thus, the congestion will put park goers at a safety risk. In addition, block access will be permanently affected as street parking may be reduced significantly because of the proposed path.	I strongly oppose the Emerson Ave. area street project. Pursuant to Minn. Stat. § 429.081 a written objection will be filed prior to or at the assessment hearing to preserve the right to appeal to the district court. This special assessment will unduly burden my financial affairs which are exacerbated because of COVID-19 and inflation. I am aware of the Clapp-Thomssen Ivy Hall Plat recording of a 12-to-20- feet right-of-way as well as the right-of-way width requirement as specified under 11-3-3(B)(2) of the Mendota Heights City Code. The fifth amendment of the United State Constitution reads, in relevant part, "Nor shall private property be taken for public use, without just compensation." Any taking of private property not subject to the 12-to-20-feet right-of-way imposes a constitutional violation if just compensation is not paid. This project raises a potential Fifth Amendment constitution violation.
738	Medora Court	1		1	1		1			1			1		1			1			1	Path is not necessary. We live at the top of Emerson, where it intersects with Medora Road. Lived at this location nearly 30 years. Everyday we drive and walk, bicycle, or roller ski on the streets under consideration. Everyday we observe others using the street to get from point A to point B. There has never been a problem for anyone using the street and there is not currently a problem. The proposed path is simply not needed. Pave the road if you must, but please do not spend our hard-earned money on a proposed path in an effort to fix or improve a perfectly good situation.	In case you haven't noticed, there are no businesses located along the route under consideration. This is a charming residential neighbor that works well for its residents and does not require change.	
1339	Medora Road	1		1		1		1		1			1		1				1		1	The proposed path would increase risks to pedestrians and bicyclists particularly with the cross traffic at numerous intersections. If installed it should definitely be on the south and east side of street for the safety of slow moving bicycles and pedestrians.		Since our property does not have street access to Emerson Ave., but rather to Medora Road I understand that we would not be assessed for the road improvement to Emerson Avenue, as we paid a substantial assessment for a road improvement to Medora Road several years ago.
1360	Medora Road	1		1		1		1		1			1			1			1			Do not want or need pedestrian path		
699	Sylvandale Court	1	1		1		1			1		1			1			1		1				Feel that pedestrian and bicycle path on Dodd Road is a bigger priority.

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			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
714	Sylvandale Court	1		1		1		1		1			1		1		Parking for guests		1			The sidewalk would make parking for guests on the major streets very difficult		
715	Sylvandale Court	1		1	1			1		1			1		1				1			Neither side - no path needed just slower vehicle speeds. I bike and walked frequently and no path is needed here just slower vehicle speeds.		Completely opposed to this pathway.
717	Sylvandale Court	1		1	1			1		1			1		1				1			Neither side - I do not want on or off street versions of the walking path.	We obviously need the unrestricted ability to come and go from our home	On street parking is a necessity.
723	Sylvandale Court	1		1	1		1			1			1			1			1	1		No need for this project		
1200	Sylvandale Road	1		1	1					1			1		1				1			No change is necessary or desired. Neither side for path. With Covid it was nice having ability to walk on either side. See prior comments. Please don't spend the city's money on something unnecessary and unwanted.		Irrigation system.
1236	Sylvandale Road	1	1			1		1	1		Excessive speed - cars go too fast		1		1		There's no real issue today.					Neither side. Not needed. The short on street distances between existing paths work just fine It's not worth the loss of parking and other disruption.	N/A	Water in the spring during snow melt. All the time - continuous in the street. Well documented with City of storm sewer back flow. Opposed to trail.
1260	Sylvandale Road	1		1	1			1	1		Excessive speed - mostly delivery trucks, school buses and trash trucks. Traffic is heavy when Highway 13 is under repair.		1		1				1			No path. We do not want a path. We don't want to lose parking at all.		Sprinkler system, but is not operational.
1271	Sylvandale Road	1		1	1		1			1	We appreciate the regular pedestrian traffic each day. We enjoy greeting our neighbors who regularly walk by. We have never been concerned about their safety or noted any situations that suggested a safety concern.		1		1				1	1		The proposed plan makes the area for car traffic too narrow. I feel this would be dangerous. The reality will be the same - walkers walking on the edge of the road, next to cars. Painting a line and restricting the parking near our property doesn't change pedestrian safety.	No special access needs other than regular coming and going for a family of six.	Have there been accidents involving pedestrians in this pathway? We see pedestrians walk this route daily, without issue. This feels like a big expense that doesn't solve anything. Painting a lane for pedestrians doesn't change anything from what is currently occurring other than making our roads more dangerous for drivers and highly inconvenient for the homeowners on the path. Perhaps a compromise could be a painted lane (no physical barrier) with no parking restrictions. The vast majority of the time there isn't much parking on the street. A few occasions the pedestrians have to walk around a parked car would be fine. Please preserve the beautiful, natural character of this neighborhood.
1280	Sylvandale Road	1		1		1		1	1		Traffic is too fast sometimes. City should post a max 20 mph limit on Sylvandale.		1		1		Don't create a problem where none exists. Perhaps street lights on Sylvandale would be a better idea (low height ones). Also add speed limit signs.					We believe a problem is being created where none exists. We've been here for 25 years and many people walk on Sylvandale with no problems.	N/A	Lots of landscaping. Sylvandale needs speed limit signs and low profile street lights. In fact, I believe narrowing of Sylvandale would create greater safety issues.
1286	Sylvandale Road	1		1	1			1		1			1		1				1			We don't feel a path is necessary. We live in a safe and secure neighborhood and waited 3 years to find a house here for that reason. As loyal taxpayers to the city we would like to keep it the way it is. Paying for an assessment and losing part of the lawn is not a good option.	N/A	

QUESTIONNAIRE RESPONSES

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			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
1289	Sylvandale Road	1		1	1		1			1	Sylvandale Road does not have the traffic to warrant this. Nor do we want increased traffic. We moved from St. Paul for a reason. We want our quiet suburban street to remain as is.		1		1		Absolutely not - for path. Absolutely remove parking would be an issue		1			Path is not needed. None. Unfair to all on Sylvandale. This is unnecessary and would greatly effect our privacy, property and enjoyment of both. This is a suburban street that is quiet and it needs to stay that way. This proposal is unneeded, not warranted for the current neighbors/hood and is completely unacceptable to us.	We need access to our home at all times. We both work from home and have deliveries daily that can not be interrupted.	Please email/send info for all hearings/sessions on this matter. We plan to attend and also if needed organize to stop this absurd/unnecessary plan. Our home and street will not be sacrificed for others "ideals" or some ____ an of a "bike path" the city may want to tout. Also, no parking on the street we live on? That is unworkable and unacceptable. We should be able to host holidays/parties etc. with ease and our rights/abilities should not be limited unfairly. No parking on street = absolute no support for this as it takes into the potential benefit of people walking pets but at the homeowners limitations and unfair restrictions. PS LOL re: Amazon and UPS ability then as they always park on the street. We walk/bike daily on Sylvandale. It is safe currently to do so. Sylvandale is a neighborhood road and my young children/family use it without safety concerns. Emerson has a lot more traffic than Sylvandale. Emerson is more busy and that street alone would be fair/understandable. Emerson is different than Sylvandale.
1297	Sylvandale Road	1	1			1		1		1				1		1			1			Neither side for path. I don't think there is room for this sort of path without expanding into yards and disrupting our property. I don't want a path built on our property. Our property has a berm up to the road that provides us with privacy and protection from flooding from the road. Encroaching on this would drastically change the character of our property and not be welcome. If there are options that would allow for a path without impacting our, or our neighbors yards, we would like to see a detailed proposal for review.	None	Water after almost any rain or melting event. The grade of the road is such that water pools at the end of our driveway after a rain. The storm drains, which are very close, are higher than the gutter at the end of our driveway. We have friends that live on Winston Court and their street was recently redone. Their feedback was that the job went to the lowest bidder and coordination and organization of the project was really poor. We wish for more than price to be considered when selecting a contractor for this project.
1300	Sylvandale Road	1		1		1	1		1				1		1				1			I do not want an off street version of the walking path.	The rehabilitation of pavement of street is okay but the walking path because of traffic and excessive speed can produce accidents and disrupt access to properties specially in the case of emergencies.	Sump pumps exit to the sewer. Sump pump pipes exit drain to street. The walking path produced very uncomfortable situations to most of the people like landscape and environmeted losses.

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			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
1303	Sylvandale Road	1		1	1			1		1			1		1				1			No path on either side. Under no circumstances do we wan an "on" or "off" street version of the path. The Sylvandale area is tucked away neighborhood not a main road like Hwy 13, Wachtler or even Wentworth. Those paths are understandable, useful and needed. If the city needs to build a path - put one on Dodd Road. Let's be realistic - there is absolutely no reason to put a path through this neighborhood and ruin our wide streets, parking, and privacy.		We have lived in Mendota Heights for 35 years. If we wanted sidewalks or paths through our front yard, we'd go to St. Paul. What's next? Streetlights? Our area does not need to be "connected" to anything. Sylvandale is not a busy street with fast traffic that warrants a pedestrian path. Plain & simple. We are vehemently opposed.
1316	Sylvandale Road	1		1	1		1			1			1		1				1			Neither side - The road is too curvy. Walking in the street would be dangerous due to the lines of sight being poor. Aweful I would fight it. Sylvandale is too curvy and the lines of sight are poor. Walking in the street would be dangerous. At a minimum it would be uncomfortable to walk with cars you can't see coming whizzing by.		Irrigation and Lights for underground utilities. We need a new road surface but not a walkway or path.
1324	Sylvandale Road	1	1			1		1		1	Pedestrian and automobile traffic is/are very manageable and appropriate currently		1		1				1			Neither side for path. Traffic flows are acceptable, reasonable, and safe. The roadway is the right width for the traffic. If made narrower the roadway could be congested, causing more accidents.	We need access to our driveway at all times. We need space for autos to park when visiting and our grandchildren are dropped off to our front door and picked up daily. Also, we have a lot of visitors and guests who park on the street. This works fine now. It might not work.	Water - in the spring - during snow melt. If people are parked in front of homes, that will take away a lane, which otherwise would be available for auto traffic. This proposal sounds costly and unnecessary.
1327	Sylvandale Road	1		1	1			1		1			1		1				1			Do not see a need for a pedestrian pathway		
1334	Sylvandale Road	1		1	1		1			1			1		1				1			Neither side for path. Over the year, we have seen many bicycle and walking paths imposed on streets or adjacent to streets. Their usage is abysmally low. Certainly, city leaders must witness this fact as well. City leaders perhaps believe in the old adage "if we build it, they will come". But they didn't come. Ergo, why continue this failing program of reserving and spending money on unutilized space. If this plan is pursued, please inform the residents of the cost of the pathway proposed and the affect on proposed assessment.	Normal access to garage and household deliveries.	Water irrigation pipes.

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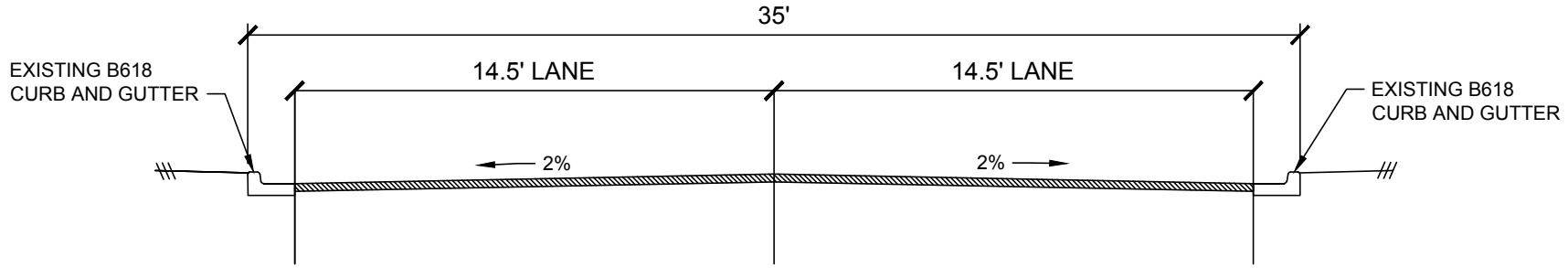
			Yes	No	Yes	No	Yes	No	Yes	No		Yes	No	Maybe	Yes	No	Comments	Yes	No	N &W	S &E		comments	
1335	Sylvandale Road	1	1		1			1	1		Cars always turn onto Emerson (from Sylvandale or Clement) way too fast and every year we get at least 2 cars in our yard/driveway from spinning out on that turn (usually snow related). Last year a car hit the power pole that is on corner of property. I circled our house below on map as it is on the corner of Emerson/Sylvandale.		1		1		I'd love a safe place to walk but not at the expense of having friends and family able to visit (which requires street parking).		1			1	That's what everyone does already. No need to spend money on that (path). I strongly oppose the path if it means losing street parking. We enjoy having friends and family at our home and this would make that impossible. If it is done it needs to be a sidewalk separated from street by a curb or else it is no different than now.	I work in downtown St. Paul and our kids attend daycare so we need to be able to get in and out of driveway.	Water - after big rain storms, in the spring - during snow melt, after almost any rain or melting event. Our driveway slopes down so water always settles at the bottom. Have a drain on right side of driveway that helps some but doesn't do much in the winter. Please do not add a pedestrian lane. Would ruin family gatherings and birthday parties for decades. Do what you need with street and sewer but don't take away parking for a "pretend" sidewalk.
1380	Wachtler Avenue	1		1		1		1		1			1		1				1		1	I do not think we need a walking path of any kind	No	
Returned		74	13	56	44	19	23	33	23	49	26	23	48	1	43	25	19	24	44	17	14	64	38	56
Percent of Returned Responses*		100%	18%	76%	59%	26%	31%	45%	31%	66%		31%	65%	1%	58%	34%		32%	59%	23%	19%			
Percent of Questionnaires Sent Out*		47%	8%	36%	28%	12%	15%	21%	15%	31%		15%	31%	1%	27%	16%		15%	28%	11%	9%			

* Percentages are based on responses of returned questionnaires and may not equal 100% if questions were not answered on questionnaire.

