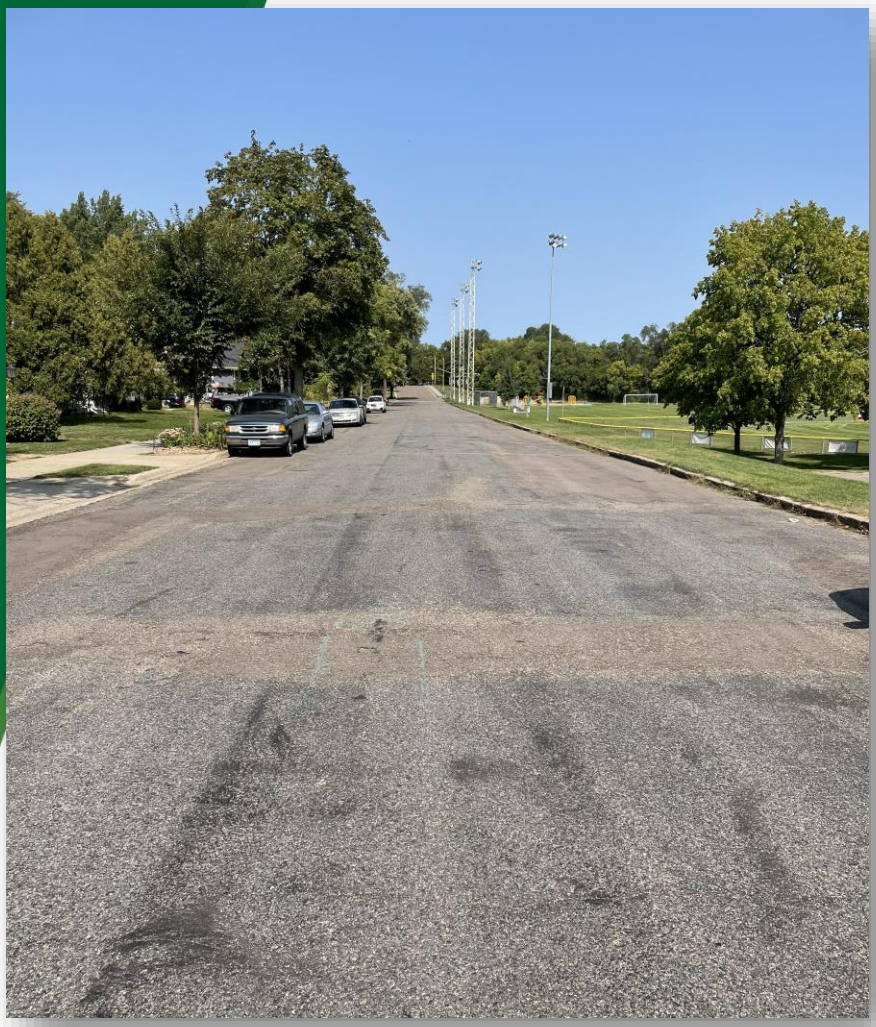
2023 Street & Utility Improvements

Preliminary Engineering Report

City of Hopkins
City Project No. 2022-010
BMI Project No. 0T1.127595



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Certification

Preliminary Engineering Report

For

2023 Street & Utility Improvements

City of Hopkins
Hopkins, MN
City Project No. 2022-010
BMI Project No. 0T1.127595

September 2022

PROFESSIONAL ENGINEER

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

Signature: _____

Typed or Printed Name: Nicholas J. Amatuccio, PE

Date: 9/26/22 License Number: 53639

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I. Executive Summary

A. Background Information

The Hopkins City Council ordered preparation of this Preliminary Engineering Report at its May 17, 2022 meeting. In general, the goal of the project is to preserve the investments Hopkins has made in its infrastructure with proper upkeep through the City's Pavement Management Program. The preliminary design report has been completed to identify the appropriate improvements needed as well as the associated project costs and preliminary estimated assessments.

B. Proposed Improvements

This report examines potential street and utility construction along various streets in the City of Hopkins, including streets in the Central Avenues Neighborhood. These areas are depicted in Figure 1 of Appendix B. The proposed improvements are described in the body of this report and are graphically illustrated in Appendix B. In brief, the proposed improvements consist of:

- Full reconstruction of the following street sections in the Central Avenues Neighborhood with replacement of concrete curb and gutter and concrete sidewalk, and replacement of watermain, sanitary sewer, and storm sewer utilities.
    - 12th Ave N from Mainstreet to 1st St N
    - 14th Ave N from Mainstreet to 2nd St N
    - 15th Ave N from Mainstreet to 2nd St N
    - 16th Ave N from Mainstreet to 1st St N and from 2nd St N to 3rd St N
    - 2nd St N from 14th Ave N to 15th Ave N
- The addition of concrete sidewalk in the following areas.
    - East side of 14th Ave N from 1st St N to 2nd St N
    - North side of 1st St N from 14th Ave N to the alley between 14th Ave N and 15th Ave N
    - South side of 1st St N from 16th Ave N to the alley between 16th Ave N and 15th Ave N
- Sanitary sewer lining on 16th Ave N from 1st St N to 2nd St N and in areas designated by City Staff in the North Presidents Neighborhood.
- Storm sewer and drainage improvements for the backyards between 13th Ave N and 14th Ave N, south of 3rd St N.
- Depending on budget and bid results, maintenance may occur on the following street sections.
    - Reclamation and resurfacing of the following street sections:
        - 10th Ave S from Mainstreet to 1st St S
        - 9th Ave S from 1st St S to Excelsior Blvd
        - 1st St S from 9th Ave S to 11th Ave S

- Mill and overlay of the following street sections:
  - 9th Ave S from Mainstreet to 1st St S
  - 1st St S from 8th Ave S to 9th Ave S

All of these improvements would be constructed in one construction season in 2023. While this report covers several areas of potential improvements, it will focus on the reconstruction area of the Central Avenues Neighborhood as the being the central project location and the most impactful to residents with special assessments.

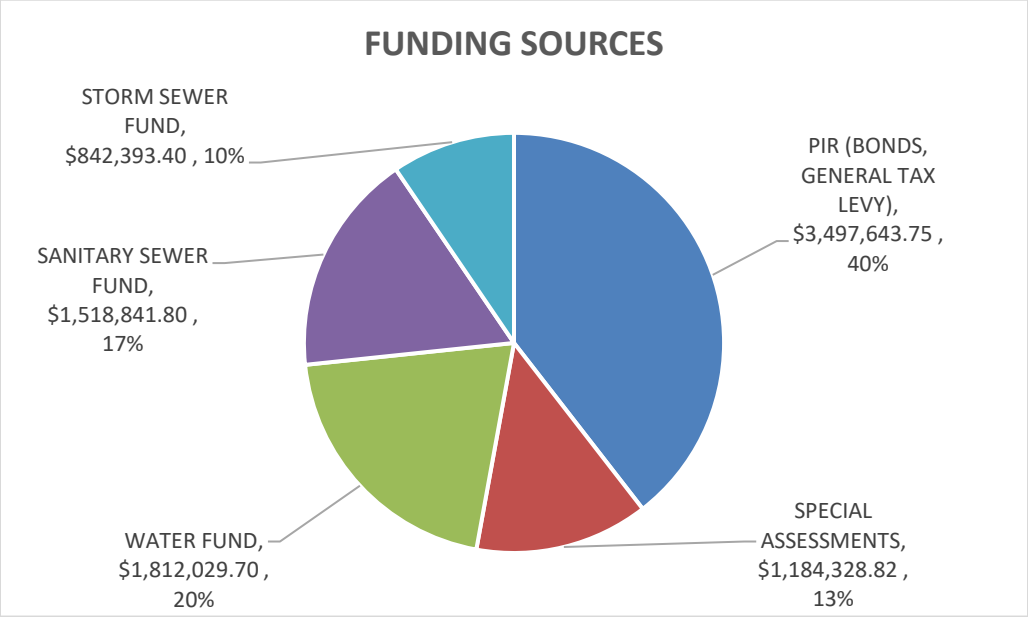
C. Estimated Costs and Proposed Funding

Cost estimates have been prepared for addressing the varying needs of all areas reviewed. Detailed cost estimates are provided in Appendix A and summarized below in Table 1.

Table ES-1 – Preliminary Estimated Cost of 2023 Proposed Improvements	
Street Reconstruction	$2,823,000
Sanitary Sewer	$1,101,000
Watermain	$1,313,000
Storm Sewer	$610,000
Street Maintenance (*Add Alternates)	$570,000
Contingencies (15%)	$962,000
Engineering & Administration (20%)	$1,476,000
Total Estimate Project Costs	$8,855,000

*Add Alternates are areas of the project involving street maintenance that will be bid with the rest of the project, but the City will have the option to either move forward with the work or remove the work from the project depending on budget constraints and bid results. We are anticipating that at least part, if not all, of the Add Alternate work will be included in the 2023 Street & Utility Improvements.

The project is proposed to be funded with general obligation bonds, utility funds, and assessments to individual properties. The chart below illustrates proposed funding sources inclusive of contingencies, engineering, and administration. $786,000 of the PIR funds is for the Add Alternates and may not be included in as part of the project based on bid results and at the discretion of the City.



II. Project Introduction

This report examines the proposed street and utility improvements including storm sewer replacement, water main replacement, sanitary sewer replacement, and street reconstruction throughout the following streets as shown on Figure 1 in Appendix B:

- 12th Ave N from Mainstreet to 1st St N
- 14th Ave N from Mainstreet to 2nd St N
- 15th Ave N from Mainstreet to 2nd St N
- 16th Ave N from Mainstreet to 1st St N and from 2nd St N to 3rd St N
- 2nd St N from 14th Ave N to 15th Ave N

This report also examines the following related improvements which are proposed to be constructed in the same project, but without involvement of special assessments:

- The addition of concrete sidewalk in the following areas.
  - East side of 14th Ave N from 1st St N to 2nd St N
  - North side of 1st St N from 14th Ave N to the alley between 14th Ave N and 15th Ave N
  - South side of 1st St N from 16th Ave N to the alley between 16th Ave N and 15th Ave N
- Sanitary sewer lining on 16th Ave N from 1st St N to 2nd St N and in areas designated by City Staff in the North Presidents Neighborhood.
- Storm sewer and drainage improvements for the backyards between 13th Ave N and 14th Ave N, south of 3rd St N.
- Depending on budget and bid results, maintenance may occur on the following street sections.
  - Reclamation and resurfacing of the following street sections:
    - 10th Ave S from Mainstreet to 1st St S
    - 9th Ave S from 1st St S to Excelsior Blvd
    - 1st St S from 9th Ave S to 11th Ave S

The project in its entirety involves:

- Addition/replacement of storm sewer within the reconstruction area
- Watermain replacement within the reconstruction area
- Water service replacement within the reconstruction area
- Sanitary sewer replacement within the reconstruction area
- Sanitary sewer rehabilitation in areas of need
- Sanitary sewer service replacement within the reconstruction area
- Concrete curb & gutter replacement within the reconstruction area and other areas of need
- Bituminous street removal and reconstruction
- Concrete walk addition/replacement within the reconstruction area and other areas of need

III. Background

The 2023 Street & Utility Improvements project was initiated following its presence for several years in the City's Capital Improvement Plan. The Hopkins City Council ordered the preparation of this feasibility report at its May 17, 2022 council meeting. The feasibility study and report has been completed to better identify the infrastructure improvements needed in the proposed project area and to better define costs associated with the improvements. This report will be used as the basis for final design and is also a required step in the State's Chapter 429 process for special assessments.

IV. Existing Conditions

A. Streets

The bituminous streets within the project areas are aged and exhibit various levels of wear and distress. This is evident on the surface by transverse, block, and alligator cracking. There is evidence of previous additional street repairs and maintenance throughout the project area including numerous street patches. Examples of the existing pavement conditions are shown below.

Consistent with observations of the existing pavements made during preparation of this report, the City of Hopkins' Pavement Management System also indicates that the "Pavement Condition Index" (PCI) for 12th Ave N, 14th Ave N, 15th Ave N, and 16th Ave N is below the threshold where rehabilitation is cost effective. As such, street reconstruction efforts are appropriate along 12th Ave N, 14th Ave N, 15th Ave N, and 16th Ave N.

The streets within the reconstruction area (12th Ave N, 14th Ave N, 15th Ave N, and 16th Ave N) have varying widths (measured curb face to curb face). Table 1 below summarizes these and other existing conditions. Parking is typically allowed on both sides of the streets throughout the neighborhood. Large, mature trees can be found throughout the project within the City's ROW and near the back of curb.

Table 1: Summary of Existing Corridor Conditions

Roadway	Existing Street Width	Existing Curb Type	Existing ROW Width
12th Ave N	35.1 – 43.2 feet	Concrete B618 C&G – east side and southern half of west side Curb w/ no gutter – northern half of west side	66 feet
14th Ave N, Mainstreet to 1st St N	30.8 feet	Curb w/ no gutter	66 feet
14th Ave N, 1st St N to 2nd St N	35.5 feet	Concrete B618 C&G – west side Curb w/ no gutter – east side	66 feet
15th Ave N	35.4 – 35.6 feet	Concrete B618 C&G – south of alley near Mainstreet Curb w/ no gutter – north of alley near Mainstreet	66 feet
16th Ave N	29.7 feet	Curb w/ no gutter – Mainstreet to 1st St N Concrete B618 C&G – 2nd St N to 3rd St N	60 feet
2nd St N	35.7 feet	Concrete B618 C&G – south side Curb w/ no gutter – north side	66 feet

Subgrade soil sampling was completed throughout the reconstruction area by Braun Intertec in the Summer of 2022. A copy of Braun Intertec's Geotechnical Evaluation Report is included in Appendix E of this report. Eleven soil borings were taken throughout the reconstruction area, as well as six pavement cores throughout the pavement maintenance area, and summarized in Table 2 on the next page.

Table 2: Summary of Geotechnical Evaluation		
Street	**Bituminous Thickness**	**Subgrade Material**
12th Ave N	4”	Mixture of lean clay with sand and organics, and poorly graded sand with silt.
14th Ave N	4” – 7.5”	Mixture of poorly graded sand with silt, lean clay with sand and organics, and clayey sand with gravel.
15th Ave N	3.5” – 9”	Mixture of poorly graded sand with silt, clayey sand with gravel, and lean clay.
16th Ave N	4” – 5”	Mixture of poorly graded sand with silt, clayey sand with gravel, organic clay, and lean clay with sand.
2nd St N	3.5”	Mixture of clayey sand with gravel, lean clay, and poorly graded sand with silt.
9th Ave S	4.75” – 9.75”	Mixture of poorly graded sand with silt and gravel, and clayey sand with gravel.
10th Ave S	4.75”	Poorly graded sand with silt.
1st St S	4.5” – 10”	Mixture of poorly graded sand with silt and gravel, and clayey sand with gravel.

The soils found just beneath pavements in the project area were most commonly fill soils classified as poorly graded sand, silty sand, or clayey sand. A few of the borings in the project area found organic clay (buried topsoil). Buried topsoil is an undesirable material for roadway construction as it’s unable to adequately support heavy vehicles, leading to earlier failure of overlying pavements.

B. Storm Sewer

The existing storm sewer system materials in the reconstruction area were inventoried in Summer 2022. The existing storm sewer systems serving the neighborhood are comprised of reinforced concrete pipe (RCP), varying in size from 12-inch diameter to 18-inch diameter. The storm sewer catch basins and manholes are a mixture of concrete block and precast concrete structures.

There are multiple storm sewer systems serving the reconstruction area. 12th Ave N and the southern portions of 14th Ave N and 15th Ave N drain to 13th Ave S to Excelsior Blvd. The southern portion of 16th Ave N drains to 16th Ave S, then over to 13th Ave S to Excelsior Blvd. The northern portion of 14th Ave N and 2nd St N drains to Maetzold Field, which eventually drains to 12th Ave N. The northern portions of 15th Ave N and 16th Ave N drain to 17th Ave N and then to Excelsior Blvd.

Drainage issues have been identified throughout the reconstruction project area through evaluation of site grades and elevations by the project team, through feedback from the neighborhood residents, and discussions with City Staff. These drainage issues can be generalized as:

1. Due to the flat grades of some of the streets, especially 16th Ave N from 2nd St N to 3rd St N, and low points without catch basins, localized drainage problems are prevalent.
2. There is a lack of catch basin inlets at the intersections of 16th Ave N & Mainstreet and 14th Ave N and 2nd St N. These intersections are overloaded during heavier rain events which causes ponding in the street.
3. There is a lack of gutters along several of the streets to adequately direct water through areas of flat topography to drainage inlets.
4. Many of the sidewalks throughout the neighborhood have isolated low spots and do not drain well after rain events or during snow melt.

There is an area nearby the project area, north of Maetzold field and between 13th Ave N and 14th Ave N, where there is an isolated low spot in the public easement of several backyards with nowhere for the water to drain. Water levels can rise significantly in this area after major rain events.

Proposed storm sewer improvements are discussed later in this report.

C. Sanitary Sewer

The existing condition of the sanitary sewer system was evaluated through discussions with City staff and CCTV inspection of the interior of the sewer piping by a City contractor. Manhole structures were visually inspected in the field by Bolton & Menk. CCTV videos produced by others were reviewed by Bolton & Menk to confirm existing sanitary mainline pipe conditions and identify the location of existing sewer service line locations.

The existing sanitary sewer system primarily consists of 8-inch diameter clay pipe, except for on 12th Ave N which consists of 10-inch diameter clay pipe. Clay pipe is susceptible to infiltration and root intrusion over time due to the large number of joints and the deterioration of the gasket material originally used to seal the joints.

The project's sanitary manholes are made of a mixture of brick, concrete block, and precast concrete structures. Brick and block structures were typically built around the 1950's/1960's or earlier, whereas precast structures indicate these structures were replaced at some point after initial construction of the other infrastructure, likely in response to some deficiency with the original structure. Brick and block manholes are susceptible to infiltration over time due to cracks and deterioration of the mortared joints. Precast concrete manholes continue to be used in modern construction and are generally acceptable provided proper gaskets were provided with the initial construction and remain in good working order.

Service lines in the neighborhood are typically 4-inch or 6-inch and their material may be clay, cast iron, orangeburg, transite, or PVC. Clay and orangeburg sanitary sewer pipes are highly susceptible to infiltration by groundwater, causing groundwater to be treated by the Met Council at its treatment facilities downstream at a cost to the public. The vast majority of sanitary sewer mains and service lines in the neighborhood are made of clay material. Based on observations of sewer service replacements to individual properties performed recently in nearby neighborhoods, potential exists for encountering orangeburg sewer service pipes during construction of the project. Orangeburg pipe, which can generally be

described as layered tar paper wrapped in a round manner to create a pipe, was commonly installed around the time several neighborhoods in Hopkins originally developed. Orangeburg pipe is widely known to 'rot' where exposed to water, generally on the bottom of the pipe, and ultimately collapse as it ages and is unable to support the surrounding soil.

Proposed sanitary sewer improvements are discussed later in this report.

D. Watermain

The existing layout and condition of the water main was determined from record drawings and discussions with City staff. The water main is primarily 6-inch cast iron pipe (CIP). CIP is a common watermain material, however upon reaching its useful life tends to fail. Because it is so brittle, as the soils around the pipe move slowly over decades, CIP cannot support shearing forces and ultimately breaks. These portions of the watermain system were installed in the 1950s and 1960s. CIP installed around this time period was also occasionally installed with lead-packed fittings.

Service lines for single family homes in the project area are typically ¾-inch or 1-inch and their material may be copper, galvanized steel, or lead. The multi-family and commercial properties in the neighborhood have services of various sizes. Not all are known, but may range from 1-inch to 8-inch diameter depending on the size of the property.

Proposed watermain improvements are discussed later in this report.

V. Proposed Improvements

A. Streets

All street pavements within the reconstruction project area have reached a point where maintenance procedures such as seal coating or milling and overlaying are no longer cost-effective strategies. 12th Ave N, 14th Ave N, 15th Ave N, 16th Ave N, and 2nd St N are scheduled for full reconstruction.

Proposed reconstruction improvements include replacement of concrete curb and gutter and replacement of the full depth of the pavement section with underlying aggregate base. It is also proposed to install a sand section under the aggregate base for additional roadway stability in areas where there are organics (buried topsoil) and other unsuitable soils present. Concrete curb will be replaced per City Policy 8.02 with B618 concrete curb and gutter, which will help extend the life of the pavement by keeping water out of the subgrade and will provide a solid edge for the asphalt pavement. Existing drainage patterns will be maintained and the elevation of the existing roadways at their edge is proposed to approximate the existing elevations. Attempts at lowering the road will be made (during final design) where appropriate to improve drainage toward the street where beneficial and practical.

Proposed street widths from face of curb to face of curb will vary for from street to street throughout the project area. Proposed street widths have been determined based on a variety of factors, including the need for a consistent street width along each roadway's length, the existing roadway width, typical roadway widths throughout the City, the existing right of way width, minimizing creation of additional impervious area, and avoidance of significant impacts due to even minor changes in street width. Attempts to avoid of impacts to significant trees was also a consideration during the preliminary design process used to determine proposed street widths.

The following specific improvements are proposed for each unique roadway corridor:

- 12th Ave N is proposed to be reconstructed, including the replacement of concrete curb and gutter, at 35 feet wide from curb face to face. This will narrow the road by approximately 0.1 feet. On the south end of 12th Ave N, the roadway is wider at 43.2 feet, which will generally be maintained at 43 feet wide proposed. Parking regulations will remain consistent with existing conditions throughout this area.
- 14th Ave N is proposed to be reconstructed, including the replacement of concrete curb and gutter, at 31 feet wide from curb face to face between Mainstreet and 1st St N and at 34 feet wide from curb face to face between 1st St N and 2nd St N. This will widen the road by approximately 0.2 feet between Mainstreet and 1st St N and narrow the road by approximately 1.5 feet between 1st St N and 2nd St N. Parking regulations will remain consistent with existing conditions throughout this area.
- 15th Ave N is proposed to be reconstructed, including the replacement of concrete curb and gutter, at 32 feet wide from curb face to face. This will narrow the road by approximately 3.5 feet. On the south end of 15th Ave N, the existing roadway width is proposed to generally remain the same width at 35 feet, south of the alley by Mainstreet. Parking regulations will remain consistent with existing conditions throughout this area.
- 16th Ave N is proposed to be reconstructed, including the replacement of concrete curb and gutter, at 30 feet wide from curb face to face. This will widen the road by approximately 0.3 feet. Parking regulations will remain consistent with existing conditions throughout this area.
- 2nd St N is proposed to be reconstructed, including the replacement of concrete curb and gutter, at 35 feet wide from curb face to face. This will narrow the road by approximately 0.7 feet. Parking regulations will remain consistent with existing conditions throughout this area.

The minimum proposed street grade is 0.50% consistent with City standards. Street grades flatter than 0.50% are undesirable for drainage. In some areas, new low-points with adequate storm sewer will need to be created to increase roadway longitudinal slope for proper drainage. These locations will be confirmed during the final design process, but one location identified during preliminary design is on 16th Ave N between 2nd St N and 3rd St N. Overall drainage patterns/directions throughout the project area are not proposed to change.

The preliminary proposed typical pavement section for all reconstructed streets consists of 2” wearing course, 2” non-wear course, 8” aggregate base class 5, 12” select granular, and spot subgrade soil corrections.

Other streets in Downtown Hopkins may be included in the project for maintenance if the budget allows and the bids from contractors are favorable. These streets are proposed to be included as add alternates to the project bid and can either be included in the contract or deleted from the contract per the discretion of City Staff and the project budget. These add alternates include the following proposed improvements:

- Reclamation and resurfacing of 10th Ave S, between Mainstreet and 1st St S.
  - 2" wearing course, 2" non-wearing course, 8" reclaimed material
- Reclamation and resurfacing of 9th Ave S, between 1st St S and Excelsior Blvd.
  - 2" wearing course, 2" non-wearing course, 8" reclaimed material
- Reclamation and resurfacing of 1st St S, between 9th Ave S to 11th Ave S.
  - 2" wearing course, 2" non-wearing course, 8" reclaimed material
- Mill and overlay of 9th Ave S, between Mainstreet and 1st St S.
  - 2" mill and 2" wearing course
- Mill and overlay of 1st St S, between 8th Ave S and 9th Ave S.
  - 2" mill and 2" wearing course

B. Storm Sewer

All the storm sewer in the project area will be reconstructed for constructability of other utilities, changing curb alignment, or increase the storm water pipe capacities to meet City standards for a 10-year rainfall event. Storm sewer will generally be replaced in the same location as the existing system, other than some additional catch basin inlets and storm sewer pipe as needed for drainage. The following is a summary of the most significant improvements proposed to the storm sewer system.

