



FEASIBILITY REPORT

2018 STREET RECONSTRUCTION PROJECT

CITY OF OSSEO | HENNEPIN COUNTY, MN

NOVEMBER 9, 2017

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

WSB PROJECT NO. R-010698-000



FEASIBILITY REPORT

2018 STREET RECONSTRUCTION PROJECT

**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
2018 Street Reconstruction Project
City of Osseo, MN
WSB Project No. R-010698-000

Dear Honorable Mayor and City Council:

Attached for your review is a feasibility report which addresses improvements associated with the 2018 Street Reconstruction Project.

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.

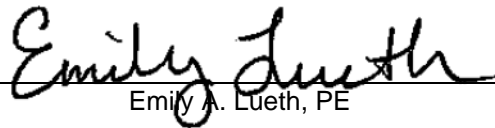
Lee Gustafson, PE
City Engineer

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, PE

Date: November 9, 2017

Lic. No. 18443

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LETTER OF TRANSMITTAL

CERTIFICATION SHEET

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1. EXECUTIVE SUMMARY

The 2018 Street Reconstruction Project consists of roadway improvements on portions of 4th Street NE, 4th Avenue NE, and 6th Avenue NE including repairing or minimal reconstruction of the storm and sanitary sewer, and replacing curb and gutter as needed. A map illustrating the project location is shown on **Figure 1** in **Appendix A**.

Improvements throughout the project consist of roadway reclamation, drainage improvements, and sidewalk installation and repair. New sidewalk is proposed to be installed on 4th Avenue NE and to be located on the side of the road that will result in minimal impacts to mailboxes, trees, and roadside utilities while maintaining connectivity to existing sidewalks.

The cost of the 2018 Street Reconstruction Project is estimated at **\$624,000**. This includes a 10% contingency and 25% indirect costs. Funding for the project will consist of special assessments and City street and utility funds.

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

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

2. INTRODUCTION

2.1 Authorization

On August 28, 2017, the Osseo City Council authorized a feasibility report for the 2018 Street Reconstruction Project.

2.2 Scope

This feasibility report includes street improvements, pedestrian improvements, and utility repairs along the following roadways:

- 4th Avenue NE from 4th Street NE to 93rd Avenue N
- 4th Street NE from 4th Avenue NE to 6th Avenue NE
- 6th Avenue NE from 4th Street NE to 3rd Street NE

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
- Televising Reports
- Field Observations of the Area and Field Topography Surveys

2.4 Project History

The 2018 Street Reconstruction Project is identified in the City's Capital Improvement Plan to address the poor condition of these roadways.

The City held a neighborhood meeting on November 2, 2017, to receive input on the project. Many of the meeting attendees were generally supportive of the project, however, some expressed concerns over the sidewalk component of the project proposal.

3. EXISTING CONDITIONS

3.1 Roadway

The streets included in the project vary in street and right-of-way widths.

Existing Conditions				
Street Segment	From	To	Exist. Width	Curb
4 th Avenue NE	4 th Street NE	93 rd Avenue N	40'	B618
4 th Street NE	4 th Avenue NE	6 th Avenue NE	41'	B618
6 th Avenue NE	4 th Street NE	3 rd Street NE	40'	B618

The existing roadway widths of streets within the project area are shown on **Figure 2** in **Appendix A**.

A geotechnical report was completed by WSB & Associates, Inc. in October of 2017. Bituminous roadway cores were taken throughout the project area. Pavement thicknesses range from 3.5 inches to 6 inches. The full report can be found in **Appendix D**.

Sidewalks exist within the project area along parts of 4th Avenue NE, 4th Street NE, and 6th Avenue NE. The existing sidewalk conditions and proposed options are shown in **Appendix B**.

3.2 Drainage

Storm sewer facilities exist within the proposed project area. The existing sewer system was televised in preparation of this project and showed that the existing pipe is in good condition. Minor flooding incidents have occurred at low points within the project area. Structures in these low areas have been recommended for replacement by City maintenance staff.

A wetland delineation was not completed as part of this project since no wetlands are located in the project area.

3.3 Sanitary Sewer

All properties within the project area are served by City sanitary sewer. The existing sewer system was televised in preparation of this project and showed that the existing pipe is in good condition with some minor root intrusion and joint offsets.

3.4 Watermain

The properties within the project area are served by City water services. City maintenance records do not show any significant issues with the system, and as such, no improvements are planned for the water system.

3.5 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:

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

4. PROPOSED IMPROVEMENTS

4.1 Roadway

The proposed roadway improvements include the reclamation of the existing bituminous pavement and aggregate base, and replacement of concrete curb and gutter as needed. A typical roadway section is included on **Figure 2** in **Appendix A**. Since the curb and gutter will be left in place or replaced in kind, no change to existing roadway widths is proposed.

The typical section has been improved to increase the longevity of the roadway. The bituminous section is slightly thicker which adds strength to the street, and a mastic sealer will be applied between the pavement and curb edge to prevent water from penetrating into the subsoil.

4.2 Drainage

Reconstruction of the streets provides the opportunity to improve drainage within the project area through the installation of new curbing as needed and structure installation at low points within the project area. Existing manholes, manhole castings, and catch basins will be repaired/replaced to meet current City standards.

There are known drainage issues for residences at the low point along 4th Avenue NE. Different options will be reviewed during final design to try to alleviate the flooding concerns during heavy rain events.

4.3 Sanitary Sewer

There are minimal improvements proposed for the sanitary sewer system as part of this project. Sanitary pipes within the project area are proposed to be cleaned and lined as part of a separate maintenance project.

4.4 Watermain

There are no proposed improvements to the water distribution system. Watermain valves and hydrants will be replaced or relocated as needed if they are found to be defective during construction or to facilitate the installation of sidewalks.

4.5 Right-of-Way/Easements

It is expected that the roadway improvements can be completed within existing road rights-of-way or drainage easements for work on all streets.

The addition of sidewalk within the project will be located to best fit the existing right-of-way and minimize impacts to adjacent property owners.

4.6 Permits/Approvals

The anticipated permits and approvals required from the respective regulatory agencies are listed below:

- MN Pollution Control Agency NPDES..... Erosion/Stormwater

4.7 Pedestrian Improvements

As part of the City's initiative to increase walkability around the City, sidewalk installation was considered for this project. In determining the benefit of sidewalk on the project, each street was evaluated for potential impacts, connectivity to existing walk, and overall benefit to adjacent properties. Based on this evaluation, the proposed location and geometry of new sidewalk are listed on the following page.

Proposed Sidewalk			
Street Segment	From	To	Sidewalk Recommendation
4 th Avenue NE	4 th Street NE	Mid-Block (at termini of existing walk)	Maintain existing walk with 4' boulevard on east side, or construct at back of curb Remove sidewalk on west side
4 th Avenue NE	Mid-Block (at termini of existing walk)	93 rd Avenue N	East side at back of curb
4 th Street NE	4 th Avenue NE	5 th Avenue NE	Maintain existing walk on both sides of street
4 th Street NE	5 th Avenue NE	6 th Avenue NE	Maintain existing walk on both sides of street Add 5' walk at back of curb at 401 6 th Avenue NE
6 th Street NE	4 th Street NE	6 th Avenue NE	Maintain existing sidewalk on east side

As stated previously in the report, the existing sidewalk conditions and proposed options are shown in **Appendix B**.

4.8 Construction Access/Staging

The contractor will be responsible for providing access to properties throughout the project. Signed detours will be required to direct traffic around the construction zones and notify users of the increased truck and construction activity as needed.

4.9 Public Involvement

A neighborhood open house for the proposed improvements was conducted on November 2, 2017, for property owners. Preliminary information was presented to property owners regarding the proposed improvements, funding, schedule, and impacts associated with the project. Comment cards were made available to attendees at the meeting and responses that were received prior to completing this feasibility report are shown in **Appendix G**.

5. FINANCING

5.1 Opinion of Probable Cost

A detailed opinion of probable cost is included in **Appendix C** of this report. The opinion of probable cost is based on projected construction costs for 2018 and includes a 10% contingency and 25% indirect costs. The indirect costs include engineering, legal, and administrative costs associated with the project. The project costs are summarized as follows:

2018 Street Reconstruction Project Estimated Cost	
Schedule A – Surface Improvements	\$571,000
Schedule B – Drainage Improvements	\$25,000
Schedule C – Watermain Improvements	\$19,000
Schedule D – Sanitary Sewer Improvements	\$9,000
TOTAL	\$624,000

5.2 Funding

Funding for the project will be provided through assessments to benefiting properties and City street and utility funds.

5.3 Special Assessments

Assessments will be levied to the benefiting properties as outlined in Minnesota Statute 429 and the City's assessment policy. A detailed preliminary assessment roll is included in **Appendix F**. A summary of the assessment rates for full reclamation projects is:

Single-Family/Duplex Roadway Reclamation..... \$6,380/unit
Commercial Roadway Reclamation.....\$77/LF

The assessment rates include the sidewalk installation as proposed.

Properties proposed to be assessed are shown on the map in **Appendix F**.

6. NECESSITY AND COST EFFECTIVENESS

The improvements proposed in this study are necessary for a number of reasons. The proposed street reconstruction provides the City with a cost-effective means of rehabilitating the streets, thereby extending the life expectancy of the streets, minimizing City maintenance efforts, and providing an adequate means of transportation for local residents.

The proposed improvements will provide a project large enough to ensure a competitive bidding environment and economy of scale, and therefore, are deemed to be cost-effective. Based on the information contained within this report, the proposed improvements as described can be considered to be necessary, cost-effective, and feasible from an engineering standpoint.

7. PROJECT SCHEDULE

The proposed project schedule is as follows:

City Council Authorizes Feasibility Report	August 28, 2017
Neighborhood Meeting	November 2, 2017
City Council Receives Feasibility Report/Orders Public Hearing	November 13, 2017
City Council Authorizes Final Design	December 2017 – January 2018
Plan/Specification Preparation	January – February 2018
City Council Approves Plans/Specs and Authorizes Bidding	February 2018
Project Bidding.....	February – March 2018
Assessment Hearing	April 2018
City Council Awards Construction Contract	May 2018
Construction.....	June – October 2018

8. FEASIBILITY AND RECOMMENDATION

The 2018 Street Reconstruction Project consists of pavement improvements, sidewalk installation, minor utility repairs, and drainage improvements. Improvements included for consideration also include the addition of sidewalk at locations as depicted in **Appendix B**. The cost of the street improvement project is estimated at **\$624,000**.

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

K:\10698-000\Cad\Exhibits\10698-000 Project Location.dwg 10/24/2017 7:25:01 AM

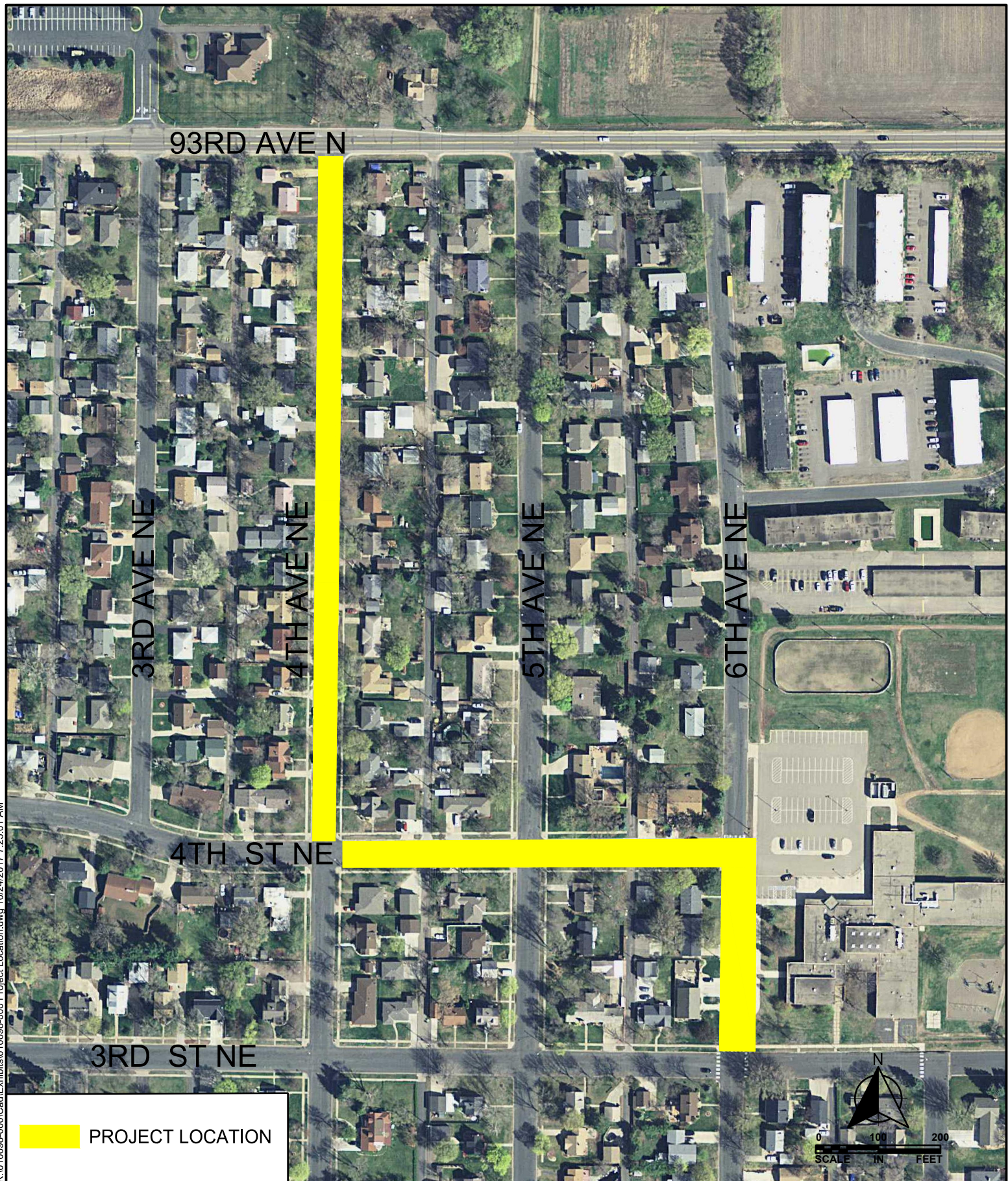
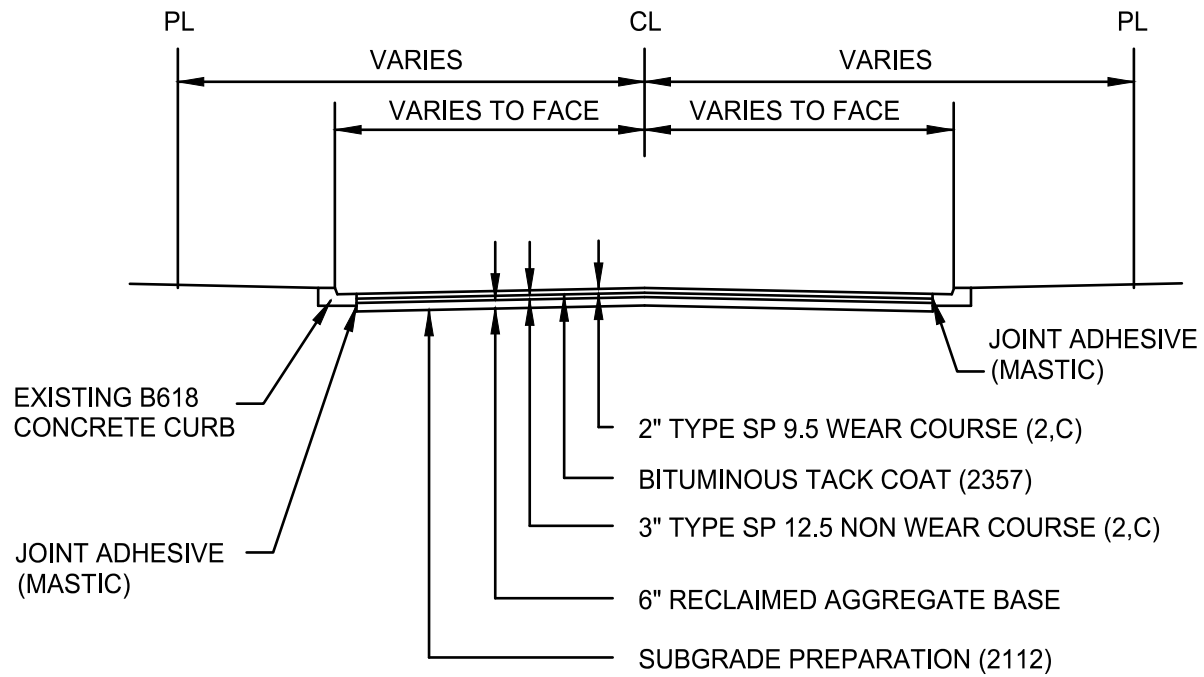


Figure 1 - Project Location Map
2018 Street Reconstruction Project
City of Osseo, MN



WSB PROJECT NO.:
10698-000



STREET	WIDTH	RIGHT OF WAY WIDTH
4TH AVENUE NE	40'	60'
4TH STREET NE	41'	66'
6TH AVENUE NE	40'	60'

Figure 2 - Typical Section
2018 Street Reconstruction Project
City of Osseo, MN

APPENDIX B

Sidewalk Options – Existing Conditions and Impacts

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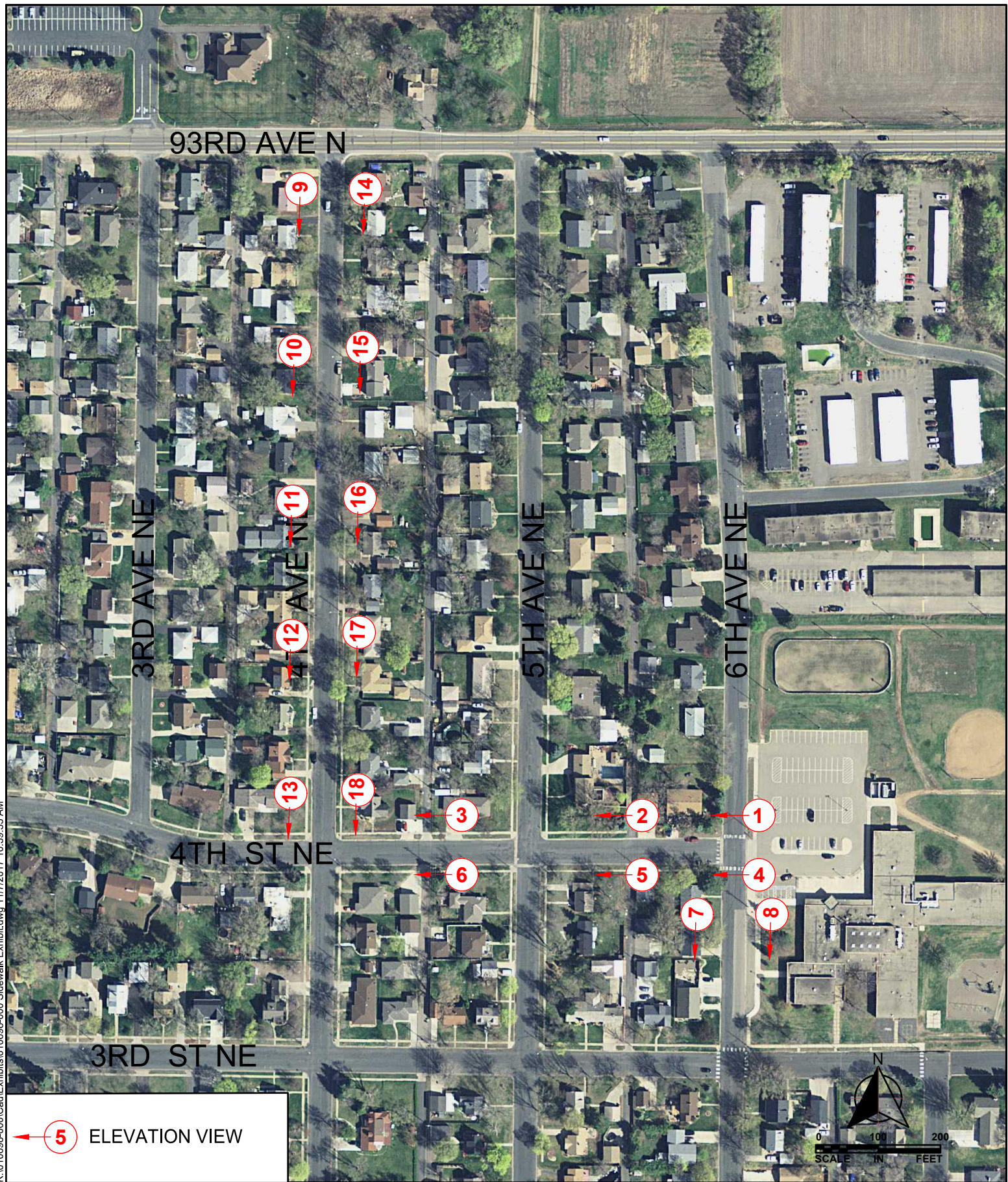


