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Preliminary Engineering Report

2019 Street & Utility Improvements

City of Rushford, Minnesota

October 2018

Submitted by:

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Certification

Preliminary Engineering Report

for

2019 Street & Utility Improvements Project

E Grove Street, Walnut Street, N Prairie Street, N Burr Oak Street, and Circle Drive

City of Rushford, Minnesota

H19.115904

October 2018

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:



Derek P. Olinger, P.E.

License No. 54287

Date:

10-3-18

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

The estimated cost of the proposed improvements within the base project area (Grove Street, Walnut Street, and N Burr Oak Street) is approximately \$1,989,460. The alternate Circle Drive Area is estimated to total \$435,035. 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, Water, and Sanitary Improvements – 30% Assessable, 70% City Cost
- Storm Sewer Improvements – 0% Assessable, 100% City Cost
- Sidewalks – 100% Assessable, 0% City Cost

Applying the City of Rushford's Assessment Policy to the project costs results in an estimated assessment of \$16,254 for a 100-ft lot with sewer and water connections (without sidewalk). If the Council wishes to reduce the assessments to a more comparable amount, it could consider reducing the assessable share of the street, sewer, and water costs from 30% to 20%. Under this scenario, the same property would have an estimated assessment of \$12,462.

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 project limits prior to moving forward.

The proposed schedule for the project is as follows:

- Design, Hearings, Approvals, and Bidding – October 2018 to February 2019
- Assessment Notices, Hearings and Award of Contract – March 2019
- Construction – May 2019 to June 2020

II. PROJECT INTRODUCTION

This Preliminary Engineering Report considers street and utility reconstruction on the following Streets:

Table 1 – Project Area		
Project	Street	From/To
Base Project Area	Grove Street St	Walnut St to Money Creek St
	N Burr Oak St	Grove St to ½ Block North
	Walnut Street	Rushford Ave to Grove St
Project Alternate	Circle Drive	Burr Oak to Cul-De-Sac

For the purposes of this report, the Circle Drive area is described as a project alternate, with the remainder of streets included in the base project area. Circle Drive was removed from the base project area for budgetary reasons, which are described in additional detail in Section VI of this report.

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 5 city block equivalents, or 6 blocks with alternate). 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. Construction of new storm sewer mains and catch basins.
5. Construction of subsurface drains with connections to 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 streets in the project area are bituminous with B624 curb & gutter and range from approximately 25 to 43 feet in width. The platted 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, block cracking, some rutting and patched areas. The condition of the existing street is shown in the photos to follow.



Exhibit 1 – Street Condition, E Grove Street



Exhibit 2 – Street Condition, Walnut Street



Exhibit 3 – Street Condition, N Burr Oak Street



Exhibit 4 – Street Condition, Circle Drive

B. Storm Sewer

With the exception of the grassed area west of Walnut Street, storm sewer is not present within the project area. Surface water currently drains overland to the curb & gutter and is conveyed south and west into a large drainage inlet structure west of the intersection of Walnut Street and Grove Street. This storm sewer system ultimately conveys water through the flood levee west of the project site and into Rush Creek. The storm sewer system was constructed in the 1960s as part of the flood levee interior drainage system and is not known to have any critical defects.

Low points at intersecting streets are drained via concrete valley gutters. It should be noted that during larger rainfall events, the existing storm sewer inlet near Walnut and Grove Street has become overwhelmed, resulting in flooding of the intersection and the yards of surrounding properties in this area. Although some recent storms have been capable of

producing runoff volumes which exceed existing pipe capacities, it is anticipated that the majority of flooding issues near Walnut and Grove Street are a result of reduced inlet capacity from debris and organic matter obstructing grates.

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

C. Sanitary Sewer

The existing sanitary sewer within the project area consists of primarily 6-inch vitrified clay pipe (VCP) mains. Sanitary mains within Prairie Street are 8-inch diameter pipes. The 6-inch mains do not meet the current minimum diameter of 8-inches, as recommended by 10 States Standards.

The bury depth of the sanitary sewer main is particularly shallow (approximately 5 feet) at certain locations: E Grove Street between Walnut Street & N Prairie Street and on Circle Drive. The existing sanitary pipe grade within Circle Drive is also known to be relatively flat, which has caused backups of sanitary services and frequent cleaning by City staff. From Circle drive, the sanitary main is routed north within the “dry run” drainage ditch and Corps of Engineers controlled levee easement before discharging to a point at the intersection of North Street and N Burr Oak Street. Exact locations of junctions and bends in the main are unknown in this area as manhole structures are not apparent on the surface.

Sanitary sewer main within the project area was installed between 1928 and 1946 (age of 90 to 72 years), based on the available record drawings.

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. Prior to final design, existing sanitary sewer within the project area will be televised to better understand the condition and locations of critical components.

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

D. Watermain

The existing water distribution system within the project area consists of 6-inch pipe that is believed to have been constructed over 50 years ago. Watermain material consists of both cast iron and transite (cement-asbestos) pipe, as determined by the available record drawings. Watermain of this age is commonly brittle (susceptible to breaks) and corroded (reduced hydraulic capacity). Watermain exists directly adjacent to most parcels; however, premature watermain termination has resulted in several long water services within the Circle Drive area.

The limited number of operable valves in many locations results in difficulties in isolating portions of the existing watermain system for maintenance and repairs. Some of the existing fire hydrants have less capacity than what would be provided with modern hydrants. In some cases, the existing hydrants are also spaced beyond the upper limit of recommended hydrant intervals. The condition of the services is unknown at this time, but due to the age of the water system, it is anticipated that they are in need of replacement as well. There are also two known locations where a single water service feeds two houses.

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

E. Other Utilities

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

IV. PROPOSED IMPROVEMENTS

A. Street and Surface

The streets in the project area proposed for reconstruction as bituminous streets with curb & gutter design B618 on both sides.

The following table summarizes the proposed street widths within the project area.

Table 2 – Proposed Street Widths		
Street	Proposed Street Width ¹ (ft)	Parking
Grove Street St	36'	Both Sides
N Burr Oak St	36'	Both Sides
Walnut Street	28'	One Side
Circle Drive ²	20' Access / 60' Cul-De-Sac	N/A

Notes: (1) Width is measured curb face to curb face
(2) The Circle drive area is a project alternate.

Street widths of 36 feet will allow for two 10-foot travel lanes and two 8-foot parking lanes. Within Walnut Street, a reduced street width of 28 feet is appropriate given that only the east side of the road is adjacent to homes. The reduced street width is also intended to avoid any excavation within the existing flood levee easement.

The Circle Drive area begins approximately ½ block north of the intersection of Grove Street and Burr Oak Street. Near this location, the road forks into both Circle Drive and also the

extension of Burr Oak Street toward North Street. Due to the existing topography, the widths of both Circle Drive and the northern extension of Burr Oak Street will likely need to remain identical to existing condition (15 ½ feet for Burr Oak and 20 feet for the Circle Drive access road). Once reconstructed, the Circle Drive cul-de-sac is proposed to have a 60-foot width, which is intended to permit adequate turning movements for snow removal equipment and other larger vehicles. The addition of surmountable D412 curb is proposed within the Circle Drive access road to allow for better control of surface runoff.

Concrete driveway aprons along the entire project will be reconstructed from the back of the new curb to the extent 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.

The typical bituminous pavement structure will consist of 4-inch thick bituminous pavement over 10-inches of aggregate base.

All disturbed turf will be restored with topsoil borrow, seeding and hydromulch. 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 should be expected.

The proposed street and surface improvements are illustrated on **Figures 3-6** of **Appendix A**. The proposed typical street section for the project is shown on **Figure 7** of **Appendix A**.

B. Storm Sewer

As discussed previously, storm sewer does not exist within the project area. The extension of new storm sewer is proposed within the base project area. The proposed system will be designed to serve the base project area (Grove Street, Walnut Street, N Burr Oak St) and Circle Drive. A new storm pipe stub will also be installed for the future extension of storm sewer within Money Creek Street.