- Storm sewer will be extended down 16th Ave N between 2nd St N and 3rd St N with additional catch basin inlets to create a new low point on this block with flat grades. This will improve drainage on this block by providing a location for the water to flow in the curb line. While other blocks in the project area are not as flat as this block, they will also be evaluated further during final design to determine if additional storm sewer pipe and catch basins will be necessary for proper drainage.
- Storm sewer pipe capacity deficiencies have been identified in the existing 18" pipe along 12th Ave N. Proposed improvements along 12th Ave N include upsizing this pipe to a 24" diameter pipe to accommodate runoff from a 10-year rainfall event.
- There as been observed ponding issues at 16th Ave N & Mainstreet and at 14th Ave N & 2nd St N. Additional catch basin inlets are proposed at these intersections to provide adequate drainage during a moderate rainfall event.
- Nearby the project area, north of Maetzold field and between 13th Ave N and 14th Ave N, there is an isolated low spot in the public easement of several backyards with nowhere for the water to drain. To provide a location for water to drain during a rainfall event and to reduce the water levels in these backyards, a storm sewer inlet and 12" diameter pipe is proposed to be installed from the low point in the backyards to Maetzold Field. The runoff from this proposed system will enter the existing storm sewer system at Maetzold Field. The proposed 12" diameter pipe is also proposed to be installed by trenchless methods to not disturb the Lake Minnetonka Regional Trail.
- In the street maintenance area at 9th Ave S and 1st St S, there is a storm sewer manhole that is deteriorating and causing the soils to settle around the manhole. This manhole is proposed be replaced along with some of the nearby storm sewer pipe and structures within the intersection to clean up the storm sewer system layout.

C. Sanitary Sewer

As summarized in the existing conditions section of this report discussing sanitary sewer, the existing system on in the reconstruction area is relatively old, made of an outdated (clay) material, and in poor condition. Given these conditions, the opportunity to excavate to this utility given removal of overlying roadway pavement for street reconstruction, and the City of Hopkins policy to replace clay sewers during street projects, the existing 8" Clay gravity sanitary sewer system throughout the reconstruction area is proposed to be replaced with PVC pipe. The south ends of each block near Mainstreet are proposed to be lined with new Cured-In-Place-Pipe (CIPP) material to avoid excavating the entire intersection of Mainstreet. The system on 16th Ave N between 1st St N and 2nd St N will also be lined with CIPP material since this block is not proposed for reconstruction. There is no sanitary sewer on 2nd St S and none is proposed to be installed on the block of 2nd St N under construction.

Where gravity mains are to be replaced, new service wyes will be provided to each home. Per City policy, sanitary services which are not PVC are proposed to be replaced with PVC pipe to the right-of-way (ROW) line. New precast concrete manholes will be installed and will incorporate the City standard 27-inch diameter cover utilizing concealed pick-holes to minimize inflow and infiltration. The proposed sanitary sewer mainline improvements are summarized in Table 3 below.

The exact age of all existing pipes listed in Table 3 could not be verified. In such cases, its age was reasonably estimated based on the known age of other utilities in the area.

Table 3: Proposed Sanitary Sewer Improvements

Roadway	From/To	Existing Pipe			Proposed Improvements
		Dia.	Matl.	Age	
12th Ave N	Mainstreet/1st St N	10"	VCP	1960	10" PVC
14th Ave N	Mainstreet/1st St N	8"	VCP	1966	8" PVC
14th Ave N	1st St N/2nd St N	8"	VCP	1966	8" PVC
15th Ave N	Mainstreet/1st St N	8"	VCP	1960	8" PVC
15th Ave N	1st St N/2nd St N	8"	VCP	1960	8" PVC
16th Ave N	Mainstreet/1st St N	8"	VCP	1957	8" PVC
16th Ave N	1st St N/2nd St N	8"	VCP	1957	8" CIPP
16th Ave N	2nd St N/3rd St N	8"	VCP	1957	8" PVC
2nd St N	15th Ave N/14th Ave N	N/A	N/A	N/A	None

D. Watermain

All existing watermain within the reconstruction project area are proposed to be replaced with new ductile iron pipe (DIP) as a part of this project. An 8-inch pipe is proposed on all the roadways to most cost effectively achieve adequate fire flows and water distribution.

Per City policy all water service lines to single family homes are proposed to be replaced to the right-of-way with a new 1" diameter copper service line. A new curb stop valve and box will be provided on each service, approximately on the right-of-way line. Multi-family residential properties and commercial properties will receive a new 6" service line or a service line matching their existing service diameter, whichever is greater. The proposed watermain mainline improvements are summarized in Table 4 on the next page.

The exact age of all existing pipes listed in Table 4 could not be verified. In such cases, its age was reasonably estimated based on the known age of other utilities in the area.

Table 4: Proposed Watermain Improvements					
Roadway	From/To	Existing Pipe			Proposed Improvements
		Dia.	Matl.	Age	
12th Ave N	Mainstreet/1st St N	6"	CIP	1960	8" DIP
14th Ave N	Mainstreet/1st St N	6"	CIP	1966	8" DIP
14th Ave N	1st St N/2nd St N	6"	CIP	1966	8" DIP
15th Ave N	Mainstreet/1st St N	6"	CIP	1960	8" DIP
15th Ave N	1st St N/2nd St N	6"	CIP	1960	8" DIP
16th Ave N	Mainstreet/1st St N	6"	CIP	1957	8" DIP
16th Ave N	2nd St N/3rd St N	6"	CIP	1957	8" DIP
2nd St N	15th Ave N/14th Ave N	6"	CIP	1960	8" DIP

There are also proposed watermain improvements within the street maintenance area to replace the old existing hydrants with new hydrants to meet City standards, replace any defective valves, and to abandon the existing 4" diameter watermain on 10th Ave S. There are currently two watermains on 10th Ave S, one being a 12" diameter pipe and the other being a 4" diameter pipe. It has been determined that the 4" diameter watermain is not necessary and only a few properties are served off this pipe. These few water services would be reconnected to the 12" diameter watermain when the 4" diameter watermain is abandoned.

E. Pedestrian Facilities

Replacement of the existing concrete sidewalk is proposed on all streets within the reconstruction area. This will be necessary due to the street and utility construction and because the existing sidewalk is in poor condition. The existing sidewalks also do not drain properly. The sidewalks are proposed to be constructed at 6 feet width. The proposed turf boulevard width will vary but will be somewhat consistent with the existing boulevard width or slightly wider if the roadway is being narrowed. The preliminary proposed typical sidewalk section consists of 4" concrete, 4" aggregate base class 5, and spot subgrade soil corrections.

Installation of new concrete sidewalk is proposed along the east side of 14th Ave N from 1st St N to 2nd St N along Maetzold Field. This sidewalk will connect the sidewalk that dead ends at 2nd St S to the pedestrian facilities at 1st St N and the parking lot of Maetzold Field. Installation of new concrete sidewalk is also proposed along 1st St N from 14th Ave N to 16th Ave N. There are two gaps in the existing sidewalk along 1st St N on these two blocks, one on the north side between 14th Ave N and the alley between 14th Ave N and 15th Ave N and the other on the south side between 16th Ave N and the alley between 16th Ave N and 15th Ave N. By filling in these two gaps, there will be continuous sidewalk on at least one side of the street along 1st St N between 5th Ave N and 16th Ave N.

Spot sidewalk replacements are proposed in the street maintenance area as determined by the engineer in the field for areas with poor drainage, cracked sidewalk, or settled sidewalk which could become a tripping hazard.

F. Driveways

All single-family residential driveways within the reconstruction project area receiving new concrete curb and gutter, will receive a new 5-foot-wide concrete apron adjacent to the concrete curb. The new concrete aprons will be constructed accordance with City standards in terms of depth and shape. In addition to the 5-foot driveway apron, additional driveway pavement disturbed as a part of the project will be replaced in-kind to match the existing driveway with the street improvements.

Non-residential and multi-family residential properties will receive the City's standard concrete commercial driveway entrance apron. Alley entrances will also be replaced with the City's standard concrete alley entrance.

G. Lawn Irrigation Systems

There may be existing sprinkler systems encountered in construction of the project. Adjacent property owners will need to assist in locating and identifying the type of sprinkler systems that are in place prior to and during construction if these facilities are to be protected. The contractor will be required to make efforts to preserve the in-place systems during construction. Where this is found to be unfeasible, the contractor will be required to remove and replace or salvage and reinstall the existing sprinkler system.

H. Street Signing and Striping

The existing street name signs will be replaced by the contractor to update the signs to the new City standards. Regulatory signs such as stop and parking enforcement signs will be replaced to conform to retroreflectivity requirements. Existing centerline striping will be repainted upon completion of the streets in the maintenance project area (9th Ave S, 10th Ave S, and 1st St S). Existing crosswalk blocks will be repainted in the same locations in both the reconstruction and maintenance areas.

I. Turf and Landscaping Restoration

Boulevards will be graded as necessary to facilitate drainage from the existing yards to the streets. Turf areas disturbed by construction, either due to boulevard grading or utility service construction, will be graded to match the new street grades and restored with sod in residential yards. In parks or other areas maintained by the City, and sometimes larger commercial properties, areas will be restored with seed and mulch (hydroseed).

Landscaping within the project area will be protected where feasible. Landscaping that is within the right-of-way and/or cannot be protected will either be salvaged and reinstalled by the contractor or will be the owner's responsibility. Items including, but not limited to walls, fences, and pavers, will be salvaged and reinstalled by the contractor. The engineer will coordinate with individual homeowners on landscape impacts to items including, but not limited to plantings, decorative rock, and decorative pavers for removal and relocation by the homeowner.

J. Boulevard Trees

As with all projects being considered by the City of Hopkins, it is a goal of this project to protect healthy boulevard trees and/or make improvements to the urban tree canopy where feasible. Residents echoed the desire to protect healthy trees and remove dead/dying trees in questionnaire responses and discussion at the neighborhood meetings. Design and construction of improvements, including appropriate selection of street widths and utility main placement, are proposed to be completed in a manner to achieve the City's goals to save healthy trees. An evaluation of boulevard tree species and condition was

completed in consideration of the adjacent street and utility improvements to facilitate design and construction and meet these criteria.

Due to their susceptibility to the emerald ash borer, green ash trees are generally considered undesirable trees. Similarly, silver maple trees are more susceptible to storm damage than other species, create more litter because of their soft wood and weak, brittle branches, and thus are not desirable trees to Public Works staff and local residents. Silver maples are also known to have an intrusive root system that can damage sidewalks and curbs and penetrate sewer joints. Finally, American Elm are still susceptible to Dutch Elm disease. These three undesirable species, as well as other trees that are either dead or in poor health, should either be removed or otherwise not protected through the design/construction process.

An inventory of the trees located in the right of way was performed in August 2022 by City public works staff. Consistent with all City of Hopkins annual street and utility improvement projects, trees that are dead or in very poor condition, and "undesirable" species in fair or poor condition, are proposed to be removed and replaced. Approximately 21 boulevard trees within the project area are considered undesirable due to condition/species. Proposed tree removals are shown in the figures within Appendix B. Those tree removals identified due to conflicts with utilities or street grading will be further evaluated during final design to see if reasonable measures can be taken to preserve them. Options to preserve highly desirable trees in harm's way include small retaining walls or moving service lines around trees but is not always feasible.

This project provides an opportunity to increase the health of the neighborhood forest by replacing some of the undesirable species with trees better suited for boulevard areas. One tree is proposed to be installed per each tree removed. New 2-inch balled and burlapped trees are typically planted in replacement of those removed. The City will communicate with the property owners to replace trees as part of the project in the event tree removal is necessary. A list of species to be planted will be formulated during final design in cooperation with the City's Public Works department. Properties located adjacent to boulevard tree removals will be contacted and allowed to provide input on their desire for a particular tree species to be planted based on the list provided.

VI. Neighborhood Meetings

A neighborhood meeting occurred on September 14, 2022 with residents and property owners that are affected by the improvements in the reconstruction area. The City Engineer and Bolton & Menk Project Manager presented the scope of the project with a discussion of existing and proposed street and utility conditions, preliminary assessment policies, other City policies, and project schedule. Additional information on the neighborhood meeting is documented in Appendix D of this report. There were approximately ten property owners/residents who participated in the event live but the presentation was also broadcasted and recorded over Zoom with several in attendance online, and the presentation will be available on the project website for residents to view at their convenience. Some of the most common questions or comments received from residents at the neighborhood meeting are as follows:

1. Residents wanted to see additional sidewalk installed on 1st St N between 16th Ave N and 15th Ave N where there is currently no sidewalk west of the alley.
    a. The project team evaluated this request and determined that adding sidewalk on the south side of the street in this area would be feasible, cost effective, and beneficial to the public.
2. There was some concern about narrowing 15th Ave N by about 3 feet from roughly 35 feet wide (curb face to face) to 32 feet wide. Residents were concerned that there are many cars that park along this street and it would be difficult to get by oncoming traffic if the road were to be narrowed, especially during the winter months when snow isn't always plowed all the way to the curb.
    a. The project team explained at the meeting that the standard width for a residential street in the City is 30 to 32 feet wide, so the existing 35 feet wide blocks along 15th Ave N are wider than necessary. Narrowing the roadway will help with traffic calming and reduce vehicle speeds. Parking will not be restricted on either side of the street and parking is allowed on both sides of the street on other streets at 30 feet wide. By narrowing the roadway, this will allow for wider boulevards to allow for more snow storage so that it will be easier for the plow trucks to clear snow all the way to the curb.
    b. The roadway width will remain the same (35 feet) near Mainstreet, south of the alley, to allow for easier turning movements at the busy Mainstreet intersection.
    c. The project team continued to evaluate the roadway width after the meeting and determined that the proposed width of 32 feet is appropriate for 15th Ave N, north of the alley near Mainstreet. This is consistent with the other residential streets in Hopkins and is feasible for the reasons stated above. This proposed street width is reflected in the figures in Appendix B and this information will be shared with the public at the next neighborhood meeting.

3. There were requests for additional crosswalks on 12th Ave and 14th Ave, mainly in areas around Maetzold Field.
    a. The project team will continue to evaluate crosswalks during final design, but it was explained that adding crosswalks isn't always safe, and usually provides a false sense of security to the pedestrian if installed in the wrong location.
4. Residents had general questions about assessments, including the process, costs, and payment options.
    a. The project team went over the assessment policy with the residents and provided rough estimates on what to expect for costs. Individual assessment amounts were not provided at the meeting, but they will be available at the next neighborhood meeting. The project team also described the payment options and schedule for the assessments.

A second neighborhood meeting has been scheduled for October 24, 2022 to review preliminary special assessments and again review proposed improvements.

Residents within the reconstruction project area were also mailed questionnaires in May 2022 shown in Appendix D. The questionnaire focused on drainage issues, utilities, pedestrian facilities, landscaping, and other concerns the residents may have. 30 questionnaires, which is roughly 25% of the affected properties, were returned with comments. The most common questionnaire responses related to:

1. Specific drainage problems in the roadway and on the sidewalk
2. Desire for sidewalk improvements and additional sidewalks
3. Pavement and curb is in poor condition
4. Overgrown and unhealthy trees throughout the neighborhood
5. Concerns about existing landscaping

A summary of the responses to the resident questionnaire are provided in the Table below.

Table 5: Resident Questionnaire Response Summary

	Yes	No	Total # of Responses
Drainage Issue	7	23	30
Sanitary Issue	4	26	30
Water Issue	4	26	30
Pedestrian Facility Issue	14	16	30
Irrigation	2	28	30
Invisible Fence	0	30	30
Tree Concerns	11	19	30
Landscaping Concerns	4	26	30

VII. Estimated Costs

Estimated construction costs presented in this report include a 15 percent contingency factor. Overhead costs, estimated at 20 percent, include legal, engineering, administrative and fiscal costs. Final costs and assessments will be determined by using low-bid construction costs of the proposed work.

Proposed construction costs for the 2023 Street & Utility Improvements (including curb and gutter, bituminous street, pedestrian facilities, storm sewer, sanitary sewer, water main, and turf restoration) are itemized in Appendix A and are summarized in Table 6 below.

These cost estimates are based upon public construction cost information. Because the consultant has no control over the cost of labor, materials, competitive bidding process, weather conditions and other factors affecting the cost of construction, all cost estimates are opinions for general information of the client and no warranty or guarantee as to the accuracy of construction cost estimates is made. It is recommended that costs for project financing should be based upon actual, competitive bid prices with reasonable contingencies.

Table 6: Preliminary Estimated Cost of 2023 Proposed Improvements	
Proposed Street Improvements	$2,823,000
Proposed Sanitary Sewer Improvements	$1,101,000
Proposed Watermain Improvements	$1,313,000
Proposed Storm Sewer Improvements	$610,000
Street & Utility Subtotal	**$5,847,000**
Street Maintenance Subtotal (*Add Alternates)	$570,000
Contingencies (15%)	$962,000
Engineering & Administration (20%)	$1,476,000
Total Estimated Project Costs	**$8,855,000**

*Add Alternates are areas of the project involving street maintenance that will be bid with the rest of the project, but the City will have the option to either move forward with the work or remove the work from the project depending on budget constraints and bid results. We are anticipating that at least part, if not all, of the Add Alternate work will be included in the 2023 Street & Utility Improvements.

VIII. Special Assessments

Street improvements throughout the reconstruction project area (12th Ave N, 14th Ave N, 15th Ave N, 16th Ave N, and 2nd St N) will be assessed to adjacent and benefitting properties according to the City of Hopkins' assessment policy. Street improvement work includes pavement removals, grading, subgrade correction, aggregate base, driveways, pavement construction, and restoration.

According to the City's assessment policy, residential street improvement costs are assessed to the benefitting properties. In summary, assessments to benefitting properties are determined based on the following criteria:

- Properties are assessed based on 70% of the actual street improvement costs. This is referred to as a **"Street Assessment"**.
- North/South Avenue improvements are typically assessed to properties with direct frontage based on a front foot basis (length) along the Avenue.
- East/West Street improvements are typically assessed to properties located within one block north/south of the Street on a unit basis (per each property).
- **"Street Assessments"** to any individual property are capped at front foot rate increase annually by 3% over the prior year's amount. An assessment cap for residential properties of $103.05 per front foot has been established by adding 3% to the 2022 assessment cap according to City policy.
- The assessment cap is applied to residential properties in the project area and is not applicable to properties which received a benefit appraisal in preparation of the assessment roll. For properties receiving a benefit appraisal, the lesser of the 'per policy' calculation and the benefit amount per the appraisal was used.
- Utility (sanitary sewer, storm sewer, water) main improvements are 100% paid by the respective utility funds. No assessment for utility mains is proposed and their costs do not contribute to either the **"Street Assessments"** or **"Utility Assessments".**
- Utility service lines are owned by the individual property per City Code. As a result, the City assesses for the cost of the individual service line replacements. This is referred to as a "**Utility Assessment"**. The City participates in a share of these costs because the replacement is mandatory where mains are reconstructed, and therefore properties are assessed for only 50% of the cost of the service replacement.
- The estimated cost of the water service replacement from the main to property line is $3,150. With the proposed 50/50 "**Utility Assessment**" split, $1,575 will be assessed to each property where water services are replaced. The estimated cost of the sewer service replacement from the main to the property line is $2,650. With the proposed 50/50 "**Utility Assessment**" split, $1,325 will be assessed to each property where sewer services are replaced. Thus, a property proposed to receive both a new water service and sewer service would have a proposed **"Utility Assessment"** of $2,900.

In the case that sanitary sewer services are made of Orangeburg, or are in disrepair, replacement or lining of the entire line will also be required from the property line to the house. On past projects, the property owner has been given one year to address the necessary repairs and the City will provide the option to use the City's Contractor to perform this work and be fully assessed to the property owner.

A preliminary assessment roll is included in Appendix C of this report. Total estimated assessments are $1,184,328.82.

IX. Right-of-Way/Easements/Permits

The majority of the proposed improvements will be limited to the existing street ROW along all corridors. Temporary construction easements may be needed for work outside the street ROW such as driveway apron replacement, grading and turf restoration.

Permits will be required from the Minnesota Pollution Control Agency for grading (National Pollutant Discharge Elimination System permit), Minnesota Department of Health for Water Main Replacement, and the Nine Mile Creek Watershed District for Erosion Control. Permits will be required from Three Rivers Park District and Hennepin County Regional Railroad Authority for the storm sewer work and drainage improvements in the backyards north of Maetzold Field. A permit may also be required from Hennepin County for working within Excelsior Blvd ROW on 9th Ave S.

X. Project Schedule

If this Preliminary Engineering Report is accepted by the City Council, the following schedule is proposed:

Order Public Improvement Hearing.....October 4, 2022

Neighborhood Meeting 2.....October 24, 2022

Conduct Improvement Hearing, Order Final Plans & Specifications .....November 1, 2022

Final Design.....November 2, 2022 – January 17, 2023

Present Final Plans / Authorize Ad for Bids .....January 17, 2023

Open Bids.....February 10, 2023

Order Public Assessment Hearing.....February 21, 2023

Neighborhood Meeting 3..... March 13-16, 2023

Conduct Assessment Hearing / Adopt Assessment Roll / Award Project.....March 21, 2023

Construction..... April/May 2023 – October/November 2023

XI. Feasibility and Recommendation

From an engineering standpoint, this project is feasible, cost effective, and necessary and can best be accomplished by letting competitive bids for the work. It is recommended that the work be done under one contract, for all project areas, to complete the work in an orderly and efficient manner. The City, its financial consultant, and the persons assessed will have to determine the economic feasibility of the proposed improvements.

Appendix A: Preliminary Cost Estimates

PRELIMINARY ENGINEER'S ESTIMATE

2023 STREET & UTILITY IMPROVEMENTS
CITY OF HOPKINS, MN
BMI PROJECT NO. 0T1.127595

BOLTON & MENK
Real People. Real Solutions.

