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Preliminary Engineering Report

2020 Street & Utility Improvements

City of Plainview, Minnesota

November 2019

Submitted by:
Bolton & Menk, Inc.
2900 43rd Street NW
Suite 100
Rochester, MN 55901
P: 507-208-4332
F: 507-208-4155

Certification

Preliminary Engineering Report

for

2020 Street & Utility Improvements Project
Hillcrest Second Addition (Reconstruction)
2nd Street Southwest (Reconstruction)
Various Streets (Mill & Overlay)

City of Plainview, Minnesota
H19.119930

November 2019

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.

By: 

Brian P. Malm, P.E.
License No. 40457

Date: November 7, 2019

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Appendix

I. EXECUTIVE SUMMARY

The existing streets and utilities considered for reconstruction in the project area are deteriorated and in need of repair. If the infrastructure is not replaced, maintenance costs will continue to rise as further deterioration occurs and the street and utilities will ultimately fail.

The proposed improvements include the replacement of the existing storm sewer, sanitary sewer, and watermain systems, bituminous surface, curb and gutter and driveway aprons. The reconstruction would also include subsurface drains to improve drainage along the street and provide an outlet for sump pumps.

There are existing streets in the project area at the age and condition that is suitable for an overlay. If an overlay is not completed, the pavement will continue to deteriorate to a point that the only effective maintenance will be reconstruction. The proposed improvements include milling the edge of the pavement (at the lip of the curb) and paving a 2-inch overlay on the existing pavement. This work will also include necessary repairs to manhole chimneys, replacing failed catch basins, replacing old castings, and adjusting structures to a new surface elevation.

The estimated cost to reconstruct a section of Hillcrest Second Addition, which is considered the Base Project, is approximately $1,505,705.00.

The estimated cost to reconstruct 2nd Street Southwest, which is considered Alternate No. 1, is approximately $846,707.50.

The estimated cost to mill and overlay various streets, which is considered Alternate No. 2, is approximately $867,915.00.

Funding for the proposed improvements is proposed to come from the sale of bonds, to be repaid through enterprise funds and ad valorem funds.

From an engineering standpoint, the proposed improvements are feasible, cost effective, necessary, and can be best accomplished by letting competitive bids for the work. We recommend that the Council accept this Preliminary Engineering Report, select which combination of the base project and alternate projects the City would like to construct, and order the improvements.

The proposed schedule for the project is as follows:

- Design, Approvals, and Bidding – November 2019 to March 2020
- Award of Contract – April 2020
- Construction – May 2020 to June 2021

II. PROJECT INTRODUCTION

This Preliminary Engineering Report considers street and utility reconstruction for two areas in town and a mill and overlay on various streets throughout town.

The proposed project is being broken into three sections for consideration and funding evaluation. These sections include:

- A portion of Hillcrest Second Addition (Full Reconstruction) – Base Project
- 2nd Street Southwest (Full Reconstruction) – Alternate No. 1
- Various Streets (Mill and Overlay) – Alternate No. 2

Bolton and Menk prepared an Infrastructure Management Plan (dated August 2019) which was instrumental in developing the approach to infrastructure rehabilitation and reconstruction. The Infrastructure Management Plan based recommendations for reconstruction on three separate categories: utility condition only, street condition only, and a combination of utility and street condition. The Reconstruction Project Map within the plan depicts the reconstruction recommendations. The reconstruction component of this report focuses on areas that have a combination of utility and street improvement needs. Further, the Infrastructure Management Plan evaluated existing pavement conditions. Pavements requiring maintenance over reconstruction are shown on the Street Maintenance Map in the Infrastructure Management Plan. The mill and overlay component of this report focuses on select streets from this map. The Infrastructure Management Plan will be referenced throughout this report.

A project location map is illustrated in ***Figure 1*** of ***Appendix A***.

The specific objectives of this Preliminary Engineering Report are to:

1. Evaluate the need for the project.
2. Determine the necessary improvements.
3. Provide information on the estimated costs for the proposed project.
4. Determine the project schedule.
5. Determine the feasibility of the proposed project.

The project as proposed would consist of fully reconstructing a section of Hillcrest Second Addition and 2nd Street Southwest. Specific items of construction will consist of:

1. Removal of existing pavement and curb and gutter.
2. Removal and replacement of sanitary sewer and services.
3. Removal and replacement of watermain and services.
4. Removal and replacement of storm sewer and catch basins.
5. Construction of subsurface drains with connections for sump pump drain hoses.

6. Construction of bituminous pavement with concrete curb and gutter.
7. Construction of concrete sidewalk and driveway aprons.
8. Establishment of turf.

The project as proposed would rehabilitate various streets in town by milling the pavement edges and overlaying the street with a new 2-inch mat of asphalt. Specific items of construction will consist of:

1. Edge mill existing pavement.
2. Spot curb and gutter repairs.
3. Patching settlements and soft areas.
4. Repair manhole chimneys, as needed.
5. Replace metal manhole paving adjustment rings, as needed.
6. Adjust structures to grade.
7. Construction of bituminous pavement.

III. EXISTING CONDITIONS

A. Street and Surface – Reconstruction

The Infrastructure Management Plan based street improvement recommendations from pavement condition ratings performed in 2018. The pavement condition ratings were updated for the proposed reconstruction sections included in this report on October 13, 2019. The ratings for the areas within Hillcrest Second Addition include: 8th Street Northwest has been downgraded to 3 (poor); 9th Street Northwest has been downgraded to 2 (less than poor); 3rd Avenue Northwest remains unchanged at 5 (fair); 4th Avenue Northwest has been downgraded to 3 (poor); and the rating for 2nd Street Southwest has been downgraded to 4 (fair).

The existing streets in the project area are bituminous surfaced with B618 curb & gutter and measure 37-feet in width at the back of curb. The right-of-way width in the area is 60-feet. The bituminous pavement is in poor condition and the driveway aprons and concrete curb & gutter are in fair to poor condition. In general, the bituminous pavement shows noticeable signs of oxidation, fatigue, alligator cracking, some rutting, and patched areas. The condition of the existing street is shown in the photos to follow.

Exhibit 1 – Street & Curb Condition, Hillcrest Second Addition

Exhibit 2 – Street Condition, Hillcrest Second Addition

Exhibit 3 – Pavement Condition, 2nd Street Southwest

Exhibit 4 – Pavement Condition, 2nd Street Southwest

B. Street and Surface – Mill & Overlay

The Infrastructure Management Plan based street improvement recommendations from pavement condition ratings performed in 2018. The pavement condition ratings were updated for the proposed reconstruction sections included in this report on October 13, 2019. The

rating for 8th Street Northwest remains unchanged at 5 (fair); 8th Avenue Northwest was downgraded to 5 (fair); 2nd Street Northwest was downgraded to 5 (fair); 1st Street Northwest was downgraded to 5 (fair); 3rd Avenue Northeast was downgraded to 6 (good) for the westerly block and remains unchanged at 6 (good) on the easterly block; 6th Street Southwest was rated at 5 (previously not rated); 8th Street Southwest was downgraded to 5 (fair); 7th Street Southwest remains unchanged at 6 (good); and 3rd Avenue Southwest remains unchanged.

The existing streets in the project area are bituminous surfaced. The curb and gutter type and width varies. The bituminous pavement is in fair to good condition.

C. Sidewalk

The Hillcrest Second Addition does not have a sidewalk system. The 2nd Street Southwest project area has an existing sidewalk system which is primarily located near the property line.

D. Storm Sewer

The existing storm sewer within the Hillcrest Second Addition reconstruction project area consists of 12-inch and 15-inch reinforced concrete pipe (RCP). Drainage is collected at the intersection of 8th Street Northwest and 3rd Avenue Northwest as well as 9th Street Northwest and 3rd Avenue Northwest before being discharged into the 10th Street Northwest ditch. The catch basins at the intersection of 8th Street Northwest and 3rd Avenue Northwest are severely deteriorated and need to be replaced.