Figure 3 - Sidewalk Options
2018 Street Reconstruction Project
City of Osseo, MN



WSB PROJECT NO.:
10698-000



Location 1



Location 2



Location 3



Location 4



Location 5



Location 6



Location 7



Location 8



Location 9



Location 10



Location 11



Location 12



Location 13



Location 14



Location 15



Location 16



Location 17



Location 18

Sidewalk Impacts

Location			Type of Existing Sidewalk	Condition of Existing Sidewalk	Impacts	
					5' Walk at Back of Curb	5' Blvd, 4' Walk
1	4th Street	North Side	N/A	N/A	1-2 bushes	many bushes, 2-3 trees
2	4th Street	North Side	7' Blvd, 4' Walk	Fair	Not recommended	No impacts (maintain existing location)
3	4th Street	North Side	7' Blvd, 4' Walk	Fair	Not recommended	No impacts (maintain existing location)
4	4th Street	South Side	7' Blvd, 4' Walk	Fair	Not recommended	No impacts (maintain existing location)
5	4th Street	South Side	7' Blvd, 4' Walk	Fair	Not recommended	No impacts (maintain existing location)
6	4th Street	South Side	7' Blvd, 4' Walk	Fair	Not recommended	No impacts (maintain existing location)
7	6th Street	West Side	N/A	N/A	Not recommended	Not recommended
8	6th Street	East Side	14' Walk at Back of Curb	Good	No impacts (maintain existing location)	Not recommended
9	4th Avenue	West Side	N/A	N/A	Fire hydrant	1-2 trees
10	4th Avenue	West Side	N/A	N/A	No impacts	2-3 trees
11	4th Avenue	West Side	N/A	N/A	Handicap ramp	Handicap ramp, 1-2 trees
12	4th Avenue	West Side	4' Blvd, 4' Walk	Fair	Retaining wall, 1-2 bushes	Retaining wall, 1-2 bushes
13	4th Avenue	West Side	4' Blvd, 4' Walk	Fair	1-2 trees	No impacts
14	4th Avenue	East Side	N/A	N/A	No impacts	No impacts
15	4th Avenue	East Side	N/A	N/A	Retaining wall, 1-2 trees	Retaining wall, 1-2 trees, fence
16	4th Avenue	East Side	N/A	N/A	Concrete stairs, 1-3 trees	Concrete stairs, 1-3 trees, fence
17	4th Avenue	East Side	4' Blvd, 4' Walk	Poor	Not recommended	No impacts (maintain existing location)
18	4th Avenue	East Side	4' Blvd, 4' Walk	Good	Not recommended	No impacts (maintain existing location)

APPENDIX C

Opinion of Probable Cost

Opinion of Probable Cost

WSB Project: 2018 Street Improvement Project
 Project Location: City of Osseo
 WSB Project No: 10698-000

Design By: EAL
 Checked By: LEG
 Date: 11/9/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
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SCHEDULE A - STREET IMPROVEMENTS

1	2021.501	MOBILIZATION	LUMP SUM	1	\$20,000.00	\$20,000.00
2	2101.502	CLEARING	TREE	15	\$250.00	\$3,750.00
3	2101.507	GRUBBING	TREE	15	\$250.00	\$3,750.00
4	2104.501	REMOVE CONCRETE CURB & GUTTER	LIN FT	1,280	\$6.00	\$7,680.00
5	2104.503	REMOVE CONCRETE WALK	SQ FT	8,140	\$1.25	\$10,175.00
6	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	580	\$5.00	\$2,900.00
7	2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	250	\$3.00	\$750.00
8	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	200	\$3.50	\$700.00
9	2104.523	SALVAGE SIGN	EACH	24	\$35.00	\$840.00
10	2104.601	SALVAGE LANDSCAPE STRUCTURES	LUMP SUM	1	\$5,000.00	\$5,000.00
11	2112.501	SUBGRADE PREPARATION	RD ST	21	\$125.00	\$2,625.00
12	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HR	20	\$100.00	\$2,000.00
13	2130.501	WATER (DUST CONTROL)	MGAL	20	\$50.00	\$1,000.00
14	2215.501	FULL DEPTH RECLAMATION	SQ YD	9,950	\$2.50	\$24,875.00
15	2232.501	MILL BITUMINOUS SURFACE	SQ YD	225	\$2.50	\$562.50
16	2331.603	JOINT ADHESIVE	LIN FT	4,250	\$1.00	\$4,250.00
17	2360.501	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TON	1,150	\$60.00	\$69,000.00
18	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (2,B)	TON	1,725	\$60.00	\$103,500.00
19	2360.502	TYPE SP 12.5 WEAR COURSE MIX (2,B) 3.0"	SQ YD	300	\$20.00	\$6,000.00
20	2505.601	UTILITY COORDINATION	LUMP SUM	1	\$1,000.00	\$1,000.00
21	2521.501	4" CONCRETE WALK	SQ FT	8,140	\$5.00	\$40,700.00
22	2521.501	6" CONCRETE WALK	SQ FT	200	\$12.00	\$2,400.00
23	2531.501	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	1,280	\$18.00	\$23,040.00
24	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	600	\$50.00	\$30,000.00
25	2531.601	ADA SUPERVISOR	LUMP SUM	1	\$1,000.00	\$1,000.00
26	2531.618	TRUNCATED DOMES	SQ FT	200	\$45.00	\$9,000.00
27	2563.601	TRAFFIC CONTROL	LUMP SUM	1	\$3,000.00	\$3,000.00
28	2572.502	CLEAN ROOT CUTTING	LIN FT	160	\$15.00	\$2,400.00
29	2572.505	PRUNE TREES	HR	5	\$160.00	\$800.00
30	2573.530	STORM DRAIN INLET PROTECTION	EACH	10	\$200.00	\$2,000.00
31	2573.533	SEDIMENT CONTROL LOG TYPE STRAW	LIN FT	500	\$3.00	\$1,500.00
32	2573.533	SEDIMENT CONTROL LOG TYPE ROCK	LIN FT	100	\$6.00	\$600.00
33	2573.535	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	\$2,000.00	\$2,000.00
34	2574.525	COMMON TOPSOIL BORROW	CU YD	320	\$25.00	\$8,000.00
35	2575.535	WATER (TURF ESTABLISHMENT)	MGAL	150	\$30.00	\$4,500.00
36	2575.505	SODDING TYPE LAWN	SQ YD	2,160	\$6.00	\$12,960.00
37	2575.605	HYDROSEEDING	SQ YD	500	\$2.00	\$1,000.00

TOTAL \$415,257.50

CONTINGENCY TOTAL (10%) \$41,525.75

SUBTOTAL TOTAL \$456,783.25

INDIRECT COST TOTAL (25%) \$114,195.81

TOTAL \$571,000.00

Opinion of Probable Cost

WSB Project: 2018 Street Improvement Project
 Project Location: City of Osseo
 WSB Project No: 10698-000

Design By: EAL
 Checked By: LEG
 Date: 11/9/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
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SCHEDULE B - DRAINAGE IMPROVEMENTS

38	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	90	\$12.00	\$1,080.00
39	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	3	\$500.00	\$1,500.00
40	2503.541	15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	60	\$35.00	\$2,100.00
41	2503.541	21" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	50	\$40.00	\$2,000.00
42	2503.541	33" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	10	\$60.00	\$600.00
43	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	2	\$1,000.00	\$2,000.00
44	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	8	\$625.00	\$5,000.00
45	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1	EACH	2	\$1,200.00	\$2,400.00
46	2506.516	CASTING ASSEMBLY	EACH	2	\$650.00	\$1,300.00
TOTAL						\$17,980.00
CONTINGENCY TOTAL (10%)						\$1,798.00
SUBTOTAL TOTAL						\$19,778.00
INDIRECT COST TOTAL (25%)						\$4,944.50
TOTAL						\$25,000.00

SCHEDULE C - WATER MAIN IMPROVEMENTS

47	2104.523	SALVAGE HYDRANT	EACH	3	\$500.00	\$1,500.00
48	2504.602	ADJUST GATE VALVE & BOX	EACH	12	\$200.00	\$2,400.00
49	2504.602	ADJUST CURB STOP	EACH	10	\$150.00	\$1,500.00
50	2504.602	INSTALL HYDRANT	EACH	3	\$2,000.00	\$6,000.00
51	2504.603	6" WATERMAIN DUCTILE IRON CL 52	LIN FT	40	\$40.00	\$1,600.00
52	2504.604	4" POLYSTYRENE INSULATION	SQ YD	15	\$40.00	\$600.00
TOTAL						\$13,600.00
CONTINGENCY TOTAL (10%)						\$1,360.00
SUBTOTAL TOTAL						\$14,960.00
INDIRECT COST TOTAL (25%)						\$3,740.00
TOTAL						\$19,000.00

SCHEDULE D - SANITARY SEWER IMPROVEMENTS

53	2104.509	REMOVE CASTING - SANITARY	EACH	7	\$150.00	\$1,050.00
54	2506.602	CHIMNEY SEALS	EACH	7	\$150.00	\$1,050.00
55	2506.516	CASTING ASSEMBLY - SANITARY	EACH	7	\$650.00	\$4,550.00
TOTAL						\$6,650.00
CONTINGENCY TOTAL (10%)						\$665.00
SUBTOTAL TOTAL						\$7,315.00
INDIRECT COST TOTAL (25%)						\$1,828.75
TOTAL						\$9,000.00

GRAND TOTAL: \$624,000.00

APPENDIX D
Geotechnical Report



GEOTECHNICAL REPORT

2018 STREET IMPROVEMENTS OSSEO, MN

October 16, 2017

Prepared for:
Mr. Rick Hass
Public Works Director
City of Osseo
415 Central Avenue
Osseo, Minnesota 55369

WSB PROJECT NO. 010698-000



GEOTECHNICAL REPORT

2018 STREET IMPROVEMENTS OSSEO, MINNESOTA

**FOR
CITY OF OSSEO
415 CENTRAL AVENUE
OSSEO, MINNESOTA**

October 16, 2017



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.



Darin Hyatt, PE

Date: October 16, 2017

Lic. No. 41316



October 16, 2017

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

Re: Geotechnical Report
2018 Street Improvements
WSB Project No.: 010698-000

We have conducted a geotechnical subsurface exploration program for the above referenced project. This report contains our soil 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.

Darin Hyatt, PE
Senior Geotechnical Engineer

Mark Osborn, PE
Geotechnical Project Engineer

Attachment

DEH/tw

**TITLE SHEET
CERTIFICATION SHEET
LETTER OF TRANSMITTAL
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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 borings were completed along three residential city streets in Osseo, Minnesota. These streets include portions of 4th and 6th Avenues Northeast, and 4th Street Northeast. The roadways were urban designed with bituminous asphalt surfacing and concrete curb and gutter. The approximate boring locations are indicated on the Soil Boring Exhibit in **Appendix A**. Hand auger boring (HAB) locations are also indicated on the exhibit, however, those borings are discussed under a separate report.

1.2 Project Description

It is proposed to reconstruct the portions of the three streets as well as complete storm and sanitary sewer replacements as needed. No watermain construction is planned. To the extent possible, the existing curb and gutter will be left in place as the reconstruction and any utility work is completed.

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 Truck Mounted Drill Rig.
2. Clearing underground utilities utilizing the Gopher State One Call.
3. Drilling 6 borings to a depth of about 5 feet.
4. Sealing the borings per Minnesota Department of Health procedures.
5. Perform soil classification and analysis.
6. Review of readily available project information and geologic data.
7. 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

We proposed to complete 6 soil borings along the residential streets.

WSB also recommended the boring depths and selected the desired locations. Our field crew staked the borings by measuring from existing site features obtained 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 drilled the borings on September 29, 2017, with a truck-mounted CME-55 drill rig operated by a two-person crew. The drill crew advanced the borings using continuous hollow stem augers. Drilling methods, crew chief, depths, sampling interval, casing usage, groundwater observations, test data, and other drilling information are indicated on the boring logs.

Generally, the drill crew sampled the soil in advance of the auger tip at two and one-half foot (2½') intervals of a depth to five feet (5'). The soil samples were obtained using a split-barrel sampler which was driven into the ground during standard penetration tests in accordance with ASTM D 1586, Standard Method of Penetration Test and Split-Barrel Sampling of Soils.

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 drill crew observed the borings for free groundwater while drilling and after completion. These observations and measurements are noted on the boring logs. The crew then backfilled the borings with soil cuttings to comply with Minnesota Department of Health regulations.

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 drilling 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 borings were complete through the existing bituminous asphalt pavement section and generally encountered fills, and naturally deposited soils. The fills encountered were likely placed and compacted to raise the roadway to grade or for utility backfill.

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 coarse alluvial soils.

The borings encountered a pavement section consisting of about 3 ½ to 6 inches of bituminous over about 4 to 5 ¼ inches of aggregate base. The bituminous averaged about 5 inches thick while the aggregate base averaged about 4 ½ inches thick.

Beneath the pavement section, fill materials were encountered at Borings PB-2, PB-4, PB-5 and PB-6 to a depth of about 1 ¼ feet to 4 feet below existing grade. Beneath the pavement section or where encountered the fill, the borings encountered and terminated in alluvial soils.

These fills consisted of clayey sand and sand with silt. The alluvial soils consisted of clayey sand, sand with clay and silty sand. The soils were generally brown to dark brown and moist.

The upper 4 feet of the pavement area has the most significant impact of pavement section design. Below is a table indicating the approximate pavement section thicknesses and subgrade soils.

Table 1: Roadway Soil Boring Profiles

Boring No.	Bituminous Thickness (inches)	Aggregate Base Thickness (inches)	Subgrade Soils (Upper 4 feet)
PB-1	4	4	Clayey Sand and Sand with Clay
PB-2	6	4 ½	Fill: Clayey Sand and Sand with Clay
PB-3	3 ½	4 ½	Clayey Sand and Sand with Clay
PB-4	6	5	Sand with Silt and Sand with Clay
PB-5	5	4	Sand with Clay and Silty Sand
PB-6	4 ½	5 ¼	Fill: Sand with Gravel over Silty Sand

3.3 Strength Characteristics

The penetration resistance N-values of the materials encountered were recorded during drilling and are indicated as blows per foot (BPF). Those values provide an indication of soil strength characteristics and are located on the boring log sheets. Also, visual-manual classification techniques and apparent moisture contents were also utilized to make an engineering judgment of the consistency of the materials. Table 2 presents a summary of the penetration resistances in the soils for the borings completed and remarks regarding the material strengths of the soils.

Table 2: Penetration Resistances

Soil Type	Classification	Penetration Resistances	Remarks
Fill		7 BPF	Moderately compacted
Alluvial Soils	SM, SP-SC, SC	7 to 13 BPF Average \approx 9 BPF	Loose to medium dense Generally loose

The preceding is a generalized description of soil conditions at this site. Variations from the generalized profile exist and should be assessed from the boring logs, the normal geologic character of the deposits, and the soils uncovered during site excavation.

3.4 Groundwater Conditions

WSB took groundwater level readings in the exploratory borings, 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 drilling process. The bore holes were only left open for a short time during the drilling process. Given the rather permeable nature of the granular soils encountered in our borings, it is our opinion that the static groundwater level was below the depths of our borings.

4. ENGINEERING ANALYSIS AND RECOMMENDATIONS

4.1 Discussion

Based on our boring logs, the native soils and fills encountered in our borings appear suitable for pavement subgrades and support of underground utilities. Excavations for utilities should be able to utilize the existing soils as backfill materials.

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, diskings, 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 clayey sands, sands with clay, 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 twenty to seventy (20-70). As the soils were loose in many areas and silty sands and sands with clay were the predominate soils, it is our opinion an R-value of thirty (30) be used for design of roadways at this site.

No traffic data was available for the roadways. We estimate that Average Daily Traffic (ADT) to be less than 300 vehicles per roadway. Our design is based on a twenty (20) year design life of the pavement section.

Based on the above estimates and an assumed distribution of traffic we calculate Equivalent Single Axle Loads (ESAL's) to be less than 30,000. Based on the City's minimum requirement of 5 inches of bituminous, we recommend the pavement section in Table 3. It should be noted that this section exceeds the section calculated using MnDOT's MnPAVE design software.

Table 3: Recommended Flexible Pavement Section

Section	Thickness (inches)
Bituminous Wear Course, MnDOT 2360	2 ½
Bituminous Base Course, MnDOT 2360	2 ½
Class 5 Aggregate Base, MnDOT 3149	5

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.

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 thickness, aggregate base thickness, and can meet the ESAL requirements.

4.3 Utilities

Invert elevations are anticipated to be within five feet of existing grades and we anticipate the subgrade soils for the utilities will consist chiefly of clayey sand, sand with clay, and silty sands. Underground

utilities are expected to be installed by backhoes completing the excavations and placing fills. Soil compactors should be used to compact the fill in even lifts to the specified densities.

4.4 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 materials. 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

4.5 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. If water enters the excavations, it should be promptly removed prior to further construction activities. Under no circumstances should fill or concrete be placed into standing water.

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.

4.6 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.

4.7 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.

4.8 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.

4.9 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.

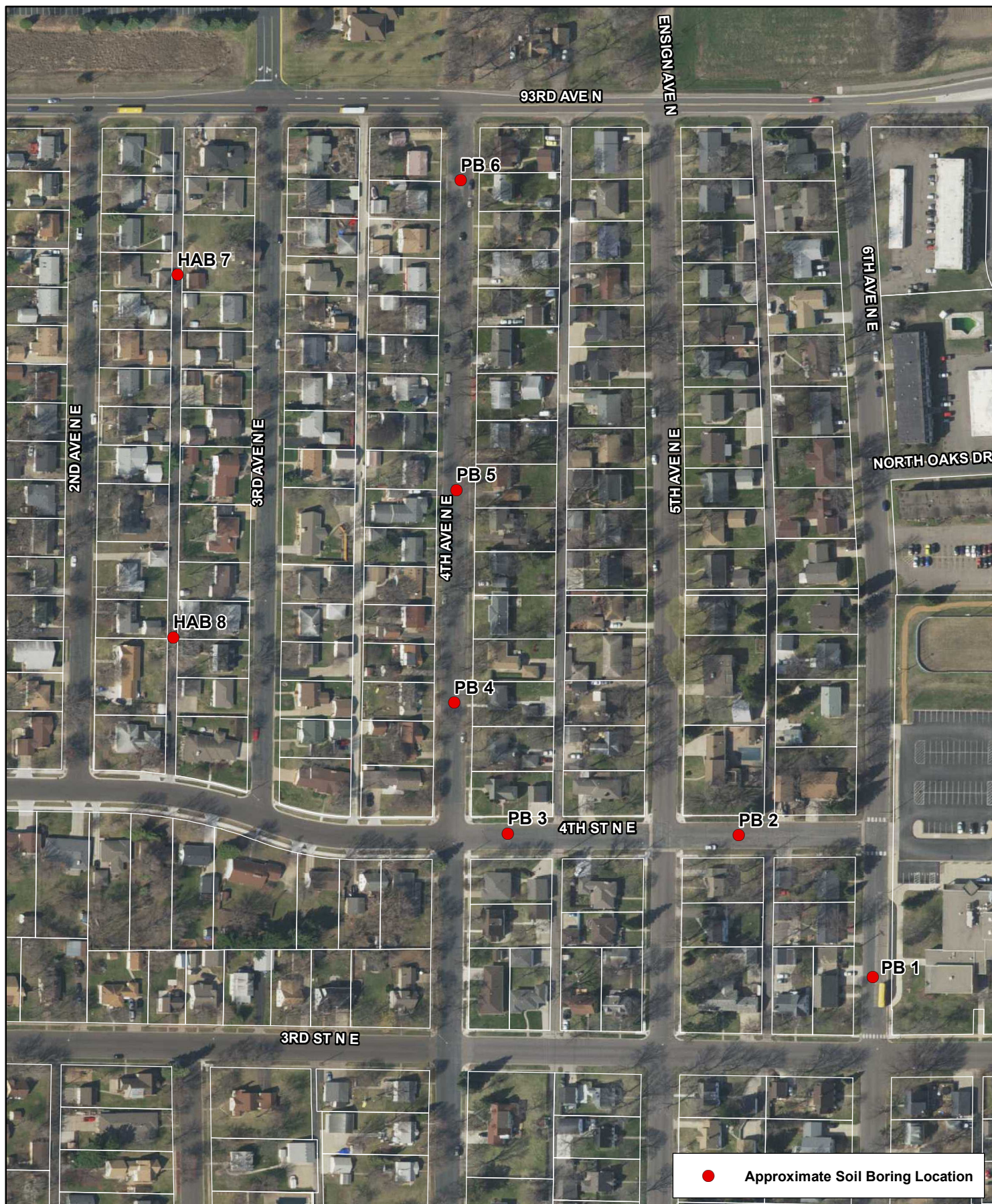
WSB has not performed any observations, investigations, studies or testing that is not specifically listed in the scope of service. WSB shall not be liable for failing to discover any condition whose discovery required the performance of services not authorized by the Agreement.

