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Preliminary Engineering Report

2020 Street & Utility Improvements

City of Houston, Minnesota

October 2019

Submitted by:
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Certification

Preliminary Engineering Report

for

2020 Street & Utility Improvements Project
South Lincoln Street

City of Houston, Minnesota
H19.119534

October 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: October 11, 2019

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I. EXECUTIVE SUMMARY

The existing streets and utilities 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.

The estimated cost of the proposed improvements is approximately $1,346,117.50. Funding for the proposed improvements is proposed to come from the sale of bonds, to be repaid through special assessments, enterprise funds and ad valorem funds.

According to the City's Assessment Policy, the proposed improvements are assessable to the benefitting properties as follows:

- Street Improvements – 50% Assessable, 50% City Cost
- Sidewalk Improvements – 50% Assessable, 50% City Cost
- Storm Sewer Improvements – 0% Assessable, 100% City Cost
- Sanitary Sewer and Water Main Improvements – 0% Assessable, 100% City Cost
- Sanitary and Water Services – 100% Assessable, 0% City Cost

Applying the City of Houston's Assessment Policy to the project costs results in an estimated assessment of $26,616 for a 100-ft lot with sewer and water connections (including sidewalk). If the Council wishes to reduce the assessments to a more comparable amount, it could consider reducing the assessable share of the street and sidewalk costs from 50% to 23%. Under this scenario, the same property would have an estimated assessment of $14,824.

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 and call for a public hearing on the proposed improvements. Council should provide direction to the design team relating to the width of Lincoln Street and whether or not to include additional sidewalk along the park.

The proposed schedule for the project is as follows:

- Design, Hearings, Approvals, and Bidding – October 2019 to February 2020
- Assessment Notices, Hearings and Award of Contract – March 2020
- Construction – May 2020 to June 2021

II. PROJECT INTRODUCTION

This Preliminary Engineering Report considers street and utility reconstruction along South Lincoln Street between West Cedar Street and West Elm Street.

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

In accordance with Minnesota Statutes, Chapter 429, the City Council has authorized the preparation of a Preliminary Engineering Report to define the scope and determine the feasibility of the proposed project. 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 the entire project area (approximately 3 city blocks). 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.

III. EXISTING CONDITIONS

A. Street and Surface

The existing street in the project area are bituminous surfaced with B624 curb & gutter and measure approximately 40-feet in width. The right-of-way width in the area is 80-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 Condition, Lincoln Street at Cedar Street

Exhibit 2 – Street Condition, East Side of Lincoln Street North of Maple Street

Exhibit 3 – Street Condition, Lincoln Street North of Spruce Street

Exhibit 4 – Street Condition, Lincoln Street at Elm Street

Exhibit 5 – Curb Condition, West Side of Lincoln Street Adjacent to the Park

B. Sidewalk

The project area has an existing sidewalk system which is primarily located near the property line. There are gaps within the system which can be described by three primary locations: the southern half of the park along the west site of Lincoln Street, south of 202 Spruce Street to Elm Street along the west side of Lincoln Street, and between 114 Spruce Street and 312 Lincoln Street along the east side of Lincoln Street.

C. Storm Sewer

The existing storm sewer within the project area consists of 12-inch and 15-inch reinforced concrete pipe (RCP) as well as 15-inch, 18-inch, and 21-inch metal pipe. All catch basin leads are 12-inch RCP storm sewer.

The project area is flat north to south with only two feet of elevation difference across approximately 1,100 feet of project length.

There is a trunk main along West Spruce Street that carries run-off westerly and discharges into a wetland south of West Elm Street, which is a part of the interior ponding area of the flood control levee system. Storm water enters the local system at West Maple Street and

flows south entering the trunk main at West Spruce Street. Catch basins at West Spruce Street and South Lincoln Street also collect run-off for conveyance to the discharge point.

There is a second trunk main along East Spruce Street which ultimately carries run-off east then north at Ellsworth Street and discharges into an un-named creek that flows through Outlet A-2 of the flood control levee system. Run-off that uses this system is collected at West Elm Street and South Lincoln Street.

The storm sewer system is particularly shallow within the project area. Catch basin depths range between 2.10-feet and 2.30-feet deep. Manhole depths range between 2.60-feet and 3.20-feet deep.

Drainage across the intersection of West Cedar Street is conveyed via a concrete valley gutter.

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

Exhibit 6 – Undersized Openings on the Catch Basins

D. Sanitary Sewer

The existing sanitary sewer within the project area consists of 8-inch cast iron pipe (CIP), 8-inch vitrified clay pipe (VCP), and 8-inch polyvinyl chloride (PVC) pipe.

The bury depth of the sanitary sewer main is particularly shallow at West Spruce Street (6.70-feet) and West Elm Street (4.20-feet). The existing sanitary pipe grade is relatively flat which can cause solids buildup and increases the risk of sewer backups and the need for frequent cleaning by City staff. Within the last five years the VCP mains experienced root intrusion along South Lincoln Street. The presence of roots is an indicator of cracks and offset joints that allow penetration into the pipe in search of a water source. The roots create flow obstructions which leads to back-ups and amplifies then need for system improvements.

