AREA SERVICING PLAN

9094 REGIONAL ROAD 25

TOWN OF HALTON HILLS
HALTON REGION

PREPARED FOR:

HALTON HILLS ONE LIMITED PARTNERSHIP

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OCTOBER 2025

CFCA FILE NO. 2022-7556

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CROZIER
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Revision Number	Date	Comments
Rev.0	October 31, 2025	Issued for 1st Submission

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1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by Halton Hills One Limited Partnership to prepare an Area Servicing Plan. Halton Hills One Limited Partnership owns the property located at 9094 Regional Road 25 (Site) located in the Town of Halton Hills (Town) and Halton Region (Region). This report demonstrates a potential water and wastewater servicing strategy in conformance with the requirements of the Town and Region.

1.1 Site Background

The Site owned by Halton Hills One Limited Partnership is located at 9094 Regional Road 25 (Site) in the Town of Halton Hills and covers an area of 26.87 ha. The Site, located in a mixed-use area, is bound by Regional Road 25 to the east, residential properties in the Town of Milton and 5 Side Road to the south, and agricultural fields to the north and west.

The Site currently consists of greenfield. The proposed development includes 3 one-storey industrial buildings and 7 commercial buildings, with associated drive aisles, parking, and loading areas. The total proposed building area for the development is 73,113 m^2 per the Site Plan prepared by Turner Fleischer Architects Inc. (September 2025). Vehicular access to the Site is proposed from both Regional Road 25 and 5 Side Road.

1.2 Study Area Definition

The Study Area will be the focus of the Area Servicing Plan, which represents the Site and the surrounding areas which could connect to municipal water and wastewater infrastructure. To define the Study Area, the Halton Region Official Plan was consulted. It was determined that the Study Area limits include the area surrounding the Site, up to the limit of the Niagara Escarpment Commission (NEC) Area to the north and west, Regional Road 25 to the east, and 5 Side Road to the south. The Study Area is presented in **Figure 1**.

The Study Area includes agricultural, residential and greenfield land use in existing conditions. Under proposed conditions, it has been assumed that the residential properties will remain. It has also been assumed that the agriculture/greenfield parcels will be developed into employment land use in proposed conditions. This report explores servicing feasibility of development within the Study Area based on existing water and wastewater infrastructure capacity.

1.3 Reference Documents

The following reports and design standards were referenced during the preparation of this report:

- Halton Region Official Plan (May 2024)
- Halton Region Integrated Master Plan (2023)
- Halton Region Water and Wastewater Linear Design Manual (2024)
- Region of Halton 2022 Development Charges Background Study (December 2021)
- InfoWorks and InfoWater Models provided by Halton Region on October 6, 2025
- As-constructed drawings prepared by WSP for Halton Region dated April 2021
- Servicing & Stormwater Management Report prepared by Crozier dated October 31, 2025

2.0 Sanitary Servicing

Halton Region is responsible for the operation and maintenance of the public wastewater (sanitary) collection and treatment system within the Town of Halton Hills. Development of the Study Area will require connections to the municipal system. This section discusses the existing and proposed sanitary network in the vicinity of the Study Area and servicing feasibility for development of the Site and Study Area.

2.1 Existing Sanitary Infrastructure

A review of the InfoWorks model provided by the Region and as-constructed drawings for the right-of-ways surrounding the Study Area, indicates that:

- There is an existing 300 mm diameter sanitary sewer located along the west side of Regional Road 25, south of 5 Side Road. The sewer has a slope of 2.0% flowing south.
- There is an existing 300 mm diameter sanitary sewer located along James Snow Parkway North. The sewer has a slope of 0.9% flowing south.
- There is an existing 300 mm diameter sanitary sewer located along 5 Side Road. The sewer has a slope of 0.6% flowing south.

The noted existing sanitary sewers all converge downstream at the intersection of James Snow Parking North and Highway 25. Please refer to **Figure 2** existing sanitary sewer information.

2.2 Proposed Sanitary Infrastructure

The Study Area is proposed to be serviced by the existing 300 mm diameter sanitary sewer along Regional Road 25 and the existing 300 mm diameter sanitary sewer along James Snow Parkway North. The sanitary sewers will be extended north to provide servicing opportunities for the parcels within the Study Area.

The west portion of the Study Area is proposed to be serviced by extending the existing 300 mm diameter sanitary sewer from James Snow Parkway north along Dublin Line. It will also be extended east along 5 Side Road.

The east portion of the Study Area is proposed to be serviced by extending the 300 mm diameter sanitary sewer north along Regional Road 25. The sanitary sewer will also be extended west along 5 Side Road to service the Site. The proposed sanitary sewer extensions provide servicing opportunities for the parcels within the Study Area. A breakdown of the proposed sanitary sewers is included below:

- Approximately 1,185 m of 300 mm diameter sanitary sewer at 0.5% extending north along Regional Road 25.
- Approximately 280 m of 300 mm diameter sanitary sewer at 0.5% extending west along 5 Side Road, west of Regional Road 25.
- Approximately 180 m of 300 mm diameter sanitary sewer at 0.5% extending west along James Snow Parkway North to Dublin Line.
- Approximately 1,000 m of 300 mm diameter sanitary sewer at 0.5% extending north along Dublin Line, west of the Study Area.

- Approximately 285 m of 300 mm diameter sanitary sewer at 0.5% extending east along 5 Side Road, east of Dublin Line.

Please refer to **Figure 2** for the Conceptual Sanitary Servicing Plan with further details. It should be noted that preliminary sanitary sewer sizing has been used for the purposes of determining servicing feasibility. Detailed sewer sizing should be completed during the detailed design phase.

2.3 Proposed Sanitary Demands

The Halton Region Water and Wastewater Linear Design Manual and Region of Halton 2022 Development Charges Background Study were used to estimate the proposed sanitary design flows for the Site and Study Area. The sanitary design criteria are as follows:

- Population Density – 125 persons/ha (industrial), 90 persons/ha (commercial), and 95 persons/ha (residential)
- Sanitary Sewage Demand – 310 L/employee/day (commercial/industrial) and 360 L/cap/day (residential)
- Infiltration = 0.286 L/s/ha
- Harmon Peaking Factor

An infiltration flow and a peaking factor calculated using the modified Harmon Formula were applied to the unit sewage flow to obtain the estimated design sewage flow for each parcel within the Study Area. It has been assumed that each parcel will have its own service connection to the proposed sanitary sewers based on site frontage. **Table 1** below summarizes the estimated sanitary demand and connection location for each parcel. Detailed calculations are provided in **Appendix A**.

Table 1: Estimated Sanitary Demands

Parcel	Block Area (ha)	Equivalent Population	Peak Flow (L/s)	Infiltration Flow (L/s)	Total Sanitary Flow (L/s)	Outlet Location
9094 Regional Rd 25 (Site)	26.87	2526	33.83	7.68	41.51	5 Side Rd
Employment Parcel 1	39.92	4990	58.11	11.42	69.53	Dublin Line
Employment Parcel 2	15.12	1890	24.45	4.33	28.77	Dublin Line
Employment Parcel 3	16.28	2035	26.14	4.66	30.80	5 Side Rd
Employment Parcel 4	20.01	2501	31.48	5.72	37.20	Regional Rd 25
Employment Parcel 5	20.46	2558	32.12	5.85	37.97	Regional Rd 25
Employment Parcel 6	3.93	491	7.01	1.12	8.13	Regional Rd 25
Residential Area 1	1.48	141	2.46	0.42	2.88	Dublin Line
Residential Area 2	3.73	355	5.98	1.07	7.05	Dublin Line
Residential Area 3	1.57	149	2.60	0.45	3.05	Regional Rd 25
Total	**149.37**	**17635**	**224.18**	**42.72**	**266.91**	**-**

Please refer to **Figure 2** for the Conceptual Sanitary Servicing Plan with further details.

2.4 Sanitary Sewer Capacity Analysis

A sanitary sewer investigation was conducted using the InfoWorks model provided by the Region. The model was used to determine the impact of the proposed development on the municipal sanitary system, considering upstream and downstream flow conditions. The analysis begins at the proposed sanitary sewers adjacent to the Study Area along Dublin Line and Regional Road 25. The analyzed sewers extend until the discharge point into the 750 mm diameter trunk sewer along Regional Road 25 south of Highway 401. Refer to **Figure 3** for the analyzed sewers.

2.4.1 Analysis Methodology

The sanitary sewer investigation was conducted using the InfoWorks model provided by the Region. While reasonable efforts were made to verify and confirm third party data utilized in the preparation of this analysis, Crozier is unable to guarantee the accuracy of all third party data relied upon. The Client assumes the risk of inaccuracies in the Region data utilized in the preparation of this analysis, to the extent such inaccuracies were not reasonably discoverable by Crozier.

It should be noted that updates to existing flows and populations in the model to represent active developments or recent development applications located within the sanitary sewershed have not been made.

2.4.2 Analysis Criteria

The capacity criteria established for the sanitary sewer capacity analysis are listed as follows:

- Criterion 1 – Design Function
  - Under proposed design flow conditions, there will be no surcharge in the sewer system. Surcharge is defined as an HGL above a pipe obvert.
  - This criterion applies to Scenarios 1 and 3 where design flows are considered under dry weather conditions.

- Criterion 2 – Basement Flooding Protection
  - Under proposed extreme wet weather flow (WWF) conditions, which includes I&I generated under the 25-year storm event, the HGL in the sewer will be at least 1.8 m below grade.
  - This criterion applies to Scenarios 2 and 4 where design flows are considered under wet weather conditions.

2.4.3 Model Scenarios

The following four (4) scenarios were analyzed as part of the downstream sanitary sewer analysis:

- **Scenario 1:** Design Flow Conditions – dry weather flow within the modeling area, not including the proposed Study Area.

- **Scenario 2:** Wet Weather Flow Conditions – dry weather flow plus contributing I&I generated by the 25-year storm event, not including the proposed Study Area.

- **Scenario 3:** Proposed Design Flow Conditions – dry weather flow, inclusive of the proposed Study Area.

- **Scenario 4:** Proposed Extreme Wet Weather Flow Conditions – dry weather flow plus contributing I&I generated by the 25-year storm event, inclusive of the proposed Study Area.

2.4.4 Model Updates

No changes were made to the existing model provided by the Region. Under proposed conditions, subcatchments were added to represent each parcel within the Study Area. A population was assigned to each parcel based on the assumed land use and population density per the Halton Region Water and Wastewater Linear Design Manual (2024). The RTK hydrograph for each parcel was set to the Regional Average RTK and a Wastewater Profile of 999 Growth was applied.

The model was also updated to include the proposed sanitary sewers within the Study Area. Updates were made based on the proposed sanitary sewers shown on **Figure 2**.

2.4.5 Analysis Results

The analyzed length of sanitary sewers is from the proposed sanitary sewers adjacent to the Study Area along Dublin Line and Regional Road 25, to the 750 mm diameter trunk sewer located south of Highway 401 along Regional Road 25. Long section profiles of the maxima flow conditions under WWF conditions (Scenarios 2 and 4) are included in **Appendix B**. Detailed results of the sanitary capacity analysis are also included in **Appendix B**.

Design Flow Conditions

The analysis results for the design flow conditions are assessed per Criterion 1 which states that there must be no surcharging in the sewers.

Scenario 3 was compared to Scenario 1 to determine the impact the proposed development within the Study Area will have on the system considering anticipated populations. Results from both Scenarios 1 and 3 show no surcharging is anticipated within the system, meeting Criterion 1. The maximum capacity within the system is 29.0% and 58.0% within pipe P7B for Scenarios 1 and 3, respectively.

The results of the analysis show that the proposed servicing strategy for the Study Area meets noted Criterion 1. Therefore, the existing municipal sanitary sewer infrastructure has adequate capacity to accept sanitary discharge from the Study Area under design flow conditions, without the need for upgrades or retrofit.

Wet Weather Flow (WWF) Conditions

The analysis results for the WWF conditions are assessed per Criterion 2 which states that the HGL in the sewer must be at least 1.80 m below grade. Scenario 4 was compared to Scenario 2 to determine the impact the proposed development within the Study Area will have on the system considering estimated populations.

The results show that the HGL requirements are achieved at all nodes within the analyzed sewers. The highest HGL in Scenario 2 is 3.14 mbgs at the downstream end of pipe P8A, located along Escarpment Way. Under proposed conditions (Scenario 4), the HGL at this location is 3.09 mbgs. The highest HGL in Scenario 4 is 3.04 mbgs at the upstream end of pipe P11 along Dublin Line. Therefore, the proposed development has a negligible impact on the HGL within the analyzed sewers.

The results of the analysis show that the proposed servicing strategy for the Study Area meets Criterion 2. Therefore, the existing municipal sanitary sewer infrastructure has adequate capacity to accept

sanitary discharge from the Study Area under WWF conditions, without the need for upgrades or retrofit.

2.5 Conclusions

The results of the downstream sanitary capacity analysis indicate that the proposed sanitary servicing strategy for the Study Area achieves the established design criteria for analyzed sewers from the Study Area to the ultimate discharge point to the trunk sanitary sewer, during both design and wet weather events.

3.0 Water Servicing

Region of Halton is responsible for the operation and maintenance of the public water supply and treatment system within the Town of Halton Hills. Development of the Study Area will require connections to the municipal system. This section discusses the existing and proposed watermain network in the vicinity of the Study Area and servicing feasibility for development of the Site and Study Area.

3.1 Existing Water Infrastructure

A review of the InfoWater model provided by the Region and as-constructed drawings for the right-of-ways surrounding the Study Area, indicates that:

- There is an existing 300 mm diameter watermain at the intersection of James Snow Parkway North and 5 Side Road.
- There is an existing 300 mm diameter watermain along 5 Side Road that extends approximately 283 m northeast of James Snow Parkway North.
- There is an existing 300 mm diameter watermain at the intersection of 5 Side Road and Regional Road 25.

Please refer to **Figure 4** existing watermain information.

3.2 Proposed Water Infrastructure

The west portion of the Study Area is proposed to be serviced by extending the existing 300 mm diameter watermain from James Snow Parkway north along Dublin Line. It will also be extended east along 5 Side Road.

The east portion of the Study Area is proposed to be serviced by extending the 300 mm diameter watermain north along Regional Road 25. Watermain is also proposed south of the Study Area along 5 Side Road to service the Site. The extended watermains provide servicing opportunities for the parcels within the Study Area. A breakdown of the proposed watermains is included below:

- Approximately 1,050 m of 300 mm diameter watermain extending north along Dublin Line.
- Approximately 325 m of 300 mm diameter watermain extending along 5 Side Road west of Regional Road 25.
- Approximately 1,085 m of 300 mm watermain extending north along Regional Road 25.

- Approximately 915 m of 300 mm watermain extending along 5 Side Road, connecting the existing dead end along 5 Side Road to Regional Road 25.

It should be noted that preliminary watermain sizing has been used for the purposes of determining servicing feasibility. Watermain sizing should be confirmed during detailed design. It should also be noted that there is the potential to connect the watermain along Dublin Line and Regional Road 25 by adding additional watermain along the north boundary of the Study Area in the future. This additional watermain would provide further looping to the system. Please refer to **Figure 4** for the Conceptual Water Servicing Plan with further details.

3.3 Proposed Water Demands

The Halton Region Water and Wastewater Linear Design Manual and Region of Halton 2022 Development Charges Background Study were used to estimate the proposed domestic demands for the Site and Study Area. The sanitary design criteria are as follows:

- Population Density – 125 persons/ha (industrial), 90 persons/ha (commercial), and 95 persons/ha (residential)
- Average Daily Demand – 225 L/employee/day (commercial/industrial) and 265 L/cap/day (residential)
- Maximum day peaking factor – 2.5
- Peak hour peaking factor – 2.25 (commercial/industrial) and 4.00 (residential)

Estimated domestic demands have been calculated for each parcel within the Study Area. It has been assumed that each parcel will have its own service connection to the proposed sanitary sewers based on site frontage. **Table 2** below summarizes the sanitary demand and connection location for each parcel. Detailed calculations are provided in **Appendix A**.

Table 2: Estimated Domestic Demands

Parcel	Equivalent Population	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)	Outlet Location
9094 Regional Rd 25 (Site)	2526	6.58	14.80	14.80	5 Side Rd
Employment Parcel 1	4990	13.00	29.24	29.24	Dublin Line
Employment Parcel 2	1890	4.92	11.08	11.08	Dublin Line
Employment Parcel 3	2035	5.30	11.93	11.93	5 Side Rd
Employment Parcel 4	2501	6.51	14.65	14.65	Regional Rd 25
Employment Parcel 5	2558	6.66	14.99	14.99	Regional Rd 25
Employment Parcel 6	491	1.28	2.88	2.88	Regional Rd 25
Residential Area 1	141	0.43	0.97	1.72	Dublin Line
Residential Area 2	355	1.09	2.45	4.35	Dublin Line
Residential Area 3	149	0.46	1.03	1.83	Regional Rd 25
Total	**17635**	**46.22**	**104.00**	**107.46**	**-**

Please refer to **Figure 4** for the Conceptual Water Servicing Plan with further details.

3.4 Proposed Fire Flow Requirements

The Halton Region Water and Wastewater Linear Design Manual states that fire flow requirements are to be calculated using the Fire Underwriters Survey (FUS). The minimum required fire flow for the Site has been determined to be 233.33 L/s per the Servicing & Stormwater Management Report prepared by Crozier (October 2025) under a separate cover. Please refer to the full report for further details.

As there are no Site Plans available for the remainder of the Study Area, the available fire flows have been determined for all remaining parcels. These fire flows are assumed to be acceptable until Site Plans are available, and site-specific requirements can be determined. Fire flow requirements and detailed calculations shall be completed for each parcel during detailed design.

3.5 Hydraulic Water Distribution Model

An InfoWater analysis was completed using the Region's InfoWater model. The water model was used to determine existing conditions and determine servicing feasibility for the Study Area. A review of the existing water distribution network setup in the model revealed that existing infrastructure along James Snow Parkway and 5 Side Road were missing from the model. Therefore, the missing watermains were added into the model based on As-constructed Drawings provided by the Region to more accurately represent existing conditions. Demands for the existing site assumed to be serviced by the added existing watermains were also calculated and added into the model. Please refer to model inputs and as-constructed drawings included in **Appendix C** for details.

The accuracy of the data provided by the Region is not guaranteed. Best efforts have been made to verify the water model correctly represents the distribution system. While reasonable efforts are made to verify and confirm third party data utilized in the preparation of this analysis, Crozier is unable to guarantee the accuracy of all third party data relied upon. The Client assumes the risk of inaccuracies in the Region data utilized in the preparation of this analysis, to the extent such inaccuracies were not reasonably discoverable by Crozier.

3.5.1 Methodology

Multiple scenarios were set up in the model provided by the Region to determine the pressures available under average day, maximum day, peak hour, and maximum day plus fire flows for both the 2021, 2026 and 2031 conditions.

The Study Area was added into the proposed model. Junction inputs for the model include domestic demands for parcels within the Study Area as well as ground elevations, which were retrieved from LiDAR data. Watermains were added and input parameters including length, diameter and calculated minor losses were included. Hazen-William friction factors were assigned to each pipe based on the diameter and the Halton Region Water and Wastewater Linear Design Manual. Please refer to **Appendix C** for detailed input information.

3.5.2 Design Criteria

The Halton Region Water and Wastewater Linear Design Manual states that systems should be designed to maintain a minimum pressure of 140 kPa (20 psi) at ground level at all points in the distribution system under maximum day demands plus fire flow conditions. The normal operating pressure in the distribution system should be approximately 350 kPa to 550 kPa (50 to 80 psi) and not less than 275 kPa (40 psi). The maximum pressures in the system should not exceed 700 kPa (100 psi).

3.5.3 Existing Condition Results

Existing conditions were run and junctions at the proposed connection locations were analyzed. This includes the existing watermain along James Snow Parkway, 5 Side Road, and Regional Road 25. The results are discussed below.

Average Day, Peak Hour, and Maximum Day

The average day, peak hour, and maximum day scenarios for existing conditions fall within the Region's standards. The pressures of the analyzed junctions fall within the acceptable range of 50 psi to 80 psi and are summarized in the table below.

Table 3: Existing Condition Pressures

Year	Average Day Demand		Maximum Day Demand		Peak Hour Demand	
	Min Pressure (psi)	Max Pressure (psi)	Min Pressure (psi)	Max Pressure (psi)	Min Pressure (psi)	Max Pressure (psi)
2021	59	68	59	68	57	66
2026	60	69	59	69	59	68
2031	59	69	59	69	58	67

Maximum Day + Fire Flow

Pressures within the analyzed existing nodes achieve the minimum allowable pressure of 20 psi for the maximum day plus fire flow scenario in existing conditions. The available fire flows within the analyzed nodes are summarized in the table below.

Table 4: Existing Available Fire Flow

Year	Available Fire Flow at 20 psi	
	Min (L/s)	Max (L/s)
2021	215	546
2026	228	690
2031	226	681

Please refer to detailed existing model results included in **Appendix C**.

3.5.4 Proposed Condition Results

Proposed conditions were run and proposed junctions within the Study Area were analyzed in addition to the junctions analyzed in existing conditions. The results are discussed below.

Average Day, Peak Hour, and Maximum Day

There were minor changes in pressures from existing conditions to proposed conditions. The average day, peak hour, and maximum day scenarios for proposed conditions generally fall within the

Region's standards. The majority of pressures of the analyzed junctions fall within the allowable range of 40 psi to 100 psi and are summarized in the table below.

Table 5: Proposed Condition Pressures

Year	Average Day Demand		Maximum Day Demand		Peak Hour Demand	
	Min Pressure (psi)	Max Pressure (psi)	Min Pressure (psi)	Max Pressure (psi)	Min Pressure (psi)	Max Pressure (psi)
2021	44	68	41	66	37	62
2026	44	69	42	68	40	65
2031	44	69	42	67	39	64

As shown in **Table 5**, minimum pressures observed during 2021 and 2031 peak hour demand conditions fall slightly below the Region's minimum accepted pressure of 40 psi. During 2021 peak hour demand conditions, there are two junctions (J-3 and J-4) which have pressures of 37 psi and 38 psi. During 2031 peak hour demand conditions, there is one junction (J-3) which has a pressure of 39 psi. It should be noted that the minimum pressures are met during 2026 conditions, and the noted pressure is only 1 psi under the Region's requirement during future 2031 conditions.

It should be noted that this minor drop in pressure is likely due to the elevation difference within the Study Area. The grades within the Study Area generally slope from north to south. Therefore, the north portion of the Study Area is at a higher elevation, causing the distribution network in this area to experience lower pressures.

Maximum Day + Fire Flow

Pressures within the analyzed proposed and existing nodes achieve the minimum allowable pressure of 20 psi for the maximum day plus fire flow scenario in proposed conditions. The available fire flows within the analyzed nodes are summarized in the table below.

Table 6: Proposed Fire Flows

Year	Available Fire Flow at 20 psi	
	Min (L/s)	Max (L/s)
2021	88	489
2026	94	636
2031	93	627

It should be noted that the required fire flow for the Site (233.33 L/s) was included in the model at the proposed Site connection location. The minimum available fire flow at the Site connection (J-6) is 276 L/s during 2021 conditions. Therefore, the results show that the proposed watermain design can support the Site's required fire flow.

As there are no Site Plans available for the remainder of the Study Area, the available fire flows have been determined for all remaining parcels. These fire flows are assumed to be acceptable until Site Plans are available, and site-specific requirements can be determined. As shown in **Table 6**, the minimum available fire flow within the Study Area is 88 L/s at J-11 during 2021 conditions. Fire flow requirements and detailed calculations shall be completed for each parcel during detailed design. Please refer to detailed proposed model results included in **Appendix C**.

3.6 Conclusions

The hydraulic analysis for the water distribution system prepared in support of the Site and Study Area has been completed including a review of the proposed watermain from a system performance perspective. The results show that the Site can be serviced from a water servicing perspective while meeting Region design criteria. There is also sufficient capacity to supply the estimated domestic demands for the remainder of the Study Area, proving servicing feasibility. Minimum fire flow requirements should be confirmed once Site Plans are available for remaining employment parcels.

As noted in **Section 3.2** above, there is the potential to connect the watermain along Dublin Line and Regional Road 25 by adding additional watermain along the north boundary of the Study Area in the future. This additional watermain would provide further looping to the system and could increase available fire flows for the north portion of the Study Area. Further, extending the watermain along 5 Side Road to connect the watermain along Dublin Line with Regional Road 25 could also be investigated to potentially improve fire flow conditions within the south portion of the Study Area.

4.0 Conclusions and Recommendations

Based on the conclusions and recommendations outlined in this report, the Study Area can be serviced in terms of water and sanitary by the existing and proposed servicing on Regional Road 25, Dublin Line, James Snow Parkway and 5 Side Road. The results of the analyses prove servicing feasibility to support the privately initiated settlement area boundary expansion for the Site and Study Area.

Should you have any questions or require any further information, please do not hesitate to contact us.

Respectfully submitted,

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APPENDIX A

Demand Calculations

Proposed Sanitary Design Flow - 9094 Regional Rd 25 (Rice Property - Site)

Total Area: 26.87 ha

Block	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
A	10.62	Commercial	90	956
B	12.35	Light Industrial	125	1544
C	0.29	Commercial	90	26
-	3.61	Conservation Area	-	0
Total	**26.87**	**-**	**-**	**2526**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Peak Factor = 3.5 Harmon Peaking Factor
Employment Average Day Flow = 310 L/employee/d
Infiltration Flow: 0.286 L/ha/s

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Sanitary Design Flow:

Average Daily Flow = **9.06** L/s
Peak Daily Flow = **33.83** L/s
Infiltration Flow = **7.68** L/s
Total Peak Flow = **41.51** L/s

9094 Regional Road 25 FSR by Crozier dated October 2025

Proposed Sanitary Design Flow - Employment Parcel 1

Total Area: 39.92 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	39.92	Light Industrial	125	4990
Total	**39.92**	**-**	**-**	**4990**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Peak Factor = 3.2 Harmon Peaking Factor
Employment Average Day Flow = 310 L/employee/d
Infiltration Flow: 0.286 L/ha/s

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Sanitary Design Flow:

Average Daily Flow = **17.90** L/s
Peak Factor = **3.25**
Peak Daily Flow = **58.11** L/s
Infiltration Flow = **11.42** L/s
Total Peak Flow = **69.53** L/s

Proposed Sanitary Design Flow - Employment Parcel 2

Total Area: 15.12 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	15.12	Light Industrial	125	1890
Total	**15.12**	**-**	**-**	**1890**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Peak Factor = 3.6 Harmon Peaking Factor
Employment Average Day Flow = 310 L/employee/d
Infiltration Flow: 0.286 L/ha/s

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Sanitary Design Flow:

Average Daily Flow = **6.78** L/s
Peak Factor = **3.60**
Peak Daily Flow = **24.45** L/s
Infiltration Flow = **4.33** L/s
Total Peak Flow = **28.77** L/s

Proposed Sanitary Design Flow - Employment Parcel 3

Total Area: 16.28 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	16.28	Light Industrial	125	2035
Total	**16.28**	**-**	**-**	**2035**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Peak Factor = 3.6 Harmon Peaking Factor
Employment Average Day Flow = 310 L/employee/d
Infiltration Flow: 0.286 L/ha/s

Sanitary Design Flow:

Average Daily Flow = **7.30** L/s
Peak Factor = **3.58**
Peak Daily Flow = **26.14** L/s
Infiltration Flow = **4.66** L/s
Total Peak Flow = **30.80** L/s

Proposed Sanitary Design Flow - Employment Parcel 4

Total Area: 20.01 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	20.01	Light Industrial	125	2501
Total	**20.01**	**-**	**-**	**2501**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Peak Factor = 3.5 Harmon Peaking Factor
Employment Average Day Flow = 310 L/employee/d
Infiltration Flow: 0.286 L/ha/s

Sanitary Design Flow:

Average Daily Flow = **8.97** L/s
Peak Factor = **3.51**
Peak Daily Flow = **31.48** L/s
Infiltration Flow = **5.72** L/s
Total Peak Flow = **37.20** L/s

Proposed Sanitary Design Flow - Employment Parcel 5

Total Area: 20.46 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	20.46	Light Industrial	125	2558
Total	**20.46**	**-**	**-**	**2558**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Peak Factor = 3.5 Harmon Peaking Factor
Employment Average Day Flow = 310 L/employee/d
Infiltration Flow: 0.286 L/ha/s

Sanitary Design Flow:

Average Daily Flow = **9.18** L/s
Peak Factor = **3.50**
Peak Daily Flow = **32.12** L/s
Infiltration Flow = **5.85** L/s
Total Peak Flow = **37.97** L/s

Proposed Sanitary Design Flow - Employment Parcel 6

Total Area: 3.93 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	3.93	Light Industrial	125	491
Total	**3.93**	**-**	**-**	**491**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Peak Factor = 4.0 Harmon Peaking Factor
Employment Average Day Flow = 310 L/employee/d
Infiltration Flow: 0.286 L/ha/s

Sanitary Design Flow:

Average Daily Flow = **1.76** L/s
Peak Factor = **3.98**
Peak Daily Flow = **7.01** L/s
Infiltration Flow = **1.12** L/s
Total Peak Flow = **8.13** L/s

Proposed Sanitary Design Flow - Residential Area 1

Total Area: 1.48 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	1.48	Single Detached	95	141
Total	**1.48**	**-**	**-**	**141**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Peak Factor = 4.2 Harmon Peaking Factor
Residential Average Day Flow = 360 L/cap/d
Infiltration Flow: 0.286 L/ha/s

Sanitary Design Flow:

Average Daily Flow = **0.59** L/s
Peak Factor = **4.20**
Peak Daily Flow = **2.46** L/s
Infiltration Flow = **0.42** L/s
Total Peak Flow = **2.88** L/s

Proposed Sanitary Design Flow - Residential Area 2

Total Area: 3.73 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	3.73	Single Detached	95	355
Total	**3.73**	**-**	**-**	**355**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Peak Factor = 4.0 Harmon Peaking Factor
Residential Average Day Flow = 360 L/cap/d
Infiltration Flow: 0.286 L/ha/s

Sanitary Design Flow:

Average Daily Flow = **1.48** L/s
Peak Factor = **4.05**
Peak Daily Flow = **5.98** L/s
Infiltration Flow = **1.07** L/s
Total Peak Flow = **7.05** L/s

Proposed Sanitary Design Flow - Residential Area 3

Total Area: 1.57 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	1.57	Single Detached	95	149
Total	**1.57**	**-**	**-**	**149**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 3.2.2, Table 3-1 and 3-2)

Design Criteria

Total Peak Flow = Average Daily Flow + Infiltration Allowance

Peak Factor = 4.2 Harmon Peaking Factor
Residential Average Day Flow = 360 L/cap/d
Infiltration Flow: 0.286 L/ha/s

Region of Halton 2022 Development Charges Background Study (December 2021), Table B-3

Sanitary Design Flow:

Average Daily Flow =	**0.62**	L/s
Peak Factor =	**4.19**	
Peak Daily Flow =	**2.60**	L/s
Infiltration Flow =	**0.45**	L/s
Total Peak Flow =	**3.05**	L/s

Project: 9094 Regional Rd 25 **Design:** MF **Date:** 2025-10-17
Project No.: 2022-7556 **Check:** JMS **Updated:** 2025-10-30

Parcel	Block Area ha	Equivalent Population	Peak Flow (L/s)	Infiltration Flow (L/s)	Total Flow (L/s)	Outlet
9094 Regional Rd 25 (Site)	26.87	2526	33.83	7.68	41.51	5th Side Road
Employment Parcel 1	39.92	4990	58.11	11.42	69.53	Dublin Line
Employment Parcel 2	15.12	1890	24.45	4.33	28.77	Dublin Line
Employment Parcel 3	16.28	2035	26.14	4.66	30.80	5th Side Road
Employment Parcel 4	20.01	2501	31.48	5.72	37.20	Regional Road 25
Employment Parcel 5	20.46	2558	32.12	5.85	37.97	Regional Road 25
Employment Parcel 6	3.93	491	7.01	1.12	8.13	Regional Road 25
Residential Area 1	1.48	141	2.46	0.42	2.88	Dublin Line
Residential Area 2	3.73	355	5.98	1.07	7.05	Dublin Line
Residential Area 3	1.57	149	2.60	0.45	3.05	Regional Road 25
Total	**149.37**	**17635**	**224.18**	**42.72**	**266.91**	**-**

Note: Areas are approximate for conceptual design purposes

Project: 9094 Regional Rd 25	**Design:** MF	**Date:** 2025-10-17
Project No.: 2022-7556	**Check:** JMS	**Updated:** 2025-10-30

Water Demand - 9094 Regional Rd 25 (Rice Property - Site)

Block Area 26.87 ha

Block	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
A	10.62	Commercial	90	956
B	12.35	Light Industrial	125	1544
C	0.29	Commercial	90	26
-	3.61	Conservation Area	-	0
Total	**26.87**	**-**	**-**	**2526**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	568271	L/day
	6.58	L/s
Maximum Daily Demand:	1278610	L/day
	14.80	L/s
Peak Hourly Demand:	1278610	L/day
	14.80	L/s

Water Demand - Employment Parcel 1

Block Area 39.92 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	39.92	Light Industrial	125	4990
Total	**39.92**	**-**	**-**	**4990**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	1122792	L/day
	13.00	L/s
Maximum Daily Demand:	2526282	L/day
	29.24	L/s
Peak Hourly Demand:	2526282	L/day
	29.24	L/s

Water Demand - Employment Parcel 2

Block Area 15.12 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	15.12	Light Industrial	125	1890
Total	**15.12**	**-**	**-**	**1890**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	425320	L/day
	4.92	L/s
Maximum Daily Demand:	956971	L/day
	11.08	L/s
Peak Hourly Demand:	956971	L/day
	11.08	L/s

Water Demand - Employment Parcel 3

Block Area 16.28 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	16.28	Light Industrial	125	2035
Total	**16.28**	**-**	**-**	**2035**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	457931	L/day
	5.30	L/s
Maximum Daily Demand:	1030345	L/day
	11.93	L/s
Peak Hourly Demand:	1030345	L/day
	11.93	L/s

Water Demand - Employment Parcel 4

Block Area 20.01 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	20.01	Light Industrial	125	2501
Total	**20.01**	**-**	**-**	**2501**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	562725	L/day
	6.51	L/s
Maximum Daily Demand:	1266131	L/day
	14.65	L/s
Peak Hourly Demand:	1266131	L/day
	14.65	L/s

Water Demand - Employment Parcel 5

Block Area 20.46 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	20.46	Light Industrial	125	2558
Total	**20.46**	**-**	**-**	**2558**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	575480	L/day
	6.66	L/s
Maximum Daily Demand:	1294829	L/day
	14.99	L/s
Peak Hourly Demand:	1294829	L/day
	14.99	L/s

Water Demand - Employment Parcel 6

Block Area 3.93 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	3.93	Light Industrial	125	491
Total	**3.93**	**-**	**-**	**491**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	110503	L/day
	1.28	L/s
Maximum Daily Demand:	248632	L/day
	2.88	L/s
Peak Hourly Demand:	248632	L/day
	2.88	L/s

Water Demand - Residential Area 1

Block Area 1.48 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	1.48	Single Detached	95	141
Total	**1.48**	**-**	**-**	**141**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	265	L/cap.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	4.00	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	37259	L/day
	0.43	L/s
Maximum Daily Demand:	83833	L/day
	0.97	L/s
Peak Hourly Demand:	149036	L/day
	1.72	L/s

Water Demand - Residential Area 2

Block Area 3.73 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	3.73	Single Detached	95	355
Total	**3.73**	**-**	**-**	**355**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	265	L/cap.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	4.00	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	93953	L/day
	1.09	L/s
Maximum Daily Demand:	211394	L/day
	2.45	L/s
Peak Hourly Demand:	375812	L/day
	4.35	L/s

Water Demand - Residential Area 3

Block Area 1.57 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	1.57	Single Detached	95	149
Total	**1.57**	**-**	**-**	**149**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	265	L/cap.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	4.00	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	39462	L/day
	0.46	L/s
Maximum Daily Demand:	88789	L/day
	1.03	L/s
Peak Hourly Demand:	157847	L/day
	1.83	L/s

Project: 9094 Regional Rd 25 **Design:** MF **Date:** 2025-10-17
Project No.: 2022-7556 **Check:** JMS **Updated:** 2025-10-30

Block	Equivalent Population	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)	Outlet
9094 Regional Rd 25 (Site)	2526	6.58	14.80	14.80	5th Side Road
Employment Parcel 1	4990	13.00	29.24	29.24	Dublin Line
Employment Parcel 2	1890	4.92	11.08	11.08	Dublin Line
Employment Parcel 3	2035	5.30	11.93	11.93	5th Side Road
Employment Parcel 4	2501	6.51	14.65	14.65	Regional Road 25
Employment Parcel 5	2558	6.66	14.99	14.99	Regional Road 25
Employment Parcel 6	491	1.28	2.88	2.88	Regional Road 25
Residential Area 1	141	0.43	0.97	1.72	Dublin Line
Residential Area 2	355	1.09	2.45	4.35	Dublin Line
Residential Area 3	149	0.46	1.03	1.83	Regional Road 25
Total	**17635**	**46.22**	**104.00**	**107.46**	**-**

Existing Water Demand - 7265 5 SIDE ROAD

Block Area 1.63 ha

Parcel	Area (ha)	Land Use	Population Density (persons/ha)	Population (persons)
1	1.63	Light Industrial	125	203
Total	**1.63**	**-**	**-**	**203**

Population density per Halton Region Water and Wastewater Linear Design Manual, 2024 (Section 2.4, Table 2-2)

Design Criteria:

Average Daily Demand:	225	L/employee.day
Maximum Daily Demand Peaking Factor:	2.25	-
Peak Hourly Demand Peaking Factor:	2.25	-

Region of Halton 2022 Development Charges Background Study (December 2021), Table 2-2 and B-1

Domestic Water Demand:

Average Daily Demand:	45726	L/day
	0.53	L/s
Maximum Daily Demand:	102883	L/day
	1.19	L/s
Peak Hourly Demand:	102883	L/day
	1.19	L/s

APPENDIX B

Sanitary Capacity Analysis

SANITARY SEWER CAPACITY ANALYSIS

Scenario 1: Active Developments Excluding the Site (Design Flow)