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)



Soil Boring Exhibit

Geotechnical Report
2018 Street Improvements
Osseo, MN
WSB #: 010698-000



0 200
Feet
1 inch = 200 feet



LOG OF TEST BORING

PROJECT NAME: 2018 Street Improvements
CLIENT/WSB #: 010698-000

PROJECT LOCATION: Osseo, MN

BORING NUMBER PB-1

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL					USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
										No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
		BITUMINOUS 4" AGGREGATE BASE 4"						Pavement Section									
1		CLAYEY SAND, fine grained, dark brown, moist					SC	Coarse Alluvium			1	HSA					
2		SAND WITH CLAY, fine grained, brown, moist, loose					SP-SC										
3									8		2	SB					
4																	
5		SILTY SAND, fine grained, light brown, moist					SM										
6		End of Boring 6.0 ft.															
7																	
8																	
9																	
10																	
WATER LEVEL MEASUREMENTS								START: 9/29/2017				END: 9/29/2017					
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD		Crew Chief:		Logged By:						
9/29/2017	10:05 am	6	4.5		None		3 1/4" HSA 0' - 4.5'		J. Tatro		MWO						
									Notes:								

LOG OF TEST BORING

PROJECT NAME: 2018 Street Improvements
CLIENT/WSB #: 010698-000

PROJECT LOCATION: Osseo, MN

BORING NUMBER PB-2

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL					USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
										No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
		BITUMINOUS 6" AGGREGATE BASE 4.5"						Pavement Section								
1		FILL, Clayey Sand and Clay with Sand, dark brown and brown, moist						Fill			1	HSA				
2																
3									7		2	SB				
4		SILTY SAND, fine grained, brown, moist, loose					SM	Coarse Alluvium								
5																
									9		3	SB				
6		End of Boring 6.0 ft.														
7																
8																
9																
10																
WATER LEVEL MEASUREMENTS								START: 9/29/2017				END: 9/29/2017				
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD		Crew Chief:		Logged By:					
9/29/2017	10:45 am	6	4.5		None		3 1/4" HSA 0' - 4.5'		J. Tatro		MWO					
									Notes:							

LOG OF TEST BORING

PROJECT NAME: 2018 Street Improvements
CLIENT/WSB #: 010698-000

PROJECT LOCATION: Osseo, MN

BORING NUMBER PB-3

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL					USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
										No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
		BITUMINOUS 4" AGGREGATE BASE 4"						Pavement Section									
1		CLAYEY SAND, fine grained, dark brown, moist					SC	Coarse Alluvium			1	HSA					
2		SAND WITH CLAY, fine grained, brown, moist, medium dense					SP-SC										
3									11		2	SB					
4		SILTY SAND, fine grained, brown, moist, loose					SM										
5									9		3	SB					
6		End of Boring 6.0 ft.															
7																	
8																	
9																	
10																	
WATER LEVEL MEASUREMENTS							START: 9/29/2017				END: 9/29/2017						
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD		Crew Chief:		Logged By:						
9/29/2017	11:22 am	6	4.5		None		3 1/4" HSA 0' - 4.5'		J. Tatro		MWO						
									Notes:								

LOG OF TEST BORING

PROJECT NAME: 2018 Street Improvements
CLIENT/WSB #: 010698-000

PROJECT LOCATION: Osseo, MN

BORING NUMBER PB-4

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL					USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
										No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
		BITUMINOUS 4" AGGREGATE BASE 4"						Pavement Section								
1		FILL, Sand with Silt and Gravel, brown, moist						Fill			1	HSA				
2		SAND WITH CLAY, fine grained, brown, moist, medium dense					SP-SC	Coarse Alluvium								
3									11		2	SB				
4																
5		SILTY SAND, fine grained, brown, moist, medium dense					SM									
6									11		3	SB				
6		End of Boring 6.0 ft.														
7																
8																
9																
10																
WATER LEVEL MEASUREMENTS								START: 9/29/2017				END: 9/29/2017				
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD		Crew Chief:		Logged By:					
9/29/2017	11:51 am	6	4.5		None		3 1/4" HSA 0' - 4.5'		J. Tatro		MWO					
									Notes:							



LOG OF TEST BORING

PROJECT NAME: 2018 Street Improvements
CLIENT/WSB #: 010698-000

PROJECT LOCATION: Osseo, MN

BORING NUMBER PB-5

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL					USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
										No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
		BITUMINOUS 5" AGGREGATE BASE 4"					Pavement Section									
1		FILL, Sand with Clay, brown, moist					Fill			1	HSA					
		SILTY SAND, fine grained, brown, moist, loose				SM	Coarse Alluvium									
2																
3								10		2	SB					
4																
5																
								8		3	SB					
6		End of Boring 6.0 ft.														
7																
8																
9																
10																
WATER LEVEL MEASUREMENTS							START: 9/29/2017				END: 9/29/2017					
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD		Crew Chief:		Logged By:					
9/29/2017	12:25 pm	6	4.5		None		3 1/4" HSA 0' - 4.5'		J. Tatro		MWO					
									Notes:							

WSB BORING LOG - WSB.GDT - 10/16/17 15:50 - K:\010698-000\GEOTECH-CMT\2018 STREET IMP\2018 STREET RECON, OSSEO MN.GPJ

LOG OF TEST BORING

PROJECT NAME: 2018 Street Improvements
CLIENT/WSB #: 010698-000

PROJECT LOCATION: Osseo, MN

BORING NUMBER PB-6

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL					USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
										No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
		BITUMINOUS 4.5" AGGREGATE BASE 5.25"						Pavement Section								
1		FILL, Sand with Gravel and a little Clay, brown, moist						Fill			1	HSA				
		SILTY SAND, fine grained, brown, moist, medium dense to loose					SM	Coarse Alluvium								
2																
3									13		2	SB				
4																
5																
									7		3	SB				
6		End of Boring 6.0 ft.														
7																
8																
9																
10																
WATER LEVEL MEASUREMENTS								START: 9/29/2017				END: 9/29/2017				
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD		Crew Chief:		Logged By:					
9/29/2017	1:00 pm	6	4.5		None		3 1/4" HSA 0' - 4.5'		J. Tatro		MWO					
									Notes:							

SYMBOLS AND TERMINOLOGY ON TEST BORING LOG

SYMBOLS			
Drilling and Sampling		Laboratory Testing	
<u>Symbol</u>	<u>Description</u>	<u>Symbol</u>	<u>Description</u>
HSA	3-1/4" LD. Hollow stem auger	W	Water content, % (ASTM** D2216)
_FA	4", 6" or 10" diameter flight auger	D	Dry density, pcf
_HA	2", 4", or 6" hand auger	LL	Liquid limit (ASTM D4318)
_DC	2-1/2", 4", 5", or 6" steel drive casing	PL	Plastic limit (ASTM D4318)
_RC	Size A, B or N rotary casing		
PD	Pipe drill or cleanout tube		-Inserts in last column (Qu or RQD)-
CS	Continuous split barrel sampling	Qu	Unconfined compressive strength, psf (ASTM D2166)
DM	Drilling mud	Pq	Penetrometer reading, tsf (ASTM D1558)
JW	Jetting water	Ts	Torvane reading, tsf
SB	2" O.D. split barrel sampling	G	Specific gravity (ASTM D854)
_L	2-1/2" or 3-1/2" O.D. SB liner sampler	SL	Shrinkage limits (ASTM D427)
_T	2" or 3" thin walled tube sample	OC	Organic content-combustion method (ASTM D2974)
3TP	3" thin walled tube using pitcher sampler	SP	Swell pressure, tsf (ASTM D4546)
_TO	2" or 3" thin walled tube using Osterberg sampler	PS	Percent swell under pressure (ASTM D4546)
W	Wash sample	FS	Free swell, % (ASTM D4546)
B	Bag sample	SS	Shrink swell, % (ASTM D4546)
P	Test pit sample	pH	Hydrogen ion content-Meter Method (ASTM D4972)
_Q	BQ, NQ, or PQ wire line system	SC	Sulfate content, parts/million or mg/l
_X	AX, BX, or NX double tube barrel	CC	Chloride content, parts/million or mg/l
N	Standard penetration test, blows per foot	C*	One dimensional consolidation (ASTM D2435)
CR	Core recovery, percent	Qc*	Triaxial compression (ASSTM D2850 and D4767)
WL	Water level	D.S.*	Direct Shear (ASTM D3080)
▼	Water level	K*	Coefficient of permeability, cm/sec (ASTM D2434)
NMR	No measurement recorded, primarily due to presence of drilling or coring fluid.	P*	Pinhole test (ASTM D4647)
		DH*	Double hydrometer (ASTM D4221)
		MA*	Particle size analysis (ASTM D422)
		R	Laboratory electrical resistivity, ohm-cm (ASTM G57)
		E*	Pressuremeter deformation modulus, tsf (ASTM D4719)
		PM*	Pressuremeter test (ASTM D4719)
		VS*	Field vane shear (ASTM D2573)
		IR*	Infiltrimeter test (ASTM D3385)
		RQD	Rock quality designation, percent
			*Results shown on attached data sheet or graph
			**ASTM designates American Society for Testing and Materials

TERMINOLOGY							
Particle Sizes				Soil layering and Moisture			
<u>Type</u>	<u>Size Range</u>			<u>Term</u>	<u>Visual Observation</u>		
Boulders	> 12"			Lamination	Up to 1/4" thick stratum		
Cobbles	3" – 12"			Varved	Altering laminations of any combination of clay, silt, fine sand, or colors		
Coarse gravel	3/4" – 3"			Lenses	Small pockets of different soils in a soil mass		
Fine gravel	#4 sieve – 3/4"			Stratified	Altering layers of varying materials or colors		
Coarse sand	#4 - #10 sieve			Layer	1/4" to 12" thick stratum		
Medium sand	#10-#40 sieve			Dry	Powdery, no noticeable water		
Fine sand	#40-#200 sieve			Moist	Damp, below saturation		
Silt	100% passing #200 sieve and > 0.005mm			Waterbearing	Pervious soil below water		
Clay	100% passing #200 sieve and < 0.005mm			Wet	Saturated, above liquid limit		
Gravel Content				Standard Penetration Resistance			
Coarse-Grained Soils		Fine-Grained Soils		Cohesionless Soils		Cohesive Soils	
<u>% Gravel</u>	<u>Description</u>	<u>% Gravel</u>	<u>Description</u>	<u>N-Value</u>	<u>Relative Density</u>	<u>N-Value</u>	<u>Consistency</u>
2-15	A little gravel	< 5	Trace of gravel	0-4	Very loose	0-4	Very soft
16-49	With gravel	5-15	A little gravel	5-10	Loose	5-8	Soft
		16-30	With gravel	11-30	Medium dense	9-15	Firm
		31-49	Gravelly	31-50	Dense	16-30	Hard
				> 50	Very dense	> 30	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

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
Clean Gravels (Less than 5% fines)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	GC	Clayey gravels, gravel-sand-clay mixtures
	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

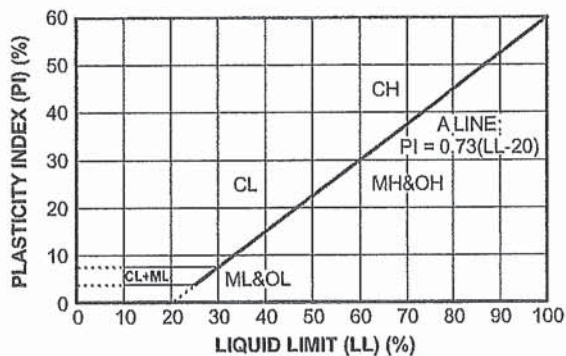
LABORATORY CLASSIFICATION CRITERIA

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 requirements 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 requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
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 requirements 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 borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

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

Less than 5 percent GW, GP, SW, SP
More than 12 percent GM, GC, SM, SC
5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX E

Televising Report



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855-845-5326

Des Moines, IA

Mankato, MN

Rogers, MN

Sioux Falls, SD

Watertown, SD

PROPOSAL

Bill To:

City of Osseo
415 Central Avenue

Osseo, MN 55415

Ship To:

City of Osseo
per map

Osseo, MN 55415

Date	Expires
8/22/2017	10/21/2017
Hydro-Klean Quote Number	Delivery / Availability
QTE039352	As Schedule Permits
Prepared By	
Michele McGreal	
Freight On Board	
Rogers, MN	
Terms	
Net 30	

Quantity	Units	Description	Price	Amount
----------	-------	-------------	-------	--------

Projected probable project cost to perform the following tasks on a unit cost basis:

Osseo, MN - Televis 8"-10" sanitary and 15"-32" storm sewer per supplied maps in streets/alleys, under direction of WSB. Prices do not include cleaning. Does not include prevailing wage, non-standard traffic control, bypassing/dewatering, easement agreements (if any), special permits or notices. Manholes/catch basins/flushed ends must be exposed and accessible. All work to be completed during same mobilization. Variations in the work scope will require execution of a change order.

1.00 Each	Mobilization of CCTV Crew and Equipment	\$250.00	\$250.00
4200.00 Foot	Televis Sanitary and Storm Sewers	\$1.01	\$4,242.00

*NOTE: Proposal does not include any applicable taxes

Prepared By: Michele McGreal

Title: Sales & Marketing
Coordinator

Approved By: Wade Anderson

Title: President

Accepted By: Emily Zule

Date: 8/31/17

Title: Project Engineer

PO#: _____

*Total
\$4,492.00

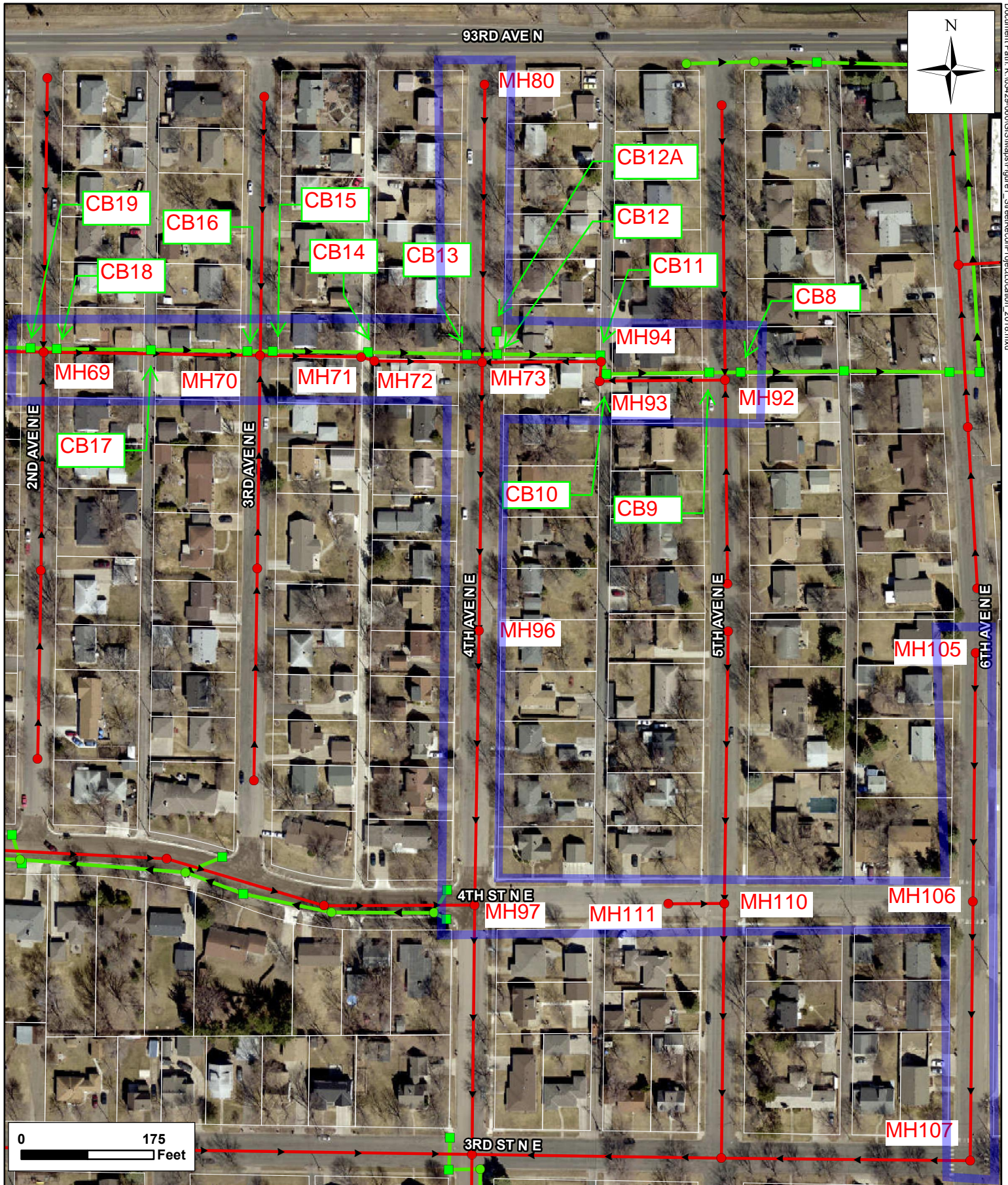
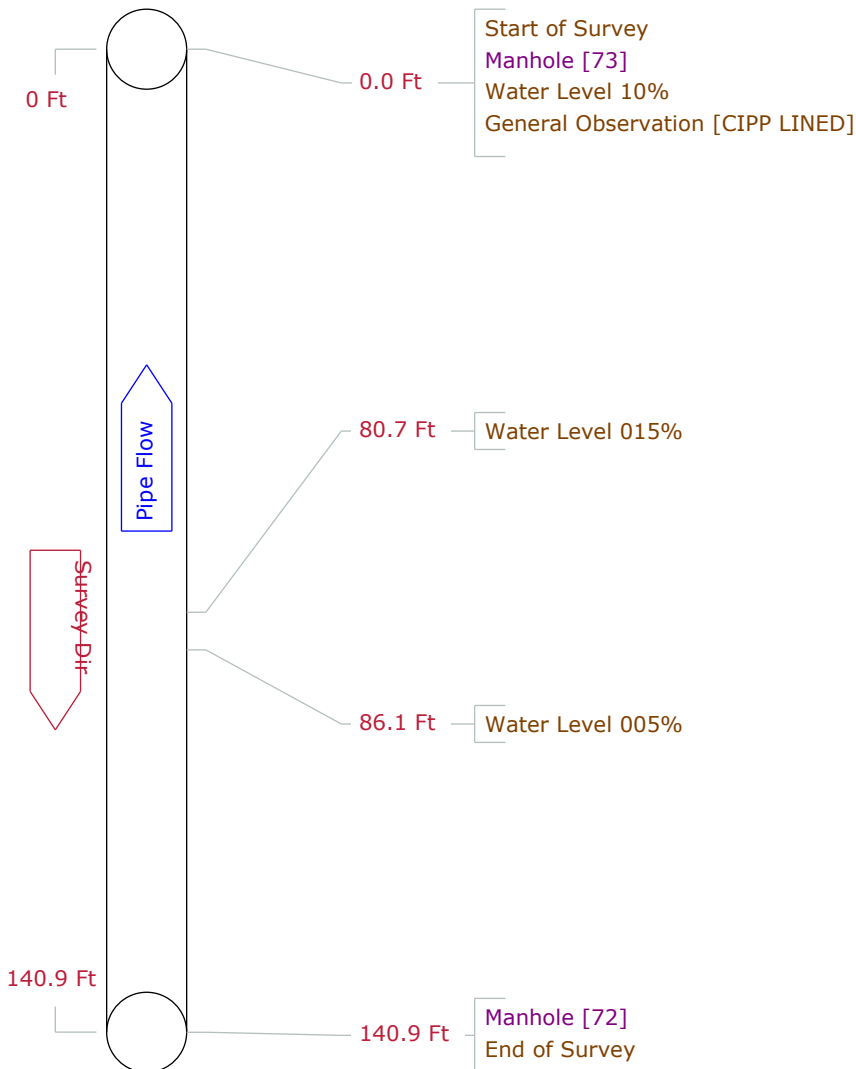


Figure 1: Project Area Map
2018 Street Reconstruction Project
Osseo, MN



Pipe Graphic Report of PSR 72 X for CITY OF OSSEO

Setup	4	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage	Survey Customer						
P/O #	Date 2017/09/28		Time 12:07		Street 4TH AVE NE.		
City	OSSEO, MN.		Further location details				
Up	72	Rim to invert		Grade to invert		Rim to grade	Ft
Down	73	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Direction Upstream		Flow control		Media No		
Shape	Circular	Height 10	Width	ins	Preclean Z	Date Cleaned	
Material	Vitrified Clay Pipe		Joint length	Ft	Total length 140.9 Ft	Length Surveyed	140.90 Ft
Lining	Cured in Place		Year laid	Year rehabilitated		Weather	
Purpose	Cat						
Additional info					Structural	O & M	Constructional
Location					Miscellaneous	Hydraulic	
Project	TV SANITARY & STORM				Work Order		
Northing	Easting				Elevation		
Coordinate System					GPS Accuracy		



Tabular Report of PSR 72 X for CITY OF OSSEO

Setup 4	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 12:07	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up 72	Rim to invert	Grade to invert	Rim to grade Ft
Down 73	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 10 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length Ft	Total length 140.9 Ft	Length Surveyed 140.9 Ft
Lining Cured in Place	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div> <div>Structural</div> <div>O & M</div> <div>Constructional</div> </div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							73
0.0			MWL Water Level			10				
0.0			MGO General Observation							CIPP LINED
80.7			MWL Water Level			15				
86.1			MWL Water Level			5				
140.9			AMH Manhole							72
140.9			FH End of Survey							

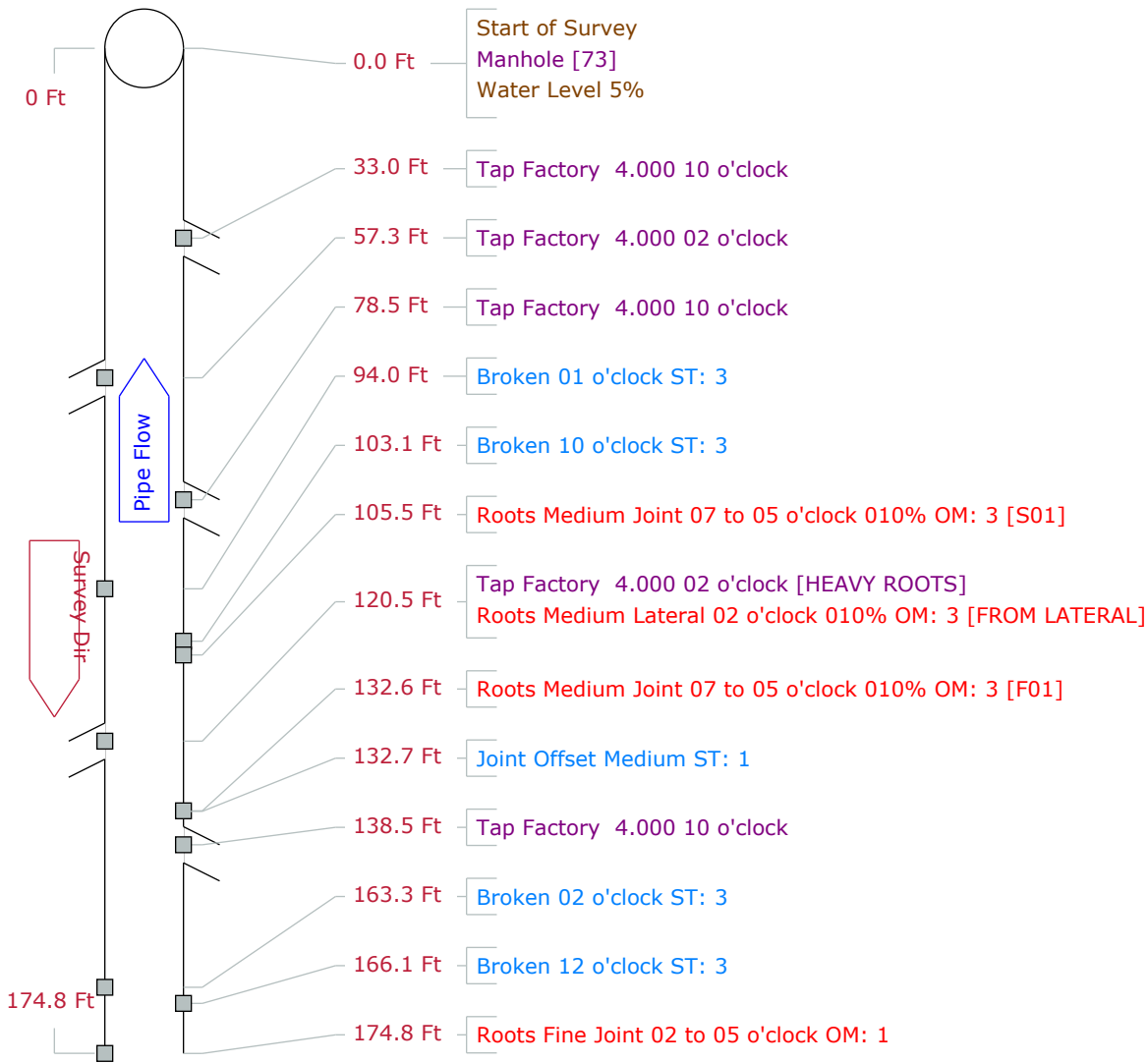
140.9 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000