The sanitary sewer main in the project area was televised in October 2013. Information gathered from this effort indicates occasional sags in the VCP main, significant calcification in the CIP (to the point of creating blockages), locations of pipe repairs, and cracked or damaged pipe. Manholes are in fair to poor condition and exhibit evidence of infiltration (groundwater leaking into the sanitary sewer system). Two manholes are of brick construction. The types and conditions of the sanitary sewer services is unknown at this time; however, services are expected to exhibit conditions similar to the sanitary main.

Based on the materials of construction and condition of the pipes and manholes, the entire system is likely over 50 years old.

Based on the condition of the manholes, sewer main, and services, and the presence of high groundwater levels throughout the City of Houston, the sanitary sewer system is highly susceptible to infiltration. This 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.

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

Exhibit 7 – Cast Iron Sanitary Sewer Main Obstructed 75-ft North of Maple Street

Exhibit 8 – Brick Sanitary Sewer Manhole Main at Maple Street

Exhibit 9 – End Sanitary Sewer Main Repair 100-ft North of Elm Street

Exhibit 10 – Damaged Clay Pipe Sanitary Sewer Main 20-ft South of Spruce Street

E. Watermain

The existing water distribution system within the project area consists of 4-inch and 6-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 in the 100 block of South Lincoln Street. In addition, 4-inch watermain does not meet current standards for fire protection.

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. Additionally, there is a lack of evidence that each house has its own shut-off further adding to the need for system improvements.

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

F. 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

Lincoln Street is proposed to be reconstructed with a bituminous surface and B624 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.

We recommend and are proposing narrowing the street width to 36-feet curb face to curb face from 40-feet curb face to curb face. This width will still allow for two 10-foot travel lanes and two 8-foot parking lanes and is the typical standard width for residential streets. The cost estimate included in Section VI is based on a 36-foot wide roadway. The additional net project cost to widen the road to 40-feet would be approximately $13,700 (additional pavement, aggregate base, and granular borrow while subtracting turf and concrete flatwork).

West Maple Street west of South Lincoln Street is 40-feet from curb face to curb face and is located in a residential area of town. We recommend and are proposing narrowing the side street connection to a width to 36-feet curb face to curb face and establish the future street width. Further, West Maple Street east of South Lincoln Street is 48-feet from curb face and is in a transitional area of the city where the streets are wider and adjacent properties are becoming commercial. There are no proposed changes to the width of West Maple Street

east of the intersection. An option for traffic calming and to lessen the distance pedestrians need to walk in the street would be to include curb bump-outs on the east side of the intersection. We would recommend using a design that keeps the street width between the bump-outs to 36-feet from curb face to curb face. The bump-outs would also offer the ability to change the street width east of the intersection to a 36-foot curb face to curb face width.

West Spruce Street, which is Houston County Road 13, has a width from curb face to curb face of 44-feet. There are no proposed changes to the width of West Spruce Street (County Road 13).

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, 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.

Drainage across the intersection of West Cedar Street will continue to be conveyed via a new concrete valley gutter.

All disturbed turf will be restored with an amended topsoil borrow and sod. 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 are illustrated on ***Figures 3*** of ***Appendix A***. The proposed typical street section for the project is shown on ***Figure 4*** of ***Appendix A***.

B. Sidewalk

A new 5-foot wide sidewalk will be installed along the corridor located two feet off the property line. This sidewalk will replace existing and aged sidewalk as well as fill in gaps of missing 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, especially given that Lincoln Street is a pedestrian route leading to the High School.

C. Storm Sewer

The new storm sewer will be constructed of gasketed joint reinforced concrete pipe and precast manholes. The proposed pipes will be 12-inch, 15-inch, 18-inch, and 21-inch in size.

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

included on the west legs of the Spruce Street and Maple Street intersections.

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 is shown on ***Figures 3*** of ***Appendix A***.

D. Sanitary Sewer

The existing sanitary sewer is made up of several material types, patched areas, areas that have settled creating a sag in the line, and one section was impassible by the televising camera due to calcium build-up in the pipe. Construction of a new sanitary sewer system is proposed. 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.

The existing sanitary main is reasonably deep in the northern half of the project and shallow in the southern half of the project. For reference, existing sanitary manhole depths are listed in the table below:

Table 1 – Sanitary Sewer Depths

Location (North to South)	Manhole No.	Build Height
Lincoln Street & Cedar Street	MH-42	9.70-ft
Lincoln Street & Maple Street	MH-60	8.00-ft
Lincoln Street & Spruce Street	MH-18	6.70-ft
Lincoln Street & Elm Street	MH-17	4.20-ft

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 is illustrated on ***Figures 3*** of ***Appendix A***.

E. Watermain

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 is illustrated on ***Figures 3*** of ***Appendix A***.

F. Other Utilities

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.

G. 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
- Houston County Utility Permit
- Houston County Work in the Right-of-Way Permit

VI. PROJECT COST ESTIMATE AND FINANCING

The estimated project costs for the base project area are summarized in the following table.