The proposed storm sewer system will outlet to the existing storm sewer at the intersection of Walnut Street and Grove Street. The capacity of the proposed system is controlled by the existing culvert-levee crossing west of the project area. The proposed system will be designed to meet design standards for pipe and inlet capacity for a 3 to 5 year rain event (3 inches to 3 ¾ inches within 24 hours), with minimal ponding within streets. Larger storm events would continue to drain through an underground overflow pipe and overland to the south of the project area. The new storm sewer would allow for quicker collection of surface runoff and decrease the potential for flooding in the streets, both inside and downstream of the project area. The new storm sewer would also better facilitate the subsurface drainage system for the

new streets.

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.

The proposed storm sewer construction is shown on **Figures 3-6 of Appendix A.**

C. Sanitary Sewer

The existing sanitary sewer is inadequately sized and is expected to be in poor condition. 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-foot intervals to facilitate maintenance and cleaning.

Existing sanitary main within Grove Street (west of Prairie Street) is excessively shallow and existing services are anticipated to be in conflict with the proposed storm sewer piping. The proposed sanitary sewer within this area will be re-routed to the west and south, toward the intersection of Walnut Street and Rushford Avenue. In addition to eliminating a vertical conflict with storm sewer piping, the re-alignment of sanitary sewer within this area will also allow for increased depth, ensuring that the proposed piping will not be damaged by frost action. Deeper sanitary main will also allow crews to re-align the combined sanitary services at 106 and 108 Walnut Street.

The sanitary sewer main within Circle drive is also proposed to be rerouted to drain westerly into the N Burr Oak sanitary sewer. This change will have multiple benefits which including increase depth for frost protection and increased grade to reduce sedimentation. The re-direction of sanitary main within Circle Drive will also be the first step toward eventual abandonment of the sanitary main north of the project area (within the levee easement).

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 water tight means, typically a rubber coupling.

The proposed sanitary sewer construction is illustrated on **Figures 3-6 of Appendix A.**

D. 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. Two known combined water services will be separated to have individual shut-offs as a part of this project.

The proposed watermain construction is illustrated on *Figures 3-6 of Appendix A*.

E. 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.

F. 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.

At this time there is one known instance of construction that will take place on private property and require temporary construction easement: separating the combined sewer and water services to #106 and #108 Walnut Street.

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
- Corps of Engineers Approval for storm sewer connection at E Grove Street & Walnut Street

VI. PROJECT COST ESTIMATE AND FINANCING

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

Table 3 – Preliminary Cost Estimate (Base Project Area)			
Item	Estimated Construction Cost	Estimated Engineering, Administration, and Financing Cost	Total Estimated Project Cost
Assessable Costs			
Removals, Street & Surface, Misc.	\$858,964.25	\$197,562.00	\$1,056,526.25
Sidewalks	\$14,561.50	\$3,350.00	\$17,911.50
Sanitary Sewer	\$200,475.00	\$46,110.00	\$246,585.00
Watermain	\$295,955.00	\$68,070.00	\$364,025.00
Total Assessable Costs	\$1,369,955.75	\$315,092.00	\$1,685,047.75
Non-Assessable Cost			
Storm Sewer	\$247,489.00	\$56,923.00	\$304,412.00
Total Estimated Project Costs	\$1,617,444.75	\$372,015.00	\$1,989,459.75

The following table provides estimated costs for the Circle Drive project alternate.

Table 4 – Preliminary Cost Estimate (Circle Drive Alternate)			
Item	Estimated Construction Cost	Estimated Engineering, Administration, and Financing Cost	Total Estimated Project Cost
Assessable Costs			
Removals, Street & Surface, Misc.	\$214,496.50	\$49,335.00	\$263,831.50
Sanitary Sewer	\$61,100.00	\$14,053.00	\$75,153.00
Watermain	\$72,809.00	\$16,747.00	\$89,556.00
Total Assessable Costs	\$348,405.50	\$80,135.00	\$428,540.50
Non-Assessable Cost			
Storm Sewer	\$5,280.00	\$1,215.00	\$6,495.00
Total Estimated Project Costs	\$353,685.50	\$81,350.00	\$435,035.50

During 2017, the City updated its capital improvement plan of street and utility projects over the next several years. At that time, a total project cost of \$1.98 million was allocated for this project. As provided in the tables above, the total estimated cost of completing the base project area *and* circle drive is approximately \$2.42 million. To stay within budget, Circle Drive was removed from the base project area and is described in this report as a project alternate.

Detailed cost estimates for both the base project area and the Circle Drive alternate area 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 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 – 30% Assessable, 70% City Cost
- Water and Sanitary Sewer Improvements – 30% Assessable, 70% City Cost
- Storm Sewer Improvements – 0% Assessable, 100% City Cost
- Sidewalks – 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 a per unit basis for sewer and water improvements, in accordance with the City of Rushford's Assessment Policy. The assessment policy clearly defines the process for assessing corner lots. Frontage assessment will be the entire width (100%) of the lot. Side lot assessment will be one-half (50%) length of the lot. For street improvements, the front of the lot will be determined by the lot's street address. Estimated assessments, as described below, are based on costs for the base project area only. Although including the Circle Drive alternate would raise total project costs, the inclusion of this area would create a net decrease in assessment rates.

Applying the City of Rushford's Assessment Policy to the base project costs results in an assessment rate of \$86/foot for street improvements and \$7,622 per unit for sewer and water. For a 100-ft lot with sewer and water connections (without sidewalk), this results in a total assessment of \$16,254.

These assessments would be higher than previous street and utility improvement projects. To make an accurate comparison with those previous project assessments, inflation should be taken into account. Over the timeframe these projects occurred until today, construction inflation has been on the order of 5% or greater in some years. The table below lists the assessments for these past projects and adjusts them for inflation to today's dollars.

Table 5 – Historic Assessment Rates		
Project	Total Assessment for a 100-ft Lot	Total Assessment for a 100-ft Lot (Adjusted for Inflation)
2016 Project	\$8,699	\$10,070
TH 43 Project	\$8,824	\$10,726
2011 Project	\$6,152	\$9,089
2009 Project	\$6,418	\$10,454

If the Council wishes to reduce the assessments to a more comparable amount, it could consider reducing the assessable share of the street, sewer, and water costs from 30% to 20%. If that were done, the assessment rates would be reduced to \$66/foot for street improvements and \$5,844 per unit for sewer and water. For a 100-ft lot with sewer and water connections (without sidewalk), this results in a total assessment of \$12,462. 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 6 – Project Schedule	
Council Authorize Preliminary Engineering Report	7/23/2018
Prepare Feasibility Report	2/24/2018 – 10/8/2018
Resolution Receiving Report and Calling for Hearing on Improvement	10/9/2018
Published Notice of Hearing on Improvement	10/11/2018
	10/18/2018
Mailed Notice of Hearing on Improvement	10/11/2018
Neighborhood Informational Meeting	10/18/2018
Improvement Hearing	10/22/2018
Resolution Ordering Improvement and Preparation of Plans and Specifications	10/22/2018
Prepare Plans and Specifications	10/23/2018 – 1/25/2019
Resolution Approving Plans and Specifications and Ordering Advertisement for Bids	1/28/2019
Advertise for Bids	1/31/2019
	2/7/2019
	2/14/2019
Open Bids	2/22/2019
Order Advertisement of Hearing	2/25/2019 or 3/11/2019
Published Notice for Assessment Hearing	3/14/2019
	3/21/2019
Mailed Notice for Assessment Hearing	3/14/2019
Resolution Approving Final Assessment Roll, Awarding Contract	3/25/2019 or 4/8/2019
Begin Construction	May 2019
Substantial Completion of Construction	September 2019
Final Completion of Construction	June 2020

