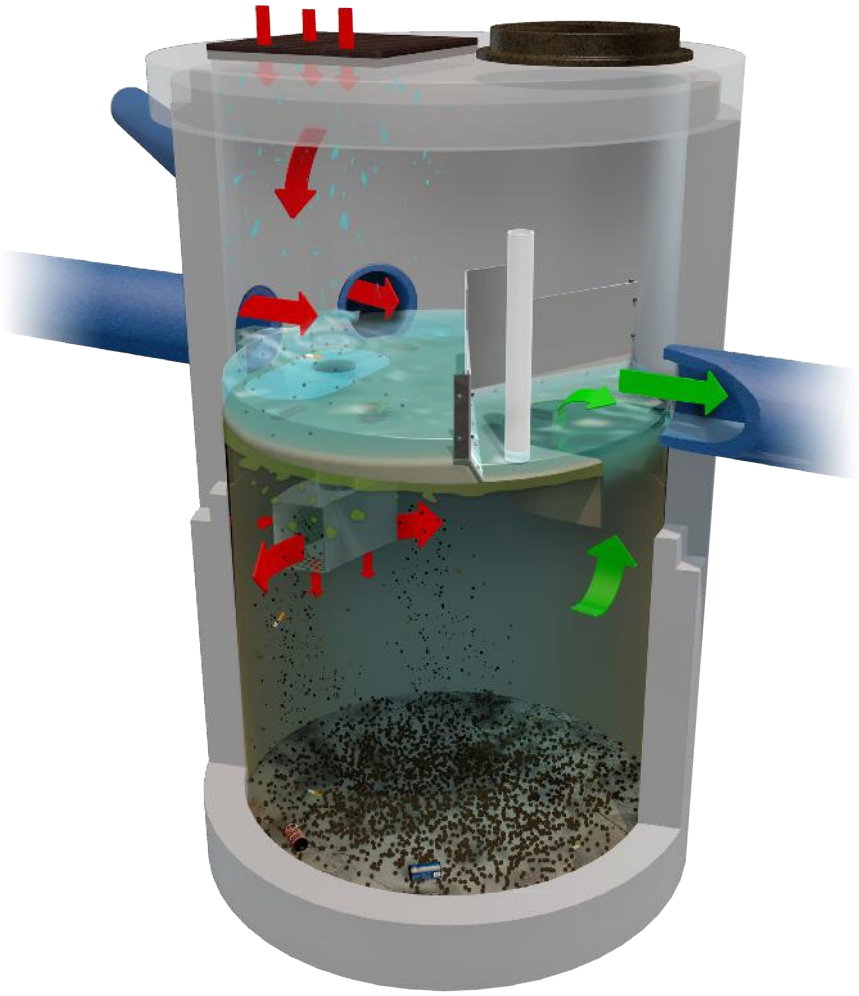
Stormceptor® EF

Owner's Manual



imbrium®

STORMCEPTOR® EF IS PATENT-PENDING.

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OVERVIEW

The **Stormceptor® EF** is a continuation and evolution of the most globally recognized oil-grit separator (OGS) stormwater treatment technology - ***Stormceptor®***. Also known as a hydrodynamic separator, the enhanced flow Stormceptor EF is a high performing oil-grit separator that effectively removes a wide variety of pollutants from stormwater and snowmelt runoff at higher flow rates as compared to the original Stormceptor. Stormceptor EF captures and retains sediment (TSS), free oils, gross pollutants and other pollutants that attach to particles, such as nutrients and metals. Stormceptor EF's patent-pending treatment and scour prevention technology and internal bypass ensures sediment is retained during all rainfall events..

Stormceptor EF offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe, multiple inlet pipes, and/or from the surface through an inlet grate. Stormceptor EF can also serve as a junction structure, accommodate a 90-degree inlet to outlet bend angle, and be modified to ensure performance in submerged conditions. With its scour prevention technology and internal bypass, Stormceptor EF can be installed online, eliminating the need for costly additional bypass structures.

OPERATION

- Stormwater enters the Stormceptor upper chamber through the inlet pipe(s) or a surface inlet grate. A specially designed insert reduces the influent velocity by creating a pond upstream of the insert's weir. Sediment particles immediately begin to settle. Swirling flow sweeps water, sediment, and floatables across the sloped surface of the insert to the inlet opening of the drop pipe, where a strong vortex draws water, sediment, oil, and debris down the drop pipe cone.
- Influent exits the cone into the drop pipe duct. The duct has two large rectangular outlet openings as well as perforations in the backside and floor of the duct. Influent is diffused through these various opening in multiple directions and at low velocity into the lower chamber.
- Free oils and floatables rise up and are trapped beneath the insert, while sediment settles to the sump. Pollutants are retained for later removal during maintenance cleaning.
- Treated effluent enters the outlet riser, moves upward, and discharges to the top side of the insert downstream of the weir, where it flows out the outlet pipe.
- During intense storm events with very high influent flow rates, the pond height on the upstream side of the weir may exceed the height of the weir, and the excess flow passes over the top of the weir to the downstream side of the insert, and exits through the outlet pipe. This internal bypass feature allows for online installation, avoiding the cost of additional bypass structures. During bypass, the pond separates sediment from all incoming flows, while full treatment in the lower chamber continues at the maximum flow rate.
- Stormceptor EF's patent-pending enhanced flow and scour prevention technology ensures pollutants are captured and retained, allowing excess flows to bypass during infrequent, high intensity storms.

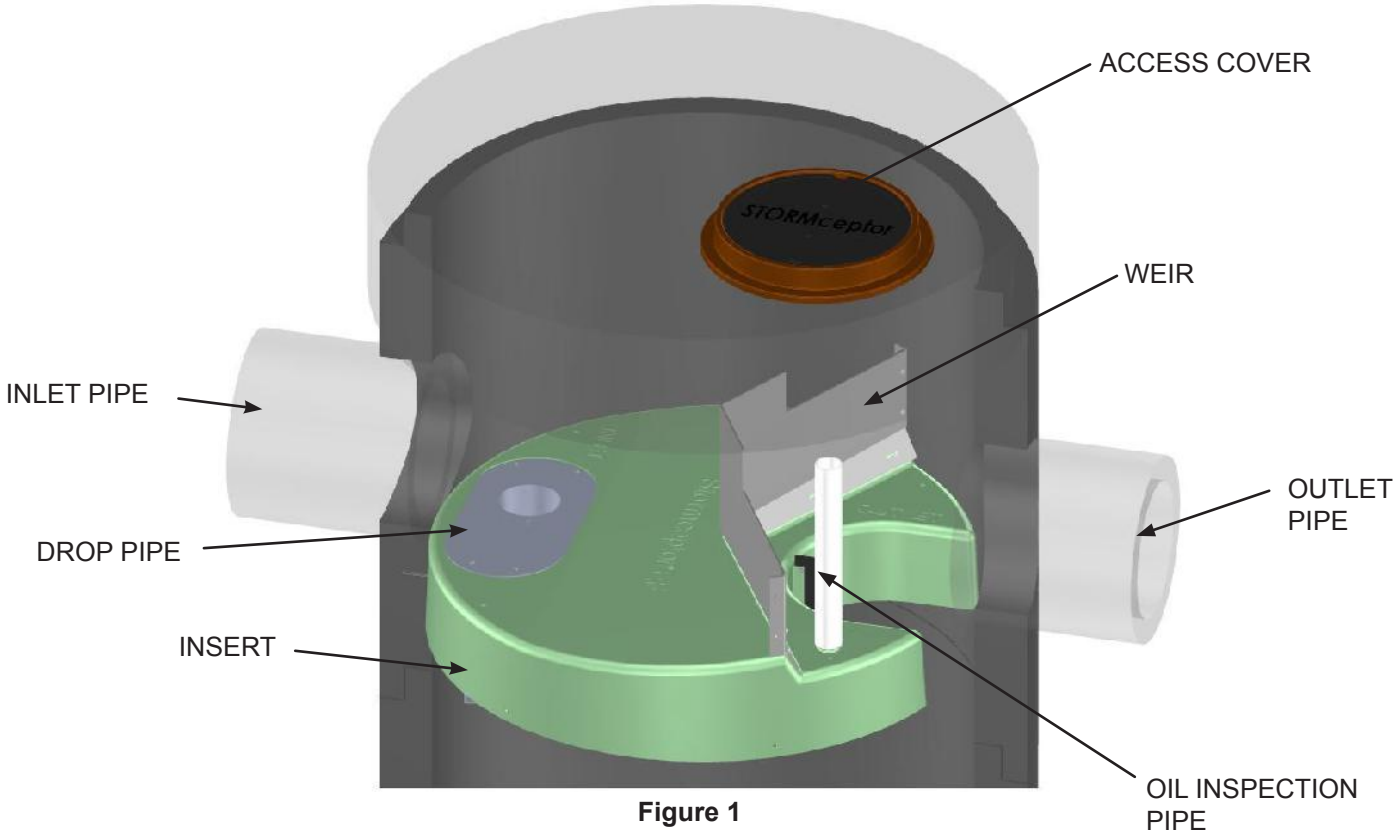


Figure 1

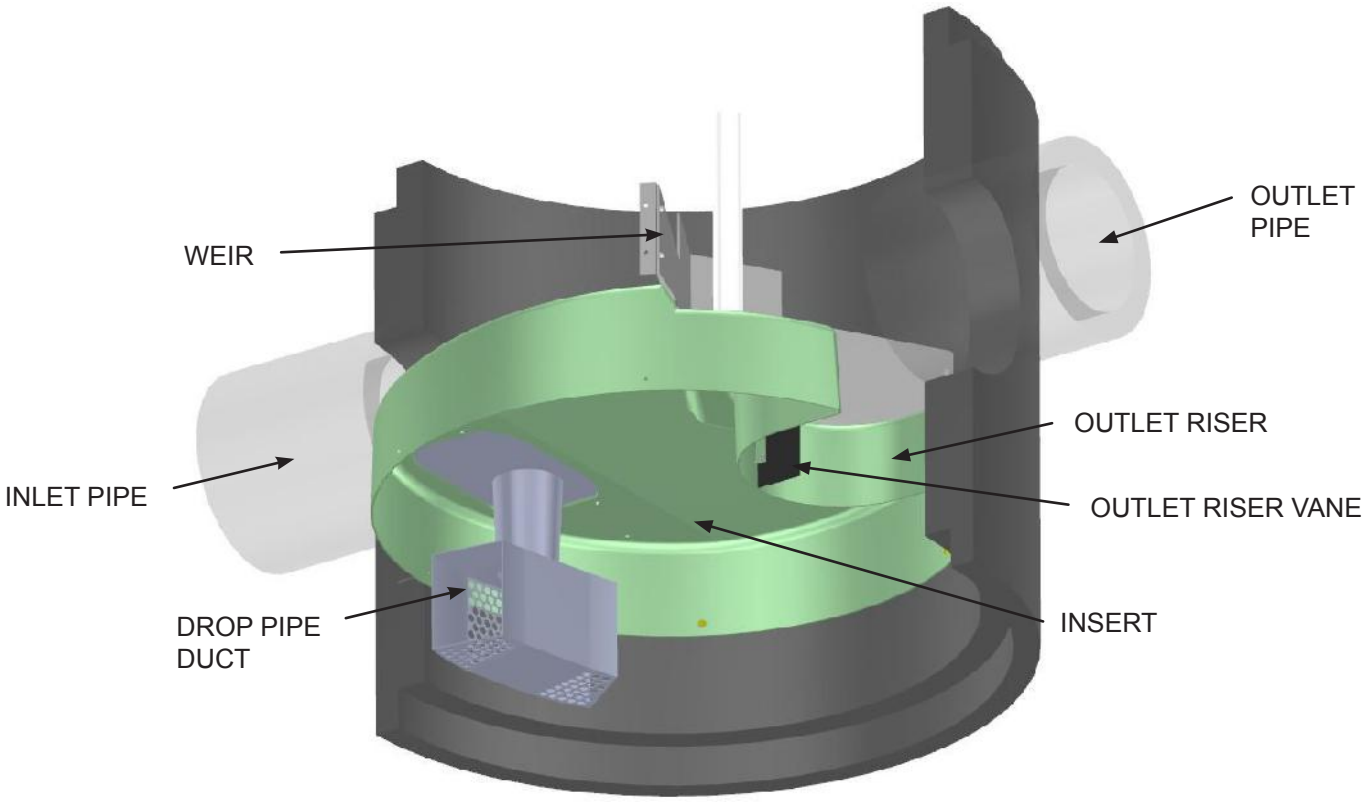


Figure 2

- Insert – separates vessel into upper and lower chambers, and provides double-wall containment of hydrocarbons
- Weir – creates stormwater ponding and driving head on top side of insert
- Drop pipe – conveys stormwater and pollutants into the lower chamber
- Outlet riser – conveys treated stormwater from the lower chamber to the outlet pipe, and provides primary inspection and maintenance access into the lower chamber
- Outlet riser vane – prevents formation of a vortex in the outlet riser during high flow rate conditions
- Oil inspection pipe – primary access for measuring oil depth, and oil removal

IDENTIFICATION

Each Stormceptor EF/EFO unit is easily identifiable by the trade name ***Stormceptor®*** embossed on the access cover at grade as shown in **Figure 3**. The tradename ***Stormceptor®*** is also embossed on the top of the insert upstream of the weir as shown in **Figure 3**.

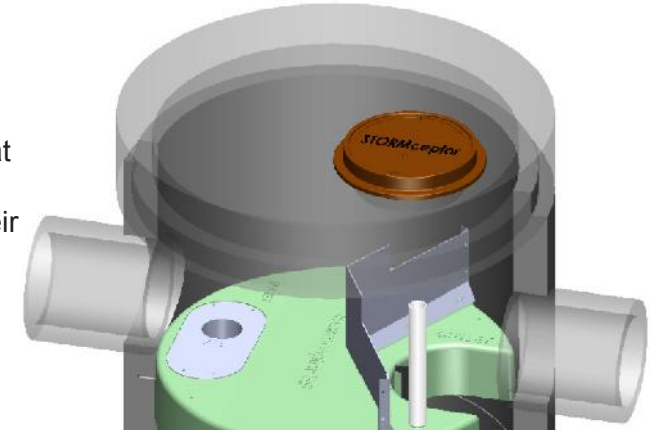


Figure 3

The unit serial number is identified on the top of the insert upstream of the weir as shown in **Figure 4**.

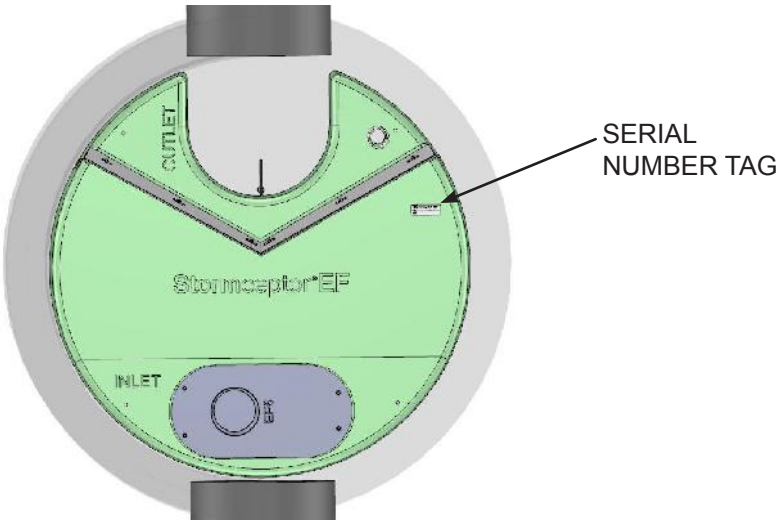


Figure 4

MODEL DETAILS

TABLE 1. METRIC DIMENSIONS AND CAPACITIES								
Stormceptor Model	Inside Diameter	Minimum Surface to Outlet Invert Depth	Depth Below Outlet Pipe Invert	Wet Volume	Sediment Capacity[1]	Hydrocarbon Storage Capacity[2]	Maximum Flow Rate into Lower Chamber[3]	Peak Conveyance Flow Rate[4]
	(m)	(mm)	(mm)	(L)	(m^3)	(L)	(L/s)	(L/s)
EF4 / EFO4	1.22	915	1524	1780	1.19	265	22.1 / 10.4	425
EF6 / EFO6	1.83	915	1930	5070	3.47	610	49.6 / 23.4	990
EF8 / EFO8	2.44	1219	2591	12090	8.78	1070	88.3 / 41.6	1700
EF10 / EFO10	3.05	1219	3251	23700	17.79	1670	138 / 65	2830
EF12 / EFO12	3.66	1524	3886	40800	31.22	2475	198.7 / 93.7	2830

TABLE 2. U.S. DIMENSIONS AND CAPACITIES								
Stormceptor Model	Inside Diameter	Minimum Surface to Outlet Invert Depth	Depth Below Outlet Pipe Invert	Wet Volume	Sediment Capacity[1]	Hydrocarbon Storage Capacity[2]	Maximum Flow Rate into Lower Chamber[3]	Peak Conveyance Flow Rate[4]
	(ft)	(in)	(in)	(gal)	(ft^3)	(gal)	(cfs)	(cfs)
EF4 / EFO4	4	36	60	471	42	70	0.78 / 0.37	15
EF6 / EFO6	6	36	76	1339	123	160	1.75 / 0.83	35
EF8 / EFO8	8	48	102	3194	310	280	3.12 / 1.47	60
EF10 / EFO10	10	48	128	6261	628	440	4.87 / 2.30	100
EF12 / EFO12	12	60	153	10779	1103	655	7.02 / 3.31	100

1. Sediment Capacity is measured from the floor to the bottom of the drop pipe cone. Sediment Capacity can be increased to accommodate specific site designs and pollutant loads. Contact your local representative for assistance.
2. Hydrocarbon Storage Capacity is measured from the bottom of the outlet riser to the underside of the insert. Hydrocarbon Storage Capacity can be increased to accommodate specific site designs and pollutant loads. Contact your local representative for assistance.
3. EF Maximum Flow Rate into Lower Chamber is based on a maximum surface loading rate (SLR) into the lower chamber of 1135 L/min/m^2 (27.9 gpm/ft^2). EFO Maximum Flow Rate into Lower Chamber is based on a maximum surface loading rate (SLR) into the lower chamber of 535 L/min/m^2 (13.1 gpm/ft^2).
4. Peak Conveyance Flow Rate is limited by a maximum velocity of 1. m/s (5 fps).

INSPECTION AND MAINTENANCE

It is important to perform regular inspection and maintenance. Regular inspection and maintenance ensures maximum operation efficiency, keeps maintenance costs low, and provides continued protection of natural waterways.

Quick Reference

- Typical inspection and maintenance is performed from grade
- Remove manhole cover(s) or inlet grate to access insert and lower chamber
  NOTE: If an inlet grate is present, EF4/EFO4 requires the removal of a flow deflector beneath inlet grate
- Use Sludge Judge® or similar sediment probe to check sediment depth through the outlet riser
- Oil dipstick can be inserted through the oil inspection pipe
- Visually inspect the insert for debris, remove debris if present
- Visually inspect the drop pipe opening for blockage, remove blockage if present
- Visually inspect insert and weir for damage, schedule repair if needed
- Insert vacuum hose and jetting wand through the outlet riser and extract sediment and floatables
- Replace flow deflector (EF4/EFO4), inlet grate, and cover(s)

When is inspection needed?

- Post-construction inspection is required prior to putting the Stormceptor into service.
- Routine inspections are recommended during the first year of operation to accurately assess pollutant accumulation.
- Inspection frequency in subsequent years is based on the maintenance plan developed in the first year.
- Inspections should also be performed immediately after oil, fuel, or other chemical spills.

What equipment is typically required for inspection?

- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically ¾-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones and caution tape
- Hard hat, safety shoes, safety glasses, and chemical-resistant gloves

When is maintenance cleaning needed?

- If the post-construction inspection indicates presence of construction sediment of a depth greater than a few inches, maintenance is recommended at that time. For optimum performance and normal operation the unit should be cleaned out once the sediment depth reaches the recommended maintenance sediment depth, see **Table 3**.
- Maintain immediately after an oil, fuel, or other chemical spill.

TABLE 3
RECOMMENDED SEDIMENT DEPTHS FOR MAINTENANCE SERVICE*

MODEL	Sediment Depth	
	in	mm
EF4 / EFO4	8	203
EF6 / EFO6	12	305
EF8 / EFO8	24	610
EF10 / EFO10	24	610
EF12 / EFO12	24	610

* Based on a minimum distance of 40 inches (1,016 mm) from bottom of outlet riser to top of sediment bed

The frequency of inspection and maintenance may need to be adjusted based on site conditions to ensure the unit is operating and performing as intended. Maintenance costs will vary based on the size of the unit, site conditions, local requirements, disposal costs, and transportation distance.

What equipment is typically required for maintenance?

- Vacuum truck equipped with water hose and jet nozzle
- Small pump and tubing for oil removal
- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically ¾-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones
- Hard hats, safety shoes, safety glasses, chemical-resistant gloves, and hearing protection for service providers
- Gas analyzer, respiratory gear, and safety harness for specially trained personnel if confined space entry is required (adhere to all OSHA / CCOSH standards)

What conditions can compromise Stormceptor performance?

- Presence of construction sediment and debris in the unit prior to activation
- Excessive sediment depth beyond the recommended maintenance depth
- Oil spill in excess of the oil storage capacity
- Clogging or restriction of the drop pipe inlet opening with debris
- Downstream blockage that results in a backwater condition

MAINTENANCE PROCEDURES

- Maintenance should be conducted during dry weather conditions when no flow is entering the unit.
- Stormceptor is maintained from grade through a standard surface manhole access cover or inlet grate.
- In the case of submerged or tailwater conditions, extra measures are likely required, such as plugging the inlet and outlet pipes prior to conducting maintenance.
- Inspection and maintenance of upstream catch basins and other stormwater conveyance structures is also recommended to extend the time between future maintenance cycles.
- Sediment depth inspections are performed through the **Outlet Riser** and oil presence can be determined through the **Oil Inspection Pipe** (**see Figures 6 and 7**).
- Oil presence and sediment depth are determined by inserting a Sludge Judge® or measuring stick to quantify the pollutant depths.
- Visually inspect the insert, weir, and drop pipe inlet opening to ensure there is no damage or blockage.

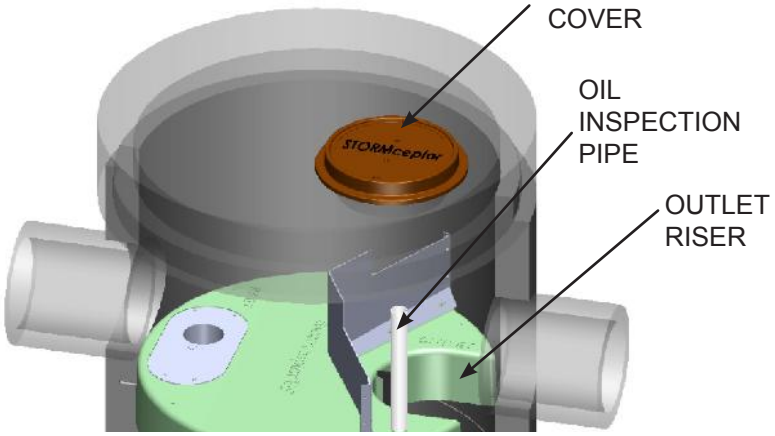


Figure 5

Figure 6

- When maintenance is required, a standard vacuum truck is used to remove the pollutants from the lower chamber of the unit through the **Outlet Riser** (**see Figure 7**).

Figure 7

- The Outlet Riser Vane is durable and flexible and designed to allow maintenance activities with minimal, if any, interference (**see Figure 8**).

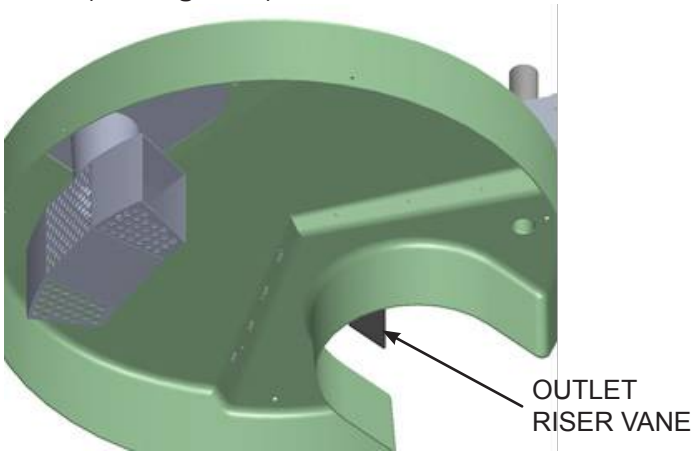


Figure 8

REMOVABLE FLOW DEFLECTOR

- Grated inlets for the Stormceptor EF4/EFO4 model requires a removable flow deflector staged underneath a 24-inch x 24-inch (600 mm x 600 mm) square inlet grate to direct flow towards the inlet side of the insert, and avoid flow and pollutants from entering the outlet side of the insert from grade **(See Figure 9).** The EF6/EFO6 and larger models do not require the flow deflector.

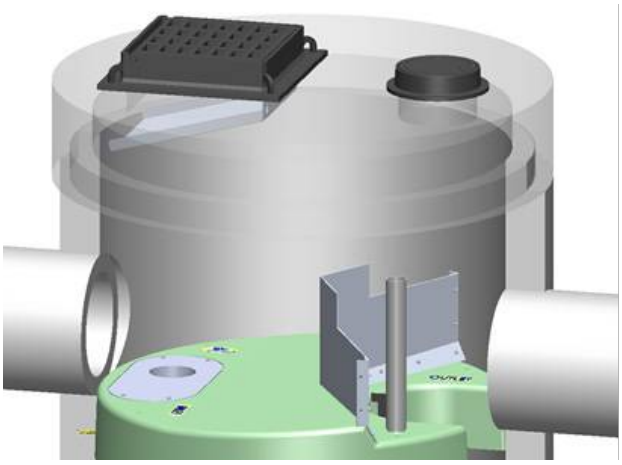
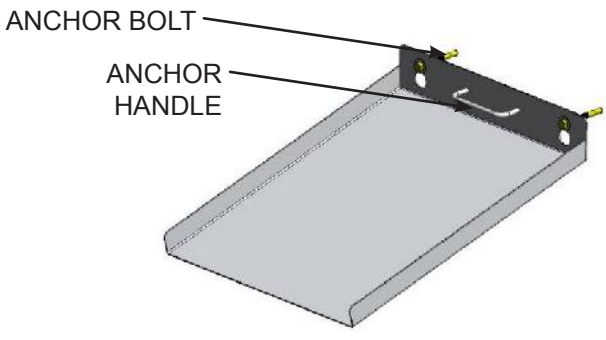


Figure 9



Removable Flow Detector

HYDROCARBON SPILLS

Stormceptor is often installed on high pollutant load hotspot sites with vehicular traffic where hydrocarbon spill potential exists. Should a spill occur, or presence of oil be identified within a Stormceptor EF/EFO, the unit should be cleaned immediately by a licensed liquid waste hauler.

Disposal

Maintenance providers are to follow all federal, state/ provincial, and local requirements for disposal of material.

Oil Sheens

When oil is present in stormwater runoff, a sheen may be noticeable at the Stormceptor outlet. An oil rainbow or sheen can be noticeable at very low oil concentrations (< 10 mg/L). Despite the appearance of a sheen, Stormceptor EF/EFO may still be functioning as intended.

Oil Level Alarm

To mitigate spill liability with 24/7 detection, an electronic Oil Level Alarm monitoring system can be employed to trigger a visual and audible alarm when a pre-set level of oil is captured within the lower chamber or when an oil spill occurs. The oil level alarm is available as an optional feature to include with Stormceptor EF/EFO as shown in **Figure 10**.

For additional details about the Oil Level Alarm, please visit www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-systems.

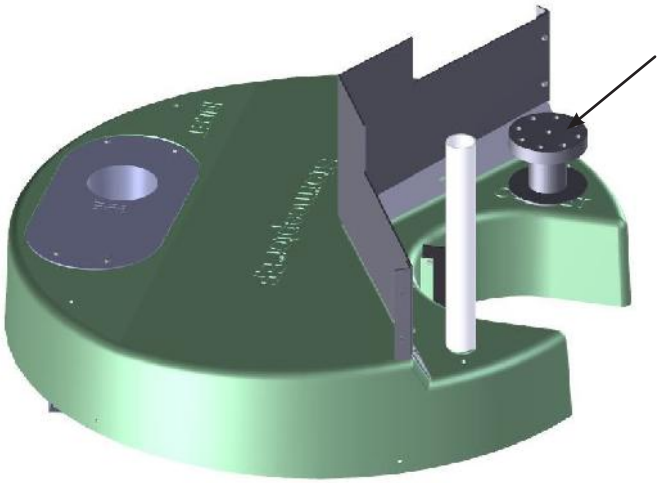


Figure 10

Optional Oil Alarm

REPLACEMENT PARTS

Stormceptor has no moving parts. Therefore, inspection and maintenance activities are generally focused on pollutant removal. Since there are no moving parts during operation in a Stormceptor, broken, damaged, or worn parts are not typically encountered. However, if replacement parts are necessary, they may be purchased by contacting your local Stormceptor representative.

STORMCEPTOR INSPECTION AND MAINTENANCE LOG

Stormceptor Model No: _____

Serial Number: _____

Installation Date: _____

Location Description of Unit: _____

Recommended Sediment Maintenance Depth: _____

DATE	SEDIMENT DEPTH	OIL DEPTH (inches or mm)	SERVICE REQUIRED (Y/N)	MAINTENANCE PERFORMED	MAINTENANCE PROVIDER	COMMENTS

Other Comments: _____

CONTACT INFORMATION

Questions regarding Stormceptor EF/EFO can be addressed by contacting your local Stormceptor representative.

Imbrium Systems Inc.
1-416-960-9900 / 1-800-565-4801 / 888-279-8826

www.imbriumsystems.com
www.stormceptor.com
info@imbriumsystems.com

APPENDIX F

PCSWMM ANALYSIS

DIGITAL REPORT AND MODELLING FILES

The following secure link is being provided by **SCS Consulting Group** to share 3171 Lakeshore Road West related digital data:

https://filesafecloud.scsconsultinggroup.com/url/vcbvpbphtnb4grnk

Please click on the link and download all files from this location.