9094 Regional Rd 25

PROJECT NUM.: 2022-7556 | DATE CREATED: 2025-10-08 | CREATED BY: MF

ADDRESS: 9094 Regional Rd 25 | DATE UPDATED: 2025-10-27 | CHECKED BY: IF

Conduit Information													Model Run Results									Capcity Analysis[1]	
Location	Pipe Name	US Node	US Ground Elevation	DS Node	DS Node Elevation	Length (m)	Diameter/ Height (mm)	Width (mm)	Gradient (m/m)	US Invert (m AD)	DS Invert (m AD)	Full Capacity (m^3/s)	Max US depth (m)	Max US flow (m^3/s)	Max US total head (m AD)	Max US velocity (m/s)	Max DS depth (m)	Max DS flow (m^3/s)	Max DS total head (m AD)	Max DS velocity (m/s)	Max Surcharge state	EX. % full (US)	EX. % full (DS)
Hwy 25	P1A	SMH101856	222.73	SMH101855	220.74	77.2	300	-	0.0196	218.90	217.39	0.160	0.03	0.000	218.93	0.019	0.03	0.000	217.42	0.019	0.10	10.0%	10.0%
Hwy 26	P2A	SMH101855	220.74	SMH101854	223.46	104.9	300	-	0.0100	217.33	216.28	0.114	0.02	0.000	217.35	0.051	0.02	0.000	216.30	0.051	0.07	7.0%	7.0%
Hwy 27	P3A	SMH101854	223.46	SMH101853	219.08	61.5	300	-	0.0172	216.25	215.19	0.150	0.03	0.000	216.28	0.030	0.03	0.000	215.23	0.030	0.10	10.3%	10.3%
Escarpment Way	P4A	SMH101853	219.08	SMH34112	218.51	36.5	300	-	0.0198	215.13	214.41	0.161	0.03	0.000	215.17	0.091	0.03	0.000	214.44	0.091	0.10	10.3%	10.3%
Escarpment Way	P5A	SMH34112	218.51	SMH34113	217.30	78.0	300	-	0.0100	214.38	213.60	0.114	0.03	0.000	214.41	0.089	0.03	0.000	213.63	0.089	0.11	10.7%	10.7%
Escarpment Way	P6A	SMH34113	217.30	SMH34114	217.13	52.9	300	-	0.0105	213.58	213.03	0.117	0.04	0.001	213.62	0.235	0.04	0.001	213.06	0.235	0.12	12.0%	12.0%
Escarpment Way	P7A	SMH34114	217.13	SMH338066	216.50	7.7	300	-	0.0105	213.03	212.95	0.117	0.04	0.001	213.06	0.235	0.04	0.001	212.98	0.235	0.12	12.0%	12.0%
Escarpment Way	P8A	SMH338066	216.50	SMH34115	215.72	46.5	300	-	0.0105	212.95	212.46	0.117	0.04	0.001	212.98	0.235	0.04	0.001	212.50	0.235	0.12	12.0%	12.0%
Escarpment Way	P9A	SMH34115	215.72	SMH34116	214.66	114.9	300	-	0.0105	212.46	211.26	0.117	0.04	0.001	212.50	0.235	0.04	0.001	211.30	0.235	0.12	12.0%	12.0%
Escarpment Way	P10A	SMH34116	214.66	SMH34117	214.09	118.2	300	-	0.0051	211.26	210.66	0.081	0.03	0.001	211.29	0.298	0.03	0.001	210.69	0.298	0.11	10.7%	10.7%
Escarpment Way	P11A	SMH34117	214.09	SMH34118	213.98	120.7	300	-	0.0050	210.63	210.03	0.081	0.03	0.001	210.66	0.316	0.03	0.001	210.06	0.316	0.11	11.0%	11.0%
Escarpment Way	P12A	SMH34118	213.98	SMH34119	212.97	120.5	300	-	0.0049	209.99	209.40	0.080	0.03	0.001	210.02	0.316	0.03	0.001	209.43	0.316	0.11	11.0%	11.0%
Escarpment Way	P13A	SMH34119	212.97	SMH34045	213.45	25.1	300	-	0.0698	209.18	207.43	0.302	0.03	0.001	209.21	0.318	0.03	0.001	207.46	0.318	0.11	11.0%	11.0%
James Snow Parkway	P1B	SMH526506	221.50	SMH526505	221.00	77.1	300	-	0.0090	216.22	215.52	0.108	0.02	0.000	216.24	0.000	0.02	0.000	215.54	0.000	0.07	6.7%	6.7%
James Snow Parkway	P2B	SMH526505	221.00	SMH526504	220.50	74.7	300	-	0.0097	215.48	214.76	0.112	0.02	0.000	215.50	0.000	0.02	0.000	214.78	0.000	0.07	6.7%	6.7%
James Snow Parkway	P3B	SMH526504	220.50	SMH525705	220.00	74.4	300	-	0.0089	214.71	214.05	0.108	0.02	0.000	214.73	0.000	0.02	0.000	214.07	0.000	0.07	6.7%	6.7%
James Snow Parkway	P4B	SMH525705	220.00	SMH525704	219.50	75.0	300	-	0.0064	213.98	213.50	0.091	0.02	0.000	214.00	0.000	0.02	0.000	213.52	0.000	0.07	6.7%	6.7%
James Snow Parkway	P5B	SMH525704	219.50	SMH525710	218.50	137.4	300	-	0.0062	213.45	212.61	0.090	0.02	0.000	213.47	0.000	0.02	0.000	212.63	0.000	0.07	6.7%	6.7%
James Snow Parkway	P6B	SMH525710	218.50	SMH525711	216.50	153.9	300	-	0.0069	212.55	211.49	0.095	0.02	0.000	212.57	0.000	0.02	0.000	211.51	0.000	0.07	6.7%	6.7%
James Snow Parkway	P7B	SMH525711	216.50	SFT999070	217.35	80.9	300	-	0.0035	211.43	211.15	0.067	0.02	0.000	211.45	0.000	0.09	0.000	211.24	0.000	0.29	6.7%	29.0%
James Snow Parkway	P8B	SFT999070	217.35	SMH59023	216.75	69.1	300	-	0.0061	211.22	210.80	0.089	0.02	0.000	211.24	0.011	0.02	0.000	210.82	0.011	0.07	6.7%	6.7%
James Snow Parkway	P9B	SMH59023	216.75	SMH59024	216.25	94.3	300	-	0.0062	210.73	210.15	0.090	0.03	0.001	210.76	0.290	0.03	0.001	210.18	0.290	0.10	10.0%	10.0%
James Snow Parkway	P10B	SMH59024	216.25	SMH59025	214.35	118.1	300	-	0.0056	210.08	209.42	0.085	0.03	0.001	210.11	0.284	0.03	0.001	209.45	0.284	0.10	10.0%	10.0%
James Snow Parkway	P11B	SMH59025	214.35	SMH59026	212.98	123.1	300	-	0.0053	209.35	208.70	0.083	0.03	0.001	209.38	0.281	0.03	0.001	208.73	0.281	0.10	10.0%	10.0%
James Snow Parkway	P12B	SMH59026	212.98	SMH55739	213.65	131.5	600	-	0.0030	208.40	208.00	0.400	0.04	0.001	208.44	0.184	0.04	0.001	208.04	0.189	0.07	6.5%	6.3%
James Snow Parkway	P13B	SMH55739	213.65	SMH55738	212.15	77.0	600	-	0.0025	207.97	207.78	0.361	0.04	0.001	208.01	0.178	0.04	0.001	207.82	0.187	0.07	6.7%	6.3%
James Snow Parkway	P14B	SMH55738	212.15	SMH55737	212.94	79.2	600	-	0.0024	207.75	207.56	0.355	0.04	0.001	207.79	0.177	0.04	0.001	207.60	0.187	0.07	6.7%	6.5%
James Snow Parkway	P15B	SMH55737	212.94	SMH34045	213.45	67.7	600	-	0.0040	207.53	207.26	0.458	0.04	0.001	207.57	0.191	0.04	0.001	207.30	0.191	0.06	6.3%	6.3%
James Snow Parkway	P16	SMH34045	213.45	SMH33672	213.90	72.9	600	-	0.0026	207.20	207.01	0.371	0.05	0.003	207.25	0.303	0.05	0.003	207.06	0.289	0.09	8.2%	8.5%
James Snow Parkway	P17	SMH33672	213.90	SMH33673	215.07	75.5	600	-	0.0021	207.01	206.85	0.334	0.05	0.003	207.06	0.289	0.05	0.003	206.90	0.309	0.09	8.5%	8.2%
James Snow Parkway	P18	SMH33673	215.07	SMH18874	215.87	57.1	525	-	0.0193	206.84	205.74	0.597	0.06	0.003	206.90	0.252	0.06	0.003	205.80	0.252	0.11	11.2%	11.2%
James Snow Parkway	P19	SMH18874	215.87	SMH18875	215.74	122.7	525	-	0.0010	205.62	205.49	0.163	0.07	0.005	205.69	0.294	0.07	0.005	205.56	0.294	0.12	12.4%	12.4%
James Snow Parkway	P20	SMH18875	215.74	SMH18872	215.42	100.3	525	-	0.0010	205.49	205.39	0.163	0.07	0.005	205.56	0.294	0.07	0.005	205.46	0.246	0.14	12.4%	13.9%
James Snow Parkway	P21	SMH18872	215.42	SMH18873	214.03	129.0	600	-	0.0010	205.39	205.26	0.233	0.07	0.006	205.46	0.318	0.07	0.006	205.33	0.313	0.12	12.2%	12.3%
Parkhill Drive	P22	SMH18873	214.03	SMH18863	212.96	129.4	600	-	0.0010	205.26	205.13	0.232	0.07	0.006	205.33	0.319	0.08	0.006	205.21	0.287	0.13	12.3%	13.3%
Parkhill Drive	P23	SMH18863	212.96	SMH18869	212.50	116.8	600	-	0.0010	205.13	205.01	0.233	0.08	0.008	205.21	0.344	0.08	0.008	205.08	0.378	0.13	13.3%	12.5%
Parkhill Drive	P24	SMH18869	212.50	SMH203923	212.00	83.4	600	-	0.0014	205.01	204.89	0.275	0.08	0.008	205.08	0.381	0.08	0.008	204.97	0.319	0.14	12.5%	14.0%
Parkhill Drive	P25	SMH203923	212.00	SMH18856	212.06	33.1	600	-	0.0006	204.89	204.87	0.178	0.08	0.008	204.97	0.319	0.07	0.008	204.94	0.416	0.14	14.0%	11.7%
Parkhill Drive	P26	SMH18856	212.06	SMH18868	211.59	73.4	600	-	0.0023	204.87	204.70	0.349	0.07	0.008	204.94	0.456	0.06	0.008	204.76	0.539	0.12	11.7%	10.5%
Parkhill Drive	P27	SMH18868	211.59	SMH18867	211.30	63.1	600	-	0.0025	204.68	204.52	0.366	0.07	0.009	204.75	0.471	0.06	0.009	204.58	0.539	0.12	11.5%	10.5%
Parkhill Drive	P28	SMH18867	211.30	SMH18848	210.95	74.6	600	-	0.0027	204.50	204.30	0.376	0.07	0.009	204.57	0.478	0.06	0.009	204.36	0.537	0.11	11.5%	10.5%
Roadway	P29	SMH18848	210.95	SMH18847	210.82	100.6	600	-	0.0028	204.14	203.86	0.383	0.07	0.010	204.21	0.519	0.07	0.010	203.92	0.571	0.12	12.2%	11.3%
Roadway	P30	SMH18847	210.82	SMH18916	209.74	86.7	600	-	0.0028	203.84	203.60	0.382	0.07	0.010	203.91	0.518	0.07	0.010	203.66	0.571	0.12	12.2%	11.3%
Roadway	P31	SMH18916	209.74	SMH18846	207.73	115.0	600	-	0.0031	203.58	203.22	0.406	0.07	0.010	203.65	0.537	0.07	0.010	203.29	0.567	0.12	11.8%	11.5%
Hwy 401	P32	SMH18846	207.73	SMH18909	206.98	116.5	600	-	0.0031	203.10	202.74	0.402	0.07	0.010	203.17	0.534	0.07	0.010	202.81	0.568	0.12	11.8%	11.3%
Hwy 401	P33	SMH18909	206.98	SMH18908	208.62	167.3	600	-	0.0028	202.69	202.22	0.384	0.07	0.010	202.76	0.519	0.07	0.010	202.29	0.571	0.12	12.2%	11.3%
Hwy 401	P34	SMH18908	208.62	SMH18907	208.20	172.8	600	-	0.0032	202.21	201.65	0.412	0.07	0.010	202.28	0.546	0.07	0.010	201.72	0.570	0.12	11.8%	11.5%
Hwy 401	P35	SMH18907	208.20	SMH18906	208.04	37.4	600	-	0.0021	201.62	201.55	0.331	0.08	0.010	201.70	0.482	0.07	0.010	201.61	0.584	0.13	13.0%	11.3%
Hwy 401	P36	SMH18906	208.04	SMH18905	207.74	21.8	600	-	0.0077	201.48	201.31	0.637	0.06	0.010	201.54	0.698	0.06	0.010	201.37	0.698	0.10	10.0%	10.0%
Hwy 25	P37	SMH18905	207.74	SMH18899	207.29	61.5	600	-	0.0063	201.29	200.91	0.575	0.06	0.010	201.36	0.660	0.06	0.010	200.97	0.660	0.10	10.5%	10.5%

Notes:

Site Discharge Node		
1	Surcharge by depth	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is less than or equal to the pipe's full capacity)
2	Surcharge by flow	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is greater than the pipe's full capacity)

SANITARY SEWER CAPACITY ANALYSIS

Scenario 2: Active Developments Excluding the Site (WWF - 25 Year Event)

9094 Regional Rd 25

PROJECT NUM.: 2022-7556 DATE CREATED: 2025-10-08 CREATED BY: MF

ADDRESS: 9094 Regional Rd 25 DATE UPDATED: 2025-10-27 CHECKED BY: IF

Conduit Information													Model Run Results									HGL Analysis	
Location	Pipe Name	US Node	US Ground Elevation	DS Node	DS Node Elevation	Length (m)	Diameter/ Height (mm)	Width (mm)	Gradient (m/m)	US Invert (m AD)	DS Invert (m AD)	Full Capacity (m^3/s)	Max US depth (m)	Max US flow (m^3/s)	Max US total head (m AD)	Max US velocity (m/s)	Max DS depth (m)	Max DS flow (m^3/s)	Max DS total head (m AD)	Max DS velocity (m/s)	Max Surcharge state	EX. US (m bgs)	EX. DS (m bgs)
Hwy 25	P1A	SMH101856	222.73	SMH101855	220.74	77.2	300	-	0.0196	218.90	217.39	0.160	0.04	0.002	218.94	0.407	0.04	0.002	217.43	0.407	0.13	3.79	3.31
Hwy 26	P2A	SMH101855	220.74	SMH101854	223.46	104.9	300	-	0.0100	217.33	216.28	0.114	0.04	0.004	217.37	0.623	0.04	0.004	216.32	0.622	0.14	3.37	7.13
Hwy 27	P3A	SMH101854	223.46	SMH101853	219.08	61.5	300	-	0.0172	216.25	215.19	0.150	0.04	0.004	216.30	0.579	0.04	0.004	215.24	0.578	0.15	7.16	3.84
Escarpment Way	P4A	SMH101853	219.08	SMH34112	218.51	36.5	300	-	0.0198	215.13	214.41	0.161	0.06	0.009	215.19	0.988	0.06	0.009	214.47	0.988	0.19	3.89	4.04
Escarpment Way	P5A	SMH34112	218.51	SMH34113	217.30	78.0	300	-	0.0100	214.38	213.60	0.114	0.06	0.009	214.44	0.821	0.10	0.009	213.70	0.586	0.32	4.06	3.61
Escarpment Way	P6A	SMH34113	217.30	SMH34114	217.13	52.9	300	-	0.0105	213.58	213.03	0.117	0.11	0.034	213.69	1.358	0.11	0.034	213.14	1.356	0.38	3.61	3.99
Escarpment Way	P7A	SMH34114	217.13	SMH338066	216.50	7.7	300	-	0.0105	213.03	212.95	0.117	0.11	0.034	213.14	1.357	0.12	0.034	213.06	1.352	0.38	3.99	3.44
Escarpment Way	P8A	SMH338066	216.50	SMH34115	215.72	46.5	300	-	0.0105	212.95	212.46	0.117	0.11	0.034	213.06	1.357	0.12	0.034	212.58	1.352	0.38	3.44	3.14
Escarpment Way	P9A	SMH34115	215.72	SMH34116	214.66	114.9	300	-	0.0105	212.46	211.26	0.117	0.11	0.034	212.58	1.357	0.14	0.033	211.40	1.058	0.46	3.14	3.26
Escarpment Way	P10A	SMH34116	214.66	SMH34117	214.09	118.2	300	-	0.0051	211.26	210.66	0.081	0.14	0.034	211.40	1.087	0.14	0.034	210.80	1.085	0.46	3.26	3.29
Escarpment Way	P11A	SMH34117	214.09	SMH34118	213.98	120.7	300	-	0.0050	210.63	210.03	0.081	0.15	0.039	210.78	1.113	0.15	0.038	210.18	1.110	0.49	3.31	3.80
Escarpment Way	P12A	SMH34118	213.98	SMH34119	212.97	120.5	300	-	0.0049	209.99	209.40	0.080	0.15	0.039	210.14	1.107	0.15	0.038	209.55	1.105	0.49	3.84	3.42
Escarpment Way	P13A	SMH34119	212.97	SMH34045	213.45	25.1	300	-	0.0698	209.18	207.43	0.302	0.08	0.038	209.26	2.630	0.08	0.038	207.51	2.630	0.26	3.71	5.94
James Snow Parkway	P1B	SMH526506	221.50	SMH526505	221.00	77.1	300	-	0.0090	216.22	215.52	0.108	0.02	0.000	216.24	0.000	0.02	0.000	215.54	0.000	0.07	5.26	5.46
James Snow Parkway	P2B	SMH526505	221.00	SMH526504	220.50	74.7	300	-	0.0097	215.48	214.76	0.112	0.02	0.000	215.50	0.000	0.02	0.000	214.78	0.000	0.07	5.50	5.72
James Snow Parkway	P3B	SMH526504	220.50	SMH525705	220.00	74.4	300	-	0.0089	214.71	214.05	0.108	0.02	0.000	214.73	0.000	0.02	0.000	214.07	0.000	0.07	5.77	5.93
James Snow Parkway	P4B	SMH525705	220.00	SMH525704	219.50	75.0	300	-	0.0064	213.98	213.50	0.091	0.02	0.000	214.00	0.000	0.02	0.000	213.52	0.000	0.07	6.00	5.98
James Snow Parkway	P5B	SMH525704	219.50	SMH525710	218.50	137.4	300	-	0.0062	213.45	212.61	0.090	0.02	0.000	213.47	0.000	0.02	0.000	212.63	0.000	0.07	6.03	5.88
James Snow Parkway	P6B	SMH525710	218.50	SMH525711	216.50	153.9	300	-	0.0069	212.55	211.49	0.095	0.02	0.000	212.57	0.000	0.02	0.000	211.51	0.000	0.07	5.93	4.99
James Snow Parkway	P7B	SMH525711	216.50	SFT999070	217.35	80.9	300	-	0.0035	211.43	211.15	0.067	0.02	0.000	211.45	0.000	0.10	0.000	211.25	0.003	0.32	5.05	6.10
James Snow Parkway	P8B	SFT999070	217.35	SMH59023	216.75	69.1	300	-	0.0061	211.22	210.80	0.089	0.03	0.001	211.25	0.257	0.04	0.001	210.84	0.259	0.12	6.10	5.91
James Snow Parkway	P9B	SMH59023	216.75	SMH59024	216.25	94.3	300	-	0.0062	210.73	210.15	0.090	0.11	0.023	210.84	1.039	0.11	0.023	210.26	1.038	0.35	5.91	5.99
James Snow Parkway	P10B	SMH59024	216.25	SMH59025	214.35	118.1	300	-	0.0056	210.08	209.42	0.085	0.11	0.023	210.19	1.004	0.11	0.023	209.53	1.002	0.36	6.06	4.82
James Snow Parkway	P11B	SMH59025	214.35	SMH59026	212.98	123.1	300	-	0.0053	209.35	208.70	0.083	0.11	0.023	209.46	0.983	0.11	0.023	208.81	0.981	0.37	4.89	4.17
James Snow Parkway	P12B	SMH59026	212.98	SMH55739	213.65	131.5	600	-	0.0030	208.40	208.00	0.400	0.11	0.026	208.51	0.760	0.10	0.026	208.10	0.785	0.18	4.47	5.55
James Snow Parkway	P13B	SMH55739	213.65	SMH55738	212.15	77.0	600	-	0.0025	207.97	207.78	0.361	0.11	0.026	208.08	0.709	0.10	0.026	207.88	0.787	0.19	5.57	4.27
James Snow Parkway	P14B	SMH55738	212.15	SMH55737	212.94	79.2	600	-	0.0024	207.75	207.56	0.355	0.11	0.026	207.86	0.701	0.10	0.026	207.66	0.786	0.19	4.29	5.27
James Snow Parkway	P15B	SMH55737	212.94	SMH34045	213.45	67.7	600	-	0.0040	207.53	207.26	0.458	0.10	0.026	207.63	0.824	0.12	0.026	207.38	0.812	0.19	5.31	6.07
James Snow Parkway	P16	SMH34045	213.45	SMH33672	213.90	72.9	600	-	0.0026	207.20	207.01	0.371	0.18	0.067	207.38	0.975	0.18	0.066	207.19	0.913	0.30	6.07	6.71
James Snow Parkway	P17	SMH33672	213.90	SMH33673	215.07	75.5	600	-	0.0021	207.01	206.85	0.334	0.18	0.066	207.19	0.913	0.17	0.066	207.02	1.048	0.30	6.71	8.06
James Snow Parkway	P18	SMH33673	215.07	SMH18874	215.87	57.1	525	-	0.0193	206.84	205.74	0.597	0.13	0.066	206.97	1.606	0.16	0.066	205.90	1.541	0.30	8.11	9.98
James Snow Parkway	P19	SMH18874	215.87	SMH18875	215.74	122.7	525	-	0.0010	205.62	205.49	0.163	0.28	0.089	205.90	0.787	0.28	0.087	205.77	0.761	0.53	9.98	9.97
James Snow Parkway	P20	SMH18875	215.74	SMH18872	215.42	100.3	525	-	0.0010	205.49	205.39	0.163	0.28	0.087	205.77	0.761	0.28	0.087	205.67	0.744	0.53	9.97	9.75
James Snow Parkway	P21	SMH18872	215.42	SMH18873	214.03	129.0	600	-	0.0010	205.39	205.26	0.233	0.28	0.103	205.67	0.810	0.28	0.102	205.54	0.789	0.47	9.75	8.49
Parkhill Drive	P22	SMH18873	214.03	SMH18863	212.96	129.4	600	-	0.0010	205.26	205.13	0.232	0.28	0.102	205.54	0.793	0.29	0.102	205.41	0.758	0.48	8.49	7.55
Parkhill Drive	P23	SMH18863	212.96	SMH18869	212.50	116.8	600	-	0.0010	205.13	205.01	0.233	0.29	0.111	205.41	0.831	0.27	0.110	205.27	0.907	0.48	7.55	7.23
Parkhill Drive	P24	SMH18869	212.50	SMH203923	212.00	83.4	600	-	0.0014	205.01	204.89	0.275	0.27	0.110	205.27	0.909	0.28	0.110	205.16	0.868	0.46	7.23	6.84
Parkhill Drive	P25	SMH203923	212.00	SMH18856	212.06	33.1	600	-	0.0006	204.89	204.87	0.178	0.28	0.110	205.16	0.868	0.24	0.110	205.10	1.054	0.46	6.84	6.95
Parkhill Drive	P26	SMH18856	212.06	SMH18868	211.59	73.4	600	-	0.0023	204.87	204.70	0.349	0.24	0.116	205.10	1.109	0.22	0.116	204.92	1.240	0.40	6.95	6.68
Parkhill Drive	P27	SMH18868	211.59	SMH18867	211.30	63.1	600	-	0.0025	204.68	204.52	0.366	0.23	0.116	204.91	1.146	0.22	0.116	204.74	1.241	0.39	6.68	6.56
Parkhill Drive	P28	SMH18867	211.30	SMH18848	210.95	74.6	600	-	0.0027	204.50	204.30	0.376	0.23	0.116	204.73	1.164	0.22	0.116	204.52	1.240	0.38	6.57	6.44
Roadway	P29	SMH18848	210.95	SMH18847	210.82	100.6	600	-	0.0028	204.14	203.86	0.383	0.24	0.124	204.37	1.198	0.23	0.124	204.08	1.266	0.39	6.58	6.74
Roadway	P30	SMH18847	210.82	SMH18916	209.74	86.7	600	-	0.0028	203.84	203.60	0.382	0.24	0.124	204.07	1.196	0.23	0.124	203.82	1.265	0.39	6.75	5.92
Roadway	P31	SMH18916	209.74	SMH18846	207.73	115.0	600	-	0.0031	203.58	203.22	0.406	0.23	0.124	203.81	1.248	0.23	0.124	203.44	1.265	0.38	5.94	4.29
Hwy 401	P32	SMH18846	207.73	SMH18909	206.98	116.5	600	-	0.0031	203.10	202.74	0.402	0.23	0.124	203.33	1.239	0.23	0.124	202.97	1.264	0.38	4.41	4.02
Hwy 401	P33	SMH18909	206.98	SMH18908	208.62	167.3	600	-	0.0028	202.69	202.22	0.384	0.24	0.124	202.92	1.197	0.23	0.124	202.45	1.264	0.39	4.06	6.18
Hwy 401	P34	SMH18908	208.62	SMH18907	208.20	172.8	600	-	0.0032	202.21	201.65	0.412	0.23	0.125	202.44	1.263	0.23	0.124	201.88	1.266	0.38	6.18	6.32
Hwy 401	P35	SMH18907	208.20	SMH18906	208.04	37.4	600	-	0.0021	201.62	201.55	0.331	0.25	0.124	201.87	1.129	0.23	0.124	201.77	1.269	0.41	6.33	6.27
Hwy 401	P36	SMH18906	208.04	SMH18905	207.74	21.8	600	-	0.0077	201.48	201.31	0.637	0.18	0.124	201.66	1.716	0.18	0.124	201.49	1.716	0.30	6.38	6.25
Hwy 25	P37	SMH18905	207.74	SMH18899	207.29	61.5	600	-	0.0063	201.29	200.91	0.575	0.19	0.124	201.48	1.597	0.19	0.124	201.10	1.597	0.32	6.26	6.19

Notes:

Site Discharge Node		
1	Surcharge by depth	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is less than or equal to the pipe's full capacity)
2	Surcharge by flow	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is greater than the pipe's full capacity)

SANITARY SEWER CAPACITY ANALYSIS

Scenario 3: All Active Developments (Design Flow)

9094 Regional Rd 25

PROJECT NUM.: 2022-7556 | DATE CREATED: 2025-10-08 | CREATED BY: MF

ADDRESS: 9094 Regional Rd 25 | DATE UPDATED: 2025-10-27 | CHECKED BY: IF

Conduit Information													Model Run Results									Capcity Analysis[1]					
Location	Pipe Name	US Node	US Ground Elevation	DS Node	DS Node Elevation	Length (m)	Diameter/ Height (mm)	Width (mm)	Gradient (m/m)	US Invert (m AD)	DS Invert (m AD)	Full Capacity (m^3/s)	Max US depth (m)	Max US flow (m^3/s)	Max US total head (m AD)	Max US velocity (m/s)	Max DS depth (m)	Max DS flow (m^3/s)	Max DS total head (m AD)	Max DS velocity (m/s)	Max Surcharge state	PR. % full (US)	PR. % full (DS)	EX. % full (US)	EX. % full (DS)	US diff	DS diff
Regional Road 25	P1	J-1	231.60	J-2	233.25	185.0	300	-	0.0050	225.06	224.13	0.069	0.06	0.006	225.12	0.571	0.07	0.006	224.20	0.548	0.22	21.0%	21.7%	-	-	-	-
Regional Road 26	P2	J-2	233.25	J-3	234.13	190.0	300	-	0.0050	224.13	223.18	0.069	0.07	0.007	224.20	0.581	0.09	0.007	223.27	0.370	0.30	21.7%	30.0%	-	-	-	-
Regional Road 27	P3	J-3	234.13	J-4	230.14	585.0	300	-	0.0050	223.18	220.25	0.069	0.09	0.013	223.27	0.728	0.09	0.013	220.34	0.684	0.31	30.0%	31.3%	-	-	-	-
Regional Road 28	P4	J-4	230.14	J-5	226.73	110.0	300	-	0.0050	220.25	219.70	0.069	0.09	0.014	220.34	0.748	0.11	0.014	219.81	0.579	0.38	31.3%	37.7%	-	-	-	-
Regional Road 29	P5	J-6	227.81	J-5	226.73	197.1	300	-	0.0076	221.20	219.70	0.085	0.06	0.006	221.26	0.654	0.11	0.006	219.81	0.257	0.38	19.3%	37.7%	-	-	-	-
Regional Road 30	P6	J-5	226.73	SMH101856	222.73	160.0	300	-	0.0050	219.70	218.90	0.069	0.11	0.020	219.81	0.836	0.11	0.020	219.01	0.869	0.38	37.7%	36.7%	-	-	-	-
Hwy 25	P1A	SMH101856	222.73	SMH101855	220.74	77.2	300	-	0.0196	218.90	217.39	0.160	0.08	0.021	218.98	1.398	0.08	0.021	217.47	1.398	0.26	26.0%	26.0%	10.0%	10.0%	16.0%	16.0%
Hwy 26	P2A	SMH101855	220.74	SMH101854	223.46	104.9	300	-	0.0100	217.33	216.28	0.114	0.09	0.021	217.42	1.183	0.09	0.021	216.37	1.183	0.29	29.3%	29.3%	7.0%	7.0%	22.3%	22.3%
Hwy 27	P3A	SMH101854	223.46	SMH101853	219.08	61.5	300	-	0.0172	216.25	215.19	0.150	0.08	0.021	216.33	1.344	0.08	0.021	215.28	1.344	0.27	27.0%	27.0%	10.3%	10.3%	16.7%	16.7%
Escarpment Way	P4A	SMH101853	219.08	SMH34112	218.51	36.5	300	-	0.0198	215.13	214.41	0.161	0.08	0.021	215.21	1.410	0.08	0.021	214.49	1.410	0.26	26.3%	26.3%	10.3%	10.3%	16.0%	16.0%
Escarpment Way	P5A	SMH34112	218.51	SMH34113	217.30	78.0	300	-	0.0100	214.38	213.60	0.114	0.09	0.021	214.47	1.138	0.09	0.021	213.69	1.138	0.31	30.7%	30.7%	10.7%	10.7%	20.0%	20.0%
Escarpment Way	P6A	SMH34113	217.30	SMH34114	217.13	52.9	300	-	0.0105	213.58	213.03	0.117	0.09	0.022	213.67	1.169	0.09	0.022	213.12	1.168	0.31	30.7%	30.7%	12.0%	12.0%	18.7%	18.7%
Escarpment Way	P7A	SMH34114	217.13	SMH338066	216.50	7.7	300	-	0.0105	213.03	212.95	0.117	0.09	0.022	213.12	1.169	0.09	0.022	213.04	1.165	0.31	30.7%	31.0%	12.0%	12.0%	18.7%	19.0%
Escarpment Way	P8A	SMH338066	216.50	SMH34115	215.72	46.5	300	-	0.0105	212.95	212.46	0.117	0.09	0.022	213.04	1.169	0.09	0.022	212.55	1.165	0.31	30.7%	31.0%	12.0%	12.0%	18.7%	19.0%
Escarpment Way	P9A	SMH34115	215.72	SMH34116	214.66	114.9	300	-	0.0105	212.46	211.26	0.117	0.09	0.022	212.55	1.169	0.11	0.022	211.37	0.948	0.36	30.7%	36.0%	12.0%	12.0%	18.7%	24.0%
Escarpment Way	P10A	SMH34116	214.66	SMH34117	214.09	118.2	300	-	0.0051	211.26	210.66	0.081	0.11	0.022	211.37	0.951	0.11	0.022	210.77	0.951	0.36	35.7%	35.7%	10.7%	10.7%	25.0%	25.0%
Escarpment Way	P11A	SMH34117	214.09	SMH34118	213.98	120.7	300	-	0.0050	210.63	210.03	0.081	0.11	0.022	210.74	0.946	0.11	0.022	210.14	0.946	0.36	36.0%	36.0%	11.0%	11.0%	25.0%	25.0%
Escarpment Way	P12A	SMH34118	213.98	SMH34119	212.97	120.5	300	-	0.0049	209.99	209.40	0.080	0.11	0.022	210.10	0.941	0.11	0.022	209.51	0.941	0.36	36.3%	36.3%	11.0%	11.0%	25.3%	25.3%
Escarpment Way	P13A	SMH34119	212.97	SMH34045	213.45	25.1	300	-	0.0698	209.18	207.43	0.302	0.06	0.022	209.24	2.075	0.06	0.022	207.49	2.075	0.21	20.7%	20.7%	11.0%	11.0%	9.7%	9.7%
Dublin Line	P7	J-7	226.73	J-8	225.91	245.0	300	-	0.0050	222.31	221.08	0.069	0.09	0.012	222.40	0.719	0.09	0.012	221.17	0.704	0.30	29.3%	29.7%	-	-	-	-
Dublin Line	P8	J-8	225.91	J-9	226.71	230.0	300	-	0.0050	221.08	219.93	0.069	0.09	0.013	221.17	0.724	0.11	0.013	220.04	0.583	0.35	29.7%	35.0%	-	-	-	-
Dublin Line	P9	J-9	226.71	J-10	225.72	190.0	300	-	0.0050	219.93	218.98	0.069	0.11	0.017	220.04	0.798	0.10	0.017	219.08	0.826	0.35	35.0%	34.0%	-	-	-	-
Dublin Line	P10	J-10	225.72	J-11	223.76	224.0	300	-	0.0073	218.98	217.35	0.084	0.10	0.018	219.08	0.923	0.12	0.018	217.47	0.686	0.40	32.3%	40.3%	-	-	-	-
Dublin Line	P11	J-12	221.91	J-11	223.76	285.0	300	-	0.0050	218.78	217.35	0.069	0.06	0.005	218.84	0.529	0.12	0.005	217.47	0.189	0.40	19.3%	40.3%	-	-	-	-
Dublin Line	P12	J-11	223.76	J-13	223.89	45.0	300	-	0.0051	217.35	217.12	0.070	0.12	0.023	217.47	0.876	0.12	0.023	217.24	0.868	0.41	40.3%	40.7%	-	-	-	-
Dublin Line	P13	J-13	223.89	SMH526506	221.50	180.0	300	-	0.0050	217.12	216.22	0.069	0.12	0.023	217.24	0.869	0.12	0.023	216.34	0.907	0.41	40.7%	39.3%	-	-	-	-
James Snow Parkway	P1B	SMH526506	221.50	SMH526505	221.00	77.1	300	-	0.0090	216.22	215.52	0.108	0.10	0.023	216.31	1.188	0.10	0.023	215.62	1.188	0.32	32.3%	32.3%	6.7%	6.7%	25.7%	25.7%
James Snow Parkway	P2B	SMH526505	221.00	SMH526504	220.50	74.7	300	-	0.0097	215.48	214.76	0.112	0.10	0.023	215.58	1.219	0.10	0.023	214.86	1.219	0.32	31.7%	31.7%	6.7%	6.7%	25.0%	25.0%
James Snow Parkway	P3B	SMH526504	220.50	SMH525705	220.00	74.4	300	-	0.0089	214.71	214.05	0.108	0.10	0.023	214.81	1.182	0.10	0.023	214.15	1.182	0.32	32.3%	32.3%	6.7%	6.7%	25.7%	25.7%
James Snow Parkway	P4B	SMH525705	220.00	SMH525704	219.50	75.0	300	-	0.0064	213.98	213.50	0.091	0.11	0.023	214.09	1.054	0.11	0.023	213.61	1.054	0.35	35.3%	35.3%	6.7%	6.7%	28.7%	28.7%
James Snow Parkway	P5B	SMH525704	219.50	SMH525710	218.50	137.4	300	-	0.0062	213.45	212.61	0.090	0.11	0.023	213.56	1.043	0.11	0.023	212.71	1.043	0.35	35.3%	35.3%	6.7%	6.7%	28.7%	28.7%
James Snow Parkway	P6B	SMH525710	218.50	SMH525711	216.50	153.9	300	-	0.0069	212.55	211.49	0.095	0.10	0.023	212.65	1.084	0.10	0.023	211.59	1.084	0.34	34.3%	34.3%	6.7%	6.7%	27.7%	27.7%
James Snow Parkway	P7B	SMH525711	216.50	SFT999070	217.35	80.9	300	-	0.0035	211.43	211.15	0.067	0.12	0.023	211.56	0.849	0.17	0.023	211.33	0.551	0.58	41.3%	58.0%	6.7%	29.0%	34.7%	29.0%
James Snow Parkway	P8B	SFT999070	217.35	SMH59023	216.75	69.1	300	-	0.0061	211.22	210.80	0.089	0.11	0.023	211.33	1.038	0.11	0.023	210.91	1.038	0.36	35.7%	35.7%	6.7%	6.7%	29.0%	29.0%
James Snow Parkway	P9B	SMH59023	216.75	SMH59024	216.25	94.3	300	-	0.0062	210.73	210.15	0.090	0.11	0.024	210.84	1.056	0.11	0.024	210.26	1.056	0.36	36.3%	36.3%	10.0%	10.0%	26.3%	26.3%
James Snow Parkway	P10B	SMH59024	216.25	SMH59025	214.35	118.1	300	-	0.0056	210.08	209.42	0.085	0.11	0.024	210.19	1.020	0.11	0.024	209.53	1.020	0.37	37.3%	37.3%	10.0%	10.0%	27.3%	27.3%
James Snow Parkway	P11B	SMH59025	214.35	SMH59026	212.98	123.1	300	-	0.0053	209.35	208.70	0.083	0.11	0.024	209.46	1.000	0.11	0.024	208.81	1.000	0.38	37.7%	37.7%	10.0%	10.0%	27.7%	27.7%
James Snow Parkway	P12B	SMH59026	212.98	SMH55739	213.65	131.5	600	-	0.0030	208.40	208.00	0.400	0.11	0.025	208.51	0.746	0.10	0.025	208.10	0.774	0.18	17.5%	17.0%	6.5%	6.3%	11.0%	10.7%
James Snow Parkway	P13B	SMH55739	213.65	SMH55738	212.15	77.0	600	-	0.0025	207.97	207.78	0.361	0.11	0.025	208.08	0.697	0.10	0.025	207.88	0.778	0.18	18.3%	17.0%	6.7%	6.3%	11.7%	10.7%
James Snow Parkway	P14B	SMH55738	212.15	SMH55737	212.94	79.2	600	-	0.0024	207.75	207.56	0.355	0.11	0.025	207.86	0.690	0.10	0.025	207.66	0.779	0.18	18.5%	17.0%	6.7%	6.5%	11.8%	10.5%
James Snow Parkway	P15B	SMH55737	212.94	SMH34045	213.45	67.7	600	-	0.0040	207.53	207.26	0.458	0.10	0.025	207.63	0.815	0.10	0.025	207.36	0.815	0.16	16.5%	16.5%	6.3%	6.3%	10.2%	10.2%
James Snow Parkway	P16	SMH34045	213.45	SMH33672	213.90	72.9	600	-	0.0026	207.20	207.01	0.371	0.15	0.047	207.35	0.875	0.16	0.047	207.17	0.818	0.26	24.7%	25.8%	8.2%	8.5%	16.5%	17.3%
James Snow Parkway	P17	SMH33672	213.90	SMH33673	215.07	75.5	600	-	0.0021	207.01	206.85	0.334	0.16	0.047	207.17	0.819	0.14	0.047	206.99	0.949	0.26	25.8%	23.2%	8.5%	8.2%	17.3%	15.0%
James Snow Parkway	P18	SMH33673	215.07	SMH18874	215.87	57.1	525	-	0.0193	206.84	205.74	0.597	0.11	0.047	206.95	1.395	0.11	0.047	205.85	1.395	0.21	21.3%	21.3%	11.2%	11.2%	10.1%	10.1%
James Snow Parkway	P19	SMH18874	215.87	SMH18875	215.74	122.7	525	-	0.0010	205.62	205.49	0.163	0.20	0.048	205.82	0.648	0.20	0.048	205.69	0.651	0.38	37.7%	37.5%	12.4%	12.4%	25.3%	25.1%
James Snow Parkway	P20	SMH18875	215.74	SMH18872	215.42	100.3	525	-	0.0010	205.49	205.39	0.163	0.20	0.048	205.69	0.651	0.19	0.048	205.58	0.678	0.38	37.5%	36.4%	12.4%	13.9%	25.1%	22.5%
James Snow Parkway	P21	SMH18872	215.42	SMH18873	214.03	129.0	600	-	0.0010	205.39	205.26	0.233	0.19	0.050	205.58	0.646	0.19	0.050	205.45	0.643	0.32	31.8%	32.0%	12.2%	12.3%	19.7%	19.7%
Parkhill Drive	P22	SMH18873	214.03	SMH18863	212.96	129.4	600	-	0.0010	205.26	205.13	0.232	0.19	0.050	205.45	0.644	0.19	0.050	205.32	0.639	0.32	32.0%	32.2%	12.3%	13.3%	19.7%	18.8%
Parkhill Drive	P23	SMH18863	212.96	SMH18869	212.50	116.8	600	-	0.0010	205.13	205.01	0.233	0.19	0.052	205.32	0.655	0.18	0.052	205.19	0.727	0.32	32.2%	29.8%	13.3%	12.5%	18.8%	17.3%
Parkhill Drive	P24	SMH18869	212.50	SMH203923	212.00	83.4	600	-	0.0014	205.01	204.89	0.275	0.18	0.052	205.19	0.728	0.19	0.052	205.08	0.668	0.32	29.8%	31.8%	12.5%	14.0%	17.3%	17.8%
Parkhill Drive	P25	SMH203923	212.00	SMH18856	212.06	33.1	600	-	0.0006	204.89	204.87	0.178	0.19	0.052	205.08	0.668	0.16	0.052	205.03	0.858	0.32	31.8%	26.5%	14.0%	11.7%	17.8%	14.8%
Parkhill Drive	P26	SMH18856	212.06	SMH18868	211.59	73.4	600	-	0.0023	204.87	204.70	0.349	0.16	0.052	205.03	0.871	0.15	0.052	204.84	0.978	0.27	26.5%	24.5%	11.7%	10.5%	14.8%	14.0%
Parkhill Drive	P27	SMH18868	211.59	SMH18867	211.30	63.1	600	-	0.0025	204.68	204.52	0.366	0.16	0.052	204.83	0.899	0.15	0.052	204.66	0.977	0.26	26.0%	24.5%	11.5%	10.5%	14.5%	14.0%
Parkhill Drive	P28	SMH18867	211.30	SMH18848	210.95	74.6	600	-	0.0027	204.50	204.30	0.376	0.15	0.052	204.65	0.915	0.15	0.052	204.44	0.976	0.26	25.7%	24.5%	11.5%	10.5%	14.2%	14.0%
Roadway	P29	SMH18848	210.95	SMH18847	210.82	100.6	600	-	0.0028	204.14	203.86	0.383	0.16	0.054	204.29	0.934	0.15	0.054	204.01	0.985	0.26	25.8%	24.8%	12.2%	11.3%	13.7%	13.5%
Roadway	P30	SMH18847	210.82	SMH18916	209.74	86.7	600	-	0.0028	203.84	203.60	0.382	0.16	0.054	203.99	0.933	0.15	0.054	203.75	0.985	0.26	25.8%	24.8%	12.2%	11.3%	13.7%	13.5%
Roadway	P31	SMH18916	209.74	SMH18846	207.73	115.0	600	-	0.0031	203.58	203.22	0.406	0.15	0.054	203.73	0.973	0.15	0.054	203.37	0.983	0.25	25.2%	24.8%	11.8%	11.5%	13.3%	13.3%
Hwy 401	P32	SMH18846	207.73	SMH18909	206.98	116.5	600	-	0.0031	203.10	202.74	0.402	0.15	0.054	203.25	0.966	0.15	0.054	202.89	0.983	0.25	25.2%	24.8%	11.8%	11.3%	13.3%	13.5%
Hwy 401	P33	SMH18909	206.98	SMH18908	208.62	167.3	600	-	0.0028	202.69	202.22	0.384	0.16	0.054	202.84	0.935	0.15	0.054	202.37	0.985	0.26	25.8%	24.8%	12.2%	11.3%	13.7%	13.5%
Hwy 401	P34	SMH18908	208.62	SMH18907	208.20	172.8	600	-	0.0032	202.21	201.65	0.412	0.15	0.054	202.36	0.984	0.15	0.054	201.80	0.984	0.25	25.0%	25.0%	11.8%	11.5%	13.2%	13.5%
Hwy 401	P35	SMH18907	208.20	SMH18906	208.04	37.4	600	-	0.0021	201.62	201.55	0.331	0.16	0.054	201.79	0.867	0.15	0.054	201.69	0.989	0.27	27.3%	24.8%	13.0%	11.3%	14.3%	13.5%
Hwy 401	P36	SMH18906	208.04	SMH18905	207.74	21.8	600	-	0.0077	201.48	201.31	0.637	0.12	0.054	201.60	1.321	0.12	0.054	201.43	1.321	0.20	20.3%	20.3%	10.0%	10.0%	10.3%	10.3%
Hwy 25	P37	SMH18905	207.74	SMH18899	207.29	61.5	600	-	0.0063	201.29	200.91	0.575	0.13	0.054	201.42	1.233	0.13	0.054	201.03	1.233	0.21	21.3%	21.3%	10.5%	10.5%	10.8%	10.8%

