

# City of Escanaba Wastewater System Improvements

Michigan Clean Water State Revolving Fund Project Plan (2023)  
Volume 2 – Appendix (FINAL)

22-0290

April 26, 2023



1211 Ludington Street  
Escanaba, MI 49829

**APPENDIX A**

**BASIS OF COST**

## **Appendix A**

### **Part 1: Construction Cost Estimates**



Ludington Street Sewer Replacement - Priority 1 (Water Plant to 9th St)

| ITEM   | UNIT | QTY    | UNIT COST | ITEM COST          |
|--|------|--------|-----------|--------------------|
| General Conditions, Mobilization, Bonds & Ins                    | LS   | 1      | \$913,000 | \$913,000          |
| Bypass Pumping During Existing Sewer Replacement                 | LS   | 1      | \$100,000 | \$100,000          |
| Archaeologist On-Site  | LS   | 1      | \$100,000 | \$100,000          |
| Utility Location Investigation                                   | EA   | 60     | \$1,000   | \$60,000           |
| Rock or Boulder Excavation                                       | CY   | 800    | \$1,256   | \$1,004,800        |
| Rock Excavation, Blasting Not Permitted                          | CY   | 200    | \$200     | \$40,000           |
| 12" Trench Undercut and Stone Refill                             | LF   | 3,200  | \$12      | \$38,400           |
| Remove, Salvage or Replace Sign                                  | EA   | 10     | \$500     | \$5,000            |
| Granular Fill Over 21" Sanitary Sewer                            | LF   | 600    | \$75      | \$45,000           |
| Granular Fill Over 12" To 18" Sanitary Sewer                     | LF   | 4,200  | \$70      | \$294,000          |
| Granular Fill Over 8" To 10" Sanitary Sewer                      | LF   | 11,700 | \$65      | \$760,500          |
| Granular Fill Over 6" Sanitary Lateral                           | LF   | 1,000  | \$60      | \$60,000           |
| 24" Sanitary Sewer   | LF   | 2,500  | \$200     | \$500,000          |
| 18" Sanitary Sewer   | LF   | 2,500  | \$125     | \$312,500          |
| 10" Sanitary Sewer   | LF   | 0      | \$100     | \$0                |
| 8" Sanitary Sewer  | LF   | 150    | \$90      | \$13,500           |
| 6" Sewer Lateral   | LF   | 12,000 | \$75      | \$900,000          |
| 24" x 6" Wye Branch  | EA   | 30     | \$1,000   | \$30,000           |
| 18" x 6" Wye Branch  | EA   | 90     | \$750     | \$67,500           |
| 10" x 6" Wye Branch  | EA   | 0      | \$650     | \$0                |
| 8" x 6" Wye Branch   | EA   | 0      | \$550     | \$0                |
| Connect to Existing 4" to 6" Lateral                             | EA   | 120    | \$550     | \$66,000           |
| Cap and Mark New Lateral   | EA   | 10     | \$500     | \$5,000            |
| 4" Insulation  | LF   | 1,000  | \$40      | \$40,000           |
| 18" to 24" Existing Sewer Bulkhead                               | EA   | 10     | \$1,000   | \$10,000           |
| 8" to 15" Existing Sewer Bulkhead                                | EA   | 10     | \$750     | \$7,500            |
| 4" to 6" Existing Sewer Bulkhead                                 | EA   | 10     | \$700     | \$7,000            |
| Abandon Existing 18" to 24" Sewer                                | LF   | 4,000  | \$25      | \$100,000          |
| Abandon Existing 8" to 15" Sewer                                 | LF   | 0      | \$20      | \$0                |
| 18" to 24" Connection to Existing Sewer                          | EA   | 1      | \$2,500   | \$2,500            |
| 12" to 15" Connection to Existing Sewer                          | EA   | 5      | \$2,500   | \$12,500           |
| 8" to 10" Connection to Existing Sewer                           | EA   | 2      | \$2,000   | \$4,000            |
| 48" to 60" Pre-cast Sanitary Concrete Manhole, 10' Depth or Less | EA   | 20     | \$6,000   | \$120,000          |
| Additional 48" Sanitary Manhole Depth Over 10'                   | VF   | 60     | \$500     | \$30,000           |
| Sanitary Manhole Exterior Drop Connection                        | VF   | 5      | \$5,000   | \$25,000           |
| Remove Existing 48" Sanitary Manhole                             | EA   | 20     | \$1,000   | \$20,000           |
| Abandon Existing Lift Station                                    | EA   | 3      | \$150,000 | \$450,000          |
| 21" Storm Sewer  | LF   | 450    | \$250     | \$112,500          |
| 18" Storm Sewer  | LF   | 400    | \$200     | \$80,000           |
| 15" Storm Sewer  | LF   | 1,000  | \$180     | \$180,000          |
| 12" Storm Sewer  | LF   | 3,000  | \$150     | \$450,000          |
| Roof Drain Connection to Storm Sewer                             | EA   | 60     | \$5,000   | \$300,000          |
| 48" to 60" Pre-cast Storm Concrete Manhole                       | EA   | 15     | \$6,000   | \$90,000           |
| 24" to 36" Pre-cast Storm Concrete Catch Basin                   | EA   | 60     | \$4,000   | \$240,000          |
| Remove Existing Storm Manhole & Catch Basin                      | EA   | 75     | \$1,000   | \$75,000           |
| Concrete Curb and Gutter Replacement Due to Sewer Laterals       | LF   | 3,600  | \$40      | \$144,000          |
| 4" Concrete Sidewalk Replacement Due to Sewer Laterals           | SF   | 15,000 | \$12      | \$180,000          |
| 12" Gravel Base in Pavement Areas                                | LF   | 17,150 | \$30      | \$514,500          |
| 3" Pavement Replacement  | LF   | 17,150 | \$75      | \$1,286,250        |
| 6" Concrete Driveway Replacement, Includes 4" Sand Base          | SY   | 1,500  | \$100     | \$150,000          |
| 3" Asphalt Driveway Replacement, Includes 6" Gravel Base         | SY   | 250    | \$75      | \$18,750           |
| 6" Gravel Driveway Replacement                                   | SY   | 250    | \$12      | \$3,000            |
| <b>Construction Cost Subtotal</b>                                |      |        |           | <b>\$9,968,000</b> |

Ludington Street Sewer Replacement - Priority 2 (9th to 19th St)

| ITEM   | UNIT | QTY    | UNIT COST | ITEM COST           |
|--|------|--------|-----------|---------------------|
| General Conditions, Mobilization, Bonds & Ins                    | LS   | 1      | \$913,000 | \$913,000           |
| Bypass Pumping During Existing Sewer Replacement                 | LS   | 1      | \$100,000 | \$100,000           |
| Archaeologist On-Site  | LS   | 0      | \$100,000 | \$0                 |
| Utility Location Investigation                                   | EA   | 90     | \$1,000   | \$90,000            |
| Rock or Boulder Excavation                                       | CY   | 1,200  | \$1,256   | \$1,507,200         |
| Rock Excavation, Blasting Not Permitted                          | CY   | 300    | \$200     | \$60,000            |
| 12" Trench Undercut and Stone Refill                             | LF   | 5,000  | \$12      | \$60,000            |
| Remove, Salvage or Replace Sign                                  | EA   | 15     | \$500     | \$7,500             |
| Granular Fill Over 21" Sanitary Sewer                            | LF   | 0      | \$75      | \$0                 |
| Granular Fill Over 12" To 18" Sanitary Sewer                     | LF   | 6,200  | \$70      | \$434,000           |
| Granular Fill Over 8" To 10" Sanitary Sewer                      | LF   | 29,200 | \$65      | \$1,898,000         |
| Granular Fill Over 6" Sanitary Lateral                           | LF   | 1,500  | \$60      | \$90,000            |
| 24" Sanitary Sewer   | LF   | 0      | \$200     | \$0                 |
| 18" Sanitary Sewer   | LF   | 0      | \$125     | \$0                 |
| 10" Sanitary Sewer   | LF   | 3,000  | \$100     | \$300,000           |
| 8" Sanitary Sewer  | LF   | 1,500  | \$90      | \$135,000           |
| 6" Sewer Lateral   | LF   | 18,000 | \$75      | \$1,350,000         |
| 24" x 6" Wye Branch  | EA   | 0      | \$1,000   | \$0                 |
| 18" x 6" Wye Branch  | EA   | 0      | \$750     | \$0                 |
| 10" x 6" Wye Branch  | EA   | 60     | \$650     | \$39,000            |
| 8" x 6" Wye Branch   | EA   | 120    | \$550     | \$66,000            |
| Connect to Existing 4" to 6" Lateral                             | EA   | 180    | \$550     | \$99,000            |
| Cap and Mark New Lateral   | EA   | 10     | \$500     | \$5,000             |
| 4" Insulation  | LF   | 1,000  | \$40      | \$40,000            |
| 18" to 24" Existing Sewer Bulkhead                               | EA   | 0      | \$1,000   | \$0                 |
| 8" to 15" Existing Sewer Bulkhead                                | EA   | 10     | \$750     | \$7,500             |
| 4" to 6" Existing Sewer Bulkhead                                 | EA   | 10     | \$700     | \$7,000             |
| Abandon Existing 18" to 24" Sewer                                | LF   | 0      | \$25      | \$0                 |
| Abandon Existing 8" to 15" Sewer                                 | LF   | 6,000  | \$20      | \$120,000           |
| 18" to 24" Connection to Existing Sewer                          | EA   | 0      | \$2,500   | \$0                 |
| 12" to 15" Connection to Existing Sewer                          | EA   | 3      | \$2,500   | \$7,500             |
| 8" to 10" Connection to Existing Sewer                           | EA   | 10     | \$2,000   | \$20,000            |
| 48" to 60" Pre-cast Sanitary Concrete Manhole, 10' Depth or Less | EA   | 25     | \$6,000   | \$150,000           |
| Additional 48" Sanitary Manhole Depth Over 10'                   | VF   | 75     | \$500     | \$37,500            |
| Sanitary Manhole Exterior Drop Connection                        | VF   | 5      | \$5,000   | \$25,000            |
| Remove Existing 48" Sanitary Manhole                             | EA   | 25     | \$1,000   | \$25,000            |
| Abandon Existing Lift Station                                    | EA   | 0      | \$150,000 | \$0                 |
| 21" Storm Sewer  | LF   | 0      | \$250     | \$0                 |
| 18" Storm Sewer  | LF   | 0      | \$200     | \$0                 |
| 15" Storm Sewer  | LF   | 1,500  | \$180     | \$270,000           |
| 12" Storm Sewer  | LF   | 5,700  | \$150     | \$855,000           |
| Roof Drain Connection to Storm Sewer                             | EA   | 90     | \$5,000   | \$450,000           |
| 48" to 60" Pre-cast Storm Concrete Manhole                       | EA   | 17     | \$6,000   | \$102,000           |
| 24" to 36" Pre-cast Storm Concrete Catch Basin                   | EA   | 68     | \$4,000   | \$272,000           |
| Remove Existing Storm Manhole & Catch Basin                      | EA   | 85     | \$1,000   | \$85,000            |
| Concrete Curb and Gutter Replacement Due to Sewer Laterals       | LF   | 4,500  | \$40      | \$180,000           |
| 4" Concrete Sidewalk Replacement Due to Sewer Laterals           | SF   | 22,500 | \$12      | \$270,000           |
| 12" Gravel Base in Pavement Areas                                | LF   | 22,500 | \$30      | \$675,000           |
| 3" Pavement Replacement  | LF   | 22,500 | \$75      | \$1,687,500         |
| 6" Concrete Driveway Replacement, Includes 4" Sand Base          | SY   | 1,000  | \$100     | \$100,000           |
| 3" Asphalt Driveway Replacement, Includes 6" Gravel Base         | SY   | 500    | \$75      | \$37,500            |
| 6" Gravel Driveway Replacement                                   | SY   | 500    | \$12      | \$6,000             |
| <b>Construction Cost Subtotal</b>                                |      |        |           | <b>\$12,584,000</b> |

Total of two : \$22,552,000

## Manhole Rehabilitation Costs

| Priority                  | No. of Manholes | Rehabilitation | Cost per Manhole | Total Cost       |
|---------------------------|-----------------|----------------|------------------|------------------|
| Priority 1                | 75              | Lining         | \$4,000          | \$300,000        |
| Priority 1                | 25              | Replacement    | \$19,000         | \$475,000        |
| <i>Priority 1 - Total</i> | <i>100</i>      |                |                  | <i>\$775,000</i> |
| Priority 2                | 37              | Lining         | \$4,000          | \$148,000        |
| Priority 2                | 29              | Replacement    | \$19,000         | \$551,000        |
| <i>Priority 2 - Total</i> | <i>66</i>       |                |                  | <i>\$699,000</i> |

Water Plant Lift Station Construction Costs

| Item   | Water Plant Lift Station | Salvage     |
|--|--------------------------|-------------|
| Wet Well, Valve Vault, & Meter Vault                 | \$400,000                | \$300,000   |
| Submersible Pumping                                  | \$200,000                | \$66,000    |
| Wet Well & Pumps/Piping Floor & Superstructure       | ----                     | ----        |
| Dry Pit Pumping                                      | ----                     | ----        |
| Self Cleaning Bar Screen, Well (Incl. Cover)         | \$225,000                | \$0         |
| Control Building                                     | \$100,000                | \$73,000    |
| Control Room/Floor & Superstructure                  | ----                     | ----        |
| On-site Generator & Housing                          | \$100,000                | \$0         |
| Site Work, Security, & Road Segment Relocation       | \$75,000                 | \$0         |
| Site Dewatering                                      | \$100,000                | \$0         |
| Restoration  | \$600,000                | \$480,000   |
| 12"-16" Force Main (to North End of Lakeshore Drive) | \$450,000                | \$360,000   |
| Utility Dewatering                                   | \$125,000                | \$0         |
| Construction Costs Subtotal                          | \$2,375,000              | \$1,279,000 |

Construction Costs for New 36" Outfall

| DESCRIPTION                                   | QUANTITY | UNIT | UNIT AMOUNT | TOTAL AMOUNT        |
|---|----------|------|-------------|---------------------|
| General Conditions                            | 1        | LS   | \$30,000    | \$30,000            |
| Conceptual Design Contingencies               | 1        | LS   | \$60,000    | \$60,000            |
| Relocations and Temporary Provisions          | 1        | LS   | \$20,000    | \$20,000            |
|   |          |      |             |                     |
| 36" DIP Pipe CL 350, Underground              | 6,800    | LF   | \$600       | \$4,080,000         |
| 60" Manhole Access Every 600 ft               | 11       | EA   | \$10,000    | \$113,333           |
| 12" Undercut and Stone Refill                 | 6,800    | LF   | \$5         | \$34,000            |
| M35 Highway Crossing                          | 1        | EA   | \$20,000    | \$20,000            |
| 48" Diameter Tunnel Casing                    | 285      | LF   | \$500       | \$142,500           |
| Tunnel casing stabilized sand backfill        | 43       | CY   | \$8         | \$342               |
| Restoration                                   | 16,000   | SY   | \$20        | \$320,000           |
| Street Restoration (30 ft width, 3" HMA)      | 2,000    | LF   | \$50        | \$100,000           |
| Runway Restoration (6" concrete)              | 400      | SY   | \$200       | \$80,000            |
| Utility Investigation                         | 5        | LS   | \$1,000     | \$5,000             |
| Abandonment of Old Outfall                    | 6,800    | LF   | \$200       | \$1,360,000         |
|   |          |      |             |                     |
| 36" DIP Pipe CL 350, Off-shore w/ Stone Bedd  | 5,630    | LF   | \$1,250     | \$7,037,500         |
| Off-Shore Pipe Installation turbidity Curtain | 1        | EA   | \$350,000   | \$350,000           |
|   |          |      |             |                     |
| <i>Construction Cost Subtotal</i>             |          |      |             | <i>\$13,753,000</i> |



## **Appendix A**

### Part 2: Bond Schedule

**Bond Schedule****Date: 02/13/23**

**Borrower Name:** City of Escanaba **Type of Bond:** 30  
**Interest Rate:** 1.875%  
**Yrs Deferred Principle:** 0  
**Principal:** \$19,038,000 (round to nearest \$1000)  
**Ammort. Factor:** 0.0439  
**Ammortized Payment:** \$835,505  
**Monthly Debt Service:** \$69,625  
**Estimated System EDUs:** 7146  
**User Rate Impact:** \$9.74

| Year | 1st Interest | 2nd Interest | Principal Paid | Total Year Payment | Loan Balance |
|------|--------------|--------------|----------------|--------------------|--------------|
|      |              |              |                |                    | 19,038,000   |
| 1    | 178,481      | 178,481      | 479,000        | 835,963            | 18,559,000   |
| 2    | 173,991      | 173,991      | 488,000        | 835,981            | 18,071,000   |
| 3    | 169,416      | 169,416      | 497,000        | 835,831            | 17,574,000   |
| 4    | 164,756      | 164,756      | 506,000        | 835,513            | 17,068,000   |
| 5    | 160,013      | 160,013      | 515,000        | 835,025            | 16,553,000   |
| 6    | 155,184      | 155,184      | 525,000        | 835,369            | 16,028,000   |
| 7    | 150,263      | 150,263      | 535,000        | 835,525            | 15,493,000   |
| 8    | 145,247      | 145,247      | 545,000        | 835,494            | 14,948,000   |
| 9    | 140,138      | 140,138      | 555,000        | 835,275            | 14,393,000   |
| 10   | 134,934      | 134,934      | 566,000        | 835,869            | 13,827,000   |
| 11   | 129,628      | 129,628      | 576,000        | 835,256            | 13,251,000   |
| 12   | 124,228      | 124,228      | 587,000        | 835,456            | 12,664,000   |
| 13   | 118,725      | 118,725      | 598,000        | 835,450            | 12,066,000   |
| 14   | 113,119      | 113,119      | 609,000        | 835,238            | 11,457,000   |
| 15   | 107,409      | 107,409      | 621,000        | 835,819            | 10,836,000   |
| 16   | 101,588      | 101,588      | 632,000        | 835,175            | 10,204,000   |
| 17   | 95,663       | 95,663       | 644,000        | 835,325            | 9,560,000    |
| 18   | 89,625       | 89,625       | 656,000        | 835,250            | 8,904,000    |
| 19   | 83,475       | 83,475       | 669,000        | 835,950            | 8,235,000    |
| 20   | 77,203       | 77,203       | 681,000        | 835,406            | 7,554,000    |
| 21   | 70,819       | 70,819       | 694,000        | 835,638            | 6,860,000    |
| 22   | 64,313       | 64,313       | 707,000        | 835,625            | 6,153,000    |
| 23   | 57,684       | 57,684       | 720,000        | 835,369            | 5,433,000    |
| 24   | 50,934       | 50,934       | 734,000        | 835,869            | 4,699,000    |
| 25   | 44,053       | 44,053       | 747,000        | 835,106            | 3,952,000    |
| 26   | 37,050       | 37,050       | 761,000        | 835,100            | 3,191,000    |
| 27   | 29,916       | 29,916       | 776,000        | 835,831            | 2,415,000    |
| 28   | 22,641       | 22,641       | 790,000        | 835,281            | 1,625,000    |
| 29   | 15,234       | 15,234       | 805,000        | 835,469            | 820,000      |
| 30   | 7,688        | 7,688        | 820,000        | 835,375            | 0            |

## **Appendix A**

### Part 3: Operating Budget (2022)

**CITY OF ESCANABA, MICHIGAN**

**Statement of Revenues, Expenses and Changes in Fund Net Position**

Proprietary Funds

For the Year Ended June 30, 2022

|  | Business-type Activities -<br>Enterprise Funds |                                |                          |
|--|--|--------------------------------|--------------------------|
|  | Electric<br>Utility<br>Fund                    | Waste Water<br>Utility<br>Fund | Water<br>Utility<br>Fund |
| <b>Operating revenues</b>                              |  |                                |                          |
| Charges for services                                   | \$ 14,600,423                                  | \$ 3,351,190                   | \$ 4,554,870             |
| Provisions for self-insurance                          | -  | -                              | -                        |
| Other revenue  | 98,260   | 18,922                         | 20,409                   |
| <b>Total operating revenues</b>                        | <b>14,698,683</b>                              | <b>3,370,112</b>               | <b>4,575,279</b>         |
| <b>Operating expenses</b>                              |  |                                |                          |
| Production   | 9,462,706                                      | -                              | -                        |
| Personnel services                                     | 877,666  | 804,285                        | 732,339                  |
| Overhead   | 1,028,664                                      | 230,156                        | 240,911                  |
| Fuel   | -  | 1,084                          | 1,849                    |
| Contracted services                                    | 118,411  | 135,942                        | 270,532                  |
| Insurance  | 264,470  | 86,825                         | 42,658                   |
| Dues and training                                      | 120,948  | 3,575                          | 9,635                    |
| Sales and promotion                                    | 223,856  | 785                            | 6,270                    |
| Repairs and maintenance                                | 59,187   | 76,056                         | 385,546                  |
| Claims   | -  | -                              | -                        |
| Equipment rental                                       | 7,402  | 33,117                         | 32,540                   |
| Depreciation/amortization                              | 758,783  | 298,837                        | 527,961                  |
| Supplies   | 18,156   | 100,460                        | 184,776                  |
| Bad debt   | 3,177  | 724                            | 992                      |
| Other  | 61,347   | 5,013                          | 14,018                   |
| <b>Total operating expenses</b>                        | <b>13,004,773</b>                              | <b>1,776,859</b>               | <b>2,450,027</b>         |
| Operating income (loss)                                | 1,693,910                                      | 1,593,253                      | 2,125,252                |
| <b>Nonoperating revenues (expenses)</b>                |  |                                |                          |
| Gain (loss) on sale of capital assets                  | (13)   | -                              | -                        |
| Investment loss  | (476,048)                                      | (29,925)                       | (163,795)                |
| Interest expense                                       | -  | (184,240)                      | (61,617)                 |
| <b>Total nonoperating revenues (expenses)</b>          | <b>(476,061)</b>                               | <b>(214,165)</b>               | <b>(225,412)</b>         |
| Income (loss) before capital contributions & transfers | 1,217,849                                      | 1,379,088                      | 1,899,840                |
| Capital contributions                                  | -  | -                              | 670,867                  |
| Income (loss) before transfers                         | 1,217,849                                      | 1,379,088                      | 2,570,707                |
| Transfers in   | -  | -                              | -                        |
| Transfers out  | (765,790)                                      | -                              | -                        |
| <b>Change in net position</b>                          | <b>452,059</b>                                 | <b>1,379,088</b>               | <b>2,570,707</b>         |
| Net position, beginning of year                        | 18,518,774                                     | 7,868,377                      | 11,483,766               |
| <b>Net position, end of year</b>                       | <b>\$ 18,970,833</b>                           | <b>\$ 9,247,465</b>            | <b>\$ 14,054,473</b>     |

The accompanying notes are an integral part of these basic financial statements.

**Appendix A**

Part 4: Water Plant Lift Station Alternative Present Worth  
Analysis

| <u>Alternative Present Worth Analysis of Water Plant Lift Station Replacement</u> |  |   |  |                   |   |
|---|--|---|--|-------------------|---|
|   |  | <u>Alternate 'A'</u><br><u>Relocate to</u><br><u>WTP Area</u> | <u>Alternate 'B'</u><br><u>Rebuild Near</u><br><u>Existing</u> |                   |   |
| <u>#</u>  | <u>Item</u>  | <u>(3 Pump Submersible)</u>                                   | <u>(3 Pump Dry Pit)</u>  | <u>A' Salvage</u> | <u>B' Salvage</u>                             |
| 01  | Wet Well, Valve Vault, & Meter Vault                 | \$400,000   | ----   | \$300,000         | ----  |
| 02  | Submersible Pumping                                  | \$200,000   | ----   | \$66,000          | ----  |
| 03  | Wet Well & Pumps/Piping Floor & Superstructure       | ----  | \$750,000  | ----              | \$562,500                                     |
| 04  | Dry Pit Pumping                                      | ----  | \$200,000  | ----              | \$66,000                                      |
| 05  | Self Cleaning Bar Screen, Well (Incl. Cover)         | \$225,000   | \$200,000  | \$0               | \$0   |
| 06  | Control Building                                     | \$100,000   | ----   | \$73,000          | ----  |
| 07  | Control Room/Floor & Superstructure                  | ----  | \$600,000  | ----              | \$450,000                                     |
| 08  | On-site Generator & Housing                          | \$100,000   | \$100,000  | \$0               | \$0   |
| 09  | Site Work, Security, & Road Segment Relocation       | \$75,000  | \$50,000   | \$0               | \$0   |
| 10  | Site Dewatering                                      | \$100,000   | \$100,000  | \$0               | \$0   |
| 11  | Restoration  | \$600,000   | \$200,000  | \$480,000         | \$160,000                                     |
| 12  | 12"-16" Force Main (to North End of Lakeshore Drive) | \$450,000   | \$150,000  | \$360,000         | \$120,000                                     |
| 13  | Utility Dewatering                                   | \$125,000   | \$75,000   | \$0               | \$0   |
|   | Subtotal   | \$2,375,000   | \$2,425,000  | \$1,279,000       | \$1,358,500                                   |
|   | Contingencies  | \$237,500   | \$242,500  |                   |   |
|   | Construction Total                                   | \$2,612,500   | \$2,667,500  |                   |   |
|   | Engineering, Permits, Legal, Admin., & Constr. Svcs. | \$498,750   | \$509,250  |                   |   |
|   | Total Capital Cost                                   | \$3,111,250   | \$3,176,750  |                   |   |
| ..  |  |   |  |                   |   |
| <u>COST EVALUATION</u>  |  |   |  |                   |   |
|   | Initial Capital Costs                                | \$3,111,250   | \$3,176,750  |                   |   |
|   | Annual O&M Costs Change                              | -\$1,200  | -\$400   |                   | <i>formula check<br/>with Excel functions</i> |
|   | Future Salvage Value                                 | \$1,279,000   | \$1,358,500  |                   |   |
|   | Present Worth of 20 Years of Future O&M Change       | -\$23,021   | -\$7,674   | \$23,021          | \$7,674                                       |
|   | Present Worth of 20 Year Salvage Value               | \$1,180,854   | \$1,254,254  | -1,180,854        | -1,254,254                                    |
|   | Total Present Worth                                  | \$1,809,229   | \$1,810,576  |                   |   |
|   | Discount Rate Used                                   | 0.4%  | 0.4%   |                   |   |
|   | <u>Salvage Value Criteria</u>                        |   |  |                   |   |
|   | <i>Piping - 100 yr (80% @ 20 yrs)</i>                |   |  |                   |   |
|   | <i>Structures - 75 yr (73% @ 20 yrs)</i>             |   |  |                   |   |
|   | <i>Pumping - 30 yr (33% @ 20 yrs)</i>                |   |  |                   |   |
|   | <i>Mechanical/Electrical - 20 yr (0% @ 20 yrs)</i>   |   |  |                   |   |
| ..  |  |   |  |                   |   |

# APPENDIX B

## Supporting Information

**Appendix B**

Part 1: Overburdened Community Status





MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY  
**OVERBURDENED AND SIGNIFICANTLY OVERBURDENED COMMUNITY STATUS  
DETERMINATION WORKSHEET**

The following data is required from each State Revolving Fund (SRF) applicant requesting a determination for overburdened and significantly overburdened community status.

The most recent census and tax data are available in a searchable table on EGLE's State Revolving Fund – Overburdened Community Definition and Scoring Criteria Development webpage along with an excel worksheet to help determine blended Median Annual Household Income (MAHI) and blended taxable value per capita for regional systems. The MAHI and taxable value per capita table will be used to make all FY24 determinations. Applicants are encouraged to visit this page prior to completing this form to see if they qualify based on MAHI (blended MAHI if applicable) or taxable value per capita (blended taxable value per capita if applicable) alone. If so, they only need to fill out lines 1 and 2 of this form, electronically sign it on page 2, and submit.

Alternately, if the applicant's MAHI or blended MAHI is above the state average - \$63,498 for FY24 – they cannot be determined as being overburdened or significantly overburdened for FY24 funding and should not complete or turn in this form.

For applicants whose MAHI or blended MAHI is below \$63,498 but do not automatically qualify based on MAHI or taxable value per capita alone, please complete the entire form and return to:

Mark Conradi  
[conradim@michigan.gov](mailto:conradim@michigan.gov)

Name of Applicant

City of Escanaba

Please check the box indicating which funding source this determination is for:

DWSRF

CWSRF

1. Is this a regional system? A regional system refers to any system that serves more than one municipality (cities, townships, and/or villages)

Yes   
No

If yes, refer to the instructions at the end of this form to complete calculations for a blended MAHI and blended taxable value per capita. Additionally, page 3 of this form will also need to be completed.

2. Median Annual Household Income from table on the overburdened webpage (blended if applicable)  
\$36,902
3. Taxable Value Per Capita from table on the overburdened webpage (blended if applicable)  
\$25,551
4. Total amount of anticipated debt for the proposed project (amount of loan requested for FY24 loan)  
\$19,850,000
5. Annual payments on the existing debt for the system  
\$575,000
6. Total operation, maintenance, and replacement expenses (OM&R) for the system on an annual basis  
\$1,478,022
7. Number of residential equivalent users (REUs) in the system  
7,146

\*I (James McNeil) hereby certify that the information in this form is complete, true, and correct to the best of my knowledge.

James McNeil  
Signature

2/28/2023  
Date

For determinations made using anticipated debt, a final determination will be made based upon the awarded loan amount and not the anticipated amount provided on this form.

**Regional System Breakdown (if applicable)**

|                      |                    |
|----------------------|--------------------|
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |
| Name of municipality | Percentage of flow |

If more spaces are needed, please include them in the email along with this submission. Percentages of flow must add up to 100%.

# OVERBURDENED AND SIGNIFICANTLY OVERBURDENED COMMUNITY STATUS INSTRUCTIONS AND GUIDANCE

The following instructions provide guidance to fill out the overburdened and significantly overburdened determination community status worksheet. Systems across the state use many types of methods for billing and some include items that others do not. The purpose of the determination is to put all systems on a level playing field by breaking down system debt, expenses, and number of customers in the same manner. The instructions address each question in the order they are presented on the worksheet.

## 1. Regional systems (if applicable) – Blended MAHI and taxable value per capita calculations

The definition of overburdened and significantly overburdened communities first requires “(a) Users within the area served by a proposed drinking water project, sewage treatment works project, or stormwater treatment project are directly assessed for the costs of construction.” That means that the calculations need to be based on who is paying for the proposed SRF loan.

For systems that serve more than one municipal entity a blended MAHI and taxable value per capita calculation must be completed. Page 3 of the worksheet includes spaces for a system to list all the municipalities (cities, townships, and/or villages) and the percentage of flow they provide to the system. The flow percentages should be based on the most recent data available.

The reason flow is used is because most systems add debt costs to customers’ bills and those are determined by flow. In rare cases there might be municipal agreements that vary slightly from this method and those will require the applicant to contact EGLE and provide the data separate from this worksheet. EGLE will take each municipality’s MAHI and taxable value per capita and multiply it by the percentage of flow and then add them all together to come up with the blended number to be used in the determination (e.g., (municipality A MAHI \* flow) + (municipality B MAHI \* flow) + (municipality C MAHI \* flow = Blended MAHI for the system)). The same formula will be repeated swapping out taxable value per capita for MAHI to determine a blended taxable value per capita.

The most recent census and tax data are available in a searchable table on EGLE’s [State Revolving Fund – Overburdened Community Definition and Scoring Criteria Development](#) webpage. This table will be used to make all FY24 determinations. Use the excel FY24 Overburdened Calculation Template also located on the [State Revolving Fund – Overburdened Community Definition and Scoring Criteria Development](#) webpage. Tab 1 titled, “Blended MAHI and TVPC calcs” will allow the applicant to input the names of the municipalities, their percentage of flow, the MAHI for each found in the table listed above, and the taxable value per capita for each in the table listed above, to calculate a blended MAHI and blended taxable value per capita of the regional system. **If the blended MAHI is above \$63,498 the project cannot qualify for overburdened or significantly overburdened status and the rest of the form should not be filled out or turned in.**

## 2. Median Annual Household Income

Use the “Fiscal Year 2024 Overburdened Median Annual Household Income (MAHI) and Taxable Values List for SRF Projects; the State of Michigan MAHI is \$63,498 for FY24 Projects” searchable table located on the [State Revolving Fund – Overburdened Community Definition and Scoring Criteria Development](#) webpage. Search for the system’s MAHI and enter it. **If the**

**MAHI is above \$63,498 the project cannot qualify for overburdened or significantly overburdened status and the rest of the form should not be filled out or turned in.**

For regional systems that serve more than one municipality (cities, townships, and/or villages), refer to the instructions for regional systems in step 1 if you have not already completed calculating a blended MAHI for the system. Once the blended MAHI is determined, enter it on line 2 of the worksheet.

### **3. Taxable Value Per Capita**

This data is found in the same location as the MAHI data and was likely already entered by the applicant while completing line 2. If not, repeat the directions for step 2 and enter the taxable value per capita from the table.

For regional systems that serve more than one municipality (cities, townships, and/or villages), refer to the instructions for regional systems in step 1 if you have not already completed calculating a blended taxable value per capita for the system. Once the blended taxable value per capita is determined, enter it on line 3 of the worksheet.

### **4. Total amount of anticipated debt for the proposed project**

Fill in the total amount of the proposed loan for the project requesting State Revolving Loan financing in FY24.

EGLE will amortize this amount to determine a yearly cost to the applicant. The excel FY24 Overburdened Calculation Template, also located on the [State Revolving Fund – Overburdened Community Definition and Scoring Criteria Development](#) webpage, has this calculation built in so the applicant only needs to enter full FY24 the loan amount when completing that as well.

Note that this loan amount is an estimate and often changes after project plans are submitted and bids come in. EGLE will run this determination again prior to finalizing the Project Priority List (PPL). Changes in the loan amount can sometimes change an applicant's status from overburdened to not or vice versa if the initial calculation is close to the 1% MAHI threshold.

Thus, if a system is determined to be overburdened or not based on annual user costs being greater than 1% of system's MAHI vs being determined overburdened by MAHI or state taxable value per capita alone, a loan amount will be provided to the applicant that provides the cutoff loan value to either gain or lose overburdened status.

### **5. Annual Payments on the existing debt of the system**

Fill in the yearly total of any current debt payments for the system. If coming in for a CWSRF project only include debt payments for the wastewater system and if coming in for a DWSRF project only include debt payments for the drinking water system.

In a regional system the additional debt payments of connected systems may be added if the connected systems are included in the blended MAHI and taxable value per capita calculations and there is no double-counting. For example, if a regional treatment system is coming in for the loan, a connected collection system could add any additional annual debt costs that the

collection system passes onto its customers after paying all debt and expenses to the regional treatment system. This is to account for the fact that the MAHI and state taxable values are being blended so the annual debt payments of the regional system can be blended as well to determine the average user cost of the regional system.

#### **6. Total operation, maintenance, and replacement (OM&R) expenses for the system on an annual basis**

As with the annual debt payments, the amount listed here should include only wastewater OM&R for CWSRF loans and only drinking water OM&R for DWSRF loans. If the accounting is combined split the costs as accurately as possible.

The OM&R costs should reflect all annual expenses for the system that are recovered annually through rates. This means that if a community makes an annual contribution of \$50,000 a year to a capital improvement fund, they could add that number to the yearly OM&R costs. If they have accumulated \$250,000 in that account and plan on using all in the calendar year they are applying for the loan, they cannot claim that amount as it is not a yearly expense; only the \$50,000 is. This is also true for depreciation expenses with no cash value or yearly contribution. They cannot be included.

In a regional system the additional OM&R expenses of connected systems may be added if the connected systems are included in the blended MAHI and taxable value per capita calculations, there is no double-counting, and the expenses follow the same OM&R rules listed above. For example, if a regional treatment system is coming in for the loan, a connected collection system could add any additional annual OM&R costs that the collection system passes onto its customers after paying all debt and expenses to the regional treatment system. This is to account for the fact that the MAHI and state taxable values are being blended so the annual OM&R expenses of the regional system can be blended as well to determine the average user cost of the regional system.

#### **7. Number of residential equivalent users (REUs) in the system**

REUs refer to number of standard household hookups in a system. In a bedroom community, with little to no commercial or industrial customers, this number clear. However, most systems have a combination of customer types. The purpose of this form is to determine the average bill for a typical residential customer to determine if it is high enough to pose a burden on the ratepayer.

There are two standard ways of determining REUs: meter size and average flow.

- **Meter size**

This is the preferred method as it eliminates most variables that using flow may have. To determine the number of REUs in a system take all the systems' meters and convert them down to 5/8<sup>th</sup>-inch or 3/4-inch (whichever is the system's standard residential size). Use the capacity of the pipe to convert down (e.g., a 2-inch meter would be equivalent to about 8, 5/8<sup>th</sup>-inch meters, a 4-inch meter would be equivalent to about 25, 5/8<sup>th</sup>-inch meters, etc.). The resulting number of equivalent 5/8<sup>th</sup>-inch or 3/4-inch meters would be the number of REUs in the system.

- Average flow

The average flow method requires the system to determine the average yearly flow for a typical residential household (i.e., a 5/8<sup>th</sup>-inch or 3/4-inch connection). The system takes the most recent yearly flow data of the entire system and divides by the average household usage number to come up with the number of REUs.

EGLE will look at the numbers provided and may have questions based on the population size vs number of REUs. EGLE will reach out and ask to see the calculations in some instances. Applicants are encouraged to include an excel sheet with these calculations along with the submittal of this form to reduce any back-and-forth communications.

### Signature

A typed name and accompanying electronic signature are required for the form to be accepted. If this section is left blank the form will be returned to the sender and not reviewed until it has been signed and sent back.

### Final Determination

**If the system's MAHI or blended MAHI (if applicable) is over the state average - \$63,498 for FY24 – it cannot be determined as being overburdened or significantly overburdened for FY24 funding.**

EGLE will take the information provided on this form and enter it into the FY24 Overburdened Calculation Template spreadsheet to calculate the average yearly cost per REU. If a community or system is not determined to be overburdened or significantly overburdened based on MAHI or taxable value per capita alone, this calculation will determine if the costs are greater than 1% of the system's MAHI.

The FY24 Overburdened Calculation Template spreadsheet with the calculations and final determination will be sent to the applicant after the review has been completed by EGLE. A blank version is available on the [State Revolving Fund – Overburdened Community Definition and Scoring Criteria Development](#) webpage. Ideally the applicant has already completed the calculations using the instructions above prior to submitting. If the applicant completes the worksheet and determines they do not qualify for overburdened status it is requested that they do not submit the completed worksheet unless they have questions. The applicant's preliminary findings using the FY24 Overburdened Calculation Template are not official until they have been reviewed by EGLE as discrepancies and/or questions about some of the numbers may arise. However, EGLE is providing the template to allow applicants to have a good idea of how the determination will result prior to hearing back officially from EGLE.

Please contact Mark Conradi ([conradim@michigan.gov](mailto:conradim@michigan.gov)) with any questions on the completion of the form.

If you need this information in an alternate format, contact [EGLE-Accessibility@Michigan.gov](mailto:EGLE-Accessibility@Michigan.gov) or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at [EGLE-NondiscriminationCC@Michigan.gov](mailto:EGLE-NondiscriminationCC@Michigan.gov) or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.



**Overburdened and Significantly Overburdened Calculation Worksheet**

**2. Median Annual Household Income**  
(blended if necessary) \$36,173

**3. Taxable Value Per Capita**  
(blended if necessary) \$25,387

**4. Amount of anticipated debt - FY24**  
SRF loan only \$19,850,000  
Terms 20  
Rate 2.75%  
New Annual debt from SRF loan \$1,303,584

**5. Annual Payments on existing debt** \$575,000

**6. Total OM&R** \$1,478,022

**7. Number of REUs** 7,146

Total Annual Cost \$3,356,606

Annual User Cost \$470

MAHI Threshold \$ amount \$362

125% of Federal Poverty MAHI \$37,500

Lowest 10% TVPC \$15,170

Lowest 20% TVPC \$22,920

Michigan MAHI \$63,498

**Significantly Overburdened**

**Significantly Overburdened**

**Overburdened without calculation needed**

**Overburdened with calculation**

**Result**

**YES**

**NO**

**NO**

**YES**

**Appendix B**

Part 2: Administrative Consent Order (ACO)



BRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

LANSING



DANIEL EICHINGER  
ACTING DIRECTOR

April 13, 2023

VIA EMAIL

James McNei, Manager  
City of Escanaba  
410 Ludington Street  
Escanaba, Michigan 49829

Dear James McNeil:

SUBJECT: City of Escanaba, Draft Administrative Consent Order

Enclosed is for your review is a draft of the proposed Administrative Consent Order (Consent Order) between the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), and the City of Escanaba (Escanaba). This Consent Order proposes to formally resolve the alleged violations of Part 31, Water Resources Protection, and Part 41, Sewerage Systems, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, MCLs 324.3101 and 324.4101 *et seq.*; Part 1, General Provisions, administrative rules promulgated pursuant to Part 41, Mich Admin Code, R 299.2901 *et seq.*; the Part 24, Land Application of Biosolids, administrative rules promulgated pursuant to Part 31, Mich Admin Code, R 323.2401 *et seq.*; and National Pollutant Discharge Elimination System Permit No. MI0025381 as issued September 25, 2012, and reissued December 28, 2018.

This Consent Order has been prepared pursuant to previous discussions with Tom Asmus, Environmental Quality Specialist, and Scott Richards, Environmental Engineer, Marquette District Office, Water Quality Unit, WRD, and has been reviewed by the Michigan Department of Attorney General.

The WRD is requesting that Escanaba review the draft of the proposed Consent Order and respond no later than April 28, 2023, with either a statement indicating the proposed Consent Order is acceptable or with any comments and/or proposed edits. If you would like to meet with the WRD in advance of this date to discuss the terms of the proposed Consent Order, please contact me at 517-290-2632; DohrmannC@Michigan.gov; or EGLE, P.O. Box 30458, Lansing, Michigan 48909-7958; to arrange a meeting.

Also enclosed is a form entitled "2021 Munipay Data Request Form" to be used with the U.S. Environmental Protection Agency's Municipal Enforcement Economic modeling software known as "Munipay." The information on this form will be uploaded into the modeling software where it will determine Escanaba's ability to pay a civil fine based on the cost of the project, Escanaba's financial situation, and census data changes over

James McNei  
Page 2  
April 13, 2023

the last two decades. Please have Escanaba's accountant complete this form and return to me via email by April 28, 2023.