Table 2 – Preliminary Cost Estimate			
Item	**Estimated Construction Cost**	**Estimated Engineering, Administration, and Financing Cost**	**Total Estimated Project Cost**
Assessable Costs			
Removals, Street & Surface, Misc.	$ 547,375.19	$ 136,892.41	$ 684,267.60
Sidewalks	$ 88,479.18	$ 22,127.65	$ 110,606.83
Sanitary Sewer Services	$ 39,490.30	$ 9,876.08	$ 49,366.39
Water Services	$ 36,971.28	$ 9,246.10	$ 46,217.39
Total Assessable Costs	$ 712,315.96	$ 178,142.25	$ 890,458.20
Non-Assessable Cost			
Storm Sewer	$ 107,267.32	$ 26,826.36	$ 134,093.68
Sanitary Sewer	$ 117,313.15	$ 29,338.70	$ 146,651.85
Watermain	$ 139,921.07	$ 34,992.69	$ 174,913.77
Total Non-Assessable Costs	$ 364,501.54	$ 91,157.75	$ 455,659.30
Total Estimated Project Costs	$ 1,076,817.50	$ 269,300.00	$ 1,346,117.50

A detailed cost estimate is 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 special assessments, City enterprise funds and ad valorem funds. According to the City's Assessment Policy, the proposed improvements are assessable to the benefitting properties as follows:

- Street Improvements – 50% Assessable, 50% City Cost
- Sidewalk Improvements – 50% Assessable, 50% City Cost
- Storm Sewer Improvements – 0% Assessable, 100% City Cost
- Sanitary Sewer and Water Main Improvements – 0% Assessable, 100% City Cost
- Sanitary and Water Services – 100% Assessable, 0% City Cost

The assessable portion of the project costs will be applied to the benefitting properties on a footage

basis for street improvements and sidewalk improvements. The assessable portion of the project costs will be applied to the benefitting properties on a per unit basis for sewer and water service improvements. The proposed assessments are in accordance with the City of Houston's Assessment Policy.

The assessment policy clearly defines the process for assessing corner lots. A corner lot is assessed based on the long side of the lot with the cost of the short side being borne by City revenue sources. Where the short side of a corner lot is improved first, the property shall be assessed for the length of the short side and a credit will be applied for the short side when the street adjacent to the long side is reconstructed. Where the long side of a corner lot is improved first, the property shall be assessed for the length of the long side.

Applying the City of Houston's Assessment Policy to the project costs results in an assessment rate of $188/foot for street improvements, $30/foot for sidewalk improvements, $2,468/unit for a sanitary service, and $2,311/unit for a water service. For a 100-ft lot with sewer and water connections, this results in a total assessment of $26,616.

If the Council wishes to reduce the assessments to a lower amount, it could consider reducing the assessable share of the street and sidewalk costs from 50% to 23%. If that were done, the assessment rates would be reduced to $86/foot for street improvements and $14/foot for sidewalk improvements. For a 100-ft lot with sewer and water connections (including sidewalk), this results in a total assessment of $14,824. If the Council chooses to consider this, the City's financial advisor should be consulted to determine the effect on project financing.

Assessment proceedings (hearings, notices, etc.) for the project would follow the requirements of Chapter 429. Detailed assessment rolls will be prepared once additional direction from City Council and Staff is received confirming the assessment policy. It is also recommended that City Staff seek input from the City Attorney and the City's financial advisors related to the project financing and special assessment process.

VII. PROPOSED SCHEDULE

The following table shows the schedule for the project.

Table 3 – Project Schedule	
Resolution Ordering Preparation of the Preliminary Engineering Report (PER)	9/9/2019
Prepare Feasibility Report	9/10/2019 – 10/14/2019
Resolution Receiving Report and Calling for Hearing on Improvement	10/15/2019
Published Notice of Hearing on Improvement	10/24/2019
	10/31/2019
Mailed Notice of Hearing on Improvement	10/24/2019
Neighborhood Informational Meeting	11/7/2019
Improvement Hearing	11/12/2019
Resolution Ordering Improvement and Preparation of Plans and Specifications	11/12/2019
Prepare Plans and Specifications	11/13/2019 – 2/9/2020
Neighborhood Informational Meeting	2/5/20
Resolution Approving Plans and Specifications and Ordering Advertisement for Bids	2/10/2020
Advertise for Bids	2/13/2020
Open Bids	3/5/2020
Prepare Assessment Roll & Contractor Evaluations	3/5/2020 – 3/9/2020
Resolution Declaring Cost to be Assessed and Ordering Preparation of Proposed Assessment	3/9/2020
Resolution for Hearing on Proposed Assessment	3/9/2020
Publish Notice of Hearing on Proposed Assessment	3/19/2020
Mailed Notice of Hearing on Proposed Assessment	3/19/2020
Neighborhood Informational Meeting	4/9/2020
Assessment Hearing	4/13/2020
Resolution Adopting Assessment	4/13/2020
Resolution Awarding Contract	4/13/2020
Begin Construction	May 2020
Substantial Completion of Construction	September 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 recommend that the Council accept this report and call for a hearing on the proposed improvements.