1. Capacity Analysis results (% full) based on the depth of flow (HGL) in the pipe (% full less than 100% means the HGL is below to pipe obvert)

Notes:

Site Discharge Node		
1	Surcharge by depth	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is less than or equal to the pipe's full capacity)
2	Surcharge by flow	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is greater than the pipe's full capacity)

SANITARY SEWER CAPACITY ANALYSIS

Scenario 4: All Active Developments (WWF - 25 Year Event)

9094 Regional Rd 25

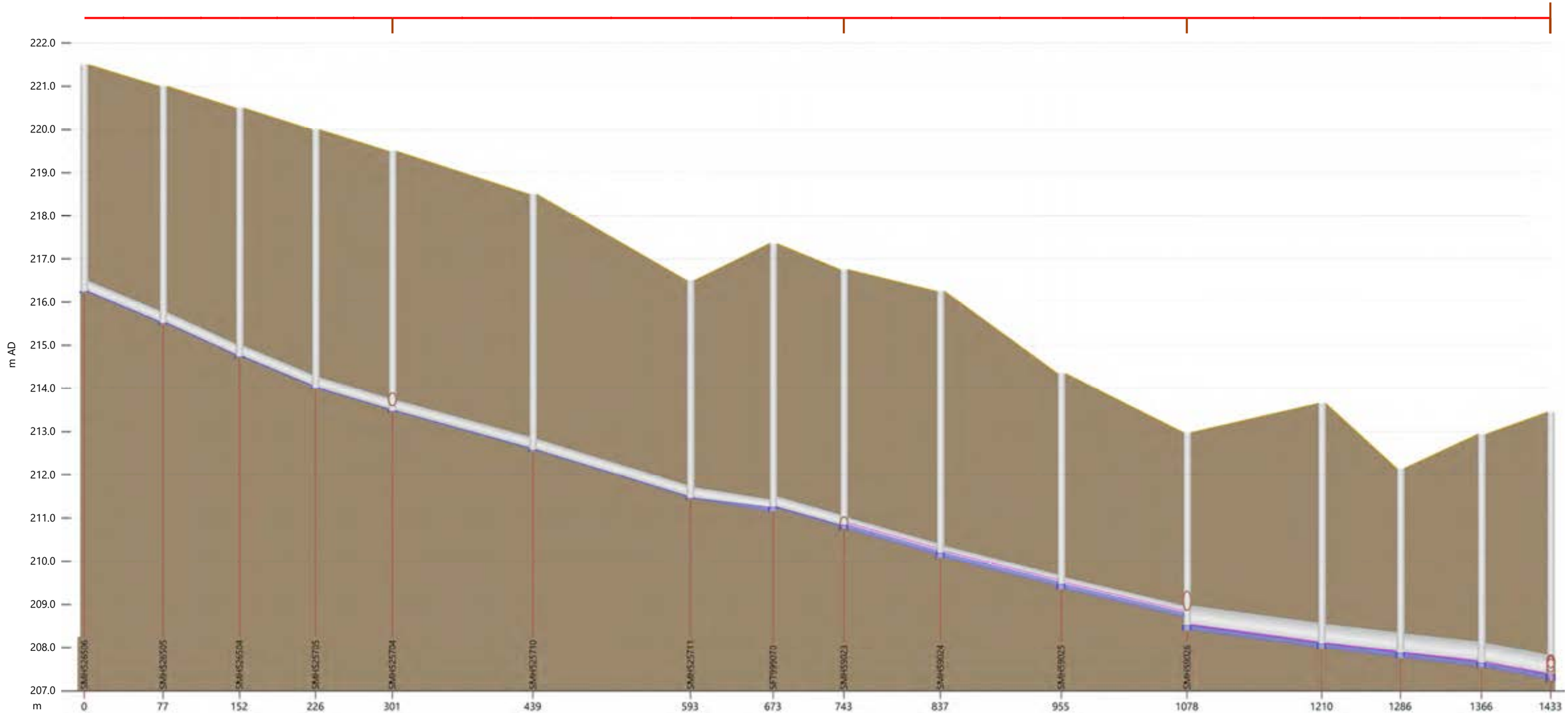
PROJECT NUM.: 2022-7556 | DATE CREATED: 2025-10-08 | CREATED BY: MF

ADDRESS: 9094 Regional Rd 25 | DATE UPDATED: 2025-10-27 | CHECKED BY: IF

Conduit Information													Model Run Results									HGL Analysis					
Location	Pipe Name	US Node	US Ground Elevation	DS Node	DS Node Elevation	Length (m)	Diameter/ Height (mm)	Width (mm)	Gradient (m/m)	US Invert (m AD)	DS Invert (m AD)	Full Capacity (m^3/s)	Max US depth (m)	Max US flow (m^3/s)	Max US total head (m AD)	Max US velocity (m/s)	Max DS depth (m)	Max DS flow (m^3/s)	Max DS total head (m AD)	Max DS velocity (m/s)	Max Surcharge state	PR. US (m bgs)	PR. DS (m bgs)	EX. US (m bgs)	EX. DS (m bgs)	US diff (m)	DS diff (m)
Regional Road 25	P1	J-1	231.60	J-2	233.25	185.0	300	-	0.0050	225.06	224.13	0.069	0.06	0.006	225.12	0.571	0.07	0.006	224.20	0.548	0.22	6.48	9.06	-	-	-	-
Regional Road 26	P2	J-2	233.25	J-3	234.13	190.0	300	-	0.0050	224.13	223.18	0.069	0.07	0.007	224.20	0.581	0.09	0.007	223.27	0.370	0.30	9.06	10.86	-	-	-	-
Regional Road 27	P3	J-3	234.13	J-4	230.14	585.0	300	-	0.0050	223.18	220.25	0.069	0.09	0.013	223.27	0.728	0.09	0.013	220.34	0.684	0.31	10.86	9.80	-	-	-	-
Regional Road 28	P4	J-4	230.14	J-5	226.73	110.0	300	-	0.0050	220.25	219.70	0.069	0.09	0.014	220.34	0.748	0.11	0.014	219.81	0.579	0.38	9.80	6.92	-	-	-	-
Regional Road 29	P5	J-6	227.81	J-5	226.73	197.1	300	-	0.0076	221.20	219.70	0.085	0.06	0.006	221.26	0.654	0.11	0.006	219.81	0.257	0.38	6.55	6.92	-	-	-	-
Regional Road 30	P6	J-5	226.73	SMH101856	222.73	160.0	300	-	0.0050	219.70	218.90	0.069	0.11	0.020	219.81	0.836	0.11	0.020	219.01	0.869	0.38	6.92	3.72	-	-	-	-
Hwy 25	P1A	SMH101856	222.73	SMH101855	220.74	77.2	300	-	0.0196	218.90	217.39	0.160	0.13	0.055	219.03	1.968	0.13	0.055	217.52	1.968	0.42	3.70	3.22	3.79	3.31	0.09	0.09
Hwy 26	P2A	SMH101855	220.74	SMH101854	223.46	104.9	300	-	0.0100	217.33	216.28	0.114	0.15	0.055	217.48	1.581	0.15	0.055	216.43	1.581	0.50	3.26	7.03	3.37	7.13	0.11	0.11
Hwy 27	P3A	SMH101854	223.46	SMH101853	219.08	61.5	300	-	0.0172	216.25	215.19	0.150	0.13	0.055	216.38	1.883	0.13	0.055	215.32	1.883	0.43	7.08	3.75	7.16	3.84	0.09	0.09
Escarpment Way	P4A	SMH101853	219.08	SMH34112	218.51	36.5	300	-	0.0198	215.13	214.41	0.161	0.13	0.056	215.26	1.986	0.13	0.056	214.54	1.986	0.42	3.82	3.97	3.89	4.04	0.07	0.07
Escarpment Way	P5A	SMH34112	218.51	SMH34113	217.30	78.0	300	-	0.0100	214.38	213.60	0.114	0.15	0.056	214.53	1.560	0.15	0.056	213.75	1.560	0.51	3.98	3.55	4.06	3.61	0.09	0.06
Escarpment Way	P6A	SMH34113	217.30	SMH34114	217.13	52.9	300	-	0.0105	213.58	213.03	0.117	0.16	0.065	213.74	1.650	0.17	0.065	213.19	1.621	0.55	3.56	3.94	3.61	3.99	0.05	0.05
Escarpment Way	P7A	SMH34114	217.13	SMH338066	216.50	7.7	300	-	0.0105	213.03	212.95	0.117	0.17	0.065	213.19	1.626	0.17	0.065	213.12	1.581	0.57	3.94	3.38	3.99	3.44	0.05	0.05
Escarpment Way	P8A	SMH338066	216.50	SMH34115	215.72	46.5	300	-	0.0105	212.95	212.46	0.117	0.16	0.065	213.11	1.649	0.17	0.065	212.63	1.582	0.57	3.39	3.09	3.44	3.14	0.05	0.05
Escarpment Way	P9A	SMH34115	215.72	SMH34116	214.66	114.9	300	-	0.0105	212.46	211.26	0.117	0.16	0.065	212.62	1.649	0.21	0.065	211.47	1.230	0.70	3.09	3.19	3.14	3.26	0.05	0.07
Escarpment Way	P10A	SMH34116	214.66	SMH34117	214.09	118.2	300	-	0.0051	211.26	210.66	0.081	0.21	0.066	211.47	1.272	0.20	0.065	210.86	1.305	0.69	3.19	3.23	3.26	3.29	0.07	0.06
Escarpment Way	P11A	SMH34117	214.09	SMH34118	213.98	120.7	300	-	0.0050	210.63	210.03	0.081	0.22	0.070	210.85	1.275	0.21	0.070	210.24	1.340	0.72	3.24	3.74	3.31	3.80	0.07	0.06
Escarpment Way	P12A	SMH34118	213.98	SMH34119	212.97	120.5	300	-	0.0049	209.99	209.40	0.080	0.22	0.070	210.21	1.267	0.21	0.070	209.61	1.340	0.73	3.77	3.36	3.84	3.42	0.07	0.06
Escarpment Way	P13A	SMH34119	212.97	SMH34045	213.45	25.1	300	-	0.0698	209.18	207.43	0.302	0.10	0.070	209.28	3.260	0.10	0.070	207.53	3.260	0.34	3.68	5.91	3.71	5.94	0.03	0.03
Dublin Line	P7	J-7	226.73	J-8	225.91	245.0	300	-	0.0050	222.31	221.08	0.069	0.15	0.032	222.46	0.950	0.15	0.032	221.23	0.927	0.49	4.27	4.68	-	-	-	-
Dublin Line	P8	J-8	225.91	J-9	226.71	230.0	300	-	0.0050	221.08	219.93	0.069	0.15	0.033	221.23	0.956	0.18	0.033	220.11	0.751	0.60	4.68	6.60	-	-	-	-
Dublin Line	P9	J-9	226.71	J-10	225.72	190.0	300	-	0.0050	219.93	218.98	0.069	0.18	0.045	220.11	1.033	0.17	0.045	219.15	1.134	0.60	6.60	6.57	-	-	-	-
Dublin Line	P10	J-10	225.72	J-11	223.76	224.0	300	-	0.0073	218.98	217.35	0.084	0.17	0.048	219.15	1.208	0.22	0.048	217.57	0.852	0.74	6.58	6.19	-	-	-	-
Dublin Line	P11	J-12	221.91	J-11	223.76	285.0	300	-	0.0050	218.78	217.35	0.069	0.09	0.013	218.87	0.732	0.22	0.013	217.57	0.237	0.74	3.04	6.19	-	-	-	-
Dublin Line	P12	J-11	223.76	J-13	223.89	45.0	300	-	0.0051	217.35	217.12	0.070	0.22	0.061	217.57	1.102	0.23	0.061	217.35	1.076	0.75	6.19	6.54	-	-	-	-
Dublin Line	P13	J-13	223.89	SMH526506	221.50	180.0	300	-	0.0050	217.12	216.22	0.069	0.22	0.061	217.34	1.093	0.19	0.061	216.41	1.270	0.74	6.55	5.09	-	-	-	-
James Snow Parkway	P1B	SMH526506	221.50	SMH526505	221.00	77.1	300	-	0.0090	216.22	215.52	0.108	0.16	0.061	216.38	1.560	0.16	0.061	215.69	1.560	0.54	5.12	5.31	5.26	5.46	0.14	0.14
James Snow Parkway	P2B	SMH526505	221.00	SMH526504	220.50	74.7	300	-	0.0097	215.48	214.76	0.112	0.16	0.061	215.64	1.604	0.16	0.061	214.92	1.604	0.53	5.36	5.58	5.50	5.72	0.14	0.14
James Snow Parkway	P3B	SMH526504	220.50	SMH525705	220.00	74.4	300	-	0.0089	214.71	214.05	0.108	0.16	0.061	214.87	1.551	0.16	0.061	214.21	1.551	0.54	5.63	5.79	5.77	5.93	0.14	0.14
James Snow Parkway	P4B	SMH525705	220.00	SMH525704	219.50	75.0	300	-	0.0064	213.98	213.50	0.091	0.18	0.061	214.16	1.368	0.18	0.061	213.69	1.368	0.60	5.84	5.82	6.00	5.98	0.16	0.16
James Snow Parkway	P5B	SMH525704	219.50	SMH525710	218.50	137.4	300	-	0.0062	213.45	212.61	0.090	0.18	0.061	213.64	1.353	0.18	0.061	212.79	1.353	0.61	5.86	5.71	6.03	5.88	0.16	0.16
James Snow Parkway	P6B	SMH525710	218.50	SMH525711	216.50	153.9	300	-	0.0069	212.55	211.49	0.095	0.18	0.061	212.73	1.411	0.18	0.061	211.67	1.411	0.59	5.77	4.84	5.93	4.99	0.16	0.16
James Snow Parkway	P7B	SMH525711	216.50	SFT999070	217.35	80.9	300	-	0.0035	211.43	211.15	0.067	0.23	0.061	211.66	1.061	0.25	0.061	211.41	0.959	0.84	4.84	5.94	5.05	6.10	0.21	0.16
James Snow Parkway	P8B	SFT999070	217.35	SMH59023	216.75	69.1	300	-	0.0061	211.22	210.80	0.089	0.18	0.061	211.40	1.345	0.18	0.061	210.98	1.344	0.61	5.95	5.77	6.10	5.91	0.16	0.15
James Snow Parkway	P9B	SMH59023	216.75	SMH59024	216.25	94.3	300	-	0.0062	210.73	210.15	0.090	0.19	0.064	210.92	1.366	0.19	0.064	210.34	1.366	0.63	5.83	5.91	5.91	5.99	0.08	0.08
James Snow Parkway	P10B	SMH59024	216.25	SMH59025	214.35	118.1	300	-	0.0056	210.08	209.42	0.085	0.20	0.064	210.28	1.315	0.20	0.064	209.62	1.315	0.65	5.97	4.73	6.06	4.82	0.09	0.09
James Snow Parkway	P11B	SMH59025	214.35	SMH59026	212.98	123.1	300	-	0.0053	209.35	208.70	0.083	0.20	0.064	209.55	1.285	0.20	0.064	208.90	1.295	0.67	4.80	4.08	4.89	4.17	0.09	0.09
James Snow Parkway	P12B	SMH59026	212.98	SMH55739	213.65	131.5	600	-	0.0030	208.40	208.00	0.400	0.17	0.066	208.57	1.024	0.17	0.066	208.17	1.043	0.28	4.41	5.49	4.47	5.55	0.06	0.06
James Snow Parkway	P13B	SMH55739	213.65	SMH55738	212.15	77.0	600	-	0.0025	207.97	207.78	0.361	0.18	0.066	208.15	0.954	0.16	0.066	207.94	1.046	0.29	5.51	4.21	5.57	4.27	0.06	0.06
James Snow Parkway	P14B	SMH55738	212.15	SMH55737	212.94	79.2	600	-	0.0024	207.75	207.56	0.355	0.18	0.066	207.93	0.944	0.16	0.066	207.72	1.046	0.29	4.22	5.21	4.29	5.27	0.06	0.06
James Snow Parkway	P15B	SMH55737	212.94	SMH34045	213.45	67.7	600	-	0.0040	207.53	207.26	0.458	0.16	0.066	207.69	1.120	0.19	0.066	207.45	0.914	0.32	5.25	6.00	5.31	6.07	0.06	0.07
James Snow Parkway	P16	SMH34045	213.45	SMH33672	213.90	72.9	600	-	0.0026	207.20	207.01	0.371	0.25	0.132	207.45	1.187	0.26	0.132	207.27	1.121	0.43	6.00	6.63	6.07	6.71	0.07	0.08
James Snow Parkway	P17	SMH33672	213.90	SMH33673	215.07	75.5	600	-	0.0021	207.01	206.85	0.334	0.26	0.132	207.27	1.121	0.23	0.132	207.08	1.292	0.43	6.63	7.99	6.71	8.06	0.08	0.07
James Snow Parkway	P18	SMH33673	215.07	SMH18874	215.87	57.1	525	-	0.0193	206.84	205.74	0.597	0.18	0.132	207.02	2.075	0.28	0.131	206.02	1.676	0.54	8.06	9.85	8.11	9.98	0.05	0.13
James Snow Parkway	P19	SMH18874	215.87	SMH18875	215.74	122.7	525	-	0.0010	205.62	205.49	0.163	0.40	0.153	206.02	0.886	0.40	0.151	205.89	0.862	0.76	9.85	9.85	9.98	9.97	0.12	0.12
James Snow Parkway	P20	SMH18875	215.74	SMH18872	215.42	100.3	525	-	0.0010	205.49	205.39	0.163	0.40	0.151	205.89	0.867	0.39	0.151	205.78	0.898	0.75	9.85	9.64	9.97	9.75	0.12	0.11
James Snow Parkway	P21	SMH18872	215.42	SMH18873	214.03	129.0	600	-	0.0010	205.39	205.26	0.233	0.38	0.169	205.77	0.912	0.38	0.168	205.64	0.887	0.64	9.65	8.39	9.75	8.49	0.10	0.10
Parkhill Drive	P22	SMH18873	214.03	SMH18863	212.96	129.4	600	-	0.0010	205.26	205.13	0.232	0.38	0.168	205.64	0.894	0.38	0.168	205.51	0.880	0.64	8.39	7.45	8.49	7.55	0.10	0.09
Parkhill Drive	P23	SMH18863	212.96	SMH18869	212.50	116.8	600	-	0.0010	205.13	205.01	0.233	0.38	0.179	205.51	0.947	0.35	0.178	205.36	1.028	0.64	7.45	7.14	7.55	7.23	0.09	0.09
Parkhill Drive	P24	SMH18869	212.50	SMH203923	212.00	83.4	600	-	0.0014	205.01	204.89	0.275	0.35	0.178	205.36	1.034	0.35	0.178	205.24	1.029	0.59	7.15	6.76	7.23	6.84	0.09	0.08
Parkhill Drive	P25	SMH203923	212.00	SMH18856	212.06	33.1	600	-	0.0006	204.89	204.87	0.178	0.35	0.178	205.24	1.029	0.31	0.178	205.17	1.220	0.59	6.76	6.88	6.84	6.95	0.08	0.07
Parkhill Drive	P26	SMH18856	212.06	SMH18868	211.59	73.4	600	-	0.0023	204.87	204.70	0.349	0.31	0.184	205.17	1.267	0.28	0.184	204.98	1.425	0.51	6.88	6.61	6.95	6.68	0.07	0.06
Parkhill Drive	P27	SMH18868	211.59	SMH18867	211.30	63.1	600	-	0.0025	204.68	204.52	0.366	0.30	0.185	204.98	1.310	0.28	0.184	204.79	1.437	0.50	6.62	6.50	6.68	6.56	0.07	0.06
Parkhill Drive	P28	SMH18867	211.30	SMH18848	210.95	74.6	600	-	0.0027	204.50	204.30	0.376	0.30	0.184	204.79	1.326	0.28	0.184	204.57	1.436	0.49	6.50	6.38	6.57	6.44	0.07	0.06
Roadway	P29	SMH18848	210.95	SMH18847	210.82	100.6	600	-	0.0028	204.14	203.86	0.383	0.30	0.194	204.44	1.355	0.29	0.194	204.14	1.460	0.50	6.51	6.68	6.58	6.74	0.07	0.06
Roadway	P30	SMH18847	210.82	SMH18916	209.74	86.7	600	-	0.0028	203.84	203.60	0.382	0.30	0.194	204.14	1.354	0.29	0.194	203.88	1.460	0.50	6.68	5.86	6.75	5.92	0.07	0.06
Roadway	P31	SMH18916	209.74	SMH18846	207.73	115.0	600	-	0.0031	203.58	203.22	0.406	0.29	0.194	203.87	1.410	0.29	0.194	203.50	1.459	0.49	5.87	4.23	5.94	4.29	0.06	0.06
Hwy 401	P32	SMH18846	207.73	SMH18909	206.98	116.5	600	-	0.0031	203.10	202.74	0.402	0.30	0.194	203.39	1.401	0.29	0.194	203.02	1.459	0.49	4.34	3.96	4.41	4.02	0.06	0.06
Hwy 401	P33	SMH18909	206.98	SMH18908	208.62	167.3	600	-	0.0028	202.69	202.22	0.384	0.30	0.194	202.99	1.351	0.29	0.193	202.51	1.459	0.51	3.99	6.12	4.06	6.18	0.07	0.06
Hwy 401	P34	SMH18908	208.62	SMH18907	208.20	172.8	600	-	0.0032	202.21	201.65	0.412	0.29	0.195	202.50	1.427	0.29	0.194	201.94	1.458	0.49	6.12	6.26	6.18	6.32	0.06	0.06
Hwy 401	P35	SMH18907	208.20	SMH18906	208.04	37.4	600	-	0.0021	201.62	201.55	0.331	0.31	0.194	201.94	1.299	0.29	0.194	201.83	1.462	0.52	6.26	6.21	6.33	6.27	0.07	0.06
Hwy 401	P36	SMH18906	208.04	SMH18905	207.74	21.8	600	-	0.0077	201.48	201.31	0.637	0.23	0.194	201.71	1.955	0.23	0.194	201.54	1.955	0.38	6.33	6.20	6.38	6.25	0.05	0.05
Hwy 25	P37	SMH18905	207.74	SMH18899	207.29	61.5	600	-	0.0063	201.29	200.91	0.575	0.24	0.194	201.53	1.817	0.24	0.194	201.15	1.816	0.40	6.21	6.14	6.26	6.19	0.05	0.05

Notes:

Site Discharge Node		
1	Surcharge by depth	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is less than or equal to the pipe's full capacity)
2	Surcharge by flow	(water level at the upstream and/or downstream end of the pipe is greater than the soffit level, and the flow is greater than the pipe's full capacity)



Link		SMH526506.1	SMH526505.1	SMH526504.1	SMH525705.1	SMH525704.1	SMH525710.1	SMH525711.1	SFT999070.1	SMH59023.1	SMH59024.1	SMH59025.1	SMH59026.1	SMH55739.1	SMH55738.1	SMH55737.1	
US node ID		SMH526506	SMH526505	SMH526504	SMH525705	SMH525704	SMH525710	SMH525711	SFT999070	SMH59023	SMH59024	SMH59025	SMH59026	SMH55739	SMH55738	SMH55737	
length (m)		77.1	74.7	74.4	75.0	137.4	153.9	80.9	69.1	94.3	118.1	123.1	131.5	77.0	79.2	67.7	
grad (m/m)		0.00898	0.00968	0.00886	0.00636	0.00618	0.00690	0.00346	0.00608	0.00615	0.00559	0.00528	0.00304	0.00247	0.00240	0.00399	
us inv (m AD)		216.215	215.483	214.710	213.981	213.454	212.550	211.433	211.220	210.730	210.080	209.350	208.400	207.970	207.750	207.530	
ds inv (m AD)		215.523	214.760	214.051	213.504	212.605	211.488	211.153	210.800	210.150	209.420	208.700	208.000	207.780	207.560	207.260	
Node	-	SMH526505	SMH526504	SMH525705	SMH525704	SMH525710	SMH525711	SFT999070	SMH59023	SMH59024	SMH59025	SMH59026	SMH55739	SMH55738	SMH55737	-	
Node ID	-	SMH526505	SMH526504	SMH525705	SMH525704	SMH525710	SMH525711	SFT999070	SMH59023	SMH59024	SMH59025	SMH59026	SMH55739	SMH55738	SMH55737	-	
ground (m AD)	-	221.000	220.500	220.000	219.500	218.500	216.500	217.350	216.750	216.250	214.350	212.980	213.654	212.150	212.936	-	
Flood level (m AD)	-	221.000	220.500	220.000	219.500	218.500	216.500	217.350	216.750	216.250	214.350	212.980	213.654	212.150	212.936	-	
flood dep (m)	-	-5.497	-5.770	-5.999	-6.026	-5.930	-5.047	-6.102	-5.914	-6.061	-4.890	-4.472	-5.572	-4.287	-5.306	-	

Scenario 2: Existing Conditions (WWF) - James Snow Parkway

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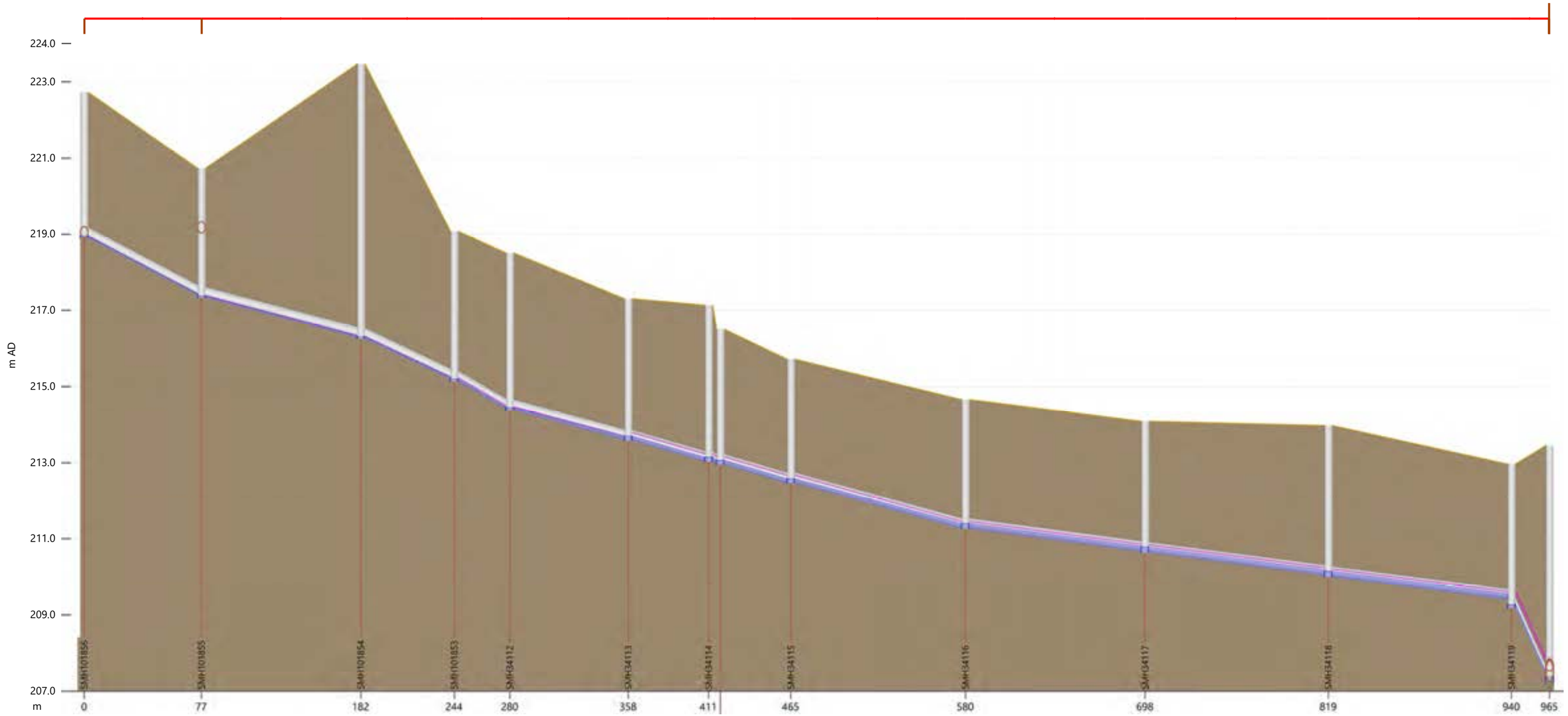

Link		SMH101856.1	SMH101855.1	SMH101854.1	-	SMH34112.1	SMH34113.1	-	SMH338066.1	SMH34115.1	SMH34116.1	SMH34117.1	SMH34118.1	-	
US node ID		SMH101856	SMH101855	SMH101854	-	SMH34112	SMH34113	-	SMH338066	SMH34115	SMH34116	SMH34117	SMH34118	-	
length (m)		77.2	104.9	61.5	36.5	78.0	52.9	-	46.5	114.9	118.2	120.7	120.5	25.1	
grad (m/m)		0.01961	0.00998	0.01720	0.01981	0.01000	0.01045	-	0.01045	0.01045	0.00508	0.00497	0.00489	-	
us inv (m AD)		218.903	217.329	216.252	215.134	214.380	213.580	-	212.947	212.461	211.260	210.630	209.990	-	
ds inv (m AD)		217.389	216.282	215.194	214.410	213.600	213.027	-	212.461	211.260	210.660	210.030	209.400	-	
Node	-	SMH101855	SMH101854	SMH101853	SMH34112	SMH34113	-	-	SMH34115	SMH34116	SMH34117	SMH34118	SMH34119	-	
Node ID	-	SMH101855	SMH101854	SMH101853	SMH34112	SMH34113	-	-	SMH34115	SMH34116	SMH34117	SMH34118	SMH34119	-	
ground (m AD)	222.727	220.735	223.458	219.076	218.507	217.303	-	-	215.719	214.660	214.091	213.979	212.966	-	
Flood level (m AD)	222.727	220.735	223.458	219.076	218.507	217.303	-	-	215.719	214.660	214.091	213.979	212.966	-	
flood dep (m)	-3.786	-3.364	-7.162	-3.885	-4.063	-3.608	-3.991	-3.439	-3.144	-3.262	-3.313	-3.840	-3.707	-	

Scenario 2: Existing Conditions (WWF) - Regional Road 25

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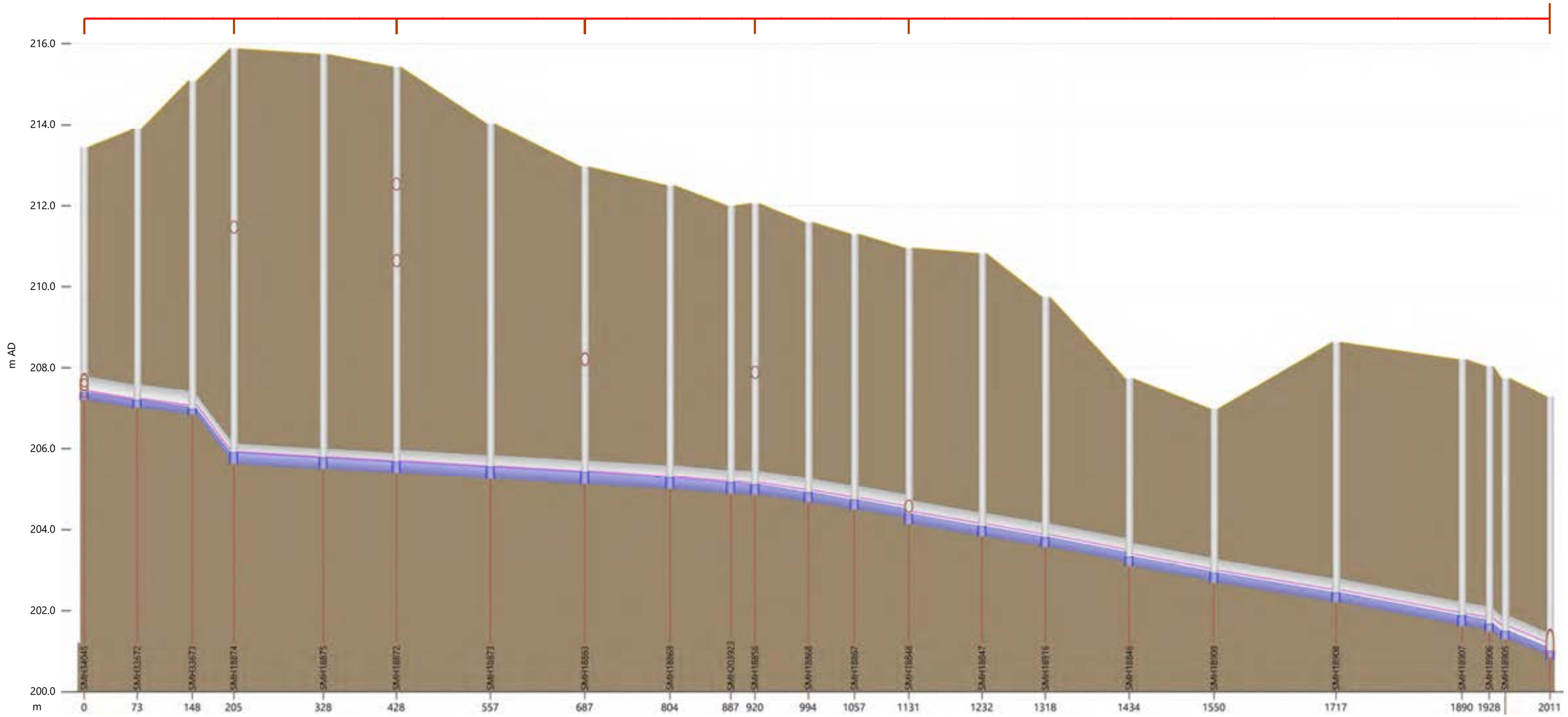

