

FEASIBILITY REPORT UPDATE

2018 ALLEY RECONSTRUCTION PROJECT

(Originally Proposed for Construction in 2017)

City of Osseo Hennepin County, Minnesota

NOVEMBER 9, 2017

Prepared for: City of Osseo 415 Central Avenue Osseo, MN 55369

WSB PROJECT NO. 3429-070



FEASIBILITY REPORT UPDATE

2018 ALLEY RECONSTRUCTION PROJECT (Originally Proposed for Construction in 2017)

FOR THE CITY OF OSSEO, MINNESOTA

November 9, 2017

Prepared By:





November 9, 2017

Honorable Mayor and City Council City of Osseo 415 Central Avenue Osseo, MN 55369

Re: Feasibility Report Update

2018 Alley Reconstruction Project

(Originally Proposed for Construction in 2017)

City of Osseo, MN

WSB Project No. 3429-070

Dear Honorable Mayor and City Council:

Attached for your review is an updated feasibility report which addresses improvements associated with one of the two 2018 Alley Reconstruction Projects. This project was originally presented to the City Council on December 12, 2016, and bids were received in March of 2017. Due to the high bid costs, it was recommended that Council reject the bids and rebid the project at a later date. Council concurred with these recommendations.

WSB is recommending that this project be combined with the other 2018 alley project and the 2018 street improvements in order to produce the most competitive bidding package.

We would be happy to discuss this report with you at your convenience. Please contact me at (763) 762-2821 if you have any questions or concerns.

Sincerely,

WSB & Associates, Inc.

Lee Gustafson, PE City Engineer

Attachment

srb

CERTIFICATION

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

Emily A. Lueth, PE

Date: November 9, 2017 Lic. No. 51773

Quality Control Review Completed By:

Lee E. Gustafson AE

Date: November 9, 2017 Lic. No. 18443

TABLE OF CONTENTS

TITLE SHEET LETTER OF TRANSMITTAL CERTIFICATION SHEET TABLE OF CONTENTS

1.	EXEC	UTIVE SUMMARY
2.	INTRO	ODUCTION
	2.1 2.2 2.3 2.4	Authorization
3.	EXIST	TING CONDITIONS
	3.1 3.2 3.3 3.4	Surface
4.	PROP	OSED IMPROVEMENTS
	4.1 4.2 4.3 4.4 4.5	Surface
5.	FINAN	NCING5
	5.1 5.2	Opinion of Probable Cost
6.	PROJ	ECT SCHEDULE
7.	FEASI	BILITY AND RECOMMENDATION
Appen	Figure	1 – Project Location Map 2 – Typical Section
Appen		n of Probable Cost
Appen		hnical Report
Appen		sing Report
Appen	Prelim	inary Assessment Map inary Assessment Roll

Public Comment Summary

Appendix F

1. EXECUTIVE SUMMARY

The 2018 Alley Reconstruction Project consists of repaving the alley bounded by 5^{th} and 6^{th} Avenues NE between 4^{th} Street NE and 93^{rd} Avenue, including repairing or minimal reconstruction of the storm sewer. A map illustrating the project location is shown on *Figure 1* in *Appendix A*.

The deterioration of the existing alley surface and drainage issues experienced along the alley make the proposed improvements necessary. Improvements include complete reconstruction of the alley with new concrete pavement and improvements to the existing storm sewer as needed.

The total estimated project cost for this 2018 Alley Reconstruction Project is \$246,500, and includes a 10% contingency and 25% indirect costs for legal, engineering, administrative, and financing costs. The project is proposed to be funded primarily with special assessments to benefiting property owners, as well as some City funding. The project is proposed to be completed in 2018.

The City's assessment policy calls for assessing adjacent properties 80% of the alley reconstruction costs. This cost is divided equally among the adjacent properties. The estimated special assessment to each of the 27 benefiting property owners for the alley improvements is \$6,580. The City's special assessment policy calls for utility and storm sewer work to be paid from the respective enterprise fund, and as such, this proposed property assessment does not include storm sewer improvement costs.

The proposed project schedule includes construction beginning June 2018, with final completion by the fall of 2018.

This project is feasible, necessary, and cost-effective from an engineering standpoint and should be constructed as proposed herein.

2. INTRODUCTION

2.1 Authorization

On October 24, 2016, the Osseo City Council authorized a feasibility report for this 2018 Alley Reconstruction Project.

2.2 Scope

This feasibility report includes alley reconstruction and drainage improvements along the alley bounded by 5th and 6th Avenues NE between 4th Street NE and 93rd Avenue.

2.3 Data Available

Information and materials used in the preparation of this report include the following:

- City of Osseo Capital Improvement Plan
- City of Osseo Assessment Policy
- City of Osseo Property Index Records
- Storm Sewer Televising Reports
- Field Observations of the Area and Field Topography Surveys

2.4 Project History

This 2018 Alley Reconstruction Project is identified in the City's Capital Improvement Plan to address the poor condition of the alley and corresponding poor drainage.

The City held two neighborhood meetings for this project on November 10, 2016 and November 2, 2017, to receive input on the project. Many of the meeting attendees expressed support for the project, and expressed concerns about the poor drainage conditions.

3. EXISTING CONDITIONS

3.1 Surface

The existing alley consists of a deteriorated bituminous surface and spans 1,140 feet between 93rd Avenue on the north end and 4th Street NE on the south end. Many of the adjacent residents utilize the alley to access garages, parking areas, or rear yards. The project area also contains fences, driveways, and grass boulevards beyond the edge of alley, all within City right-of-way.

3.2 Drainage

Storm sewer facilities exist within the proposed project area. Generally, runoff from adjacent properties runs down the center of the alley to an existing catch basin, or to adjacent streets. Runoff that is collected in the catch basin and along the side streets ultimately flows north to the county ditch system along 93rd Avenue.

3.3 Private Utilities

Private utilities that have facilities in or near the project area will be notified during the final design phase of the project and will be requested to coordinate any necessary repairs and replacements as needed at their cost. Private utility companies that have facilities within the project area include the following:

- CenturyLink (Telephone/Internet)
- CenterPoint Energy (Gas)
- Comcast (Cable)
- Xcel Energy (Electric)
- Zayo Bandwidth (Telecom)

3.4 Watermain and Sanitary Sewer

Public utilities do not exist within the project area.

4. PROPOSED IMPROVEMENTS

4.1 Surface

The proposed surface improvements for the 2018 Alley Reconstruction Project include removal of the existing bituminous surface and installation of a new 12-foot-wide concrete pavement. Full-depth removal of the existing pavement will allow the alley to be reconstructed with a 6-inch concrete pavement on top of a 4-inch section of a Class 5 gravel base over an acceptable, compacted subgrade.

4.2 Drainage Improvements

The profile grades of the alley will be sloped to direct water to the existing catch basin. Typically, the minimum profile grade for a new street or alley is designed to a standard slope of 0.50% or greater. The alley profile will be designed to meet the minimum profile grade and maintain positive drainage at adjacent driveways and garage entrances.

4.3 Easements

It is anticipated that all alley and storm sewer work will take place within the existing alley right-of-way or within existing drainage and utility easements. Additional right-of-way acquisition is not expected to be required in order to construct the project as proposed.

4.4 Permits/Approvals

It is anticipated that no permits will be required as a part of the proposed improvements.