Sincerely,



Christopher Dohrmann, Enforcement Analyst  
Resources Enforcement Unit  
Water Resources Division

Enclosures

cc: Jeff Lampi, Escanaba  
Cheri Meyer, EGLE  
Luis Saldivia, EGLE  
Susan Doty, EGLE  
Jay Parent, EGLE  
Tom Asmus, EGLE  
Scott Richards, EGLE

**Appendix B**

Part 3: Maintenance and Sewer Backup History

## **Maintenance Call Log with Dates (2014 to 2023)**

*\*Yes in the Plug column indicates a backup*

| <b>Address</b>  | <b>Date</b> | <b>Plug?</b> |
|-----------------|-------------|--------------|
| 1315 10th Ave S | 4/9/2014    | No           |
| 1315 10th Ave S | 12/18/2015  | No           |
| 1115 10th Ave S | 5/7/2016    | Yes          |
| 1916 10th Ave S | 7/1/2016    | No           |
| 1916 10th Ave S | 7/1/2016    | No           |
| 1924 10th Ave S | 12/12/2018  | No           |
| 1215 11th Ave S | 1/7/2014    | No           |
| 1201 11th Ave S | 3/4/2014    | No           |
| 1105 11th Ave S | 11/1/2014   | No           |
| 1201 11th Ave S | 1/19/2015   | Yes          |
| 1125 11th Ave S | 4/11/2019   | Yes          |
| 1125 11th Ave S | 4/12/2019   | No           |
| 1414 11th Ave S | 12/9/2019   | Yes          |
| 1201 11th Ave S | 2/22/2020   | No           |
| 1201 11th Ave S | 12/25/2020  | No           |
| 1201 11th Ave S | 8/24/2021   | Yes          |
| 1201 11th Ave S | 2/14/2022   | No           |
| 1201 11th Ave S | 3/4/2022    | No           |
| 2220 12th Ave N | 10/31/2016  | No           |
| 1606 12th Ave S | 2/13/2019   | Yes          |
| 1606 12th Ave S | 5/26/2019   | No           |
| 2109 12th Ave S | 3/10/2022   | No           |
| 2109 12th Ave S | 3/11/2022   | No           |
| 1815 13th Ave N | 4/22/2019   | No           |
| 1815 13th Ave N | 9/27/2021   | Yes          |
| 2009 13th Ave S | 1/1/2016    | Yes          |
| 1824 14th Ave N | 11/18/2016  | No           |
| 2117 14th Ave N | 2/3/2018    | Yes          |
| 2117 14th Ave N | 2/4/2019    | No           |
| 2550 14th Ave S | 2/3/2014    | No           |
| 3117 14th Ave S | 3/10/2014   | No           |
| 2501 14th Ave S | 4/7/2014    | No           |
| 2501 14th Ave S | 9/12/2014   | No           |
| 2501 14th Ave S | 10/13/2014  | No           |
| 2530 14th Ave S | 7/18/2016   | No           |
| 2550 14th Ave S | 1/8/2018    | No           |
| 2106 15th Ave N | 2/21/2014   | No           |
| 2000 16th Ave N | 12/11/2017  | Yes          |
| 1630 16th Ave S | 2/19/2014   | No           |
| 1501 16th Ave S | 12/16/2014  | No           |
| 1624 16th Ave S | 11/8/2021   | No           |
| 1617 17th Ave S | 1/10/2014   | No           |
| 1619 17th Ave S | 12/22/2018  | No           |

| <b>Address</b>    | <b>Date</b> | <b>Plug?</b> |
|-------------------|-------------|--------------|
| 1422 N 23rd St    | 8/5/2020    | No           |
| 1422 N 23rd St    | 8/21/2020   | No           |
| 1412 N 23rd St    | 6/26/2021   | No           |
| 227 N 9th St      | 3/9/2015    | No           |
| 227 N 9th St      | 4/6/2018    | No           |
| 227 N 9th St      | 4/25/2019   | No           |
| 521 N Lincoln Rd  | 1/10/2014   | Yes          |
| 3101 N Lincoln Rd | 2/25/2014   | Yes          |
| 1424 N Lincoln Rd | 4/14/2014   | No           |
| 412 N Lincoln Rd  | 7/23/2015   | No           |
| 3101 N Lincoln Rd | 1/14/2016   | No           |
| 811 N Lincoln Rd  | 4/21/2016   | No           |
| 700 N Lincoln Rd  | 5/4/2016    | No           |
| 1315 N Lincoln Rd | 5/16/2016   | No           |
| 1315 N Lincoln Rd | 7/9/2016    | No           |
| 700 N Lincoln Rd  | 12/6/2016   | No           |
| 201 N Lincoln Rd  | 4/21/2017   | No           |
| 3101 N Lincoln Rd | 2/16/2018   | No           |
| 700 N Lincoln Rd  | 6/1/2018    | No           |
| 205 N Lincoln Rd  | 10/11/2018  | No           |
| 205 N Lincoln Rd  | 11/22/2019  | No           |
| 301 N Lincoln Rd  | 7/16/2020   | Yes          |
| 205 N Lincoln Rd  | 1/6/2021    | No           |
| 1026 N Lincoln Rd | 2/15/2022   | No           |
| 1604 N Lincoln Rd | 3/17/2022   | Yes          |
| 301 N Lincoln Rd  | 6/1/2022    | No           |
| 415 N Lincoln Rd  | 10/12/2022  | No           |
| 415 N Lincoln Rd  | 10/13/2022  | No           |
| 315 Ogden Ave     | 12/16/2014  | No           |
| 501 Ogden Ave     | 4/23/2015   | Yes          |
| 501 Ogden Ave     | 12/5/2016   | Yes          |
| 501 Ogden Ave     | 12/21/2017  | No           |
| 501 Ogden Ave     | 9/4/2018    | Yes          |
| 501 Ogden Ave     | 2/5/2019    | Yes          |
| 501 Ogden Ave     | 12/26/2020  | Yes          |
| 303 Ogden Ave     | 8/4/2021    | No           |
| 611 Ogden Ave     | 3/30/2022   | No           |
| 218 S 10th St     | 2/20/2015   | No           |
| 218 S 10th St     | 2/26/2015   | No           |
| 225 S 10th St     | 4/13/2015   | No           |
| 221 S 10th St     | 1/4/2017    | Yes          |
| 330 S 10th St     | 1/31/2019   | No           |
| 407 S 10th St     | 6/11/2019   | No           |

## **Maintenace Call Log with Dates (2014 to 2023)**

*\*Yes in the Plug column indicates a backup*

| Address         | Date       | Plug? |
|-----------------|------------|-------|
| 1619 17th Ave S | 3/10/2020  | No    |
| 1410 18th Ave S | 4/3/2014   | Yes   |
| 1410 18th Ave S | 9/10/2014  | Yes   |
| 1420 18th Ave S | 9/10/2014  | Yes   |
| 1123 1St Ave N  | 1/20/2014  | Yes   |
| 2510 1St Ave N  | 2/17/2014  | No    |
| 1123 1St Ave N  | 3/1/2014   | Yes   |
| 1408 1St Ave N  | 10/23/2014 | No    |
| 2510 1St Ave N  | 2/2/2015   | No    |
| 910 1St Ave N   | 2/14/2017  | Yes   |
| 1117 1St Ave N  | 3/2/2017   | Yes   |
| 910 1St Ave N   | 4/20/2017  | No    |
| 919 1St Ave N   | 4/30/2018  | No    |
| 919 1St Ave N   | 6/1/2018   | No    |
| 919 1St Ave N   | 6/28/2018  | No    |
| 1222 1St Ave N  | 2/2/2019   | No    |
| 2525 1St Ave N  | 9/17/2019  | Yes   |
| 1408 1St Ave N  | 10/3/2020  | No    |
| 1408 1St Ave N  | 10/4/2020  | No    |
| 1123 1St Ave N  | 7/19/2021  | Yes   |
| 1117 1St Ave N  | 7/26/2021  | No    |
| 1408 1St Ave N  | 10/30/2021 | No    |
| 1221 1St Ave N  | 1/24/2022  | No    |
| 2525 1St Ave N  | 3/23/2022  | No    |
| 823 1St Ave N   | 6/9/2022   | No    |
| 307 1St Ave S   | 3/24/2014  | No    |
| 1823 1St Ave S  | 8/21/2014  | No    |
| 1823 1St Ave S  | 9/10/2014  | No    |
| 901 1St Ave S   | 11/25/2014 | No    |
| 819 1St Ave S   | 3/20/2015  | No    |
| 1421 1St Ave S  | 4/23/2015  | No    |
| 700 1St Ave S   | 8/5/2015   | No    |
| 1309 1St Ave S  | 3/16/2016  | No    |
| 1518 1St Ave S  | 10/18/2016 | No    |
| 905 1St Ave S   | 3/8/2017   | No    |
| 1421 1St Ave S  | 9/29/2017  | No    |
| 1401 1St Ave S  | 3/18/2019  | Yes   |
| 1309 1St Ave S  | 7/24/2020  | No    |
| 905 1St Ave S   | 8/11/2020  | No    |
| 2425 1St Ave S  | 12/21/2021 | No    |
| 911 1St Ave S   | 11/4/2022  | No    |
| 2124 21St Ave S | 10/13/2015 | No    |
| 1818 22nd Ave S | 6/25/2019  | No    |

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 423 S 10th St  | 3/10/2020  | No    |
| 512 S 10th St  | 12/9/2022  | No    |
| 209 S 11th St  | 4/19/2014  | No    |
| 220 S 11th St  | 3/4/2015   | Yes   |
| 612 S 11th St  | 4/12/2015  | No    |
| 209 S 11th St  | 5/5/2015   | No    |
| 209 S 11th St  | 9/22/2015  | No    |
| 325 S 11th St  | 3/21/2017  | No    |
| 221 S 11th St  | 2/22/2018  | No    |
| 221 S 11th St  | 4/12/2018  | No    |
| 221 S 11th St  | 8/12/2018  | No    |
| 301 S 11th St  | 12/28/2018 | No    |
| 221 S 11th St  | 7/8/2019   | No    |
| 209 S 11th St  | 1/7/2020   | No    |
| 221 S 11th St  | 4/2/2020   | No    |
| 1100 S 11th St | 10/14/2020 | No    |
| 221 S 11th St  | 10/23/2020 | No    |
| 221 S 11th St  | 1/29/2021  | No    |
| 612 S 11th St  | 7/30/2021  | No    |
| 221 S 11th St  | 8/23/2021  | No    |
| 616 S 11th St  | 12/3/2021  | No    |
| 221 S 11th St  | 12/30/2021 | No    |
| 221 S 11th St  | 6/29/2022  | No    |
| 221 S 11th St  | 8/12/2022  | No    |
| 408 S 11th St  | 8/20/2022  | No    |
| 313 S 12th St  | 3/5/2014   | Yes   |
| 529 S 12th St  | 11/28/2014 | No    |
| 1017 S 12th St | 7/31/2015  | No    |
| 702 S 12th St  | 4/17/2017  | Yes   |
| 1110 S 12th St | 2/8/2018   | Yes   |
| 1110 S 12th St | 11/30/2018 | Yes   |
| 1110 S 12th St | 3/5/2019   | No    |
| 702 S 12th St  | 2/24/2020  | Yes   |
| 702 S 12th St  | 3/18/2020  | Yes   |
| 1017 S 12th St | 4/15/2020  | No    |
| 502 S 12th St  | 1/7/2021   | Yes   |
| 1110 S 12th St | 2/20/2021  | Yes   |
| 1110 S 12th St | 5/13/2022  | Yes   |
| 1110 S 12th St | 12/14/2022 | Yes   |
| 719 S 13th St  | 1/7/2014   | No    |
| 719 S 13th St  | 2/18/2014  | Yes   |
| 1522 S 13th St | 4/13/2014  | Yes   |
| 800 S 13th St  | 12/2/2014  | No    |

## Maintenace Call Log with Dates (2014 to 2023)

\*Yes in the Plug column indicates a backup

| Address         | Date       | Plug? |
|-----------------|------------|-------|
| 1818 22nd Ave S | 12/14/2021 | No    |
| 2222 25th Ave S | 10/13/2014 | No    |
| 2222 25th Ave S | 9/30/2020  | No    |
| 2206 26th Ave S | 12/10/2014 | No    |
| 1412 2nd Ave N  | 7/26/2016  | No    |
| 1115 2nd Ave N  | 7/31/2018  | No    |
| 910 2nd Ave N   | 12/21/2018 | No    |
| 515 2nd Ave S   | 5/12/2014  | Yes   |
| 516 2nd Ave S   | 5/12/2014  | Yes   |
| 523 2nd Ave S   | 5/12/2014  | Yes   |
| 1104 2nd Ave S  | 7/9/2014   | Yes   |
| 1213 2nd Ave S  | 7/22/2014  | Yes   |
| 523 2nd Ave S   | 8/18/2014  | Yes   |
| 1104 2nd Ave S  | 2/21/2015  | Yes   |
| 2513 2nd Ave S  | 2/23/2015  | Yes   |
| 1104 2nd Ave S  | 3/4/2015   | Yes   |
| 1710 2nd Ave S  | 3/7/2015   | No    |
| 1213 2nd Ave S  | 4/14/2015  | No    |
| 818 2nd Ave S   | 12/13/2016 | No    |
| 1213 2nd Ave S  | 2/17/2017  | No    |
| 1215 2nd Ave S  | 2/25/2017  | Yes   |
| 306 2nd Ave S   | 4/21/2017  | Yes   |
| 306 2nd Ave S   | 4/22/2017  | No    |
| 306 2nd Ave S   | 12/17/2017 | No    |
| 823 2nd Ave S   | 1/26/2018  | No    |
| 2513 2nd Ave S  | 12/27/2018 | Yes   |
| 2513 2nd Ave S  | 5/8/2019   | No    |
| 921 2nd Ave S   | 5/14/2019  | No    |
| 2513 2nd Ave S  | 11/13/2019 | Yes   |
| 1710 2nd Ave S  | 12/4/2019  | Yes   |
| 818 2nd Ave S   | 8/10/2020  | No    |
| 1118 2nd Ave S  | 1/7/2021   | No    |
| 1710 2nd Ave S  | 1/18/2021  | Yes   |
| 1710 2nd Ave S  | 1/22/2021  | No    |
| 1215 2nd Ave S  | 2/15/2021  | No    |
| 1320 2nd Ave S  | 2/18/2021  | No    |
| 415 2nd Ave S   | 3/11/2021  | No    |
| 1710 2nd Ave S  | 2/21/2022  | No    |
| 316 2nd Ave S   | 5/18/2022  | Yes   |
| 1213 2nd Ave S  | 11/12/2022 | Yes   |
| 1400 3rd Ave N  | 3/5/2014   | No    |
| 1921 3rd Ave N  | 9/22/2014  | Yes   |
| 1719 3rd Ave N  | 5/12/2015  | No    |

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 804 S 13th St  | 2/16/2015  | No    |
| 1401 S 13th St | 3/28/2016  | No    |
| 619 S 13th St  | 5/2/2016   | No    |
| 1522 S 13th St | 9/4/2017   | No    |
| 1522 S 13th St | 9/11/2017  | No    |
| 712 S 13th St  | 4/2/2018   | No    |
| 712 S 13th St  | 4/18/2018  | No    |
| 1522 S 13th St | 4/19/2019  | No    |
| 707 S 13th St  | 12/9/2020  | No    |
| 918 S 13th St  | 10/9/2021  | No    |
| 712 S 13th St  | 12/3/2021  | No    |
| 1401 S 13th St | 4/13/2022  | No    |
| 212 S 13th St  | 11/14/2022 | No    |
| 1414 S 14th St | 2/17/2014  | No    |
| 211 S 14th St  | 3/14/2014  | No    |
| 400 S 14th St  | 3/19/2014  | No    |
| 430 S 14th St  | 7/25/2014  | No    |
| 915 S 14th St  | 12/11/2014 | No    |
| 1411 S 14th St | 1/13/2015  | No    |
| 713 S 14th St  | 3/14/2015  | No    |
| 1505 S 14th St | 4/23/2015  | No    |
| 302 S 14th St  | 9/11/2015  | No    |
| 902 S 14th St  | 1/22/2016  | No    |
| 403 S 14th St  | 3/5/2016   | No    |
| 620 S 14th St  | 7/22/2016  | No    |
| 304 S 14th St  | 8/29/2016  | No    |
| 315 S 14th St  | 2/9/2017   | No    |
| 315 S 14th St  | 2/16/2017  | No    |
| 315 S 14th St  | 12/11/2017 | No    |
| 430 S 14th St  | 5/11/2018  | No    |
| 1401 S 14th St | 8/11/2018  | Yes   |
| 713 S 14th St  | 12/2/2018  | No    |
| 521 S 14th St  | 1/3/2019   | No    |
| 315 S 14th St  | 4/22/2019  | No    |
| 1429 S 14th St | 4/27/2019  | No    |
| 430 S 14th St  | 12/22/2019 | Yes   |
| 1514 S 14th St | 3/10/2020  | No    |
| 713 S 14th St  | 3/25/2020  | No    |
| 713 S 14th St  | 4/4/2020   | No    |
| 430 S 14th St  | 4/12/2020  | Yes   |
| 304 S 14th St  | 5/1/2020   | No    |
| 1514 S 14th St | 1/4/2021   | No    |
| 711 S 14th St  | 2/8/2021   | No    |



## **Maintenace Call Log with Dates (2014 to 2023)**

*\*Yes in the Plug column indicates a backup*

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 1119 3rd Ave N | 11/8/2018  | Yes   |
| 1921 3rd Ave N | 3/25/2020  | No    |
| 1409 3rd Ave N | 5/22/2020  | No    |
| 1409 3rd Ave N | 5/23/2020  | No    |
| 1409 3rd Ave N | 5/25/2020  | No    |
| 1009 3rd Ave N | 10/18/2022 | No    |
| 1706 3rd Ave S | 10/15/2014 | Yes   |
| 1513 3rd Ave S | 1/2/2015   | No    |
| 1101 3rd Ave S | 2/10/2015  | No    |
| 1210 3rd Ave S | 2/19/2015  | No    |
| 2815 3rd Ave S | 6/8/2016   | No    |
| 2410 3rd Ave S | 10/7/2016  | No    |
| 1825 3rd Ave S | 2/18/2017  | Yes   |
| 520 3rd Ave S  | 7/1/2017   | No    |
| 2122 3rd Ave S | 7/5/2017   | No    |
| 1825 3rd Ave S | 1/6/2018   | Yes   |
| 520 3rd Ave S  | 12/31/2019 | No    |
| 1825 3rd Ave S | 4/9/2021   | No    |
| 716 3rd Ave S  | 12/19/2021 | Yes   |
| 1115 4th Ave S | 1/2/2014   | No    |
| 809 4th Ave S  | 3/11/2016  | Yes   |
| 812 4th Ave S  | 12/1/2020  | No    |
| 1020 5th Ave S | 1/22/2014  | No    |
| 3115 5th Ave S | 3/7/2014   | No    |
| 2004 5th Ave S | 10/18/2016 | Yes   |
| 2010 5th Ave S | 10/20/2016 | No    |
| 1115 5th Ave S | 11/20/2017 | No    |
| 2901 5th Ave S | 1/18/2018  | No    |
| 2004 5th Ave S | 3/11/2018  | Yes   |
| 1511 5th Ave S | 10/15/2019 | No    |
| 1414 5th Ave S | 1/31/2020  | Yes   |
| 1420 5th Ave S | 1/31/2020  | Yes   |
| 1115 5th Ave S | 7/21/2020  | No    |
| 1109 5th Ave S | 1/28/2021  | No    |
| 1109 5th Ave S | 2/1/2021   | No    |
| 1220 5th Ave S | 5/14/2022  | Yes   |
| 1220 5th Ave S | 8/12/2022  | Yes   |
| 1511 5th Ave S | 10/17/2022 | No    |
| 2123 6th Ave S | 1/31/2014  | Yes   |
| 2123 6th Ave S | 9/3/2014   | Yes   |
| 2123 6th Ave S | 9/20/2014  | No    |
| 2123 6th Ave S | 12/28/2015 | Yes   |
| 2123 6th Ave S | 1/3/2016   | No    |

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 413 S 14th St  | 3/16/2021  | Yes   |
| 430 S 14th St  | 4/19/2021  | Yes   |
| 315 S 14th St  | 1/26/2022  | No    |
| 1514 S 14th St | 2/18/2022  | No    |
| 1522 S 14th St | 3/30/2022  | Yes   |
| 713 S 14th St  | 4/15/2022  | No    |
| 413 S 14th St  | 5/24/2022  | Yes   |
| 1514 S 14th St | 10/4/2022  | No    |
| 211 S 14th St  | 12/12/2022 | Yes   |
| 713 S 14th St  | 1/9/2023   | No    |
| 502 S 15th St  | 1/1/2014   | Yes   |
| 720 S 15th St  | 2/15/2014  | Yes   |
| 321 S 15th St  | 3/2/2014   | No    |
| 404 S 15th St  | 3/3/2014   | Yes   |
| 830 S 15th St  | 3/10/2014  | Yes   |
| 720 S 15th St  | 3/23/2014  | No    |
| 612 S 15th St  | 8/20/2014  | No    |
| 720 S 15th St  | 11/26/2014 | No    |
| 404 S 15th St  | 1/31/2015  | No    |
| 720 S 15th St  | 2/4/2015   | Yes   |
| 1310 S 15th St | 5/13/2015  | No    |
| 918 S 15th St  | 10/10/2015 | No    |
| 1400 S 15th St | 10/25/2016 | No    |
| 612 S 15th St  | 11/2/2016  | No    |
| 504 S 15th St  | 2/12/2017  | Yes   |
| 720 S 15th St  | 3/5/2017   | Yes   |
| 504 S 15th St  | 4/7/2017   | Yes   |
| 504 S 15th St  | 4/12/2017  | No    |
| 1511 S 15th St | 10/13/2017 | No    |
| 918 S 15th St  | 12/4/2017  | No    |
| 1220 S 15th St | 6/25/2018  | No    |
| 1311 S 15th St | 7/3/2018   | No    |
| 504 S 15th St  | 10/1/2018  | No    |
| 1515 S 15th St | 10/9/2018  | No    |
| 1400 S 15th St | 11/11/2018 | No    |
| 504 S 15th St  | 6/17/2019  | No    |
| 504 S 15th St  | 8/1/2019   | No    |
| 918 S 15th St  | 9/13/2019  | No    |
| 325 S 15th St  | 4/5/2020   | No    |
| 1600 S 15th St | 11/23/2020 | No    |
| 325 S 15th St  | 11/25/2020 | No    |
| 720 S 15th St  | 11/30/2020 | Yes   |
| 1515 S 15th St | 1/25/2021  | No    |

## **Maintenace Call Log with Dates (2014 to 2023)**

*\*Yes in the Plug column indicates a backup*

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 1014 6th Ave S | 9/14/2016  | No    |
| 2123 6th Ave S | 2/16/2017  | No    |
| 2123 6th Ave S | 2/18/2017  | Yes   |
| 1123 6th Ave S | 11/7/2017  | No    |
| 2004 6th Ave S | 2/28/2018  | No    |
| 1120 6th Ave S | 7/18/2019  | No    |
| 1120 6th Ave S | 9/12/2019  | No    |
| 1111 6th Ave S | 6/2/2020   | No    |
| 905 6th Ave S  | 10/13/2021 | No    |
| 2123 6th Ave S | 5/16/2022  | No    |
| 1015 6th Ave S | 12/26/2022 | No    |
| 1610 7th Ave N | 5/21/2018  | No    |
| 1610 7th Ave N | 11/5/2018  | No    |
| 1610 7th Ave N | 2/25/2019  | No    |
| 2500 7th Ave S | 3/11/2014  | No    |
| 1409 7th Ave S | 3/18/2014  | No    |
| 1409 7th Ave S | 3/18/2014  | No    |
| 917 7th Ave S  | 3/31/2014  | Yes   |
| 1914 7th Ave S | 9/13/2015  | No    |
| 1122 7th Ave S | 12/30/2015 | No    |
| 1914 7th Ave S | 8/23/2016  | No    |
| 1914 7th Ave S | 4/30/2017  | No    |
| 915 7th Ave S  | 11/20/2017 | No    |
| 1420 7th Ave S | 7/10/2018  | No    |
| 1914 7th Ave S | 2/17/2019  | No    |
| 1420 7th Ave S | 7/1/2019   | No    |
| 915 7th Ave S  | 8/5/2019   | No    |
| 1120 7th Ave S | 6/2/2020   | No    |
| 1514 7th Ave S | 11/30/2020 | Yes   |
| 1514 7th Ave S | 12/22/2020 | No    |
| 1420 7th Ave S | 1/4/2021   | No    |
| 1914 7th Ave S | 6/7/2021   | No    |
| 1914 7th Ave S | 7/6/2021   | No    |
| 917 7th Ave S  | 8/16/2022  | Yes   |
| 1524 8th Ave S | 3/13/2014  | Yes   |
| 1310 8th Ave S | 11/4/2015  | No    |
| 1310 8th Ave S | 9/17/2016  | No    |
| 1620 8th Ave S | 10/12/2018 | Yes   |
| 1409 8th Ave S | 5/26/2020  | No    |
| 1815 8th Ave S | 3/11/2021  | Yes   |
| 1713 8th Ave S | 11/5/2021  | No    |
| 1820 9th Ave N | 3/17/2014  | Yes   |
| 1820 9th Ave N | 6/17/2014  | No    |

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 1515 S 15th St | 5/17/2021  | No    |
| 918 S 15th St  | 8/17/2021  | No    |
| 1208 S 15th St | 10/1/2021  | No    |
| 325 S 15th St  | 12/10/2021 | No    |
| 404 S 15th St  | 2/2/2022   | Yes   |
| 1512 S 15th St | 3/25/2022  | No    |
| 1208 S 15th St | 5/12/2022  | No    |
| 1400 S 15th St | 10/5/2022  | No    |
| 404 S 15th St  | 12/1/2022  | No    |
| 816 S 16th St  | 1/14/2014  | Yes   |
| 504 S 16th St  | 1/19/2014  | Yes   |
| 1812 S 16th St | 2/4/2014   | No    |
| 504 S 16th St  | 2/10/2014  | Yes   |
| 304 S 16th St  | 3/14/2014  | No    |
| 1108 S 16th St | 4/20/2014  | Yes   |
| 913 S 16th St  | 8/12/2014  | No    |
| 208 S 16th St  | 9/23/2014  | No    |
| 425 S 16th St  | 3/9/2015   | No    |
| 1812 S 16th St | 1/5/2016   | No    |
| 1812 S 16th St | 1/18/2016  | No    |
| 1611 S 16th St | 11/13/2017 | No    |
| 421 S 16th St  | 1/5/2018   | No    |
| 1611 S 16th St | 1/23/2018  | No    |
| 421 S 16th St  | 3/16/2018  | No    |
| 425 S 16th St  | 12/22/2020 | No    |
| 1108 S 16th St | 2/9/2021   | Yes   |
| 810 S 16th St  | 5/20/2022  | Yes   |
| 1005 S 16th St | 10/5/2022  | No    |
| 915 S 17th St  | 4/29/2014  | No    |
| 915 S 17th St  | 10/8/2014  | No    |
| 405 S 17th St  | 8/1/2016   | No    |
| 708 S 17th St  | 11/28/2016 | No    |
| 303 S 17th St  | 3/28/2017  | No    |
| 328 S 17th St  | 3/13/2018  | Yes   |
| 708 S 17th St  | 2/24/2019  | No    |
| 813 S 17th St  | 9/18/2019  | No    |
| 813 S 17th St  | 3/4/2021   | No    |
| 303 S 17th St  | 7/9/2021   | No    |
| 112 S 17th St  | 9/17/2021  | No    |
| 429 S 17th St  | 2/25/2022  | No    |
| 605 S 17th St  | 3/7/2022   | No    |
| 600 S 18th St  | 2/1/2014   | No    |
| 912 S 18th St  | 2/16/2016  | No    |

## Maintenace Call Log with Dates (2014 to 2023)

\*Yes in the Plug column indicates a backup

| Address            | Date       | Plug? |
|--------------------|------------|-------|
| 1820 9th Ave N     | 9/29/2015  | No    |
| 1820 9th Ave N     | 4/3/2017   | No    |
| 1820 9th Ave N     | 3/21/2018  | Yes   |
| 1820 9th Ave N     | 4/23/2021  | Yes   |
| 1621 9th Ave S     | 4/7/2014   | No    |
| 1023 9th Ave S     | 4/1/2015   | No    |
| 1822 9th Ave S     | 12/8/2016  | No    |
| 1621 9th Ave S     | 1/21/2019  | No    |
| 1621 9th Ave S     | 2/27/2022  | No    |
| 2601 Danforth      | 8/22/2014  | No    |
| 1810 Grand Ave     | 10/20/2014 | No    |
| 1705 Grand Ave     | 3/8/2021   | No    |
| 1705 Grand Ave     | 12/4/2021  | No    |
| 1120 Lake Shore Dr | 2/18/2014  | No    |
| 1807 Lake Shore Dr | 2/19/2014  | No    |
| 730 Lake Shore Dr  | 2/21/2014  | Yes   |
| 1807 Lake Shore Dr | 2/28/2014  | No    |
| 248 Lake Shore Dr  | 3/20/2014  | No    |
| 1204 Lake Shore Dr | 4/9/2014   | No    |
| 2605 Lake Shore Dr | 5/18/2014  | Yes   |
| 1129 Lake Shore Dr | 8/21/2015  | Yes   |
| 1607 Lake Shore Dr | 8/31/2015  | No    |
| 730 Lake Shore Dr  | 2/21/2016  | Yes   |
| 2605 Lake Shore Dr | 4/12/2016  | Yes   |
| 1125 Lake Shore Dr | 5/31/2016  | No    |
| 1209 Lake Shore Dr | 12/9/2016  | No    |
| 1607 Lake Shore Dr | 3/6/2017   | No    |
| 730 Lake Shore Dr  | 6/26/2017  | Yes   |
| 2019 Lake Shore Dr | 7/5/2017   | No    |
| 1607 Lake Shore Dr | 1/5/2018   | No    |
| 2545 Lake Shore Dr | 1/11/2018  | Yes   |
| 2545 Lake Shore Dr | 1/26/2018  | No    |
| 2605 Lake Shore Dr | 1/31/2018  | No    |
| 2605 Lake Shore Dr | 3/28/2019  | Yes   |
| 1709 Lake Shore Dr | 9/3/2019   | No    |
| 1209 Lake Shore Dr | 2/13/2020  | No    |
| 1209 Lake Shore Dr | 3/13/2020  | No    |
| 815 Lake Shore Dr  | 5/6/2020   | Yes   |
| 1125 Lake Shore Dr | 12/10/2020 | Yes   |
| 404 Lake Shore Dr  | 11/28/2022 | No    |
| 1227 Lake Shore Dr | 12/21/2022 | No    |
| 815 Lake Shore Dr  | 1/17/2023  | No    |
| 901 Ludington St   | 1/16/2014  | No    |

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 902 S 18th St  | 3/16/2016  | No    |
| 513 S 18th St  | 2/25/2017  | Yes   |
| 513 S 18th St  | 1/6/2018   | Yes   |
| 600 S 18th St  | 5/14/2018  | No    |
| 513 S 18th St  | 1/20/2019  | Yes   |
| 513 S 18th St  | 1/31/2019  | No    |
| 513 S 18th St  | 4/30/2020  | Yes   |
| 508 S 18th St  | 3/11/2021  | Yes   |
| 402 S 18th St  | 4/19/2021  | No    |
| 402 S 18th St  | 8/5/2021   | No    |
| 500 S 19th St  | 6/11/2014  | No    |
| 500 S 19th St  | 7/26/2014  | No    |
| 716 S 19th St  | 7/27/2014  | No    |
| 615 S 19th St  | 11/4/2014  | No    |
| 524 S 19th St  | 12/30/2014 | Yes   |
| 524 S 19th St  | 1/11/2015  | No    |
| 318 S 19th St  | 3/2/2015   | No    |
| 615 S 19th St  | 12/2/2016  | No    |
| 1106 S 19th St | 9/27/2017  | No    |
| 208 S 19th St  | 12/28/2017 | No    |
| 430 S 19th St  | 9/8/2018   | No    |
| 615 S 19th St  | 12/11/2018 | No    |
| 303 S 19th St  | 6/30/2019  | No    |
| 303 S 19th St  | 8/27/2019  | No    |
| 409 S 19th St  | 1/10/2020  | No    |
| 208 S 19th St  | 3/12/2020  | Yes   |
| 716 S 19th St  | 6/14/2021  | No    |
| 502 S 19th St  | 7/7/2021   | No    |
| 820 S 19th St  | 7/26/2021  | No    |
| 820 S 19th St  | 7/27/2021  | No    |
| 820 S 19th St  | 8/5/2021   | No    |
| 500 S 19th St  | 8/6/2021   | No    |
| 500 S 19th St  | 2/22/2022  | No    |
| 621 S 20th St  | 5/4/2015   | No    |
| 615 S 20th St  | 12/2/2015  | No    |
| 1015 S 20th St | 10/6/2016  | No    |
| 621 S 20th St  | 4/2/2018   | No    |
| 705 S 20th St  | 5/29/2018  | No    |
| 621 S 20th St  | 11/30/2021 | No    |
| 610 S 21St St  | 11/27/2017 | No    |
| 2104 S 21St St | 6/30/2018  | No    |
| 2104 S 21St St | 5/14/2019  | No    |
| 2104 S 21St St | 5/31/2019  | No    |

## **Maintenace Call Log with Dates (2014 to 2023)**

*\*Yes in the Plug column indicates a backup*

| Address           | Date       | Plug? |
|-------------------|------------|-------|
| 1813 Ludington St | 2/5/2014   | No    |
| 901 Ludington St  | 2/25/2014  | No    |
| 1422 Ludington St | 3/14/2014  | No    |
| 1710 Ludington St | 7/7/2014   | No    |
| 1710 Ludington St | 9/4/2014   | No    |
| 600 Ludington St  | 12/26/2014 | No    |
| 1817 Ludington St | 1/6/2015   | No    |
| 1817 Ludington St | 6/2/2015   | No    |
| 2000 Ludington St | 9/29/2015  | No    |
| 1101 Ludington St | 12/14/2015 | No    |
| 1710 Ludington St | 12/14/2015 | No    |
| 1710 Ludington St | 8/16/2016  | No    |
| 1710 Ludington St | 10/18/2016 | No    |
| 1806 Ludington St | 11/5/2016  | No    |
| 1710 Ludington St | 1/6/2017   | No    |
| 1813 Ludington St | 6/8/2018   | No    |
| 1323 Ludington St | 8/22/2018  | No    |
| 2000 Ludington St | 8/28/2019  | Yes   |
| 2635 Ludington St | 9/20/2019  | Yes   |
| 1900 Ludington St | 1/7/2020   | No    |
| 608 Ludington St  | 5/21/2020  | No    |
| 1115 Ludington St | 1/7/2021   | Yes   |
| 2425 Ludington St | 4/23/2021  | No    |
| 2425 Ludington St | 5/28/2021  | No    |
| 2119 Ludington St | 1/12/2022  | Yes   |
| 2119 Ludington St | 11/23/2022 | No    |
| 321 N 10th St     | 3/28/2014  | No    |
| 207 N 11th St     | 5/31/2018  | Yes   |
| 302 N 11th St     | 2/16/2022  | No    |
| 311 N 11th St     | 1/9/2023   | Yes   |
| 323 N 12th St     | 6/14/2015  | Yes   |
| 323 N 12th St     | 2/2/2016   | Yes   |
| 324 N 12th St     | 4/29/2016  | Yes   |
| 315 N 12th St     | 9/14/2018  | No    |
| 315 N 12th St     | 6/1/2020   | No    |
| 324 N 12th St     | 9/22/2022  | No    |
| 225 N 13th St     | 3/9/2015   | Yes   |
| 300 N 13th St     | 10/19/2017 | No    |
| 304 N 13th St     | 4/13/2021  | No    |
| 309 N 14th St     | 2/10/2016  | No    |
| 305 N 14th St     | 5/19/2016  | No    |
| 225 N 14th St     | 4/25/2017  | No    |
| 225 N 14th St     | 5/12/2017  | Yes   |

| Address          | Date       | Plug? |
|------------------|------------|-------|
| 700 S 21St St    | 3/17/2020  | No    |
| 615 S 21St St    | 3/26/2020  | Yes   |
| 700 S 21St St    | 5/5/2020   | No    |
| 700 S 21St St    | 7/14/2020  | No    |
| 2000 S 21St St   | 9/9/2021   | No    |
| 2508 S 22nd St   | 1/3/2014   | No    |
| 2621 S 22nd St   | 3/1/2014   | No    |
| 125 S 22nd St    | 7/6/2014   | No    |
| 231 S 22nd St    | 9/10/2014  | Yes   |
| 115 S 22nd St    | 9/12/2014  | No    |
| 234 S 22nd St    | 11/29/2014 | No    |
| 231 S 22nd St    | 3/18/2016  | Yes   |
| 412 S 22nd St    | 12/26/2016 | No    |
| 234 S 22nd St    | 10/4/2018  | No    |
| 125 S 22nd St    | 6/10/2020  | No    |
| 239 S 22nd St    | 8/13/2020  | No    |
| 123 S 22nd St    | 7/27/2021  | No    |
| 239 S 22nd St    | 11/8/2021  | No    |
| 239 S 22nd St    | 11/29/2021 | No    |
| 239 S 22nd St    | 9/6/2022   | No    |
| 906 S 25th Place | 2/21/2014  | No    |
| 906 S 25th Place | 2/22/2014  | No    |
| 215 S 26th St    | 12/6/2022  | No    |
| 522 S 28th St    | 8/20/2014  | No    |
| 506 S 30th St    | 2/16/2021  | No    |
| 701 S 31St St    | 2/17/2014  | Yes   |
| 512 S 31St St    | 8/5/2016   | Yes   |
| 701 S 31St St    | 12/30/2019 | No    |
| 701 S 31St St    | 3/20/2020  | Yes   |
| 701 S 31St St    | 5/13/2020  | No    |
| 512 S 31St St    | 10/4/2021  | Yes   |
| 512 S 31St St    | 1/2/2022   | Yes   |
| 512 S 31St St    | 2/10/2022  | No    |
| 701 S 31St St    | 3/31/2022  | No    |
| 208 S 4th St     | 2/9/2014   | No    |
| 406 S 4th St     | 10/15/2016 | Yes   |
| 406 S 4th St     | 10/22/2017 | No    |
| 208 S 4th St     | 1/20/2022  | No    |
| 309 S 5th St     | 3/31/2020  | No    |
| 309 S 5th St     | 4/3/2020   | No    |
| 216 S 5th St     | 2/26/2021  | No    |
| 314 S 6th St     | 2/21/2015  | No    |
| 209 S 6th St     | 3/9/2015   | Yes   |

## Maintenace Call Log with Dates (2014 to 2023)

\*Yes in the Plug column indicates a backup

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 309 N 14th St  | 6/26/2018  | No    |
| 309 N 14th St  | 5/7/2020   | No    |
| 225 N 14th St  | 2/23/2022  | No    |
| 200 N 14th St  | 1/13/2023  | No    |
| 323 N 15th St  | 3/21/2014  | Yes   |
| 106 N 15th St  | 9/28/2016  | No    |
| 319 N 15th St  | 12/30/2019 | No    |
| 319 N 15th St  | 7/28/2021  | No    |
| 106 N 15th St  | 9/26/2022  | No    |
| 1615 N 16th St | 3/11/2014  | Yes   |
| 1615 N 16th St | 3/21/2014  | No    |
| 1529 N 16th St | 4/3/2014   | No    |
| 1127 N 16th St | 11/26/2014 | No    |
| 207 N 16th St  | 5/8/2015   | No    |
| 1306 N 16th St | 12/20/2016 | Yes   |
| 1402 N 16th St | 2/2/2017   | Yes   |
| 1515 N 16th St | 2/14/2017  | No    |
| 1402 N 16th St | 1/4/2018   | No    |
| 1115 N 16th St | 1/13/2018  | No    |
| 1215 N 16th St | 3/23/2018  | No    |
| 207 N 16th St  | 4/2/2018   | No    |
| 1624 N 16th St | 4/4/2018   | No    |
| 1402 N 16th St | 11/11/2018 | Yes   |
| 1624 N 16th St | 1/10/2019  | No    |
| 1416 N 16th St | 1/21/2019  | No    |
| 1402 N 16th St | 3/19/2019  | Yes   |
| 1428 N 16th St | 10/30/2019 | No    |
| 1306 N 16th St | 12/21/2019 | No    |
| 1511 N 16th St | 1/4/2020   | Yes   |
| 1306 N 16th St | 2/15/2020  | No    |
| 1115 N 16th St | 3/20/2020  | Yes   |
| 213 N 16th St  | 5/6/2020   | No    |
| 1402 N 16th St | 8/29/2020  | No    |
| 1215 N 16th St | 2/26/2021  | No    |
| 1115 N 16th St | 8/25/2021  | Yes   |
| 1428 N 16th St | 8/26/2021  | No    |
| 302 N 16th St  | 12/1/2021  | No    |
| 1306 N 16th St | 12/10/2021 | No    |
| 1416 N 16th St | 1/24/2022  | No    |
| 1402 N 16th St | 3/4/2022   | No    |
| 1215 N 16th St | 4/19/2022  | No    |
| 1402 N 16th St | 4/19/2022  | No    |
| 1306 N 16th St | 9/13/2022  | No    |

| Address          | Date       | Plug? |
|------------------|------------|-------|
| 414 S 6th St     | 8/1/2019   | No    |
| 209 S 6th St     | 3/13/2020  | No    |
| 327 S 7th St     | 2/25/2014  | Yes   |
| 407 S 7th St     | 9/24/2014  | No    |
| 327 S 7th St     | 10/5/2014  | Yes   |
| 408 S 7th St     | 4/23/2016  | Yes   |
| 412 S 7th St     | 4/23/2016  | Yes   |
| 327 S 7th St     | 10/3/2017  | Yes   |
| 623 S 8th St     | 1/26/2014  | No    |
| 601 S 8th St     | 2/21/2014  | Yes   |
| 405 S 8th St     | 12/23/2014 | No    |
| 214 S 8th St     | 2/16/2015  | No    |
| 428 S 8th St     | 2/27/2015  | No    |
| 210 S 8th St     | 7/2/2015   | No    |
| 405 S 8th St     | 4/23/2016  | Yes   |
| 409 S 8th St     | 4/24/2016  | No    |
| 409 S 8th St     | 4/27/2016  | No    |
| 428 S 8th St     | 11/7/2018  | Yes   |
| 428 S 8th St     | 8/14/2020  | Yes   |
| 405 S 8th St     | 1/18/2021  | No    |
| 428 S 8th St     | 5/8/2022   | Yes   |
| 428 S 8th St     | 7/27/2022  | No    |
| 428 S 8th St     | 7/30/2022  | No    |
| 322 S 9th St     | 4/15/2014  | Yes   |
| 322 S 9th St     | 7/15/2016  | Yes   |
| 324 S 9th St     | 12/29/2017 | Yes   |
| 324 S 9th St     | 2/18/2019  | No    |
| 407 S 9th St     | 3/8/2019   | No    |
| 324 S 9th St     | 4/14/2020  | Yes   |
| 324 S 9th St     | 8/6/2020   | Yes   |
| 324 S 9th St     | 11/6/2020  | Yes   |
| 502 S 9th St     | 3/5/2021   | No    |
| 502 S 9th St     | 3/8/2021   | No    |
| 502 S 9th St     | 7/12/2021  | No    |
| 324 S 9th St     | 2/10/2022  | Yes   |
| 324 S 9th St     | 4/7/2022   | Yes   |
| 410 S 9th St     | 6/15/2022  | No    |
| 409 S Lincoln Rd | 2/14/2017  | No    |
| 225 S Lincoln Rd | 3/7/2018   | No    |
| 225 S Lincoln Rd | 9/26/2018  | No    |
| 501 S Lincoln Rd | 12/27/2018 | No    |
| 325 S Lincoln Rd | 12/15/2020 | No    |
| 325 S Lincoln Rd | 2/15/2021  | No    |