Link	-	-	-	SMH18874.1	SMH18875.1	SMH18872.1	SMH18873.1	SMH18863.1	-	-	-	-	-	SMH18848.1	-	SMH18916.1	SMH18846.1	SMH18909.1	SMH18908.1	-	-	-
US node ID	-	-	-	SMH18874	SMH18875	SMH18872	SMH18873	SMH18863	SMH18869	-	-	-	-	SMH18848	SMH18847	SMH18916	SMH18846	SMH18909	SMH18908	-	-	-
length (m)	72.9	75.5	57.1	122.7	100.3	129.0	129.4	116.8	83.4	33.1	73.4	63.1	74.6	100.6	86.7	115.0	116.5	167.3	172.8	37.4	-	61.5
grad (m/m)	0.00261	0.00212	0.01927	0.00103	0.00103	0.00103	0.00102	0.00103	0.00144	-	0.00232	0.00254	0.00268	0.00278	0.00277	0.00313	0.00307	0.00279	0.00323	-	-	0.00627
us inv (m AD)	207.200	207.010	206.840	205.620	205.494	205.391	205.258	205.126	205.006	-	204.866	204.676	204.496	204.136	203.836	203.576	203.096	202.688	202.211	-	-	201.292
ds inv (m AD)	207.010	206.850	205.740	205.494	205.391	205.258	205.126	205.006	204.886	-	204.696	204.516	204.296	203.856	203.596	203.216	202.738	202.221	201.653	-	-	200.906

Node	-	-	-	SMH18874	SMH18875	SMH18872	SMH18873	SMH18863	SMH18869	-	-	-	-	SMH18848	SMH18847	SMH18916	SMH18846	SMH18909	SMH18908	SMH18907	-	-	-
Node ID	-	-	-	SMH18874	SMH18875	SMH18872	SMH18873	SMH18863	SMH18869	-	-	-	-	SMH18848	SMH18847	SMH18916	SMH18846	SMH18909	SMH18908	SMH18907	-	-	-
ground (m AD)	-	213.898	-	215.871	215.738	215.424	214.029	212.961	212.504	-	-	211.590	211.295	210.950	210.818	209.742	207.732	206.983	208.624	208.201	-	-	-
Flood level (m AD)	-	213.898	-	215.871	215.738	215.424	214.029	212.961	212.504	-	-	211.590	211.295	210.950	210.818	209.742	207.732	206.983	208.624	208.201	-	-	-
flood dep (m)	-	-6.705	-8.105	-9.976	-9.968	-9.753	-8.490	-7.547	-7.231	-6.839	-	-6.681	-6.569	-6.577	-6.745	-5.936	-4.406	-4.058	-6.185	-6.330	-	-	-

Scenario 2: Existing Conditions (WWF) - James Snow Parkway to Hwy 25

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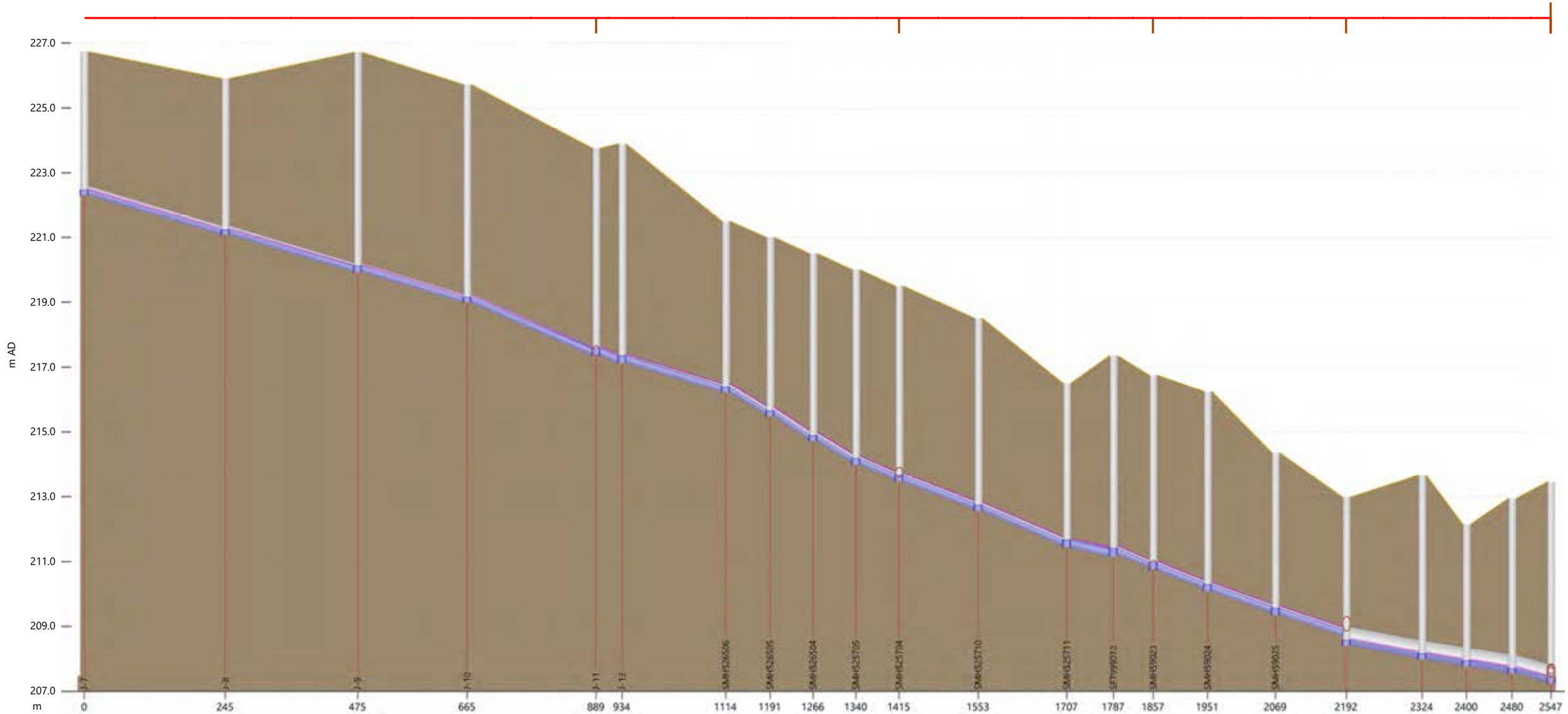

Link	J-7.1	J-8.2	J-9.2	J-10.2	-	J-13.2	-	-	-	-	SMH525704.1	SMH525710.1	-	-	-	SMH59024.1	SMH59025.1	SMH59026.1	-	-	-	
US node ID	J-7	J-8	J-9	J-10	J-11	J-13	-	-	-	-	SMH525704	SMH525710	-	-	-	SMH59024	SMH59025	SMH59026	-	-	-	
length (m)	245.0	230.0	190.0	224.0	45.0	180.0	77.1	74.7	74.4	75.0	137.4	153.9	80.9	69.1	94.3	118.1	123.1	131.5	77.0	79.2	67.7	
grad (m/m)	0.00502	0.00500	0.00500	0.00728	-	0.00500	0.00898	0.00968	0.00886	0.00636	0.00618	0.00690	0.00346	-	0.00615	0.00559	0.00528	0.00304	0.00247	0.00240	-	
us inv (m AD)	222.310	221.080	219.930	218.980	-	217.120	216.215	215.483	214.710	213.981	213.454	212.550	211.433	-	210.730	210.080	209.350	208.400	207.970	207.750	-	
ds inv (m AD)	221.080	219.930	218.980	217.350	-	216.220	215.523	214.760	214.051	213.504	212.605	211.488	211.153	-	210.150	209.420	208.700	208.000	207.780	207.560	-	

Node	J-7	J-8	J-9	J-10	J-11	J-13	SMH526506	-	-	-	-	SMH525710	-	-	-	-	SMH59025	SMH59026	-	-	-	-
Node ID	J-7	J-8	J-9	J-10	J-11	J-13	SMH526506	-	-	-	-	SMH525710	-	-	-	-	SMH59025	SMH59026	-	-	-	-
ground (m AD)	226.730	225.910	226.710	225.720	223.760	223.890	221.500	-	-	-	219.500	218.500	216.500	-	-	216.250	214.350	212.980	213.654	-	-	-
Flood level (m AD)	226.730	225.910	226.710	225.720	223.760	223.890	221.500	-	-	-	219.500	218.500	216.500	-	-	216.250	214.350	212.980	213.654	-	-	-
flood dep (m)	-4.275	-4.682	-6.600	-6.575	-6.187	-6.546	-5.121	-5.355	-5.623	-5.834	-5.841	-5.771	-4.836	-5.944	-5.790	-5.967	-4.791	-4.413	-5.508	-4.223	-5.249	-

Scenario 4: Proposed Conditions (Including the Study Area) (WWF) - Dublin Line

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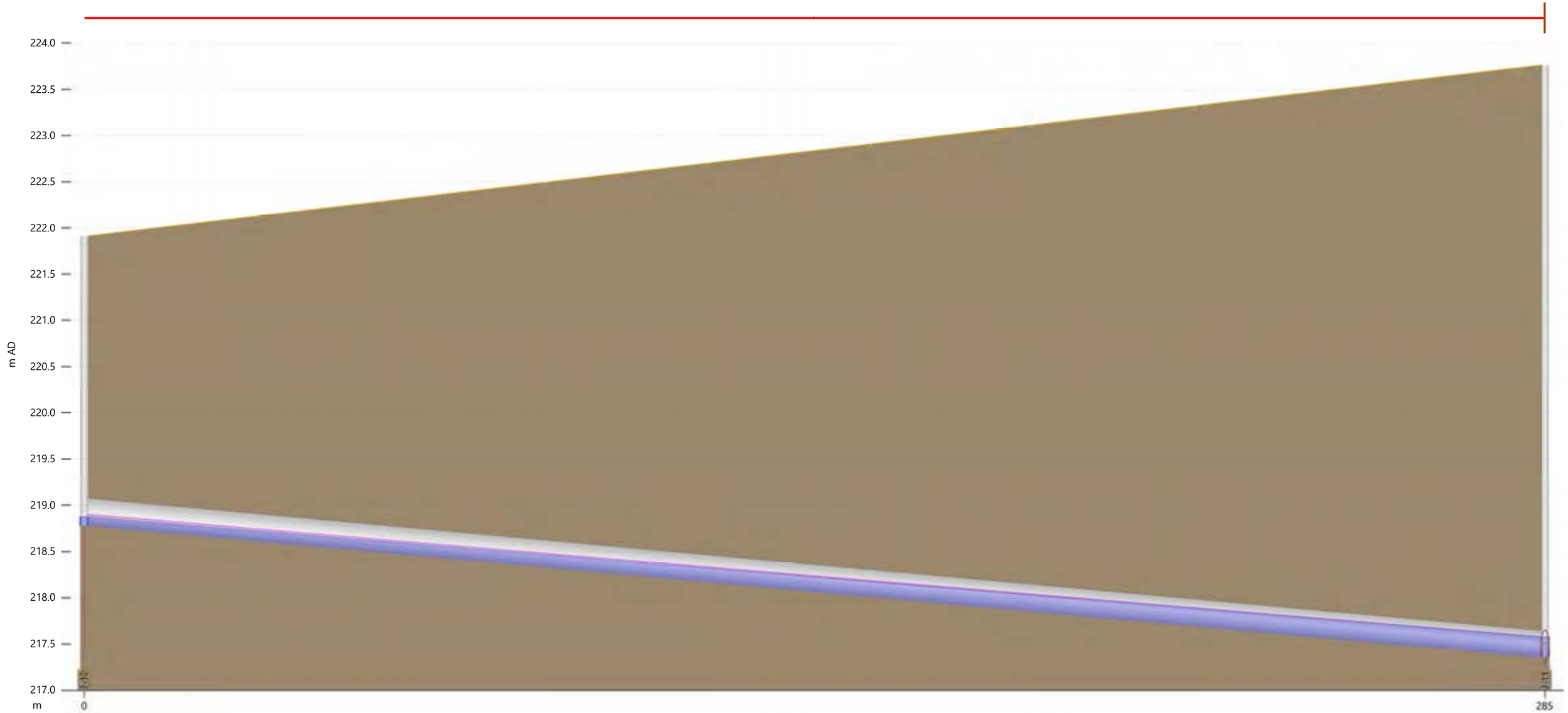

Link	J-12.2	
US node ID	J-12	
length (m)	285.0	
grad (m/m)	0.00502	
us inv (m AD)	218.780	
ds inv (m AD)	217.350	

Node	J-12	J-11
Node ID	J-12	J-11
ground (m AD)	221.910	223.760
Flood level (m AD)	221.910	223.760
flood dep (m)	-3.039	-6.187

Scenario 4: Proposed Conditions (Including the Study Area) (WWF) - 5th Side Road East of Dublin Line

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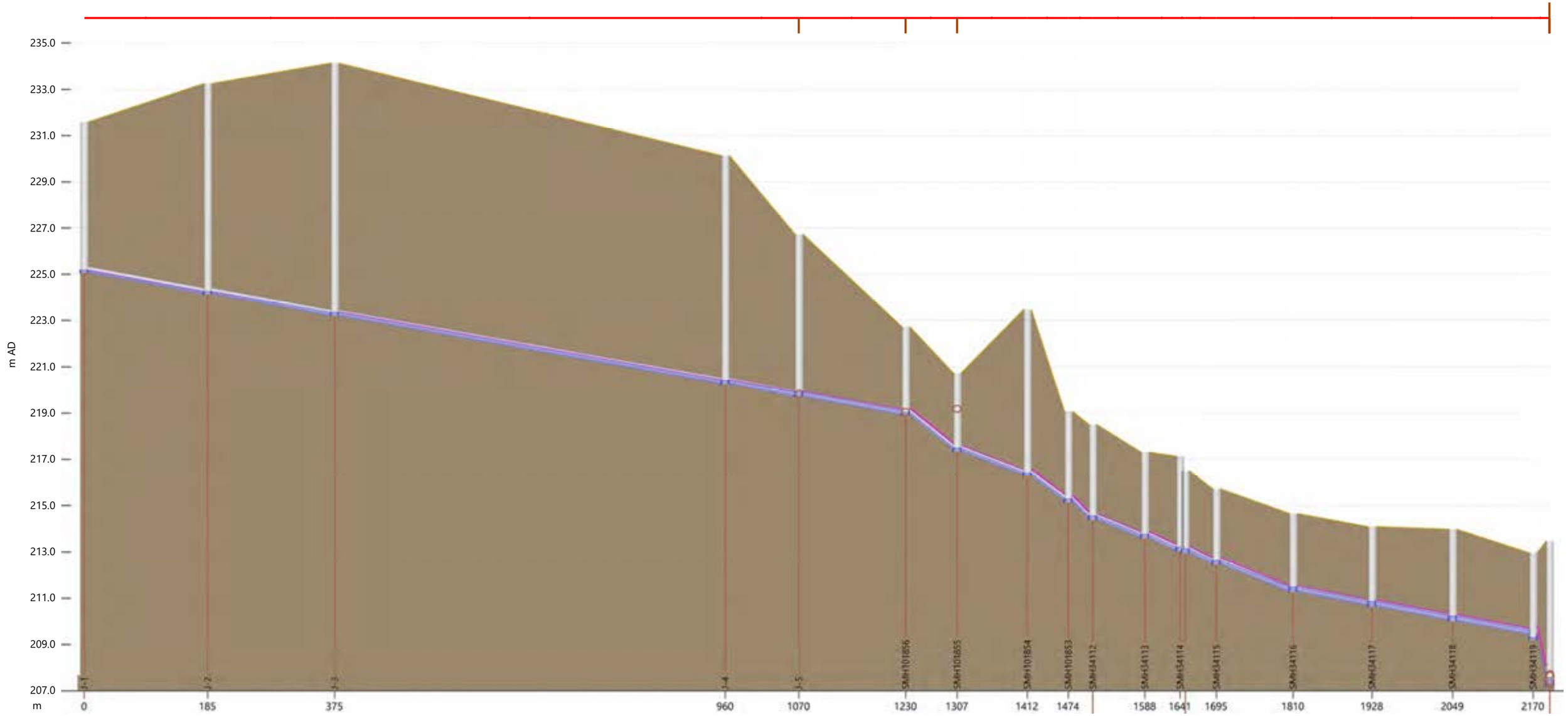

Link	J-1.1	J-2.1	J-3.2	J-4.2	J-5.2	-	-	-	-	-	-	-	SMH34115.1	SMH34116.1	SMH34117.1	SMH34118.1	-
US node ID	J-1	J-2	J-3	J-4	J-5	-	SMH101855	-	-	-	-	-	SMH34115	SMH34116	SMH34117	SMH34118	-
length (m)	185.0	190.0	585.0	110.0	160.0	77.2	104.9	61.5	36.5	78.0	52.9	46.5	114.9	118.2	120.7	120.5	-
grad (m/m)	0.00503	0.00500	0.00501	0.00500	0.00500	0.01961	0.00998	-	-	0.01000	-	-	0.01045	0.00508	0.00497	0.00489	-
us inv (m AD)	225.060	224.130	223.180	220.250	219.700	218.903	217.329	-	-	214.380	-	-	212.461	211.260	210.630	209.990	-
ds inv (m AD)	224.130	223.180	220.250	219.700	218.900	217.389	216.282	-	-	213.600	-	-	211.260	210.660	210.030	209.400	-

Node	J-1	J-2	J-3	J-4	J-5	SMH101856	-	-	-	-	-	-	-	-	SMH34116	SMH34117	SMH34118	-
Node ID	J-1	J-2	J-3	J-4	J-5	SMH101856	-	-	-	-	-	-	-	-	SMH34116	SMH34117	SMH34118	-
ground (m AD)	231.600	233.250	234.130	230.140	226.730	222.727	220.735	223.458	-	-	-	-	-	215.719	214.660	214.091	213.979	212.966
Flood level (m AD)	231.600	233.250	234.130	230.140	226.730	222.727	220.735	223.458	-	-	-	-	-	215.719	214.660	214.091	213.979	212.966
flood dep (m)	-6.440	-9.016	-10.801	-9.732	-6.824	-3.698	-3.257	-7.076	-	-	-3.555	-	-	-3.089	-3.191	-3.240	-3.767	-3.681

Scenario 4: Proposed Conditions (Including the Study Area) (WWF) - Regional Road 25 north of 5th Side Rd

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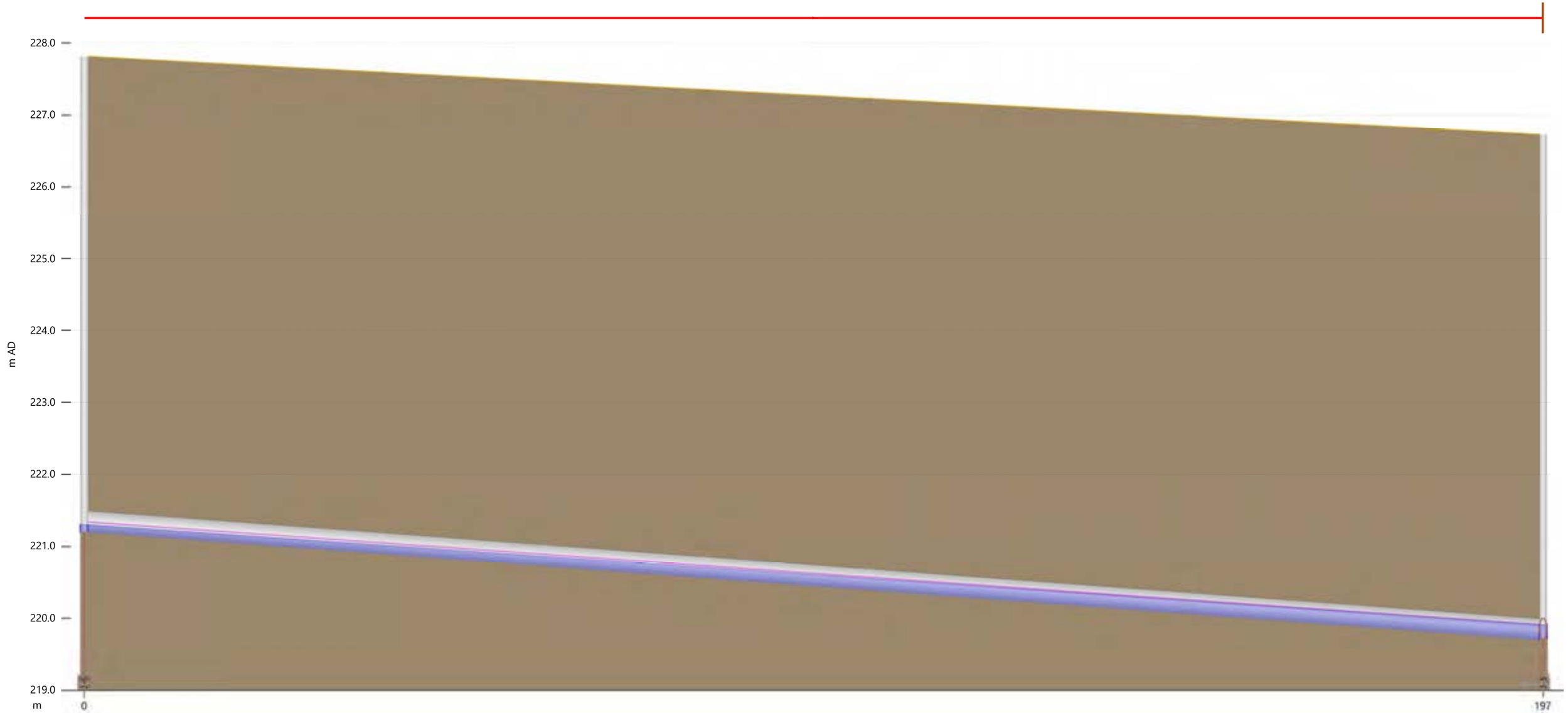

Link	J-6.1	
US node ID	J-6	
length (m)	197.1	
grad (m/m)	0.00761	
us inv (m AD)	221.200	
ds inv (m AD)	219.700	
Node	J-6	J-5
Node ID	J-6	J-5
ground (m AD)	227.810	226.730
Flood level (m AD)	227.810	226.730
flood dep (m)	-6.514	-6.824

Scenario 4: Proposed Conditions (Including the Study Area) (WWF) - 5th Side Road west of Regional Rd 25

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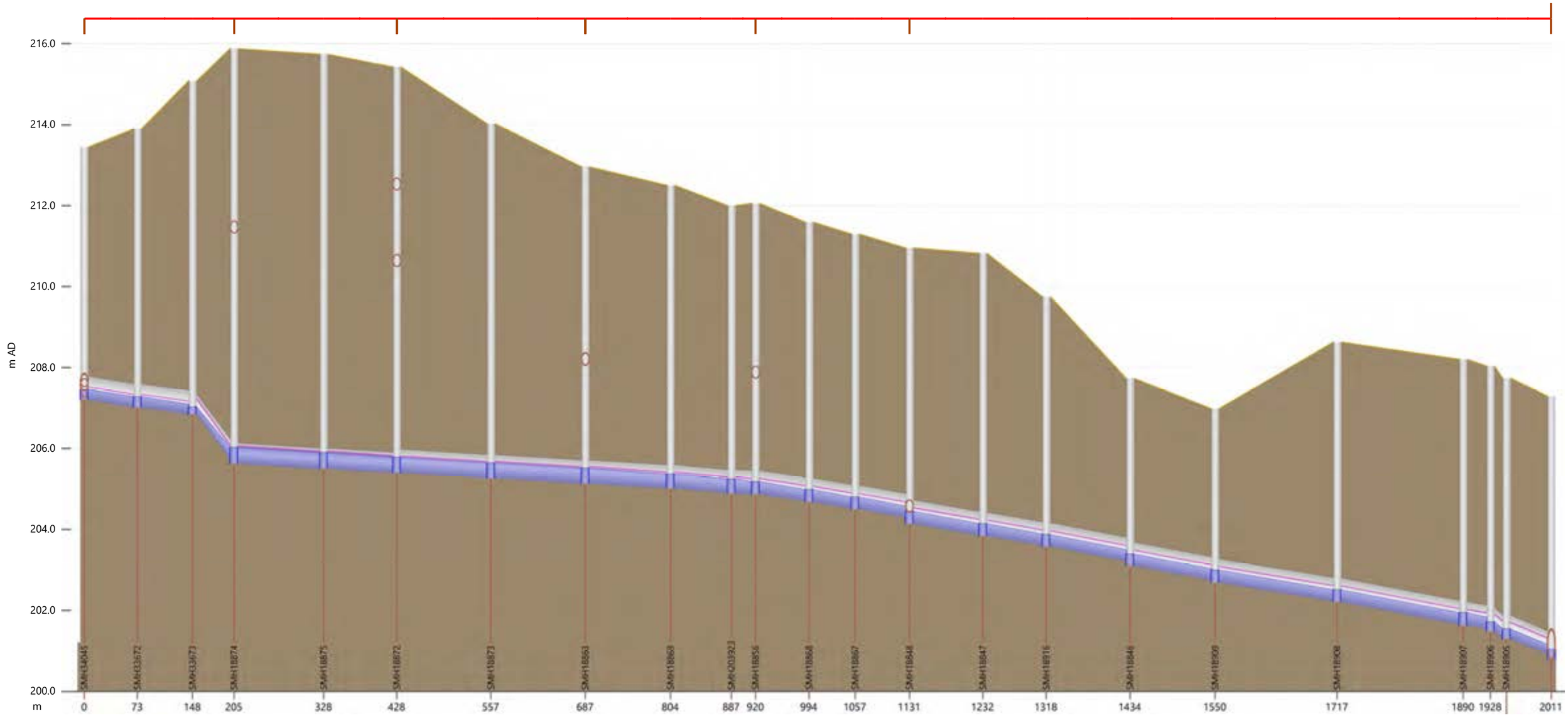

Link	-	-	-	SMH18874.1	SMH18875.1	SMH18872.1	SMH18873.1	SMH18863.1	-	-	-	-	-	SMH18848.1	-	SMH18916.1	SMH18846.1	SMH18909.1	SMH18908.1	-	-	-
US node ID	-	-	-	SMH18874	SMH18875	SMH18872	SMH18873	SMH18863	SMH18869	-	-	-	-	SMH18848	SMH18847	SMH18916	SMH18846	SMH18909	SMH18908	-	-	-
length (m)	72.9	75.5	57.1	122.7	100.3	129.0	129.4	116.8	83.4	33.1	73.4	63.1	74.6	100.6	86.7	115.0	116.5	167.3	172.8	37.4	-	61.5
grad (m/m)	0.00261	0.00212	0.01927	0.00103	0.00103	0.00103	0.00102	0.00103	0.00144	-	0.00232	0.00254	0.00268	0.00278	0.00277	0.00313	0.00307	0.00279	0.00323	-	-	0.00627
us inv (m AD)	207.200	207.010	206.840	205.620	205.494	205.391	205.258	205.126	205.006	-	204.866	204.676	204.496	204.136	203.836	203.576	203.096	202.688	202.211	-	-	201.292
ds inv (m AD)	207.010	206.850	205.740	205.494	205.391	205.258	205.126	205.006	204.886	-	204.696	204.516	204.296	203.856	203.596	203.216	202.738	202.221	201.653	-	-	200.906

Node	-	-	-	SMH18874	SMH18875	SMH18872	SMH18873	SMH18863	SMH18869	-	-	-	-	SMH18848	SMH18847	SMH18916	SMH18846	SMH18909	SMH18908	SMH18907	-	-	-
Node ID	-	-	-	SMH18874	SMH18875	SMH18872	SMH18873	SMH18863	SMH18869	-	-	-	-	SMH18848	SMH18847	SMH18916	SMH18846	SMH18909	SMH18908	SMH18907	-	-	-
ground (m AD)	-	213.898	-	215.871	215.738	215.424	214.029	212.961	212.504	-	-	211.590	211.295	210.950	210.818	209.742	207.732	206.983	208.624	208.201	-	-	-
Flood level (m AD)	-	213.898	-	215.871	215.738	215.424	214.029	212.961	212.504	-	-	211.590	211.295	210.950	210.818	209.742	207.732	206.983	208.624	208.201	-	-	-
flood dep (m)	-	-6.627	-8.058	-9.848	-9.846	-9.644	-8.389	-7.452	-7.145	-6.762	-	-6.614	-6.503	-6.510	-6.679	-5.872	-4.341	-3.991	-6.121	-6.261	-	-	-

Scenario 4: Proposed Conditions (Including the Study Area) (WWF) - James Snow Parkway to Hwy 25

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APPENDIX C

Water Distribution Model

Poject: 9094 Regional Road
Project No.: 2022-7556
Design by: MF
Date: 17-Oct-25
Updated: 28-Oct-25

Junction Input Summary

Junction ID	Parcel	Elevation (m)	Average Daily Demand (L/s)	Maximum Daily Demand (L/s)	Peak Hourly Demand (L/s)	Minimum Fire Flow (L/s) (Per FUS)
J-1	-	226.73	0.00	0.00	0.00	-
J-2	Parcel 6	230.14	1.28	2.88	2.88	-
J-3	Parcel 5	234.13	6.66	14.99	14.99	-
J-4	Residential Area 3	233.25	0.46	1.03	1.83	-
J-5	Parcel 4	231.60	6.51	14.65	14.65	-
J-6	9094 Regional Road	227.81	6.58	14.80	14.80	233.33
J-7	Parcel 3	221.91	5.30	11.93	11.93	-
J-8	-	223.76	0.00	0.00	0.00	-
J-9	Residential Area 2	225.72	1.09	2.45	4.35	-
J-10	Parcel 2	226.71	4.92	11.08	11.08	-
J-11	Residential Area 1	225.91	0.43	0.97	1.72	-
J-12	Parcel 1	226.73	13.00	29.24	29.24	-
J-1E	7265 5 Side Road - Existing Property	219.50	0.53	1.19	1.19	-
J-2E	-	221.50	0.00	0.00	0.00	-
J-3E	-	223.89	0.00	0.00	0.00	-
		Total	**46.75**	**105.19**	**108.65**	**-**

Project: 9094 Regional Road
Project No.: 2022-7556
Design by: MF
Date: 28-Oct-25

Pipe Minor Losses Summary

Pipe ID P-1

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			0.74

Pipe ID P-2

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	0	0.35	0.00
Tee (Branch Flow)	1	1.28	1.28
Reducer	0	0.64	0.00
Total			1.67

Pipe ID P-3

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			0.74

Pipe ID P-4

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	0	0.35	0.00
Tee (Branch Flow)	1	1.28	1.28
Reducer	0	0.64	0.00
Total			1.67

Pipe ID P-5

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	4	0.20	0.80
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			1.54

Pipe ID P-6

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			0.74

Pipe ID P-7

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	3	0.20	0.60
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	0	0.35	0.00
Tee (Branch Flow)	1	1.28	1.28
Reducer	0	0.64	0.00
Total			2.27

Pipe ID P-8

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	0	0.35	0.00
Tee (Branch Flow)	1	1.28	1.28
Reducer	0	0.64	0.00
Total			1.67

Pipe ID P-9

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	2	0.20	0.40
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	0	0.35	0.00
Tee (Branch Flow)	1	1.28	1.28
Reducer	0	0.64	0.00
Total			2.07

Pipe ID P-10

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			0.74

Pipe ID P-11

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	0	0.35	0.00
Tee (Branch Flow)	1	1.28	1.28
Reducer	0	0.64	0.00
Total			1.67

Pipe ID P-12

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			0.74

Pipe ID P-1E

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	0	0.10	0.00
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			0.74

Pipe ID P-2E

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	0	0.20	0.00
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	2	0.10	0.20
Tee (Line Flow)	1	0.35	0.35
Tee (Branch Flow)	0	1.28	0.00
Reducer	0	0.64	0.00
Total			0.94

Pipe ID P-3E

Minor Loss	Number of Fittings	Loss Coef. (K)	SubTotal
Gate Valve (Open)	1	0.39	0.39
90° Bend (R/D=1 - Vertical)	0	0.37	0.00
90° Bend (R/D=1 - Horizontal)	0	0.37	0.00
45° Bend (Mitered - Vertical)	1	0.20	0.20
45° Bend (Mitered - Horizontal)	0	0.20	0.00
30° Bend (Mitered - Vertical)	0	0.10	0.00
30° Bend (Mitered - Horizontal)	2	0.10	0.20
Tee (Line Flow)	0	0.35	0.00
Tee (Branch Flow)	1	1.28	1.28
Reducer	0	0.64	0.00
Total			2.07

Project: 9094 Regional Road
Project No.: 2022-7556
Design by: MF
Date: 28-Oct-25

Pipe Input Summary

Proposed Pipe ID	Material	Length (m)	Diameter (mm)	Hazen-Williams C	Total Minor Loss Coefficient
P-1	PVC	36.4	300	120	0.74
P-2	PVC	73.3	300	120	1.67
P-3	PVC	609.9	300	120	0.74
P-4	PVC	198.5	300	120	1.67
P-5	PVC	166.8	300	120	1.54
P-6	PVC	350.3	300	120	0.74
P-7	PVC	553.5	300	120	2.27
P-8	PVC	32.7	300	120	1.67
P-9	PVC	350.7	300	120	2.07
P-10	PVC	421.8	300	120	0.74
P-11	PVC	247.8	300	120	1.67
P-12	PVC	247.8	300	120	0.74
P-1E	PVC	385.7	300	150	0.74
P-2E	PVC	271.2	300	150	0.94
P-3E	PVC	539.2	300	150	2.07

InfoWater Schematic - Existing Conditions

Pipes P-1E, P-2E and P-3E and junctions J-1E, J-2E and J-3E have been added into existing conditions model

InfoWater Schematic - Proposed Conditions

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Junction Results - Average Day Demand - 2021 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	0.53	219.50	265.42	65
J-2E	0.00	221.50	265.42	62
J-3E	0.00	223.89	265.42	59
WCV45161	0.01	223.65	265.43	59
WCV45162	0.01	223.37	265.43	60
WFT262169	0.03	217.31	265.42	68
WFT262172	0.03	217.55	265.42	68
WFT54124	0.01	223.69	265.43	59
WFT54125	0.09	223.96	265.43	59
WFT54141	0.01	223.65	265.43	59
WFT748195603	0.00	223.90	265.43	59

Junction Results - Maximum Day Demand - 2021 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	1.19	219.50	265.33	65
J-2E	0.00	221.50	265.33	62
J-3E	0.00	223.89	265.33	59
WCV45161	0.02	223.65	265.36	59
WCV45162	0.02	223.37	265.36	60
WFT262169	0.05	217.31	265.33	68
WFT262172	0.05	217.55	265.33	68
WFT54124	0.02	223.69	265.36	59
WFT54125	0.16	223.96	265.36	59
WFT54141	0.02	223.65	265.36	59
WFT748195603	0.00	223.90	265.36	59

Junction Results -Peak Hour Demand - 2021 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	1.19	219.50	263.95	63
J-2E	0.00	221.50	263.95	60
J-3E	0.00	223.89	263.95	57
WCV45161	0.04	223.65	264.04	57
WCV45162	0.04	223.37	264.04	58
WFT262169	0.08	217.31	263.95	66
WFT262172	0.08	217.55	263.95	66
WFT54124	0.04	223.69	264.04	57
WFT54125	0.26	223.96	264.04	57
WFT54141	0.04	223.65	264.04	57
WFT748195603	0.00	223.90	264.04	57

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Pipe Results - Average Day Demand - 2021 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.05	0.01	0.000130	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.05	0.01	0.000000	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.05	0.01	0.000000	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.03	0.01	0.000000	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	0.00	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.03	0.01	0.000000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.04	0.01	0.000000	0.00	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.03	0.01	0.000000	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.03	0.00	0.000019	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.04	0.00	0.000000	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.04	0.01	0.000000	0.00	Open	0

Pipe Results - Maximum Day Demand - 2021 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.10	0.02	0.000521	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.06	0.01	0.000019	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.06	0.01	0.000000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.07	0.01	0.000000	0.00	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.06	0.01	0.000019	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.05	0.01	0.000037	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.08	0.01	0.000019	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.07	0.01	0.000000	0.00	Open	0

Pipe Results - Peak Hour Demand - 2021 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.10	0.02	0.000521	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.12	0.02	0.000037	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.10	0.02	0.000037	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.10	0.02	0.000000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.11	0.02	0.000019	0.01	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.10	0.02	0.000037	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.08	0.01	0.000074	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.12	0.01	0.000019	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.12	0.02	0.000000	0.00	Open	0

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Junction Results - Average Day Demand - 2026 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	0.53	219.50	265.94	66
J-2E	0.00	221.50	265.94	63
J-3E	0.00	223.89	265.94	60
WCV45161	0.01	223.65	265.91	60
WCV45162	0.01	223.37	265.91	60
WFT262169	0.03	217.31	265.94	69
WFT262172	0.03	217.55	265.94	69
WFT54124	0.01	223.69	265.91	60
WFT54125	0.09	223.96	265.91	60
WFT54141	0.01	223.65	265.91	60
WFT748195603	0.00	223.90	265.91	60

Junction Results - Maximum Day Demand - 2026 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	1.19	219.50	265.76	66
J-2E	0.00	221.50	265.76	63
J-3E	0.00	223.89	265.76	60
WCV45161	0.02	223.65	265.72	60
WCV45162	0.02	223.37	265.72	60
WFT262169	0.06	217.31	265.76	69
WFT262172	0.06	217.55	265.76	69
WFT54124	0.02	223.69	265.72	60
WFT54125	0.17	223.96	265.72	59
WFT54141	0.02	223.65	265.72	60
WFT748195603	0.00	223.90	265.72	59

Junction Results -Peak Hour Demand - 2026 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	1.19	219.50	265.17	65
J-2E	0.00	221.50	265.17	62
J-3E	0.00	223.89	265.17	59
WCV45161	0.04	223.65	265.16	59
WCV45162	0.04	223.37	265.16	59
WFT262169	0.09	217.31	265.17	68
WFT262172	0.09	217.55	265.17	68
WFT54124	0.04	223.69	265.16	59
WFT54125	0.26	223.96	265.16	59
WFT54141	0.04	223.65	265.16	59
WFT748195603	0.00	223.90	265.16	59

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Pipe Results - Average Day Demand - 2026 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.05	0.01	0.000112	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.05	0.01	0.000019	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.05	0.01	0.000000	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.03	0.01	0.000019	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	0.00	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.03	0.01	0.000000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.04	0.01	0.000000	0.00	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.03	0.01	0.000000	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.03	0.00	0.000000	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.04	0.00	0.000000	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.04	0.01	0.000000	0.00	Open	0

Pipe Results - Maximum Day Demand - 2026 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.10	0.02	0.000540	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.06	0.01	0.000019	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.06	0.01	0.000000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.07	0.01	0.000019	0.01	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.06	0.01	0.000000	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.05	0.01	0.000037	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.08	0.01	0.000000	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.08	0.01	0.000000	0.00	Open	0

Pipe Results - Peak Hour Demand - 2026 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.10	0.02	0.000521	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.12	0.02	0.000056	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.10	0.02	0.000037	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.10	0.02	0.000019	0.01	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.12	0.02	0.000000	0.00	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.10	0.02	0.000037	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.08	0.01	0.000074	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.12	0.01	0.000019	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.12	0.02	0.000000	0.00	Open	0