- PCSWMM Modelling (Town and Site Plan Modified)

Legend

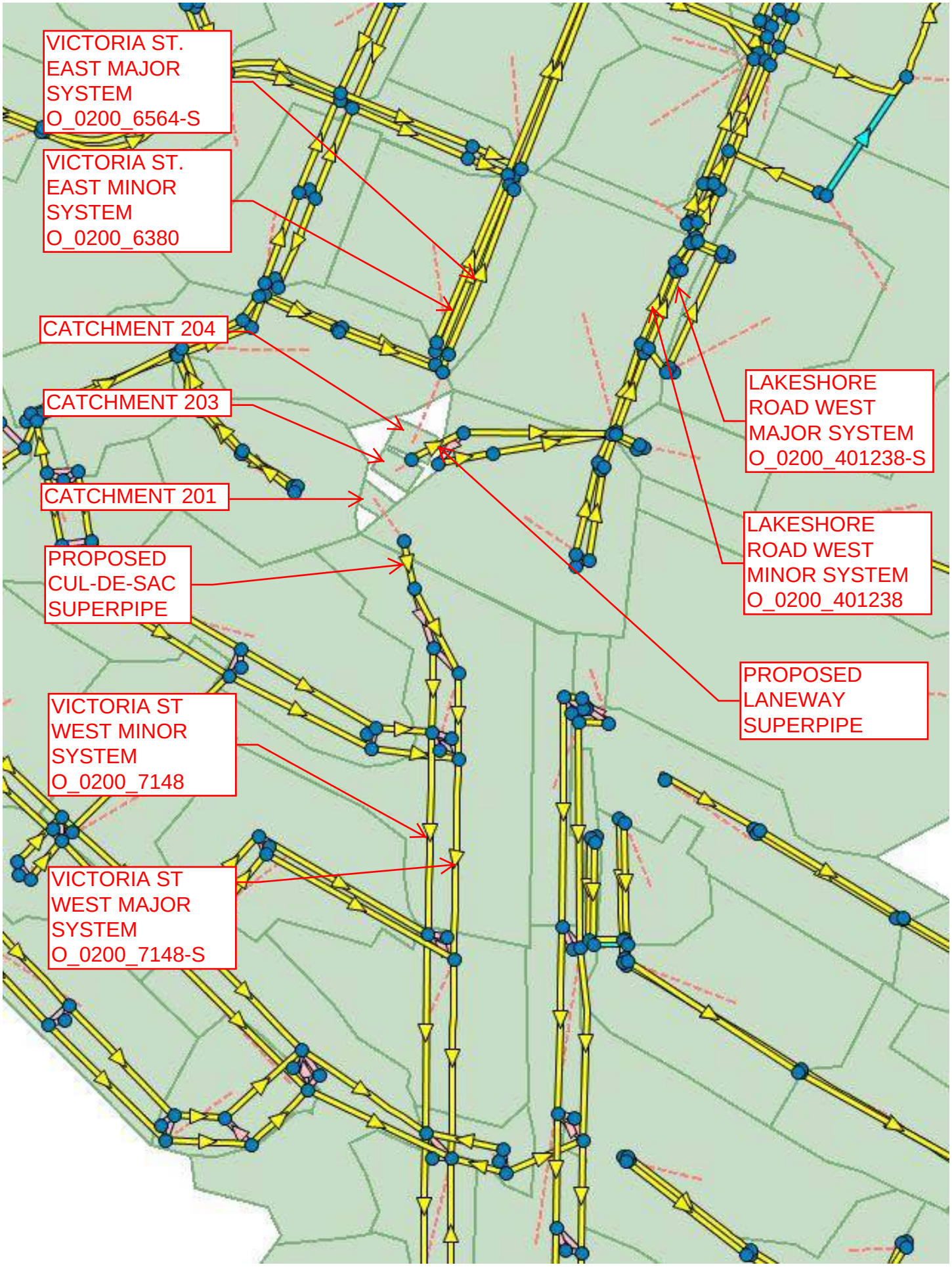
- Network
- Subcatchment
- Parcels
- Roads
- Pump
- Storage
- Outfalls

Minor System

- Unsurcharged
- Below 1/2 Surcharging Depth and Above Obvert
- Above 1/2 Surcharging Depth and Below Rim Elevation
- Surcharged Above Rim Elevation

PROPOSED RE-DEVELOPMENT

Stormwater Management Master Plan **Phase 2** **Town of Oakville**	**Minor System Capacity Assessment (Part 1)** **100-Year Existing Condition**	wood.	Scale **1:15,000** 200 100 0 200 Meters Project No. **TP 115045** Figure No. **F6-1**



PCSWMM MODEL SCHEMATIC

Project ID	1930
Project Name	3171 Lakeshore Road West, Oakville
Date	Saturday, October 1, 2022
Description	Assess Impact on Adjacent Catchment Areas
Location	Town of Oakville

ATTRIBUTES					
Name	**201**	**203**	**204**	**S8_36 modified**	**S9_9 combined**
X-Coordinate				603838.08	603874.383
Y-Coordinate				4804491.167	4804615.887
Description					
Tag				8	8
Rain Gage	RG1	RG1	RG1	RG1	RG1
Outlet	J3	J1	O_0160_6138-S	O_0160_6768-S	O_0160_400803-S
Area (ha)	0.196	0.671	0.0626	1.391	0.656
Width (m)	49	167.7	41.7	347	164
Flow Length (m)	40	40	15	40	40
Slope (%)	3	1	4	0.87	1
Imperv. (%)	61	69	34	64.1	48.6
N Imperv	0.013	0.013	0.013	0.013	0.013
N Perv	0.25	0.25	0.25	0.25	0.25
Dstore Imperv (mm)	1	1	1	1	1
Dstore Perv (mm)	5	5	5	5	5
Zero Imperv (%)	25	25	25	25	25
Subarea Routing	PERVIOUS	PERVIOUS	PERVIOUS	PERVIOUS	PERVIOUS
Percent Routed (%)	11	19	100	40	50

HGL

Peak values

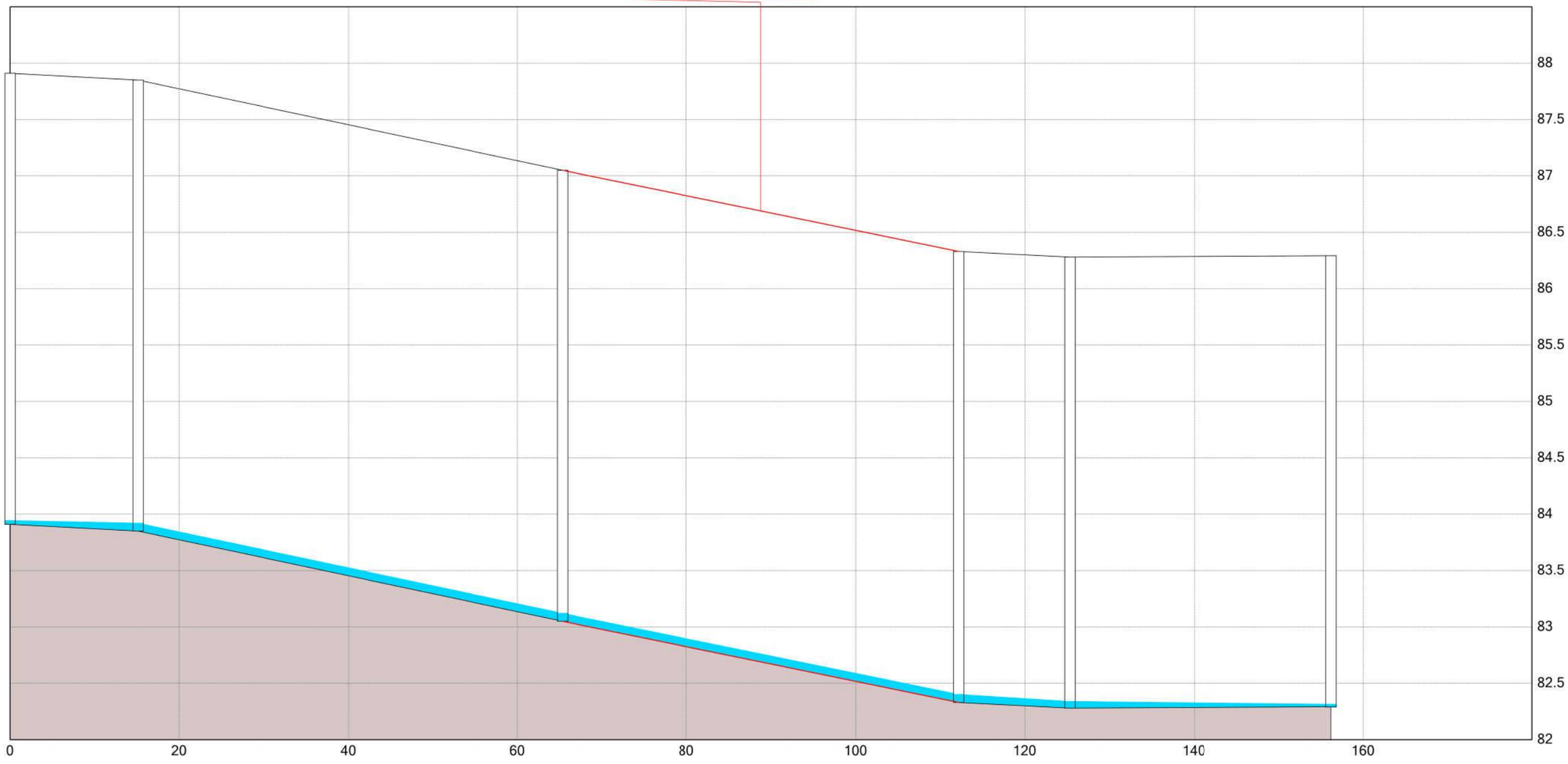
Conduit O_0200_401240-S
Flow = 0.031 m³/s
Slope = 0.00396 m/m
Invert1 = 83.91 m
Invert2 = 83.85 m

Conduit O_0200_401242-S
Flow = 0.286 m³/s
Slope = 0.0159 m/m
Invert1 = 83.85 m
Invert2 = 83.05 m

Conduit O_0200_401238-S
Flow = 0.287 m³/s
Slope = 0.0154 m/m
Invert1 = 83.05 m
Invert2 = 82.33 m

Conduit O_0200_401239-S
Flow = 0.147 m³/s
Slope = 0.00381 m/m
Invert1 = 82.33 m
Invert2 = 82.28 m

Conduit O_0200_7156-S-R1_1
Flow = 0.008 m³/s
Slope = -0.00039 m/m
Invert1 = 82.28 m
Invert2 = 82.292 m



Junction O_0160_400808-S
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Max. CWSEL = 83.94627 m
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Junction O_0160_400804-S
CWSEL = 83.92349 m
Max. CWSEL = 83.92349 m
06/02/2020 08:30AM

Junction O_0160_400806-S
CWSEL = 83.12408 m
Max. CWSEL = 83.12408 m
06/02/2020 08:30AM

Junction O_0160_400807-S
CWSEL = 82.40457 m
Max. CWSEL = 82.40457 m
06/02/2020 08:30AM

Junction O_0160_6671-S
CWSEL = 82.34224 m
Max. CWSEL = 82.34224 m
06/02/2020 08:35AM

Junction J3_9_R_LS
CWSEL = 82.31709 m
Max. CWSEL = 82.31709 m
06/02/2020 08:35AM

LAKESHORE ROAD WEST
MAJOR SYSTEM
5 YEAR
EXISTING

HGL

Peak values

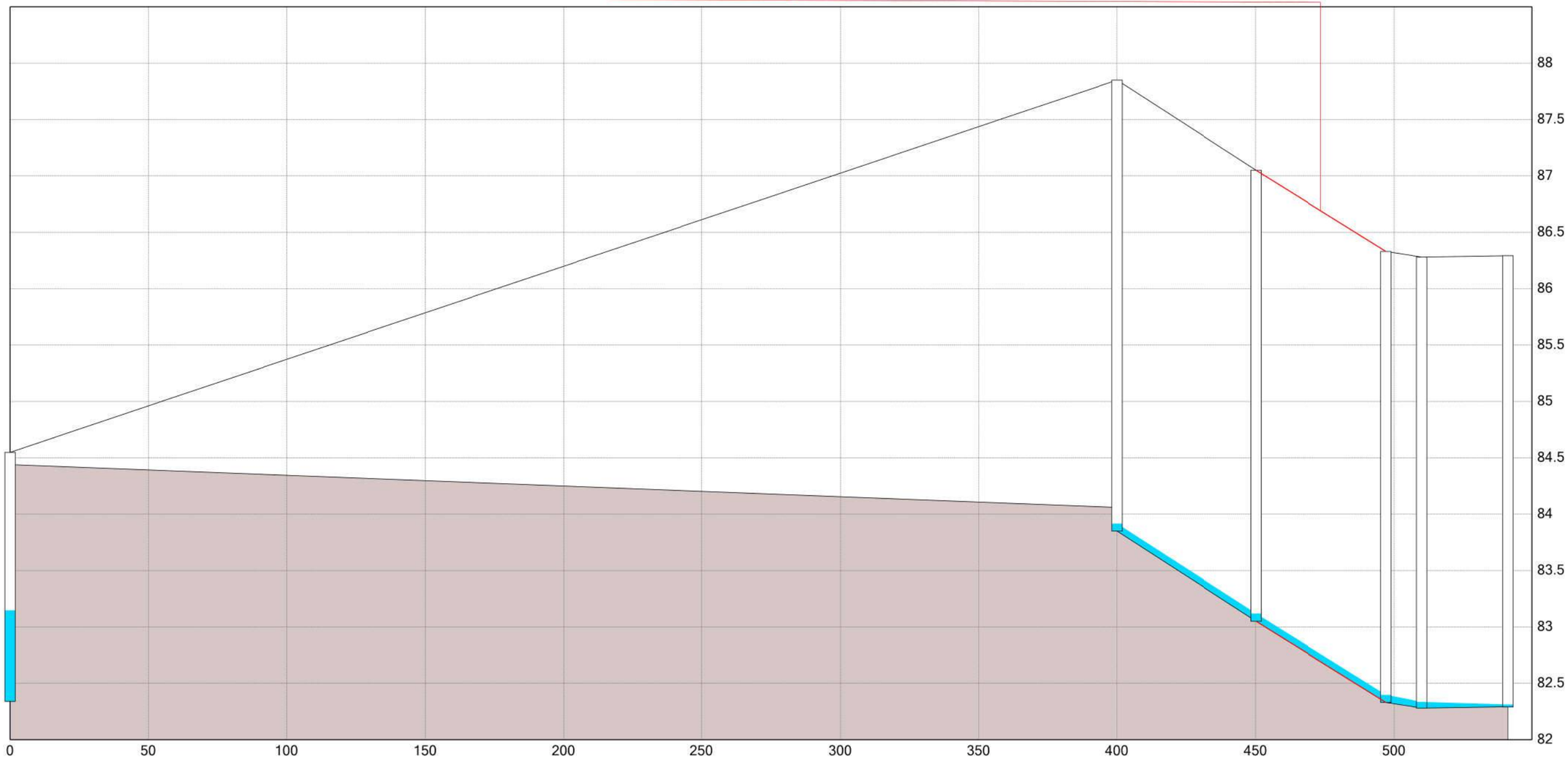
Conduit C7
Flow = 0 m³/s
Slope = 0.00095 m/m
Invert1 = 84.44 m
Invert2 = 84.06 m

Conduit O_0200_401242-S
Flow = 0.224 m³/s
Slope = 0.0159 m/m
Invert1 = 83.85 m
Invert2 = 83.05 m

Conduit O_0200_401238-S
Flow = 0.236 m³/s
Slope = 0.0154 m/m
Invert1 = 83.05 m
Invert2 = 82.33 m

Conduit O_0200_401239-S
Flow = 0.113 m³/s
Slope = 0.00381 m/m
Invert1 = 82.33 m
Invert2 = 82.28 m

Conduit O_0200_7156-S-R1_1
Flow = 0.006 m³/s
Slope = -0.00039 m/m
Invert1 = 82.28 m
Invert2 = 82.292 m



Junction J2
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Junction O_0160_400806-S
CWSEL = 83.11904 m
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Junction O_0160_400807-S
CWSEL = 82.39771 m
Max. CWSEL = 82.39771 m
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Junction O_0160_6671-S
CWSEL = 82.33525 m
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Junction J3_9_R_LS
CWSEL = 82.31245 m
Max. CWSEL = 82.31245 m
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LAKESHORE ROAD WEST
MAJOR SYSTEM
5 YEAR
PROPOSED

HGL

Peak values

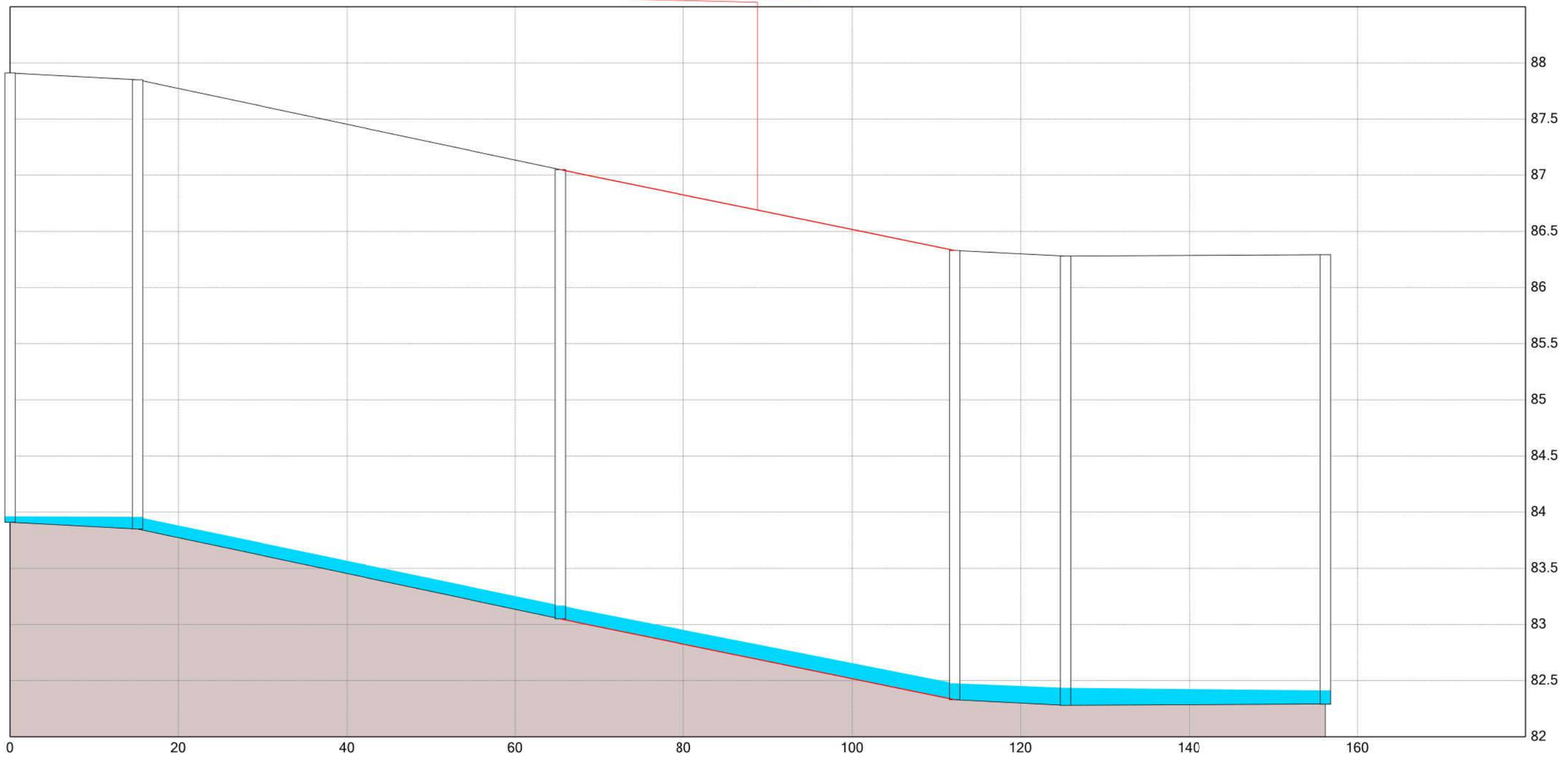
Conduit O_0200_401240-S
Flow = 0.071 m³/s
Slope = 0.00396 m/m
Invert1 = 83.91 m
Invert2 = 83.85 m

Conduit O_0200_401242-S
Flow = 0.868 m³/s
Slope = 0.0159 m/m
Invert1 = 83.85 m
Invert2 = 83.05 m

Conduit O_0200_401238-S
Flow = 1.112 m³/s
Slope = 0.0154 m/m
Invert1 = 83.05 m
Invert2 = 82.33 m

Conduit O_0200_401239-S
Flow = 0.853 m³/s
Slope = 0.00381 m/m
Invert1 = 82.33 m
Invert2 = 82.28 m

Conduit O_0200_7156-S-R1_1
Flow = 0.161 m³/s
Slope = -0.00039 m/m
Invert1 = 82.28 m
Invert2 = 82.292 m



Junction O_0160_400808-S
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Max. CWSEL = 83.96284 m
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Junction O_0160_400804-S
CWSEL = 83.95797 m
Max. CWSEL = 83.95797 m
06/02/2020 08:30AM

Junction O_0160_400806-S
CWSEL = 83.16902 m
Max. CWSEL = 83.16902 m
06/02/2020 08:30AM

Junction O_0160_400807-S
CWSEL = 82.47604 m
Max. CWSEL = 82.47604 m
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Junction O_0160_6671-S
CWSEL = 82.43593 m
Max. CWSEL = 82.43593 m
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Junction J3_9_R_LS
CWSEL = 82.41261 m
Max. CWSEL = 82.41261 m
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LAKESHORE ROAD WEST
MAJOR SYSTEM
100 YEAR
EXISTING

HGL

Peak values

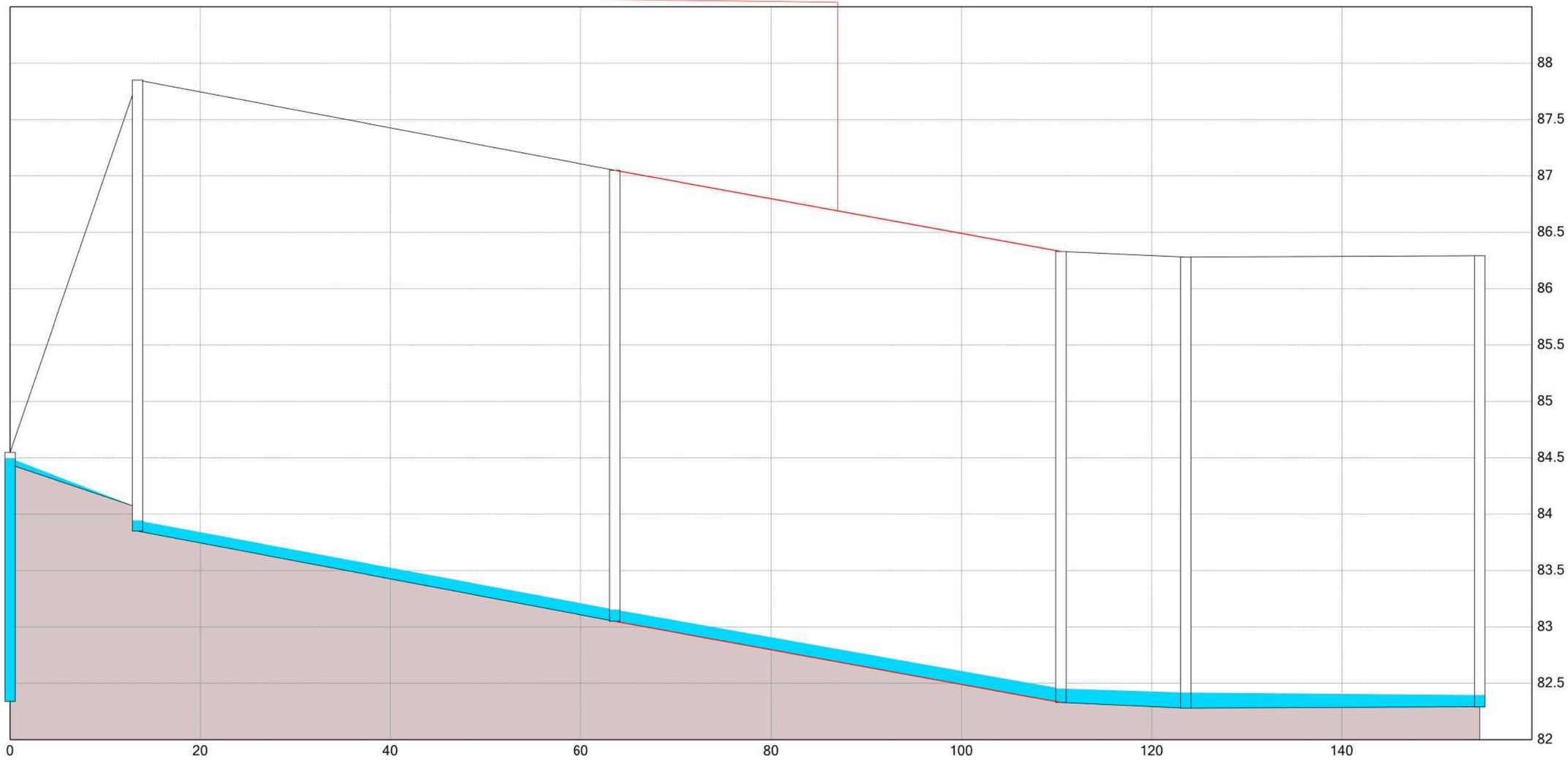
Conduit C5
Flow = 0.088 m³/s
Slope = 0.0284 m/m
Invert1 = 84.44 m
Invert2 = 84.06 m

Conduit O_0200_401242-S
Flow = 0.595 m³/s
Slope = 0.0159 m/m
Invert1 = 83.85 m
Invert2 = 83.05 m

Conduit O_0200_401238-S
Flow = 0.771 m³/s
Slope = 0.0154 m/m
Invert1 = 83.05 m
Invert2 = 82.33 m

Conduit O_0200_401239-S
Flow = 0.592 m³/s
Slope = 0.00381 m/m
Invert1 = 82.33 m
Invert2 = 82.28 m

Conduit O_0200_7156-S-R1_1
Flow = 0.114 m³/s
Slope = -0.00039 m/m
Invert1 = 82.28 m
Invert2 = 82.292 m



Junction J2
CWSEL = 84.498 m
Max. CWSEL = 84.498 m
06/02/2020 08:35AM

Junction O_0160_400804-S
CWSEL = 83.94454 m
Max. CWSEL = 83.94454 m
06/02/2020 08:30AM

Junction O_0160_400806-S
CWSEL = 83.15418 m
Max. CWSEL = 83.15418 m
06/02/2020 08:30AM

Junction O_0160_400807-S
CWSEL = 82.45369 m
Max. CWSEL = 82.45369 m
06/02/2020 08:35AM

Junction O_0160_6671-S
CWSEL = 82.41809 m
Max. CWSEL = 82.41809 m
06/02/2020 08:35AM

Junction J3_9_R_LS
CWSEL = 82.39622 m
Max. CWSEL = 82.39622 m
06/02/2020 08:35AM

LAKESHORE ROAD WEST
MAJOR SYSTEM
100 YEAR
PROPOSED

HGL

Peak values

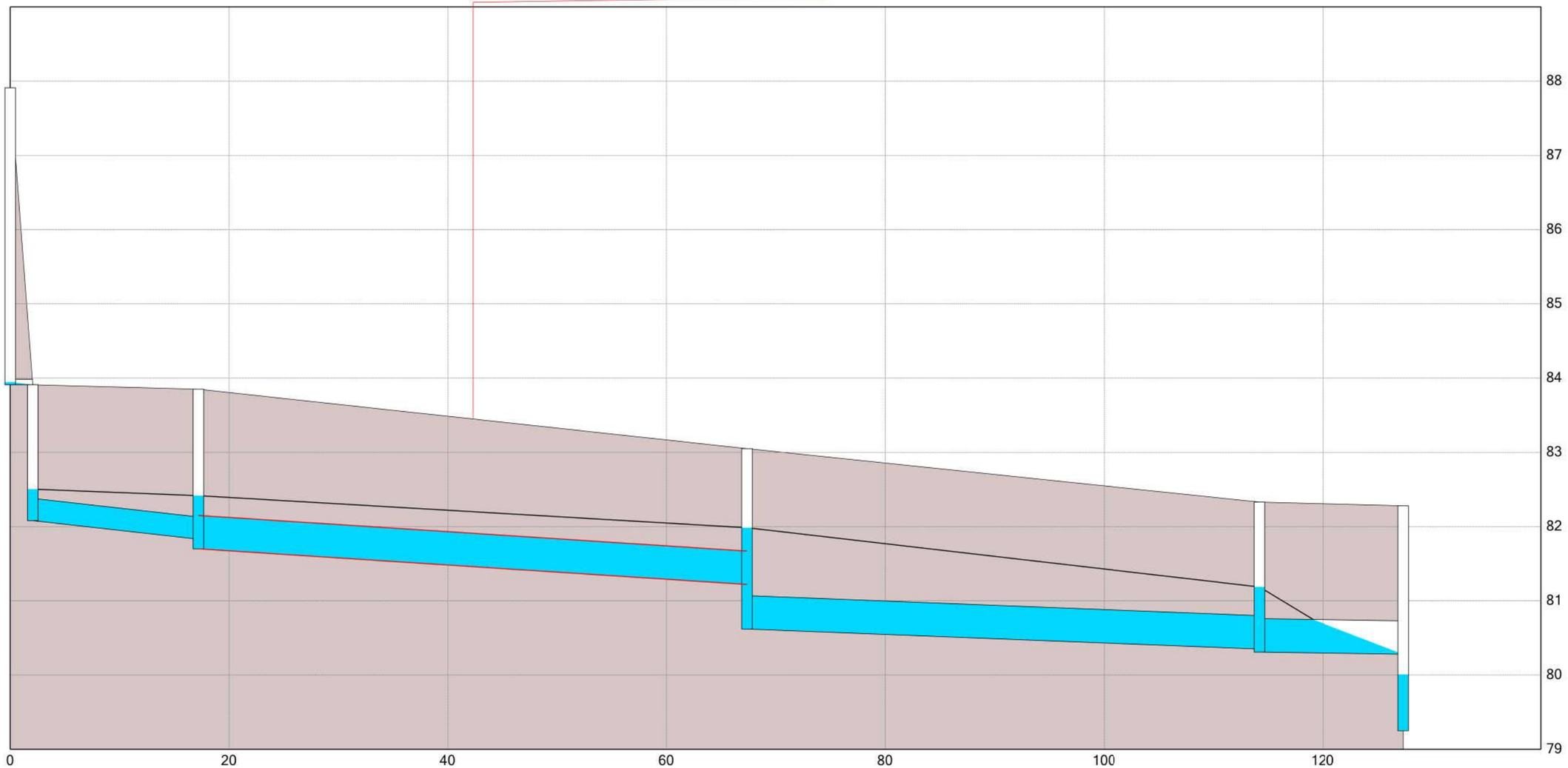
Orifice O_0160_400808-IC
Flow = 0.001 m³/s