4.5 Public Involvement

Two neighborhood informational meetings for the proposed improvements were conducted on November 10, 2016 and November 2, 2017, for adjacent property owners. Preliminary information was presented to property owners regarding the proposed improvements including costs, funding, schedule, and project impacts. Comment cards were made available to attendees at the meeting; comments can be found in *Appendix D*.

5. FINANCING

5.1 Opinion of Probable Cost

The total project cost is estimated at \$246,500, and includes all proposed surface and storm sewer improvements as well as all engineering, legal, financing, and administrative costs. Detailed cost estimates can be found in *Appendix B* of this report. The opinions of cost incorporate estimated 2018 construction costs and include a 10% contingency factor. Administrative costs are projected at 25% of the construction cost and include engineering, legal, financing, and administrative costs.

5.2 Funding and Assessments

Financing the 2018 Alley Reconstruction Project will be based on the City's special assessment policy which calls for 80% of the proposed improvements to be specially assessed. The remaining 20% and 100% of the storm sewer costs will be financed by the City. Assessments for this project were calculated by dividing 80% of the total cost of the project equally among adjoining residents. There is a total of 27 properties benefiting from the improvements equating to a cost of \$6,580 per unit. The proposed assessment roll is included in *Appendix E* of this report, along with an assessment map highlighting the benefiting properties and the assessment calculations for benefiting property owners.

6. PROJECT SCHEDULE

The proposed project schedule is as follows:

City Council Authorizes Feasibility ReportAugust 28, 2017
November 2, 2017
City Council Receives Feasibility Report/Orders Public HearingNovember 13, 2017
City Council Authorizes Final Design
lan/Specification Preparation
City Council Approves Plans/Specs and Authorizes Bidding February 2018
roject BiddingFebruary – March 2018
April 2018
City Council Awards Construction Contract
Construction June - August 2018

7. FEASIBILITY AND RECOMMENDATION

This 2018 Alley Reconstruction Project consists of reconstructing the alley bounded by 5th and 6th Avenues NE between 4th Street NE and 93rd Avenue, including repairing or minimal reconstruction of the storm sewer.

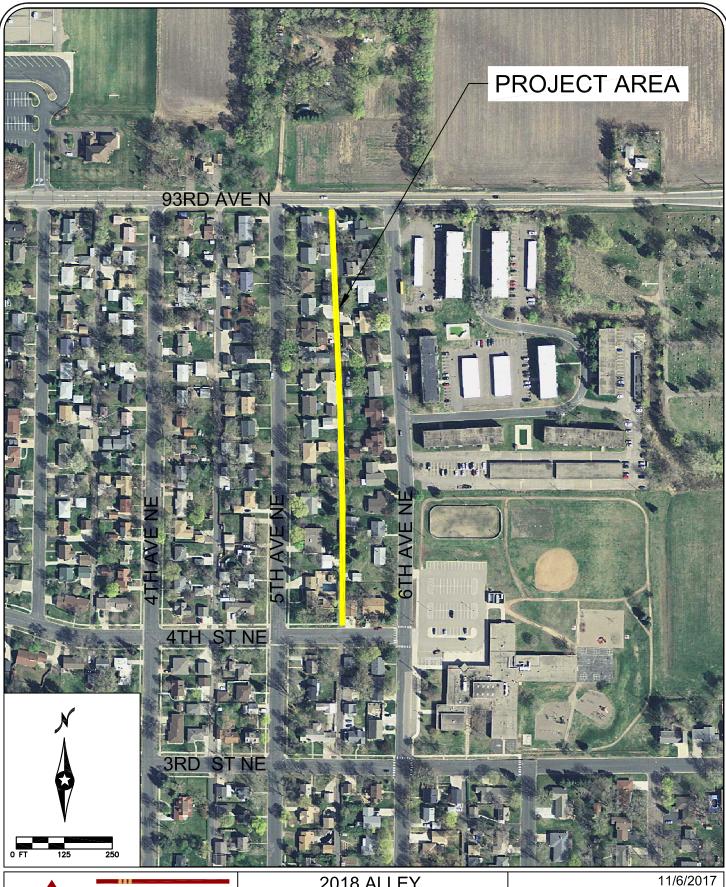
The alley totals approximately 1,140 feet (0.22 miles) and it is proposed that the aforementioned residential alley be reconstructed to a width of 12 feet.

The total estimated project cost for this 2018 Alley Reconstruction Project is \$246,500. Proposed funding for the project is provided through 80% special assessments and 20% City funds. The special assessment cost to each of the 27 benefiting property owners is \$6,580.

Based on the information contained within this report, the proposed improvements as described are necessary, cost-effective, and feasible from an engineering perspective. WSB & Associates, Inc. recommends construction of the proposed improvements as detailed in this report. The economic feasibility of this project will be determined by the City Council.

APPENDIX A

Figure 1 – Project Location Map Figure 2 – Typical Section



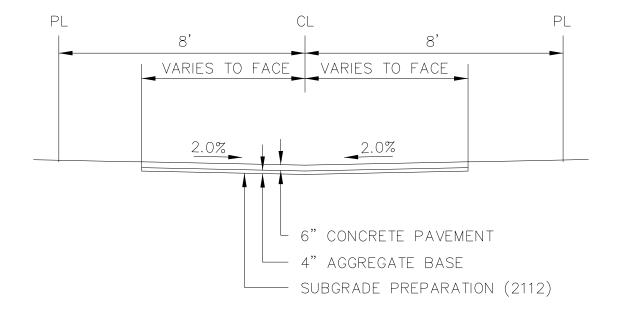
701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416 www.wsbeng.com