Appendix A: Figures

2020 STREET AND UTILITY IMPROVMENT PROJECT

CITY OF HOUSTON

FIGURE 1 - PROJECT LOCATION

OCTOBER 2019

BOLTON & MENK

H:\HOUSTON_CI_MN\H19119534\CAD\C3D\MISC-119534-PER FIGURE 1-LOCATION MAP.dwg 9/25/2019 9:11:37 AM

2020 STREET AND UTILITY IMPROVEMENT PROJECT

CITY OF HOUSTON

FIGURE 2 - EXISTING UTILITIES

OCTOBER 2019

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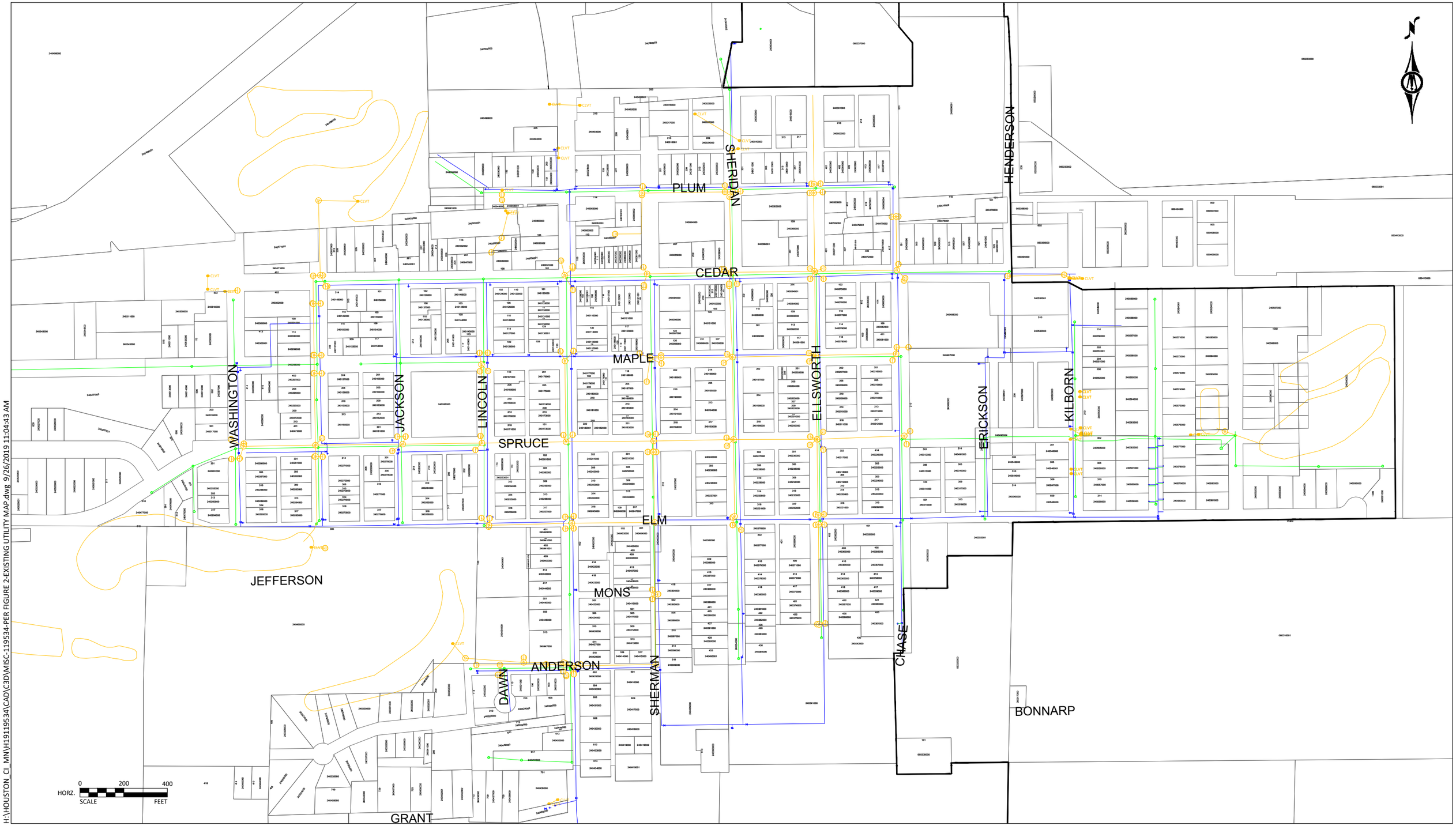

H:\HOUSTON_CI_MN\H191119534\CAD\C3D\MISC-119534-PER FIGURE 2-EXISTING UTILITY MAP.dwg 9/26/2019 11:04:43 AM

2020 STREET AND UTILITY IMPROVEMENT PROJECT

CITY OF HOUSTON

FIGURE 3 - PROPOSED PROJECT

OCTOBER 2019

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LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CONCRETE CURB & GUTTER
- REMOVE & REPLACE EXISTING SIDEWALK
- PROPOSED NEW CONCRETE SIDEWALK (OPTIONAL)
- PROPOSED CONCRETE DRIVEWAY
- PROPOSED ASPHALT PAVEMENT
- SOD