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Junction Results - Average Day Demand - 2031 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	0.53	219.50	265.81	66
J-2E	0.00	221.50	265.81	63
J-3E	0.00	223.89	265.81	60
WCV45161	0.01	223.65	265.79	60
WCV45162	0.01	223.37	265.79	60
WFT262169	0.03	217.31	265.81	69
WFT262172	0.03	217.55	265.81	69
WFT54124	0.01	223.69	265.79	60
WFT54125	0.09	223.96	265.79	59
WFT54141	0.01	223.65	265.79	60
WFT748195603	0.00	223.90	265.79	60

Junction Results - Maximum Day Demand - 2031 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	1.19	219.50	265.72	66
J-2E	0.00	221.50	265.72	63
J-3E	0.00	223.89	265.72	59
WCV45161	0.02	223.65	265.68	60
WCV45162	0.02	223.37	265.68	60
WFT262169	0.06	217.31	265.72	69
WFT262172	0.06	217.55	265.72	68
WFT54124	0.02	223.69	265.68	60
WFT54125	0.17	223.96	265.68	59
WFT54141	0.02	223.65	265.68	60
WFT748195603	0.00	223.90	265.68	59

Junction Results -Peak Hour Demand - 2031 - Existing Conditions

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1E	1.19	219.50	264.55	64
J-2E	0.00	221.50	264.55	61
J-3E	0.00	223.89	264.55	58
WCV45161	0.04	223.65	264.54	58
WCV45162	0.04	223.37	264.54	59
WFT262169	0.09	217.31	264.55	67
WFT262172	0.09	217.55	264.55	67
WFT54124	0.04	223.69	264.54	58
WFT54125	0.26	223.96	264.54	58
WFT54141	0.04	223.65	264.54	58
WFT748195603	0.00	223.90	264.54	58

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Pipe Results - Average Day Demand - 2031 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.05	0.01	0.00013	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.00000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.00000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.05	0.01	0.00002	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.05	0.01	0.00000	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.03	0.01	0.00000	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	0.00	0.00	0.00000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.03	0.01	0.00000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.04	0.01	0.00000	0.00	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.03	0.01	0.00002	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.03	0.00	0.00002	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.04	0.00	0.00000	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.04	0.01	0.00000	0.00	Open	0

Pipe Results - Maximum Day Demand - 2031 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.10	0.02	0.000540	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.06	0.01	0.000019	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.06	0.01	0.000000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.07	0.01	0.000000	0.00	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.06	0.01	0.000019	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.05	0.01	0.000037	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.08	0.01	0.000000	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.08	0.01	0.000000	0.00	Open	0

Pipe Results - Peak Hour Demand - 2031 - Existing Conditions

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1E	WFT262172	J-1E	385.7	300	150	0.10	0.02	0.000540	0.00	Open	0
P-2E	J-1E	J-2E	271.2	300	150	0.00	0.00	0.000000	0.00	Open	0
P-3E	J-1E	J-3E	539.2	300	150	0.00	0.00	0.000000	0.00	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	0.12	0.02	0.000037	0.00	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	0.11	0.02	0.000037	0.00	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	0.10	0.02	0.000037	0.00	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	0.10	0.02	0.000000	0.00	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-0.12	0.02	0.000019	0.01	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	0.10	0.02	0.000037	0.00	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	0.08	0.01	0.000093	0.00	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	0.12	0.01	0.000019	0.00	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	0.12	0.02	0.000000	0.00	Open	0

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Junction Results - Max Day Demand + Fire Flow - Active Fire Flow - 2021 - Existing Conditions

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)
J-1E	1.19	65	265.33	64	322	20
J-2E	0.00	62	265.33	61	258	20
J-3E	0.00	59	265.33	57	215	20
WCV45161	0.02	59	265.36	59	412	20
WCV45162	0.02	60	265.36	59	416	20
WFT262169	0.05	68	265.33	68	546	20
WFT262172	0.05	68	265.33	67	522	20
WFT54124	0.02	59	265.36	59	412	20
WFT54125	0.16	59	265.36	58	395	20
WFT54141	0.02	59	265.36	59	414	20

Junction Results - Max Day Demand + Fire Flow - Active Fire Flow - 2026 - Existing Conditions

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)
J-1E	1.19	66	265.76	65	354	20
J-2E	0.00	63	265.76	62	277	20
J-3E	0.00	60	265.76	59	228	20
WCV45161	0.02	60	265.72	59	450	20
WCV45162	0.02	60	265.72	60	455	20
WFT262169	0.06	69	265.76	69	690	20
WFT262172	0.06	69	265.76	68	648	20
WFT54124	0.02	60	265.72	59	451	20
WFT54125	0.17	59	265.72	59	430	20
WFT54141	0.02	60	265.72	59	454	20

Junction Results - Max Day Demand + Fire Flow - Active Fire Flow - 2031 - Existing Conditions

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)
J-1E	1.19	66	265.72	65	351	20
J-2E	0.00	63	265.72	62	275	20
J-3E	0.00	59	265.72	58	226	20
WCV45161	0.02	60	265.68	59	445	20
WCV45162	0.02	60	265.68	60	450	20
WFT262169	0.06	69	265.72	69	681	20
WFT262172	0.06	68	265.72	68	640	20
WFT54124	0.02	60	265.68	59	446	20
WFT54125	0.17	59	265.68	59	425	20
WFT54141	0.02	60	265.68	59	448	20

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Project No.: 2022-7556
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Date: 2025-10-08
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Junction Results - Max Day Demand + Fire Flow - Fire Flow Design - 2021 - Existing Conditions

ID	Capacity Assessment	Total Demand (L/s)	Hydrant Available Flow (L/s)	Critical Node ID for Design Run	Critical Node Pressure at Available Flow (psi)	Critical Node Pressure at Fire Demand (psi)	Critical Pressure for Design Run (psi)	Hydrant Design Flow (L/s)	Hydrant Pressure at Design Flow (psi)	Critical Node Pressure at Design Flow (psi)
J-1E	PASS	31.19	322	J-3E	14	58	20	297	26	20
J-2E	PASS	30.00	258	J-2E	20	61	20	258	20	20
J-3E	PASS	30.00	215	J-3E	20	57	20	215	20	20
WCV45161	PASS	30.02	412	WFT54127	18	56	20	397	22	20
WCV45162	PASS	30.02	416	WFT54127	17	56	20	398	23	20
WFT262169	PASS	30.05	546	J-3E	11	58	20	483	29	20
WFT262172	PASS	30.05	522	J-3E	11	58	20	464	29	20
WFT54124	PASS	30.02	412	WFT54127	17	56	20	397	23	20
WFT54125	PASS	30.16	395	WFT54126	19	57	20	391	21	20
WFT54141	PASS	30.02	414	WFT54127	17	56	20	398	23	20

Junction Results - Max Day Demand + Fire Flow - Fire Flow Design - 2026 - Existing Conditions

ID	Capacity Assessment	Total Demand (L/s)	Hydrant Available Flow (L/s)	Critical Node ID for Design Run	Critical Node Pressure at Available Flow (psi)	Critical Node Pressure at Fire Demand (psi)	Critical Pressure for Design Run (psi)	Hydrant Design Flow (L/s)	Hydrant Pressure at Design Flow (psi)	Critical Node Pressure at Design Flow (psi)
J-1E	PASS	31.19	354	J-3E	14	59	20	327	26	20
J-2E	PASS	30.00	277	J-2E	20	62	20	277	20	20
J-3E	PASS	30.00	228	J-3E	20	59	20	228	20	20
WCV45161	PASS	30.02	450	WFT54127	18	57	20	435	22	20
WCV45162	PASS	30.02	455	WFT54127	17	57	20	436	23	20
WFT262169	PASS	30.06	690	J-3E	11	59	20	614	29	20
WFT262172	PASS	30.06	648	J-3E	11	59	20	578	29	20
WFT54124	PASS	30.02	451	WFT54127	17	57	20	435	23	20
WFT54125	PASS	30.17	430	WFT54126	19	58	20	427	21	20
WFT54141	PASS	30.02	454	WFT54127	17	57	20	437	23	20

Junction Results - Max Day Demand + Fire Flow - Fire Flow Design - 2031 - Existing Conditions

ID	Capacity Assessment	Total Demand (L/s)	Hydrant Available Flow (L/s)	Critical Node ID for Design Run	Critical Node Pressure at Available Flow (psi)	Critical Node Pressure at Fire Demand (psi)	Critical Pressure for Design Run (psi)	Hydrant Design Flow (L/s)	Hydrant Pressure at Design Flow (psi)	Critical Node Pressure at Design Flow (psi)
J-1E	PASS	31.19	351	J-3E	14	59	20	324	26	20
J-2E	PASS	30.00	275	J-2E	20	62	20	275	20	20
J-3E	PASS	30.00	226	J-3E	20	58	20	226	20	20
WCV45161	PASS	30.02	445	WFT54127	18	57	20	430	22	20
WCV45162	PASS	30.02	450	WFT54127	17	57	20	431	23	20
WFT262169	PASS	30.06	681	J-3E	11	59	20	604	29	20
WFT262172	PASS	30.06	640	J-3E	11	59	20	570	29	20
WFT54124	PASS	30.02	446	WFT54127	17	57	20	429	23	20
WFT54125	PASS	30.17	425	WFT54126	19	57	20	421	21	20
WFT54141	PASS	30.02	448	WFT54127	17	57	20	431	23	20

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Junction Results - Average Day Demand - 2021 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	264.93	54
J-10	4.92	226.71	264.36	54
J-11	0.43	225.91	264.31	55
J-12	13.00	226.73	264.27	53
J-2	1.28	230.14	264.91	49
J-3	6.66	234.13	264.79	44
J-4	0.46	233.25	264.78	45
J-5	6.51	231.60	264.77	47
J-6	6.58	227.81	264.89	53
J-7	5.30	221.91	264.62	61
J-8	0.00	223.76	264.63	58
J-9	1.09	225.72	264.50	55
J-1E	0.53	219.50	264.87	64
J-2E	0.00	221.50	264.87	62
J-3E	0.00	223.89	264.66	58
WCV45161	0.01	223.65	264.96	59
WCV45162	0.01	223.37	264.96	59
WFT262169	0.03	217.31	264.99	68
WFT262172	0.03	217.55	264.98	67
WFT54124	0.01	223.69	264.96	59
WFT54125	0.09	223.96	264.95	58
WFT54141	0.01	223.65	264.96	59
WFT748195603	0.00	223.90	264.95	58

Junction Results - Maximum Day Demand - 2021 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	263.36	52
J-10	11.08	226.71	260.80	48
J-11	0.97	225.91	260.58	49
J-12	29.24	226.73	260.38	48
J-2	2.88	230.14	263.27	47
J-3	14.99	234.13	262.76	41
J-4	1.03	233.25	262.70	42
J-5	14.65	231.60	262.67	44
J-6	14.80	227.81	263.18	50
J-7	11.93	221.91	261.99	57
J-8	0.00	223.76	262.03	54
J-9	2.45	225.72	261.42	51
J-1E	1.19	219.50	263.13	62
J-2E	0.00	221.50	263.14	59
J-3E	0.00	223.89	262.16	54
WCV45161	0.02	223.65	263.52	57
WCV45162	0.02	223.37	263.52	57
WFT262169	0.05	217.31	263.67	66
WFT262172	0.05	217.55	263.64	66
WFT54124	0.02	223.69	263.52	57
WFT54125	0.16	223.96	263.49	56
WFT54141	0.02	223.65	263.53	57
WFT748195603	0.00	223.90	263.48	56

Junction Results -Peak Hour Demand - 2021 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	260.79	48
J-10	11.08	226.71	257.96	44
J-11	1.72	225.91	257.74	45
J-12	29.24	226.73	257.54	44
J-2	2.88	230.14	260.69	43
J-3	14.99	234.13	260.15	37
J-4	1.83	233.25	260.09	38
J-5	14.65	231.60	260.05	40
J-6	14.80	227.81	260.57	47
J-7	11.93	221.91	259.25	53
J-8	0.00	223.76	259.29	51
J-9	4.35	225.72	258.61	47
J-1E	1.19	219.50	260.48	58
J-2E	0.00	221.50	260.51	55
J-3E	0.00	223.89	259.43	51
WCV45161	0.04	223.65	260.95	53
WCV45162	0.04	223.37	260.96	53
WFT262169	0.08	217.31	261.04	62
WFT262172	0.08	217.55	261.01	62
WFT54124	0.04	223.69	260.96	53
WFT54125	0.26	223.96	260.92	53
WFT54141	0.04	223.65	260.96	53
WFT748195603	0.00	223.90	260.92	53

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Pipe Results - Average Day Demand - 2021 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	2.20	0.36	0.026417	0.73	Open	0
P-10	J-9	J-10	421.8	300	120	1.59	0.26	0.138578	0.33	Open	0
P-11	J-10	J-11	247.8	300	120	1.16	0.19	0.047904	0.19	Open	0
P-12	J-11	J-12	247.8	300	120	1.12	0.18	0.043495	0.18	Open	0
P-13	J-8	J-7	353.4	300	150	0.46	0.07	0.007553	0.02	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	1.84	0.30	0.111844	0.29	Open	0
P-2	J-1	J-2	73.3	300	120	1.29	0.21	0.019869	0.27	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.34	0.06	0.003553	0.01	Open	0
P-3	J-2	J-3	609.9	300	120	1.18	0.19	0.114840	0.19	Open	0
P-3E	J-1E	J-3E	539.2	300	150	2.14	0.35	0.212973	0.39	Open	0
P-4	J-3	J-4	198.5	300	120	0.60	0.10	0.011478	0.06	Open	0
P-5	J-4	J-5	166.8	300	120	0.56	0.09	0.008558	0.05	Open	0
P-6	J-1	J-6	350.3	300	120	0.91	0.15	0.041411	0.12	Open	0
P-7	J-6	J-2E	553.5	300	120	0.34	0.06	0.010864	0.02	Open	0
P-8	J-3E	J-8	32.7	300	120	2.14	0.35	0.028761	0.88	Open	0
P-9	J-8	J-9	350.7	300	120	1.68	0.28	0.133852	0.38	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	1.84	0.30	0.008074	0.28	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	1.84	0.30	0.006214	0.28	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-0.50	0.08	0.000800	0.03	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	0.00	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	1.70	0.28	0.000874	0.25	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-1.70	0.28	0.000800	0.25	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	1.70	0.28	0.007144	0.25	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-0.51	0.08	0.002753	0.03	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	1.70	0.16	0.002791	0.06	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	1.70	0.28	0.000446	0.25	Open	0

Pipe Results - Maximum Day Demand - 2021 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	4.91	0.80	0.119714	3.29	Open	0
P-10	J-9	J-10	421.8	300	120	3.57	0.58	0.623701	1.48	Open	0
P-11	J-10	J-11	247.8	300	120	2.61	0.43	0.216787	0.87	Open	0
P-12	J-11	J-12	247.8	300	120	2.53	0.41	0.195895	0.79	Open	0
P-13	J-8	J-7	353.4	300	150	1.03	0.17	0.033970	0.10	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	4.18	0.68	0.512694	1.33	Open	0
P-2	J-1	J-2	73.3	300	120	2.90	0.47	0.091418	1.25	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.74	0.12	0.014622	0.05	Open	0
P-3	J-2	J-3	609.9	300	120	2.65	0.43	0.516434	0.85	Open	0
P-3E	J-1E	J-3E	539.2	300	150	4.81	0.79	0.963811	1.79	Open	0
P-4	J-3	J-4	198.5	300	120	1.35	0.22	0.052034	0.26	Open	0
P-5	J-4	J-5	166.8	300	120	1.27	0.21	0.038826	0.23	Open	0
P-6	J-1	J-6	350.3	300	120	2.01	0.33	0.180026	0.51	Open	0
P-7	J-6	J-2E	553.5	300	120	0.74	0.12	0.044667	0.08	Open	0
P-8	J-3E	J-8	32.7	300	120	4.81	0.79	0.135117	4.13	Open	0
P-9	J-8	J-9	350.7	300	120	3.78	0.62	0.605544	1.73	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	4.19	0.69	0.036854	1.29	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	4.18	0.68	0.028408	1.29	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-1.13	0.19	0.003590	0.12	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	3.78	0.62	0.003832	1.11	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-3.79	0.62	0.003535	1.12	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	3.78	0.62	0.031477	1.11	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-1.15	0.19	0.012260	0.12	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	3.79	0.35	0.012260	0.27	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	3.79	0.62	0.001991	1.11	Open	0

Pipe Results - Peak Hour Demand - 2021 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	5.17	0.85	0.131657	3.62	Open	0
P-10	J-9	J-10	421.8	300	120	3.63	0.59	0.644891	1.53	Open	0
P-11	J-10	J-11	247.8	300	120	2.67	0.44	0.226926	0.92	Open	0
P-12	J-11	J-12	247.8	300	120	2.53	0.41	0.195895	0.79	Open	0
P-13	J-8	J-7	353.4	300	150	1.03	0.17	0.033951	0.10	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	4.22	0.69	0.522684	1.36	Open	0
P-2	J-1	J-2	73.3	300	120	2.97	0.49	0.095548	1.30	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.92	0.15	0.022231	0.08	Open	0
P-3	J-2	J-3	609.9	300	120	2.72	0.45	0.541697	0.89	Open	0
P-3E	J-1E	J-3E	539.2	300	150	5.04	0.83	1.050987	1.95	Open	0
P-4	J-3	J-4	198.5	300	120	1.42	0.23	0.057094	0.29	Open	0
P-5	J-4	J-5	166.8	300	120	1.27	0.21	0.038826	0.23	Open	0
P-6	J-1	J-6	350.3	300	120	2.20	0.36	0.211968	0.61	Open	0
P-7	J-6	J-2E	553.5	300	120	0.92	0.15	0.067828	0.12	Open	0
P-8	J-3E	J-8	32.7	300	120	5.04	0.83	0.147675	4.52	Open	0
P-9	J-8	J-9	350.7	300	120	4.01	0.66	0.675605	1.93	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	4.24	0.69	0.037635	1.32	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	4.23	0.69	0.028984	1.31	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-1.16	0.19	0.003777	0.12	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	4.01	0.66	0.004260	1.23	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-4.02	0.66	0.003925	1.24	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	4.00	0.66	0.035030	1.23	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-1.19	0.19	0.013060	0.13	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	4.03	0.37	0.013692	0.31	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	4.02	0.66	0.002214	1.24	Open	0

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Junction Results - Average Day Demand - 2026 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	265.55	55
J-10	4.92	226.71	265.00	54
J-11	0.43	225.91	264.95	56
J-12	13.00	226.73	264.91	54
J-2	1.28	230.14	265.53	50
J-3	6.66	234.13	265.42	44
J-4	0.46	233.25	265.40	46
J-5	6.51	231.60	265.40	48
J-6	6.58	227.81	265.52	54
J-7	5.30	221.91	265.27	62
J-8	0.00	223.76	265.27	59
J-9	1.09	225.72	265.14	56
J-1E	0.53	219.50	265.52	65
J-2E	0.00	221.50	265.52	63
J-3E	0.00	223.89	265.30	59
WCV45161	0.01	223.65	265.58	60
WCV45162	0.01	223.37	265.58	60
WFT262169	0.03	217.31	265.65	69
WFT262172	0.03	217.55	265.64	68
WFT54124	0.01	223.69	265.58	60
WFT54125	0.09	223.96	265.57	59
WFT54141	0.01	223.65	265.58	60
WFT748195603	0.00	223.90	265.57	59

Junction Results - Maximum Day Demand - 2026 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	264.40	54
J-10	11.08	226.71	261.91	50
J-11	0.97	225.91	261.69	51
J-12	29.24	226.73	261.49	49
J-2	2.88	230.14	264.31	49
J-3	14.99	234.13	263.80	42
J-4	1.03	233.25	263.74	43
J-5	14.65	231.60	263.70	46
J-6	14.80	227.81	264.26	52
J-7	11.93	221.91	263.10	59
J-8	0.00	223.76	263.14	56
J-9	2.45	225.72	262.53	52
J-1E	1.19	219.50	264.24	64
J-2E	0.00	221.50	264.24	61
J-3E	0.00	223.89	263.27	56
WCV45161	0.02	223.65	264.54	58
WCV45162	0.02	223.37	264.55	59
WFT262169	0.06	217.31	264.84	68
WFT262172	0.06	217.55	264.81	67
WFT54124	0.02	223.69	264.54	58
WFT54125	0.17	223.96	264.52	58
WFT54141	0.02	223.65	264.55	58
WFT748195603	0.00	223.90	264.51	58

Junction Results -Peak Hour Demand - 2026 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	262.93	51
J-10	11.08	226.71	260.22	48
J-11	1.72	225.91	259.99	48
J-12	29.24	226.73	259.79	47
J-2	2.88	230.14	262.83	46
J-3	14.99	234.13	262.29	40
J-4	1.83	233.25	262.23	41
J-5	14.65	231.60	262.19	43
J-6	14.80	227.81	262.77	50
J-7	11.93	221.91	261.50	56
J-8	0.00	223.76	261.54	54
J-9	4.35	225.72	260.86	50
J-1E	1.19	219.50	262.74	61
J-2E	0.00	221.50	262.75	59
J-3E	0.00	223.89	261.69	54
WCV45161	0.04	223.65	263.07	56
WCV45162	0.04	223.37	263.08	56
WFT262169	0.09	217.31	263.38	65
WFT262172	0.09	217.55	263.34	65
WFT54124	0.04	223.69	263.08	56
WFT54125	0.26	223.96	263.04	56
WFT54141	0.04	223.65	263.08	56
WFT748195603	0.00	223.90	263.04	56

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Pipe Results - Average Day Demand - 2026 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	2.06	0.34	0.023310	0.64	Open	0
P-10	J-9	J-10	421.8	300	120	1.59	0.26	0.138578	0.33	Open	0
P-11	J-10	J-11	247.8	300	120	1.16	0.19	0.047904	0.19	Open	0
P-12	J-11	J-12	247.8	300	120	1.12	0.18	0.043495	0.18	Open	0
P-13	J-8	J-7	353.4	300	150	0.46	0.07	0.007553	0.02	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	1.98	0.32	0.128476	0.33	Open	0
P-2	J-1	J-2	73.3	300	120	1.29	0.21	0.019869	0.27	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.20	0.03	0.001302	0.00	Open	0
P-3	J-2	J-3	609.9	300	120	1.18	0.19	0.114821	0.19	Open	0
P-3E	J-1E	J-3E	539.2	300	150	2.14	0.35	0.212973	0.39	Open	0
P-4	J-3	J-4	198.5	300	120	0.60	0.10	0.011497	0.06	Open	0
P-5	J-4	J-5	166.8	300	120	0.56	0.09	0.008558	0.05	Open	0
P-6	J-1	J-6	350.3	300	120	0.77	0.13	0.030194	0.09	Open	0
P-7	J-6	J-2E	553.5	300	120	0.20	0.03	0.004018	0.01	Open	0
P-8	J-3E	J-8	32.7	300	120	2.14	0.35	0.028761	0.88	Open	0
P-9	J-8	J-9	350.7	300	120	1.68	0.28	0.133852	0.38	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	1.99	0.33	0.009283	0.32	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	1.99	0.33	0.007144	0.32	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-0.47	0.08	0.000688	0.02	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	0.00	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	1.59	0.26	0.000763	0.22	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-1.59	0.26	0.000707	0.22	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	1.59	0.26	0.006325	0.22	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-0.48	0.08	0.002418	0.02	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	1.60	0.15	0.002456	0.05	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	1.60	0.26	0.000409	0.23	Open	0

Pipe Results - Maximum Day Demand - 2026 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	4.66	0.76	0.108552	2.98	Open	0
P-10	J-9	J-10	421.8	300	120	3.57	0.58	0.623701	1.48	Open	0
P-11	J-10	J-11	247.8	300	120	2.61	0.43	0.216787	0.87	Open	0
P-12	J-11	J-12	247.8	300	120	2.53	0.41	0.195895	0.79	Open	0
P-13	J-8	J-7	353.4	300	150	1.03	0.17	0.033970	0.10	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	4.43	0.72	0.570886	1.48	Open	0
P-2	J-1	J-2	73.3	300	120	2.90	0.47	0.091399	1.25	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.49	0.08	0.006790	0.03	Open	0
P-3	J-2	J-3	609.9	300	120	2.65	0.43	0.516452	0.85	Open	0
P-3E	J-1E	J-3E	539.2	300	150	4.81	0.79	0.963811	1.79	Open	0
P-4	J-3	J-4	198.5	300	120	1.35	0.22	0.052034	0.26	Open	0
P-5	J-4	J-5	166.8	300	120	1.27	0.21	0.038826	0.23	Open	0
P-6	J-1	J-6	350.3	300	120	1.76	0.29	0.140922	0.40	Open	0
P-7	J-6	J-2E	553.5	300	120	0.49	0.08	0.020706	0.04	Open	0
P-8	J-3E	J-8	32.7	300	120	4.81	0.79	0.135117	4.13	Open	0
P-9	J-8	J-9	350.7	300	120	3.78	0.62	0.605544	1.73	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	4.44	0.73	0.041039	1.44	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	4.43	0.73	0.031626	1.43	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-1.07	0.18	0.003256	0.11	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	3.59	0.59	0.003479	1.01	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-3.60	0.59	0.003200	1.01	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	3.59	0.59	0.028649	1.01	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-1.09	0.18	0.011088	0.11	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	3.61	0.33	0.011162	0.25	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	3.60	0.59	0.001823	1.02	Open	0

Pipe Results - Peak Hour Demand - 2026 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	4.81	0.79	0.115119	3.16	Open	0
P-10	J-9	J-10	421.8	300	120	3.63	0.59	0.644872	1.53	Open	0
P-11	J-10	J-11	247.8	300	120	2.67	0.44	0.226926	0.92	Open	0
P-12	J-11	J-12	247.8	300	120	2.53	0.41	0.195895	0.79	Open	0
P-13	J-8	J-7	353.4	300	150	1.03	0.17	0.033951	0.10	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	4.58	0.75	0.607405	1.57	Open	0
P-2	J-1	J-2	73.3	300	120	2.97	0.49	0.095548	1.30	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.56	0.09	0.008967	0.03	Open	0
P-3	J-2	J-3	609.9	300	120	2.72	0.45	0.541697	0.89	Open	0
P-3E	J-1E	J-3E	539.2	300	150	5.04	0.83	1.050987	1.95	Open	0
P-4	J-3	J-4	198.5	300	120	1.42	0.23	0.057094	0.29	Open	0
P-5	J-4	J-5	166.8	300	120	1.27	0.21	0.038826	0.23	Open	0
P-6	J-1	J-6	350.3	300	120	1.84	0.30	0.152791	0.44	Open	0
P-7	J-6	J-2E	553.5	300	120	0.56	0.09	0.027384	0.05	Open	0
P-8	J-3E	J-8	32.7	300	120	5.04	0.83	0.147675	4.52	Open	0
P-9	J-8	J-9	350.7	300	120	4.01	0.66	0.675624	1.93	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	4.59	0.75	0.043737	1.53	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	4.59	0.75	0.033691	1.52	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-1.08	0.18	0.003274	0.11	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	3.74	0.61	0.003758	1.09	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-3.75	0.61	0.003460	1.09	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	3.73	0.61	0.030770	1.08	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-1.10	0.18	0.011348	0.11	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	3.76	0.35	0.012036	0.27	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	3.75	0.61	0.001953	1.09	Open	0

Project: 9094 Regional Rd 25
File: Watermain Hydraulic Analysis
Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Junction Results - Average Day Demand - 2031 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	265.47	55
J-10	4.92	226.71	264.92	54
J-11	0.43	225.91	264.88	55
J-12	13.00	226.73	264.83	54
J-2	1.28	230.14	265.45	50
J-3	6.66	234.13	265.34	44
J-4	0.46	233.25	265.33	46
J-5	6.51	231.60	265.32	48
J-6	6.58	227.81	265.44	53
J-7	5.30	221.91	265.19	62
J-8	0.00	223.76	265.20	59
J-9	1.09	225.72	265.06	56
J-1E	0.53	219.50	265.44	65
J-2E	0.00	221.50	265.44	62
J-3E	0.00	223.89	265.22	59
WCV45161	0.01	223.65	265.50	59
WCV45162	0.01	223.37	265.50	60
WFT262169	0.03	217.31	265.57	69
WFT262172	0.03	217.55	265.57	68
WFT54124	0.01	223.69	265.50	59
WFT54125	0.09	223.96	265.50	59
WFT54141	0.01	223.65	265.50	59
WFT748195603	0.00	223.90	265.50	59

Junction Results - Maximum Day Demand - 2031 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	264.19	53
J-10	11.08	226.71	261.69	50
J-11	0.97	225.91	261.47	51
J-12	29.24	226.73	261.28	49
J-2	2.88	230.14	264.10	48
J-3	14.99	234.13	263.58	42
J-4	1.03	233.25	263.53	43
J-5	14.65	231.60	263.49	45
J-6	14.80	227.81	264.05	52
J-7	11.93	221.91	262.89	58
J-8	0.00	223.76	262.92	56
J-9	2.45	225.72	262.31	52
J-1E	1.19	219.50	264.02	63
J-2E	0.00	221.50	264.03	60
J-3E	0.00	223.89	263.05	56
WCV45161	0.02	223.65	264.32	58
WCV45162	0.02	223.37	264.33	58
WFT262169	0.06	217.31	264.62	67
WFT262172	0.06	217.55	264.59	67
WFT54124	0.02	223.69	264.33	58
WFT54125	0.17	223.96	264.30	57
WFT54141	0.02	223.65	264.33	58
WFT748195603	0.00	223.90	264.30	57

Junction Results -Peak Hour Demand - 2031 - Proposed

Junction ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
J-1	0.00	226.73	262.04	50
J-10	11.08	226.71	259.33	46
J-11	1.72	225.91	259.10	47
J-12	29.24	226.73	258.90	46
J-2	2.88	230.14	261.94	45
J-3	14.99	234.13	261.40	39
J-4	1.83	233.25	261.34	40
J-5	14.65	231.60	261.30	42
J-6	14.80	227.81	261.88	48
J-7	11.93	221.91	260.61	55
J-8	0.00	223.76	260.65	52
J-9	4.35	225.72	259.97	49
J-1E	1.19	219.50	261.85	60
J-2E	0.00	221.50	261.86	57
J-3E	0.00	223.89	260.80	52
WCV45161	0.04	223.65	262.18	55
WCV45162	0.04	223.37	262.19	55
WFT262169	0.09	217.31	262.49	64
WFT262172	0.09	217.55	262.45	64
WFT54124	0.04	223.69	262.19	55
WFT54125	0.26	223.96	262.16	54
WFT54141	0.04	223.65	262.19	55
WFT748195603	0.00	223.90	262.15	54

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Project No.: 2022-7556
Design By: MF
Date: 2025-10-08
Revised Date: 2025-10-28

Pipe Results - Average Day Demand - 2031 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	2.06	0.34	0.02335	0.64	Open	0
P-10	J-9	J-10	421.8	300	120	1.59	0.26	0.13858	0.33	Open	0
P-11	J-10	J-11	247.8	300	120	1.16	0.19	0.04790	0.19	Open	0
P-12	J-11	J-12	247.8	300	120	1.12	0.18	0.04350	0.18	Open	0
P-13	J-8	J-7	353.4	300	150	0.46	0.07	0.00757	0.02	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	1.98	0.32	0.12822	0.33	Open	0
P-2	J-1	J-2	73.3	300	120	1.29	0.21	0.01987	0.27	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.20	0.03	0.00134	0.00	Open	0
P-3	J-2	J-3	609.9	300	120	1.18	0.19	0.11484	0.19	Open	0
P-3E	J-1E	J-3E	539.2	300	150	2.14	0.35	0.21297	0.39	Open	0
P-4	J-3	J-4	198.5	300	120	0.60	0.10	0.01148	0.06	Open	0
P-5	J-4	J-5	166.8	300	120	0.56	0.09	0.00856	0.05	Open	0
P-6	J-1	J-6	350.3	300	120	0.77	0.13	0.03036	0.09	Open	0
P-7	J-6	J-2E	553.5	300	120	0.20	0.03	0.00407	0.01	Open	0
P-8	J-3E	J-8	32.7	300	120	2.14	0.35	0.02876	0.88	Open	0
P-9	J-8	J-9	350.7	300	120	1.68	0.28	0.13385	0.38	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	1.99	0.33	0.00927	0.32	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	1.98	0.32	0.00713	0.32	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-0.47	0.08	0.00069	0.02	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	0.00	0.00	0.00000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	1.59	0.26	0.00078	0.23	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-1.60	0.26	0.00071	0.22	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	1.59	0.26	0.00633	0.22	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-0.48	0.08	0.00242	0.02	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	1.60	0.15	0.00247	0.06	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	1.60	0.26	0.00041	0.23	Open	0

Pipe Results - Maximum Day Demand - 2031 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	4.66	0.76	0.108514	2.98	Open	0
P-10	J-9	J-10	421.8	300	120	3.57	0.58	0.623701	1.48	Open	0
P-11	J-10	J-11	247.8	300	120	2.61	0.43	0.216787	0.87	Open	0
P-12	J-11	J-12	247.8	300	120	2.53	0.41	0.195895	0.79	Open	0
P-13	J-8	J-7	353.4	300	150	1.03	0.17	0.033970	0.10	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	4.43	0.72	0.571109	1.48	Open	0
P-2	J-1	J-2	73.3	300	120	2.90	0.47	0.091399	1.25	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.49	0.08	0.006753	0.02	Open	0
P-3	J-2	J-3	609.9	300	120	2.65	0.43	0.516434	0.85	Open	0
P-3E	J-1E	J-3E	539.2	300	150	4.81	0.79	0.963811	1.79	Open	0
P-4	J-3	J-4	198.5	300	120	1.35	0.22	0.052034	0.26	Open	0
P-5	J-4	J-5	166.8	300	120	1.27	0.21	0.038826	0.23	Open	0
P-6	J-1	J-6	350.3	300	120	1.76	0.29	0.140773	0.40	Open	0
P-7	J-6	J-2E	553.5	300	120	0.49	0.08	0.020650	0.04	Open	0
P-8	J-3E	J-8	32.7	300	120	4.81	0.79	0.135117	4.13	Open	0
P-9	J-8	J-9	350.7	300	120	3.78	0.62	0.605544	1.73	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	4.44	0.73	0.041058	1.44	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	4.43	0.73	0.031645	1.43	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-1.07	0.18	0.003256	0.11	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	3.59	0.59	0.003479	1.01	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-3.60	0.59	0.003200	1.01	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	3.59	0.59	0.028631	1.01	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-1.09	0.18	0.011088	0.11	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	3.61	0.33	0.011162	0.25	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	3.60	0.59	0.001823	1.02	Open	0

Pipe Results - Peak Hour Demand - 2031 - Proposed

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (ML/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
P-1	WFT748195603	J-1	36.4	300	120	4.82	0.79	0.115472	3.17	Open	0
P-10	J-9	J-10	421.8	300	120	3.63	0.59	0.644872	1.53	Open	0
P-11	J-10	J-11	247.8	300	120	2.67	0.44	0.226926	0.92	Open	0
P-12	J-11	J-12	247.8	300	120	2.53	0.41	0.195895	0.79	Open	0
P-13	J-8	J-7	353.4	300	150	1.03	0.17	0.033951	0.10	Open	0
P-1E	WFT262172	J-1E	385.7	300	150	4.57	0.75	0.605507	1.57	Open	0
P-2	J-1	J-2	73.3	300	120	2.97	0.49	0.095548	1.30	Open	0
P-2E	J-1E	J-2E	271.2	300	150	-0.57	0.09	0.009190	0.03	Open	0
P-3	J-2	J-3	609.9	300	120	2.72	0.45	0.541697	0.89	Open	0
P-3E	J-1E	J-3E	539.2	300	150	5.04	0.83	1.050987	1.95	Open	0
P-4	J-3	J-4	198.5	300	120	1.42	0.23	0.057076	0.29	Open	0
P-5	J-4	J-5	166.8	300	120	1.27	0.21	0.038844	0.23	Open	0
P-6	J-1	J-6	350.3	300	120	1.85	0.30	0.153981	0.44	Open	0
P-7	J-6	J-2E	553.5	300	120	0.57	0.09	0.028073	0.05	Open	0
P-8	J-3E	J-8	32.7	300	120	5.04	0.83	0.147675	4.52	Open	0
P-9	J-8	J-9	350.7	300	120	4.01	0.66	0.675624	1.93	Open	0
WMN163164	WFT262170	WFT262169	28.6	300	150	4.59	0.75	0.043625	1.53	Open	0
WMN163165	WFT262169	WFT262172	22.1	300	150	4.58	0.75	0.033579	1.52	Open	0
WMN47079	WFT748195603	WFT54125	30.2	300	147	-1.08	0.18	0.003293	0.11	Open	0
WMN71481	WCV45160	WFT54124	3.9	300	147	-0.01	0.00	0.000000	0.00	Open	0
WMN71482	WFT54124	WCV45161	3.5	300	147	3.74	0.61	0.003758	1.09	Open	0
WMN71483	WFT54124	WCV45162	3.2	300	147	-3.76	0.62	0.003479	1.10	Open	0
WMN71484	WCV45161	WFT748195603	28.4	300	147	3.74	0.61	0.030863	1.08	Open	0
WMN71486	WFT54125	WFT54126	100.8	300	147	-1.10	0.18	0.011385	0.11	Open	0
WMN71519	WFT54140	WFT54141	44.7	400	147	3.76	0.35	0.012092	0.27	Open	0
WMN71520	WFT54141	WCV45162	1.8	300	147	3.76	0.62	0.001953	1.09	Open	0

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Junction Results - Max Day Demand + Fire Flow - Active Fire Flow - 2021 - Proposed

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)
J-10	11.08	48	260.80	50.0	36	104	20
J-11	0.97	49	260.58	50.0	35	88	20
J-12	29.24	48	260.38	50.0	32	107	20
J-2	2.88	47	263.27	50.0	44	243	20
J-3	14.99	41	262.76	50.0	34	126	20
J-4	1.03	42	262.70	50.0	34	105	20
J-5	14.65	44	262.67	50.0	35	117	20
J-6	14.80	50	263.18	233.3	25	276	20
J-7	11.93	57	261.99	50.0	49	167	20
J-9	2.45	51	261.42	50.0	41	123	20
WCV45161	0.02	57	263.52	30.0	55	378	20
WCV45162	0.02	57	263.52	30.0	56	382	20
WFT262169	0.05	66	263.67	30.0	65	489	20
WFT262172	0.05	66	263.64	30.0	64	473	20
WFT54124	0.02	57	263.52	30.0	55	378	20
WFT54125	0.16	56	263.49	30.0	55	363	20
WFT54141	0.02	57	263.53	30.0	55	379	20

Junction Results - Max Day Demand + Fire Flow - Active Fire Flow - 2026 - Proposed