The existing storm sewer within the 2nd Street Southwest reconstruction project area consists of 15-inch reinforced concrete pipe (RCP) catch basin leads at the intersection of 2nd Street Southwest and 3rd Avenue Southwest. The catch basin leads connect to a 30-inch RCP trunk main on 3rd Avenue Southwest. There is a highpoint approximately at 2nd Street Southwest and 4th Avenue Southwest where water drains north or south. Water draining south ultimately discharges into the MnDOT right-of-way.

The existing storm sewer system is illustrated on the Existing Utilities Map, ***Figure 2*** of ***Appendix A***.

E. Sanitary Sewer

The existing sanitary sewer within the reconstruction project areas consists of 8-inch vitrified clay pipe (VCP). Based on the materials of construction, the entire system is likely over 50 years old.

Sanitary sewer record drawings from 1964 show the sanitary sewer along 2nd Street Southwest being 6-feet and 7-feet deep. This is supported by discussions with public works

and reports of flat service pipes and the need to flush service lines. The main along 2nd Street Southwest was televised in June 2003. The televising report indicated mineral deposits at the joints, some blockage in the pipe from mineral deposits, a 3-inch sag, and one broken pipe section.

Sanitary sewer record drawings from 1973 show the sanitary sewer in the Hillcrest Second Subdivision at approximately 8-feet deep. The mains in the Hillcrest Second Additional were televised in December 2000. The televising report indicated offset joints, several sags ranging from ¾-inch to 3-inches, and one instance of a shattered pipe.

The city evaluated 335 sanitary sewer manholes as part of the 2009 Sanitary Sewer Manhole Inspections project. The goal was to identify manhole defects and contributing inflow and infiltration (I/I) into the collection system. I/I is problematic because it causes increased flows in the sewer system and at the wastewater treatment plant, which increases the risk of sewer backups, increased treatment costs, and the possibility of sewer bypass at the treatment plant. Manhole information in the mill and overlay project area is summarized in the table below.

Table 1 - Mill & Overlay - Manholes

No.	Location	I/I Rating(1)
181	Intersection of 3rd Avenue NE and 2nd Street NE	Moderate
298	Intersection of 3rd Avenue SW and 7th Street SW	Moderate
313	100-ft West of 2nd Street NW along 8th Avenue NW	Moderate
316	75-ft South of 8th Avenue NW along 1st Street NW	Severe

1 - Information obtained from the 2009 Sanitary Sewer Manhole Inspection Report

The existing sanitary sewer system is shown on the Existing Utilities Map, ***Figure 2*** of ***Appendix A***.

F. Watermain

The existing water distribution system within the reconstruction project areas consists of 4-inch (4-inch watermain does not meet current standards for fire protection), 6-inch, and 8-inch cast iron pipe, which based on material is likely over 50 years old. Watermain of this material and age is commonly brittle (susceptible to breaks) and corroded (reduced hydraulic capacity).

There is a history of watermain breaks along 2nd Street Southwest.

The condition of the services is unknown at this time, but due to the age of the water system,

it is likely they are in poor condition and in need of replacement as well.

The existing water distribution system is shown on the Existing Utilities Map, ***Figure 2*** of ***Appendix A***.

G. Other Utilities

Other non-municipal owned utilities are present in the right-of-way. These include natural gas, electric, and telecommunication.

IV. PROPOSED IMPROVEMENTS

A. Street and Surface – Reconstruction

The Hillcrest Second Subdivision and 2nd Street Southwest are proposed to be reconstructed with a bituminous surface and B618 concrete curb & gutter. The typical bituminous pavement structure will consist of 4-inch thick bituminous pavement, 8-inches of aggregate base, and 12-inches of select granular borrow over a geotextile fabric.

The street width will be 36-feet curb face to curb face which is very similar to what is currently in place. This width will allow for two 10-foot travel lanes and two 8-foot parking lanes.

Concrete driveway aprons along the entire project will be reconstructed from the back of the new curb to the back of existing or proposed sidewalk or property line, and any additional length necessary to adequately match into the existing driveway. Any existing approach sidewalks from the street to house will be reconstructed in a similar fashion as the driveways.

All disturbed turf will be restored with an amended topsoil borrow and seeded. Trees and or bushes located within the street right of way may need to be removed in order to facilitate underground utility reconstruction. Attempts will be made to reduce impacts to existing trees; however, some tree removals may be necessary.

The proposed street and surface improvements for Hillcrest Second Addition are illustrated on ***Figures 3*** of ***Appendix A***.

The proposed street and surface improvements for 2nd Street Southwest are illustrated on ***Figures 4*** of ***Appendix A***.

B. Street and Surface – Mill & Overlay

Several streets in the project area will have the edges along the curb lip milled before paving a 2-inch overlay as a means of pavement maintenance. The proposed improvements include milling the edge of the pavement (at the lip of the curb) and paving a 2-inch overlay on the

existing pavement. This work will also include necessary repairs to manhole chimneys, replacing failed catch basins, replacing old castings, and adjusting structures to a new surface elevation.

The proposed mill and overlay improvements are illustrated on ***Figures 5*** of ***Appendix A***.

C. Sidewalk – Reconstruction

As an option, the City could install 5-foot wide sidewalks on either side of the street in Hillcrest Second Subdivision. The back of the sidewalk would be installed 1-foot off of the property line. Any property with an "out-walk" will have it replaced. No new "out-walks" will be added. ADA compliance pedestrian ramps will be constructed at all intersections. The total estimated project cost to construct sidewalk in the Hillcrest Second Subdivision is $117,430 as noted in the Preliminary Engineer's Estimate under Appendix B.

The optional sidewalk improvements for Hillcrest Second Addition are illustrated on ***Figures 3*** of ***Appendix A***.

A new 5-foot wide sidewalk will be installed along the 2nd Street Southwest corridor replacing the existing aged sidewalk. Any property with an "out-walk" will have it replaced. No new "out-walks" will be added. ADA compliance pedestrian ramps will be reconstructed at all intersections. General pedestrian safety and welfare is the driving force behind the proposed improvements.

The proposed sidewalk improvements for 2nd Street Southwest are illustrated on ***Figures 4*** of ***Appendix A***.

D. Storm Sewer – Reconstruction

The new storm sewer will be constructed of gasketed joint reinforced concrete pipe and precast structures. The proposed pipes will be 12-inch and 5-inch in size.

The proposed storm sewer system will include additional catch basins to supplement the collection and underground conveyance of the run-off.

Perforated subsurface drain piping is proposed along the back of the curb lines on each street. These drains are proposed to be 6-inch diameter perforated PVC. The new subsurface drains will be connected to downstream catch basins. The purpose of these drains is to remove subsurface water from the pavement section and underlying soils. This will help keep the underlying soils stable and help to preserve the life of the street. Additionally, sump pump services will be provided to each lot. Buried sump service connections provide homeowners with an additional option for sump pumps which may reduce the number of illegal sanitary connections and is generally more favorable than discharging water to yards or the street

gutter.

The proposed storm sewer construction for Hillcrest Second Addition is illustrated on ***Figures 3*** of ***Appendix A***.

The proposed storm sewer construction for 2nd Street Southwest is illustrated on ***Figures 4*** of ***Appendix A***.

E. Sanitary Sewer – Reconstruction

The new sanitary sewer will be constructed of gasketed joint, PVC pipe and precast concrete manholes. The proposed pipe will meet the standard minimum diameter of 8- inches. Manholes will be spaced at a maximum of 400-feet intervals to facilitate maintenance and cleaning.