WEST ELM STREET

SOUTH LINCOLN STREET

WEST SPRUCE STREET

WEST MAPLE STREET

WEST CEDAR STREET

HOUSE 317

GARAGE

HOUSE 202

HOUSE 318

HOUSE 314

HOUSE 312

HOUSE 114

HOUSE 218

HOUSE 214

HOUSE 210

HOUSE 206

HOUSE 114

HOUSE 117

HOUSE 113

HOUSE 109

HOUSE 105

HOUSE 101

GARAGE

HOUSE 114

HOUSE 110

HOUSE 106

GARAGE

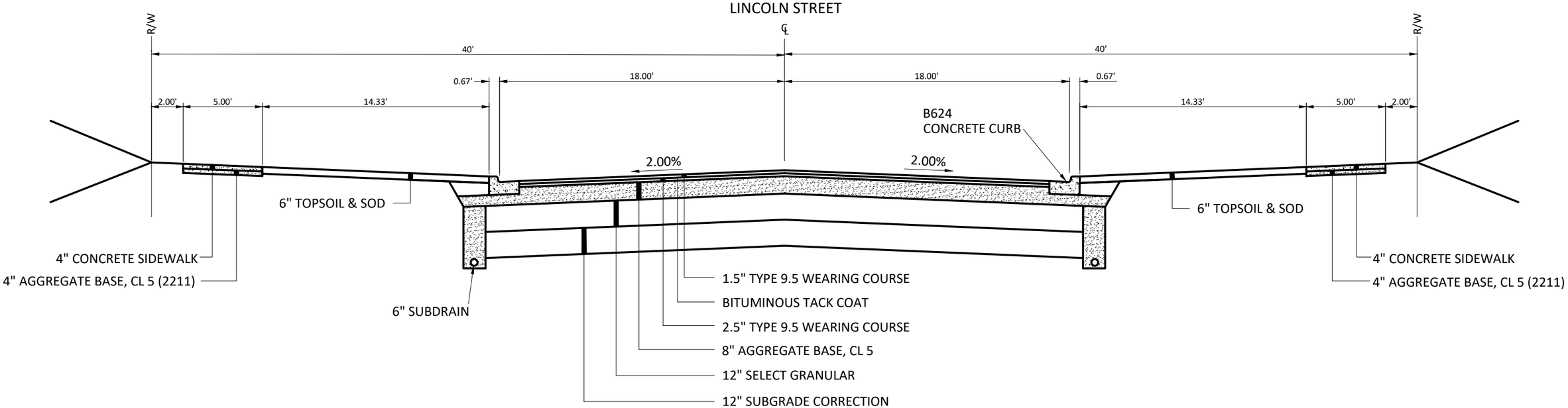
HOUSE 102

HORZ. SCALE 0 40 80 FEET

H:\HOUSTON_CI_MN\H19119534\CAD\C3D\MISC-119534-PER FIGURE 3-PROPOSED PROJECT.dwg 10/8/2019 11:08:58 AM

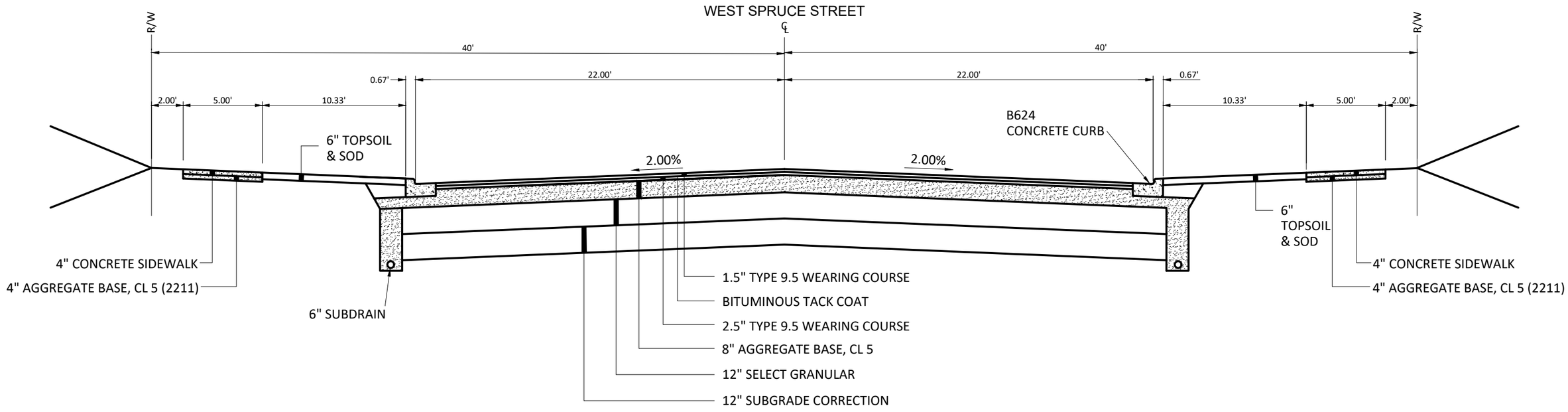
TYPICAL SECTION

LINCOLN STREET



TYPICAL SECTION

WEST SPRUCE STREET



H:\HOUSTON_CI_MN\H119534\CAD\C3D\MISC-119534-PER FIGURE 4-TYPICAL SECTION.dwg 10/8/2019 12:47:24 PM

Appendix B: Detailed Cost Estimate

PRELIMINARY ENGINEER'S ESTIMATE

2020 STREET & UTILITY IMPROVEMENTS
CITY OF HOUSTON, MN
BMI PROJECT NO.: H19.119534

Updated: 10/10/2019

ITEM NO.	ITEM	QTY	UNIT	UNIT PRICE	TOTAL
STREET AND SITE					
1	MOBILIZATION	1	LS	$ 46,600.00	$ 46,600.00
2	TRAFFIC CONTROL	1	LS	$ 6,500.00	$ 6,500.00
3	TREE TRIMMING / CLEAR & GRUB	9	EA	$ 600.00	$ 5,400.00
4	REMOVE BITUMINOUS PAVEMENT	5,300	SY	$ 2.50	$ 13,250.00
5	REMOVE CURB & GUTTER	2,280	LF	$ 3.00	$ 6,840.00
6	REMOVE CONCRETE DRIVEWAY	350	SY	$ 8.00	$ 2,800.00
7	REMOVE BITUMINOUS DRIVEWAY	15	SY	$ 5.00	$ 75.00
8	REMOVE CONC WALK	5,780	SF	$ 1.00	$ 5,780.00
9	COMMON EXCAVATION	2,295	CY	$ 12.00	$ 27,540.00
10	SUBGRADE EXCAVATION	485	CY	$ 12.00	$ 5,820.00
11	GEOTEXTILE FABRIC TYPE V	5,870	SY	$ 2.00	$ 11,740.00
12	STABILIZING AGGREGATE	485	CY	$ 30.00	$ 14,550.00
13	SELECT GRANULAR BORROW (12")	1,960	CY	$ 22.00	$ 43,120.00
14	AGGREGATE BASE CLASS 5 (8")	1,315	CY	$ 30.00	$ 39,450.00
15	BITUMINOUS NON WEAR COURSE (2 1/2")	4,885	SY	$ 14.00	$ 68,390.00
16	BITUMINOUS WEAR COURSE (1 1/2")	4,885	SY	$ 9.00	$ 43,965.00
17	CONSTRUCT CONCRETE DRIVEWAY (6")	445	SY	$ 60.00	$ 26,700.00
18	CONCRETE CURB & GUTTER DES B624	2,345	LF	$ 16.00	$ 37,520.00