## **Maintenace Call Log with Dates (2014 to 2023)**

*\*Yes in the Plug column indicates a backup*

| <b>Address</b> | <b>Date</b> | <b>Plug?</b> |
|----------------|-------------|--------------|
| 1306 N 16th St | 9/14/2022   | No           |
| 1215 N 16th St | 10/4/2022   | No           |
| 538 N 18th St  | 2/1/2014    | No           |
| 318 N 18th St  | 3/13/2014   | No           |
| 814 N 18th St  | 4/14/2014   | No           |
| 1115 N 18th St | 4/23/2014   | No           |
| 1509 N 18th St | 1/12/2015   | No           |
| 1002 N 18th St | 4/26/2015   | No           |
| 1401 N 18th St | 12/15/2015  | No           |
| 936 N 18th St  | 4/22/2016   | No           |
| 1426 N 18th St | 11/9/2016   | No           |
| 1315 N 18th St | 11/30/2016  | No           |
| 940 N 18th St  | 6/24/2017   | Yes          |
| 940 N 18th St  | 7/20/2018   | No           |
| 936 N 18th St  | 10/23/2018  | Yes          |
| 1329 N 18th St | 12/7/2018   | No           |
| 1307 N 18th St | 5/17/2019   | No           |
| 936 N 18th St  | 6/12/2019   | No           |
| 1507 N 18th St | 7/20/2019   | Yes          |
| 509 N 18th St  | 1/14/2021   | No           |
| 1304 N 19th St | 2/16/2014   | No           |
| 903 N 19th St  | 3/7/2014    | No           |
| 317 N 19th St  | 3/16/2015   | No           |
| 309 N 19th St  | 5/4/2015    | No           |
| 1601 N 19th St | 5/9/2016    | No           |
| 1601 N 19th St | 10/10/2016  | No           |
| 1414 N 19th St | 1/26/2017   | No           |
| 217 N 19th St  | 2/20/2017   | No           |
| 206 N 19th St  | 6/13/2018   | No           |
| 521 N 19th St  | 2/1/2019    | No           |
| 1601 N 19th St | 12/9/2019   | No           |
| 1601 N 19th St | 1/18/2020   | No           |
| 1601 N 19th St | 1/19/2020   | No           |
| 1601 N 19th St | 2/3/2020    | No           |
| 1421 N 19th St | 6/21/2020   | No           |
| 1414 N 19th St | 11/2/2020   | No           |
| 1421 N 19th St | 1/21/2021   | No           |
| 1601 N 19th St | 3/25/2021   | No           |
| 615 N 19th St  | 11/3/2021   | No           |
| 909 N 20th St  | 5/21/2014   | No           |
| 212 N 20th St  | 9/23/2014   | Yes          |
| 212 N 20th St  | 10/26/2014  | No           |
| 803 N 20th St  | 12/29/2014  | No           |

| <b>Address</b>   | <b>Date</b> | <b>Plug?</b> |
|------------------|-------------|--------------|
| 226 S Lincoln Rd | 4/9/2022    | No           |
| 611 S Lincoln Rd | 6/8/2022    | Yes          |
| 830 Sheridan Rd  | 2/14/2014   | No           |
| 1123 Sheridan Rd | 3/23/2014   | No           |
| 1118 Sheridan Rd | 3/24/2014   | Yes          |
| 1104 Sheridan Rd | 8/15/2014   | No           |
| 1300 Sheridan Rd | 2/16/2015   | No           |
| 916 Sheridan Rd  | 2/26/2015   | No           |
| 921 Sheridan Rd  | 3/5/2015    | No           |
| 904 Sheridan Rd  | 3/19/2015   | No           |
| 1216 Sheridan Rd | 3/20/2015   | Yes          |
| 1230 Sheridan Rd | 9/28/2015   | No           |
| 921 Sheridan Rd  | 9/29/2015   | No           |
| 1401 Sheridan Rd | 3/2/2016    | Yes          |
| 1228 Sheridan Rd | 3/8/2016    | No           |
| 1401 Sheridan Rd | 3/9/2016    | No           |
| 816 Sheridan Rd  | 1/17/2017   | No           |
| 1216 Sheridan Rd | 7/28/2017   | Yes          |
| 920 Sheridan Rd  | 1/15/2018   | No           |
| 920 Sheridan Rd  | 4/9/2018    | No           |
| 914 Sheridan Rd  | 9/21/2018   | No           |
| 920 Sheridan Rd  | 11/15/2018  | No           |
| 1228 Sheridan Rd | 11/20/2018  | Yes          |
| 1401 Sheridan Rd | 1/28/2019   | No           |
| 824 Sheridan Rd  | 2/28/2019   | No           |
| 828 Sheridan Rd  | 4/23/2019   | No           |
| 1228 Sheridan Rd | 10/22/2019  | No           |
| 1317 Sheridan Rd | 2/15/2020   | No           |
| 1317 Sheridan Rd | 3/7/2020    | No           |
| 1015 Sheridan Rd | 5/4/2020    | No           |
| 1223 Sheridan Rd | 6/3/2020    | No           |
| 1216 Sheridan Rd | 6/15/2020   | Yes          |
| 1026 Sheridan Rd | 2/19/2021   | No           |
| 1401 Sheridan Rd | 12/13/2021  | No           |
| 919 Sheridan Rd  | 1/2/2022    | Yes          |
| 1228 Sheridan Rd | 1/4/2022    | Yes          |
| 1026 Sheridan Rd | 2/24/2022   | No           |
| 919 Sheridan Rd  | 8/23/2022   | No           |
| 921 Sheridan Rd  | 11/16/2022  | No           |
| 1003 Stephenson  | 2/12/2014   | No           |
| 1010 Stephenson  | 3/9/2014    | No           |
| 202 Stephenson   | 4/10/2014   | No           |
| 1511 Stephenson  | 7/12/2014   | No           |

## **Maintenace Call Log with Dates (2014 to 2023)**

*\*Yes in the Plug column indicates a backup*

| Address        | Date       | Plug? |
|----------------|------------|-------|
| 113 N 20th St  | 4/13/2015  | No    |
| 803 N 20th St  | 7/24/2015  | No    |
| 232 N 20th St  | 12/30/2016 | No    |
| 232 N 20th St  | 5/24/2017  | Yes   |
| 212 N 20th St  | 6/5/2017   | No    |
| 807 N 20th St  | 11/7/2018  | No    |
| 825 N 20th St  | 3/23/2019  | No    |
| 1407 N 20th St | 3/28/2019  | No    |
| 1407 N 20th St | 4/1/2019   | No    |
| 212 N 20th St  | 7/22/2019  | Yes   |
| 1423 N 20th St | 6/2/2020   | No    |
| 1423 N 20th St | 12/10/2020 | No    |
| 825 N 20th St  | 2/18/2021  | No    |
| 941 N 20th St  | 1/5/2022   | No    |
| 232 N 20th St  | 2/9/2022   | No    |
| 803 N 20th St  | 2/23/2022  | Yes   |
| 308 N 20th St  | 10/17/2022 | No    |
| 1605 N 21St St | 3/19/2014  | No    |
| 1605 N 21St St | 3/20/2014  | No    |
| 225 N 21St St  | 8/21/2014  | No    |
| 516 N 21St St  | 12/31/2017 | No    |
| 314 N 21St St  | 12/7/2021  | No    |
| 1304 N 22nd St | 2/19/2014  | No    |
| 1409 N 22nd St | 4/26/2014  | Yes   |
| 1401 N 22nd St | 10/16/2014 | No    |
| 1409 N 22nd St | 11/5/2014  | No    |
| 1401 N 22nd St | 5/19/2016  | No    |
| 1409 N 22nd St | 1/20/2017  | No    |
| 1315 N 22nd St | 5/19/2017  | No    |
| 1401 N 22nd St | 9/19/2018  | No    |
| 1302 N 22nd St | 1/18/2019  | No    |
| 1401 N 22nd St | 11/6/2019  | No    |
| 1325 N 22nd St | 12/3/2019  | No    |
| 1401 N 22nd St | 3/11/2022  | Yes   |
| 1401 N 22nd St | 3/14/2022  | No    |

| Address            | Date       | Plug? |
|--------------------|------------|-------|
| 1327 Stephenson    | 6/22/2015  | No    |
| 1507 Stephenson    | 11/3/2015  | No    |
| 1609 Stephenson    | 8/10/2016  | No    |
| 1609 Stephenson    | 1/26/2017  | No    |
| 1609 Stephenson    | 2/17/2017  | No    |
| 1609 Stephenson    | 2/27/2017  | No    |
| 1030 Stephenson    | 5/8/2017   | No    |
| 956 Stephenson     | 1/29/2019  | No    |
| 1504 Stephenson    | 2/4/2019   | No    |
| 1202 Stephenson    | 5/25/2019  | No    |
| 433 Stephenson     | 9/18/2019  | No    |
| 1412 Stephenson    | 10/21/2019 | No    |
| 433 Stephenson     | 3/17/2020  | No    |
| 1003 Stephenson    | 5/15/2020  | No    |
| 1003 Stephenson    | 6/4/2020   | No    |
| 1103 Stephenson    | 7/17/2020  | No    |
| 1103 Stephenson    | 2/15/2021  | No    |
| 1609 Stephenson    | 2/16/2021  | No    |
| 1116 Stephenson    | 5/12/2021  | No    |
| 1003 Stephenson    | 9/7/2021   | No    |
| 1416 Stephenson    | 3/30/2022  | No    |
| 1609 Stephenson    | 5/5/2022   | No    |
| 1609 Stephenson    | 6/13/2022  | No    |
| 1504 Stephenson    | 9/30/2022  | No    |
| 1504 Stephenson    | 12/13/2022 | No    |
| 1018 Washington    | 2/24/2014  | Yes   |
| 1005 Washington    | 4/6/2014   | No    |
| 1028 Washington    | 12/23/2014 | Yes   |
| 1020 Washington    | 2/16/2015  | No    |
| 917 Washington     | 11/21/2016 | No    |
| 1114 Washington    | 11/25/2016 | No    |
| 1205 Washington    | 4/27/2018  | No    |
| 1205 Washington    | 9/17/2018  | No    |
| 1028 Washington    | 7/29/2019  | No    |
| 1028 Washington    | 4/20/2020  | No    |
| 1020 Washington    | 3/20/2021  | Yes   |
| 1028 Washington    | 1/26/2022  | No    |
| 1115 Washington    | 1/2/2023   | No    |
| 1107 Willow Ck. Rd | 2/25/2016  | No    |

**Appendix B**

Part 4: Water Quality Violations



6/2017 TSS % REMOVAL  
CBOD % REMOVAL  

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2/2017 - TSS % REMOVAL

9/2018 TSS % REMOVAL

10/2018 TSS % REMOVAL

4/2019 TSS % REMOVAL  
CBOD5 % REMOVAL

5/2019 TSS % REM  
CBOD5 % REM

6/2019 TSS % REM  
CBOD5 % REM

10/2019 TSS % REM

4/2020 TSS % REM  
CBOD5 % REM

7/2020 TSS % REM

5/2021 TSS % REM

9/2021 TSS % REM

**Appendix B**

Part 5: Pipe Condition and Quick Rating Summary Table

Pipe Rehabilitation Priorities

| Label | Pipe        | Size (in.) | Material | Length (ft) | Install Year | Street                                  | Consequence of Failure | Probability of Failure | Business Risk | Quick Rating | Justification for Rehabilitation   |
|-------|-------------|------------|----------|-------------|--------------|---|------------------------|------------------------|---------------|--------------|--|
| A1    | S9725-S9582 | 8"         | RCP      | 357         | 1960         | EASEMENT EAST OF LINCOLN ROAD NORTH     | 1                      | 5                      | 5             | 5200         | Cracking; Holes; I/I observed; Connections at PVC-concrete are failing; High probability of failure                                |
| A2    | S9459-S9457 | 8"         | VCP      | 238         | 1927         | EASEMENT - PLAYGROUND OF SCHOOL         | 3                      | 5                      | 15            | 5200         | Root infiltration; Holes; Joint Offsets; Cracking; Deformation; High probability of failure  |
| A3    | S3345-S2987 | 8"         | VCP      | 467         | 1885         | ALLEY EAST OF 16TH STREET SOUTH         | 1                      | 5                      | 5             | 4200         | Joint offsets; Cracking; Holes; Sand infiltration; Cannot cctv entire pipe; High probability of failure; Installed in 1800s        |
| A3    | S3773-S3345 | 8"         | VCP      | 418         | 1885         | ALLEY EAST OF 16TH STREET SOUTH         | 1                      | 5                      | 5             | 4200         | Joint offsets; Cracking; Holes; Sand infiltration; Cannot cctv entire pipe; High probability of failure; Installed in 1800s        |
| A4    | S0276-S3168 | 8"         | VCP      | 450         | 1885         | ALLEY EAST OF 9TH STREET SOUTH          | 1                      | 5                      | 5             | 4200         | Sand infiltration; High probability of failure; Installed in 1800s   |
| A5    | S3084-S3113 | 8"         | RCP      | 264         | 1960         | 6TH AVENUE SOUTH                        | 1                      | 5                      | 5             | 5200         | Hole in pipe; Sand infiltration; Pipe sagging; High probability of failure; One service call in past 10 years                      |
| A5    | S3113-S3048 | 8"         | RCP      | 330         | 1960         | 6TH AVENUE SOUTH                        | 1                      | 5                      | 5             | 5200         | Hole in pipe; Sand infiltration; Pipe sagging; High probability of failure; One service call in past 10 years                      |
| A5    | S3048-S3047 | 8"         | RCP      | 25          | 1960         | 6TH AVENUE SOUTH                        | 1                      | 5                      | 5             | 5200         | Hole in pipe; Sand infiltration; Pipe sagging; High probability of failure; One service call in past 10 years                      |
| A6    | S2890-S2683 | 8"         | VCP      | 380         | 1900         | ALLEY EAST OF 14TH STREET SOUTH         | 1                      | 5                      | 5             | 4200         | Root & sand infiltration; Holes; Cracking; Cannot cctv entire pipe; High probability of failure; 10 service calls in past 10 years |
| A7    | S8167-S8168 | 8"         | RCP      | 241         | 1970         | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 1                      | 5                      | 5             | 4200         | High probability of failure  |
| A7    | S8168-S8169 | 8"         | RCP      | 398         | 1966         | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 1                      | 5                      | 5             | 5200         | High probability of failure  |
| A7    | S8169-S8170 | 8"         | RCP      | 401         | 1966         | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 1                      | 5                      | 5             | 5200         | High probability of failure  |
| A7    | S8170-S8171 | 10"        | RCP      | 342         | 1960         | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 2                      | 5                      | 10            | 5200         | High probability of failure  |
| A7    | S8171-S6392 | 10"        | RCP      | 324         | 1960         | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 2                      | 5                      | 10            | 5200         | High probability of failure  |
| A8    | S2074-S2075 | 8"         | RCP      | 48          | 1992         | EASEMENT EAST OF LINCOLN ROAD SOUTH     | 1                      | 5                      | 5             | 4200         | Cracking; Joint offsets; Cannot cctv entire pipe; High probability of failure  |

|     |             |     |     |       |      |                                     |   |   |    |      |  |
|-----|-------------|-----|-----|-------|------|-------------------------------------|---|---|----|------|--|
| A8  | S2075-S2083 | 8"  | RCP | 341   | 1965 | EASEMENT EAST OF LINCOLN ROAD SOUTH | 1 | 5 | 5  | 5200 | Cracking; Joint offsets; Cannot cctv entire pipe; High probability of failure  |
| A9  | S1736-S1735 | 8"  | RCP | 222   | 1950 | EASEMENT EAST OF 16TH STREET SOUTH  | 1 | 5 | 5  | 5200 | Cracking; Root & sand infiltration; High probability of failure; 3 service calls in past 10 years  |
| A9  | S1735-S5458 | 8"  | RCP | 351   | 1950 | EASEMENT EAST OF 16TH STREET SOUTH  | 1 | 5 | 5  | 5200 | Cracking; Root & sand infiltration; High probability of failure; 3 service calls in past 10 years  |
| A10 | S7642-S7634 | 10" |     | 205.9 | 1960 | EASEMENT EAST OF 16TH STREET SOUTH  | 3 | 4 | 12 | 3200 | Sand infiltration; Cannot cctv entire run pipe; Failing wye;   |
| A10 | S7643-S7642 | 10" |     | 286.9 | 1960 | EASEMENT EAST OF 16TH STREET SOUTH  | 3 | 4 | 12 | 3200 | Sand infiltration; Cannot cctv entire run pipe; Failing wye;   |
| L1  | S5588-S5576 | 20" | VCP | 400   | 1885 | LUDINGTON STREET                    | 2 | 5 | 10 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5648-S5639 | 8"  | VCP | 381   | 1885 | LUDINGTON STREET                    | 4 | 5 | 20 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5639-S5630 | 8"  | VCP | 380   | 1885 | LUDINGTON STREET                    | 4 | 5 | 20 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5630-S5624 | 10" | VCP | 380   | 1885 | LUDINGTON STREET                    | 4 | 5 | 20 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5604-S5597 | 10" | VCP | 391   | 1885 | LUDINGTON STREET                    | 2 | 5 | 10 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5570-S5564 | 20" | VCP | 513   | 1930 | LUDINGTON STREET                    | 5 | 5 | 25 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5655-S5648 | 8"  | VCP | 379   | 1885 | LUDINGTON STREET                    | 4 | 5 | 20 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5666-S5655 | 8"  | VCP | 380   | 1885 | LUDINGTON STREET                    | 3 | 5 | 15 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5676-S5666 | 8"  | VCP | 380   | 1885 | LUDINGTON STREET                    | 3 | 5 | 15 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5683-S5676 | 8"  | VCP | 379   | 1885 | LUDINGTON STREET                    | 3 | 5 | 15 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1  | S5691-S5683 | 8"  | VCP | 341   | 1885 | LUDINGTON STREET                    | 3 | 5 | 15 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |

|    |             |     |     |     |      |                  |   |   |    |      |  |
|----|-------------|-----|-----|-----|------|------------------|---|---|----|------|--|
| L1 | S5706-S5692 | 8"  | VCP | 451 | 1885 | LUDINGTON STREET | 2 | 5 | 10 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5717-S5706 | 8"  | VCP | 214 | 1885 | LUDINGTON STREET | 2 | 5 | 10 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5733-S5721 | 8"  | VCP | 173 | 1885 | LUDINGTON STREET | 1 | 5 | 5  | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5721-S5720 | 8"  | VCP | 163 | 1885 | LUDINGTON STREET | 1 | 5 | 5  | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5720-S5717 | 8"  | VCP | 169 | 1885 | LUDINGTON STREET | 2 | 5 | 10 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5692-S5691 | 8"  | VCP | 14  | 1885 | LUDINGTON STREET | 3 | 5 | 15 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5614-S5604 | 10" | VCP | 378 | 1885 | LUDINGTON STREET | 4 | 5 | 20 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5597-S5588 | 20" | VCP | 399 | 1885 | LUDINGTON STREET | 2 | 5 | 10 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5576-S5570 | 20" | VCP | 487 | 1885 | LUDINGTON STREET | 2 | 5 | 10 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | S5624-S5614 | 10" | VCP | 378 | 1885 | LUDINGTON STREET | 4 | 5 | 20 | 4200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |
| L1 | P5th-S5597  | 6"  | CAS | 68  | 1959 | LUDINGTON STREET | 2 | 5 | 10 | 5200 | Four backups in past 10 years; 27 service calls in past 10 years; High probability of failure; I/I priority area from SSES; Installed in 1800s |

\*Pipes listed above have not been give NASSCO quick ratings; quick ratings reported above are based on sewer age, material, and knowledge of condition

\*Pipes highlighted are in need of rehabilitation due to I&I concerns (on top of structural concerns)

| Pipe Segment Reference/Manhole- Manhole ID* | Street*                                 | Pipe Length* | NASSCO PACP Structural Quick Rating Score* | Pipe Material, if Known | Year Constructed, if Known | Consequence of Failure, per Asset Management Plan, if applicable | Probability of Failure, per Asset Management Plan, if applicable | Types of Structural Defects Found (O&M defects are not CWSRF-eligible) | Justification of Need (required for non-NASSCO structural 4 or 5 rated segments)*  |
|---|---|--------------|--|-------------------------|----------------------------|--|--|--|--|
| S9725-S9582                                 | EASEMENT EAST OF LINCOLN ROAD NORTH     | 357          | 5200                                       | RCP                     | 1960                       | 1  | 5  | See column to the right  | Cracking; Holes; I/I observed; Connections at PVC-concrete are failing; High probability of failure                                |
| S9459-S9457                                 | EASEMENT - PLAYGROUND OF SCHOOL         | 238          | 5200                                       | VCP                     | 1927                       | 3  | 5  | See column to the right  | Root infiltration; Holes; Joint Offsets; Cracking; Deformation; High probability of failure  |
| S3345-S2987                                 | ALLEY EAST OF 16TH STREET SOUTH         | 467          | 4200                                       | VCP                     | 1885                       | 1  | 5  | See column to the right  | Joint offsets; Cracking; Holes; Sand infiltration; Cannot cctv entire pipe; High probability of failure; Installed in 1800s        |
| S3773-S3345                                 | ALLEY EAST OF 16TH STREET SOUTH         | 418          | 4200                                       | VCP                     | 1885                       | 1  | 5  | See column to the right  | Joint offsets; Cracking; Holes; Sand infiltration; Cannot cctv entire pipe; High probability of failure; Installed in 1800s        |
| S0276-S3168                                 | ALLEY EAST OF 9TH STREET SOUTH          | 450          | 4200                                       | VCP                     | 1885                       | 1  | 5  | See column to the right  | Sand infiltration; High probability of failure; Installed in 1800s   |
| S3084-S3113                                 | 6TH AVENUE SOUTH                        | 264          | 5200                                       | RCP                     | 1960                       | 1  | 5  | See column to the right  | Hole in pipe; Sand infiltration; Pipe sagging; High probability of failure; One service call                                       |
| S3113-S3048                                 | 6TH AVENUE SOUTH                        | 330          | 5200                                       | RCP                     | 1960                       | 1  | 5  | See column to the right  | Hole in pipe; Sand infiltration; Pipe sagging; High probability of failure; One service call                                       |
| S3048-S3047                                 | 6TH AVENUE SOUTH                        | 25           | 5200                                       | RCP                     | 1960                       | 1  | 5  | See column to the right  | Hole in pipe; Sand infiltration; Pipe sagging; High probability of failure; One service call                                       |
| S2890-S2683                                 | ALLEY EAST OF 14TH STREET SOUTH         | 380          | 4200                                       | VCP                     | 1900                       | 1  | 5  | See column to the right  | Root & sand infiltration; Holes; Cracking; Cannot cctv entire pipe; High probability of failure; 10 service calls in past 10 years |
| S8167-S8168                                 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 241          | 4200                                       | RCP                     | 1970                       | 1  | 5  | See column to the right  | High probability of failure  |
| S8168-S8169                                 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 398          | 5200                                       | RCP                     | 1966                       | 1  | 5  | See column to the right  | High probability of failure  |
| S8169-S8170                                 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 401          | 5200                                       | RCP                     | 1966                       | 1  | 5  | See column to the right  | High probability of failure  |
| S8170-S8171                                 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 342          | 5200                                       | RCP                     | 1960                       | 2  | 5  | See column to the right  | High probability of failure  |
| S8171-S6392                                 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 324          | 5200                                       | RCP                     | 1960                       | 2  | 5  | See column to the right  | High probability of failure  |

|             |                                     |       |      |     |      |   |   |                         |   |
|-------------|-------------------------------------|-------|------|-----|------|---|---|-------------------------|---|
| S2074-S2075 | EASEMENT EAST OF LINCOLN ROAD SOUTH | 48    | 4200 | RCP | 1992 | 1 | 5 | See column to the right | Cracking; Joint offsets; Cannot cctv entire pipe; High probability of failure                     |
| S2075-S2083 | EASEMENT EAST OF LINCOLN ROAD SOUTH | 341   | 5200 | RCP | 1965 | 1 | 5 | See column to the right | Cracking; Joint offsets; Cannot cctv entire pipe; High probability of failure                     |
| S1736-S1735 | EASEMENT EAST OF 16TH STREET SOUTH  | 222   | 5200 | RCP | 1950 | 1 | 5 | See column to the right | Cracking; Root & sand infiltration; High probability of failure; 3 service calls in past 10 years |
| S1735-S5458 | EASEMENT EAST OF 16TH STREET SOUTH  | 351   | 5200 | RCP | 1950 | 1 | 5 | See column to the right | Cracking; Root & sand infiltration; High probability of failure; 3 service calls in past 10 years |
| S7642-S7634 | EASEMENT EAST OF 16TH STREET SOUTH  | 205.9 | 3200 |     | 1960 | 3 | 4 | See column to the right | Sand infiltration; Cannot cctv entire run pipe; Failing wye;                                      |
| S7643-S7642 | EASEMENT EAST OF 16TH STREET SOUTH  | 286.9 | 3200 |     | 1960 | 3 | 4 | See column to the right | Sand infiltration; Cannot cctv entire run pipe; Failing wye;                                      |
| S5588-S5576 | LUDINGTON STREET                    | 400   | 4200 | VCP | 1885 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5648-S5639 | LUDINGTON STREET                    | 381   | 4200 | VCP | 1885 | 4 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5639-S5630 | LUDINGTON STREET                    | 380   | 4200 | VCP | 1885 | 4 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5630-S5624 | LUDINGTON STREET                    | 380   | 4200 | VCP | 1885 | 4 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5604-S5597 | LUDINGTON STREET                    | 391   | 4200 | VCP | 1885 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5570-S5564 | LUDINGTON STREET                    | 513   | 4200 | VCP | 1930 | 5 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5655-S5648 | LUDINGTON STREET                    | 379   | 4200 | VCP | 1885 | 4 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5666-S5655 | LUDINGTON STREET                    | 380   | 4200 | VCP | 1885 | 3 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5676-S5666 | LUDINGTON STREET                    | 380   | 4200 | VCP | 1885 | 3 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5683-S5676 | LUDINGTON STREET                    | 379   | 4200 | VCP | 1885 | 3 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5691-S5683 | LUDINGTON STREET                    | 341   | 4200 | VCP | 1885 | 3 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5706-S5692 | LUDINGTON STREET                    | 451   | 4200 | VCP | 1885 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5717-S5706 | LUDINGTON STREET                    | 214   | 4200 | VCP | 1885 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5733-S5721 | LUDINGTON STREET                    | 173   | 4200 | VCP | 1885 | 1 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5721-S5720 | LUDINGTON STREET                    | 163   | 4200 | VCP | 1885 | 1 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |
| S5720-S5717 | LUDINGTON STREET                    | 169   | 4200 | VCP | 1885 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of             |

|              |                  |     |      |     |      |   |   |                         |   |
|--------------|------------------|-----|------|-----|------|---|---|-------------------------|---|
| \$5692-S5691 | LUDINGTON STREET | 14  | 4200 | VCP | 1885 | 3 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of |
| \$5614-S5604 | LUDINGTON STREET | 378 | 4200 | VCP | 1885 | 4 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of |
| \$5597-S5588 | LUDINGTON STREET | 399 | 4200 | VCP | 1885 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of |
| \$5576-S5570 | LUDINGTON STREET | 487 | 4200 | VCP | 1885 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of |
| \$5624-S5614 | LUDINGTON STREET | 378 | 4200 | VCP | 1885 | 4 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of |
| P5th-S5597   | LUDINGTON STREET | 68  | 5200 | CAS | 1959 | 2 | 5 | See column to the right | Four backups in past 10 years; 27 service calls in past 10 years; High probability of |

\*Pipes listed above have not been give NASSCO quick ratings; quick ratings reported above are based on sewer age, material, and knowledge of condition

\*Pipes highlighted are in need of rehabilitation due to I&I concerns (on top of structural concerns)



**Appendix B**

Part 6: Manhole Condition and Quick Rating Summary  
Table

Manholes for Rehabilitation

| Priority   | Manhole | Location                            | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |                   |                        |                        |               |                        |                   |                |                |               |   |
|------------|---------|-------------------------------------|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|-------------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|---|
|            |         |                                     |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments     | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification  |
| Priority 1 | S0275   | 8TH STREET SOUTH                    | Lining       | 7.7              | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  | root infiltration | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          |   |
| Priority 1 | S0752   | 25TH AVENUE SOUTH                   | Lining       | 9.88             | 48                         | 1964         | CR                      | CR            | CR                              | Infiltr. Dripper   | None  | Yes                | None                  |                   | 2                      | 2                      | 4             | No                     | 3                 | 2              | 2              | 3200          | ; Wall structural concerns causing groundwater                    |
| Priority 1 | S0754   | 25TH AVENUE SOUTH                   | Lining       | 9.22             | 48                         | 1964         | CR                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S0809   | 22ND STREET SOUTH                   | Lining       | 13.1             | 48                         | 1964         | Brick                   | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 2                      | 2                      | 4             | No                     | 3                 | 2              | 2              | 3200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S0853   | LAKE SHORE DRIVE ALLEY NORTH        | Lining       | 7.16             | 48                         | 1964         |                         | Brick         | Brick                           | Infiltr. Weeper    | None  | Yes                | None                  |                   | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S0938   | 18TH AVENUE SOUTH                   | Lining       | 11.46            | 48                         | 1950         |                         | Brick         | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 5                      | 2                      | 10            | No                     | 2                 | 2              | 3              | 3200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S0947   | 18TH AVENUE SOUTH                   | Lining       | 11.7             | 48                         | 1950         |                         | CN            | CN                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 5                      | 3                      | 15            | No                     | 2                 | 3              | 3              | 3200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S1020   | EASEMENT NORTH OF 23RD AVENUE SOUTH | Lining       | 14.18            | 48                         | 1964         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S10324  | LINCOLN ROAD SOUTH                  | Lining       | 16.64            | 48                         | 1960         |                         | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S10482  | STEPHENSON AVENUE                   | Lining       | 10.3             | 48                         | 1900         |                         | CN            | CN                              | None               | None  | Yes                | None                  | root infiltration | 4                      | 3                      | 12            | No                     | 3                 | 3              | 3              | 3200          | 100 years old; Root infiltration causing groundwater infiltration |
| Priority 1 | S10814  | ALLEY EAST OF 18TH STREET NORTH     | Replacement  | 4.95             | 48                         | 1900         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | No                     | 4                 | 4              | 4              | 4200          | 100 years old   |
| Priority 1 | S10874  | 11TH AVENUE NORTH                   | Lining       | 7.55             | 48                         | 1900         |                         | CN            | CN                              | None               | None  | Yes                | None                  | root infiltration | 1                      | 4                      | 4             | No                     | 4                 | 4              | 4              | 4200          | structural concerns causing groundwater infiltration; Root        |
| Priority 1 | S10960  | 16TH AVENUE NORTH                   | Replacement  | 6.1              | 48                         | 1900         | CN                      | CN            | CN                              | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | No                     | 4                 | 4              | 4              | 4200          | 100 years old   |
| Priority 1 | S11069  | ALLEY EAST OF LINCOLN ROAD NORTH    | Replacement  | 5.57             | 48                         | 1950         | Brick                   | Brick         | Brick                           | None               | None  | No                 | None                  |                   | 1                      | 4                      | 4             | No                     | 4                 | 4              | 4              | 4200          | ; No flow channel   |
| Priority 1 | S11080  | ALLEY WEST OF 20TH STREET NORTH     | Replacement  | 5.25             | 48                         | 1950         | Brick                   | Brick         | Brick                           | None               | None  | No                 | None                  |                   | 1                      | 4                      | 4             | No                     | 4                 | 4              | 4              | 4200          | ; No flow channel   |
| Priority 1 | S11081  | ALLEY WEST OF 20TH STREET NORTH     | Replacement  | 5.78             | 48                         | 1950         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | No                     | 4                 | 4              | 3              | 4200          |   |
| Priority 1 | S11083  | ALLEY WEST OF 20TH STREET NORTH     | Replacement  | 5.76             | 48                         | 1950         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | No                     | 4                 | 4              | 4              | 4200          |   |
| Priority 1 | S11123  | STEPHENSON AVENUE                   | Lining       | 7.73             | 48                         | 1900         |                         | CN            | CN                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | structural concerns causing groundwater infiltration              |
| Priority 1 | S11564  | 48TH STREET NORTH                   | Lining       | 6.7              | 48                         | 1999         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 3              | 3200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S11566  | 19th AVENUE NORTH                   | Lining       | 11.04            | 48                         | 1999         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 3              | 3200          | ; Wall structural concerns causing groundwater infiltration       |

Manholes for Rehabilitation

| Priority   | Manhole | Location                            | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |                   |                        |                        |               |                        |                   |                |                |               |   |
|------------|---------|-------------------------------------|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|-------------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|---|
|            |         |                                     |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments     | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification  |
| Priority 1 | S11567  | 19TH AVENUE NORTH                   | Lining       | 10.43            | 48                         | 1999         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S11571  | 29TH AVENUE NORTH                   | Lining       | 9.69             | 48                         | 1979         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S11574  | 26TH STREET NORTH                   | Lining       | 6.68             | 48                         | 1964         | Brick                   | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 4                      | 2                      | 8             | No                     | 4                 | 2              | 2              | 4200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S11578  | EAST OF WASHINGTON AVENUE           | Replacement  | 6.6              | 48                         | 1900         | Brick                   | Brick         | CN                              | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | No                     | 4                 | 4              | 3              | 4200          | 100 years old   |
| Priority 1 | S11609  | EASEMENT BAY COLLEGE                | Lining       | 5.14             | 36                         | 1969         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S11627  | 18TH AVENUE SOUTH                   | Lining       | 10.66            | 48                         | 1972         |                         | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S11628  | LAKE SHORE DRIVE ALLEY NORTH        | Lining       | 7.9              | 48                         | 1964         | Brick                   | CN            | Brick                           | Infiltr. Gusher    | None  |                    | None                  |                   | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | causing groundwater infiltration; No flow channel                     |
| Priority 1 | S1252   | 22ND PLACE SOUTH                    | Lining       | 6.72             | 48                         | 1998         |                         | CR            | CR                              | Infiltr. S         | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 2                 | 1              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S1265   | 22.5 DRIVE SOUTH                    | Lining       | 7.66             | 48                         | 1998         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 1                      | 1                      | 1             | No                     | 2                 | 1              | 1              | 2200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S1294   | 17TH AVENUE SOUTH                   | Lining       | 7.46             | 48                         | 1953         | CR                      | Brick         | Brick                           | None               | None  | No                 | None                  | root infiltration | 2                      | 3                      | 6             | No                     | 2                 | 4              | 4              | 4200          | ; Root infiltration causing groundwater infiltration; No flow channel |
| Priority 1 | S1299   | 16TH STREET SOUTH                   | Lining       | 7.7              | 48                         | 1953         | CR                      | CR            | Brick                           | None               | None  | No                 | None                  | root infiltration | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Root infiltration causing groundwater infiltration; No flow channel |
| Priority 1 | S1365   | GRAND AVENUE                        | Lining       | 5.46             | 48                         | 1957         |                         | Brick         | Brick                           | None               | None  | No                 | None                  | root infiltration | 1                      | 3                      | 3             | No                     | 3                 | 4              | 3              | 4200          | ; Root infiltration causing groundwater infiltration; No flow channel |
| Priority 1 | S1520   | 15TH STREET SOUTH                   | Lining       | 11.1             | 48                         | 1957         | CN                      | CN            | CN                              | None               | None  | Yes                | None                  |                   | 5                      | 4                      | 20            | No                     | 3                 | 4              | 4              | 4200          |   |
| Priority 1 | S1532   | ALLEY EAST OF 15TH STREET SOUTH     | Replacement  | 4.9              | 48                         | 1950         |                         | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | No                     | 3                 | 4              | 4              | 4200          |   |
| Priority 1 | S1850   | 10TH AVENUE SOUTH                   | Lining       | 11.38            | 48                         | 1950         |                         | CN            | CN                              | None               | None  | Yes                | None                  | Heavy roots       | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Root infiltration causing groundwater infiltration                  |
| Priority 1 | S1884   | 15TH STREET SOUTH                   | Lining       | 11.3             | 48                         | 1950         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  | root infiltration | 3                      | 3                      | 9             | No                     | 4                 | 3              | 2              | 4200          | ; Root infiltration causing groundwater infiltration                  |
| Priority 1 | S1885   | ALLEY EAST OF 15TH STREET SOUTH     | Replacement  | 9.16             | 48                         | 1950         |                         | S             | S                               | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | Yes                    | 3                 | 4              | 4              | 4200          |   |
| Priority 1 | S2075   | EASEMENT EAST OF LINCOLN ROAD SOUTH | Lining       | 9.54             | 48                         | 1967         | Brick                   | Brick         | Brick                           | Infiltr. Runner    | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          | ; Wall structural concerns causing groundwater infiltration           |
| Priority 1 | S2250   | 15TH STREET SOUTH                   | Lining       | 13.1             | 48                         | 1950         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  | root infiltration | 3                      | 3                      | 9             | No                     | 2                 | 3              | 3              | 3200          | ; Root infiltration causing groundwater infiltration                  |

Manholes for Rehabilitation

| Priority   | Manhole | Location                            | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |                         |                        |                        |               |                        |                   |                |                |               |   |
|------------|---------|-------------------------------------|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|-------------------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|---|
|            |         |                                     |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments           | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification  |
| Priority 1 | S2384   | 11TH STREET SOUTH                   | Lining       | 4.78             | 48                         | 1900         |                         | Brick         | Brick                           | None               | None  | Yes                | None                  | root infiltration       | 1                      | 4                      | 4             | No                     | 3                 | 5              | 5              | 5200          | 100 years old; Root infiltration causing groundwater infiltration |
| Priority 1 | S2386   | 10TH STREET SOUTH                   | Replacement  | 4.48             | 48                         | 1900         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 5                 | 4              | 3              | 5200          | 100 years old   |
| Priority 1 | S2585   | EASEMENT TO WWTP                    | Lining       | 14.66            | 48                         | 2008         |                         | CR            | CR                              | Infiltr. Runner    | None  | Yes                | Infiltration Runner   |                         | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | causing groundwater infiltration; Channel is structural concerns  |
| Priority 1 | S2586   | EASEMENT TO WWTP                    | Lining       | 16.86            | 48                         | 2008         |                         | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                         | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S2591   | EASEMENT TO WWTP                    | Lining       | 9.82             | 48                         | 2008         | CR                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                         | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S2695   | 12TH STREET SOUTH                   | Replacement  | 4.8              | 48                         | 1900         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 2                      | 4                      | 8             | No                     | 5                 | 4              | 4              | 5200          | 100 years old   |
| Priority 1 | S2907   | 6TH AVENUE SOUTH                    | Lining       | 9.48             | 48                         | 1900         | Brick                   | Brick         | Brick                           | Infiltr. Weeper    | None  | Yes                | None                  |                         | 2                      | 4                      | 8             | No                     | 4                 | 4              | 4              | 4200          | structural concerns causing groundwater infiltration              |
| Priority 1 | S3165   | 5TH AVENUE SOUTH                    | Lining       | 8.08             | 48                         | 1885         | CR                      | CR            | Brick                           | None               | None  | Yes                | None                  | root infiltration       | 2                      | 3                      | 6             | No                     | 3                 | 2              | 3              | 3200          | 100 years old; Root infiltration causing groundwater infiltration |
| Priority 1 | S3494   | EASEMENT NORTH OF 6TH AVENUE SOUTH  | Lining       | 3.8              | 48                         | 1980         | CR                      | CN            | CR                              | None               | None  | Yes                | None                  | major root infiltration | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Root infiltration causing groundwater infiltration              |
| Priority 1 | S3534   | EASEMENT EAST OF LINCOLN ROAD SOUTH | Lining       | 6.76             | 48                         | 1964         |                         | Brick         | Brick                           | Infiltr. Weeper    | None  | Yes                | None                  |                         | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 1 | S3642   | ALLEY NORTH OF 8TH AVENUE SOUTH     | Replacement  | 4.88             | 48                         | 1900         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 5                 | 4              | 4              | 5200          | 100 years old   |
| Priority 1 | S3737   | 4TH AVENUE SOUTH                    | Replacement  | 5.54             | 48                         | 1900         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 3                 | 4              | 4              | 4200          | 100 years old   |
| Priority 1 | S3893   | 4TH AVENUE SOUTH                    | Replacement  | 5.64             | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 5                 | 4              | 3              | 5200          | 100 years old   |
| Priority 1 | S4220   | 3RD AVENUE SOUTH                    | Replacement  | 8.06             | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 2                      | 4                      | 8             | No                     | 5                 | 4              | 3              | 5200          | 100 years old   |
| Priority 1 | S4326   | 3RD AVENUE SOUTH                    | Replacement  | 5.6              | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 5                 | 4              | 3              | 5200          | 100 years old   |
| Priority 1 | S4353   | 3RD AVENUE SOUTH                    | Replacement  | 7.58             | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 5                 | 5              | 3              | 5200          | 100 years old   |
| Priority 1 | S4547   | ALLEY EAST OF 15TH STREET SOUTH     | Replacement  | 7.1              | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 5                 | 4              | 4              | 5200          | 100 years old   |
| Priority 1 | S4608   | 1ST AVENUE SOUTH                    | Replacement  | 7.1              | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                         | 1                      | 4                      | 4             | No                     | 5                 | 4              | 3              | 5200          | 100 years old   |
| Priority 1 | S4797   | 5TH STREET SOUTH                    | Lining       | 6.78             | 48                         | 1885         | CR                      | Brick         | Brick                           | None               | None  | Yes                | None                  | root infiltration       | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | 100 years old; Root infiltration causing groundwater infiltration |

Manholes for Rehabilitation

| Priority   | Manhole | Location                           | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |                   |                        |                        |               |                        |                   |                |                |               |  |
|------------|---------|------------------------------------|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|-------------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|--|
|            |         |                                    |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments     | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification   |
| Priority 1 | S5902   | LINCOLN ROAD NORTH                 | Lining       | 12.76            | 48                         | 2000         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S6855   | WILLOW CREEK ROAD                  | Lining       | 21.24            | 60                         | 1972         | CR                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 5                      | 2                      | 10            | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S6947   | WILLOW CREEK ROAD                  | Lining       | 21.5             | 60                         | 1972         |                         | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 5                      | 2                      | 10            | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S6950   | WILLOW CREEK ROAD                  | Lining       | 21.52            | 60                         | 1972         | Brick                   | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 5                      | 2                      | 10            | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S6972   | 7TH AVENUE SOUTH                   | Lining       | 6.9              | 48                         | 2001         | CR                      | CR            | CR                              | Infiltr. S         | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7006   | WILLOW CREEK ROAD                  | Lining       | 20.94            | 60                         | 1972         | Brick                   | CR            | CR                              | None               | Infiltr. Runner   | Yes                | None                  |                   | 5                      | 2                      | 10            | No                     | 3                 | 2              | 2              | 3200          | ; Chimney structural concerns causing groundwater infiltration |
| Priority 1 | S7033   | WILLOW CREEK ROAD                  | Lining       | 21.7             | 48                         | 1972         | Brick                   | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 5                      | 2                      | 10            | No                     | 3                 | 2              | 2              | 3200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7044   | 5TH AVENUE SOUTH                   | Lining       | 9.86             | 48                         | 2002         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7056   | 5TH AVENUE SOUTH                   | Lining       | 9.46             | 48                         | 2002         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7082   | 32ND STREET SOUTH                  | Lining       | 7.77             | 48                         | 2002         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7341   | 7TH PLACE                          | Lining       | 5.82             | 48                         | 1997         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7482   | EASEMENT SOUTH OF 5TH AVENUE SOUTH | Lining       | 6.78             | 48                         | 1966         |                         | CR            | CR                              | None               | None  | Yes                | None                  | root infiltration | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Root infiltration causing groundwater infiltration           |
| Priority 1 | S7547   | 3RD AVENUE SOUTH                   | Lining       | 12.06            | 48                         | 1960         |                         | CR            | CR                              | Infiltr. Dripper   | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7554   | 26TH STREET SOUTH                  | Lining       | 11.32            | 48                         | 1960         | CR                      | CR            | CR                              | Infiltr. Dripper   | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7611   | EASEMENT PARKING LOT DCCU          | Replacement  | 5.7              | 48                         | 1930         | CR                      | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | Yes                    | 3                 | 4              | 4              | 4200          | 80 years old   |
| Priority 1 | S7642   | ALLEY NORTH OF 1ST AVENUE SOUTH    | Lining       | 7.05             | 48                         | 1960         | CR                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 3                 | 2              | 2              | 3200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7708   | WWTP                               | Lining       | 19.9             | 48                         | 2008         | CN                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 5                      | 1                      | 5             | No                     | 2                 | 1              | 1              | 2200          | ; Wall structural concerns causing groundwater infiltration    |
| Priority 1 | S7709   | WWTP                               | Lining       | 23.65            | 60                         | 1960         |                         | CR            | CR                              | Infiltr. Runner    | None  | No                 | None                  |                   | 5                      | 4                      | 20            | No                     | 4                 | 4              | 4              | 4200          | causing groundwater infiltration; No flow channel              |
| Priority 1 | S7716   | EASEMENT TO WWTP                   | Lining       | 18.78            | 48                         | 2008         | CR                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |                   | 3                      | 2                      | 6             | No                     | 2                 | 2              | 1              | 2200          | ; Wall structural concerns causing groundwater infiltration    |