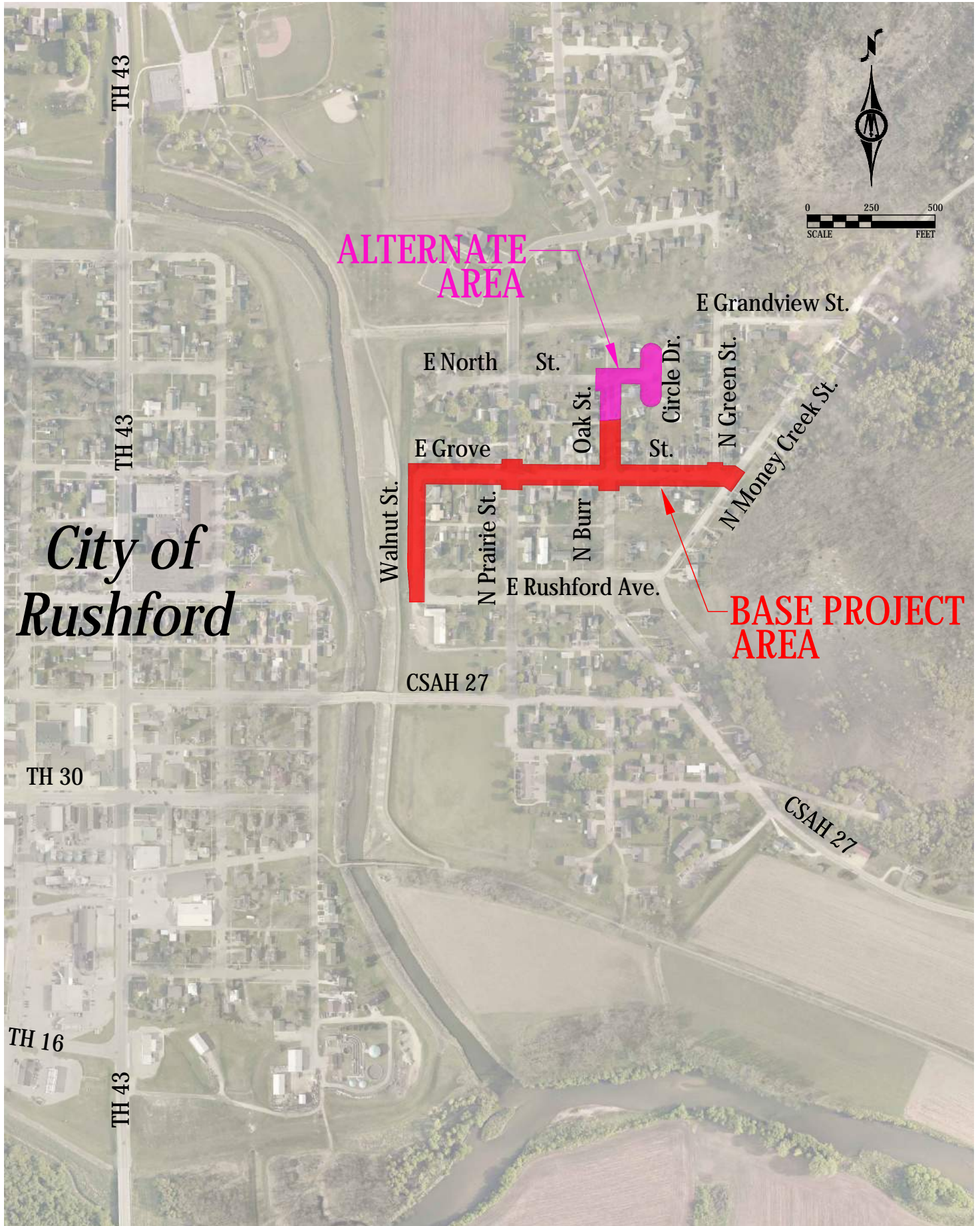
VIII. CONCLUSION AND RECOMMENDATIONS

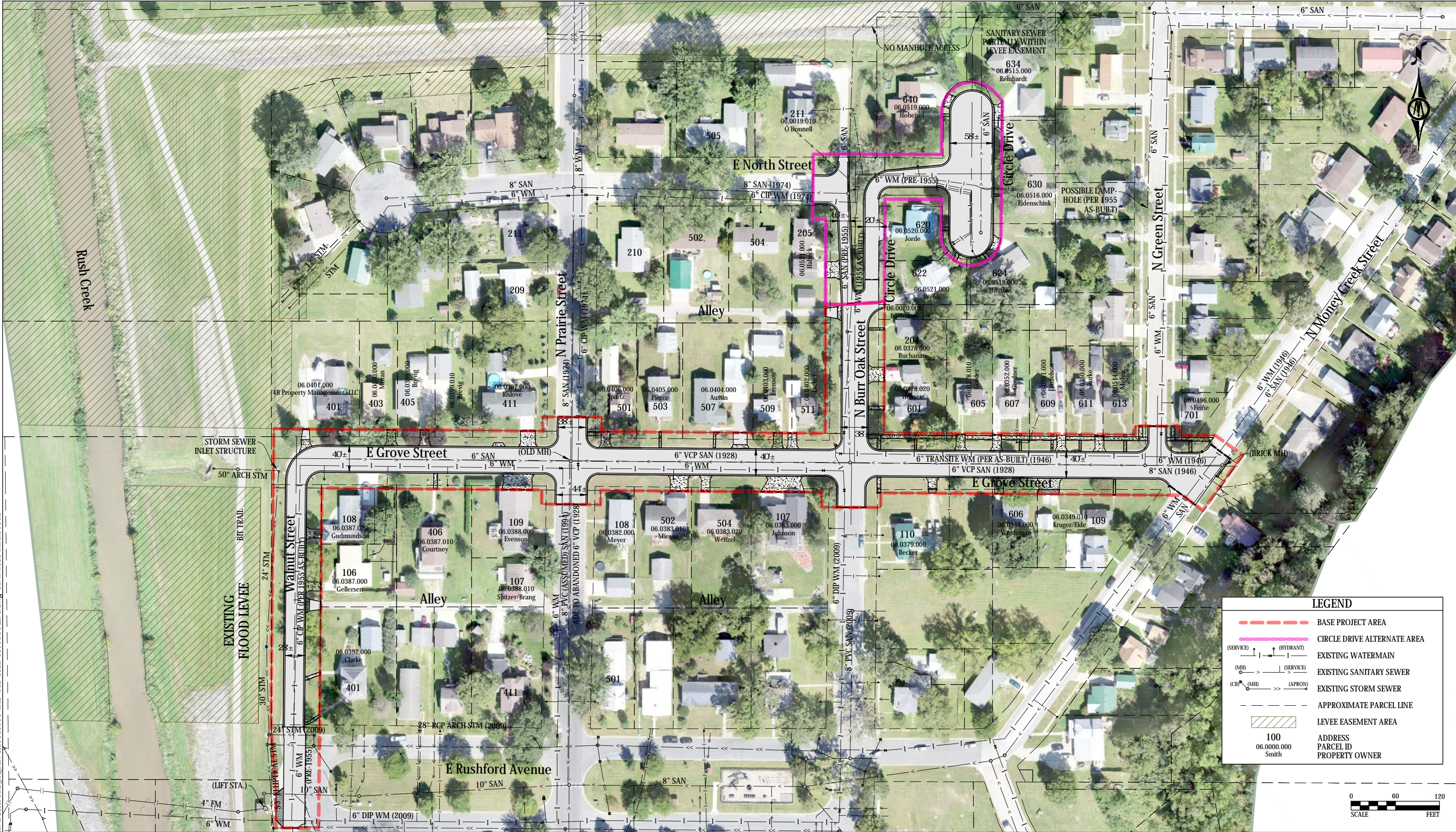
The existing streets and utilities within the project area are deteriorated and in need to repair.