Pipe Graphic Report of PSR 80

for CITY OF OSSEO

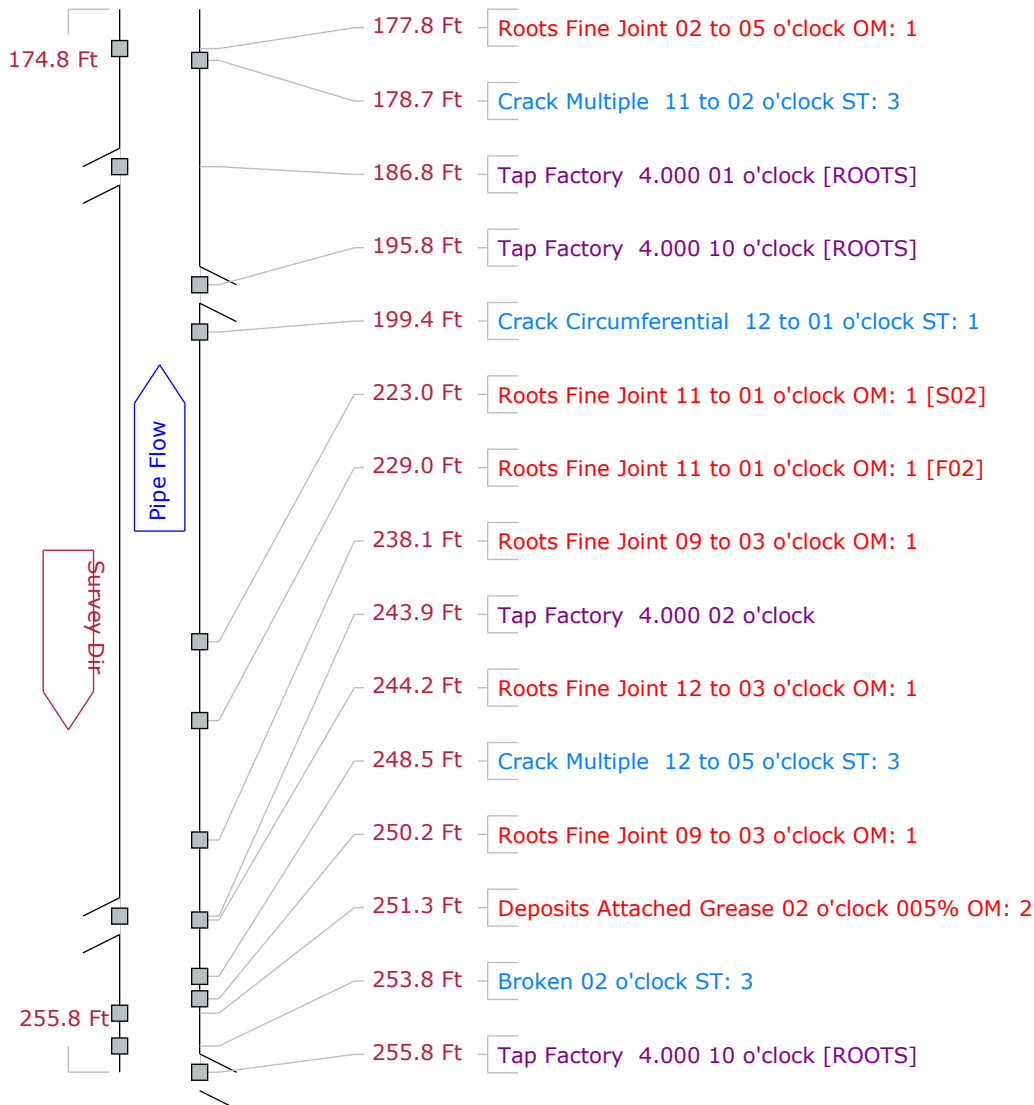
Setup	5	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage			Survey Customer				
P/O #		Date	2017/09/28	Time	12:33	Street	4TH AVE NE.
City	OSSEO, MN.		Further location details				
Up	80		Rim to invert		Grade to invert	Rim to grade	Ft
Down	73		Rim to invert		Grade to invert	Rim to grade	Ft
Use		Direction	Upstream		Flow control	Media No	
Shape	Circular	Height	8	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe	Joint length		Ft	Total length	366.2 Ft	Length Surveyed 366.20 Ft
Lining		Year laid			Year rehabilitated		Weather
Purpose			Cat				
Additional info						Structural	O & M
Location						Miscellaneous	Hydraulic
Project	TV SANITARY & STORM					Work Order	
Northing			Easting			Elevation	
Coordinate System						GPS Accuracy	



Pipe Graphic Report of PSR 80

for CITY OF OSSEO

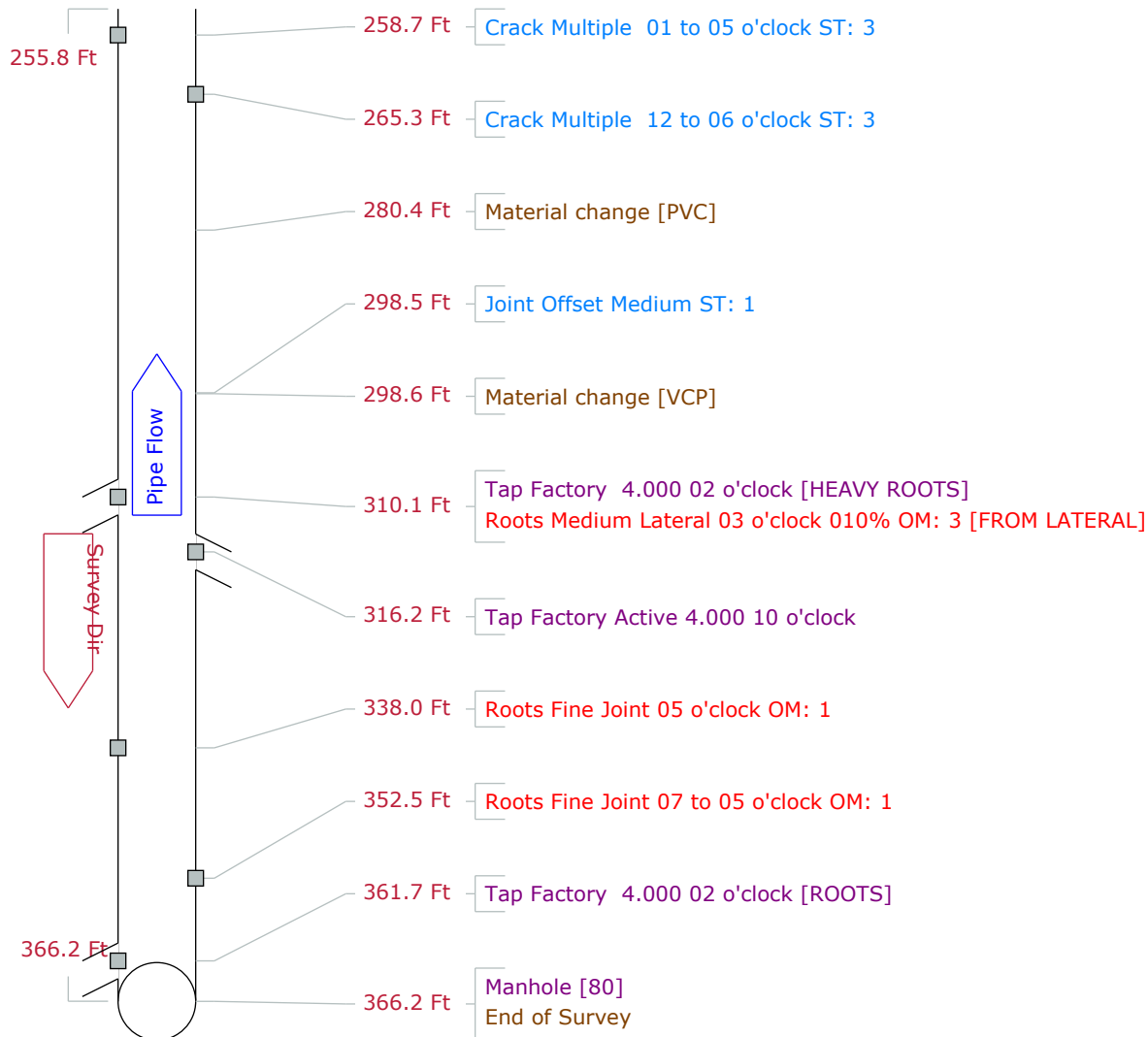
Setup	5	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage			Survey Customer				
P/O #		Date	2017/09/28	Time	12:33	Street	4TH AVE NE.
City	OSSEO, MN.		Further location details				
Up	80		Rim to invert		Grade to invert	Rim to grade	Ft
Down	73		Rim to invert		Grade to invert	Rim to grade	Ft
Use		Direction	Upstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe	Joint length		Ft	Total length	366.2 Ft	Length Surveyed
Lining		Year laid		Year rehabilitated		Weather	
Purpose			Cat				
Additional info						Structural	O & M
Location						Miscellaneous	Hydraulic
Project	TV SANITARY & STORM					Work Order	
Northing			Easting			Elevation	
Coordinate System						GPS Accuracy	



Pipe Graphic Report of PSR 80

for CITY OF OSSEO

Setup	5	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage	Survey Customer						
P/O #	Date 2017/09/28		Time 12:33		Street 4TH AVE NE.		
City	OSSEO, MN.		Further location details				
Up	80	Rim to invert		Grade to invert		Rim to grade	Ft
Down	73	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Direction Upstream		Flow control		Media No		
Shape	Circular		Height 8	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe		Joint length	Ft	Total length 366.2 Ft	Length Surveyed 366.20 Ft	
Lining	Year laid		Year rehabilitated		Weather		
Purpose	Cat						
Additional info					Structural	O & M	Constructional
Location					Miscellaneous	Hydraulic	
Project	TV SANITARY & STORM				Work Order		
Northing	Easting			Elevation			
Coordinate System					GPS Accuracy		



Tabular Report of PSR 80

for CITY OF OSSEO

Setup	5	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage		Survey Customer					
P/O #		Date	2017/09/28	Time	12:33	Street	4TH AVE NE.
City	OSSEO, MN.	Further location details					
Up	80	Rim to invert		Grade to invert		Rim to grade	Ft
Down	73	Rim to invert		Grade to invert		Rim to grade	Ft
Use		Direction	Up	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe	Joint length		Ft	Total length	366.2 Ft	Length Surveyed
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info						<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location							
Project						TV SANITARY & STORM	
Northing						Easting	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							73
0.0			MWL Water Level			5				
33.0			TF Tap Factory	4.000			10			
57.3			TF Tap Factory	4.000			02			
78.5			TF Tap Factory	4.000			10			
94.0			B Broken				J 01			
103.1			B Broken				J 10			
105.5		S01	RMJ Roots Medium Joint			10	J 07 05			
120.5			TF Tap Factory	4.000			02			HEAVY ROOTS
120.5			RML Roots Medium Lateral			10	02			FROM LATERAL
132.6		F01	RMJ Roots Medium Joint			10	J 07 05			
132.7			JOM Joint Offset Medium							
138.5			TF Tap Factory	4.000			10			
163.3			B Broken				J 02			
166.1			B Broken				J 12			
174.8			RFJ Roots Fine Joint				J 02 05			
177.8			RFJ Roots Fine Joint				J 02 05			
178.7			CM Crack Multiple				J 11 02			
186.8			TF Tap Factory	4.000			01			ROOTS
195.8			TF Tap Factory	4.000			10			ROOTS
199.4			CC Crack Circumferential				J 12 01			
223.0		S02	RFJ Roots Fine Joint				J 11 01			
229.0		F02	RFJ Roots Fine Joint				J 11 01			
238.1			RFJ Roots Fine Joint				J 09 03			
243.9			TF Tap Factory	4.000			02			
244.2			RFJ Roots Fine Joint				J 12 03			
248.5			CM Crack Multiple				J 12 05			
250.2			RFJ Roots Fine Joint				J 09 03			
251.3			DAGS Deposits Attached Grease			5	02			
253.8			B Broken				J 02			

Tabular Report of PSR 80

for CITY OF OSSEO

Setup 5	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 12:33	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up 80	Rim to invert	Grade to invert	Rim to grade Ft
Down 73	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 8 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 366.2 Ft	Length Surveyed 366.2 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div> <div>Structural</div> <div>O & M</div> <div>Constructional</div> </div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Elevation	
Coordinate System		GPS Accuracy	

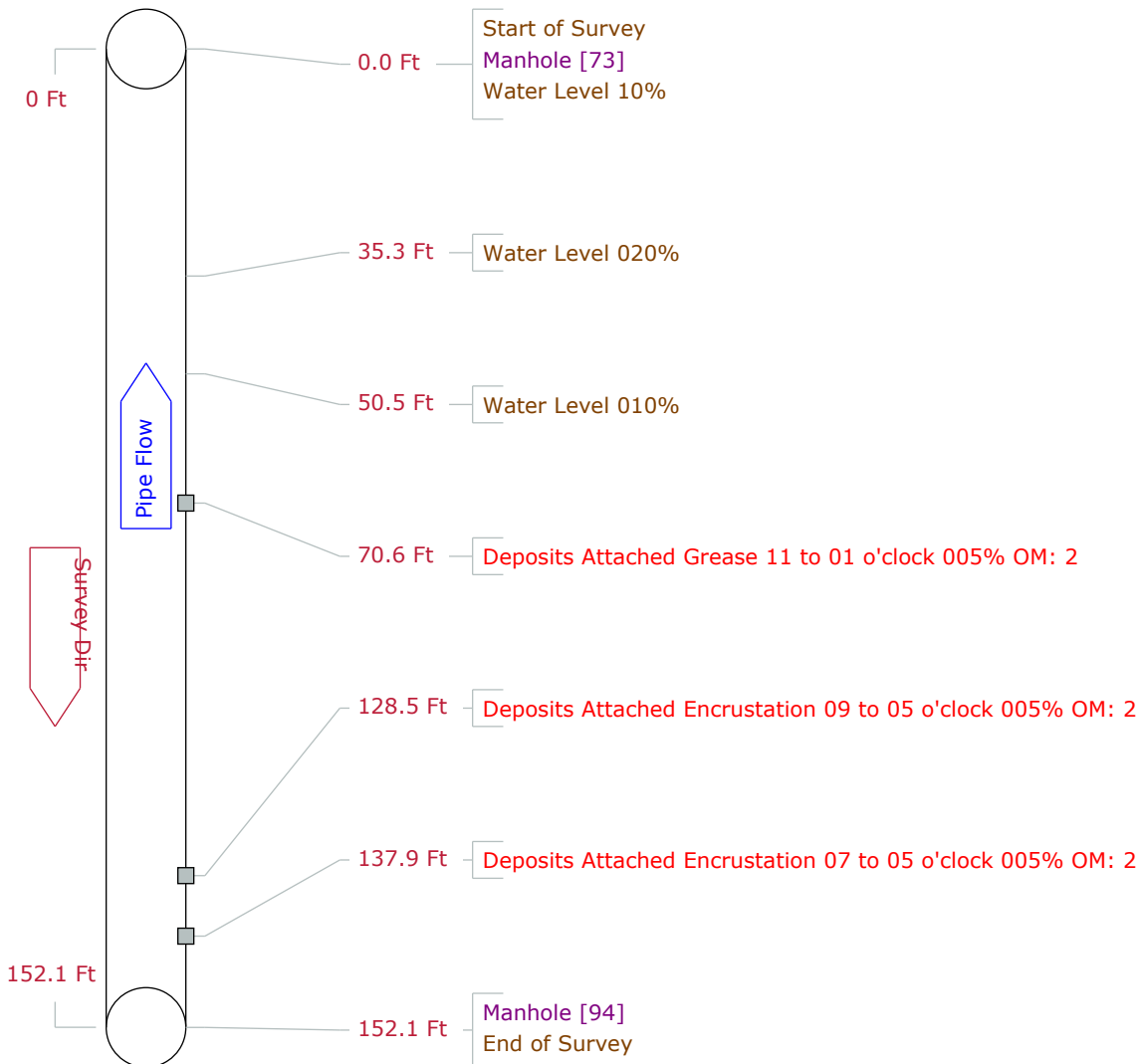
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
255.8			TF Tap Factory	4.000			10			ROOTS
258.7			CM Crack Multiple				J 01	05		
265.3			CM Crack Multiple				J 12	06		
280.4			MMC Material change							PVC
298.5			JOM Joint Offset Medium							
298.6			MMC Material change							VCP
310.1			TF Tap Factory	4.000			02			HEAVY ROOTS
310.1			RML Roots Medium Lateral			10	03			FROM LATERAL
316.2			TFA Tap Factory Active	4.000			10			
338.0			RFJ Roots Fine Joint				J 05			
352.5			RFJ Roots Fine Joint				J 07	05		
361.7			TF Tap Factory	4.000			02			ROOTS
366.2			AMH Manhole							80
366.2			FH End of Survey							

366.2 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 30	Pipe Ratings Index 2.5	Quick Rating 3913
	O&M:	Pipe Rating 31	Pipe Ratings Index 1.9	Quick Rating 3721
	Overall	Pipe Rating 61	Pipe Ratings Index 4.4	Quick Rating 3B21

Pipe Graphic Report of PSR 94 X for CITY OF OSSEO

Setup	6	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/28		Time 13:27		Street 4TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	94	Rim to invert		Grade to invert		Rim to grade Ft
Down	73	Rim to invert		Grade to invert		Rim to grade Ft
Use	Direction Upstream		Flow control		Media No	
Shape	Circular	Height 8	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	152.1 Ft	Length Surveyed 152.10 Ft
Lining	Year laid		Year rehabilitated		Weather	
Purpose	Cat					
Additional info				Structural	O & M	Constructional
Location				Miscellaneous	Hydraulic	
Project	TV SANITARY & STORM			Work Order		
Northing	Easting			Elevation		
Coordinate System				GPS Accuracy		



Tabular Report of PSR 94 X for CITY OF OSSEO

Setup 6	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 13:27	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up 94	Rim to invert	Grade to invert	Rim to grade Ft
Down 73	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 8 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 152.1 Ft	Length Surveyed 152.1 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat		Pressure
Additional info		<div> <div>Structural</div> <div>O & M</div> <div>Constructional</div> </div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

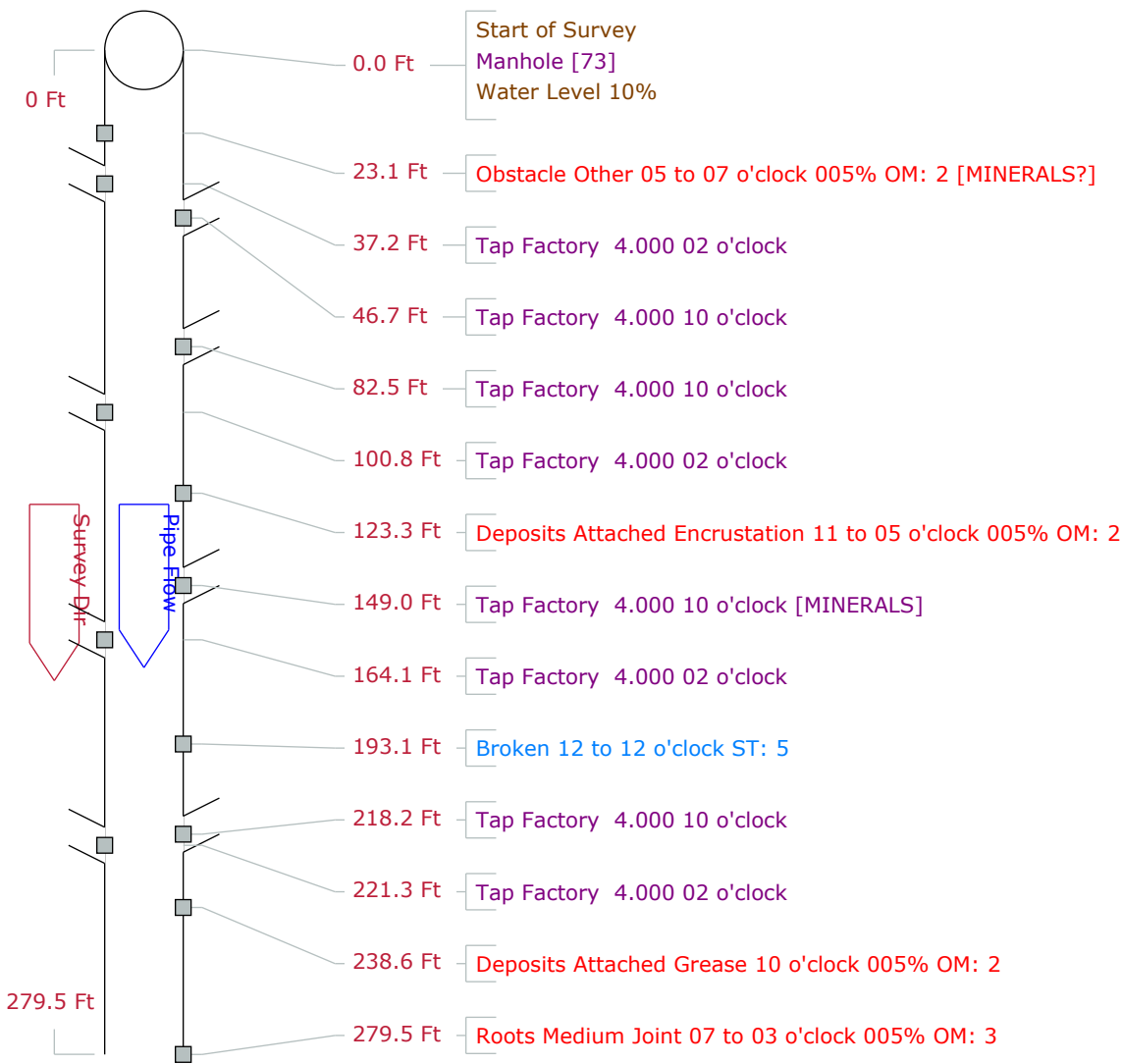
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							73
0.0			MWL Water Level			10				
35.3			MWL Water Level			20				
50.5			MWL Water Level			10				
70.6			DAGS Deposits Attached Grease			5	11	01		
128.5			DAE Deposits Attached Encrustation			5	J 09	05		
137.9			DAE Deposits Attached Encrustation			5	J 07	05		
152.1			AMH Manhole							94
152.1			FH End of Survey							