Manholes for Rehabilitation

| Priority   | Manhole | Location                               | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |               |                        |                        |               |                        |                   |                |                |               |   |
|------------|---------|--|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|---------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|---|
|            |         |  |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification  |
| Priority 1 | S7717   | EASEMENT TO WWTP                       | Lining       | 17.64            | 48                         | 2008         | CR                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |               | 3                      | 2                      | 6             | No                     | 2                 | 2              | 1              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8146   | 18TH AVENUE SOUTH                      | Lining       | 14.3             | 48                         | 1972         | Brick                   | CR            | CR                              | Infiltr. Dripper   | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8152   | EASEMENT N-S-EAST OF WILLOW CREEK ROAD | Lining       | 7.9              | 48                         | 1962         |                         | Brick         | Brick                           | Infiltr. Dripper   | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8153   | EASEMENT N-S-WEST OF 30TH STREET SOUTH | Lining       | 9.16             | 48                         | 1985         |                         | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8165   | EASEMENT SOUTH OF 8TH AVENUE SOUTH     | Lining       | 8.18             | 48                         | 1966         | Brick                   | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8238   | ALLEY EAST OF 22ND STREET NORTH        | Lining       | 6.02             | 48                         | 1950         | Brick                   | CN            | CN                              | Infiltr. Weeper    | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8252   | ALLEY EAST OF 22ND STREET NORTH        | Lining       | 5                | 48                         | 1950         | Brick                   | Brick         | Brick                           | Infiltr. Weeper    | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8284   | FAIR GROUNDS                           | Replacement  | 4.22             | 48                         | 1940         |                         | Brick         | Brick                           | None               | None  | No                 | None                  |               | 2                      | 4                      | 8             | No                     | 4                 | 4              | 4              | 4200          | 80 years old; No flow channel                               |
| Priority 1 | S8456   | 26TH STREET NORTH                      | Lining       | 6.07             | 48                         | 1964         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |               | 4                      | 2                      | 8             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8461   | 26TH STREET NORTH                      | Lining       | 20.09            | 48                         | 1969         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |               | 4                      | 2                      | 8             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8463   | 26TH STREET NORTH                      | Lining       | 19.68            | 48                         | 1969         |                         | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |               | 4                      | 2                      | 8             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8537   | 26TH STREET NORTH                      | Lining       | 6.01             | 48                         | 1969         |                         | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |               | 4                      | 2                      | 8             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8548   | DANFORTH ROAD                          | Lining       | 19.45            | 48                         | 1969         | CN                      | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |               | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8551   | DANFORTH ROAD                          | Lining       | 15.63            | 48                         | 2000         | CR                      | CR            | CR                              | Infiltr. Dripper   | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8552   | DANFORTH ROAD                          | Lining       | 15.33            | 48                         | 2000         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8553   | DANFORTH ROAD                          | Lining       | 13.08            | 48                         | 2000         | CR                      | CR            | CR                              | Infiltr. Weeper    | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8735   | 27TH AVENUE NORTH                      | Lining       | 10.82            | 48                         | 1979         |                         | CR            | CR                              | Infiltr. Gusher    | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8736   | EASEMENT WEST OF RAILROAD              | Lining       | 12.32            | 48                         | 1979         |                         | CR            | CR                              | Infiltr. Gusher    | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |
| Priority 1 | S8860   | EASEMENT RAILROAD GRADE                | Lining       | 13.08            | 48                         | 1973         | Brick                   | CR            | CR                              | Infiltr. Runner    | None  | Yes                | None                  |               | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration |

Manholes for Rehabilitation

| Priority   | Manhole | Location                                 | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |                   |                        |                        |               |                        |                   |                |                |               |   |
|------------|---------|--|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|-------------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|---|
|            |         |  |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments     | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification  |
| Priority 1 | S8978   | ALLEY NORTH OF LUDINGTON STREET          | Replacement  | 4.96             | 48                         | 1885         |                         | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 5                      | 5             | Yes                    | 5                 | 5              | 5              | 5200          | 100 years old   |
| Priority 1 | S8979   | ALLEY NORTH OF LUDINGTON STREET          | Replacement  | 5.4              | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 5                      | 5             | Yes                    | 5                 | 5              | 5              | 5200          | 100 years old   |
| Priority 1 | S9621   | 2ND AVENUE NORTH                         | Replacement  | 7.2              | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 2                      | 4                      | 8             | Yes                    | 5                 | 4              | 3              | 5200          | 100 years old   |
| Priority 1 | S9947   | 5TH AVENUE NORTH                         | Replacement  | 8.88             | 48                         | 2021         |                         | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 3                      | 4                      | 12            | No                     | 4                 | 4              | 4              | 4200          |   |
| Priority 2 | S0276   | 6TH AVENUE SOUTH                         | Lining       | 6.64             | 36                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          | 100 years old   |
| Priority 2 | S0977   | 18TH AVENUE SOUTH                        | Lining       | 16.2             | 48                         | 1950         |                         | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 5                      | 2                      | 10            | No                     | 2                 | 2              | 2              | 2200          |   |
| Priority 2 | S10032  | 5TH AVENUE NORTH                         | Replacement  | 7.48             | 48                         | 1900         | CN                      | CN            | CN                              | None               | None  | No                 | None                  |                   | 2                      | 3                      | 6             | No                     | 2                 | 3              | 3              | 3200          | 100 years old; No flow channel                                    |
| Priority 2 | S10100  | FAIR GROUNDS                             | Lining       | 7.72             | 48                         | 1964         |                         | CR            | CR                              | None               | None  | Yes                | None                  |                   | 4                      | 3                      | 12            | No                     | 3                 | 3              | 3              | 3200          |   |
| Priority 2 | S10415  | 12TH AVENUE NORTH                        | Lining       | 8.2              | 48                         | 1964         | Brick                   | CR            | CR                              | None               | None  | Yes                | None                  |                   | 4                      | 2                      | 8             | No                     | 3                 | 2              | 2              | 3200          |   |
| Priority 2 | S10417  | 12TH AVENUE NORTH                        | Lining       | 7.15             | 48                         | 1900         |                         | CN            | CN                              | None               | None  | Yes                | None                  |                   | 2                      | 3                      | 6             | No                     | 3                 | 3              | 3              | 3200          | 100 years old   |
| Priority 2 | S10418  | 12TH AVENUE NORTH                        | Lining       | 7.42             | 48                         | 1964         |                         | CN            | CN                              | None               | None  | Yes                | None                  |                   | 4                      | 2                      | 8             | No                     | 2                 | 2              | 2              | 2200          | ; Wall structural concerns causing groundwater infiltration       |
| Priority 2 | S10424  | 12TH AVENUE NORTH                        | Lining       | 8.6              | 48                         | 1964         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |                   | 4                      | 2                      | 8             | No                     | 3                 | 2              | 2              | 3200          |   |
| Priority 2 | S10536  | 12TH AVENUE NORTH                        | Replacement  | 10.7             | 48                         | 1972         | CN                      | CN            | CN                              | None               | None  | Yes                | None                  |                   | 4                      | 4                      | 16            | No                     | 4                 | 4              | 3              | 4200          |   |
| Priority 2 | S11120  | STEPHENSON AVENUE                        | Replacement  | 6.1              | 48                         | 1900         |                         | CN            | CN                              | None               | None  | Yes                | None                  |                   | 1                      | 4                      | 4             | No                     | 3                 | 4              | 4              | 4200          | 100 years old   |
| Priority 2 | S11288  | 16TH AVENUE NORTH                        | Replacement  | 5.85             | 48                         | 1900         | CN                      | CN            | CN                              | None               | None  |                    | None                  |                   | 1                      | 3                      | 3             | No                     | 4                 | 3              | 3              | 4200          | 100 years old; No flow channel                                    |
| Priority 2 | S1548   | ALLEY EAST OF 14TH STREET SOUTH          | Replacement  | 5.86             | 48                         | 1940         |                         | Brick         | Brick                           | None               | None  | Yes                | None                  |                   | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | 80 years old  |
| Priority 2 | S1712   | ALLEY NORTH OF 12TH AVENUE SOUTH         | Lining       | 5.42             | 48                         | 1910         |                         | CN            | CN                              | None               | None  | Yes                | None                  | root infiltration | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | 100 years old; Root infiltration causing groundwater infiltration |
| Priority 2 | S1735   | 11TH AVENUE SOUTH                        | Replacement  | 9.1              | 48                         | 1950         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |                   | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          |   |
| Priority 2 | S1736   | EASEMENT EAST OF SOUTH 16TH STREET SOUTH | Replacement  | 9.4              | 48                         | 1950         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  |                   | 1                      | 3                      | 3             | No                     | 5                 | 3              | 2              | 5200          |   |

Manholes for Rehabilitation

| Priority   | Manhole | Location                            | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |               |                        |                        |               |                        |                   |                |                |               |                      |
|------------|---------|-------------------------------------|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|---------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|----------------------|
|            |         |                                     |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification |
| Priority 2 | S2074   | EASEMENT EAST OF LINCOLN ROAD SOUTH | Replacement  | 10.28            | 48                         | 1992         |                         | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S2083   | 12TH AVENUE SOUTH                   | Replacement  | 13.58            | 48                         | 1965         | Brick                   | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S2377   | 12TH AVENUE SOUTH                   | Replacement  | 9                | 48                         | 1910         |                         | CN            | CN                              | None               | None  | Yes                | None                  |               | 2                      | 3                      | 6             | No                     | 3                 | 3              | 3              | 3200          | 100 years old        |
| Priority 2 | S2683   | ALLEY EAST OF 14TH STREET SOUTH     | Replacement  | 8.36             | 48                         | 1900         |                         | CN            | CN                              | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | 100 years old        |
| Priority 2 | S2890   | 6TH AVENUE SOUTH                    | Replacement  | 7.64             | 48                         | 1900         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 5                 | 3              | 3              | 5200          | 100 years old        |
| Priority 2 | S2897   | 6TH AVENUE SOUTH                    | Replacement  | 4.7              | 48                         | 1900         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 2              | 3              | 3200          | 100 years old        |
| Priority 2 | S3047   | 6TH AVENUE SOUTH                    | Replacement  | 4.28             | 48                         | 1960         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 2              | 3              | 3200          |                      |
| Priority 2 | S3048   | 6TH AVENUE SOUTH                    | Replacement  | 3.94             | 48                         | 1960         | CR                      | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          |                      |
| Priority 2 | S3084   | 21ST STREET SOUTH                   | Replacement  | 4.7              | 48                         | 1960         | CR                      | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S3113   | 6TH AVENUE SOUTH                    | Replacement  | 4.72             | 48                         | 1960         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          |                      |
| Priority 2 | S3168   | 5TH AVENUE SOUTH                    | Lining       | 8.8              | 48                         | 1885         | CR                      | CR            | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | 100 years old        |
| Priority 2 | S3177   | 5TH AVENUE SOUTH                    | Lining       | 9.05             | 36                         | 1885         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          | 100 years old        |
| Priority 2 | S3246   | 5TH AVENUE SOUTH                    | Lining       | 10.78            | 48                         | 1885         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | 100 years old        |
| Priority 2 | S3282   | 5TH AVENUE SOUTH                    | Lining       | 12.34            | 48                         | 1885         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          | 100 years old        |
| Priority 2 | S3283   | 5TH AVENUE SOUTH                    | Lining       | 7.82             | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 2                      | 3                      | 6             | No                     | 2                 | 3              | 3              | 3200          | 100 years old        |
| Priority 2 | S3318   | 5TH AVENUE SOUTH                    | Lining       | 5.86             | 48                         | 1885         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  |               | 2                      | 3                      | 6             | No                     | 3                 | 3              | 2              | 3200          | 100 years old        |
| Priority 2 | S3332   | 5TH AVENUE SOUTH                    | Lining       | 5.24             | 48                         | 1885         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 2                      | 3                      | 6             | No                     | 3                 | 3              | 3              | 3200          | 100 years old        |
| Priority 2 | S3345   | 5TH AVENUE SOUTH                    | Lining       | 4.4              | 0                          | 1885         |                         | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | 100 years old        |
| Priority 2 | S3354   | 5TH AVENUE SOUTH                    | Lining       | 12.74            | 0                          | 1885         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 3                      | 2                      | 6             | No                     | 3                 | 2              | 2              | 3200          | 100 years old        |



Manholes for Rehabilitation

| Priority   | Manhole | Location                        | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |               |                        |                        |               |                        |                   |                |                |               |                                |
|------------|---------|---------------------------------|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|---------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|--------------------------------|
|            |         |                                 |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification           |
| Priority 2 | S3386   | 5TH AVENUE SOUTH                | Lining       | 4.54             | 48                         | 1885         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 4                 | 2              | 3              | 4200          | 100 years old                  |
| Priority 2 | S3398   | 5TH AVENUE SOUTH                | Lining       | 7.12             | 48                         | 1900         |                         | CR            | S                               | None               | None  | No                 | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 3              | 3              | 3200          | 100 years old; No flow channel |
| Priority 2 | S3408   | 5TH AVENUE SOUTH                | Lining       | 11.6             | 48                         | 1985         | CR                      | CN            | CN                              | None               | None  | No                 | None                  |               | 3                      | 3                      | 9             | Yes                    | 3                 | 3              | 3              | 3200          | ; No flow channel              |
| Priority 2 | S3410   | 5TH AVENUE SOUTH                | Lining       | 9.4              | 48                         | 1885         | CR                      | CR            | CN                              | None               | None  | No                 | None                  |               | 3                      | 3                      | 9             | Yes                    | 2                 | 3              | 3              | 3200          | 100 years old; No flow channel |
| Priority 2 | S3421   | 5TH AVENUE SOUTH                | Lining       | 7.9              | 48                         | 1885         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 3                      | 3                      | 9             | No                     | 3                 | 3              | 3              | 3200          | 100 years old                  |
| Priority 2 | S3422   | 5TH AVENUE SOUTH                | Lining       | 5.8              | 48                         | 1885         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 3                      | 3                      | 9             | No                     | 3                 | 3              | 3              | 3200          | 100 years old                  |
| Priority 2 | S3426   | 5TH AVENUE SOUTH                | Lining       | 6.7              | 48                         | 1960         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 3                      | 3                      | 9             | No                     | 3                 | 3              | 3              | 3200          |                                |
| Priority 2 | S3432   | 5TH AVENUE SOUTH                | Lining       | 6.8              | 48                         | 1960         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 3                      | 3                      | 9             | No                     | 3                 | 3              | 3              | 3200          |                                |
| Priority 2 | S3440   | 5TH AVENUE SOUTH                | Lining       | 6.7              | 48                         | 1960         | Brick                   | Brick         | CN                              | None               | None  | No                 | None                  |               | 3                      | 3                      | 9             | Yes                    | 3                 | 3              | 3              | 3200          | ; No flow channel              |
| Priority 2 | S3458   | 5TH AVENUE SOUTH                | Lining       | 6.3              | 48                         | 1960         |                         | CR            | CR                              | None               | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          |                                |
| Priority 2 | S3479   | 5TH AVENUE SOUTH                | Lining       | 7.5              | 48                         | 1960         | CR                      | Brick         | Brick                           | None               | None  | No                 | None                  |               | 1                      | 3                      | 3             | Yes                    | 2                 | 3              | 3              | 3200          | ; No flow channel              |
| Priority 2 | S3489   | 5TH AVENUE SOUTH                | Lining       | 6.42             | 48                         | 1960         | CR                      | Brick         | CN                              | None               | None  | Yes                | None                  |               | 3                      | 3                      | 9             | No                     | 3                 | 3              | 3              | 3200          |                                |
| Priority 2 | S3528   | 5TH AVENUE SOUTH                | Lining       | 10.98            | 48                         | 1885         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 5                 | 3              | 3              | 5200          | 100 years old                  |
| Priority 2 | S4056   | OGDEN AVENUE                    | Replacement  | 4.7              | 48                         | 1885         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          | 100 years old                  |
| Priority 2 | S4294   | 3RD AVENUE SOUTH                | Replacement  | 8.38             | 48                         | 1885         | CR                      | CR            | Brick                           | None               | None  | Yes                | None                  |               | 1                      | 3                      | 3             | No                     | 3                 | 2              | 3              | 3200          | 100 years old                  |
| Priority 2 | S5458   | 12TH AVENUE SOUTH               | Replacement  | 10.66            | 48                         | 1950         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          |                                |
| Priority 2 | S6340   | ALLEY NORTH OF LUDINGTON STREET | Replacement  | 7.9              | 48                         | 1920         | Brick                   | CN            | CN                              | None               | None  | Yes                | None                  |               | 4                      | 3                      | 12            | Yes                    | 2                 | 3              | 3              | 3200          | 100 years old                  |
| Priority 2 | S6392   | 14TH AVENUE NORTH               | Replacement  | 23.2             | 48                         | 1960         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 3                      | 2                      | 6             | No                     | 2                 | 2              | 2              | 2200          |                                |
| Priority 2 | S7494   | LINCOLN ROAD SOUTH              | Lining       | 8.4              | 48                         | 1960         | Brick                   | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          |                                |

Manholes for Rehabilitation

| Priority   | Manhole | Location                                | Rehab Method | Rim to Inv. (ft) | Manholes with Observed I/I |              | Structural & I/I Issues |               | Manholes with Structural Issues |                    | Manholes with City Personnel Concerns & Observations of Failure |                    |                       |               |                        |                        |               |                        |                   |                |                |               |                      |
|------------|---------|---|--------------|------------------|----------------------------|--------------|-------------------------|---------------|---------------------------------|--------------------|---|--------------------|-----------------------|---------------|------------------------|------------------------|---------------|------------------------|-------------------|----------------|----------------|---------------|----------------------|
|            |         |   |              |                  | Wall Diameter              | Install Year | Chimney Material        | Cone Material | Wall Material                   | Wall Infiltr. Obs. | Chimney Infiltr. Obs.   | Channel Installed? | Channel Infiltr. Obs. | Obs. Comments | Consequence of Failure | Probability of Failure | Business Risk | Evidence of Surcharge? | Chimney Condition | Cone Condition | Wall Condition | Quick Rating* | Rehab. Justification |
| Priority 2 | S7759   | 1ST AVENUE NORTH                        | Lining       | 13.6             | 60                         | 1972         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 4                      | 2                      | 8             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8166   | EASEMENT SOUTH OF 8TH AVENUE SOUTH      |              | 6.86             | 48                         | 1966         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 3                 | 2              | 2              | 3200          |                      |
| Priority 2 | S8167   | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | Replacement  | 6.34             | 48                         | 1970         |                         | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8168   | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | Replacement  | 7.82             | 48                         | 1966         |                         | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8169   | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | Replacement  | 9.44             | 48                         | 1966         |                         | CR            | CR                              | None               | None  | Yes                | None                  |               | 1                      | 2                      | 2             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8170   | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | Replacement  | 17.3             | 48                         | 1960         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8171   | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | Replacement  | 19.04            | 48                         | 1960         |                         | CR            | CR                              | None               | None  | Yes                | None                  |               | 2                      | 2                      | 4             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8193   | LINCOLN ROAD SOUTH                      | Lining       | 18.52            | 48                         | 1985         | Brick                   | Brick         | Brick                           | None               | None  | Yes                | None                  |               | 5                      | 3                      | 15            | No                     | 3                 | 3              | 3              | 3200          |                      |
| Priority 2 | S8195   | 18TH AVENUE SOUTH                       | Lining       | 17.88            | 48                         | 1985         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 5                      | 2                      | 10            | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8196   | 18TH AVENUE SOUTH                       | Lining       | 18.2             | 48                         | 1960         | CR                      | CR            | CR                              | None               | None  | Yes                | None                  |               | 5                      | 2                      | 10            | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S8219   | 12TH AVENUE NORTH                       | Lining       | 8.02             | 48                         | 1940         | CR                      | CN            | CN                              | None               | None  | Yes                | None                  |               | 2                      | 3                      | 6             | No                     | 2                 | 3              | 3              | 3200          | 80 years old         |
| Priority 2 | S9582   | 1ST AVENUE NORTH                        | Lining       | 13.4             | 60                         | 1960         |                         | CR            | CR                              | None               | None  | Yes                | None                  |               | 4                      | 2                      | 8             | No                     | 2                 | 2              | 2              | 2200          |                      |
| Priority 2 | S9655   | 2ND AVENUE NORTH                        | Replacement  | 7.98             | 48                         | 1930         |                         | CN            | CN                              | None               | None  | Yes                | None                  |               | 1                      | 4                      | 4             | No                     | 3                 | 4              | 4              | 4200          | 80 years old         |

| Manhole reference/ID* | Street Location*                    | NASSCO MACP Level 2 Structural Rating* | Year Constructed, if Known | Consequence of Failure, per Asset Management Plan, if applicable | Probability of Failure, per Asset Management Plan, if applicable | Types of Structural Defects Found (O&M defects are not eligible) | Justification of need (required for non-NASSCO structural 4 or 5 rated manholes)* |
|-----------------------|-------------------------------------|--|----------------------------|--|--|--|---|
| S0275                 | 8TH STREET SOUTH                    | 3200                                   | 1885                       | 1  | 3  | See column to the right and color coding                         |   |
| S0752                 | 25TH AVENUE SOUTH                   | 3200                                   | 1964                       | 2  | 2  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S0754                 | 25TH AVENUE SOUTH                   | 2200                                   | 1964                       | 2  | 2  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S0809                 | 22ND STREET SOUTH                   | 3200                                   | 1964                       | 2  | 2  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S0853                 | LAKE SHORE DRIVE ALLEY NORTH        | 3200                                   | 1964                       | 1  | 3  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S0938                 | 18TH AVENUE SOUTH                   | 3200                                   | 1950                       | 5  | 2  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S0947                 | 18TH AVENUE SOUTH                   | 3200                                   | 1950                       | 5  | 3  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S1020                 | EASEMENT NORTH OF 23RD AVENUE SOUTH | 2200                                   | 1964                       | 2  | 2  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S10324                | LINCOLN ROAD SOUTH                  | 2200                                   | 1960                       | 3  | 2  | See column to the right and color coding                         | ; Wall structural concerns causing groundwater infiltration                       |
| S10482                | STEPHENSON AVENUE                   | 3200                                   | 1900                       | 4  | 3  | See column to the right and color coding                         | 100 years old; Root infiltration causing groundwater infiltration                 |

|        |                                  |      |      |   |   |  |   |
|--------|----------------------------------|------|------|---|---|--|---|
| S10814 | ALLEY EAST OF 18TH STREET NORTH  | 4200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old   |
| S10874 | 11TH AVENUE NORTH                | 4200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old; Chimney structural concerns causing groundwater infiltration; Root infiltration causing groundwater infiltration |
| S10960 | 16TH AVENUE NORTH                | 4200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old   |
| S11069 | ALLEY EAST OF LINCOLN ROAD NORTH | 4200 | 1950 | 1 | 4 | See column to the right and color coding | ; No flow channel   |
| S11080 | ALLEY WEST OF 20TH STREET NORTH  | 4200 | 1950 | 1 | 4 | See column to the right and color coding | ; No flow channel   |
| S11081 | ALLEY WEST OF 20TH STREET NORTH  | 4200 | 1950 | 1 | 4 | See column to the right and color coding |   |
| S11083 | ALLEY WEST OF 20TH STREET NORTH  | 4200 | 1950 | 1 | 4 | See column to the right and color coding |   |
| S11123 | STEPHENSON AVENUE                | 2200 | 1900 | 1 | 2 | See column to the right and color coding | 100 years old; Wall structural concerns causing groundwater infiltration  |
| S11564 | 48TH STREET NORTH                | 3200 | 1999 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration   |
| S11566 | 19th AVENUE NORTH                | 3200 | 1999 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration   |

|        |                              |      |      |   |   |  |  |
|--------|------------------------------|------|------|---|---|--|--|
| S11567 | 19TH AVENUE NORTH            | 2200 | 1999 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S11571 | 29TH AVENUE NORTH            | 2200 | 1979 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S11574 | 26TH STREET NORTH            | 4200 | 1964 | 4 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S11578 | EAST OF WASHINGTON AVENUE    | 4200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S11609 | EASEMENT BAY COLLEGE         | 2200 | 1969 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S11627 | 18TH AVENUE SOUTH            | 2200 | 1972 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S11628 | LAKE SHORE DRIVE ALLEY NORTH | 3200 | 1964 | 1 | 3 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration; No flow channel |
| S1252  | 22ND PLACE SOUTH             | 2200 | 1998 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S1265  | 22.5 DRIVE SOUTH             | 2200 | 1998 | 1 | 1 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S1294  | 17TH AVENUE SOUTH            | 4200 | 1953 | 2 | 3 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration; No flow channel        |
| S1299  | 16TH STREET SOUTH            | 2200 | 1953 | 2 | 2 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration; No flow channel        |
| S1365  | GRAND AVENUE                 | 4200 | 1957 | 1 | 3 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration; No flow channel        |
| S1520  | 15TH STREET SOUTH            | 4200 | 1957 | 5 | 4 | See column to the right and color coding |  |

|       |                                     |      |      |   |   |  |  |
|-------|-------------------------------------|------|------|---|---|--|--|
| S1532 | ALLEY EAST OF 15TH STREET SOUTH     | 4200 | 1950 | 1 | 4 | See column to the right and color coding |  |
| S1850 | 10TH AVENUE SOUTH                   | 2200 | 1950 | 3 | 2 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration   |
| S1884 | 15TH STREET SOUTH                   | 4200 | 1950 | 3 | 3 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration   |
| S1885 | ALLEY EAST OF 15TH STREET SOUTH     | 4200 | 1950 | 1 | 4 | See column to the right and color coding |  |
| S2075 | EASEMENT EAST OF LINCOLN ROAD SOUTH | 3200 | 1967 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration  |
| S2250 | 15TH STREET SOUTH                   | 3200 | 1950 | 3 | 3 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration   |
| S2384 | 11TH STREET SOUTH                   | 5200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old; Root infiltration causing groundwater infiltration  |
| S2386 | 10TH STREET SOUTH                   | 5200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S2585 | EASEMENT TO WWTP                    | 2200 | 2008 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration; Channel is structural concerns causing groundwater infiltration |
| S2586 | EASEMENT TO WWTP                    | 2200 | 2008 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration  |
| S2591 | EASEMENT TO WWTP                    | 2200 | 2008 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration  |
| S2695 | 12TH STREET SOUTH                   | 5200 | 1900 | 2 | 4 | See column to the right and color coding | 100 years old  |

|       |                                     |      |      |   |   |  |  |
|-------|-------------------------------------|------|------|---|---|--|--|
| S2907 | 6TH AVENUE SOUTH                    | 4200 | 1900 | 2 | 4 | See column to the right and color coding | 100 years old; Wall structural concerns causing groundwater infiltration |
| S3165 | 5TH AVENUE SOUTH                    | 3200 | 1885 | 2 | 3 | See column to the right and color coding | 100 years old; Root infiltration causing groundwater infiltration        |
| S3494 | EASEMENT NORTH OF 6TH AVENUE SOUTH  | 2200 | 1980 | 1 | 2 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration                     |
| S3534 | EASEMENT EAST OF LINCOLN ROAD SOUTH | 2200 | 1964 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration              |
| S3642 | ALLEY NORTH OF 8TH AVENUE SOUTH     | 5200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S3737 | 4TH AVENUE SOUTH                    | 4200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S3893 | 4TH AVENUE SOUTH                    | 5200 | 1885 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S4220 | 3RD AVENUE SOUTH                    | 5200 | 1885 | 2 | 4 | See column to the right and color coding | 100 years old  |
| S4326 | 3RD AVENUE SOUTH                    | 5200 | 1885 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S4353 | 3RD AVENUE SOUTH                    | 5200 | 1885 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S4547 | ALLEY EAST OF 15TH STREET SOUTH     | 5200 | 1885 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S4608 | 1ST AVENUE SOUTH                    | 5200 | 1885 | 1 | 4 | See column to the right and color coding | 100 years old  |
| S4797 | 5TH STREET SOUTH                    | 3200 | 1885 | 1 | 3 | See column to the right and color coding | 100 years old; Root infiltration causing groundwater infiltration        |

|       |                                    |      |      |   |   |  |  |
|-------|------------------------------------|------|------|---|---|--|--|
| S5902 | LINCOLN ROAD NORTH                 | 2200 | 2000 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S6855 | WILLOW CREEK ROAD                  | 2200 | 1972 | 5 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S6947 | WILLOW CREEK ROAD                  | 2200 | 1972 | 5 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S6950 | WILLOW CREEK ROAD                  | 2200 | 1972 | 5 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S6972 | 7TH AVENUE SOUTH                   | 2200 | 2001 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S7006 | WILLOW CREEK ROAD                  | 3200 | 1972 | 5 | 2 | See column to the right and color coding | ; Chimney structural concerns causing groundwater infiltration |
| S7033 | WILLOW CREEK ROAD                  | 3200 | 1972 | 5 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S7044 | 5TH AVENUE SOUTH                   | 2200 | 2002 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S7056 | 5TH AVENUE SOUTH                   | 2200 | 2002 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S7082 | 32ND STREET SOUTH                  | 2200 | 2002 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S7341 | 7TH PLACE                          | 2200 | 1997 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration    |
| S7482 | EASEMENT SOUTH OF 5TH AVENUE SOUTH | 2200 | 1966 | 1 | 2 | See column to the right and color coding | ; Root infiltration causing groundwater infiltration           |



|       |  |      |      |   |   |  |  |
|-------|--|------|------|---|---|--|--|
| S7547 | 3RD AVENUE SOUTH                       | 2200 | 1960 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S7554 | 26TH STREET SOUTH                      | 2200 | 1960 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S7611 | EASEMENT PARKING LOT DCCU              | 4200 | 1930 | 1 | 4 | See column to the right and color coding | 80 years old   |
| S7642 | ALLEY NORTH OF 1ST AVENUE SOUTH        | 3200 | 1960 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S7708 | WWTP                                   | 2200 | 2008 | 5 | 1 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S7709 | WWTP                                   | 4200 | 1960 | 5 | 4 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration; No flow channel |
| S7716 | EASEMENT TO WWTP                       | 2200 | 2008 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S7717 | EASEMENT TO WWTP                       | 2200 | 2008 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S8146 | 18TH AVENUE SOUTH                      | 3200 | 1972 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S8152 | EASEMENT N-S-EAST OF WILLOW CREEK ROAD | 2200 | 1962 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |
| S8153 | EASEMENT N-S-WEST OF 30TH STREET SOUTH | 2200 | 1985 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration                  |

|       |                                    |      |      |   |   |  |   |
|-------|------------------------------------|------|------|---|---|--|---|
| S8165 | EASEMENT SOUTH OF 8TH AVENUE SOUTH | 3200 | 1966 | 1 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8238 | ALLEY EAST OF 22ND STREET NORTH    | 3200 | 1950 | 1 | 3 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8252 | ALLEY EAST OF 22ND STREET NORTH    | 3200 | 1950 | 1 | 3 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8284 | FAIR GROUNDS                       | 4200 | 1940 | 2 | 4 | See column to the right and color coding | 80 years old; No flow channel                               |
| S8456 | 26TH STREET NORTH                  | 2200 | 1964 | 4 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8461 | 26TH STREET NORTH                  | 2200 | 1969 | 4 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8463 | 26TH STREET NORTH                  | 2200 | 1969 | 4 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8537 | 26TH STREET NORTH                  | 2200 | 1969 | 4 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8548 | DANFORTH ROAD                      | 2200 | 1969 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8551 | DANFORTH ROAD                      | 2200 | 2000 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8552 | DANFORTH ROAD                      | 2200 | 2000 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8553 | DANFORTH ROAD                      | 2200 | 2000 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |

|        |                                 |      |      |   |   |  |   |
|--------|---------------------------------|------|------|---|---|--|---|
| S8735  | 27TH AVENUE NORTH               | 2200 | 1979 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8736  | EASEMENT WEST OF RAILROAD       | 2200 | 1979 | 2 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8860  | EASEMENT RAILROAD GRADE         | 2200 | 1973 | 3 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration |
| S8978  | ALLEY NORTH OF LUDINGTON STREET | 5200 | 1885 | 1 | 5 | See column to the right and color coding | 100 years old   |
| S8979  | ALLEY NORTH OF LUDINGTON STREET | 5200 | 1885 | 1 | 5 | See column to the right and color coding | 100 years old   |
| S9621  | 2ND AVENUE NORTH                | 5200 | 1885 | 2 | 4 | See column to the right and color coding | 100 years old   |
| S9947  | 5TH AVENUE NORTH                | 4200 | 2021 | 3 | 4 | See column to the right and color coding |   |
| S0276  | 6TH AVENUE SOUTH                | 3200 | 1885 | 1 | 2 | See column to the right and color coding | 100 years old   |
| S0977  | 18TH AVENUE SOUTH               | 2200 | 1950 | 5 | 2 | See column to the right and color coding |   |
| S10032 | 5TH AVENUE NORTH                | 3200 | 1900 | 2 | 3 | See column to the right and color coding | 100 years old; No flow channel                              |
| S10100 | FAIR GROUNDS                    | 3200 | 1964 | 4 | 3 | See column to the right and color coding |   |
| S10415 | 12TH AVENUE NORTH               | 3200 | 1964 | 4 | 2 | See column to the right and color coding |   |
| S10417 | 12TH AVENUE NORTH               | 3200 | 1900 | 2 | 3 | See column to the right and color coding | 100 years old   |

|        |  |      |      |   |   |  |   |
|--------|--|------|------|---|---|--|---|
| S10418 | 12TH AVENUE NORTH                        | 2200 | 1964 | 4 | 2 | See column to the right and color coding | ; Wall structural concerns causing groundwater infiltration       |
| S10424 | 12TH AVENUE NORTH                        | 3200 | 1964 | 4 | 2 | See column to the right and color coding |   |
| S10536 | 12TH AVENUE NORTH                        | 4200 | 1972 | 4 | 4 | See column to the right and color coding |   |
| S11120 | STEPHENSON AVENUE                        | 4200 | 1900 | 1 | 4 | See column to the right and color coding | 100 years old   |
| S11288 | 16TH AVENUE NORTH                        | 4200 | 1900 | 1 | 3 | See column to the right and color coding | 100 years old; No flow channel                                    |
| S1548  | ALLEY EAST OF 14TH STREET SOUTH          | 3200 | 1940 | 1 | 3 | See column to the right and color coding | 80 years old  |
| S1712  | ALLEY NORTH OF 12TH AVENUE SOUTH         | 2200 | 1910 | 1 | 2 | See column to the right and color coding | 100 years old; Root infiltration causing groundwater infiltration |
| S1735  | 11TH AVENUE SOUTH                        | 2200 | 1950 | 1 | 2 | See column to the right and color coding |   |
| S1736  | EASEMENT EAST OF SOUTH 16TH STREET SOUTH | 5200 | 1950 | 1 | 3 | See column to the right and color coding |   |
| S2074  | EASEMENT EAST OF LINCOLN ROAD SOUTH      | 2200 | 1992 | 1 | 2 | See column to the right and color coding |   |
| S2083  | 12TH AVENUE SOUTH                        | 2200 | 1965 | 1 | 2 | See column to the right and color coding |   |

|       |                                 |      |      |   |   |  |               |
|-------|---------------------------------|------|------|---|---|--|---------------|
| S2377 | 12TH AVENUE SOUTH               | 3200 | 1910 | 2 | 3 | See column to the right and color coding | 100 years old |
| S2683 | ALLEY EAST OF 14TH STREET SOUTH | 3200 | 1900 | 1 | 3 | See column to the right and color coding | 100 years old |
| S2890 | 6TH AVENUE SOUTH                | 5200 | 1900 | 1 | 3 | See column to the right and color coding | 100 years old |
| S2897 | 6TH AVENUE SOUTH                | 3200 | 1900 | 1 | 3 | See column to the right and color coding | 100 years old |
| S3047 | 6TH AVENUE SOUTH                | 3200 | 1960 | 1 | 3 | See column to the right and color coding |               |
| S3048 | 6TH AVENUE SOUTH                | 3200 | 1960 | 1 | 3 | See column to the right and color coding |               |
| S3084 | 21ST STREET SOUTH               | 2200 | 1960 | 1 | 2 | See column to the right and color coding |               |
| S3113 | 6TH AVENUE SOUTH                | 3200 | 1960 | 1 | 2 | See column to the right and color coding |               |
| S3168 | 5TH AVENUE SOUTH                | 2200 | 1885 | 1 | 2 | See column to the right and color coding | 100 years old |
| S3177 | 5TH AVENUE SOUTH                | 3200 | 1885 | 1 | 2 | See column to the right and color coding | 100 years old |
| S3246 | 5TH AVENUE SOUTH                | 2200 | 1885 | 2 | 2 | See column to the right and color coding | 100 years old |
| S3282 | 5TH AVENUE SOUTH                | 2200 | 1885 | 2 | 2 | See column to the right and color coding | 100 years old |
| S3283 | 5TH AVENUE SOUTH                | 3200 | 1885 | 2 | 3 | See column to the right and color coding | 100 years old |
| S3318 | 5TH AVENUE SOUTH                | 3200 | 1885 | 2 | 3 | See column to the right and color coding | 100 years old |
| S3332 | 5TH AVENUE SOUTH                | 3200 | 1885 | 2 | 3 | See column to the right and color coding | 100 years old |
| S3345 | 5TH AVENUE SOUTH                | 3200 | 1885 | 1 | 3 | See column to the right and color coding | 100 years old |
| S3354 | 5TH AVENUE SOUTH                | 3200 | 1885 | 3 | 2 | See column to the right and color coding | 100 years old |

|       |                                 |      |      |   |   |  |                                |
|-------|---------------------------------|------|------|---|---|--|--------------------------------|
| S3386 | 5TH AVENUE SOUTH                | 4200 | 1885 | 1 | 3 | See column to the right and color coding | 100 years old                  |
| S3398 | 5TH AVENUE SOUTH                | 3200 | 1900 | 1 | 3 | See column to the right and color coding | 100 years old; No flow channel |
| S3408 | 5TH AVENUE SOUTH                | 3200 | 1985 | 3 | 3 | See column to the right and color coding | ; No flow channel              |
| S3410 | 5TH AVENUE SOUTH                | 3200 | 1885 | 3 | 3 | See column to the right and color coding | 100 years old; No flow channel |
| S3421 | 5TH AVENUE SOUTH                | 3200 | 1885 | 3 | 3 | See column to the right and color coding | 100 years old                  |
| S3422 | 5TH AVENUE SOUTH                | 3200 | 1885 | 3 | 3 | See column to the right and color coding | 100 years old                  |
| S3426 | 5TH AVENUE SOUTH                | 3200 | 1960 | 3 | 3 | See column to the right and color coding |                                |
| S3432 | 5TH AVENUE SOUTH                | 3200 | 1960 | 3 | 3 | See column to the right and color coding |                                |
| S3440 | 5TH AVENUE SOUTH                | 3200 | 1960 | 3 | 3 | See column to the right and color coding | ; No flow channel              |
| S3458 | 5TH AVENUE SOUTH                | 2200 | 1960 | 2 | 2 | See column to the right and color coding |                                |
| S3479 | 5TH AVENUE SOUTH                | 3200 | 1960 | 1 | 3 | See column to the right and color coding | ; No flow channel              |
| S3489 | 5TH AVENUE SOUTH                | 3200 | 1960 | 3 | 3 | See column to the right and color coding |                                |
| S3528 | 5TH AVENUE SOUTH                | 5200 | 1885 | 1 | 3 | See column to the right and color coding | 100 years old                  |
| S4056 | OGDEN AVENUE                    | 2200 | 1885 | 1 | 2 | See column to the right and color coding | 100 years old                  |
| S4294 | 3RD AVENUE SOUTH                | 3200 | 1885 | 1 | 3 | See column to the right and color coding | 100 years old                  |
| S5458 | 12TH AVENUE SOUTH               | 3200 | 1950 | 1 | 2 | See column to the right and color coding |                                |
| S6340 | ALLEY NORTH OF LUDINGTON STREET | 3200 | 1920 | 4 | 3 | See column to the right and color coding | 100 years old                  |

|       |   |      |      |   |   |  |  |
|-------|---|------|------|---|---|--|--|
| S6392 | 14TH AVENUE NORTH                       | 2200 | 1960 | 3 | 2 | See column to the right and color coding |  |
| S7494 | LINCOLN ROAD SOUTH                      | 3200 | 1960 | 1 | 2 | See column to the right and color coding |  |
| S7759 | 1ST AVENUE NORTH                        | 2200 | 1972 | 4 | 2 | See column to the right and color coding |  |
| S8166 | EASEMENT SOUTH OF 8TH AVENUE SOUTH      | 3200 | 1966 | 1 | 2 | See column to the right and color coding |  |
| S8167 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 2200 | 1970 | 1 | 2 | See column to the right and color coding |  |
| S8168 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 2200 | 1966 | 1 | 2 | See column to the right and color coding |  |
| S8169 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 2200 | 1966 | 1 | 2 | See column to the right and color coding |  |
| S8170 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 2200 | 1960 | 2 | 2 | See column to the right and color coding |  |
| S8171 | EASEMENT N-S-WEST OF LINCOLN ROAD SOUTH | 2200 | 1960 | 2 | 2 | See column to the right and color coding |  |
| S8193 | LINCOLN ROAD SOUTH                      | 3200 | 1985 | 5 | 3 | See column to the right and color coding |  |
| S8195 | 18TH AVENUE SOUTH                       | 2200 | 1985 | 5 | 2 | See column to the right and color coding |  |

|       |                   |      |      |   |   |  |              |
|-------|-------------------|------|------|---|---|--|--------------|
| S8196 | 18TH AVENUE SOUTH | 2200 | 1960 | 5 | 2 | See column to the right and color coding |              |
| S8219 | 12TH AVENUE NORTH | 3200 | 1940 | 2 | 3 | See column to the right and color coding | 80 years old |
| S9582 | 1ST AVENUE NORTH  | 2200 | 1960 | 4 | 2 | See column to the right and color coding |              |
| S9655 | 2ND AVENUE NORTH  | 4200 | 1930 | 1 | 4 | See column to the right and color coding | 80 years old |

|                            |                                       |                                 |   |
|----------------------------|---------------------------------------|---------------------------------|---|
| Manholes with Observed I/I | Manholes with Structural & I/I Issues | Manholes with Structural Issues | Manholes with City Personnel Concerns & Observations of Failure |
|----------------------------|---------------------------------------|---------------------------------|---|




*\*Manholes only had level 1 assessment; Level 2 Quick Rating was determined based on inspection with visual or zoom camea inspection data, documented historical*



## **Appendix B**

### Part 7: CCTV Supporting Data

|  |                     |                    |                      |                     |                  |
|--|---------------------|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>                                       | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |                     | S7112              | S1705                | 03-21-2022          | 11:48 AM         |
| <b>Surveyor</b>                                    | <b>Street</b>       |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS MT  | 1201 11th Ave South |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
| 8  | Clay Tile           |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>                                    |                     |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in on south 12th street going towards 13th. |                     |                    |                      | Heavy Cleaning      | 337.2            |

|   | Ftg.  | Code    | Description          | Position | Severity  | Comment   |
|---|-------|---------|----------------------|----------|-----------|---|
|   | 3.0   | AP      | Access Point - Other |          |           |   |
|   | 4.9   | R       | Roots                | 7 to 9   | 3         |   |
|   | 18.7  | R       | Roots                | 1 to 4   | 3         |   |
|   | 49.0  | JO      | Joint Offset         | 3 to 8   | 2         |   |
|  | 49.4  | C       | Crack                | 7 to 11  | 2         |   |
|   | 49.9  | C       | Crack                | 4 to 5   | 2         |   |
|   | 51.6  | L       | Lateral              | 7 to 10  |           |   |
|   | 58.2  | C       | Crack                | 7 to 9   | 2         |   |
|   | 61.7  | L       | Lateral              | 2 to 4   |           | 1201 11th Ave South Lateral.                                    |
|   | 61.9  | C       | Crack                | 2 to 5   | 2         |   |
|   | 67.9  | C       | Crack                | 8 to 9   | 2         |   |
|   | 84.1  | GO      | General Observation  | 7 to 9   |           | Small bump in pipe with crack at the center.                    |
|   | 92.7  | C       | Crack                | 8 to 10  | 2         |   |
|   | 95.1  | C       | Crack                | 1 to 3   | 2         |   |
|   | 103.2 | JO      | Joint Offset         | 9 to 12  | 2         |   |
|   | 111.2 | L       | Lateral              | 1 to 4   |           |   |
|   | 111.2 | C       | Crack                | 8 to 11  | 2         |   |
|   | 119.3 | H       | Hole                 | 7 to 11  | 4         | Large hole with section of pipe missing.                        |
|   | 121.0 | L       | Lateral              | 8 to 11  |           |   |
|   | 121.7 | H       | Hole                 | 4 to 6   | 4         |   |
|   | 121.8 | H       | Hole                 | 4 to 8   | 4         | Hole from previous incident runs the entire bottom of the pipe. |
|   | 161.8 | L       | Lateral              | 2 to 5   |           |   |
| 163.3   | L     | Lateral | 8 to 11              |          |           |   |
| 208.8   | L     | Lateral | 1 to 4               |          |           |   |
| 286.9   | L     | Lateral | 1 to 4               |          |           |   |
| 307.7   | L     | Lateral | 1 to 4               |          |           |   |
| 311.7   | L     | Lateral | 1 to 5               |          | Abandoned |   |
| 322.4   | L     | Lateral | 7 to 10              |          |           |   |
| 337.2   | MH    | Manhole |                      |          |           |   |

|  |                     |                    |                      |                     |                  |
|--|---------------------|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>                                       | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |                     | S7112              | S1705                | 03-21-2022          | 11:48 AM         |
| <b>Surveyor</b>                                    | <b>Street</b>       |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS MT  | 1201 11th Ave South |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
| 8  | Clay Tile           |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>                                    |                     |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in on south 12th street going towards 13th. |                     |                    |                      | Heavy Cleaning      | 337.2            |



AP - Access Point - Other @ 3.0 ft.