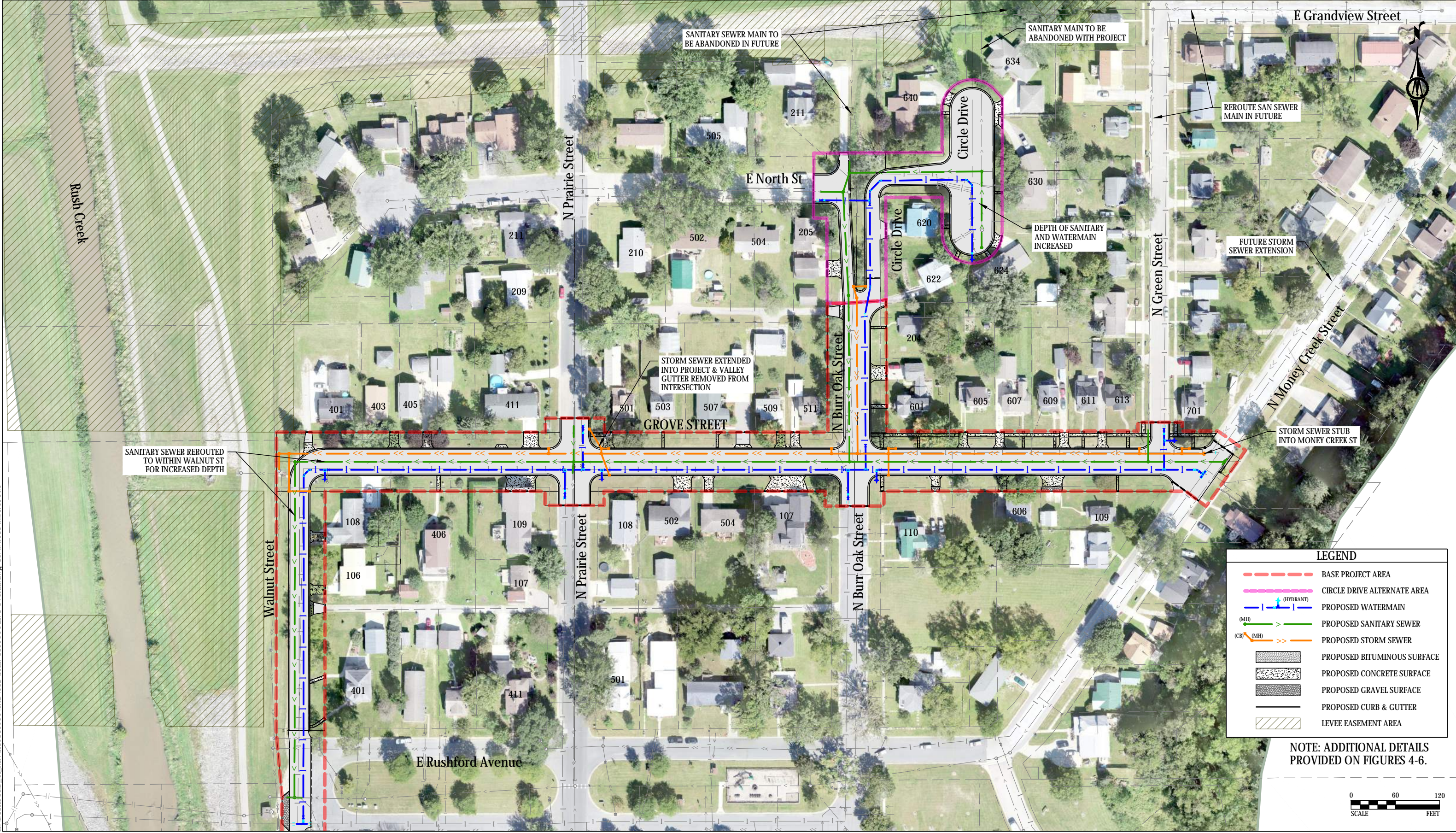
Without replacement maintenance costs will continue to rise and the infrastructure will ultimately fail. From an engineering standpoint, this project is feasible, cost effective, necessary, and can be best accomplished by letting competitive bids for the work.

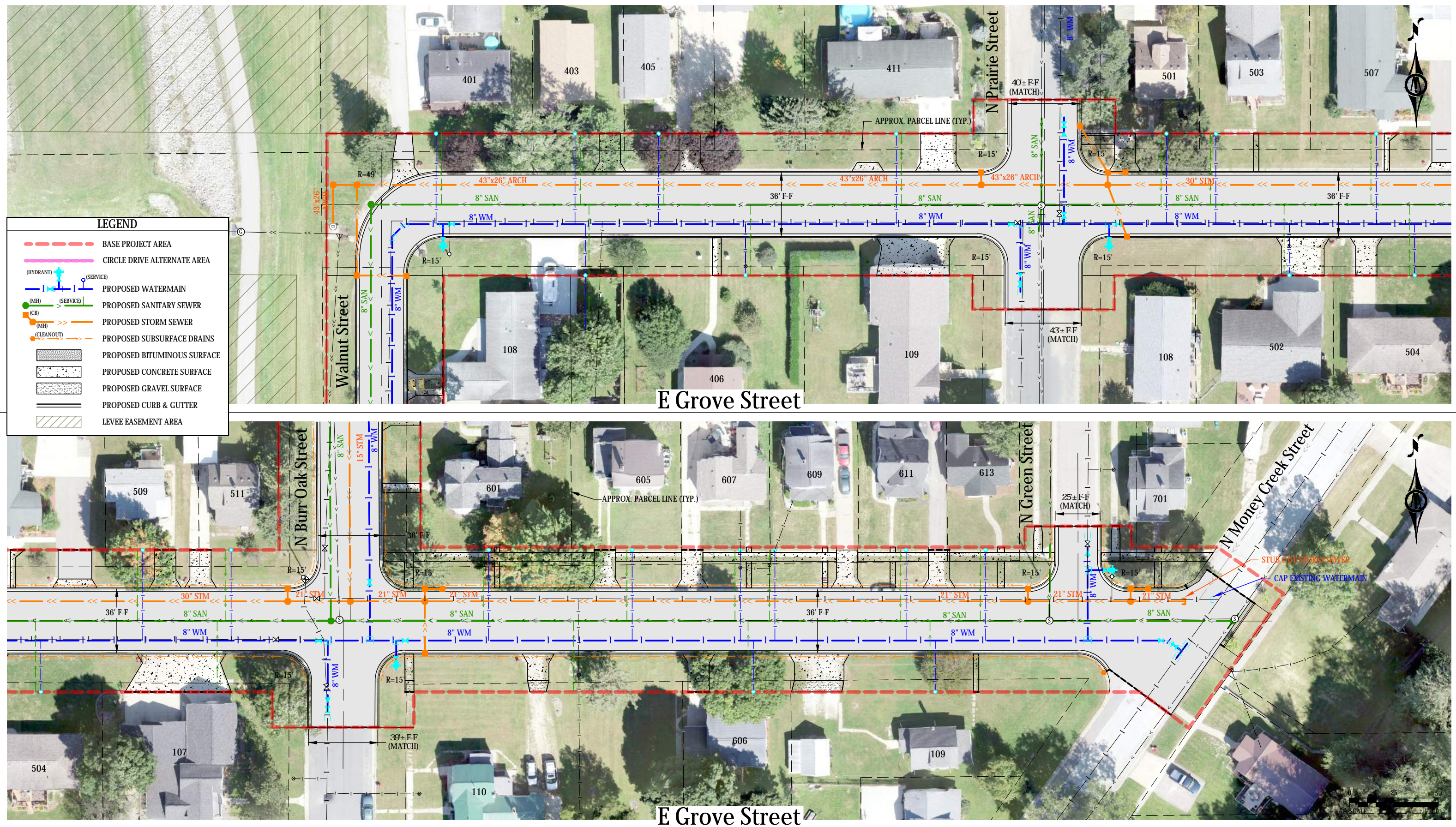
We recommend that the Council accept this report, call for a hearing on the proposed improvements. Prior to calling for the assessment hearing, the Council should provide direction relating to the selection of project areas discussed in this report (base project area and Circle Drive alternate) as this will affect the required mailings.