Conduit O_0200_401240
Flow = 0.035 m³/s
Slope = 0.0165 m/m
Invert1 = 82.08 m
Invert2 = 81.83 m

Conduit O_0200_401242
Flow = 0.249 m³/s
Slope = 0.00957 m/m
Invert1 = 81.7 m
Invert2 = 81.22 m

Conduit O_0200_401238
Flow = 0.365 m³/s
Slope = 0.00576 m/m
Invert1 = 80.62 m
Invert2 = 80.35 m

Conduit O_0200_401239
Flow = 0.486 m³/s
Slope = 0.00229 m/m
Invert1 = 80.31 m
Invert2 = 80.28 m



Junction O_0160_400808-S
CWSEL = 83.94627 m
Max. CWSEL = 83.94627 m
06/02/2020 08:30AM

Junction O_0160_400808
CWSEL = 82.50443 m
Max. CWSEL = 82.50443 m
06/02/2020 08:30AM

Junction O_0160_400804
CWSEL = 82.41638 m
Max. CWSEL = 82.41638 m
06/02/2020 08:30AM

Junction O_0160_400806
CWSEL = 81.98442 m
Max. CWSEL = 81.98442 m
06/02/2020 08:30AM

Junction O_0160_400807
CWSEL = 81.18639 m
Max. CWSEL = 81.18639 m
06/02/2020 08:30AM

Junction O_0160_6671_09_1_LS
CWSEL = 80.00918 m
Max. CWSEL = 80.00918 m
06/02/2020 08:35AM

LAKESHORE ROAD WEST
MINOR SYSTEM
5 YEAR
EXISTING

HGL

Peak values

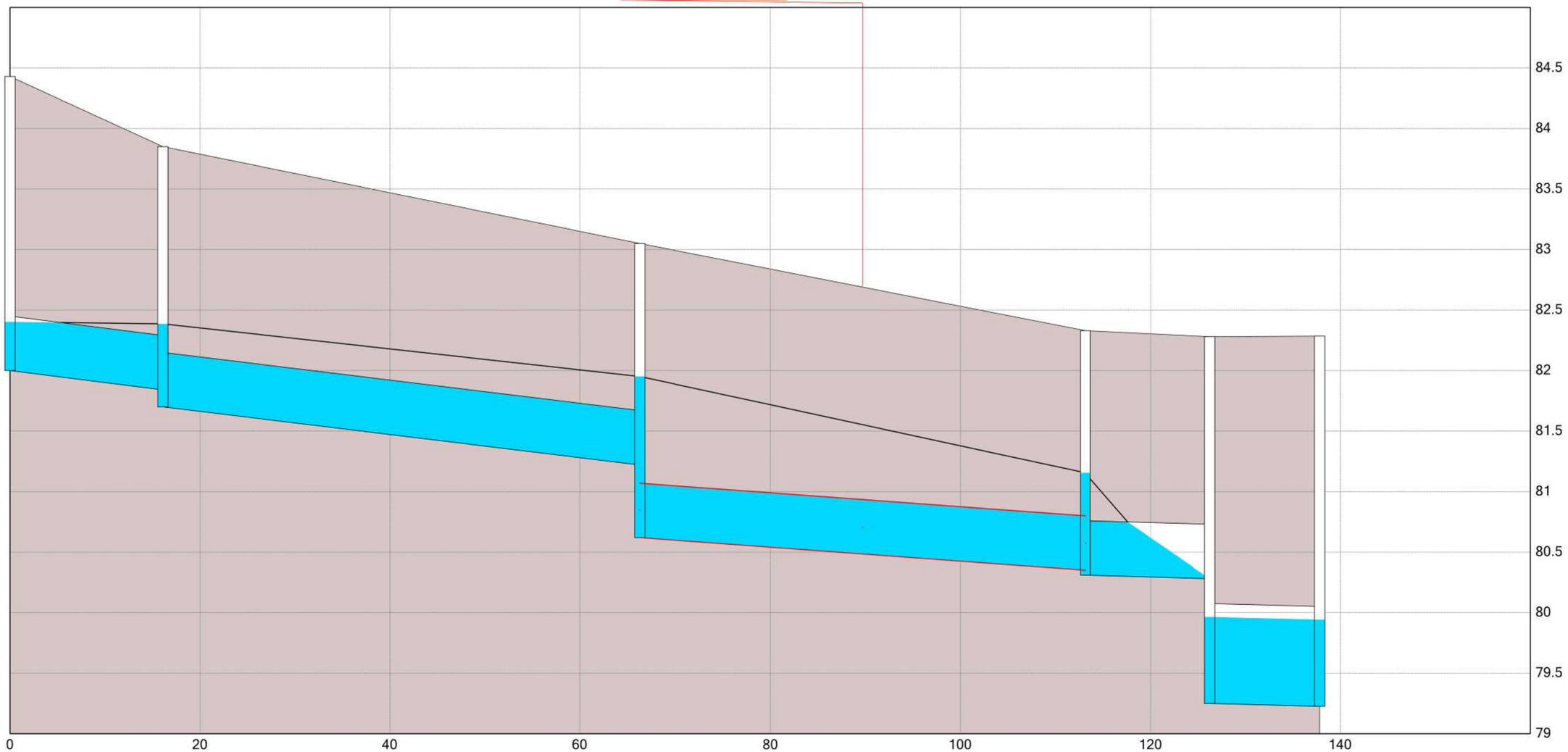
Conduit C4
Flow = 0.1 m³/s
Slope = 0.00994 m/m
Invert1 = 82 m
Invert2 = 81.84 m

Conduit O_0200_401242
Flow = 0.258 m³/s
Slope = 0.00957 m/m
Invert1 = 81.7 m
Invert2 = 81.22 m

Conduit O_0200_401238
Flow = 0.364 m³/s
Slope = 0.00576 m/m
Invert1 = 80.62 m
Invert2 = 80.35 m

Conduit O_0200_401239
Flow = 0.471 m³/s
Slope = 0.00229 m/m
Invert1 = 80.31 m
Invert2 = 80.28 m

Conduit O_0200_7156_1
Flow = 0.667 m³/s
Slope = 0.00207 m/m
Invert1 = 79.25 m
Invert2 = 79.226 m



Junction MH2
CWSEL = 82.40245 m
Max. CWSEL = 82.40245 m
06/02/2020 08:35AM

Junction O_0160_400804
CWSEL = 82.38593 m
Max. CWSEL = 82.38593 m
06/02/2020 08:35AM

Junction O_0160_400806
CWSEL = 81.95125 m
Max. CWSEL = 81.95125 m
06/02/2020 08:35AM

Junction O_0160_400807
CWSEL = 81.15554 m
Max. CWSEL = 81.15554 m
06/02/2020 08:35AM

Junction O_0160_6671_09_1_LS
CWSEL = 79.96445 m
Max. CWSEL = 79.96445 m
06/02/2020 08:35AM

Junction O_0160_6671_09_2_LS
CWSEL = 79.9422 m
Max. CWSEL = 79.9422 m
06/02/2020 08:35AM

LAKESHORE ROAD WEST
MINOR SYSTEM
5 YEAR
PROPOSED

HGL

Peak values

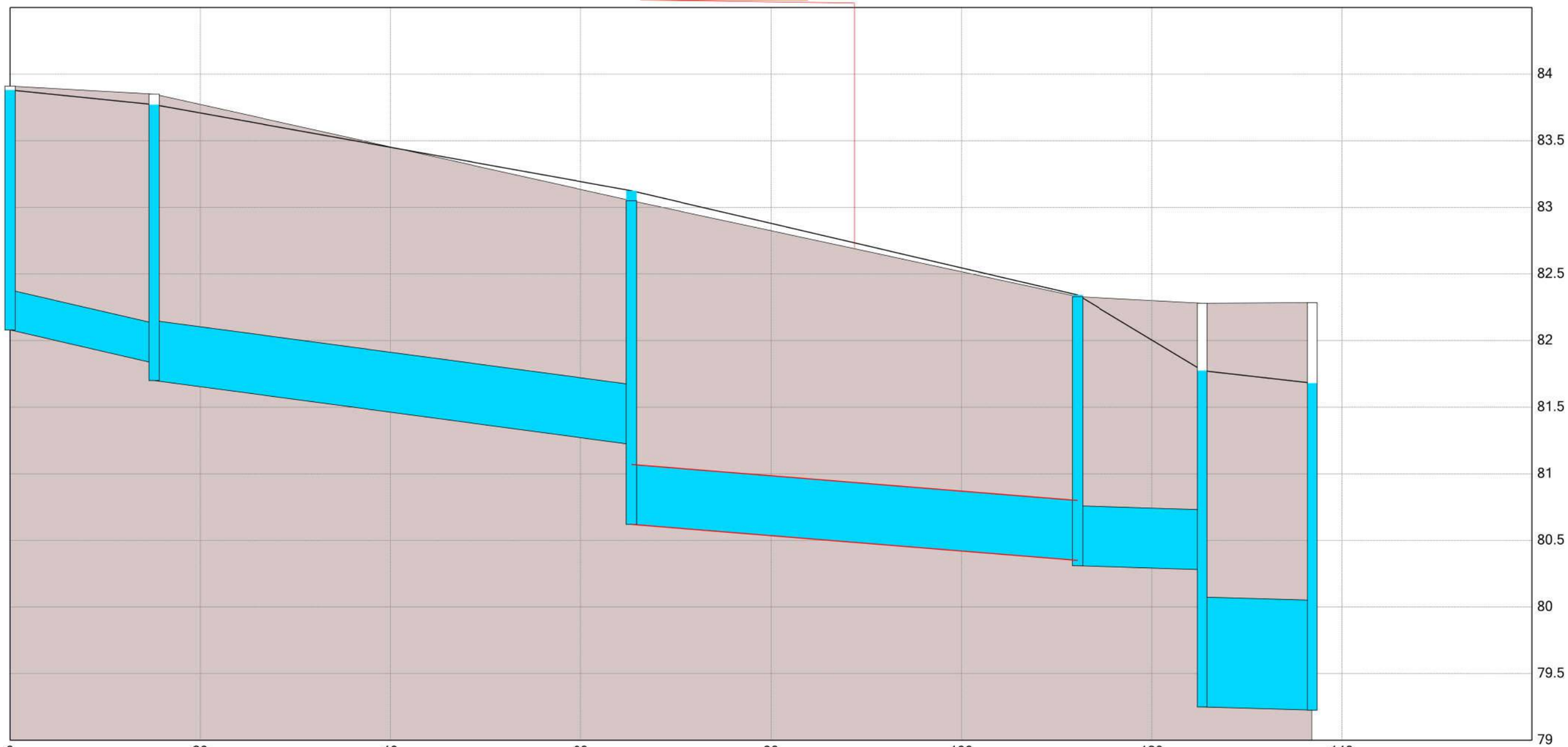
Conduit O_0200_401240
Flow = 0.064 m³/s
Slope = 0.0165 m/m
Invert1 = 82.08 m
Invert2 = 81.83 m

Conduit O_0200_401242
Flow = 0.316 m³/s
Slope = 0.00957 m/m
Invert1 = 81.7 m
Invert2 = 81.22 m

Conduit O_0200_401238
Flow = 0.43 m³/s
Slope = 0.00576 m/m
Invert1 = 80.62 m
Invert2 = 80.35 m

Conduit O_0200_401239
Flow = 0.578 m³/s
Slope = 0.00229 m/m
Invert1 = 80.31 m
Invert2 = 80.28 m

Conduit O_0200_7156_1
Flow = 1.336 m³/s
Slope = 0.00207 m/m
Invert1 = 79.25 m
Invert2 = 79.226 m



Junction O_0160_400808
CWSEL = 83.88092 m
Max. CWSEL = 83.88092 m
06/02/2020 08:30AM

Junction O_0160_400804
CWSEL = 83.77097 m
Max. CWSEL = 83.77097 m
06/02/2020 08:30AM

Junction O_0160_400806
CWSEL = 83.12463 m
Max. CWSEL = 83.12463 m
06/02/2020 08:30AM

Junction O_0160_400807
CWSEL = 82.34254 m
Max. CWSEL = 82.34254 m
06/02/2020 08:30AM

Junction O_0160_6671_09_1_LS
CWSEL = 81.77467 m
Max. CWSEL = 81.77467 m
06/02/2020 08:35AM

Junction O_0160_6671_09_2_LS
CWSEL = 81.6803 m
Max. CWSEL = 81.6803 m
06/02/2020 08:35AM

LAKESHORE ROAD WEST
MINOR SYSTEM
100 YEAR
EXISTING

HGL

Peak values

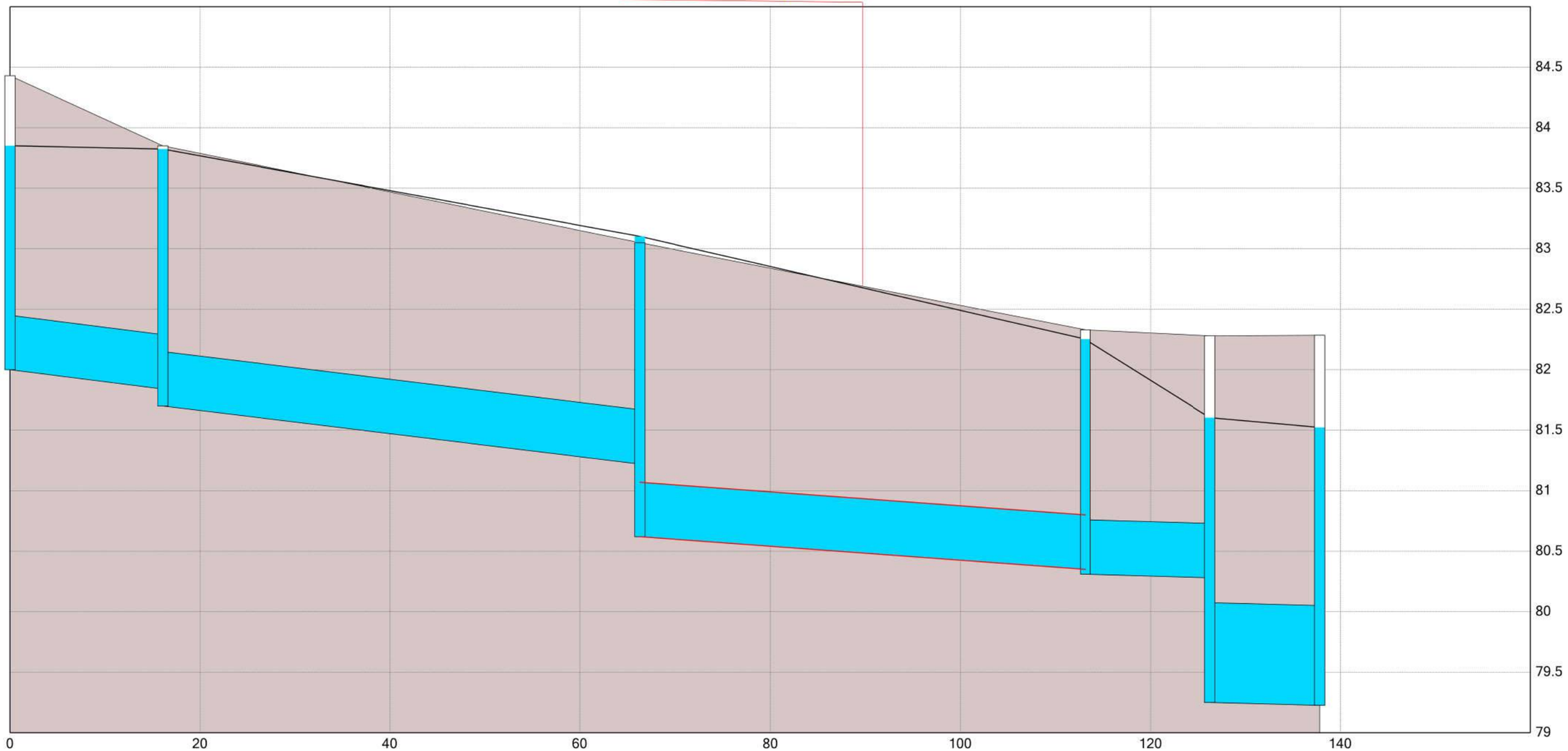
Conduit C4
Flow = 0.128 m³/s
Slope = 0.00994 m/m
Invert1 = 82 m
Invert2 = 81.84 m

Conduit O_0200_401242
Flow = 0.338 m³/s
Slope = 0.00957 m/m
Invert1 = 81.7 m
Invert2 = 81.22 m

Conduit O_0200_401238
Flow = 0.441 m³/s
Slope = 0.00576 m/m
Invert1 = 80.62 m
Invert2 = 80.35 m

Conduit O_0200_401239
Flow = 0.628 m³/s
Slope = 0.00229 m/m
Invert1 = 80.31 m
Invert2 = 80.28 m

Conduit O_0200_7156_1
Flow = 1.24 m³/s
Slope = 0.00207 m/m
Invert1 = 79.25 m
Invert2 = 79.226 m



Junction MH2
CWSEL = 83.85126 m
Max. CWSEL = 83.85126 m
06/02/2020 08:30AM

Junction O_0160_400804
CWSEL = 83.82372 m
Max. CWSEL = 83.82372 m
06/02/2020 08:30AM

Junction O_0160_400806
CWSEL = 83.1021 m
Max. CWSEL = 83.1021 m
06/02/2020 08:35AM

Junction O_0160_400807
CWSEL = 82.25249 m
Max. CWSEL = 82.25249 m
06/02/2020 08:35AM

Junction O_0160_6671_09_1_LS
CWSEL = 81.60358 m
Max. CWSEL = 81.60358 m
06/02/2020 08:35AM

Junction O_0160_6671_09_2_LS
CWSEL = 81.52316 m
Max. CWSEL = 81.52316 m
06/02/2020 08:35AM

LAKESHORE ROAD WEST
MINOR SYSTEM
100 YEAR
PROPOSED

HGL

Peak values

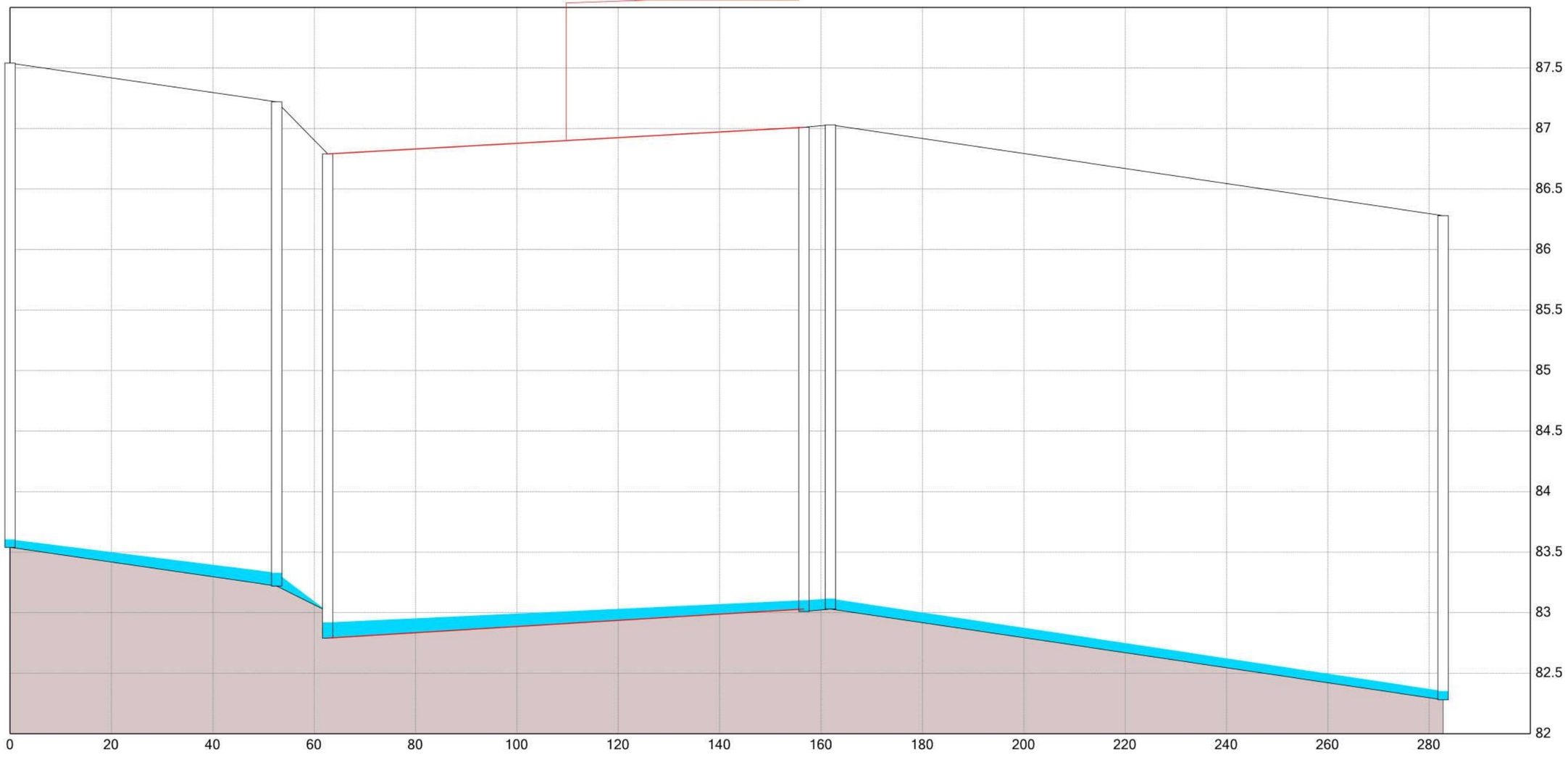
Conduit O_0200_6725-S
Flow = 0.145 m³/s
Slope = 0.00608 m/m
Invert1 = 83.54 m
Invert2 = 83.22 m

Conduit O_0200_6380-S
Flow = 0.136 m³/s
Slope = 0.021 m/m
Invert1 = 83.22 m
Invert2 = 83.01 m

Conduit O_0200_6564-S
Flow = 0 m³/s
Slope = -0.00255 m/m
Invert1 = 82.79 m
Invert2 = 83.03 m

Conduit O_0200_6381-S
Flow = 0 m³/s
Slope = -0.00383 m/m
Invert1 = 83.01 m
Invert2 = 83.03 m

Conduit O_0200_6711-S
Flow = 0.045 m³/s
Slope = 0.0062 m/m
Invert1 = 83.03 m
Invert2 = 82.28 m



Junction O_0160_6137-S
CWSEL = 83.60593 m
Max. CWSEL = 83.60593 m
06/02/2020 08:40AM

Junction O_0160_6138-S
CWSEL = 83.32927 m
Max. CWSEL = 83.32927 m
06/02/2020 08:40AM

Junction O_0160_6770-S
CWSEL = 82.91946 m
Max. CWSEL = 82.91946 m
06/02/2020 08:45AM

Junction O_0160_9331-S
CWSEL = 83.10323 m
Max. CWSEL = 83.10323 m
06/02/2020 08:50AM

Junction O_0160_6769-S
CWSEL = 83.11622 m
Max. CWSEL = 83.11622 m
06/02/2020 08:45AM

Junction O_0160_6112-S
CWSEL = 82.3529 m
Max. CWSEL = 82.3529 m
06/02/2020 08:40AM

VICTORIA ST. EAST
MAJOR SYSTEM
5 YEAR
EXISTING

HGL

Peak values

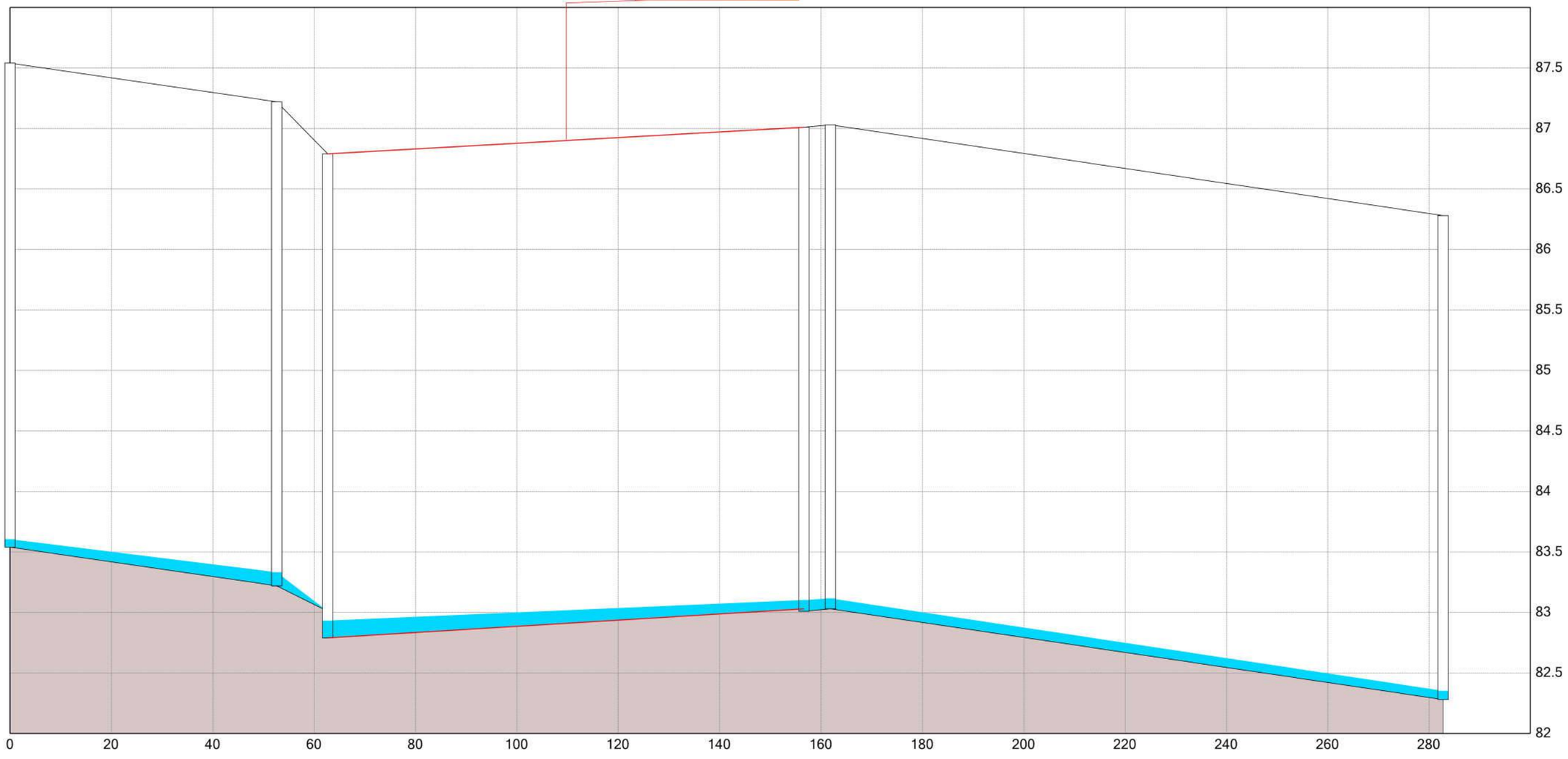
Conduit O_0200_6725-S
Flow = 0.145 m³/s
Slope = 0.00608 m/m
Invert1 = 83.54 m
Invert2 = 83.22 m

Conduit O_0200_6380-S
Flow = 0.148 m³/s
Slope = 0.021 m/m
Invert1 = 83.22 m
Invert2 = 83.01 m

Conduit O_0200_6564-S
Flow = 0 m³/s
Slope = -0.00255 m/m
Invert1 = 82.79 m
Invert2 = 83.03 m

Conduit O_0200_6381-S
Flow = 0 m³/s
Slope = -0.00383 m/m
Invert1 = 83.01 m
Invert2 = 83.03 m

Conduit O_0200_6711-S
Flow = 0.045 m³/s
Slope = 0.0062 m/m
Invert1 = 83.03 m
Invert2 = 82.28 m



Junction O_0160_6137-S
CWSEL = 83.60595 m
Max. CWSEL = 83.60595 m
06/02/2020 08:40AM

Junction O_0160_6138-S
CWSEL = 83.33239 m
Max. CWSEL = 83.33239 m
06/02/2020 08:40AM

Junction O_0160_6770-S
CWSEL = 82.9328 m
Max. CWSEL = 82.9328 m
06/02/2020 08:45AM

Junction O_0160_9331-S
CWSEL = 83.10316 m
Max. CWSEL = 83.10316 m
06/02/2020 08:50AM

Junction O_0160_6769-S
CWSEL = 83.11619 m
Max. CWSEL = 83.11619 m
06/02/2020 08:45AM

Junction O_0160_6112-S
CWSEL = 82.35289 m
Max. CWSEL = 82.35289 m
06/02/2020 08:40AM

VICTORIA ST. EAST
MAJOR SYSTEM
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PROPOSED