R - Roots @ 4.9 ft.



R - Roots @ 18.7 ft.



JO - Joint Offset @ 49.0 ft.



C - Crack @ 49.4 ft.



C - Crack @ 49.9 ft.



L - Lateral @ 51.6 ft.

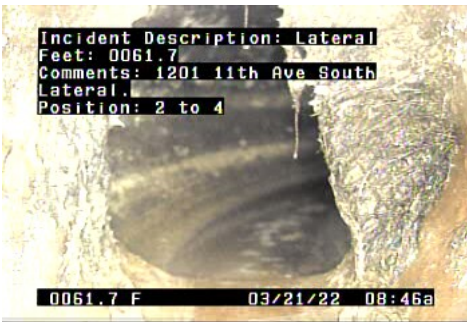


C - Crack @ 58.2 ft.



L - Lateral @ 61.7 ft. 1201 11th Ave South Lateral.

|  |                     |                    |                      |                |             |
|--|---------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>                                       | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|  |                     | S7112              | S1705                | 03-21-2022     | 11:48 AM    |
| <b>Surveyor</b>                                    | <b>Street</b>       |                    | <b>City</b>          | <b>Weather</b> |             |
| JS MT  | 1201 11th Ave South |                    |                      | Dry            |             |
| <b>Size</b>  | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
| 8  | Clay Tile           |                    | Routine Assessment   |                |             |
| <b>Comments</b>                                    | <b>Pre-Cleaning</b> | <b>TV Length</b>   |                      |                |             |
| Camera in on south 12th street going towards 13th. | Heavy Cleaning      | 337.2              |                      |                |             |



C - Crack @ 61.9 ft.



C - Crack @ 67.9 ft.



GO - General Observation @ 84.1 ft. Small bump in pipe with crack at the center.



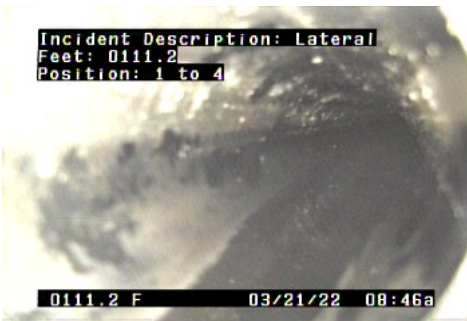
C - Crack @ 92.7 ft.



C - Crack @ 95.1 ft.



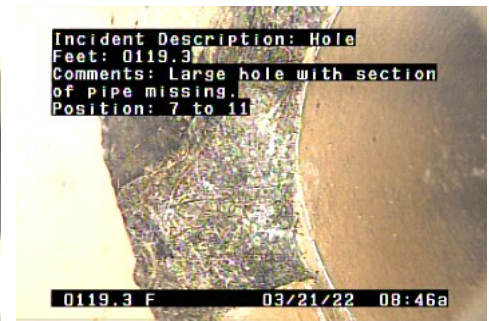
JO - Joint Offset @ 103.2 ft.



L - Lateral @ 111.2 ft.



C - Crack @ 111.2 ft.



H - Hole @ 119.3 ft. Large hole with section of pipe missing.

|                 |                     |                    |                      |                |             |
|-----------------|---------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>    | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|                 |                     | S7112              | S1705                | 03-21-2022     | 11:48 AM    |
| <b>Surveyor</b> | <b>Street</b>       |                    | <b>City</b>          | <b>Weather</b> |             |
| JS MT           | 1201 11th Ave South |                    |                      | Dry            |             |
| <b>Size</b>     | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
| 8               | Clay Tile           |                    | Routine Assessment   |                |             |

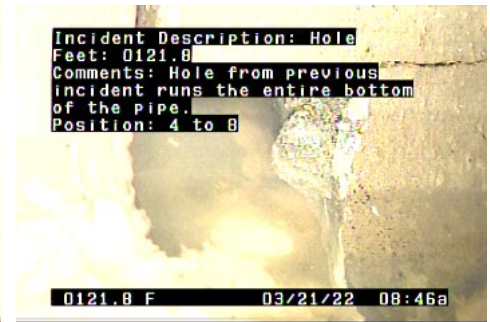
|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>                                    | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in on south 12th street going towards 13th. | Heavy Cleaning      | 337.2            |



L - Lateral @ 121.0 ft.



H - Hole @ 121.7 ft.



H - Hole @ 121.8 ft. Hole from previous incident runs the entire bottom of the pipe.



L - Lateral @ 161.8 ft.



L - Lateral @ 163.3 ft.



L - Lateral @ 208.8 ft.



L - Lateral @ 286.9 ft.

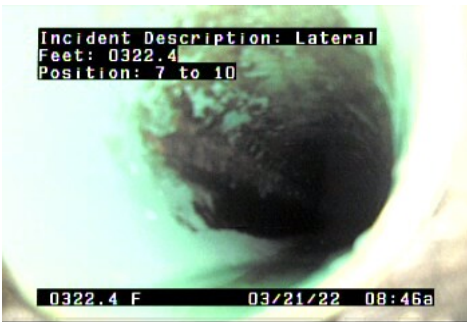


L - Lateral @ 307.7 ft.



L - Lateral @ 311.7 ft. Abandoned

|  |                     |                    |                      |                     |                  |
|--|---------------------|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>                                       | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |                     | S7112              | S1705                | 03-21-2022          | 11:48 AM         |
| <b>Surveyor</b>                                    | <b>Street</b>       |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS MT  | 1201 11th Ave South |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
| 8  | Clay Tile           |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>                                    |                     |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in on south 12th street going towards 13th. |                     |                    |                      | Heavy Cleaning      | 337.2            |



L - Lateral @ 322.4 ft.



MH - Manhole @ 337.2 ft.

Owner: [ ] Customer: [ ] Upstream MH: S7112 Downstream MH: S1705 Date: 03-21-2022 Time: 11:48 AM

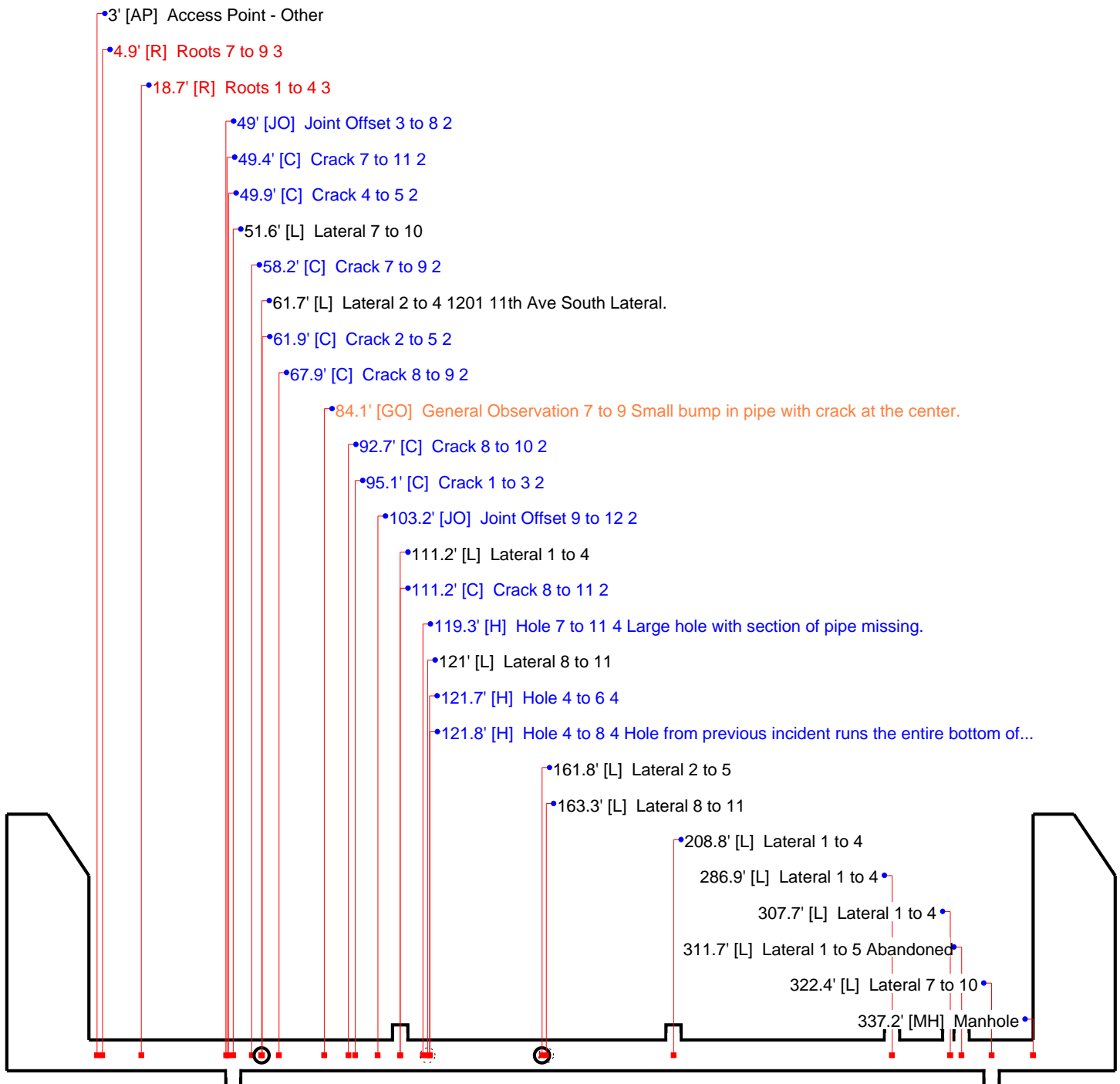
Surveyor: JS MT Street: 1201 11th Ave South City: [ ] Weather: Dry

Size: 8 Material: Clay Tile Sewer Use: [ ] Purpose: Routine Assessment Length: [ ]

Comments: Camera in on south 12th street going towards 13th. Pre-Cleaning: Heavy Cleaning TV Length: 337.2

| Ftg.  | Code | Description          | Position | Severity | Comment   |
|-------|------|----------------------|----------|----------|---|
| 3.0   | AP   | Access Point - Other |          |          |   |
| 4.9   | R    | Roots                | 7 to 9   | 3        |   |
| 18.7  | R    | Roots                | 1 to 4   | 3        |   |
| 49.0  | JO   | Joint Offset         | 3 to 8   | 2        |   |
| 49.4  | C    | Crack                | 7 to 11  | 2        |   |
| 49.9  | C    | Crack                | 4 to 5   | 2        |   |
| 51.6  | L    | Lateral              | 7 to 10  |          |   |
| 58.2  | C    | Crack                | 7 to 9   | 2        |   |
| 61.7  | L    | Lateral              | 2 to 4   |          | 1201 11th Ave South Lateral.                                    |
| 61.9  | C    | Crack                | 2 to 5   | 2        |   |
| 67.9  | C    | Crack                | 8 to 9   | 2        |   |
| 84.1  | GO   | General Observation  | 7 to 9   |          | Small bump in pipe with crack at the center.                    |
| 92.7  | C    | Crack                | 8 to 10  | 2        |   |
| 95.1  | C    | Crack                | 1 to 3   | 2        |   |
| 103.2 | JO   | Joint Offset         | 9 to 12  | 2        |   |
| 111.2 | L    | Lateral              | 1 to 4   |          |   |
| 111.2 | C    | Crack                | 8 to 11  | 2        |   |
| 119.3 | H    | Hole                 | 7 to 11  | 4        | Large hole with section of pipe missing.                        |
| 121.0 | L    | Lateral              | 8 to 11  |          |   |
| 121.7 | H    | Hole                 | 4 to 6   | 4        |   |
| 121.8 | H    | Hole                 | 4 to 8   | 4        | Hole from previous incident runs the entire bottom of the pipe. |
| 161.8 | L    | Lateral              | 2 to 5   |          |   |
| 163.3 | L    | Lateral              | 8 to 11  |          |   |
| 208.8 | L    | Lateral              | 1 to 4   |          |   |
| 286.9 | L    | Lateral              | 1 to 4   |          |   |
| 307.7 | L    | Lateral              | 1 to 4   |          |   |
| 311.7 | L    | Lateral              | 1 to 5   |          | Abandoned   |
| 322.4 | L    | Lateral              | 7 to 10  |          |   |
| 337.2 | MH   | Manhole              |          |          |   |

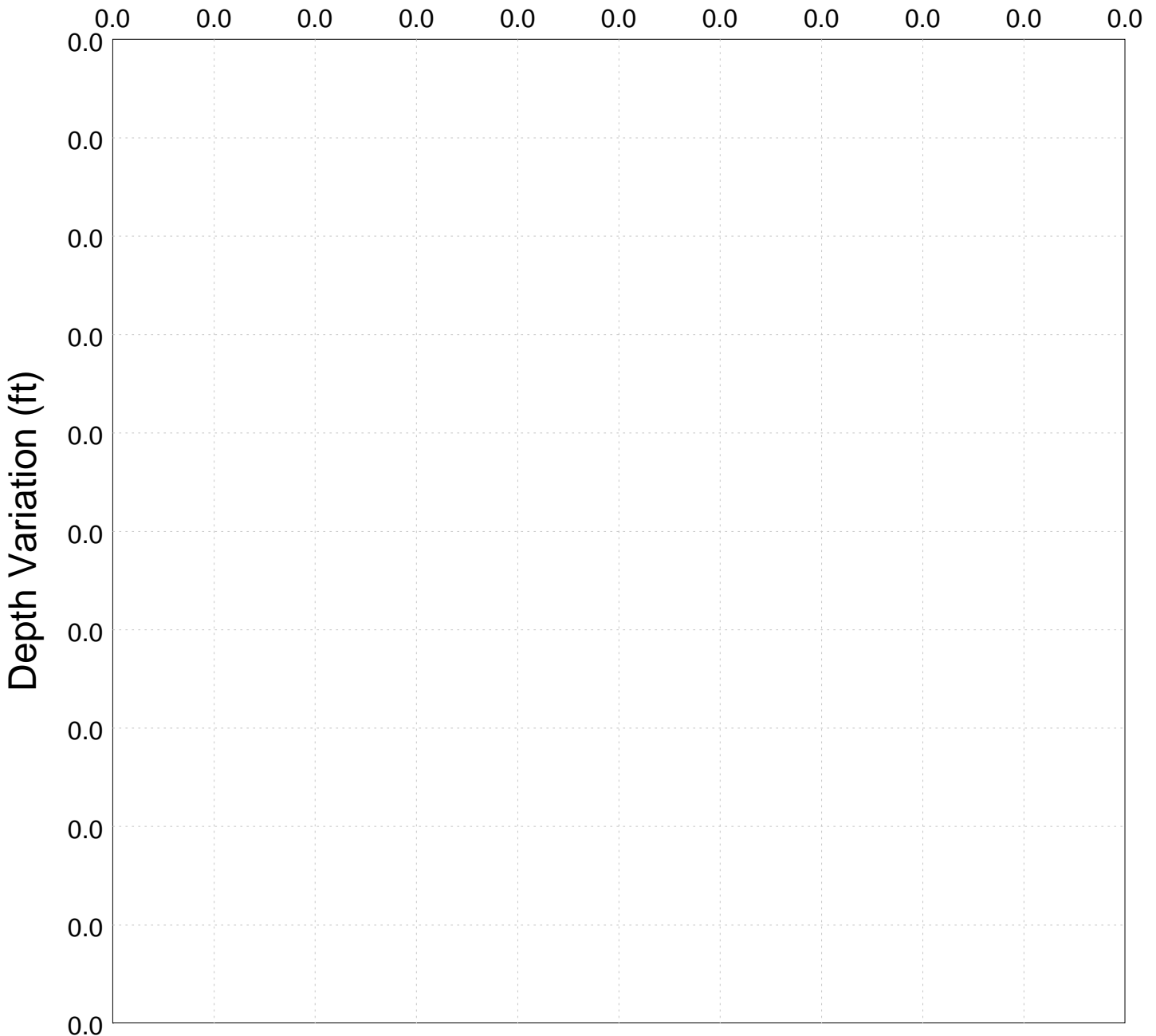
|  |                     |                    |                      |                     |                  |
|--|---------------------|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>                                       | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |                     | S7112              | S1705                | 03-21-2022          | 11:48 AM         |
| <b>Surveyor</b>                                    | <b>Street</b>       |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS MT  | 1201 11th Ave South |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
| 8  | Clay Tile           |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>                                    |                     |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in on south 12th street going towards 13th. |                     |                    |                      | Heavy Cleaning      | 337.2            |








|  |                     |                    |                      |                     |                  |
|--|---------------------|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>                                       | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |                     | S7112              | S1705                | 03-21-2022          | 11:48 AM         |
| <b>Surveyor</b>                                    | <b>Street</b>       |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS MT  | 1201 11th Ave South |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
| 8  | Clay Tile           |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>                                    |                     |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in on south 12th street going towards 13th. |                     |                    |                      | Heavy Cleaning      | 337.2            |

**Distance (ft)**



|                 |                   |                    |                      |                |             |
|-----------------|-------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|                 |                   | S7578              | S7643                | 08-25-2021     | 9:43 AM     |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |             |
| JS JG           | South 25th Street |                    |                      | Dry            |             |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
|                 |                   |                    | Routine Assessment   |                |             |

|   |                     |                  |
|---|---------------------|------------------|
| <b>Comments</b>   | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | Heavy Cleaning      | 361.8            |

|  | Ftg.  | Code | Description          | Position | Severity | Comment  |
|--|-------|------|----------------------|----------|----------|--|
|    | 0.0   | AP   | Access Point - Other |          |          |  |
|    | 26.1  | GO   | General Observation  | 4 to 8   |          | Sand in pipe.                                  |
|  | 41.1  | C    | Crack                | 7 to 9   | 2        |  |
|  | 47.2  | C    | Crack                | 8 to 10  | 2        |  |
|  | 60.7  | I    | Infiltration         | 2 to 4   | 3        |  |
|  | 65.2  | C    | Crack                | 8 to 9   | 2        |  |
|  | 74.4  | C    | Crack                | 9 to 11  | 2        |  |
|  | 77.5  | C    | Crack                | 9 to 10  | 2        |  |
|  | 107.6 | C    | Crack                | 8 to 10  | 2        |  |
|  | 128.7 | C    | Crack                | 8 to 10  | 2        |  |
|  | 131.7 | C    | Crack                | 8 to 10  | 2        |  |
|  | 152.7 | C    | Crack                | 7 to 9   | 2        |  |
|  | 200.7 | C    | Crack                | 7 to 9   | 2        |  |
|  | 215.0 | JO   | Joint Offset         | 4 to 9   | 2        |  |
|  | 229.3 | JO   | Joint Offset         | 4 to 8   | 2        |  |
|  | 233.8 | I    | Infiltration         | 7 to 9   | 3        | Water entering through a crack next to a seam. |
|  | 248.8 | C    | Crack                | 7 to 9   | 2        |  |
|  | 251.7 | C    | Crack                | 8 to 10  | 2        |  |
|  | 255.0 | C    | Crack                | 8 to 9   | 2        |  |
|  | 274.8 | L    | Lateral              | 8 to 10  |          |  |
|  | 277.8 | L    | Lateral              | 2 to 4   |          | Abandoned.                                     |
|  | 317.0 | L    | Lateral              | 8 to 10  |          | Abandoned.                                     |
|  | 320.1 | L    | Lateral              | 1 to 4   |          | Abandoned.                                     |
|  | 324.2 | C    | Crack                | 8 to 10  | 2        |  |
|  | 336.7 | R    | Roots                | 2 to 4   | 3        |  |
|  | 338.3 | C    | Crack                | 1 to 4   | 2        | Large root entering through pipe.              |
|  | 359.9 | C    | Crack                | 6 to 6   | 2        |  |
|  | 361.8 | MH   | Manhole              |          |          | S7578  |

|                 |                   |                    |                      |               |             |
|-----------------|-------------------|--------------------|----------------------|---------------|-------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>   | <b>Time</b> |
|                 |                   | S7578              | S7643                | 08-25-2021    | 9:43 AM     |
| <b>Surveyor</b> | <b>Street</b>     | <b>City</b>        | <b>Weather</b>       |               |             |
| JS JG           | South 25th Street |                    | Dry                  |               |             |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b> |             |
|                 |                   |                    | Routine Assessment   |               |             |

|   |                     |                  |
|---|---------------------|------------------|
| <b>Comments</b>   | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | Heavy Cleaning      | 361.8            |



AP - Access Point - Other @ 0.0 ft.



GO - General Observation @ 26.1 ft.  
Sand in pipe.



C - Crack @ 41.1 ft.



C - Crack @ 47.2 ft.



I - Infiltration @ 60.7 ft.



C - Crack @ 65.2 ft.



C - Crack @ 74.4 ft.



C - Crack @ 77.5 ft.



C - Crack @ 107.6 ft.

|                          |                                    |                             |                                      |                           |                        |
|--------------------------|------------------------------------|-----------------------------|--------------------------------------|---------------------------|------------------------|
| <b>Owner</b>             | <b>Customer</b>                    | <b>Upstream MH</b><br>S7578 | <b>Downstream MH</b><br>S7643        | <b>Date</b><br>08-25-2021 | <b>Time</b><br>9:43 AM |
| <b>Surveyor</b><br>JS JG | <b>Street</b><br>South 25th Street |                             | <b>City</b>                          | <b>Weather</b><br>Dry     |                        |
| <b>Size</b>              | <b>Material</b>                    | <b>Sewer Use</b>            | <b>Purpose</b><br>Routine Assessment |                           | <b>Length</b>          |

|  |                                       |                           |
|--|---------------------------------------|---------------------------|
| <b>Comments</b><br>Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | <b>Pre-Cleaning</b><br>Heavy Cleaning | <b>TV Length</b><br>361.8 |
|--|---------------------------------------|---------------------------|



C - Crack @ 128.7 ft.



C - Crack @ 131.7 ft.



C - Crack @ 152.7 ft.



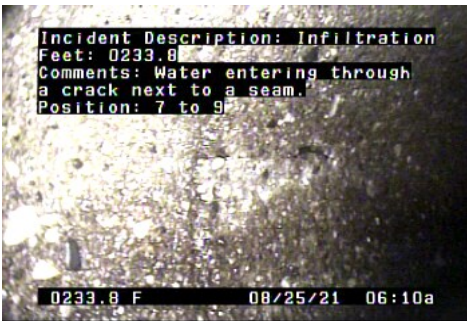
C - Crack @ 200.7 ft.



JO - Joint Offset @ 215.0 ft.



JO - Joint Offset @ 229.3 ft.



I - Infiltration @ 233.8 ft. Water entering through a crack next to a seam.



C - Crack @ 248.8 ft.



C - Crack @ 251.7 ft.

|                          |                                    |                             |                                      |                           |                        |
|--------------------------|------------------------------------|-----------------------------|--------------------------------------|---------------------------|------------------------|
| <b>Owner</b>             | <b>Customer</b>                    | <b>Upstream MH</b><br>S7578 | <b>Downstream MH</b><br>S7643        | <b>Date</b><br>08-25-2021 | <b>Time</b><br>9:43 AM |
| <b>Surveyor</b><br>JS JG | <b>Street</b><br>South 25th Street |                             | <b>City</b>                          | <b>Weather</b><br>Dry     |                        |
| <b>Size</b>              | <b>Material</b>                    | <b>Sewer Use</b>            | <b>Purpose</b><br>Routine Assessment |                           | <b>Length</b>          |

|  |                                       |                           |
|--|---------------------------------------|---------------------------|
| <b>Comments</b><br>Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | <b>Pre-Cleaning</b><br>Heavy Cleaning | <b>TV Length</b><br>361.8 |
|--|---------------------------------------|---------------------------|



C - Crack @ 255.0 ft.



L - Lateral @ 274.8 ft.



L - Lateral @ 277.8 ft. Abandoned.



L - Lateral @ 317.0 ft. Abandoned.



L - Lateral @ 320.1 ft. Abandoned.



C - Crack @ 324.2 ft.



R - Roots @ 336.7 ft.



C - Crack @ 338.3 ft. Large root entering through pipe.



C - Crack @ 359.9 ft.

|              |                 |                    |                      |             |             |
|--------------|-----------------|--------------------|----------------------|-------------|-------------|
| <b>Owner</b> | <b>Customer</b> | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b> | <b>Time</b> |
|              |                 | S7578              | S7643                | 08-25-2021  | 9:43 AM     |

|                 |                   |             |                |
|-----------------|-------------------|-------------|----------------|
| <b>Surveyor</b> | <b>Street</b>     | <b>City</b> | <b>Weather</b> |
| JS JG           | South 25th Street |             | Dry            |

|             |                 |                  |                    |               |
|-------------|-----------------|------------------|--------------------|---------------|
| <b>Size</b> | <b>Material</b> | <b>Sewer Use</b> | <b>Purpose</b>     | <b>Length</b> |
|             |                 |                  | Routine Assessment |               |

|   |                     |                  |
|---|---------------------|------------------|
| <b>Comments</b>   | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | Heavy Cleaning      | 361.8            |



MH - Manhole @ 361.8 ft. S7578

|              |                 |                    |                      |             |             |
|--------------|-----------------|--------------------|----------------------|-------------|-------------|
| <b>Owner</b> | <b>Customer</b> | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b> | <b>Time</b> |
|              |                 | S7578              | S7643                | 08-25-2021  | 9:43 AM     |

|                 |                   |             |                |
|-----------------|-------------------|-------------|----------------|
| <b>Surveyor</b> | <b>Street</b>     | <b>City</b> | <b>Weather</b> |
| JS JG           | South 25th Street |             | Dry            |

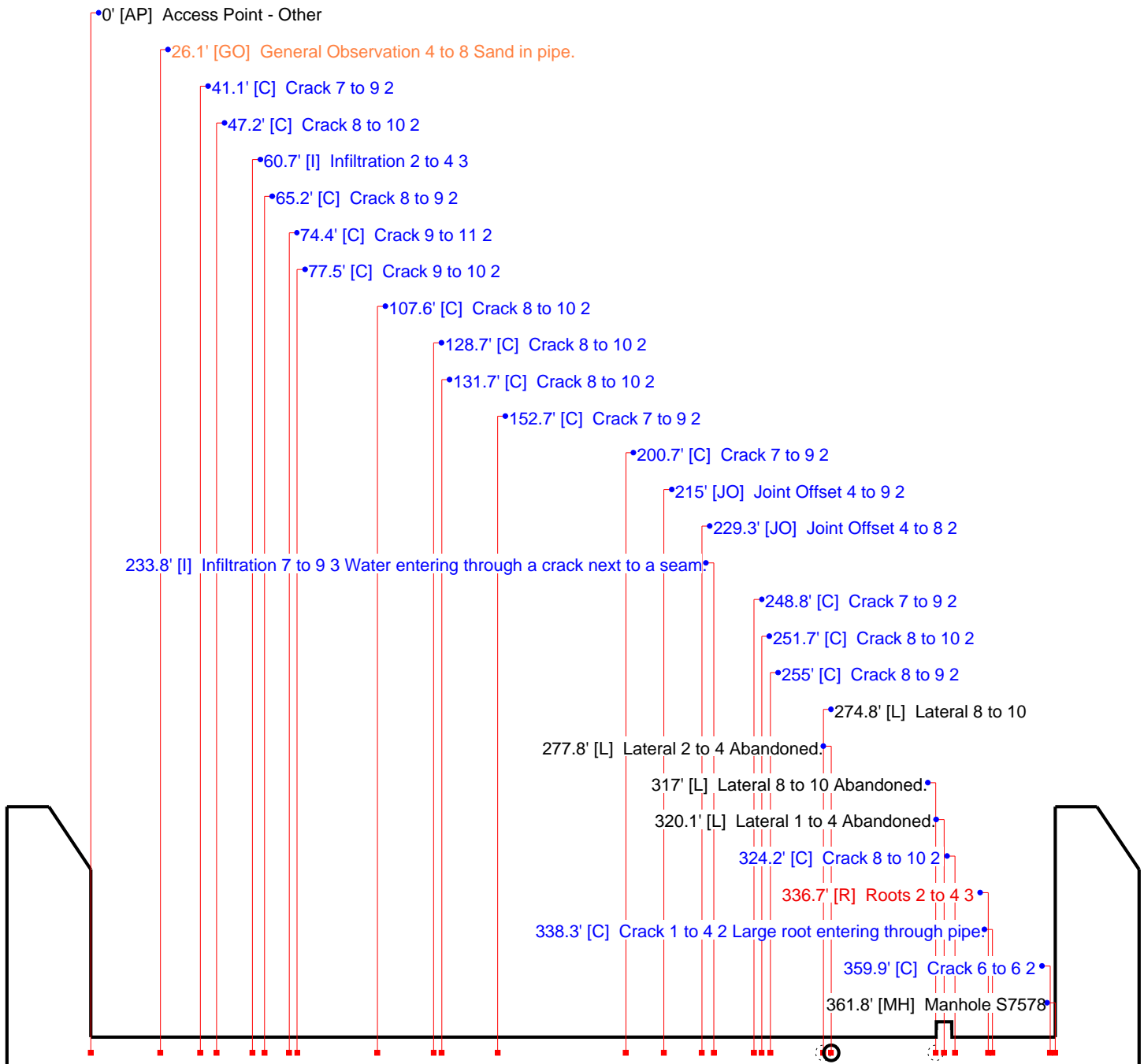
|             |                 |                  |                    |               |
|-------------|-----------------|------------------|--------------------|---------------|
| <b>Size</b> | <b>Material</b> | <b>Sewer Use</b> | <b>Purpose</b>     | <b>Length</b> |
|             |                 |                  | Routine Assessment |               |

|   |                     |                  |
|---|---------------------|------------------|
| <b>Comments</b>   | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | Heavy Cleaning      | 361.8            |

| Ftg.  | Code | Description          | Position | Severity | Comment  |
|-------|------|----------------------|----------|----------|--|
| 0.0   | AP   | Access Point - Other |          |          |  |
| 26.1  | GO   | General Observation  | 4 to 8   |          | Sand in pipe.                                  |
| 41.1  | C    | Crack                | 7 to 9   | 2        |  |
| 47.2  | C    | Crack                | 8 to 10  | 2        |  |
| 60.7  | I    | Infiltration         | 2 to 4   | 3        |  |
| 65.2  | C    | Crack                | 8 to 9   | 2        |  |
| 74.4  | C    | Crack                | 9 to 11  | 2        |  |
| 77.5  | C    | Crack                | 9 to 10  | 2        |  |
| 107.6 | C    | Crack                | 8 to 10  | 2        |  |
| 128.7 | C    | Crack                | 8 to 10  | 2        |  |
| 131.7 | C    | Crack                | 8 to 10  | 2        |  |
| 152.7 | C    | Crack                | 7 to 9   | 2        |  |
| 200.7 | C    | Crack                | 7 to 9   | 2        |  |
| 215.0 | JO   | Joint Offset         | 4 to 9   | 2        |  |
| 229.3 | JO   | Joint Offset         | 4 to 8   | 2        |  |
| 233.8 | I    | Infiltration         | 7 to 9   | 3        | Water entering through a crack next to a seam. |
| 248.8 | C    | Crack                | 7 to 9   | 2        |  |
| 251.7 | C    | Crack                | 8 to 10  | 2        |  |
| 255.0 | C    | Crack                | 8 to 9   | 2        |  |
| 274.8 | L    | Lateral              | 8 to 10  |          |  |
| 277.8 | L    | Lateral              | 2 to 4   |          | Abandoned.                                     |
| 317.0 | L    | Lateral              | 8 to 10  |          | Abandoned.                                     |
| 320.1 | L    | Lateral              | 1 to 4   |          | Abandoned.                                     |
| 324.2 | C    | Crack                | 8 to 10  | 2        |  |
| 336.7 | R    | Roots                | 2 to 4   | 3        |  |
| 338.3 | C    | Crack                | 1 to 4   | 2        | Large root entering through pipe.              |
| 359.9 | C    | Crack                | 6 to 6   | 2        |  |
| 361.8 | MH   | Manhole              |          |          | S7578  |

|                          |                                    |                             |                                      |                           |                        |
|--------------------------|------------------------------------|-----------------------------|--------------------------------------|---------------------------|------------------------|
| <b>Owner</b>             | <b>Customer</b>                    | <b>Upstream MH</b><br>S7578 | <b>Downstream MH</b><br>S7643        | <b>Date</b><br>08-25-2021 | <b>Time</b><br>9:43 AM |
| <b>Surveyor</b><br>JS JG | <b>Street</b><br>South 25th Street |                             | <b>City</b>                          | <b>Weather</b><br>Dry     |                        |
| <b>Size</b>              | <b>Material</b>                    | <b>Sewer Use</b>            | <b>Purpose</b><br>Routine Assessment |                           | <b>Length</b>          |

|  |                                       |                           |
|--|---------------------------------------|---------------------------|
| <b>Comments</b><br>Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | <b>Pre-Cleaning</b><br>Heavy Cleaning | <b>TV Length</b><br>361.8 |
|--|---------------------------------------|---------------------------|

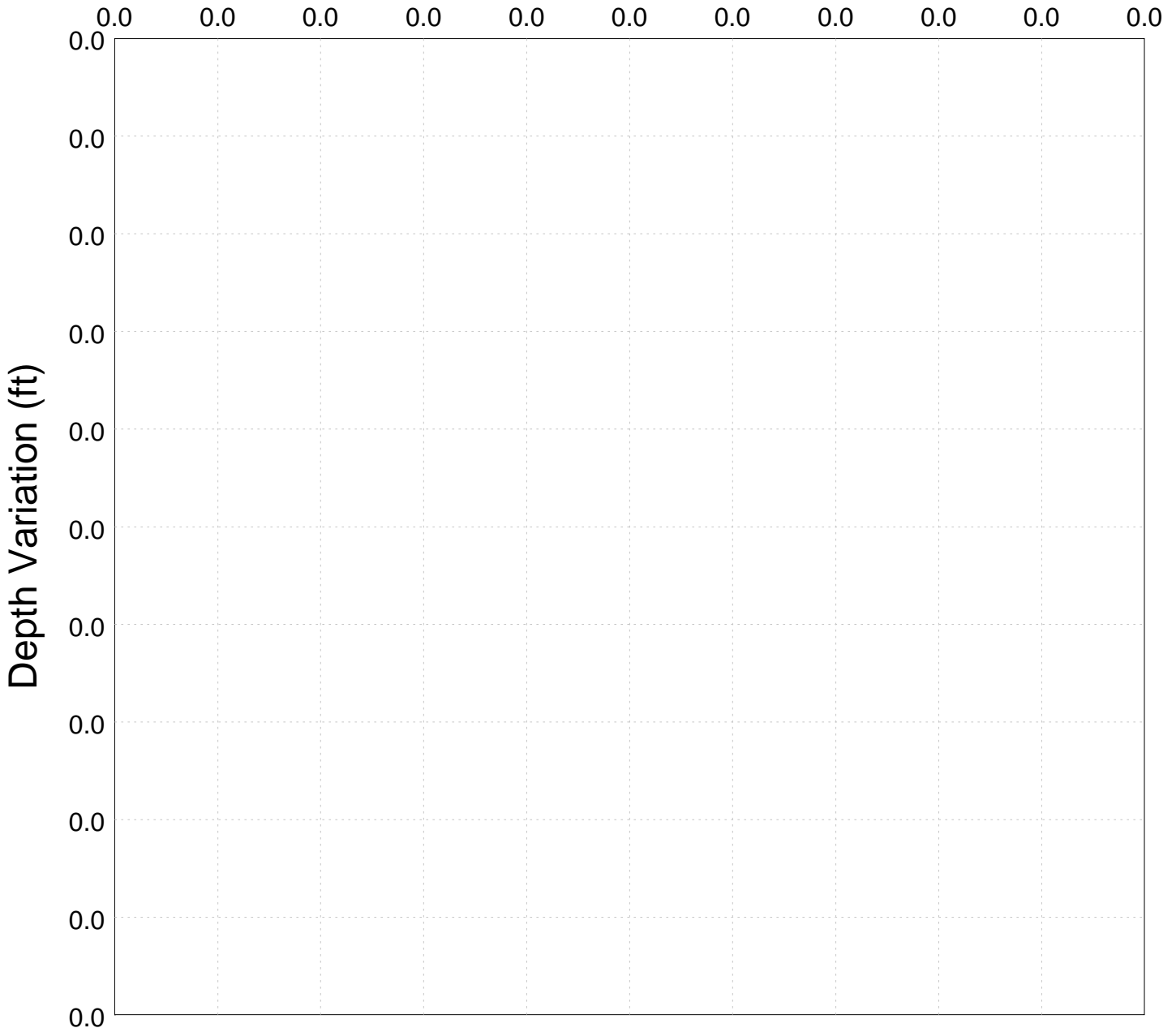




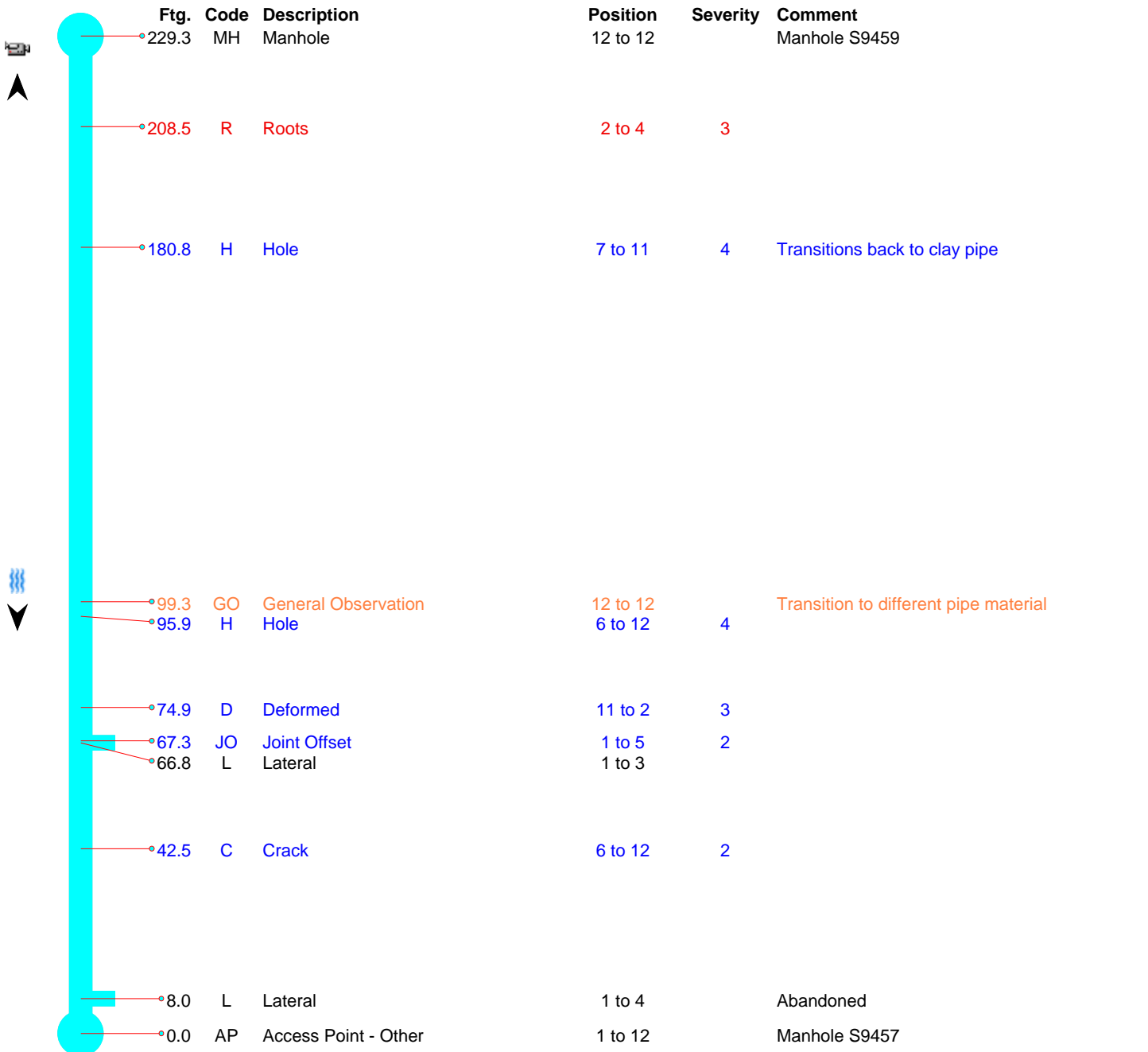
|                 |                   |                    |                      |                |             |
|-----------------|-------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|                 |                   | S7578              | S7643                | 08-25-2021     | 9:43 AM     |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |             |
| JS JG           | South 25th Street |                    |                      | Dry            |             |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
|                 |                   |                    | Routine Assessment   |                |             |

|   |                     |                  |
|---|---------------------|------------------|
| <b>Comments</b>   | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S7643, alley between US 2/41 and 1st ave south, going towards S7578, between 1st and 2nd Ave south on South 25th street. | Heavy Cleaning      | 361.8            |

### Distance (ft)



|                          |                                 |                              |                                      |  |                           |
|--------------------------|---------------------------------|------------------------------|--------------------------------------|--|---------------------------|
| <b>Owner</b><br>City     | <b>Customer</b><br>JR High      | <b>Upstream MH</b><br>S9459  | <b>Downstream MH</b><br>S9457        | <b>Date</b><br>06-21-2022              | <b>Time</b><br>10:01 AM   |
| <b>Surveyor</b><br>MT/CB | <b>Street</b><br>Behind JR High |                              | <b>City</b><br>Escanaba              | <b>Weather</b><br>Dry                  |                           |
| <b>Size</b><br>8         | <b>Material</b><br>Clay Tile    | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment |  | <b>Length</b>             |
| <b>Comments</b>          |                                 |                              |                                      | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>229.3 |



|                          |                                 |                              |                                      |  |                           |
|--------------------------|---------------------------------|------------------------------|--------------------------------------|--|---------------------------|
| <b>Owner</b><br>City     | <b>Customer</b><br>JR High      | <b>Upstream MH</b><br>S9459  | <b>Downstream MH</b><br>S9457        | <b>Date</b><br>06-21-2022              | <b>Time</b><br>10:01 AM   |
| <b>Surveyor</b><br>MT/CB | <b>Street</b><br>Behind JR High |                              | <b>City</b><br>Escanaba              | <b>Weather</b><br>Dry                  |                           |
| <b>Size</b><br>8         | <b>Material</b><br>Clay Tile    | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment |  | <b>Length</b>             |
| <b>Comments</b>          |                                 |                              |                                      | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>229.3 |



AP - Access Point - Other @ 0.0 ft. Manhole S9457



L - Lateral @ 8.0 ft. Abandoned



C - Crack @ 42.5 ft.