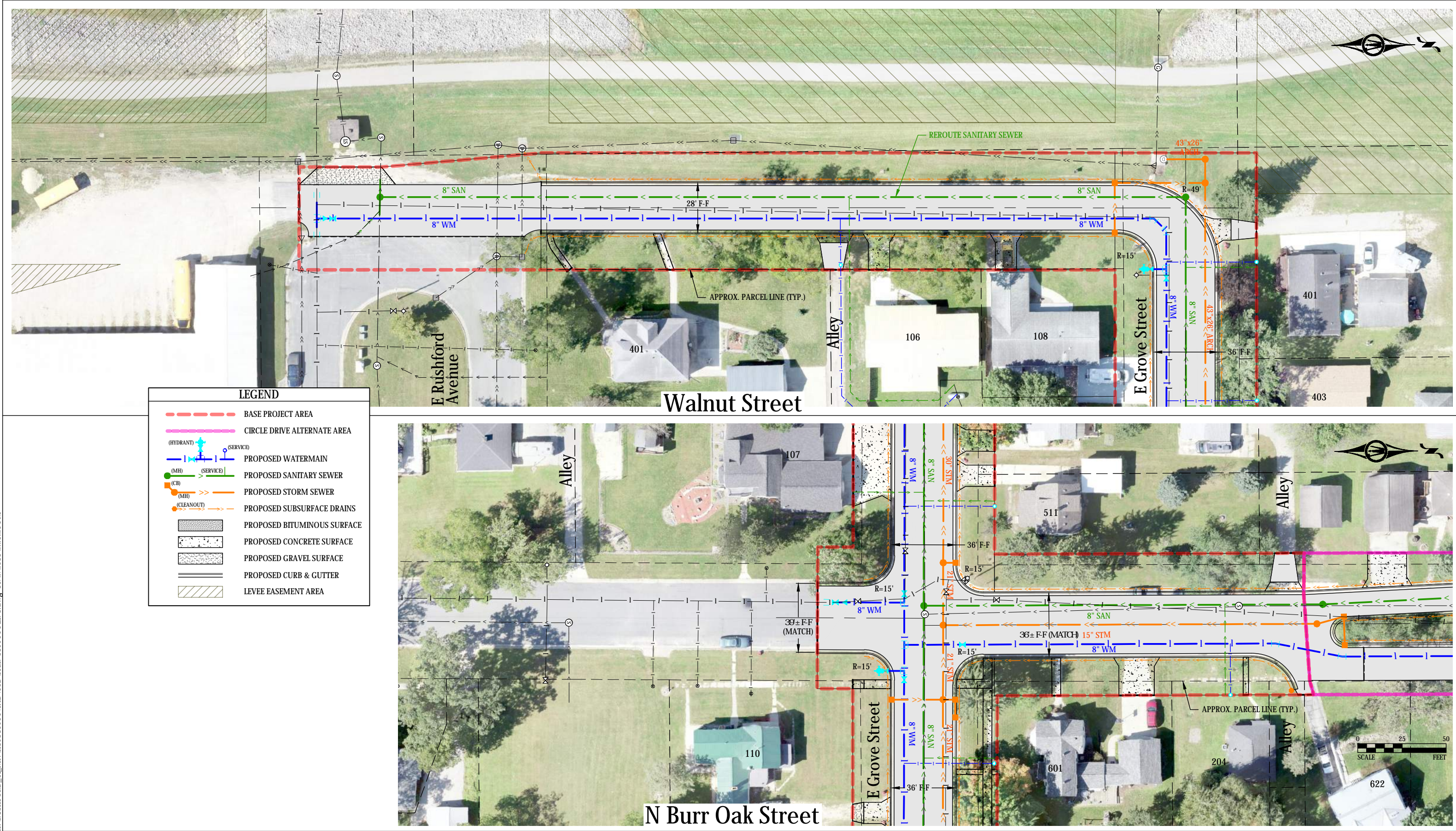
Appendix A: Figures

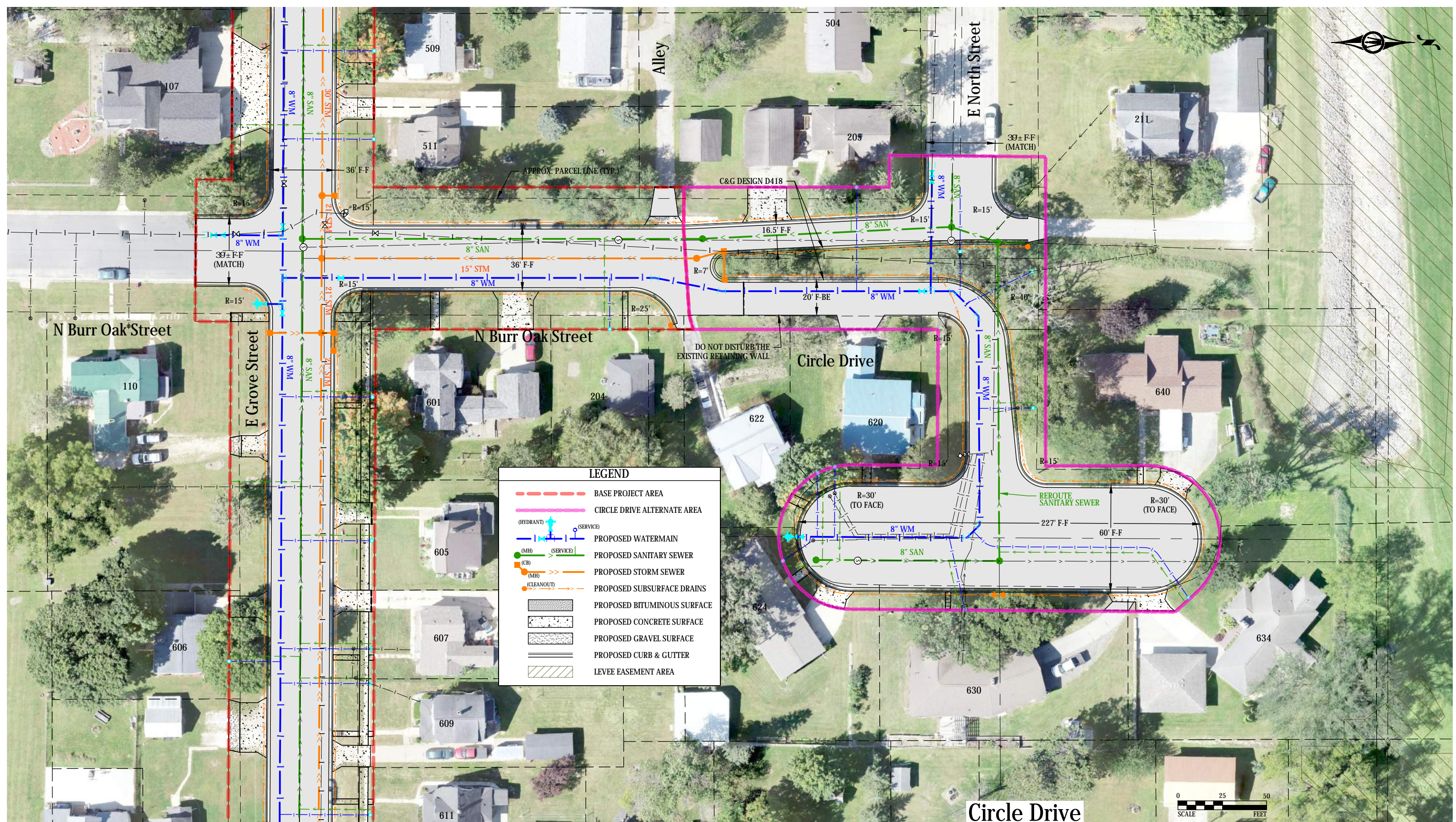


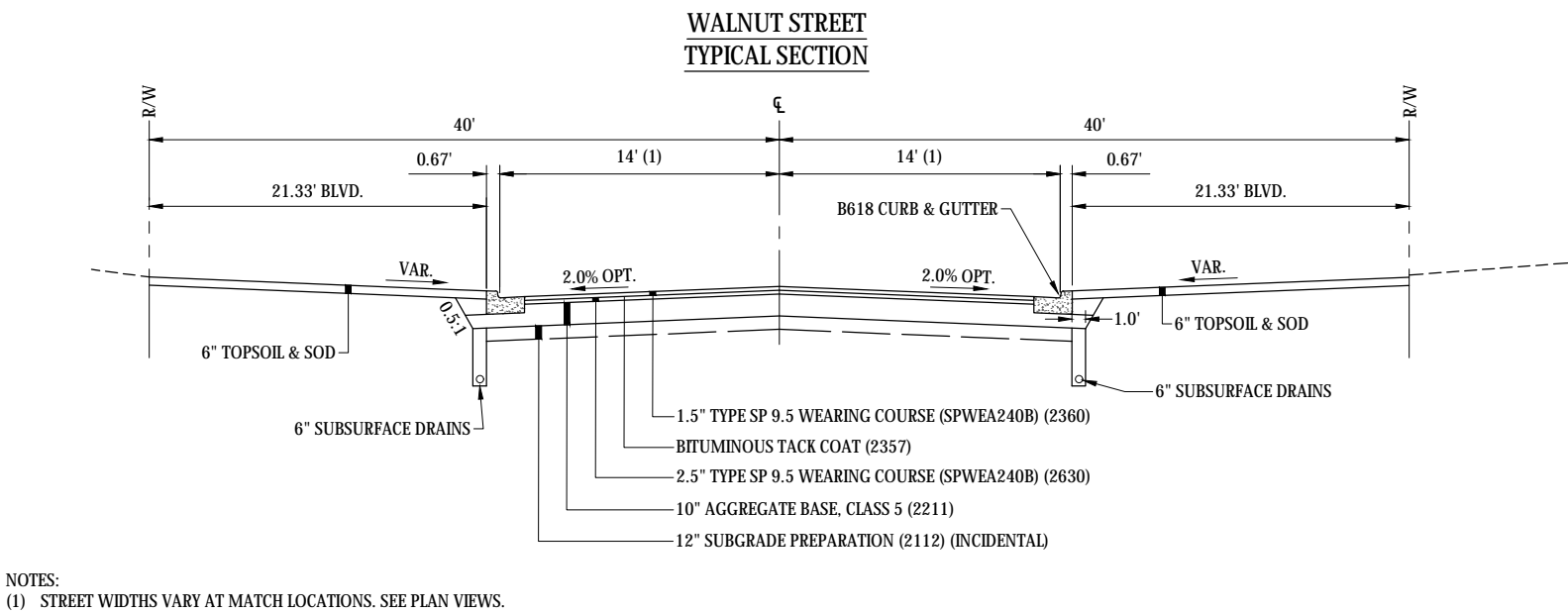
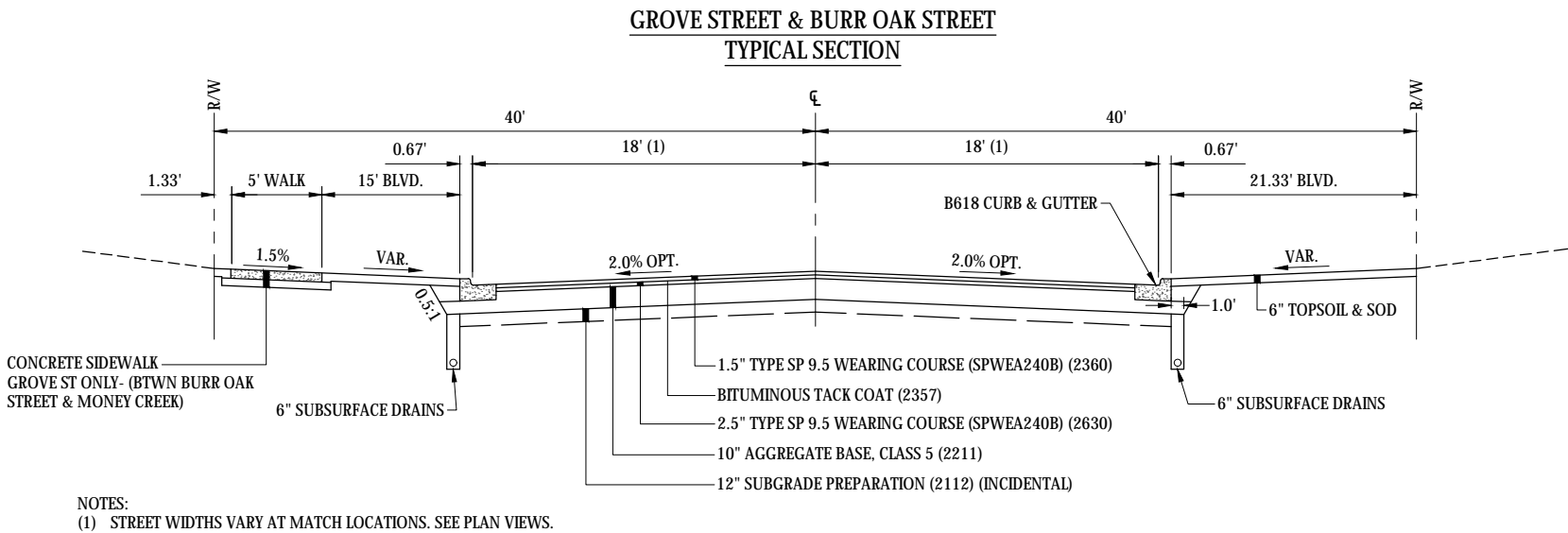