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)
J-10	11.08	50	261.91	50.0	38	111	20
J-11	0.97	51	261.69	50.0	37	94	20
J-12	29.24	49	261.49	50.0	34	112	20
J-2	2.88	49	264.31	50.0	46	275	20
J-3	14.99	42	263.80	50.0	36	136	20
J-4	1.03	43	263.74	50.0	36	113	20
J-5	14.65	46	263.70	50.0	37	125	20
J-6	14.80	52	264.26	233.3	30	312	20
J-7	11.93	59	263.10	50.0	51	178	20
J-9	2.45	52	262.53	50.0	43	133	20
WCV45161	0.02	58	264.54	30.0	57	441	20
WCV45162	0.02	59	264.55	30.0	57	446	20
WFT262169	0.06	68	264.84	30.0	67	636	20
WFT262172	0.06	67	264.81	30.0	66	605	20
WFT54124	0.02	58	264.54	30.0	57	442	20
WFT54125	0.17	58	264.52	30.0	57	421	20
WFT54141	0.02	58	264.55	30.0	57	443	20

Junction Results - Max Day Demand + Fire Flow - Active Fire Flow - 2031 - Proposed							
ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)
J-10	11.08	50	261.69	50.0	38	110	20
J-11	0.97	51	261.47	50.0	37	93	20
J-12	29.24	49	261.28	50.0	34	111	20
J-2	2.88	48	264.10	50.0	45	270	20
J-3	14.99	42	263.58	50.0	35	134	20
J-4	1.03	43	263.53	50.0	36	112	20
J-5	14.65	45	263.49	50.0	37	123	20
J-6	14.80	52	264.05	233.3	29	307	20
J-7	11.93	58	262.89	50.0	51	177	20
J-9	2.45	52	262.31	50.0	43	131	20
WCV45161	0.02	58	264.32	30.0	57	434	20
WCV45162	0.02	58	264.33	30.0	57	438	20
WFT262169	0.06	67	264.62	30.0	66	627	20
WFT262172	0.06	67	264.59	30.0	66	596	20
WFT54124	0.02	58	264.33	30.0	57	434	20
WFT54125	0.17	57	264.30	30.0	56	415	20
WFT54141	0.02	58	264.33	30.0	57	436	20

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File: Watermain Hydraulic Analysis
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Revised Date: 2025-10-28

Junction Results - Max Day Demand + Fire Flow - Fire Flow Design - 2021 - Proposed

ID	Capacity Assessment	Total Demand (L/s)	Hydrant Available Flow (L/s)	Critical Node ID for Design Run	Critical Node Pressure at Available Flow (psi)	Critical Node Pressure at Fire Demand (psi)	Critical Pressure for Design Run (psi)	Hydrant Design Flow (L/s)	Hydrant Pressure at Design Flow (psi)	Critical Node Pressure at Design Flow (psi)
J-10	PASS	61.08	104	J-12	19	35	20	103	21	20
J-11	PASS	50.97	88	J-12	19	34	20	85	21	20
J-12	PASS	79.24	107	J-12	20	32	20	107	20	20
J-2	PASS	52.88	243	J-3	14	37	20	203	26	20
J-3	PASS	64.99	126	J-3	20	34	20	126	20	20
J-4	PASS	51.03	105	J-4	20	34	20	105	20	20
J-5	PASS	64.65	117	J-5	20	35	20	117	20	20
J-6	PASS	248.13	276	J-6	20	25	20	276	20	20
J-7	PASS	61.93	167	J-12	17	41	20	157	23	20
J-9	PASS	52.45	123	J-12	17	38	20	115	23	20
WCV45161	PASS	30.02	378	J-3	5	39	20	261	36	20
WCV45162	PASS	30.02	382	J-3	4	39	20	262	36	20
WFT262169	PASS	30.05	489	J-3	5	40	20	341	39	20
WFT262172	PASS	30.05	473	J-3	7	40	20	338	38	20
WFT54124	PASS	30.02	378	J-3	5	39	20	262	36	20
WFT54125	PASS	30.16	363	J-3	6	39	20	259	35	20
WFT54141	PASS	30.02	379	J-3	5	39	20	263	36	20

Junction Results - Max Day Demand + Fire Flow - Fire Flow Design - 2026 - Proposed

ID	Capacity Assessment	Total Demand (L/s)	Hydrant Available Flow (L/s)	Critical Node ID for Design Run	Critical Node Pressure at Available Flow (psi)	Critical Node Pressure at Fire Demand (psi)	Critical Pressure for Design Run (psi)	Hydrant Design Flow (L/s)	Hydrant Pressure at Design Flow (psi)	Critical Node Pressure at Design Flow (psi)
J-10	PASS	61.08	111	J-12	19	38	20	110	21	20
J-11	PASS	50.97	94	J-12	19	36	20	91	21	20
J-12	PASS	79.24	112	J-12	20	34	20	112	20	20
J-2	PASS	52.88	275	J-3	14	39	20	234	26	20
J-3	PASS	64.99	136	J-3	20	36	20	136	20	20
J-4	PASS	51.03	113	J-4	20	36	20	113	20	20
J-5	PASS	64.65	125	J-5	20	37	20	125	20	20
J-6	PASS	248.13	312	J-6	20	30	20	312	20	20
J-7	PASS	61.93	178	J-12	18	43	20	171	22	20
J-9	PASS	52.45	133	J-12	17	41	20	124	23	20
WCV45161	PASS	30.02	441	J-3	5	41	20	315	36	20
WCV45162	PASS	30.02	446	J-3	4	41	20	317	36	20
WFT262169	PASS	30.06	636	J-3	6	42	20	462	39	20
WFT262172	PASS	30.06	605	J-3	8	41	20	456	37	20
WFT54124	PASS	30.02	442	J-3	5	41	20	316	36	20
WFT54125	PASS	30.17	421	J-3	7	41	20	312	34	20
WFT54141	PASS	30.02	443	J-3	5	41	20	317	36	20

Junction Results - Max Day Demand + Fire Flow - Fire Flow Design - 2031 - Proposed

ID	Capacity Assessment	Total Demand (L/s)	Hydrant Available Flow (L/s)	Critical Node ID for Design Run	Critical Node Pressure at Available Flow (psi)	Critical Node Pressure at Fire Demand (psi)	Critical Pressure for Design Run (psi)	Hydrant Design Flow (L/s)	Hydrant Pressure at Design Flow (psi)	Critical Node Pressure at Design Flow (psi)
J-10	PASS	61.08	110	J-12	19	37	20	108	21	20
J-11	PASS	50.97	93	J-12	19	36	20	89	21	20
J-12	PASS	79.24	111	J-12	20	34	20	111	20	20
J-2	PASS	52.88	270	J-3	14	39	20	229	26	20
J-3	PASS	64.99	134	J-3	20	35	20	134	20	20
J-4	PASS	51.03	112	J-4	20	36	20	112	20	20
J-5	PASS	64.65	123	J-5	20	37	20	123	20	20
J-6	PASS	248.13	307	J-6	20	29	20	307	20	20
J-7	PASS	61.93	177	J-12	18	43	20	169	23	20
J-9	PASS	52.45	131	J-12	17	40	20	123	23	20
WCV45161	PASS	30.02	434	J-3	5	41	20	308	36	20
WCV45162	PASS	30.02	438	J-3	4	41	20	309	36	20
WFT262169	PASS	30.06	627	J-3	5	41	20	448	39	20
WFT262172	PASS	30.06	596	J-3	7	41	20	442	38	20
WFT54124	PASS	30.02	434	J-3	5	41	20	308	36	20
WFT54125	PASS	30.17	415	J-3	7	41	20	304	34	20
WFT54141	PASS	30.02	436	J-3	5	41	20	309	36	20

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.

AS-CONSTRUCTED DRAWING

CONTRACTOR	CON-KER / PACIFIC PAVING LTD.
WORK COMMENCED	APR-DEC 2017-CON KER
WORK COMPLETED	APR 2019-NOV 2020-PACIFIC PAV.
INSPECTOR	CRAIG McNABB (WSP)
INSPECTOR'S DIARIES	E-0095 (WSP)

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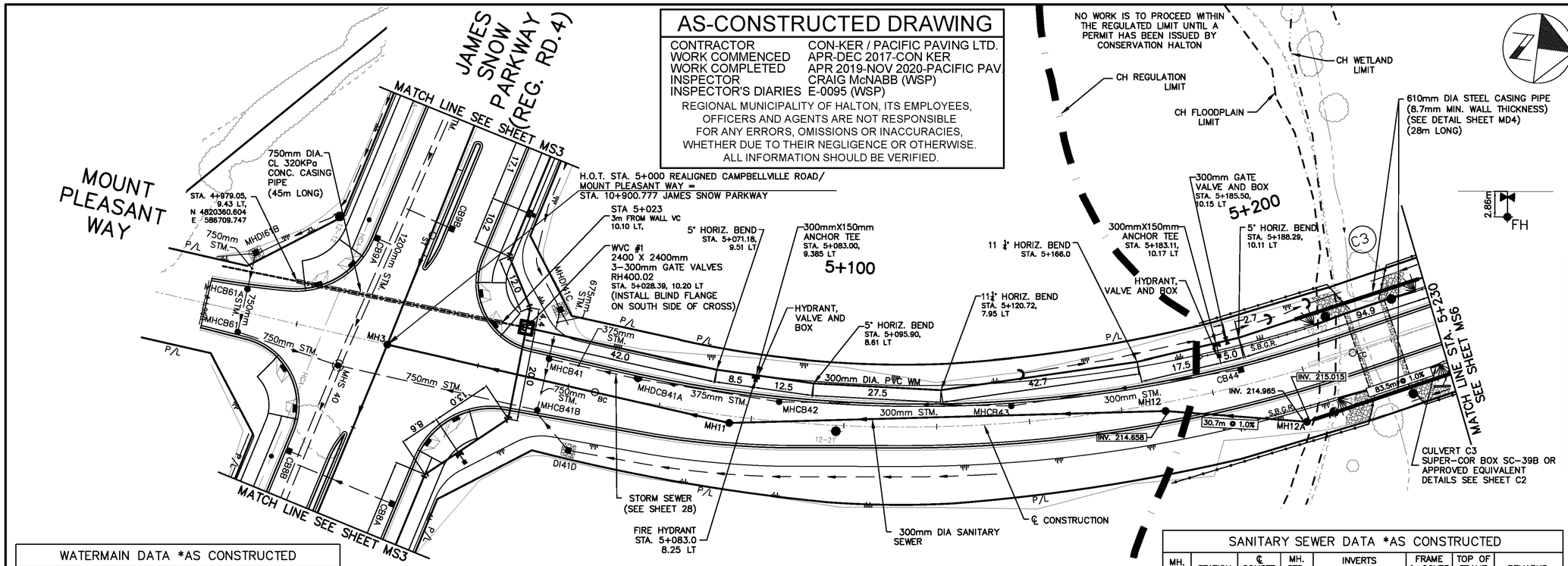
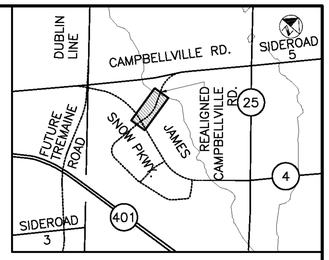
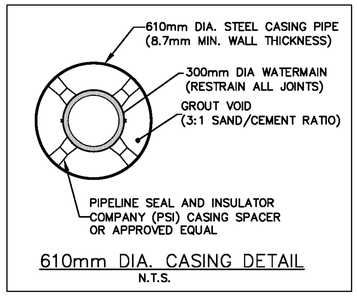






610mm DIA. CASING DETAIL
N.T.S.

NOTES:

1. NO MACHINES TO ENTER WETLAND AREA, ALL EXCAVATION CAN BE COMPLETED FROM THE BANKS.
2. BACKFILL WILL BE SELECT NATIVE, CLEAN.
3. EXCAVATED MATERIAL TO BE REMOVED FROM THE IMMEDIATE AREA.
4. ALL MATERIALS AND PROCEDURES TO BE IN ACCORDANCE WITH OPSS.
5. CREEK BED TO BE REINSTATED AS PER CONSERVATION HALTON.

* FOR GENERAL NOTES PLEASE REFER SHEET NO. MS2 AND MO4

REFER TO PROPOSED CONSTRUCTION DRAWINGS FOR ROAD AND STORM SEWER CONSTRUCTION

MH12A
T/G 220.36
STA 5+197.713
O/S 11.165 RT.
INV. N 215.015
INV. S 214.965

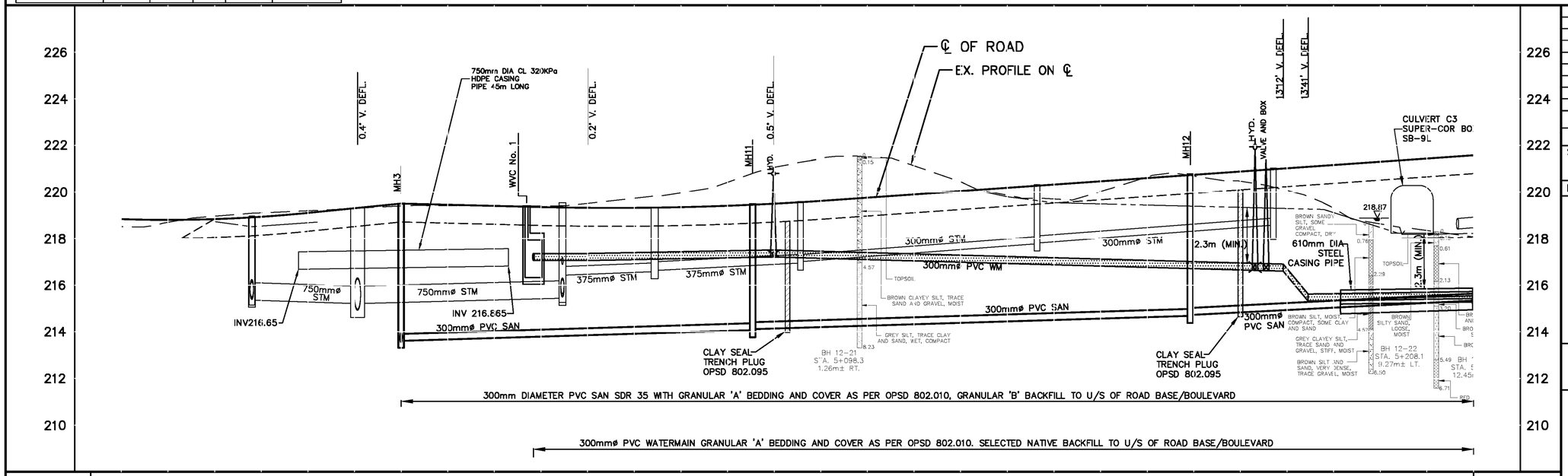
WATERMAIN DATA *AS CONSTRUCTED

ITEM	STATION	℄ CONSTR OFFSET	STD. DWG.	W/M INVERT	REMARKS
5° H. BEND	5+071.18	9.51 LT.	–	217.166	
5° H. BEND	5+092.86	8.74 LT.	–	217.128	
11¼° H. BEND	5+120.72	7.95 LT.	–	216.905	
5° H. BEND	5+165.06	9.69 LT.	–	216.726	
5° H. BEND	5+189.33	10.23 LT.	–	216.466	

SANITARY SEWER DATA *AS CONSTRUCTED

MH. #	STATION	℄ CONSTR OFFSET	MH. STD. DWG.	INVERTS INLET	INVERTS OUTLET	FRAME & COVER STD.	TOP OF FRAME ELEV.	REMARKS
MH 3	5+000.00	0.00 RT.	701.010	N. 213.601 W. 213.621	E. 213.551	401.010	219.493	
MH 11	5+075.73	1.78 RT.	701.010	N. 213.974	S. 213.934	401.010	219.471	
MH 12	5+169.08	1.67 RT.	701.010	N. 214.644	S. 214.594	401.010	220.754	
MH12A	5+197.713	11.165 RT.	701.010	N. 215.015	S. 214.965	401.010	220.360	

REALIGNED CAMPBELLVILLE ROAD



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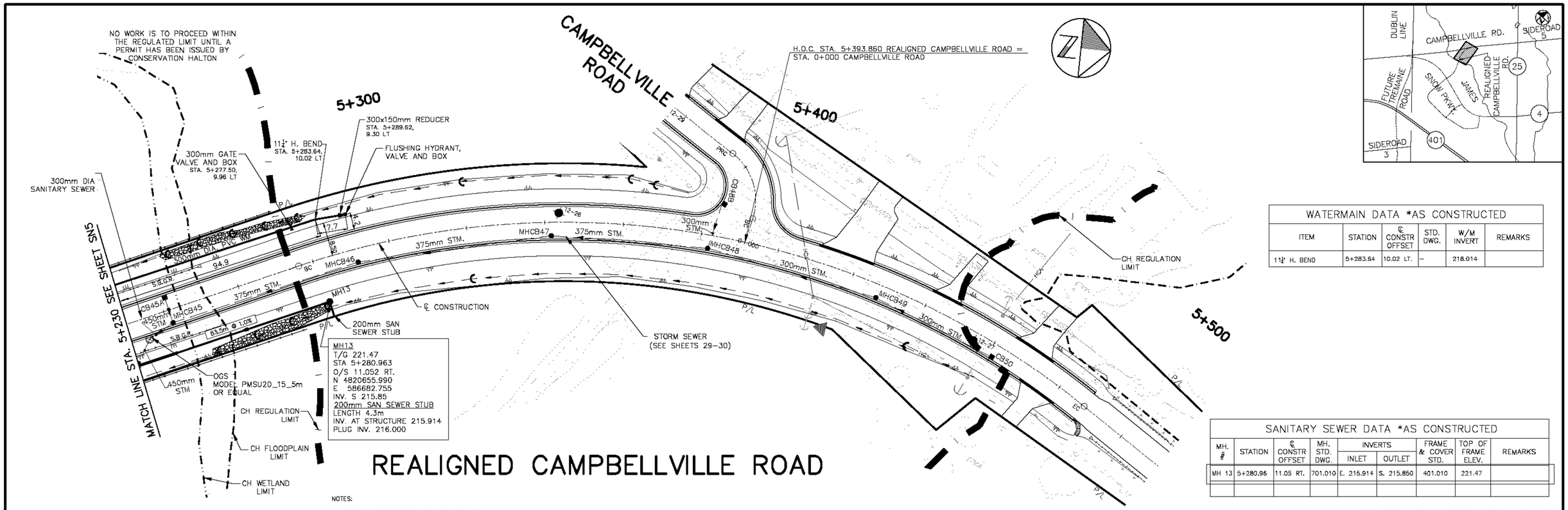

WATERMAIN DATA *AS CONSTRUCTED					
ITEM	STATION	℄ CONSTR OFFSET	STD. DWG.	W/M INVERT	REMARKS
11¼° H. BEND	5+283.64	10.02 LT.	–	218.014	

SANITARY SEWER DATA *AS CONSTRUCTED								
MH. #	STATION	℄ CONSTR OFFSET	MH. STD. DWG.	INVERTS		FRAME & COVER STD.	TOP OF FRAME ELEV.	REMARKS
				INLET	OUTLET			
MH 13	5+280.96	11.05 RT.	701.010	E. 215.914	S. 215.850	401.010	221.47	

* FOR GENERAL NOTES PLEASE REFER SHEET NO. MS2 & MO4

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NOTES:

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5. CREEK BED TO BE REINSTATED AS PER CONSERVATION HALTON.

REFER TO PROPOSED CONSTRUCTION DRAWINGS FOR ROAD AND STORM SEWER CONSTRUCTION

AS-CONSTRUCTED DRAWING

CONTRACTOR	CON-KER / PACIFIC PAVING LTD.
WORK COMMENCED	APR-DEC 2017-CON KER
WORK COMPLETED	APR 2019-NOV 2020-PACIFIC PAV
INSPECTOR	CRAIG McNABB (WSP)
INSPECTOR'S DIARIES	E-0095 (WSP)

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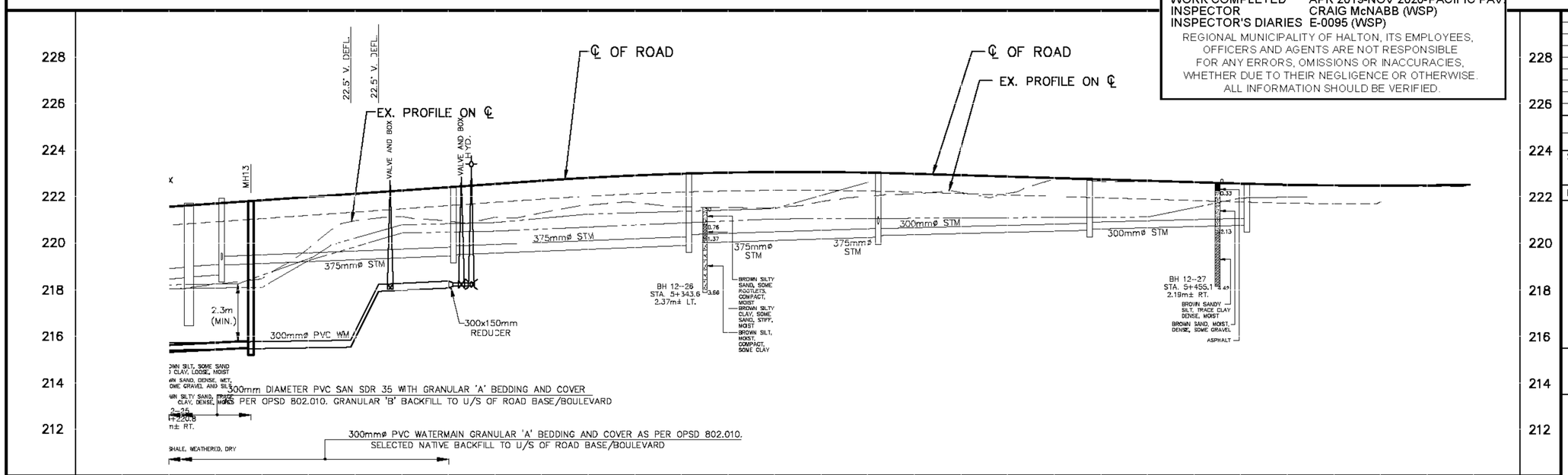

℄ ELEVATIONS	218.23 221.707	219.79 221.987	221.13 222.267	221.11 222.547	221.64 222.811	221.55 222.985	221.53 223.059	222.01 223.033	222.18 222.922	222.74 222.802	222.65 222.682	222.57 222.562	222.45 222.484	222.44 222.487	℄ ELEVATIONS
WATERMAIN INVERTS	74.5m @ 0.3%	215.525	217.924	6.0m @ 40%	218.087	15.0m @ 1.09%	AS CONSTRUCTED INVERTS								WATERMAIN INVERTS
SANITARY INVERTS	S215.503	AS CONSTRUCTED INVERTS	78.5m – @ 1.0%												SANITARY INVERTS
CHAINAGE	5+240	5+248.00	5+260	5+269.00	5+275.00	5+280	5+290.00	5+300	5+320	5+340	5+360	5+380	5+400	5+420	5+440	5+460	5+480	5+500	CHAINAGE

NO	Date	By	REVISIONS	MANU	CAD
	04/22/21	C.M.	AS CONSTRUCTED (WSP)		
5	02.28.2017	A.I.	CH WETLAND/FLOODPLAIN LIMITS		
4	07.28.2016	A.I.	ISSUED FOR CONSTRUCTION		
3	07.26.2016	A.I.	WM REVISION		
2	06.20.2016	A.I.	SAN AND WM REVISION		
1	05.30.2016	A.I.	ISSUED FOR TENDER		

Design	A.I.	Ch'kd	B.K.	Date MAY 2016
Drawn	E.B.	Ch'kd		
Scale Horiz. 10m 5m 0 10m; Vert. 2m 1m 0 2m				References
Regional				Field Notes

ACCEPTED FOR CONSTRUCTION OF REGIONAL INFRASTRUCTURE

Reviewed For Compliance With Regional Standards Only.

Director

Manager

Stamp

wsp

Halton REGION

TITLE

PROPOSED WATERMAIN AND SANITARY SEWER CONSTRUCTION OF REALIGNED CAMPBELLVILLE ROAD

165m S OF CAMPBELLVILLE RD. TO CAMPBELLVILLE RD. STA. 5+230 TO STA. 5+510

IN THE TOWN OF MILTON

Consultant File NO 3210150	Regional Drawing NO
CONTRACT NO R–2387C–16	Drawing NO SHEET MS6 OF MS6

M-12479

R–2387C–16 MS6 of MS6

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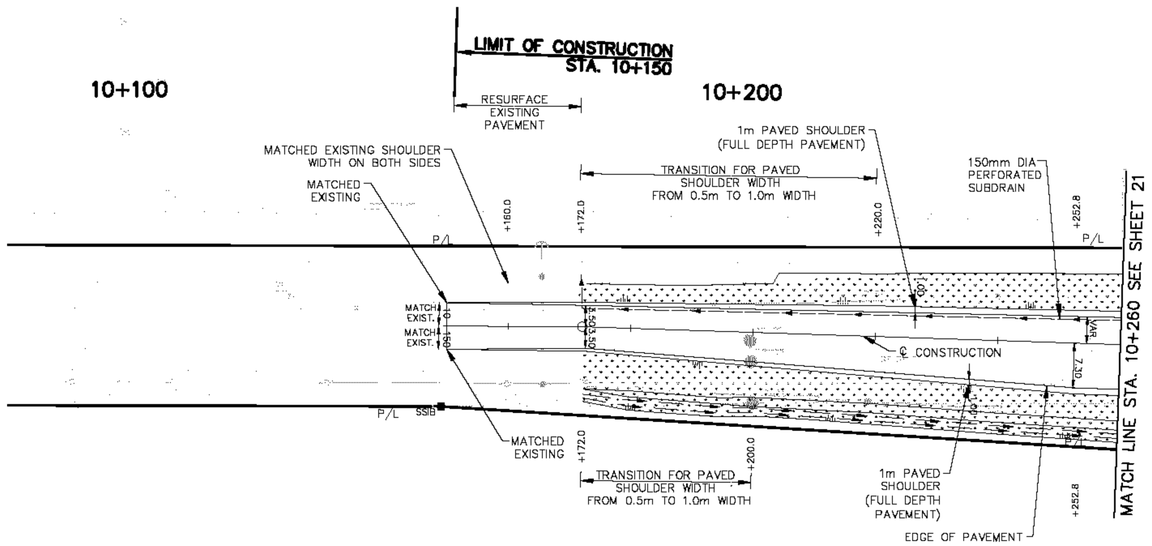
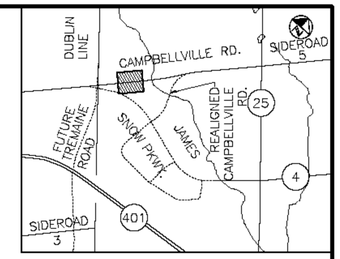


CAMPBELLVILLE ROAD

GENERAL NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. THE LOCATION OF UTILITIES, SANITARY SEWER, WATERMAINS SHOWN ON PLAN AND PROFILE IS APPROXIMATE ONLY AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND APPROPRIATE UTILITY COMPANY CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL ASSUME LIABILITY FOR DAMAGE DURING THE COURSE OF CONSTRUCTION.
3. ALL SINGLE AND DOUBLE CATCHBASIN LEADS TO BE 300mm DIA. UNLESS OTHERWISE NOTED. ALL CATCHBASIN LEADS TO BE INSTALLED AT 1% MIN. UNLESS OTHERWISE NOTED.
4. CENTRE LINE CONSTRUCTION OFFSET AND TOP OF FRAME ELEVATIONS OF CBMH, DCBMH AND CB REFER TO THE CENTRE OF THE FRAME AND GRATE.
5. SEE ALIGNMENT DRAWINGS FOR CORNER RADIUS LAYOUT.
6. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT TOWN, REGION PUBLIC WORKS AND OPS STANDARD SPECIFICATIONS.
7. THE CONTRACTOR SHALL PROVIDE A 24 HOUR ADVANCE NOTICE TO THE CONTRACT ADMINISTRATOR PRIOR TO THE START OF ANY WORK ON MILLING OR SURFACING OPERATION.
8. THE CONTRACTOR SHALL ALLOW 48 HOURS MINIMUM CURING TIME FOR NEW CURBS BEFORE CARRYING OUT ANY COMPACTION WORK ADJACENT TO THE CURB.
9. IF THE COMPACTION WORK WILL BE PERFORMED ADJACENT TO CURB AFTER THE INITIAL 48 HOUR PERIOD BUT WITHIN FIRST SEVEN DAYS, THEN THE CONTRACTOR SHALL USE HIGH EARLY STRENGTH CONCRETE AT HIS OWN EXPENSE.
10. WHERE ROADS ARE EXCAVATED ON WIDENING ONLY AND THE EXISTING GRANULAR SUBBASE ARE LOWER THAN PROPOSED, INCREASE DEPTH OF GRANULAR "B" TO MATCH EXISTING.
11. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IMPLEMENTED PRIOR TO, AND MAINTAINED DURING THE CONSTRUCTION PHASES TO PREVENT ENTRY OF SEDIMENT INTO THE WATER. REFER TO SHEETS 12 TO 19.
12. ALL DISTURBED AREAS WILL BE STABILIZED AND RESTORED WITH NATIVE/NON-INVASIVE SPECIES UPON COMPLETION OF THE WORK.
13. ALL ACTIVITIES, INCLUDING MAINTENANCE PROCEDURES, WILL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES INTO WATERCOURSE.VEHICULAR REFUELING AND MAINTENANCE WILL BE CONDUCTED 30 METRES FROM THE WATER.
14. THE CONTRACTOR SHALL CONTINUALLY MONITOR THE WEATHER SEVERAL DAYS IN ADVANCE OF THE ONSET OF THE PROJECT TO ENSURE THERE WILL BE FAVORABLE WEATHER CONDITION DURING CONSTRUCTION. SHOULD AN UNANTICIPATED STORM DEVELOP, THE CONTRACTOR SHALL UTILIZE THE CONTINGENCY PLAN AS NOTED ON THIS DRAWING.
15. OUTFALL OF THE DEWATERING SHALL BE LOCATED AT LEAST 30 METRES FROM THE WATERCOURSE TO A FILTERBAG/SPLASH PAD. NO DEWATERING SHALL BE SENT DIRECTLY TO ANY WATERCOURSE.
16. THE EROSION AND SEDIMENT CONTROLS (ESCs) OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO PREVENT SEDIMENT RELEASE TO THE NATURAL ENVIRONMENT. CH ENFORCEMENT OFFICER SHOULD BE IMMEDIATELY CONTACTED, SHOULD AN ISSUE ARISE.
17. TO PROTECT LOCAL FISH POPULATION DURING THEIR SPAWNING AND NURSERY PERIODS, NO IN-WATER WORK/ACTIVITY FOR SIXTEEN MILE CREEK TRIBUTARY SHALL OCCUR BETWEEN JULY 1 TO SEPTEMBER 14, UNLESS AN EXTENSION IS GRANTED IN WRITING FROM THE MINISTRY OF NATURAL RESOURCES.
18. ANY FISH STRANDED IN THE CONSTRUCTION ZONES SHALL BE CAPTURED USING APPROPRIATE TECHNIQUES BY LICENSED PERSONNEL AND RELEASED WITHOUT HARM. CAPTURE AND RELEASE OF STRANDED FISH SHALL BE CARRIED OUT BY A QUALIFIED BIOLOGIST APPROVED BY THE MINISTRY IF NATURAL RESOURCES.



FOR WATERMAIN AND SANITARY SEWER CONSTRUCTION REFER TO WATERMAIN AND SANITARY SEWER DRAWINGS

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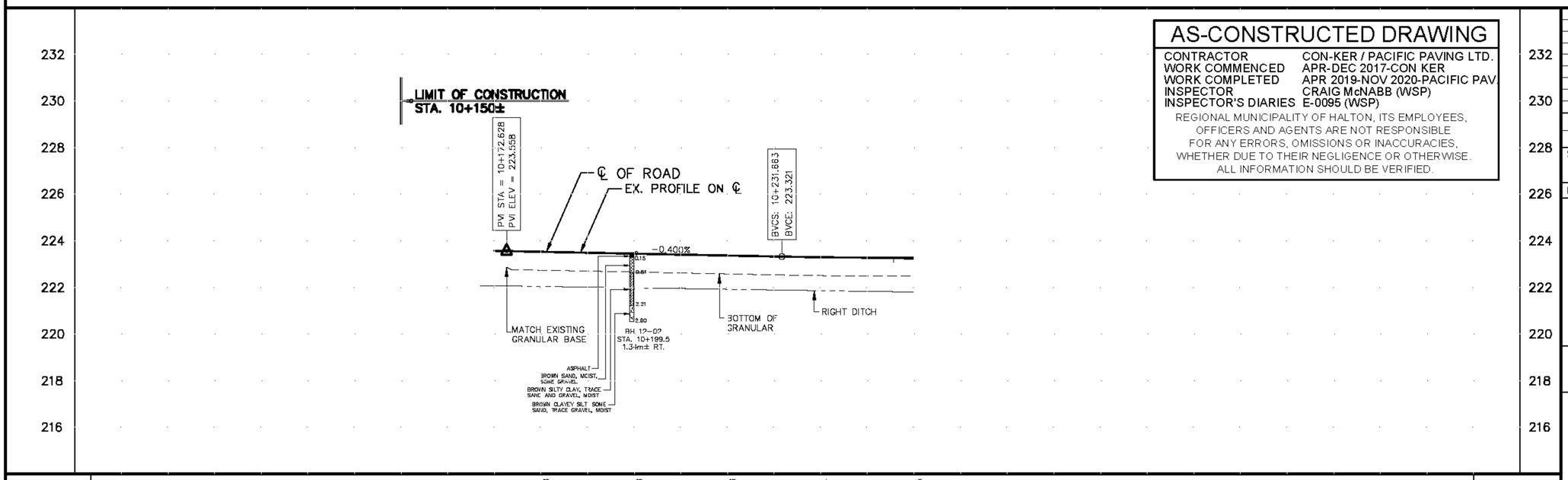


AS-CONSTRUCTED DRAWING

CONTRACTOR	CON-KER / PACIFIC PAVING LTD.
WORK COMMENCED	APR-DEC 2017-CON KER
WORK COMPLETED	APR 2019-NOV 2020-PACIFIC PAV
INSPECTOR	CRAIG McNABB (WSP)
INSPECTOR'S DIARIES	E-0095 (WSP)

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.

	04/22/21	C.M.	AS CONSTRUCTED (WSP)		
3	01/02/17	A.I.	CH COMMENTS		
2	07/28/16	A.I.	ISSUED FOR CONSTRUCTION		
1	05/30/16	A.I.	ISSUED FOR TENDER		
No	Date	By	REVISIONS	MANU	CAD

Design	A.I.	Ch'kd	B.K.	Date MAY 2016
Drawn	E.B.	Ch'kd		
Scale Horiz. 10m 5m 0 10m; Vert. 2m 1m 0 2m				References
Regional				Field Notes
ACCEPTED FOR CONSTRUCTION OF REGIONAL INFRASTRUCTURE. Reviewed For Compliance With Regional Standards Only. Director. Manager				Stamp

wsp

Halton REGION

TITLE

PROPOSED CONSTRUCTION

RECONSTRUCTION OF CAMPBELLVILLE ROAD
235m W OF FUTURE TREMAINE RD. TO 125m W OF FUTURE TREMAINE RD. STA. 10+150 TO STA. 10+260
IN THE TOWN OF MILTON

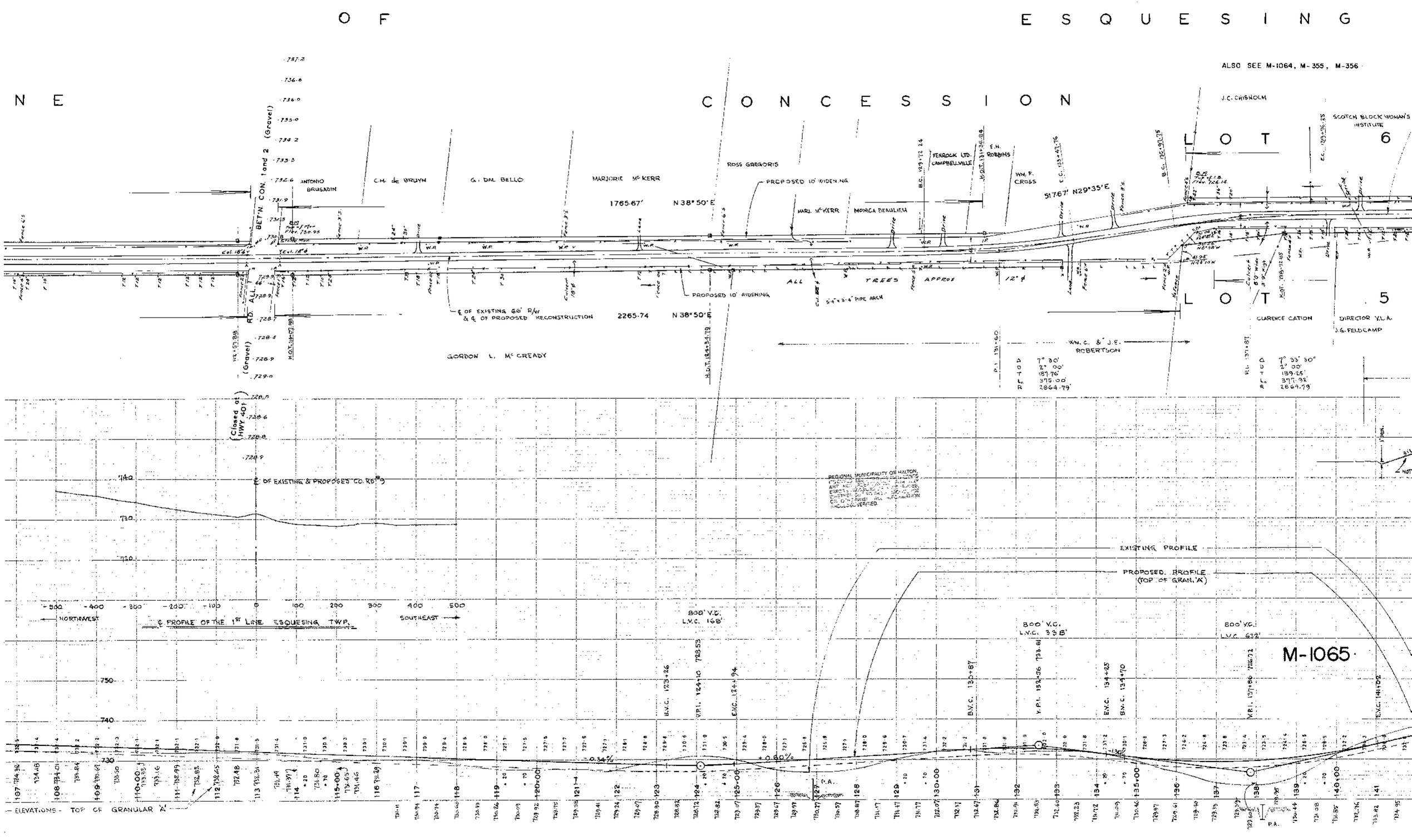
Consultant File No 3210150	Regional Drawing No
CONTRACT No R-2387C-16	Drawing No SHEET 20 OF 50

℄ ELEVATIONS					223.52 223.528	223.42 223.448	223.36 223.388	223.31 223.294	223.25 223.275	
STORM INVERTS (WEST)										
STORM INVERTS (EAST)										
CHAINAGE	10+100	10+120	10+140	10+160	10+180	10+200	10+220	10+240	10+260	

M-12441

R-2387C-16 20 of 50

DRAWING: W:\MISC\2021\16M-01479-01 - JAMES SNOW PARKWAY-AS BUILT\CONTRACT NO. R-2387C-16-AS-BUILT\3210150-400-CD-SHEETS 20 TO SHEET 31 NEW CONSTRUCTION-AS-BUILT.DWG
LAYOUT TAB: SHEET 20 OF 50
MODIFIED: 10/05/2021 Time: 06:51:10 PM



REGIONAL MUNICIPALITY OF HALTON
PLANNING & DEVELOPMENT
ARE NOT GUARANTEED TO BE ACCURATE
ERRORS, OMISSIONS OR DELAYS
CO. OF HALTON WILL NOT BE LIABLE FOR ANY DAMAGES
INCURRED BY ANY PERSON OR ORGANIZATION
RELYING ON THIS INFORMATION
UNLESS OTHERWISE VERIFIED.