ITEM NO.	ITEM	UNIT	UNIT PRICE	ESTIMATED COSTS														TOTAL QUANTITY	TOTAL COST
				RECONSTRUCTION													RESURFACING		
				12TH AVE N, 14TH AVE N, 15TH AVE N, 16TH AVE N, 2ND ST N													1ST ST S, 9TH AVE S, 10TH AVE S		
				12TH AVE N	14TH AVE N SOUTH BLOCK	14TH AVE N NORTH BLOCK	15TH AVE N	16TH AVE N	2ND ST N	EXISTING WALK	MAETZOLD FIELD & 1ST ST N WALK	STREET TOTAL	SANITARY	STORM	WATER	RECONSTRUCTION TOTAL			
1	MOBILIZATION	LUMP SUM	$300,000.00	$18,000.00	$18,000.00	$18,000.00	$36,000.00	$36,000.00	$9,000.00	$9,000.00	$6,000.00	$150,000.00	$45,000.00	$15,000.00	$60,000.00	$270,000.00	$30,000.00	1	$300,000.00
2	CLEARING	TREE	$750.00	$1,500.00	$2,250.00	$3,750.00	$13,500.00	$12,750.00	$750.00			$34,500.00				$34,500.00		46	$34,500.00
3	GRUBBING	TREE	$250.00	$1,500.00	$750.00	$1,500.00	$4,500.00	$5,000.00	$250.00			$13,500.00				$13,500.00		54	$13,500.00
4	DECIDUOUS TREE 2" CAL B&B	EACH	$500.00	$3,000.00	$1,500.00	$3,000.00	$9,000.00	$10,000.00	$500.00			$27,000.00				$27,000.00		54	$27,000.00
5	REMOVE SIGN POST	EACH	$50.00	$750.00	$500.00	$200.00	$250.00	$350.00				$2,050.00				$2,050.00		41	$2,050.00
6	REMOVE SIGN PANEL	EACH	$50.00	$750.00	$500.00	$200.00	$250.00	$350.00				$2,050.00				$2,050.00		41	$2,050.00
7	REMOVE CURB AND GUTTER	LIN FT	$10.00	$12,150.00	$12,500.00	$14,210.00	$26,600.00	$27,500.00				$92,960.00				$92,960.00	$9,050.00	10201	$102,010.00
8	REMOVE BITUMINOUS PAVEMENT	SQ YD	$10.00		$1,200.00	$350.00	$400.00	$200.00			$600.00	$2,750.00				$2,750.00	$2,800.00	555	$5,550.00
9	REMOVE CONCRETE WALK	SQ FT	$1.00	$1,450.00	$579.00	$35.00	$1,356.00	$2,300.00		$42,915.00		$48,635.00				$48,635.00	$5,410.00	54045	$54,045.00
10	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	$12.00	$1,332.00	$228.00	$1,416.00	$3,252.00	$2,256.00	$1,356.00			$9,840.00				$9,840.00		820	$9,840.00
11	SALVAGE PAVERS	SQ FT	$4.00	$120.00		$220.00		$360.00				$700.00				$700.00		175	$700.00
12	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	$5.00	$750.00	$200.00	$200.00	$1,200.00	$1,000.00	$25.00			$3,375.00				$3,375.00	$5,000.00	1675	$8,375.00
13	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	$4.00	$1,000.00	$500.00	$780.00	$1,060.00	$2,200.00	$260.00		$40.00	$5,840.00				$5,840.00	$1,520.00	1840	$7,360.00
14	SALVAGE & REINSTALL FENCE	LIN FT	$75.00				$3,750.00	$3,750.00				$7,500.00				$7,500.00		100	$7,500.00
15	SALVAGE & REINSTALL STONE RETAINING WALL	LIN FT	$100.00	$5,000.00	$5,000.00		$15,000.00					$25,000.00				$25,000.00		250	$25,000.00
16	SALVAGE & REINSTALL BLOCK RETAINING WALL	LIN FT	$150.00		$15,000.00		$37,500.00	$15,000.00				$67,500.00				$67,500.00		450	$67,500.00
17	REMOVE HYDRANT	EACH	$750.00												$6,000.00	$6,000.00	$3,000.00	12	$9,000.00
18	REMOVE WATERMAIN	LIN FT	$12.00												$51,180.00	$51,180.00	$660.00	4320	$51,840.00
19	REMOVE DRAINAGE STRUCTURE (STORM)	EACH	$500.00											$11,000.00		$11,000.00		22	$11,000.00
20	REMOVE STORM SEWER PIPE	LIN FT	$15.00											$16,425.00		$16,425.00		1095	$16,425.00
21	REMOVE SANITARY SEWER PIPE	LIN FT	$10.00										$44,500.00			$44,500.00		4450	$44,500.00
22	REMOVE SANITARY MANHOLE	EACH	$750.00										$15,000.00			$15,000.00		20	$15,000.00
23	ABANDON WATERMAIN	LIN FT	$10.00														$6,850.00	685	$6,850.00
24	ABANDON STORM SEWER	LIN FT	$20.00														$800.00	40	$800.00
25	EXPLORATORY EXCAVATION	HOUR	$1,000.00										$20,000.00	$10,000.00	$20,000.00	$50,000.00		50	$50,000.00
26	COMMON EXCAVATION	CU YD	$22.00	$44,638.00	$41,404.00	$50,358.00	$101,200.00	$79,684.00	$19,492.00			$336,776.00				$336,776.00		15308	$336,776.00
27	SUBGRADE EXCAVATION	CU YD	$30.00	$7,170.00	$6,330.00	$6,360.00	$11,910.00	$12,690.00	$2,520.00			$46,980.00				$46,980.00	$11,070.00	1935	$58,050.00
28	RECLAIM BITUMINOUS SURFACE (IN PLACE)	SQ YD	$2.50														$18,345.00	7338	$18,345.00
29	RECLAIM BITUMINOUS SURFACE (LOAD & STOCKPILE)	SQ YD	$3.50	$8,519.00	$7,903.00	$9,611.00	$19,320.00	$15,211.00	$3,720.50			$64,284.50				$64,284.50		18367	$64,284.50
30	SUBGRADE PREPARATION	SQ YD	$2.00														$14,676.00	7338	$14,676.00
31	GEOTEXTILE FABRIC TYPE V	SQ YD	$1.50	$4,302.00	$3,793.50	$4,632.00	$8,580.00	$7,599.00	$1,669.50			$30,576.00				$30,576.00		20384	$30,576.00
32	STABILIZING AGGREGATE	CU YD	$50.00	$11,950.00	$10,550.00	$10,600.00	$19,850.00	$21,150.00	$4,200.00			$78,300.00				$78,300.00		1566	$78,300.00
33	SELECT GRANULAR BORROW	TON	$18.00	$31,374.00	$27,666.00	$33,768.00	$62,550.00	$55,404.00	$12,186.00			$222,948.00				$222,948.00		12386	$222,948.00
34	CLASS 5 AGGREGATE BASE	TON	$20.00	$23,360.00	$20,600.00	$25,140.00	$46,580.00	$41,240.00	$9,080.00			$166,000.00				$166,000.00	$13,500.00	8975	$179,500.00
35	CLASS 2 AGGREGATE SURFACING (GRAVEL DRIVEWAY)	TON	$40.00			$40.00	$40.00					$80.00				$80.00		2	$80.00
36	BITUMINOUS WEARING COURSE (SPWEA240C)	TON	$90.00		$22,860.00	$27,630.00	$51,930.00	$45,540.00	$10,890.00			$158,850.00				$158,850.00		1765	$158,850.00
37	BITUMINOUS -NON-WEARING COURSE (SPNWB230C)	TON	$85.00		$21,590.00	$26,095.00	$49,045.00	$43,010.00	$10,285.00			$150,025.00				$150,025.00		1765	$150,025.00
38	BITUMINOUS WEARING COURSE (SPWEA340C)	TON	$92.00	$27,048.00								$27,048.00				$27,048.00	$130,916.00	1717	$157,964.00
39	BITUMINOUS -NON-WEARING COURSE (SPNWB330C)	TON	$88.00	$25,872.00								$25,872.00				$25,872.00	$81,224.00	1217	$107,096.00
40	BITUMINOUS MATERIAL FOR TACK COAT	GAL	$5.00	$610.00	$525.00	$635.00	$1,195.00	$1,045.00	$250.00			$4,260.00				$4,260.00	$3,495.00	1551	$7,755.00
41	2" BITUMINOUS STREET PATCH	SQ YD	$25.00			$375.00						$375.00				$375.00	$15,475.00	634	$15,850.00
42	MILL BITUMINOUS SURFACE (2")	SQ YD	$2.00														$8,240.00	4120	$8,240.00
43	3" BITUMINOUS DRIVEWAY	SQ YD	$30.00		$3,600.00	$540.00	$1,050.00	$570.00			$1,860.00	$7,620.00				$7,620.00		254	$7,620.00
44	JOINT ADHESIVE (MASTIC)	LIN FT	$1.00	$1,168.00	$1,255.00	$1,421.00	$2,669.00	$2,657.00	$595.00			$9,765.00				$9,765.00	$5,265.00	15030	$15,030.00
45	6" PERF PVC UNDERDRAIN	LIN FT	$20.00											$42,000.00		$42,000.00		2100	$42,000.00
46	6" PERF PVC UNDERDRAIN CLEANOUT	EACH	$400.00											$8,400.00		$8,400.00		21	$8,400.00
47	15" RC STORM PIPE	LIN FT	$65.00											$60,125.00		$60,125.00		925	$60,125.00
48	24" RC STORM PIPE	LIN FT	$95.00											$54,150.00		$54,150.00		570	$54,150.00
49	STORM MANHOLE	EACH	$4,000.00											$36,000.00		$36,000.00		9	$36,000.00
50	STORM CATCH BASIN	EACH	$2,000.00											$42,000.00		$42,000.00		21	$42,000.00
51	INSTALL CASTING (R-3067)(STORM)	EACH	$1,000.00											$21,000.00		$21,000.00		21	$21,000.00
52	INSTALL CASTING (R-1733)(STORM)	EACH	$1,200.00											$10,800.00		$10,800.00		9	$10,800.00
53	ADJUST FRAME & RING CASTINGS (STORM)	EACH	$750.00														$12,000.00	16	$12,000.00
54	CONNECT TO EXISTING STORM PIPE	EACH	$1,500.00											$12,000.00		$12,000.00		8	$12,000.00
55	CONNECT TO EXISTING STORM STRUCTURE	EACH	$2,000.00											$2,000.00		$2,000.00		1	$2,000.00
56	12" TRENCHLESS STORM SEWER	LUMP SUM	$50,000.00											$50,000.00		$50,000.00		1	$50,000.00
57	8" PVC SDR 35 SANITARY SEWER PIPE	LIN FT	$65.00										$250,250.00			$250,250.00		3850	$250,250.00
58	10" PVC SDR 35 SANITARY SEWER PIPE	LIN FT	$75.00										$46,125.00			$46,125.00		615	$46,125.00
59	COARSE AGGREGATE BEDDING (TYPE B)	LIN FT	$15.00										$17,985.00			$17,985.00		1199	$17,985.00
60	8" CIPP LINING (RECON LINING)	LIN FT	$40.00										$37,800.00			$37,800.00		945	$37,800.00
61	8" CIPP LINING (CITY WIDE LINING)	LIN FT	$35.00										$52,500.00			$52,500.00		1500	$52,500.00
62	SEAL SANITARY MANHOLE	EACH	$1,500.00										$18,000.00			$18,000.00		12	$18,000.00
63	6" PVC SDR 26 SANITARY SEWER SERVICE PIPE	LIN FT	$50.00										$212,800.00			$212,800.00		4256	$212,800.00
64	8" X 6" SDR 26 PVC SERVICE WYE	EACH	$650.00										$86,450.00			$86,450.00		133	$86,450.00
65	INSTALL CASTING (R-1733)(SANITARY)	EACH	$1,500.00										$43,500.00			$43,500.00	$9,000.00	35	$52,500.00
66	SANITARY MANHOLE	LIN FT	$450.00										$119,700.00			$119,700.00		266	$119,700.00
67	RECONNECT SANITARY SEWER SERVICE	EACH	$500.00										$66,500.00			$66,500.00		133	$66,500.00

PRELIMINARY ENGINEER'S ESTIMATE

2023 STREET & UTILITY IMPROVEMENTS
CITY OF HOPKINS, MN
BMI PROJECT NO. 0T1.127595

BOLTON & MENK
Real People. Real Solutions.

ITEM NO.	ITEM	UNIT	UNIT PRICE	ESTIMATED COSTS														TOTAL QUANTITY	TOTAL COST
				RECONSTRUCTION													RESURFACING		
				12TH AVE N, 14TH AVE N, 15TH AVE N, 16TH AVE N, 2ND ST N													1ST ST S, 9TH AVE S, 10TH AVE S		
				12TH AVE N	14TH AVE N SOUTH BLOCK	14TH AVE N NORTH BLOCK	15TH AVE N	16TH AVE N	2ND ST N	EXISTING WALK	MAETZOLD FIELD & 1ST ST N WALK	STREET TOTAL	SANITARY	STORM	WATER	RECONSTRUCTION TOTAL			
68	CONNECT TO EXISTING SANITARY SEWER PIPE	EACH	$2,000.00										$14,000.00			$14,000.00		7	$14,000.00
69	CONNECT TO EXISTING SANITARY MANHOLE	EACH	$3,000.00										$3,000.00			$3,000.00		1	$3,000.00
70	HYDRANT	EACH	$6,000.00												$48,000.00	$48,000.00	$24,000.00	12	$72,000.00
71	INSTALL SAMPLING STATION	EACH	$1,000.00												$1,000.00	$1,000.00		1	$1,000.00
72	DUCTILE IRON FITTINGS	POUND	$10.00												$40,000.00	$40,000.00	$1,600.00	4160	$41,600.00
73	4" GATE VALVE & BOX	EACH	$2,000.00												$2,000.00	$2,000.00		1	$2,000.00
74	6" GATE VALVE & BOX	EACH	$2,250.00												$22,500.00	$22,500.00	$9,000.00	14	$31,500.00
75	8" GATE VALVE & BOX	EACH	$2,500.00												$55,000.00	$55,000.00		22	$55,000.00
76	12" BUTTERFLY VALVE & BOX	EACH	$4,000.00												$8,000.00	$8,000.00		2	$8,000.00
77	4" DIP WATERMAIN	LIN FT	$60.00												$2,700.00	$2,700.00		45	$2,700.00
78	6" DIP WATERMAIN	EACH	$65.00												$13,000.00	$13,000.00	$3,575.00	255	$16,575.00
79	8" DIP WATERMAIN	EACH	$75.00												$386,250.00	$386,250.00		5150	$386,250.00
80	1" TYPE K COPPER SERVICE PIPE	LIN FT	$55.00												$225,720.00	$225,720.00	$6,655.00	4225	$232,375.00
81	1.5" TYPE K COPPER SERVICE PIPE	LIN FT	$65.00												$1,365.00	$1,365.00		21	$1,365.00
82	2" TYPE K COPPER SERVICE PIPE	LIN FT	$75.00												$3,300.00	$3,300.00		44	$3,300.00
83	1" CURB STOP & BOX	EACH	$500.00												$65,500.00	$65,500.00	$2,000.00	135	$67,500.00
84	1.5" CURB STOP & BOX	EACH	$650.00												$650.00	$650.00		1	$650.00
85	2" CURB STOP & BOX	EACH	$800.00												$800.00	$800.00		1	$800.00
86	1" CORPORATION STOP	EACH	$500.00												$65,500.00	$65,500.00	$2,000.00	135	$67,500.00
87	1.5" CORPORATION STOP	EACH	$650.00												$650.00	$650.00		1	$650.00
88	2" CORPORATION STOP	EACH	$800.00												$800.00	$800.00		1	$800.00
89	GROUNDING ANODE	EACH	$100.00												$17,500.00	$17,500.00		175	$17,500.00
90	TRACER WIRE ACCESS BOX (NON ROADWAY)	EACH	$150.00												$19,950.00	$19,950.00		133	$19,950.00
91	TRACER WIRE TEST STATION (HYDRANT)	EACH	$175.00												$1,400.00	$1,400.00		8	$1,400.00
92	RECONNECT WATER SERVICE	EACH	$500.00												$66,500.00	$66,500.00	$2,000.00	137	$68,500.00
93	CONNECT TO EXISTING WATERMAIN	EACH	$1,200.00												$22,800.00	$22,800.00	$4,800.00	23	$27,600.00
94	TEMPORARY WATER SERVICE	EACH	$500.00												$66,500.00	$66,500.00		133	$66,500.00
95	TEMPORARY WATER SERVICE (SPECIAL)	EACH	$5,000.00												$25,000.00	$25,000.00		5	$25,000.00
96	ADJUST GATE VALVE & BOX	EACH	$500.00												$3,500.00	$3,500.00	$5,500.00	18	$9,000.00
97	4" CONCRETE WALK	SQ FT	$7.00	$1,267.00	$2,415.00	$2,835.00	$1,750.00	$5,250.00		$300,405.00	$40,495.00	$354,417.00				$354,417.00	$31,570.00	55141	$385,987.00
98	CONCRETE STEP	EACH	$300.00		$4,800.00	$1,200.00	$18,000.00	$7,200.00				$31,200.00				$31,200.00		104	$31,200.00
99	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	$22.00											$217,030.00		$217,030.00	$19,910.00	10770	$236,940.00
100	6" CONCRETE WALKS (PED RAMPS)	SQ YD	$140.00							$51,100.00	$50,400.00	$101,500.00				$101,500.00	$14,000.00	825	$115,500.00
101	6" CONCRETE DRIVEWAY	SQ YD	$75.00	$1,425.00		$7,875.00	$16,725.00	$7,800.00	$8,700.00			$42,525.00				$42,525.00		567	$42,525.00
102	8" CONCRETE DRIVEWAY/ALLEY	SQ YD	$85.00	$16,065.00	$3,570.00		$10,200.00	$7,225.00				$37,060.00				$37,060.00		436	$37,060.00
103	TRUNCATED DOMES	SQ FT	$60.00							$20,880.00	$1,440.00	$22,320.00				$22,320.00	$8,640.00	516	$30,960.00
104	TRAFFIC CONTROL	LUMP SUM	$50,000.00	$3,000.00	$3,000.00	$3,000.00	$6,000.00	$6,000.00	$1,500.00	$1,500.00	$1,000.00	$25,000.00	$7,500.00	$2,500.00	$10,000.00	$45,000.00	$5,000.00	1	$50,000.00
105	INSTALL SIGN POST	EACH	$600.00	$9,000.00	$6,000.00	$2,400.00	$3,000.00	$4,200.00				$24,600.00				$24,600.00		41	$24,600.00
106	INSTALL SIGN PANELS	EACH	$400.00	$6,000.00	$4,000.00	$1,600.00	$2,000.00	$2,800.00				$16,400.00				$16,400.00		41	$16,400.00
107	SIGNAL LOOP	EACH	$1,600.00	$3,200.00	$3,200.00							$6,400.00				$6,400.00	$6,400.00	8	$12,800.00
108	STREET SWEEPER WITH OPERATOR	HOUR	$150.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00			$18,000.00				$18,000.00	$7,500.00	170	$25,500.00
109	STABILIZED CONSTRUCTION EXIT	EACH	$1,200.00	$2,400.00	$1,200.00	$1,200.00	$2,400.00	$4,800.00	$1,200.00			$13,200.00				$13,200.00		11	$13,200.00
110	STORM DRAIN INLET PROTECTION	EACH	$200.00	$1,800.00	$2,000.00	$800.00	$1,600.00	$2,400.00	$600.00			$9,200.00				$9,200.00		46	$9,200.00
111	TOPSOIL BORROW (SPECIAL)	CU YD	$40.00	$11,000.00	$14,720.00	$6,800.00	$28,560.00	$25,280.00	$5,800.00		$7,600.00	$99,760.00				$99,760.00	$8,400.00	2704	$108,160.00
112	HYDROSEEDING	SQ YD	$3.00														$3,780.00	1260	$3,780.00
113	SODDING, TYPE LAWN	SQ YD	$8.00	$13,200.00	$17,640.00	$8,120.00	$34,240.00	$30,320.00	$6,920.00		$9,120.00	$119,560.00				$119,560.00		14945	$119,560.00
114	LANDSCAPE ALLOWANCE	LUMP SUM	$50,000.00	$5,000.00	$5,000.00	$5,000.00	$10,000.00	$10,000.00	$5,000.00		$10,000.00	$50,000.00				$50,000.00		1	$50,000.00
115	HANDICAP SYMBOL (GR IN) - THERMOPLASTIC	EACH	$750.00														$1,500.00	2	$1,500.00
116	4" SOLID WHITE - MULTI COMPONET LIQUID	LIN FT	$1.50														$90.00	60	$90.00
117	4" BROKEN YELLOW - MULTI COMPONET LIQUID	LIN FT	$0.75														$716.25	955	$716.25
118	4" SOLID YELLOW - MULTI COMPONET LIQUID	LIN FT	$1.00														$120.00	120	$120.00
119	CROSSWALK - THERMOPLASTIC	SQ FT	$15.00	$3,240.00	$4,050.00	$4,050.00	$8,100.00	$6,750.00	$2,700.00			$28,890.00				$28,890.00	$12,690.00	2772	$41,580.00
SUBTOTAL				$ 312,910.00	$ 301,378.50	$ 288,946.00	$ 675,112.00	$ 567,841.00	$ 122,449.00	$ 425,800.00	$ 128,555.00	$ 2,822,991.50	$ 1,100,610.00	$ 610,430.00	$ 1,313,065.00	$ 5,847,096.50	$ 569,742.25		$6,416,838.75
CONTINGENCIES (15%)				$ 46,936.50	$ 45,206.78	$ 43,341.90	$ 101,266.80	$ 85,176.15	$ 18,367.35	$ 63,870.00	$ 19,283.25	$ 423,448.73	$ 165,091.50	$ 91,564.50	$ 196,959.75	$ 877,064.48	$ 85,461.34		$ 962,525.81
ENGINEERING AND ADMINISTRATION (20%)				$ 71,969.30	$ 69,317.06	$ 66,457.58	$ 155,275.76	$ 130,603.43	$ 28,163.27	$ 97,934.00	$ 29,567.65	$ 649,288.05	$ 253,140.30	$ 140,398.90	$ 302,004.95	$ 1,344,832.20	$ 131,040.72		$ 1,475,872.91
TOTAL ESTIMATED PROJECT COST				**$ 431,815.80**	**$ 415,902.33**	**$ 398,745.48**	**$ 931,654.56**	**$ 783,620.58**	**$ 168,979.62**	**$ 587,604.00**	**$ 177,405.90**	**$ 3,895,728.27**	**$ 1,518,841.80**	**$ 842,393.40**	**$ 1,812,029.70**	**$ 8,068,993.17**	**$ 786,244.31**		**$ 8,855,237.48**

Appendix B: Figures

LEGEND
PROJECT AREA

0 300 600
HORZ. SCALE FEET

CITY OF HOPKINS
2023 STREET & UTILITY IMPROVEMENTS
PROJECT LAYOUT

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LEGEND

EXISTING FIGURES

EXISTING

- BITUMINOUS EDGE
- CONCRETE EDGE
- CONCRETE CURB
- GRAVEL EDGE
- RIGHT-OF-WAY
- SANITARY SEWER
- SANITARY MANHOLE
- STORM SEWER
- STORM MANHOLE
- STORM CATCH BASIN
- WATERMAIN
- HYDRANT
- GATE VALVE

PROPOSED FIGURES

PROPOSED

- CURB & GUTTER
- BITUMINOUS PAVEMENT
- CONCRETE DRIVEWAY
- CONCRETE SIDEWALK
- GRAVEL DRIVEWAY
- PAVERS
- STORM MANHOLE
- STORM CATCH BASIN
- STORM SEWER
- SANITARY SEWER MANHOLE
- SANITARY SEWER
- SANITARY CIPP LINING
- HYDRANT & VALVE
- GATE VALVE
- WATERMAIN
- POOR HEALTH
- UTILITY CONFLICT
- ASH TREE
- CURB/WALK CONFLICT

EXISTING BACKGROUND

- BITUMINOUS
- CONCRETE
- CONCRETE CURB
- GRAVEL
- RIGHT-OF-WAY
- SANITARY SEWER
- SANITARY MANHOLE
- STORM SEWER
- STORM MANHOLE
- STORM CATCH BASIN
- WATERMAIN
- HYDRANT
- GATE VALVE

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2023 Street & Utility Improvements
City of Hopkins

Figure # 3
September 2022

BOLTON & MENK

11TH AVE S
10TH AVE S
9TH AVE S
1011
50
43.69' F-F
60'
CONCRETE PAVERS
NO PARKING
STOP
ROCKS
TREE GRATE
MULCH

1ST ST S EXISTING CONDITIONS

1ST ST S PROPOSED CONDITIONS

11 LF 3" STRUCTURAL LINER AND REPAIR INVERT

REMOVE STORM SEWER

LEGEND

- RECLAIM & RESURFACING
- 2" MILL & OVERLAY

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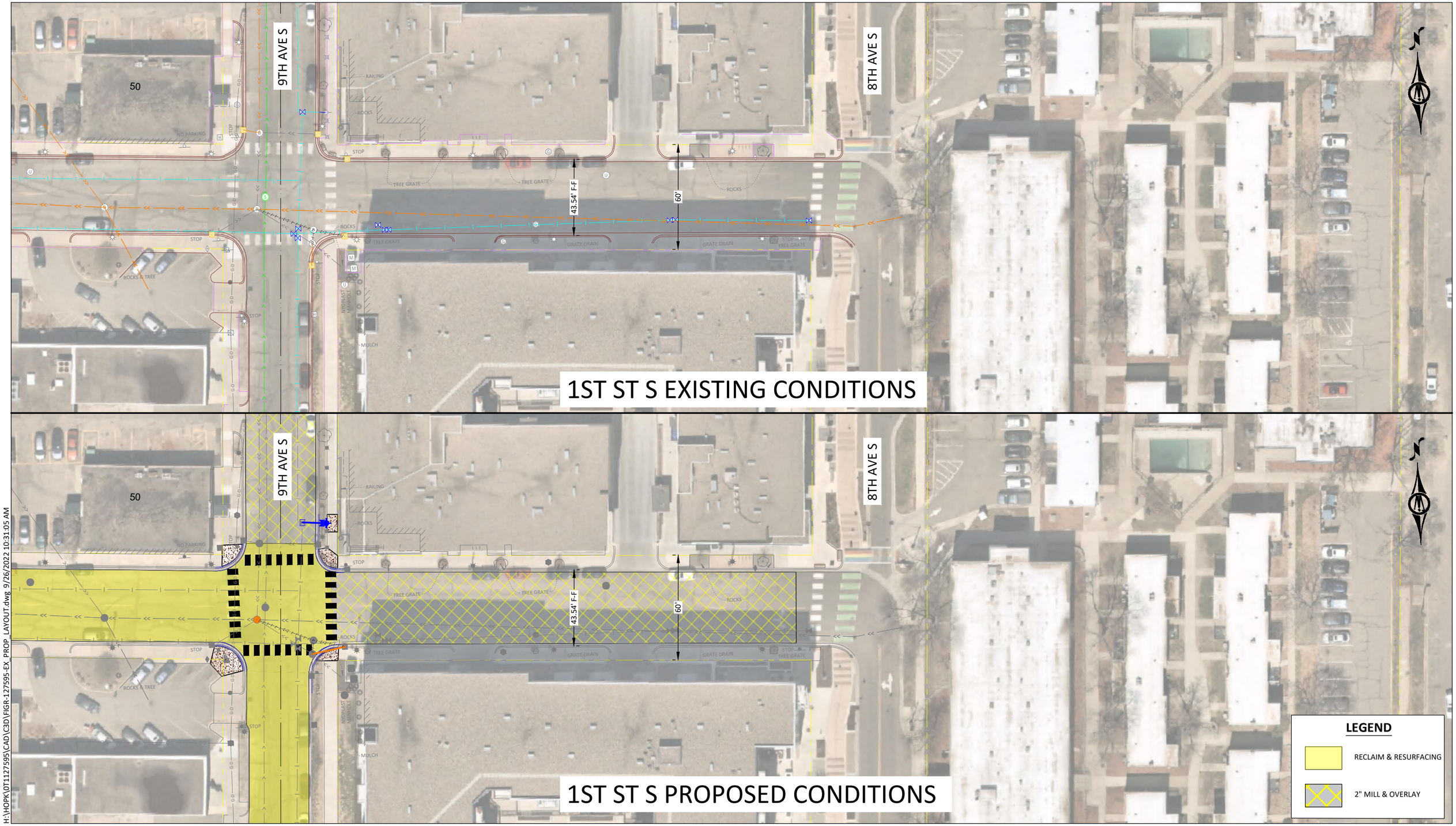