L - Lateral @ 66.8 ft.



JO - Joint Offset @ 67.3 ft.



D - Deformed @ 74.9 ft.



H - Hole @ 95.9 ft.



GO - General Observation @ 99.3 ft. Transition to different pipe material



H - Hole @ 180.8 ft. Transitions back to clay pipe

|                          |                                 |                              |                                      |  |                           |
|--------------------------|---------------------------------|------------------------------|--------------------------------------|--|---------------------------|
| <b>Owner</b><br>City     | <b>Customer</b><br>JR High      | <b>Upstream MH</b><br>S9459  | <b>Downstream MH</b><br>S9457        | <b>Date</b><br>06-21-2022              | <b>Time</b><br>10:01 AM   |
| <b>Surveyor</b><br>MT/CB | <b>Street</b><br>Behind JR High |                              | <b>City</b><br>Escanaba              | <b>Weather</b><br>Dry                  |                           |
| <b>Size</b><br>8         | <b>Material</b><br>Clay Tile    | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment |  | <b>Length</b><br>         |
| <b>Comments</b>          |                                 |                              |                                      | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>229.3 |



R - Roots @ 208.5 ft.



MH - Manhole @ 229.3 ft. Manhole S9459

|                      |                            |                             |                               |                           |                         |
|----------------------|----------------------------|-----------------------------|-------------------------------|---------------------------|-------------------------|
| <b>Owner</b><br>City | <b>Customer</b><br>JR High | <b>Upstream MH</b><br>S9459 | <b>Downstream MH</b><br>S9457 | <b>Date</b><br>06-21-2022 | <b>Time</b><br>10:01 AM |
|----------------------|----------------------------|-----------------------------|-------------------------------|---------------------------|-------------------------|

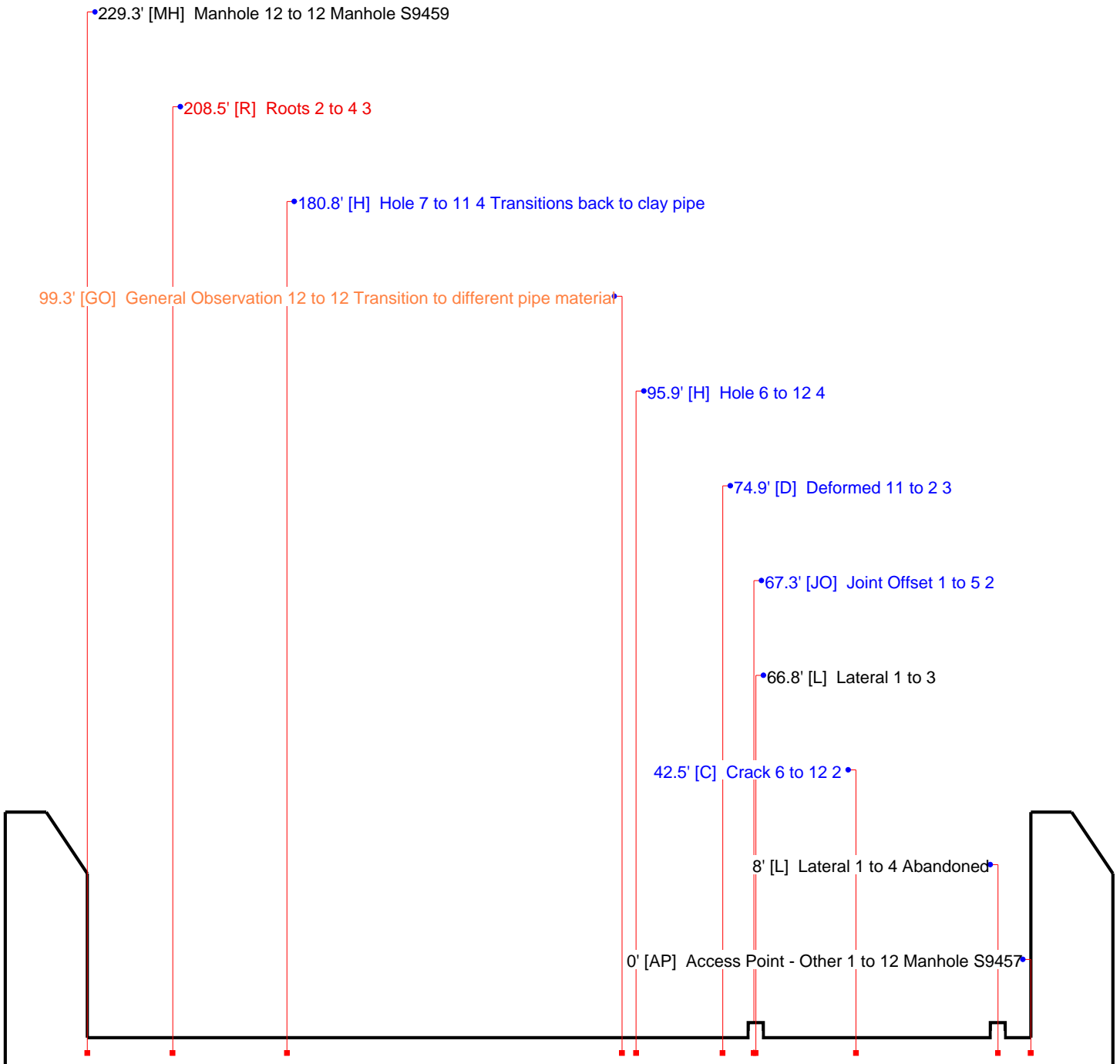
|                          |                                 |                         |                       |
|--------------------------|---------------------------------|-------------------------|-----------------------|
| <b>Surveyor</b><br>MT/CB | <b>Street</b><br>Behind JR High | <b>City</b><br>Escanaba | <b>Weather</b><br>Dry |
|--------------------------|---------------------------------|-------------------------|-----------------------|

|                  |                              |                              |                                      |               |
|------------------|------------------------------|------------------------------|--------------------------------------|---------------|
| <b>Size</b><br>8 | <b>Material</b><br>Clay Tile | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b> |
|------------------|------------------------------|------------------------------|--------------------------------------|---------------|

|                 |  |                           |
|-----------------|--|---------------------------|
| <b>Comments</b> | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>229.3 |
|-----------------|--|---------------------------|

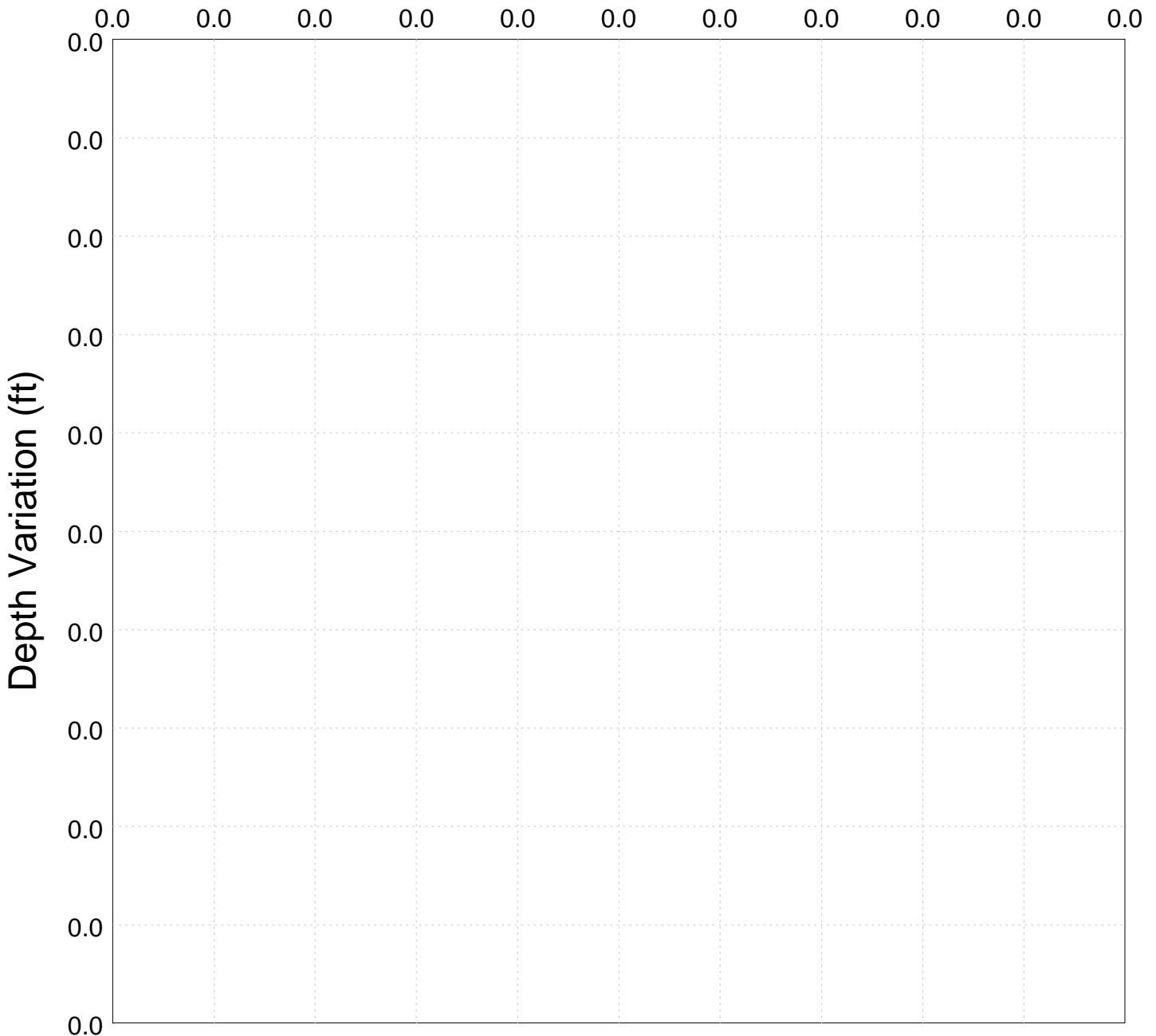
| Ftg.  | Code | Description          | Position | Severity | Comment                               |
|-------|------|----------------------|----------|----------|---------------------------------------|
| 0.0   | AP   | Access Point - Other | 1 to 12  |          | Manhole S9457                         |
| 8.0   | L    | Lateral              | 1 to 4   |          | Abandoned                             |
| 42.5  | C    | Crack                | 6 to 12  | 2        |                                       |
| 66.8  | L    | Lateral              | 1 to 3   |          |                                       |
| 67.3  | JO   | Joint Offset         | 1 to 5   | 2        |                                       |
| 74.9  | D    | Deformed             | 11 to 2  | 3        |                                       |
| 95.9  | H    | Hole                 | 6 to 12  | 4        |                                       |
| 99.3  | GO   | General Observation  | 12 to 12 |          | Transition to different pipe material |
| 180.8 | H    | Hole                 | 7 to 11  | 4        | Transitions back to clay pipe         |
| 208.5 | R    | Roots                | 2 to 4   | 3        |                                       |
| 229.3 | MH   | Manhole              | 12 to 12 |          | Manhole S9459                         |

|                          |                                 |                              |                                      |  |                           |
|--------------------------|---------------------------------|------------------------------|--------------------------------------|--|---------------------------|
| <b>Owner</b><br>City     | <b>Customer</b><br>JR High      | <b>Upstream MH</b><br>S9459  | <b>Downstream MH</b><br>S9457        | <b>Date</b><br>06-21-2022              | <b>Time</b><br>10:01 AM   |
| <b>Surveyor</b><br>MT/CB | <b>Street</b><br>Behind JR High |                              | <b>City</b><br>Escanaba              | <b>Weather</b><br>Dry                  |                           |
| <b>Size</b><br>8         | <b>Material</b><br>Clay Tile    | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment |  | <b>Length</b>             |
| <b>Comments</b>          |                                 |                              |                                      | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>229.3 |



|                          |                                 |                              |                                      |  |                           |
|--------------------------|---------------------------------|------------------------------|--------------------------------------|--|---------------------------|
| <b>Owner</b><br>City     | <b>Customer</b><br>JR High      | <b>Upstream MH</b><br>S9459  | <b>Downstream MH</b><br>S9457        | <b>Date</b><br>06-21-2022              | <b>Time</b><br>10:01 AM   |
| <b>Surveyor</b><br>MT/CB | <b>Street</b><br>Behind JR High |                              | <b>City</b><br>Escanaba              | <b>Weather</b><br>Dry                  |                           |
| <b>Size</b><br>8         | <b>Material</b><br>Clay Tile    | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b>                          |                           |
| <b>Comments</b>          |                                 |                              |                                      | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>229.3 |

## Distance (ft)









**Peninsular Technologies**

555 Ada Drive

Ada, MI 49301

Phone: (616) 676-9811

|  |                                |                           |  |                              |
|--|--------------------------------|---------------------------|--|------------------------------|
| <b>Owner</b><br>City                     | <b>Customer</b>                | <b>Upstream MH</b><br>123 | <b>Downstream MH</b><br>S9655          | <b>Date</b><br>13-Aug-2019   |
| <b>Surveyor</b><br>MT                    | <b>Street</b><br>5th Ave South |                           | <b>City</b><br>Escanaba                | <b>Weather</b><br>Light Rain |
| <b>Size</b><br>8                         | <b>Material</b><br>Clay Tile   | <b>Sewer Use</b>          | <b>Purpose</b><br>Routine Assessment   | <b>Length</b>                |
| <b>Comments</b><br>Manhole ... Sink hole |                                |                           | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>6.9      |

|  | Ftg. | Code | Description          | Position | Severity | Comment         |
|--|------|------|----------------------|----------|----------|-----------------|
|    | 0.0  | AP   | Access Point - Other | 12 to 12 |          |                 |
|    |      |      |                      |          |          |                 |
|  |      |      |                      |          |          |                 |
|  |      |      |                      |          |          |                 |
|  | 6.9  | X    | Collapsed            | 9 to 3   | 5        | Sewer collapsed |





**Peninsular Technologies**

555 Ada Drive

Ada, MI 49301

Phone: (616) 676-9811

|  |                                |                           |  |                              |
|--|--------------------------------|---------------------------|--|------------------------------|
| <b>Owner</b><br>City                     | <b>Customer</b>                | <b>Upstream MH</b><br>123 | <b>Downstream MH</b><br>S9655          | <b>Date</b><br>13-Aug-2019   |
| <b>Surveyor</b><br>MT                    | <b>Street</b><br>5th Ave South |                           | <b>City</b><br>Escanaba                | <b>Weather</b><br>Light Rain |
| <b>Size</b><br>8                         | <b>Material</b><br>Clay Tile   | <b>Sewer Use</b>          | <b>Purpose</b><br>Routine Assessment   | <b>Length</b>                |
| <b>Comments</b><br>Manhole ... Sink hole |                                |                           | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>6.9      |







AP - Access Point - Other @ 0.0 ft.



X - Collapsed @ 6.9 ft. Sewer collapsed

|                 |                   |                    |                      |                |             |
|-----------------|-------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM     |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |             |
| JS JG           | North 16th Street |                    |                      | Dry            |             |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
|                 |                   |                    | Routine Assessment   |                |             |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |

|  | Ftg.  | Code | Description          | Position | Severity | Comment  |
|--|-------|------|----------------------|----------|----------|--|
|    | 0.0   | AP   | Access Point - Other |          |          |  |
|    | 0.4   | C    | Crack                | 9 to 12  | 2        | Portion of pipe missing.   |
|  | 0.4   | H    | Hole                 | 10 to 3  | 4        | Top of pipe is missing.  |
|  | 5.8   | C    | Crack                | 9 to 2   | 2        |  |
|  | 8.5   | C    | Crack                | 8 to 2   | 2        |  |
|  | 13.5  | C    | Crack                | 11 to 4  | 2        |  |
|  | 16.1  | C    | Crack                | 10 to 3  | 2        |  |
|  | 18.8  | C    | Crack                | 9 to 3   | 2        |  |
|  | 23.8  | C    | Crack                | 10 to 3  | 2        |  |
|  | 31.6  | C    | Crack                | 10 to 2  | 2        |  |
|  | 34.2  | C    | Crack                | 10 to 2  | 2        |  |
|  | 36.5  | C    | Crack                | 9 to 1   | 2        |  |
|  | 39.4  | C    | Crack                | 9 to 2   | 2        |  |
|  | 41.9  | C    | Crack                | 10 to 2  | 2        |  |
|  | 46.9  | C    | Crack                | 9 to 1   | 2        |  |
|  | 52.2  | C    | Crack                | 8 to 10  | 2        |  |
|  | 60.9  | L    | Lateral              | 8 to 11  |          |  |
|  | 73.7  | C    | Crack                | 7 to 4   | 2        |  |
|  | 76.8  | L    | Lateral              | 1 to 5   |          |  |
|  | 78.0  | C    | Crack                | 8 to 2   | 2        |  |
|  | 81.3  | L    | Lateral              | 2 to 5   |          |  |
|  | 83.0  | C    | Crack                | 8 to 2   | 2        |  |
|  | 88.0  | C    | Crack                | 9 to 11  | 2        |  |
|  | 108.4 | C    | Crack                | 9 to 12  | 2        |  |
|  | 109.5 | L    | Lateral              | 8 to 11  |          |  |
|  | 113.5 | C    | Crack                | 9 to 4   | 2        |  |
|  | 119.9 | L    | Lateral              | 1 to 4   |          |  |
|  | 123.9 | C    | Crack                | 8 to 12  | 2        |  |
|  | 126.6 | C    | Crack                | 9 to 1   | 2        |  |
|  | 148.2 | L    | Lateral              | 8 to 11  |          |  |
|  | 149.9 | C    | Crack                | 7 to 9   | 2        |  |
|  | 154.9 | C    | Crack                | 7 to 9   | 2        |  |
|  | 157.7 | C    | Crack                | 2 to 5   | 2        |  |
|  | 171.2 | L    | Lateral              | 1 to 4   |          |  |
|  | 172.9 | C    | Crack                | 8 to 10  | 2        |  |
|  | 206.3 | R    | Roots                | 10 to 2  | 3        |  |
|  | 209.8 | L    | Lateral              | 1 to 4   |          |  |
|  | 212.3 | L    | Lateral              | 8 to 11  |          |  |
|  | 221.3 | R    | Roots                | 10 to 2  | 3        |  |
|  | 255.9 | C    | Crack                | 11 to 3  | 2        |  |
|  | 266.1 | L    | Lateral              | 8 to 11  |          |  |
|  | 273.6 | L    | Lateral              | 1 to 4   |          |  |
|  | 276.2 | L    | Lateral              | 1 to 5   |          |  |
|  | 312.0 | L    | Lateral              | 8 to 11  |          |  |
|  | 316.3 | C    | Crack                | 11 to 1  | 2        |  |
|  | 322.3 | L    | Lateral              | 1 to 4   |          |  |
|  | 351.4 | R    | Roots                | 8 to 10  | 3        |  |
|  | 353.5 | R    | Roots                | 7 to 11  | 3        | Large root ball stopping camera. 90 feet of pipe has not been televised. |

|                 |                   |                    |                      |                |               |
|-----------------|-------------------|--------------------|----------------------|----------------|---------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b>   |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM       |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |               |
| JS JG           | North 16th Street |                    |                      | Dry            |               |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       |                | <b>Length</b> |
|                 |                   |                    | Routine Assessment   |                |               |

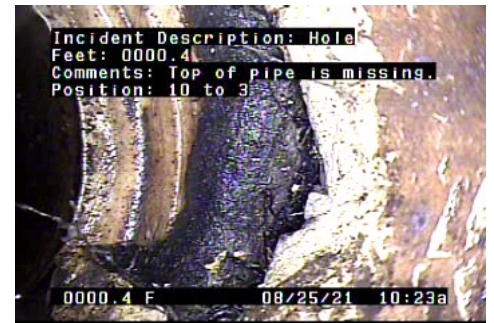
|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |



AP - Access Point - Other @ 0.0 ft.



C - Crack @ 0.4 ft. Portion of pipe missing.



H - Hole @ 0.4 ft. Top of pipe is missing.



C - Crack @ 5.8 ft.



C - Crack @ 8.5 ft.



C - Crack @ 13.5 ft.



C - Crack @ 16.1 ft.



C - Crack @ 18.8 ft.



C - Crack @ 23.8 ft.

|                 |                   |                    |                      |                |               |
|-----------------|-------------------|--------------------|----------------------|----------------|---------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b>   |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM       |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |               |
| JS JG           | North 16th Street |                    |                      | Dry            |               |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       |                | <b>Length</b> |
|                 |                   |                    | Routine Assessment   |                |               |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |



C - Crack @ 31.6 ft.



C - Crack @ 34.2 ft.



C - Crack @ 36.5 ft.



C - Crack @ 39.4 ft.



C - Crack @ 41.9 ft.



C - Crack @ 46.9 ft.



C - Crack @ 52.2 ft.



L - Lateral @ 60.9 ft.



C - Crack @ 73.7 ft.

|                 |                   |                    |                      |                |               |
|-----------------|-------------------|--------------------|----------------------|----------------|---------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b>   |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM       |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |               |
| JS JG           | North 16th Street |                    |                      | Dry            |               |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       |                | <b>Length</b> |
|                 |                   |                    | Routine Assessment   |                |               |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |



L - Lateral @ 76.8 ft.



C - Crack @ 78.0 ft.



L - Lateral @ 81.3 ft.



C - Crack @ 83.0 ft.



C - Crack @ 88.0 ft.



C - Crack @ 108.4 ft.



L - Lateral @ 109.5 ft.



C - Crack @ 113.5 ft.



L - Lateral @ 119.9 ft.

|                 |                   |                    |                      |                |               |
|-----------------|-------------------|--------------------|----------------------|----------------|---------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b>   |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM       |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |               |
| JS JG           | North 16th Street |                    |                      | Dry            |               |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       |                | <b>Length</b> |
|                 |                   |                    | Routine Assessment   |                |               |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |



C - Crack @ 123.9 ft.



C - Crack @ 126.6 ft.



L - Lateral @ 148.2 ft.



C - Crack @ 149.9 ft.



C - Crack @ 154.9 ft.



C - Crack @ 157.7 ft.



L - Lateral @ 171.2 ft.



C - Crack @ 172.9 ft.



R - Roots @ 206.3 ft.

|                 |                   |                    |                      |                |             |
|-----------------|-------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM     |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |             |
| JS JG           | North 16th Street |                    |                      | Dry            |             |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
|                 |                   |                    | Routine Assessment   |                |             |

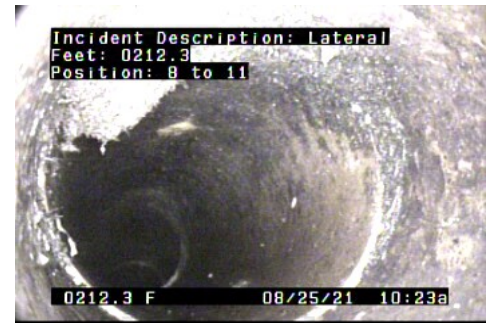
|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |



L - Lateral @ 209.8 ft.



L - Lateral @ 212.3 ft.



R - Roots @ 221.3 ft.



C - Crack @ 255.9 ft.



L - Lateral @ 266.1 ft.



L - Lateral @ 273.6 ft.



L - Lateral @ 276.2 ft.



L - Lateral @ 312.0 ft.



C - Crack @ 316.3 ft.

|                 |                   |                    |                      |                |             |
|-----------------|-------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM     |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |             |
| JS JG           | North 16th Street |                    |                      | Dry            |             |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
|                 |                   |                    | Routine Assessment   |                |             |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |



L - Lateral @ 322.3 ft.



R - Roots @ 351.4 ft.



R - Roots @ 353.5 ft. Large root ball stopping camera. 90 feet of pipe has not been televised.



|              |                 |                    |                      |             |             |
|--------------|-----------------|--------------------|----------------------|-------------|-------------|
| <b>Owner</b> | <b>Customer</b> | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b> | <b>Time</b> |
|              |                 | S10672             | S10662               | 08-25-2021  | 1:23 PM     |

|                 |                   |             |                |
|-----------------|-------------------|-------------|----------------|
| <b>Surveyor</b> | <b>Street</b>     | <b>City</b> | <b>Weather</b> |
| JS JG           | North 16th Street |             | Dry            |

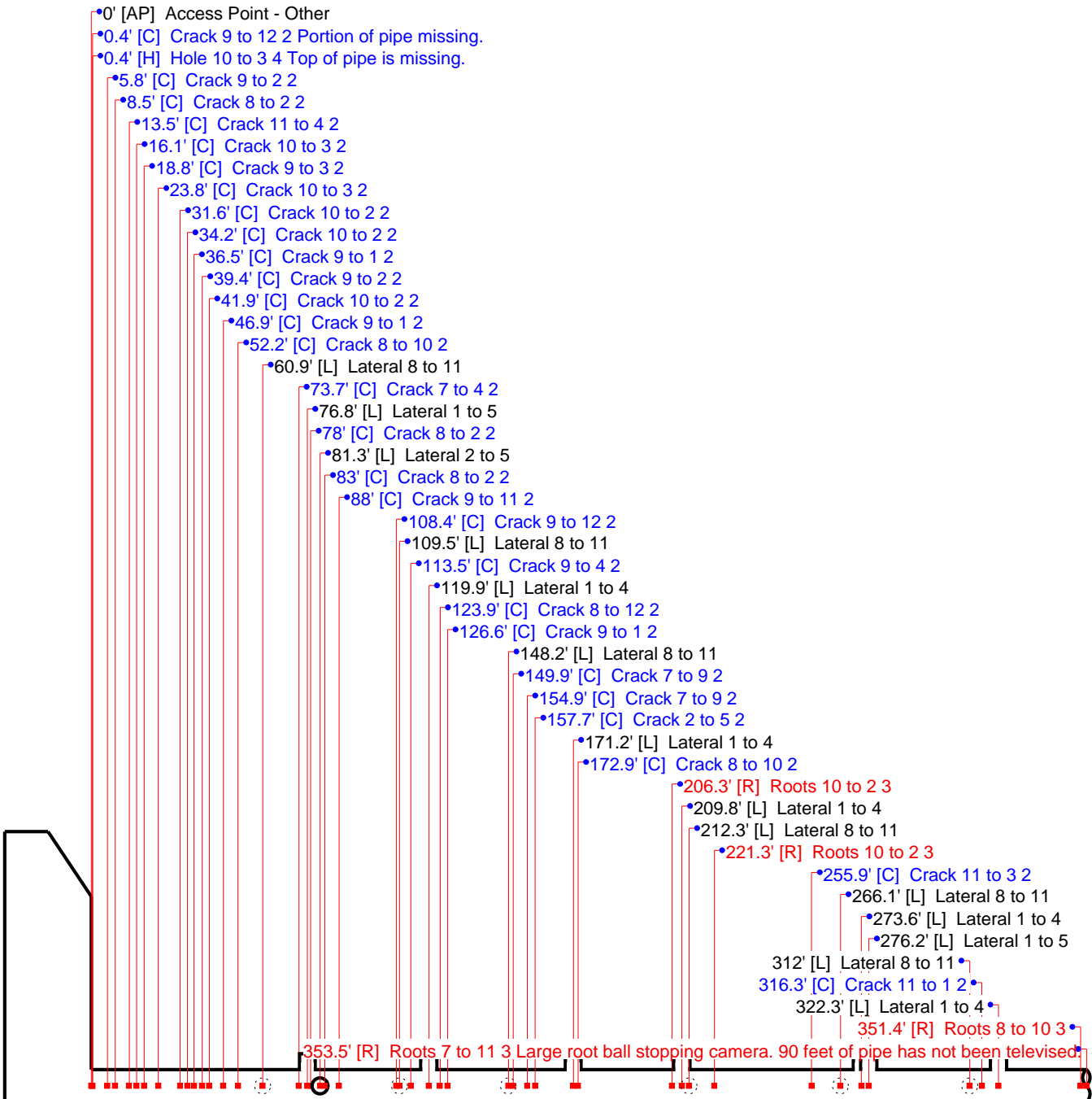
|             |                 |                  |                    |               |
|-------------|-----------------|------------------|--------------------|---------------|
| <b>Size</b> | <b>Material</b> | <b>Sewer Use</b> | <b>Purpose</b>     | <b>Length</b> |
|             |                 |                  | Routine Assessment |               |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |

| Ftg.  | Code | Description          | Position | Severity | Comment  |
|-------|------|----------------------|----------|----------|--|
| 0.0   | AP   | Access Point - Other |          |          |  |
| 0.4   | C    | Crack                | 9 to 12  | 2        | Portion of pipe missing.   |
| 0.4   | H    | Hole                 | 10 to 3  | 4        | Top of pipe is missing.  |
| 5.8   | C    | Crack                | 9 to 2   | 2        |  |
| 8.5   | C    | Crack                | 8 to 2   | 2        |  |
| 13.5  | C    | Crack                | 11 to 4  | 2        |  |
| 16.1  | C    | Crack                | 10 to 3  | 2        |  |
| 18.8  | C    | Crack                | 9 to 3   | 2        |  |
| 23.8  | C    | Crack                | 10 to 3  | 2        |  |
| 31.6  | C    | Crack                | 10 to 2  | 2        |  |
| 34.2  | C    | Crack                | 10 to 2  | 2        |  |
| 36.5  | C    | Crack                | 9 to 1   | 2        |  |
| 39.4  | C    | Crack                | 9 to 2   | 2        |  |
| 41.9  | C    | Crack                | 10 to 2  | 2        |  |
| 46.9  | C    | Crack                | 9 to 1   | 2        |  |
| 52.2  | C    | Crack                | 8 to 10  | 2        |  |
| 60.9  | L    | Lateral              | 8 to 11  |          |  |
| 73.7  | C    | Crack                | 7 to 4   | 2        |  |
| 76.8  | L    | Lateral              | 1 to 5   |          |  |
| 78.0  | C    | Crack                | 8 to 2   | 2        |  |
| 81.3  | L    | Lateral              | 2 to 5   |          |  |
| 83.0  | C    | Crack                | 8 to 2   | 2        |  |
| 88.0  | C    | Crack                | 9 to 11  | 2        |  |
| 108.4 | C    | Crack                | 9 to 12  | 2        |  |
| 109.5 | L    | Lateral              | 8 to 11  |          |  |
| 113.5 | C    | Crack                | 9 to 4   | 2        |  |
| 119.9 | L    | Lateral              | 1 to 4   |          |  |
| 123.9 | C    | Crack                | 8 to 12  | 2        |  |
| 126.6 | C    | Crack                | 9 to 1   | 2        |  |
| 148.2 | L    | Lateral              | 8 to 11  |          |  |
| 149.9 | C    | Crack                | 7 to 9   | 2        |  |
| 154.9 | C    | Crack                | 7 to 9   | 2        |  |
| 157.7 | C    | Crack                | 2 to 5   | 2        |  |
| 171.2 | L    | Lateral              | 1 to 4   |          |  |
| 172.9 | C    | Crack                | 8 to 10  | 2        |  |
| 206.3 | R    | Roots                | 10 to 2  | 3        |  |
| 209.8 | L    | Lateral              | 1 to 4   |          |  |
| 212.3 | L    | Lateral              | 8 to 11  |          |  |
| 221.3 | R    | Roots                | 10 to 2  | 3        |  |
| 255.9 | C    | Crack                | 11 to 3  | 2        |  |
| 266.1 | L    | Lateral              | 8 to 11  |          |  |
| 273.6 | L    | Lateral              | 1 to 4   |          |  |
| 276.2 | L    | Lateral              | 1 to 5   |          |  |
| 312.0 | L    | Lateral              | 8 to 11  |          |  |
| 316.3 | C    | Crack                | 11 to 1  | 2        |  |
| 322.3 | L    | Lateral              | 1 to 4   |          |  |
| 351.4 | R    | Roots                | 8 to 10  | 3        |  |
| 353.5 | R    | Roots                | 7 to 11  | 3        | Large root ball stopping camera. 90 feet of pipe has not been televised. |

|                 |                   |                    |                      |                |               |
|-----------------|-------------------|--------------------|----------------------|----------------|---------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b>   |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM       |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |               |
| JS JG           | North 16th Street |                    |                      | Dry            |               |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       |                | <b>Length</b> |
|                 |                   |                    | Routine Assessment   |                |               |

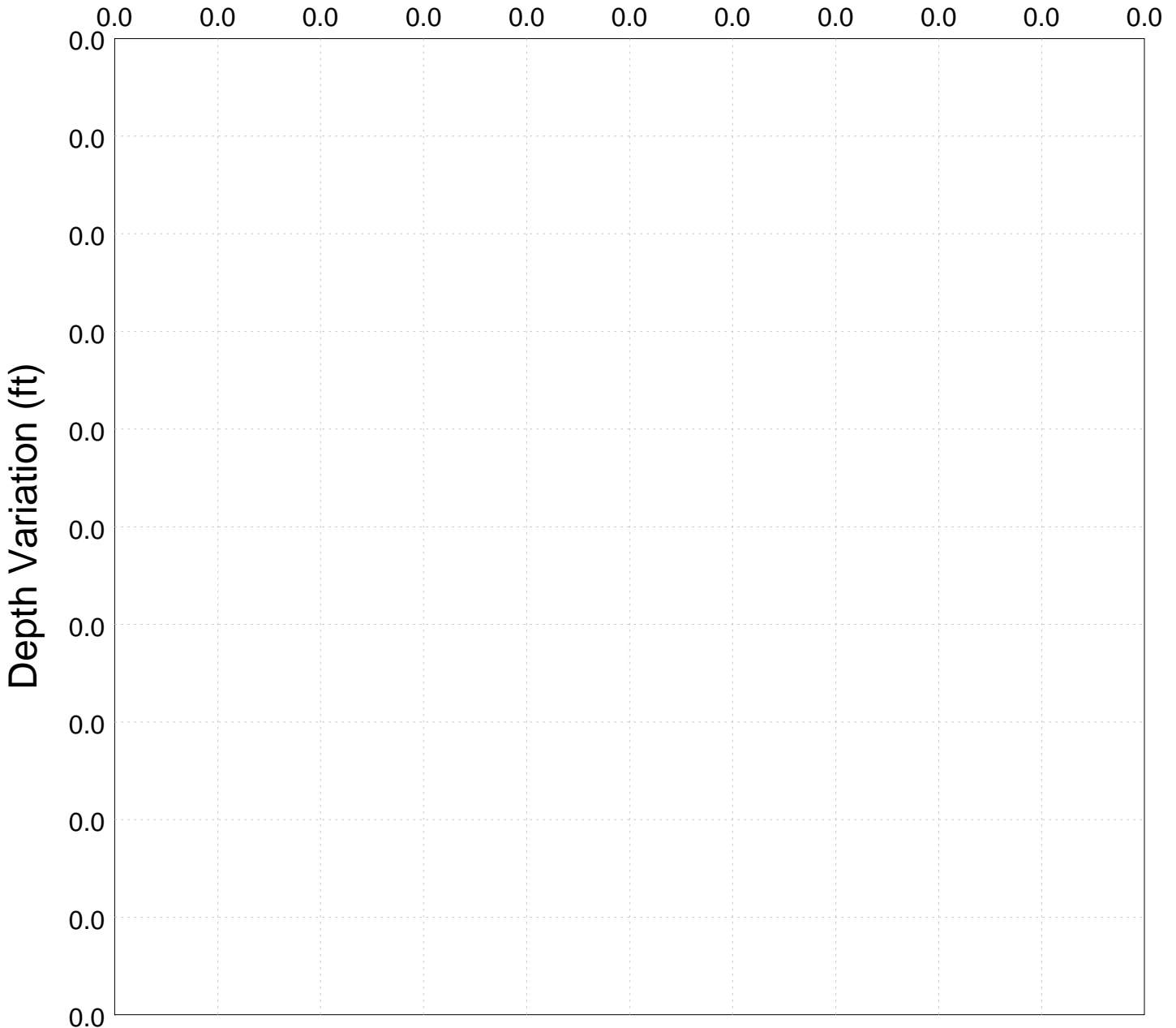
|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |



|                 |                   |                    |                      |                |             |
|-----------------|-------------------|--------------------|----------------------|----------------|-------------|
| <b>Owner</b>    | <b>Customer</b>   | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>    | <b>Time</b> |
|                 |                   | S10672             | S10662               | 08-25-2021     | 1:23 PM     |
| <b>Surveyor</b> | <b>Street</b>     |                    | <b>City</b>          | <b>Weather</b> |             |
| JS JG           | North 16th Street |                    |                      | Dry            |             |
| <b>Size</b>     | <b>Material</b>   | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>  |             |
|                 |                   |                    | Routine Assessment   |                |             |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at S10672 going towards S10662. Running with flow. Roots stopped camera when trying to run against flow. |                     | 353.5            |

### Distance (ft)





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 Ada, MI 49301  
 Phone: (616) 676-9811

|                          |                             |  |   |                            |
|--------------------------|-----------------------------|--|---|----------------------------|
| <b>Owner</b><br>escanaba | <b>Customer</b><br>escanaba | <b>Upstream MH</b><br>5th ave S. between<br>15th and 16th st | <b>Downstream MH</b><br>6th ave s. " "<br>" " | <b>Date</b><br>08-Feb-2017 |
|--------------------------|-----------------------------|--|---|----------------------------|

|                              |                              |                         |                        |
|------------------------------|------------------------------|-------------------------|------------------------|
| <b>Surveyor</b><br>R.G./C.B. | <b>Street</b><br>624 S. 15th | <b>City</b><br>escanaba | <b>Weather</b><br>Snow |
|------------------------------|------------------------------|-------------------------|------------------------|

|                  |                              |                              |                                      |                   |
|------------------|------------------------------|------------------------------|--------------------------------------|-------------------|
| <b>Size</b><br>8 | <b>Material</b><br>Clay Tile | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br> |
|------------------|------------------------------|------------------------------|--------------------------------------|-------------------|

|  |  |                          |
|--|--|--------------------------|
| <b>Comments</b><br>Possible clean sand | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>47.8 |
|--|--|--------------------------|





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|                          |                             |  |   |                            |
|--------------------------|-----------------------------|--|---|----------------------------|
| <b>Owner</b><br>escanaba | <b>Customer</b><br>escanaba | <b>Upstream MH</b><br>5th ave S. between<br>15th and 16th st | <b>Downstream MH</b><br>6th ave s. " " "<br>" " " | <b>Date</b><br>08-Feb-2017 |
|--------------------------|-----------------------------|--|---|----------------------------|

|                              |                              |                         |                        |
|------------------------------|------------------------------|-------------------------|------------------------|
| <b>Surveyor</b><br>R.G./C.B. | <b>Street</b><br>624 S. 15th | <b>City</b><br>escanaba | <b>Weather</b><br>Snow |
|------------------------------|------------------------------|-------------------------|------------------------|

|                  |                              |                              |                                      |                   |
|------------------|------------------------------|------------------------------|--------------------------------------|-------------------|
| <b>Size</b><br>8 | <b>Material</b><br>Clay Tile | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br> |
|------------------|------------------------------|------------------------------|--------------------------------------|-------------------|

|  |  |                          |
|--|--|--------------------------|
| <b>Comments</b><br>Possible clean sand | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>47.8 |
|--|--|--------------------------|



AP - Access Point - Other @ 3.0 ft.



JO - Joint Offset @ 47.8 ft. source of sand???



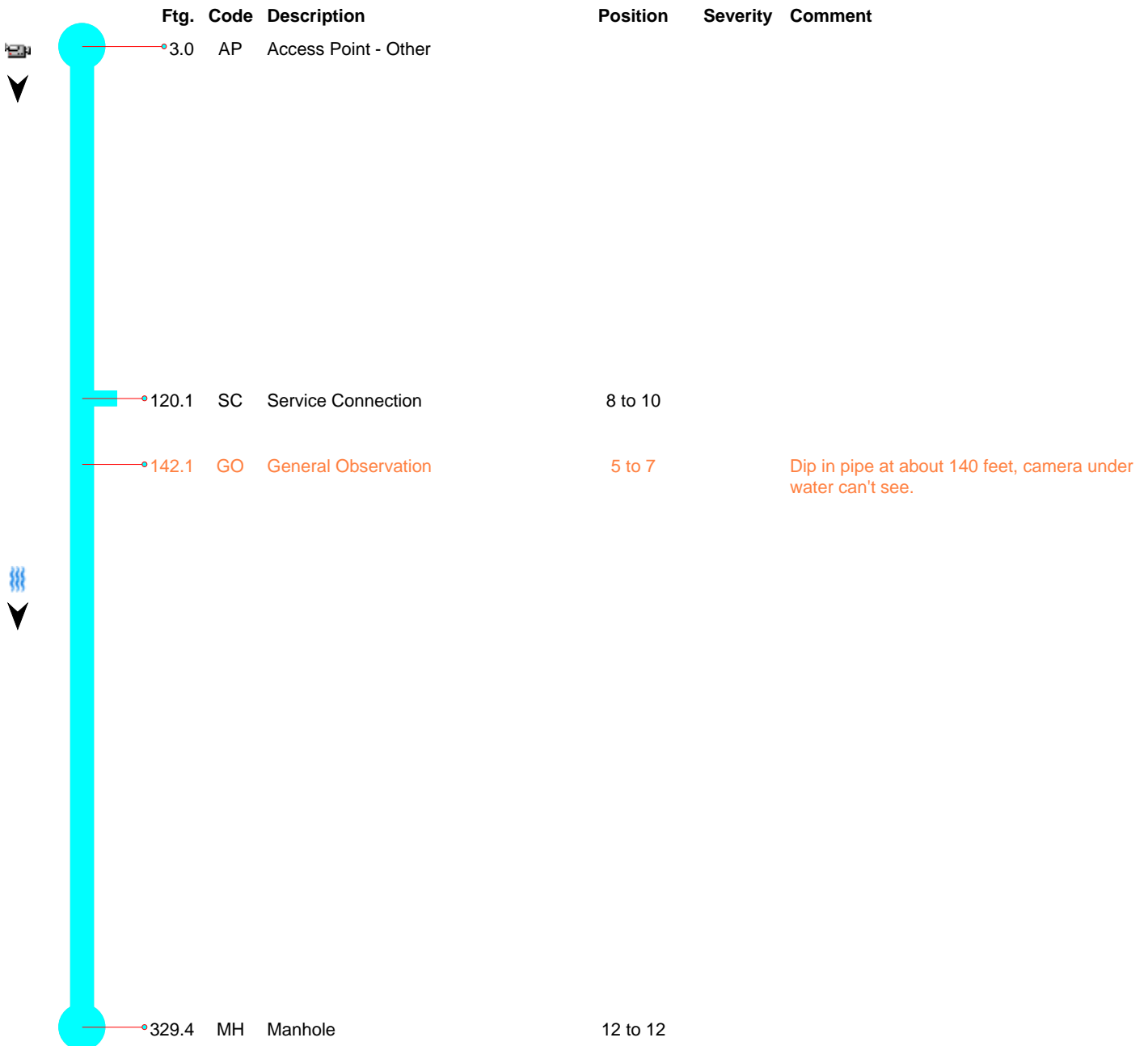
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|                                  |   |  |   |                            |
|----------------------------------|---|--|---|----------------------------|
| <b>Owner</b><br>City of Escanaba | <b>Customer</b><br>                               | <b>Upstream MH</b><br>6th Ave. between S. 21st and S. 20th St. | <b>Downstream MH</b><br>6th Ave. between S. 19th and 20th st. | <b>Date</b><br>05-Jul-2017 |
| <b>Surveyor</b><br>J.V. R.G.     | <b>Street</b><br>S. 21st St.                      |  | <b>City</b><br>Escanaba                                       | <b>Weather</b><br>Dry      |
| <b>Size</b><br>8                 | <b>Material</b><br>Concrete Pipe (non-reinforced) | <b>Sewer Use</b><br>Sanitary                                   | <b>Purpose</b><br>Routine Assessment                          | <b>Length</b><br>          |
| <b>Comments</b>                  |   |  | <b>Pre-Cleaning</b><br>Jetting                                | <b>TV Length</b><br>329.4  |





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|                                  |   |  |   |                            |
|----------------------------------|---|--|---|----------------------------|
| <b>Owner</b><br>City of Escanaba | <b>Customer</b><br>                               | <b>Upstream MH</b><br>6th Ave. between S. 21st and S. 20th St. | <b>Downstream MH</b><br>6th Ave. between S. 19th and 20th st. | <b>Date</b><br>05-Jul-2017 |
| <b>Surveyor</b><br>J.V. R.G.     | <b>Street</b><br>S. 21st St.                      |  | <b>City</b><br>Escanaba                                       | <b>Weather</b><br>Dry      |
| <b>Size</b><br>8                 | <b>Material</b><br>Concrete Pipe (non-reinforced) | <b>Sewer Use</b><br>Sanitary                                   | <b>Purpose</b><br>Routine Assessment                          | <b>Length</b><br>          |
| <b>Comments</b>                  |   |  | <b>Pre-Cleaning</b><br>Jetting                                | <b>TV Length</b><br>329.4  |



AP - Access Point - Other @ 3.0 ft.