19	CONCRETE VALLEY GUTTER	30	SY	$ 85.00	$ 2,550.00
20	4" CONCRETE WALK	9,870	SF	$ 6.50	$ 64,155.00
21	TRUNCATED DOMES	210	SF	$ 50.00	$ 10,500.00
22	6" PVC UNDERDRAIN	2,345	LF	$ 15.00	$ 35,175.00
23	6" UNDERDRAIN CLEANOUT	6	EA	$ 300.00	$ 1,800.00
24	SUBDRAIN SERVICE	20	EA	$ 680.00	$ 13,600.00
25	AMENDED TOPSOIL BORROW (LV)	700	CY	$ 26.00	$ 18,200.00
26	INLET PROTECTION	15	EA	$ 175.00	$ 2,625.00
27	TURF ESTABLISHMENT	2,600	SY	$ 6.75	$ 17,550.00
28	STABILIZED CONTRUCTION EXIT/ENTRANCE	2	EA	$ 675.00	$ 1,350.00
29	EROSION & SEDIMENT CONTROL	1	LS	$ 4,500.00	$ 4,500.00
				SUBTOTAL:	**$ 578,045.00**
SANITARY SEWER					
30	REMOVE SANITARY MANHOLE	3	EA	$ 425.00	$ 1,275.00
31	CONSTRUCT SANITARY MANHOLE DES 4007C	20	LF	$ 335.00	$ 6,532.50
32	ADJUST SANITARY MANHOLE	1	EA	$ 425.00	$ 425.00
33	SANITARY SEWER CASTING ASSEMBLY	4	EA	$ 725.00	$ 2,900.00
34	CONNECT TO EXIST SANITARY	3	EA	$ 675.00	$ 2,025.00
35	8" SANITARY SEWER	1,220	LF	$ 42.00	$ 51,240.00
36	8" X 4" SANITARY WYE	20	EA	$ 325.00	$ 6,500.00
37	4" SANITARY SEWER	800	LF	$ 30.00	$ 24,000.00
38	4" INSULATION (SERVICE)	180	SY	$ 30.00	$ 5,400.00
39	4" INSULATION (MAIN)	325	SY	$ 30.00	$ 9,750.00
39	DEWATERING	1	LS	$ 32,500.00	$ 32,500.00
				SUBTOTAL:	**$ 142,547.50**
WATERMAIN					
40	TEMPORARY WATER SERVICE	1	LS	$ 6,900.00	$ 6,900.00
41	REMOVE WATERMAIN PIPE	1,400	LF	$ 3.00	$ 4,200.00
42	REMOVE GATE VALVE & BOX	6	EA	$ 250.00	$ 1,500.00
43	REMOVE & SALVAGE HYDRANT	1	EA	$ 590.00	$ 590.00
44	CONNECT TO EXIST WATERMAIN	7	EA	$ 850.00	$ 5,950.00
45	8" GATE VALVE & BOX	9	EA	$ 2,300.00	$ 20,700.00
46	HYDRANT	2	EA	$ 4,000.00	$ 8,000.00
47	6" GATE VALVE & BOX	2	EA	$ 1,475.00	$ 2,950.00
48	6" WATERMAIN	40	LF	$ 42.00	$ 1,680.00
49	8" WATERMAIN	1,410	LF	$ 43.00	$ 60,630.00
50	1" CURB STOP	20	EA	$ 350.00	$ 7,000.00
51	1" CORPORATION STOP	20	EA	$ 375.00	$ 7,500.00
52	1" WATER SERVICE PIPE	735	LF	$ 26.00	$ 19,110.00
53	WATERMAIN FITTINGS	1,410	LB	$ 10.00	$ 14,100.00
				SUBTOTAL:	**$ 160,810.00**