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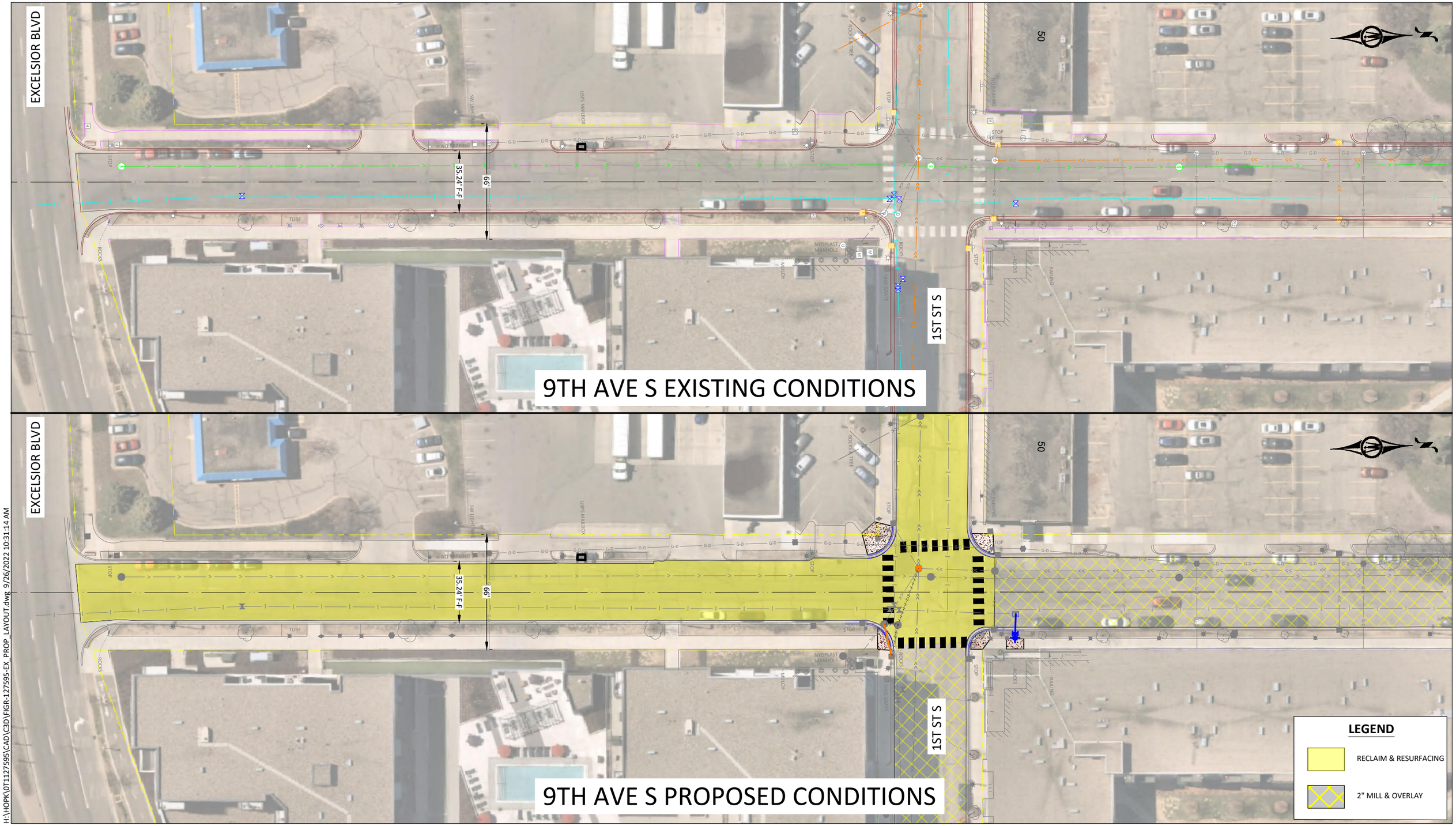
2023 Street & Utility Improvements
City of Hopkins

Figure # 5
September 2022

BOLTON & MENK



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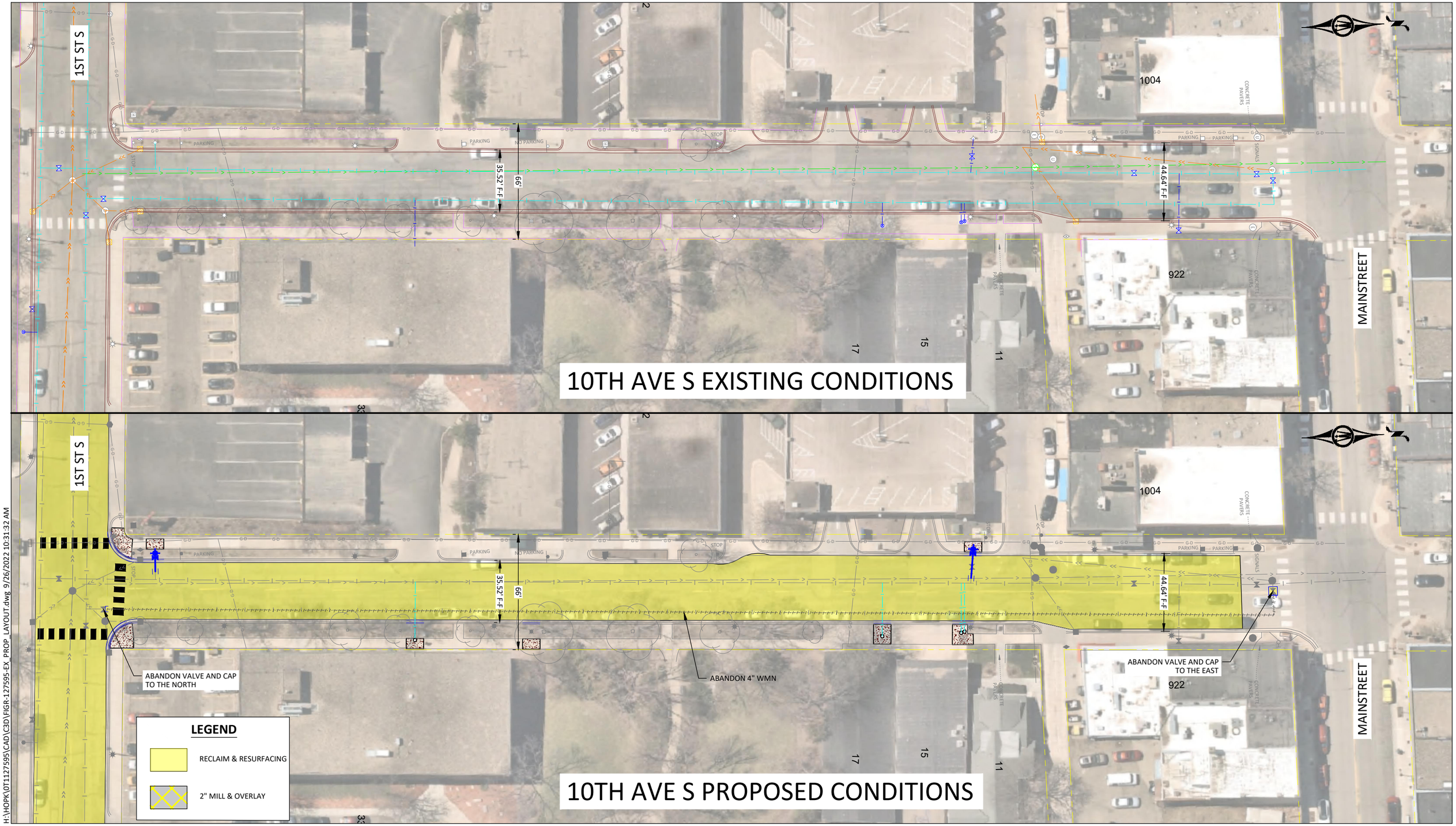
9TH AVE S EXISTING CONDITIONS

9TH AVE S PROPOSED CONDITIONS



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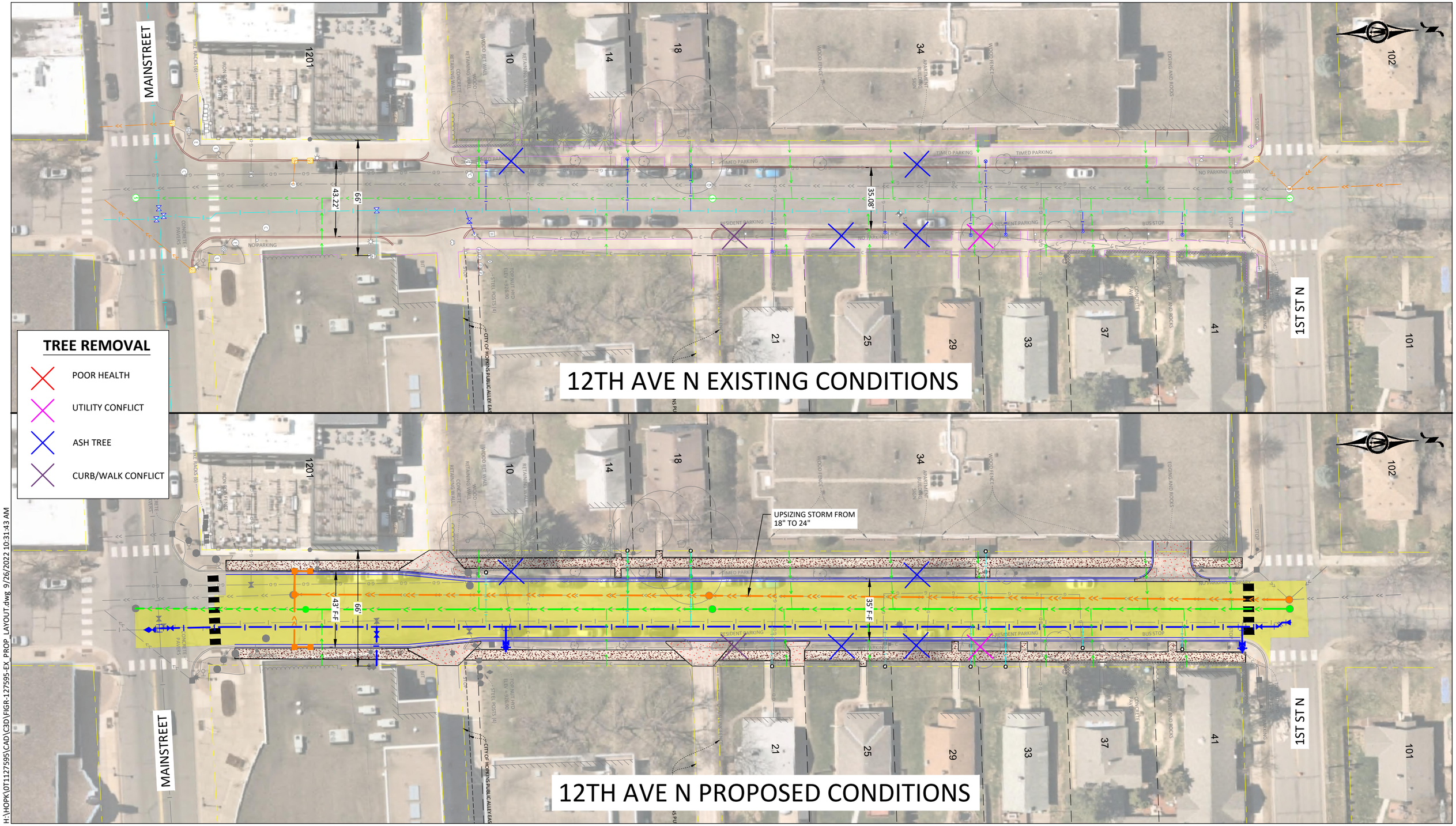

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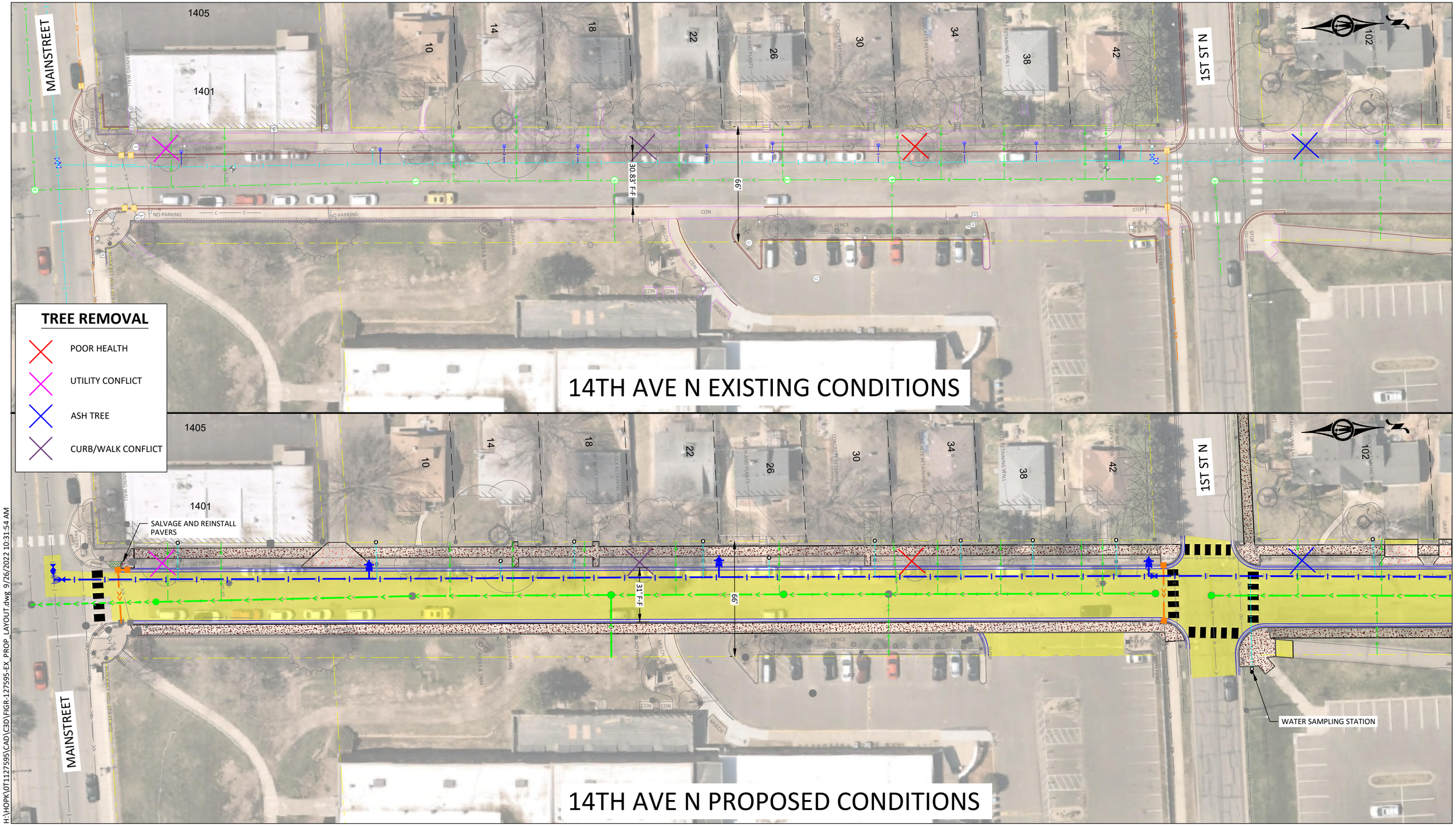

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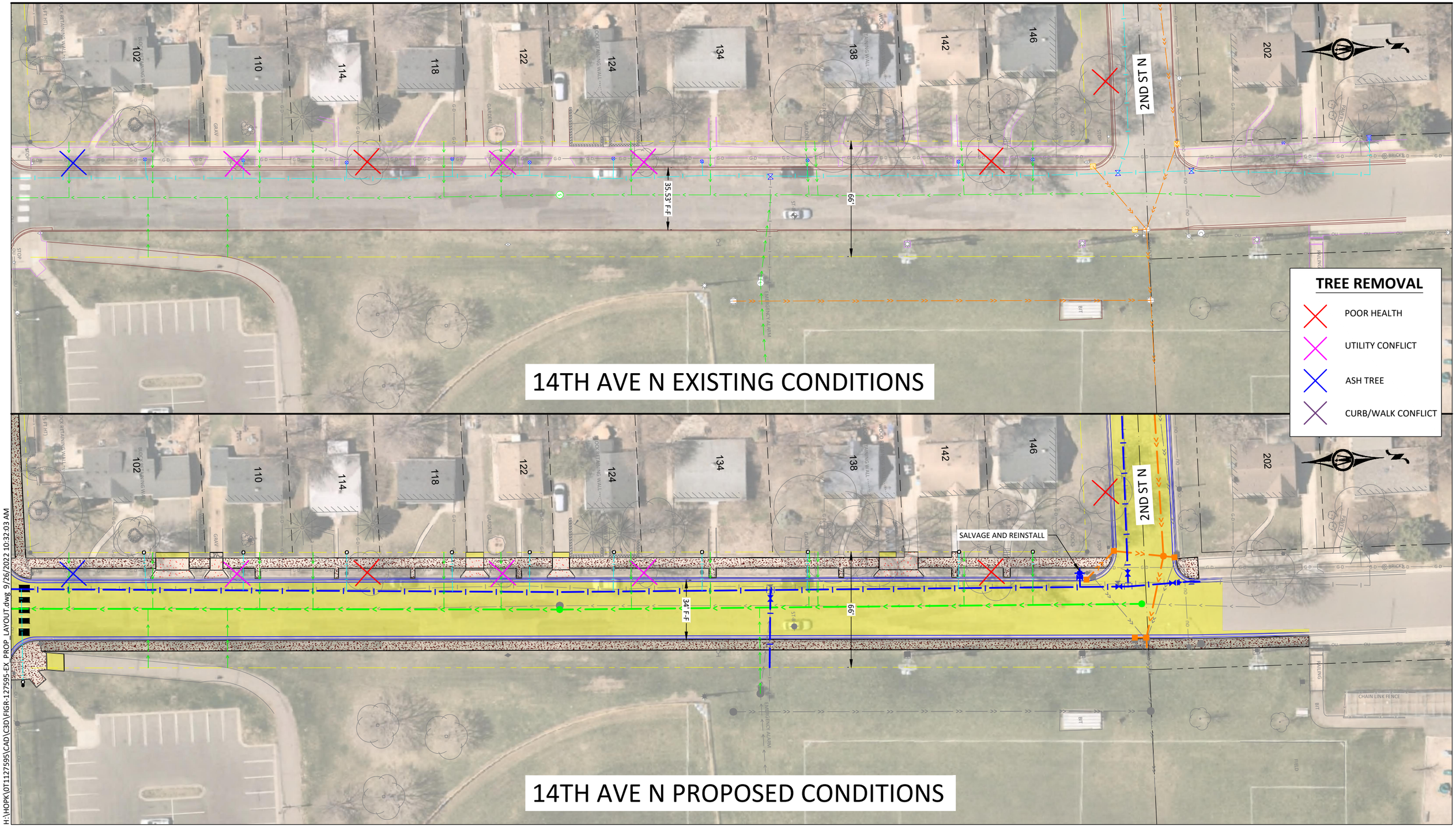
2023 Street & Utility Improvements
City of Hopkins

Figure # 10
September 2022

BOLTON & MENK



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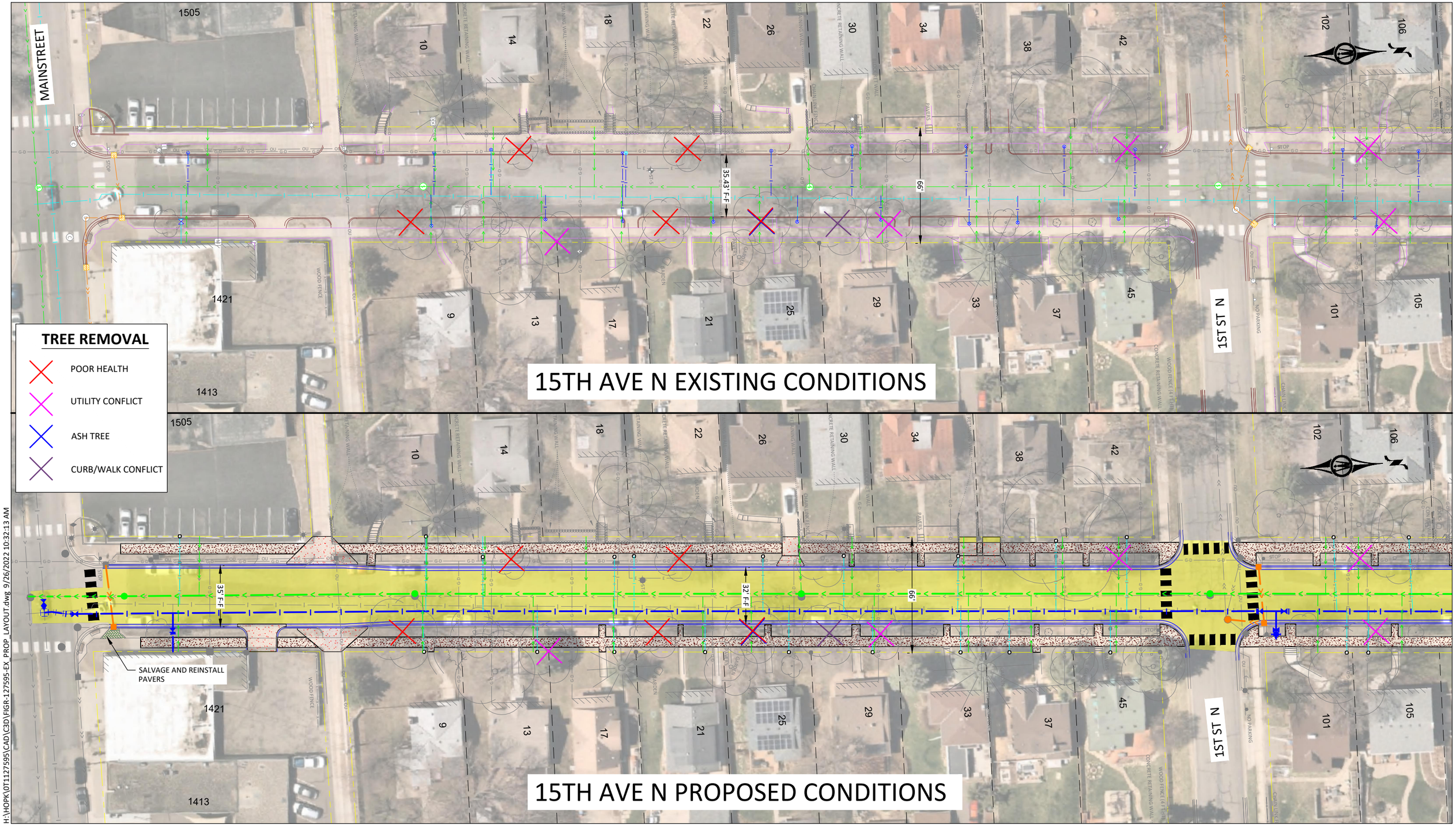