763-541-4800 - Fax 763-541-1700
INFRASTRUCTURE ■ ENGINEERING ■ PLANNING ■ CONSTRUCTION

2018 ALLEY RECONSTRUCTION **PROJECT**

OSSEO, MN

FIGURE 1 PROJECT AREA





701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416 www.wsbeng.com

763-541-4800 - Fax 763-541-1700 INFRASTRUCTURE ■ ENGINEERING ■ PLANNING ■ CONSTRUCTION 2018 ALLEY RECONSTRUCTION PROJECT

OSSEO, MN

11/6/2017

FIGURE 2 TYPICAL SECTION

APPENDIX B

Opinion of Probable Cost

		Opinion of Prob	able Cos	t		
W	SB Project:	2018 Alley Improvement Project			Design By:	LME
	-	City of Osseo			Checked By:	EAL
.,	Project No:	2			Date:	11/6/2017
Item No.	MN/DOT Specification	Description	Unit	Estimated Total Quantity	Estimated Unit	Estimated Total Cost
CCII	No.	A ALLEY IMPROVEMENTE				
		A - ALLEY IMPROVEMENTS			Ι .	
1	2021.501	MOBILIZATION	LUMP SUM	1	\$10,000.00	\$10,000.00
2	2104.501	REMOVE CONCRETE CURB & GUTTER	LIN FT	25	\$7.50	\$187.50
3	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	175	\$16.00	\$2,800.00
4	2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	110	\$16.00	\$1,760.00
5	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	1,465	\$8.00	\$11,720.00
6	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	50	\$8.00	\$400.00
7	2104.601	SALVAGE LANDSCAPE STRUCTURES	LUMP SUM	1	\$2,500.00	\$2,500.00
8	2105.501	COMMON EXCAVATION (P)	CU YD	202	\$30.00	\$6,060.00
9	2112.501	SUBGRADE PREPARATION	RD ST	11	\$250.00	\$2,750.00
10	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	10	\$150.00	\$1,500.00
11	2130.501	WATER (DUST CONTROL)	MGAL	10	\$80.00	\$800.00
12	2211.501	AGGREGATE BASE CLASS 5	TON	446	\$25.00	\$11,150.00
13	2301.504	CONCRETE PAVEMENT 6"	SQ YD	1,486	\$55.00	\$81,730.00
14	2360.503	TYPE SP 12.5 WEAR COURSE MIX (2,B) 3.0" THICK	SQ YD	110	\$50.00	\$5,500.00
15	2505.601	UTILITY COORDINATION	LUMP SUM	1	\$1,000.00	\$1,000.00
16	2531.501	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	25	\$60.00	\$1,500.00
17	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	175	\$55.00	\$9,625.00
18	2563.601	TRAFFIC CONTROL	LUMP SUM	1	\$1,000.00	\$1,000.00
19	2573.530	STORM INLET PROTECTION	EACH	2	\$250.00	\$500.00
20	2573.533	SEDIMENT CONTROL LOG TYPE STRAW	LIN FT	100	\$5.00	\$500.00
21	2573.533	SEDIMENT CONTROL LOG TYPE ROCK	LIN FT	50	\$10.00	\$500.00
22	2573.535	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	\$2,000.00	\$2,000.00
23	2574.525	COMMON TOPSOIL BORROW	CU YD	50	\$35.00	\$1,750.00
24	2575.505	SODDING TYPE LAWN	SQ YD	275	\$10.00	\$2,750.00
25	2575.535	WATER (TURF ESTABLISHMENT)	MGAL	30	\$50.00	\$1,500.00
-					TOTAL	\$161,482.50
				CONTINGENC	Y TOTAL (10%)	\$16,148.25
					TOTAL TOTAL	\$177,630.75
			II		T TOTAL (25%)	\$44,407.69
			-		TOTAL	\$222,000.00
SC _D	EDIII E	B - DRAINAGE IMPROVEMENT	Γς		IOIAL	Ψ222,000.00
			_		A. a	* ,
26	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	1	\$1,200.00	
27	2503.541	12" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	40	\$80.00	\$3,200.00
28	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	2	\$1,200.00	
29	2506.501	CONSTRUCT DRAINAGE STRUCTURE DES 48-4020	LIN FT	4	\$1,000.00	\$4,000.00
30	2506.501	CONSTRUCT DRAINAGE STRUCTURE DES 60-4020	LIN FT	5	\$1,000.00	\$5,000.00
31	2506.516	CASTING ASSEMBLY	EACH	2	\$1,000.00	\$2,000.00
					TOTAL	\$17,800.00
					Y TOTAL (10%)	\$1,780.00
					TOTAL TOTAL	\$19,580.00
				NDIRECT COS	T TOTAL (25%)	\$4,895.00
					TOTAL	\$24,500.00
				GRA	ND TOTAL:	\$246,500.00

APPENDIX C

Geotechnical Report



GEOTECHNICAL REPORT

ALLEY IMPROVEMENTS

OSSEO, MN

NOVEMBER 28, 2016

Prepared for: City of Osseo 415 Central Avenue Osseo, Minnesota 55369

WSB PROJECT NO. 03429-060



GEOTECHNICAL REPORT

ALLEY IMPROVEMENTS BETWEEN 5TH AND 6TH AVENUE NORTHEAST OSSEO, MINNESOTA

FOR
CITY OF OSSEO
415 CENTRAL AVENUE
OSSEO, MINNESOTA

NOVEMBER 28, 2016



CERTIFICATION

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

Mark W. Osborn, PE

Date: November 28, 2016 Lic. No. 41362



November 28, 2016

Mr. Rick Hass, Public Services Director City of Osseo 415 Central Avenue Osseo, Minnesota 55369

Re: Geotechnical Report

Alley Improvements

Between 5th and 6th Avenue Northeast WSB Project No.: 03429-060

We have conducted a geotechnical subsurface exploration program for the above referenced project. This report contains our hand auger boring logs, an evaluation of the conditions encountered in the borings and our recommendations for pavement section, subgrade improvements, and other geotechnical related design and construction considerations.

If you have any questions concerning this report or our recommendations, or for construction material testing for this project, please call us at (952) 737-4660.

Sincerely,

WSB & Associates, Inc.

Mark Osborn, PE Geotechnical Project Engineer

lel Osh

Attachment

MWO/mwo

Darin Hyatt, PE Senior Geotechnical Engineer

TITLE SHEET CERTIFICATION SHEET LETTER OF TRANSMITTAL TABLE OF CONTENTS

1.	INTR	RODUCTION	2
	1.1	Project Location	2
	1.2	Project Description	2
	1.3	Purpose and Project Scope of Services	2
2.	PRO	OCEDURES	
	2.1	Boring Layout and Soil Sampling Procedures	3
	2.2	Groundwater Measurements and Borehole Abandonment	3
	2.3	Boring Log Procedures and Qualifications	3
3.	EXP	LORATION RESULTS	
	3.1	Site and Geology	4
	3.2	Subsurface Soil and Groundwater Conditions	4
	3.3	Groundwater Conditions	4
4.	ENG	SINEERING ANALYSIS AND RECOMMENDATIONS	5
	4.1	Discussion	5
	4.2	Pavement Areas	5
	4.3	Backfill and Fill Selection and Compaction	
	4.4	Construction Considerations	7
	4.5	Construction Safety	7
	4.6	Cold Weather Construction	7
	4.7	Field Observation and Testing	7
	4.8	Plan Review and Remarks	8
5	STA	NDARD OF CARE	q

Appendix A

Soil Boring Exhibit Logs of Test Borings Symbols and Terminology on Test Boring Log Notice to Report Users Boring Log Information Unified Soil Classification System (USCS)

1. INTRODUCTION

1.1 Project Location

The bituminous cores and hand augers were completed within the alley that is located between 5th and 6th Avenue Northeast and connects 4th and 7th Street Northeast. The alley was a rural design bituminous asphalt surfaced roadway. The approximate cores and hand auger locations are shown on the Soil Boring Exhibit in *Appendix A*.

1.2 Project Description

It is proposed to reconstruct the alley and place a new bituminous asphalt pavement surface. The alley will remain a rural design section. We understand that no underground utilities will be constructed within the alley. We understand the horizontal and vertical alignments of the roadway will not be altered from existing conditions.

WSB has developed recommendations for this project in consideration of the proposed layout and configurations as understood at this time. WSB must be made aware of the revised or additional information in order to evaluate the recommendations for continued applicability.

1.3 Purpose and Project Scope of Services

The City of Osseo (City) authorized this work. In order to assist the design team in preparing plans and specifications, we have developed recommendations for pavements and subgrades. As such, we have completed a subsurface exploration program and prepared a geotechnical report for the referenced site. This stated purpose was a significant factor in determining the scope and level of service provided. Should the purpose of the report change the report immediately ceases to be valid and use of it without WSB's prior review and written authorization shall be at the user's sole risk.

Our authorized scope of work has been limited to:

- 1. Mobilization / Demobilization of a Coring Crew.
- 2. Clearing underground utilities utilizing the Gopher State One Call.
- 3. Coring three (3) locations and completing hand augers to 5 foot depths.
- 4. Perform soil classification and analysis.
- 5. Review of readily available project information and geologic data.
- 6. Providing this geotechnical report containing:
 - A. Summary of our findings.
 - B. Discussion of subsurface soil and groundwater conditions and how they may affect the proposed pavements.
 - C. Estimated R-value of the soils.
 - D. Recommended pavement section.
 - E. A discussion of soils for use as site fills.