M-1065

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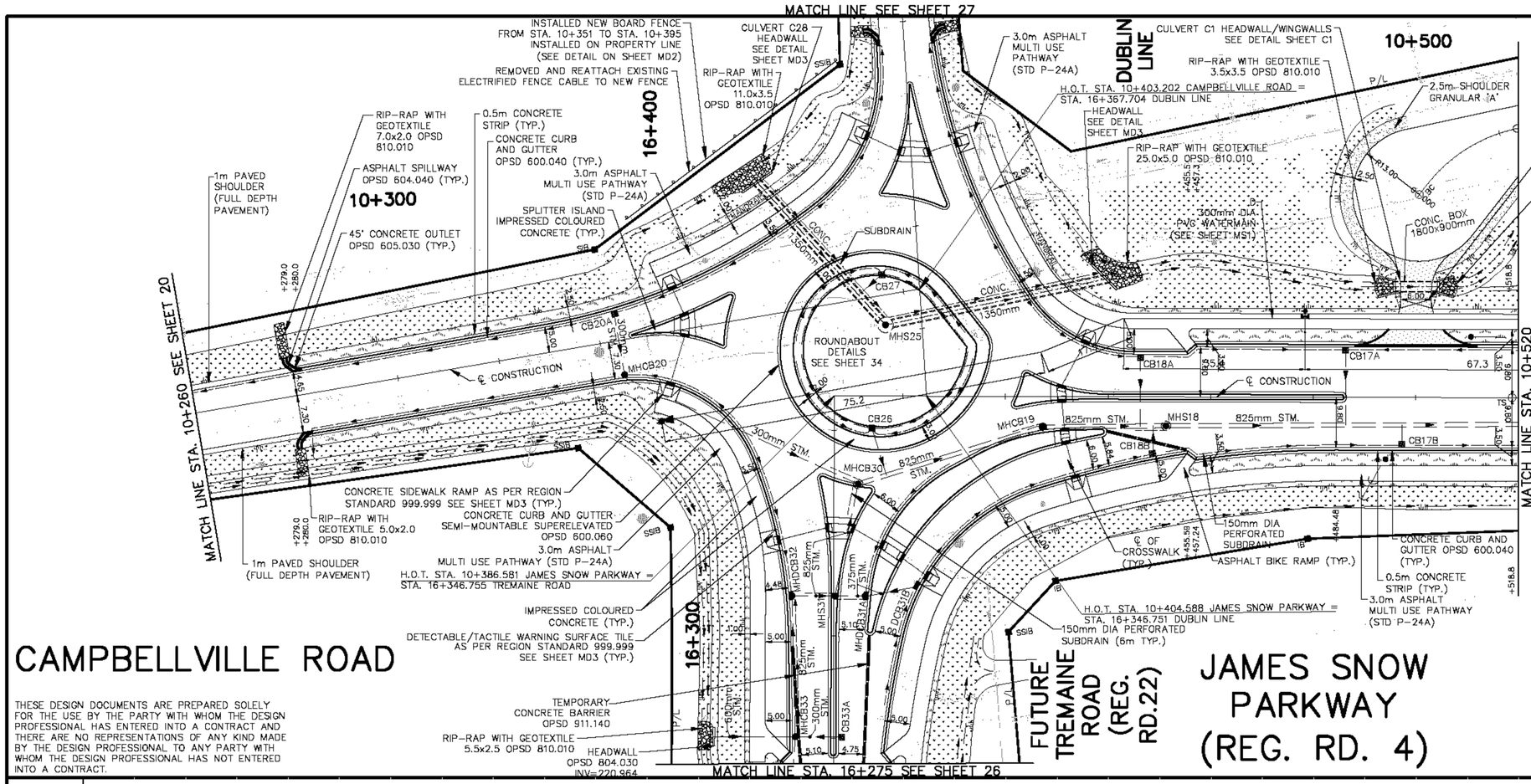
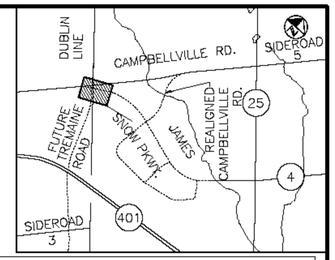




STORM SEWER DATA *AS CONSTRUCTED

MH. #	STATION	℄ CONSTR OFFSET	MH. STD. DWG.	INVERTS INLET	INVERTS OUTLET	FRAME & COVER STD.	TOP OF FRAME ELEV.	REMARKS
MHCB20	10+343.90	8.11 RT.	701.010	N. 220.874	E. 220.094	400.082	223.835	
CB20A	10+343.38	6.62 LT.	705.010	–	S. 221.893	400.082	223.865	
MHCB30	10+391.54	17.97 RT.	701.012	S. 219.505 W. 219.786	E. 219.485	400.082	224.242	
MHCB19	10+428.71	6.97 RT.	701.012	W. 219.301	E. 219.621	400.082	224.120	
MHS18	10+451.22	6.64 RT.	701.012	S. 220.178 W. 219.130	E. 219.080	401.010	223.720	
CB18B	10+448.72	12.41 RT.	705.010	–	N. 221.804	400.082	223.754	
CB18A	10+446.41	9.03 LT.	705.010	–	S. 221.890	400.082	223.920	
CB17B	10+499.15	10.53 RT.	705.010	–	N. 221.010	400.082	223.157	
CB17A	10+486.30	10.53 LT.	705.010	–	S. 221.280	400.082	223.418	
MHS25	10+397.46	13.88 LT.	701.014	N. 221.571	E. 221.541	401.010	224.870	ON ROUNDABOUT ON CULVERT 28
CB26	10+394.00	6.27 RT.	705.010	–	S. 222.282	400.100	224.232	ON ROUNDABOUT
CB27	16+369.85	7.42 LT.	705.010	–	S. 222.532	400.100	224.232	ON ROUNDABOUT

CULVERT DATA *AS CONSTRUCTED

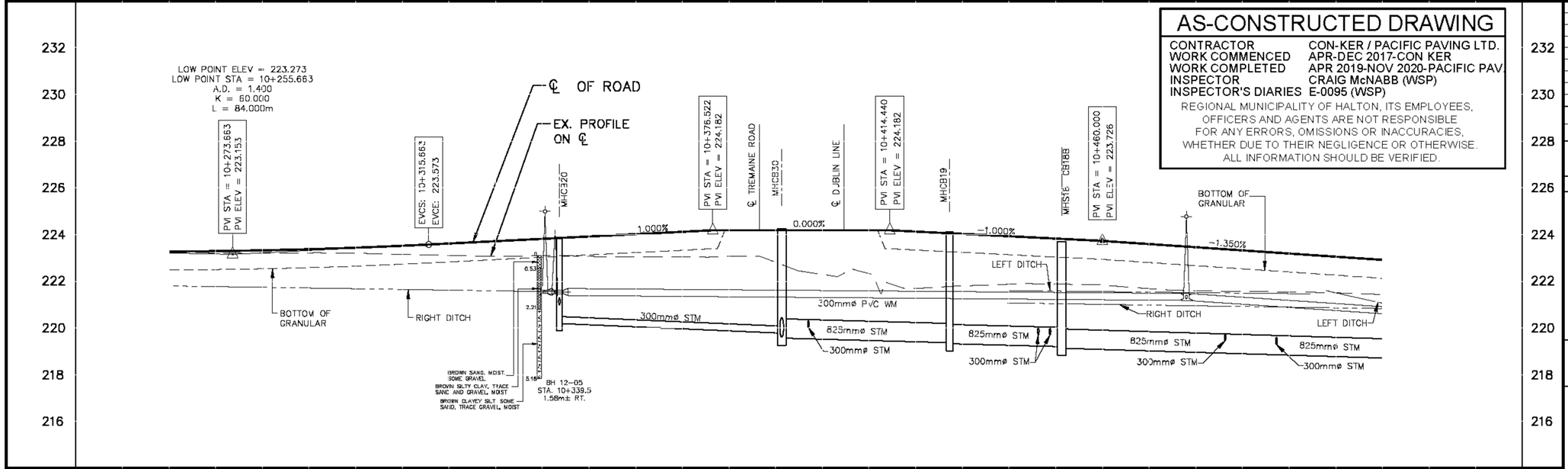
CULVERT #	SIZE RISEXSPAN (mm)	LENGTH (m)	INLET STATION	INLET ℄ CONSTR OFFSET	INLET INV. ELEV.	OUTLET STATION	OUTLET ℄ CONSTR OFFSET	OUTLET INV. ELEV.	REMARKS
C2B	ø1350	82.0	16+390.70	30.43 LT	221.738	10+439.37	23.00 LT	221.271	PIPE AT INLET/OUTLET
C1	900x1800	38.5	10+485.66	32.90 LT	221.360	10+523.28	41.00 LT	221.248	CUL-DE-SAC (NOTE 3)

NOTES:

1. ALL LATERALS SHALL BE 300mm DIA FOR SINGLE CATCHBASINS AND 375mm DIA FOR DOUBLE CATCHBASNS UNLESS OTHERWISE NOTED.
2. FOR GENERAL NOTES PLEASE REFER SHEET NO. 20 OF 50.
3. INVERTS REFER TO INVERTS OF BOX CULVERT.

FOR WATERMAIN AND SANITARY SEWER CONSTRUCTION REFER TO WATERMAIN AND SANITARY SEWER DRAWINGS

THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.



AS-CONSTRUCTED DRAWING

CONTRACTOR	CON-KER / PACIFIC PAVING LTD.
WORK COMMENCED	APR-DEC 2017-CON KER
WORK COMPLETED	APR 2019-NOV 2020-PACIFIC PAV.
INSPECTOR	CRAIG McNABB (WSP)
INSPECTOR'S DIARIES	E-0095 (WSP)

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.

04/22/21	C.M.	AS CONSTRUCTED (WSP)		
4 02.28.2017	A.I.	CH COMMENTS (CULVERT C1)		
3 07.28.2016	A.I.	ISSUED FOR CONSTRUCTION		
2 06.23.2016	A.I.	UPDATED LABELS		
1 05/30/16	A.I.	ISSUED FOR TENDER		
№ Date	By	REVISIONS	MANU	CAD

Design	A.I.	Ch'kd	B.K.
Drawn	E.B.	Ch'kd	

Date: MAY 2016

Scale: Horiz. 10m 5m 0 10m; Vert. 2m 1m 0 2m

References

Regional

ACCEPTED FOR CONSTRUCTION OF REGIONAL INFRASTRUCTURE

Reviewed For Compliance With Regional Standards Only.

Director

Manager

Field Notes

Stamp

3 March 2017

wsp

Halton REGION

TITLE

PROPOSED CONSTRUCTION

CONSTRUCTION OF JAMES SNOW PARKWAY

125m W OF FUTURE TREMAINE RD. TO 135m E OF FUTURE TREMAINE RD. STA. 10+260 TO STA. 10+520

IN THE TOWN OF MILTON

Consultant File № 3210150

Regional Drawing №

CONTRACT № R-2387C-16

Drawing № SHEET 21 OF 50

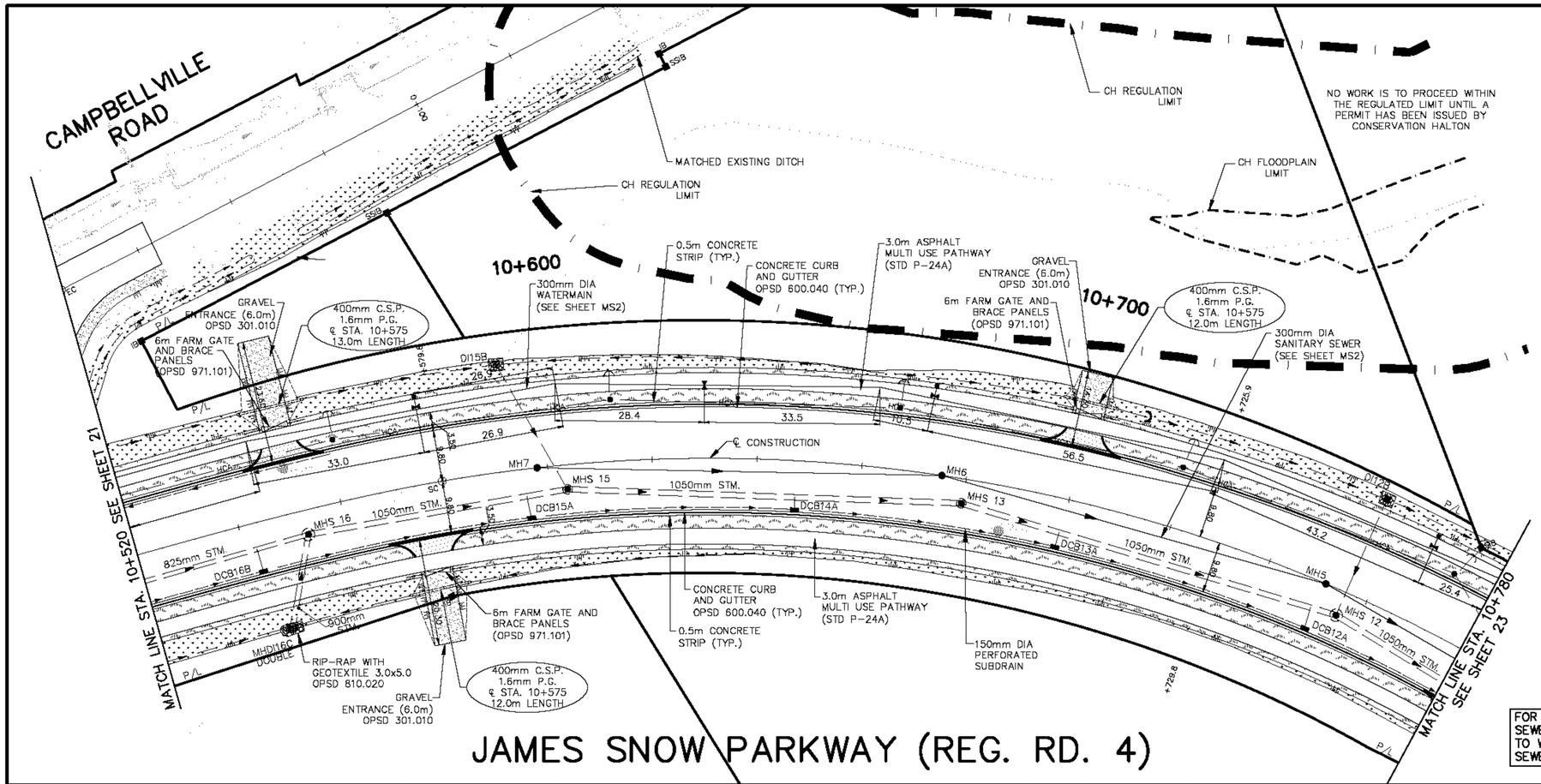
CHAINAGE	℄ ELEVATIONS	STORM INVERTS (WEST)	STORM INVERTS (EAST)
10+260	223.25 223.275		
10+280	223.21 223.323		
10+300	223.20 223.437		
10+320	223.10 223.617		
10+340	223.09 223.817		AS CONSTRUCTED INVERTS N220.986 E220.186
10+360	223.04 224.017		300mm DIA STM CL65D CONC. 50.0m @ 0.80%
10+380	223.06 224.182		
10+400	222.29 224.182		W219.786 S219.505 E219.485
10+420	221.69 224.126		825mm DIA. STM CL65D CONC. 38.76m @ 0.47%
10+440	221.88 223.926		W219.301 E219.261
10+460	221.84 223.726		825mm DIA. STM CL65D CONC. 22.52m @ 0.58%
10+480	221.99 223.456		W219.130 S220.178 E219.080
10+500	221.54 223.186		825mm DIA. STM CL65D CONC. 102.15m @ 0.88%
10+520	221.44 222.916		

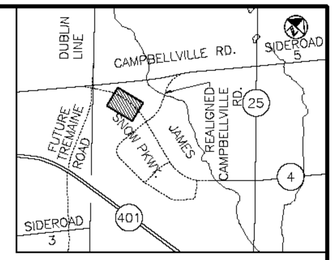
DRAWING: W:\MISC\2021\16M-01475-01 - JAMES SNOW PARKWAY-AS BUILT\CONTRACT NO. R-2387C-16-AS-BUILT\3210150-400-05-SHEETS 20 TO SHEET 31 NEW CONSTRUCTION-AS-BUILT.DWG
LAYOUT TAB: SHEET 21 OF 50
MODIFIED: 10/05/2021 Time: 06:51:14 PM

R-2387C-16 21 of 50

M-12442

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.





STORM SEWER DATA *AS CONSTRUCTED

MH. #	STATION	℄ CONSTR OFFSET	MH. STD. DWG.	INVERTS INLET	INVERTS OUTLET	FRAME & COVER STD.	TOP OF FRAME ELEV.	REMARKS
DCB16B	10+542.45	10.53 RT.	705.020	–	N. 220.099	400.082(x2)	222.547	
MHDI16C	10+544.48	21.22 RT.	706.020	–	N. 218.666	403.010(x2)	220.510	DOUBLE DITCH INLET, 3:1 SLOPE
MHS16	10+553.48	3.94 RT.	701.013	W. 218.187 S. 218.522	E. 218.127	401.010	222.384	
DCB15A	10+595.86	10.53 RT.	705.020	–	N. 219.801	400.082(x2)	221.826	
MHS15	10+603.43	6.18 RT.	701.013	N. 218.422 W. 217.576	E. 217.476	401.010	221.698	
DCB14A	10+647.62	10.53 RT.	705.020	–	N. 218.946	400.082(x2)	221.145	
MHS13	10+680.40	3.46 RT.	701.013	W. 216.830	E. 216.770	401.010	220.715	
DCB13A	10+699.37	10.53 RT.	705.020	–	N. 218.444	400.082(x2)	220.514	
MHS12	10+755.92	5.38 RT.	701.013	N. 218.727 W. 216.016	E. 215.906	401.010	220.124	
DCB12A	10+751.13	10.57 RT.	705.020	–	N. 218.009	400.082(x2)	220.174	
DI12B	10+755.70	19.40 LT.	705.030	–	S. 216.847	403.010	219.150	3:1 SLOPE
DI15B	10+592.75	20.40 LT.	705.030	–	S. 218.559	403.010	220.523	3:1 SLOPE

NOTES:

1. ALL LATERALS SHALL BE 300mm DIA FOR SINGLE CATCHBASINS AND 375mm DIA FOR DOUBLE CATCHBASNS UNLESS OTHERWISE NOTED.
2. FOR GENERAL NOTES PLEASE REFER SHEET NO. 20 OF 50.
3. PAVED FIELD ENTRANCE SHALL BE CONSIST OF: 40mm HL3, 50mm HL8, 150mm GRANULAR 'A' LIMESTONE AND 300mm GRANULAR 'B' TYPE II.
4. GRAVEL FIELD ENTRANCE SHALL CONSIST OF: 150mm GRANULAR 'A' LIMESTONE AND 300mm GRANULAR 'B' TYPE II.

FOR WATERMAIN AND SANITARY SEWER CONSTRUCTION REFER TO WATERMAIN AND SANITARY SEWER DRAWINGS

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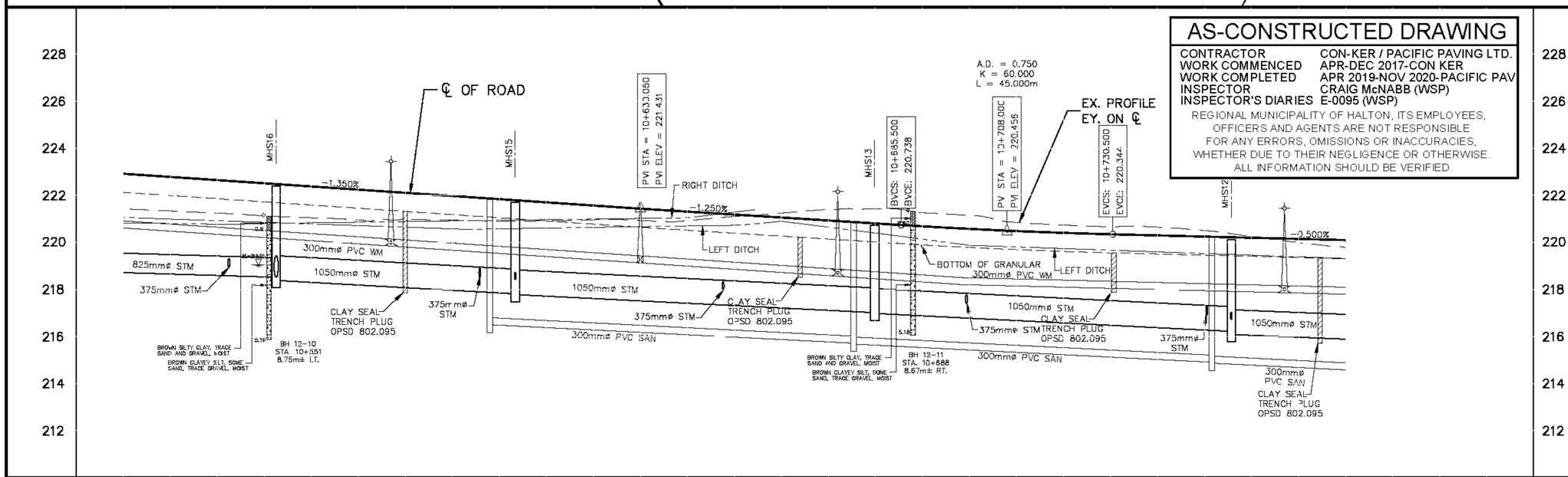

AS-CONSTRUCTED DRAWING

CONTRACTOR	CON-KER / PACIFIC PAVING LTD.
WORK COMMENCED	APR-DEC 2017-CON KER
WORK COMPLETED	APR 2019-NOV 2020-PACIFIC PAV
INSPECTOR	CRAIG McNABB (WSP)
INSPECTOR'S DIARIES	E-0095 (WSP)

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	04/22/21	C.M.	AS CONSTRUCTED (WSP)	
4	02/28/17	A.I.	CH COMMENTS (CLAY SEAL)	
3	07/28/16	A.I.	ISSUED FOR CONSTRUCTION	
2	06/23/16	A.I.	UPDATED LABELS	
1	05/30/16	A.I.	ISSUED FOR TENDER	
№	Date	By	REVISIONS	MANU CAD

Design	A.I.	Ch'kd	B.K.	Date MAY 2016
Drawn	E.B.	Ch'kd		
Scale Horiz. 10m 5m 0 10m; Vert. 2m 1m 0 2m				References
Regional				Field Notes

ACCEPTED FOR CONSTRUCTION OF REGIONAL INFRASTRUCTURE

Reviewed For Compliance With Regional Standards Only.

Director

Manager

Stamp

3 March 2017

wsp

Halton REGION

TITLE

PROPOSED CONSTRUCTION

CONSTRUCTION OF JAMES SNOW PARKWAY

135m E OF FUTURE TREMAINE RD. TO 120m W OF REALIGNED CAMPBELLVILLE STA. 10+520 TO STA. 10+780

IN THE TOWN OF MILTON

Consultant File № 3210150

Regional Drawing №

CONTRACT № R-2387C-16

Drawing № SHEET 22 OF 50

M-12443

℄ ELEVATIONS	221.44 222.916	221.24 222.646	221.04 222.376	220.98 222.106	220.80 221.836	220.96 221.566	220.93 221.306	221.25 221.056	221.42 220.806	221.15 220.574	220.74 220.406	220.65 220.296	220.25 220.196	219.79 220.086

STORM INVERTS (WEST)

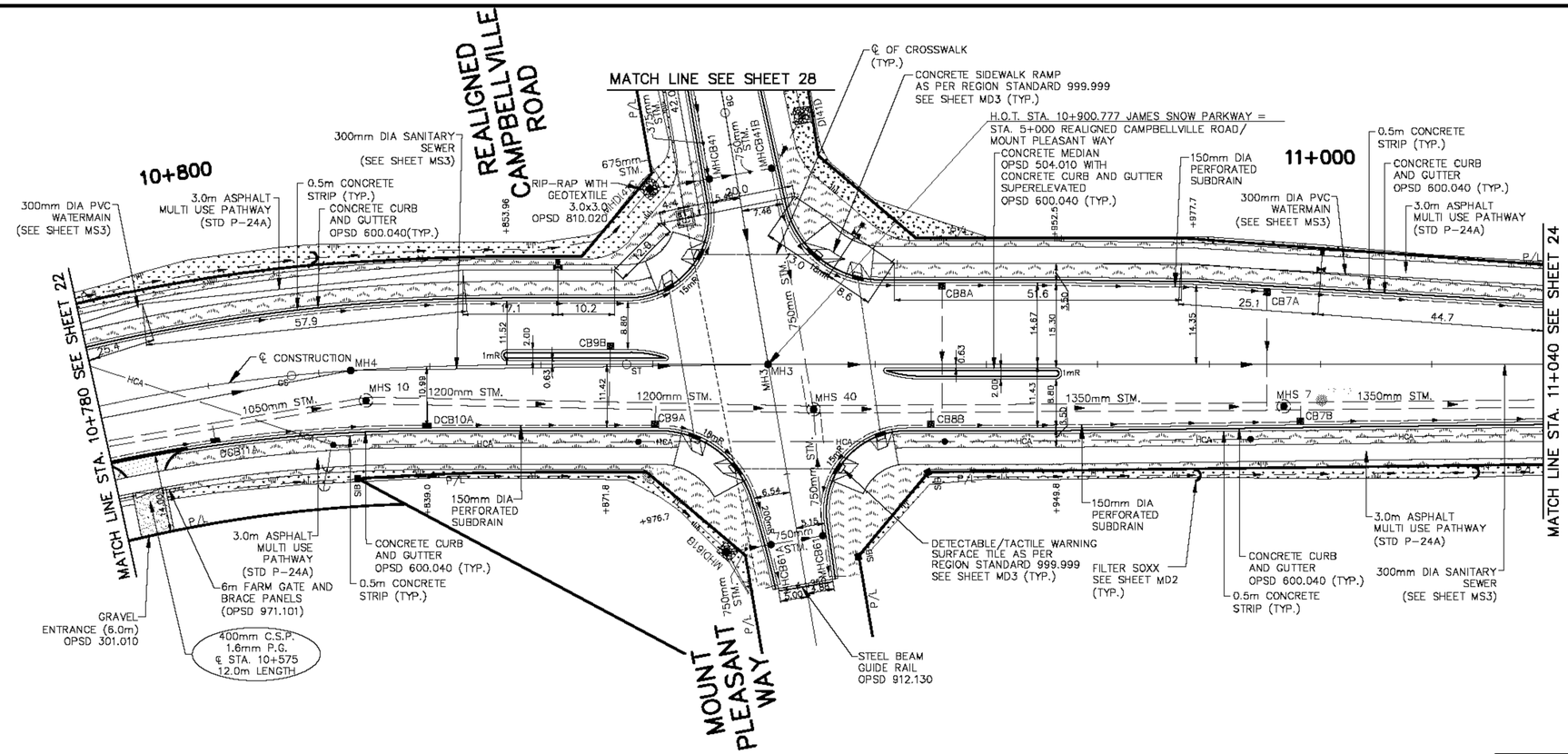
STORM INVERTS (EAST): 825mm DIA. STM CL65D CONC. 101.0m @ 0.88% (W218.187 S218.522 E218.127) — 1050mm DIA. STM CL65D CONC. 49.19m @ 1.12% (W217.576 N218.422 E217.476) — 1050mm DIA. STM CL65D CONC. 75.57m @ 0.85% (W216.830 E216.770) — AS CONSTRUCTED INVERTS — 1050mm DIA. STM CL65D CONC. 74.24m @ 1.02% (W216.016 N216.727 E215.906) — 1050mm DIA. STM CL65D CONC. 70.59m @ 0.73%

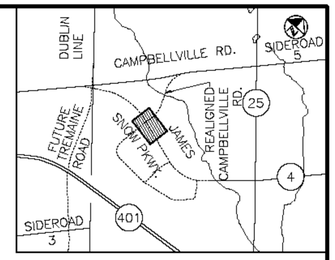
CHAINAGE: 10+520 10+540 10+560 10+580 10+600 10+620 10+640 10+660 10+680 10+700 10+720 10+740 10+760 10+780

R-2387C-16 22 of 50

DRAWING: W:\MISC\2021\16M-01475-01 - JAMES SNOW PARKWAY-AS BUILT\CONTRACT NO. R-2387C-16-AS-BUILT\3210150-400-05-SHEETS 20 TO SHEET 31 NEW CONSTRUCTION-AS-BUILT.DWG
LAYOUT: ABS SHEET 22 OF 50
MODIFIED: 10/06/2021 Time: 06:51:19 PM

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.





STORM SEWER DATA *AS CONSTRUCTED								
MH. #	STATION	℄ CONSTR OFFSET	MH. STD. DWG.	INVERTS INLET	INVERTS OUTLET	FRAME & COVER STD.	TOP OF FRAME ELEV.	REMARKS
MHS10	10+827.87	4.75 RT.	701.013	W. 215.388	E. 215.248	401.010	219.745	
DCB11A	10+799.77	10.97 RT.	705.020	–	N. 217.708	400.082(x2)	219.923	
DCB10A	10+839.10	11.72 RT.	705.020	–	N. 217.506	400.082(x2)	219.711	
CB9A	10+880.46	12.16 RT.	705.010	–	N. 217.344	400.082	219.495	
CB9B	10+872.41	1.89 LT.	705.010	–	S. 217.826	400.082	219.776	
CB8B	10+929.46	12.04 RT.	705.010	–	N. 217.170	400.082	219.320	
CB8A	10+932.05	15.52 LT.	705.010	–	S. 217.354	400.082	219.276	
CB7B	10+997.18	11.34 RT.	705.010	–	N. 216.705	400.082	218.985	
CB7A	10+990.46	14.58 LT.	705.010	–	S. 218.816	400.082	218.916	
MHS7	10+993.72	9.07 RT.	701.013	W. 214.357	E. 214.302	401.010	219.007	
MHS40	10+908.61	7.98 RT.	701.014	W. 214.797 N. 215.206 S. 215.206	E. 214.747	401.010	219.306	

NOTES:

1. ALL LATERALS SHALL BE 300mm DIA FOR SINGLE CATCHBASINS AND 375mm DIA FOR DOUBLE CATCHBASNS UNLESS OTHERWISE NOTED.
2. FOR GENERAL NOTES PLEASE REFER SHEET NO. 20 OF 50.
3. PAVED FIELD ENTRANCE SHALL BE CONSIST OF: 40mm HL3, 50mm HL8, 150mm GRANULAR 'A' LIMESTONE AND 300mm GRANULAR 'B' TYPE II.
4. GRAVEL FIELD ENTRANCE SHALL CONSIST OF: 150mm GRANULAR 'A' LIMESTONE AND 300mm GRANULAR 'B' TYPE II.

JAMES SNOW PARKWAY (REG. RD. 4)

FOR WATERMAIN AND SANITARY SEWER CONSTRUCTION REFER TO WATERMAIN AND SANITARY SEWER DRAWINGS

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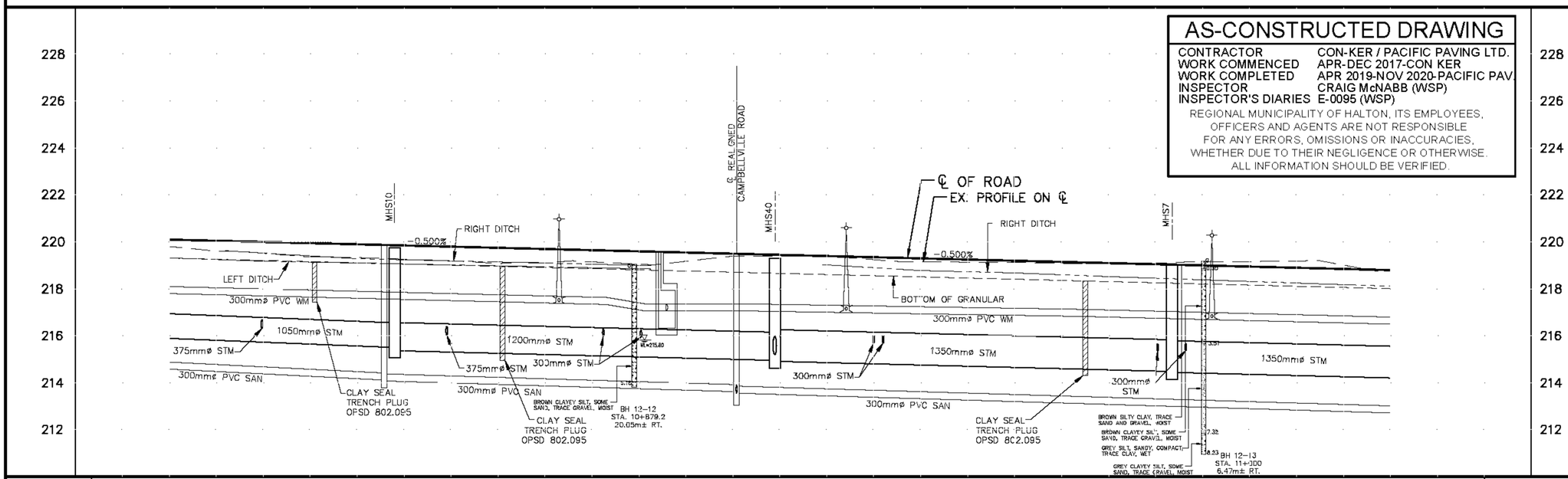


AS-CONSTRUCTED DRAWING

CONTRACTOR	CON-KER / PACIFIC PAVING LTD.
WORK COMMENCED	APR-DEC 2017-CON KER
WORK COMPLETED	APR 2019-NOV 2020-PACIFIC PAV.
INSPECTOR	CRAIG McNABB (WSP)
INSPECTOR'S DIARIES	E-0095 (WSP)

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.

℄ ELEVATIONS	219.79 220.096	219.51 219.996	219.33 219.896	219.18 219.796	219.10 219.696	219.05 219.596	219.39 219.496	219.37 219.396	219.15 219.296	219.12 219.196	219.09 219.096	219.17 218.996	219.18 218.896	218.83 218.796	℄ ELEVATIONS
STORM INVERTS (WEST)															STORM INVERTS (WEST)
STORM INVERTS (EAST)	1050mm DIA. STM CL65D CONC. 70.59m @ 0.73%			W215.388 E215.248	1350mm DIA. STM CL65D CONC. 80.46m @ 0.56%			W214.797 N215.206 S215.206 E214.747	1350mm DIA. STM CL65D CONC. 85.11m @ 0.46% AS CONSTRUCTED INVERTS			W214.357 E214.302	1350mm DIA. STM CL65D CONC. 99.94m @ 0.56%		STORM INVERTS (EAST)
CHAINAGE	10+780	10+800	10+820	10+840	10+860	10+880	10+900	10+920	10+940	10+960	10+980	11+000	11+020	11+040	CHAINAGE

Nº	Date	By	REVISIONS	MANU	CAD
	04/22/21	C.M.	AS CONSTRUCTED (WSP)		
3	02/28/17	A.I.	CH COMMENTS (CLAY SEAL)		
2	07/28/16	A.I.	ISSUED FOR CONSTRUCTION		
1	05/30/16	A.I.	ISSUED FOR TENDER		

Design	A.I.	Ch'kd	B.K.	Date MAY 2016
Drawn	E.B.	Ch'kd		
Scale Horiz. 10m 5m 0 10m; Vert. 2m 1m 0 2m				References
Regional				Field Notes

ACCEPTED FOR CONSTRUCTION OF REGIONAL INFRASTRUCTURE

Reviewed For Compliance With Regional Standards Only.

Director

Manager

Stamp: 3 March 2017

wsp

Halton REGION

TITLE

PROPOSED CONSTRUCTION

CONSTRUCTION OF JAMES SNOW PARKWAY
120m W OF REALIGNED CAMPBELLVILLE RD. TO 140m E OF REALIGNED CAMPBELLVILLE RD.
STA. 10+780 TO STA. 11+040
IN THE TOWN OF MILTON

Consultant File Nº 3210150

Regional Drawing Nº

CONTRACT Nº R-2387C-16

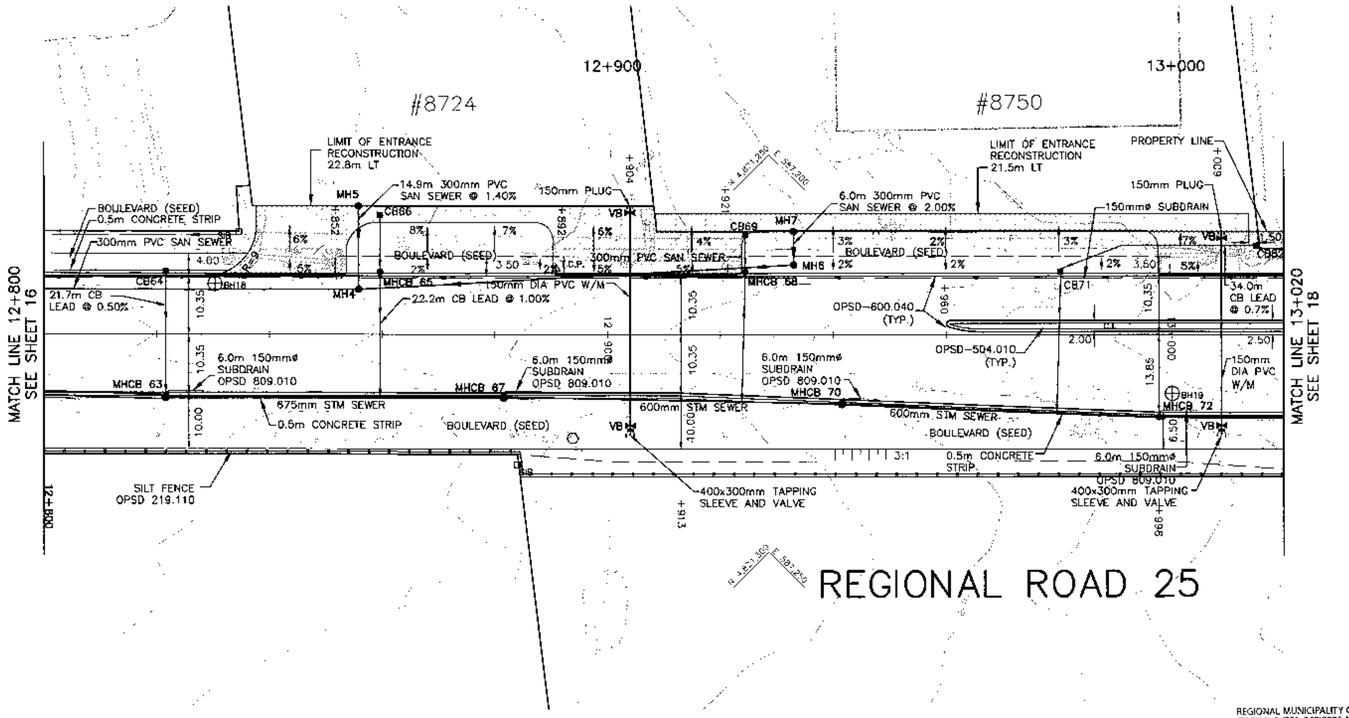
Drawing Nº SHEET 23 OF 50

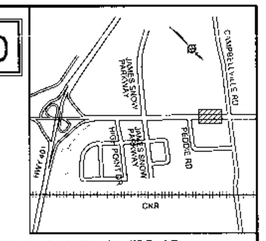
M-12445

R-2387C-16 23 of 50

DRAWING: W:\MISC\2021\16M-01479-01 - JAMES SNOW PARKWAY-AS BUILT\CONTRACT NO. R-2387C-16-AS-BUILT\3210150-400-05-SHEETS 20 TO SHEET 31 NEW CONSTRUCTION-AS-BUILT.DWG
LAYOUT: ABS SHEET 23 OF 50
MODIFIED: 10/06/2021 Time: 06:51:24 PM

AS CONSTRUCTED





NOTES:
1. ASSUMED NORTH FOR INVERTS → N
2. ℄ OFFSET OF MANHOLES AND SIDE INLET CATCHBASINS IS TO CENTRE OF COVER
3. ALL CATCHBASIN LEADS ARE 300mmø
4. ALL CATCHBASIN LEADS @ 2.00% SLOPE UNLESS OTHERWISE NOTED
5. CONTRACTOR SHALL VERIFY 3.0m HORIZONTAL CLEARANCE AND 0.5m VERTICAL CLEARANCE BETWEEN ALL STORM/SANITARY SEWERS AND WATER MAIN. CLEARANCE TO BE MEASURED TO OUTSIDE OF PIPE WALL.