Sanitary sewer shallower than 7-feet deep will be insulated to protect against frost and freezing conditions. Additionally, sanitary sewer services in the same areas will also be insulated up to the connection point within the right of way.

New, gasketed PVC sanitary sewer services will be constructed from the sewer main to the right-of-way line. Residential connections generally require a 4-inch diameter service. The new services will be connected to the existing services by watertight means, typically a rubber coupling.

The proposed sanitary sewer construction for Hillcrest Second Addition is illustrated on ***Figures 3*** of ***Appendix A***.

The proposed sanitary sewer construction for 2nd Street Southwest is illustrated on ***Figures 4*** of ***Appendix A***.

F. Watermain – Reconstruction

Given the age, condition, and inadequate size of the existing watermain in the project area, it is proposed that the existing watermain be replaced with new watermain. In order to provide proper fire protection, the current standard for minimum watermain size is 8-inch diameter pipe. Hydrants with dedicated valves will be installed at appropriate intervals and main line valves will be installed to properly isolate the system for flushing, repair, and maintenance.

New, 1-inch copper water service pipe will be constructed to the right-of-way for each home, and new curb stops will be installed.

The proposed watermain construction for Hillcrest Second Addition is illustrated on ***Figures 3*** of ***Appendix A***.

The proposed watermain construction for 2nd Street Southwest is illustrated on ***Figures 4*** of

Appendix A.

G. Storm Sewer – Mill & Overlay

Storm sewer manholes will be adjusted to the new surface elevation after paving, deteriorated concrete adjusting rings will be replaced, broken metal paving adjusting rings will be replaced, and cracked lids and broken casting frames will be replaced. Catch basins showing signs of deterioration will be removed and replaced.

H. Sanitary Sewer – Mill & Overlay

Sanitary sewer manholes will be adjusted to the new surface elevation after paving, deteriorated concrete adjusting rings will be replaced, broken metal paving adjusting rings will be replaced, and cracked lids and broken casting frames will be replaced. Specific manholes will be repaired per the schedule below which is a result of a city-wide sanitary sewer manhole evaluation in 2009 that targeted contributing factors for infiltration and inflow.

Table 2 - Mill & Overlay – Sanitary Sewer Manholes

No.	Location	I/I Rating[1]	Proposed Manhole Repair[1]
181	Intersection of 3rd Avenue NE and 2nd Street NE	Moderate	Install chimney seal and plug lift holes
298	Intersection of 3rd Avenue SW and 7th Street SW	Moderate	Replace chimney and frame; Drill and pressure grout leaking joints
313	100-ft West of 2nd Street NW along 8th Avenue NW	Moderate	Remove frame, rebuild chimney, reset frame
316	75-ft South of 8th Avenue NW along 1st Street NW	Severe	Replace chimney and frame

1 - Information obtained from the 2009 Sanitary Sewer Manhole Inspection Report

I. Watermain – Mill & Overlay

Valve boxes within the roadway will be adjusted to finished grade following the paving. Any valve boxes that are broken will be replaced prior to paving.

J. Other Utilities – Reconstruction

The design of the proposed improvements will be coordinated with the owners of other utilities such as natural gas, electric, and communications. A design coordination meeting will be held with all private utility companies to identify those utilities that are in conflict with the proposed improvements. Private utility companies will be requested to submit proposed designs and construction schedules for any relocation. The construction schedule

for the proposed improvements will be coordinated with the utility relocation schedule to avoid unnecessary delays.

K. Right-of-Way and Easements

Although the project will be designed to limit construction of the proposed improvements to within the existing right-of-way, it is possible that minor disturbances on private property will occur during construction of sidewalks, driveways, and sewer and water services. Therefore, temporary construction easements may be necessary along the project frontage to accommodate these minor disturbances.

V. APPROVALS AND PERMITS

Approvals and Permits are required from various agencies for the construction of the project. They include the following:

- Minnesota Pollution Control Agency (MPCA) General Construction Storm Water Permit
- Minnesota Department of Health (MDH) Plan Review for watermain construction
- Minnesota Department of Transportation (MnDOT) Work in the Right-of-Way Permit
- Wabasha County Drainage Permit

VI. PROJECT COST ESTIMATE AND FINANCING

The estimated project costs for the base project and two alternates are summarized in the following table.

Table 3 – Preliminary Cost Estimate

Item	Estimated Construction Cost	Estimated Engineering, Administration, and Financing Cost	Total Estimated Project Cost
Hillcrest Subdivision – Base Project	$ 1,204,505.00(1)	$ 301,200.00(1)	$ 1,505,705.00(1)
2nd Street Southwest – Alt. No. 1	$ 677,307.50	$ 169,400.00	$ 846,707.50
Misc. Mill & Overlays – Alt. No. 2	$ 694,315.00	$ 173,600.00	$ 867,915.00
Total Estimated Project Costs	$ 2,576,127.50	$ 644,200.00	$ 3,220,327.50

1 – An OPTIONAL 5-foot sidewalk system is included in the estimated costs.

Detailed cost estimates are included in ***Appendix B***.

These cost estimates are based on public construction cost information from other recent projects which are similar in scope. Since the cost estimates are dependent on 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 and no warranty or guarantee as to the accuracy of construction cost is made. Therefore, financing for this project should be

based upon actual competitive bid prices with reasonable contingencies.

Funding for the proposed improvement is proposed to come from the sale of bonds, to be repaid through City enterprise funds and ad valorem funds.

VII. PROPOSED SCHEDULE

The following table shows the schedule for the project.

Table 4 – Project Schedule	
Council Orders Preparation of Feasibility Report	10/8/19
Prepare Feasibility Report	10/9/19 - 11/8/19
Neighborhood Informational Meeting	11/6/19
Resolution Receiving Report	11/12/19
Resolution Ordering Improvement and Preparation of Plans and Specifications	11/12/19
Prepare Plans and Specifications	11/13/19 - 3/10/20
Neighborhood Informational Meeting	2/18/20
Resolution Approving Plans and Specifications and Ordering Advertisement for Bids	3/10/20
Advertise for Bids	3/19/19
Open Bids	4/9/19
Resolution Awarding Contract	4/14/20
Neighborhood Informational Meeting	4/28/20
Begin Construction	May 2020
End Construction	June 2021

VIII. CONCLUSION AND RECOMMENDATIONS

The existing streets and utilities within the project area are deteriorated and in need of repair. Without replacement, maintenance costs will continue to rise, and the infrastructure will ultimately fail. From an engineering standpoint, this project is feasible, cost effective, necessary, and can be best accomplished by letting competitive bids for the work.

We are requesting direction from the Council regarding the scope of the project (base project plus one or both of the recommended alternates) and whether or not sidewalk should be included as part of the Hillcrest Second Addition reconstruction.

We recommend that the Council accept this report and authorize the preparation of bidding documents.