HGL

Peak values

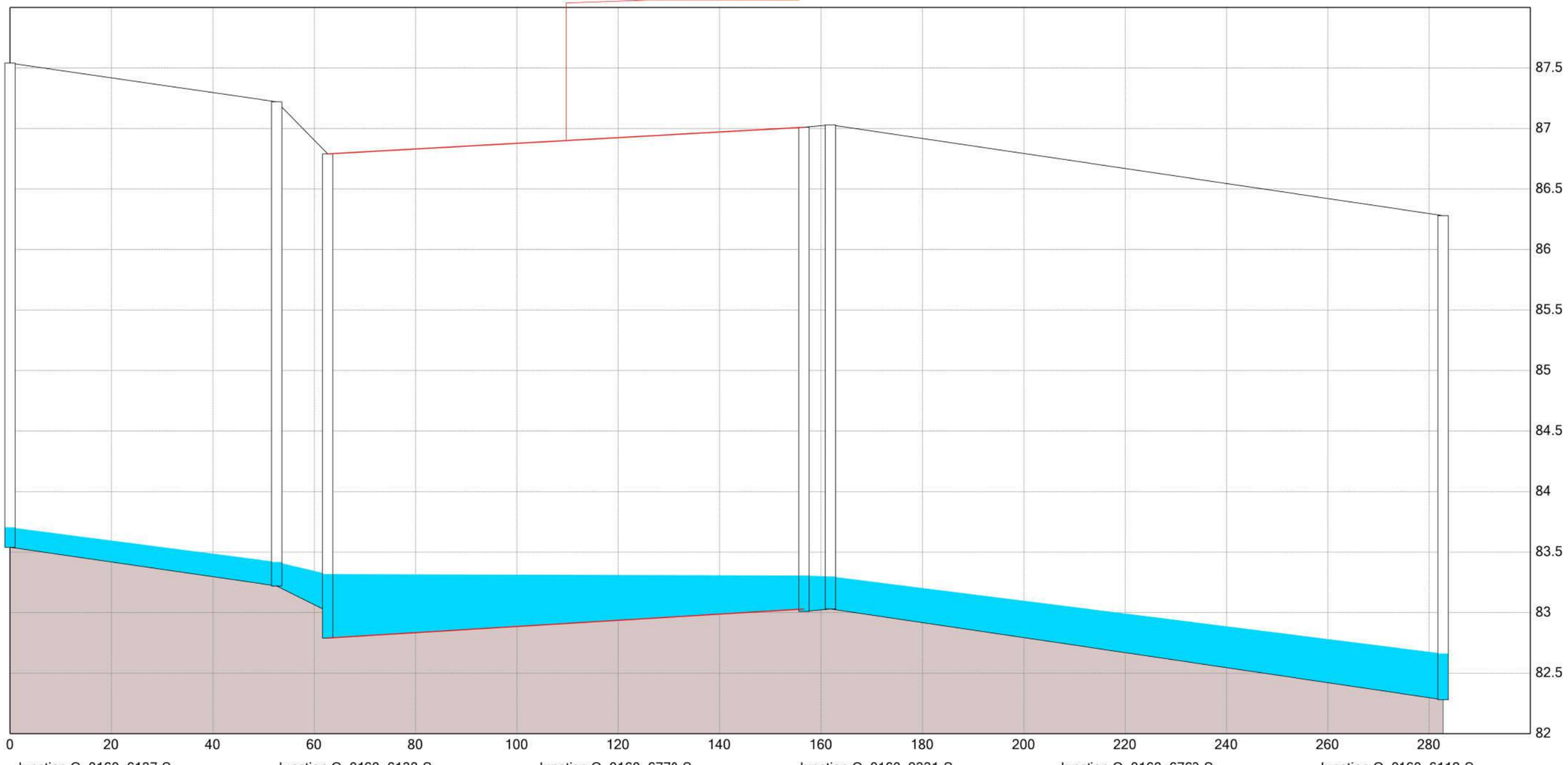
Conduit O_0200_6725-S
Flow = 1.428 m³/s
Slope = 0.00608 m/m
Invert1 = 83.54 m
Invert2 = 83.22 m

Conduit O_0200_6380-S
Flow = 1.432 m³/s
Slope = 0.021 m/m
Invert1 = 83.22 m
Invert2 = 83.01 m

Conduit O_0200_6564-S
Flow = 1.143 m³/s
Slope = -0.00255 m/m
Invert1 = 82.79 m
Invert2 = 83.03 m

Conduit O_0200_6381-S
Flow = 1.138 m³/s
Slope = -0.00383 m/m
Invert1 = 83.01 m
Invert2 = 83.03 m

Conduit O_0200_6711-S
Flow = 2.366 m³/s
Slope = 0.0062 m/m
Invert1 = 83.03 m
Invert2 = 82.28 m



Junction O_0160_6137-S
CWSEL = 83.70424 m
Max. CWSEL = 83.70424 m
06/02/2020 08:35AM

Junction O_0160_6138-S
CWSEL = 83.41807 m
Max. CWSEL = 83.41807 m
06/02/2020 08:35AM

Junction O_0160_6770-S
CWSEL = 83.31824 m
Max. CWSEL = 83.31824 m
06/02/2020 08:40AM

Junction O_0160_9331-S
CWSEL = 83.30615 m
Max. CWSEL = 83.30615 m
06/02/2020 08:40AM

Junction O_0160_6769-S
CWSEL = 83.29882 m
Max. CWSEL = 83.29882 m
06/02/2020 08:40AM

Junction O_0160_6112-S
CWSEL = 82.66158 m
Max. CWSEL = 82.66158 m
06/02/2020 08:45AM

VICTORIA ST. EAST
MAJOR SYSTEM
100 YEAR
EXISTING

HGL

Peak values

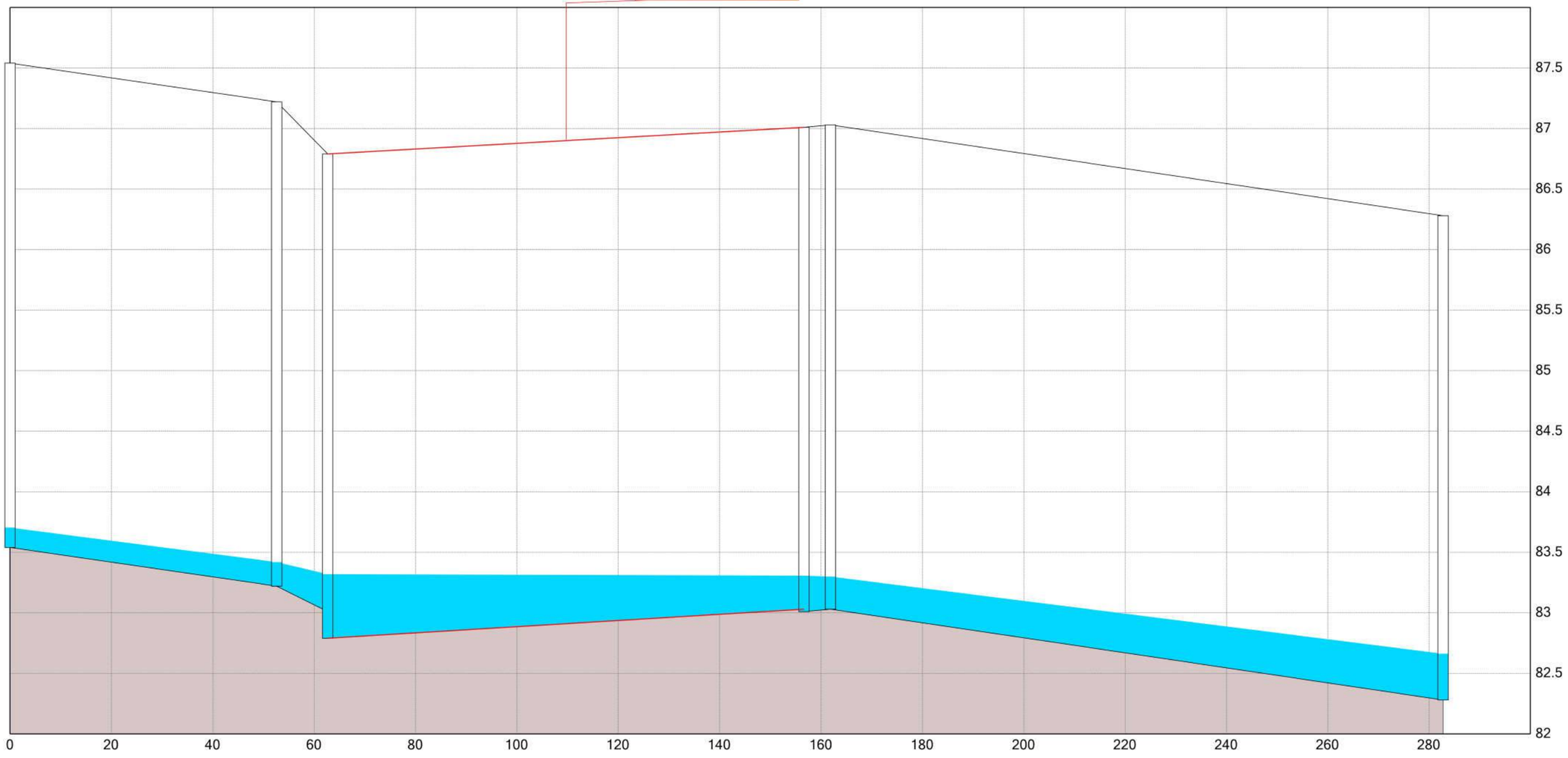
Conduit O_0200_6725-S
Flow = 1.426 m³/s
Slope = 0.00608 m/m
Invert1 = 83.54 m
Invert2 = 83.22 m

Conduit O_0200_6380-S
Flow = 1.451 m³/s
Slope = 0.021 m/m
Invert1 = 83.22 m
Invert2 = 83.01 m

Conduit O_0200_6564-S
Flow = 1.158 m³/s
Slope = -0.00255 m/m
Invert1 = 82.79 m
Invert2 = 83.03 m

Conduit O_0200_6381-S
Flow = 1.156 m³/s
Slope = -0.00383 m/m
Invert1 = 83.01 m
Invert2 = 83.03 m

Conduit O_0200_6711-S
Flow = 2.385 m³/s
Slope = 0.0062 m/m
Invert1 = 83.03 m
Invert2 = 82.28 m



Junction O_0160_6137-S
CWSEL = 83.70418 m
Max. CWSEL = 83.70418 m
06/02/2020 08:35AM

Junction O_0160_6138-S
CWSEL = 83.41884 m
Max. CWSEL = 83.41884 m
06/02/2020 08:35AM

Junction O_0160_6770-S
CWSEL = 83.31915 m
Max. CWSEL = 83.31915 m
06/02/2020 08:40AM

Junction O_0160_9331-S
CWSEL = 83.30692 m
Max. CWSEL = 83.30692 m
06/02/2020 08:40AM

Junction O_0160_6769-S
CWSEL = 83.29944 m
Max. CWSEL = 83.29944 m
06/02/2020 08:40AM

Junction O_0160_6112-S
CWSEL = 82.66199 m
Max. CWSEL = 82.66199 m
06/02/2020 08:45AM

VICTORIA ST. EAST
MAJOR SYSTEM
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PROPOSED

HGL

Peak values

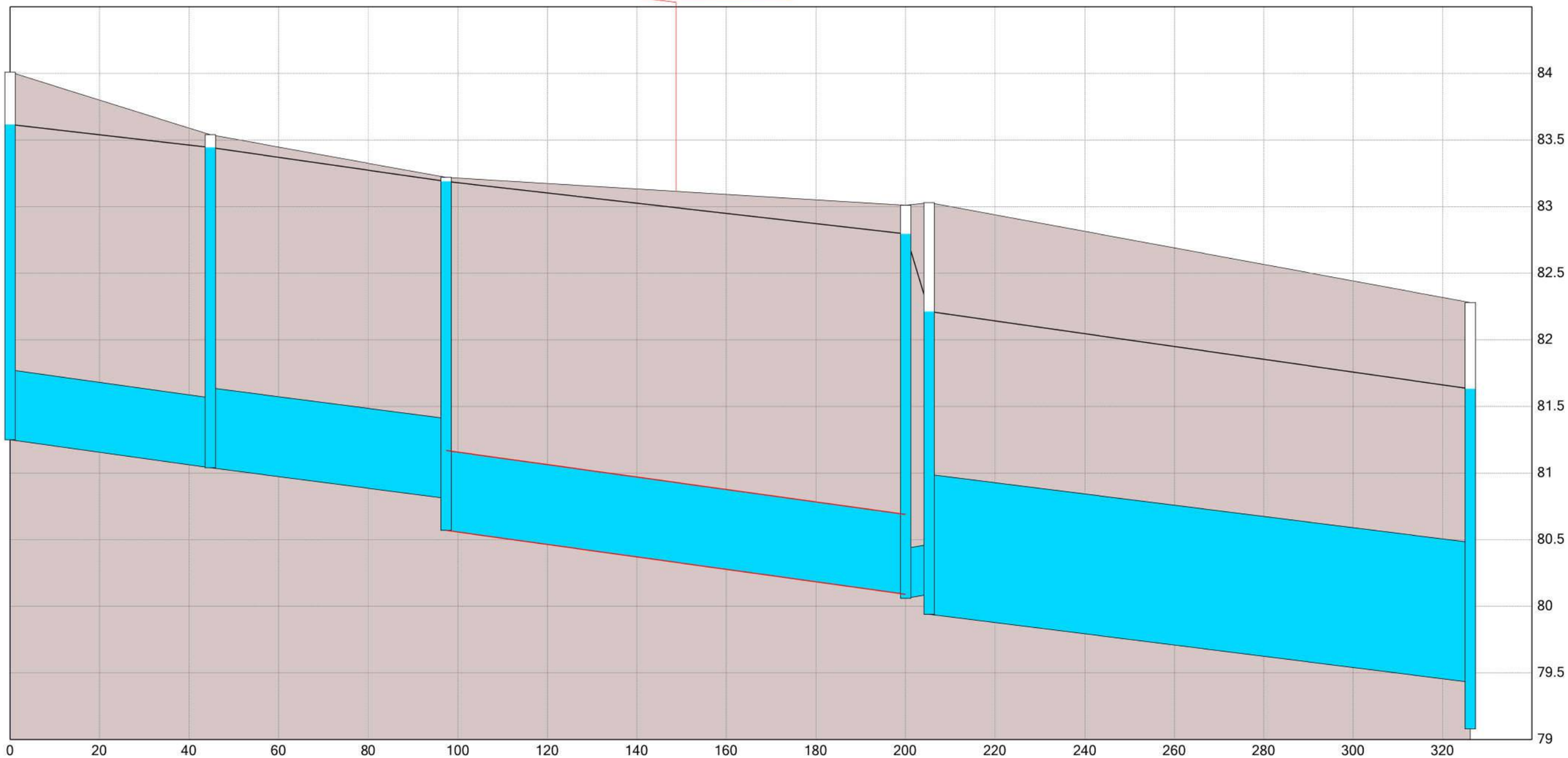
Conduit O_0200_6724
Flow = 0.31 m³/s
Slope = 0.0047 m/m
Invert1 = 81.25 m
Invert2 = 81.04 m

Conduit O_0200_6725
Flow = 0.397 m³/s
Slope = 0.00437 m/m
Invert1 = 81.04 m
Invert2 = 80.81 m

Conduit O_0200_6380
Flow = 0.398 m³/s
Slope = 0.00467 m/m
Invert1 = 80.57 m
Invert2 = 80.09 m

Conduit O_0200_6381
Flow = 0.399 m³/s
Slope = -0.00575 m/m
Invert1 = 80.06 m
Invert2 = 80.09 m

Conduit O_0200_6711
Flow = 1.595 m³/s
Slope = 0.00422 m/m
Invert1 = 79.94 m
Invert2 = 79.43 m



Junction O_0160_6136
CWSEL = 83.61656 m
Max. CWSEL = 83.61656 m
06/02/2020 08:40AM

Junction O_0160_6137
CWSEL = 83.44401 m
Max. CWSEL = 83.44401 m
06/02/2020 08:40AM

Junction O_0160_6138
CWSEL = 83.18945 m
Max. CWSEL = 83.18945 m
06/02/2020 08:40AM

Junction O_0160_9331
CWSEL = 82.79539 m
Max. CWSEL = 82.79539 m
06/02/2020 08:40AM

Junction O_0160_6769
CWSEL = 82.21301 m
Max. CWSEL = 82.21301 m
06/02/2020 08:40AM

Junction O_0160_6112
CWSEL = 81.63235 m
Max. CWSEL = 81.63235 m
06/02/2020 08:40AM

VICTORIA ST. EAST
MINOR SYSTEM
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EXISTING

HGL

Peak values

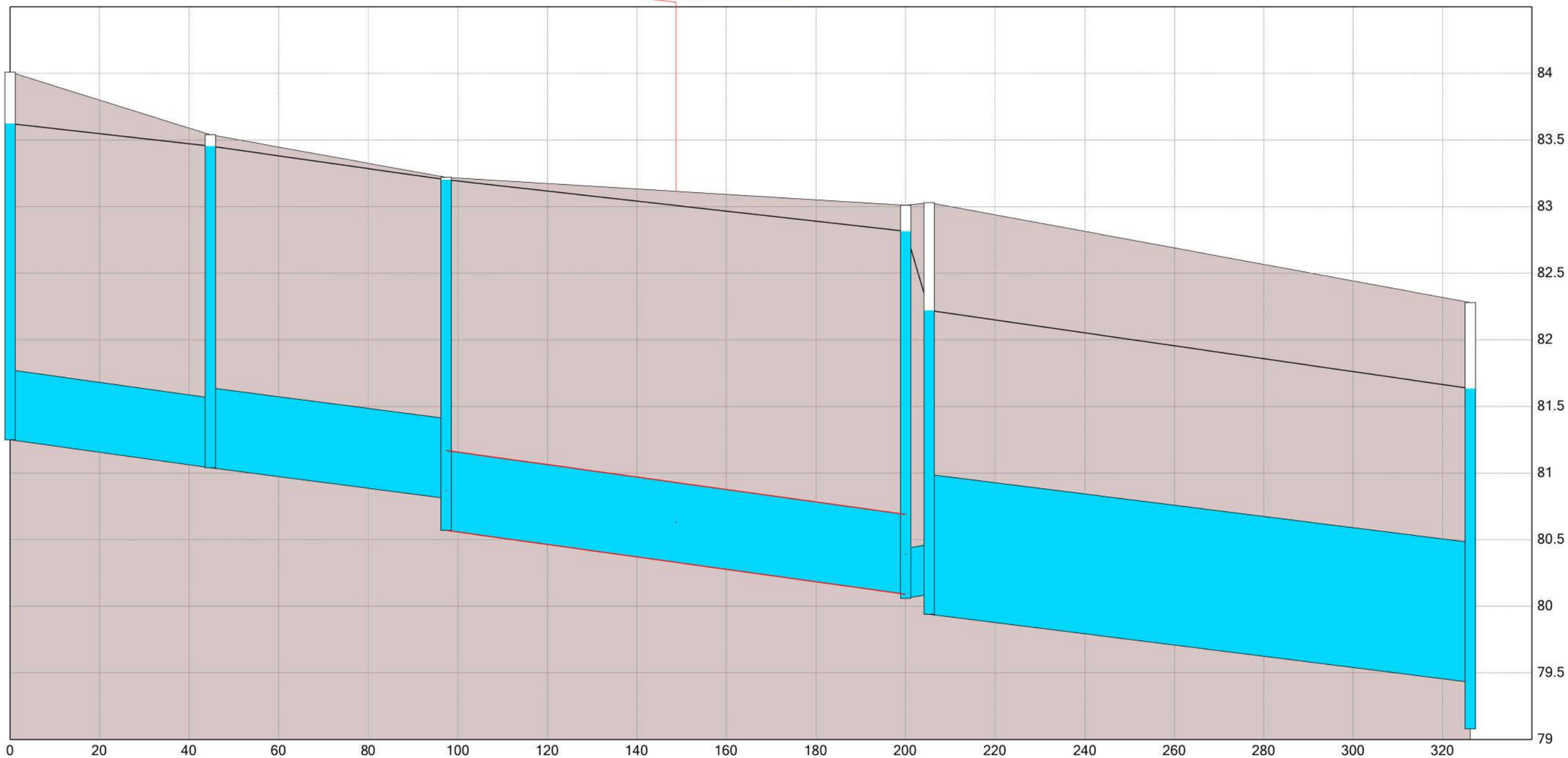
Conduit O_0200_6724
Flow = 0.31 m³/s
Slope = 0.0047 m/m
Invert1 = 81.25 m
Invert2 = 81.04 m

Conduit O_0200_6725
Flow = 0.394 m³/s
Slope = 0.00437 m/m
Invert1 = 81.04 m
Invert2 = 80.81 m

Conduit O_0200_6380
Flow = 0.395 m³/s
Slope = 0.00467 m/m
Invert1 = 80.57 m
Invert2 = 80.09 m

Conduit O_0200_6381
Flow = 0.396 m³/s
Slope = -0.00575 m/m
Invert1 = 80.06 m
Invert2 = 80.09 m

Conduit O_0200_6711
Flow = 1.6 m³/s
Slope = 0.00422 m/m
Invert1 = 79.94 m
Invert2 = 79.43 m



Junction O_0160_6136
CWSEL = 83.62326 m
Max. CWSEL = 83.62326 m
06/02/2020 08:40AM

Junction O_0160_6137
CWSEL = 83.45417 m
Max. CWSEL = 83.45417 m
06/02/2020 08:40AM

Junction O_0160_6138
CWSEL = 83.20229 m
Max. CWSEL = 83.20229 m
06/02/2020 08:40AM

Junction O_0160_9331
CWSEL = 82.81493 m
Max. CWSEL = 82.81493 m
06/02/2020 08:40AM

Junction O_0160_6769
CWSEL = 82.22088 m
Max. CWSEL = 82.22088 m
06/02/2020 08:40AM

Junction O_0160_6112
CWSEL = 81.63488 m
Max. CWSEL = 81.63488 m
06/02/2020 08:40AM

VICTORIA ST. EAST
MINOR SYSTEM
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PROPOSED

HGL

Peak values

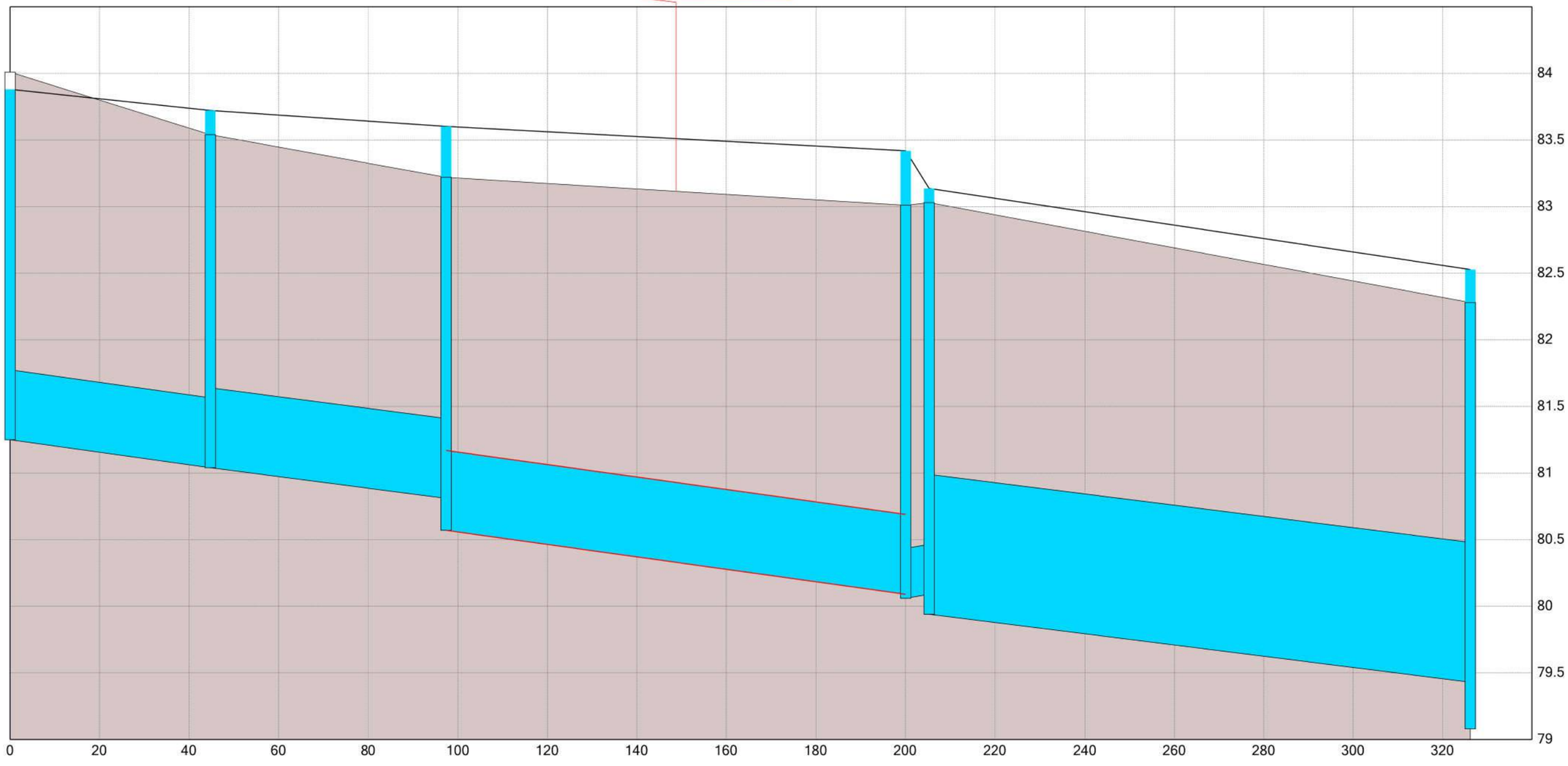
Conduit O_0200_6724
Flow = 0.256 m³/s
Slope = 0.0047 m/m
Invert1 = 81.25 m
Invert2 = 81.04 m

Conduit O_0200_6725
Flow = 0.303 m³/s
Slope = 0.00437 m/m
Invert1 = 81.04 m
Invert2 = 80.81 m

Conduit O_0200_6380
Flow = 0.303 m³/s
Slope = 0.00467 m/m
Invert1 = 80.57 m
Invert2 = 80.09 m

Conduit O_0200_6381
Flow = 0.305 m³/s
Slope = -0.00575 m/m
Invert1 = 80.06 m
Invert2 = 80.09 m

Conduit O_0200_6711
Flow = 1.645 m³/s
Slope = 0.00422 m/m
Invert1 = 79.94 m
Invert2 = 79.43 m



Junction O_0160_6136
CWSEL = 83.88049 m
Max. CWSEL = 83.88049 m
06/02/2020 08:35AM

Junction O_0160_6137
CWSEL = 83.72172 m
Max. CWSEL = 83.72172 m
06/02/2020 08:35AM

Junction O_0160_6138
CWSEL = 83.60222 m
Max. CWSEL = 83.60222 m
06/02/2020 08:35AM

Junction O_0160_9331
CWSEL = 83.41885 m
Max. CWSEL = 83.41885 m
06/02/2020 08:35AM

Junction O_0160_6769
CWSEL = 83.13652 m
Max. CWSEL = 83.13652 m
06/02/2020 08:35AM

Junction O_0160_6112
CWSEL = 82.52777 m
Max. CWSEL = 82.52777 m
06/02/2020 08:35AM

VICTORIA ST. EAST
MINOR SYSTEM
100 YEAR
EXISTING

HGL

Peak values

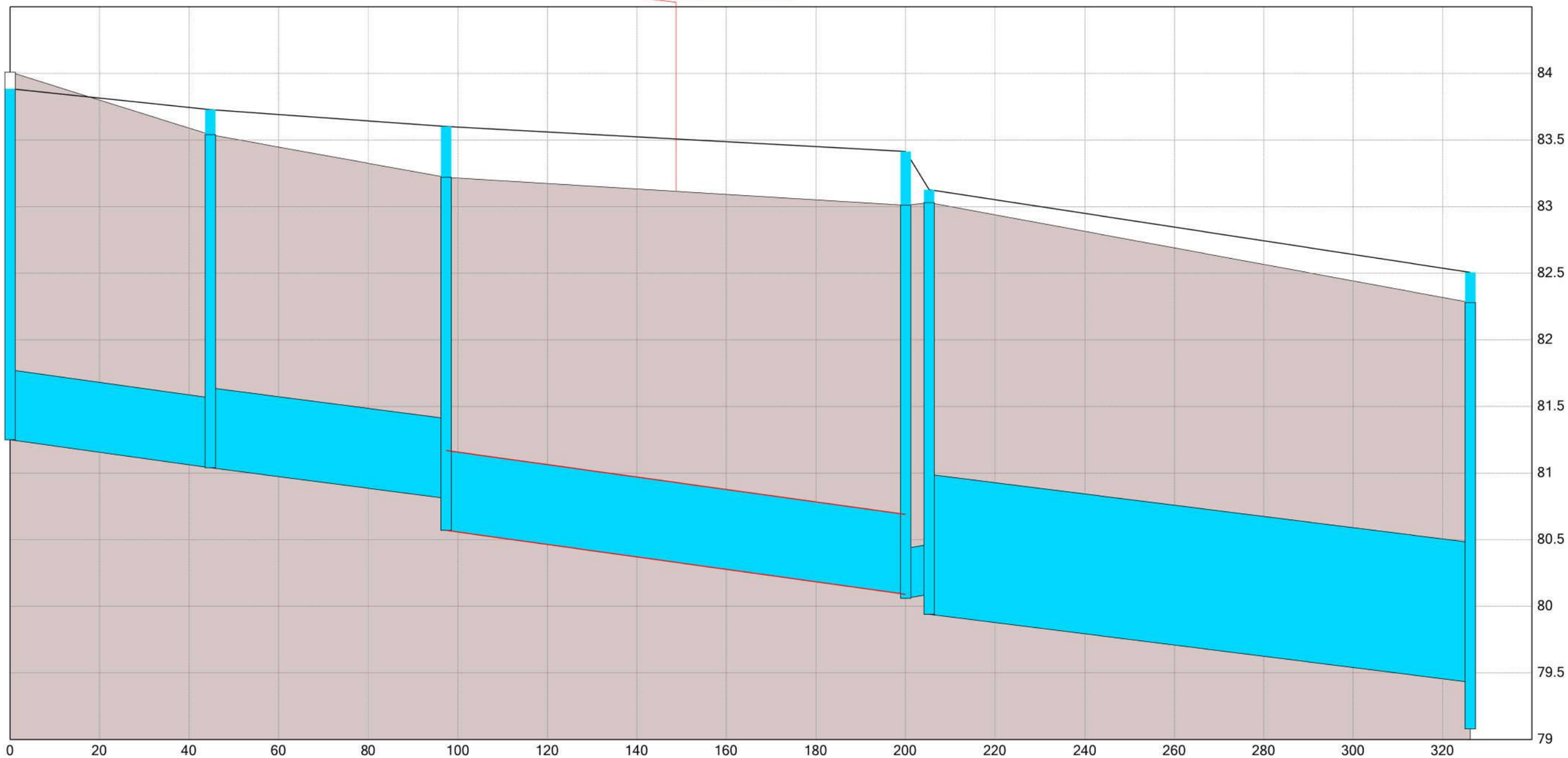
Conduit O_0200_6724
Flow = 0.258 m³/s
Slope = 0.0047 m/m
Invert1 = 81.25 m
Invert2 = 81.04 m

Conduit O_0200_6725
Flow = 0.301 m³/s
Slope = 0.00437 m/m
Invert1 = 81.04 m
Invert2 = 80.81 m

Conduit O_0200_6380
Flow = 0.301 m³/s
Slope = 0.00467 m/m
Invert1 = 80.57 m
Invert2 = 80.09 m

Conduit O_0200_6381
Flow = 0.303 m³/s
Slope = -0.00575 m/m
Invert1 = 80.06 m
Invert2 = 80.09 m

Conduit O_0200_6711
Flow = 1.687 m³/s
Slope = 0.00422 m/m
Invert1 = 79.94 m
Invert2 = 79.43 m



Junction O_0160_6136
CWSEL = 83.88516 m
Max. CWSEL = 83.88516 m
06/02/2020 08:35AM

Junction O_0160_6137
CWSEL = 83.7279 m
Max. CWSEL = 83.7279 m
06/02/2020 08:35AM

Junction O_0160_6138
CWSEL = 83.60169 m
Max. CWSEL = 83.60169 m
06/02/2020 08:35AM