152.1 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 6	Pipe Ratings Index 2	Quick Rating 2300
	Overall	Pipe Rating 6	Pipe Ratings Index 2	Quick Rating 2300

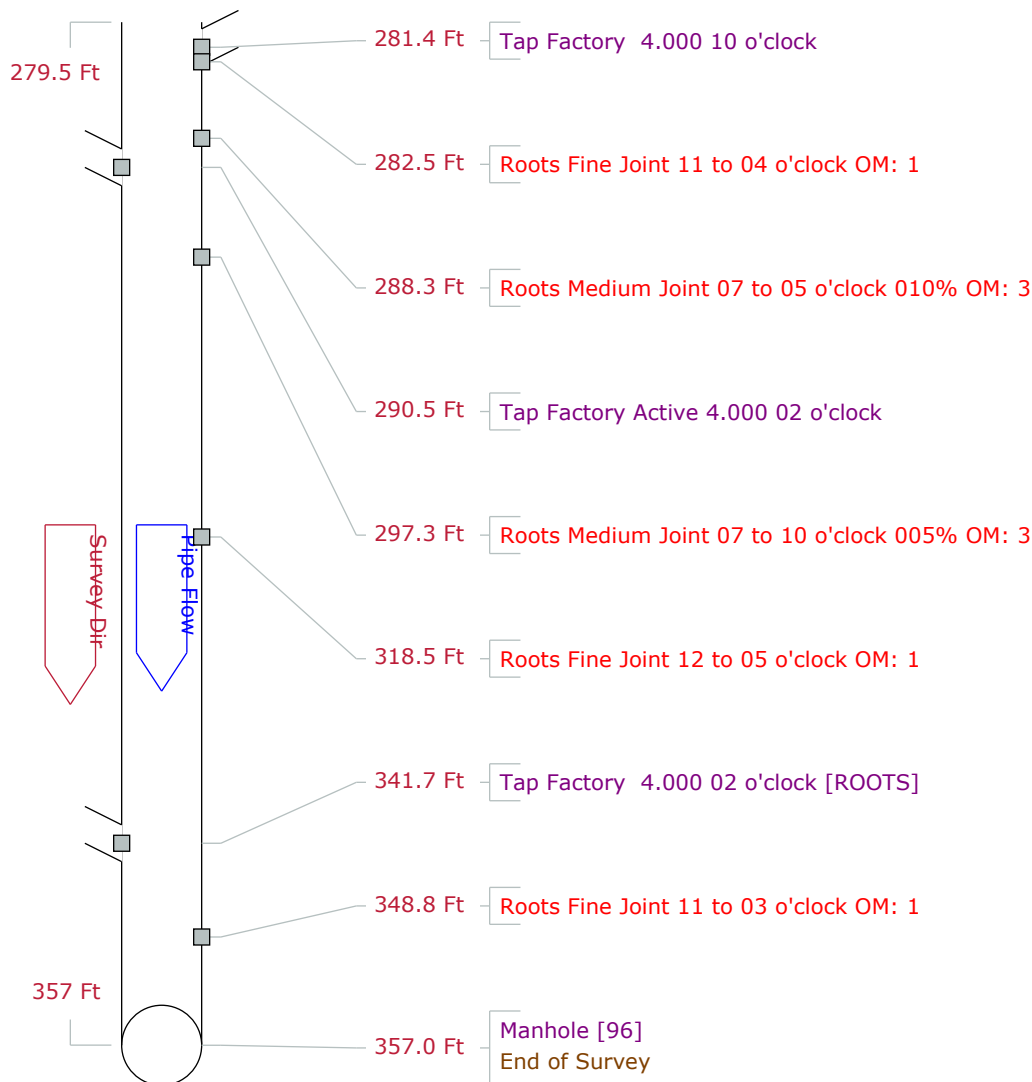
Pipe Graphic Report of PSR 73 X for CITY OF OSSEO

Setup	7	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/28		Time 13:43		Street 4TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	73	Rim to invert		Grade to invert		Rim to grade Ft
Down	96	Rim to invert		Grade to invert		Rim to grade Ft
Use	Direction Downstream		Flow control		Media No	
Shape	Circular	Height 10	Width ins	Preclean Z		Date Cleaned
Material	Vitrified Clay Pipe		Joint length Ft	Total length 357.0 Ft		Length Surveyed 357.00 Ft
Lining	Year laid		Year rehabilitated		Weather	
Purpose	Cat					
Additional info				Structural	O & M	Constructional
Location				Miscellaneous	Hydraulic	
Project	TV SANITARY & STORM			Work Order		
Northing	Easting			Elevation		
Coordinate System				GPS Accuracy		



Pipe Graphic Report of PSR 73 X for CITY OF OSSEO

Setup	7	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage	Survey Customer						
P/O #	Date 2017/09/28		Time 13:43		Street 4TH AVE NE.		
City	OSSEO, MN.		Further location details				
Up	73	Rim to invert		Grade to invert		Rim to grade	Ft
Down	96	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Direction Downstream		Flow control		Media No		
Shape	Circular	Height 10	Width	ins	Preclean Z	Date Cleaned	
Material	Vitrified Clay Pipe		Joint length		Ft	Total length 357.0 Ft	Length Surveyed 357.00 Ft
Lining	Year laid		Year rehabilitated		Weather		
Purpose	Cat						
Additional info					Structural		
Location					O & M		
Project					TV SANITARY & STORM		
Northing					Work Order		
Coordinate System					Easting		
					Elevation		
					GPS Accuracy		



Tabular Report of PSR 73 X for CITY OF OSSEO

Setup 7	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 13:43	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up 73	Rim to invert	Grade to invert	Rim to grade Ft
Down 96	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 10 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 357.0 Ft	Length Surveyed 357.0 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

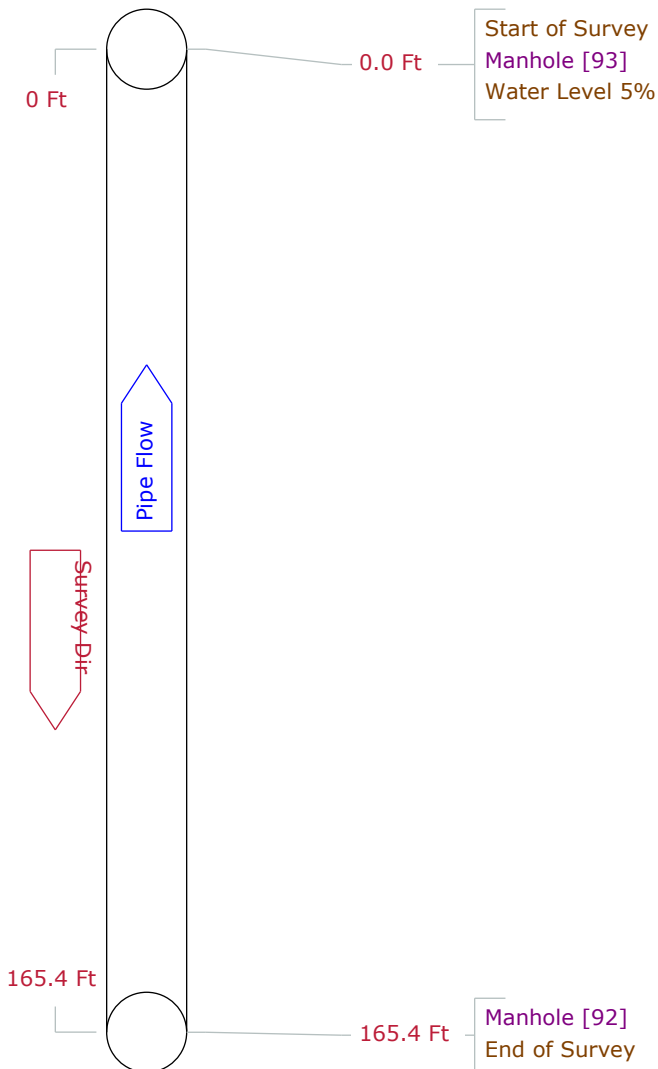
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							73
0.0			MWL Water Level			10				
23.1			OBZ Obstacle Other			5	05	07		MINERALS?
37.2			TF Tap Factory	4.000			02			
46.7			TF Tap Factory	4.000			10			
82.5			TF Tap Factory	4.000			10			
100.8			TF Tap Factory	4.000			02			
123.3			DAE Deposits Attached Encrustation			5	J	11	05	
149.0			TF Tap Factory	4.000			10			MINERALS
164.1			TF Tap Factory	4.000			02			
193.1			B Broken				J	12	12	
218.2			TF Tap Factory	4.000			10			
221.3			TF Tap Factory	4.000			02			
238.6			DAGS Deposits Attached Grease			5	10			
279.5			RMJ Roots Medium Joint			5	J	07	03	
281.4			TF Tap Factory	4.000			10			
282.5			RFJ Roots Fine Joint				J	11	04	
288.3			RMJ Roots Medium Joint			10	J	07	05	
290.5			TFA Tap Factory Active	4.000			02			
297.3			RMJ Roots Medium Joint			5	J	07	10	
318.5			RFJ Roots Fine Joint				J	12	05	
341.7			TF Tap Factory	4.000			02			ROOTS
348.8			RFJ Roots Fine Joint				J	11	03	
357.0			AMH Manhole							96
357.0			FH End of Survey							

357.0 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 5	Pipe Ratings Index 5	Quick Rating 5100
	O&M:	Pipe Rating 18	Pipe Ratings Index 2	Quick Rating 3323
	Overall	Pipe Rating 23	Pipe Ratings Index 7	Quick Rating 5133

Pipe Graphic Report of PSR 92 X for CITY OF OSSEO

Setup	10	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage	Survey Customer						
P/O #	Date 2017/09/28		Time 16:35	Street ALLEY 4TH-5TH AVE NE			
City	OSSEO, MN.		Further location details				
Up	92	Rim to invert		Grade to invert		Rim to grade	Ft
Down	93	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Direction Upstream		Flow control			Media No	
Shape	Circular	Height 8	Width	ins	Preclean Z	Date Cleaned	
Material	Vitrified Clay Pipe		Joint length	Ft	Total length 165.4 Ft	Length Surveyed	165.40 Ft
Lining	Year laid		Year rehabilitated			Weather	
Purpose	Cat						
Additional info					Structural	O & M	Constructional
Location					Miscellaneous	Hydraulic	
Project	TV SANITARY & STORM				Work Order		
Northing	Easting				Elevation		
Coordinate System					GPS Accuracy		



Tabular Report of PSR 92 X for CITY OF OSSEO

Setup 10	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 16:35	Street ALLEY 4TH-5TH AVE NE
City OSSEO, MN.	Further location details		
Up 92	Rim to invert	Grade to invert	Rim to grade Ft
Down 93	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 8 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 165.4 Ft	Length Surveyed 165.4 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div> <div>Structural</div> <div>O & M</div> <div>Constructional</div> </div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

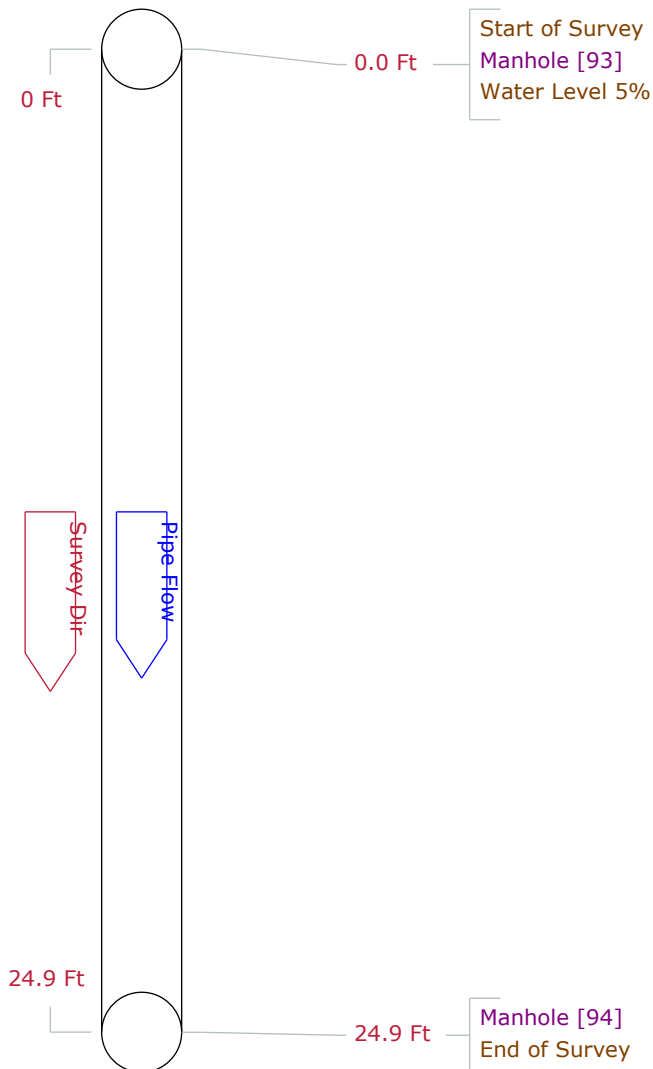
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							93
0.0			MWL Water Level			5				
165.4			AMH Manhole							92
165.4			FH End of Survey							

165.4 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000

Pipe Graphic Report of PSR 93 X for CITY OF OSSEO

Setup	9	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage	Survey Customer						
P/O #	Date 2017/09/28		Time 16:30	Street ALLEY 4TH-5TH AVE NE			
City	OSSEO, MN.		Further location details				
Up	93	Rim to invert		Grade to invert		Rim to grade	Ft
Down	94	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Direction Downstream		Flow control		Media No		
Shape	Circular	Height 8	Width	ins	Preclean Z	Date Cleaned	
Material	Vitrified Clay Pipe		Joint length	Ft	Total length 24.9	Ft	Length Surveyed 24.90 Ft
Lining	Year laid		Year rehabilitated		Weather		
Purpose	Cat						
Additional info					Structural	O & M	Constructional
Location					Miscellaneous	Hydraulic	
Project	TV SANITARY & STORM				Work Order		
Northing	Easting			Elevation			
Coordinate System					GPS Accuracy		



Tabular Report of PSR 93 X for CITY OF OSSEO

Setup 9	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 16:30	Street ALLEY 4TH-5TH AVE NE
City OSSEO, MN.	Further location details		
Up 93	Rim to invert	Grade to invert	Rim to grade Ft
Down 94	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 8 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 24.9 Ft	Length Surveyed 24.9 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div> <div>Structural</div> <div>O & M</div> <div>Constructional</div> </div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

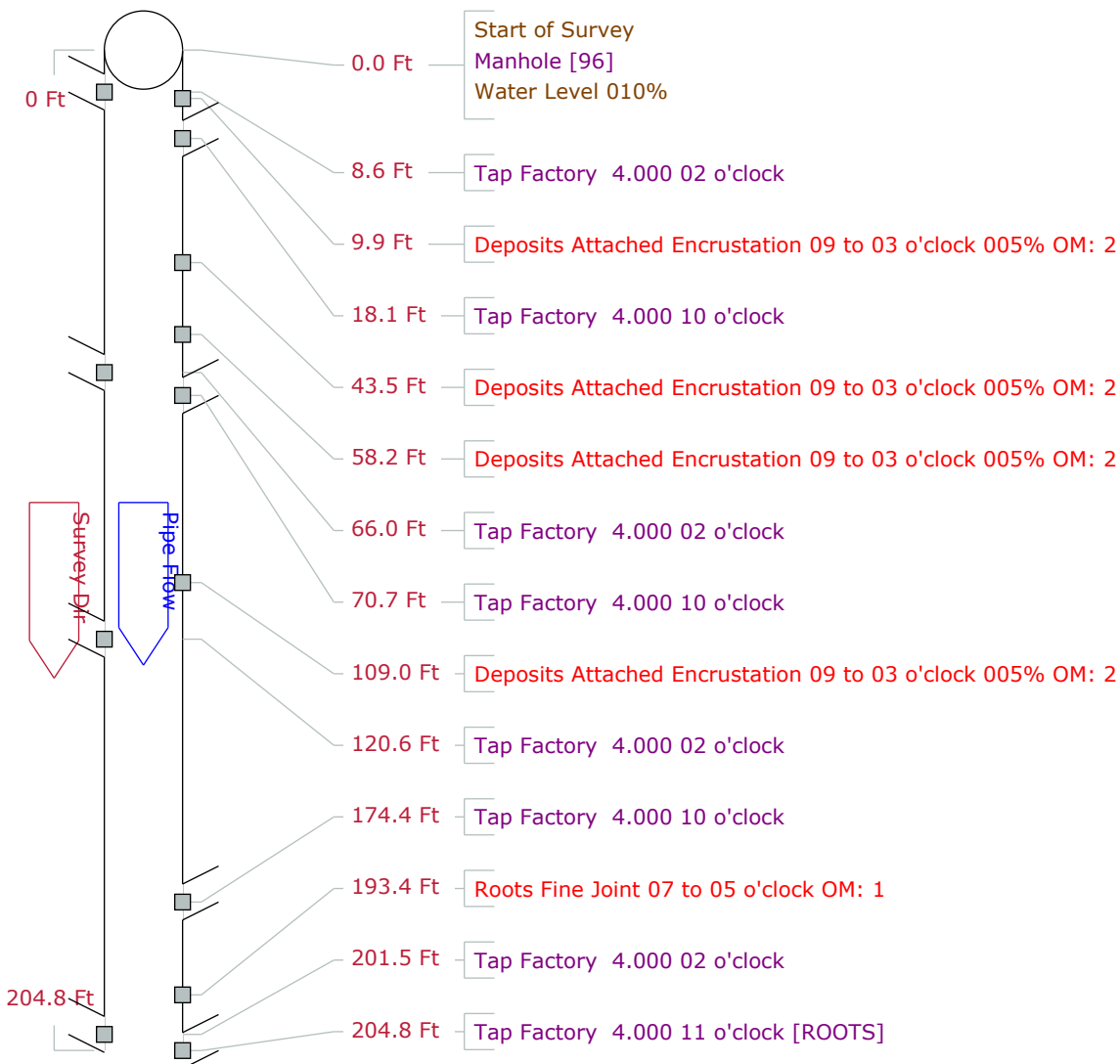
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							93
0.0			MWL Water Level			5				
24.9			AMH Manhole							94
24.9			FH End of Survey							

24.9 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000

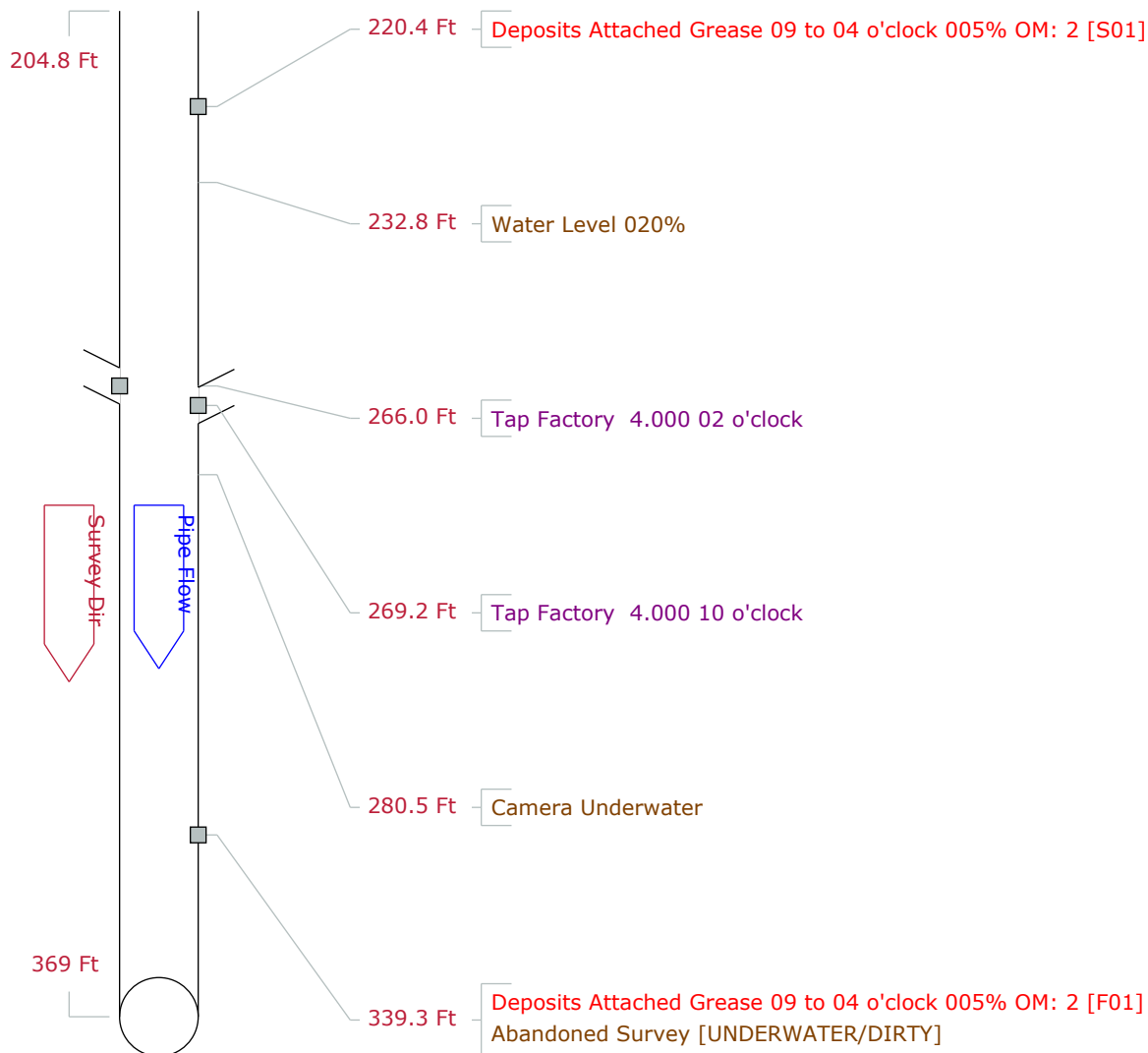
Pipe Graphic Report of PSR 96 X for CITY OF OSSEO