Appendix A: Figures

- FIGURE 1 – LOCATION MAP
- FIGURE 2 – EXISTING UTILITY MAP
- FIGURE 3 – PROPOSED PROJECT - HILLCREST SECOND SUBDIVISION
- FIGURE 4 – PROPOSED PROJECT - 2ND STREET SW
- FIGURE 5 – PROPOSED PROJECT - MILL AND OVERLAY
- FIGURE 6 – TYPICAL SECTION

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2020 STREET AND UTILITY IMPROVEMENT PROJECT

CITY OF PLAINVIEW

FIGURE 1 - PROJECT LOCATION MAP

NOVEMBER 2019

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LEGEND

- BASE PROJECT - RECONSTRUCTION
- ALTERNATE #1 - RECONSTRUCTION
- ALTERNATE #2 - MILL & OVERLAY

7TH AVE NW
8TH AVE NW
10TH ST NW
9TH ST
8TH ST NW
7TH ST NW
6TH ST NW
5TH ST NW
4TH ST NW
4TH AVE
3RD AVE
3RD AVE NW
2ND AVE NW
2ND ST NW
1ST ST NW
NW ABASHA
1ST ST NE
2ND ST NE
3RD ST NE
4TH ST NE
5TH ST NE
6TH ST NE
7TH ST NE
8TH ST NE
6TH AVE NE
5TH AVE NE
4TH AVE NE
1ST AVE NE
W BROADWAY
E BROADWAY
9TH ST SW
1ST AVE SW
2ND AVE SW
3RD ST SW
4TH ST SW
5TH ST SW
6TH ST SW
7TH ST SW
8TH ST SW
10TH ST SW
4TH AVE SW
3RD ST SE
4TH ST SE
2ND AVE SE
3RD AVE SE
4TH AVE SE
5TH AVE SE
7TH AVE SE
S HIGHWAY 42
2ND ST SE
TH 42

HORZ. SCALE 0 300 600 FEET

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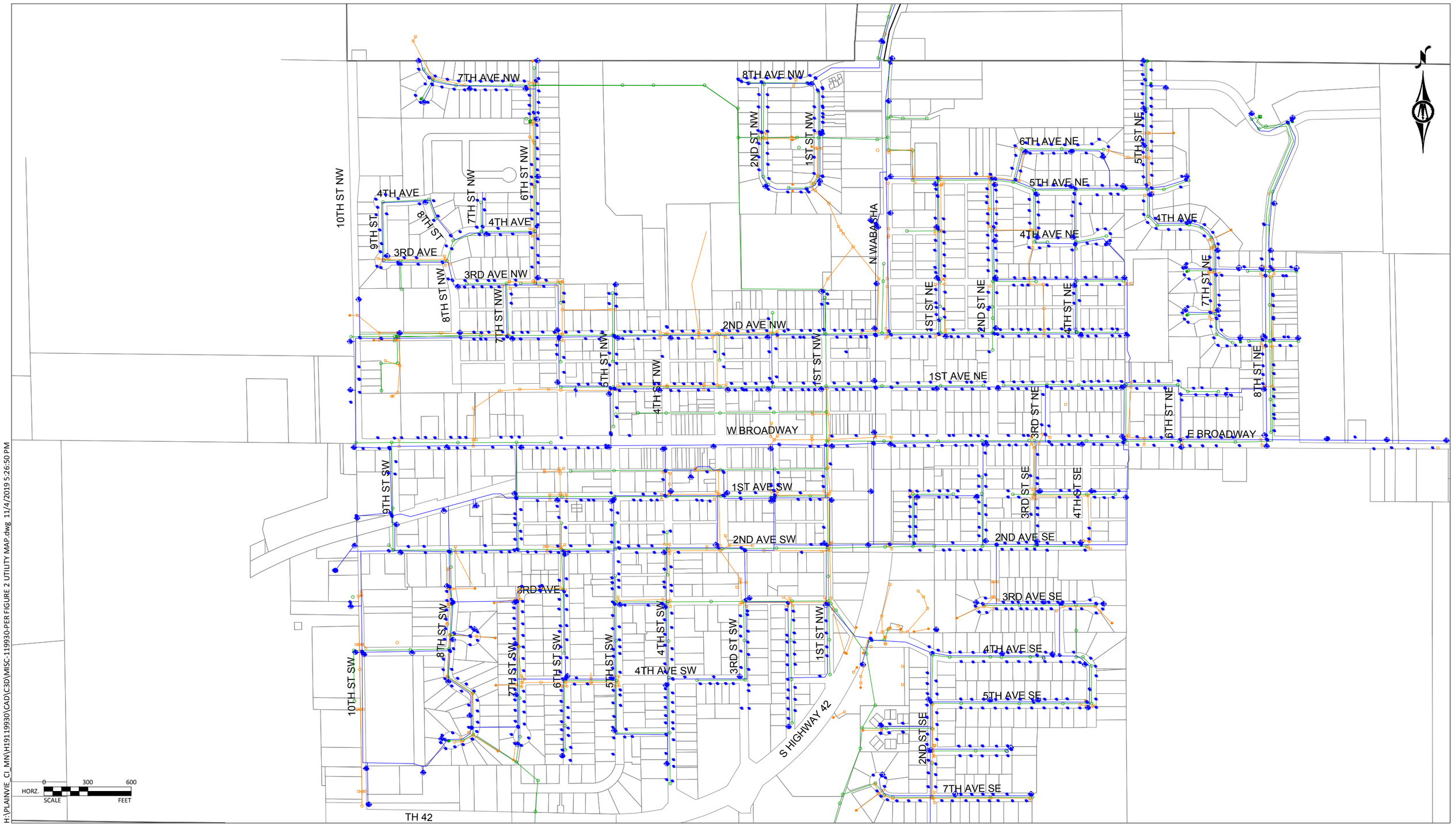
2020 STREET AND UTILITY IMPROVEMENT PROJECT

CITY OF PLAINVIEW

FIGURE 2 - EXISTING UTILITY MAP

NOVEMBER 2019



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2020 STREET AND UTILITY IMPROVEMENT PROJECT

CITY OF PLAINVIEW

FIGURE 3 - PROPOSED PROJECT - HILLCREST SECOND SUBDIVISION

NOVEMBER 2019

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LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CONCRETE CURB & GUTTER
- OPTIONAL CONCRETE SIDEWALK
- PROPOSED CONCRETE DRIVEWAY
- PROPOSED ASPHALT PAVEMENT
- REESTABLISH TURF

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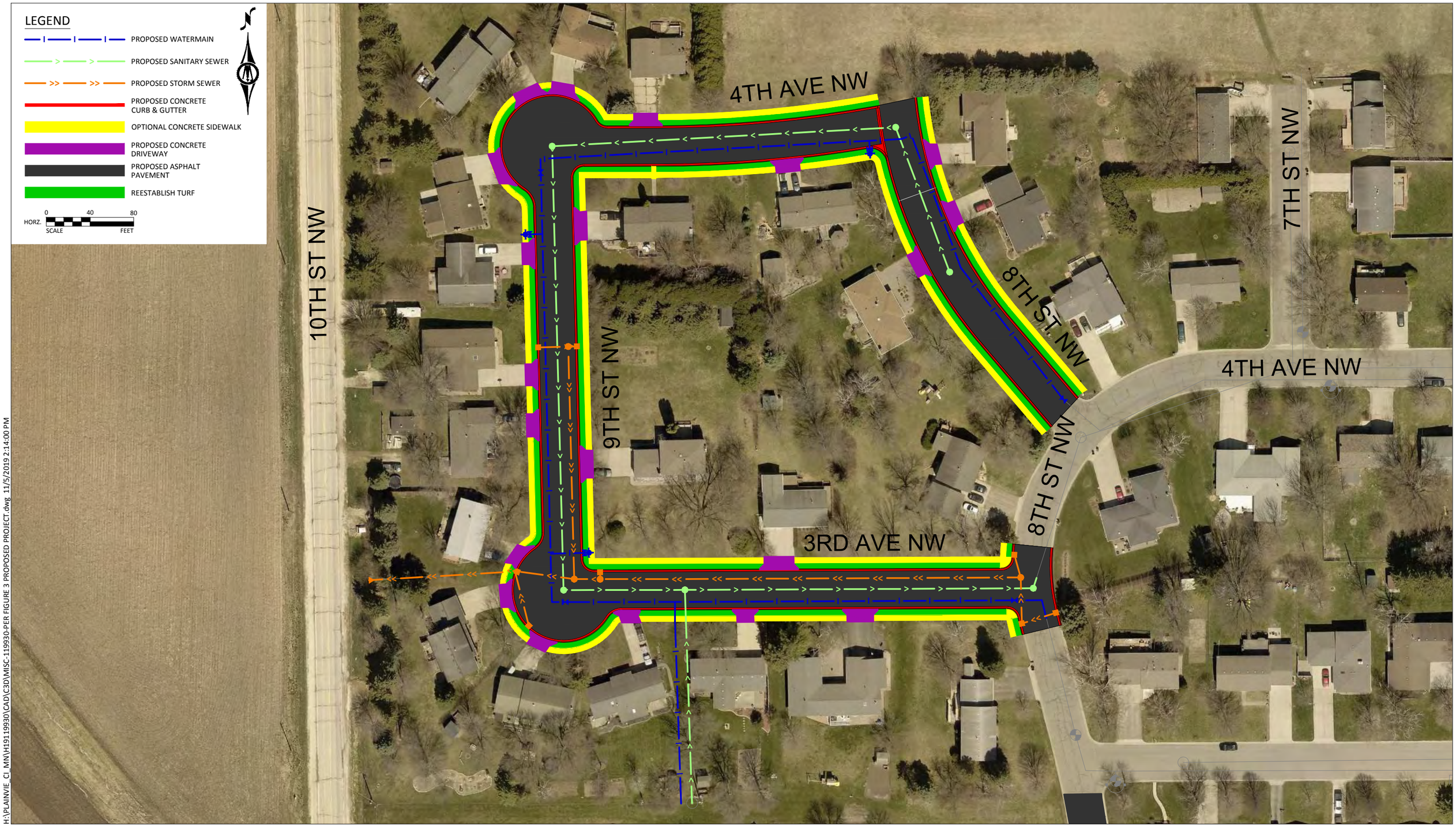