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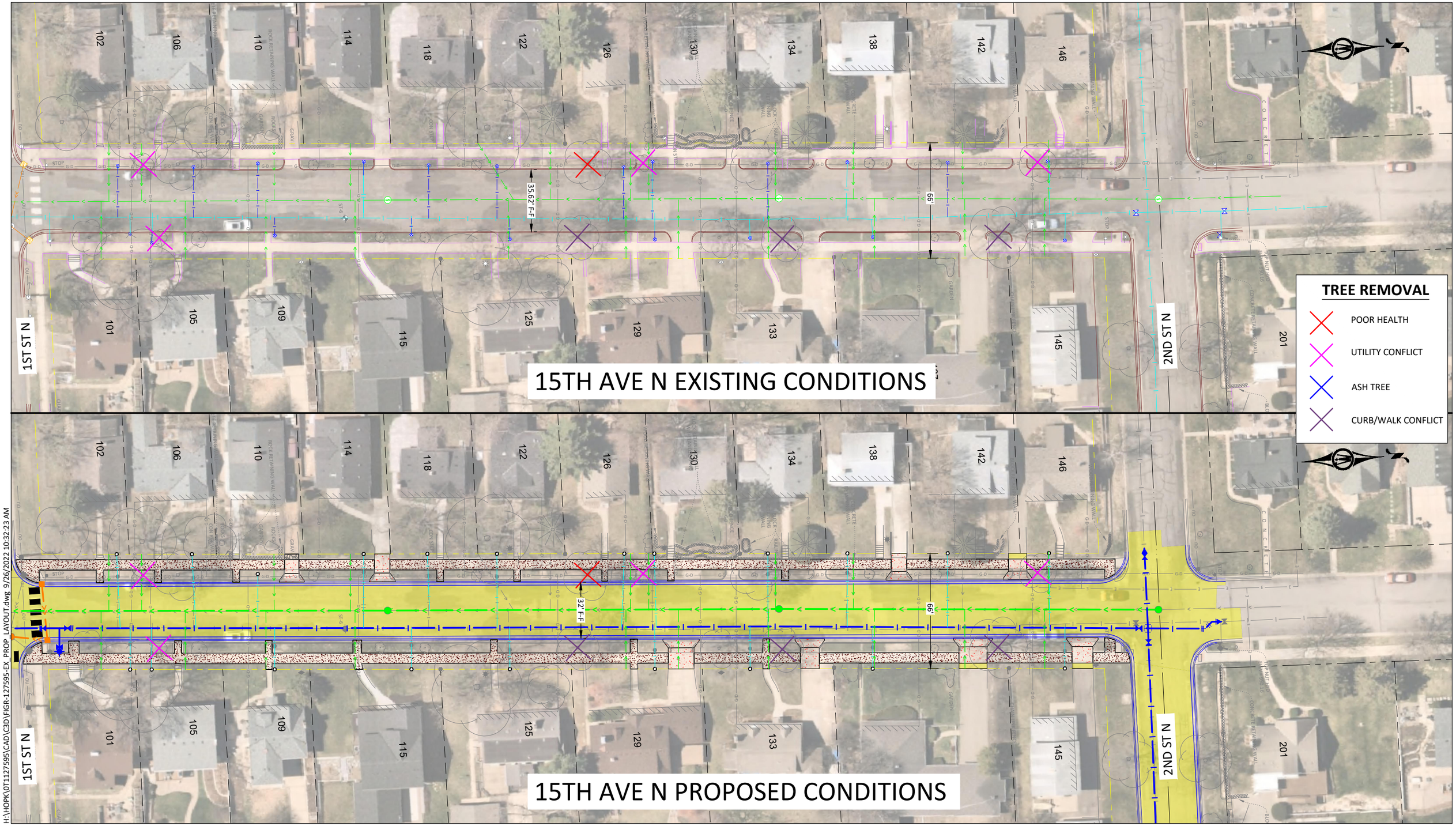

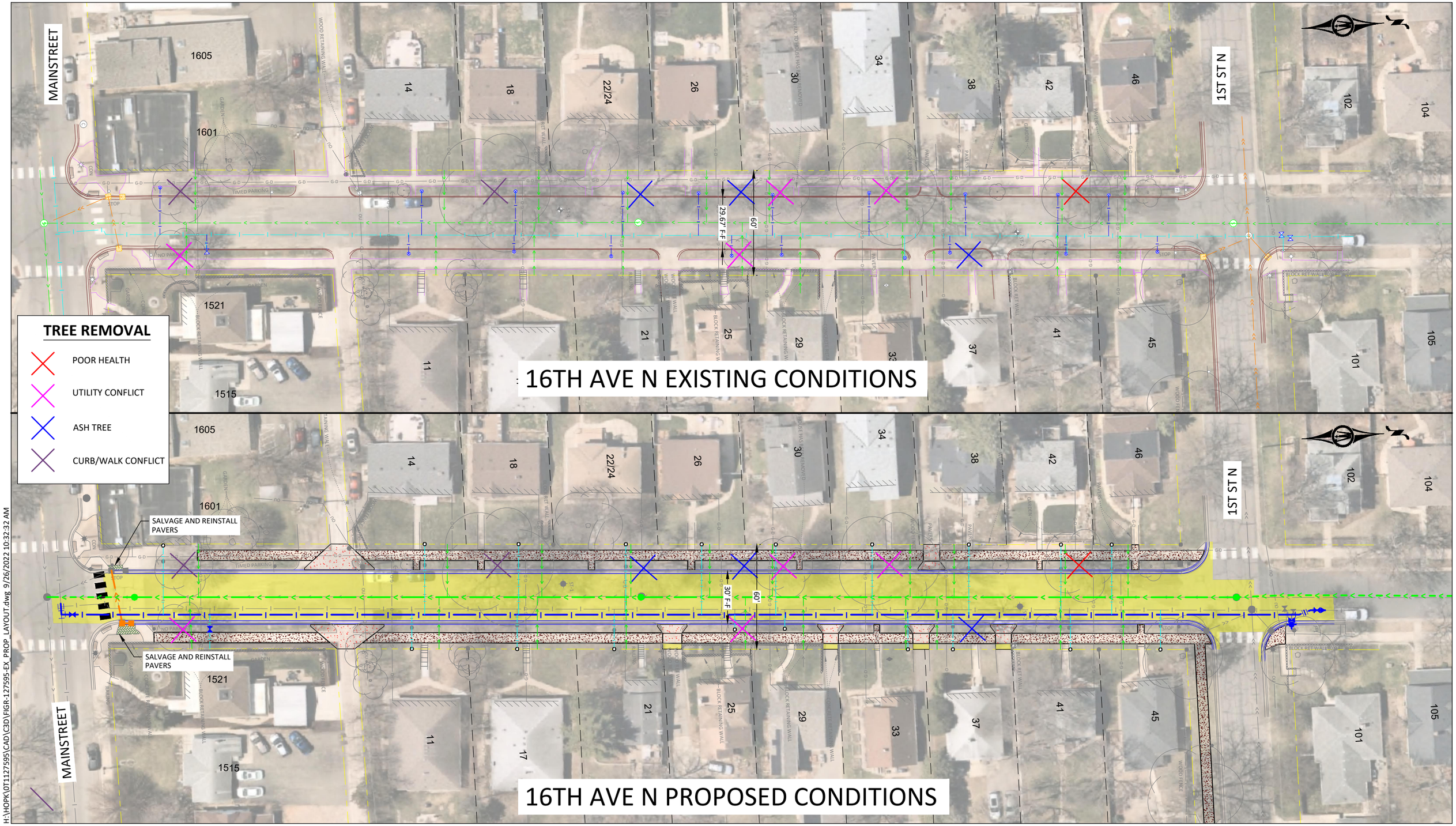

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TREE REMOVAL

- POOR HEALTH
- UTILITY CONFLICT
- ASH TREE
- CURB/WALK CONFLICT

2ND ST N

3RD ST N

LRT REGIONAL TRAIL

29.71' F-F

60'

16TH AVE N EXISTING CONDITIONS

30' F-F

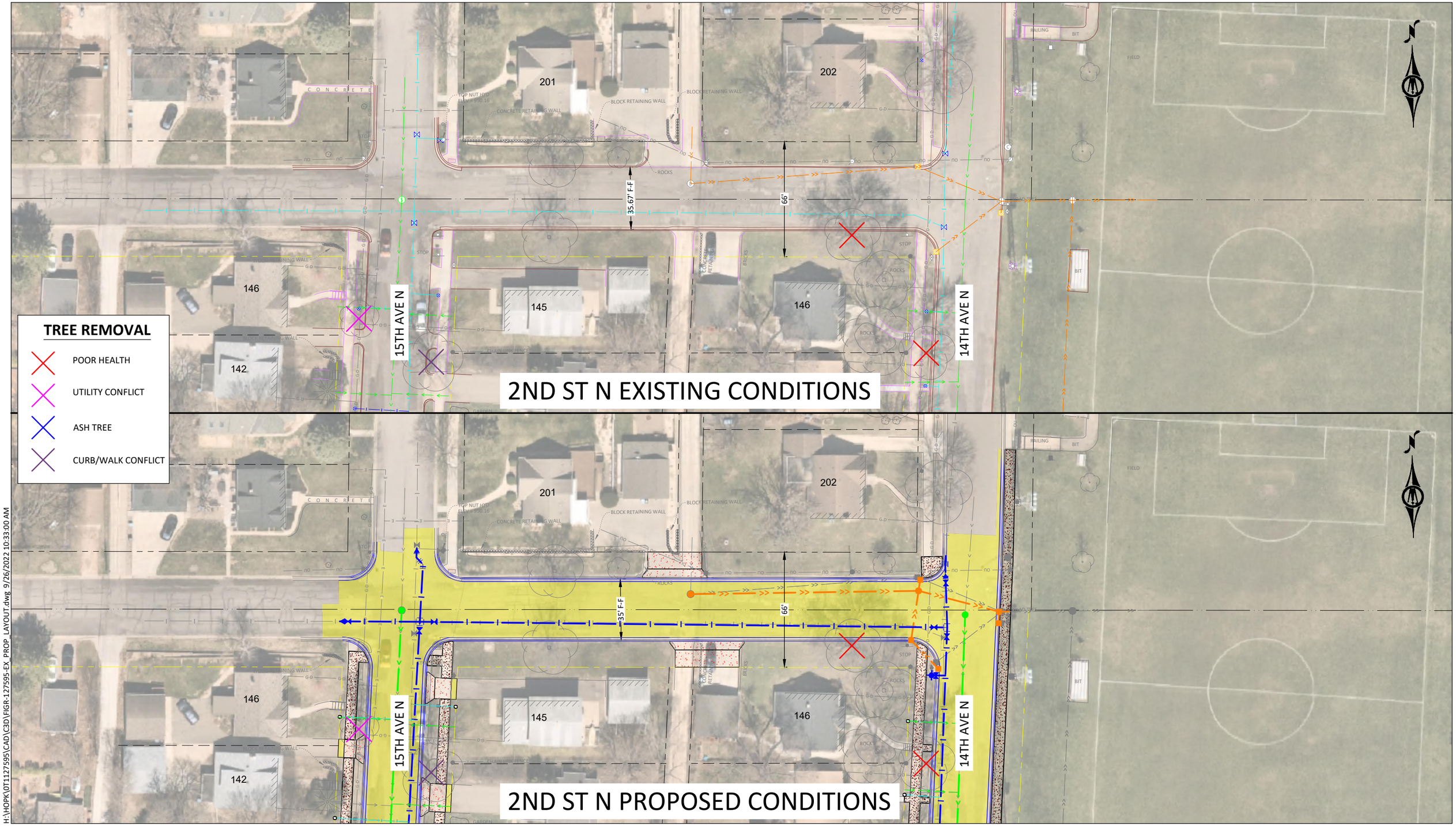
60'

SALVAGE AND REMOVE FENCE

16TH AVE N PROPOSED CONDITIONS

1ST ST N EXISTING CONDITIONS

1ST ST N PROPOSED CONDITIONS



Appendix C: Preliminary Assessment Roll

PRELIMINARY ASSESSMENT ROLL

2023 STREET & UTILITY IMPROVEMENTS
CITY OF HOPKINS, MN
CITY PROJECT NO. 2022-010
BMI PROJECT NO. 0T1.127595

PID	PROPERTY ADDRESS	TAXPAYER NAME	TAXPAYER ADDRESS (LINE 1)	TAXPAYER ADDRESS (LINE 2)	TAXPAYER ADDRESS (LINE 3)	PROPOSED STREET ASSESSMENT	PROPOSED WATER SERVICE ASSESSMENT	PROPOSED SEWER SERVICE ASSESSMENT	TOTAL PROPOSED ASSESSMENT
2411722310148	10 11TH AVENUE NORTH	CENTURY LINK	ATTN PROPERTY TAX DEPT	1025 ELDORADO BLVD	BROOMFIELD CO 80021	$ -	$ -	$ 2,850.00	$ 2,850.00
2411722310058	10 12TH AVENUE NORTH	ELIZABETH D WRIGHT	PETER HESSE	10 12TH AVE N	HOPKINS MN 55343	$ 5,018.54	$ 1,575.00	$ 1,325.00	$ 7,918.54
2411722310057	14 12TH AVENUE NORTH	STEVEN G BAIEL	14 12TH AVE N	HOPKINS MN 55343		$ 5,667.75	$ 1,575.00	$ 1,325.00	$ 8,567.75
2411722310056	18 12TH AVENUE NORTH	TIMOTHY J BUCKLEY	SUSAN FAY LUNQUIST BUCKLEY	18 12TH AVE N	HOPKINS MN 55343	$ 4,637.25	$ 1,575.00	$ 1,325.00	$ 7,537.25
2411722310049	21 12TH AVENUE NORTH	ROBERT M LEGRAND	BARBARA L LEGRAND	21 12TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722310050	25 12TH AVENUE NORTH	ADAM J MINTER	CHRISTINE H TAN	25 12TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722310051	29 12TH AVENUE NORTH	THOMAS B PROUT	29 12TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722310052	33 12TH AVENUE NORTH	MARK L & KATHRYN M HUCKA	33 12TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722310055	34 12TH AVENUE NORTH	GOLDCREST LLC	1137 CEDAR VIEW DR	MINNEAPOLIS MN 55405		$ 41,800.00	$ 6,190.00	$ 11,450.00	$ 59,440.00
2411722310053	37 12TH AVENUE NORTH	SUSAN GONYEA	37 12TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722310054	41 12TH AVENUE NORTH	SUMBA PROPERTIES LLC	37 12TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320096	10 14TH AVENUE NORTH	TNG INVESTMENT COMPANY	2710 OLDE WOOD CT	WAYZATA MN 55391		$ 6,384.98	$ 1,575.00	$ 1,325.00	$ 9,284.98
2411722320095	14 14TH AVENUE NORTH	JEFF R CARRIVEAU	14 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320094	18 14TH AVENUE NORTH	JEAN M RYAN	18 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320093	22 14TH AVENUE NORTH	AUSTIN HATCH & HANNAH HATCH	22 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320092	26 14TH AVENUE NORTH	ERIK S HAGENESS	EMILY A HAGENESS	26 14TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320138	27 14TH AVENUE NORTH	COMMUNITY HSG DEVEL CORP	C/O MASTER COMM GROUP	614 1ST ST N SUITE 100	MINNEAPOLIS MN 55401	$ 73,500.00	$ -	$ 3,000.00	$ 76,500.00
2411722320091	30 14TH AVENUE NORTH	SHARON EVANS	30 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320090	34 14TH AVENUE NORTH	MICHAEL HIGGINS/BETH HIGGINS	3088 GABLER AVE SE	BUFFALO MN 55313		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320089	38 14TH AVENUE NORTH	KELLY A KEMPF	38 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320088	42 14TH AVENUE NORTH	BRIANNA ROONEY	42 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320120	102 14TH AVENUE NORTH	MICHELLE WALLIN	MATTHEW GUSTAFSON	102 14TH AVE N	HOPKINS MN 55343	$ 10,305.00	$ 1,575.00	$ 1,325.00	$ 13,205.00
2411722320119	110 14TH AVENUE NORTH	THEODORE J BAUER	SARAH F AMES	110 14TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320118	114 14TH AVENUE NORTH	STEPHEN H ESH	114-14TH AVE NO	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320117	118 14TH AVENUE NORTH	WILLIAM C FREIBERG	122 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320116	122 14TH AVENUE NORTH	WILLIAM C FREIBERG	122 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320115	124 14TH AVENUE NORTH	PETER-JIM S REYNOLDS	124 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320114	134 14TH AVENUE NORTH	SHARON A HORGDAL	134 14TH AVE N	HOPKINS MN 55343		$ 7,728.75	$ 1,575.00	$ 1,325.00	$ 10,628.75
2411722320113	138 14TH AVENUE NORTH	ZOE LISTON	138 14TH AVE N	HOPKINS MN 55343		$ 7,728.75	$ 1,575.00	$ 1,325.00	$ 10,628.75
2411722320112	142 14TH AVENUE NORTH	SONIA KEENEY	142 14TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320111	146 14TH AVENUE NORTH	CAROLINE S KEMPFERT	146 14TH AVE NO	HOPKINS MN 55343		$ 5,636.84	$ 1,575.00	$ 1,325.00	$ 8,536.84
2411722230092	202 14TH AVENUE NORTH	MARLENE J STRACHOTA	202 14TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230157	208 14TH AVENUE NORTH	MARTHA J KRAWCZAK	RICHARD A STEIN	208 14TH AVE N	HOPKINS MN 55343	$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230090	214 14TH AVENUE NORTH	KRISTIN ROBERTSON NEMEC	214 14TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230089	222 14TH AVENUE NORTH	MARY KAY BROKAW	222 14TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230088	226 14TH AVENUE NORTH	DENNIS E DORE/BARBARA B DORE	226 14TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230153	236 14TH AVENUE NORTH	KELLY O'BRIEN DUFOUR	DANIEL JOHN FLEISSNER	236 14TH AVE N	HOPKINS MN 55343	$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230152	246 14TH AVENUE NORTH	SCOTT A WOLF	246 14TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722320102	9 15TH AVENUE NORTH	TNG INVESTMENT COMPANY	2710 OLDE WOOD CT	WAYZATA MN 55391		$ 6,928.05	$ 1,575.00	$ 1,325.00	$ 9,828.05
2411722320073	10 15TH AVENUE NORTH	BRIAN & KATHERINE E MILLER	10 15TH AVE N	HOPKINS MN 55343		$ 7,272.24	$ 1,575.00	$ 1,325.00	$ 10,172.24
2411722320103	13 15TH AVENUE NORTH	MITCH A & MYKEN EDWARDS	13 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320072	14 15TH AVENUE NORTH	MARK A & BETTY J PETERSON	14 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320104	17 15TH AVENUE NORTH	PAUL & NANCY JOHNSEN	17 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320071	18 15TH AVENUE NORTH	DONALD D NELSON	18 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320105	21 15TH AVENUE NORTH	THOMAS & PAMELA SCHULZ	21 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320070	22 15TH AVENUE NORTH	BRUCE H & MARY T BAUER	22-15TH AVE NO	HOPKINS MN 55343		$ 5,564.70	$ 1,575.00	$ 1,325.00	$ 8,464.70
2411722320106	25 15TH AVENUE NORTH	KYLE W BRESIN	ELYSSA B MC INTYRE	25 15TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320069	26 15TH AVENUE NORTH	DECHEN WANGMO	26 15TH AVE N	HOPKINS MN 55343		$ 4,740.30	$ 1,575.00	$ 1,325.00	$ 7,640.30
2411722320107	29 15TH AVENUE NORTH	LAURA L WOOD	DOUGLAS ALEXANDER WEIHER	29 15TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320068	30 15TH AVENUE NORTH	TINA ZELINKA	30 15TH AVE N	HOPKINS MN 55343		$ 4,122.00	$ 1,575.00	$ 1,325.00	$ 7,022.00
2411722320108	33 15TH AVENUE NORTH	LOREN W BROWN	2710 OLDE WOOD CT	WAYZATA MN 55391		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320067	34 15TH AVENUE NORTH	DAVID G PRCHAL	34 15TH AVE N	HOPKINS MN 55343		$ 6,183.00	$ 1,575.00	$ 1,325.00	$ 9,083.00
2411722320109	37 15TH AVENUE NORTH	ABBY G WOLF & CULLEN J PRICE	37 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50

PRELIMINARY ASSESSMENT ROLL

2023 STREET & UTILITY IMPROVEMENTS
CITY OF HOPKINS, MN
CITY PROJECT NO. 2022-010
BMI PROJECT NO. 0T1.127595

PID	PROPERTY ADDRESS	TAXPAYER NAME	TAXPAYER ADDRESS (LINE 1)	TAXPAYER ADDRESS (LINE 2)	TAXPAYER ADDRESS (LINE 3)	PROPOSED STREET ASSESSMENT	PROPOSED WATER SERVICE ASSESSMENT	PROPOSED SEWER SERVICE ASSESSMENT	TOTAL PROPOSED ASSESSMENT
2411722320066	38 15TH AVENUE NORTH	J ERICKSON & B LOESCHKE	38 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320065	42 15TH AVENUE NORTH	MARK J WEAVER	CHUENCHOM SUPUNNIAM	42 15TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320110	45 15TH AVENUE NORTH	KEVIN W THOMAS	45 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320121	101 15TH AVENUE NORTH	MATT D HOSCHMILLER	MARTHA E HOSCHMILLER	101 15TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320012	102 15TH AVENUE NORTH	TONY L ZAKARIASEN	102 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320122	105 15TH AVENUE NORTH	DEAN & VALERIE J SOLYNTJES	105 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320011	106 15TH AVENUE NORTH	JUDITH A PAKENHAM	106 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320123	109 15TH AVENUE NORTH	JESSICA GREEN	109 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320010	110 15TH AVENUE NORTH	JOHN W QUINN	110 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320009	114 15TH AVENUE NORTH	KIM & MIKE URAHN	114 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320124	115 15TH AVENUE NORTH	CRAIG M IHRY & AMANDA R IHRY	115 15TH AVE N	HOPKINS MN 55343		$ 7,728.75	$ 1,575.00	$ 1,325.00	$ 10,628.75
2411722320008	118 15TH AVENUE NORTH	SHANE REYNOLDS	118 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320007	122 15TH AVENUE NORTH	TERESA J GOETHEL	122 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320125	125 15TH AVENUE NORTH	VIRGINIA M MILLER	125-15TH AVE NO	HOPKINS MN 55343		$ 7,728.75	$ 1,575.00	$ 1,325.00	$ 10,628.75
2411722320006	126 15TH AVENUE NORTH	PAMELA S PARISH	126 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320126	129 15TH AVENUE NORTH	KEVIN WOLTER & AMY WOLTER	129 15TH AVE N	HOPKINS MN 55343		$ 7,728.75	$ 1,575.00	$ 1,325.00	$ 10,628.75
2411722320005	130 15TH AVENUE NORTH	AXEL KORNFUEHRER	GEORGIANNE A KORNFUEHRER	130 15TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320127	133 15TH AVENUE NORTH	MAXWELL GOODMANSON	133 15TH AVE N	HOPKINS MN 55343		$ 7,728.75	$ 1,575.00	$ 1,325.00	$ 10,628.75
2411722320004	134 15TH AVENUE NORTH	GREGORY BIRGY	MICHELE BIRGY	134 15TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320128	137 15TH AVENUE NORTH	JOAN N MARKHAM	137 15TH AVE N	HOPKINS MN 55343		$ 10,305.00	$ 1,575.00	$ 1,325.00	$ 13,205.00
2411722320003	138 15TH AVENUE NORTH	JOHN O'NEILL	138 15TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320002	142 15TH AVENUE NORTH	KATHLEEN & ROBERT DOUGLASS	142 15TH AVE N	HOPKINS MN 55343		$ 6,234.53	$ 1,575.00	$ 1,325.00	$ 9,134.53
2411722320129	145 15TH AVENUE NORTH	GERALD J TECHAM	145 15TH AVE NO	HOPKINS MN 55343		$ 5,710.00	$ 1,575.00	$ 1,325.00	$ 8,610.00
2411722320001	146 15TH AVENUE NORTH	M ZIEGLER & V ZIEGLER	146 15TH AVE N	HOPKINS MN 55343		$ 4,637.25	$ 1,575.00	$ 1,325.00	$ 7,537.25
2411722230093	201 15TH AVENUE NORTH	CHARLES W NEWCOMB	201 15TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230094	209 15TH AVENUE NORTH	DANIEL K LENZ	ARIEL J KLUGMAN LENZ	209 15TH AVE N	HOPKINS MN 55343	$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230095	217 15TH AVENUE NORTH	C R & S E JOHNSON	217 15TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230096	219 15TH AVENUE NORTH	JESSICA A KLUGMAN	219 15TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230097	225 15TH AVENUE NORTH	ALEXANDER W MARQUARDT	ABBEY E MARQUARDT	225 15TH AVE N	HOPKINS MN 55343	$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230098	231 15TH AVENUE NORTH	DHS HOLDINGS LLC	5156 W 95TH ST	BLOOMINGTON MN 55437		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722230099	233 15TH AVENUE NORTH	MARK HUIBREGTSE	233 15TH AVE N	HOPKINS MN 55343		$ 3,478.99	$ -	$ -	$ 3,478.99
2411722320078	11 16TH AVENUE NORTH	16TH AVENUE HOLDINGS LLC	3100 DARTMOUTH DR	EXCELSIOR MN 55331		$ 6,633.33	$ 1,575.00	$ 1,325.00	$ 9,533.33
2411722320052	14 16TH AVENUE NORTH	NEAL HULTSTRAND	WHITNEY HULTSTRAND	14 16TH AVE N	HOPKINS MN 55343	$ 6,923.93	$ 1,575.00	$ 1,325.00	$ 9,823.93
2411722320079	17 16TH AVENUE NORTH	16TH AVENUE HOLDINGS LLC	3100 DARTMOUTH DR	EXCELSIOR MN 55331		$ 6,341.70	$ 1,575.00	$ 1,325.00	$ 9,241.70
2411722320051	18 16TH AVENUE NORTH	CHRISTOPHER A HAZUKA	18 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320080	21 16TH AVENUE NORTH	MARIA MANSOUR	21 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320050	22 16TH AVENUE NORTH	DALE L BRAKEMEIER	5080 HOLIDAY RD	MINNETONKA MN 55345		$ 6,183.00	$ 1,575.00	$ 1,325.00	$ 9,083.00
2411722320081	25 16TH AVENUE NORTH	PETER B HIRSCH	25 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320049	26 16TH AVENUE NORTH	LYNN M HARRIS	26 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320082	29 16TH AVENUE NORTH	ANTHONY M POHLEN	ESTHER Q VAN STAM	29 16TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320241	30 16TH AVENUE NORTH	GREGORY J GOZOLA	CINDY A GOZOLA	30 16TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320083	33 16TH AVENUE NORTH	MATTHEW C KILANOWSKI	33 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320240	34 16TH AVENUE NORTH	J C FAHLSTROM & T D LAMA	34 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320084	37 16TH AVENUE NORTH	MARY A REITTER	37 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320047	38 16TH AVENUE NORTH	DENISE A ANDERSON	38 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320085	41 16TH AVENUE NORTH	CHERYL K. NEWSTOM	41 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320046	42 16TH AVENUE NORTH	RANDY W CHINN	NAOMI J CHINN	42 16TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320086	45 16TH AVENUE NORTH	CPY PROPERTIES II LLC	16506 LIMERICK LANE	MINNETONKA MN 55345		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722320045	46 16TH AVENUE NORTH	CATHERINE ORN	46 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722230065	201 16TH AVENUE NORTH	THOMAS C HAGMANN	LEZLIE E JOHNSON-HAGMANN	201 16TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722230045	202 16TH AVENUE NORTH	ALLISON KATE JENNESS	ANTHONY MILLER	202 16TH AVE N	HOPKINS MN 55343	$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722230066	205 16TH AVENUE NORTH	ISAAC ROVNER	LASHAY THOMPSON	205 16TH AVE N	HOPKINS MN 55343	$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230044	206 16TH AVENUE NORTH	BRODY CHIRPICH	206 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50