Note: 662 Ivy Falls Court - 2 questionnaires returned

EXHIBIT 2:
Typical Cross Sections

EXISTING ROADWAY SECTION



PROPOSED ROADWAY SECTION

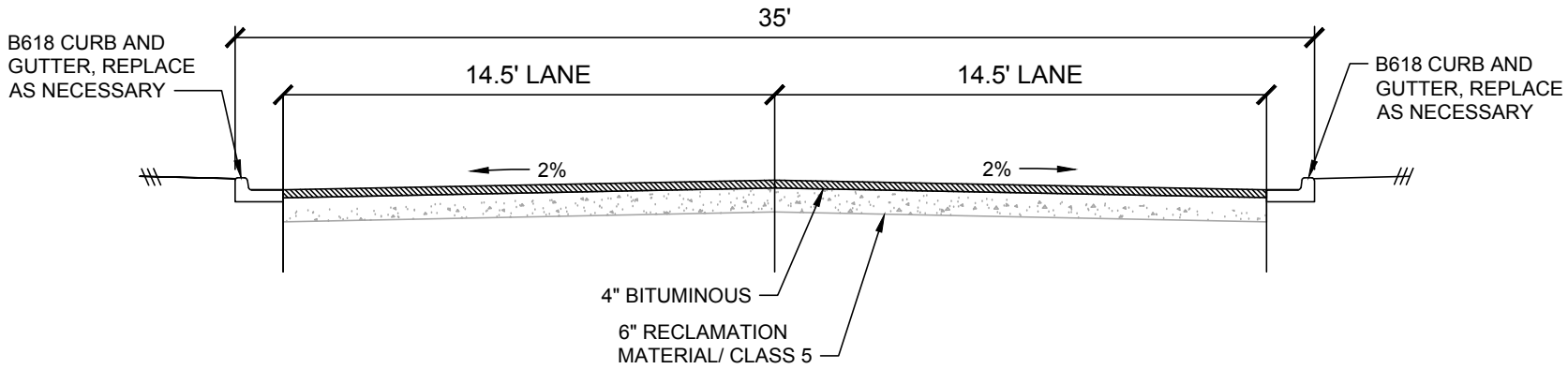


EXHIBIT 3
Engineer's Estimate

2024 EMERSON AREA STREET IMPROVEMENTS
ENGINEERS ESTIMATE
CITY OF MENDOTA HEIGHTS, MINNESOTA
November 2, 2023

ITEM #	SPEC. REF	DESCRIPTION	UNIT	UNIT PRICE	EMERSON AREA										TOTAL QUANTITY	PROJECT TOTAL
					STREETS		STORM		PARK		PRIVATE (PARKING BAYS)		SPRWS			
					QUANTITY	COST	QUANTITY	COST	QUANTITY	COST			QUANTITY	COST	QUANTITY	COST
1	2021.501	MOBILIZATION	LUMP SUM	$ 85,862.00	0.5	$ 42,931.00			0.02	$ 1,717.24			0.48	$ 41,213.76	1	$ 85,862.00
2	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	$ 500.00									16	$ 8,000.00	16	$ 8,000.00
3	2104.502	REMOVE SIGN TYPE C	EACH	$ 55.00	16	$ 880.00									16	$ 880.00
4	2104.502	REMOVE SIGN TYPE SPECIAL	EACH	$ 66.00	26	$ 1,716.00									26	$ 1,716.00
5	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	$ 3.00	1000	$ 3,000.00			30	$ 90.00					1030	$ 3,090.00
6	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	$ 6.00	10	$ 60.00									10	$ 60.00
7	2104.503	REMOVE CURB AND GUTTER	LIN FT	$ 10.00	3503	$ 35,030.00									3503	$ 35,030.00
8	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	$ 10.00									100	$ 1,000.00	100	$ 1,000.00
9	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	$ 7.00	1577	$ 11,036.67					989	$ 6,925.33			2566	$ 17,962.00
10	2104.504	REMOVE CONCRETE WALK	SQ YD	$ 10.00					245	$ 2,450.00					245	$ 2,450.00
11	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	$ 13.50	553	$ 7,465.50									553	$ 7,465.50
12	2104.518	REMOVE BITUMINOUS WALK	SQ FT	$ 2.00	50	$ 100.00			80	$ 160.00					130	$ 260.00
13	2104.602	SALVAGE MAIL BOX SUPPORT	EACH	$ 100.00	10	$ 1,000.00									10	$ 1,000.00
14	2105.504	GEOTEXTILE FABRIC TYPE 5	SQ YD	$ 2.00	2284	$ 4,568.00			115	$ 230.00					2399	$ 4,798.00
15	2105.601	DEWATERING	LUMP SUM	$ 10,000.00	0.5	$ 5,000.00			0.02	$ 200.00			0.48	$ 4,800.00	1	$ 10,000.00
16	2105.607	SALV MILL BIT & AGG FROM STOCKPILE (SV)	CU YD	$ 20.00	3383	$ 67,660.00			170	$ 3,400.00					3553	$ 71,060.00
17	2105.609	CRUSHED ROCK (1" CLEAR)	TON	$ 45.00	286	$ 12,870.00									286	$ 12,870.00
18	2105.609	CRUSHED ROCK (3" MINUS)	TON	$ 45.00	257	$ 11,565.00									257	$ 11,565.00
19	2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	$ 22.00	762	$ 16,764.00									762	$ 16,764.00
20	2106.607	EXCAVATION - COMMON	CU YD	$ 20.00	3383	$ 67,660.00									3383	$ 67,660.00
21	2106.607	EXCAVATION - SUBGRADE	CU YD	$ 20.00	762	$ 15,240.00									762	$ 15,240.00
22	2111.519	TEST ROLLING	ROAD STA	$ 150.00	88	$ 13,200.00									88	$ 13,200.00
23	2112.519	SUBGRADE PREPARATION	ROAD STA	$ 500.00	88	$ 44,000.00									88	$ 44,000.00
24	2123.61	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	$ 200.00	132	$ 26,400.00			0.015	$ 3.00					132.015	$ 26,403.00
25	2123.61	1.5 CU YD BACKHOE	HOUR	$ 250.00	27	$ 6,750.00			0.003	$ 0.75					27.003	$ 6,750.75
26	2130.523	WATER	M GALLON	$ 55.00	106	$ 5,830.00			0.012	$ 0.66					106.012	$ 5,830.66
27	2211.507	STOCKPILE AGGREGATE (CV)	CU YD	$ 12.00	3383	$ 40,596.00			170	$ 2,040.00					3553	$ 42,636.00
28	2211.509	AGGREGATE BASE CLASS 5	TON	$ 20.00	874	$ 17,475.00					278	$ 5,565.00	459	$ 9,180.00	1611	$ 32,220.00
29	2215.604	FULL DEPTH RECLAMATION	SQ YD	$ 2.50	31966	$ 79,915.00			1599	$ 3,997.50					33565	$ 83,912.50
30	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)	TON	$ 92.00	7636	$ 702,512.00			382	$ 35,144.00					8018	$ 737,656.00
31	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C) DRIVEWAYS	TON	$ 140.00	269.824	$ 37,775.36					169.176	$ 23,684.64			439	$ 61,460.00
32	2360.509	BITUMINOUS PATCHING MIXTURE	TON	$ 175.00	50	$ 8,750.00									50	$ 8,750.00
33	2502.503	4" PERF PVC PIPE DRAIN	LIN FT	$ 20.00			50	$ 1,000.00							50	$ 1,000.00
34	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	$ 110.00			200	$ 22,000.00					100	$ 11,000.00	300	$ 33,000.00
35	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	$ 2,000.00			3	$ 6,000.00							3	$ 6,000.00
36	2504.602	ADJUST VALVE/SERVICE STOP BOX	EACH	$ 600.00	14	$ 8,400.00									14	$ 8,400.00
37	2504.602	CONNECT TO EXISTING WATERMAIN	EACH	$ 2,500.00									9	$ 22,500.00	9	$ 22,500.00
38	2504.602	CONNECT TO EXISTING WATER SERVICE	EACH	$ 1,500.00									1	$ 1,500.00	1	$ 1,500.00
39	2504.602	HYDRANT	EACH	$ 3,000.00									15	$ 45,000.00	15	$ 45,000.00
40	2504.602	1" CURB STOP AND BOX	EACH	$ 600.00									1	$ 600.00	1	$ 600.00
41	2504.602	1" CORPORATION STOP	EACH	$ 500.00									1	$ 500.00	1	$ 500.00
42	2504.602	8" GATE VALVE AND BOX	EACH	$ 4,500.00									15	$ 67,500.00	15	$ 67,500.00
43	2504.602	CONNECT TO EXISTING WATERMAIN	EACH	$ 2,500.00									9	$ 22,500.00	9	$ 22,500.00
44	2504.603	REMOVE WATERMAIN	LIN FT	$ 15.00									6995	$ 104,925.00	6995	$ 104,925.00
45	2504.603	8" DI CL 53 WATERMAIN	LIN FT	$ 110.00									6995	$ 769,450.00	6995	$ 769,450.00
46	2504.608	DUCTILE IRON FITTINGS	POUND	$ 25.00									6248	$ 156,200.00	6248	$ 156,200.00
47	2506.502	ADJUST FRAME AND RING CASTING	EACH	$ 900.00	87	$ 78,300.00									87	$ 78,300.00
48	2506.502	CONSTRUCT CATCH BASIN	EACH	$ 1,200.00			1	$ 1,200.00					16	$ 19,200.00	17	$ 20,400.00
49	2521.518	6" CONCRETE WALK	SQ FT	$ 16.00	100	$ 1,600.00			245	$ 3,920.00					345	$ 5,520.00
50	2521.602	DRILL & GROUT DOWEL BAR (EPOXY COATED)	EACH	$ 30.00	5	$ 150.00			10	$ 300.00					15	$ 450.00
51	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	$ 30.00	3503	$ 105,090.00							5866	$ 175,980.00	9369	$ 281,070.00
52	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	$ 85.00	553	$ 47,005.00									553	$ 47,005.00
53	2531.618	TRUNCATED DOMES	SQ FT	$ 65.00	12	$ 780.00			27	$ 1,755.00					39	$ 2,535.00
54	2540.602	INSTALL MAIL BOX SUPPORT	EACH	$ 100.00	10	$ 1,000.00									10	$ 1,000.00
55	2563.601	TRAFFIC CONTROL	LUMP SUM	$ 15,000.00	0.5	$ 7,500.00			0.02	$ 300.00			0.48	$ 7,200.00	1	$ 15,000.00
56	2564.518	SIGN TYPE C	SQ FT	$ 250.00	96	$ 24,000.00									96	$ 24,000.00
57	2564.618	SIGN TYPE SPECIAL	SQ FT	$ 120.00	71.5	$ 8,580.00									71.5	$ 8,580.00
58	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM	SYSTEM	$ 25,000.00	1	$ 25,000.00									1	$ 25,000.00
59	2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	$ 3,500.00	0.5	$ 1,750.00			0.02	$ 70.00			0.48	$ 1,680.00	1	$ 3,500.00
60	2573.502	STORM DRAIN INLET PROTECTION	EACH	$ 200.00	29	$ 5,800.00									29	$ 5,800.00
61	2573.503	SILT FENCE TYPE MS	LIN FT	$ 5.00	500	$ 2,500.00									500	$ 2,500.00
62	2573.503	SEDIMENT CONTROL LOG TYPE COMPOST	LIN FT	$ 2.50	3503	$ 8,757.50									3503	$ 8,757.50
63	2574.507	COMMON TOPSOIL BORROW	CU YD	$ 40.00	55	$ 2,200.00									55	$ 2,200.00
64	2574.508	FERTILIZER TYPE 3	POUND	$ 1.00	49	$ 49.00							81	$ 81.00	130	$ 130.00
65	2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	$ 2.00	112	$ 224.00									112	$ 224.00
66	2575.505	SOIL BED PREPARATION	ACRE	$ 1,500.00	0.07	$ 105.00							0.11	$ 165.00	0.18	$ 270.00
67	2575.505	RAPID STABILIZATION METHOD 3	ACRE	$ 4,000.00	0.07	$ 280.00							0.11	$ 440.00	0.18	$ 720.00
68	2575.505	SEEDING	ACRE	$ 3,500.00	0.07	$ 245.00							0.11	$ 385.00	0.18	$ 630.00
69	2575.508	SEED MIXTURE 25-151	POUND	$ 5.00	29	$ 145.00							49	$ 245.00	78	$ 390.00
70	2575.508	STABILIZED FIBER MATRIX	POUND	$ 1.30	604	$ 785.20									604	$ 785.20
71	2582.503	4" SOLID LINE MULTI COMPONENT (WR)	LIN FT	$ 1.00					400	$ 400.00					400	$ 400.00
TOTAL						**$ 1,617,995.23**		**$ 30,200.00**		**$ 56,178.15**		**$ 36,174.97**		**$ 1,471,244.76**		**$ 3,211,793.11**

EXHIBIT 4
Preliminary Assessment Roll

City of Mendota Heights - Emerson Area Street Improvements		
Total Project Cost	$	3,749,974.00
Assessable Amount	$	1,837,554.00
Assessment (50% of Assessable Amount)	$	918,777.00
Residential unit assessments (units)	107.5	
Residential unit rate	$	8,547.00
Interest rate	6%	
Term	10	
Initial year	2025	