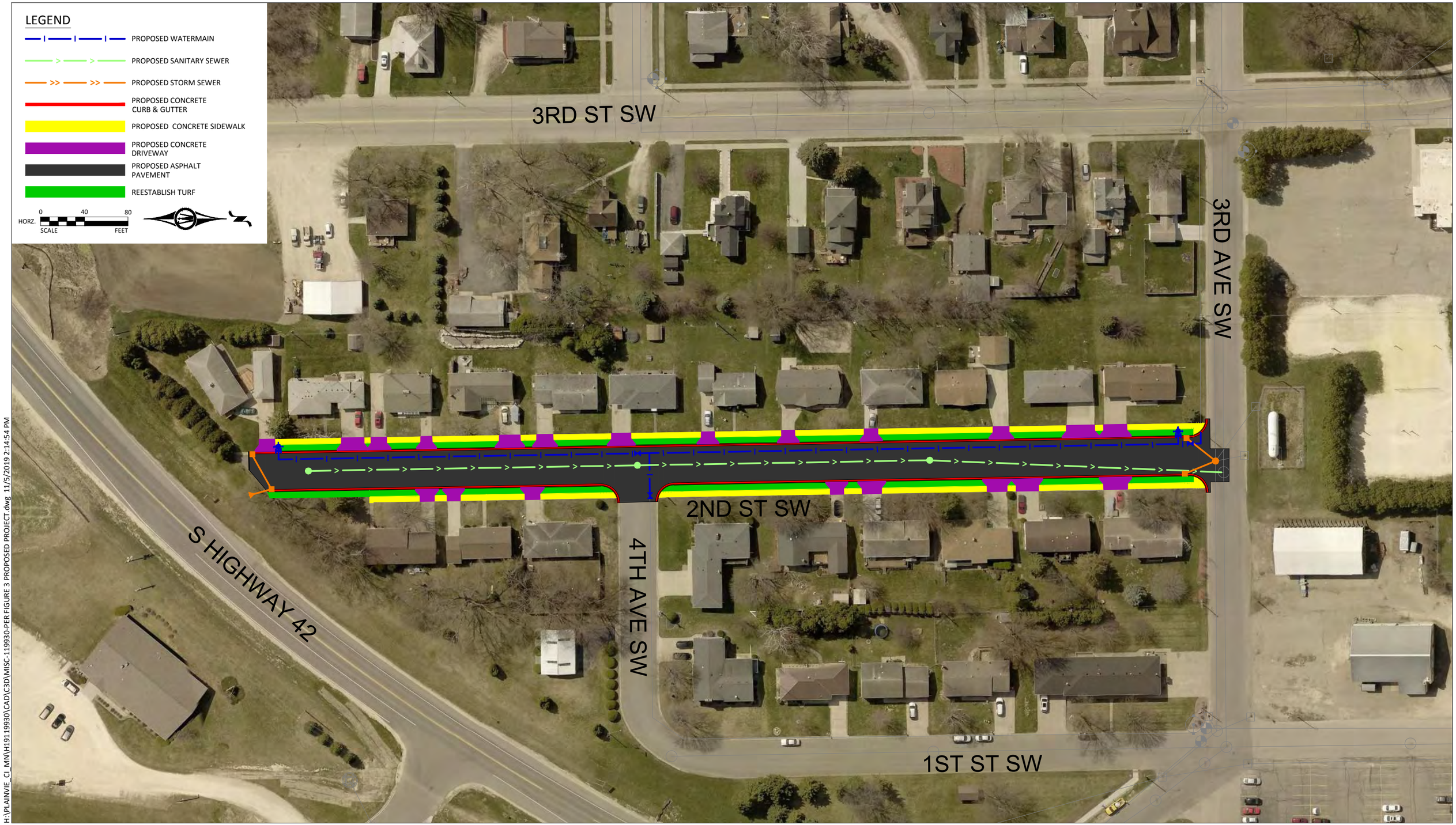
H:\PLAINVIE_CI_MN\H191190930\CAD\C3D\MISC-119930-PER FIGURE 3 PROPOSED PROJECT.dwg 11/5/2019 2:14:00 PM

2020 STREET AND UTILITY IMPROVEMENT PROJECT

CITY OF PLAINVIEW

FIGURE 4 - PROPOSED PROJECT - 2ND STREET SW

NOVEMBER 2019



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2020 STREET AND UTILITY IMPROVEMENT PROJECT

CITY OF PLAINVIEW

FIGURE 5 - PROPOSED PROJECT - MILL AND OVERLAY

NOVEMBER 2019

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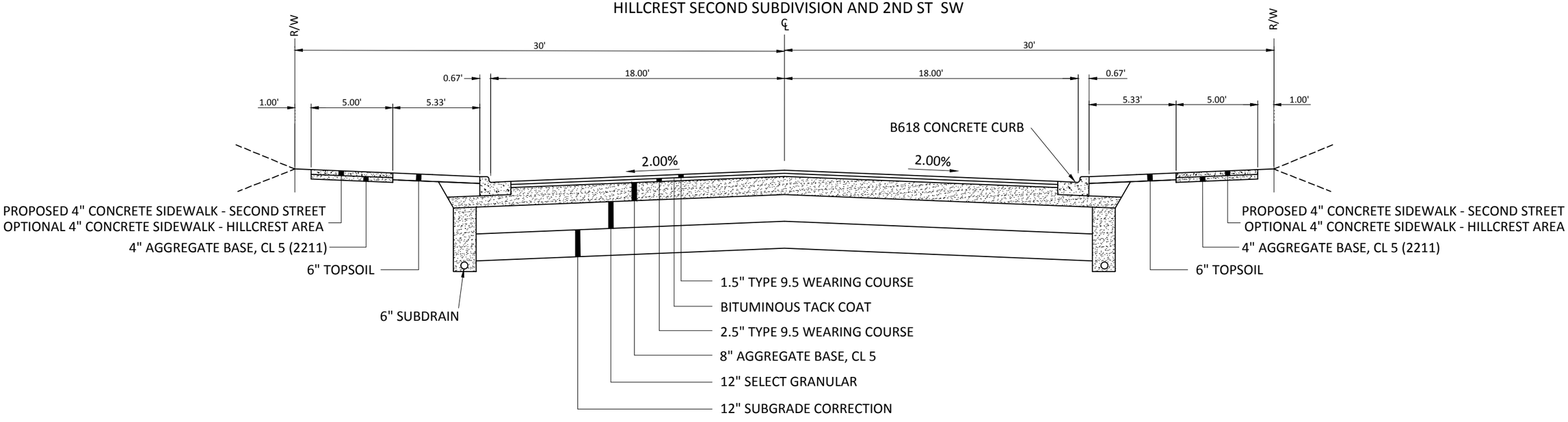
TYPICAL SECTION