Junction O_0160_9331
CWSEL = 83.41397 m
Max. CWSEL = 83.41397 m
06/02/2020 08:35AM

Junction O_0160_6769
CWSEL = 83.12743 m
Max. CWSEL = 83.12743 m
06/02/2020 08:35AM

Junction O_0160_6112
CWSEL = 82.50642 m
Max. CWSEL = 82.50642 m
06/02/2020 08:35AM

VICTORIA ST. EAST
MINOR SYSTEM
100 YEAR
PROPOSED

HGL

Peak values

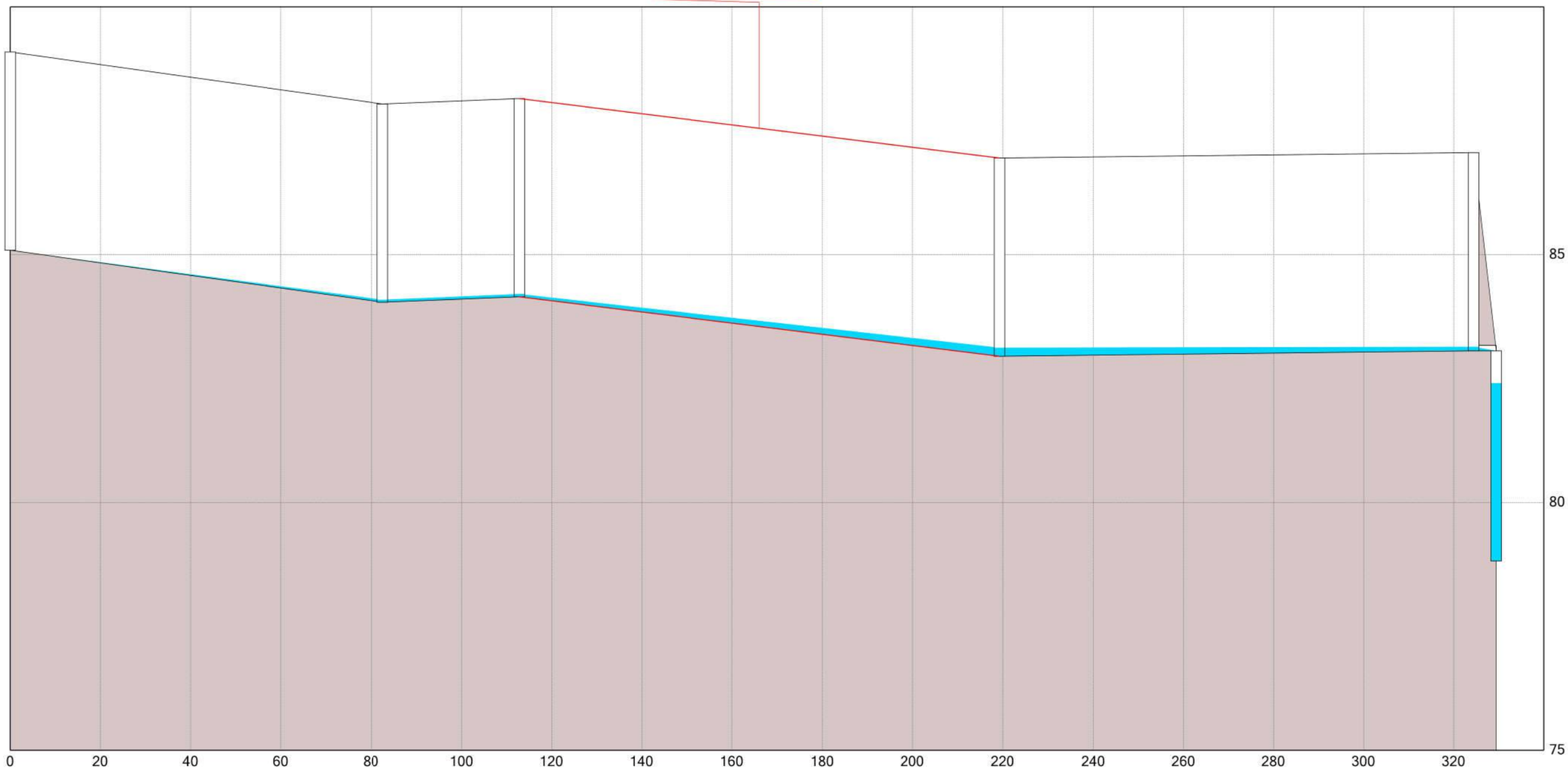
Conduit O_0200_6560-S
Flow = 0 m³/s
Slope = 0.0127 m/m
Invert1 = 85.09 m
Invert2 = 84.04 m

Conduit O_0200_6561-S
Flow = 0 m³/s
Slope = -0.00362 m/m
Invert1 = 84.04 m
Invert2 = 84.15 m

Conduit O_0200_7148-S
Flow = 0.143 m³/s
Slope = 0.0113 m/m
Invert1 = 84.15 m
Invert2 = 82.95 m

Conduit O_0200_6260-S
Flow = 0 m³/s
Slope = -0.00105 m/m
Invert1 = 82.95 m
Invert2 = 83.06 m

Orifice O_0160_4221-IC
Flow = 0.001 m³/s



Junction O_0160_6765-S
CWSEL = 85.09 m
Max. CWSEL = 85.09 m
06/02/2020 12:05AM

Junction O_0160_6766-S
CWSEL = 84.09103 m
Max. CWSEL = 84.09103 m
06/02/2020 08:35AM

Junction O_0160_6767-S
CWSEL = 84.20734 m
Max. CWSEL = 84.20734 m
06/02/2020 08:30AM

Junction O_0160_4220-S
CWSEL = 83.12379 m
Max. CWSEL = 83.12379 m
06/02/2020 08:45AM

Junction O_0160_4221-S
CWSEL = 83.14227 m
Max. CWSEL = 83.14227 m
06/02/2020 08:40AM

Junction O_0160_4221
CWSEL = 82.40954 m
Max. CWSEL = 82.40954 m
06/02/2020 08:40AM

VICTORIA ST. WEST
MAJOR SYSTEM
5 YEAR
EXISTING

HGL

Peak values

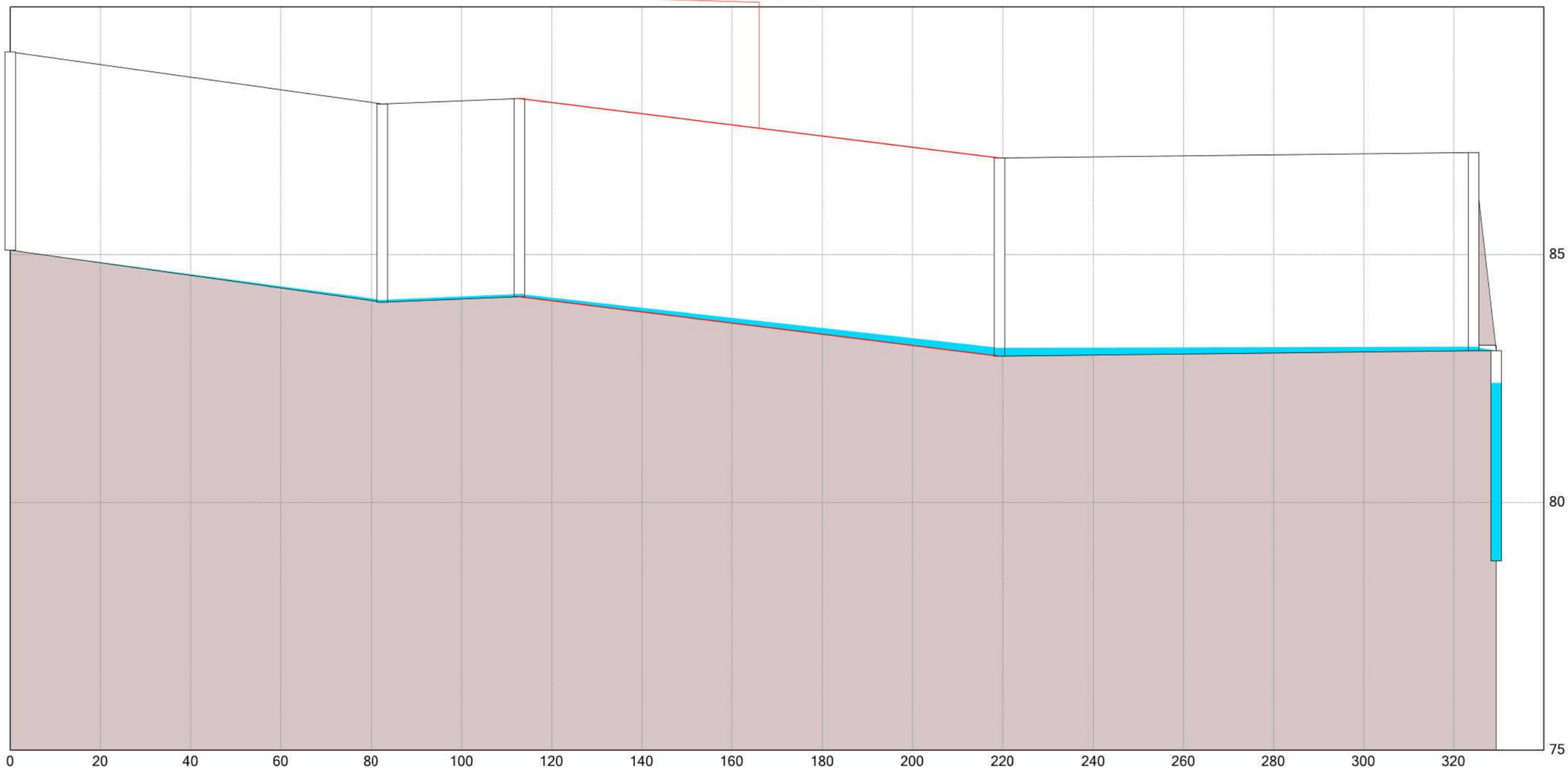
Conduit O_0200_6560-S
Flow = 0 m³/s
Slope = 0.0127 m/m
Invert1 = 85.09 m
Invert2 = 84.04 m

Conduit O_0200_6561-S
Flow = 0 m³/s
Slope = -0.00362 m/m
Invert1 = 84.04 m
Invert2 = 84.15 m

Conduit O_0200_7148-S
Flow = 0.132 m³/s
Slope = 0.0113 m/m
Invert1 = 84.15 m
Invert2 = 82.95 m

Conduit O_0200_6260-S
Flow = 0 m³/s
Slope = -0.00105 m/m
Invert1 = 82.95 m
Invert2 = 83.06 m

Orifice O_0160_4221-IC
Flow = 0.001 m³/s



Junction O_0160_6765-S
CWSEL = 85.09 m
Max. CWSEL = 85.09 m
06/02/2020 12:05AM

Junction O_0160_6766-S
CWSEL = 84.0875 m
Max. CWSEL = 84.0875 m
06/02/2020 08:35AM

Junction O_0160_6767-S
CWSEL = 84.20531 m
Max. CWSEL = 84.20531 m
06/02/2020 08:30AM

Junction O_0160_4220-S
CWSEL = 83.11802 m
Max. CWSEL = 83.11802 m
06/02/2020 08:45AM

Junction O_0160_4221-S
CWSEL = 83.14225 m
Max. CWSEL = 83.14225 m
06/02/2020 08:40AM

Junction O_0160_4221
CWSEL = 82.41251 m
Max. CWSEL = 82.41251 m
06/02/2020 08:40AM

VICTORIA ST. WEST
MAJOR SYSTEM
5 YEAR
PROPOSED

HGL

Peak values

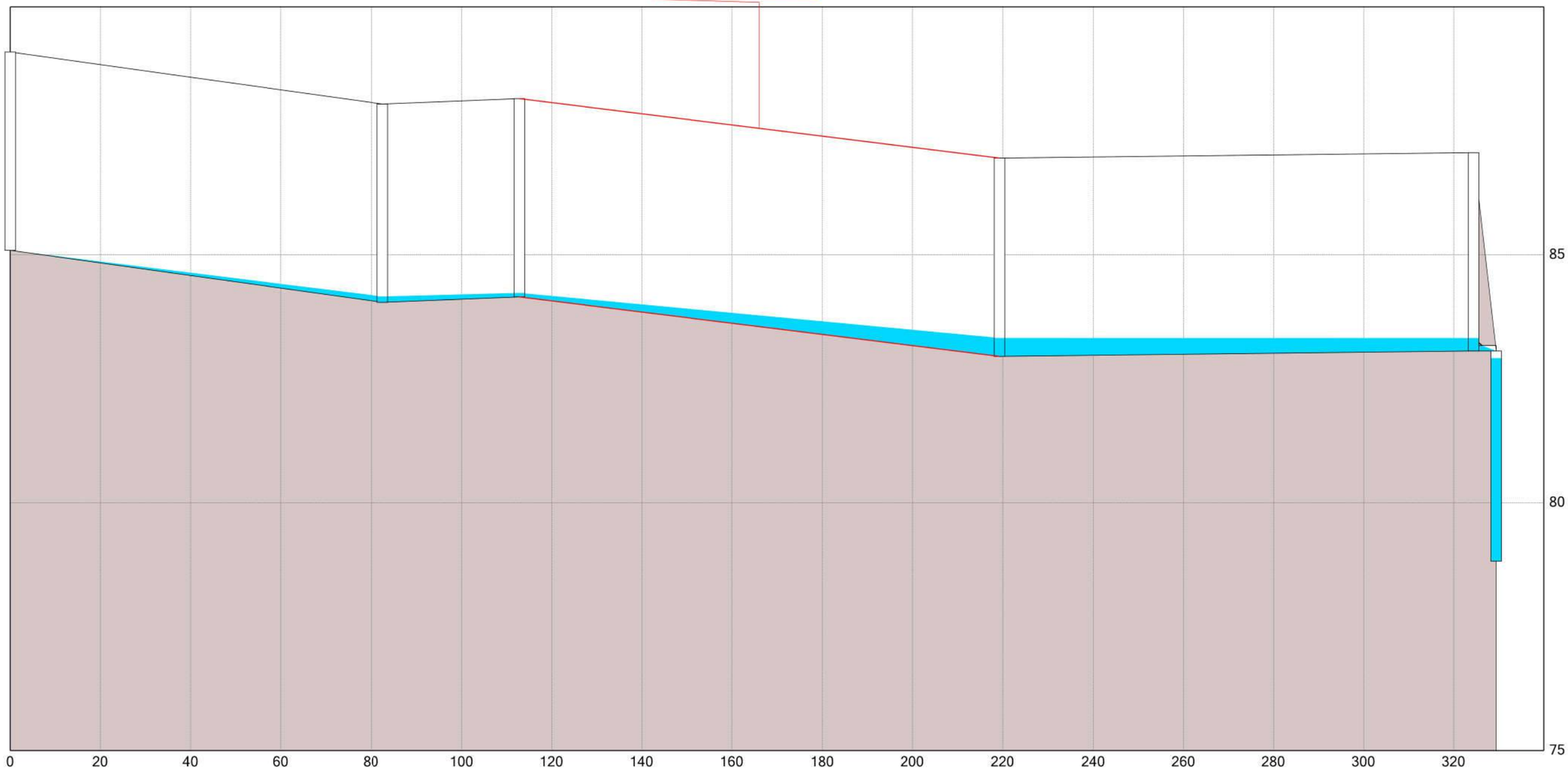
Conduit O_0200_6560-S
Flow = 0 m³/s
Slope = 0.0127 m/m
Invert1 = 85.09 m
Invert2 = 84.04 m

Conduit O_0200_6561-S
Flow = 0 m³/s
Slope = -0.00362 m/m
Invert1 = 84.04 m
Invert2 = 84.15 m

Conduit O_0200_7148-S
Flow = 0.323 m³/s
Slope = 0.0113 m/m
Invert1 = 84.15 m
Invert2 = 82.95 m

Conduit O_0200_6260-S
Flow = 0.073 m³/s
Slope = -0.00105 m/m
Invert1 = 82.95 m
Invert2 = 83.06 m

Orifice O_0160_4221-IC
Flow = 0.002 m³/s



Junction O_0160_6765-S
CWSEL = 85.09 m
Max. CWSEL = 85.09 m
06/02/2020 12:05AM

Junction O_0160_6766-S
CWSEL = 84.15884 m
Max. CWSEL = 84.15884 m
06/02/2020 08:35AM

Junction O_0160_6767-S
CWSEL = 84.23102 m
Max. CWSEL = 84.23102 m
06/02/2020 08:30AM

Junction O_0160_4220-S
CWSEL = 83.3227 m
Max. CWSEL = 83.3227 m
06/02/2020 08:45AM

Junction O_0160_4221-S
CWSEL = 83.32108 m
Max. CWSEL = 83.32108 m
06/02/2020 08:45AM

Junction O_0160_4221
CWSEL = 82.91544 m
Max. CWSEL = 82.91544 m
06/02/2020 08:35AM

VICTORIA ST. WEST
MAJOR SYSTEM
100 YEAR
EXISTING

HGL

Peak values

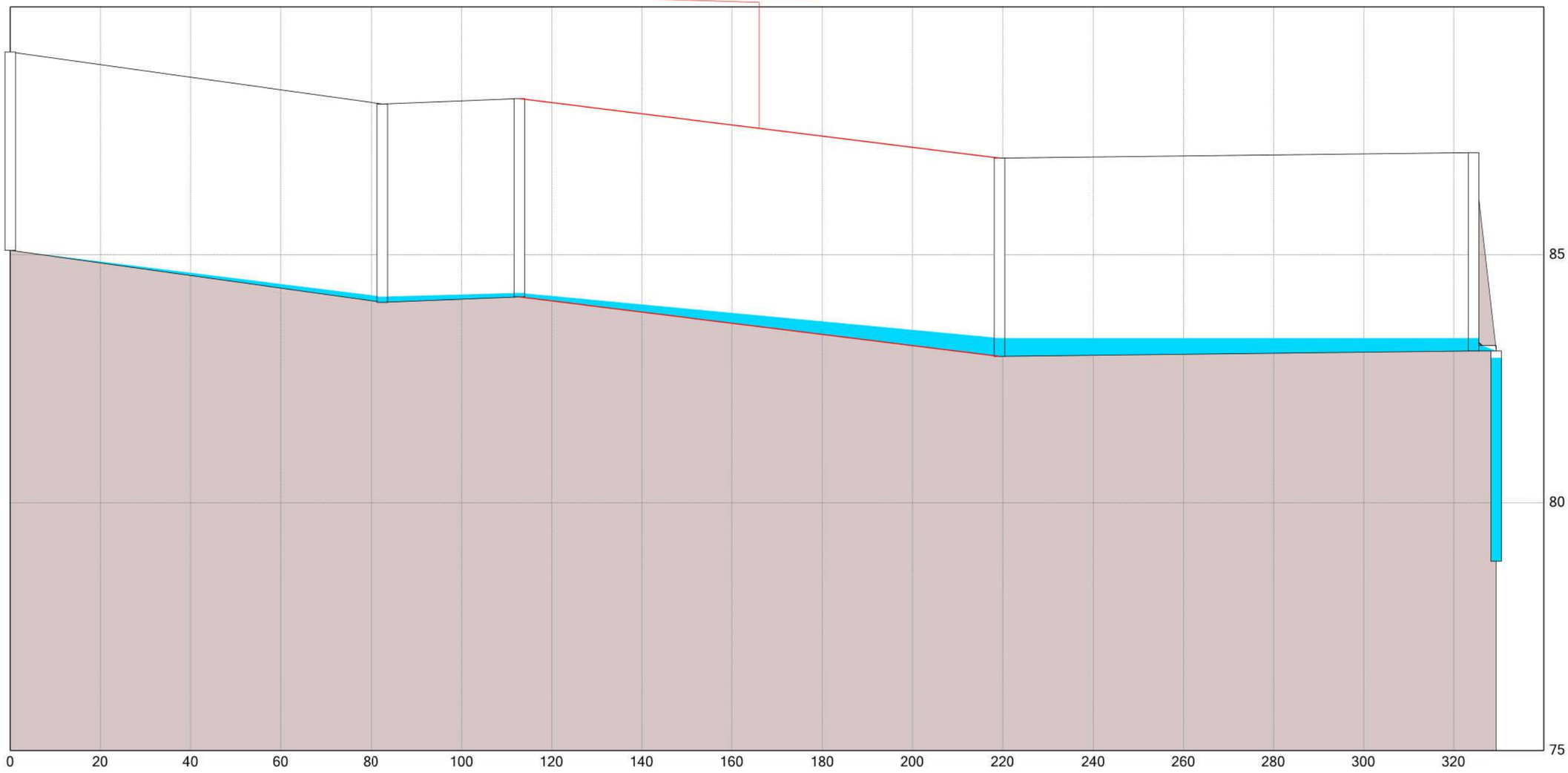
Conduit O_0200_6560-S
Flow = 0 m³/s
Slope = 0.0127 m/m
Invert1 = 85.09 m
Invert2 = 84.04 m

Conduit O_0200_6561-S
Flow = 0 m³/s
Slope = -0.00362 m/m
Invert1 = 84.04 m
Invert2 = 84.15 m

Conduit O_0200_7148-S
Flow = 0.316 m³/s
Slope = 0.0113 m/m
Invert1 = 84.15 m
Invert2 = 82.95 m

Conduit O_0200_6260-S
Flow = 0.088 m³/s
Slope = -0.00105 m/m
Invert1 = 82.95 m
Invert2 = 83.06 m

Orifice O_0160_4221-IC
Flow = 0.002 m³/s



Junction O_0160_6765-S
CWSEL = 85.09 m
Max. CWSEL = 85.09 m
06/02/2020 12:05AM

Junction O_0160_6766-S
CWSEL = 84.15511 m
Max. CWSEL = 84.15511 m
06/02/2020 08:35AM

Junction O_0160_6767-S
CWSEL = 84.2304 m
Max. CWSEL = 84.2304 m
06/02/2020 08:30AM

Junction O_0160_4220-S
CWSEL = 83.32065 m
Max. CWSEL = 83.32065 m
06/02/2020 08:45AM

Junction O_0160_4221-S
CWSEL = 83.32021 m
Max. CWSEL = 83.32021 m
06/02/2020 08:45AM

Junction O_0160_4221
CWSEL = 82.92055 m
Max. CWSEL = 82.92055 m
06/02/2020 08:35AM

VICTORIA ST. WEST
MAJOR SYSTEM
100 YEAR
PROPOSED

HGL

Peak values

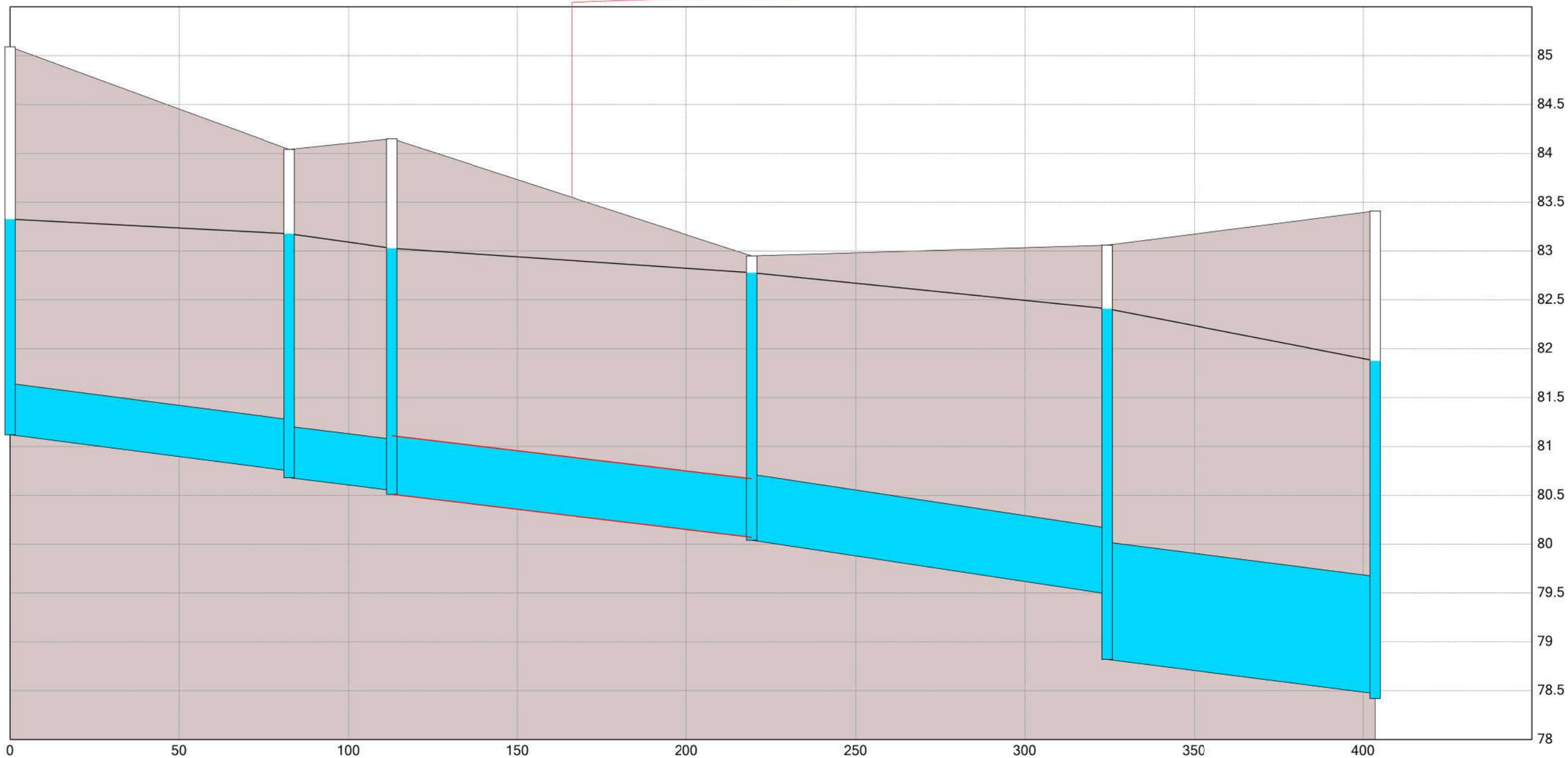
Conduit O_0200_6560
Flow = 0.257 m³/s
Slope = 0.00448 m/m
Invert1 = 81.12 m
Invert2 = 80.75 m

Conduit O_0200_6561
Flow = 0.279 m³/s
Slope = 0.00428 m/m
Invert1 = 80.68 m
Invert2 = 80.55 m

Conduit O_0200_7148
Flow = 0.377 m³/s
Slope = 0.00414 m/m
Invert1 = 80.51 m
Invert2 = 80.07 m

Conduit O_0200_6260
Flow = 0.528 m³/s
Slope = 0.00523 m/m
Invert1 = 80.04 m
Invert2 = 79.49 m

Conduit O_0200_6331
Flow = 3.046 m³/s
Slope = 0.00442 m/m
Invert1 = 78.82 m
Invert2 = 78.47 m



Junction O_0160_6765
CWSEL = 83.32635 m
Max. CWSEL = 83.32635 m
06/02/2020 08:35AM

Junction O_0160_6766
CWSEL = 83.17686 m
Max. CWSEL = 83.17686 m
06/02/2020 08:35AM

Junction O_0160_6767
CWSEL = 83.02805 m
Max. CWSEL = 83.02805 m
06/02/2020 08:35AM

Junction O_0160_4220
CWSEL = 82.77824 m
Max. CWSEL = 82.77824 m
06/02/2020 08:40AM

Junction O_0160_4221
CWSEL = 82.40954 m
Max. CWSEL = 82.40954 m
06/02/2020 08:40AM

Junction O_0160_4301
CWSEL = 81.87608 m
Max. CWSEL = 81.87608 m
06/02/2020 08:40AM

VICTORIA ST. WEST
MINOR SYSTEM
5 YEAR
EXISTING

HGL

Peak values

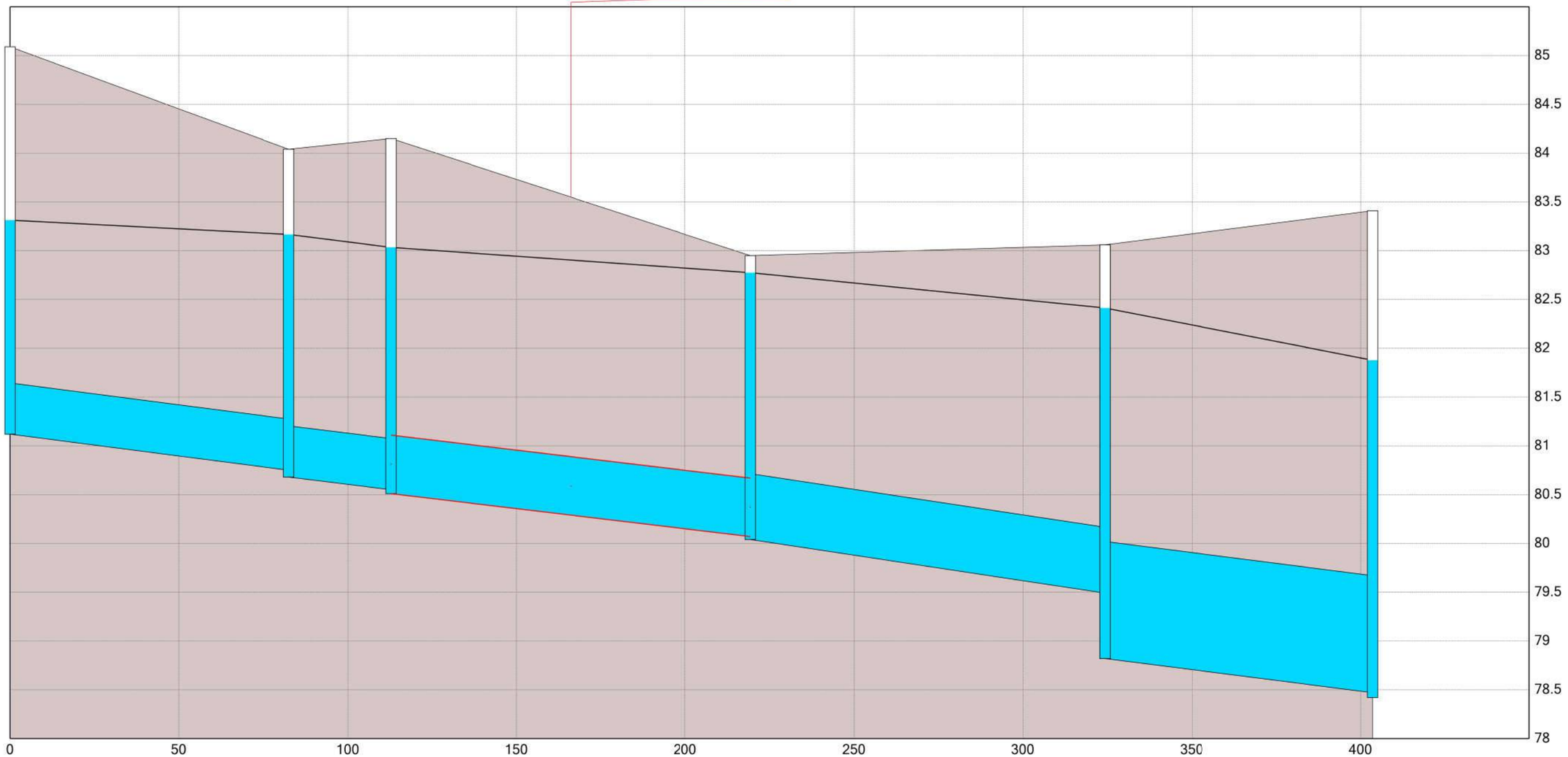
Conduit O_0200_6560
Flow = 0.257 m³/s
Slope = 0.00448 m/m
Invert1 = 81.12 m
Invert2 = 80.75 m