Setup	8	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner	
Drainage	Survey Customer						
P/O #	Date 2017/09/28		Time 14:30		Street 4TH AVE NE.		
City	OSSEO, MN.		Further location details				
Up	96	Rim to invert		Grade to invert		Rim to grade	Ft
Down	97	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Direction Downstream		Flow control		Media No		
Shape	Circular	Height 10	Width	ins	Preclean Z	Date Cleaned	
Material	Vitrified Clay Pipe		Joint length	Ft	Total length 369.0 Ft	Length Surveyed	339.30 Ft
Lining	Year laid		Year rehabilitated		Weather		
Purpose	Cat						
Additional info					Structural	O & M	Constructional
Location					Miscellaneous	Hydraulic	
Project	TV SANITARY & STORM				Work Order		
Northing	Easting				Elevation		
Coordinate System					GPS Accuracy		



Pipe Graphic Report of PSR 96 X for CITY OF OSSEO

Setup	8	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/28		Time 14:30		Street 4TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	96	Rim to invert		Grade to invert		Rim to grade Ft
Down	97	Rim to invert		Grade to invert		Rim to grade Ft
Use	Direction Downstream		Flow control		Media No	
Shape	Circular	Height 10	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe		Joint length	Ft	Total length 369.0 Ft	Length Surveyed 339.30 Ft
Lining	Year laid		Year rehabilitated		Weather	
Purpose	Cat					
Additional info					Structural	
Location					O & M	
Project					TV SANITARY & STORM	
Northing					Work Order	
Coordinate System					Elevation	
					GPS Accuracy	



Tabular Report of PSR 96 X for CITY OF OSSEO

Setup 8	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 14:30	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up 96	Rim to invert	Grade to invert	Rim to grade Ft
Down 97	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 10 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 369.0 Ft	Length Surveyed 339.3 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

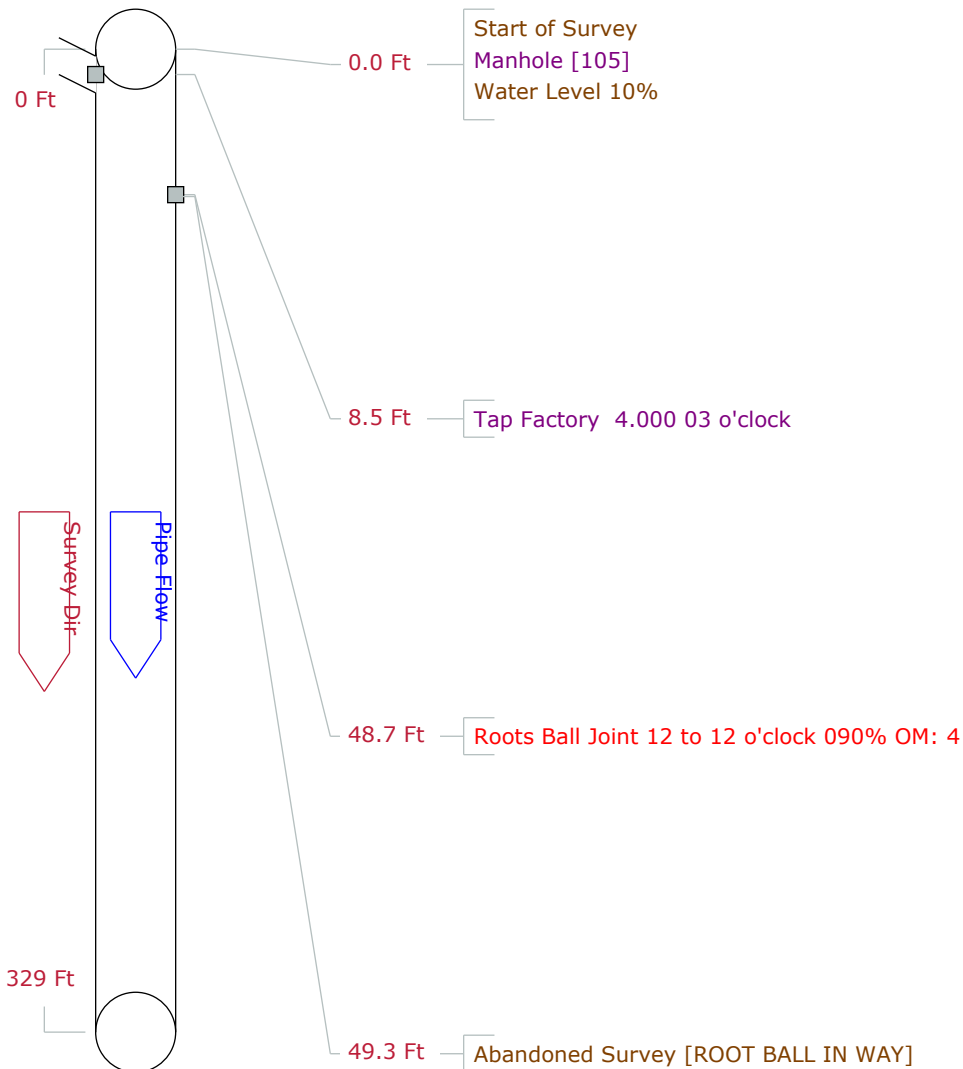
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							96
0.0			MWL Water Level			10				
8.6			TF Tap Factory	4.000			02			
9.9			DAE Deposits Attached Encrustation			5	J 09 03			
18.1			TF Tap Factory	4.000			10			
43.5			DAE Deposits Attached Encrustation			5	J 09 03			
58.2			DAE Deposits Attached Encrustation			5	J 09 03			
66.0			TF Tap Factory	4.000			02			
70.7			TF Tap Factory	4.000			10			
109.0			DAE Deposits Attached Encrustation			5	J 09 03			
120.6			TF Tap Factory	4.000			02			
174.4			TF Tap Factory	4.000			10			
193.4			RFJ Roots Fine Joint				J 07 05			
201.5			TF Tap Factory	4.000			02			
204.8			TF Tap Factory	4.000			11			ROOTS
220.4		S01	DAGS Deposits Attached Grease			5	09 04			
232.8			MWL Water Level			20				
266.0			TF Tap Factory	4.000			02			
269.2			TF Tap Factory	4.000			10			
280.5			MCU Camera Underwater							
339.3		F01	DAGS Deposits Attached Grease			5	09 04			
339.3			MSA Abandoned Survey							UNDERWATER/DIRTY

339.3 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 61	Pipe Ratings Index 2	Quick Rating 412D
	Overall	Pipe Rating 61	Pipe Ratings Index 2	Quick Rating 412D

Pipe Graphic Report of PSR 105 X for CITY OF OSSEO

Setup	12/11	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/28		Time 17:20		Street 6TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	105	Rim to invert		Grade to invert		Rim to grade Ft
Down	106	Rim to invert		Grade to invert		Rim to grade Ft
Use	Direction Downstream		Flow control		Media No	
Shape	Circular	Height 8	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe	Joint length	Ft	Total length 329.0	Ft	Length Surveyed 49.30 Ft
Lining	Year laid		Year rehabilitated		Weather	
Purpose	Cat					
Additional info	Reverse set up on sheet:11				Structural	O & M
Location					Miscellaneous	Hydraulic
Project	TV SANITARY & STORM				Work Order	
Northing	Easting				Elevation	
Coordinate System	GPS Accuracy					



Tabular Report of PSR 105 X for CITY OF OSSEO

Setup 12	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 17:20	Street 6TH AVE NE.
City OSSEO, MN.	Further location details		
Up 105	Rim to invert	Grade to invert	Rim to grade Ft
Down 106	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 8 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 329.0 Ft	Length Surveyed 49.3 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info	Reverse set up on sheet:11		<div>Structural</div> <div>O & M</div> <div>Constructional</div>
Location			Miscellaneous
Project TV SANITARY & STORM	Work Order		
Northing	Easting	Elevation	
Coordinate System	GPS Accuracy		

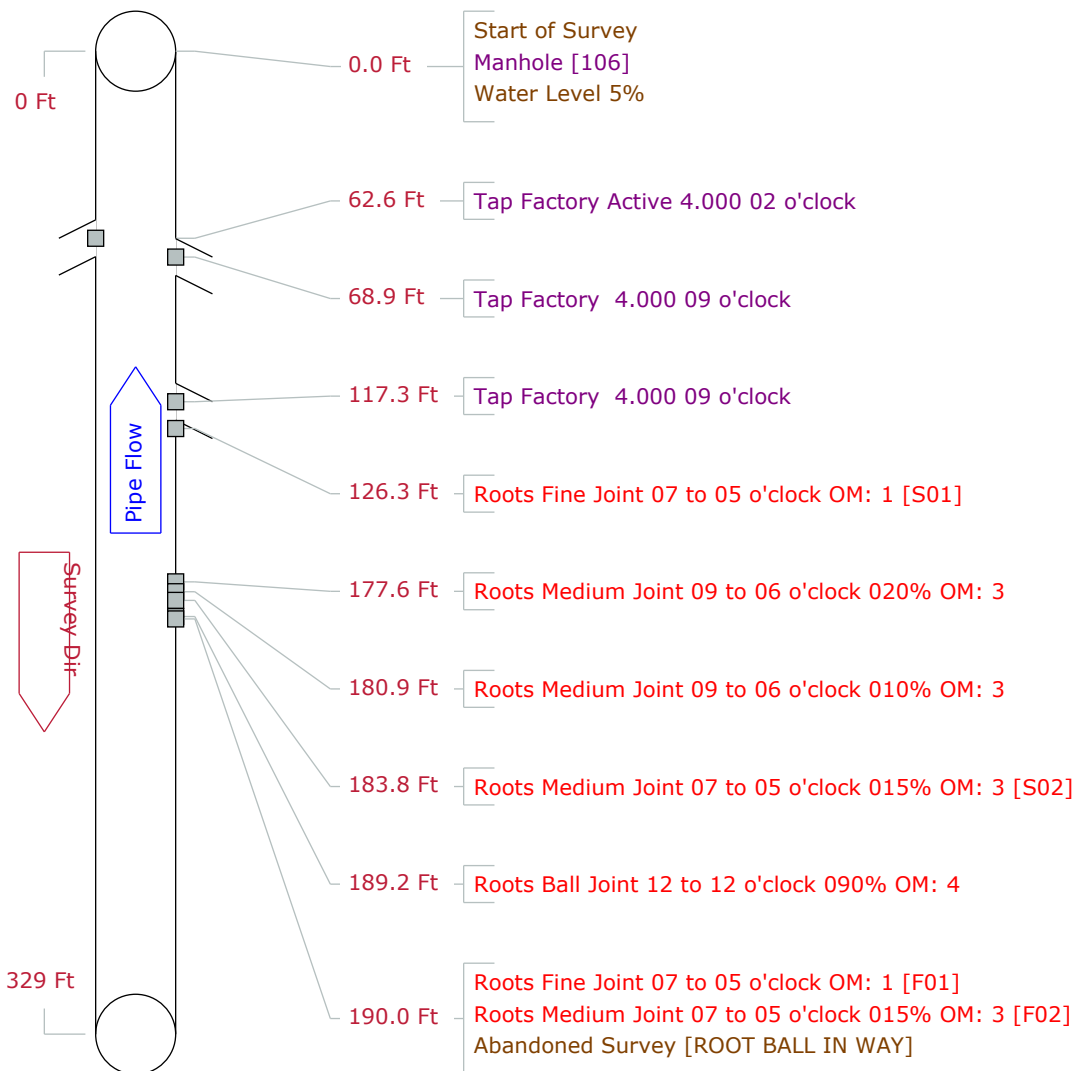
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							105
0.0			MWL Water Level			10				
8.5			TF Tap Factory	4.000			03			
48.7			RBJ Roots Ball Joint			90	J 12	12		
49.3			MSA Abandoned Survey							ROOT BALL IN WAY

49.3 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 4	Pipe Ratings Index 4	Quick Rating 4100
	Overall	Pipe Rating 4	Pipe Ratings Index 4	Quick Rating 4100

Pipe Graphic Report of PSR 105 X for CITY OF OSSEO

Setup	11/12	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/28		Time 16:43		Street 6TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	105	Rim to invert		Grade to invert		Rim to grade Ft
Down	106	Rim to invert		Grade to invert		Rim to grade Ft
Use	Direction Upstream		Flow control		Media No	
Shape	Circular	Height 8	Width ins	Preclean Z		Date Cleaned
Material	Vitrified Clay Pipe		Joint length Ft	Total length 329.0 Ft		Length Surveyed 190.00 Ft
Lining	Year laid		Year rehabilitated		Weather	
Purpose	Cat					
Additional info				Structural O & M Constructional		
Location				Miscellaneous Hydraulic		
Project	TV SANITARY & STORM			Work Order		
Northing	Easting			Elevation		
Coordinate System				GPS Accuracy		



Tabular Report of PSR 105 X for CITY OF OSSEO

Setup 11	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 16:43	Street 6TH AVE NE.
City OSSEO, MN.	Further location details		
Up 105	Rim to invert	Grade to invert	Rim to grade Ft
Down 106	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 8 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 329.0 Ft	Length Surveyed 190.0 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

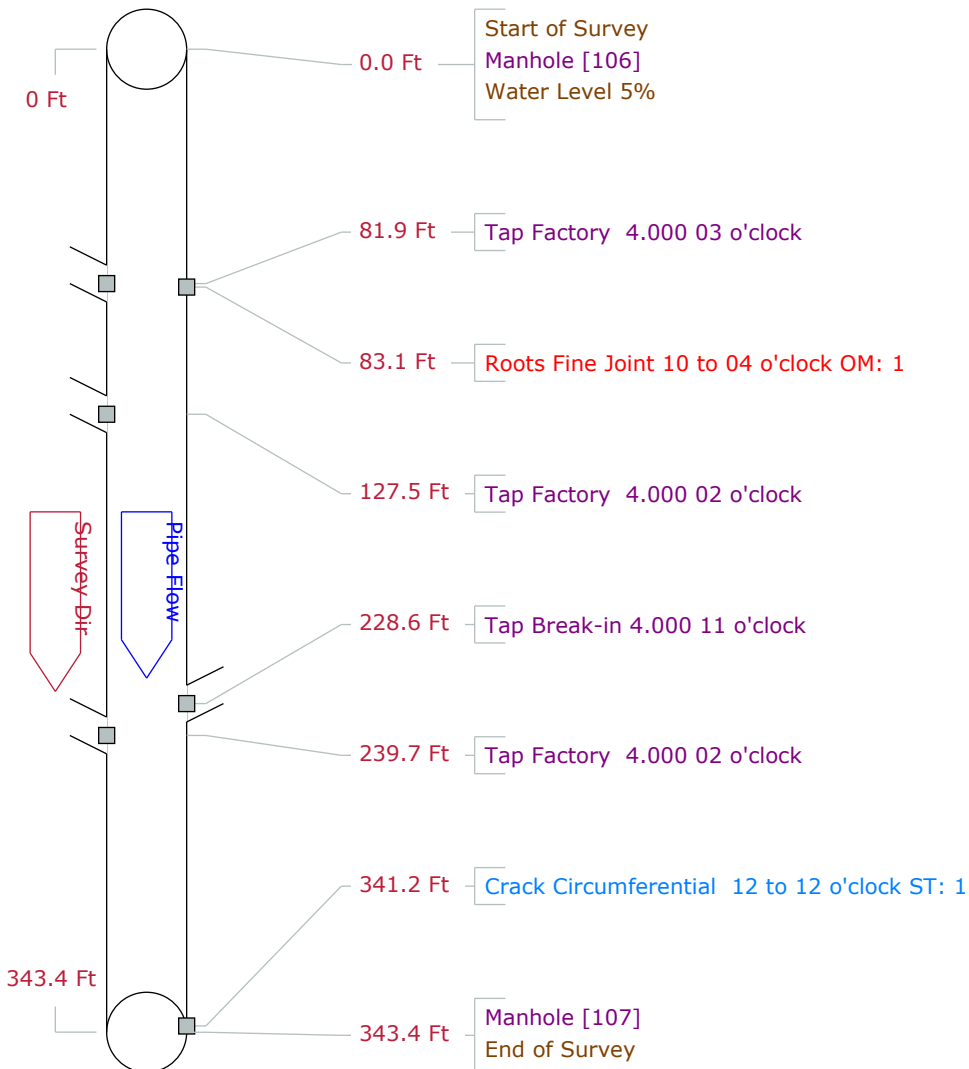
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							106
0.0			MWL Water Level			5				
62.6			TFA Tap Factory Active	4.000			02			
68.9			TF Tap Factory	4.000			09			
117.3			TF Tap Factory	4.000			09			
126.3		S01	RFJ Roots Fine Joint				J 07	05		
177.6			RMJ Roots Medium Joint			20	J 09	06		
180.9			RMJ Roots Medium Joint			10	J 09	06		
183.8		S02	RMJ Roots Medium Joint			15	J 07	05		
189.2			RBJ Roots Ball Joint			90	J 12	12		
190.0		F01	RFJ Roots Fine Joint				J 07	05		
190.0		F02	RMJ Roots Medium Joint			15	J 07	05		
190.0			MSA Abandoned Survey							ROOT BALL IN WAY

190.0 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 26	Pipe Ratings Index 1.5	Quick Rating 4133
	Overall	Pipe Rating 26	Pipe Ratings Index 1.5	Quick Rating 4133

Pipe Graphic Report of PSR 106 X for CITY OF OSSEO

Setup	13	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/28		Time 17:23		Street 6TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	106	Rim to invert		Grade to invert		Rim to grade Ft
Down	107	Rim to invert		Grade to invert		Rim to grade Ft
Use	Direction Downstream		Flow control		Media No	
Shape	Circular	Height 8	Width	ins	Preclean Z	Date Cleaned
Material	Vitrified Clay Pipe		Joint length	Ft	Total length 343.4 Ft	Length Surveyed 343.40 Ft
Lining	Year laid		Year rehabilitated		Weather	
Purpose	Cat					
Additional info				Structural		
Location				O & M		
Project				TV SANITARY & STORM		
Northing				Work Order		
Coordinate System				Easting		
				Elevation		
				GPS Accuracy		



Tabular Report of PSR 106 X for CITY OF OSSEO

Setup 13	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/28	Time 17:23	Street 6TH AVE NE.
City OSSEO, MN.	Further location details		
Up 106	Rim to invert	Grade to invert	Rim to grade Ft
Down 107	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 8 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length 343.4 Ft	Length Surveyed 343.4 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat		Pressure
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

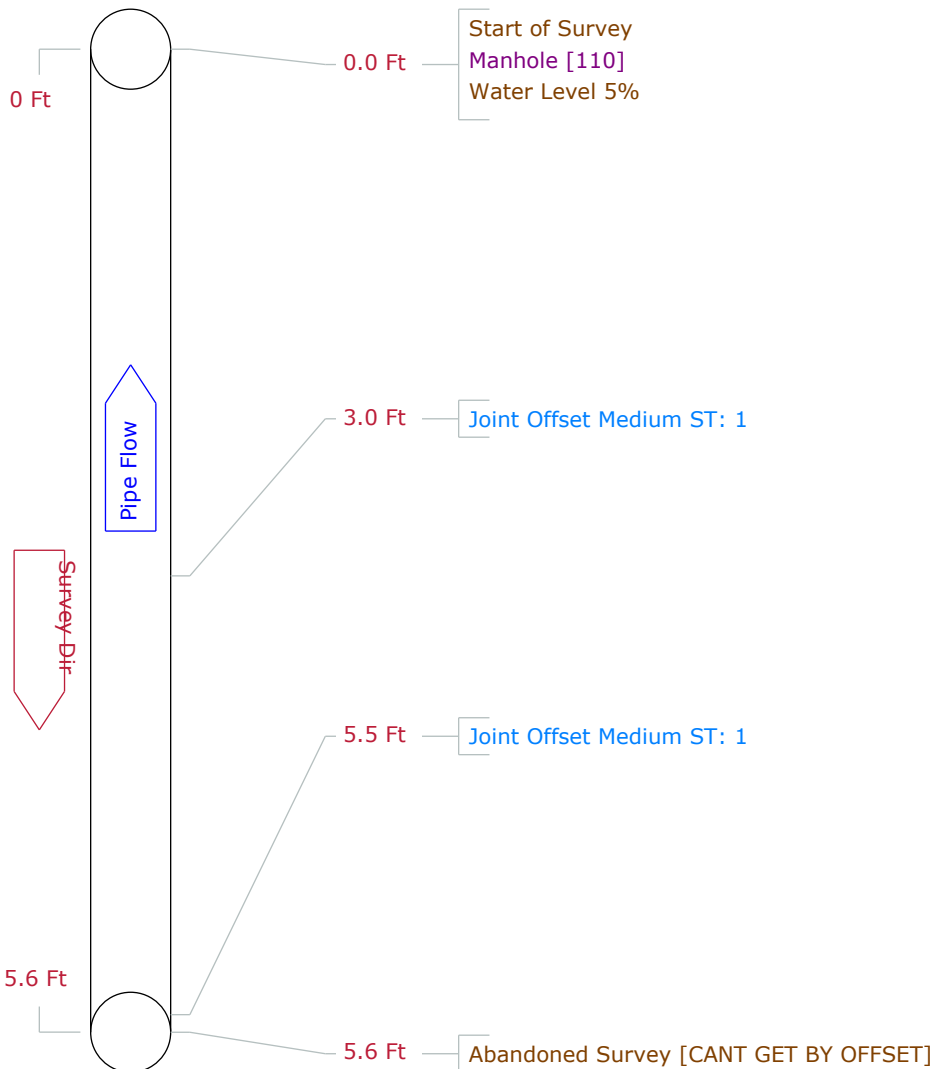
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							106
0.0			MWL Water Level			5				
81.9			TF Tap Factory	4.000			03			
83.1			RFJ Roots Fine Joint				J 10 04			
127.5			TF Tap Factory	4.000			02			
228.6			TB Tap Break-in	4.000			11			
239.7			TF Tap Factory	4.000			02			
341.2			CC Crack Circumferential				12 12			
343.4			AMH Manhole							107
343.4			FH End of Survey							