PRELIMINARY ENGINEER'S ESTIMATE

2020 STREET & UTILITY IMPROVEMENTS
CITY OF HOUSTON, MN
BMI PROJECT NO.: H19.119534

Updated: 10/10/2019

ITEM NO.	ITEM	QTY	UNIT	UNIT PRICE	TOTAL
STORM SEWER					
54	REMOVE STORM PIPE, ALL SIZES	810	LF	$ 12.50	$ 10,125.00
55	REMOVE STORM MANHOLE	3	EA	$ 425.00	$ 1,275.00
56	REMOVE CATCH BASIN	9	EA	$ 375.00	$ 3,375.00
57	CONNECT TO EXISTING STORM	4	EA	$ 850.00	$ 3,400.00
58	CONSTRUCT DRAINAGE MANHOLE, DES 4020 - 48"	32	LF	$ 500.00	$ 16,000.00
59	CONSTRUCT DRAINAGE MANHOLE, DES R-1	46	LF	$ 440.00	$ 20,240.00
60	STORM SEWER CASTING ASSEMBLY	17	EA	$ 725.00	$ 12,325.00
61	12" RC PIPE SEWER	230	LF	$ 34.50	$ 7,935.00
62	15" RC PIPE SEWER	190	LF	$ 38.00	$ 7,220.00
63	18" RC PIPE SEWER	355	LF	$ 44.00	$ 15,620.00
64	21" RC PIPE SEWER	88	LF	$ 56.00	$ 4,928.00
				SUBTOTAL:	**$ 97,515.00**

TOTAL PROJECT COST SUMMARY		
	BASE CONSTRUCTION SUBTOTAL:	$978,917.50
	CONSTRUCTION CONTINGENCIES (10%):	$97,900.00
	BASE CONSTRUCTION COST:	**$1,076,817.50**
	ESTIMATED ENGINEERING, ADMIN & LEGAL:	$269,300.00
	ESTIMATED BASE PROJECT TOTAL:	**$1,346,117.50**