HILLCREST SECOND SUBDIVISION AND 2ND ST SW



Appendix B: Detailed Cost Estimates

- HILLCREST SECOND SUBDIVISION – BASE PROJECT
- 2ND STREET SOUTHWEST – ALTERNATE NO. 1
- MILL AND OVERLAY – ALTERNATE NO. 2

PRELIMINARY ENGINEER'S ESTIMATE

HILLCREST SUBDIVISION - BASE PROJECT

2020 STREET & UTILITY IMPROVEMENTS
CITY OF PLAINVIEW, MN
BMI PROJECT NO.: H19.119930

Updated: 11/6/2019

ITEM NO.	ITEM	QTY	UNIT	UNIT PRICE	TOTAL
STREET AND SITE					
1	MOBILIZATION	1	LS	$ 48,100.00	$ 48,100.00
2	TRAFFIC CONTROL	1	LS	$ 5,000.00	$ 5,000.00
3	TREE TRIMMING / CLEAR & GRUB	1	LS	$ 5,000.00	$ 5,000.00
4	REMOVE BITUMINOUS PAVEMENT	6,360	SY	$ 2.50	$ 15,900.00
5	REMOVE CURB & GUTTER	3,160	LF	$ 2.00	$ 6,320.00
6	REMOVE CONCRETE DRIVEWAY	770	SY	$ 6.50	$ 5,005.00
7	REMOVE BITUMINOUS DRIVEWAY	85	SY	$ 4.00	$ 340.00
8	REMOVE CONC WALK	75	SF	$ 1.00	$ 75.00
9	EXPLORATORY EXCAVATION	15	HR	$ 300.00	$ 4,500.00
10	COMMON EXCAVATION	4,500	CY	$ 12.00	$ 54,000.00
11	SUBGRADE EXCAVATION	675	CY	$ 12.00	$ 8,100.00
12	GEOTEXTILE FABRIC TYPE V	7,900	SY	$ 2.00	$ 15,800.00
13	STABILIZING AGGREGATE	675	CY	$ 30.00	$ 20,250.00
14	SELECT GRANULAR BORROW (12")	2,630	CY	$ 22.00	$ 57,860.00
15	AGGREGATE BASE CLASS 5 (8")	1,660	CY	$ 30.00	$ 49,800.00
16	BITUMINOUS NON WEAR COURSE (2 1/2")	7,000	SY	$ 11.00	$ 77,000.00
17	BITUMINOUS WEAR COURSE (1 1/2")	7,000	SY	$ 7.00	$ 49,000.00
18	BITUMINOUS DRIVEWAY WEAR COURSE (3")	100	SY	$ 35.00	$ 3,500.00
18	CONSTRUCT CONCRETE DRIVEWAY (6")	630	SY	$ 60.00	$ 37,800.00
19	CONCRETE CURB & GUTTER DES B618	3,080	LF	$ 16.00	$ 49,280.00
20	CONCRETE VALLEY GUTTER	120	SY	$ 85.00	$ 10,200.00
21	4" CONCRETE WALK	75	SF	$ 8.00	$ 600.00
22	6" PVC UNDERDRAIN	3,120	LF	$ 15.00	$ 46,800.00
23	6" UNDERDRAIN CLEANOUT	10	EA	$ 275.00	$ 2,750.00
24	SUBDRAIN SERVICE	20	EA	$ 680.00	$ 13,600.00
25	AMENDED TOPSOIL BORROW (LV)	250	CY	$ 25.00	$ 6,250.00
26	INLET PROTECTION	6	EA	$ 175.00	$ 1,050.00
27	TURF ESTABLISHMENT	1,600	SY	$ 4.00	$ 6,400.00
28	STABILIZED CONTRUCTION EXIT/ENTRANCE	2	EA	$ 675.00	$ 1,350.00
29	EROSION & SEDIMENT CONTROL	1	LS	$ 5,000.00	$ 5,000.00
				SUBTOTAL:	**$ 606,630.00**
SANITARY SEWER					
30	REMOVE SANITARY MANHOLE	7	EA	$ 425.00	$ 2,975.00
31	REMOVE SANITARY SEWER PIPE	1,370	EA	$ 2.00	$ 2,740.00
32	CONSTRUCT SANITARY MANHOLE DES 4007C	56	LF	$ 335.00	$ 18,760.00
33	SANITARY SEWER CASTING ASSEMBLY	7	EA	$ 725.00	$ 5,075.00
34	CONNECT TO EXIST SANITARY	2	EA	$ 725.00	$ 1,450.00
35	8" SANITARY SEWER	1,370	LF	$ 42.00	$ 57,540.00
36	8" CIPP SANITARY SEWER	195	LF	$ 50.00	$ 9,750.00
36	8" X 4" SANITARY WYE	20	EA	$ 325.00	$ 6,500.00
37	4" SANITARY SEWER	780	LF	$ 30.00	$ 23,400.00
38	SANITARY SEWER TRACER WIRE SYSTEM	1	LS	$ 2,500.00	$ 2,500.00
				SUBTOTAL:	**$ 130,690.00**
WATERMAIN					
39	TEMPORARY WATER SERVICE	1	LS	$ 7,500.00	$ 7,500.00
40	REMOVE WATERMAIN PIPE	1,600	LF	$ 4.00	$ 6,400.00
41	REMOVE WATER SERVICE PIPE	750	LF	$ 1.00	$ 750.00
42	REMOVE CURB STOP AND BOX	20	EA	$ 100.00	$ 2,000.00
43	REMOVE GATE VALVE & BOX	5	EA	$ 275.00	$ 1,375.00
44	REMOVE & SALVAGE HYDRANT	2	EA	$ 600.00	$ 1,200.00
45	CONNECT TO EXIST WATERMAIN	4	EA	$ 850.00	$ 3,400.00
46	6" GATE VALVE & BOX	2	EA	$ 1,475.00	$ 2,950.00
47	8" GATE VALVE & BOX	5	EA	$ 2,300.00	$ 11,500.00
48	HYDRANT	2	EA	$ 4,000.00	$ 8,000.00
49	6" WATERMAIN	40	LF	$ 45.00	$ 1,800.00
50	8" WATERMAIN	1,610	LF	$ 46.00	$ 74,060.00
51	8" WATERMAIN (PIPE BURSTING)	175	LF	$ 75.00	$ 13,125.00
52	1" CURB STOP & BOX	20	EA	$ 350.00	$ 7,000.00
53	1" CORPORATION STOP	20	EA	$ 400.00	$ 8,000.00
54	1" WATER SERVICE PIPE	750	LF	$ 30.00	$ 22,500.00
55	WATERMAIN FITTINGS	1,250	LB	$ 8.00	$ 10,000.00
56	WATERMAIN TRACER WIRE SYSTEM	1	LS	$ 2,500.00	$ 2,500.00
				SUBTOTAL:	**$ 184,060.00**