343.4 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 1	Pipe Ratings Index 1	Quick Rating 1100
	O&M:	Pipe Rating 1	Pipe Ratings Index 1	Quick Rating 1100
	Overall	Pipe Rating 2	Pipe Ratings Index 2	Quick Rating 1200

Pipe Graphic Report of PSR 111 X for CITY OF OSSEO

Setup	26	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner			
Drainage	Survey Customer								
P/O #	Date 2017/09/29		Time 10:31		Street 4TH ST NE.				
City	OSSEO, MN.		Further location details						
Up	111	Rim to invert		Grade to invert		Rim to grade	Ft		
Down	110	Rim to invert		Grade to invert		Rim to grade	Ft		
Use	Direction Upstream		Flow control		Media No				
Shape	Circular	Height 6	Width	ins	Preclean Z	Date Cleaned			
Material	Vitrified Clay Pipe		Joint length	Ft	Total length	Ft	Length Surveyed 05.60	Ft	
Lining	Year laid		Year rehabilitated		Weather				
Purpose	Cat								
Additional info					Structural			O & M	Constructional
Location					Miscellaneous			Hydraulic	
Project	TV SANITARY & STORM				Work Order				
Northing	Easting			Elevation					
Coordinate System				GPS Accuracy					



Tabular Report of PSR 111 X for CITY OF OSSEO

Setup 26	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 10:31	Street 4TH ST NE.
City OSSEO, MN.	Further location details		
Up 111	Rim to invert	Grade to invert	Rim to grade Ft
Down 110	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 6 Width	ins Preclean Z	Date Cleaned
Material Vitrified Clay Pipe	Joint length	Ft Total length Ft	Length Surveyed 5.6 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat		Pressure
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

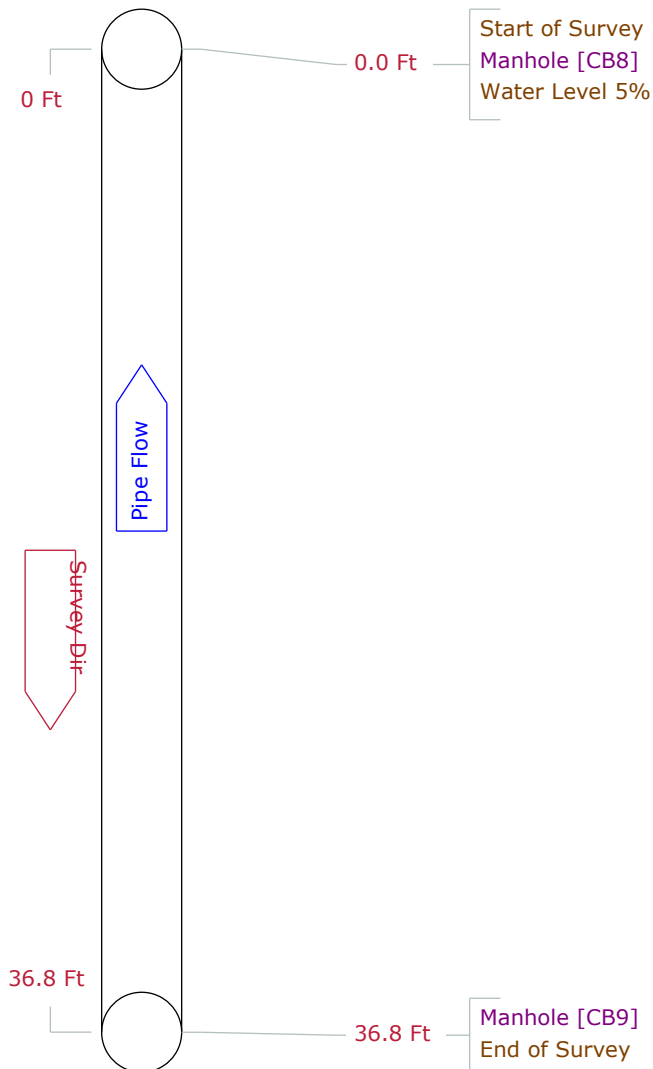
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							110
0.0			MWL Water Level			5				
3.0			JOM Joint Offset Medium							
5.5			JOM Joint Offset Medium							
5.6			MSA Abandoned Survey							CANT GET BY OFFSET

5.6 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 2	Pipe Ratings Index 1	Quick Rating 1200
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 2	Pipe Ratings Index 1	Quick Rating 1200

Pipe Graphic Report of PSR CB9 X for CITY OF OSSEO

Setup	24	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner		
Drainage	Survey Customer							
P/O #	Date 2017/09/29		Time 9:56		Street 5TH AVE NE.			
City	OSSEO, MN.		Further location details					
Up	CB9	Rim to invert		Grade to invert		Rim to grade	Ft	
Down	CB8	Rim to invert		Grade to invert		Rim to grade	Ft	
Use	Direction Upstream		Flow control		Media No			
Shape	Circular	Height 32	Width	ins	Preclean Z	Date Cleaned		
Material	Reinforced Concrete Pipe		Joint length	Ft	Total length 36.8	Ft	Length Surveyed 36.80	Ft
Lining	Year laid		Year rehabilitated		Weather			
Purpose	Cat							
Additional info					Structural	O & M	Constructional	
Location					Miscellaneous	Hydraulic		
Project	TV SANITARY & STORM				Work Order			
Northing	Easting				Elevation			
Coordinate System					GPS Accuracy			



Tabular Report of PSR CB9 X for CITY OF OSSEO

Setup 24	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 9:56	Street 5TH AVE NE.
City OSSEO, MN.	Further location details		
Up CB9	Rim to invert	Grade to invert	Rim to grade Ft
Down CB8	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 32 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length	Ft Total length 36.8 Ft	Length Surveyed 36.8 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div> <div>Structural</div> <div>O & M</div> <div>Constructional</div> </div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

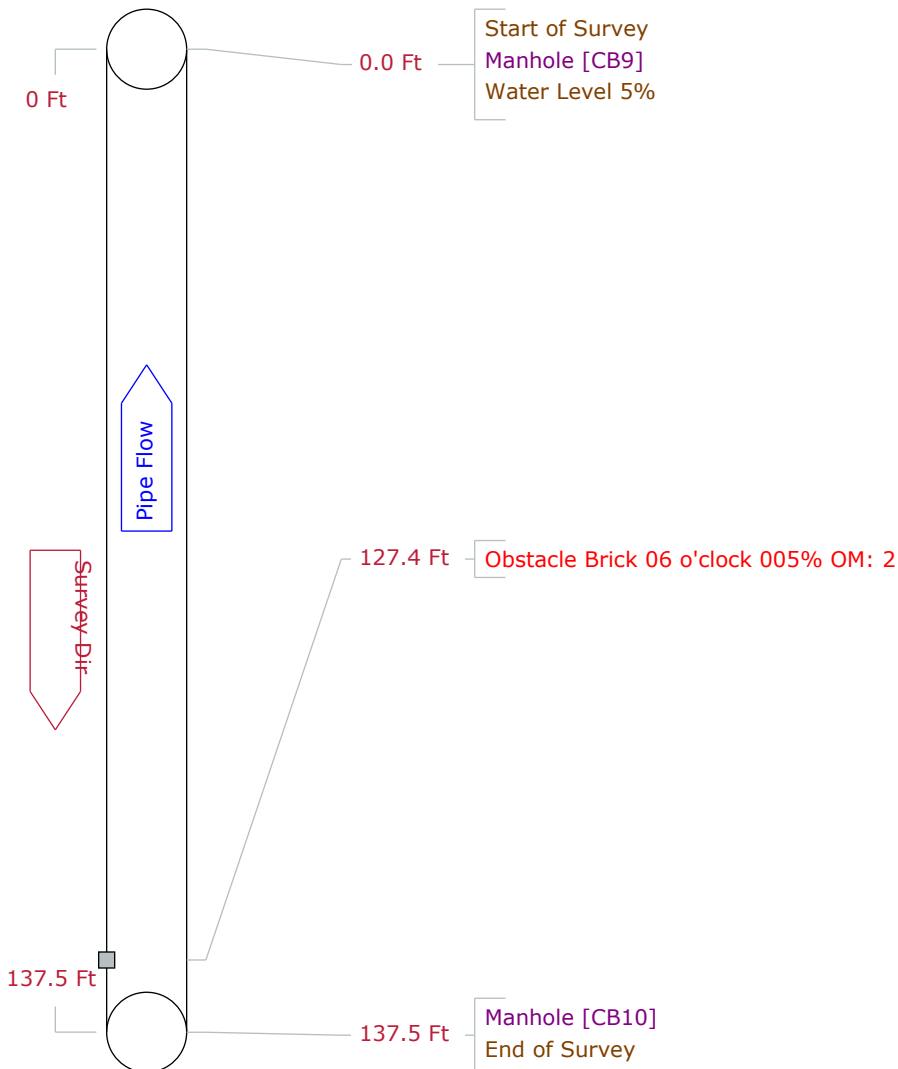
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							CB8
0.0			MWL Water Level			5				
36.8			AMH Manhole							CB9
36.8			FH End of Survey							

36.8 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000

Pipe Graphic Report of PSR CB10 X for CITY OF OSSEO

Setup	25	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner				
Drainage	Survey Customer									
P/O #	Date 2017/09/29		Time 10:00		Street 5TH AVE NE.					
City	OSSEO, MN.		Further location details							
Up	CB10		Rim to invert		Grade to invert	Rim to grade	Ft			
Down	CB9		Rim to invert		Grade to invert	Rim to grade	Ft			
Use			Direction	Upstream	Flow control		Media No			
Shape	Circular		Height	32	Width	ins	Preclean Z	Date Cleaned		
Material	Reinforced Concrete Pipe		Joint length		Ft	Total length	137.5 Ft	Length Surveyed	137.50 Ft	
Lining			Year laid		Year rehabilitated		Weather			
Purpose					Cat					
Additional info						Structural			O & M	Constructional
Location						Miscellaneous			Hydraulic	
Project	TV SANITARY & STORM					Work Order				
Northing						Easting				
Coordinate System					Elevation					
					GPS Accuracy					



Tabular Report of PSR CB10 X for CITY OF OSSEO

Setup 25	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 10:00	Street 5TH AVE NE.
City OSSEO, MN.	Further location details		
Up CB10	Rim to invert	Grade to invert	Rim to grade Ft
Down CB9	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 32 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length	Ft Total length 137.5 Ft	Length Surveyed 137.5 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

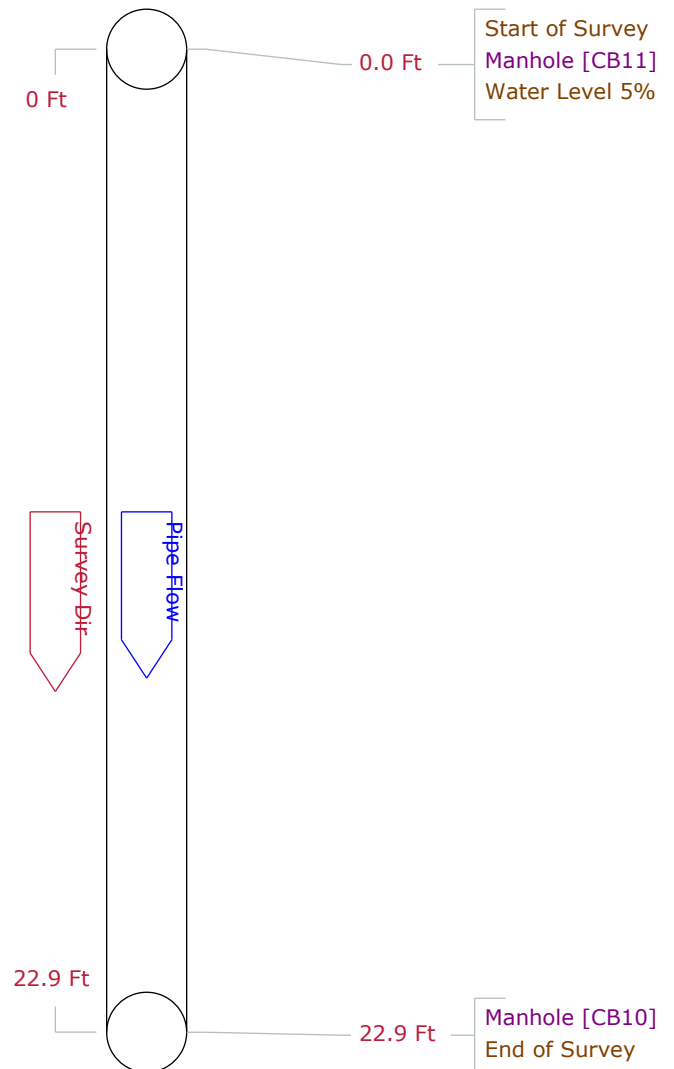
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							CB9
0.0			MWL Water Level			5				
127.4			OBB Obstacle Brick			5	06			
137.5			AMH Manhole							CB10
137.5			FH End of Survey							

137.5 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 2	Pipe Ratings Index 2	Quick Rating 2100
	Overall	Pipe Rating 2	Pipe Ratings Index 2	Quick Rating 2100

Pipe Graphic Report of PSR CB11 X for CITY OF OSSEO

Setup	23	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/29		Time 9:27		Street ALLEY 4TH-5TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	CB11		Rim to invert		Grade to invert	Rim to grade Ft
Down	CB10		Rim to invert		Grade to invert	Rim to grade Ft
Use	Direction Downstream		Flow control		Media No	
Shape	Circular		Height 32	Width ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe		Joint length Ft	Total length 22.9 Ft	Length Surveyed 22.90 Ft	
Lining	Year laid		Year rehabilitated		Weather	
Purpose	Cat					
Additional info					Structural	O & M
Location					Miscellaneous	Hydraulic
Project	TV SANITARY & STORM				Work Order	
Northing	Easting				Elevation	
Coordinate System					GPS Accuracy	



Tabular Report of PSR CB11 X for CITY OF OSSEO

Setup 23	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 9:27	Street ALLEY 4TH-5TH AVE NE.
City OSSEO, MN.	Further location details		
Up CB11	Rim to invert	Grade to invert	Rim to grade Ft
Down CB10	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 32 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length	Ft Total length 22.9 Ft	Length Surveyed 22.9 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

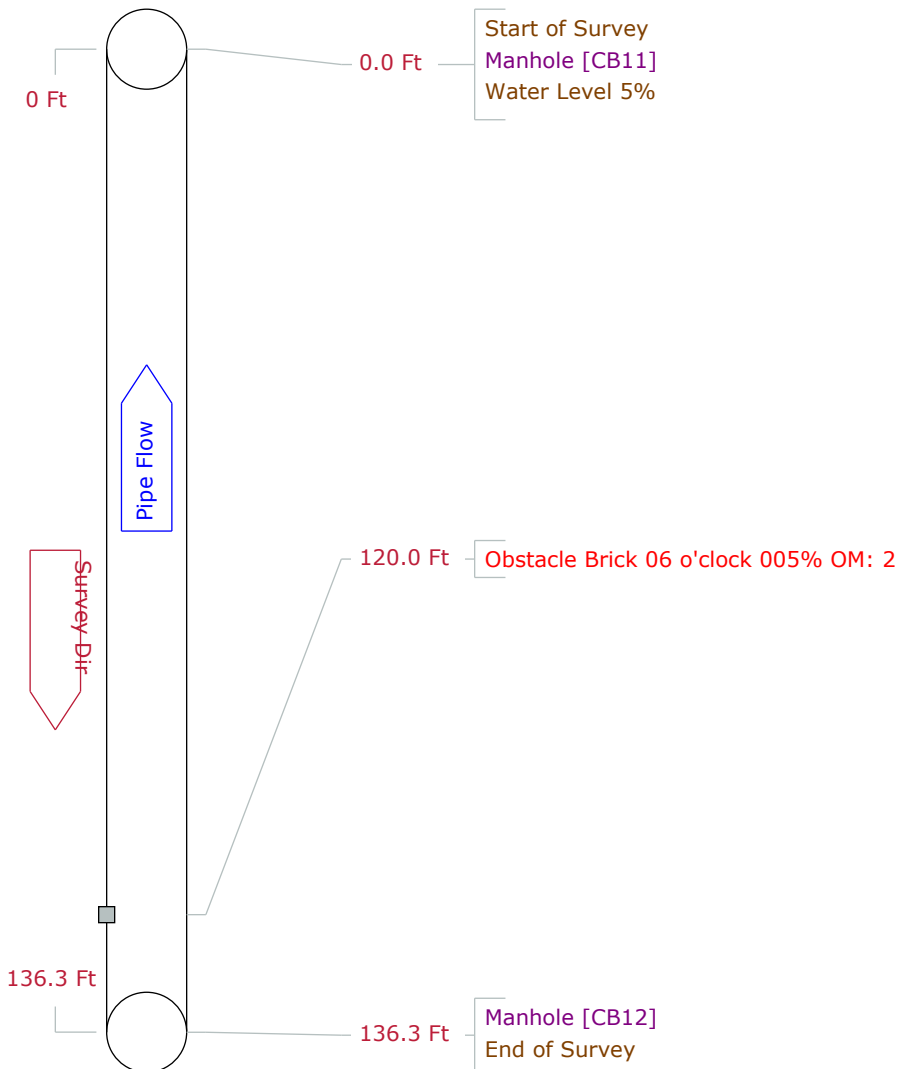
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							CB11
0.0			MWL Water Level			5				
22.9			AMH Manhole							CB10
22.9			FH End of Survey							

22.9 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000

Pipe Graphic Report of PSR CB12 X for CITY OF OSSEO

Setup	22	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner			
Drainage	Survey Customer								
P/O #	Date 2017/09/29		Time 9:20		Street 4TH AVE NE.				
City	OSSEO, MN.		Further location details						
Up	CB12		Rim to invert		Grade to invert	Rim to grade	Ft		
Down	CB11		Rim to invert		Grade to invert	Rim to grade	Ft		
Use			Direction Upstream		Flow control		Media No		
Shape	Circular		Height 32	Width	ins	Preclean Z	Date Cleaned		
Material	Reinforced Concrete Pipe		Joint length		Ft	Total length 136.3 Ft	Length Surveyed 136.30 Ft		
Lining			Year laid		Year rehabilitated		Weather		
Purpose					Cat				
Additional info					Structural			O & M	Constructional
Location					Miscellaneous			Hydraulic	
Project	TV SANITARY & STORM				Work Order				
Northing					Easting				
Coordinate System				Elevation					
				GPS Accuracy					



Tabular Report of PSR CB12 X for CITY OF OSSEO

Setup 22	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 9:20	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up CB12	Rim to invert	Grade to invert	Rim to grade Ft
Down CB11	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Up	Flow control	Media No
Shape Circular	Height 32 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length	Ft Total length 136.3 Ft	Length Surveyed 136.3 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

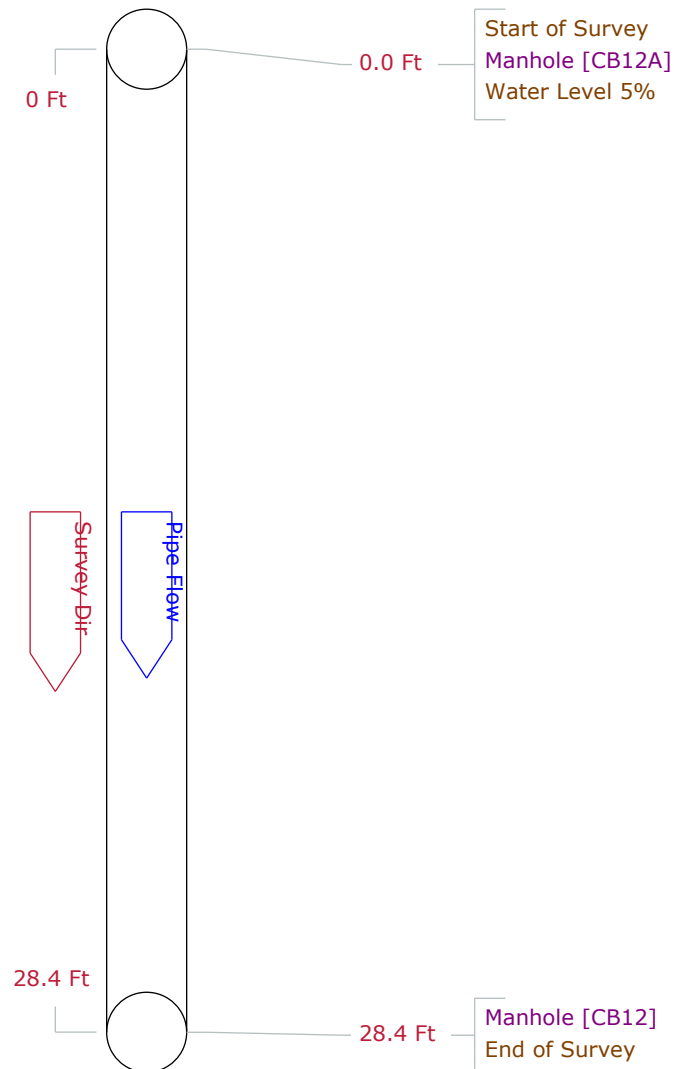
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							CB11
0.0			MWL Water Level			5				
120.0			OBB Obstacle Brick			5	06			
136.3			AMH Manhole							CB12
136.3			FH End of Survey							

136.3 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 2	Pipe Ratings Index 2	Quick Rating 2100
	Overall	Pipe Rating 2	Pipe Ratings Index 2	Quick Rating 2100

Pipe Graphic Report of PSR CB12A X for CITY OF OSSEO

Setup	21	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/29		Time 9:00		Street 4TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	CB12A		Rim to invert		Grade to invert	Rim to grade Ft
Down	CB12		Rim to invert		Grade to invert	Rim to grade Ft
Use			Direction	Downstream	Flow control	Media No
Shape	Circular		Height	15	Width ins	Preclean Z Date Cleaned
Material	Reinforced Concrete Pipe		Joint length	Ft	Total length 28.4 Ft	Length Surveyed 28.40 Ft
Lining			Year laid	Year rehabilitated		Weather
Purpose	Cat					
Additional info					Structural	O & M
Location					Miscellaneous	Hydraulic
Project	TV SANITARY & STORM				Work Order	
Northing	Easting				Elevation	
Coordinate System					GPS Accuracy	