PRELIMINARY ASSESSMENT ROLL

2023 STREET & UTILITY IMPROVEMENTS
CITY OF HOPKINS, MN
CITY PROJECT NO. 2022-010
BMI PROJECT NO. 0T1.127595

PID	PROPERTY ADDRESS	TAXPAYER NAME	TAXPAYER ADDRESS (LINE 1)	TAXPAYER ADDRESS (LINE 2)	TAXPAYER ADDRESS (LINE 3)	PROPOSED STREET ASSESSMENT	PROPOSED WATER SERVICE ASSESSMENT	PROPOSED SEWER SERVICE ASSESSMENT	TOTAL PROPOSED ASSESSMENT
2411722230067	209 16TH AVENUE NORTH	KELLY E AHRENS	209 16TH AVE N	HOPKINS MN 55343		$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230043	210 16TH AVENUE NORTH	KELLY BRAY	210 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722230068	213 16TH AVENUE NORTH	KEVIN M DAVIS	213 16TH AVE N	HOPKINS MN 55343		$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230042	214 16TH AVENUE NORTH	SARAH HAVLIK	214 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722230069	217 16TH AVENUE NORTH	MICHAEL S DECOSSE	PATRICIA DECOSSE	217 16TH AVE N	HOPKINS MN 55343	$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230041	218 16TH AVENUE NORTH	WILLIAM R STEINKE	218 16TH AVE N	HOPKINS MN 55343		$ 5,152.50	$ 1,575.00	$ 1,325.00	$ 8,052.50
2411722230070	221 16TH AVENUE NORTH	DOUGLAS S & SANDRA G ORTIZ	221 16TH AVE N	HOPKINS MN 55343		$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230040	222 16TH AVENUE NORTH	MARY ANN & ROBERT FOLSTAD	222 16TH AVE N	HOPKINS MN 55343		$ 4,843.35	$ 1,575.00	$ 1,325.00	$ 7,743.35
2411722230071	225 16TH AVENUE NORTH	JOAN M STATELY	225 16TH AVE N	HOPKINS MN 55343		$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230039	226 16TH AVENUE NORTH	RONALD J FRERICKS	226-16TH AVE NO	HOPKINS MN 55343		$ 4,843.35	$ 1,575.00	$ 1,325.00	$ 7,743.35
2411722230072	229 16TH AVENUE NORTH	ROGER W MILLER	BARBARA A MILLER	229 16TH AVE N	HOPKINS MN 55343	$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230038	230 16TH AVENUE NORTH	TONY & KRISTIN MILLER	4131 18TH AVE S	MINNEAPOLIS MN 55407		$ 4,843.35	$ 1,575.00	$ 1,325.00	$ 7,743.35
2411722230073	233 16TH AVENUE NORTH	ADAM T STROM	233 16TH AVE N	HOPKINS MN 55343		$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230037	234 16TH AVENUE NORTH	STACEY JEANNE TUPPER	234 16TH AVE N	HOPKINS MN 55343		$ 4,843.35	$ 1,575.00	$ 1,325.00	$ 7,743.35
2411722230036	238 16TH AVENUE NORTH	JAMES G LEHAN	238 16TH AV N	HOPKINS MN 55343		$ 4,843.35	$ 1,575.00	$ 1,325.00	$ 7,743.35
2411722230074	241 16TH AVENUE NORTH	ARCHIE SKALBECK	241 16TH AVE N	HOPKINS MN 55343		$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230035	242 16TH AVENUE NORTH	RUTH M MICHL	242 16TH AVE N	HOPKINS MN 55343		$ 4,843.35	$ 1,575.00	$ 1,325.00	$ 7,743.35
2411722230075	245 16TH AVENUE NORTH	MICHAEL E & JOAN M OPITZ	245 16TH AVE N	HOPKINS MN 55343		$ 5,461.65	$ 1,575.00	$ 1,325.00	$ 8,361.65
2411722230034	246 16TH AVENUE NORTH	PLAZA HOLDINGS LLC	9617 OAK RIDGE TR	MINNETONKA MN 55305		$ 4,933.00	$ 1,575.00	$ 1,325.00	$ 7,833.00
2411722230154	1412 3RD STREET NORTH	MICHAEL HOCHMAN	ELIZABETH HOCHMAN	1412 3RD ST N	HOPKINS MN 55343	$ 3,478.99	$ -	$ -	$ 3,478.99
2411722310059	1201 MAINSTREET	WESTGATE 15750 VENTURE LLC	15750 VENTURE LA	EDEN PRAIRIE MN 55344		$ 7,700.00	$ -	$ -	$ 7,700.00
2411722320097	1401 MAINSTREET	PREMIUM MIDWEST PROPS LLC	1361 ROMEO CT	CHASKA MN 55318		$ 5,900.00	$ 4,810.00	$ 5,750.00	$ 16,460.00
2411722320101	1421 MAINSTREET	ZELLER ASSETS LLC	1762 WOODSTONE DR	VICTORIA MN 55386		$ 7,700.00	$ 5,570.00	$ 2,800.00	$ 16,070.00
2411722320074	1505 MAINSTREET	JEFFREY S KINNEY	1505 MAINSTREET	HOPKINS MN 55343		$ 8,200.00	$ 5,890.00	$ 2,800.00	$ 16,890.00
2411722320077	1521 MAINSTREET	SUSAN M GALLUCCI	1521 MAINSTREET	HOPKINS MN 55343		$ 6,100.00	$ 4,750.00	$ 2,700.00	$ 13,550.00
2411722320053	1601 MAINSTREET	HAN-SAN & MING-TZU LEE	C/O JASMINE GARDEN RESTAURAN	1601 MAINSTREET	HOPKINS MN 55343	$ 5,400.00	$ 6,010.00	$ 2,750.00	$ 14,160.00
							PRELIMINARY TOTAL AMOUNT TO BE ASSESSED		$ 1,184,328.82

Appendix D: Resident Questionnaires & Neighborhood Meetings

CITY OF HOPKINS

PUBLIC WORKS-ENGINEERING DIVISION

2023 STREET AND UTILITY IMPROVEMENT QUESTIONNAIRE

PLEASE EMAIL TO NICK AMATUCCIO: NICKAM@BOLTON-MENK.COM BY: JUNE 30, 2022

QUESTIONNAIRES CAN ALSO BE MAILED TO NICK AT 12224 NICOLLET AVE, BURNSVILLE, MN 55337

Street and utility improvements are proposed on 12th, 14th, 15th & 16th Ave N in 2023. This questionnaire is a valuable resource for the City in identifying issues to receive attention. Your comments are greatly appreciated.

1. DRAINAGE

Have you observed standing water in the street or your front yard after a significant rain? If so, where is it located?

_____

2. SANITARY SEWER, please indicate 'yes' with an X as applicable:

_____ We have NOT experienced problems with our sanitary sewer service.
_____ We have experienced problems or replaced our sewer service. Please describe:

_____

3. WATERMAIN, please indicate 'yes' with an X as applicable:

_____ We have NOT experienced problems with our water service.
_____ We have experienced problems or replaced our water service. Please describe:

_____

4. PEDESTRIAN SAFETY & FACILITIES

Are there any areas of concern with respect to pedestrian safety? If so, where?

_____

_____

5. IRRIGATION SYSTEM / INVISIBLE FENCE, please indicate 'yes' with an X as applicable:

_____ Yes, we have an irrigation system. _____ Yes, we have an invisible pet fence.

6. TREES / LANDSCAPING

Do you have concerns about the condition of trees or potential impacts to landscaping in your front yard? If so, describe.

_____
_____

7. GENERAL COMMENTS / QUESTIONS

Please describe any issues you suggest be considered as part of this project:

_____
_____
_____

The following information is optional but is useful if we have a question about your responses:

Name:_____ Phone #:_____

Address:_____ Email:_____

THANK YOU FOR YOUR RESPONSE!

Should you have any questions please contact Eric Klingbeil, City Engineer, at 952-548-6357 or eklingbeil@hopkinsmn.com or Nick Amatuccio at 612-965-3926 or nickam@bolton-menk.com

City of Hopkins
2023 Street & Utility Improvements
Neighborhood Meeting 1

BOLTON & MENK
Real People. Real Solutions.

Time: 5:30 PM
Date: September 14, 2022
Location: Hopkins City Hall - Council Chambers
Hopkins, MN

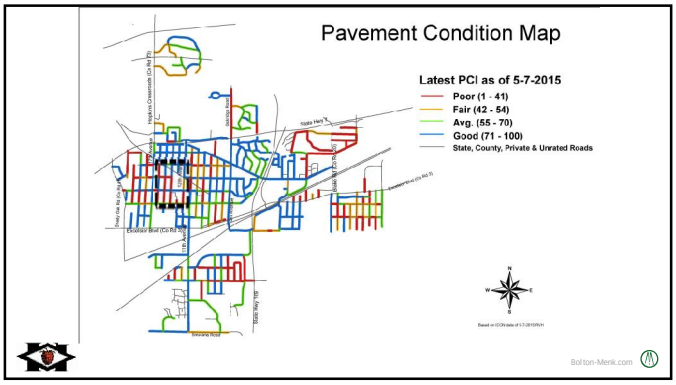
Name	Address	Phone or Email (Optional)
Roger and Barbara Miller	229 16th Ave N	952-936-0384
Doug Datta	206 15th Ave N	612-272-2598
Brandon Marknam	137 15th Ave N	952-938-4443
Deb Zeller (Zeller Studio)	1421 Mainstreet	952-201-8583
Mike DeCasse	217 16th Ave N	903-933-1017
Dave Prohal	34 15th Ave N	952-797-2536
Axel & Geargianne Komfuehrer	130 15th Ave N	952-933-6742
Adam Minter	25 12th Ave N	612-384-2283

Neighborhood Meeting #1
2023 Street & Utility Improvements

City of Hopkins
September 14, 2022

Bolton-Menk.com

1



Bolton-Menk.com

2

Project Development Process

Pavement Management Ratings & Utility Conditions

↓

Capital Improvements Plan (CIP)

↓

Preliminary Design / Feasibility Stage

↓

Final Design

↓

Construction

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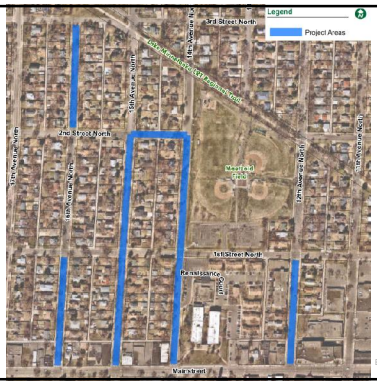
3

Project Area



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Resident Questionnaire Summary

30 Questionnaires Received

Most Common Responses:

- Sidewalk needed on 14th Ave N along Maetzold Field
  - Sidewalk is proposed to continue along the east side of 14th Ave N from 2nd St N to 1st St N
- Sidewalk needed on 1st St N between 14th Ave N and 15th Ave N
  - Sidewalk connection is proposed on the north side of 1st St N to fill in the gap between the alley and 14th Ave N
- Sidewalk with low spots that pond and build up ice in the winter
  - Sidewalks to be replaced on all streets with adequate grade for drainage and safety
- Drainage issues at 16th Ave N and Mainstreet
  - New curb and gutter and additional storm sewer catch basins as needed to improve drainage
- Some overgrown and unhealthy trees throughout the neighborhood
  - Trees within the boulevard and City right-of-way have been and will continue to be evaluated by the project team and the City Forester to determine trees that need to be removed as part of the project
  - The project team will try to protect and save as many healthy trees as possible throughout the project

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Existing Pavement Conditions

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6

Reconstructed Street Example

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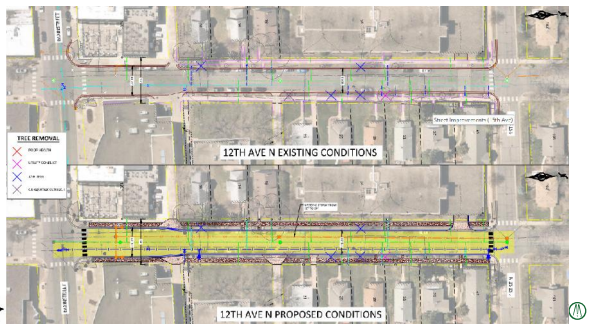
Street Improvements



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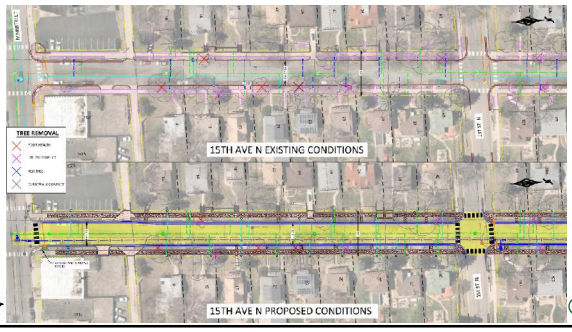
Street Improvements



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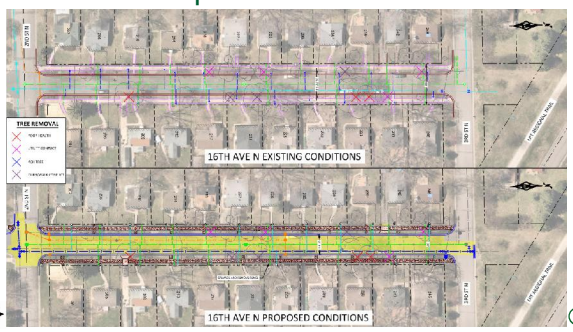
Street & Storm Improvements



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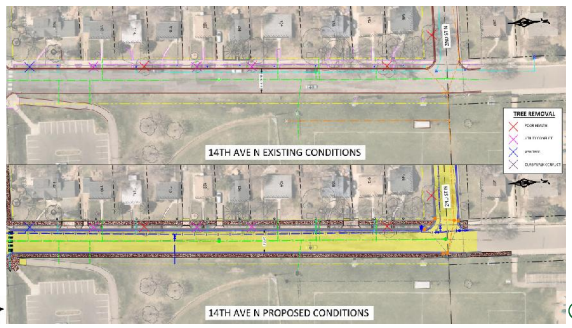
Pedestrian Improvements



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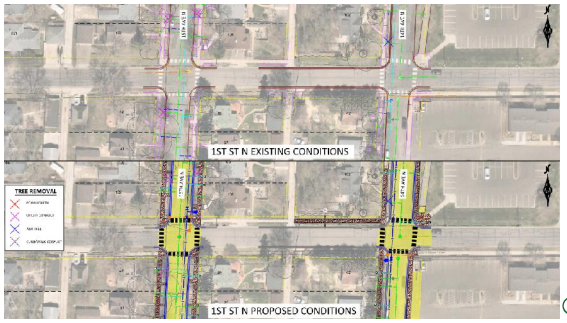
Pedestrian Improvements



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Utility Improvements – Sanitary Sewer

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Utility Improvements – Watermain

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Service Line Replacement

Water & sewer services to be replaced from City's main (in the street) to the right-of-way property line, about 10'-15' from the edge of road

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Boulevard Trees

Trees may be removed for one of the following reasons:

- Susceptible to disease or invasive species – Ash trees
- Poor condition – Dead, dying, leaning, etc.
- Conflict with utilities (Sewer and Water lines)
- Conflict with road construction or grading

Trees that are removed will be replaced with a tree at the end of the project.

Source: extension.umn.edu/tree-and-shrub-insects/emerald-ash-borers

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Special Assessment Policies

- Assessments are proposed for all reconstructed streets
  - Individual letters with estimated assessment amounts will be mailed in October
- Streets (Street Assessment)
  - 70% of the total street improvement cost
  - Varies for each property based on front footage
    - Front foot rate subject to cap
  - Streets with no adjacent property addresses (2nd St N) will be distributed one block north and south
- Utility Mains
  - No Assessments
- Utility Services (Utility Assessment)
  - 50% of as-bid, actual service costs
- Total Assessment = Utility Assessment + Street Assessment

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Special Assessment Caps

- 2023 Front Foot Rate Cap (Single Family Residential Properties)
  - $103.05 / front foot
- Front Footage Cap (Single Family Residential Properties)
  - Front footage counted up to 125 feet
- Caps do not apply to commercial properties or apartment buildings
  - Benefit Appraisals for these properties – lower amount used (appraisal vs. policy)
- Preliminary Assessment amounts will be mailed to each property receiving an assessment within the next month
  - Prior to Neighborhood Meeting #2 and the Public Improvement Hearing (City Council Meeting) in November

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Project Schedule (2022)

September 14 – Neighborhood Meeting 1
- Review Existing Conditions, present proposed improvements, collect input

October 4 – City Council Meeting
- Present Feasibility Report and Council calls for the public hearing

October 24 – Neighborhood Meeting 2
- Review of proposed improvements, review preliminary assessments, collect input

November 1 – City Council Meeting
- Council conducts public hearing on improvements and considers ordering final plans

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Project Schedule (2023)

January 17 – City Council Meeting
- Approve final plans and authorize bidding

February 10 – Open Bids

February 21 – City Council Meeting
- Council orders public hearing on assessments

Early March (Date TBD)– Neighborhood Meeting 3
- Review final assessments, final plans, collect input

March 21 – City Council Meeting
- Conduct public hearing on assessments and consider adopting assessments
- Award contract

May to October – Construction
- Construction could possibly start in April if weather conditions allow
- Final punch list and cleanup items may go into November and Spring of 2024

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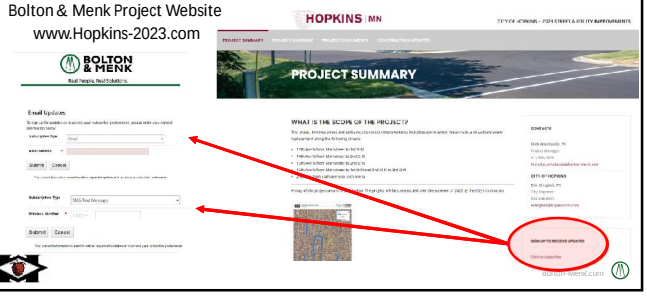
Project Communication

Bolton & Menk Project Website
www.Hopkins-2023.com



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Project Contacts

Nick Amatuccio, P.E. – Project Manager
- nickam@bolton-menk.com; 612-965-3926

Eric Klingbeil, P.E. – City Engineer
- eklingbeil@hopkinsmn.com; 952-548-6357

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Nick Amatuccio, PE
Project Manager

Eric Klingbeil, PE
City Engineer

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Real People. Real Solutions.

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Appendix E: Geotechnical Evaluation

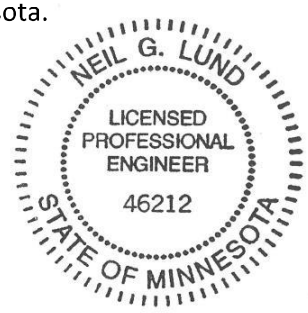
Geotechnical Evaluation Report

City of Hopkins 2023 Street and Utility Improvements Project
Hopkins, Minnesota

Prepared for

Bolton & Menk, Inc.

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.



Neil G. Lund, PE
Technical Manager, Senior Engineer
License Number: 46212
September 23, 2022

BRAUN INTERTEC
The Science You Build On.

Project B2204619

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

September 23, 2022 Project B2204619

Nick Amatuccio, PE
Bolton & Menk, Inc.
12224 Nicollet Avenue
Burnsville, MN 55337

Re: Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Improvements Project
Hopkins, Minnesota

Dear Mr. Amatuccio:

We are pleased to present this Geotechnical Evaluation for the proposed City of Hopkins 2023 Street and Utility Improvements Project in Hopkins, Minnesota.

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 Carter Reber at 507.298.0548 (CReber@braunintertec.com); or Neil Lund at 612.369.3163 (NLund@braunintertec.com).

Sincerely,

BRAUN INTERTEC CORPORATION

Carter Reber, EIT
Staff Engineer

Neil G. Lund, PE
Technical Manager, 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 2023 Street and Utility Improvements Project in Hopkins, Minnesota. Figure 1 provides the proposed locations of full reconstruction of city streets and utilities in solid blue. Figure 2 provides the proposed locations of reclamation or mill and overlay of city street pavement as dashed blue lines.

Figure 1. Streets Proposed for Reconstruction in 2023

Figure provided by Bolton & Menk, Inc., dated April 22, 2022

Figure 2: Streets Proposed for Rehabilitation in 2023

Figure 2 provided by Bolton & Menk, Inc., dated April 22, 2022

Proposed work on the project will include utility replacements, street reconstruction, and street reconstruction or rehabilitation.

Table 1. Project Description – 2023 Street and Utility Improvements Project

Project Component	Description	Source
Pavement type(s)	Bituminous	Assumed based on in-place pavements/City of Hopkins standards
Pavement loads	Residential streets in reconstruction area: 100,000 ESALs	Assumed – traffic data not available
	Rehabilitation area streets: 320,000 ESALs	MnDOT data for 1st Street South (11th Ave S to 8th Ave S) and State Aid ESAL Calculator. Assumed the most recent 2016 count for design with a growth rate of 0.5 percent due to declining historical AADT.
Grade changes	Streets < 1 foot	Assumed
Utilities	Storm sewer, water main and sanitary sewer replacement Maximum utility depth of approximately 14 feet	Bolton & Menk, Inc. (BMI)

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. Project Area Conditions

A.2.a. Zoning and Site Grades

The in-place streets are bituminous-surfaced with urban sections that include concrete curb and gutter.

The project area shown in Figure 1 is largely zoned as a mix of business and medium-density residential. The proposed rehabilitation shown in Figure 2 is in an area of mixed business and high-density residential.

Street grades in the reconstruction area generally increase from south to north at 12th, 15th, and 16th Avenues North, with grades at the boring locations between 929.9 to 948.6 feet above mean sea level (MSL).

Street grades in the rehabilitation area are generally flat at 9th and 10th Avenue South, while those along 1st Street South increase from west to east. According to MnTOPO, grades at 1st Street South are between 916.1 to 924.6 feet above mean sea level (MSL).

A.2.b. Pavement Surface Conditions (Rehabilitation Area)

In the rehabilitation area shown in Figure 2, pavement surface condition varied from poor to good. Major distresses included frequent patches, linear cracks, block cracks, edge cracks and fatigue cracks. Table 2 includes a summary of distresses for each block in this area with a qualitative judgement of overall surface condition based on the following general criteria:

- Excellent: Newer pavements with little to no cracking, all of which is non-structural (e.g. only linear thermal cracking). Maintenance requirements include crack seal or a sealcoat.

- Good: relatively new pavements with (typically sealed) linear cracks and isolated structural issues (fatigue cracking, potholes, edge cracking) of low severity. May require isolated patching and somewhat frequent crack sealing.

- Fair: Widespread linear cracking beginning to develop secondary cracks due to lack of maintenance. Structural cracking is somewhat common, occasionally severe, and has previously required patches for repair. The bituminous materials are still mostly intact and pavements can be repaired by mill and overlay.

- Poor: Frequent maintenance of structural issues is needed. Edges and curblines may be failing and breaking up; most linear cracks are too wide to be sealed. Frequent patches are usually present and there is a loss of bituminous material integrity. Pavements in poor condition can typically be repaired with reclamation or reconstruction.

- Very Poor: Pavements with significant areas of failure, including widespread structural cracking, potholes, and general breakup of the pavement that is too extensive for small-scale patching. Generally requires reconstruction, possibly with significant subgrade soil correction.