PRELIMINARY ENGINEER'S ESTIMATE

HILLCREST SUBDIVISION - BASE PROJECT

2020 STREET & UTILITY IMPROVEMENTS
CITY OF PLAINVIEW, MN
BMI PROJECT NO.: H19.119930

Updated: 11/6/2019

ITEM NO.	ITEM	QTY	UNIT	UNIT PRICE	TOTAL
STORM SEWER					
57	REMOVE STORM PIPE, ALL SIZES	815	LF	$ 12.00	$ 9,780.00
58	REMOVE STORM MANHOLE	2	EA	$ 425.00	$ 850.00
59	REMOVE CATCH BASIN	6	EA	$ 325.00	$ 1,950.00
60	CONNECT TO EXISTING STORM	1	EA	$ 850.00	$ 850.00
61	CONSTRUCT DRAINAGE MANHOLE, DES 4020 - 48"	15	LF	$ 425.00	$ 6,375.00
62	CONSTRUCT DRAINAGE MANHOLE, DES R-1	32	LF	$ 440.00	$ 14,080.00
63	STORM SEWER CASTING ASSEMBLY	11	EA	$ 725.00	$ 7,975.00
64	12" RC PIPE SEWER	250	LF	$ 40.00	$ 10,000.00
65	15" RC PIPE SEWER	845	LF	$ 43.00	$ 36,335.00
				SUBTOTAL:	**$ 88,195.00**
SIDEWALK (OPTIONAL)					
66	MOBILIZATION	1	LS	$ 4,100.00	$ 4,100.00
67	4" CONCRETE WALK - INSIDE THE LOOP	6,000	SF	$ 6.00	$ 36,000.00
68	6" CONCRETE WALK - INSIDE THE LOOP	240	SF	$ 8.00	$ 1,920.00
69	TRUNCATED DOMES - INSIDE THE LOOP	24	SF	$ 50.00	$ 1,200.00
70	4" CONCRETE WALK - OUTSIDE THE LOOP	6,515	SF	$ 6.00	$ 39,090.00
71	6" CONCRETE WALK - OUTSIDE THE LOOP	240	SF	$ 8.00	$ 1,920.00
72	TRUNCATED DOMES - OUTSIDE THE LOOP	24	SF	$ 50.00	$ 1,200.00
				SUBTOTAL:	**$ 85,430.00**

TOTAL PROJECT COST SUMMARY	HILLCREST SUBDIVISION CONSTRUCTION SUBTOTAL:	$1,009,575.00
	CONSTRUCTION CONTINGENCIES (10%):	$101,000.00
	HILLCREST SUBDIVISION CONSTRUCTION COST:	**$1,110,575.00**
	ESTIMATED ENGINEERING, ADMIN & LEGAL:	$277,700.00
	ESTIMATED HILLCREST SUBDIVISION PROJECT TOTAL:	**$1,388,275.00**

TOTAL OPTIONAL SIDEWALK PROJECT COST SUMMARY	HILLCREST SUBDIVISION OPTIONAL SIDEWALK CONSTRUCTION SUBTOTAL:	$85,430.00
	CONSTRUCTION CONTINGENCIES (10%):	$8,500.00
	HILLCREST SUBDIVISION OPTIONAL SIDEWALK CONSTRUCTION COST:	**$93,930.00**
	ESTIMATED ENGINEERING, ADMIN & LEGAL:	$23,500.00
	ESTIMATED HILLCREST SUBDIVISION OPTIONAL SIDEWALK PROJECT TOTAL:	**$117,430.00**

TOTAL COMBINED PROJECT COST SUMMARY	HILLCREST SUBDIVISION COMBINED CONSTRUCTION SUBTOTAL:	$1,095,005.00
	CONSTRUCTION CONTINGENCIES (10%):	$109,500.00
	HILLCREST SUBDIVISION COMBINED CONSTRUCTION COST:	**$1,204,505.00**
	ESTIMATED ENGINEERING, ADMIN & LEGAL:	$301,200.00
	ESTIMATED HILLCREST SUBDIVISION COMBINED PROJECT TOTAL:	**$1,505,705.00**

PRELIMINARY ENGINEER'S ESTIMATE

2ND STREET SOUTHWEST - ALTERNATE NO. 1

2020 STREET & UTILITY IMPROVEMENTS
CITY OF PLAINVIEW, MN
BMI PROJECT NO.: H19.119930

Updated: 11/6/2019

ITEM NO.	ITEM	QTY	UNIT	UNIT PRICE	TOTAL
STREET AND SITE					
1	MOBILIZATION	1	LS	$ 29,300.00	$ 29,300.00
2	TRAFFIC CONTROL	1	LS	$ 5,000.00	$ 5,000.00
3	TREE TRIMMING / CLEAR & GRUB	1	LS	$ 5,000.00	$ 5,000.00
4	REMOVE BITUMINOUS PAVEMENT	3,370	SY	$ 2.50	$ 8,425.00
5	REMOVE CURB & GUTTER	1,785	LF	$ 2.00	$ 3,570.00
6	REMOVE CONCRETE DRIVEWAY	275	SY	$ 6.50	$ 1,787.50
7	REMOVE CONC WALK	6,500	SF	$ 1.00	$ 6,500.00
8	COMMON EXCAVATION	2,270	CY	$ 12.00	$ 27,240.00
9	SUBGRADE EXCAVATION	340	CY	$ 12.00	$ 4,080.00
10	GEOTEXTILE FABRIC TYPE V	3,970	SY	$ 2.00	$ 7,940.00
11	STABILIZING AGGREGATE	340	CY	$ 30.00	$ 10,200.00
12	SELECT GRANULAR BORROW (12")	1,400	CY	$ 22.00	$ 30,800.00
13	AGGREGATE BASE CLASS 5 (8")	900	CY	$ 30.00	$ 27,000.00
14	BITUMINOUS NON WEAR COURSE (2 1/2")	3,710	SY	$ 11.00	$ 40,810.00
15	BITUMINOUS WEAR COURSE (1 1/2")	3,710	SY	$ 7.00	$ 25,970.00
16	CONSTRUCT CONCRETE DRIVEWAY (6")	485	SY	$ 60.00	$ 29,100.00
17	CONCRETE CURB & GUTTER DES B618	1,820	LF	$ 16.00	$ 29,120.00
18	4" CONCRETE WALK	6,020	SF	$ 6.00	$ 36,120.00
19	6" CONCRETE WALK	480	SF	$ 8.00	$ 3,840.00
20	TRUNCATED DOMES	50	SF	$ 50.00	$ 2,500.00
21	6" PVC UNDERDRAIN	1,760	LF	$ 15.00	$ 26,400.00
22	6" UNDERDRAIN CLEANOUT	6	EA	$ 275.00	$ 1,650.00
23	SUBDRAIN SERVICE	21	EA	$ 680.00	$ 14,280.00
24	AMENDED TOPSOIL BORROW (LV)	135	CY	$ 25.00	$ 3,375.00
25	INLET PROTECTION	4	EA	$ 175.00	$ 700.00
26	TURF ESTABLISHMENT	800	SY	$ 4.00	$ 3,200.00
27	STABILIZED CONTRUCTION EXIT/ENTRANCE	2	EA	$ 675.00	$ 1,350.00
28	EROSION & SEDIMENT CONTROL	1	LS	$ 5,000.00	$ 5,000.00
				SUBTOTAL:	**$ 390,257.50**
SANITARY SEWER					
29	REMOVE SANITARY MANHOLE	3	EA	$ 425.00	$ 1,275.00
30	REMOVE SANITARY SEWER PIPE	840	EA	$ 3.00	$ 2,520.00
31	CONSTRUCT SANITARY MANHOLE DES 4007C	24	LF	$ 335.00	$ 8,040.00
32	SANITARY SEWER CASTING ASSEMBLY	3	EA	$ 725.00	$ 2,175.00
33	CONNECT TO EXIST SANITARY	1	EA	$ 675.00	$ 675.00
34	8" SANITARY SEWER	840	LF	$ 42.00	$ 35,280.00
35	8" X 4" SANITARY WYE	21	EA	$ 325.00	$ 6,825.00
36	4" SANITARY SEWER	630	LF	$ 30.00	$ 18,900.00
37	4" INSULATION	400	SY	$ 30.00	$ 12,000.00
38	SANITARY SEWER TRACER WIRE SYSTEM	1	LS	$ 2,500.00	$ 2,500.00
				SUBTOTAL:	**$ 90,190.00**
WATERMAIN					
39	TEMPORARY WATER SERVICE	1	LS	$ 7,500.00	$ 7,500.00
40	REMOVE WATERMAIN PIPE	920	LF	$ 4.00	$ 3,680.00
41	REMOVE WATER SERVICE PIPE	600	LF	$ 1.00	$ 600.00
42	REMOVE CURB STOP AND BOX	21	EA	$ 100.00	$ 2,100.00
43	REMOVE GATE VALVE & BOX	2	EA	$ 275.00	$ 550.00
44	REMOVE & SALVAGE HYDRANT	1	EA	$ 600.00	$ 600.00
45	CONNECT TO EXIST WATERMAIN	2	EA	$ 850.00	$ 1,700.00
46	6" GATE VALVE & BOX	2	EA	$ 1,475.00	$ 2,950.00
47	8" GATE VALVE & BOX	2	EA	$ 2,300.00	$ 4,600.00
48	HYDRANT	2	EA	$ 4,000.00	$ 8,000.00
49	6" WATERMAIN	40	LF	$ 45.00	$ 1,800.00
50	8" WATERMAIN	900	LF	$ 46.00	$ 41,400.00
51	1" CURB STOP & BOX	21	EA	$ 350.00	$ 7,350.00
52	1" CORPORATION STOP	21	EA	$ 400.00	$ 8,400.00
53	1" WATER SERVICE PIPE	600	LF	$ 30.00	$ 18,000.00
53	WATERMAIN FITTINGS	500	LB	$ 8.00	$ 4,000.00
54	WATERMAIN TRACER WIRE SYSTEM	1	LB	$ 2,500.00	$ 2,500.00
				SUBTOTAL:	**$ 115,730.00**