Tabular Report of PSR CB12A X for CITY OF OSSEO

Setup 21	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 9:00	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up CB12A	Rim to invert	Grade to invert	Rim to grade Ft
Down CB12	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 15 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length	Ft Total length 28.4 Ft	Length Surveyed 28.4 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

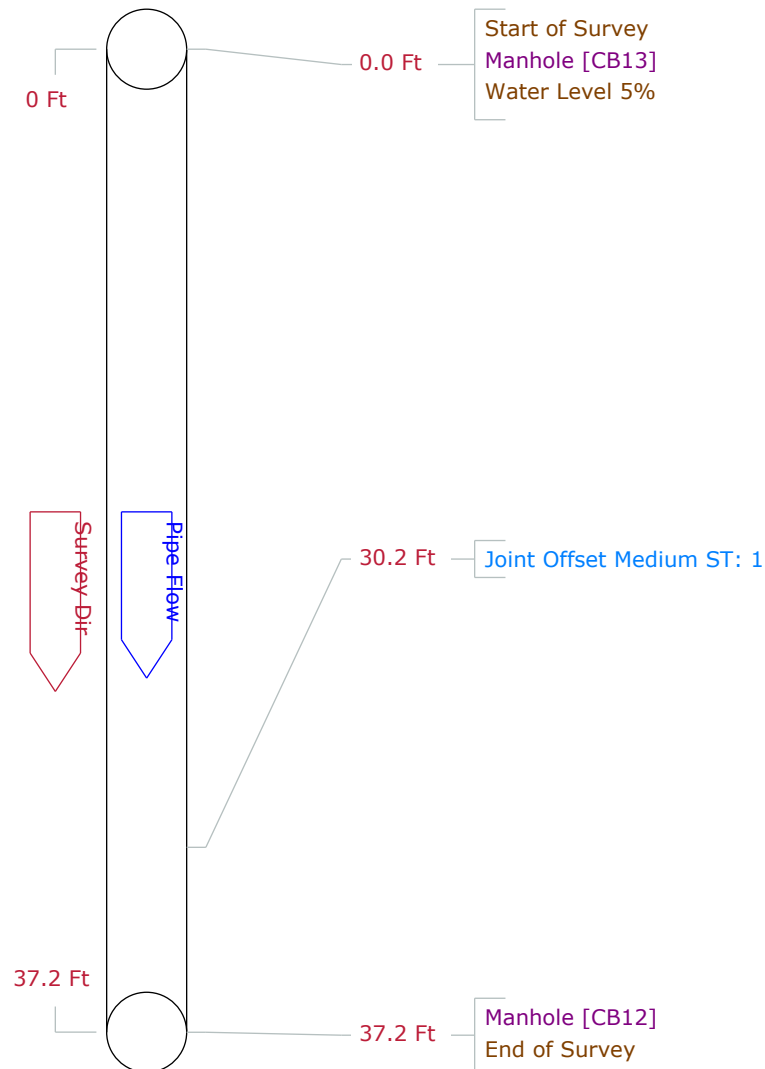
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							CB12A
0.0			MWL Water Level			5				
28.4			AMH Manhole							CB12
28.4			FH End of Survey							

28.4 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000

Pipe Graphic Report of PSR CB13 X for CITY OF OSSEO

Setup	20	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner
Drainage	Survey Customer					
P/O #	Date 2017/09/29		Time 8:27		Street 4TH AVE NE.	
City	OSSEO, MN.		Further location details			
Up	CB13		Rim to invert		Grade to invert	Rim to grade Ft
Down	CB12		Rim to invert		Grade to invert	Rim to grade Ft
Use			Direction Downstream		Flow control	Media No
Shape	Circular		Height 24	Width ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe		Joint length Ft	Total length 37.2 Ft	Length Surveyed 37.20 Ft	
Lining			Year laid	Year rehabilitated		Weather
Purpose	Cat					
Additional info					Structural	O & M
Location					Miscellaneous	Hydraulic
Project	TV SANITARY & STORM				Work Order	
Northing					Easting	
Coordinate System				Elevation		
				GPS Accuracy		



Tabular Report of PSR CB13 X for CITY OF OSSEO

Setup 20	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 8:27	Street 4TH AVE NE.
City OSSEO, MN.	Further location details		
Up CB13	Rim to invert	Grade to invert	Rim to grade Ft
Down CB12	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 24 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length	Ft Total length 37.2 Ft	Length Surveyed 37.2 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div> <div>Structural</div> <div>O & M</div> <div>Constructional</div> </div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

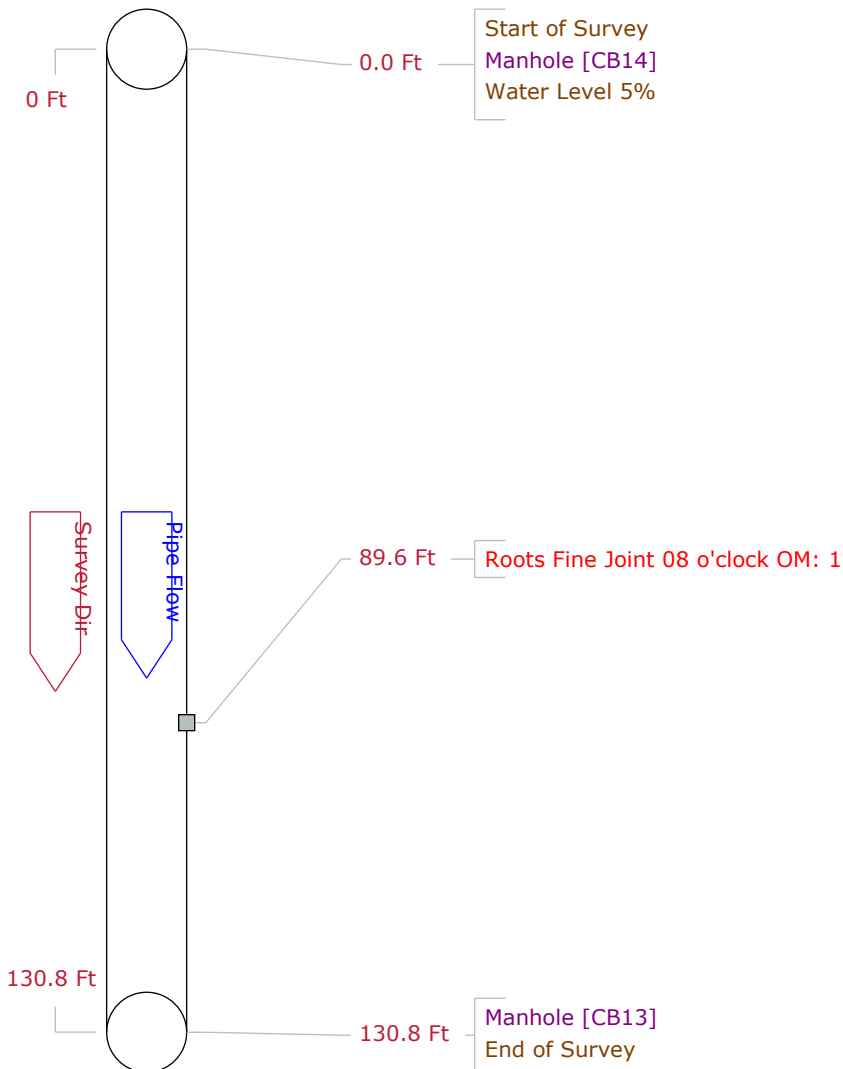
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							CB13
0.0			MWL Water Level			5				
30.2			JOM Joint Offset Medium							
37.2			AMH Manhole							CB12
37.2			FH End of Survey							

37.2 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 1	Pipe Ratings Index 1	Quick Rating 1100
	O&M:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	Overall	Pipe Rating 1	Pipe Ratings Index 1	Quick Rating 1100

Pipe Graphic Report of PSR CB14 X for CITY OF OSSEO

Setup	19	Surveyor	CORY FERGUSON	Certificate #	07003281	System Owner			
Drainage	Survey Customer								
P/O #	Date 2017/09/29		Time 8:18	Street ALLEY 3RD-4TH AVE NE.					
City	OSSEO, MN.		Further location details						
Up	CB14		Rim to invert		Grade to invert	Rim to grade	Ft		
Down	CB13		Rim to invert		Grade to invert	Rim to grade	Ft		
Use			Direction	Downstream	Flow control		Media No		
Shape	Circular		Height	24	Width	ins	Preclean Z	Date Cleaned	
Material	Reinforced Concrete Pipe		Joint length	Ft	Total length	130.8 Ft	Length Surveyed	130.80 Ft	
Lining			Year laid		Year rehabilitated		Weather		
Purpose			Cat						
Additional info					Structural			O & M	Constructional
Location					Miscellaneous			Hydraulic	
Project	TV SANITARY & STORM				Work Order				
Northing					Easting				
Coordinate System					Elevation				
					GPS Accuracy				



Tabular Report of PSR CB14 X for CITY OF OSSEO

Setup 19	Surveyor CORY FERGUSON	Certificate # 07003281	System Owner
Drainage	Survey Customer		
P/O #	Date 2017/09/29	Time 8:18	Street ALLEY 3RD-4TH AVE NE.
City OSSEO, MN.	Further location details		
Up CB14	Rim to invert	Grade to invert	Rim to grade Ft
Down CB13	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Down	Flow control	Media No
Shape Circular	Height 24 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length	Ft Total length 130.8 Ft	Length Surveyed 130.8 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat	Pressure	
Additional info		<div>Structural</div> <div>O & M</div> <div>Constructional</div>	
Location		Miscellaneous	
Project TV SANITARY & STORM		Work Order	
Northing		Easting	
Coordinate System		GPS Accuracy	

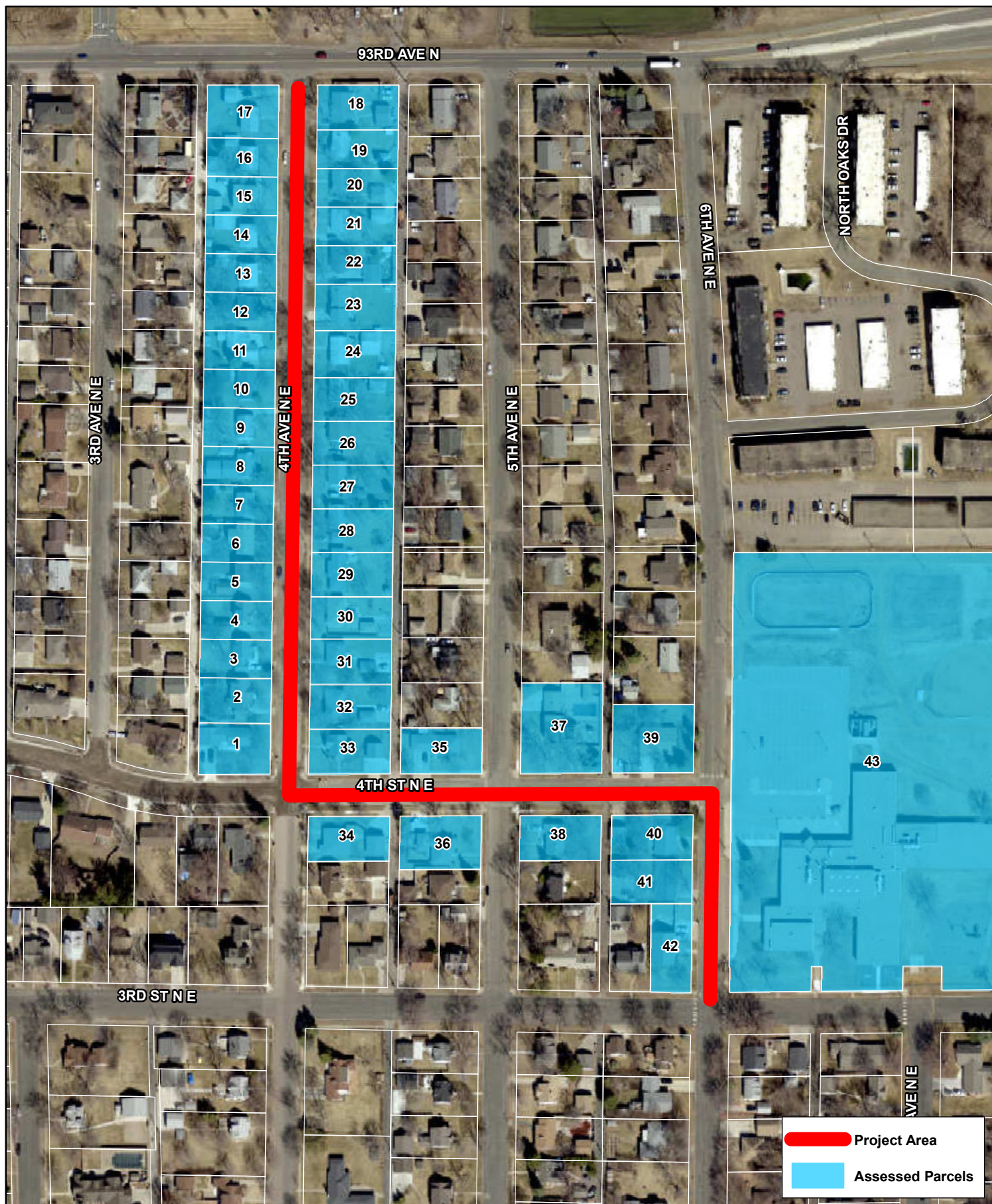
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			AMH Manhole							CB14
0.0			MWL Water Level			5				
89.6			RFJ Roots Fine Joint				J 08			
130.8			AMH Manhole							CB13
130.8			FH End of Survey							

130.8 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 0	Pipe Ratings Index 0	Quick Rating 0000
	O&M:	Pipe Rating 1	Pipe Ratings Index 1	Quick Rating 1100
	Overall	Pipe Rating 1	Pipe Ratings Index 1	Quick Rating 1100

APPENDIX F

Assessment Map
Preliminary Assessment Roll



Project Area Map

2018 Street Reconstruction Project
Osseo, MN



0 200
Feet
1 inch = 200 feet



<p align="center"> <i>CITY OF OSSEO</i> <i>2018 STREET RECONSTRUCTION PROJECT</i> <i>PRELIMINARY ASSESSMENT ROLL</i> </p>									
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Date: 11/9/2017 Rate

WSB Project No.: 010698-000 Complete Reconstruction Residential Single-Family Per Unit Assessment: \$6,380.00

Rate

\$6,380.00

\$77.00

\$77.00

MAP ID	PID	FEE OWNER	FEE OWNER ADDRESS	CITY/STATE/ZIP	PROPERTY ADDRESS	USE DESCRIPTION	UNITS	UNIT ASSESSMENT RATE	FRONT FOOTAGE (LF)	FOOTAGE ASSESSMENT RATE	PROPOSED ASSESSMENT
1	1811921220039	RICHARD & E NESETH	333 4TH ST NE	OSSEO, MN 55369	333 4TH ST NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
2	1811921220038	JANET L BUDLONG	P O BOX 142	CHETEK, WI 54728	409 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
3	1811921220037	LORENCE & KATHLEEN STELMACH	417 4TH AVE NE	OSSEO, MN 55369	417 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
4	1811921220036	DARRIN DALE BEEKMAN & GRACE LOUISE BEEKMAN	425 4TH AVE NE	OSSEO, MN 55369	425 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
5	1811921220035	RYAN COPLAN	433 4TH AVE NE	OSSEO, MN 55369	433 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
6	1811921220034	MICHAEL P FORSBERG	501 4TH AVE NE	OSSEO, MN 55369	501 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
7	1811921220033	JOY M BANDEL	509 4TH AVE NE	OSSEO, MN 55369	509 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
8	1811921220032	COLLETTE L & PHILIP A WINN JR	517 4TH AVE NE	OSSEO, MN 55369	517 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
9	1811921220031	SHARON BOESE-FORMATO	525 4TH AVE NE	OSSEO, MN 55369	525 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
10	1811921220030	TINA M DURANT	533 4TH AVE NE	OSSEO, MN 55369	533 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
11	1811921220029	LESLIE L PETERSON	541 4TH AVE NE	OSSEO, MN 55369	541 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
12	1811921220028	SHERILYN K MILLER	601 4TH AVE NE	OSSEO, MN 55369	601 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
13	1811921220027	ERIC E & SUSAN MOTTINGER	16192 84TH AVE N	MAPLE GROVE, MN 55311	609 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
14	1811921220026	SHIRLEY BEIER	617 4TH AVE NE	OSSEO, MN 55369	617 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
15	1811921220025	MATTHEW RYAN GRIFFITH	625 4TH AVE NE	OSSEO, MN 55369	625 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
16	1811921220024	JOSEPH M BELL	633 4TH AVE NE	OSSEO, MN 55369	633 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
17	1811921220023	WAYNE & KELLY WIEGAND	4621 56TH ST SW	WAVERLY, MN 55390	641 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
18	1811921210003	PATRICIA L BERRY	640 4TH AVE NE	OSSEO, MN 55369	640 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
19	1811921210004	JOHN KLOBUCAR	14778 312TH LANE NE	CAMBRIDGE, MN 55008	632 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
20	1811921210005	RICHARD L MCGLYNN	624 4TH AVE NE	OSSEO, MN 55369	624 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
21	1811921210006	THOMAS D TISCHNER	616 4TH AVE NE	OSSEO, MN 55369	616 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
22	1811921210007	ZACHARY SMETANA	608 4TH AVE NE	OSSEO, MN 55369	608 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
23	1811921210008	JAMES R SCHROEDER	6941 137TH LA NW	ANOKA, MN 55303	600 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
24	1811921210009	TODD JOHNSON	5225 E TWIN LAKE BLVD	BROOKLYN CENTER, MN 55429	540 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
25	1811921210010	TODD A & JULIE A BURKSTRAND	532 4TH AVE NE	OSSEO, MN 55369	532 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
26	1811921210011	WILLIAM J TISCHNER	524 4TH AVE NE	OSSEO, MN 55369	524 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
27	1811921210012	TIMOTHY R GORHAM	516 4TH AVE NE	OSSEO, MN 55369	516 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
28	1811921210013	RICKY C & NANCY J TAYLOR	508 4TH AVE NE	OSSEO, MN 55369	508 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
29	1811921210064	ADAM T RISLAND & KATHERINE M PUTNAM	432 4TH AVE NE	OSSEO, MN 55369	432 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
30	1811921210063	NICHOLAS Y LECTKA	424 4TH AVE NE	OSSEO, MN 55369	424 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
31	1811921210062	MARK A BLASKOWSKI	416 4TH AVE NE	OSSEO, MN 55369	416 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
32	1811921210061	MARK R JOHNSON	408 4TH AVE NE	OSSEO, MN 55369	408 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
33	1811921210060	THOMAS B HOOD	400 4TH AVE NE	OSSEO, MN 55369	400 4TH AVE NE	RESIDENTIAL	1.5	\$6,380.00			\$9,570.00
34	1811921210054	RICHARD T WEBER	332 4TH AVE NE	OSSEO, MN 55369	332 4TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
35	1811921210059	MILO E DAHN & MARY K DWINELL	417 4TH ST NE	OSSEO, MN 55369	417 4TH ST NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
36	1811921210051	ROGER L MAAS	325 5TH AVE NE	OSSEO, MN 55369	325 5TH AVE NE	RESIDENTIAL	0.5	\$6,380.00			\$3,190.00
37	1811921210043	DUANE E & AMY L POPPE	408 5TH AVE NE	OSSEO, MN 55369	408 5TH AVE NE	RESIDENTIAL	0.5	\$6,380.00			\$3,190.00
38	1811921210050	2015-2 IH2 BORROWER L P, C/O INVITATION HOMES	901 MAIN ST #4700	DALLAS, TX 75202	332 5TH AVE NE	RESIDENTIAL	0.5	\$6,380.00			\$3,190.00
39	1811921210087	CAROL B EMMANS	401 6TH AVE NE	OSSEO, MN 55369	401 6TH AVE NE	RESIDENTIAL	0.5	\$6,380.00			\$3,190.00
40	1811921210047	BARBRA J PLZAK	333 6TH AVE NE	OSSEO, MN 55369	333 6TH AVE NE	RESIDENTIAL	1.5	\$6,380.00			\$9,570.00
41	1811921210048	KATHERINE D GUSTAFSON	325 6TH AVE NE	OSSEO, MN 55369	325 6TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
42	1811921240097	TAYLOR NELSON & TYLER NELSON	309 6TH AVE NE	OSSEO, MN 55369	309 6TH AVE NE	RESIDENTIAL	1	\$6,380.00			\$6,380.00
43	1811921210001	OSSEO SCHOOL DISTRICT NO 279	11200 93RD AVE N	MAPLE GROVE, MN 55369	324 6TH AVE NE	COMMERCIAL			310.45	\$77.00	\$23,904.65

APPENDIX G

Public Comment Summary

Emily Lueth

Subject: FW: 2018 Street Reconstruction Project

From: Todd and Julie Burkstrand [<mailto:toddjulie@embarqmail.com>]

Sent: Tuesday, October 31, 2017 10:13 AM

To: Lee Gustafson <LGustafson@wsbeng.com>

Subject: 2018 Street Reconstruction Project

Hi Lee,

We received your letter in the mail about the proposed street construction project concerning portions of 4th Street NE, 4th Ave NE, and 6th Ave NE.

We are unable to attend the informational meeting on Thursday, November 2nd, but did have a concern that we would like to pass along for the city to consider when planning for this reconstruction project.

Our home is located at 532 4th Ave NE here in Osseo. We've been here 20+ years and over that time have constantly seen problems with the street storm sewer gutters every time we get a large amount of rainfall. The storm sewers on both sides of the road seem to get backed up and that causes street flooding and also flooding into one of our neighbor's garages which is facing 4th Ave NE.

The problem is even worse in the alley between 4th Ave NE and 5th Ave NE. Over the years, many neighbors have taken steps to deter their yards, garages, and basements from being flooded, but the sewer drain in the alley just can't handle large quantities of rain.

We realize some of this is inevitable as our section of 4th Ave NE seems to be the low lying spot of the neighborhood, and we know the city has looked at this in the past, but we are hoping that as the city plans this future project that it will take a look at what can be done to help remedy this issue even more.

Thanks so much for your time,

Todd and Julie Burkstrand

532 4th Ave NE

Osseo, MN 55369

763-425-6329