STORM SEWER DATA								
MH. #	STATION	℄ OFFSET	MH. STD. DWG.	INVERTS INLET	INVERTS OUTLET	FRAME & COVER STD.	TOP OF COVER ELEV.	REMARKS
MHCB63	12+821.58	11.12 RT	701.011	N218.257	S218.180	400.082	220.925	
CB64	12+821.58	11.12 LT	705.010		E219.295	400.082	220.945	
MHCB65	12+859.58	11.12 LT	701.010	W219.163	E219.183	400.082	221.487	
CB66	12+859.58	21.26 LT	705.010		E219.355	400.020	220.855	
MHCB67	12+881.58	11.12 RT	701.011	N218.932	S218.857	400.082	221.808	
MHCB68	12+924.44	11.12 LT	701.010	W220.878	E220.878	400.082	222.536	
CB69	12+924.44	17.78 LT	705.010		E221.002	400.020	222.502	
MHCB70	12+941.61	12.32 RT	701.010	N220.162	S220.132	400.082	222.909	
CB71	12+980.38	11.12 LT	705.010	NW222.112	E222.101	400.082	223.743	
MHCB72	12+997.81	14.62 RT	701.011	N221.316	S221.286	400.082	224.080	
CB82	13+015.00	15.79 LT	705.010		S222.350	400.020	223.400	

SANITARY SEWER DATA								
MH. #	STATION	℄ OFFSET	MH. STD. DWG.	INVERTS INLET	INVERTS OUTLET	FRAME & COVER STD.	TOP OF COVER ELEV.	REMARKS
MH4	12+855.77	8.00 LT	701.010	N217.359 W217.389	S217.305	401.010	221.417	
MH5	12+855.77	22.86 LT	701.010		E217.599	401.010	220.913	
MH6	12+933.02	12.36 LT	701.010	W218.963	S218.903	401.010	222.770	
MH7	12+933.02	18.29 LT	701.010		E219.083	401.010	222.580	

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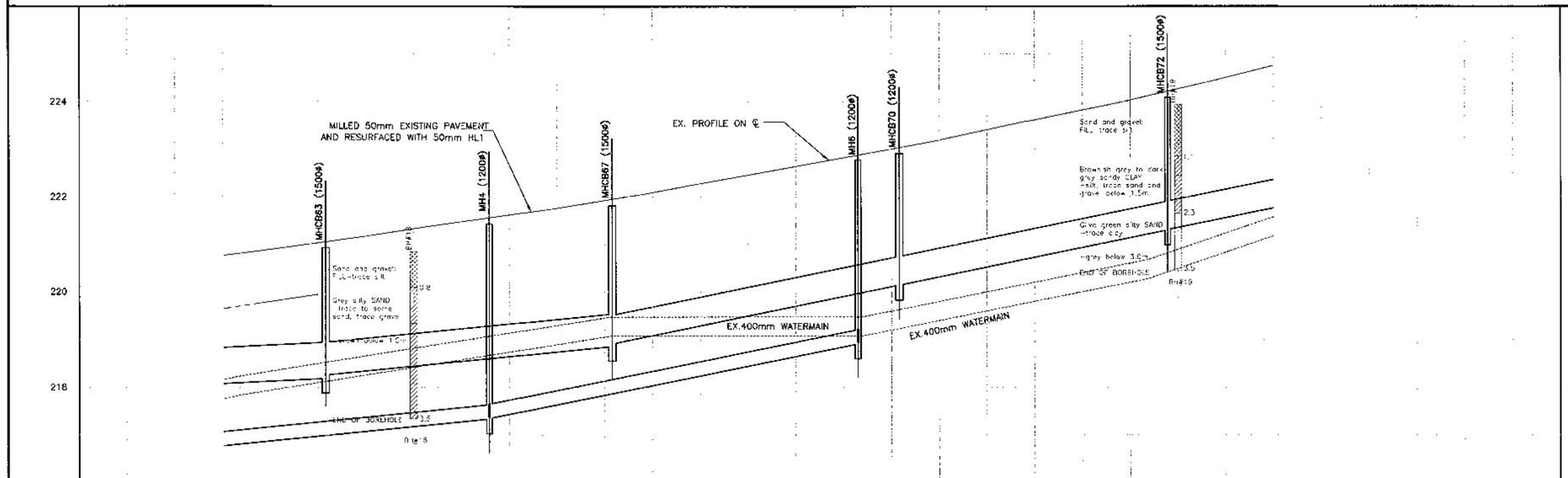


℄ ELEVATIONS	220.76		221.02		221.32		221.61		221.92		222.27		222.63		223.00		223.41		223.82		224.26		224.75	℄ ELEVATIONS
STM SEWER INVERTS		60.0m–750mmø CONC. STM (CL.65D) @ 0.50% CLASS 'B' BEDDING	S218.180 N218.257	60.0m–675mmø CONC. STM (CL.65D)@ 1.00% CLASS 'B' BEDDING		S219.857 N218.932	60.0m–600mmø CONC. STM (CL.65D)@ 2.00% CLASS 'B' BEDDING		S220.132 N220.162	56.2m–600mmø CONC. STM (CL.65D)@ 2.00% CLASS 'B' BEDDING		S221.286 N221.316	67.2m–600mmø CONC. STM (CL.65D)@ 2.00% CLASS 'B' BEDDING											STM SEWER INVERTS
SAN SEWER INVERTS		104.7m–300mmø PVC SAN @ 1.00%			S217.329 N217.359 W217.389	77.2m–300mmø PVC SAN @ 2.00%			S218.903 W218.963															SAN SEWER INVERTS
CHAINAGE	12+800		12+821.58	12+840		12+855.77		12+880	12+881.58		12+920			12+933.02	12+941.61		12+960			12+997.81	13+000			CHAINAGE

NO	Date	By	REVISIONS	MANU CAD
5.	15/04/14	G.M.	AS-CONSTRUCTED	
4.	11/14/12	G.M.	SANITARY SEWER REVISIONS	
3.	05/09/12	G.M.	STORM SEWER REVISIONS	
2.	03/15/12	G.M.	ISSUED FOR CONSTRUCTION	
1.	02/21/12	G.M.	ISSUED FOR TENDER	

Design	N.V.	Ch'kd	G.M.	Date
Drawn	N.V.	Ch'kd	T.S.	February 8, 2012

Scale Horiz. 10 5 0 10 Vert. 1.0 0.5 0 1.0

References

Regional

ACCEPTED FOR CONSTRUCTION OF REGIONAL INFRASTRUCTURE

Reviewed For Compliance With Regional Standards Only.

Director

Manager

Field Notes
REGION BOOK

Stamp

Stantec
Stantec Consulting Ltd.
300-675 Cochrane Drive West Tower
Markham ON Canada
L3R 0B8
Tel. 905 948 9177
Fax. 905 474 9889
www.stantec.com

Halton REGION

TITLE
ROAD CONSTRUCTION
REGIONAL ROAD 25 WIDENING
FROM 123m N. OF PEDDIE ROAD TO 74m S. OF CAMPBELLVILLE ROAD
STA 12+800 TO STA 13+020
TOWN OF MILTON

Consultant File NO 160210504

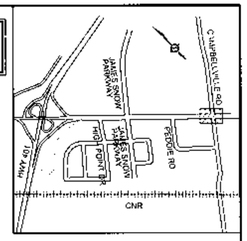
M-08867

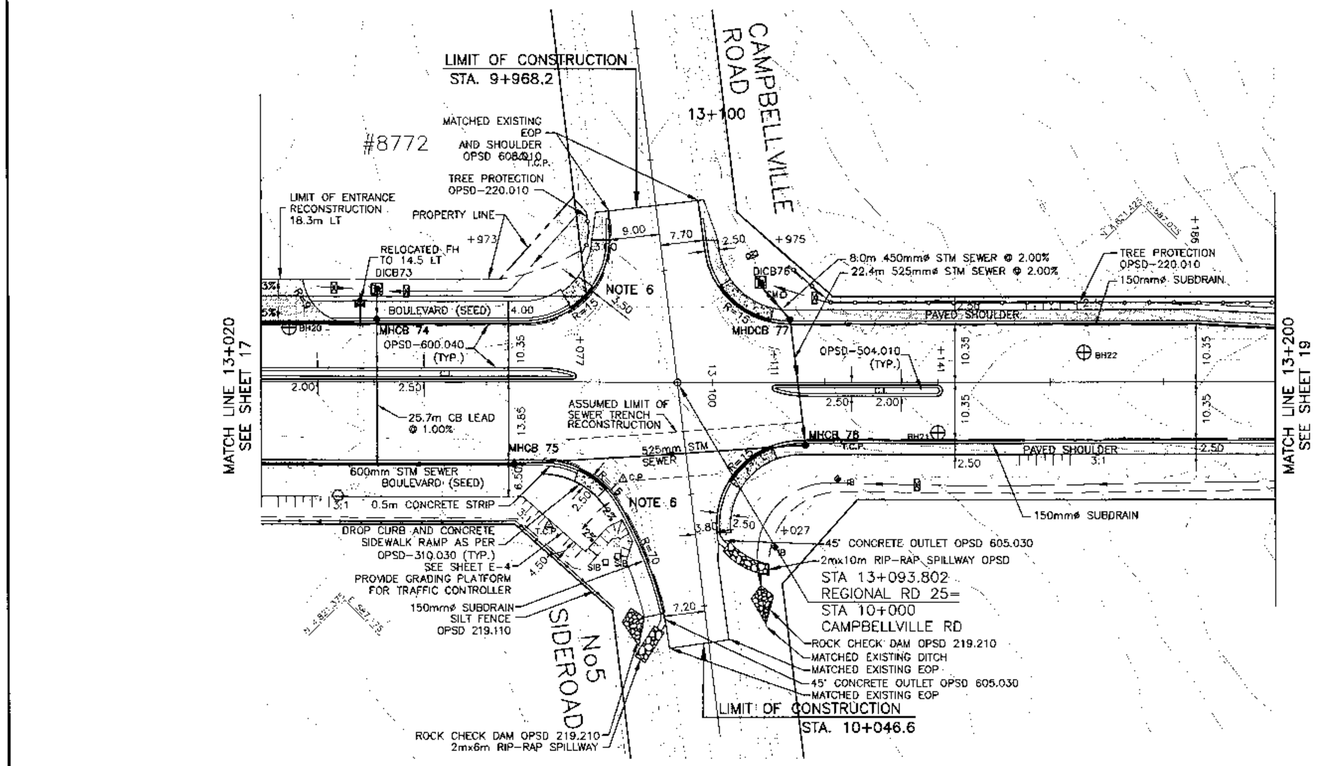
CONTRACT NO R-2312B-12

Drawing NO SHEET 17 OF 35

R-2312B-12 17 of 35

AS CONSTRUCTED

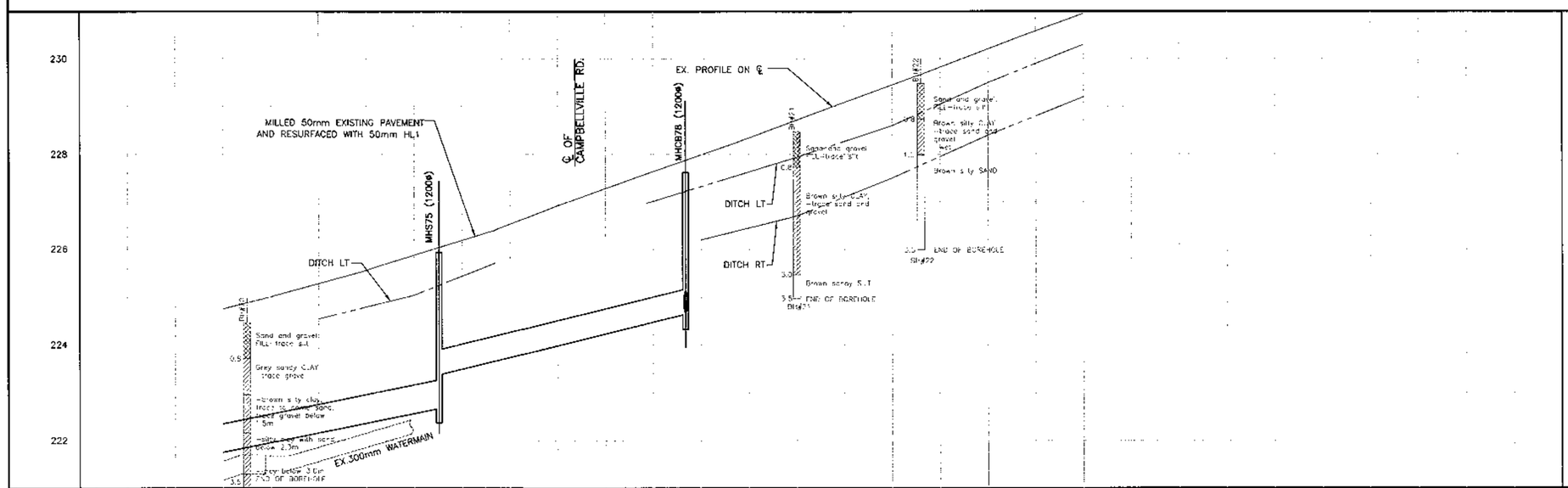




STORM SEWER DATA									
MH. #	STATION	℄ OFFSET	MH. STD. DWG.	INVERTS INLET	INVERTS OUTLET	FRAME & COVER STD.	TOP OF COVER ELEV.	REMARKS
DICB73	13+036.98	16.52 LT	705.030		NE223.043	403.010	224.543	GRATE SLOPE 2:1
MHCB74	13+040.51	11.12 LT	701.010	W222.947	E222.947	400.082	225.203	
MHCB75	13+064.78	14.62 RT	701.010	N223.410	S222.760	401.010	225.958	
DICB76	13+108.63	17.78 LT	705.030		NE225.179	403.010	226.970	GRATE SLOPE 3:1
MHDCB77	13+114.65	11.12 LT	705.020	W225.019	E224.944	400.082	227.682	
MHBCB78	13+116.76	11.12 RT	701.010	W224.496	S224.446	400.082	227.704	

NOTES:
1. ASSUMED NORTH FOR INVERTS ——→ N
2. ℄ OFFSET OF MANHOLES AND SIDE INLET CATCHBASINS IS TO CENTRE OF COVER
3. ALL CATCHBASIN LEADS ARE 300mmø
4. ALL CATCHBASIN LEADS @ 2.00% SLOPE UNLESS OTHERWISE NOTED
5. CONTRACTOR SHALL VERIFY 3.0m HORIZONTAL CLEARANCE AND 0.5m VERTICAL CLEARANCE BETWEEN ALL STORM/SANITARY SEWERS AND WATER MAIN. CLEARANCE TO BE MEASURED TO OUTSIDE OF PIPE WALL.
6. No5 SIDEROAD/CAMPBELLVILLE ROAD PAVEMENT WIDENING: EXCAVATE FROM EDGE OF PAVEMENT TO BACK OF PROPOSED CURB AND GUTTER, CONSTRUCT WIDENED PAVEMENT STRUCTURE WITH SAME STRUCTURE AS REGIONAL ROAD 25

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.



℄ ELEVATIONS	224.26	224.75	225.28	225.88	226.53	227.28	227.99	228.72	229.45	230.20	230.95		℄ ELEVATIONS
	67.2m–600mm ø CONC. STM (CL.65D)@ 2.00% CLASS 'B' BEDDING			S222.760 N223.410	51.6m–525mm ø CONC. STM (CL.65D) @ 2.50% CLASS 'B' BEDDING			S224.446					STM SEWER INVERTS
													SAN SEWER INVERTS
CHAINAGE		13+040		13+064.78	13+080		13+116.76	13+120		13+160		13+200	CHAINAGE

NO	Date	By	REVISIONS	MANU CAD
5.	15/04/14	G.M.	AS-CONSTRUCTED	
4.	11/14/12	G.M.	SANITARY SEWER REVISIONS	
3.	05/09/12	G.M.	STORM SEWER REVISIONS	
2.	03/15/12	G.M.	ISSUED FOR CONSTRUCTION	
1.	02/21/12	G.M.	ISSUED FOR TENDER	

Design	N.V.	Ch'kd	G.M.	Date
Drawn	N.V.	Ch'kd	T.S.	February 8, 2012

Scale Horiz. 10 5 0 10 Vert. 1.0 0.5 0 1.0

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Field Notes: REGION BOOK

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300-675 Cochrane Drive West Tower
Markham, ON, Canada
L3R 0B8
Tel. 905 944 7777
Fax. 905 474 9889
www.stantec.com

Halton REGION

TITLE
ROAD CONSTRUCTION
REGIONAL ROAD 25 WIDENING
FROM 74m S. OF CAMPBELLVILLE ROAD TO 106m N. OF CAMPBELLVILLE ROAD
STA 13+020 TO STA 13+200
TOWN OF MILTON

Consultant File NO 160210504

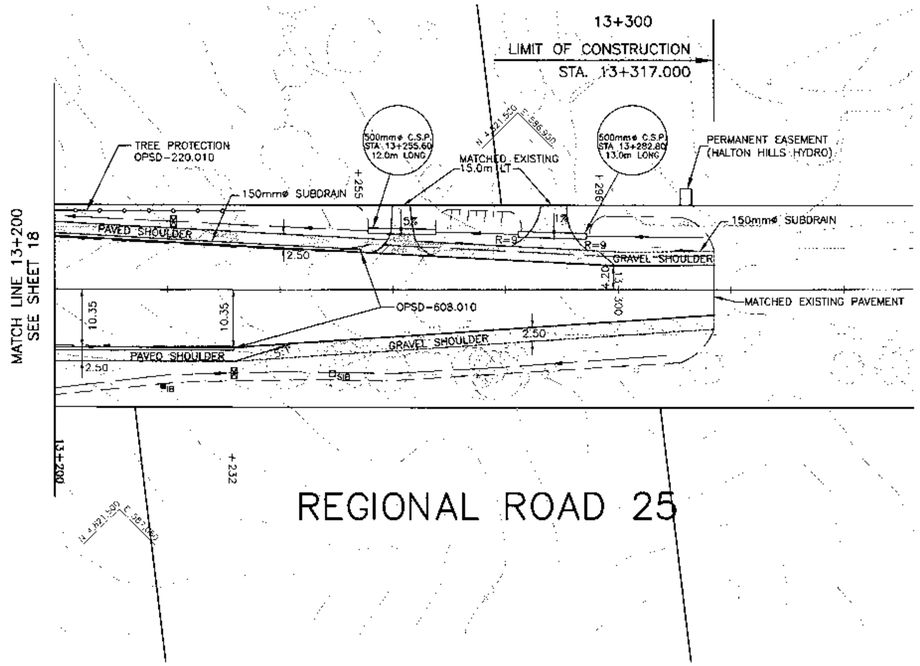
M-08868

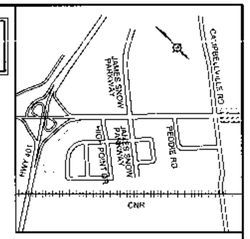
CONTRACT NO R-2312B-12

Drawing NO SHEET 18 OF 35

R-2312B-12 18 of 35

AS CONSTRUCTED





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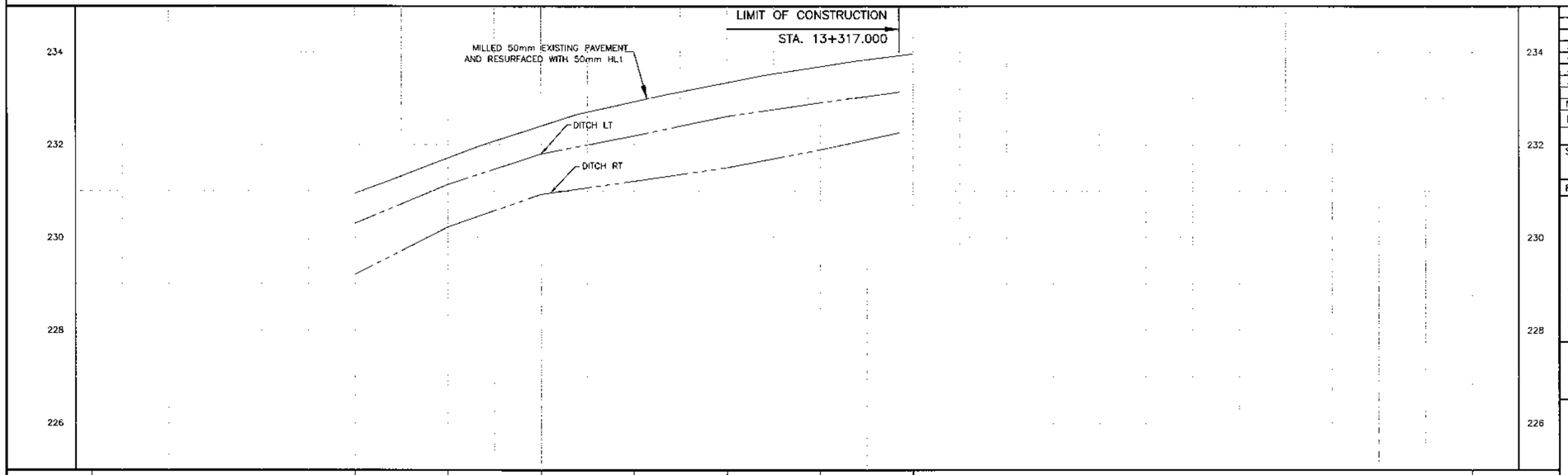

℄ ELEVATIONS	230.85	231.71	232.40	232.92	233.34	233.68	233.88	℄ ELEVATIONS
								STM SEWER INVERTS
								SAN SEWER INVERTS
CHAINAGE	13+200		13+240		13+280		13+320	CHAINAGE

NO	Date	By	REVISIONS		MANU	CAD
5.	15/04/14	G.M.	AS-CONSTRUCTED			
4.	11/14/12	G.M.	SANITARY SEWER REVISIONS			
3.	05/09/12	G.M.	STORM SEWER REVISIONS			
2.	03/15/12	G.M.	ISSUED FOR CONSTRUCTION			
1.	02/21/12	G.M.	ISSUED FOR TENDER			

Design	N.V.	Ch'kd	G.M.	Date
Drawn	N.V.	Ch'kd	T.S.	February 8, 2012

Scale Horiz. 10 5 0 10 Vert. 1.0 0.5 0 1.0

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www.stantec.com

Halton REGION

TITLE
ROAD CONSTRUCTION
REGIONAL ROAD 25 WIDENING
FROM 106m N. OF CAMPBELLVILLE ROAD TO
223m N. OF CAMPBELLVILLE ROAD
STA 13+200 TO STA 13+317
TOWN OF MILTON

Consultant File Nº 160210504

M-08869

CONTRACT Nº R-2312B-12

Drawing Nº SHEET 19 OF 35

R-2312B-12 19 of 35

Drawing: Z:\160210504\TECH\160210504 REGIONAL ROAD 25\AS-BUILT\DRAWINGS\S-PLAN_CC\S-PLAN-12-71_XC.DWG
Layout Tab: P19
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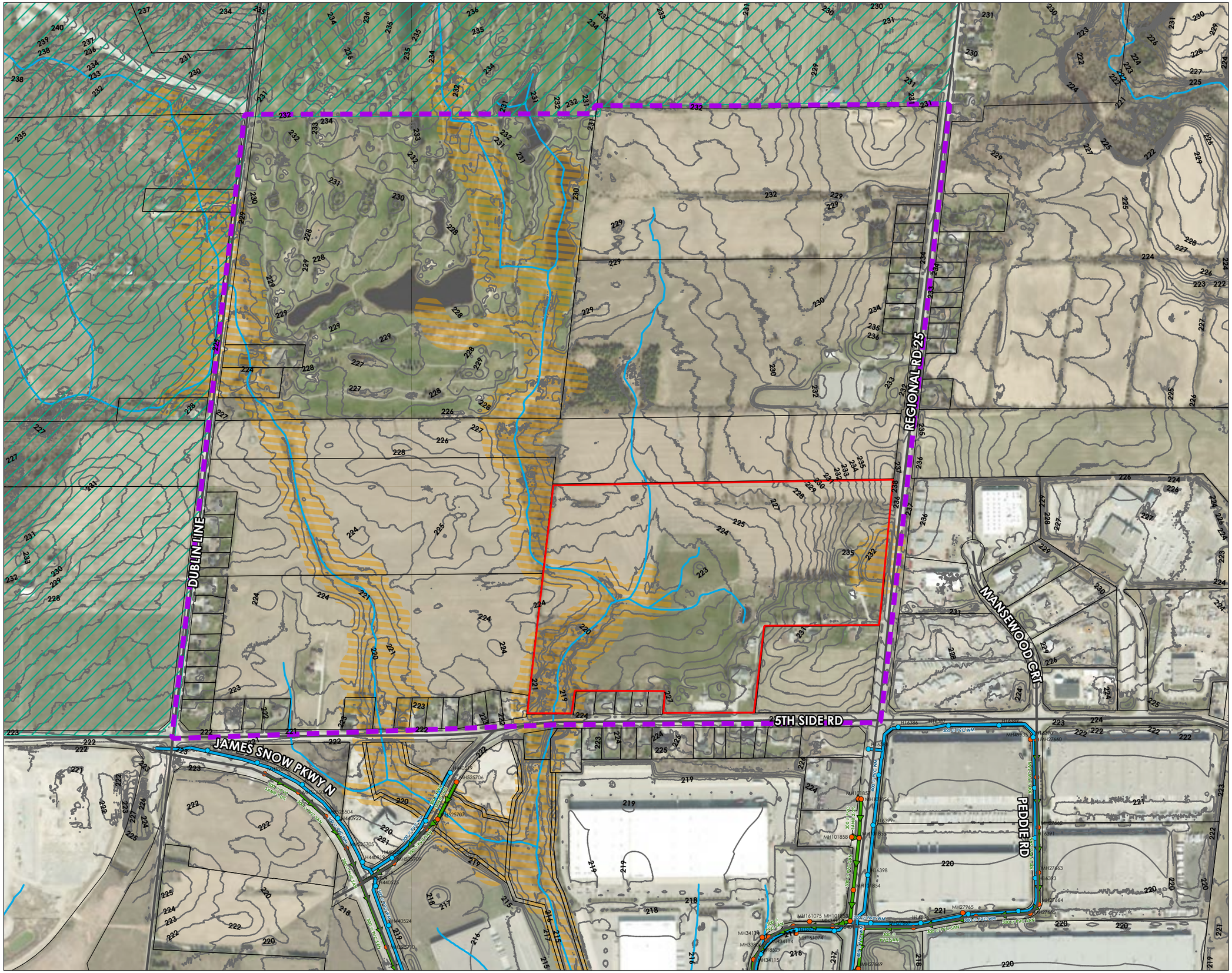
FIGURES



LEGEND

- Site Area #1
- Study Area
- Approximate Conservation Halton Regulation Area
- Ex. Hydrant
- Ex. Sanitary Manhole
- Ex. Sanitary Sewer
- Ex. Watermain
- 1m Contour
- Road
- Watercourse
- Niagara Escarpment Plan Boundary
- Parcel Boundary

0 100 200 400 Metres

Source: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Peel Region, Town of Oakville, Vantor, Esri, HERE, Garmin, USGS, EPA, NPS, NRCan

9094 REGIONAL ROAD 25, HALTON HILLS

FIGURE 1:
AREA SERVICING PLAN STUDY AREA

CROZIER

GROUND = 226.73m
INVERT = 222.31m

PR. 245m - 300 Ø
SANI @ 0.5%

Residential Area 1
Design Flow = 2.88 L/s

T/G 225.91
INV 221.08

PR. 230m - 300 Ø
SANI @ 0.5%

T/G 226.71
INV 219.93

PR. 230m - 300 Ø
SANI @ 0.5%

Residential Area 2
Design Flow = 7.05 L/s

T/G 225.72
INV 218.98

PR. 325m - 300 Ø
SANI @ 0.5%

T/G 223.76
INV 217.35

PR. 180m - 300 Ø
SANI @ 0.5%

T/G 223.89
INV 217.12

PR. 180m - 300 Ø
SANI @ 0.5%

CONNECT INTO EX 300mm
DIA. SANITARY SEWER
INVERT = 216.22m

PR. 285m - 300 Ø
SANI @ 0.5%

T/G 221.91
INV 218.78

Employment Parcel 1
Design Flow = 69.53 L/s

Employment Parcel 2
Design Flow = 28.77 L/s

Employment Parcel 3
Design Flow = 30.80 L/s

Employment Parcel 4
Design Flow = 37.20 L/s

Employment Parcel 5
Design Flow = 37.97 L/s

HYDRO CORRIDOR

9094 Regional Road 25
Design Flow = 41.51 L/s

T/G 227.81
INV 221.10

Employment Parcel 6
Design Flow = 8.13 L/s

PR. 280m - 300 Ø
SANI @ 0.5%

Residential Area 4

T/G 231.60
INV 225.06

PR. 185m - 300 Ø
SANI @ 0.5%

T/G 233.25
INV 224.13

Residential Area 3
Design Flow = 3.05 L/s

PR. 195m - 300 Ø
SANI @ 0.5%

T/G 234.13
INV 223.18

PR. 585m - 300 Ø
SANI @ 0.5%

T/G 230.14
INV 220.25

PR. 110m - 300 Ø
SANI @ 0.5%

T/G 226.73
INV 219.70

PR. 160m - 300Ø
SANI @ 0.5%

CONNECT INTO EX 300mm
DIA. SANITARY SEWER
INVERT = 218.90m

DUBLIN LINE
JAMES SNOW PKWY N
5 SIDE ROAD
REGIONAL RD 25
MANSEWOOD CRT
PEDDIE RD

LEGEND

- Site Area #1
- Study Area
- Approximate Conservation Halton Regulation Area
- Hydro Corridor
- Residential
- Residential (existing sanitary infrastructure to remain)
- 1m Contour
- Watercourse
- Niagara Escarpment Plan Boundary
- Parcel Boundary
- Ex. Sanitary Sewer
- Proposed Sanitary Sewer
- Proposed Node
- Sanitary Outlet Location

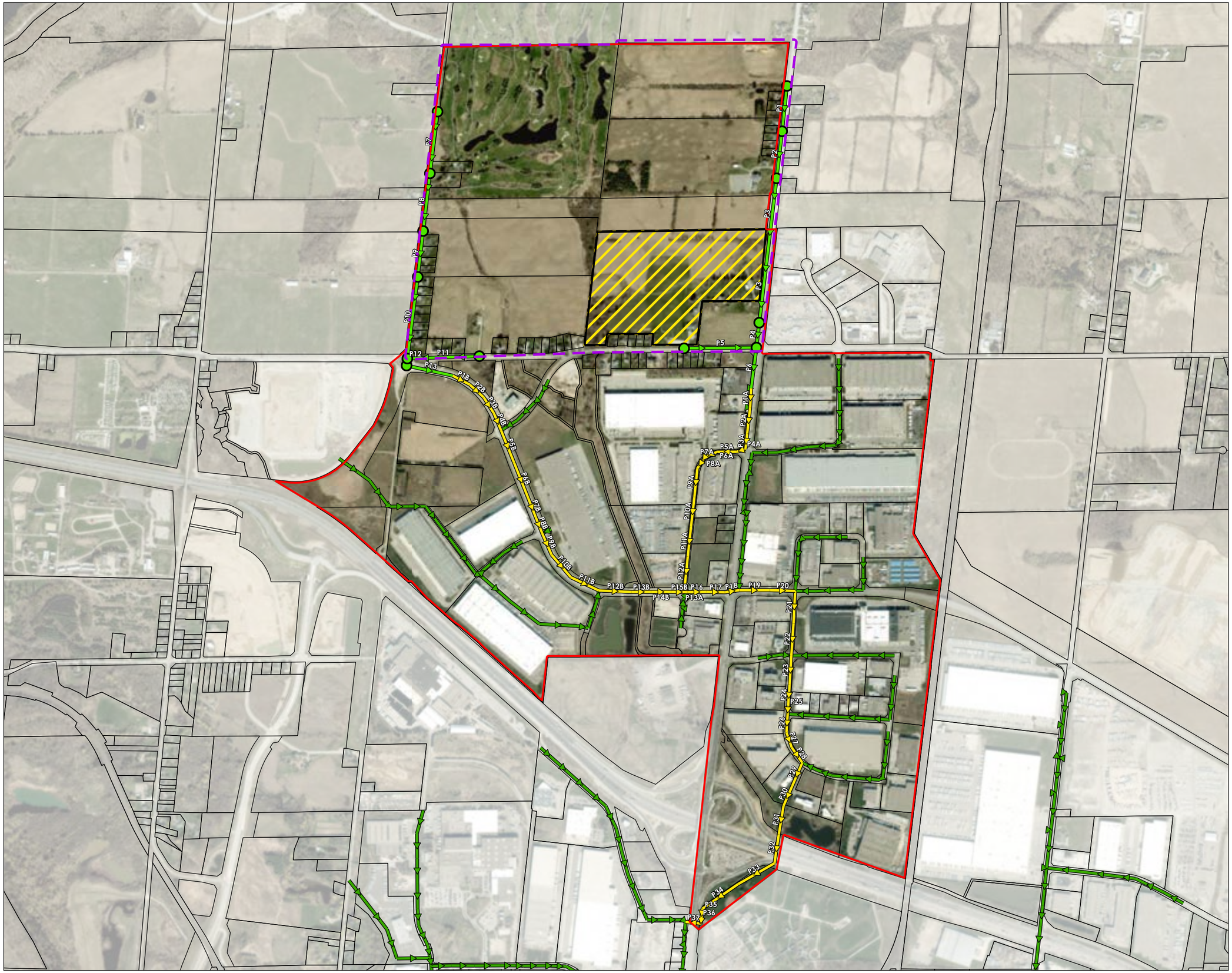
0 100 200 400 Metres

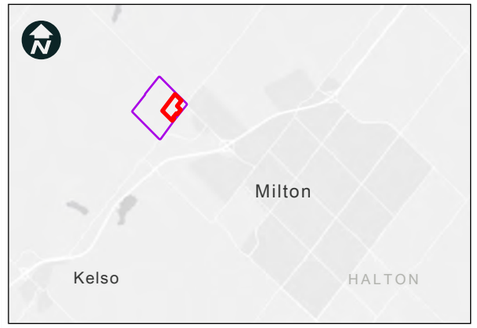
Source: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Peel Region, Town of Oakville, Vantor, Esri, HERE, Garmin, USGS, EPA, NPS, NRCan

9094 REGIONAL ROAD 25, HALTON HILLS

FIGURE 2:
CONCEPTUAL SANITARY SERVICING PLAN

CROZIER





LEGEND

- Sanitary Sewershed
- Study Area
- Site Area #1
- Parcel Boundary
- Analyzed Sewers
- Existing Sanitary Sewer
- Proposed Sanitary Sewer
- Proposed Node

0 200 400 800 Metres

Source: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Peel Region, Town of Oakville, Vantor, Esri, HERE, Garmin, USGS, EPA, NPS, NRCan

9094 REGIONAL ROAD 25, HALTON HILLS

FIGURE 3:
SANITARY SEWERSHED MAP

CROZIER

Employment Parcel 1
Peak Hour Design Flow = 29.24 L/s

Employment Parcel 2
Peak Hour Design Flow = 11.08 L/s

Employment Parcel 3
Peak Hour Design Flow = 11.93 L/s

Employment Parcel 4
Peak Hour Design Flow = 14.65 L/s

Employment Parcel 5
Peak Hour Design Flow = 14.99 L/s

Employment Parcel 6
Peak Hour Design Flow = 2.88 L/s

Residential Area 1
Design Flow = 1.72 L/s

Residential Area 2
Design Flow = 4.35 L/s

Residential Area 3
Design Flow = 1.83 L/s

Residential Area 4

9094 Regional Road 25
Peak Hour Design Flow = 14.80 L/s

HYDRO CORRIDOR

PROPOSED 1,050 m - 300mm WATERMAIN ALONG DUBLIN LINE

PROPOSED 1,085 m - 300mm WATERMAIN ALONG REGIONAL ROAD 25

PROPOSED 325 m - 300mm WATERMAIN ALONG 5 SIDE ROAD

PROPOSED 915 m - 300mm WATERMAIN ALONG 5 SIDE ROAD

DUBLIN LINE

REGIONAL RD 25

5 SIDE ROAD

JAMES SNOW PKWY N

MANSEWOOD CRT

PEDDIE RD

LEGEND

- Site Area #1
- Study Area
- Approximate Conservation Halton Regulation Area
- Hydro Corridor
- Residential
- Residential (existing water infrastructure to remain)
- Ex. Hydrant
- Ex. Watermain
- 1m Contour
- Watercourse
- Niagara Escarpment Plan Boundary
- Parcel Boundary
- Proposed Watermain
- Demand Node
- Water Outlet Location

0 100 200 400 Metres

Source: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Peel Region, Town of Oakville, Vantor, Esri, HERE, Garmin, USGS, EPA, NPS, NRCan

9094 REGIONAL ROAD 25, HALTON HILLS

FIGURE 4:
CONCEPTUAL WATER SERVICING PLAN

CROZIER