Conduit O_0200_6561
Flow = 0.275 m³/s
Slope = 0.00428 m/m
Invert1 = 80.68 m
Invert2 = 80.55 m

Conduit O_0200_7148
Flow = 0.38 m³/s
Slope = 0.00414 m/m
Invert1 = 80.51 m
Invert2 = 80.07 m

Conduit O_0200_6260
Flow = 0.532 m³/s
Slope = 0.00523 m/m
Invert1 = 80.04 m
Invert2 = 79.49 m

Conduit O_0200_6331
Flow = 3.046 m³/s
Slope = 0.00442 m/m
Invert1 = 78.82 m
Invert2 = 78.47 m



Junction O_0160_6765
CWSEL = 83.31319 m
Max. CWSEL = 83.31319 m
06/02/2020 08:35AM

Junction O_0160_6766
CWSEL = 83.16654 m
Max. CWSEL = 83.16654 m
06/02/2020 08:35AM

Junction O_0160_6767
CWSEL = 83.03394 m
Max. CWSEL = 83.03394 m
06/02/2020 08:40AM

Junction O_0160_4220
CWSEL = 82.77475 m
Max. CWSEL = 82.77475 m
06/02/2020 08:40AM

Junction O_0160_4221
CWSEL = 82.41251 m
Max. CWSEL = 82.41251 m
06/02/2020 08:40AM

Junction O_0160_4301
CWSEL = 81.87709 m
Max. CWSEL = 81.87709 m
06/02/2020 08:40AM

VICTORIA ST. WEST
MINOR SYSTEM
5 YEAR
PROPOSED

HGL

Peak values

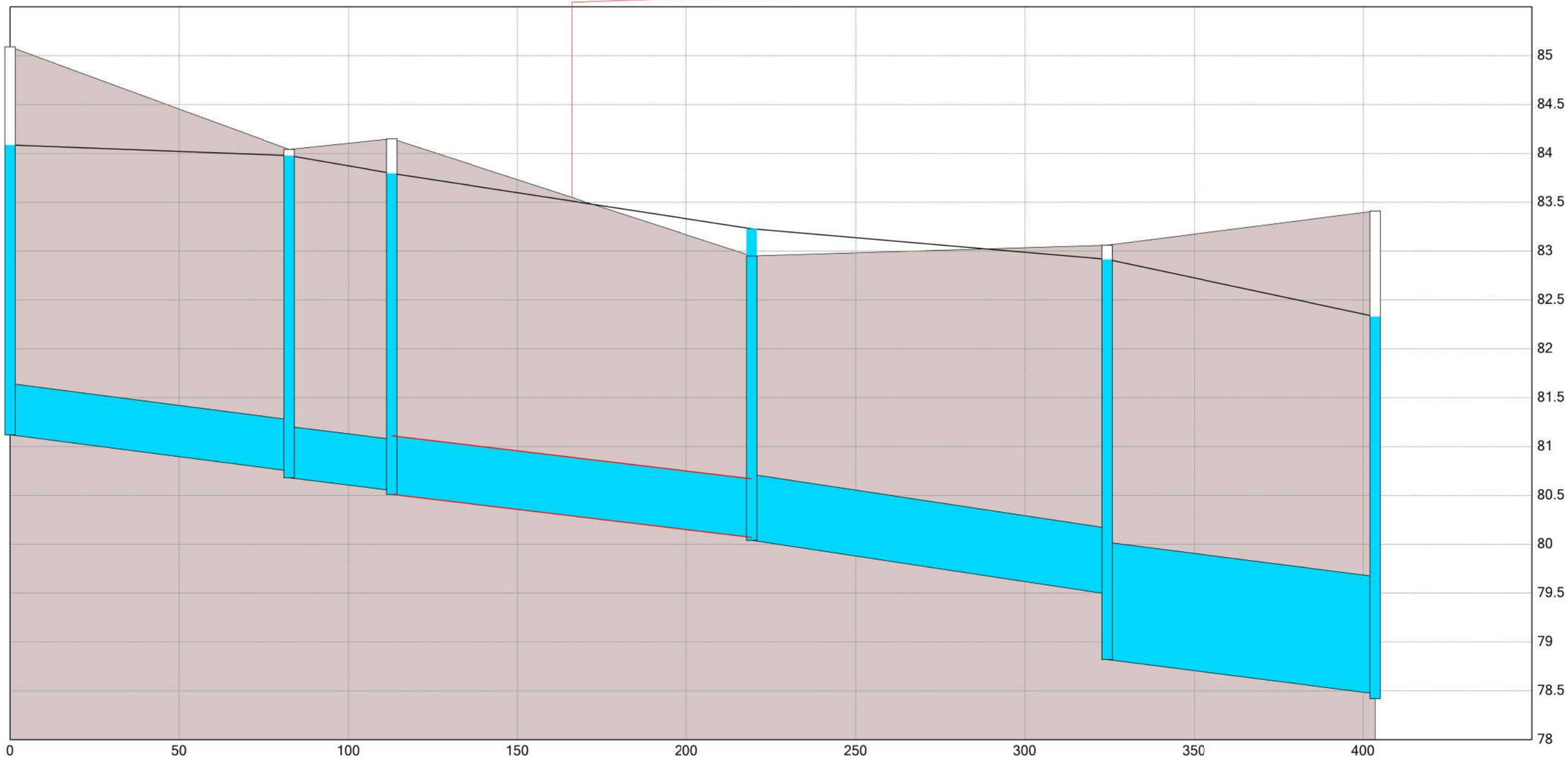
Conduit O_0200_6560
Flow = 0.273 m³/s
Slope = 0.00448 m/m
Invert1 = 81.12 m
Invert2 = 80.75 m

Conduit O_0200_6561
Flow = 0.283 m³/s
Slope = 0.00428 m/m
Invert1 = 80.68 m
Invert2 = 80.55 m

Conduit O_0200_7148
Flow = 0.45 m³/s
Slope = 0.00414 m/m
Invert1 = 80.51 m
Invert2 = 80.07 m

Conduit O_0200_6260
Flow = 0.485 m³/s
Slope = 0.00523 m/m
Invert1 = 80.04 m
Invert2 = 79.49 m

Conduit O_0200_6331
Flow = 3.167 m³/s
Slope = 0.00442 m/m
Invert1 = 78.82 m
Invert2 = 78.47 m



Junction O_0160_6765
CWSEL = 84.08564 m
Max. CWSEL = 84.08564 m
06/02/2020 08:30AM

Junction O_0160_6766
CWSEL = 83.97714 m
Max. CWSEL = 83.97714 m
06/02/2020 08:30AM

Junction O_0160_6767
CWSEL = 83.7952 m
Max. CWSEL = 83.7952 m
06/02/2020 08:30AM

Junction O_0160_4220
CWSEL = 83.22841 m
Max. CWSEL = 83.22841 m
06/02/2020 08:35AM

Junction O_0160_4221
CWSEL = 82.91544 m
Max. CWSEL = 82.91544 m
06/02/2020 08:35AM

Junction O_0160_4301
CWSEL = 82.32971 m
Max. CWSEL = 82.32971 m
06/02/2020 08:35AM

VICTORIA ST. WEST
MINOR SYSTEM
100 YEAR
EXISTING

HGL

Peak values

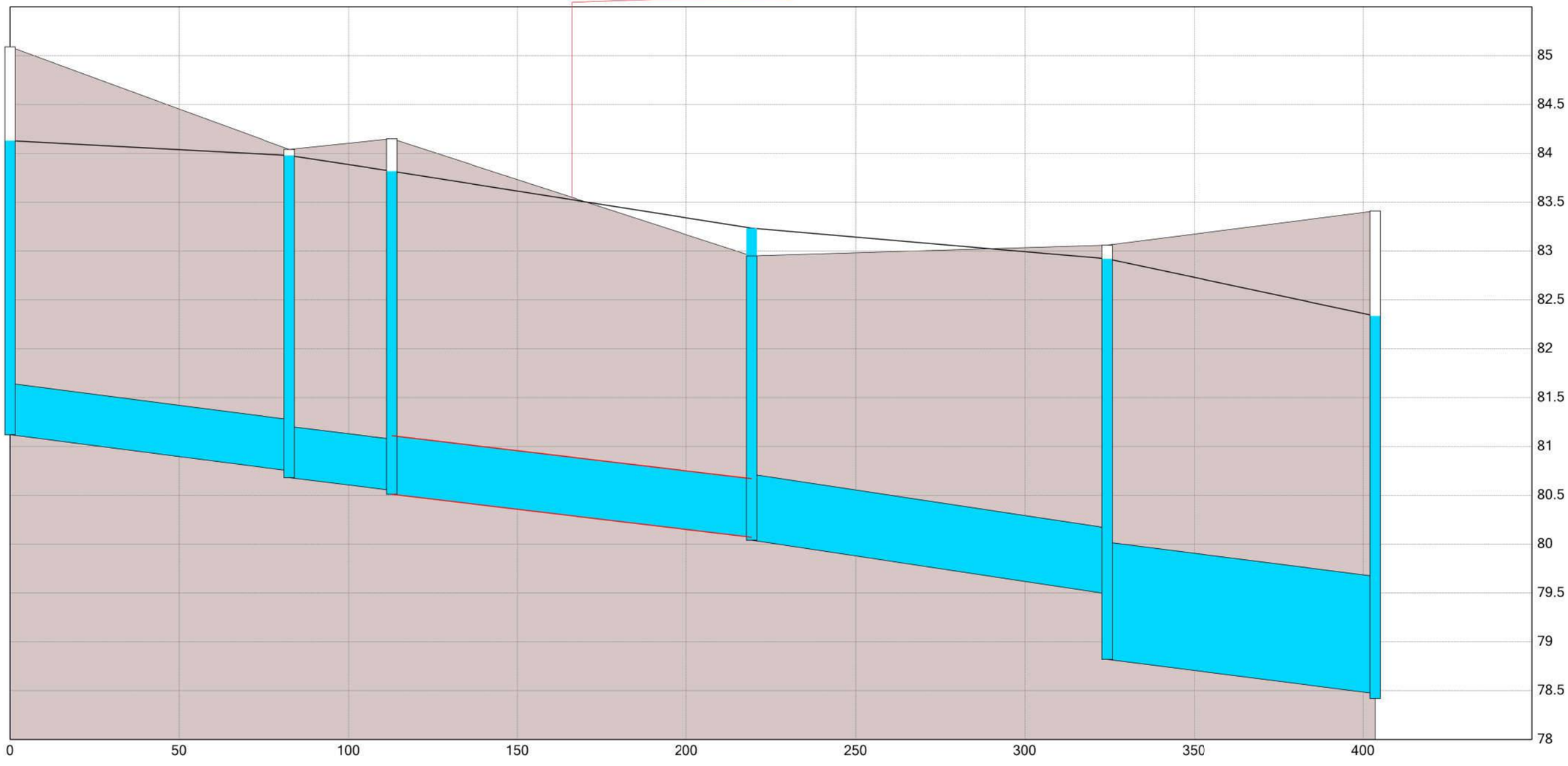
Conduit O_0200_6560
Flow = 0.272 m³/s
Slope = 0.00448 m/m
Invert1 = 81.12 m
Invert2 = 80.75 m

Conduit O_0200_6561
Flow = 0.277 m³/s
Slope = 0.00428 m/m
Invert1 = 80.68 m
Invert2 = 80.55 m

Conduit O_0200_7148
Flow = 0.455 m³/s
Slope = 0.00414 m/m
Invert1 = 80.51 m
Invert2 = 80.07 m

Conduit O_0200_6260
Flow = 0.489 m³/s
Slope = 0.00523 m/m
Invert1 = 80.04 m
Invert2 = 79.49 m

Conduit O_0200_6331
Flow = 3.168 m³/s
Slope = 0.00442 m/m
Invert1 = 78.82 m
Invert2 = 78.47 m



Junction O_0160_6765
CWSEL = 84.12931 m
Max. CWSEL = 84.12931 m
06/02/2020 08:30AM

Junction O_0160_6766
CWSEL = 83.97795 m
Max. CWSEL = 83.97795 m
06/02/2020 08:30AM

Junction O_0160_6767
CWSEL = 83.81686 m
Max. CWSEL = 83.81686 m
06/02/2020 08:30AM

Junction O_0160_4220
CWSEL = 83.2342 m
Max. CWSEL = 83.2342 m
06/02/2020 08:35AM

Junction O_0160_4221
CWSEL = 82.92055 m
Max. CWSEL = 82.92055 m
06/02/2020 08:35AM

Junction O_0160_4301
CWSEL = 82.33511 m
Max. CWSEL = 82.33511 m
06/02/2020 08:35AM

VICTORIA ST. WEST
MINOR SYSTEM
100 YEAR
PROPOSED

HGL

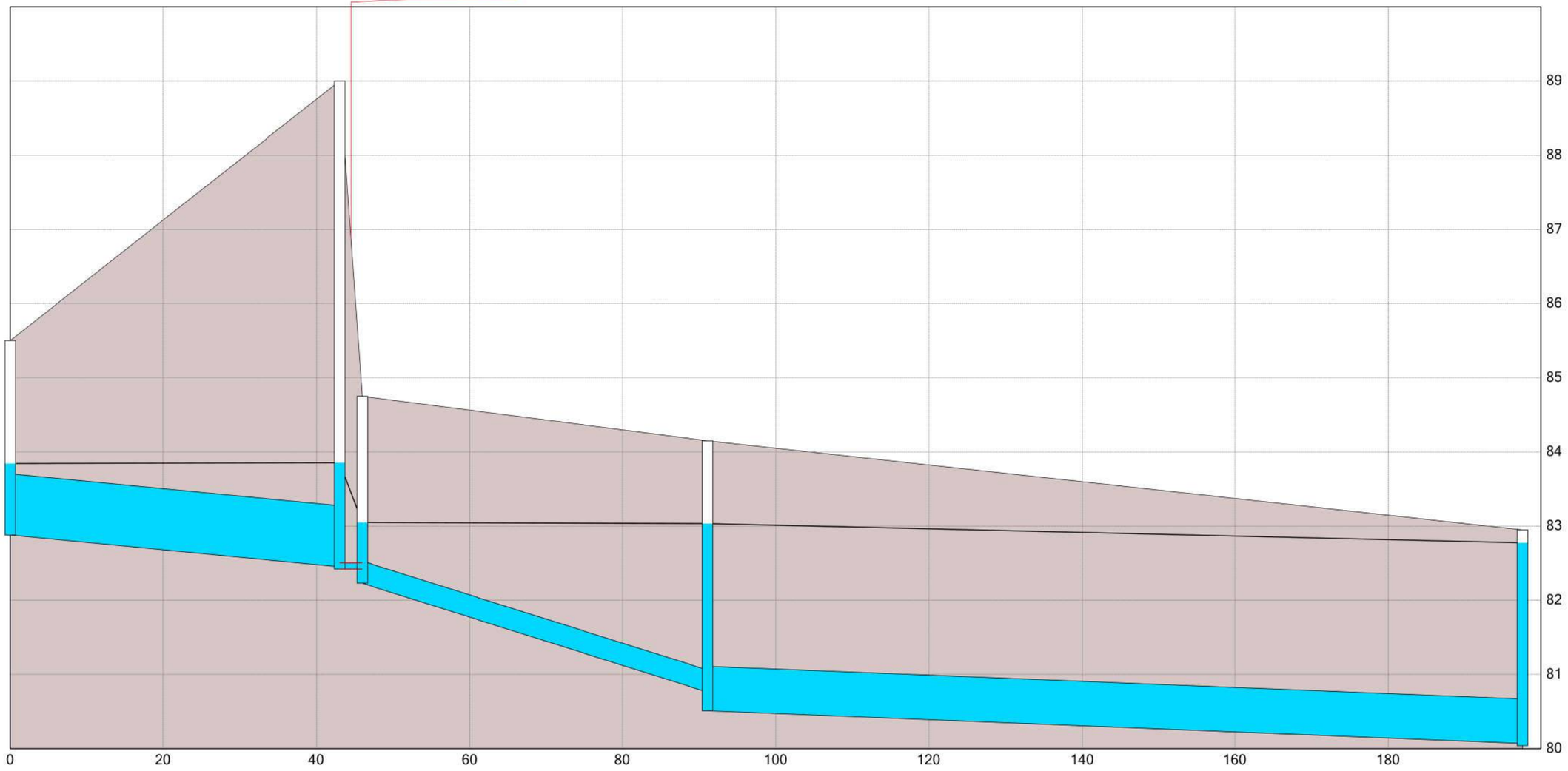
Peak values

Conduit C2
Flow = 0.049 m³/s
Slope = 0.01 m/m
Invert1 = 82.88 m
Invert2 = 82.45 m

Orifice OR2
Flow = 0.016 m³/s

Conduit O_0200_6562
Flow = 0.025 m³/s
Slope = 0.0326 m/m
Invert1 = 82.23 m
Invert2 = 80.76 m

Conduit O_0200_7148
Flow = 0.38 m³/s
Slope = 0.00414 m/m
Invert1 = 80.51 m
Invert2 = 80.07 m



Junction J3
CWSEL = 83.84345 m
Max. CWSEL = 83.84345 m
06/02/2020 08:40AM

Junction J4
CWSEL = 83.85397 m
Max. CWSEL = 83.85397 m
06/02/2020 08:40AM

Junction O_0160_6768
CWSEL = 83.04917 m
Max. CWSEL = 83.04917 m
06/02/2020 08:40AM

Junction O_0160_6767
CWSEL = 83.03394 m
Max. CWSEL = 83.03394 m
06/02/2020 08:40AM

Junction O_0160_4220
CWSEL = 82.77475 m
Max. CWSEL = 82.77475 m
06/02/2020 08:40AM

SITE (CUL-DE-SAC)
MINOR SYSTEM
5 YEAR

HGL

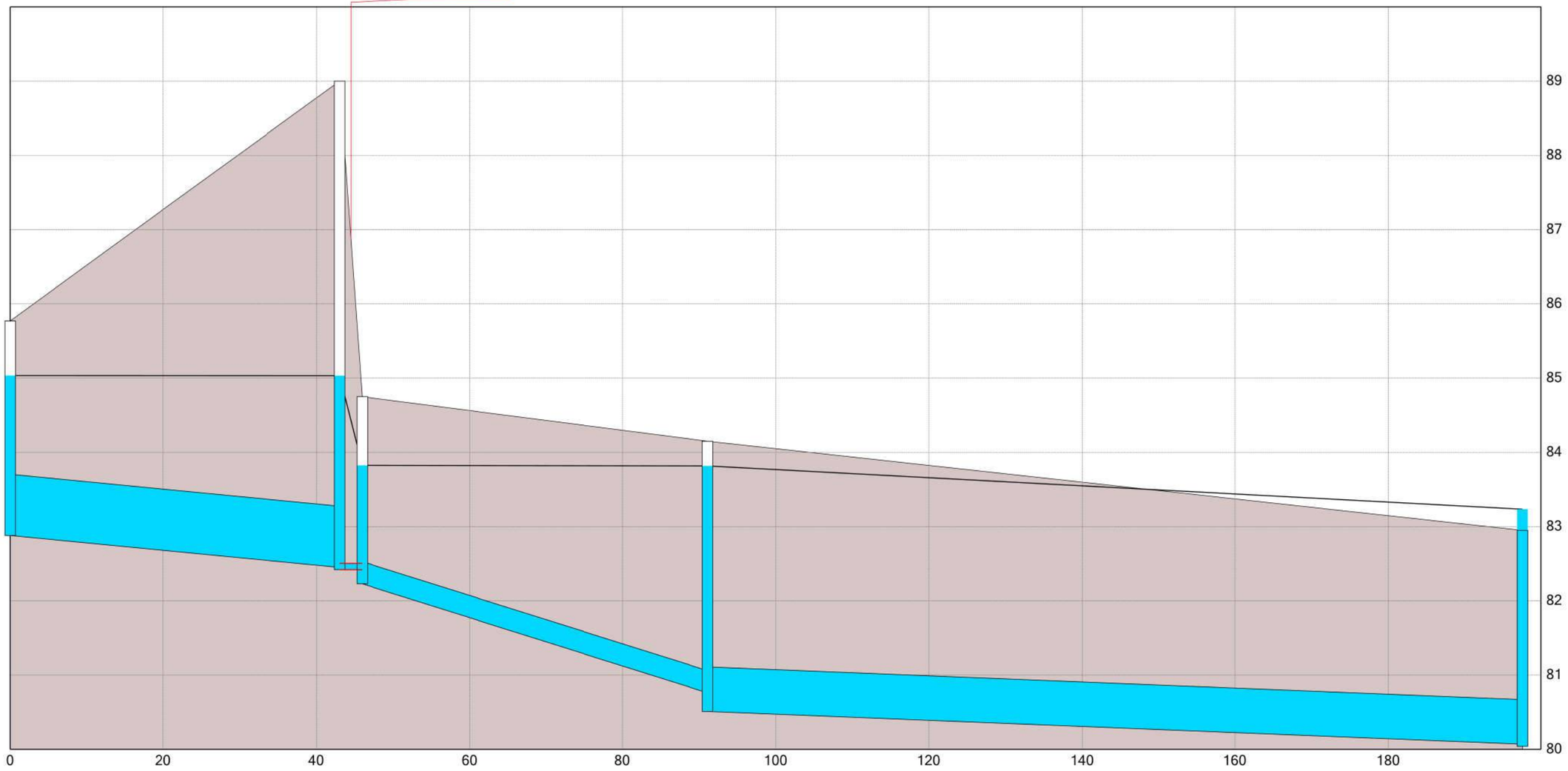
Peak values

Conduit C2
Flow = 0.093 m³/s
Slope = 0.01 m/m
Invert1 = 82.88 m
Invert2 = 82.45 m

Orifice OR2
Flow = 0.02 m³/s

Conduit O_0200_6562
Flow = 0.021 m³/s
Slope = 0.0326 m/m
Invert1 = 82.23 m
Invert2 = 80.76 m

Conduit O_0200_7148
Flow = 0.455 m³/s
Slope = 0.00414 m/m
Invert1 = 80.51 m
Invert2 = 80.07 m



Junction J3
CWSEL = 85.03443 m
Max. CWSEL = 85.03443 m
06/02/2020 08:30AM

Junction J4
CWSEL = 85.03293 m
Max. CWSEL = 85.03293 m
06/02/2020 08:30AM

Junction O_0160_6768
CWSEL = 83.82512 m
Max. CWSEL = 83.82512 m
06/02/2020 08:30AM

Junction O_0160_6767
CWSEL = 83.81686 m
Max. CWSEL = 83.81686 m
06/02/2020 08:30AM

Junction O_0160_4220
CWSEL = 83.2342 m
Max. CWSEL = 83.2342 m
06/02/2020 08:35AM

SITE (CUL-DE-SAC)
MINOR SYSTEM
100 YEAR

HGL

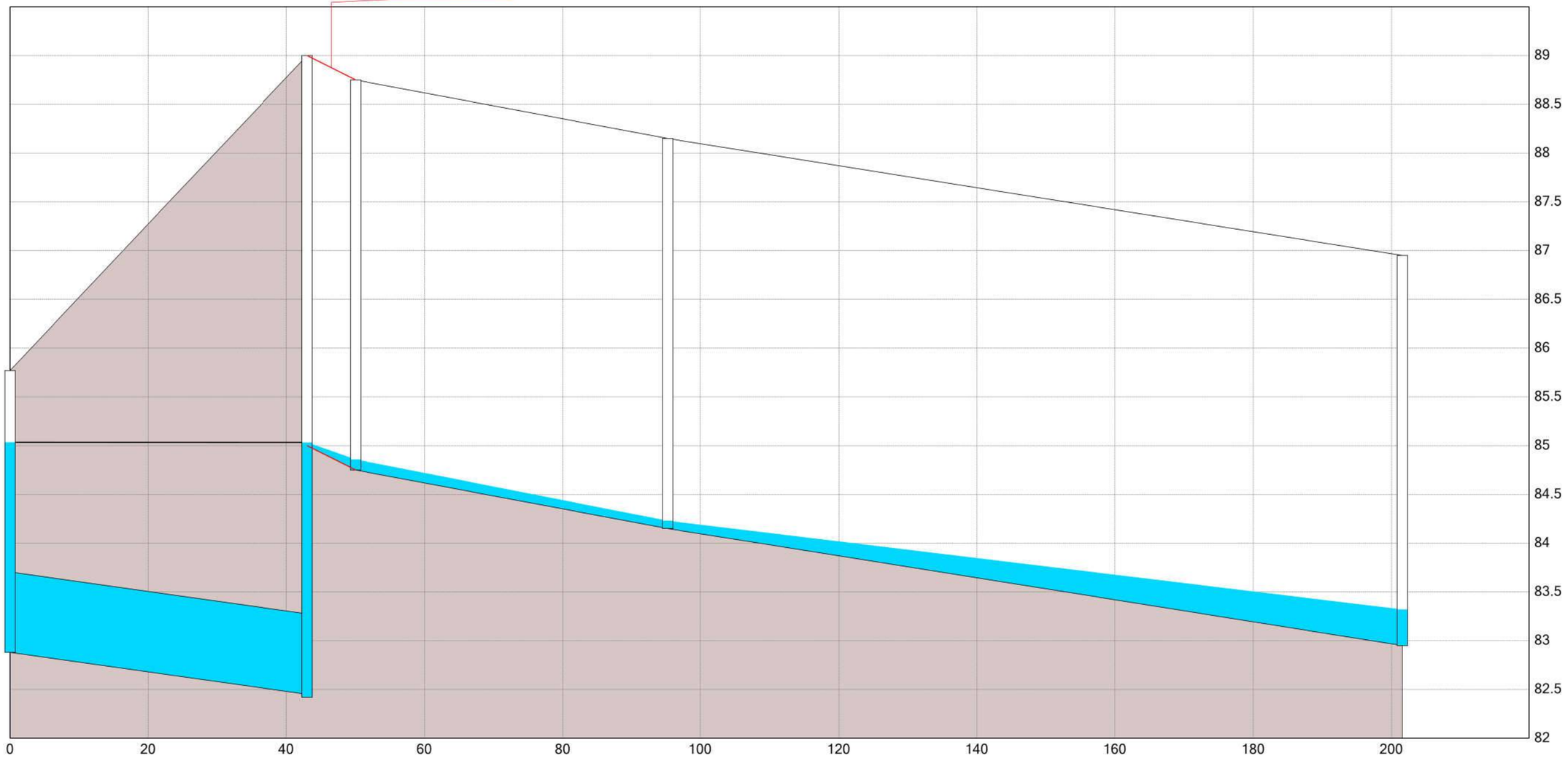
Peak values

Conduit C2
Flow = 0.093 m³/s
Slope = 0.01 m/m
Invert1 = 82.88 m
Invert2 = 82.45 m

Conduit C7
Flow = 0.076 m³/s
Slope = 0.0357 m/m
Invert1 = 85 m
Invert2 = 84.75 m

Conduit O_0200_6562-S
Flow = 0.716 m³/s
Slope = 0.0133 m/m
Invert1 = 84.75 m
Invert2 = 84.15 m

Conduit O_0200_7148-S
Flow = 0.316 m³/s
Slope = 0.0113 m/m
Invert1 = 84.15 m
Invert2 = 82.95 m



Junction J3
CWSEL = 85.03443 m
Max. CWSEL = 85.03443 m
06/02/2020 08:30AM

Junction J4
CWSEL = 85.03293 m
Max. CWSEL = 85.03293 m
06/02/2020 08:30AM

Junction O_0160_6768-S
CWSEL = 84.85932 m
Max. CWSEL = 84.85932 m
06/02/2020 08:30AM

Junction O_0160_6767-S
CWSEL = 84.2304 m
Max. CWSEL = 84.2304 m
06/02/2020 08:30AM

Junction O_0160_4220-S
CWSEL = 83.32065 m
Max. CWSEL = 83.32065 m
06/02/2020 08:45AM

SITE (CUL-DE-SAC)
MAJOR SYSTEM
100 YEAR

HGL

Peak values

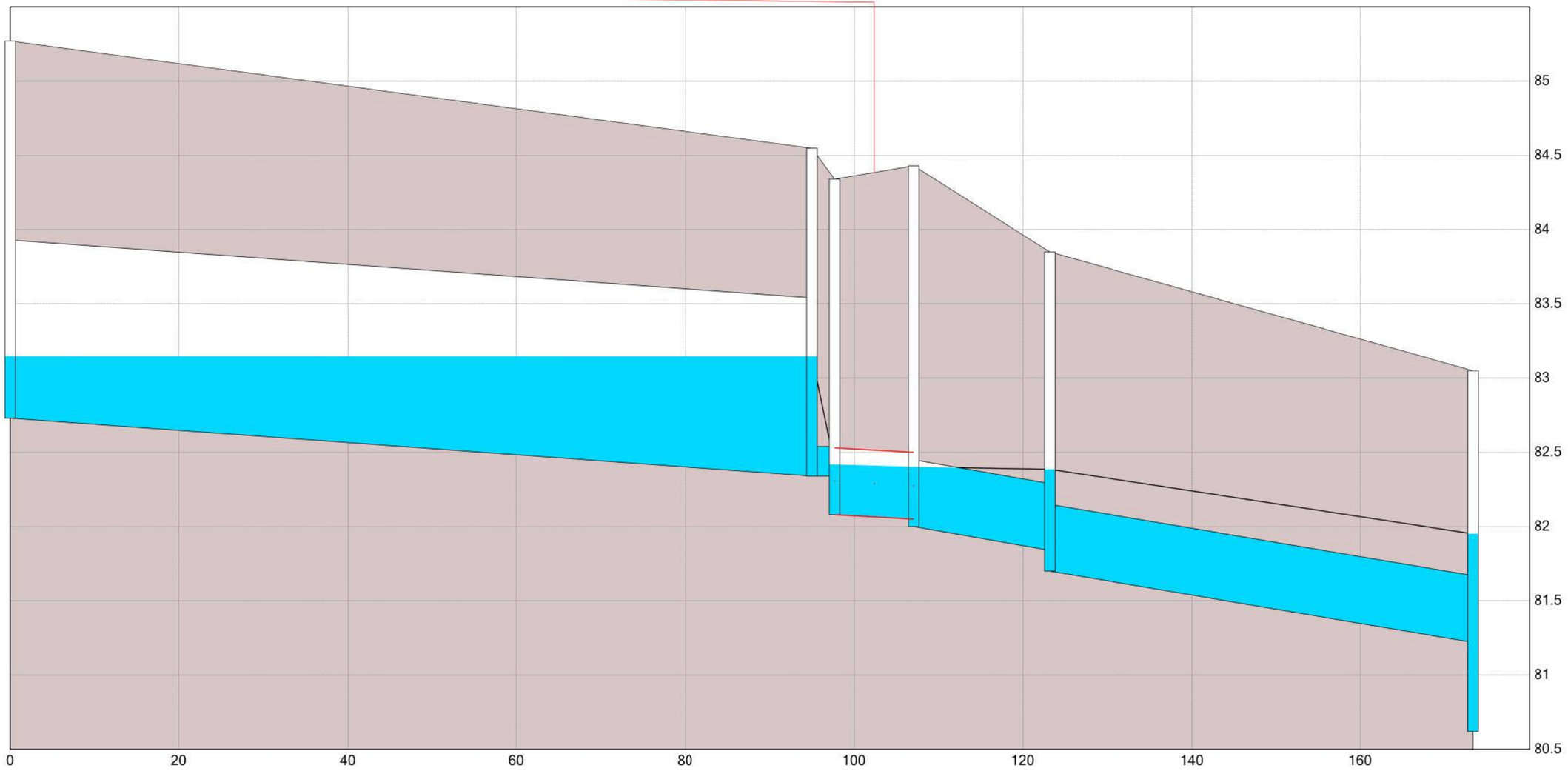
Conduit C1
Flow = 0.025 m³/s
Slope = 0.00411 m/m
Invert1 = 82.73 m
Invert2 = 82.34 m