RECLAMATION

NUMBER	PARCEL ADDRESS	PARCEL ID NUMBER	LEGAL DESCRIPTION	PROPERTY OWNER	JOINT OWNER	OWNER ADDRESS	CITY AND ZIP	CONSTRUCTION TYPE	NUMBER OF UNITS	UNIT ASSESSMENT RATE	PRIVATE PARKING BAY ASSESSMENT	TOTAL ASSESSMENT AMOUNT	
1	1125 IVY HILL DR	271785000490	CLAPP-THOMSSEN IVY HILL	MITCHELL E BLATT	MICHELE A LEPSCHE	1125 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
2	1127 IVY HILL DR	271785000500	CLAPP-THOMSSEN IVY HILL	COREY S MCCOWN		1127 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
3	1129 IVY HILL DR	271785000510	CLAPP-THOMSSEN IVY HILL	ANN M DOTY		1129 IVY HILL DR	SAINT PAUL MN 55118-1830	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
4	1131 IVY HILL DR	271785000520	CLAPP-THOMSSEN IVY HILL	KATHLEEN M GARDNER		1131 IVY HILL DR	SAINT PAUL MN 55118-1830	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
5	1132 IVY HILL DR	271785000530	CLAPP-THOMSSEN IVY HILL	ANTHONY W TSTE ERICKSON		1132 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
6	1134 IVY HILL DR	271785000540	CLAPP-THOMSSEN IVY HILL	MELANIE TSCHIDA		1134 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
7	1136 IVY HILL DR	271785000550	CLAPP-THOMSSEN IVY HILL	GRAHAM C CLARK		1136 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
8	1138 IVY HILL DR	271785000560	CLAPP-THOMSSEN IVY HILL	ANA M MOREL	ROBERT N VANVLIET	1138 IVY HILLS DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
9	1141 IVY HILL DR	271785000430	CLAPP-THOMSSEN IVY HILL	PAMELA D RIESBERG		1141 IVY HILL DR	SAINT PAUL MN 55118-1830	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
10	1143 IVY HILL DR	271785000440	CLAPP-THOMSSEN IVY HILL	MARY JANE TSTE CRONIN		1143 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
11	1145 IVY HILL DR	271785000450	CLAPP-THOMSSEN IVY HILL	TYLER ALBERTSON		1145 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
12	1147 IVY HILL DR	271785000460	CLAPP-THOMSSEN IVY HILL	MARY HARRINGTON FORD		1147 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
13	1149 IVY HILL DR	271785000470	CLAPP-THOMSSEN IVY HILL	MICHAEL E TSTE GONYOU		1149 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
14	1151 IVY HILL DR	271785000480	CLAPP-THOMSSEN IVY HILL	NANCY A QUINN		1151 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
15	611 MAPLE PARK DR	271785000570	CLAPP-THOMSSEN IVY HILL	DIANE J RAPPATH		611 MAPLE PARK DR	SAINT PAUL MN 55118-1840	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
16	613 MAPLE PARK DR	271785000580	CLAPP-THOMSSEN IVY HILL	CAROL ROSSBACH		613 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
17	615 MAPLE PARK DR	271785000590	CLAPP-THOMSSEN IVY HILL	JOHN H BAAGO		615 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
18	616 MAPLE PARK DR	271785000040	CLAPP-THOMSSEN IVY HILL	ROBERT WESLEY HALLMAN	MOLLY ANN ROCHEFORD TOWLE	616 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
19	617 MAPLE PARK DR	271785000600	CLAPP-THOMSSEN IVY HILL	KIM LOUISE REED	HOPE CAROL REED-COUNSELL	617 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
20	619 MAPLE PARK DR	271785000610	CLAPP-THOMSSEN IVY HILL	ELIZABETH H HEWITT		619 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118-1840	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
21	621 MAPLE PARK DR	271785000620	CLAPP-THOMSSEN IVY HILL	HARRISON JR & MARY N RANDOLPH		621 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
22	1090 IVY HILL DR	273775101020	IVY KEEP II	ROBERT & LINDA S BIRNBAUM		1090 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
23	1092 IVY HILL DR	273775101030	IVY KEEP II	MARGARET LUCY ANDREWS		1092 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
24	1094 IVY HILL DR	273775101040	IVY KEEP II	CARYL A GHIMENTI		1094 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
25	1096 IVY HILL DR	273775101050	IVY KEEP II	GRACE KELIHER		1096 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
26	1098 IVY HILL DR	273775101060	IVY KEEP II	LESLIE CALDWELL WINTER		1098 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
27	1100 IVY HILL DR	273775101070	IVY KEEP II	MICHAEL & NANCY BRILL		1100 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
28	1102 IVY HILL DR	273775101080	IVY KEEP II	DAVID & BRIDGET BUSACKER		1102 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
29	1104 IVY HILL DR	273775101090	IVY KEEP II	NANCY J TSTE COLEY		1104 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
30	1109 IVY HILL DR	276330002050	IVY KEEP II REPLAT BLOCKS 2 AND 3	WAYNE W WEGNER		1109 IVY HILL DR	MENDOTA HEIGHTS MN 55118-1830	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
31	1111 IVY HILL DR	276330002040	IVY KEEP II REPLAT BLOCKS 2 AND 3	CONNIE M ROEHRICH		1111 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
32	1113 IVY HILL DR	276330002030	IVY KEEP II REPLAT BLOCKS 2 AND 3	THOMAS F TSTE ROLEWICZ	PATRICA A TSTE ROLEWICZ	1113 IVY HILL DR	SAINT PAUL MN 55118-1830	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
33	1115 IVY HILL DR	276330002020	IVY KEEP II REPLAT BLOCKS 2 AND 3	MARGARET A RAMIREZ		1115 IVY HILL DR	MENDOTA HEIGHTS MN 55118-1830	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
34	623 MAPLE PARK DR	273775104080	IVY KEEP II	TIMOTHY & KRISTA WALSH		623 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
35	625 MAPLE PARK DR	273775104070	IVY KEEP II	BRUCE D ANDERSON	KEITH J ANDERSON	625 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
36	627 MAPLE PARK DR	273775104060	IVY KEEP II	TIMOTHY JOHN SMITH		627 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
37	629 MAPLE PARK DR	273775104050	IVY KEEP II	CLAIRE PRESCOTT		629 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
38	631 MAPLE PARK DR	273775104040	IVY KEEP II	MARIA MAMON		631 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
39	633 MAPLE PARK DR	273775104030	IVY KEEP II	NANCY J KING		633 MAPLE PARK DR	SAINT PAUL MN 55118-1840	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
40	635 MAPLE PARK DR	273775104020	IVY KEEP II	JOHN R NYGAARD	GLORIA J FREDERICK	635 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
41	1095 IVY HILL DR	276330001070	IVY KEEP II REPLAT BLOCKS 2 AND 3	JAMES D KNOX		1095 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
42	1097 IVY HILL DR	276330001060	IVY KEEP II REPLAT BLOCKS 2 AND 3	JEFFERY SUPPLEMENTAL NEEDS TRU LOWENTHAL		915 DOUGLAS RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
43	1099 IVY HILL DR	276330001050	IVY KEEP II REPLAT BLOCKS 2 AND 3	ANTHONY JOSEPH ANDERSON	MARY SALMEN ANDERSON	1099 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
44	1101 IVY HILL DR	276330001040	IVY KEEP II REPLAT BLOCKS 2 AND 3	MARY K ALBERS		1101 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
45	1103 IVY HILL DR	276330001030	IVY KEEP II REPLAT BLOCKS 2 AND 3	PAMELA DYKSTRA	STEVEN MUELLER	1103 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
46	1105 IVY HILL DR	276330001020	IVY KEEP II REPLAT BLOCKS 2 AND 3	BLAINE KIRSCHERT	KRISTINE DOMPIER	1105 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
47	603 MAPLE PARK DR	271785000390	CLAPP-THOMSSEN IVY HILL	ROBERT & LISA BERNABUCCI		603 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
48	605 MAPLE PARK DR	271785000400	CLAPP-THOMSSEN IVY HILL	MARGARET H CULLIGAN		605 MAPLE PARK DR	SAINT PAUL MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
49	607 MAPLE PARK DR	271785000410	CLAPP-THOMSSEN IVY HILL	BIRGIT C MAYR		607 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
50	609 MAPLE PARK DR	271785000420	CLAPP-THOMSSEN IVY HILL	RICHARD & KATHY BROOKS		7300 DIVISION ST	RIVER FOREST IL 60305	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
51	1140 IVY HILL DR	271785000080	CLAPP-THOMSSEN IVY HILL	JAMES B & BARBARA J MULROONEY		1140 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
52	1142 IVY HILL DR	271785000090	CLAPP-THOMSSEN IVY HILL	LANE C TSTE LARSON		1643 86TH CT E	INVER GROVE HEIGHTS MN 55077	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
53	1144 IVY HILL DR	271785000100	CLAPP-THOMSSEN IVY HILL	EDWARD & SUSAN TSTES ADRIAN		1144 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
54	1146 IVY HILL DR	271785000110	CLAPP-THOMSSEN IVY HILL	SARAH B LEVINE		1146 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
55	1148 IVY HILL DR	271785000120	CLAPP-THOMSSEN IVY HILL	JAMES G & SANDRA C BROCK		1148 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
56	1150 IVY HILL DR	271785000130	CLAPP-THOMSSEN IVY HILL	JEFFREY F & SANDRA L GIBBS		1150 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
57	1175 IVY HILL DR	271785000180	CLAPP-THOMSSEN IVY HILL	DEBORAH A KLINGEL		1175 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
58	1177 IVY HILL DR	271785000190	CLAPP-THOMSSEN IVY HILL	THOMAS F SCHULTZ		1177 IVY HILL DR	MENDOTA HEIGHTS MN 55118-1827	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
59	1179 IVY HILL DR	271785000200	CLAPP-THOMSSEN IVY HILL	BRADLEY G TSTE CLARY		1179 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
60	1181 IVY HILL DR	271785000210	CLAPP-THOMSSEN IVY HILL	SARAH E ARENDT		1181 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
61	1183 IVY HILL DR	271785000220	CLAPP-THOMSSEN IVY HILL	MARY S VUJOVICH		1183 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
62	1185 IVY HILL DR	271785000230	CLAPP-THOMSSEN IVY HILL	PER CARL & MARY JO NILSEN		1185 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
63	580 MAPLE PARK DR	271785000300	CLAPP-THOMSSEN IVY HILL	THOMAS & KATHLEEN BROUGHTEN		580 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
64	582 MAPLE PARK DR	271785000310	CLAPP-THOMSSEN IVY HILL	LUCILLE E OSOJNICKI		582 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
65	584 MAPLE PARK DR	271785000320	CLAPP-THOMSSEN IVY HILL	ELLEN ROSE DONOVAN	DANIEL RICHARD SR & DONOVAN	584 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
66	586 MAPLE PARK DR	271785000330	CLAPP-THOMSSEN IVY HILL	KUE DAVID & MIDO LEE SOUNG		586 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
67	588 MAPLE PARK DR	271785000340	CLAPP-THOMSSEN IVY HILL	DAVID H HARICH		588 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
68	590 MAPLE PARK DR	271785000350	CLAPP-THOMSSEN IVY HILL	CHARLES P DRISCOLL		590 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
69	592 MAPLE PARK DR	271785000360	CLAPP-THOMSSEN IVY HILL	CYNTHIA QUEHL		592 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
70	594 MAPLE PARK DR	271785000370	CLAPP-THOMSSEN IVY HILL	JEFFERY J & DEBORAH LENTSCH		594 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
71	596 MAPLE PARK DR	271785000380	CLAPP-THOMSSEN IVY HILL	BARBARA L NILLES		596 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
72	577 MAPLE PARK DR	271785000240	CLAPP-THOMSSEN IVY HILL	PETER F & JEANNINE KESSLER		577 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
73	579 MAPLE PARK DR	271785000250	CLAPP-THOMSSEN IVY HILL	MARY K BELL		579 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
74	581 MAPLE PARK DR	271785000260	CLAPP-THOMSSEN IVY HILL	CARL M CONNEY		581 MAPLE PARK DR	SAINT PAUL MN 55118-1837	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
75	583 MAPLE PARK DR	271785000270	CLAPP-THOMSSEN IVY HILL	LAWRENCE J & BARBARA SOMMER		583 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118-1837	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
76	585 MAPLE PARK DR	271785000280	CLAPP-THOMSSEN IVY HILL	ROBERT C & BETH S SCHNELL		1130 OLD CRYSTAL BAY RD	WAYZATA MN 55391	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
77	587 MAPLE PARK DR	271785000290	CLAPP-THOMSSEN IVY HILL	JOCELYN RAE BROOKS		587 MAPLE PARK DR	SAINT PAUL MN 55118-1837	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
78	1159 IVY HILL DR	271785000140	CLAPP-THOMSSEN IVY HILL	MARK J PERRY	MARY B BENTON PERRY	1159 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
79	1161 IVY HILL DR	271785000150	CLAPP-THOMSSEN IVY HILL	JAMES & DOROTHY SNODGRASS		1161 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
80	1163 IVY HILL DR	271785000160	CLAPP-THOMSSEN IVY HILL	CYNTHIA S ABAIR		1163 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
81	1165 IVY HILL DR	271785000170	CLAPP-THOMSSEN IVY HILL	RITA ANN CLEMENS		1165 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
82	1083 IVY HILL DR	271785101040	CLAPP-THOMSSEN IVY HILL 2ND	JOYCE M HOWES		1083 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
83	1085 IVY HILL DR	271785101030	CLAPP-THOMSSEN IVY HILL 2ND	TOM & COLLEEN MACDONALD		1085 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
84	1087 IVY HILL DR	271785101020	CLAPP-THOMSSEN IVY HILL 2ND	PHYLLIS A NOVITSKIE		1087 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
85	1089 IVY HILL DR	271785101010	CLAPP-THOMSSEN IVY HILL 2ND	ROLAND D & ALICE BEIHL		1089 IVY HILL DR	SAINT PAUL MN 55118-1830	RECLAMATION	0.44	$ 8,547.00	$ 430.85	$ 4,151.35	Townhouse area 37 units divided by 85 units (3675 ft/100 ft = 36.8 units)Parking Bay Assessment ($36622.40/85 units
86	COMMON AREA IVY KEEP I&II	271785000650	CLAPP-THOMSSEN IVY HILL	IVY KEEP I & II OWNERS ASSOC		10340 VIKING DR STE 105	EDEN PRAIRIE MN 55344	RECLAMATION				$ -	IVY KEEP I & II - COMMON AREA
87	COMMON AREA IVY KEEP I&II	271785101052	CLAPP-THOMSSEN IVY HILL 2ND	IVY KEEP II OWNERS ASSOC		10340 VIKING DR STE 105	EDEN PRAIRIE MN 55344	RECLAMATION				$ -	IVY KEEP I & II - COMMON AREA
88	COMMON AREA (1083-1089 IVY HIL	271785101051	CLAPP-THOMSSEN IVY HILL 2ND	IVY PARK TOWNHOUSE ASSOC		1089 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION				$ -	COMMON AREA FOR 1083-1089 IVY HILL DR
89	598 MAPLE PARK DR	271785000070	CLAPP-THOMSSEN IVY HILL	FREDRICK P & M WASHBURN		598 MAPLE PARK DR	SAINT PAUL MN 55118-1839	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
90	604 MAPLE PARK DR	271785000060	CLAPP-THOMSSEN IVY HILL	JACQUELINE A ELLINGSON		604 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
91	610 MAPLE PARK DR	271785000050	CLAPP-THOMSSEN IVY HILL	LORI JEAN KNOSALLA	BENJAMIN BESHOAR GOSACK	610 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
92	616 MAPLE PARK DR	271785000040	CLAPP-THOMSSEN IVY HILL	MATTHEW SEGALL	ALYSSA SEGALL	616 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
93	622 MAPLE PARK DR	271785000030	CLAPP-THOMSSEN IVY HILL	MATTHEW P & ALEXANDRA E HOURIGAN		622 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
94	632 MAPLE PARK DR	271785000020	CLAPP-THOMSSEN IVY HILL	CLAIRE M & MICHAEL JOHNSON		632 MAPLE PARK DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
95	642 MAPLE PARK DR	271785000010	CLAPP-THOMSSEN IVY HILL	MARY A SCHUSTER		642 MAPLE PARK DR	SAINT PAUL MN 55118-1839	RECLAMATION	2	$ 8,547.00		$ 17,094.00	
96	1200 SYLVANDALE RD	271335000031	BAUERS ACRE LOTS	JOHN KEVIN COSTLEY	ADINA M OVERBEE	1200 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
97	1205 SYLVANDALE RD	273760101010	IVY FALLS 2ND ADDITION	ANGELA L THORNBURG		1205 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118-1717	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
98	1220 SYLVANDALE RD	273760104010	IVY FALLS 2ND ADDITION	STEVEN T NILSSON		1220 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
99	661 IVY FALLS CT	273760101020	IVY FALLS 2ND ADDITION	RICHARD A JR FAYE		661 IVY FALLS CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
100	662 IVY FALLS CT	273760101100	IVY FALLS 2ND ADDITION	JOSEPH OPACK	KATIE OPACK	662 IVY FALLS CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
101	667 IVY FALLS CT	273760101030	IVY FALLS 2ND ADDITION	WILLIAM B & MARY K TSTES STEWART		667 IVY FALLS CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
102	672 IVY FALLS CT	273760101110	IVY FALLS 2ND ADDITION	JOHN M TSTE PETERSON	PAMELA R TSTE BURKLEY	672 IVY FALLS CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
103	675 IVY FALLS CT	273760101040	IVY FALLS 2ND ADDITION	LACHLAN S & JULIENNE M TSTES DUNLOP		675 IVY FALLS CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
104	678 IVY FALLS CT	273760101070	IVY FALLS 2ND ADDITION	THOMAS J ALTON	KATHLEEN M PETERSON	678 IVY FALLS CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
105	681 IVY FALLS CT	273760101050	IVY FALLS 2ND ADDITION	CLIFTON G HULL	MELISSA E LEE	681 IVY FALLS CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
106	682 IVY FALLS CT	273760101060	IVY FALLS 2ND ADDITION	RICHARD A TSTE & DIANE R TSTE SMOOKLER		682 IVY FALLS CT	MENDOTA HEIGHTS MN 55118-1727	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
107	1236 SYLVANDALE RD	273760104020	IVY FALLS 2ND ADDITION	GREGORY W & ERIN K MUNSON		1236 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
108	1255 SYLVANDALE RD	273760101090	IVY FALLS 2ND ADDITION	JENNIFER ANN RIDGEWAY		1255 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118-1719	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
109	1260 SYLVANDALE RD	273760104030	IVY FALLS 2ND ADDITION	FRANCIS T STIFTER	BARBARA J HANSEN	1260 SYLVANDALE RD	SAINT PAUL MN 55118-1718	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
110	1271 SYLVANDALE RD	273760101080	IVY FALLS 2ND ADDITION	INGRID ELIZABETH STRAUSS	NICOLAS OHARA STRAUSS	1271 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
111	1278 LAURA ST	273760104040	IVY FALLS 2ND ADDITION	KEVIN M HARRINGTON	CHRISTINE DOOLEY-HARRINGTON	1278 LAURA ST	WEST SAINT PAUL MN 55118-1948	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
112	1280 SYLVANDALE RD	273760103010	IVY FALLS 2ND ADDITION	DANIEL M & MYNDAL D SILVER		1280 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118-1720	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
113	1286 SYLVANDALE RD	273760103020	IVY FALLS 2ND ADDITION	JOHN GOETZ	DEANNE GEORGE-GOETZ	1286 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
114	1289 SYLVANDALE RD	273760102010	IVY FALLS 2ND ADDITION	SARAH E ANDERSON	BRYAN K ANDERSON	1289 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	
115	1292 SYLVANDALE RD	273760103030	IVY FALLS 2ND ADDITION	HANNAH S LICHTSINN	JOHN W LICHTSINN	1292 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00	