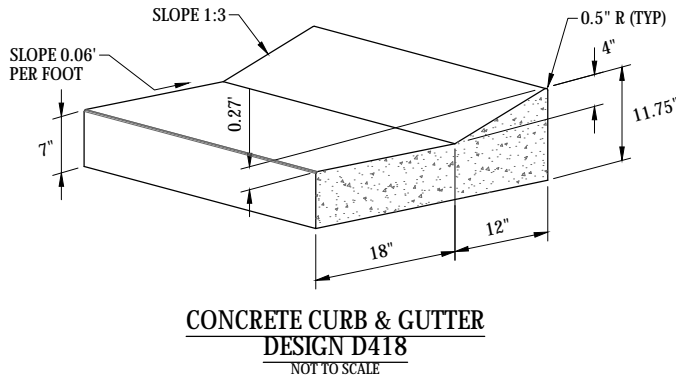
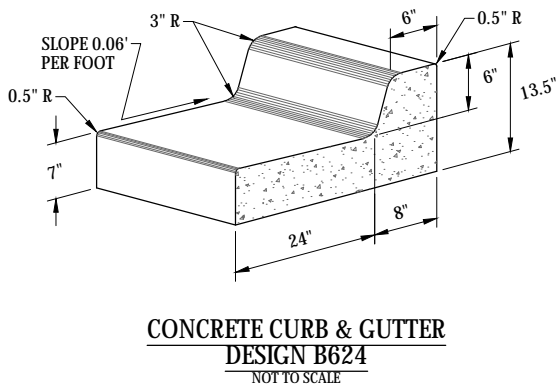
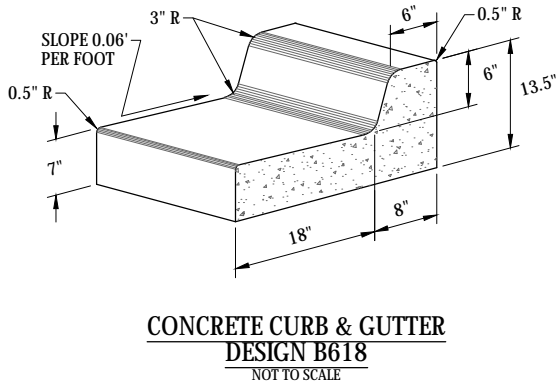
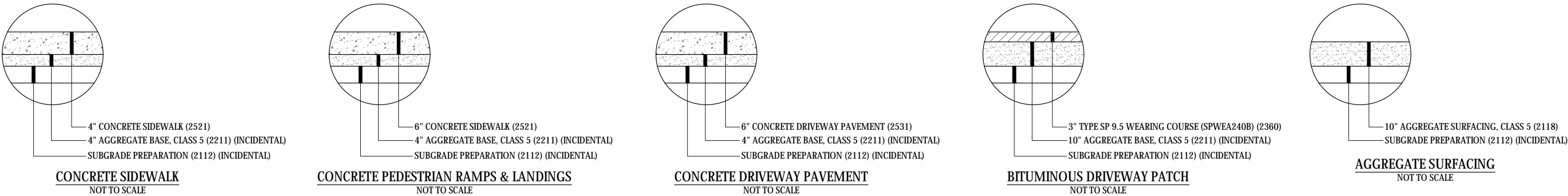