Orifice OR1
Flow = 0.096 m³/s

Conduit C3
Flow = 0.097 m³/s
Slope = 0.00319 m/m
Invert1 = 82.08 m
Invert2 = 82.05 m

Conduit C4
Flow = 0.1 m³/s
Slope = 0.00994 m/m
Invert1 = 82 m
Invert2 = 81.84 m

Conduit O_0200_401242
Flow = 0.258 m³/s
Slope = 0.00957 m/m
Invert1 = 81.7 m
Invert2 = 81.22 m



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Junction J2
CWSEL = 83.14754 m
Max. CWSEL = 83.14754 m
06/02/2020 08:35AM

Junction OGS_EF06
CWSEL = 82.41856 m
Max. CWSEL = 82.41856 m
06/02/2020 08:35AM

Junction MH2
CWSEL = 82.40245 m
Max. CWSEL = 82.40245 m
06/02/2020 08:35AM

Junction O_0160_400804
CWSEL = 82.38593 m
Max. CWSEL = 82.38593 m
06/02/2020 08:35AM

Junction O_0160_400806
CWSEL = 81.95125 m
Max. CWSEL = 81.95125 m
06/02/2020 08:35AM

SITE (LANEWAY)
MINOR SYSTEM
5 YEAR

HGL

Peak values

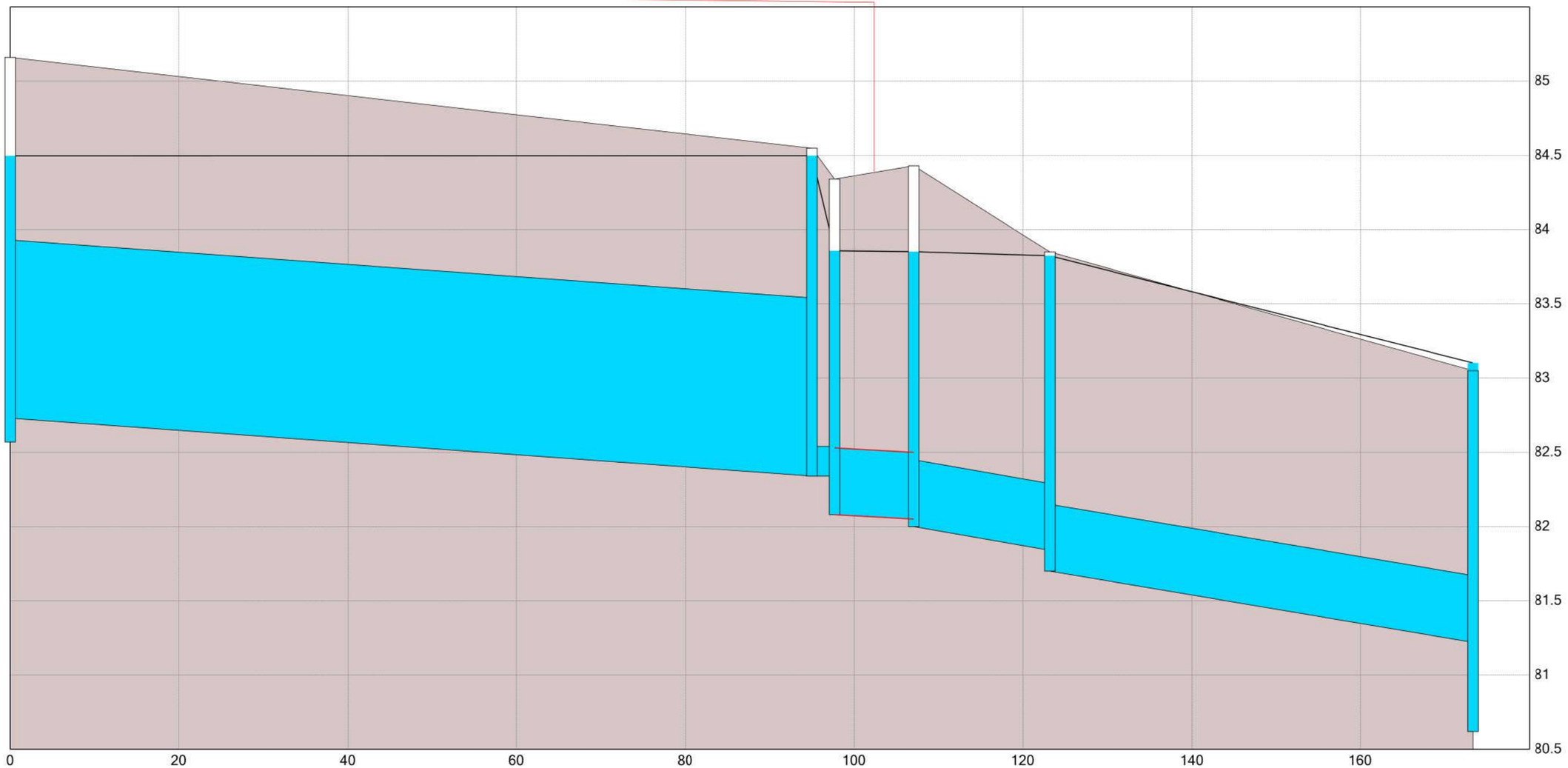
Conduit C1
Flow = 0.042 m³/s
Slope = 0.00411 m/m
Invert1 = 82.73 m
Invert2 = 82.34 m

Orifice OR1
Flow = 0.128 m³/s

Conduit C3
Flow = 0.128 m³/s
Slope = 0.00319 m/m
Invert1 = 82.08 m
Invert2 = 82.05 m

Conduit C4
Flow = 0.128 m³/s
Slope = 0.00994 m/m
Invert1 = 82 m
Invert2 = 81.84 m

Conduit O_0200_401242
Flow = 0.338 m³/s
Slope = 0.00957 m/m
Invert1 = 81.7 m
Invert2 = 81.22 m



Junction J1
CWSEL = 84.497 m
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06/02/2020 08:35AM

Junction J2
CWSEL = 84.498 m
Max. CWSEL = 84.498 m
06/02/2020 08:35AM

Junction OGS_EF06
CWSEL = 83.85742 m
Max. CWSEL = 83.85742 m
06/02/2020 08:30AM

Junction MH2
CWSEL = 83.85126 m
Max. CWSEL = 83.85126 m
06/02/2020 08:30AM

Junction O_0160_400804
CWSEL = 83.82372 m
Max. CWSEL = 83.82372 m
06/02/2020 08:30AM

Junction O_0160_400806
CWSEL = 83.1021 m
Max. CWSEL = 83.1021 m
06/02/2020 08:35AM

SITE (LANEWAY)
MINOR SYSTEM
100 YEAR

HGL

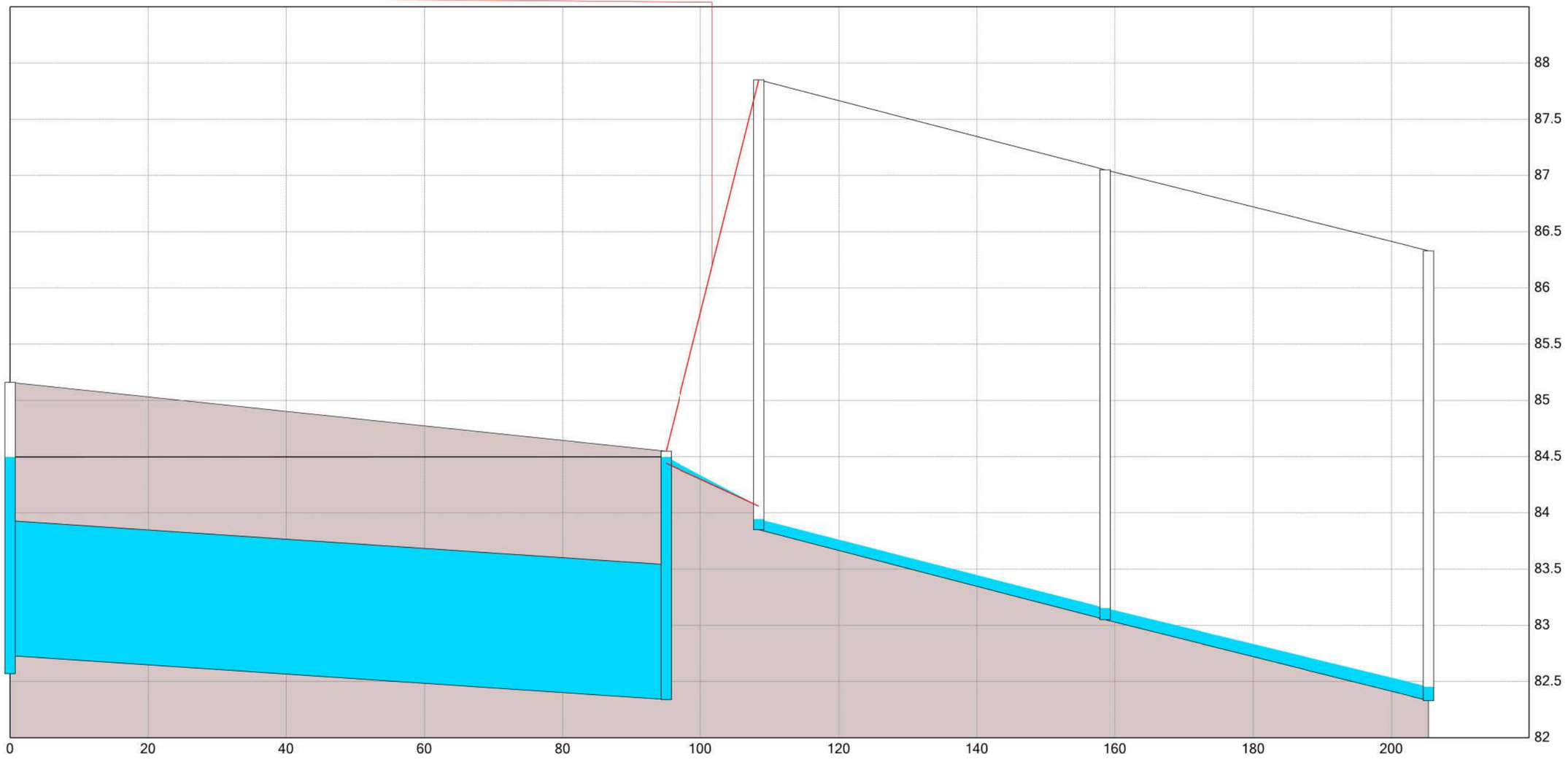
Peak values

Conduit C1
Flow = 0.042 m³/s
Slope = 0.00411 m/m
Invert1 = 82.73 m
Invert2 = 82.34 m

Conduit C5
Flow = 0.088 m³/s
Slope = 0.0284 m/m
Invert1 = 84.44 m
Invert2 = 84.06 m

Conduit O_0200_401242-S
Flow = 0.595 m³/s
Slope = 0.0159 m/m
Invert1 = 83.85 m
Invert2 = 83.05 m

Conduit O_0200_401238-S
Flow = 0.771 m³/s
Slope = 0.0154 m/m
Invert1 = 83.05 m
Invert2 = 82.33 m



Junction J1
CWSEL = 84.497 m
Max. CWSEL = 84.497 m
06/02/2020 08:35AM

Junction J2
CWSEL = 84.498 m
Max. CWSEL = 84.498 m
06/02/2020 08:35AM

Junction O_0160_400804-S
CWSEL = 83.94454 m
Max. CWSEL = 83.94454 m
06/02/2020 08:30AM

Junction O_0160_400806-S
CWSEL = 83.15418 m
Max. CWSEL = 83.15418 m
06/02/2020 08:30AM

Junction O_0160_400807-S
CWSEL = 82.45369 m
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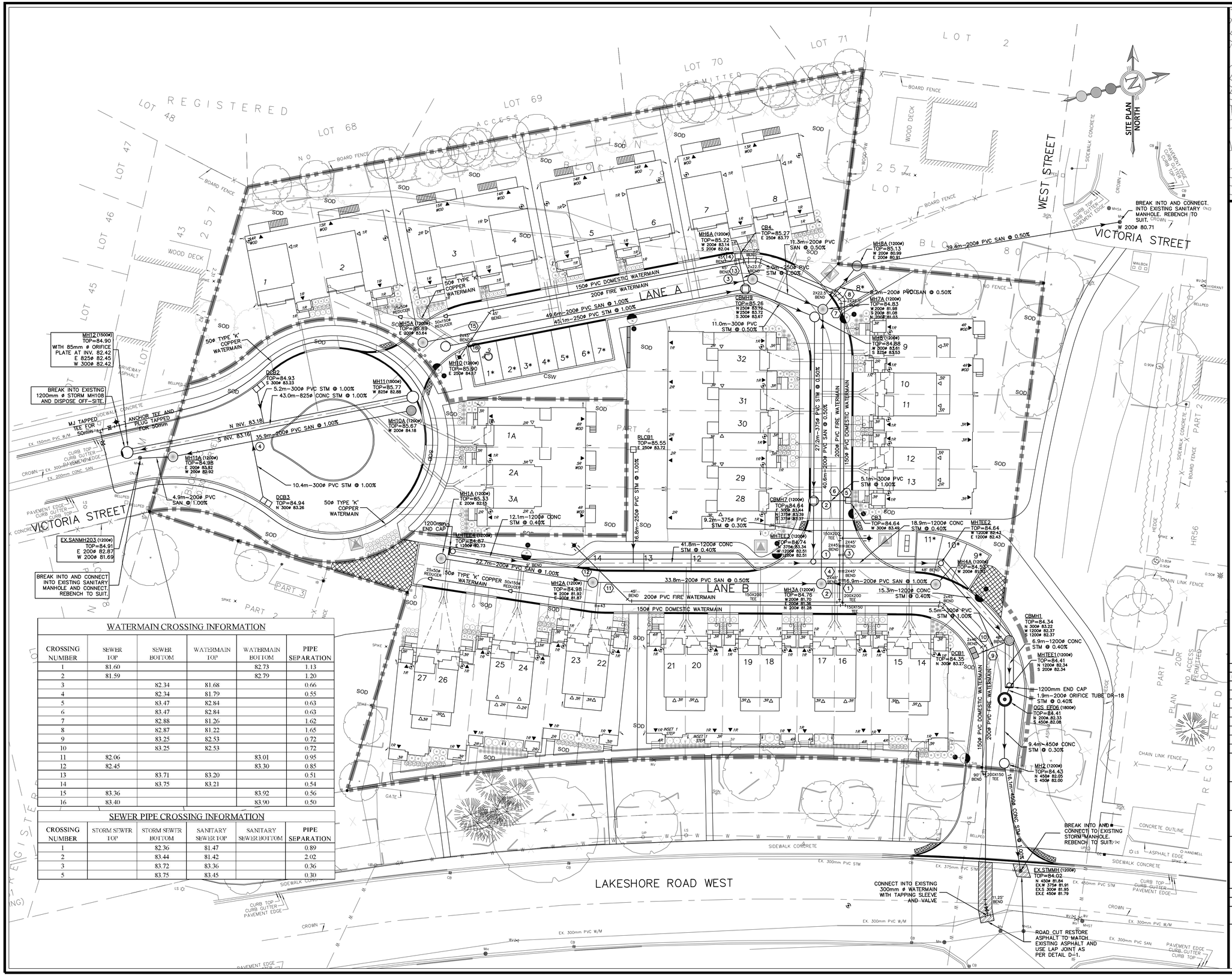
SITE (LANEWAY)
MAJOR SYSTEM
OVERFLOW
100 YEAR

APPENDIX F

DRAWINGS



WATERMAIN CROSSING INFORMATION

CROSSING NUMBER	SEWER TOP	SEWER BOTTOM	WATERMAIN TOP	WATERMAIN BOTTOM	PIPE SEPARATION
1	81.60			82.73	1.13
2	81.59			82.79	1.20
3		82.34	81.68		0.66
4		82.34	81.79		0.55
5		83.47	82.84		0.63
6		83.47	82.84		0.63
7		82.88	81.26		1.62
8		82.87	81.22		1.65
9		83.25	82.53		0.72
10		83.25	82.53		0.72
11	82.06			83.01	0.95
12	82.45			83.30	0.85
13		83.71	83.20		0.51
14		83.75	83.21		0.54
15	83.36			83.92	0.56
16	83.40			83.90	0.50

SEWER PIPE CROSSING INFORMATION

CROSSING NUMBER	STORM SEWER TOP	STORM SEWER BOTTOM	SANITARY SEWER TOP	SANITARY SEWER BOTTOM	PIPE SEPARATION
1		82.36	81.47		0.89
2		83.44	81.42		2.02
3		83.72	83.36		0.36
5		83.75	83.45		0.30

BENCHMARK: ELEV. 85.407

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO TOWN OF OAKVILLE VERTICAL BENCH MARK NUMBER 188 HAVING AN ORTHOMETRIC ELEVATION OF 85.407 METERS. ELEVATIONS ARE REFERENCED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1925, PRE-1978 ADJUSTMENT (CGVD-1928:PRE-1978 ADJ.).

LEGEND:

- LIMIT OF PROPERTY
- LIMIT OF MUNICIPAL PROPERTY
- PROPOSED SANITARY SEWER AND MANHOLE
- PROPOSED STORM SEWER AND MANHOLE
- PROPOSED SUPERPIPE
- PROPOSED OIL GRIT SEPARATOR
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED SINGLE CATCHBASIN / DOUBLE CATCHBASIN
- PROPOSED SINGLE /DOUBLE CATCHBASIN WITH BORDEN TYPE GALVANIZED GRATING (R/W-22-4) OR APPROVED EQUIVALENT
- PROPOSED UNITS WITH SUMP PUMP TO STORM LATERAL REFER TO DETAIL ON DRAWING D-1.
- PROPOSED WATERMAIN
- PROPOSED HYDRANT
- PROPOSED VALVE AND BOX
- PROPOSED DUAL SERVICE CONNECTION
- PROPOSED SINGLE SERVICE CONNECTION
- PROPOSED 100mm PVC SDR-35 STORM LATERAL FOR SUMP PUMP DISCHARGE AS PER DETAIL ON DRAWING D-1. TO BE CONSTRUCTED UPON COMPLETION OF HOUSE FOUNDATION
- PROPOSED WATER SERVICE
- PROPOSED RAIN WATER LEADER
- (12) DENOTES WATERMAIN CROSSING
- (10) DENOTES SEWER PIPE CROSSING
- PROPOSED TREE PROTECTION FENCE AS PER DETAILS ON LANDSCAPE PLANS
- PROPOSED 1.8m HIGH WOOD FENCE AS PER DETAILS ON LANDSCAPE PLANS
- EXISTING MANHOLE
- EXISTING CATCHBASIN
- EXISTING WATERMAIN VALVE AND BOX
- EXISTING TREE
- EXISTING UTILITY POLE
- EXISTING LIGHT STANDARD
- EXISTING BELL PEDISTAL
- EXISTING OVERHEAD WIRE
- EXISTING FENCE

TOPOGRAPHIC SURVEY PROVIDED BY RPE SURVEYING LTD, MAY 2017

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR SITE PLAN APPLICATON	JAN 20/22	P.G.	
2.	ISSUED FOR SITE PLAN APPLICATON - 2ND SUBMISSION	OCT 14/22	P.G.	

scs consulting group ltd
30 CENTURIAN DRIVE, SUITE 100
MARKHAM, ONTARIO L3R 8B8
TEL: (905) 475-1900
FAX: (905) 475-8335

OAKVILLE
1225 TRAFALGAR ROAD
OAKVILLE, ONTARIO L6H 0H3
TEL: (905) 845-6601

VOGUE WYCLIFFE (OAKVILLE) LIMITED
3171 LAKESHORE ROAD WEST, OAKVILLE
SERVICING PLAN

LICENSED PROFESSIONAL ENGINEER — K. CHEN 100136982 — 2022-10-14 — PROVINCE OF ONTARIO

DATE:	OCTOBER 2022	DESIGNED BY:	K.L.	CHECKED BY:	P.G
SCALE:	1:250	DRAWN BY:	K.L	CHECKED BY:	P.G

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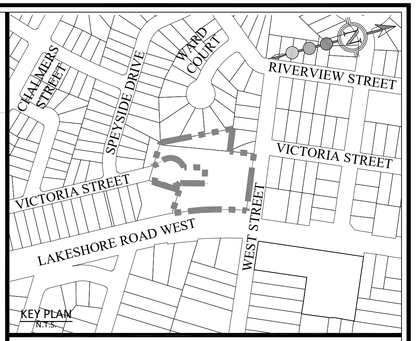
PROJECT No: 1930

DRAWING No: S-1



BENCHMARK: ELEV. 85.407

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LEGEND:

- LIMIT OF PROPERTY
- SANITARY MANHOLE
- STORM MANHOLE
- OIL GRIT SEPARATOR
- CATCHBASIN MANHOLE
- SINGLE CATCHBASIN
- DOUBLE CATCHBASIN
- HYDRANT
- VALVE AND BOX
- RAIN WATER LEADER
- 270.25 EXISTING CONTOUR AND ELEVATION
- ×123.23EX EXISTING ELEVATION
- ×123.23 PROPOSED ELEVATION
- 123.23 PROPOSED CENTRELINE ELEVATION
- ×123.23TC PROPOSED TOP OF CURB ELEVATION
- ×123.23BC PROPOSED BOTTOM OF CURB ELEVATION
- PROPOSED EMERGENCY OVERLAND FLOW DIRECTION
- PROPOSED TREE PROTECTION FENCE AS PER DETAILS ON LANDSCAPE PLANS
- PROPOSED TREE PROTECTION FENCE AS PER DETAILS ON LANDSCAPE PLANS
- MH EXISTING MANHOLE
- EXISTING CATCHBASIN
- WV EXISTING WATERMAIN VALVE AND BOX
- 0.30ø 0.90ø EXISTING TREE
- EXISTING UTILITY POLE
- LS EXISTING LIGHT STANDARD
- BELLPED EXISTING BELL PEDISTAL
- W EXISTING OVERHEAD WIRE
- EXISTING FENCE
- DOUBLE CATCHBASIN WITH BORDEN GRATE (R/W-22-4)
- CATCHBASIN MANHOLE WITH BORDEN GRATE (R/W-22-4)
- PROPOSED UNITS WITH SUMP PUMP TO STORM LATERAL

TOPOGRAPHIC SURVEY PROVIDED BY RPE SURVEYING LTD, MAY 2017

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR SITE PLAN APPLICATON	JAN 20/22	P.G.	
2.	ISSUED FOR SITE PLAN APPLICATON - 2nd SUBMISSION	OCT 14/22	P.G.	

SCS consulting group ltd
30 CENTURIAN DRIVE, SUITE 100
MARKHAM, ONTARIO L3R 8B8
TEL: (905) 475-1900
FAX: (905) 475-8335

OAKVILLE
1225 TRAFALGAR ROAD
OAKVILLE, ONTARIO L6H 0H3
TEL: (905) 845-6601

VOGUE WYCLIFFE (OAKVILLE) LIMITED
3171 LAKESHORE ROAD WEST, OAKVILLE

GRADING PLAN

LICENSED PROFESSIONAL ENGINEER
K. CHEN
100136982
2022-10-14
PROVINCE OF ONTARIO

DATE:	OCTOBER 2022	DESIGNED BY:	K.L.
SCALE:	1:250	DRAWN BY:	K.L.
		CHECKED BY:	P.G.
		CHECKED BY:	P.G.

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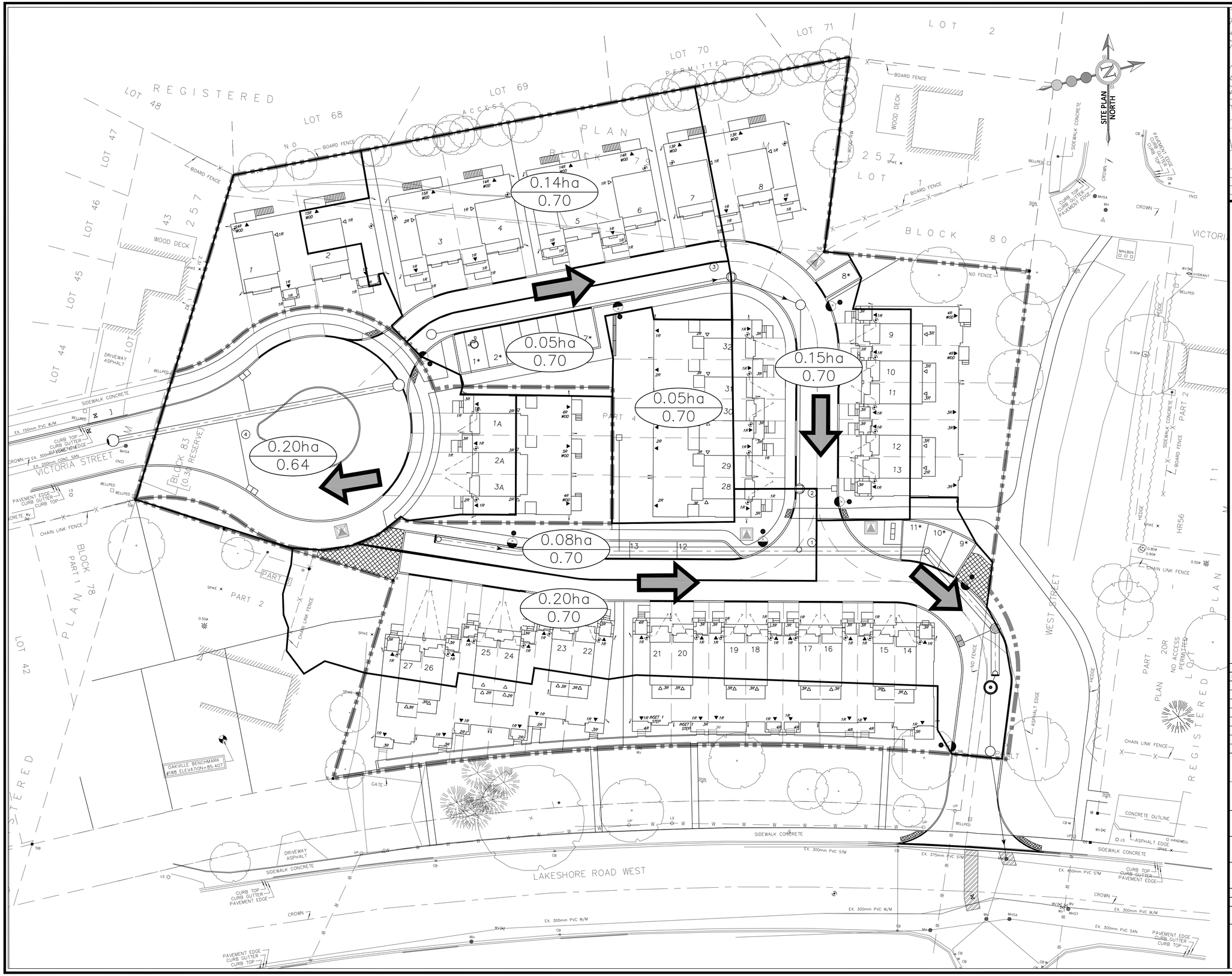
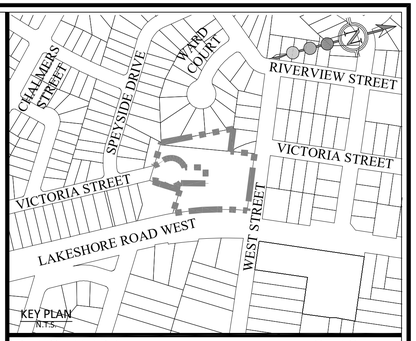
PROJECT No: 1930

DRAWING No: GR-1





BENCHMARK: ELEV. 85.407

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO TOWN OF OAKVILLE VERTICAL BENCH MARK NUMBER 188 HAVING AN ORTHOMETRIC ELEVATION OF 85.407 METERS. ELEVATIONS ARE REFERENCED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1925, PRE-1978 ADJUSTMENT (CGVD-1928:PRE-1978 ADJ.).

LEGEND:

- LIMIT OF PROPERTY
- LIMIT OF MUNICIPAL PROPERTY
- MAJOR SYSTEM OVERLAND FLOW
- PROPOSED STORM DRAINAGE BOUNDARY
- 0.15ha / 0.70 — DRAINAGE AREA (HECTARES) / RUNOFF COEFFICIENT
- 270.25 — EXISTING CONTOURS
- EXISTING STORM SEWER AND MANHOLE
- PROPOSED STORM SEWER AND MANHOLE
- PROPOSED SUPERPIPE
- PROPOSED OIL-GRIT SEPARATOR MANHOLE
- PROPOSED SUMP PUMP
- PROPOSED RAIN WATER LEADER

TOPOGRAPHIC SURVEY PROVIDED BY RPE SURVEYING LTD, MAY 2017

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR SITE PLAN APPLICATION	JAN 20/22	P.G.	
2.	ISSUED FOR SITE PLAN APPLICATION - 2ND SUBMISSION	OCT 14/22	P.G.	