116	1294 LAURA ST	273760104050	IVY FALLS 2ND ADDITION	JOHN M & CATHERINE HARVANKO		1294 LAURA ST	MENDOTA HEIGHTS MN 55118-1948	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
117	1296 SYLVANDALE RD	273760103041	IVY FALLS 2ND ADDITION	STEVEN MCCARTHY	JENNIFER MCCARTHY	1296 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
118	1297 SYLVANDALE RD	273760102020	IVY FALLS 2ND ADDITION	PAUL D REHOVSKY	ARIEL L CARLS	1297 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
119	1299 LAURA ST	273760103150	IVY FALLS 2ND ADDITION	JONATHAN VAUPEL	JENNIFER VAUPEL	1299 LAURA ST	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
120	1300 SYLVANDALE RD	273760103052	IVY FALLS 2ND ADDITION	JORGE & LEONILDA ESTRIN		1300 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118-1720	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
121	1303 SYLVANDALE RD	273760102090	IVY FALLS 2ND ADDITION	THOMAS J WOESSNER	MICHELLE M WOESSNER	1303 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
122	1308 LAURA ST	273760104060	IVY FALLS 2ND ADDITION	KAISER G LIM	TERESA A LIM	1308 LAURA ST	SAINT PAUL MN 55118-1948	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
123	1313 LAURA ST	273760103140	IVY FALLS 2ND ADDITION	LINDA S C MOORE		1313 LAURA ST	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
124	1316 SYLVANDALE RD	273760103060	IVY FALLS 2ND ADDITION	MARK GRONDAHL		1316 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118-1720	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
125	1324 LAURA ST	273760104070	IVY FALLS 2ND ADDITION	KARRING T MOAN	HAYLEY I SHELDON	1324 LAURA ST	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
126	1324 SYLVANDALE RD	273760103070	IVY FALLS 2ND ADDITION	MARY KATE OCONNELL FISCHER LIVING TRUS		1324 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
127	1327 SYLVANDALE RD	273760102130	IVY FALLS 2ND ADDITION	RICHARD H & JANIE L GOODSPEED		1327 SYLVANDALE RD	SAINT PAUL MN 55118-1724	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
128	1334 SYLVANDALE RD	273760103080	IVY FALLS 2ND ADDITION	CHARLEEN VITELLI	JOHN VITELLI	1334 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
129	1335 SYLVANDALE RD	273760102140	IVY FALLS 2ND ADDITION	NATHAN & PARISA GIBSON		1335 SYLVANDALE RD	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
130	662 LAURA CT	273760103090	IVY FALLS 2ND ADDITION	JOHN & KATHERINE KOVAR		662 LAURA CT	MENDOTA HEIGHTS MN 55118-1946	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
131	669 LAURA CT	273760103130	IVY FALLS 2ND ADDITION	CHARLES W & JENNIFER ROBINSON KLOOS		669 LAURA CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
132	670 LAURA CT	273760103100	IVY FALLS 2ND ADDITION	TERRANCE P PENELON		670 LAURA CT	SAINT PAUL MN 55118-1946	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
133	675 LAURA CT	273760103120	IVY FALLS 2ND ADDITION	JOHN F TSTE & PATRICIA A TSTE TRACY		675 LAURA CT	MENDOTA HEIGHTS MN 55118-1947	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
134	676 LAURA CT	273760103110	IVY FALLS 2ND ADDITION	RYAN D FEINER	ANGELA K HILO	676 LAURA CT	MENDOTA HEIGHTS MN 55118-1946	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
135	699 SYLVANDALE CT	273760102030	IVY FALLS 2ND ADDITION	JORGE A LEON	ALEXANDRA E POLO	699 SYLVANDALE CT	SAINT PAUL MN 55118-1714	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
136	702 SYLVANDALE CT	273760102080	IVY FALLS 2ND ADDITION	MICHAEL WESBROD		702 SYLVANDALE CT N	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
137	705 SYLVANDALE CT	273760102040	IVY FALLS 2ND ADDITION	STEVEN F SCHLETZ		1848 SUMMIT LANE	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
138	712 SYLVANDALE CT S	279011000030	REGISTERED LAND SURVEY #11	ELISHA C BIEL	JULIA K BIEL	712 SYLVANDALE CT S	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
139	714 SYLVANDALE CT	273760100040	IVY FALLS 2ND ADDITION	ALEXANDER Z STROHOFFER	BARBARA A STROHOFFER	714 SYLVANDALE CT N	SAINT PAUL MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
140	715 SYLVANDALE CT	273760102050	IVY FALLS 2ND ADDITION	ROBERT A & DENISE L MALMGREN		715 SYLVANDALE CT	SAINT PAUL MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
141	717 SYLVANDALE CT S	279011000010	REGISTERED LAND SURVEY #11	JAMES D TSTE OLSON	CHAD F TSTE OLSON	717 SYLVANDALE CT S	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
142	720 SYLVANDALE CT S	279011000020	REGISTERED LAND SURVEY #11	ROBERT MILLHEISER	CLARE FAHEY	720 SYLVANDALE CT S	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
143	723 SYLVANDALE CT	273760102061	IVY FALLS 2ND ADDITION	ERIC J MAGNUSON	KAY E TUVESON	723 SYLVANDALE CT	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
144	1344 KNOLLWOOD LN	273767602010	IVY FALLS WEST 2ND ADD	ANN STEINGRAEBER	THOMAS STEINGRAEBER	1344 KNOLLWOOD LN	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
145	1355 CLEMENT ST	270380028020	AUDITORS SUBDIVISION NO 3	CARMEN H A TSTE BRUNNER		1355 CLEMENT	SAINT PAUL MN 55118-2725	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
146	1380 WACHTLER AVE	271715001010	CHERRY HILL	PETER KVASNIK		1380 WACHTLER AVE	SAINT PAUL MN 55118-2748	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
147	1390 WACHTLER AVE	271715002030	CHERRY HILL	BENJAMIN J & ELISA R MANNY		1390 WACHTLER AVE	MENDOTA HTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
148	777 EMERSON AVE	273767601020	IVY FALLS WEST 2ND ADD	TARA & RYAN ROIGER		777 EMERSON AVE W	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
149	781 EMERSON AVE	273767601010	IVY FALLS WEST 2ND ADD	MARY C SWEENEY		781 EMERSON AVE	SAINT PAUL MN 55118-1705	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
150	784 EMERSON AVE	271715002010	CHERRY HILL	ARASH & MAGDA R FORDUHARI		784 EMERSON AVE W	SAINT PAUL MN 55118-1704	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
151	790 EMERSON AVE	271715002020	CHERRY HILL	TODD R & JILL M JOHNSON	BART L & KAY M ZIBROWSKI	790 EMERSON AVE W	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
152	791 EMERSON AVE	271715001021	CHERRY HILL	JOHN & PAULA GROSENICK		791 EMERSON AVE W	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
153	1165 SYLVANDALE RD	273760006180	IVY FALLS	HOLLY ARNST		1165 SYLVANDALE RD	MENDOTA HTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
154	1176 IVY HILL DR	274210008090	KIRCHNER ADDITION	ROBERT R ALVAREZ	CONSTANCE F ALVAREZ	1176 IVY HILL DR	MENDOTA HEIGHTS MN 55118	RECLAMATION	1	$ 8,547.00		$ 8,547.00		
155	645 BUTLER AVE	271785000660	CLAPP-THOMSSEN IVY HILL	CITY OF MENDOTA HEIGHTS		1101 VICTORIA CURV	SAINT PAUL MN 55118-4367	RECLAMATION	3.5	$ 8,547.00		$ 29,914.50	CITY ASSESSED	
156	DRAINAGE AREA	273760100020	IVY FALLS 2ND ADDITION	IVY FALLS HOME OWNER ASSOC		711 MAPLE PARK CT	MENDOTA HEIGHTS MN 55118	RECLAMATION				$ -	DRAINAGE AREA	
157	DRAINAGE AREA	273760100030	IVY FALLS 2ND ADDITION	IVY FALLS HOME OWNER ASSOC		711 MAPLE PARK CT	MENDOTA HEIGHTS MN 55118	RECLAMATION				$ -	DRAINAGE AREA	
								TOTAL	**107.50**		**$ 36,622.40**	**$ 955,428.40**		

EXHIBIT 5
Assessment Map

N

0 50 100 200

SCALE IN FEET

1205
675
667
661
650
IVY FALLS COURT
1220
681
662
672
1236
682
678
1255
715
705
1260
723
SYLVANDALE COURT N
699
1271
714
702
1297
1289
SYLVANDALE ROAD
1278
1280
717
1303
1299
1294
SYLVANDALE COURT S
1300
1286
1313
LAURA ST
720
1296
1292
1308
712
1316
669
675
LAURA COURT
1327
1324
1324
676
670
662
1335
1334
738
1339
1344
KNOLLWOOD LANE
WACHTLER AVE
1349
EMERSON AVE
1380
777
1355
1360
1355
781
791
1372
MEDORA ROAD
CLEMENT ST
1373
1390
790
784
KNOLLWOOD LANE

LEGEND

PROJECT AREA

ASSESSED PARCEL

EMERSON AVENUE STREET IMPROVEMENTS
ASSESSMENT MAP 1

0 50 100 200
SCALE IN FEET

BUTLER AVE W

1083-1089

192'

19'

127'

396'

1090-1104

1095-1105

1132-1138

259'

IVY HILL DR

327.5'

1109-1115

IVY HILLS PARK

1125-1151

1140-1150

623-635

566'

1159-1165

720'

1176

1175-1185

IVY KEEP I&II OWNERS ASSOCIATION

611-621

577-609

580-596

TH 149 (DODD ROAD)

348'

314'

94'

661'

663

1154

664

MAPLE PARK DR

1165

642
2 UNITS

632

622

616

610

604

598

1200

1205

675

667

661

650

LEGEND

PROJECT AREA

ASSESSED PARCEL

EMERSON AVENUE STREET IMPROVEMENTS
ASSESSMENT MAP 2

EXHIBIT 6
Geotechnical Report

Geotechnical Evaluation Report

Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

Prepared for

TKDA

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

Kevin S. Zalec, PE
Senior Engineer
License Number: 47909
July 26, 2023

Project B2209687

Braun Intertec Corporation

BRAUN INTERTEC
The Science You Build On.

Braun Intertec Corporation
11001 Hampshire Avenue S
Minneapolis, MN 55438

Phone: 952.995.2000
Fax: 952.995.2020
Web: braunintertec.com

July 26, 2023 Project B2209687

Larry Poppler, PE
TKDA
444 Cedar Street, Suite 1500
St. Paul, MN 55101

Re: Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

Dear Mr. Poppler:

We are pleased to present this Geotechnical Evaluation Report for the Emerson Avenue Street Improvements project.

Thank you for making Braun Intertec your geotechnical consultant for this project. If you have questions about this report, or if there are other services that we can provide in support of our work to date, please contact Zach Semlak at 651.788.5071 (zsemlak@braunintertec.com) or Kevin Zalec at 952.995.2223 (kzalec@braunintertec.com).

Sincerely,

BRAUN INTERTEC CORPORATION

Zachary T. Semlak
Staff Engineer

Kevin S. Zalec, PE
Senior Engineer

Table of Contents

Description **Page**

Table of Contents (continued)

Description **Page**

Appendix

A. Introduction

A.1. Project Description

This Geotechnical Evaluation Report addresses the proposed design and construction of the Emerson Avenue Improvements project in Mendota Heights, Minnesota. The streets included in the project are:

- Emerson Avenue/Clement Street/Sylvandale Road
- Sylvandale Court N & S
- Laura Street/Laura Court
- Ivy Falls Court
- Maple Park Drive
- Ivy Hill Road

The project will consist of reclamation or a mill-and-overlay of existing pavement surfaces, curb and gutter repair, storm sewer repair, and new bituminous surfacing. We understand the St. Paul Regional Water Service (SPRWS) may replace watermain on Clement Street between Emerson Avenue to Sylvandale Road, Sylvandale Road between Clement Street to Maple Park Drive, Maple Park Drive between Sylvandale Road to Ivy Hill Drive, and Ivy Hill Drive between Butler Avenue West to Maple Park Drive.

Table 1. Site Aspects

Aspect	Description
Pavement type(s)	Bituminous (Assumed based on existing pavements)
Assumed pavement loads	Less than 100,000 Bituminous ESALs*
Grade changes	Minimal (Assumed; profiles and cross-sections not available at the time of this report)

*Equivalent 18,000-lb single axle loads based on 20-year design.

We have described our understanding of the proposed construction and site to the extent others reported it to us. Depending on the extent of available information, we may have made assumptions based on our experience with similar projects. If we have not correctly recorded or interpreted the

project details, the project team should notify us. New or changed information could require additional evaluation, analyses and/or recommendations.

A.2. Site Conditions

The existing streets consist of two-lane bituminous-paved roadways within a residential development. The project area is bounded by Wachtler Avenue to the west, County Road 13 to the north, County Road 149 (Dodd Road) to the east, and Wentworth Avenue West to the south.

Current grades at our boring locations range from about 849 at Boring ST-1 to 965 1/2 feet at Boring ST-19. The area generally slopes downward from north to south.

Current traffic volumes for the streets to be reconstructed as part of this project were not available at the time of this report.

A.3. Purpose

The purpose of our geotechnical evaluation was to characterize subsurface geologic conditions at selected exploration locations, evaluate their impact on the project, and provide geotechnical recommendations for the design and construction of the proposed street rehabilitation project.

A.4. Background Information and Reference Documents

We reviewed the following information:

- Request for Proposals prepared by the City of Mendota Heights, received August 23, 2022.
- Map M178, Surficial Geology of the Twin Cities Metropolitan Area prepared by the Minnesota Geological Survey, dated 2007.
- MnTOPO Web Mapping Application available via the Minnesota Department of Natural Resources, http://arcgis.dnr.state.mn.us/maps/mntopo/.
- Communications with Larry Poppler at TKDA regarding the project rehabilitation methods.

A.5. Scope of Services

We performed our scope of services for the project in accordance with our Revised Proposal QTB164557 to TKDA, dated September 14, 2022, and authorized on September 23, 2022. The following list describes the geotechnical tasks completed in accordance with our authorized scope of services.

- Reviewing the background information and reference documents previously cited.

- Staking and clearing the exploration location of underground utilities. In consultation with TKDA, we selected and staked the exploration locations. We acquired the surface elevations and locations with GPS technology using the State of Minnesota's permanent GPS base station network. The Soil Boring Location Sketch included in the Appendix shows the approximate locations of the borings.

- Performing 19 standard penetration test (SPT) borings, denoted as ST-1 to ST-19, to nominal depths of 5 feet below grade, with pavement cores and shallow hand auger borings (HAB) to measure the pavement section thickness at each location. Upon request of SPRWS, we extended four borings (ST-4, ST-8, ST-15, and ST-18) to nominal depths of 10 feet below grade for watermain utility replacement. Watermain and water service utilities near Boring ST-13 were difficult for the City utility locator to decisively mark, and we were requested to not drill the location via SPT. To obtain pavement thickness information, we performed the pavement core with a shallow hand auger boring to a depth of 2 feet below existing grade.

- Performing laboratory testing on select samples to aid in soil classification and engineering analysis. At the request of SPRWS, four samples from Borings ST-4, ST-8, ST-15, and ST-18 were submitted for a suite of corrosion susceptibility tests. We were not able to collect a sample at the necessary depth for Boring ST-13 due to the previously mentioned utility conflicts for our drill rig.

- Preparing this report containing a boring location sketch, logs of soil borings, a summary of the soils encountered, results of laboratory tests, and recommendations for utility and pavement subgrade preparation and the design of utilities and pavements.

Our scope of services did not include environmental services or testing and our geotechnical personnel performing this evaluation are not trained to provide environmental services or testing. We can provide environmental services or testing at your request.

B. Results

B.1. Geologic Overview

A review of the referenced geologic map indicates the project area is generally underlain with Twin Cities Member glacial till (Map Unit "Qnd") associated with the Des Moines Lobe, comprised of lean clay and sandy lean clay with cobbles and boulders.

Figure 1. Surficial Geology

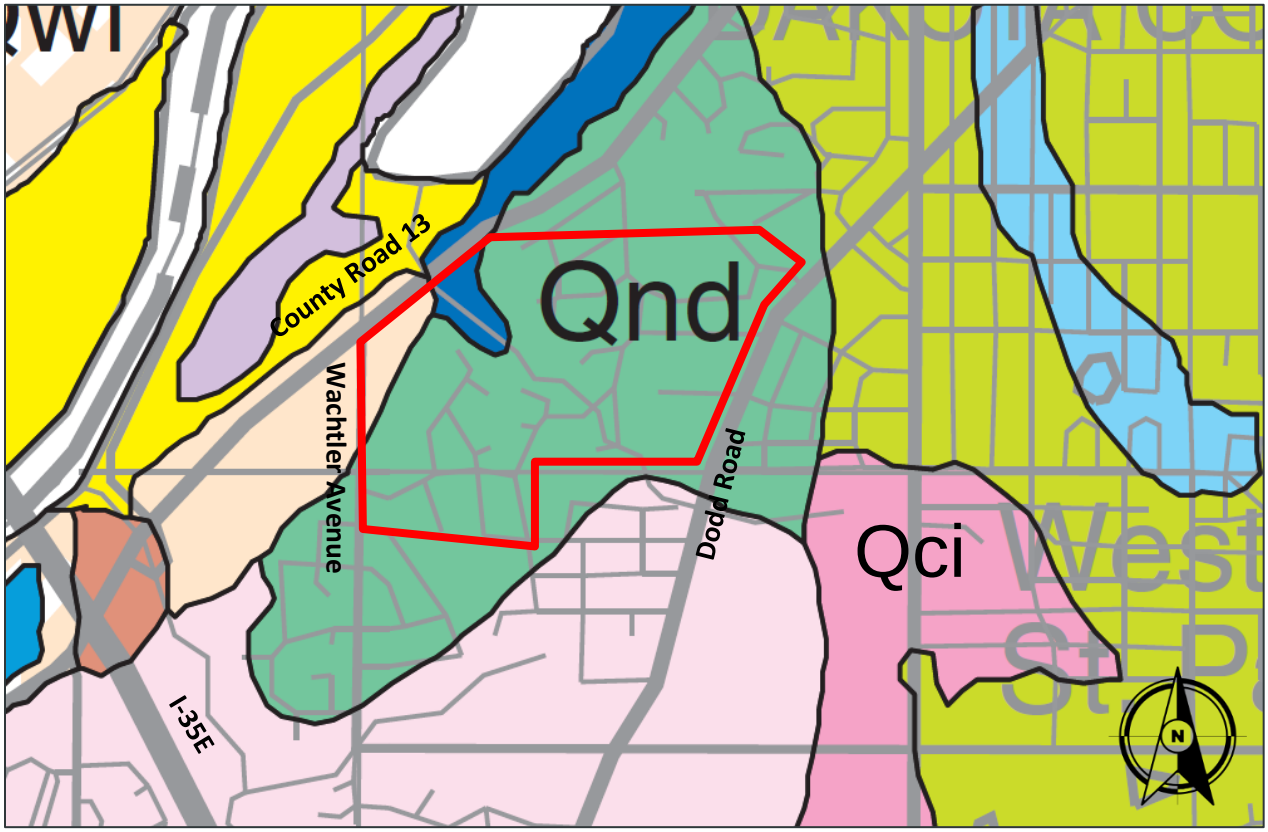


Figure extracted from Map M-178, Surficial Geology of the Twin Cities Metropolitan Area.