Appendix B: Detailed Cost Estimate

ENGINEER'S PRELIMINARY COST ESTIMATE
2019 Street & Utility Improvements
 (E Grove Street, Walnut Street, N Prairie Street, N Burr Oak Street, and Circle Drive Alternate)
 City of Rushford, Minnesota
 BMI Project No.: H19.115904

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10/2/2018

Item	Unit	Estimated Unit Price	BASE PROJECT Grove St., Walnut St., Prairie St., & Burr Oak St.		ADD ALTERNATE Circle Drive		BASE PROJECT W/ ALTERNATE TOTAL	
			Est. Qnty.	Amount	Est. Qnty.	Amount	Est. Qnty.	Amount
SURFACE IMPROVEMENTS								
MOBILIZATION	LS	\$75,000.00	0.9	\$67,500.00	0.1	\$7,500.00	1	\$75,000.00
TRAFFIC CONTROL	LS	\$5,000.00	0.9	\$4,500.00	0.1	\$500.00	1	\$5,000.00
CLEARING	TREE	\$350.00	10	\$3,500.00			10	\$3,500.00
GRUBBING	TREE	\$350.00	10	\$3,500.00			10	\$3,500.00
REMOVE CURB & GUTTER	LF	\$3.00	3190	\$9,570.00	930	\$2,790.00	4120	\$12,360.00
REMOVE CONCRETE WALK (PRIVATE)	SF	\$1.50	1970	\$2,955.00			1970	\$2,955.00
REMOVE BITUMINOUS PAVEMENT	SY	\$3.50	8137.5	\$28,481.25	2450	\$8,575.00	10587.5	\$37,056.25
REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SY	\$4.50	100	\$450.00	7	\$31.50	107	\$481.50
REMOVE CONCRETE DRIVEWAY PAVEMENT	SY	\$5.50	940	\$5,170.00	115	\$632.50	1055	\$5,802.50
SAWING CONCRETE PAVEMENT (FULL DEPTH)	LF	\$4.00	465	\$1,860.00	85	\$340.00	550	\$2,200.00
SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	\$3.50	540	\$1,890.00	35	\$122.50	575	\$2,012.50
COMMON EXCAVATION (EV) (P)	CY	\$12.00	5600	\$67,200.00	1580	\$18,960.00	7180	\$86,160.00
SUBGRADE EXCAVATION (EV)	CY	\$14.00	635	\$8,890.00	205	\$2,870.00	840	\$11,760.00
STABILIZING AGGREGATE (CV)	CY	\$30.00	635	\$19,050.00	205	\$6,150.00	840	\$25,200.00
1.5 CY BACKHOE (EXPLORATORY EXCAVATION)	HR	\$300.00	15	\$4,500.00	5	\$1,500.00	20	\$6,000.00
AGGREGATE BASE CLASS 5 (CV) (P)	CY	\$30.00	2515	\$75,450.00	805	\$24,150.00	3320	\$99,600.00
AGGREGATE SURFACING CLASS 5	TON	\$20.00	50	\$1,000.00			50	\$1,000.00
TYPE SP 9.5 WEARING COURSE MIXTURE (2,C) 1.5" THICK (P)	SY	\$8.00	7750	\$62,000.00	2450	\$19,600.00	10200	\$81,600.00
TYPE SP 9.5 WEARING COURSE MIXTURE (2,C) 2.5" THICK (P)	SY	\$15.00	7750	\$116,250.00	2450	\$36,750.00	10200	\$153,000.00
BITUMINOUS DRIVEWAY PATCH	SY	\$40.00	100	\$4,000.00	7	\$280.00	107	\$4,280.00
6" PERFORATED PVC PIPE DRAIN	LF	\$12.00	3530	\$42,360.00	1205	\$14,460.00	4735	\$56,820.00
SUMP PUMP SERVICE	EA	\$600.00	29	\$17,400.00	7	\$4,200.00	36	\$21,600.00
6" PVC PIPE DRAIN CLEANOUT	EA	\$300.00	12	\$3,600.00	5	\$1,500.00	17	\$5,100.00
CONCRETE CURB & GUTTER DESIGN B618	LF	\$17.00	3620	\$61,540.00	930	\$15,810.00	4550	\$77,350.00
CONCRETE CURB & GUTTER DESIGN B624	LF	\$20.00	30	\$600.00			30	\$600.00
CONCRETE CURB & GUTTER DESIGN D418	LF	\$17.00			325	\$5,525.00	325	\$5,525.00
6" CONCRETE DRIVEWAY PAVEMENT	SY	\$70.00	940	\$65,800.00	115	\$8,050.00	1055	\$73,850.00
6" CONCRETE WALK	SF	\$12.00	350	\$4,200.00			350	\$4,200.00
4" CONCRETE WALK (PRIVATE)	SF	\$6.00	1620	\$9,720.00			1620	\$9,720.00
TRUNCATED DOMES	SF	\$60.00	45	\$2,700.00			45	\$2,700.00
CONCRETE STEP	EA	\$600.00	5	\$3,000.00	5	\$3,000.00	10	\$6,000.00
EROSION & SEDIMENT CONTROL	LS	\$20,000.00	0.9	\$18,000.00	0.1	\$2,000.00	1	\$20,000.00
AMENDED TOPSOIL BORROW (LV)	CY	\$30.00	1200	\$36,000.00	120	\$3,600.00	1320	\$39,600.00
SEED, FERTILIZE & HYDROMULCH	SY	\$4.00	7060	\$28,240.00	1525	\$6,100.00	8585	\$34,340.00
SUBTOTAL				\$780,876.25		\$194,996.50		\$975,872.75
10% CONTINGENCY				\$78,088.00		\$19,500.00		\$97,588.00
ESTIMATED CONSTRUCTION COST				\$858,964.25		\$214,496.50		\$1,073,460.75
ENGINEERING, ADMINISTRATION, FINANCING				\$197,562.00		\$49,335.00		\$246,897.00
ESTIMATED PROJECT COST - SURFACE IMPROVEMENTS				\$1,056,526.25		\$263,831.50		\$1,320,357.75
PUBLIC SIDEWALK IMPROVEMENTS								
REMOVE CONCRETE WALK	SF	\$1.50	1765	\$2,647.50			1765	\$2,647.50
4" CONCRETE WALK	SF	\$6.00	1765	\$10,590.00			1765	\$10,590.00
SUBTOTAL				\$13,237.50				\$13,237.50
10% CONTINGENCY				\$1,324.00				\$1,324.00
ESTIMATED CONSTRUCTION COST				\$14,561.50				\$14,561.50
ENGINEERING, ADMINISTRATION, FINANCING				\$3,350.00				\$3,350.00
ESTIMATED PROJECT COST - SIDEWALK IMPROVEMENTS				\$17,911.50				\$17,911.50

ENGINEER'S PRELIMINARY COST ESTIMATE
2019 Street & Utility Improvements
 (E Grove Street, Walnut Street, N Prairie Street, N Burr Oak Street, and Circle Drive Alternate)
 City of Rushford, Minnesota
 BMI Project No.: H19.115904