SC - Service Connection @ 120.1 ft.



GO - General Observation @ 142.1 ft.  
Dip in pipe at about 140 feet, camera under water can't see.



MH - Manhole @ 329.4 ft.



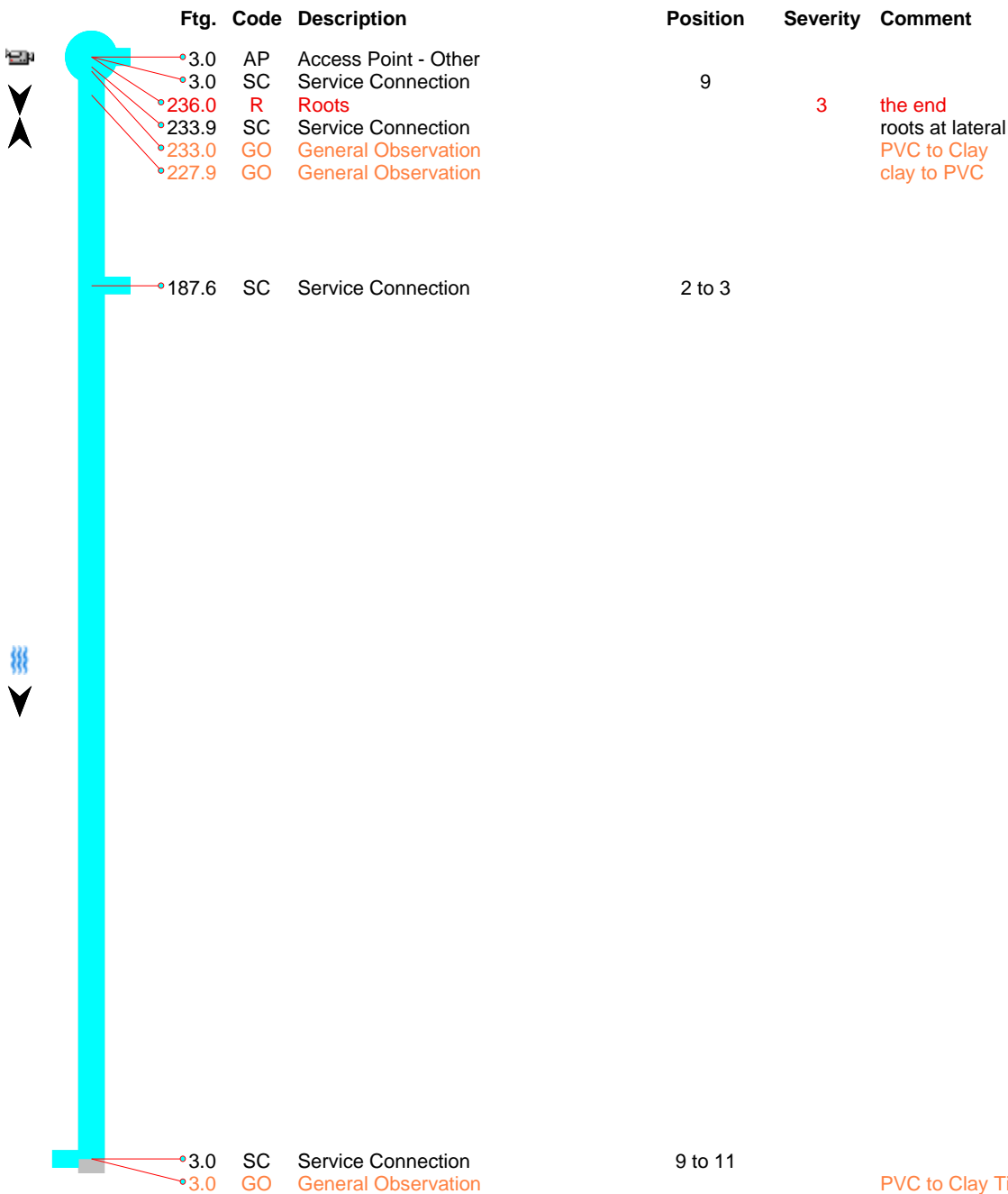
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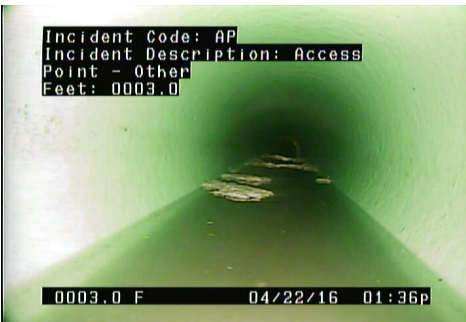
|                                       |                                       |                              |                                      |                            |
|---------------------------------------|---------------------------------------|------------------------------|--------------------------------------|----------------------------|
| <b>Owner</b>                          | <b>Customer</b>                       | <b>Upstream MH</b><br>9      | <b>Downstream MH</b><br>10           | <b>Date</b><br>22-Apr-2016 |
| <b>Surveyor</b>                       | <b>Street</b>                         | <b>City</b><br>404 LSD       | <b>Weather</b><br>Dry                |                            |
| <b>Size</b><br>8                      | <b>Material</b><br>Polyvinyl Chloride | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b>              |
| <b>Comments</b><br>lateral inspection |                                       |                              | <b>Pre-Cleaning</b><br>Jetting       | <b>TV Length</b><br>236    |



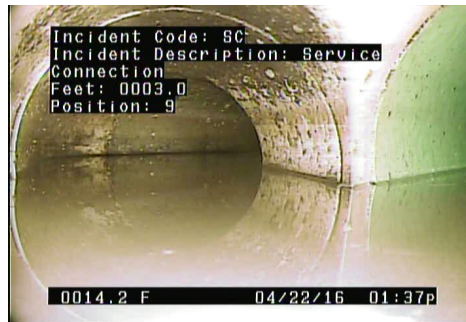




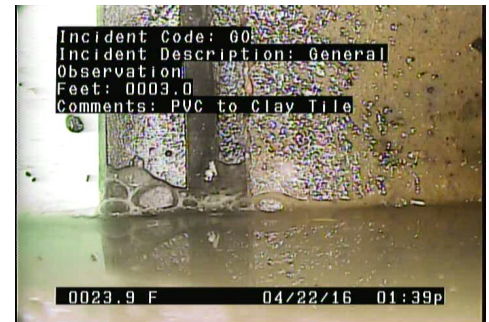
|                    |                     |                    |                      |               |
|--------------------|---------------------|--------------------|----------------------|---------------|
| <b>Owner</b>       | <b>Customer</b>     | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>   |
|                    |                     | 9                  | 10                   | 22-Apr-2016   |
| <b>Surveyor</b>    | <b>Street</b>       | <b>City</b>        | <b>Weather</b>       |               |
|                    |                     | 404 LSD            | Dry                  |               |
| <b>Size</b>        | <b>Material</b>     | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b> |
| 8                  | Polyvinyl Chloride  | Sanitary           | Routine Assessment   |               |
| <b>Comments</b>    | <b>Pre-Cleaning</b> | <b>TV Length</b>   |                      |               |
| lateral inspection | Jetting             | 236                |                      |               |



AP - Access Point - Other @ 3.0 ft.



SC - Service Connection @ 3.0 ft.



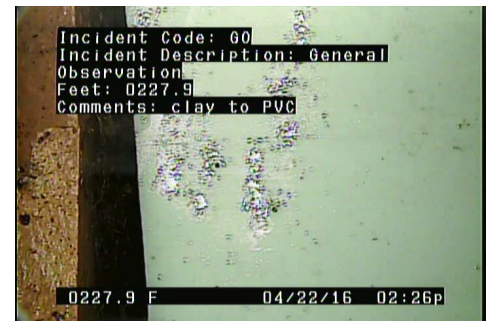
GO - General Observation @ 3.0 ft. PVC to Clay Tile



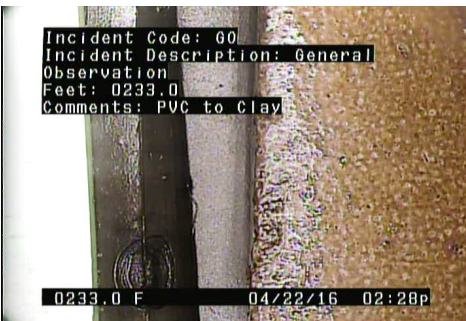
SC - Service Connection @ 3.0 ft.



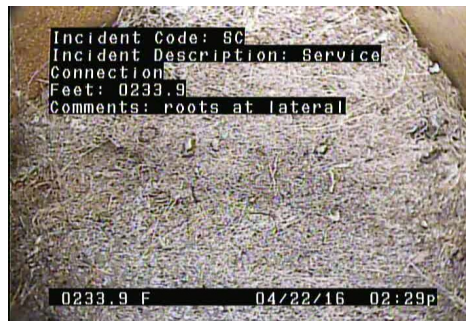
SC - Service Connection @ 187.6 ft.



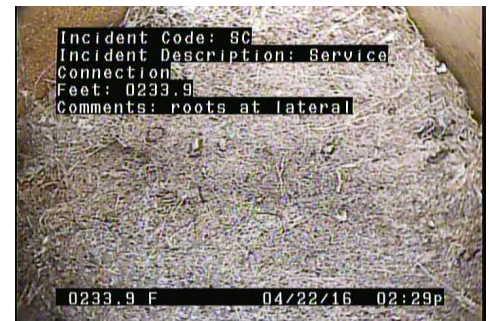
GO - General Observation @ 227.9 ft. clay to PVC



GO - General Observation @ 233.0 ft. PVC to Clay



SC - Service Connection @ 233.9 ft. roots at lateral



R - Roots @ 236.0 ft. the end



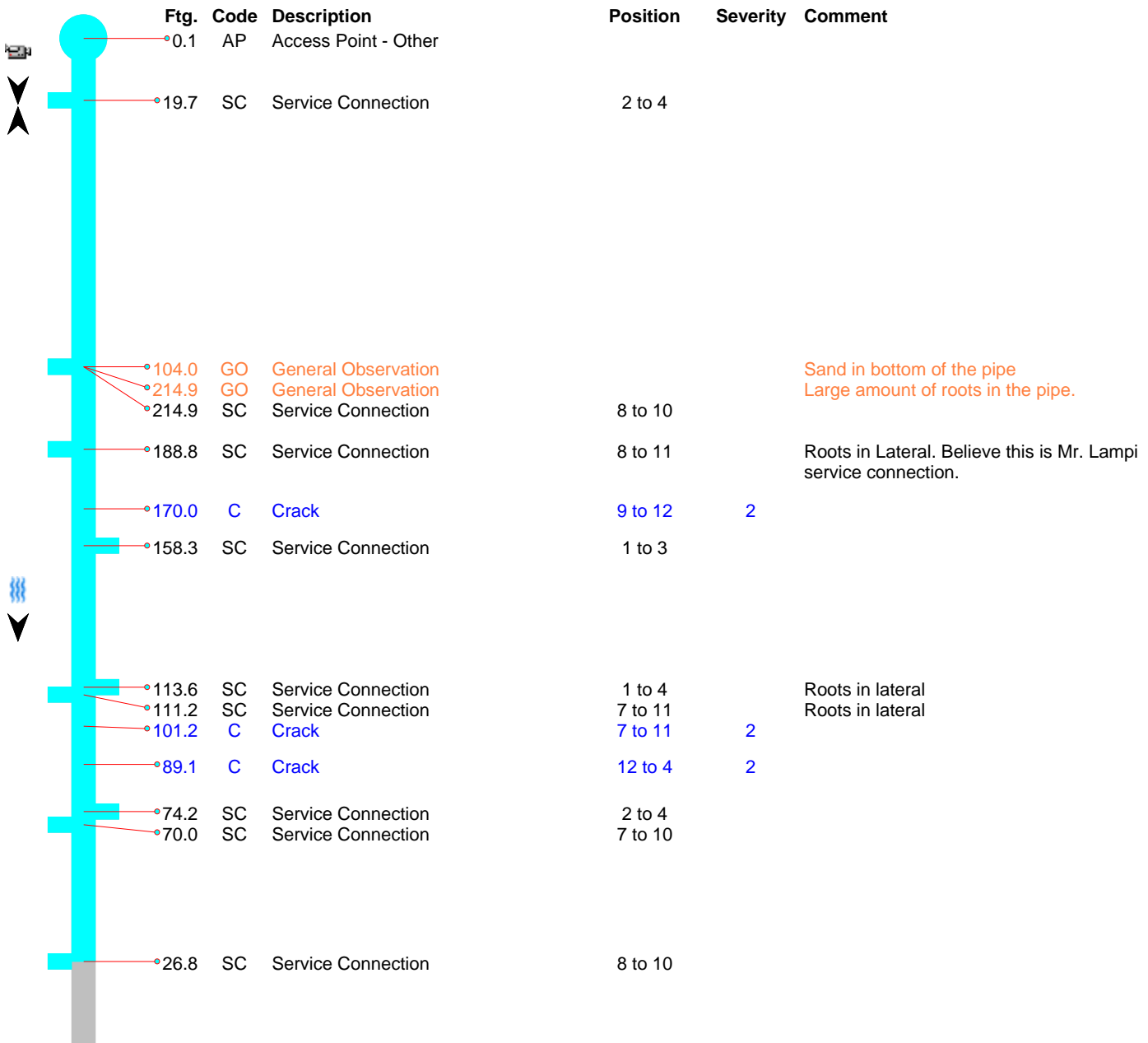
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|                          |                 |   |   |                            |
|--------------------------|-----------------|---|---|----------------------------|
| <b>Owner</b>             | <b>Customer</b> | <b>Upstream MH</b><br>7th Ave between<br>13th and 14th street | <b>Downstream MH</b><br>6th ave between<br>13th and 14th street | <b>Date</b><br>03-Apr-2018 |
| <b>Surveyor</b><br>JS MM | <b>Street</b>   | <b>City</b>   | <b>Weather</b><br>Dry   |                            |
| <b>Size</b>              | <b>Material</b> | <b>Sewer Use</b><br>Sanitary                                  | <b>Purpose</b><br>Routine Assessment                            | <b>Length</b>              |
| <b>Comments</b>          |                 |   | <b>Pre-Cleaning</b><br>No Pre-Cleaning                          | <b>TV Length</b><br>214.9  |





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|                          |                 |   |   |                            |
|--------------------------|-----------------|---|---|----------------------------|
| <b>Owner</b>             | <b>Customer</b> | <b>Upstream MH</b><br>7th Ave between<br>13th and 14th street | <b>Downstream MH</b><br>6th ave between<br>13th and 14th street | <b>Date</b><br>03-Apr-2018 |
| <b>Surveyor</b><br>JS MM | <b>Street</b>   | <b>City</b>   | <b>Weather</b><br>Dry   |                            |
| <b>Size</b>              | <b>Material</b> | <b>Sewer Use</b><br>Sanitary                                  | <b>Purpose</b><br>Routine Assessment                            | <b>Length</b>              |
| <b>Comments</b>          |                 |   | <b>Pre-Cleaning</b><br>No Pre-Cleaning                          | <b>TV Length</b><br>214.9  |



AP - Access Point - Other @ 0.1 ft.



SC - Service Connection @ 19.7 ft.



SC - Service Connection @ 26.8 ft.



SC - Service Connection @ 70.0 ft.



SC - Service Connection @ 74.2 ft.



C - Crack @ 89.1 ft.



C - Crack @ 101.2 ft.



GO - General Observation @ 104.0 ft.  
Sand in bottom of the pipe



SC - Service Connection @ 111.2 ft.  
Roots in lateral



|                          |                 |   |   |                            |
|--------------------------|-----------------|---|---|----------------------------|
| <b>Owner</b>             | <b>Customer</b> | <b>Upstream MH</b><br>7th Ave between<br>13th and 14th street | <b>Downstream MH</b><br>6th ave between<br>13th and 14th street | <b>Date</b><br>03-Apr-2018 |
| <b>Surveyor</b><br>JS MM | <b>Street</b>   | <b>City</b>   | <b>Weather</b><br>Dry   |                            |
| <b>Size</b>              | <b>Material</b> | <b>Sewer Use</b><br>Sanitary                                  | <b>Purpose</b><br>Routine Assessment                            | <b>Length</b>              |
| <b>Comments</b>          |                 |   | <b>Pre-Cleaning</b><br>No Pre-Cleaning                          | <b>TV Length</b><br>214.9  |



SC - Service Connection @ 113.6 ft.  
Roots in lateral



SC - Service Connection @ 158.3 ft.



C - Crack @ 170.0 ft.



SC - Service Connection @ 188.8 ft.  
Roots in Lateral. Believe this is Mr. Lampi service connection.



SC - Service Connection @ 214.9 ft.



GO - General Observation @ 214.9 ft.  
Large amount of roots in the pipe.



**Peninsular Technologies**





555 Ada Drive  
 Ada, MI 49301  
 Phone: (616) 676-9811

|                          |                     |   |   |                            |
|--------------------------|---------------------|---|---|----------------------------|
| <b>Owner</b><br>Escanaba | <b>Customer</b><br> | <b>Upstream MH</b><br>alley between 1st<br>ave north and 2nd<br>ave north | <b>Downstream MH</b><br>1st ave north<br>between NLR 22nd<br>st | <b>Date</b><br>21-Jul-2017 |
|--------------------------|---------------------|---|---|----------------------------|

|                          |                   |                    |                       |
|--------------------------|-------------------|--------------------|-----------------------|
| <b>Surveyor</b><br>RG,JV | <b>Street</b><br> | <b>City</b><br>esc | <b>Weather</b><br>Dry |
|--------------------------|-------------------|--------------------|-----------------------|

|                  |   |                              |                                      |                   |
|------------------|---|------------------------------|--------------------------------------|-------------------|
| <b>Size</b><br>8 | <b>Material</b><br>Concrete Pipe (non-reinforced) | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br> |
|------------------|---|------------------------------|--------------------------------------|-------------------|

|   |  |                           |
|---|--|---------------------------|
| <b>Comments</b><br>investigating sinkhole in 1st ave between Elmers Rest. and Wendy's | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>343.3 |
|---|--|---------------------------|

|   | Ftg.  | Code | Description          | Position | Severity | Comment                                     |
|---|-------|------|----------------------|----------|----------|---|
|     | 3.0   | AP   | Access Point - Other |          |          |   |
|  | 135.2 | SC   | Service Connection   | 2 to 4   |          |   |
|  | 186.0 | SC   | Service Connection   | 2 to 4   |          |   |
|  | 236.9 | SC   | Service Connection   | 2 to 4   |          |   |
|   | 279.7 | C    | Crack                | 12 to 3  | 2        |   |
|   | 288.9 | SC   | Service Connection   | 2 to 4   |          |   |
|   | 291.0 | H    | Hole                 | 5 to 7   | 4        |   |
|   | 339.9 | I    | Infiltration         | 2 to 4   | 3        |   |
|   | 343.3 | H    | Hole                 | 5 to 7   | 4        | concrete to pvc, seems to be hole on bottom |



|                          |                     |   |   |                            |
|--------------------------|---------------------|---|---|----------------------------|
| <b>Owner</b><br>Escanaba | <b>Customer</b><br> | <b>Upstream MH</b><br>alley between 1st<br>ave north and 2nd<br>ave north | <b>Downstream MH</b><br>1st ave north<br>between NLR 22nd<br>st | <b>Date</b><br>21-Jul-2017 |
|--------------------------|---------------------|---|---|----------------------------|

|                          |                   |                    |                       |
|--------------------------|-------------------|--------------------|-----------------------|
| <b>Surveyor</b><br>RG,JV | <b>Street</b><br> | <b>City</b><br>esc | <b>Weather</b><br>Dry |
|--------------------------|-------------------|--------------------|-----------------------|

|                  |   |                              |                                      |                   |
|------------------|---|------------------------------|--------------------------------------|-------------------|
| <b>Size</b><br>8 | <b>Material</b><br>Concrete Pipe (non-reinforced) | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br> |
|------------------|---|------------------------------|--------------------------------------|-------------------|

|   |  |                           |
|---|--|---------------------------|
| <b>Comments</b><br>investigating sinkhole in 1st ave between Elmers Rest. and Wendy's | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>343.3 |
|---|--|---------------------------|



AP - Access Point - Other @ 3.0 ft.



SC - Service Connection @ 135.2 ft.



SC - Service Connection @ 186.0 ft.



SC - Service Connection @ 236.9 ft.



C - Crack @ 279.7 ft.



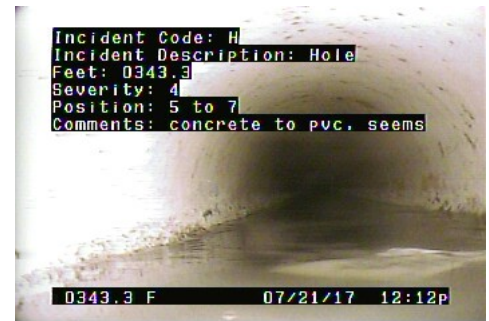
SC - Service Connection @ 288.9 ft.



H - Hole @ 291.0 ft.



I - Infiltration @ 339.9 ft.



H - Hole @ 343.3 ft. concrete to pvc, seems to be hole on bottom



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555 Ada Drive  
 Ada, MI 49301  
 Phone: (616) 676-9811

|                          |                     |   |   |                            |
|--------------------------|---------------------|---|---|----------------------------|
| <b>Owner</b><br>escanaba | <b>Customer</b><br> | <b>Upstream MH</b><br>dead end in alley | <b>Downstream MH</b><br>12th ave between<br>22nd st and S<br>lincoln Rd | <b>Date</b><br>09-Mar-2017 |
|--------------------------|---------------------|---|---|----------------------------|

|                          |                           |                         |                       |
|--------------------------|---------------------------|-------------------------|-----------------------|
| <b>Surveyor</b><br>RG,MT | <b>Street</b><br>12th Ave | <b>City</b><br>Escanaba | <b>Weather</b><br>Dry |
|--------------------------|---------------------------|-------------------------|-----------------------|

|                  |   |                              |                                      |                   |
|------------------|---|------------------------------|--------------------------------------|-------------------|
| <b>Size</b><br>8 | <b>Material</b><br>Concrete Pipe (non-reinforced) | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br> |
|------------------|---|------------------------------|--------------------------------------|-------------------|

|  |  |                          |
|--|--|--------------------------|
| <b>Comments</b><br>inspecting sewer repair | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>66.5 |
|--|--|--------------------------|

|  | Ftg. | Code | Description         | Position | Severity | Comment              |
|--|------|------|---------------------|----------|----------|----------------------|
|  | 66.5 | GO   | General Observation |          |          | stuck, end of survey |
|  | 65.0 | JS   | Joint Separated     | 10 to 10 | 3        |                      |
|  | 61.2 | C    | Crack               | 10 to 2  | 2        |                      |
|  | 40.4 | SC   | Service Connection  | 9 to 10  |          |                      |
|  | 36.3 | SC   | Service Connection  | 2 to 3   |          |                      |



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|                          |                     |   |   |                            |
|--------------------------|---------------------|---|---|----------------------------|
| <b>Owner</b><br>escanaba | <b>Customer</b><br> | <b>Upstream MH</b><br>dead end in alley | <b>Downstream MH</b><br>12th ave between<br>22nd st and S<br>lincoln Rd | <b>Date</b><br>09-Mar-2017 |
|--------------------------|---------------------|---|---|----------------------------|

|                          |                           |                         |                       |
|--------------------------|---------------------------|-------------------------|-----------------------|
| <b>Surveyor</b><br>RG,MT | <b>Street</b><br>12th Ave | <b>City</b><br>Escanaba | <b>Weather</b><br>Dry |
|--------------------------|---------------------------|-------------------------|-----------------------|

|                  |   |                              |                                      |                   |
|------------------|---|------------------------------|--------------------------------------|-------------------|
| <b>Size</b><br>8 | <b>Material</b><br>Concrete Pipe (non-reinforced) | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br> |
|------------------|---|------------------------------|--------------------------------------|-------------------|

|  |  |                          |
|--|--|--------------------------|
| <b>Comments</b><br>inspecting sewer repair | <b>Pre-Cleaning</b><br>No Pre-Cleaning | <b>TV Length</b><br>66.5 |
|--|--|--------------------------|



SC - Service Connection @ 36.3 ft.



SC - Service Connection @ 40.4 ft.



C - Crack @ 61.2 ft. wide crack possible exposed ground



JS - Joint Separated @ 65.0 ft.



GO - General Observation @ 66.5 ft. stuck, end of survey











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|                       |                                       |                              |                                      |                            |
|-----------------------|---------------------------------------|------------------------------|--------------------------------------|----------------------------|
| <b>Owner</b><br>city  | <b>Customer</b><br>1203 5th Ave South | <b>Upstream MH</b><br>S3283  | <b>Downstream MH</b><br>S3246        | <b>Date</b><br>28-Sep-2020 |
| <b>Surveyor</b><br>MT | <b>Street</b><br>5th Ave South        | <b>City</b><br>escanaba      | <b>Weather</b><br>Dry                |                            |
| <b>Size</b><br>8      | <b>Material</b><br>Clay Tile          | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br>          |
| <b>Comments</b>       |                                       |                              |                                      | <b>Pre-Cleaning</b>        |
|                       |                                       |                              |                                      | 202.5                      |

|   | Ftg.  | Code | Description          | Position | Severity | Comment                |
|---|-------|------|----------------------|----------|----------|------------------------|
|     | 0.1   | AP   | Access Point - Other |          |          | Manhole S3283          |
|     |       |      |                      |          |          |                        |
|   |       |      |                      |          |          |                        |
|   | 16.5  | C    | Crack                | 8 to 11  | 2        |                        |
|   | 18.4  | C    | Crack                | 10 to 2  | 2        |                        |
|   | 22.4  | C    | Crack                | 8 to 11  | 2        |                        |
|   | 28.6  | C    | Crack                | 7 to 11  | 2        |                        |
|   | 38.5  | C    | Crack                | 10 to 2  | 2        |                        |
|   | 40.6  | C    | Crack                | 10 to 2  | 2        |                        |
|   | 60.9  | C    | Crack                | 1 to 4   | 2        |                        |
|   | 74.9  | C    | Crack                | 1 to 4   | 2        |                        |
|   | 77.6  | C    | Crack                | 1 to 5   | 10       | Real Bad!              |
|  | 82.4  | SC   | Service Connection   | 12 to 3  |          |                        |
|   |       |      |                      |          |          |                        |
|   |       |      |                      |          |          |                        |
|   | 202.5 | SC   | Service Connection   | 11 to 1  |          | Not sure what this is? |
|   | 202.5 | C    | Crack                | 12 to 12 | 10       |                        |



|                       |                                       |                              |                                      |                            |
|-----------------------|---------------------------------------|------------------------------|--------------------------------------|----------------------------|
| <b>Owner</b><br>city  | <b>Customer</b><br>1203 5th Ave South | <b>Upstream MH</b><br>S3283  | <b>Downstream MH</b><br>S3246        | <b>Date</b><br>28-Sep-2020 |
| <b>Surveyor</b><br>MT | <b>Street</b><br>5th Ave South        |                              | <b>City</b><br>escanaba              | <b>Weather</b><br>Dry      |
| <b>Size</b><br>8      | <b>Material</b><br>Clay Tile          | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br>          |
| <b>Comments</b>       |                                       |                              | <b>Pre-Cleaning</b>                  | <b>TV Length</b><br>202.5  |



AP - Access Point - Other @ 0.1 ft. Manhole S3283



C - Crack @ 16.5 ft.



C - Crack @ 18.4 ft.



C - Crack @ 22.4 ft.



C - Crack @ 28.6 ft.



C - Crack @ 38.5 ft.



C - Crack @ 40.6 ft.



C - Crack @ 60.9 ft.



C - Crack @ 74.9 ft.



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|                       |                                       |                              |                                      |                            |
|-----------------------|---------------------------------------|------------------------------|--------------------------------------|----------------------------|
| <b>Owner</b><br>city  | <b>Customer</b><br>1203 5th Ave South | <b>Upstream MH</b><br>S3283  | <b>Downstream MH</b><br>S3246        | <b>Date</b><br>28-Sep-2020 |
| <b>Surveyor</b><br>MT | <b>Street</b><br>5th Ave South        | <b>City</b><br>escanaba      | <b>Weather</b><br>Dry                |                            |
| <b>Size</b><br>8      | <b>Material</b><br>Clay Tile          | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br>          |
| <b>Comments</b>       |                                       |                              | <b>Pre-Cleaning</b>                  | <b>TV Length</b><br>202.5  |



C - Crack @ 77.6 ft. Real Bad!



SC - Service Connection @ 82.4 ft.



SC - Service Connection @ 202.5 ft. Not sure what this is?



C - Crack @ 202.5 ft.



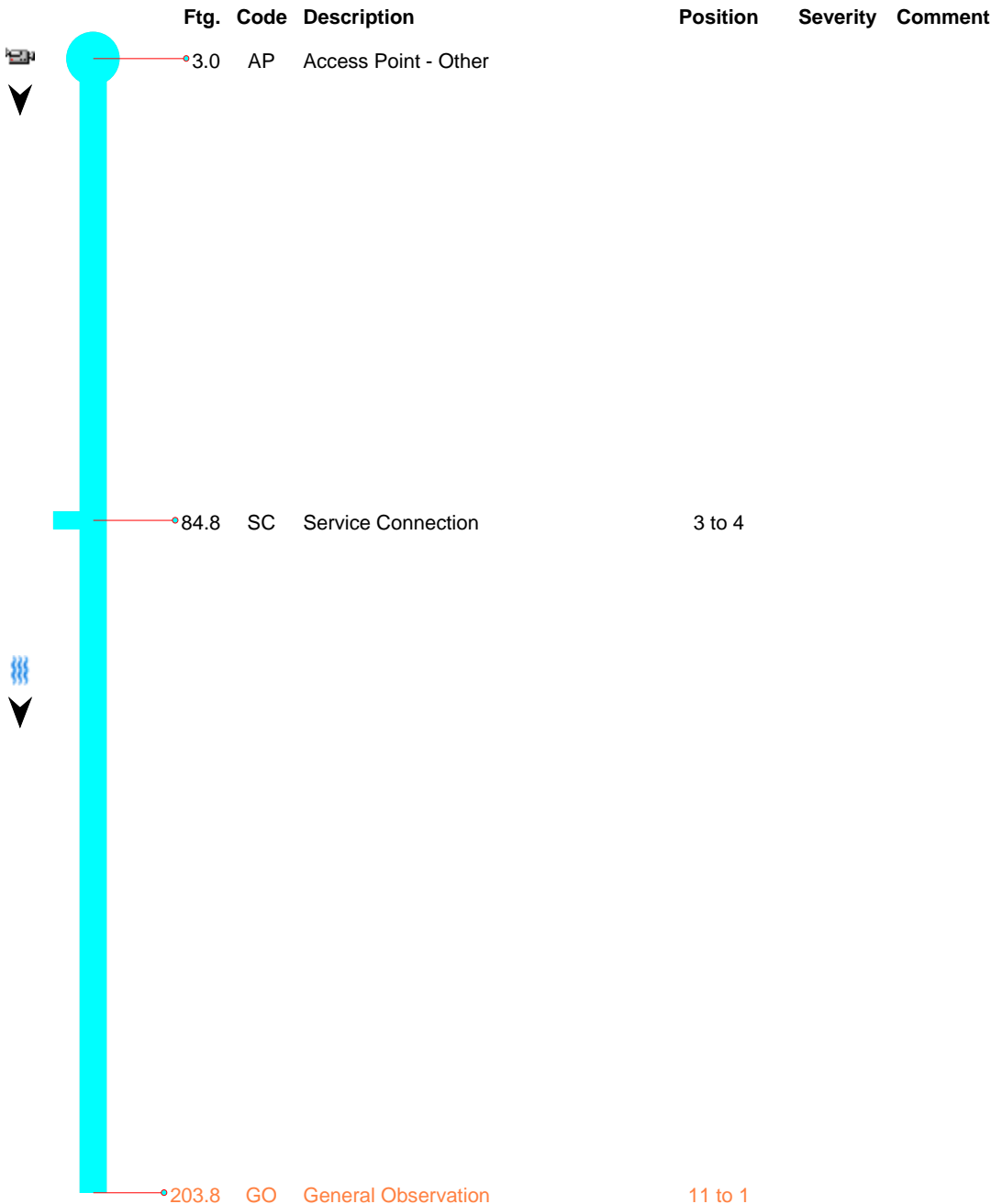
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555 Ada Drive

Ada, MI 49301

Phone: (616) 676-9811

|   |                              |                              |                                      |                            |
|---|------------------------------|------------------------------|--------------------------------------|----------------------------|
| <b>Owner</b>                                | <b>Customer</b>              | <b>Upstream MH</b><br>s3283  | <b>Downstream MH</b><br>s3246        | <b>Date</b><br>13-Jan-2021 |
| <b>Surveyor</b>                             | <b>Street</b>                |                              | <b>City</b>                          | <b>Weather</b><br>Dry      |
| <b>Size</b>                                 | <b>Material</b><br>Clay Tile | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b>              |
| <b>Comments</b><br>Lantern hole in 12th st? |                              |                              | <b>Pre-Cleaning</b><br>Jetting       | <b>TV Length</b><br>203.8  |





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|              |                 |                             |                               |                            |
|--------------|-----------------|-----------------------------|-------------------------------|----------------------------|
| <b>Owner</b> | <b>Customer</b> | <b>Upstream MH</b><br>s3283 | <b>Downstream MH</b><br>s3246 | <b>Date</b><br>13-Jan-2021 |
|--------------|-----------------|-----------------------------|-------------------------------|----------------------------|

|                 |               |             |                       |
|-----------------|---------------|-------------|-----------------------|
| <b>Surveyor</b> | <b>Street</b> | <b>City</b> | <b>Weather</b><br>Dry |
|-----------------|---------------|-------------|-----------------------|

|             |                              |                              |                                      |               |
|-------------|------------------------------|------------------------------|--------------------------------------|---------------|
| <b>Size</b> | <b>Material</b><br>Clay Tile | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b> |
|-------------|------------------------------|------------------------------|--------------------------------------|---------------|

|   |                                |                           |
|---|--------------------------------|---------------------------|
| <b>Comments</b><br>Lantern hole in 12th st? | <b>Pre-Cleaning</b><br>Jetting | <b>TV Length</b><br>203.8 |
|---|--------------------------------|---------------------------|



AP - Access Point - Other @ 3.0 ft.







SC - Service Connection @ 84.8 ft.



GO - General Observation @ 203.8 ft.

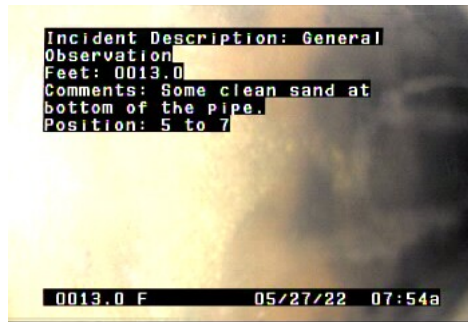
|  |  |                    |                      |                  |             |
|--|--|--------------------|----------------------|------------------|-------------|
| <b>Owner</b>   | <b>Customer</b>                                  | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>      | <b>Time</b> |
|  |  | S3870              | S4294                | 05-27-2022       | 11:05 AM    |
| <b>Surveyor</b>  | <b>Street</b>                                    |                    | <b>City</b>          | <b>Weather</b>   |             |
| JS CL  | 3rd Ave south Alley between 13th and 14th street |                    |                      | Dry              |             |
| <b>Size</b>  | <b>Material</b>                                  | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>    |             |
|  |  |                    | Routine Assessment   |                  |             |
| <b>Comments</b>  |  |                    | <b>Pre-Cleaning</b>  | <b>TV Length</b> |             |
| Camera in at 3rd Ave south Alley between 13th and 14th street going towards 4th ave. |  |                    | Jetting              | 33.5             |             |

|  | Ftg. | Code | Description          | Position | Severity | Comment  |
|--|------|------|----------------------|----------|----------|--|
|    | 0.0  | AP   | Access Point - Other |          |          |  |
|    |      |      |                      |          |          |  |
|  |      |      |                      |          |          |  |
|  |      |      |                      |          |          |  |
|  | 13.0 | GO   | General Observation  | 5 to 7   |          | Some clean sand at bottom of the pipe.   |
|  | 22.9 | R    | Roots                | 3 to 5   | 3        |  |
|  | 27.0 | C    | Crack                | 1 to 4   | 2        |  |
|  | 29.0 | R    | Roots                | 2 to 9   | 3        |  |
|  | 31.2 | R    | Roots                | 8 to 10  | 3        | Large ball of roots. Likely the cause of the backups.<br>Roots are preventing the camera from advancing. |
|  | 31.2 | C    | Crack                | 8 to 10  | 2        |  |
|  | 31.8 | R    | Roots                | 2 to 10  | 3        |  |
|  | 33.5 | GO   | General Observation  |          |          |  |

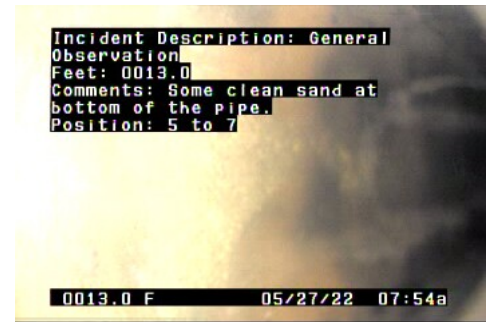
|  |  |                    |                      |                     |                  |
|--|--|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>   | <b>Customer</b>                                  | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |  | S3870              | S4294                | 05-27-2022          | 11:05 AM         |
| <b>Surveyor</b>  | <b>Street</b>                                    |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS CL  | 3rd Ave south Alley between 13th and 14th street |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>                                  | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
|  |  |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>  |  |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at 3rd Ave south Alley between 13th and 14th street going towards 4th ave. |  |                    |                      | Jetting             | 33.5             |



AP - Access Point - Other @ 0.0 ft.



GO - General Observation @ 13.0 ft.  
Some clean sand at bottom of the pipe.



R - Roots @ 22.9 ft.



C - Crack @ 27.0 ft.



R - Roots @ 29.0 ft.



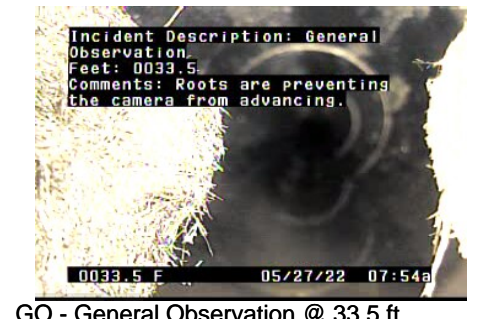
R - Roots @ 31.2 ft.



C - Crack @ 31.2 ft.



R - Roots @ 31.8 ft. Large ball of roots. Likely the cause of the backups.