We based the geologic origins used in this report on the soil types, laboratory testing, and available common knowledge of the geological history of the site. Because of the complex depositional history, geologic origins can be difficult to ascertain. We did not perform a detailed investigation of the geologic history for the site.

B.2. Boring Results

Table 2 provides a summary of the pavement section thicknesses measured from borings and cores returned to the laboratory. Note that aggregate base was observed and measured in the field by the drill and coring crews. We did not perform gradation analysis on the apparent aggregate base material encountered as part of the pavement section and cannot conclusively determine if the encountered material satisfies a particular specification. The aggregate base thicknesses should also be considered approximate, as the transitions between the aggregate base and the underlying subgrade are difficult to discern.

Table 2. Summary of Pavement Section Thicknesses by Boring/Core Location

Roadway	Location	Bituminous Thickness (inches)	Apparent Aggregate Base Thickness (inches)	Core Condition
Emerson Ave	ST-1	4	4 1/4	Debonding at 2 1/4 inches, high deterioration throughout.
	ST-2	4	6 3/4	Good condition.
	ST-3	3 1/2	7 3/4	Good Condition
Clement St	ST-4	5 1/2	8 3/4	Low severity stripping in upper 2 inches of core.
Sylvandale Ct S	ST-5	3 3/4	11 1/4	Highly deteriorated, bottom of core crumbled during coring process.
Sylvandale Rd	ST-6	6 1/4	10 3/4	Low severity stripping throughout, debonding at 4 inches.
	ST-8	5 1/2	6	Good condition.
	ST-11	6 1/2	6 1/2	High deterioration, bottom half of core disintegrated during core retrieval.
	ST-13	6	5	Moderate severity stripping throughout.

Roadway	Location	Bituminous Thickness (inches)	Apparent Aggregate Base Thickness (inches)	Core Condition
Sylvandale Ct N	ST-7	5 1/2	11 1/2	Moderate to high deterioration.
Laura St	ST-9	5 1/4	3 3/4	Low to moderate severity stripping throughout.
Laura Ct	ST-10	4 3/4	9 1/4	Debonded at 2 inches, heavy stripping from 1 1/2 to 3 1/2 inches.
Ivy Falls Ct	ST-12	4 1/2	7 1/2	Moderate severity stripping throughout.
Maple Park Dr	ST-14	5	7	Good condition.
	ST-15	5 1/2	8	Low to moderate severity stripping throughout.
	ST-16	5	7	High deterioration, horizontal and vertical cracking throughout core.
Ivy Hill Dr	ST-17	4 3/4	11 1/4	Good condition.
	ST-18	4 1/2	14 1/2	Moderate deterioration with cracking below 2 inches.
	ST-19	4 1/2	4	Good condition.

Table 3 provides a summary of the soil boring results, in the general order we encountered the strata. Please refer to the Log of Boring sheets in the Appendix for additional details. The Descriptive Terminology sheet in the Appendix includes definitions of abbreviations used in Table 3.

For simplicity in this report, we define fill to mean existing, uncontrolled or undocumented.

Table 3. Subsurface Profile Summary

Strata	Soil Type - ASTM Classification	Range of Penetration Resistances	Commentary and Details
Pavement section	---	---	▪ See Table 2 above for details.
Fill	SP, SP-SM, SM, SC, CL	3 to 33 blows per foot (BPF)	▪ General penetration resistance of 10 to 24 BPF. ▪ Moisture condition generally moist. ▪ Extended to depths below existing grade ranging from about 3 feet to boring termination depth of 11 1/2 feet. ▪ Portions of the fill within Boring ST-1 contained organic inclusions from depths of 4 to 6 feet below existing grade.
Glacial deposits	SM, CL	5 to 24 BPF	▪ Encountered below the fill at Borings ST-3, ST-4, ST-8, ST-12, and ST-15. ▪ Silty sand only encountered at Boring ST-4. ▪ Moisture condition generally moist. ▪ Soils intermixed; may contain cobbles and boulders.

B.3. Groundwater

We did not observe groundwater while advancing our borings. Therefore, it appears that groundwater is below the depths explored. Project planning should anticipate seasonal and annual fluctuations of groundwater.

B.4. Laboratory Test Results

B.4.a. Moisture Contents

We performed moisture content (MC) tests (per ASTM D2216) on selected samples to aid in our classifications and estimations of the materials' engineering properties. The moisture contents for the granular soils tested ranged from about 2 to 7 percent, which are likely below the materials' probable optimum moisture content. The moisture contents of the cohesive soils tested ranged from 6 to 13 percent, which are likely slightly below to near the probable optimum moisture content. The Log of Boring Sheets attached in the Appendix present the results of the MC tests in the "MC" column.

B.4.b. Percent Passing the #200 Sieve Tests

We performed tests to evaluate the percent of particles passing the #200 sieve (P200), per ASTM D1140, to assist in classification and estimate the engineering properties of the granular material. The results of these tests indicated the soils tested had P200s ranging from about 7 to 18 percent. The Log of Boring sheets list the results of P200 tests in the "Tests or Remarks" column.

B.4.c. Corrosivity Tests

Table 4 presents the results of the laboratory corrosivity tests performed by our corrosion testing subcontractor, Project X Corrosion Engineering. The full test result report is attached in the Appendix.

Table 4. Laboratory Corrosivity Test Results

Location	Sample Depth (ft)	pH	Total Sulfide as S (mg/kg)	Redox Potential (mV)	Electrical Resistivity – As Received (ohm-cm)	Minimum Electrical Resistivity (ohm-cm)	10-Point System (ANSI/AWWA C105/A21.5 Standard)
ST-4	6 - 8	8.9	0.87	134	4,824	1,407	15
ST-8	6 - 8	7.7	0.75	144	2,814	2,278	6
ST-15	8 - 10	7.6	0.36	145	2,814	2,211	4
ST-18	8 - 10	8.8	5.69	144	2,881	2,412	9 1/2

The ANSI/AWWA C105/A21.5 standard uses a 10-Point System for corrosion evaluation of soils in contact with iron pipe. Based on the 10-point system and the results of the corrosion testing performed, the tested soil at this site has a corrosivity value range of 4 to 15. A value of 10 is the threshold for corrosion potential indicating that corrosion protection of iron materials by this standard is required. Based on the test results, corrosion protection or use of non-corrosive materials is required near Boring ST-4, and is not required at the other tested locations referenced in Table 4.

C. Recommendations

C.1. Design and Construction Discussion

C.1.a. Pavement Reclamation

Based on our soil borings and cores, all locations (as noted in Table 2) encountered between 3 1/2 to 6 1/2 inches of bituminous pavement over apparent aggregate base underlain by mainly fill soils consisting of clayey sand, silty sand, lean clay, poorly graded sand, and poorly graded sand with silt.

We recommend that a 10-inch FDR be performed based on the pavement measurements from the borings and cores. This generally will avoid subgrade soils through much of the project area; in areas where subgrade may be penetrated due to a thinner pavement section, we recommend reducing the reclaim depth to allow for a 1- to 2-inch buffer from the top of subgrade and then excavating to the design depth of the pavement section.

In areas where utility reconstruction will occur, reuse of pavement materials by reclamation, removal, stockpiling, and replacement will be anticipated.

Areas where no utility reconstruction will occur, reuse of pavement materials by reclamation, removing/recompacting and paving is anticipated where poor pavement cores were extracted during field exploration.

We recommend implementing through quality control practices, including frequent sieve analyses, to achieve a desirable gradation of the reclaimed material. The gradation requirements of MnDOT Specification 2215 (Reclamation) or Specification 3138 (Aggregate for Surface and Base Courses) can be used for the aggregate base; the latter specification's controls on gradation and asphalt content are stricter and will generally be more difficult to meet. We suggest that the contractor assume some contingency for importing clean, crushed rock that can be blended with the reclaimed material to improve the uniformity of the resulting gradation prior to reuse as an aggregate base.

C.1.b. Mill and Overlay (Optional)

Areas outside of utility construction listed below may be suitable for a mill-and-overlay approach in lieu of FDR.

- Portions of Emerson Avenue (near Borings ST-2 and ST-3)
- Laura Street (near Boring ST-9)
- Portions of Maple Park Drive (near Boring ST-14)
- Portions of Ivy Hill Drive (near Borings ST-17 and ST-19)

These pavements appeared to be in fair to good condition, with an anticipated life expectancy for the overlay of 11 to 17 years.

We have provided general recommendations in Section C.4 if this approach is used.

C.1.c. Pavement Subgrade Soil Reuse

Based on the soil boring results, we anticipate the shallow subgrade soils will generally consist of silty sand and clayey sand and less commonly poorly graded with silt and lean clay. Since we anticipate no change in grade, the subgrade soils present beneath the existing roads will generally be suitable for pavement support.

C.1.d. Utilities

The reuse of the utility trench backfill soils will have potential impacts on the pavement subgrades. If the backfill is not properly compacted, there is the potential for subgrade instability and settlement, with premature deterioration of the pavement surface. On this project, we anticipate that most of the trench soils will consist of silty sand and sandy lean clay that can be readily recompacted.

Care should be used to avoid disturbance of the silty soils supporting utilities or impacting the utilities themselves during removal and reconstruction.

C.1.e. Corrosion Potential

Based on the laboratory corrosivity testing, the soils encountered at Boring ST-4 are moderately to highly corrosive to metallic conduits, but only marginally corrosive to concrete. We recommend specifying non-corrosive materials or providing corrosion protection.

For the three other locations tested and reported in Table 4, (Borings ST-8, ST-15, and ST-18) the laboratory tests performed indicate these locations are slightly corrosive to metallic conduits and should not need corrosion protection based on the ANSI/AWWA C105/A21.5 standard.

C.1.f. Groundwater

Based on the results of the borings, we do not anticipate groundwater will be encountered during construction. Some of the soils, such as the silty and clayey sands, may collect water from precipitation or if water drains to the site. We recommend the contractor remove any water that collects in work areas before performing further work.

C.1.g. Construction Disturbance

The silty roadway subgrades will be sensitive to disturbance and strength loss if subjected to repeated vehicle traffic. Subexcavation and recompaction or replacement of subgrade soils may be required if they lose strength.

C.2. Utility Replacement

C.2.a. Excavation Oversizing

When removing unsuitable materials below structures, utilities, or pavements, we recommend the excavation extend outward and downward at a slope of 1H:1V (Horizontal:Vertical) or flatter.

C.2.b. Utility Subgrade Stabilization

For the proposed watermain replacement, we anticipate the soils at typical invert elevations will be suitable for utility support. However, if construction encounters unfavorable conditions such as soft clay, organic soils or perched water at invert grades, the unsuitable soils may require some additional subcutting and replacement with sand or crushed rock to prepare a proper subgrade for pipe support.

C.2.c. Excavated Slopes

Based on the borings, we anticipate on-site soils in excavations will consist of a mixture of granular and/or cohesive fills, with granular soils generally overlying cohesive soils in areas of utility replacement. The granular soils are typically considered Type C Soil under OSHA (Occupational Safety and Health Administration) guidelines. OSHA guidelines indicate unsupported excavations in Type C soils should have a gradient no steeper than 1 1/2H:1V. Slopes constructed in this manner may still exhibit surface sloughing. OSHA requires an engineer to evaluate slopes or excavations over 20 feet in depth.

An OSHA-approved qualified person should review the soil classification in the field. Excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P, “Excavations and Trenches.” This document states excavation safety is the responsibility of the contractor. The project specifications should reference these OSHA requirements.

C.2.d. Engineered Fill Materials and Compaction

We recommend using suitable, existing on-site soils as backfill material. If imported material is to be used, Table 5 contains our recommendations for engineered fill. Note that similar materials compared to existing should be used. Importing different soils for backfill may create lenses that could trap water. If longitudinal transitions in soil type are required, we recommend tapering them at a rate of 20H:1V or flatter. Transitions in the transverse direction, such as at intersections, should be at least 4H:1V.

Table 5. Recommended Fill and Compaction Specifications*

Material	Material Specification	Compaction Specification
Pavements and utility trench fill – within 3 feet of pavement surface	Granular Material MnDOT 3149.2B	MnDOT 2106.3.G.1
Pavements and utility trench fill – more than 3 feet of pavement surface	Select Grading Material MnDOT 2106.2.B.1	MnDOT 2106.3.G.1
Below landscaped surfaces, where subsidence is not a concern	Non-Structural Grading Material MnDOT 2106.2.B.8	MnDOT 2106.3.G.2

*More select soils comprised of MnDOT 3149.2.J.2 Fine Filter Aggregate may be needed to accommodate work occurring in periods of wet or freezing weather.

We recommend placing engineered fill in accordance with MnDOT 2106. We recommend compacting engineered fill in accordance with the criteria presented above in Table 5.

The project documents should not allow the contractor to use frozen material as engineered fill or to place engineered fill on frozen material.

We recommend performing density tests in engineered fill to evaluate if the contractors are effectively compacting the soil and meeting project requirements.

C.3. Subgrade Preparation

C.3.a. Pavement Subgrade Preparation

We recommend the following steps for pavement subgrade preparation, understanding the site will generally match existing grades.

1. Reclaim the pavement as recommended in Section C.1.a, stockpile and/or redistribute excess reclaim material as necessary to construct the new pavement sections.

2. Once the roadway sections are cut grade, have a geotechnical representative observe the excavated subgrade to evaluate if additional subgrade improvements are necessary.

3. Slope subgrade soils to areas of sand or drain tile to allow the removal of accumulating water.

4. Scarify, moisture condition, and surface compact to at least 100 percent of standard Proctor density.

5. Place pavement engineered fill to grade and compact in accordance with Section C.2.d to bottom of pavement.

6. Test roll the pavement subgrade as described in Section C.3.b.

C.3.b. Pavement Subgrade Test Roll

As the site soils are generally a mixture poorly graded sands and poorly graded sands with silt largely free of fine particles, a test roll may be difficult to perform at subgrade. If that is the case, we recommend observing surface compaction of the pavement subgrade followed by a test roll when the aggregate base section is in place. We recommend performing test rolls in accordance with MnDOT Specification 2111.

C.3.c. Design Sections

Our scope of services for this project did not include laboratory tests on subgrade soils to determine an R-value for pavement design. Based on our experience with similar sandy soils anticipated at the pavement subgrade elevation, we recommend pavement design assume an R-value of 30. Note the contractor may need to perform limited removal of unsuitable or less suitable soils to achieve this value. Table 6 provides the recommended pavement sections for the various streets in the outlined area in red on Figure 1.

Table 6. Recommended Bituminous Pavement Section (9-Ton Design)

Material	Thickness (inches)	Designation	Specification
Bituminous wear	2	SPWEA330C	MnDOT 2360
Bituminous non-wear	2	SPNWB330C	MnDOT 2360
Aggregate base	6	---	FDR (MnDOT 3138 or 2215)
Aggregate base	Varies*	---	Residual aggregate base

*Residual aggregate base thickness may vary per location.

C.3.d. Pavement Materials Placement

We recommend specifying materials based on those provided in Table 6.

Bituminous pavements should generally meet the requirements of Specification 2360, which includes gyratory tests to evaluate strength and air voids and density tests to evaluate compaction.

We recommend tack coat meeting MnDOT Specification 2357 be placed between the lifts and along vertical faces where paving will match adjacent pavement.

We recommend compacting aggregate base to a minimum of 100 percent of its maximum standard Proctor dry density or to the requirements of the Penetration Index Method as per MnDOT Specification 2211.

C.3.e. Performance and Maintenance

We based the above pavement designs on a 20-year performance life for bituminous. This is the amount of time before we anticipate the pavement will require major rehabilitation. This performance life assumes routine maintenance, such as seal coating and crack sealing. The actual pavement life will vary depending on variations in weather, traffic conditions and maintenance.

Many conditions affect the overall performance of the pavements. Some of these conditions include the environment, loading conditions and the level of ongoing maintenance. It is common to have thermal cracking develop within the first few years of placement and continue throughout the life of the pavement. We recommend developing a regular maintenance plan for filling cracks in pavements to

lessen the potential impacts for cold weather distress due to frost heave or warm weather distress due to wetting and softening of the subgrade.

C.4. Mill and Overlay (Optional)

If the mill-and-overlay option is selected instead of an FDR method, the following below would be recommended based on the pavement core conditions.