2. PROCEDURES

2.1 Boring Layout and Soil Sampling Procedures

The City requested we complete three (3) soil borings along the alleyway. After our site visit to layout boring locations and meet with utility locators, we noted that the overhead power lines and narrow alleyway would prevent our drill rig from being able to perform soils borings. We contacted the Client and it was agreed that three (3) bituminous cores and hand augers would be completed along the alley. WSB recommended the depths and selected the desired locations. Our field crew staked the borings from existing site features from the supplied site plan. The approximate boring locations are shown on the Soil Boring Exhibit in *Appendix A* which is an aerial photo.

We completed the cores and hand augers on November 8, 2016 with a coring machine with a 6 inch barrel and a 1½" steel hand auger. Methods, crew chief, depths, sampling interval, groundwater observations, test data, and other information are indicated on the hand auger boring logs.

The materials encountered were described on field logs and representative samples were containerized, and transported to our laboratory for further examination and testing.

The samples were visually examined to estimate the distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We classified the soils according to type using the Unified Soil Classification System (USCS). A chart describing the Unified Soil Classification System is included in *Appendix A*.

2.2 Groundwater Measurements and Borehole Abandonment

The crew observed the borings for free groundwater after completion. These observations and measurements are noted on the boring logs. The crew then backfilled with soil cuttings.

2.3 Boring Log Procedures and Qualifications

The subsurface conditions encountered by the test borings are illustrated on the Logs of Test Borings in **Appendix A**. Similar soils were grouped into the strata shown on the boring logs, and the appropriate estimated USCS classification symbols were also added. The depths and thickness of the subsurface strata indicated on the boring logs were estimated from the auger results.

The transition between materials (horizontal and vertical) is approximate and is usually far more gradual than shown. Information on actual subsurface conditions exists only at the specific locations indicated and is relevant only to the time exploration was performed. Subsurface conditions and groundwater levels at other locations may differ from conditions found at the indicated locations. The nature and extent of these conditions would not become evident until exposed by construction excavation. These stratification lines were used for our analytical purposes and, due to the aforementioned limitations, should not be used as a basis of design or construction cost estimates.

3. EXPLORATION RESULTS

3.1 Site and Geology

The cores and augers were completed through the existing bituminous asphalt pavement section and encountered mostly fills overlying lean clays and clayey sands.

The Hennepin County Geologic Atlas indicates the surficial geology of the area is mostly sand and gravel.

3.2 Subsurface Soil and Groundwater Conditions

The boring profile generally consisted of pavement section materials and fills overlying fine and mixed alluvial soils.

Fill materials were encountered to depths of 1 foot at Boring HA-3 and extended to termination at Borings HA-1 and HA-2. These fills consisted mostly of silty sands and lean clays.

Lean clays were encountered below the fills at Boring HA-3, and were generally brown in color and moist. Clayey sands were encountered below the clays and were generally brown in color and moist.

Table 1 below indicates the soils present within the upper 4 feet of the roadway profile. These soils typically have the greatest effect on the roadway subgrade.

Aggregate **Bituminous Base** Subgrade Soils **Boring No. Thickness Thickness** (Upper 4 feet) (inches) (inches) PB-1 2 10 Fill (Silty Sand and Lean Clay) PB-2 11/2 101/2 Fill (Silty Sand) PB-3 2 Lean Clay, Clayey Sand 10

Table 1: Roadway Soil Boring Profiles

3.3 Groundwater Conditions

WSB took groundwater level readings in the exploratory auger holes, reviewed the data obtained, and discussed its interpretation of the data in the text of the report. Note that groundwater levels may fluctuate due to seasonal variations (e.g. precipitation, snowmelt and rainfall) and/or other factors not evident at the time of measurement.

No groundwater was encountered during the augers. The holes were only left open for a short time during the process.

4. ENGINEERING ANALYSIS AND RECOMMENDATIONS

4.1 Discussion

The fills encountered onsite consisted of lean clays and silty sands. These fills have been inplace for a long period of time and were likely placed to raise the roadway to grade or as utility backfill. Primary settlement of these soils should be complete. Based on this, it is our opinion these soils are suitable to remain in place as subgrade soils.

The native lean clays and clayey sands would be suitable for pavement support.

The soils within the pavement subgrade consist of clays and silty sands, which are frost susceptible soils. Consideration should be given to partially subcutting these soils and replacing with a non-frost susceptible granular fill to reduce the potential frost heave below the pavement section.

4.2 Pavement Areas

After excavation of the pavement section, proof-roll tests should be utilized with a loaded dump truck to help identify areas that may require corrective action such as scarifying, disking, and compaction or sub-excavations. We also recommend a proof-roll be performed again on the aggregate base just prior to placement of the bituminous pavement.

Once the site has been prepared as recommended, we anticipate the subgrade will consist of a mixture of lean clays, clayey sands, and silty sands. The MnDOT Flexible Pavement Design Guidance Memo from June 2014, indicates soils such as those anticipated have R-values ranging from about ten to thirty (10-30). We recommend an R-value of fifteen (15) be used for design of roadways at this site.

No traffic data was available for the alleyway. We would expect traffic to be limited to residents driving to their garage and for garbage trucks. We estimated the Average Daily Traffic (ADT) to be less than 200 vehicles. Our design is based on a twenty (20) year design life of the pavement section.

Based on the design R-value and the traffic ADT we calculated the roadway traffic to be equivalent to approximately 18,000 Estimated Single Axle Loads (ESAL's).

Bituminous Pavement Option

Based on MnDOT's MnPave software, we recommend the pavement section in Table 2.

SectionThickness (inches)Bituminous Wear Course, MnDOT 23601½Bituminous Base Course, MnDOT 23602MnDOT Class 5 Aggregate Base6

Table 2: Recommended Flexible Pavement Section

As previously mentioned the use of a non-frost susceptible sand cushion will help reduce the effects of frost heave. In our opinion, a 30 inch sand cushion typically provides adequate reduction in frost heave potential. It should be noted that any sand cushion placed below the pavement section will provide positive benefits for reduced potential frost heave.

Drainage of the sand cushion via drain tile may be necessary. Drain tile wrapped in a sock should be placed at the base of the sand cushion and tied into catch basins. We recommend the sand cushion contain less than ten percent (10%) passing the #200 sieve.

Within several years after initial paving, some thermal shrinkage cracks will develop. We recommend routine maintenance be performed to improve pavement performance and increase pavement life. Pavement should be sealed with a liquid bitumen sealer to retard water intrusion into the base course and subgrade. Localized patch failures may also develop where trucks or buses turn on the pavement. When these occur, they should be cut out and patch repaired. Periodic seal coating should also be applied, to preserve the longevity of the pavement.

Concrete Pavement Option

Alternately, a concrete section could be designed for these roadways. The concrete section in Table 3 is based on minimum recommendations from MnDOT design methods.

Table 3: Commercial Roadways
Concrete – Rigid Pavement Section

Section	Thickness (inches)	
Concrete, MnDOT	6	
MnDOT Class 5 Aggregate Base	4	

MnDOT recommends joint spacing of twelve foot (12') or fifteen foot (15') lengths. We used twelve feet (12') for our calculations in the MnDOT Rigid Pavement Design software. We suggest the concrete mix be air-entrained to six percent plus or minus one and one-half percent (6% +/- 1½ %) with a minimum twenty-eight (28) day compressive strength of 4,000 psi. The slump range should be between two to five inches (2-5") to reduce shrinkage related problems such as curling or excessive cracking. A maximum water to cement ratio of forty-five hundredths (0.45) is recommended. Type 1 cement should be acceptable, and should meet the requirements of ASTM C150. The concrete mix design should follow MnDOT requirements.