GO - General Observation @ 33.5 ft. Roots are preventing the camera from advancing.

|              |                 |                    |                      |             |             |
|--------------|-----------------|--------------------|----------------------|-------------|-------------|
| <b>Owner</b> | <b>Customer</b> | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b> | <b>Time</b> |
|              |                 | S3870              | S4294                | 05-27-2022  | 11:05 AM    |

|                 |  |             |                |
|-----------------|--|-------------|----------------|
| <b>Surveyor</b> | <b>Street</b>                                    | <b>City</b> | <b>Weather</b> |
| JS CL           | 3rd Ave south Alley between 13th and 14th street |             | Dry            |

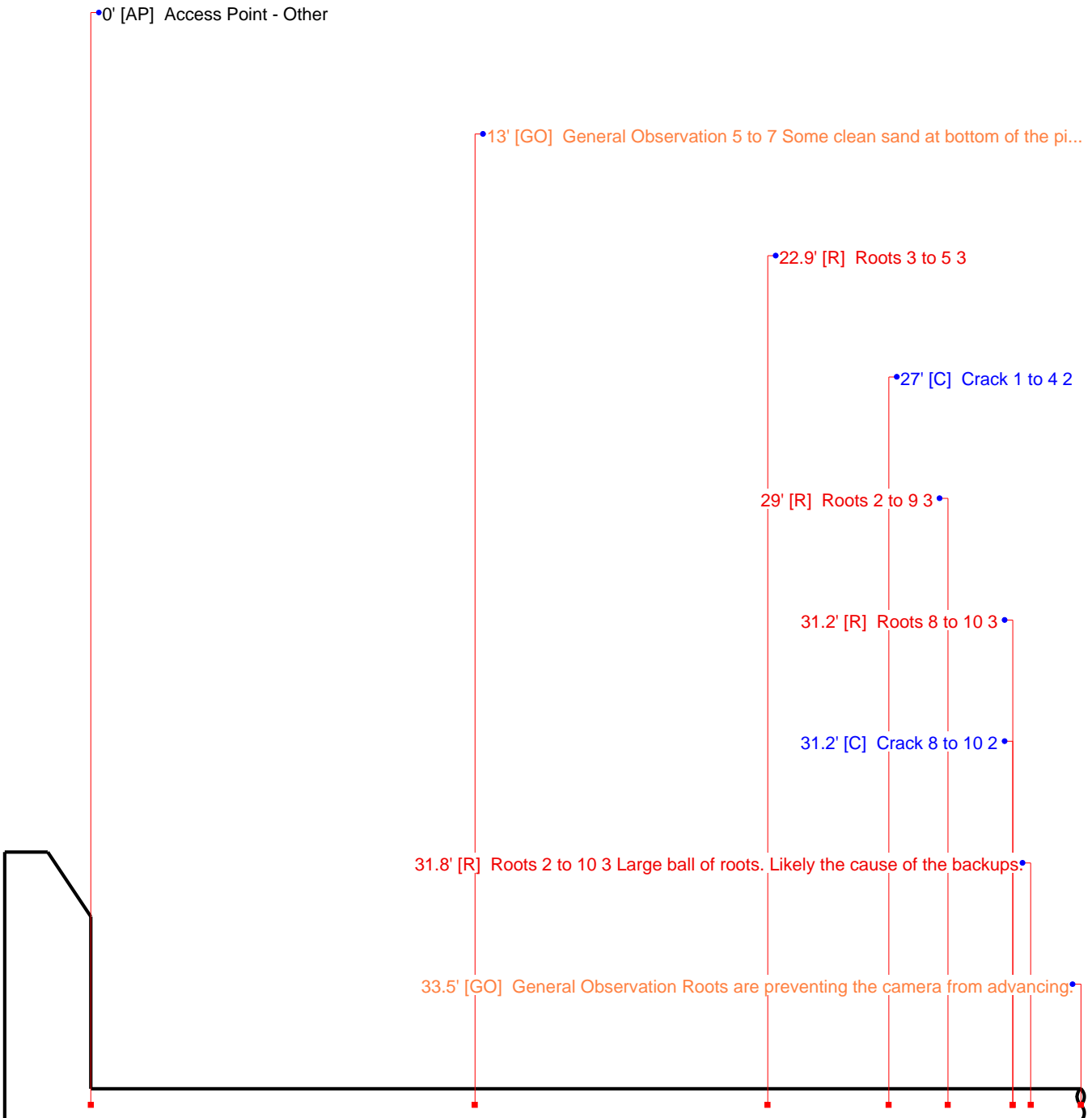
|             |                 |                  |                    |               |
|-------------|-----------------|------------------|--------------------|---------------|
| <b>Size</b> | <b>Material</b> | <b>Sewer Use</b> | <b>Purpose</b>     | <b>Length</b> |
|             |                 |                  | Routine Assessment |               |

|  |                     |                  |
|--|---------------------|------------------|
| <b>Comments</b>  | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at 3rd Ave south Alley between 13th and 14th street going towards 4th ave. | Jetting             | 33.5             |

| Ftg. | Code | Description          | Position | Severity | Comment   |
|------|------|----------------------|----------|----------|---|
| 0.0  | AP   | Access Point - Other |          |          |   |
| 13.0 | GO   | General Observation  | 5 to 7   |          | Some clean sand at bottom of the pipe.                |
| 22.9 | R    | Roots                | 3 to 5   | 3        |   |
| 27.0 | C    | Crack                | 1 to 4   | 2        |   |
| 29.0 | R    | Roots                | 2 to 9   | 3        |   |
| 31.2 | R    | Roots                | 8 to 10  | 3        |   |
| 31.2 | C    | Crack                | 8 to 10  | 2        |   |
| 31.8 | R    | Roots                | 2 to 10  | 3        | Large ball of roots. Likely the cause of the backups. |
| 33.5 | GO   | General Observation  |          |          | Roots are preventing the camera from advancing.       |

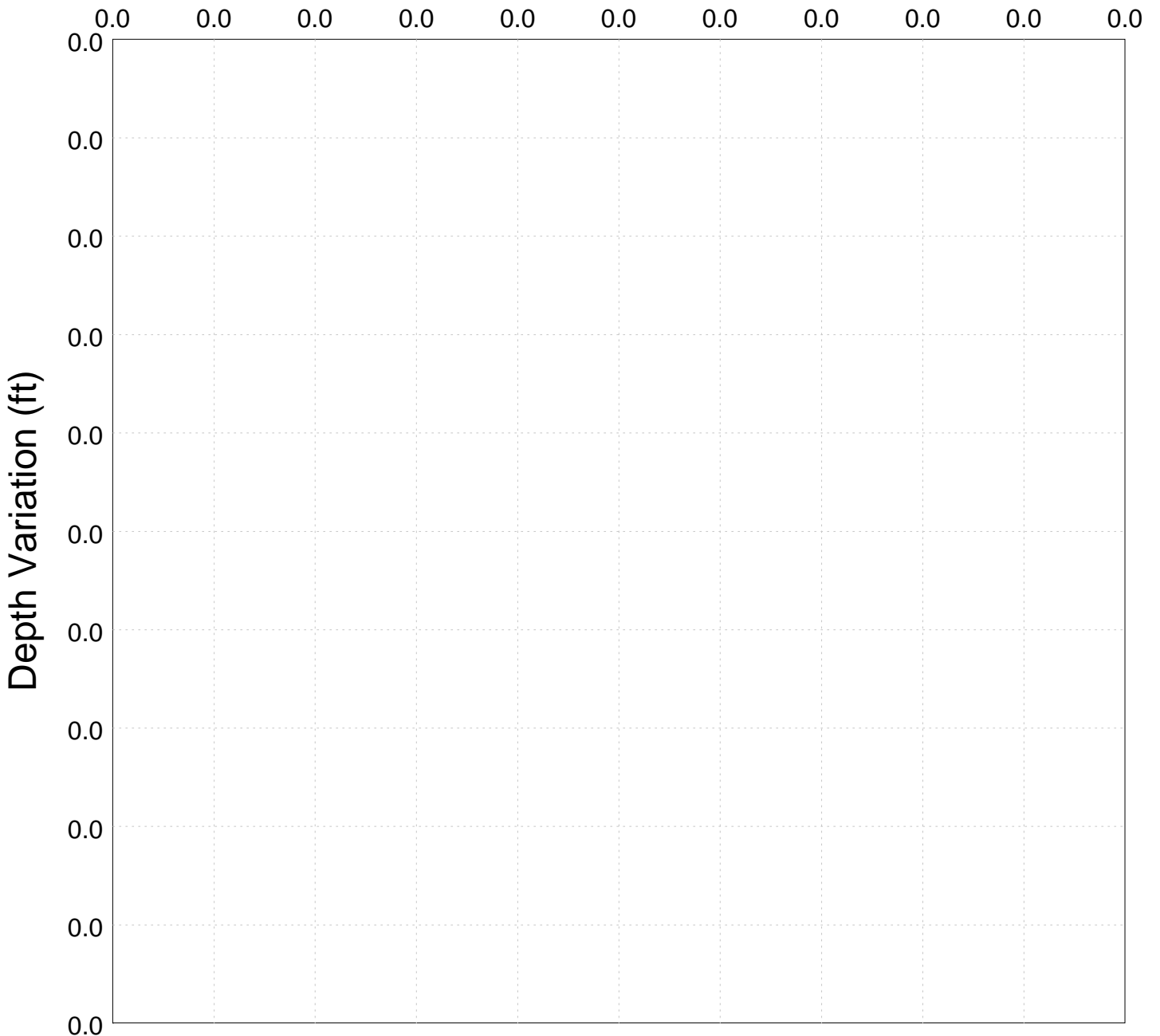


|  |  |                    |                      |                     |                  |
|--|--|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>   | <b>Customer</b>                                  | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |  | S3870              | S4294                | 05-27-2022          | 11:05 AM         |
| <b>Surveyor</b>  | <b>Street</b>                                    |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS CL  | 3rd Ave south Alley between 13th and 14th street |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>                                  | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
|  |  |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>  |  |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at 3rd Ave south Alley between 13th and 14th street going towards 4th ave. |  |                    |                      | Jetting             | 33.5             |



|  |  |                    |                      |                     |                  |
|--|--|--------------------|----------------------|---------------------|------------------|
| <b>Owner</b>   | <b>Customer</b>                                  | <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Date</b>         | <b>Time</b>      |
|  |  | S3870              | S4294                | 05-27-2022          | 11:05 AM         |
| <b>Surveyor</b>  | <b>Street</b>                                    |                    | <b>City</b>          | <b>Weather</b>      |                  |
| JS CL  | 3rd Ave south Alley between 13th and 14th street |                    |                      | Dry                 |                  |
| <b>Size</b>  | <b>Material</b>                                  | <b>Sewer Use</b>   | <b>Purpose</b>       | <b>Length</b>       |                  |
|  |  |                    | Routine Assessment   |                     |                  |
| <b>Comments</b>  |  |                    |                      | <b>Pre-Cleaning</b> | <b>TV Length</b> |
| Camera in at 3rd Ave south Alley between 13th and 14th street going towards 4th ave. |  |                    |                      | Jetting             | 33.5             |

**Distance (ft)**





**Peninsular Technologies**

555 Ada Drive

Ada, MI 49301

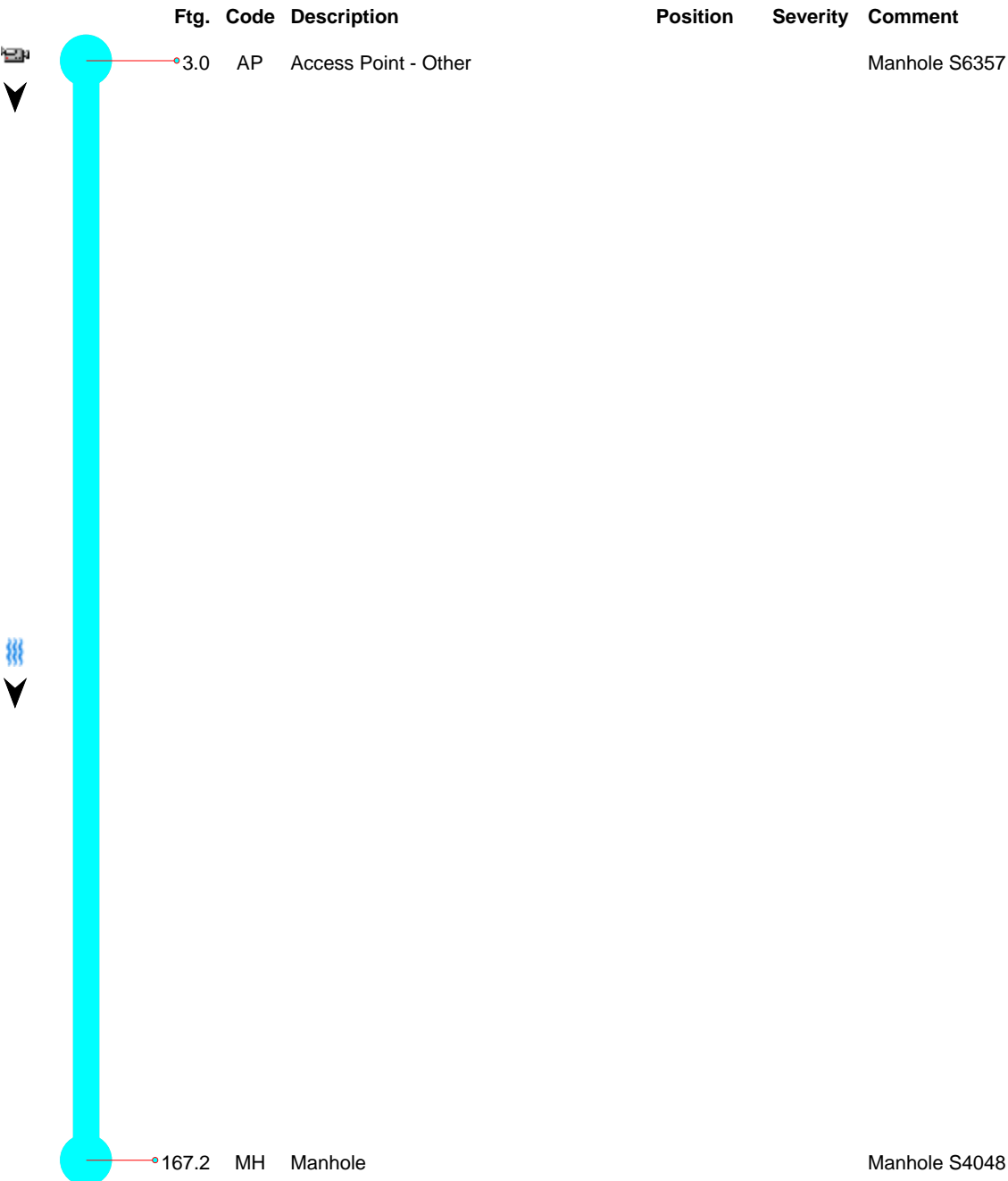
Phone: (616) 676-9811

|                                  |                     |                             |                               |                            |
|----------------------------------|---------------------|-----------------------------|-------------------------------|----------------------------|
| <b>Owner</b><br>city of escanaba | <b>Customer</b><br> | <b>Upstream MH</b><br>S6357 | <b>Downstream MH</b><br>S4048 | <b>Date</b><br>28-Dec-2020 |
|----------------------------------|---------------------|-----------------------------|-------------------------------|----------------------------|

|                     |                             |                         |                        |
|---------------------|-----------------------------|-------------------------|------------------------|
| <b>Surveyor</b><br> | <b>Street</b><br>S. 5th St. | <b>City</b><br>escanaba | <b>Weather</b><br>Snow |
|---------------------|-----------------------------|-------------------------|------------------------|

|                  |                                       |                              |                                      |                   |
|------------------|---------------------------------------|------------------------------|--------------------------------------|-------------------|
| <b>Size</b><br>8 | <b>Material</b><br>Polyvinyl Chloride | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment | <b>Length</b><br> |
|------------------|---------------------------------------|------------------------------|--------------------------------------|-------------------|

|                     |                                       |                           |
|---------------------|---------------------------------------|---------------------------|
| <b>Comments</b><br> | <b>Pre-Cleaning</b><br>Heavy Cleaning | <b>TV Length</b><br>167.2 |
|---------------------|---------------------------------------|---------------------------|





**Peninsular Technologies**

555 Ada Drive

Ada, MI 49301

Phone: (616) 676-9811

|                                  |                                       |                              |                                       |                            |
|----------------------------------|---------------------------------------|------------------------------|---------------------------------------|----------------------------|
| <b>Owner</b><br>city of escanaba | <b>Customer</b><br>                   | <b>Upstream MH</b><br>S6357  | <b>Downstream MH</b><br>S4048         | <b>Date</b><br>28-Dec-2020 |
| <b>Surveyor</b><br>              | <b>Street</b><br>S. 5th St.           | <b>City</b><br>escanaba      | <b>Weather</b><br>Snow                |                            |
| <b>Size</b><br>8                 | <b>Material</b><br>Polyvinyl Chloride | <b>Sewer Use</b><br>Sanitary | <b>Purpose</b><br>Routine Assessment  | <b>Length</b><br>          |
| <b>Comments</b><br>              |                                       |                              | <b>Pre-Cleaning</b><br>Heavy Cleaning | <b>TV Length</b><br>167.2  |



AP - Access Point - Other @ 3.0 ft.  
Manhole S6357




MH - Manhole @ 167.2 ft. Manhole  
S4048 ahead

**Appendix B**

Part 8: NPDES Permit

PERMIT NO. MI0025381

**STATE OF MICHIGAN**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**



**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Water Pollution Control Act, 33 U.S.C., Section 1251 *et seq.*, as amended; Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2011-1,

**City of Escanaba**  
410 Ludington Street  
PO Box 948  
Escanaba, MI 49829

is authorized to discharge from the **Escanaba Wastewater Treatment Plant** located at

1900 Willow Creek Road  
Escanaba, MI 49829

designated as **Escanaba WWTP**

to the receiving water named Lake Michigan (Little Bay de Noc) in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on June 28, 2016.

**This permit takes effect on February 1, 2019.** The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date, this permit shall supersede National Pollutant Discharge Elimination System (NPDES) Permit No. MI0025381 (expiring October 1, 2016).

This permit and the authorization to discharge shall expire at midnight on **October 1, 2023**. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application that contains such information, forms, and fees as are required by the Michigan Department of Environmental Quality (Department) by **April 4, 2023**.

**Issued:** December 28, 2018

Original signed by Christine Alexander  
Christine Alexander, Manager  
Permits Section  
Water Resources Division

## PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by January 15 for notices mailed by December 1. The fee is due no later than 45 days after receiving the notice for notices mailed after December 1.

**Annual Permit Fee Classification:** Municipal Major, less than 10 MGD (Individual Permit)

In accordance with Section 324.3132 of the NREPA, the permittee shall make payment of an annual biosolids land application fee to the Department if the permittee land applies biosolids. In response to the Department's annual notice, the permittee shall submit the fee, which shall be postmarked no later than January 31 of each year.

## CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Upper Peninsula District Office of the Water Resources Division. The Upper Peninsula District Office is located at 1504 West Washington Street, Marquette, MI 49855, Telephone: 906-228-4853, Fax: 906-228-4940.

## CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

**PART I**

**Section A. Limitations and Monitoring Requirements**

**1. Final Effluent Limitations, Monitoring Point 001A**

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to Lake Michigan (Little Bay de Noc) at Latitude 45.71757, Longitude -87.04742. Such discharge shall be limited and monitored by the permittee as specified below.

| Parameter                                      | Maximum Limits for Quantity or Loading |       |          |         | Maximum Limits for Quality or Concentration |       |                        |            | Monitoring Frequency | Sample Type             |
|--|--|-------|----------|---------|---|-------|------------------------|------------|----------------------|-------------------------|
|  | Monthly                                | 7-Day | Daily    | Units   | Monthly                                     | 7-Day | Daily                  | Units      |                      |                         |
| Flow   | (report)                               | ---   | (report) | MGD     | ---   | ---   | ---                    | ---        | Daily                | Report Total Daily Flow |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) |  |       |          |         |   |       |                        |            |                      |                         |
|  | 460                                    | 730   | (report) | lbs/day | 25  | 40    | (report)               | mg/l       | 5×Weekly             | 24-Hr Composite         |
| Total Suspended Solids (TSS)                   |  |       |          |         |   |       |                        |            |                      |                         |
|  | 550                                    | 830   | (report) | lbs/day | 30  | 45    | (report)               | mg/l       | 5×Weekly             | 24-Hr Composite         |
| Ammonia Nitrogen (as N)                        |  |       |          |         |   |       |                        |            |                      |                         |
| May-September                                  | (report)                               | ---   | (report) | lbs/day | (report)                                    | ---   | (report)               | mg/l       | Weekly               | 24-Hr Composite         |
| Total Phosphorus (as P)                        | 18                                     | ---   | (report) | lbs/day | 1.0   | ---   | (report)               | mg/l       | 3×Weekly             | 24-Hr Composite         |
| Fecal Coliform Bacteria                        | ---                                    | ---   | ---      | ---     | 200   | 400   | (report)               | cts/100 ml | 5×Weekly             | Grab                    |
| Total Residual Chlorine                        | ---                                    | ---   | ---      | ---     | ---   | ---   | 0.5                    | mg/l       | 5×Weekly             | Grab                    |
| Total Copper                                   | ---                                    | ---   | 0.88     | lbs/day | ---   | ---   | 48                     | ug/l       | 2×Monthly            | 24-Hr Composite         |
| Total Mercury                                  |  |       |          |         |   |       |                        |            |                      |                         |
| --Corrected                                    | (report)                               | ---   | (report) | lbs/day | (report)                                    | ---   | (report)               | ng/l       | Quarterly            | Calculation             |
| --Uncorrected                                  | ---                                    | ---   | ---      | ---     | ---   | ---   | (report)               | ng/l       | Quarterly            | Grab                    |
| --Field Duplicate                              | ---                                    | ---   | ---      | ---     | ---   | ---   | (report)               | ng/l       | Quarterly            | Grab                    |
| --Field Blank                                  | ---                                    | ---   | ---      | ---     | ---   | ---   | (report)               | ng/l       | Quarterly            | Preparation             |
| --Laboratory Method Blank                      | ---                                    | ---   | ---      | ---     | ---   | ---   | (report)               | ng/l       | Quarterly            | Preparation             |
|  | <b>12-Month Rolling Avg</b>            |       |          |         | <b>12-Month Rolling Avg</b>                 |       |                        |            |                      |                         |
| Total Mercury                                  | 0.000037                               | ---   | ---      | lbs/day | 2.0   | ---   | ---                    | ng/l       | Quarterly            | Calculation             |
|  |  |       |          |         | <b>Minimum % Monthly</b>                    |       | <b>Minimum % Daily</b> |            |                      |                         |
| CBOD5 Minimum % Removal                        | ---                                    | ---   | ---      | ---     | 85  | ---   | (report)               | %          | Monthly              | Calculation             |
| TSS Minimum % Removal                          | ---                                    | ---   | ---      | ---     | 85  | ---   | (report)               | %          | Monthly              | Calculation             |



**PART I**

**Section A. Limitations and Monitoring Requirements**

| Parameter        | Maximum Limits for Quantity or Loading |     |     |     | Maximum Limits for Quality or Concentration |     |               |      | Monitoring | Sample |
|------------------|--|-----|-----|-----|---|-----|---------------|------|------------|--------|
|                  |  |     |     |     | Minimum Daily                               |     | Maximum Daily |      |            |        |
| pH               | ---                                    | --- | --- | --- | 6.5   | --- | 9.0           | S.U. | 5×Weekly   | Grab   |
| Dissolved Oxygen | ---                                    | --- | --- | --- | 4.0   | --- | ---           | mg/l | 5×Weekly   | Grab   |

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: 2.2 MGD.

- a. **Narrative Standard**  
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Sampling Locations**  
Samples for CBOD5, TSS, Ammonia Nitrogen, Total Phosphorus, and Total Copper shall be taken prior to disinfection. Samples for Fecal Coliform Bacteria, Total Residual Chlorine, Total Mercury, pH, and Dissolved Oxygen shall be taken after disinfection. The Department may approve alternate sampling locations that are demonstrated by the permittee to be representative of the effluent.
- c. **Total Residual Chlorine (TRC)**  
Compliance with the TRC limit shall be determined on the basis of one or more grab samples. If more than one (1) sample per day is taken, the additional samples shall be collected in near equal intervals over at least eight (8) hours. The samples shall be analyzed immediately upon collection and the average reported as the daily concentration. Samples shall be analyzed in accordance with Part II.B.2. of this permit.
- d. **Percent Removal Requirements**  
These requirements shall be calculated based on the monthly (30-day) effluent CBOD5 and TSS concentrations and the monthly influent concentrations for approximately the same period.
- e. **Monitoring Frequency Reduction for Total Copper**  
After the submittal of 12 months of data, the permittee may request, in writing, Department approval for a reduction in monitoring frequency for Total Copper. This request shall contain an explanation as to why the reduced monitoring is appropriate. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.1. of this permit. The monitoring frequency for Total Copper shall not be reduced to less than quarterly. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittee.
- f. **Quarterly Monitoring**  
Quarterly samples shall be taken during the months of January, April, July, and October. If the facility does not discharge during these months, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "\*"G" on the Discharge Monitoring Report (DMR). (For purposes of reporting on the Daily tab of the DMR, the permittee shall enter "\*"G" on the first day of the month only).

**PART I****Section A. Limitations and Monitoring Requirements**

## g. Final Effluent Limitation for Total Mercury

The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharger variance from the WQBEL of 1.3 ng/l, pursuant to Rule 1103(9) of the Water Quality Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the calculation of which may be done using blank-corrected sample results. The 12-month rolling average shall be determined by adding the present monthly average result to the preceding 11 monthly average results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total mercury, quarterly monitoring shall be equivalent to three (3) months of monitoring in calculating the 12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any quarter is less than or equal to the LCA, the permittee will be considered to be in compliance for total mercury for that quarter, provided the permittee is also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.4. of this permit.

## h. Total Mercury Testing and Additional Reporting Requirements

The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E, "Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry." The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique sampling procedures is required unless the permittee can demonstrate to the Department that an alternate sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in EPA Method 1669, Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance), EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittee shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittee shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than ten (10) samples are collected during a sampling event, the permittee shall collect at least one (1) additional field blank AND field duplicate for every ten (10) samples collected. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e., a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittee shall report under "Total Mercury – Corrected" the same value reported under "Total Mercury – Uncorrected." The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

## PART I

## Section A. Limitations and Monitoring Requirements

## 2. Quantification Levels and Analytical Methods for Selected Parameters

Quantification levels (QLs) are specified for selected parameters in the table below. These QLs shall be considered the maximum acceptable unless a higher QL is appropriate because of sample matrix interference. Justification for higher QLs shall be submitted to the Department within 30 days of such determination. Where necessary to help ensure that the QLs specified can be achieved, analytical methods may also be specified in the table below. The sampling procedures, preservation and handling, and analytical protocol for all monitoring conducted in compliance with this permit, including monitoring conducted to meet the requirements of the application for permit reissuance, shall be in accordance with the methods specified in the table below, or in accordance with Part II.B.2. of this permit if no method is specified in the table below, unless an alternate method is approved by the Department. With the exception of total mercury, all units are in ug/l. The table is continued on the following page:

| Parameter                             | QL   | Units | Analytical Method   |
|---------------------------------------|------|-------|---------------------|
| 1,2-Diphenylhydrazine (as Azobenzene) | 3.0  | ug/l  |                     |
| 2,4,6-Trichlorophenol                 | 5.0  | ug/l  |                     |
| 2,4-Dinitrophenol                     | 19   | ug/l  |                     |
| 3,3'-Dichlorobenzidine                | 1.5  | ug/l  | EPA Method 605      |
| 4,4'-DDD                              | 0.05 | ug/l  | EPA Method 608      |
| 4,4'-DDE                              | 0.01 | ug/l  | EPA Method 608      |
| 4,4'-DDT                              | 0.01 | ug/l  | EPA Method 608      |
| Acrylonitrile                         | 1.0  | ug/l  |                     |
| Aldrin                                | 0.01 | ug/l  | EPA Method 608      |
| Alpha-Hexachlorocyclohexane           | 0.01 | ug/l  | EPA Method 608      |
| Antimony, Total                       | 1    | ug/l  |                     |
| Arsenic, Total                        | 1    | ug/l  |                     |
| Barium, Total                         | 5    | ug/l  |                     |
| Benzidine                             | 0.1  | ug/l  | EPA Method 605      |
| Beryllium, Total                      | 1    | ug/l  |                     |
| Beta-Hexachlorocyclohexane            | 0.01 | ug/l  | EPA Method 608      |
| Bis (2-Chloroethyl) Ether             | 1.0  | ug/l  |                     |
| Boron, Total                          | 20   | ug/l  |                     |
| Cadmium, Total                        | 0.2  | ug/l  |                     |
| Chlordane                             | 0.01 | ug/l  | EPA Method 608      |
| Chromium, Hexavalent                  | 5    | ug/l  |                     |
| Chromium, Total                       | 10   | ug/l  |                     |
| Copper, Total                         | 1    | ug/l  |                     |
| Cyanide, Available                    | 2    | ug/l  | EPA Method OIA 1677 |
| Cyanide, Total                        | 5    | ug/l  |                     |
| Delta-Hexachlorocyclohexane           | 0.01 | ug/l  | EPA Method 608      |
| Dieldrin                              | 0.01 | ug/l  | EPA Method 608      |
| Di-N-Butyl Phthalate                  | 9.0  | ug/l  |                     |
| Endosulfan I                          | 0.01 | ug/l  | EPA Method 608      |
| Endosulfan II                         | 0.01 | ug/l  | EPA Method 608      |
| Endosulfan Sulfate                    | 0.01 | ug/l  | EPA Method 608      |
| Endrin                                | 0.01 | ug/l  | EPA Method 608      |
| Endrin Aldehyde                       | 0.01 | ug/l  | EPA Method 608      |
| Fluoranthene                          | 1.0  | ug/l  |                     |
| Heptachlor                            | 0.01 | ug/l  | EPA Method 608      |

## PART I

## Section A. Limitations and Monitoring Requirements

| Parameter                 | QL   | Units | Analytical Method |
|---------------------------|------|-------|-------------------|
| Heptachlor Epoxide        | 0.01 | ug/l  | EPA Method 608    |
| Hexachlorobenzene         | 0.01 | ug/l  | EPA Method 612    |
| Hexachlorobutadiene       | 0.01 | ug/l  | EPA Method 612    |
| Hexachlorocyclopentadiene | 0.01 | ug/l  | EPA Method 612    |
| Hexachloroethane          | 5.0  | ug/l  |                   |
| Lead, Total               | 1    | ug/l  |                   |
| Lindane                   | 0.01 | ug/l  | EPA Method 608    |
| Lithium, Total            | 10   | ug/l  |                   |
| Mercury, Total            | 0.5  | ng/l  | EPA Method 1631E  |
| Nickel, Total             | 5    | ug/l  |                   |
| PCB-1016                  | 0.1  | ug/l  | EPA Method 608    |
| PCB-1221                  | 0.1  | ug/l  | EPA Method 608    |
| PCB-1232                  | 0.1  | ug/l  | EPA Method 608    |
| PCB-1242                  | 0.1  | ug/l  | EPA Method 608    |
| PCB-1248                  | 0.1  | ug/l  | EPA Method 608    |
| PCB-1254                  | 0.1  | ug/l  | EPA Method 608    |
| PCB-1260                  | 0.1  | ug/l  | EPA Method 608    |
| Pentachlorophenol         | 1.8  | ug/l  |                   |
| Phenanthrene              | 1.0  | ug/l  |                   |
| Selenium, Total           | 1.0  | ug/l  |                   |
| Silver, Total             | 0.5  | ug/l  |                   |
| Strontium, Total          | 1000 | ug/l  |                   |
| Sulfides, Dissolved       | 20   | ug/l  |                   |
| Thallium, Total           | 1    | ug/l  |                   |
| Toxaphene                 | 0.1  | ug/l  | EPA Method 608    |
| Vinyl Chloride            | 0.25 | ug/l  |                   |
| Zinc, Total               | 10   | ug/l  |                   |

### 3. Additional Monitoring Requirements

As a condition of this permit, the permittee shall monitor the discharge from monitoring point 001A for the constituents identified below. This monitoring is an application requirement of 40 CFR 122.21(j), effective December 2, 1999. Testing shall be conducted in October 2019, May 2020, March 2021, and August 2022. Grab samples shall be collected for available cyanide, total phenols, and the Volatile Organic Compounds identified below. For all other parameters, 24-hour composite samples shall be collected.

Test species for whole effluent toxicity monitoring shall include fathead minnow **and** either *Daphnia magna*, *Daphnia pulex* or *Ceriodaphnia dubia*, for a total of four (4) tests on each species. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-012, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (Fifth Edition). When the effluent ammonia nitrogen (as N) concentration is greater than 5 mg/l, the pH of the toxicity test shall be maintained at the pH of the effluent at the time of sample collection. Toxicity test data acceptability is contingent upon the validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request.

**PART I**

**Section A. Limitations and Monitoring Requirements**

The results of such additional monitoring shall be submitted with the application for reissuance (see the cover page of this permit for the application due date). The permittee shall notify the Department within 14 days of completing the monitoring for each month specified above in accordance with Part II.C.5. Additional reporting requirements are specified in Part II.C.11. The permittee shall report to the Department any whole effluent toxicity test results greater than 1.0 TU<sub>A</sub> within five (5) days of becoming aware of the result. If, upon review of the analysis, it is determined that additional requirements are needed to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified by the Department in accordance with applicable laws and rules.

Whole Effluent Toxicity

acute toxicity

Hardness

calcium carbonate

Metals (Total Recoverable), Cyanide and Total Phenols

|           |         |                          |          |
|-----------|---------|--------------------------|----------|
| antimony  | arsenic | available cyanide        | barium   |
| beryllium | boron   | cadmium                  | chromium |
| lead      | nickel  | selenium                 | silver   |
| thallium  | zinc    | total phenolic compounds |          |

Volatile Organic Compounds

|                          |                            |                      |                     |
|--------------------------|----------------------------|----------------------|---------------------|
| acrolein                 | acrylonitrile              | benzene              | bromoform           |
| carbon tetrachloride     | chlorobenzene              | chlorodibromomethane | chloroethane        |
| 2-chloroethylvinyl ether | chloroform                 | dichlorobromomethane | 1,1-dichloroethane  |
| 1,2-dichloroethane       | trans-1,2-dichloroethylene | 1,1-dichloroethylene | 1,2-dichloropropane |
| 1,3-dichloropropylene    | ethylbenzene               | methyl bromide       | methyl chloride     |
| methylene chloride       | 1,1,2,2-tetrachloroethane  | tetrachloroethylene  | toluene             |
| 1,1,1-trichloroethane    | 1,1,2-trichloroethane      | trichloroethylene    | vinyl chloride      |

Acid-Extractable Compounds

|                         |                   |                       |                    |
|-------------------------|-------------------|-----------------------|--------------------|
| 4-chloro-3-methylphenol | 2-chlorophenol    | 2,4-dichlorophenol    | 2,4-dimethylphenol |
| 4,6-dinitro-o-cresol    | 2,4-dinitrophenol | 2-nitrophenol         | 4-nitrophenol      |
| Pentachlorophenol       | phenol            | 2,4,6-trichlorophenol |                    |

Base/Neutral Compounds

|                             |                            |                            |                             |
|-----------------------------|----------------------------|----------------------------|-----------------------------|
| acenaphthene                | acenaphthylene             | anthracene                 | benzidine                   |
| benzo(a)anthracene          | benzo(a)pyrene             | 3,4-benzofluoranthene      | benzo(ghi)perylene          |
| benzo(k)fluoranthene        | bis(2-chloroethoxy)methane | bis(2-chloroethyl)ether    | bis(2-chloroisopropyl)ether |
| bis(2-ethylhexyl)phthalate  | 4-bromophenyl phenyl ether | butyl benzyl phthalate     | 2-chloronaphthalene         |
| 4-chlorophenyl phenyl ether | chrysene                   | di-n-butyl phthalate       | di-n-octyl phthalate        |
| dibenzo(a,h)anthracene      | 1,2-dichlorobenzene        | 1,3-dichlorobenzene        | 1,4-dichlorobenzene         |
| 3,3'-dichlorobenzidine      | diethyl phthalate          | dimethyl phthalate         | 2,4-dinitrotoluene          |
| 2,6-dinitrotoluene          | 1,2-diphenylhydrazine      | fluoranthene               | fluorene                    |
| Hexachlorobenzene           | hexachlorobutadiene        | hexachlorocyclo-pentadiene | hexachloroethane            |
| indeno(1,2,3-cd)pyrene      | isophorone                 | naphthalene                | nitrobenzene                |
| n-nitrosodi-n-propylamine   | n-nitrosodimethylamine     | n-nitrosodiphenylamine     | phenanthrene                |
| pyrene                      | 1,2,4-trichlorobenzene     |                            |                             |

## PART I

### Section A. Limitations and Monitoring Requirements

#### 4. Pollutant Minimization Program for Total Mercury

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/l. The permittee shall continue to implement the Pollutant Minimization Program approved on June 16, 2005, and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following:

- a. an annual review and semi-annual monitoring of potential sources of mercury entering the wastewater collection system;
- b. a program for quarterly monitoring of influent and periodic monitoring of sludge for mercury; and
- c. implementation of reasonable cost-effective control measures when sources of mercury are discovered. Factors to be considered include significance of sources, economic considerations, and technical and treatability considerations.

On or before March 31 of each year, the permittee shall submit a status report for the previous calendar year to the Department that includes 1) the monitoring results for the previous year, 2) an updated list of potential mercury sources, and 3) a summary of all actions taken to reduce or eliminate identified sources of mercury.

Any information generated as a result of the Pollutant Minimization Program set forth in this permit may be used to support a request to modify the approved program or to demonstrate that the Pollutant Minimization Program requirement has been completed satisfactorily.

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. and b.

This permit may be modified in accordance with applicable laws and rules to include additional mercury conditions and/or limitations as necessary.

#### 5. Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements

In accordance with Section 324.3112a of the NREPA, if untreated sewage, including sanitary sewer overflows (SSO) and combined sewer overflows (CSO), or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the entity responsible for the sewer system shall immediately, but not more than 24 hours after the discharge begins, notify, by telephone, the Department, local health departments, a daily newspaper of general circulation in the county in which the permittee is located, and a daily newspaper of general circulation in the county or counties in which the municipalities whose waters may be affected by the discharge are located that the discharge is occurring.

The permittee shall also annually contact municipalities, including the superintendent of a public drinking water supply with potentially affected intakes, whose waters may be affected by the permittee's discharge of combined sewage, and if those municipalities wish to be notified in the same manner as specified above, the permittee shall provide such notification. Such notification shall also include a daily newspaper in the county of the affected municipality.

At the conclusion of the discharge, written notification shall be submitted in accordance with and on the "Report of Discharge Form" available via the internet at: <http://www.deq.state.mi.us/csosso/>, or, alternatively for combined sewer overflow discharges, in accordance with notification procedures approved by the Department.

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In addition, in accordance with Section 324.3112a of the NREPA, each time a discharge of untreated sewage or partially treated sewage occurs, the permittee shall test the affected waters for *Escherichia coli* to assess the risk to the public health as a result of the discharge and shall provide the test results to the affected local county health departments and to the Department. The testing shall be done at locations specified by each affected local county health department but shall not exceed 10 tests for each separate discharge event. The affected local county health department may waive this testing requirement, if it determines that such testing is not needed to assess the risk to the public health as a result of the discharge event. The results of this testing shall be submitted with the written notification required above, or, if the results are not yet available, submit them as soon as they become available. This testing is not required, if the testing has been waived by the local health department, or if the discharge(s) did not affect surface waters.

Permittees accepting sanitary or municipal sewage from other sewage collection systems are encouraged to notify the owners of those systems of the above reporting and testing requirements.

### 6. Facility Contact

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
  - for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
  - for a partnership, a general partner,
  - for a sole proprietorship, the proprietor, or
  - for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.
- b. A person is a duly authorized representative only if:
  - the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
  - the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section releases the permittee from properly submitting reports and forms as required by law.

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#### 7. Monthly Operating Reports

Part 41 of Act 451 of 1994 as amended, specifically Section 324.4106 and associated R 299.2953, requires that the permittee file with the Department, on forms prescribed by the Department, operating reports showing the effectiveness of the treatment facility operation and the quantity and quality of liquid wastes discharged into waters of the state.

Within 30 days of the effective date of this permit, the permittee shall submit to the Department a revised treatment facility monitoring program to address monitoring requirement changes reflected in this permit, or submit justification explaining why monitoring requirement changes reflected in this permit do not necessitate revisions to the treatment facility monitoring program. The permittee shall implement the revised treatment facility monitoring program upon approval from the Department. Applicable forms and guidance are available on the Department's web site at [http://www.michigan.gov/deq/0,1607,7-135-3313\\_44117---,00.html](http://www.michigan.gov/deq/0,1607,7-135-3313_44117---,00.html). The permittee may use alternate forms if they are consistent with the approved treatment facility monitoring program. Unless the Department provides written notification to the permittee that monthly submittal of operating reports is required, operating reports that result from implementation of the approved treatment facility monitoring program shall be maintained on site for a minimum of three (3) years and shall be made available to the Department for review upon request.

#### 8. Asset Management

The permittee shall at all times properly operate and maintain all facilities (i.e., the sewer system and treatment works as defined in Part 41 of the NREPA), and control systems installed or used by the permittee to operate the sewer system and treatment works and achieve and maintain compliance with the conditions of this permit (also see Part II.D.3 of this permit). The requirements of an Asset Management Program function to achieve the goals of effective performance, adequate funding, and adequate operator staffing and training. Asset management is a planning process for ensuring that optimum value is gained for each asset and that financial resources are available to rehabilitate and replace those assets when necessary. Asset management is centered on a framework of five (5) core elements: the current state of the assets; the required sustainable level of service; the assets critical to sustained performance; the minimum life-cycle costs; and the best long-term funding strategy.

a. Asset Management Program Requirements

On or before August 1, 2019, the permittee shall submit to the Department an Asset Management Plan for review and approval. An approvable Asset Management Plan shall contain a schedule for the development and implementation of an Asset Management Program that meets the requirements outlined below in 1) – 4). A copy of any Asset Management Program requirements already completed by the permittee should be submitted as part of the Asset Management Plan. Upon approval by the Department the permittee shall implement the Asset Management Plan. (The permittee may choose to include the Operation and Maintenance Manual required under Part II.C.14. of this permit as part of their Asset Management Program).

1) *Maintenance Staff.* The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. The level of staffing needed shall be determined by taking into account the work involved in operating the sewer system and treatment works, planning for and conducting maintenance, and complying with this permit.

2) *Collection System Map.* The permittee shall complete a map of the sewer collection system it owns and operates. The map shall be of sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by the Department. **Note: Items below referencing combined sewer systems are not applicable to separate sewer systems.** Such map(s) shall include but not be limited to the following:



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- a) all sanitary sewer lines and related manholes;
  - b) all combined sewer lines, related manholes, catch basins and CSO regulators;
  - c) all known or suspected connections between the sanitary sewer or combined sewer and storm drain systems;
  - d) all outfalls, including the treatment plant outfall(s), combined sewer treatment facility outfalls, untreated CSOs, and any known SSOs;
  - e) all pump stations and force mains;
  - f) the wastewater treatment facility(ies), including all treatment processes;
  - g) all surface waters (labeled);
  - h) other major appurtenances such as inverted siphons and air release valves;
  - i) a numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
  - j) the scale and a north arrow;
  - k) the pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow; and
  - l) the manhole interior material, rim elevation (optional), and invert elevations.
- 3) *Inventory and assessment of fixed assets.* The permittee shall complete an inventory and assessment of operations-related fixed assets. Fixed assets are assets that are normally stationary (e.g., pumps, blowers, and buildings). The inventory and assessment shall be based on current conditions and shall be kept up-to-date and available for review by the Department.
- a) The fixed asset inventory shall include the following:
    - (1) a brief description of the fixed asset, its design capacity (e.g., pump: 120 gallons per minute), its level of redundancy, and its tag number if applicable;
    - (2) the location of the fixed asset;
    - (3) the year the fixed asset was installed;
    - (4) the present condition of the fixed asset (e.g., excellent, good, fair, poor); and
    - (5) the current fixed asset (replacement) cost in dollars for year specified in accordance with approved schedules;
  - b) The fixed asset assessment shall include a "Business Risk Evaluation" that combines the probability of failure of the fixed asset and the criticality of the fixed asset, as follows:
    - (1) Rate the probability of failure of the fixed asset on a scale of 1-5 (low to high) using criteria such as maintenance history, failure history, and remaining percentage of useful life (or years remaining);
    - (2) Rate the criticality of the fixed asset on a scale of 1-5 (low to high) based on the consequence of failure versus the desired level of service for the facility; and

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(3) Compute the Business Risk Factor of the fixed asset by multiplying the failure rating from (1) by the criticality rating from (2).

4) *Operation, Maintenance & Replacement (OM&R) Budget and Rate Sufficiency for the Sewer System and Treatment Works.* The permittee shall complete an assessment of its user rates and replacement fund, including the following:

- a) beginning and end dates of fiscal year;
- b) name of the department, committee, board, or other organization that sets rates for the operation of the sewer system and treatment works;
- c) amount in the permittee's replacement fund in dollars for year specified in accordance with approved schedules;
- d) replacement fund strategy of all assets with a useful life of 20 years or less;
- e) expenditures for maintenance, corrective action and capital improvement taken during the fiscal year;
- f) OM&R budget for the fiscal year; and
- g) rate calculation demonstrating sufficient revenues to cover OM&R expenses. If the rate calculation shows there are insufficient revenues to cover OM&R expenses, the permittee shall document, within three (3) fiscal years after submittal of the Asset Management Plan, that there is at least one rate adjustment that reduces the revenue gap by at least 10 percent. The permittee may prepare and submit an alternate plan, subject to Department approval, for addressing the revenue gap. The ultimate goal of the Asset Management Program is to ensure sufficient revenues to cover OM&R expenses.

b. Annual Reporting

The permittee shall develop a written report that summarizes asset management activities completed during the previous year and planned for the upcoming year. The written report shall be submitted to the Department on or before November 1 of each year. The written report shall include:

- 1) a description of the staffing levels maintained during the year;
- 2) a description of inspections and maintenance activities conducted and corrective actions taken during the previous year;
- 3) expenditures for collection system maintenance activities, treatment works maintenance activities, corrective actions, and capital improvement during the previous year;
- 4) a summary of assets/areas identified for inspection/action (including capital improvement) in the upcoming year based on the five (5) core elements and the Business Risk Factors;
- 5) a maintenance budget and capital improvement budget for the upcoming year that take into account implementation of an effective Asset Management Program that meets the five (5) core elements;
- 6) an updated asset inventory based on the original submission; and
- 7) an updated OM&R budget with an updated rate schedule that includes the amount of insufficient revenues, if any.