We would recommend milling the pavement in accordance with MnDOT Specification 2232. The mill depth will vary based on conditions encountered but should be a minimum depth of 1 1/2 inches, with a replacement mix meeting SPWEA330C. The lift thickness for the overlay should not exceed 2 1/2 inches regardless of mill depth. Pavement depth can vary between the boring locations and the contractor may need to adjust the mill depth to account for unexpected conditions such as areas of thin pavement.

The surface condition prior to milling can indicate where deeper repairs to the milled surface may be necessary to improve the life of the overlay. This includes distresses such as severe longitudinal and transverse cracking, alligator/fatigue cracking of any severity, potholes, edge cracking, and similar failures. MnDOT defines these distresses in their surface rating procedure as follows:

- High-severity transverse cracking: Any crack running transverse to the centerline of the roadway with significant adjacent random cracking (12 inches or more apart), have large areas of spalling, missing material and/or potholes.

- High-severity longitudinal cracking: Any crack running parallel to the centerline of the roadway with significant adjacent random cracking (12 inches or more apart), large areas of spalling, missing material and/or potholes.

- Alligator cracking: A series of interconnected cracks forming many-sided, sharp-angled pieces, 6 inches or less in size, typically located in the wheel paths and under concentrated traffic loads.

A mill and overlay will normally have a service life of between 7 and 13 years. Over that time maintenance will be required, which may include crack seal, surface treatments, and patching.

If the mill-and-overlay method is selected, we would recommend full-depth milling or sawcutting and complete removal of pavements exhibiting high-severity distress conditions, recompaction of the exposed soils and replacement with the same thickness of existing bituminous materials used for the overlay.

Pavement milling should proceed as described in MnDOT Specification 2232. We recommend having an experienced engineer walk the milled surface to delineate areas where further repair may be warranted based on conditions exposed by the milling process.

D. Procedures

D.1. Penetration Test Borings

We drilled the penetration test borings with a truck-mounted core and auger drill equipped with hollow-stem auger. We performed the borings in general accordance with ASTM D6151 taking penetration test samples continuously in general accordance to ASTM D1586. The boring logs show the actual sample intervals and corresponding depths.

D.2. Pavement Cores

We obtained core samples of the pavement using a portable coring machine advancing a 4-inch diameter core barrel. Immediately after completing the coring, we repaired the bituminous pavement with a cold-mix bituminous patch. We measured the cores to obtain approximate bituminous thickness and noted their material conditions based on visual observation. The Appendix includes images of the cores.

D.3. Hand Auger Borings

We drilled one hand auger boring (Boring ST-13) with a 1 1/2-inch-diameter bucket auger. We advanced Boring ST-13 in 2- to 4-inch increments to a depth of 1 1/2 feet below subgrade elevation. We then withdrew the auger from the borehole to obtain cuttings. We made preliminary estimates of soil consistency and density based on resistance to penetration of the hand auger and the turning resistance.

D.4. Exploration Logs

D.4.a. Log of Boring Sheets

The Appendix includes Log of Boring sheets for our penetration test borings. The logs identify and describe the penetrated geologic materials and present the results of penetration resistance tests performed. The logs also present the results of laboratory tests performed on penetration test samples, and groundwater measurements.

We inferred strata boundaries from changes in the penetration test samples and the auger cuttings. Because we did not perform continuous sampling, the strata boundary depths are only approximate. The boundary depths likely vary away from the boring locations, and the boundaries themselves may occur as gradual rather than abrupt transitions.

D.4.b. Geologic Origins

We assigned geologic origins to the materials shown on the logs and referenced within this report, based on: (1) a review of the background information and reference documents cited above, (2) visual classification of the various geologic material samples retrieved during the course of our subsurface exploration, (3) penetration resistance testing performed for the project, (4) laboratory test results, and (5) available common knowledge of the geologic processes and environments that have impacted the site and surrounding area in the past.

D.5. Material Classification and Testing

D.5.a. Visual and Manual Classification

We visually and manually classified the geologic materials encountered based on ASTM D2488. When we performed laboratory classification tests, we used the results to classify the geologic materials in accordance with ASTM D2487. The Appendix includes a chart explaining the classification system we used.

D.5.b. Laboratory Testing

The exploration logs in the Appendix note most of the results of the laboratory tests performed on geologic material samples. We performed the tests in general accordance with ASTM procedures.

D.6. Groundwater Measurements

The drillers checked for groundwater while advancing the penetration test borings, and again after auger withdrawal. We then filled the boreholes as noted on the boring logs.

E. Qualifications

E.1. Variations in Subsurface Conditions

E.1.a. Material Strata

We developed our evaluation, analyses and recommendations from a limited amount of site and subsurface information. It is not standard engineering practice to retrieve material samples from exploration locations continuously with depth. Therefore, we must infer strata boundaries and thicknesses to some extent. Strata boundaries may also be gradual transitions, and project planning should expect the strata to vary in depth, elevation and thickness, away from the exploration locations.

Variations in subsurface conditions present between exploration locations may not be revealed until performing additional exploration work, or starting construction. If future activity for this project reveals any such variations, you should notify us so that we may reevaluate our recommendations. Such variations could increase construction costs, and we recommend including a contingency to accommodate them.

E.1.b. Groundwater Levels

We made groundwater measurements under the conditions reported herein and shown on the exploration logs, and interpreted in the text of this report. Note that the observation periods were relatively short, and project planning can expect groundwater levels to fluctuate in response to rainfall, flooding, irrigation, seasonal freezing and thawing, surface drainage modifications and other seasonal and annual factors.

E.2. Continuity of Professional Responsibility

E.2.a. Plan Review

We based this report on a limited amount of information, and we made a number of assumptions to help us develop our recommendations. We should be retained to review the geotechnical aspects of the

designs and specifications. This review will allow us to evaluate whether we anticipated the design correctly, if any design changes affect the validity of our recommendations, and if the design and specifications correctly interpret and implement our recommendations.

E.2.b. Construction Observations and Testing

We recommend retaining us to perform the required observations and testing during construction as part of the ongoing geotechnical evaluation. This will allow us to correlate the subsurface conditions exposed during construction with those encountered by the borings and provide professional continuity from the design phase to the construction phase. If we do not perform observations and testing during construction, it becomes the responsibility of others to validate the assumption made during the preparation of this report and to accept the construction-related geotechnical engineer-of-record responsibilities.

E.3. Use of Report

This report is for the exclusive use of the addressed parties. Without written approval, we assume no responsibility to other parties regarding this report. Our evaluation, analyses and recommendations may not be appropriate for other parties or projects.

E.4. Standard of Care

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

Appendix

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

100' 0 200'

SCALE: 1"= 200'

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BRAUN INTERTEC
The Science You Build On.
11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Drawing Information

Project No:	B2209687
Drawing No:	B2209687
Drawn By:	JAG
Date Drawn:	10/15/22
Checked By:	KZ
Last Modified:	11/8/22

Project Information

Geotechnical Evaluation

Emerson Avenue Street Improvements

Mendota Heights, Minnesota

Soil Boring Location Sketch

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

100' 0 200'

SCALE: 1"= 200'

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Project Information

Geotechnical Evaluation

Emerson Avenue Street Improvements

Mendota Heights, Minnesota

Soil Boring Location Sketch

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-1**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 257826 EASTING: 549415
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 848.9 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
848.2		PAVEMENT, 4 inches of bituminous over 4 1/4 inches of apparent aggregate base					
0.7		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, moist		8-6-7-8 (13) 19"		2	P200=7%
846.2							
2.7		FILL: SANDY LEAN CLAY (CL), brown and gray, moist		4-9-6-4 (15) 22"			
844.2							
4.7		FILL: SILTY SAND (SM), fine to medium-grained, with Gravel, trace organics, brown, moist		6-5-5-5 (10) 20"			
842.2							
6.7		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
		5					
		10					
		15					

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-2**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 257899 EASTING: 549832
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 874.4 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
873.5		PAVEMENT, 4 inches of bituminous over 6 3/4 inches of apparent aggregate base					
0.9		FILL: CLAYEY SAND (SC), trace Gravel, brown, moist		7-7-7-7 (14) 20"			
871.5							
2.9		FILL: SILTY SAND (SM), fine-grained, with Sandy Lean Clay inclusions, brown, moist		8-8-6-6 (14) 20"		7	
			5	6-7-10-8 (17) 22"			
867.5							
6.9		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
			10				
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-3**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258049 EASTING: 550338
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 909.3 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
908.4		PAVEMENT, 3 1/2 inches of bituminous over 7 3/4 inches of apparent aggregate base					
0.9		FILL: SANDY LEAN CLAY (CL), trace Gravel, brown, moist		7-6-5-6 (11) 19"		9	
				11-10-18-12 (28) 23"			
904.4							
4.9		SANDY LEAN CLAY (CL), light brown, moist, very stiff (GLACIOFLUVIUM)	5	7-8-8-10 (16) 22"			
902.4							
6.9		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
			10				
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-4**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258145 EASTING: 550837
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 892.0 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
890.8		PAVEMENT, 5 1/2 inches of bituminous over 8 3/4 inches of apparent aggregate base					
1.2		SANDY LEAN CLAY (CL), trace Gravel, brown, moist, medium (GLACIAL TILL)		3-3-2-2 (5) 19"			
				2-2-3-3 (5) 20"		9	
886.8			5				
5.2		SILTY SAND (SM), fine-grained, light brown, moist, medium dense (GLACIAL OUTWASH)		3-6-7-7 (13) 21"			
				7-8-9-9 (17) 23"			
				8-11-8-10 (19) 24"			
			10				
880.8							
11.2		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-5**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258427 EASTING: 550900
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 871.1 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
869.9		PAVEMENT, 3 3/4 inches of bituminous over 11 1/4 inches of apparent aggregate base					
1.3		FILL: CLAYEY SAND (SC), trace Gravel, brown, moist		6-10-7-7 (17) 17"		7	
867.8							
3.3		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, dark brown to brown, moist		16-13-15-12 (28) 19"			
5				8-9-12-12 (21) 0"			
863.8							
7.3		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
10							
15							

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-6**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258528 EASTING: 551139
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 859.6 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
858.2		PAVEMENT, 6 1/4 inches of bituminous over 10 3/4 inches of apparent aggregate base					
1.4		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, with Sandy Lean Clay inclusions, brown, moist		8-8-8-14 (16) 19"		5	
856.2				12-10-13-11 (23) 21"			
3.4		FILL: SANDY LEAN CLAY (CL), trace Gravel, dark brown to brown, moist					
5				11-10-6-5 (16) 24"			
852.2							
7.4		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
10							
15							

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-7**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258729 EASTING: 550970
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 860.4 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
859.0		PAVEMENT, 5 1/2 inches of bituminous over 11 1/2 inches of apparent aggregate base					
1.4		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, with Clayey Sand inclusions, brown, moist		5-6-10-12 (16) 17"			
857.0							
3.4		FILL: SANDY LEAN CLAY (CL), trace Gravel, brown, moist		9-9-7-7 (16) 20"		11	
			5	6-7-6-5 (13) 21"			
853.0							
7.4		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
			10				
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-8**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258669 EASTING: 551616
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 857.7 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
856.7		PAVEMENT, 5 1/2 inches of bituminous over 6 inches of apparent aggregate base					
1.0		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown, moist		7-17-15-10 (32) 15"		6	
				8-10-11-7 (21) 17"			
852.7							
5.0		SANDY LEAN CLAY (CL), brown, moist, stiff to very stiff (GLACIAL TILL)	5	4-5-6-9 (11) 20"			
				10-6-7-7 (13) 20"			
				6-10-11-8 (21) 24"			
			10				
846.7							
11.0		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-9**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258601 EASTING: 551806
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 868.3 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
867.6		PAVEMENT, 5 1/4 inches of bituminous over 3 3/4 inches of apparent aggregate base					
0.8		FILL: CLAYEY SAND (SC), trace Gravel, brown, moist		6-7-4-5 (11) 19"			
				16-17-16-16 (33) 20"		6	
			5	11-12-8-8 (20) 17"			
861.5							
6.8		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
			10				
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-10**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 258238 EASTING: 551698
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 866.7 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
865.5		PAVEMENT, 4 3/4 inches of bituminous over 9 1/4 inches of apparent aggregate base					
1.2		FILL: CLAYEY SAND (SC), trace Gravel, dark brown, moist		7-5-6-6 (11) 20"		7	
				9-13-10-11 (23) 21"			
5				11-11-12-10 (23) 20"			
859.5							
7.2		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
10							
15							

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-11**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 259069 EASTING: 551812
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/26/22 END DATE: 10/26/22
SURFACE ELEVATION: 875.4 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
874.3		PAVEMENT, 6 1/2 inches of bituminous over 6 1/2 inches of apparent aggregate base					
1.1		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown, moist		8-4-8-8 (12) 19"		6	
				14-12-13-11 (25) 20"			
5				10-11-9-7 (20) 20"			
868.3							
7.1		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
10							
15							

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
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Various Streets
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BORING: **ST-12**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 259138 EASTING: 551551
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/25/22 END DATE: 10/25/22
SURFACE ELEVATION: 864.3 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Clouds

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
863.2		PAVEMENT, 4 1/2 inches of bituminous over 8 1/2 inches of apparent aggregate base					
1.1		FILL: CLAYEY SAND (SC), trace Gravel, brown, moist		11-12-8-10 (20) 4"			
861.2							
3.1		SANDY LEAN CLAY (CL), reddish brown, moist, stiff to very stiff (GLACIAL TILL)		6-7-7-8 (14) 19"		11	
			5	6-10-14-13 (24) 20"			
857.2							
7.1		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
			10				
			15				

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LOG OF HAND AUGER

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
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Mendota Heights, Minnesota

HAND AUGER: **ST-13**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 259542 EASTING: 551960
OPERATOR: J. Vloo LOGGED BY: Z. Semlak START DATE: 11/04/22 END DATE: 11/04/22
SURFACE ELEVATION: 886.0 ft METHOD: Hand Auger SURFACING: Pavement WEATHER: Clear

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	Sample Blows Recovery	q_p tsf	MC %	Tests or Remarks
885.1		PAVEMENT, 6 inches of bituminous over 5 inches of apparent aggregate base					
0.9		FILL: SILTY SAND (SM), fine-grained, brown, moist					
884.7		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, gray, moist					Water not observed while augering.
1.3		END OF HAND AUGER					
884.2		Boring then backfilled with auger cuttings					
1.8							
			5				
			10				
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-14**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 259675 EASTING: 552274
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/26/22 END DATE: 10/26/22
SURFACE ELEVATION: 904.9 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
903.9		PAVEMENT, 5 inches of bituminous over 7 inches of apparent aggregate base					
1.0		FILL: CLAYEY SAND (SC), trace Gravel, gray and brown, moist		14-13-7-8 (20) 19"			
901.9							
3.0		FILL: SANDY LEAN CLAY (CL), dark brown, moist		8-7-7-5 (14) 20"		13	
			5	6-5-5-6 (10) 20"			
897.9							
7.0		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
			10				
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-15**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 259677 EASTING: 552792
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/26/22 END DATE: 10/26/22
SURFACE ELEVATION: 929.9 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
928.8		PAVEMENT, 5 1/2 inches of bituminous over 8 inches of apparent aggregate base					
1.1		FILL: CLAYEY SAND (SC), trace Gravel, dark brown, moist		10-7-11-6 (18) 17"		9	
				7-10-9-9 (19) 20"			
924.8			5	8-5-5-6 (10) 10"			
5.1		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, contains seams of Clayey Sand, brown, moist *With Gravel at 6 feet*		11-12-15-10 (27) 15"		5	P200=11%
920.8							
9.1		SANDY LEAN CLAY (CL), brown, moist, very stiff (GLACIAL TILL)	10	6-9-10-10 (19) 24"			
918.8							
11.1		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-16**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 259929 EASTING: 553033
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/26/22 END DATE: 10/26/22
SURFACE ELEVATION: 948.7 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
947.7		PAVEMENT, 5 inches of bituminous over 7 inches of apparent aggregate base					
1.0		FILL: SILTY SAND (SM), fine-grained, trace Gravel, brown, moist		17-14-7-9 (21) 19"		4	P200=18%
945.7							
3.0		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, with Sandy Lean Clay inclusions, brown, moist		12-10-6-7 (16) 12"			
			5	7-7-5-5 (12) 0"			
941.7							
7.0		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
			10				
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
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Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-17**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 260601 EASTING: 552545
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/26/22 END DATE: 10/26/22
SURFACE ELEVATION: 927.4 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
926.1		PAVEMENT, 4 3/4 inches of bituminous over 11 1/4 inches of apparent aggregate base					
1.3		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist		10-10-7-6 (17) 20"			
924.1							
3.3		FILL: CLAYEY SAND (SC), brown, moist		11-9-9-8 (18) 22"		9	
5				4-5-6-6 (11) 22"			
920.1							
7.3		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
10							
15							