General Design

The pavement sections above provide options to meet the ESAL requirements. Other pavement design options would be acceptable as well as long as they meet the minimum requirements for bituminous/concrete thickness, aggregate base thickness, and can meet the ESAL requirements.

4.3 Backfill and Fill Selection and Compaction

The on-site non-organic soils may be reused as backfill and fill provided they are moisture conditioned and can be compacted to their specified densities. Any wet soils excavated would need to be dried before reuse as an engineered fill. Backfills with cobbles larger than six inches (6") should not be placed below pavements or in contact with utilities. We recommend that sandy soils be moisture conditioned to meet compaction specifications and clayey soils be moisture conditioned to within two percent (2%) below to three percent (3%) above their optimum moisture contents as determined from their standard Proctor tests (ASTM D-698). Fill should be spread in thin lifts to allow for complete compaction of the material. Table 4 indicates the recommended compaction levels.

Table 4: Recommended Level of Compaction for Backfill and Fill

Area	Percent of Standard Proctor Maximum Dry Density
Pavement: Within 3 feet of top of subgrade	100
Pavement: Greater than 3 feet below top of subgrade	95
Utility Trench	95
Landscaping (non-structural)	90

4.4 Construction Considerations

Good surface drainage should be maintained throughout the work so that the site is not vulnerable to ponding during or after a rainfall. The excavation for any soil correction to densify loose fill should not encounter groundwater intrusion. However, if water does enter excavations, it should be promptly removed prior to further construction activities. Under no circumstances should fill or concrete be placed into standing water. Trenches for underground utility lines serving the building addition are also expected to be dry.

Soil corrections at this site for pavement subgrades may not be continuous in all areas. We recommend tapering the fills back to native soils at a ten to one (10:1) slope.

4.5 Construction Safety

All excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P "Excavations and Trenches". This document states that excavation safety is the responsibility of the contractor. Reference to this OSHA requirement should be included in the job specifications.

The responsibility to provide safe working conditions on this site, for earthwork, building construction, or any associated operations is solely that of the contractor. This responsibility is not borne in any manner by WSB.

4.6 Cold Weather Construction

It is our understanding that construction is unlikely to occur during the winter months. However, if the construction does continue into the winter months we recommend the following guidelines.

Only unfrozen fill should be used. Placement of fill or concrete must not be permitted on frozen soil.

4.7 Field Observation and Testing

The soil conditions illustrated on the Logs of Test Borings in *Appendix A* are indicative of the conditions only at the boring locations.

WSB also recommends a representative number of field density tests be taken in all engineered fill and backfill placed to aid in judging its suitability. Fill placement and compaction should be monitored and tested to determine that the resulting fill and backfill conforms to specified density, strength or compressibility requirements. Prior to use, any proposed fill and backfill material should be submitted to the WSB laboratory for testing to verify compliance with recommendations and project specifications.

Dynamic Cone Penetrometer (DCP) tests can be completed in the aggregate base in lieu of density testing. We recommend following MnDOT Specification 2211-3.

WSB would be pleased to provide the necessary field observation, monitoring and testing services during construction.

4.8 Plan Review and Remarks

The observations, recommendations and conclusions described in this report are based primarily on information provided to WSB, obtained from our subsurface exploration, our experience, several necessary assumptions and the scopes of service developed for this project and are for the sole use of our client. We recommend that WSB be retained to perform a review of final design drawing and specifications to evaluate that the geotechnical engineering report has not been misinterpreted. Should there be any changes in the design related to this project or if there are any uncertainties in the report we should be notified. We would be pleased to review any project changes and modify the recommendations in this report (if necessary) or provide any clarification in writing.

The entire report should be kept together; for example, boring logs should not be removed and placed in the specifications separately.

The boring logs and related information included in this report are indicators of the subsurface conditions only at the specific locations indicated on the Soil Boring Exhibit and times noted on the Logs of Test Boring sheets in *Appendix A*. The subsurface conditions, including groundwater levels, at other locations on the site may differ significantly from conditions that existed at the time of sampling and at the boring locations.

The test borings were put down by WSB solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.

WSB has not performed any observations, investigations, studies or testing that is not specifically listed in the scope of service. WSB shall not be liable for failing to discover any condition whose discovery required the performance of services not authorized by the Agreement.

5. STANDARD OF CARE

The recommendations and opinions contained in this report are based on our professional judgment. The soil testing and geotechnical engineering services performed for this project have been performed with the level of skill and diligence ordinarily exercised by reputable members of the same profession under similar circumstances, at the same time and in the same or a similar locale. No warranty, either express or implied, is made.

APPENDIX A

Soil Borings Exhibit
Logs of Test Borings
Symbols and Terminology on Test Boring Log
Notice to Report Users Boring Log Information
Unified Soil Classification Sheet (USCS)











WSB BORING LOG - WSB.GDT - 11/21/16 09:21 - K:\03429-060\GEOTECH-CMT\2017 STREET IMPROVEMENTS.GPJ

LOG OF TEST BORING

BORING NUMBER HA 1 PROJECT NAME: 2017 Street Improvements PROJECT LOCATION: Osseo, MN CLIENT/WSB #: 03429-060 PAGE 1 OF 1 LABORATORY TESTS DEPTH **GEOLOGIC** WLUSCS MC DD LL (%) (%) PL (%) DESCRIPTION OF MATERIAL ORIGIN No. TYPE (ft) BITUMINOUS 0 - 2" Pavement Section AGGREGATE BASE 2" - 12" ΑU Fill FILL, mostly Silty Sand, dark brown 2 ΑU 3 FILL, mostly Lean Clay, grayish brown Fill ΑU 3 End of Boring 5.0 ft. 6-7-9. 10 11 WATER LEVEL MEASUREMENTS START: 11/08/2016 END: 11/08/2016 Crew Chief: Logged By: SAMPLED CASING | CAVE-IN WATER WATER DATE TIME **METHOD DEPTH** DEPTH **DEPTH DEPTH ELEVATION** J. Tatro DAJ 11/08/2016 5 1 1/2" HA 0' - 5' None Notes:



WSB BORING LOG - WSB.GDT - 11/21/16 09:21 - K:\03429-060\GEOTECH-CMT\2017 STREET IMPROVEMENTS.GPJ

LOG OF TEST BORING

BORING NUMBER HA 2 PROJECT NAME: 2017 Street Improvements PROJECT LOCATION: Osseo, MN CLIENT/WSB #: 03429-060 PAGE 1 OF 1 LABORATORY TESTS DEPTH **GEOLOGIC** USCS M MC DD LL (%) (%) PL (%) DESCRIPTION OF MATERIAL ORIGIN No. TYPE (ft) BITUMINOUS 0 - 1 1/2" AGGREGATE BASE 1 1/2" - 12" Pavement Section ΑU Fill FILL, mostly Silty Sand, dark brown 2 2 ΑU 3 End of Boring 5.0 ft. 6-7-9 10 11 WATER LEVEL MEASUREMENTS START: 11/08/2016 END: 11/08/2016 Crew Chief: Logged By: SAMPLED CASING | CAVE-IN WATER WATER DATE TIME **METHOD DEPTH DEPTH DEPTH DEPTH ELEVATION** J. Tatro DAJ 11/08/2016 5 1 1/2" HA 0' - 5' None Notes:



WSB BORING LOG - WSB.GDT - 11/21/16 09:21 - K:\03429-060\GEOTECH-CMT\2017 STREET IMPROVEMENTS.GPJ

LOG OF TEST BORING

BORING NUMBER HA 3 PROJECT NAME: 2017 Street Improvements PROJECT LOCATION: Osseo, MN CLIENT/WSB #: 03429-060 PAGE 1 OF 1 LABORATORY TESTS DEPTH **GEOLOGIC** USCS M MC DD LL (%) (%) PL (%) DESCRIPTION OF MATERIAL ORIGIN No. TYPE (ft) BITUMINOUS 0 - 2" Pavement Section AGGREGATE BASE 2" - 12" ΑU CL LEAN CLAY, brown, moist Fine Alluvium 2 AU 3 CLAYEY SAND, brown, moist SC Mixed Alluvium 3 ΑU End of Boring 5.0 ft. 6-7-9. 10 11 WATER LEVEL MEASUREMENTS START: 11/08/2016 END: 11/08/2016 Crew Chief: Logged By: SAMPLED CASING | CAVE-IN WATER WATER DATE TIME **METHOD DEPTH DEPTH DEPTH DEPTH ELEVATION** J. Tatro DAJ 11/08/2016 5 1 1/2" HA 0' - 5' None Notes:



SYMBOLS AND TERMINOLOGOY ON TEST BORING LOG

	SYMBOI	LS					
	Drilling and Sampling		Laboratory Testing				
Symbol	<u>Description</u>	Symbol	<u>Description</u>				
HSA _FA _HA _DC _RC PD CS DM JW SB _L _T 3TP _TO W B P _Q _X N CR WL ▼ NMR	3-1/4" LD. Hollow stem auger 4", 6" or 10" diameter flight auger 2", 4", or 6" hand auger 2-1/2", 4", 5", or 6" steel drive casing Size A, B or N rotary casing Pipe drill or cleanout tube Continuous split barrel sampling Drilling mud Jetting water 2" O.D. split barrel sampling 2-1/2" or 3-1/2" O.D. SB liner sampler 2" or 3" thin walled tube sample 3" thin walled tube using pitcher sampler 2" or 3" thin walled tube using Osterberg sampler Wash sample Bag sample Test pit sample BQ, NQ, or PQ wire line system AX, BX, or NX double tube barrel Standard penetration test, blows per foot Core recovery, percent Water level Water level No measurement recorded, primarily due to presence of drilling or coring fluid.		Water content, % (ASTM** D2216) Dry density, pcf Liquid limit (ASTM D4318) Plastic limit (ASTM D4318) -Inserts in last column (Qu or RQD)- Unconfined compressive strength, psf (ASTM D2166) Penetrometer reading, tsf (ASTM D1558) Torvane reading, tsf Specific gravity (ASTM D854) Shrinkage limits (ASTM D427) Organic content-combustion method (ASTM D2974) Swell pressure, tsf (ASTM D4546) Percent swell under pressure (ASTM D4546) Free swell, % (ASTM D4546) Shrink swell, % (ASTM D4546) Hydrogen ion content-Meter Method (ASTM D4972) Sulfate content, parts/million or mg/l Chloride content, parts/million or mg/l One dimensional consolidation (ASTM D2435) Triaxial compression (ASSTM D2850 and D4767) Direct Shear (ASTM D3080) Coefficient of permeability, cm/sec (ASTM D2434) Pinhole test (ASTM D4647) Double hydrometer (ASTM D4221) Particle size analysis (ASTM D422) Laboratory electrical resistivity, ohm-cm (ASTM G57) Pressuremeter deformation modulus, tsf (ASTM D4719) Pressuremeter test (ASTM D3385) Rock quality designation, percent Schown on attached data sheet or graph M designates American Society for Testing and Materials				

TERMINOLOGY								
Particle Sizes				Soil layering and Moisture				
Type Size Range Boulders > 12" Cobbles 3" - 12" Coarse gravel 3/4" - 3" Fine gravel #4 sieve - 3/4" Coarse sand #4 - #10 sieve Medium sand #10-#40 sieve Fine sand #40-#200 sieve Silt 100% passing #200 sieve and > 0.005mm Clay 100% passing #200 sieve and < 0.005mm			Varved Lenses Stratified Layer Dry Moist	LaminationUp to 1/4" thick stratumVarvedAltering laminations of any combination of clay, silt, fine sand, or colorsLensesSmall pockets of different soils in a soil massStratifiedAltering layers of varying materials or colorsLayer1/4" to 12" thick stratumDryPowdery, no noticeable waterMoistDamp, below saturationWaterbearingPervious soil below water				
Grave	Content		Standard Penetration Resistance					
Coarse-Grained Soils	Fine-	Grained Soils	Coh	Cohesionless Soils Cohesive Soils				
% Gravel Description 2-15 A little gravel 16-49 With gravel	% Gravel < 5 5-15 16-30 31-49	Description Trace of gravel A little gravel With gravel Gravelly	N-Value 0-4 5-10 11-30 31-50 > 50	Relative Density Very loose Loose Medium dense Dense Very dense	N-Value 0-4 5-8 9-15 16-30 > 30	Consistency Very soft Soft Firm Hard Very hard		



NOTICE TO REPORT USERS BORING LOG INFORMATION

Subsurface Profiles

The subsurface stratification lines on the graphic representation of the test borings show an approximate boundary between soil types or rock. The transition between materials is approximate and is usually far more gradual than shown. Estimating excavation depths, soil volumes and other computations relying on the subsurface strata may not be possible to any degree of accuracy.

Water Level

WSB & Associates, Inc. took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of this report. The groundwater level may fluctuate due to seasonal variations caused by precipitation, snowmelt, rainfalls, construction or remediation activities, and/or other factors not evident at the time of measurement.

The actual determination of the subsurface water level is an interpretative process. Subsurface water level may not be accurately depicted by the levels indicated on the boring logs. Normally, a subsurface exploration obtains general information regarding subsurface features for design purposes. An accurate determination of subsurface water levels is not possible with a typical scope of work. The use of the subsurface water level information provided for estimating purposes or other site review can present a moderate to high risk of error.

The following information is obtained in the field and noted under "Water Level Measurements" at the bottom of the log.

Sampled Depth: The lowest depth of soil sampling at the time a water level measurement is taken.

Casing Depth: The depth to the bottom of the casing or hollow-stem auger at the time of water

level measurement.

Cave-In Depth: The depth at which the measuring tape stops in the bore hole.

Water Level: The point in the bore hole at which free-standing water is encountered by a

measuring tape dropped from the surface inside the casing.

Drilling Fluid Level: Similar to the water level, except the liquid in the bore hole is a drilling fluid.

Obstruction Depths

Obstructions and/or obstruction depths may be noted on the boring logs. Obstruction indicates the sampling equipment encountered resistance to penetration. It must be realized that continuation of drilling, the use of other drilling equipment or further exploration may provide information other than that depicted on the logs. The correlation of obstruction depths on the log with construction features such as rock excavation, foundation depths, or buried debris cannot normally be determined with any degree of accuracy. For example, penetration of weathered rock by soil sampling equipment may not correlate with removal by certain types of construction equipment. Using this information for estimating purposes often results in a high degree of misinterpretation.

Accurately identifying the obstruction or estimating depths where hard rock is present over the site requires a scope of service beyond the normal geotechnical exploration program. The risk of using the information noted on the boring logs for estimating purposes must be understood.