Table 2. Pavement Surface Condition Summary

Segment	Condition	Distress Summary	Photo
1st St S - 11th Ave S to 10th Ave S	Fair	Edge distress/patches, linear cracks	
1st St S - 10th Ave S to 9th Ave S	Fair/Poor	Patches, large areas of block cracks, edge distresses, linear cracks	
1st St S - 9th Ave S to 8th Ave S	Fair/Poor	Block cracks, linear cracks, patches	

Segment	Condition	Distress Summary	Photo
9th Ave S - 2nd St S to 1st St S	Fair/Poor	Linear, block, edge cracks including patches	
9th Ave S - 1st St S to Mainstreet	Fair	Patches, linear, edge cracks	
10th Ave S- 1st St S to Mainstreet	Poor	Frequent edge cracks and patches, deep linear cracks	

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 2023 Street and Utility Improvements Project in the City of Hopkins, Minnesota.

A.4. Background Information and Reference Documents

We reviewed the following information:

- Communications with BMI regarding the proposed street and utility rehabilitation.
- Aerial imagery of the site provided by BMI and available on Google Earth.
- Geologic map *C-45, Part A, Geologic Atlas of Hennepin County, Minnesota* prepared by the Minnesota Geological Survey, dated 2018.

A.5. Scope of Services

We performed our scope of services for the project in accordance with our Proposal for a Geotechnical Evaluation to BMI, dated May 5, 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. 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 11 standard penetration test (SPT) borings, denoted as ST-1 to ST-11, to a nominal depth of 14 1/2 to 20 feet below grade.
- Backfilling or sealing borings in accordance with Minnesota Department of Health (MDH) requirements.

- Coring and performing hand auger borings for six locations along 1st Street South, 9th Avenue South, and 10th Avenue South to provide recommendations on the feasibility of mill and overlay, reclamation, or an alternative rehabilitation strategy.

- Performing laboratory testing on select samples to aid in soil classification and engineering analysis.

- 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 material selection, subgrade preparation, and pavement and utility designs.

B. Results

B.1. Geologic Overview

Based on the review of geologic information and our experience in the area, soils will mostly consist of granular fill overlying native soils consisting of sand and gravel glacial outwash.

We based the geologic origins used in this report on the soil types and 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 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.

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

Table 3. Subsurface Profile Summary*

Strata	Soil Type - ASTM Classification*	Range of Penetration Resistances	Commentary and Details
Pavement section	---	---	▪ Between 3 1/2 inches and 9 inches of bituminous pavement over 4 to 12 inches of probable aggregate base. ▪ "Aggregate base" does not imply conformance with MnDOT standard specifications (e.g. Class 5). The aggregate base thicknesses should be considered approximate. ▪ See Section B.5 for information on proposed rehabilitation locations
Fill	SP-SM, SC	0 to 22 BPF**	▪ Mostly sandy soils; clayey fill soils in ST-1, ST-2, ST-4, ST-7, and ST-10. ▪ Extended to depths ranging from 2 to 7 feet where present. ▪ Generally moist.
Buried topsoil	SC, CL/OL	2 to 5 BPF	▪ Present in ST-3, ST-8, and ST-11; extends to depths of 4 to 9 feet below surface. ▪ Black, slightly organic clayey sand and lean clay.
Glaciofluvium	CL	3	▪ Present in ST-7, extending from 3 to 7 feet in depth. ▪ Moist, brown lean clay.
Glacial outwash	SP-SM	7 BPF to 50 BPF/ 4 inches	▪ Sandy soils of varying gravel content. ▪ Loose to very loose in ST-7, mostly medium dense to dense elsewhere. ▪ Brown, fine-to-medium grained. ▪ Generally moist. ▪ Glacial deposits may include cobbles and/or boulders.
Glacial Till	SC, CL	9 to 34	▪ Observed in ST-3, ST-4, ST-5, and ST-9. ▪ Brown clayey sand and lean clay. ▪ Generally moist. ▪ Stiff to hard. ▪ Glacial deposits may include cobbles and/or boulders.

*Abbreviations defined in the attached Descriptive Terminology of Soil sheet.

** BPF – blows per foot.

Table 4 provides a summary of the existing pavement section thicknesses that were encountered at each boring location while drilling.

Table 4. Pavement Section Thickness

Boring	Street	Pavement Section (inches)	Aggregate Base Section (inches)
ST-1	16th Avenue North	4	6
ST-2		4 1/2	5
ST-3		4	11
ST-4		5	7
ST-5	15th Avenue North	5	4
ST-6		9	4
ST-7		3 1/2	6
ST-8	14th Avenue North	4	6
ST-9		5	5
ST-10		7 1/2	8
ST-11	12th Avenue North	4	12

B.3. Groundwater

We did not observe groundwater while advancing our borings. It appears based on this and the apparent and tested moisture contents that groundwater is below the depths explored. Project planning should anticipate seasonal and annual fluctuations of groundwater.

B.4. Core and Hand Auger Boring Results

Table 5 summarizes the pavement cores and hand auger borings performed on the area noted in Figure 2. A photo log of the cores can be found in the report Appendix.

Table 5. Core and Hand Auger Boring Results

Boring/Core	Thickness (inches)		Base Description	Core Condition	Subgrade Soil Description	Notes
	HMA	Aggregate Base				
C-1	9 3/4	10	Sand and gravel	Bottom 2" low severity stripping	Poorly graded sand with silt, with gravel, brown, moist	9th Avenue S – 1st St to Mainstreet
C-2	10	7	Sand and gravel	Bottom 4" low severity stripping	Poorly graded sand with silt, with gravel, brown, moist	1st Street S – 9th Ave S to 8th Ave S
C-3	4 3/4	7	Sand and gravel	Good condition	Clayey sand with gravel, brown, moist	9th Avenue S
C-4	7 1/4	7 3/4	Recycled aggregate base	High-severity stripping, debonding of multiple chip seals, break 2" from top of pavement	Poorly graded sand with silt, fine-medium, brown, moist	1st Street S – 10th Ave S to 9th Ave S
C-5	4 1/2	7 3/4	Recycled aggregate base	High-severity stripping, debonding of multiple chip seals, break along vertical crack	Clayey sand with gravel, brown, moist	1st Street S – 11th Ave S to 10th Ave S. Taken on a sealed crack in pavement
C-6	4 3/4	11	Sand and gravel	Good condition	Poorly graded sand with silt, fine-grained, brown, moist	10th Avenue S – 1st St S to Mainstreet

B.5. Laboratory Test Results

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 Log of Boring Sheets attached in the Appendix present the results of the MC tests in the "MC" column.

We also performed wash loss (P200) tests (per ASTM D1140) and organic content (OC) tests (per ASTM D2974) on selected samples to determine the reusability of the material within trenches. The Log of Boring sheets in the Appendix show the results of the OC test in the "Tests or Remarks" column.

C. Recommendations

C.1. Design and Construction Discussion

C.1.a. Pavement Reuse – Reconstruction Project

If the pavements are to be reused or reclaimed, our pavement thickness measurements suggest a 9 to 10 inch or greater full-depth reclamation (FDR) depth can be used for materials in the reconstruction area. Variation of existing pavement depth should be anticipated.

We recommend implementing thorough quality control practices, including frequent sieve analyses, to achieve a desirable gradation of the reclaimed material. We also 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. Soil Reuse

Based on the soil boring results, we anticipate the subgrade soils will generally consist of poorly graded sand with silt, with less frequent clayey soils. It appears these soils can generally be reused based on composition and apparent moisture and organic contents. We provide comment on soil reuse in Table 6.

Table 6. Soil Reuse Considerations

Boring	Street	Soil Depth (ft)	Soil Type	Comment
ST-1	16th Avenue North	0.8 to 6	SC	Slightly organic fill; suitable for reuse with the recommended compaction and conditioning
ST-3		4 to 7	OL	9 percent organic content -- **Not suitable for reuse (remove and replace)**
ST-7	5th Avenue North	3 to 7	CL	Very soft glaciofluvial soils that may be susceptible to strength loss. Will likely need moisture conditioning to replace as utility trench backfill, or consider removal and replacement
ST-8	14th Avenue North	4 to 7	CL	Slightly organic buried topsoil with elevated moisture content. Consider removal and replacement along with underlying materials (see below)
		7 to 9	5	Very soft glaciofluvial soils that may be susceptible to strength loss. Will likely need moisture conditioning to replace as utility trench backfill, or consider removal and replacement along with overlying buried topsoil
ST-11	12th Avenue North	1.3 to 4	12	Slightly organic fill; suitable for reuse with the recommended compaction and conditioning

We recommend tapering zones of clayey soils adjacent to more granular material to avoid abrupt transitions that may result in differential movements at the surface. We do not recommend further mixing of clayey soils with granular soils during construction, and to the extent possible, soil types should be separated for reuse during excavation.

Although we did not note cobbles and boulders in our borings, glacial deposits contain them, and we did have one boring meet refusal at depth (ST-11). The presence of cobbles and boulders may slow excavation and limit the quantity of soil that can be reused efficiently in utility trenches.

C.1.c. 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 relatively granular soils that can be readily recompacted provided they are conditioned to the recommended moisture content. Table 6 provides comment on possible zones of soft or unstable backfill that may require additional work or removal and replacement.

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

C.1.d. Rehabilitation Area

In our opinion, the surface condition and/or pavement material conditions of the following segments will **not** be suitable for a partial-depth mill and overlay, and instead will require either full-depth mill and overlay or FDR:

- 1st Street S, from 11th Avenue S to 9th Avenue S
- 10th Avenue S, from 1st Street S to Mainstreet
- 9th Avenue S, from 2nd Street S to 1st Street S

The remaining segments (1st Street S from 9th Avenue S to 8th Avenue S, and 9th Avenue S from 1st Street S to Mainstreet) had much thicker bituminous pavement at approximately 10 inches and appeared to be in marginally better condition at the surface overall. The substantial pavement thickness makes a full-depth mill and overlay untenable; however, depending on the cost and service life that is acceptable to the City, a partial depth mill and overlay, or FDR are both viable approaches to rehabilitation:

- Preservation of these segments via partial depth mill and overlay will result in a service life of 10 to 12 years before similar rehabilitation is required. Additional work, such as repairing damaged

curb edges or patching large distresses, could help prolong the service life. We also note that our thickness measurements for each segment were based on a single core, and that there were numerous patches on each route, including those for utility connections on the 1st Street S segment that may not match the thickness of the mainline pavement.

- We expect FDR to have a 20-year service life. This work would require pre-milling prior to reclamation, which could be completed along with milling on adjoining streets; alternatively, reclamation can proceed at the surface to a depth of about 12 inches, after which the reclaim can be removed to accommodate new bituminous pavements.

The following table summarizes the above discussion.

Table 7. Repair Recommendations Summary

Segment	Start	End	Repair
1st St S	11th Ave S	10th Ave S	Full-depth mill and overlay or FDR based on surface condition, material condition
1st St S	10th Ave S	9th Ave S	Full-depth mill and overlay or FDR based on surface condition, material condition
1st St S	9th Ave S	8th Ave S	Due to bituminous pavement thickness and surface condition: FDR or partial-depth mill with supplemental repairs depending on service life expectations.
9th Ave S	2nd Street S	1st Street S	Full-depth mill and overlay or FDR based on surface condition
9th Ave S	1st Street S	Mainstreet	Due to bituminous pavement thickness and surface condition: FDR or partial-depth mill with supplemental repairs depending on service life expectations.
10th Ave S	1st Street S	Mainstreet	Full-depth mill and overlay or FDR based on surface condition, material condition

C.2. Utility Replacement

C.2.a. Excavation Oversizing

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

Care during excavation should be used to avoid disturbance of unsuitable soils in the side walls of the excavation.

C.2.b. Utility Subgrade Stabilization

We anticipate the soils at typical invert elevations for utilities will generally be suitable for utility support after the recommended subgrade preparation. Pockets of organic soils may be encountered near boring depths on ST-3, where we have recommended soil removal and replacement. We recommend soils containing organics greater than 5 percent or other unsuitable materials be removed from utility subgrade and replaced with MnDOT select granular (MnDOT 3149.2.B) as referenced in Table 8.

C.2.c. Excavated Slopes

Based on the borings, we anticipate many of the on-site soils in excavations will consist of granular glacial deposits and fill materials. These 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 1/2 V:H. 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. Selection, Placement and Compaction of Backfill

We recommend compacting soils per the requirements outlined in Table 8.

Table 8. Engineered Fill Materials*

Locations to Be Used	Engineered Fill Classification	Possible Soil Type Descriptions	Gradation	Additional Requirements
Pavement subgrades Trench backfill Embankment fill (areas with sandy soils)	MnDOT granular material	SP, SP-SM, SM	See MnDOT 3149.2.B	---
Pavement subgrades Trench backfill Embankment fill (areas with clayey soils soils)	MnDOT select grading	SP, SP-SM, SC, CL	MnDOT 2106	< 80% silt < 6% OC
Pavement subbase/drainage layer Non-frost-susceptible Utility bedding (dry or moist conditions)	Free draining Non-frost-susceptible fill MnDOT select granular	GP, GW, SP, SP-SM, SW	See MnDOT 3149.2.B	---

Locations to Be Used	Engineered Fill Classification	Possible Soil Type Descriptions	Gradation	Additional Requirements
Utility bedding (wet or unstable conditions)*	Coarse aggregate bedding	GP, GW, SP, SW	100% passing 1 1/2-inch sieve 0 to 10% passing #4 sieve See MnDOT 3149.G.2	---
Below landscaped surfaces, where subsidence is not a concern	Non-structural fill	---	100% passing 6-inch sieve	< 10% OC

*Thicknesses will vary by condition and alternative materials may be required; consult the geotechnical representative to evaluate utility excavations.

We recommend spreading engineered fill in loose lifts approximately 12 inches thick. We recommend compacting engineered fill in accordance with the criteria presented below in Table 9.

Table 9. Compaction Recommendations Summary

Reference	Relative Compaction, percent (ASTM D698 – Standard Proctor)	Moisture Content Variance from Optimum, percentage points*	
		< 12% Passing #200 Sieve (typically SP, SP-SM)	> 12% Passing #200 Sieve (typically CL, SC, ML, SM)
Within 3 feet of top of pavement subgrade	100	±3	-1 to +3
More than 3 feet below top of pavement subgrade	95	±3	±3
Below landscaped surfaces	90	±5	±4

*Alternatively, use the penetration index method (MnDOT Specification 2106.3.G.3) for soils with P200 < 20%. Consult MnDOT 2106.3.C for alternative moisture content controls when using Specified Density for soils.

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

C.2.e. Corrosion Potential

Most of the soil borings indicated the site predominantly consists of poorly graded sand with silts . We consider these soils non-to-slightly-corrosive to metallic conduits, and utilities should not require cathodic protection. The clayey soils on site are considered moderately corrosive and we recommend providing cathodic protection where needed or bedding utilities in granular soils in these areas.

C.3. New Pavements

C.3.a. Pavement Subgrade Preparation

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

1. Remove or reclaim and stockpile/windrow the existing pavement.

2. Once the roadway sections are cut to grade, have a geotechnical representative observe the excavated subgrade to evaluate if additional subgrade improvements are necessary. We recommend extending excavations outward from the bottom of the subgrade elevation at a slope of 1:1 V:H (vertical:horizontal) or flatter.

3. Scarify, moisture condition, and surface compact to at least 100 percent of Standard Proctor density (non-granular soils) or to the requirements of the MnDOT penetration index method (granular soils).

4. Place pavement engineered fill to grade where required and compact in accordance with Section C.2.d to bottom of pavement section.

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

C.3.b. Pavement Subgrade Test Roll

After preparing the subgrade as described above and prior to the placement of the sand subbase or aggregate base/reclaim, we recommend test rolling the subgrade soils with a fully loaded tandem-axle truck. We also recommend having a geotechnical representative observe the test roll. Areas that fail the test roll likely indicate soft or weak soils that will require additional correction work to support pavements.

The contractor should correct areas that display yielding or rutting greater as described in MnDOT Specification 2111. Possible options for subgrade correction include moisture conditioning and recompaction, subcutting and replacement with soil or crushed aggregate, chemical stabilization and/or geotextiles. We recommend performing a second test roll after the aggregate base material is in place prior to placing bituminous pavement.

C.3.c. Engineered Fill Materials and Compaction

The on-site soils with an organic content less than 5 percent and free of debris are suitable for reuse as trench backfill. The limited clayey soils encountered will be more difficult to compact if wet, allowed to become wet, or if spread and compacted over wet surfaces.

If imported material is to be used, Table 4 contains our recommendations for engineered fill. Similar materials compared to existing should be used to the degree possible; as such, we recommend that imported fill meet the requirements of MnDOT granular material in areas with sandy soils.

C.3.d. Pavement Design Sections, Full Depth Reconstruction

Our scope of services for this project did not include laboratory tests on subgrade soils to determine an R-value for pavement design. However, given the variable nature of typical subgrades, which were generally silty sand, we recommend using a design R-value of 30 for pavement design on the project. The contractor may need to perform limited removal of unsuitable or less suitable soils, such as those revealed by test roll, to achieve this value.

Based upon the estimated traffic loads and an R-value of 30, we recommend that new pavement sections in the reconstructed residential areas include the following materials and thicknesses per Table 10.

Table 10. Recommended Bituminous Pavement Thickness Design – Reconstruction Project, Residential Streets

Layer	Thickness (inches)	Material (Specification)
Bituminous wear course	2	SPWEA240C (MnDOT 2360)
Bituminous non-wear course	2	SPNWB230C (MnDOT 2360)
Aggregate base	8	Class 5 or 6 (3138); modified aggregate base (2215)
Subbase	12	Select granular (3149.2B2)
Approved subgrade	---	---

Some areas of each project will experience more frequent passenger car and/or truck traffic. This includes the entire rehabilitation project area and 12th Avenue North between Mainstreet and 1st Street N, which is designated a truck route and has a higher spring axle load posting (5 tons). For these segments, we recommend a change in bituminous materials as shown in Table 11.

Table 11. Recommended Bituminous Pavement Thickness Design – Rehabilitation Project and 12th Avenue N (Mainstreet to 1st Street N)

Layer	Thickness (inches)	Material (Specification)
Bituminous wear course	2	SPWEA340C (MnDOT 2360)
Bituminous non-wear course	2	SPNWB330C (MnDOT 2360)
Aggregate base	8	Class 5 or 6 (3138); modified aggregate base (2215)
Subbase	12	Select granular (3149.2B2)
Approved subgrade	---	---

The above pavement designs assume on a 20-year performance life. 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. Regarding bituminous pavements, 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.3.e. Pavement Materials Placement

We recommend placing the bituminous wear and non-wear courses to meet the requirements of MnDOT Specification 2360.

We recommend compacting the aggregate base to meet the requirements of MnDOT Specification 2211.3.D.2.c (Penetration Index Method for the dynamic cone penetrometer [DCP]).

C.4. Pavement Rehabilitation Areas

Milling should proceed per MnDOT Specification 2232, with bituminous paving in general accordance with MnDOT Specification 2360. For mill and overlay sections, we recommend a 2-inch mill depth and replacement with SPWEA240C.

For full-depth mill areas, we recommend replacement with the same pavements used for reconstruction as shown in Table 10. Prior to paving, the exposed aggregate base should be graded, recompacted and test rolled as described in Section C.3.b.

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 at 2 1/2- or 5-foot intervals in general accordance with ASTM D1586. The boring logs show the actual sample intervals and corresponding depths.

D.2. Exploration Logs

D.2.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.2.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.3. Material Classification and Testing

D.3.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.3.b. Laboratory Testing

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

D.4. Groundwater Measurements

The drillers checked for groundwater while advancing the penetration test borings, and again after auger withdrawal. We then filled the boreholes or allowed them to remain open for an extended period of observation, 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

125' 0 250'

SCALE: 1"= 250'

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11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Drawing Information

Project No:	B2204619
Drawing No:	B2204619
Drawn By:	JAG
Date Drawn:	6/1/22
Checked By:	NGL
Last Modified:	7/24/22

Project Information

City of Hopkins 2023 Street and Utility Project

Various Streets

Hopkins, Minnesota

Soil Boring Location Sketch

F:\2022\B2204619\CAD\B2204619.dwg,Geotech,7/25/2022 4:41:08 AM

DENOTES APPROXIMATE LOCATION OF PAVEMENT CORING AND HAND AUGER SOIL BORING

75' 0 150'

SCALE: 1"= 150'

F:\2022\B2204619\CAD\B2204619.dwg,Cores,7/25/2022 4:41:29 AM

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Project Information

City of Hopkins 2023 Street and Utility Project

Various Streets

Hopkins, Minnesota

Pavement Coring and Hand Auger Location Sketch

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-1**

LOCATION: See attached sketch

NORTHING: 148879 EASTING: 490429

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/09/22 | END DATE: 06/09/22

SURFACE ELEVATION: 929.9 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
929.1		PAVEMENT, 4 inches of bituminous over 6 inches of apparent aggregate base					
0.8		FILL: CLAYEY SAND (SC), fine to medium-grained, trace Gravel, black to brown, moist		1-1-1 (2) 2"		16	OC=3%
			5	5-8-12 (20) 8"			
923.9							
6.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, moist, medium dense to dense (GLACIAL OUTWASH)		36-18-23 (41) 6"			
			10	13-12-12 (24) 6"		4	
				12-15-18-18 (33) 12"			
915.4							
14.5		END OF BORING Boring immediately backfilled	15				Water not observed while drilling.
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-2**
LOCATION: See attached sketch
NORTHING: 149140 EASTING: 490460
DRILLER: M. Barber LOGGED BY: C. Reber
START DATE: 06/09/22 END DATE: 06/09/22
SURFACE ELEVATION: 934.4 ft RIG: GP-1 METHOD: 3 1/4" HSA
SURFACING: Asphalt WEATHER: Sunny

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
933.6		PAVEMENT, 4 1/2 inches of bituminous over 5 inches of apparent aggregate base					Reclaimed bituminous
0.8		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with SANDY LEAN CLAY layers, black, moist		1-1-1 (2) 6"			
930.4							
4.0		FILL: CLAYEY SAND (SC), brown, moist	5	1-2-4 (6) 6"		18	
927.4							
7.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, moist, dense (GLACIAL OUTWASH)		17-16-18 (34) 4"			
			10	23-19-26 (45) 6"			
				15-13-17-15 (30) 10"			
919.9							
14.5		END OF BORING Boring immediately backfilled	15				Water not observed while drilling.
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-3**
LOCATION: See attached sketch
NORTHING: 150063 EASTING: 490503
DRILLER: M. Barber LOGGED BY: C. Reber START DATE: 06/09/22 END DATE: 06/09/22
SURFACE ELEVATION: 945.3 ft RIG: GP-1 METHOD: 3 1/4" HSA SURFACING: Asphalt WEATHER: Sunny

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
944.1		PAVEMENT, 4 inches of bituminous over 11 inches of apparent aggregate base					
1.3		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, and Clay, brown, moist		3-2-2 (4) 4"			
941.3							
4.0		ORGANIC CLAY (OL), black, moist (BURIED TOPSOIL)	5	1-2-3 (5) 7"		39	OC=9%
938.3							
7.0		LEAN CLAY (CL), with Sand, brown, moist, medium to stiff (GLACIAL TILL)		2-3-3 (6) 10"			
			10	2-4-6 (10) 8"			
933.3							
12.0		CLAYEY SAND (SC), brown, moist, stiff (GLACIAL TILL)		5-5-4-4 (9) 15"		15	
930.8							
14.5		END OF BORING	15				Water not observed while drilling.
		Boring immediately backfilled					
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-4**

LOCATION: See attached sketch

NORTHING: 150388 EASTING: 490534

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/09/22 | END DATE: 06/09/22

SURFACE ELEVATION: 945.8 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
944.8		PAVEMENT, 5 inches of bituminous over 7 inches of apparent aggregate base					
1.0		FILL: CLAYEY SAND (SC), with Gravel, brown, moist		2-2-3 (5) 6"		9	
941.8							
4.0		CLAYEY SAND (SC), brown, moist, stiff (GLACIAL TILL)		4-6-7 (13) 8"			
938.8							
7.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, moist, medium dense to dense (GLACIAL OUTWASH)		8-16-23 (39) 3"			
				18-16-14 (30) 8"			
				15-12-13-13 (25) 10"			
931.3							
14.5		END OF BORING Boring immediately backfilled					Water not observed while drilling.