PRELIMINARY ENGINEER'S ESTIMATE

2ND STREET SOUTHWEST - ALTERNATE NO. 1

2020 STREET & UTILITY IMPROVEMENTS
CITY OF PLAINVIEW, MN
BMI PROJECT NO.: H19.119930

Updated: 11/6/2019

ITEM NO.	ITEM	QTY	UNIT	UNIT PRICE	TOTAL
STORM SEWER					
55	REMOVE STORM PIPE, ALL SIZES	60	LF	$ 12.00	$ 720.00
56	REMOVE CATCH BASIN	2	EA	$ 325.00	$ 650.00
57	CONNECT TO EXISTING STORM	2	EA	$ 850.00	$ 1,700.00
58	CONSTRUCT DRAINAGE MANHOLE, DES R-1	16	LF	$ 440.00	$ 7,040.00
59	STORM SEWER CASTING ASSEMBLY	4	EA	$ 725.00	$ 2,900.00
60	15" RC APRON	1	EA	$ 500.00	$ 500.00
61	15" RC PIPE SEWER	140	LF	$ 43.00	$ 6,020.00
				SUBTOTAL:	**$ 19,530.00**

TOTAL PROJECT COST SUMMARY		
	HILLCREST SUBDIVISION CONSTRUCTION SUBTOTAL:	$615,707.50
	CONSTRUCTION CONTINGENCIES (10%):	$61,600.00
	HILLCREST SUBDIVISION CONSTRUCTION COST:	**$677,307.50**
	ESTIMATED ENGINEERING, ADMIN & LEGAL:	$169,400.00
	ESTIMATED HILLCREST SUBDIVISION PROJECT TOTAL:	**$846,707.50**

PRELIMINARY ENGINEER'S ESTIMATE

MISCELLANEOUS MILL & OVERLAY STREETS - ALTERNATE NO. 2

2020 STREET & UTILITY IMPROVEMENTS
CITY OF PLAINVIEW, MN
BMI PROJECT NO.: H19.119930

Updated: 11/6/2019

ITEM NO.	ITEM	QTY	UNIT	UNIT PRICE	TOTAL
STREET AND SITE					
1	MOBILIZATION	1	LS	$ 30,100.00	$ 30,100.00
2	TRAFFIC CONTROL	1	LS	$ 10,000.00	$ 10,000.00
3	REMOVE BITUMINOUSE PAVEMENT	3,700	SY	$ 5.00	$ 18,500.00
4	REMOVE CURB & GUTTER	2,100	LF	$ 8.00	$ 16,800.00
5	SUBGRADE EXCAVATION	1,240	CY	$ 12.00	$ 14,880.00
6	STABILIZING AGGREGATE	1,240	CY	$ 30.00	$ 37,200.00
7	EDGE MILL BITUMINOUS PAVEMENT	11,470	SY	$ 3.00	$ 34,410.00
8	BITUMINOUS WEAR COURSE (2")	3,330	TON	$ 85.00	$ 283,050.00
9	ASPHALT PATCHING	3,700	SY	$ 12.00	$ 44,400.00
10	CONCRETE CURB & GUTTER REPAIR	2,100	LF	$ 30.00	$ 63,000.00
11	VALLEY GUTTER REPAIR	30	SY	$ 100.00	$ 3,000.00
12	INLET PROTECTION	36	EA	$ 175.00	$ 6,300.00
13	TURF RESTORATION	470	SY	$ 15.00	$ 7,050.00
				SUBTOTAL:	**$ 568,690.00**
SANITARY SEWER					
14	SANITARY SEWER MANHOLE CHIMNEY REPAIR	10	EA	$ 500.00	$ 5,000.00
15	ADJUST SANITARY MANHOLE	30	EA	$ 425.00	$ 12,750.00
16	SANITARY SEWER CASTING ASSEMBLY	10	EA	$ 725.00	$ 7,250.00
17	EXTERNAL CHIMNEY SEAL	5	EA	$ 300.00	$ 1,500.00
18	PRESSURE GROUT LEAKING JOINTS	2	EA	$ 500.00	$ 1,000.00
19	PLUG LIFT HOLES	2	EA	$ 200.00	$ 400.00
				SUBTOTAL:	**$ 27,900.00**
WATERMAIN					
20	ADJUST VALVE BOX	28	EA	$ 150.00	$ 4,200.00
21	REPLACE VALVE BOX TOP SECTION	10	EA	$ 750.00	$ 7,500.00
				SUBTOTAL:	**$ 11,700.00**
STORM SEWER					
22	STORM SEWER MANHOLE CHIMNEY REPAIR	5	EA	$ 500.00	$ 2,500.00
23	CATCH BASIN REPAIR	4	EA	$ 2,500.00	$ 10,000.00
24	ADJUST STORM MANHOLE	16	EA	$ 425.00	$ 6,800.00
25	STORM SEWER CASTING ASSEMBLY	5	EA	$ 725.00	$ 3,625.00
				SUBTOTAL:	**$ 22,925.00**

TOTAL PROJECT COST SUMMARY	
MILL & OVERLAY CONSTRUCTION SUBTOTAL:	$631,215.00
CONSTRUCTION CONTINGENCIES (10%):	$63,100.00
MILL & OVERLAY CONSTRUCTION COST:	**$694,315.00**
ESTIMATED ENGINEERING, ADMIN & LEGAL:	$173,600.00
ESTIMATED MILL & OVERLAY PROJECT TOTAL:	**$867,915.00**