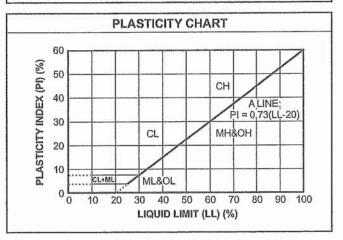


UNIFIED SOIL CLASSIFICATION SYSTEM

ONII IED OOI		IFICATION AND SYMBOL CHART
, ,		RSE-GRAINED SOILS
(more than		erial is larger than No. 200 sieve size.)
	1.4.9	Gravels (Less than 5% fines)
GRAVELS	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
More than 50% of coarse	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
fraction larger	Grave	s with fines (More than 12% fines)
than No. 4 sieve size	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
	Clean	Sands (Less than 5% fines)
CANDO	sw	Well-graded sands, gravelly sands, little or no fines
SANDS 50% or more of coarse	SP	Poorly graded sands, gravelly sands, little or no fines
fraction smaller	Sands	with fines (More than 12% fines)
than No. 4 sieve size	SM	Silty sands, sand-silt mixtures
	sc	Clayey sands, sand-clay mixtures
	FINE	GRAINED SOILS
(50% or m	ore of mate	rial is smaller than No. 200 sieve size.)
SILTS	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
AND CLAYS Liquid limit less than	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
50%	OL	Organic silts and organic silty clays of low plasticity
SILTS	МН	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
AND CLAYS Liquid limit 50%	СН	Inorganic clays of high plasticity, fat clays
or greater	ОН	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	<u>√</u> <u>√</u> PT	Peat and other highly organic soils

	LABORATORY CLAS	SIFICATION CRITERIA			
GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than	4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3			
GP	Not meeting all gradation re	quirements for GW			
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases			
GC	Atterberg limits above "A" line with P.I. greater than 7	requiring use of dual symbols			
sw	$C_u = \frac{D_{60}}{D_{10}}$ greater than	4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3			
SP	Not meeting all gradation re	quirements for GW			
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are			
SC	Atterberg limits above "A" line with P.I. greater than 7	borderline cases requiring use of dual symbols.			

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained solls are classified as follows:



APPENDIX D

Televising Report

Televising Report

for

WSB & Associates

Televising

in

Osseo, MN

November 23rd, 2016



Experience the difference.
One call. One service provider. One experience.
Hydro-Klean, LLC

21040 Commerce Blvd.

Rogers, Minnesota 55374 763.428.6488 | fax: 763.428.6489

www.hydro-klean.com

Tabular Report of PSR ST 8

for OSSEO

Drainage Survey Customer P/O # Date 2016/11/11 Time 10:38 Street 5th Ave NE City Osseo Further location details Up ST 8 Rim to invert Grade to invert Rim to grade Down ST 9 Rim to invert Grade to invert Rim to grade Use Stormwater Direction Down Flow control Media No Shape Circular Height 15 Width ins Preclean J Date Cleaned Material Vitrified Clay Pipe Joint length Ft Total length 133.8 Ft Length Surveyed Lining Year laid Year rehabilitated Weather	
City Osseo Further location details Up ST 8 Rim to invert Grade to invert Rim to grade Down ST 9 Rim to invert Grade to invert Rim to grade Use Stormwater Direction Down Flow control Media No Shape Circular Height 15 Width ins Preclean J Date Cleaned Material Vitrified Clay Pipe Joint length Ft Total length 133.8 Ft Length Surveyed	
Up ST 8 Rim to invert Grade to invert Rim to grade Down ST 9 Rim to invert Grade to invert Rim to grade Use Stormwater Direction Down Flow control Media No Shape Circular Height 15 Width ins Preclean J Date Cleaned Material Vitrified Clay Pipe Joint length F1 Total length 133.8 F1 Length Surveyed	
Down ST 9 Rim to invert Grade to invert Rim to grade Use Stormwater Direction Down Flow control Media No Shape Circular Height 15 Width ins Preclean J Date Cleaned Material Vitrified Clay Pipe Joint length Ft Total length 133.8 Ft Length Surveyed	
Down ST 9 Rim to invert Grade to invert Rim to grade Use Stormwater Direction Down Flow control Media No Shape Circular Height 15 Width ins Preclean J Date Cleaned Material Vitrified Clay Pipe Joint length Ft Total length 133.8 Ft Length Surveyed	Ft
Use Stormwater Direction Down Flow control Media No Shape Circular Height 15 Width ins Preclean J Date Cleaned Material Vitrified Clay Pipe Joint length Ft Total length 133.8 Ft Length Surveyed	Ft
Shape Circular Height 15 Width ins Preclean J Date Cleaned Material Vitrified Clay Pipe Joint length Ft Total length 133.8 Ft Length Surveyed	
Lining Countries of the Foundation of the Length Surveyed	
Lining	133.8 =4
	100.0
Purpose Cat Pressure	0.000
Additional info Structural O & M Constru	
Location Miscellaneous Hydraulic	, out of
Project Work Order	
Northing Easting Elevation	
Coordinate System GPS Accuracy	
Count Video CD Code In1 In2 % JntFr To ImRef Remarks	

Count Video	CD Code	 In1	ln2	%	Jnt	Fr	To	ImRef	Remark	S		
0.0	ST Start of Survey	1 -					- 1					
0.0	AMH Manhole		1 .	<u> </u>		T				-		
0.0	MWL Water Level			5						·		<u> </u>
133.8	AMH Manhole						- 1		.		-	
133.8	FH End of Survey											

133.8 Ft Total Length Surveyed

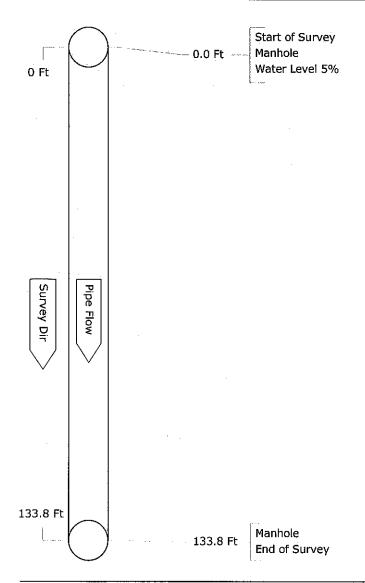
Scores	Structural: O&M:	Pipe Rating 0 Pipe Rating 0	Pipe Ratings Index 0 Pipe Ratings Index 0	Peak 0 Peak 0	Mean Pipe 0 Mean Pipe 0