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-5**

LOCATION: See attached sketch

NORTHING: 148936 EASTING: 490759

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/09/22 | END DATE: 06/09/22

SURFACE ELEVATION: 936.4 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
935.6		PAVEMENT, 5 inches of bituminous over 4 inches of apparent aggregate base					
0.8		FILL: POORLY GRADED SAND with SILT (SP-SM), with Gravel, brown, moist		8-7-8 (15) 3"			
			5	16-14-13 (27) 1"			
929.4							
7.0		POORLY GRADED SAND with SILT (SP-SM), with Gravel, brown, moist, medium dense (GLACIAL OUTWASH)		10-9-9 (18) 4"			
			10	9-16-14 (30) 8"			
924.9							
11.5		CLAYEY SAND (SC), brown, moist, hard (GLACIAL TILL)		15-17-17-15 (34) 12"		8	
921.9							
14.5		END OF BORING	15				Water not observed while drilling.
		Boring immediately backfilled					
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-6**

LOCATION: See attached sketch

NORTHING: 149460 EASTING: 490810

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/09/22 | END DATE: 06/09/22

SURFACE ELEVATION: 943.8 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
942.7		PAVEMENT, 9 inches of bituminous over 4 inches of apparent aggregate base					
1.1		POORLY GRADED SAND with SILT and GRAVEL (SP-SM), brown, moist, medium dense to dense (GLACIAL OUTWASH)		4-6-10 (16) 6"			
			5	23-20-16 (36) 8"		3	
				13-11-10 (21) 7"			
			10	13-15-16 (31) 5"			
				10-14-15-17 (29) 10"			
929.3							
14.5		END OF BORING Boring immediately backfilled	15				Water not observed while drilling.
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-7**

LOCATION: See attached sketch

NORTHING: 149889 EASTING: 490822

DRILLER: M. Barber LOGGED BY: C. Reber START DATE: 06/10/22 END DATE: 06/10/22

SURFACE ELEVATION: 948.6 ft RIG: GP-1 METHOD: 3 1/4" HSA SURFACING: Asphalt WEATHER: Sunny

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
947.8		PAVEMENT, 3 1/2 inches of bituminous over 6 inches of apparent aggregate base					
0.8		FILL: CLAYEY SAND (SC), trace Gravel, black and brown, moist		0-0-0 WOH/18" 1"			
945.6							
3.0		LEAN CLAY (CL), brown, moist, soft (GLACIOFLUVIUM)					
			5	0-1-2 (3) 4"			
941.6							
7.0		POORLY GRADED SAND with SILT (SP-SM), with Gravel, brown, moist, loose to dense (GLACIAL OUTWASH)		2-3-4 (7) 6"			
			10	5-7-13 (20) 8"		4	
				15-10-13 (23) 10"			
			15	14-17-18 (35) 10"			
			20	13-10-12 (22) 6"			
927.6							
21.0		END OF BORING Boring immediately backfilled					Water not observed while drilling.
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-8**

LOCATION: See attached sketch

NORTHING: 149719 EASTING: 491152

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/10/22 | END DATE: 06/10/22

SURFACE ELEVATION: 929.0 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
928.2		PAVEMENT, 4 inches of bituminous over 6 inches of apparent aggregate base					
0.8		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, moist		13-12-10 (22) 6"			
925.0							
4.0		LEAN CLAY (CL), with Sand, slightly organic, black, moist (BURIED TOPSOIL)	5	3-1-1 (2) 7"		23	OC=3%
922.0							
7.0		LEAN CLAY (CL), brown, moist (GLACIOFLUVIUM)		0-0-0 WOH/18" 5"			
920.0							
9.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist, medium dense to dense (GLACIAL OUTWASH)	10	5-5-8 (13) 8"		5	P200=9%
				10-15-18-16 (33) 10"			
914.5							
14.5		END OF BORING Boring immediately backfilled	15				Water not observed while drilling.
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-9**

LOCATION: See attached sketch

NORTHING: 149194 EASTING: 491102

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/10/22 | END DATE: 06/10/22

SURFACE ELEVATION: 934.0 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
933.2		PAVEMENT, 5 inches of bituminous over 5 inches of apparent aggregate base					
0.8		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, moist		8-7-6 (13) 5"			
			5	7-6-7 (13) 2"			
928.0							
6.0		CLAYEY SAND (SC), trace Gravel, brown, moist, very stiff (GLACIAL TILL)		10-10-10 (20) 8"			
			10	10-11-12 (23) 10"			
				9-10-12 (22) 10"			
			15	8-12-13 (25) 6"			
			20	11-8-6 (14) 12"		9	
913.0							
21.0		END OF BORING Boring immediately backfilled					Water not observed while drilling.
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-10**

LOCATION: See attached sketch

NORTHING: 148695 EASTING: 491071

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/10/22 | END DATE: 06/10/22

SURFACE ELEVATION: 928.5 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
927.2		PAVEMENT, 7 1/2 inches of bituminous over 8 to 9 inches of apparent aggregate base				8	
1.3		FILL: CLAYEY SAND (SC), trace Gravel, brown, moist		3-6-8 (14) 8"			
926.5 2.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, moist, medium dense to dense (GLACIAL OUTWASH)	5	36-22-21 (43) 4"			
				22-19-21 (40) 8"			
			10	13-15-16 (31) 10"		5	P200=7%
				20-17-21-22 (38) 12"			
914.0 14.5		END OF BORING Boring immediately backfilled	15				Water not observed while drilling.
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

BORING: **ST-11**

LOCATION: See attached sketch

NORTHING: 149022 EASTING: 491764

DRILLER: M. Barber | LOGGED BY: C. Reber | START DATE: 06/10/22 | END DATE: 06/10/22

SURFACE ELEVATION: 927.1 ft | RIG: GP-1 | METHOD: 3 1/4" HSA | SURFACING: Asphalt | WEATHER: Sunny

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
925.8		PAVEMENT, 4 inches of bituminous over 12 inches of apparent aggregate base					
1.3		LEAN CLAY (CL), with Sand, slightly organic, black, moist (BURIED TOPSOIL)		0-1-1 (2) 5"			
923.1							
4.0		POORLY GRADED SAND with SILT (SP-SM), with Gravel, brown, moist, medium dense to very dense (GLACIAL OUTWASH)	5	4-9-11 (20) 1"			
				17-18-21 (39) 6"			
			10	23-21-19 (40) 8"			
				19-17-13 (30) 10"			
			15	22-25-18 (43) 7"		4	
906.8			20	47-50/4" (REF) 5"			
20.3		END OF BORING Boring immediately backfilled					Water not observed while drilling.
			25				
			30				

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LOG OF HAND AUGER

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

HAND AUGER: **C-1**
LOCATION: See attached sketch
DATUM:
NORTHING: EASTING:
OPERATOR: C. Reber | LOGGED BY: C. Reber | START DATE: 06/21/22 | END DATE: 06/21/22
SURFACE ELEVATION: | METHOD: Hand Auger | SURFACING: Asphalt | WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	Sample Blows Recovery	q_p tsf	MC %	Tests or Remarks
		PAVEMENT, 9 3/4 inches of bituminous over 9 1/2 inches of apparent aggregate base					Pavement was cored
1.6		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel					
2.8		END OF HAND AUGER Boring then backfilled with auger cuttings					Termination by refusal Water not observed while augering.
5							

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LOG OF HAND AUGER

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

HAND AUGER: **C-2**
LOCATION: See attached sketch
DATUM:
NORTHING: EASTING:
OPERATOR: C. Reber | LOGGED BY: C. Reber | START DATE: 06/21/22 | END DATE: 06/21/22
SURFACE ELEVATION: | METHOD: Hand Auger | SURFACING: Asphalt | WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	Sample Blows Recovery	q_p tsf	MC %	Tests or Remarks
		PAVEMENT, 10 inches of bituminous over 7 inches of apparent aggregate base					Pavement was cored
1.4		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel					
3.5		END OF HAND AUGER Boring then backfilled with auger cuttings					Water not observed while augering.
5							

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LOG OF HAND AUGER

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

HAND AUGER: **C-3**
LOCATION: See attached sketch
DATUM:
NORTHING: EASTING:
OPERATOR: C. Reber | LOGGED BY: C. Reber | START DATE: 06/21/22 | END DATE: 06/21/22
SURFACE ELEVATION: | METHOD: Hand Auger | SURFACING: Asphalt | WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	Sample Blows Recovery	q_p tsf	MC %	Tests or Remarks
		PAVEMENT, 4 3/4 inches of bituminous over 7 inches of apparent aggregate base					Pavement was cored
1.3							
1.5		CLAYEY SAND with GRAVEL (SC), brown, moist					Termination by refusal
		END OF HAND AUGER					Water not observed while augering.
		Boring then backfilled with auger cuttings					
			5				

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LOG OF HAND AUGER

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

HAND AUGER: **C-4**
LOCATION: See attached sketch
DATUM:
NORTHING: EASTING:
OPERATOR: C. Reber | LOGGED BY: C. Reber | START DATE: 06/21/22 | END DATE: 06/21/22
SURFACE ELEVATION: | METHOD: Hand Auger | SURFACING: Asphalt | WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	Sample Blows Recovery	q_p tsf	MC %	Tests or Remarks
		PAVEMENT, 7 1/4 inches of bituminous over 7 3/4 inches of apparent aggregate base					Pavement was cored
1.3							
1.5		CLAYEY SAND with GRAVEL (SC), brown, moist					
		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, moist					
3.0							
		END OF HAND AUGER					Water not observed while augering.
		Boring then backfilled with auger cuttings					
5							

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LOG OF HAND AUGER

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

HAND AUGER: **C-5**
LOCATION: See attached sketch
DATUM:
NORTHING: EASTING:
OPERATOR: C. Reber | LOGGED BY: C. Reber | START DATE: 06/21/22 | END DATE: 06/21/22
SURFACE ELEVATION: | METHOD: Hand Auger | SURFACING: Asphalt | WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	Sample Blows Recovery	q_p tsf	MC %	Tests or Remarks
		PAVEMENT, 4 1/2 inches of bituminous over 7 3/4 inches of apparent aggregate base					Pavement was cored
1.0		CLAYEY SAND with GRAVEL (SC), brown, moist					Termination by refusal
1.5		END OF HAND AUGER					Water not observed while augering.
		Boring then backfilled with auger cuttings					
			5				

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LOG OF HAND AUGER

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2204619
Geotechnical Evaluation
City of Hopkins 2023 Street and Utility Project
Various Streets
Hopkins, Minnesota

HAND AUGER: **C-6**
LOCATION: See attached sketch
DATUM:
NORTHING: EASTING:
OPERATOR: C. Reber | LOGGED BY: C. Reber | START DATE: 06/21/22 | END DATE: 06/21/22
SURFACE ELEVATION: | METHOD: Hand Auger | SURFACING: Asphalt | WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	Sample Blows Recovery	q_p tsf	MC %	Tests or Remarks
		PAVEMENT, 4 3/4 inches of bituminous over 11 inches of apparent aggregate base					Pavement was cored
1.3		LEAN CLAY with SAND (CL), brown, moist					
2.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, moist					
3.0		END OF HAND AUGER Boring then backfilled with auger cuttings					Water not observed while augering.
5							

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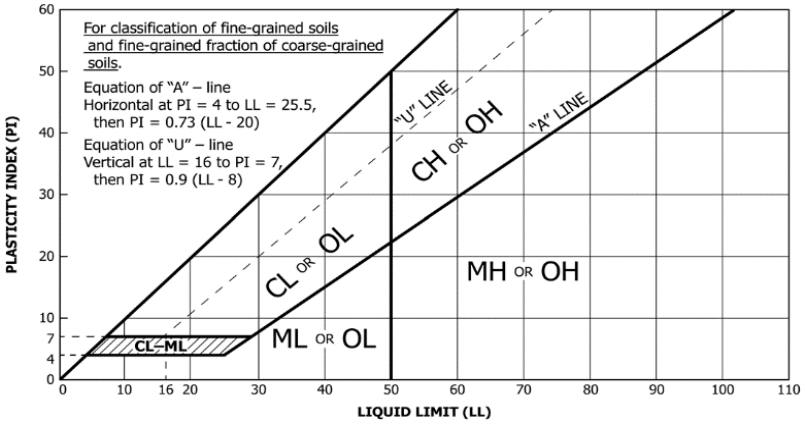
Descriptive Terminology of Soil

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 (▽▼).

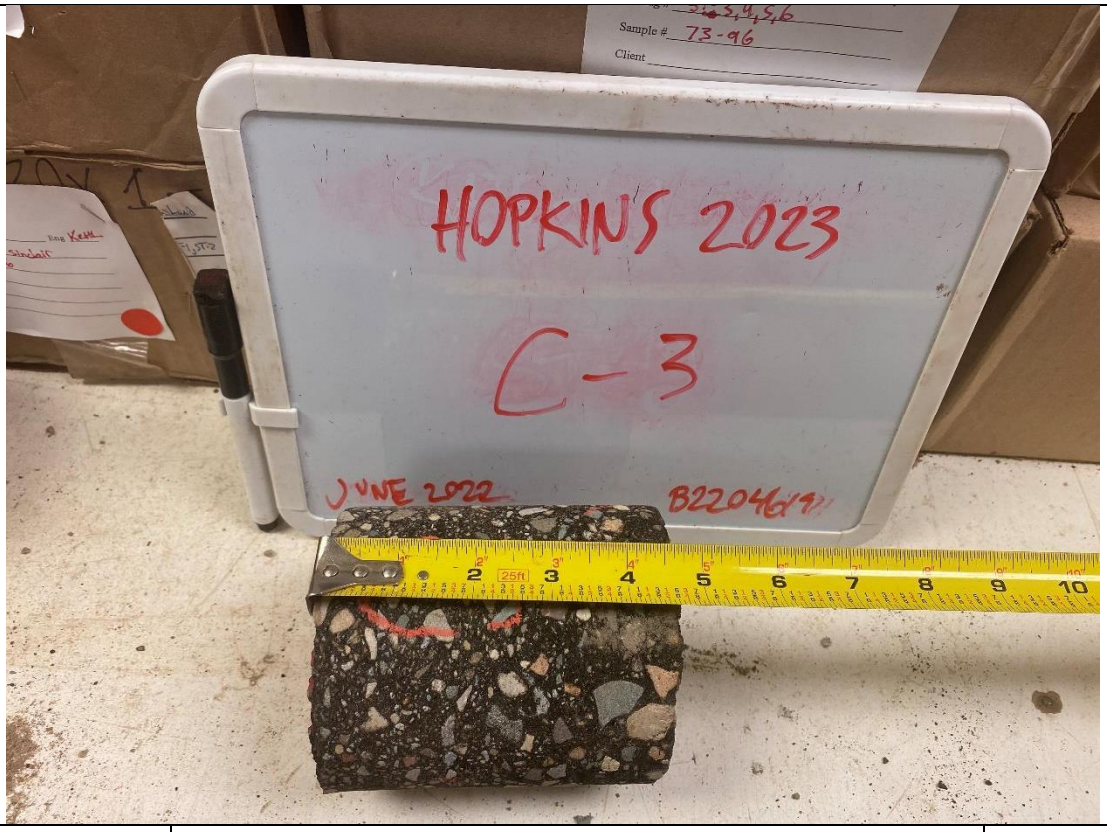
Sample Symbols

Standard Penetration Test
Modified California (MC)
Auger
Grab Sample
Rock Core
Thinwall (TW)/Shelby Tube (SH)
Texas Cone Penetrometer
Dynamic Cone Penetrometer

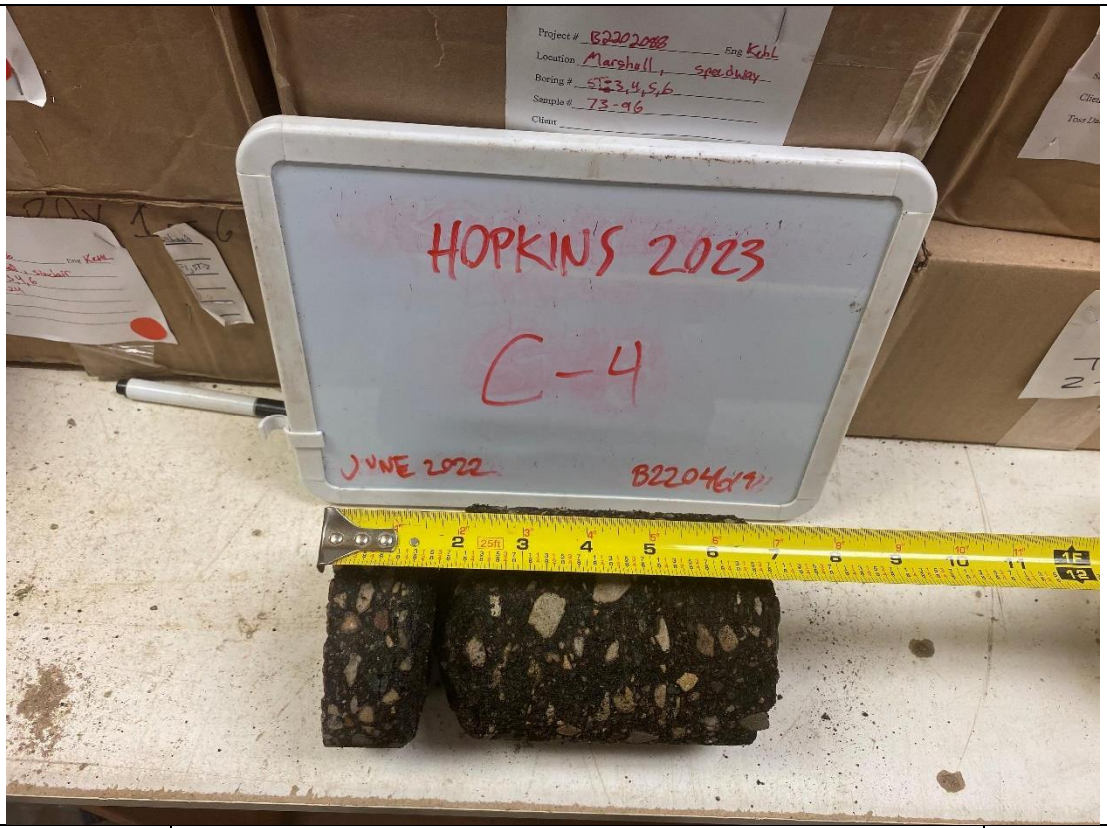
5/2021

Core #:	C-1		Project: B2204619
Pavement thickness:	9 3/4 inches	Agg base thickness:	9 1/2 inches
Facility:	City of Hopkins – 9th Avenue S		
Date:	June 2022		
Notes:			

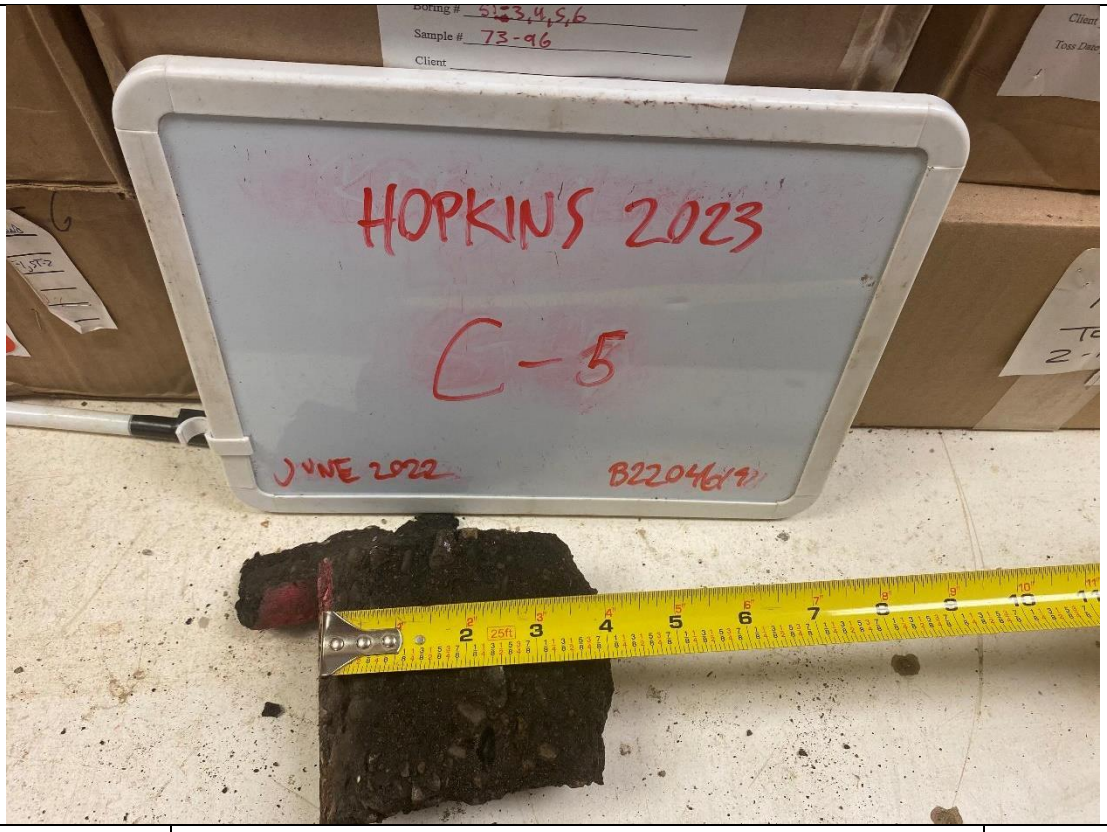
Core #:	C-2		Project: B2204619
Pavement thickness	10 inches	Agg base thickness:	7 inches
Facility:	City of Hopkins – 1st Street S		
Date:	June 2022		
Notes:			



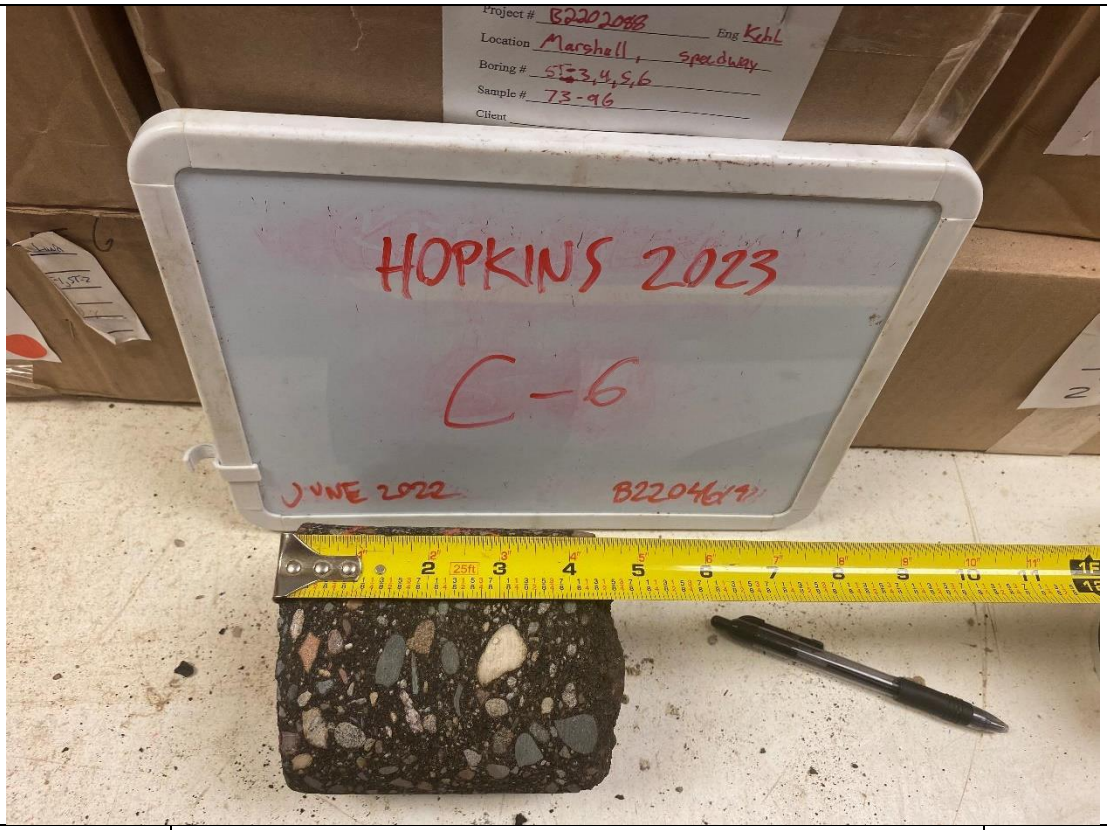
Core #:	C-3			Project: B2204619
Pavement thickness:	4 3/4 inches	Agg base thickness:	7 inches	BRAUN INTERTEC
Facility:	City of Hopkins – 9th Avenue S			
Date:	June 2022			
Notes:				



Core #:	C-4			Project: B2204619
Pavement thickness	7 1/4 inches	Agg base thickness:	7 3/4 inches	BRAUN INTERTEC
Facility:	City of Hopkins – 1st Street S			
Date:	June 2022			
Notes:				



Core #:	C-5			Project: B2204619
Pavement thickness:	4 1/2 inches	Agg base thickness:	7 3/4 inches	BRAUN INTERTEC
Facility:	City of Hopkins – 1st Street S			
Date:	June 2022			
Notes:				



Core #:	C-6			Project: B2204619
Pavement thickness	4 3/4 inches	Agg base thickness:	11 inches	BRAUN INTERTEC
Facility:	City of Hopkins – 10th Avenue S			
Date:	June 2022			
Notes:				

Services Provided:

Civil and Municipal Engineering

Water and Wastewater Engineering

Traffic and Transportation Engineering

Aviation Planning and Engineering

Water Resources Engineering

Coatings Inspection Services

Landscape Architecture Services

Surveying and Mapping

Geographic Information System Services

Funding Assistance

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