Appendix C: Preliminary Assessment Roll

HOUSTON
The Best of Bluff Country

Preliminary Assessment Roll

2020 Street & Utility Improvements
South Lincoln Street
City of Houston, Minnesota
BMI Project No. H19.119534

BOLTON & MENK

10/11/2019

Parcel ID	Owner	Property Address	Owner Mailing Address	Legal Description	Corner Lot	Short Side First	Long Side First	Project Footage	Project Footage	Street & Curb and Gutter Asssessment	Project Footage	Sidewalk Asssessment	Sanitary Service	Sanitary Service Assessment	Water Service	Water Service Assessment	Credit	Total Asssessment
									$187.99 per foot		$30.39 per foot		$2,468.32 each		$2,310.87 each			
24.0146.000	SARAH J JILK	101 S LINCOLN ST	101 LINCOLN ST S HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-010 Block-022	X	X		60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0145.000	DONALD D RANGE	105 S LINCOLN ST	105 S LINCOLN ST HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-009 Block-022 (Ex) N 55 FT Lot 9-Blk 22				55.00	55.00	$10,339.18	55.00	$1,671.18	1.00	$2,468.32	1.00	$2,310.87	$0.00	$16,789.55
24.0144.000	AFFORDABLE INVESTMENTS KENNETH & JAYNIE JOHNSTON	109 S LINCOLN ST	17186 COUNTY 26 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-999 Block-022 Lot 8 & 5 FT Lot 9 - Blk 22				65.00	65.00	$12,219.03	65.00	$1,975.03	1.00	$2,468.32	1.00	$2,310.87	$0.00	$18,973.25
24.0143.000	MARVIN F COX CHRISTINE L COX	113 S LINCOLN ST	PO BOX 738 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-007 Block-022 N 40 FT E 1/2 Lot 7 - Blk 22				40.00	40.00	$7,519.40	40.00	$1,215.40	1.00	$2,468.32	1.00	$2,310.87	$0.00	$13,513.99
24.0142.000	MARVIN F COX CHRISTINE L COX	117 S LINCOLN ST	PO BOX 738 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON E 1/2 Lot 6 & 7 Ex N 40 FT Lot 7 - Blk 22	X		X	80.00	80.00	$15,038.80	80.00	$2,430.80	1.00	$2,468.32	1.00	$2,310.87	$0.00	$22,248.79
24.0166.000	CITY OF HOUSTON	LINCOLN ST	105 MAPLE ST W PO BOX 667 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Block-027				300.00	300.00	$56,395.50	300.00	$9,115.50	1.00	$2,468.32	1.00	$2,310.87	$0.00	$70,290.19
24.0269.000	TERRY MUNSON JUDITH MUNSON	202 W SPRUCE ST	202 SPRUCE ST W HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-999 Block-038 N 30 FT E 1/2 Lots 9 & 10 - Blk 38	X		X	150.00	150.00	$28,197.75	150.00	$4,557.75	0.00	$0.00	0.00	$0.00	$0.00	$32,755.50
24.0267.000	INEZ P ABRAHAM	317 S LINCOLN ST	317 LINCOLN ST PO BOX 166 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-999 Block-038 Lots 6 & 7 & 30 FT E 1/2 Lot 8 - Blk 38	X		X	150.00	150.00	$28,197.75	150.00	$4,557.75	1.00	$2,468.32	1.00	$2,310.87	$0.00	$37,534.69
24.0124.000	KARYN PETERSON OLSON	102 S LINCOLN ST	PO BOX 644 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-001 Block-021 W 1/2 Lot 1 - Blk 21	X	X		60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0125.000	BRUCE J VIROCK SUSAM M VIROCK	106 S LINCOLN ST	106 LINCOLN ST S HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-002 Block-021				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0126.000	JEAN MARIE CARLSON	110 S LINCOLN ST	110 S LINCOLN PO BOX 271 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-003 Block-021				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0127.000	STEPHAN A ERICKSON LISA A ERICKSON	114 S LINCOLN ST	613 SHERIDAN S HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-004 Block-021				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0128.000	CITY OF HOUSTON	109 W MAPLE ST	105 MAPLE ST W PO BOX 667 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-999 Block-021 (EX) Lot 5 & W 85 FT Lot 6 Blk 21	X	X		60.00	60.00	$11,279.10	60.00	$1,823.10	0.00	$0.00	0.00	$0.00	$0.00	$13,102.20
24.0167.000	MARILYN ERICKSON	114 W MAPLE ST	114 W MAPLE ST PO BOX 543 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-1 Ex PC 25 FT E & W by 10 FT & S IN SE COR Blk 28	X	X		60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0168.000	DANIEL SMITH GAYEL SMITH	206 S LINCOLN ST	PO BOX 135 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-999 Block-028 All Lot 2 & PT Lot 1 COM at SE COR Thereof; W 25 FT; N 10 FT; E 25 FT; S 10 FT to BEG - Blk 28				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0169.000	GREGORY W SHIMSHAK	210 S LINCOLN ST	210 LINCOLN ST S PO BOX 523 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-003 Block-028				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0170.000	DANIEL SMITH GAYEL SMITH	214 S LINCOLN ST	PO BOX 135 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-004 Block-028				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0171.000	ANTON P FEDIE	218 S LINCOLN ST	218 LINCOLN ST S HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-005 Block-028	X	X		60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0253.000	LORI A JOHNSON FRANCIS	114 W SPRUCE ST	810 GRANT ST S HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-999 Block-037 W 1/2 Lots 1 & 2 - Blk 37 Ex S 20 FT W 1/2 Lot 2	X		X	120.00	120.00	$22,558.20	120.00	$3,646.20	1.00	$2,468.32	1.00	$2,310.87	$0.00	$30,983.59
24.0253.001	CAROL MEEKS	LINCOLN ST	312 S LINCOLN ST PO BOX 721 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-002 Block-037 S 20 FT W 1/2 Lot 2 - Blk 37				20.00	20.00	$3,759.70	20.00	$607.70	0.00	$0.00	0.00	$0.00	$0.00	$4,367.40
24.0254.000	CAROL MEEKS	312 S LINCOLN ST	312 S LINCOLN ST PO BOX 721 HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-003 Block-037				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0255.000	TRENT J EDWARDS	314 S LINCOLN ST	314 S LINCOLN ST HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-004 Block-037				60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
24.0256.000	DAWN K BREVIG NATHAN L ULMEN	318 S LINCOLN ST	318 LINCOLN ST S HOUSTON, MN 55943	MONS ANDERSONS ADTN HOUSTON Lot-005 Block-037	X	X		60.00	60.00	$11,279.10	60.00	$1,823.10	1.00	$2,468.32	1.00	$2,310.87	$0.00	$17,881.39
							Totals	1,820.00	1,820.00	342,132.71	1,820.00	55,300.71	20.00	49,366.40	20.00	46,217.40	0.00	493,017.22