Pipe Graphic Report of PSR ST 8

for OSSEO

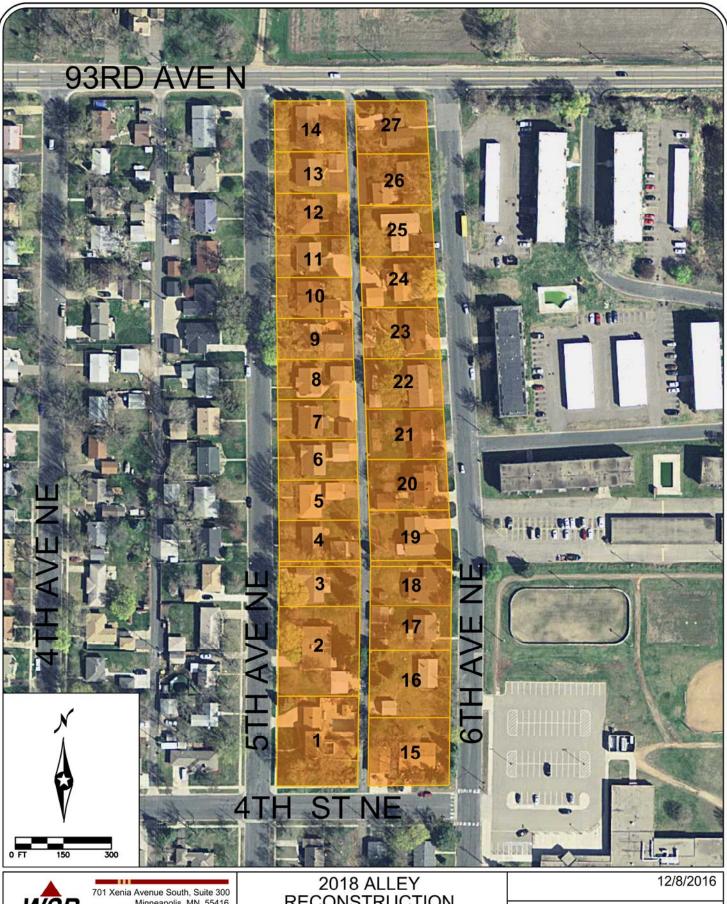
· · · · · · · · · · · · · · · · · · ·						
Setup 20 Surveyor	Kyle Van Pelt	Certificate #	V3516	System Ov	vner	
Drainage	Survey Custo	mer				
P/O #	Date 2016/11/11	Time 10:38	Street 5t	h Ave NE		
City Osseo	Further I	ocation details				
Up ST 8	Rim	to invert	Grade	to invert	Rim to gı	ade Ft
Down ST9	Rim	ı to invert	Grade to invert		Rim to gi	ade Ft
Use Stormwater	Direction	Downstream	Flow contr	ol	Media	No
Shape Circular	Circular Height 15		ins P	reclean J	Date Clean	ied
Material Vitrified Clay Pipe	•	Joint length	Ft Total le	ength 133.8 Ft	Length Տւ	irveyed 133.80 j
Lining		Year laid	Year rehak	ilitated	Weather	_
Purpose		C	at			
Additional info		······································		Structural	O & M	Constructional
Location				Miscellaneous	Hydraulic	
Project				Work	Order	· ·
Northing		Easting	g Elev		ation/	
Coordinate System				GPS Accura	су	





APPENDIX E

Preliminary Assessment Map Preliminary Assessment Roll



Minneapolis, MN 55416 www.wsbeng.com

763-541-4800 - Fax 763-541-1700 INFRASTRUCTURE ■ ENGINEERING ■ PLANNING ■ CONSTRUCTION

RECONSTRUCTION **PROJECT**

OSSEO, MN

PRELIMINARY ASSESSMENT MAP

CITY OF OSSEO 2018 ALLEY RECONSTRUCTION PROJECT PRELIMINARY ASSESSMENT ROLL

Date: 11/6/2017

Rate WSB Project No.: 03429-070 Complete Reconstruction Residential Single-Family Per Unit Assessment: \$6,580.00

MAP ID	PID	FEE OWNER	FEE OWNER ADDRESS	CITY/STATE/ZIP	PROPERTY ADDRESS	USE DESCRIPTION	UNIT ASSESSMENT RATE	PROPOSED ASSESSMENT
1	1811921210043	DUANE E & AMY L POPPE	408 5TH AVE N E	OSSEO MN 55369	408 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
2	1811921210085	KENNETH J FELBER	424 5TH AVE N E	OSSEO MN 55369	424 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
3	1811921210046	SUZANNE M PACE	432 5TH AV NE	OSSEO MN 55369	432 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
4	1811921210035	STACY L & TIMOTHY M POLICH	500 5TH AVE N E	OSSEO MN 55369	500 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
5	1811921210034	KATHARINE ELIZABETH METHUM	508 5TH AVE N E	OSSEO MN 55369	508 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
6	1811921210033	DIANA L LAHD	516 5TH AVE N E	OSSEO MN 55369	516 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
7	1811921210032	LEE RITTER & SUE RITTER	524 5TH AVE N E	OSSEO MN 55369	524 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
8	1811921210031	ROBERT & BETTY ROBIDEAU	532 5TH AVE N E	OSSEO MN 55369	532 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
9	1811921210030	SALLY M HEIN	600 5TH AVE N E	OSSEO MN 55369	600 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
10	1811921210029	BRADLEY J ROSCH	608 5TH AVE N E	OSSEO MN 55369	608 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
11	1811921210028	LESLIE J EIDEN	616 5TH AVE N E	OSSEO MN 55369	616 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
12	1811921210027	TODD W & DAWN L TESSMAN	624 5TH AVE N E	OSSEO MN 55369	624 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
13	1811921210026	LISA A PETERSON	632 5TH AVE N E	OSSEO MN 55369	632 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
14	1811921210025	ALAN & KATHERINE KOWALCHYK	25061 BAY CEDER DRIVE	BONITA SPRINGS, FL 34134	640 5TH AVE NE	RESIDENTIAL	1	\$6,580.00
15	1811921210087	CAROL EMMANS	401 6TH AVE N E	OSSEO MN 55369	401 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
16	1811921210086	ERIN M HENTE	417 6TH AVE N E	OSSEO MN 55369	417 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
17	1811921210039	MICHAEL W MACK	425 6TH AVE N E	OSSEO MN 55369	425 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
18	1811921210038	MOLLY BURNS	433 6TH AVE N E	OSSEO MN 55369	433 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
19	1811921210073	MAYNARD R EDER	501 6TH AVE N E	OSSEO MN 55369	501 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
20	1811921210072	TIMOTHY J PASKE	509 6TH AVE NE	OSSEO MN 55369	509 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
21	1811921210071	MARK R & LUJEAN K RUEL	517 6TH AVE N E	OSSEO MN 55369	517 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
22	1811921210070	RAYMOND/PAMELA MC DONALD JR	601 6TH AVE N	OSSEO MN 55369	601 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
23	1811921210069	BRUCE J DAHLHEIMER	609 6TH AV NE	OSSEO MN 55369	609 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
24	1811921210068	PAUL F FERGUSON	617 6TH AVE N E	OSSEO MN 55369	617 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
25	1811921210067	RHONDA SCHLEGEL	19705 CTY RD 30	CORCORAN MN 55340	625 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
26	1811921210066	KAREN L KELLAR TRUSTEE	633 6TH AVE N E	OSSEO MN 55369	633 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
27	1811921210065	CHRIST F & JOYCE M JENSEN	22275 CO RD NO 117	ROGERS MN 55374	641 6TH AVE NE	RESIDENTIAL	1	\$6,580.00
						GRAND TOTAL - PRELIMINARY PRO	JECT ASSESSMENT:	\$177,660.00

APPENDIX F

Public Comment Summary

City of Osseo, Minnesota	
2017 Alley Reconstruction	Project

Date: <u>Thursday, November 10, 2016</u> Location: <u>Osseo Community Center</u>

Name	Bob + B 532-5	ett, Robi	ideau. NE,	Phone	(763) 424-7665	
	DSSEO			WN.	Zip Code <u>55369</u>	

General Comments
Thanks for ALL the Information on the 10th-its important that we get all correct Information before work begins. Our Alley Right Now is Not much more than a asphalt sidewalk-holes, bumps 7 many filled in pot holes. We Look forward to seeing a wonderful NEW Alley that is done correctly - smooth - Level And done with Care.

Signature my Tolicheau