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10/2/2018

Item	Unit	Estimated Unit Price	BASE PROJECT Grove St., Walnut St., Prairie St., & Burr Oak St.		ADD ALTERNATE Circle Drive		BASE PROJECT W/ ALTERNATE TOTAL	
			Est. Qnty.	Amount	Est. Qnty.	Amount	Est. Qnty.	Amount
SANITARY SEWER IMPROVEMENTS								
REMOVE SEWER PIPE (SANITARY)	LF	\$2.00	1550	\$3,100.00	410	\$820.00	1960	\$3,920.00
REMOVE MANHOLE (SANITARY)	EA	\$500.00	6	\$3,000.00	2	\$1,000.00	8	\$4,000.00
CONNECT TO EXISTING SANITARY	EA	\$600.00	9	\$5,400.00	1	\$600.00	10	\$6,000.00
8" PIPE SEWER	LF	\$40.00	2065	\$82,600.00	490	\$19,600.00	2555	\$102,200.00
10" PIPE SEWER	LF	\$50.00	20	\$1,000.00			20	\$1,000.00
CONSTRUCT MANHOLE (SANITARY)	LF	\$300.00	86	\$25,800.00	44	\$13,200.00	130	\$39,000.00
CASTING ASSEMBLY (SANITARY)	EA	\$650.00	9	\$5,850.00	4	\$2,600.00	13	\$8,450.00
SANITARY CLEANOUT	EA	\$500.00	4	\$2,000.00	1	\$500.00	5	\$2,500.00
4" PIPE SEWER SERVICE	LF	\$35.00	1350	\$47,250.00	435	\$15,225.00	1785	\$62,475.00
8"x4" WYE BRANCH	EA	\$250.00	25	\$6,250.00	8	\$2,000.00	33	\$8,250.00
SUBTOTAL				\$182,250.00		\$55,545.00		\$237,795.00
10% CONTINGENCY				\$18,225.00		\$5,555.00		\$23,780.00
ESTIMATED CONSTRUCTION COST				\$200,475.00		\$61,100.00		\$261,575.00
ENGINEERING, ADMINISTRATION, FINANCING				\$46,110.00		\$14,053.00		\$60,163.00
ESTIMATED PROJECT COST - SANITARY SEWER IMPROVEMENTS				\$246,585.00		\$75,153.00		\$321,738.00
WATER SYSTEM IMPROVEMENTS								
REMOVE WATERMAIN	LF	\$4.00	1985	\$7,940.00	125	\$500.00	2110	\$8,440.00
REMOVE HYDRANT	EA	\$300.00	3	\$900.00	1	\$300.00	4	\$1,200.00
REMOVE GATE VALVE & BOX	EA	\$250.00	7	\$1,750.00	1	\$250.00	8	\$2,000.00
CONNECT TO EXISTING WATERMAIN	EA	\$1,200.00	8	\$9,600.00			8	\$9,600.00
6" WATERMAIN	LF	\$45.00	80	\$3,600.00	10	\$450.00	90	\$4,050.00
8" WATERMAIN	LF	\$50.00	2160	\$108,000.00	445	\$22,250.00	2605	\$130,250.00
HYDRANT	EA	\$4,000.00	4	\$16,000.00	1	\$4,000.00	5	\$20,000.00
6" GATE VALVE & BOX	EA	\$1,600.00	9	\$14,400.00	2	\$3,200.00	11	\$17,600.00
8" GATE VALVE & BOX	EA	\$2,000.00	9	\$18,000.00	1	\$2,000.00	10	\$20,000.00
WATERMAIN FITTINGS	LB	\$9.00	1850	\$16,650.00	650	\$5,850.00	2500	\$22,500.00
TEMPORARY WATER SERVICE	LS	\$5,500.00	0.82	\$4,510.00	0.18	\$990.00	1	\$5,500.00
1" CORPORATION STOP & TAPPING SADDLE	EA	\$350.00	23	\$8,050.00	8	\$2,800.00	31	\$10,850.00
1" CURB STOP & BOX	EA	\$350.00	23	\$8,050.00	8	\$2,800.00	31	\$10,850.00
1" TYPE K COPPER WATER SERVICE	LF	\$40.00	1290	\$51,600.00	520	\$20,800.00	1810	\$72,400.00
SUBTOTAL				\$269,050.00		\$66,190.00		\$335,240.00
10% CONTINGENCY				\$26,905.00		\$6,619.00		\$33,524.00
ESTIMATED CONSTRUCTION COST				\$295,955.00		\$72,809.00		\$368,764.00
ENGINEERING, ADMINISTRATION, FINANCING				\$68,070.00		\$16,747.00		\$84,817.00
ESTIMATED PROJECT COST - WATER SYSTEM IMPROVEMENTS				\$364,025.00		\$89,556.00		\$453,581.00
STORM SEWER IMPROVEMENTS								
12" RC PIPE SEWER DESIGN 3006 CLASS V	LF	\$45.00	185	\$8,325.00	30	\$1,350.00	215	\$9,675.00
15" RC PIPE SEWER DESIGN 3006 CLASS V	LF	\$51.00	300	\$15,300.00			300	\$15,300.00
18" RC PIPE SEWER DESIGN 3006 CLASS III	LF	\$55.00	8	\$440.00			8	\$440.00
21" RC PIPE SEWER DESIGN 3006 CLASS III	LF	\$60.00	470	\$28,200.00			470	\$28,200.00
24" RC PIPE SEWER DESIGN 3006 CLASS III	LF	\$65.00	35	\$2,275.00			35	\$2,275.00
30" RC PIPE SEWER DESIGN 3006 CLASS III	LF	\$80.00	315	\$25,200.00			315	\$25,200.00
44" SPAN RC PIPE-ARCH CLASS IIA	LF	\$145.00	460	\$66,700.00			460	\$66,700.00
CONNECT INTO EXISTING DRAINAGE STRUCTURE	EA	\$1,500.00	3	\$4,500.00			3	\$4,500.00
CONSTRUCT DRAINAGE STRUCTURE DESIGN R-1	LF	\$350.00	65	\$22,750.00	8	\$2,800.00	73	\$25,550.00
CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LF	\$400.00	5	\$2,000.00			5	\$2,000.00
CONSTRUCT DRAINAGE STRUCTURE DESIGN 54-4020	LF	\$450.00	12	\$5,400.00			12	\$5,400.00
CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020	LF	\$500.00	21	\$10,500.00			21	\$10,500.00
CONSTRUCT DRAINAGE STRUCTURE DESIGN 84-4020	LF	\$800.00	15	\$12,000.00			15	\$12,000.00
CONSTRUCT DRAINAGE STRUCTURE DESIGN 96-4020	LF	\$900.00	5	\$4,500.00			5	\$4,500.00
CASTING ASSEMBLY (STORM)	EA	\$650.00	26	\$16,900.00	1	\$650.00	27	\$17,550.00
SUBTOTAL				\$224,990.00		\$4,800.00		\$229,790.00
10% CONTINGENCY				\$22,499.00		\$480.00		\$22,979.00
ESTIMATED CONSTRUCTION COST				\$247,489.00		\$5,280.00		\$252,769.00
ENGINEERING, ADMINISTRATION, FINANCING				\$56,923.00		\$1,215.00		\$58,138.00
ESTIMATED PROJECT COST - STORM SEWER IMPROVEMENTS				\$304,412.00		\$6,495.00		\$310,907.00
Subtotal				\$1,470,403.75		\$321,531.50		\$1,791,935.25
Contingency (10%)				\$147,041.00		\$32,154.00		\$179,195.00
Total Estimated Construction Cost				\$1,617,444.75		\$353,685.50		\$1,971,130.25
Engineering, Administration and Financing				\$372,015.00		\$81,350.00		\$453,365.00
Total Estimated Project Cost				\$1,989,459.75		\$435,035.50		\$2,424,495.25