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
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Various Streets
Mendota Heights, Minnesota

BORING: **ST-18**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 260253 EASTING: 552799
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/26/22 END DATE: 10/26/22
SURFACE ELEVATION: 931.5 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
929.9		PAVEMENT, 4 1/2 inches of bituminous over 14 1/2 inches of apparent aggregate base					
1.6		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, dry		20-10-10-9 (20) 20"		2	
927.9							
3.6		FILL: CLAYEY SAND (SC), brown, moist		4-8-8-6 (16) 21"			
925.9			5				
5.6		FILL: SANDY LEAN CLAY (CL), brown, moist		1-2-1-2 (3) 13"			
				2-3-3-3 (6) 0"			
921.9							
9.6		FILL: SILTY SAND (SM), fine-grained, trace Gravel, brown, moist	10	3-4-4-4 (8) 20"			
919.9							
11.6		END OF BORING Boring then backfilled with auger cuttings					Water not observed while drilling.
			15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2209687
Geotechnical Evaluation
Emerson Avenue Street Improvements
Various Streets
Mendota Heights, Minnesota

BORING: **ST-19**
LOCATION: See attached sketch
DATUM: NAD 1983 HARN Adj MN Dakota (US Feet)
NORTHING: 259887 EASTING: 553369
DRILLER: J. Vloo LOGGED BY: Z. Semlak START DATE: 10/26/22 END DATE: 10/26/22
SURFACE ELEVATION: 965.5 ft RIG: 7516B METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
964.8		PAVEMENT, 4 1/2 inches of bituminous over 4 inches of apparent aggregate base					
0.7		FILL: SILTY SAND (SM), fine-grained, trace Gravel, brown, moist		14-9-10-14 (19) 20"		6	
962.8							
2.7		FILL: SANDY LEAN CLAY (CL), brown, moist		8-10-13-12 (23) 19"			
				12-14-10-10 (24) 0"			
5							
958.8							
6.7		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
10							
15							

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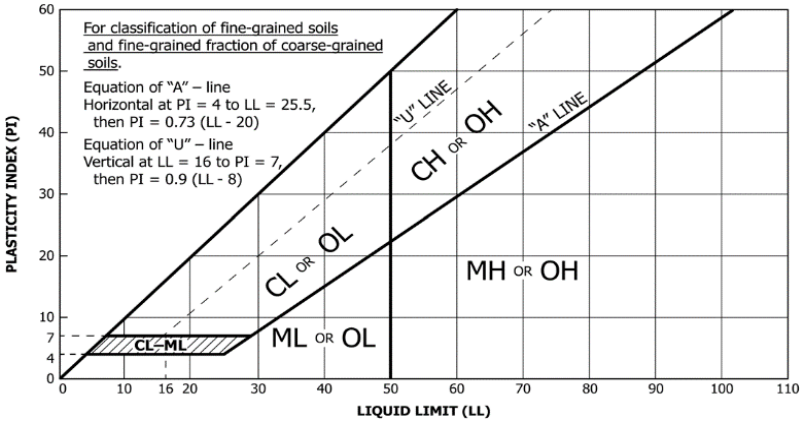
Descriptive Terminology of Soil

Based on Standards ASTM D2487/2488
(Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]				Soil Classification	
				Group Symbol	Group Name[B]
Coarse-grained Soils (more than 50% retained on No. 200 sieve)	Gravels (More than 50% of coarse fraction retained on No. 4 sieve)	Clean Gravels (Less than 5% fines[C])	$C_u \geq 4$ and $1 \leq C_c \leq 3$[D]	GW	Well-graded gravel[E]
			$C_u < 4$ and/or ($C_c < 1$ or $C_c > 3$)[D]	GP	Poorly graded gravel[E]
		Gravels with Fines (More than 12% fines[C])	Fines classify as ML or MH	GM	Silty gravel[E F G]
			Fines Classify as CL or CH	GC	Clayey gravel[E F G]
	Sands (50% or more coarse fraction passes No. 4 sieve)	Clean Sands (Less than 5% fines[H])	$C_u \geq 6$ and $1 \leq C_c \leq 3$[D]	SW	Well-graded sand[I]
			$C_u < 6$ and/or ($C_c < 1$ or $C_c > 3$)[D]	SP	Poorly graded sand[I]
		Sands with Fines (More than 12% fines[H])	Fines classify as ML or MH	SM	Silty sand[F G I]
			Fines classify as CL or CH	SC	Clayey sand[F G I]
Fine-grained Soils (50% or more passes the No. 200 sieve)	Silts and Clays (Liquid limit less than 50)	Inorganic	PI > 7 and plots on or above "A" line[J]	CL	Lean clay[K L M]
			PI < 4 or plots below "A" line[J]	ML	Silt[K L M]
		Organic	Liquid Limit – oven dried / Liquid Limit – not dried <0.75	OL	Organic clay[K L M N] / Organic silt[K L M O]
	Silts and Clays (Liquid limit 50 or more)	Inorganic	PI plots on or above "A" line	CH	Fat clay[K L M]
			PI plots below "A" line	MH	Elastic silt[K L M]
		Organic	Liquid Limit – oven dried / Liquid Limit – not dried <0.75	OH	Organic clay[K L M P] / Organic silt[K L M Q]
Highly Organic Soils		Primarily organic matter, dark in color, and organic odor		PT	Peat

A. Based on the material passing the 3-inch (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:
   GW-GM well-graded gravel with silt
   GW-GC well-graded gravel with clay
   GP-GM poorly graded gravel with silt
   GP-GC poorly graded gravel with clay
D. $C_u = D_{60} / D_{10}$ $C_c = (D_{30})^2 / (D_{10} \times D_{60})$
E. If soil contains ≥ 15% sand, add "with sand" to group name.
F. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
G. If fines are organic, add "with organic fines" to group name.
H. Sands with 5 to 12% fines require dual symbols:
   SW-SM well-graded sand with silt
   SW-SC well-graded sand with clay
   SP-SM poorly graded sand with silt
   SP-SC poorly graded sand with clay
I. If soil contains ≥ 15% gravel, add "with gravel" to group name.
J. If Atterberg limits plot in hatched area, soil is CL-ML, silty clay.
K. If soil contains 15 to < 30% plus No. 200, add "with sand" or "with gravel", whichever is predominant.
L. If soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.
M. If soil contains ≥ 30% plus No. 200 predominantly gravel, add "gravelly" to group name.
N. PI ≥ 4 and plots on or above "A" line.
O. PI < 4 or plots below "A" line.
P. PI plots on or above "A" line.
Q. PI plots below "A" line.



Laboratory Tests

DD	Dry density, pcf	**q_p**	Pocket penetrometer strength, tsf
WD	Wet density, pcf	**q_U**	Unconfined compression test, tsf
P200	% Passing #200 sieve	**LL**	Liquid limit
MC	Moisture content, %	**PL**	Plastic limit
OC	Organic content, %	**PI**	Plasticity index

Particle Size Identification

Boulders..... over 12"
Cobbles..... 3" to 12"
Gravel
  Coarse..... 3/4" to 3" (19.00 mm to 75.00 mm)
  Fine..... No. 4 to 3/4" (4.75 mm to 19.00 mm)
Sand
  Coarse..... No. 10 to No. 4 (2.00 mm to 4.75 mm)
  Medium..... No. 40 to No. 10 (0.425 mm to 2.00 mm)
  Fine..... No. 200 to No. 40 (0.075 mm to 0.425 mm)
Silt..... No. 200 (0.075 mm) to .005 mm
Clay..... < .005 mm

Relative Proportions[L, M]

trace..... 0 to 5%
little..... 6 to 14%
with..... ≥ 15%

Inclusion Thicknesses

lens..... 0 to 1/8"
seam..... 1/8" to 1"
layer..... over 1"

Apparent Relative Density of Cohesionless Soils

Very loose ..... 0 to 4 BPF
Loose ..... 5 to 10 BPF
Medium dense..... 11 to 30 BPF
Dense..... 31 to 50 BPF
Very dense..... over 50 BPF

Consistency of Cohesive Soils	Blows Per Foot	Approximate Unconfined Compressive Strength
Very soft	0 to 1 BPF	< 0.25 tsf
Soft	2 to 4 BPF	0.25 to 0.5 tsf
Medium	5 to 8 BPF	0.5 to 1 tsf
Stiff	9 to 15 BPF	1 to 2 tsf
Very Stiff	16 to 30 BPF	2 to 4 tsf
Hard	over 30 BPF	> 4 tsf

Moisture Content:

Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp but no visible water.
Wet: Visible free water, usually soil is below water table.

Drilling Notes:

Blows/N-value: Blows indicate the driving resistance recorded for each 6-inch interval. The reported N-value is the blows per foot recorded by summing the second and third interval in accordance with the Standard Penetration Test, ASTM D1586.

Partial Penetration: If the sampler could not be driven through a full 6-inch interval, the number of blows for that partial penetration is shown as #/x" (i.e. 50/2"). The N-value is reported as "REF" indicating refusal.

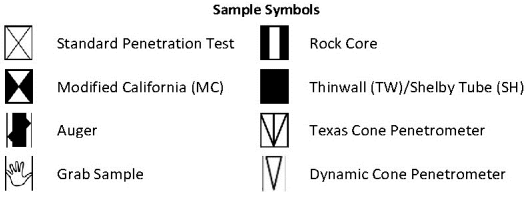
Recovery: Indicates the inches of sample recovered from the sampled interval. For a standard penetration test, full recovery is 18", and is 24" for a thinwall/shelby tube sample.

WOH: Indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

WOR: Indicates the sampler penetrated soil under weight of rods alone; hammer weight and driving not required.

Water Level: Indicates the water level measured by the drillers either while drilling (▽), at the end of drilling (▼), or at some time after drilling (▼).

Sample Symbols



5/2021

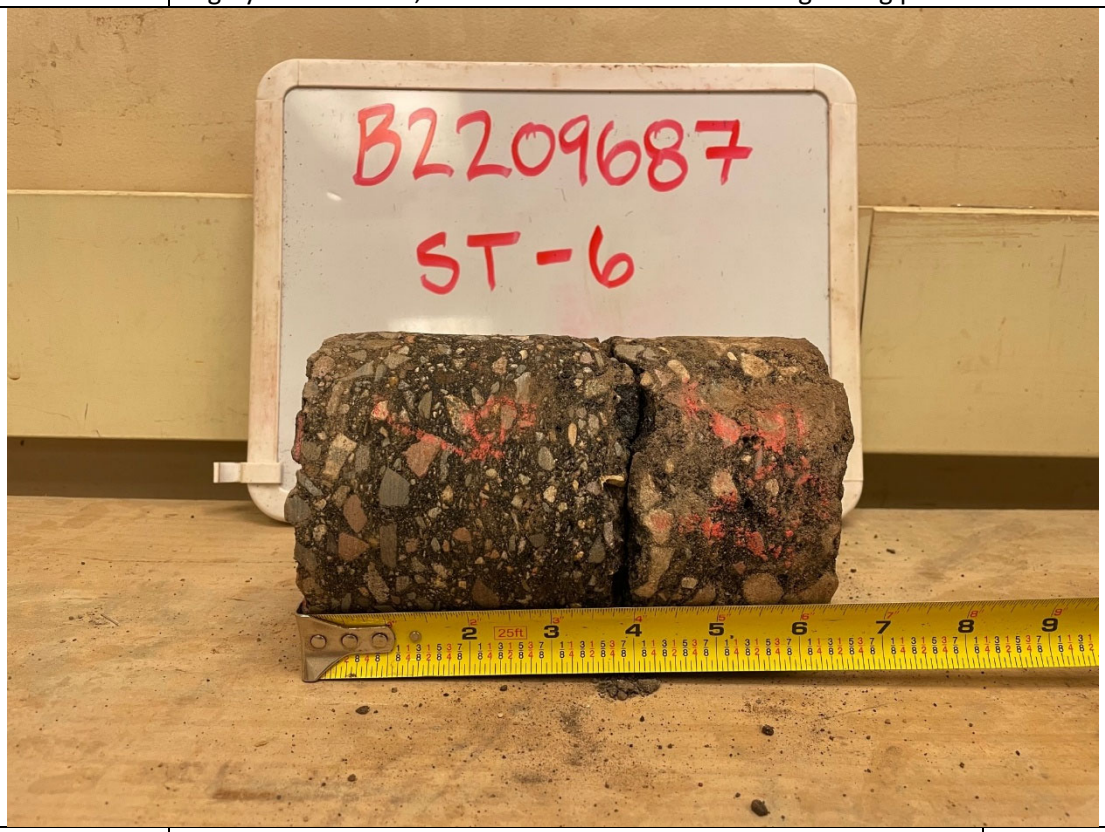
Core #:	ST-1		Project: B2209687
Pavement thickness:	4 inches	Agg base thickness:	4 1/4 inches
Location:	Emerson Avenue		
Date:	November 2022		
Notes:	Debonding at 2 1/4, high deterioration throughout.		

Core #:	ST-2		Project: B2209687
Pavement thickness	4 inches	Agg base thickness:	6 3/4 inches
Location:	Emerson Avenue		
Date:	November 2022		
Notes:	Overall good condition		

Core #:	ST-3			Project: B2209687
Pavement thickness:	3 1/2 inches	Agg base thickness:	7 3/4 inches	BRAUN INTERTEC
Location:	Emerson Avenue			
Date:	November 2022			
Notes:	Overall good condition			

Core #:	ST-4			Project: B2209687
Pavement thickness	5 1/2 inches	Agg base thickness:	8 3/4 inches	BRAUN INTERTEC
Location:	Clement Street			
Date:	November 2022			
Notes:	Slight stripping in upper 2 inches of core.			

Core #:	ST-5			Project: B2209687
Pavement thickness:	3 3/4 inches	Agg base thickness:	11 1/4 inches	BRAUN INTERTEC
Location:	Sylvandale Court South			
Date:	November 2022			
Notes:	Highly deteriorated, bottom of core crumbled during coring process.			



Core #:	ST-6			Project: B2209687
Pavement thickness	6 1/4 inches	Agg base thickness:	10 3/4 inches	BRAUN INTERTEC
Location:	Sylvandale Road			
Date:	November 2022			
Notes:	Slight stripping throughout, debonding at 4 inches			

Core #:	ST-7		Project: B2209687
Pavement thickness:	5 1/2 inches	Agg base thickness: 11 1/2 inches	
Location:	Sylvandale Court North		
Date:	November 2022		
Notes:	Moderate to high deterioration.		

Core #:	ST-8		Project: B2209687
Pavement thickness	5 1/2 inches	Agg base thickness: 6 inches	
Location:	Sylvandale Road		
Date:	November 2022		
Notes:	Overall good condition.		

Core #:	ST-9			Project: B2209687
Pavement thickness:	5 1/4 inches	Agg base thickness:	3 3/4 inches	BRAUN INTERTEC
Location:	Laura Street			
Date:	November 2022			
Notes:	Low to moderate stripping throughout.			

Core #:	ST-10			Project: B2209687
Pavement thickness	4 3/4 inches	Agg base thickness:	9 1/4 inches	BRAUN INTERTEC
Location:	Laura Court			
Date:	November 2022			
Notes:	Debonded at 2-inches, heavy stripping from 1 1/2 to 3 1/2 inches.			

Core #:	ST-11			Project: B2209687
Pavement thickness:	6 1/2 inches	Agg base thickness:	6 1/2 inches	BRAUN INTERTEC
Location:	Sylvandale Road			
Date:	November 2022			
Notes:	High deterioration, bottom half of core disintegrated during core retrieval.			

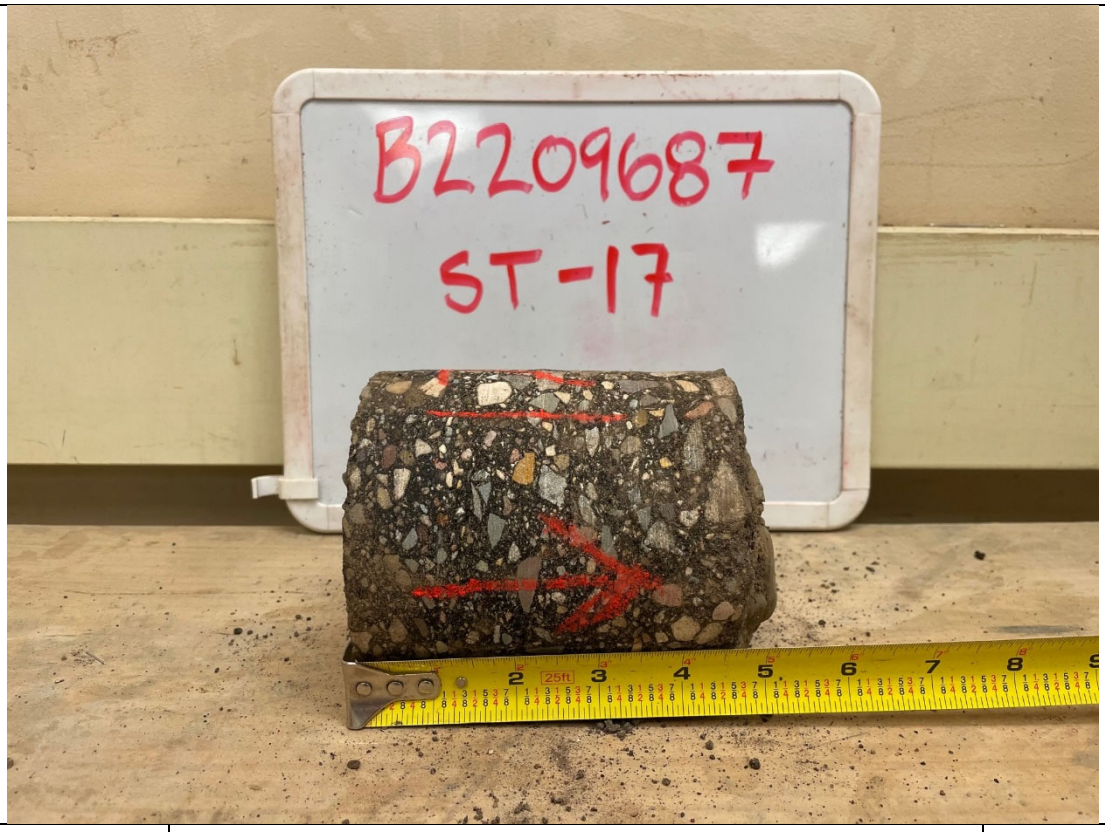
Core #:	ST-12			Project: B2209687
Pavement thickness	4 1/2 inches	Agg base thickness:	7 1/2 inches	BRAUN INTERTEC
Location:	Ivy Falls Court			
Date:	November 2022			
Notes:	Moderate stripping throughout.			

Core #:	ST-13			Project: B2209687
Pavement thickness:	6 inches	Agg base thickness:	5 inches	BRAUN INTERTEC
Location:	Sylvandale Road			
Date:	November 2022			
Notes:	Moderate stripping throughout; Core deterioration 2 inches and below.			

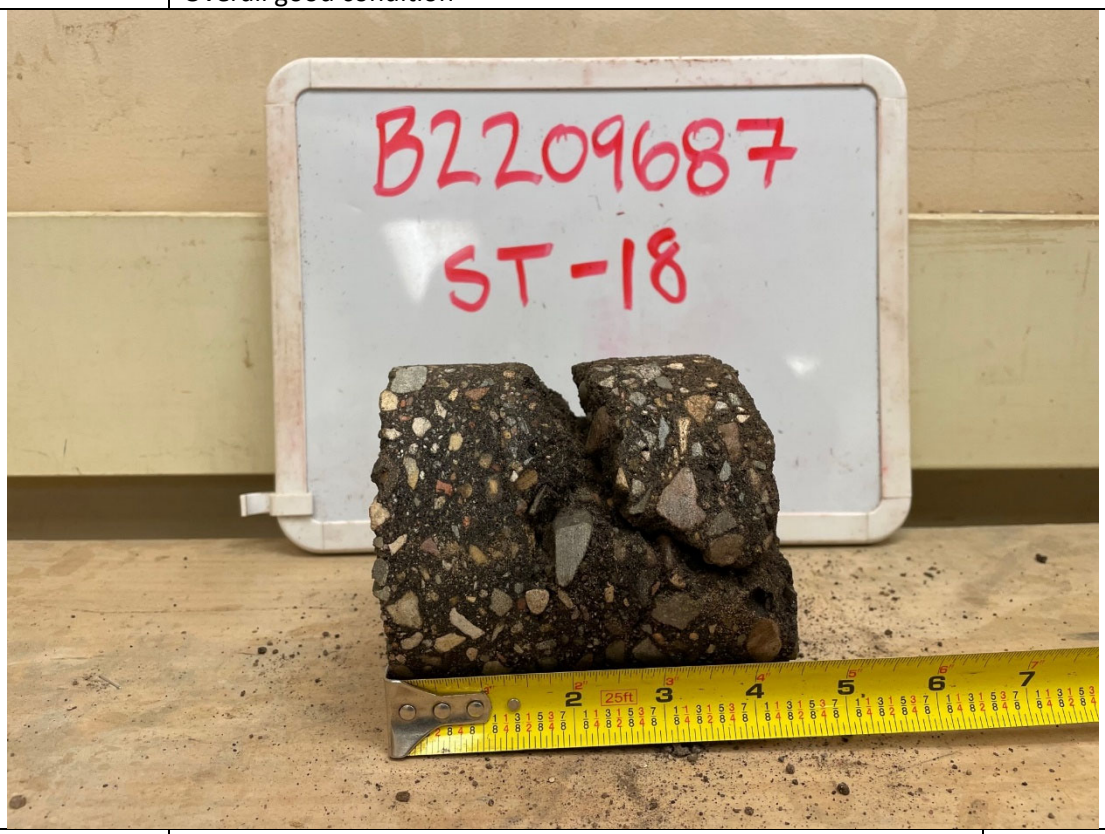
Core #:	ST-14			Project: B2209687
Pavement thickness	5 inches	Agg base thickness:	7 inches	BRAUN INTERTEC
Location:	Maple Park Drive			
Date:	November 2022			
Notes:	Overall good condition.			

Core #:	ST-15		Project: B2209687
Pavement thickness:	5 1/2 inches	Agg base thickness: 8 inches	BRAUN INTERTEC
Location:	Maple Park Drive		
Date:	November 2022		
Notes:	Low to moderate stripping throughout.		

Core #:	ST-16		Project: B2209687
Pavement thickness	5 inches	Agg base thickness: 7 inches	BRAUN INTERTEC
Location:	Maple Park Drive		
Date:	November 2022		
Notes:	High deterioration, horizontal and vertical cracking throughout core.		



Core #:	ST-17		Project: B2209687
Pavement thickness:	4 3/4 inches	Agg base thickness:	11 1/4 inches
Location:	Ivy Hill Drive		
Date:	November 2022		
Notes:	Overall good condition		



Core #:	ST-18		Project: B2209687
Pavement thickness	4 1/2 inches	Agg base thickness:	14 1/2 inches
Location:	Ivy Hill Drive		
Date:	November 2022		
Notes:	Moderate to high deterioration with cracking below 2-inches.		

Core #:	ST-19			Project: B2209687
Pavement thickness:	4 1/2 inches	Agg base thickness:	4 inches	BRAUN INTERTEC
Location:	Ivy Hill Drive			
Date:	November 2022			
Notes:	Overall good condition			

Results Only Soil Testing for Emerson Avenue Street Improvements

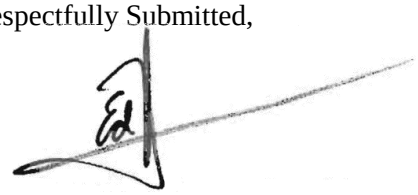
November 18, 2022

Prepared for:

Kevin Zalec
Braun Intertec Corporation
11001 Hampshire Ave S
Minneapolis, MN 55438
kzalec@braunintertec.com

Project X Job#: S221117A
Client Job or PO#: B2209687

Respectfully Submitted,



Eduardo Hernandez, M.Sc., P.E.
Sr. Corrosion Consultant
NACE Corrosion Technologist #16592
Professional Engineer
California No. M37102
ehernandez@projectxcorrosion.com

Soil Analysis Lab Results

Client: Braun Intertec Corporation
Job Name: Emerson Avenue Street Improvements
Client Job Number: B2209687
Project X Job Number: S221117A
November 18, 2022

	Method	ASTM D4327		ASTM D4327		ASTM G187		ASTM G51	ASTM G200	SM 4500-D	ASTM D4327	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D4327	ASTM D4327
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-		**Resistivity** As Rec'd | Minimum		**pH**	**Redox**	**Sulfide** S^{2-}	**Nitrate** NO_3^-	**Ammonium** NH_4^+	**Lithium** Li^+	**Sodium** Na^+	**Potassium** K^+	**Magnesium** Mg^{2+}	**Calcium** Ca^{2+}	**Fluoride** F_2^{--}	**Phosphate** PO_4^{3-}
	(ft)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	(Ohm-cm)	(Ohm-cm)		(mV)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Boring ST-4	6-8	24.1	0.0024	261.7	0.0262	4,824	1,407	8.9	134	0.87	2.3	1.4	ND	332.7	6.0	23.7	67.5	2.1	1.7
Boring ST-8	6-8	10.2	0.0010	73.8	0.0074	2,814	2,278	7.7	144	0.75	0.2	1.2	ND	102.5	4.1	21.0	64.4	2.5	1.2
Boring ST-15	8-10	91.9	0.0092	142.3	0.0142	2,814	2,211	7.6	145	0.36	2.2	2.2	ND	135.0	10.3	38.0	115.7	2.6	0.2
Boring ST-18	8-10	23.3	0.0023	73.8	0.0074	2,881	2,412	8.8	144	5.69	0.6	14.9	ND	183.1	11.4	28.7	122.9	3.3	0.7

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract
PPM = mg/kg (soil) = mg/L (Liquid)

Project X
Corrosion Engineering
Corrosion Control - Soil, Water, and Metallurgy Lab

Lab Request Sheet Chain of Custody
Phone: (213) 928-7213 · Fax (951) 226-1720 · www.projectxcorrosion.com
Ship Samples To: 29990 Technology Dr, Suite 13, Murrieta, CA 92563

Project X Job Number S221117A Braun-MN B2209687 EmersonAve 4Full

IMPORTANT: Please complete Project and Sample Identification Data as you would like it to appear in report & include this form with samples.

Company Name:	Braun Intertec Corporation	**Contact Name:**	Kevin Zalec
Phone No:	(612) 385-2293		
Mailing Address:	11001 Hampshire Ave S, Minneapolis, MN 55438	**Contact Email:**	kzalec@braunintertec.com
Accounting Contact:		**Invoice Email:**	bic_invoicecapture@concursolutions.com
Client Project No:	B2209687	**Project Name:**	Emerson Avenue Street Improvements
P.O. #:			

(Business Days) Turn Around Time: 3-5 Day Standard ● | 3 Day Guarantee 50% mark-up | 24 Hour RUSH 100% mark-up

For Corrosion Control Recommendations (350g soil sample):
NEED (1) Groundwater depth and
(2) Soil Sample Locations Map

FOR THERMAL RESISTIVITY PROVIDE (1,500g soil sample):
(1) Optimal Moisture %
(2) Dry Density{PCF}
(3) Desired Compaction
Date & Received By:

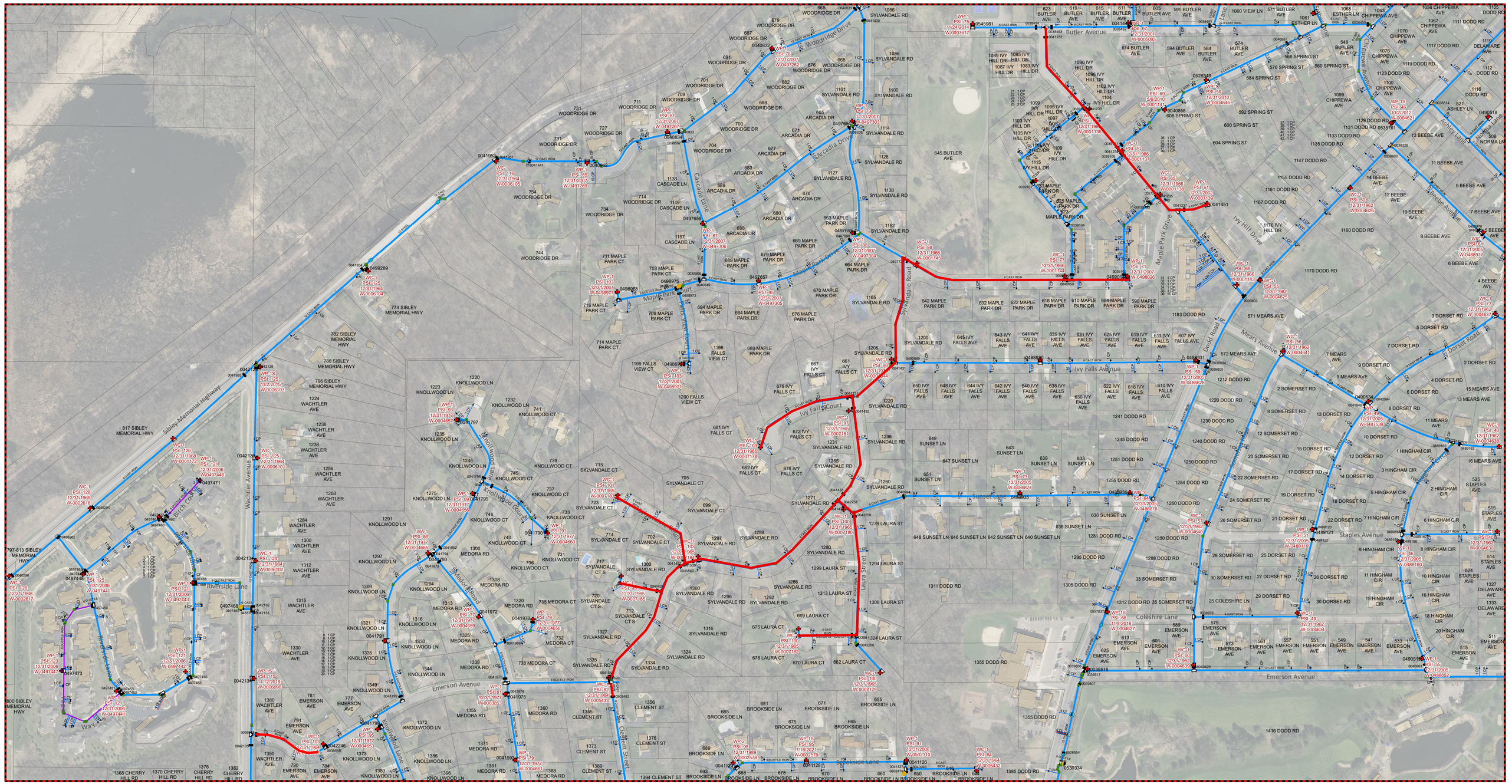
METHOD ANALYSIS REQUESTED (Please circle)

SAMPLE ID - BORE # - Description	DEPTH (ft)	DATE COLLECTED
289 1 Boring ST-4	6' - 8'	~~10/24/22~~
290 2 Boring ST-8	6' - 8'	
3 ~~Boring ST-13~~	~~6' - 8'~~	
291 4 Boring ST-15	8'-10' ~~6' - 8'~~	
292 5 Boring ST-18	~~6' - 8'~~ 8'-10'	
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Default Method	Soil Resistivity	pH	Sulfate	Chloride	Redox Potential	Sulfide	Ammonia	Nitrate	Flouride	Phosphate	Lithium	Sodium	Potassium	Magnesium	Calcium	Full Corrosion Series
	Geo Quad				Full Corrosion Series											
	Caltrans CTM643	Caltrans CTM643	Caltrans CTM417	Caltrans CT422												350g Sample
	AASHTO T288	AASHTO T 289	AASHTO T 290	AASHTO T 291	SM 2580B		SM 4500-NH3	SM 4500-NO3								
	ASTM G187	ASTM G 51	ASTM D4327	ASTM D4327	ASTM G200	SM 4500-S2	ASTM D4327	ASTM D4327	SM 2320B	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	

*Req: Min. 3 Samples, site map, and groundwater info	Reports		Moisture Content	Total Alkalinity	Soil Remolding	Thermal Resistivity	(ANC) Alk Neutr Cap	(SRB) Sulfate Reducing	Puckorius Index	XRF Elemental Analysis	Water Hardness
	Soil Corrosivity Evaluation Report	Water Corrosivity Mini Report					1,500g Sample			ASTM A751	
			ASTM D2216	ASTM D2216	ASTM D2216	ASTM D5334 8-inch				ASTM E322	
			SM 2520B		ASTM D698	IEEE 442 6-inch		HACH BART		ASTM E1621	

EXHIBIT 7
Saint Paul Regional Water – Watermain Replacement Map



1 inch = 170 feet

Date: 7/6/2023

2024 Mendota Heights Emerson/Sylvandale Project