SCS consulting group ltd
30 CENTURIAN DRIVE, SUITE 100
MARKHAM, ONTARIO L3R 8B8
TEL: (905) 475-1900
FAX: (905) 475-8335

OAKVILLE
1225 TRAFALGAR ROAD
OAKVILLE, ONTARIO L6H 0H3
TEL: (905) 845-6601

VOGUE WYCLIFFE (OAKVILLE) LIMITED
3171 LAKESHORE ROAD WEST, OAKVILLE

STORM DRAINAGE PLAN

LICENSED PROFESSIONAL ENGINEER
K. CHEN
100136982
2022-10-14
PROVINCE OF ONTARIO

DATE: OCTOBER 2022	DESIGNED BY: K.L.	CHECKED BY:	P.G.
SCALE: 1:500	DRAWN BY: K.L.	CHECKED BY:	P.G.

10 5 0 10 20 30 40 50 60 70 80

PROJECT No: 1930

DRAWING No: DR-1

File: P:\1930 3171 Lakeshore Road West, Oakville\Drawings\Phase 1\Dr\1930D-STRM-STM1.dwg – Revised by <CMAIER-DOWNING> : Thu, Sep 29 2022 – 10:57am

GENERAL

1. PRIOR TO STARTING ANY WORKS, THE CONTRACTOR MUST ENSURE THAT ALL NECESSARY APPROVALS ARE IN PLACE FROM THE MUNICIPALITY AND OTHER EXTERNAL AGENCIES, AS REQUIRED.
2. WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH THE APPLICABLE HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
3. WORKS AND MATERIALS SHALL CONFORM TO CURRENT MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS, MUNICIPAL, REGIONAL, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. FOR ALL WORK WITHIN PRIVATE PROPERTY, WORKS AND MATERIALS SHALL CONFORM TO THE ONTARIO BUILDING CODE, OR THE ABOVE-NOTED STANDARDS, WHICHEVER IS MORE STRINGENT.
4. WORKS BY OTHERS (EITHER ON-SITE OR OFF-SITE) MAY BE ON-GOING DURING THE PERIOD OF THIS CONTRACT. COORDINATE CONSTRUCTION ACTIVITIES WITH ALL OTHER CONTRACTORS TO PREVENT CONSTRUCTION CONFLICTS.
5. VERIFY THE LOCATION, DIMENSIONS AND ELEVATION OF EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION. EXISTING INFRASTRUCTURE TO BE PROTECTED AND/OR SUPPORTED DURING CONSTRUCTION. DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.
6. REFER TO THE ARCHITECTURAL SITE PLAN FOR DIMENSIONS AND LAYOUT INFORMATION.

WATERMAINS

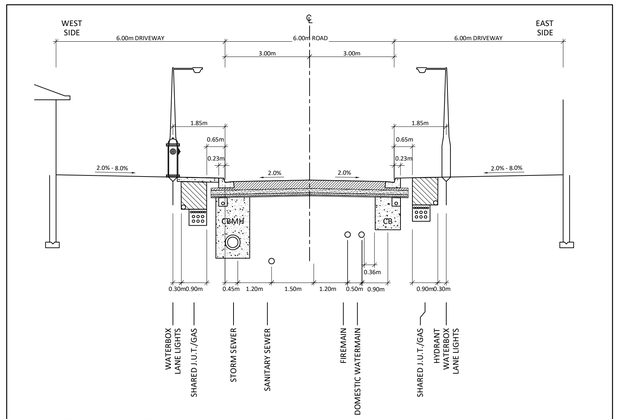
1. PIPE: POLYVINYL CHLORIDE (PVC) CLASS 150 DR-18 PIPE, AWWA C900 AND CSA B137.3, LATEST AMENDMENTS.
   TYPE K COPPER, ASTM B88.
2. EMBEDMENT AND TRENCH DETAIL: OPSD 802.010.
3. BEDDING MATERIAL: MUNICIPAL WATERMAIN BEDDING SHALL CONFORM TO MUNICIPAL STANDARDS. PRIVATE WATERMAIN BEDDING SHALL CONFORM TO GEOTECHNICAL RECOMMENDATION.
4. MINIMUM COVER: 1.80 m FROM PROPOSED FINISHED GRADES.
5. INSULATION: TO BE PROVIDED IF COVER TO OBVERT IS LESS THAN 1.20 METRES. 50mm THICK HIGH LOAD 60. WIDTH AS NOTED ON DRAWING.
6. MINIMUM CURVATURE OF PIPE DEFLECTION (IF REQUIRED) SHALL BE AS PER THE FOLLOWING GUIDELINES: 100mm - R=30.0m; 150mm - R=43.0m; 200mm - R=57.0m; 300mm - R=83.0m; 400mm - R=100.0m.
7. HORIZONTAL SEPARATION: MINIMUM 2.5 METRES FROM SEWERS AND SEWER MANHOLES, MEASURED FROM THE NEAREST EDGES.
8. VERTICAL SEPARATION: MINIMUM 0.5 METRES. IF WATERMAIN MUST CROSS BELOW A SEWER, THE WATERMAIN SHALL BE INSTALLED WITH JOINTS LOCATED A MINIMUM OF 2.5 METRES FROM THE POINT OF CROSSING.
9. MECHANICAL RESTRAINTS: REQUIRED AT ALL CHANGES IN PIPE DIRECTION AND AT REDUCERS. RESTRAIN PIPE 12.2 METRES BACK FROM STUBS AND 6.1 METRES ON EITHER SIDE OF VALVES 100mm OR LARGER. RESTRAIN ALL JOINTS WITHIN ENGINEERED FILL AREAS. RESTRAINT RODS AND INSTALLATION SHALL CONFORM TO NFPA 24 (STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES).
10. THRUST BLOCKING: REQUIRED FOR ALL TEES, PLUGS AND HORIZONTAL BENDS PER OPSD 1103.010 AND ONTARIO BUILDING CODE S.7.3.4.9.
11. HYDRANTS: SHALL CONFORM TO MUNICIPAL SPECIFICATIONS AND STANDARDS. STORZ NOZZLE TO BE ORIENTED PERPENDICULAR TO THE FIRE ROUTE. HYDRANT FLANGE ELEVATION TO BE 0.15m ABOVE PROPOSED FINISHED GRADE AT THE HYDRANT. HYDRANT TO BE PAINTED PER FIRE DEPARTMENT SPECIFICATIONS.
12. HYDRANT ANCHOR TEES: ATTACH HYDRANT VALVE TO THE ANCHOR TEE, PROVIDED THAT THE MAXIMUM DISTANCE FROM HYDRANT TO VALVE DOES NOT EXCEED 6.1 METRES. ENSURE VALVE BOX DOES NOT CONFLICT WITH CURBS.
13. HYDRANT FLOW TEST: TO BE COMPLETED BY CONTRACTOR PER NFPA AND RESULTS PROVIDED TO THE ENGINEER.
14. PIPE FITTINGS: CAST IRON, CEMENT LINED, MECHANICAL JOINT, SHORT BODY CONFORMING TO ANSI/AWWA C110/A21.10. JOINTS: RUBBER GASKET CONFORMING TO ANSI/AWWA C111/A21.11.
15. VALVE BOXES: 100mm SLIDING TYPE BOX COMPLETE WITH GUIDE PLATE. INSTALL EXTENSION STEM AS REQUIRED TO MAINTAIN A MAXIMUM DISTANCE OF 1.8m FROM TOP OF OPERATING NUT TO FINISHED GRADE.
16. TRACER WIRE: #12 AWG SOLID COPPER SUITABLE FOR DIRECT BURIAL.
17. CATHODIC PROTECTION: OPSD 1109.011 AND OPSS 702. DUCTILE IRON FITTINGS: 5.4 kg ZINC ANODE. HYDRANTS, VALVES AND TEES: 10.8 kg ZINC ANODE. WHERE NEW WATERMAIN IS CONNECTED TO EXISTING CAST IRON OR DUCTILE IRON WATERMAIN, ONE 14.5 kg MAGNESIUM ANODE SHALL BE PLACED ON EACH SIDE OF THE CONNECTION.
18. TERMINATE SERVICES 1.0 METRE FROM THE OUTSIDE FACE OF BUILDING, UNLESS OTHERWISE NOTED ON DRAWING. TERMINATE STUBS WITH A PLUG AND 50 mm BLOW OFF.
19. ISOLATE NEW WATERMAIN FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATION.
20. PRESSURE AND BACTERIOLOGICAL TESTING: AS PER MUNICIPAL STANDARD SPECIFICATIONS; ONTARIO BUILDING CODE AND MINISTRY OF THE ENVIRONMENT. TREAT CHLORINATED WATER TO ACCEPTABLE LEVELS PRIOR TO DISCHARGE.
21. SUMP PUMPS: TO BE PROVIDED FOR ALL UNITS (BY BUILDER) AND DISCHARGE TO GRADE OR TO STORM SEWER LATERAL WITH GOOSNECK PER DETAIL ON THIS DRAWING.

STORM AND SANITARY SEWERS

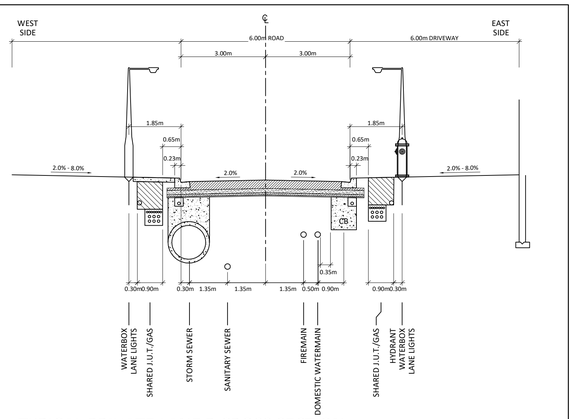
1. PIPE: POLYVINYL CHLORIDE (PVC) SEWER PIPES AND FITTINGS SHALL CONFORM TO CSA-B182.2.
2. PVC SEWERS (375 mm DIAMETER AND SMALLER): SDR-35, CSA B182.2-LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
3. CONCRETE SEWERS (450 mm DIAMETER AND LARGER): CONCRETE (CLASS 65-D), CSA A257.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
4. PVC PIPE SEWER BEDDING: OPSD 802.010.
5. CONCRETE PIPE SEWER BEDDING: OPSD 802.030 CLASS 'B' FOR TYPE 1 AND 2 SOILS. OPSD 802.031 FOR TYPE 3 SOILS. SOIL TYPE TO BE CONFIRMED BY THE GEOTECHNICAL CONSULTANT DURING EXCAVATION.
6. TRENCH BACKFILL: PER THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
7. INSULATION: TO BE PROVIDED IF COVER TO OBVERT IS LESS THAN 1.20 METRES. 50mm THICK HIGH LOAD 60. WIDTH AS NOTED ON DRAWING.
8. MANHOLES: OPSD 701.010 TO 701.015 AND CSA A257.4.
9. CLEANOUTS: ZURN Z1474 OR APPROVED EQUIVALENT.
10. SAFETY PLATFORM: OPSD 404.020 TO OPSD 404.022. INSTALL SAFETY PLATFORM WHERE MANHOLE DEPTH EXCEEDS 5.0m.
11. MANHOLE FRAMES AND COVERS: OPSD 401.010 - TYPE 'A'
12. JOINTS-PIPE AND MANHOLE: CSA A257.3.
13. BACKFILL: ALL MANHOLE AND CATCHBASIN EXCAVATIONS SHALL BE BACKFILLED WITH GRANULAR 'B'.
14. MANHOLE BENCHING: OPSD 701.021. CATCHBASIN MANHOLES TO BE BENCHED.
15. CATCHBASINS: SINGLE: OPSD 705.010 AND CSA A257.4; DOUBLE: OPSD 705.030 AND CSA A257.4. DITCH INLET CATCHBASINS: OPSD 705.030.
16. CATCHBASIN FRAMES AND COVERS: OPSD 400.020.
17. CATCHBASIN LEADS AND SERVICE LATERALS ON PRIVATE PROPERTY SHALL BE CONNECTED TO MAINLINE SEWER WITH WYE FITTING.
18. DURING CONSTRUCTION ALL CATCHBASINS SHALL BE EQUIPPED WITH TEMPORARY SEDIMENT CONTROL DEVICE. REFER TO DETAILS ON THIS DRAWING.
19. CONCRETE ADJUSTMENT UNITS FOR MANHOLES AND CATCHBASINS: OPSD 704.010, OPSS 407 AND CSA A257.4. MAXIMUM HEIGHT OF ADJUSTMENT UNITS SHALL BE 300mm.
20. PERFORATED SUB-DRAINS SHALL BE CONNECTED TO ALL CATCHBASINS AND CATCHBASIN MANHOLES AS PER DETAIL ON THIS DRAWING. PERFORATED SUB-DRAINS SHALL BE PLACED UNDER ALL CURB.
21. LASER ALIGNMENT AND ELEVATION CONTROL TO BE UTILIZED FOR SEWER INSTALLATIONS.
22. FLUSH AND INSPECT SEWERS VIA CCTV CAMERA. SUBMIT ONE WRITTEN REPORT AND TWO DIGITAL VIDEOS IN AN MPEG FORMAT TO THE ENGINEER FOR REVIEW.
23. LATERAL SEWER PIPES: SINGLE: 125mm PVC (SDR-28) CSA B181.2; DUAL: 150mm PVC (SDR-28).
24. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER AN AS-CONSTRUCTED SERVICING DRAWING.

GRADING NOTES

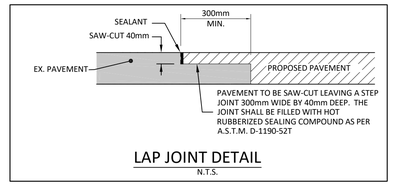
1. PRIOR TO COMMENCEMENT OF EARTHWORKS, SITE ALTERATION PLANS MUST BE APPROVED AND ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND OPERATIONAL. THE CONTRACTOR SHALL MAINTAIN ALL WORKS UNTIL CONSTRUCTION IS COMPLETED TO THE SATISFACTION OF THE ENGINEER.
2. ENGINEERED FILL SHALL CONFORM TO THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
3. ENGINEERED FILL SHALL BE INSPECTED AND TESTED BY THE GEOTECHNICAL CONSULTANT. PROOF ROLLING OF SUBGRADE WILL BE REQUIRED PRIOR TO PLACEMENT OF GRANULAR MATERIALS. COORDINATE INSPECTIONS WITH GEOTECHNICAL CONSULTANT.
4. GRANULAR COMPACTION: PER THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
5. PAVEMENT STRUCTURE:
   40 mm HL3 TOP COURSE ASPHALT
   60 mm HL8 BASE COURSE ASPHALT
   150 mm GRANULAR 'A'
   350 mm GRANULAR 'B'
6. ASPHALT COMPACTION: PER THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
7. BARRIER CURB: OPSD 600.110.
   CONCRETE BARRIER CURB AND GUTTER (TWO STAGE CONSTRUCTION) : OPSD 600.070
8. CONCRETE SIDEWALK: 125mm DEEP WITH 125mm GRANULAR 'A' BASE CONCRETE SIDEWALK ACROSS RESIDENTIAL DRIVEWAY: 175mm DEEP. CONCRETE SIDEWALK ACROSS LANEWAYS, ROADS, COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL DRIVEWAYS: 200mm DEEP.
9. LAP JOINTS SHALL BE USED WHERE PROPOSED ASPHALT MEETS EXISTING ASPHALT AS PER DETAIL ON THIS DRAWING.
10. PAVEMENT MARKINGS SHALL BE PLACED AS SHOWN ON THE ARCHITECTURAL SITE PLAN WITH A MINIMUM OF TWO COATS OF ORGANIC SOLVENT BASED PAINT AS PER OPSS 1712.
11. INSTALL SIGNAGE AS PER THE ARCHITECTURAL SITE PLAN.
12. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED OFFSITE TO THE CONTRACTOR'S APPROVED DISPOSAL SITE.
13. EMBANKMENTS SHALL BE SLOPED AT A MAXIMUM OF 3H:1V, UNLESS OTHERWISE SPECIFIED.
14. DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER. THE RELOCATION OR REMOVAL OF TREES AND SHRUBS SHALL BE SUBJECT TO APPROVAL BY THE ARBORIST.
15. REFER TO LANDSCAPE DRAWINGS FOR LOCATION AND TYPE OF ALL HARD LANDSCAPE SURFACES.
16. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER AN AS-CONSTRUCTED GRADING DRAWING.



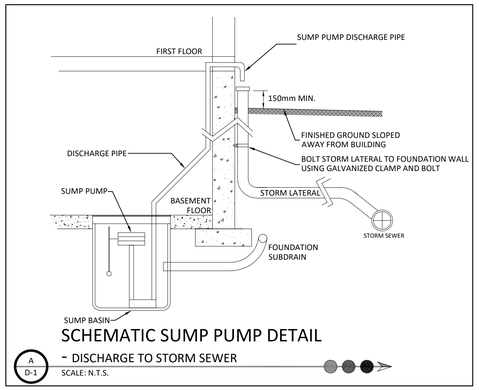
A D-1 TYPICAL PRIVATE LANE A CROSS SECTION
SCALE: 1:100



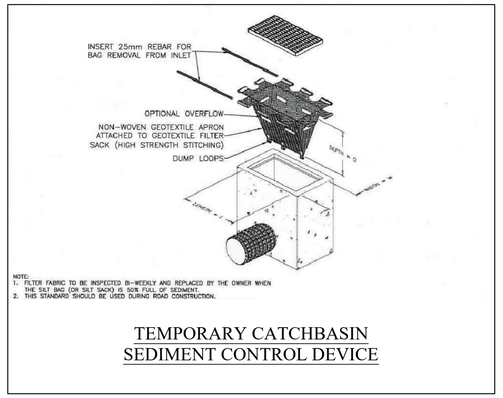
B D-1 TYPICAL PRIVATE LANE B CROSS SECTION
SCALE: 1:100



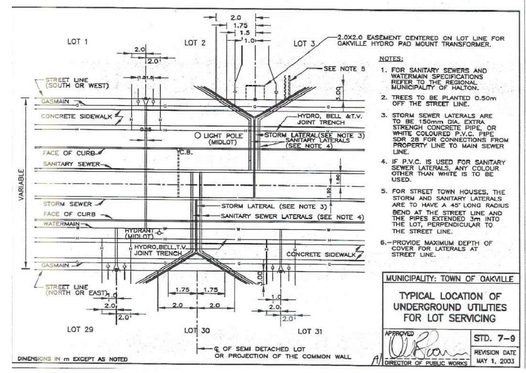
LAP JOINT DETAIL
N.T.S.

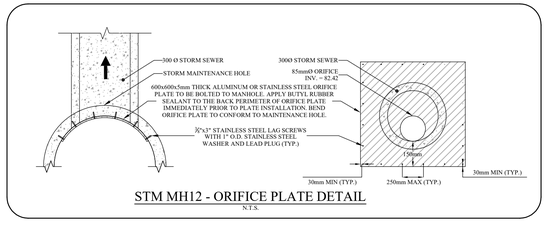


A D-1 SCHEMATIC SUMP PUMP DETAIL
- DISCHARGE TO STORM SEWER
SCALE: N.T.S.

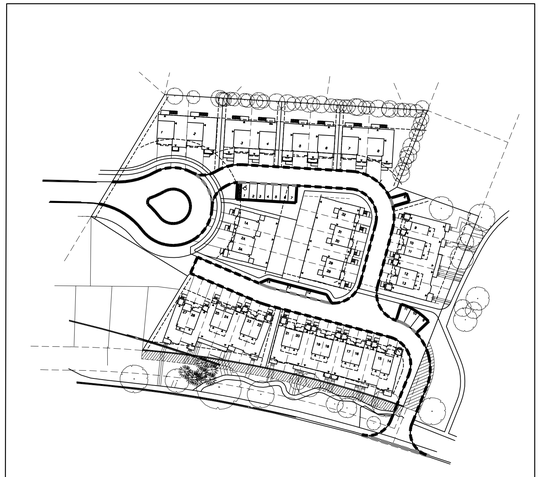


TEMPORARY CATCHBASIN
SEDIMENT CONTROL DEVICE

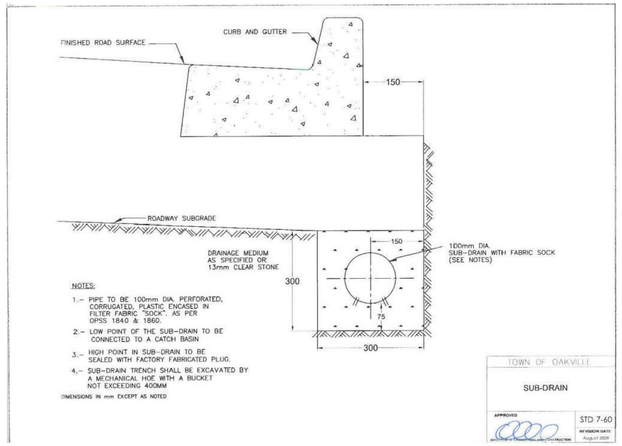




STM MH12 - ORIFICE PLATE DETAIL
N.T.S.



CURB KEYPLAN
SCALE : N.T.S.



REVISIONS				
No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR SITE PLAN APPLICATION	JAN 20/22	P.G.	
2.	ISSUED FOR SITE PLAN APPLICATION - 2nd SUBMISSION	OCT 14/22	P.G.	

SCS consulting group ltd
30 CENTURIAN DRIVE, SUITE 100
MARKHAM, ONTARIO L3R 8B8
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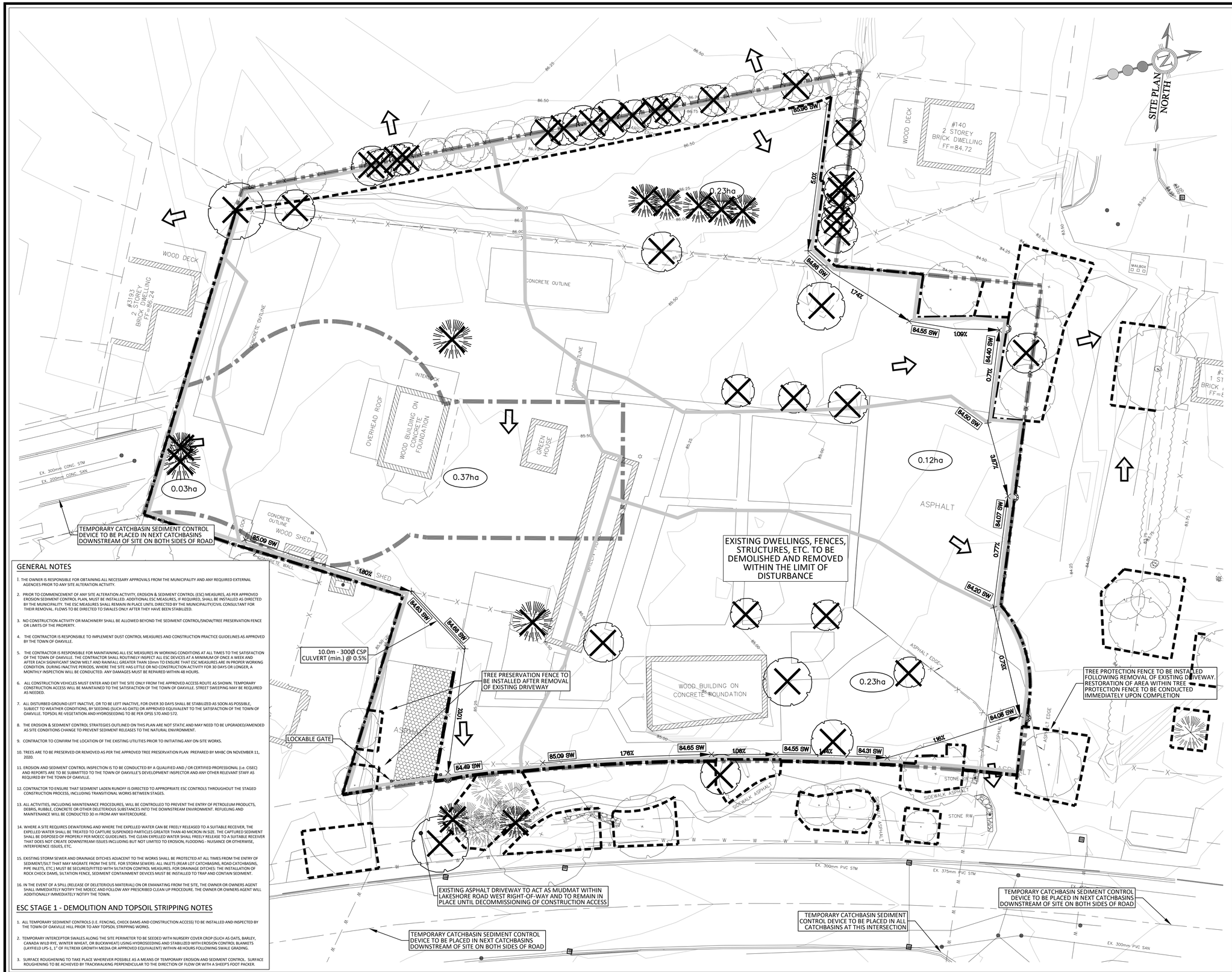
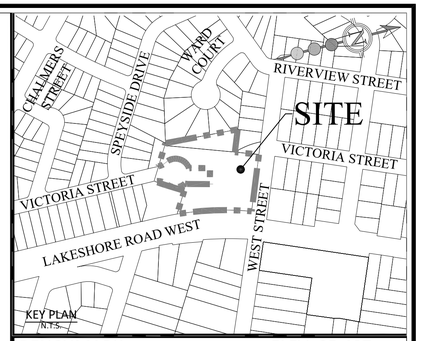
VOGUE WYCLIFFE (OAKVILLE) LIMITED
3171 LAKESHORE ROAD WEST, OAKVILLE

DETAILS PLAN

LICENSED PROFESSIONAL ENGINEER
K. CHEN
100136982
2022-10-14
PROVINCE OF ONTARIO

DATE:	OCTOBER 2022	DESIGNED BY:	K.L.
SCALE:	N.T.S.	DRAWN BY:	K.L.
CHECKED BY:			P.G.
CHECKED BY:			P.G.
PROJECT No:			1930
DRAWING No:			D-1





GENERAL NOTES

1. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE MUNICIPALITY AND ANY REQUIRED EXTERNAL AGENCIES PRIOR TO ANY SITE ALTERATION ACTIVITY.
2. PRIOR TO COMMENCEMENT OF ANY SITE ALTERATION ACTIVITY, EROSION & SEDIMENT CONTROL (ESC) MEASURES, AS PER APPROVED EROSION SEDIMENT CONTROL PLAN, MUST BE INSTALLED. ADDITIONAL ESC MEASURES, IF REQUIRED, SHALL BE INSTALLED AS DIRECTED BY THE MUNICIPALITY. THE ESC MEASURES SHALL REMAIN IN PLACE UNTIL DIRECTED BY THE MUNICIPALITY/CIVIL CONSULTANT FOR THEIR REMOVAL. FLOWS TO BE DIRECTED TO SWALES ONLY AFTER THEY HAVE BEEN STABILIZED.
3. NO CONSTRUCTION ACTIVITY OR MACHINERY SHALL BE ALLOWED BEYOND THE SEDIMENT CONTROL/SNOW/TREE PRESERVATION FENCE OR LIMITS OF THE PROPERTY.
4. THE CONTRACTOR IS RESPONSIBLE TO IMPLEMENT DUST CONTROL MEASURES AND CONSTRUCTION PRACTICE GUIDELINES AS APPROVED BY THE TOWN OF OAKVILLE.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ESC MEASURES IN WORKING CONDITIONS AT ALL TIMES TO THE SATISFACTION OF THE TOWN OF OAKVILLE. THE CONTRACTOR SHALL ROUTINELY INSPECT ALL ESC DEVICES AT A MINIMUM OF ONCE A WEEK AND AFTER EACH SIGNIFICANT SNOW MELT AND RAINFALL GREATER THAN 10mm TO ENSURE THAT ESC MEASURES ARE IN PROPER WORKING CONDITION. DURING INACTIVE PERIODS, WHERE THE SITE HAS LITTLE OR NO CONSTRUCTION ACTIVITY FOR 30 DAYS OR LONGER, A MONTHLY INSPECTION WILL BE CONDUCTED. ANY DAMAGES MUST BE REPAIRED WITHIN 48 HOURS.
6. ALL CONSTRUCTION VEHICLES MUST ENTER AND EXIT THE SITE ONLY FROM THE APPROVED ACCESS ROUTE AS SHOWN. TEMPORARY CONSTRUCTION ACCESS WILL BE MAINTAINED TO THE SATISFACTION OF THE TOWN OF OAKVILLE. STREET SWEEPING MAY BE REQUIRED AS NEEDED.
7. ALL DISTURBED GROUND LEFT INACTIVE, OR TO BE LEFT INACTIVE, FOR OVER 30 DAYS SHALL BE STABILIZED AS SOON AS POSSIBLE, SUBJECT TO WEATHER CONDITIONS, BY SEEDING (SUCH AS OATS) OR APPROVED EQUIVALENT TO THE SATISFACTION OF THE TOWN OF OAKVILLE. TOPSOIL RE-VEGETATION AND HYDROSEEDING TO BE PER OPSS 570 AND 572.
8. THE EROSION & SEDIMENT CONTROL STRATEGIES OUTLINED ON THIS PLAN ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONXITIONS CHANGE TO PREVENT SEDIMENT RELEASES TO THE NATURAL ENVIRONMENT.
9. CONTRACTOR TO CONFIRM THE LOCATION OF THE EXISTING UTILITIES PRIOR TO INITIATING ANY ON-SITE WORKS.
10. TREES ARE TO BE PRESERVED OR REMOVED AS PER THE APPROVED TREE PRESERVATION PLAN PREPARED BY MHBC ON NOVEMBER 11, 2020.
11. EROSION AND SEDIMENT CONTROL INSPECTION IS TO BE CONDUCTED BY A QUALIFIED AND / OR CERTIFIED PROFESSIONAL (i.e. CISEC) AND REPORTS ARE TO BE SUBMITTED TO THE TOWN OF OAKVILLE'S DEVELOPMENT INSPECTOR AND ANY OTHER RELEVANT STAFF AS REQUIRED BY THE TOWN OF OAKVILLE.
12. CONTRACTOR TO ENSURE THAT SEDIMENT LADEN RUNOFF IS DIRECTED TO APPROPRIATE ESC CONTROLS THROUGHOUT THE STAGED CONSTRUCTION PROCESS, INCLUDING TRANSITIONAL WORKS BETWEEN STAGES.
13. ALL ACTIVITIES, INCLUDING MAINTENANCE PROCEDURES, WILL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES INTO THE DOWNSTREAM ENVIRONMENT. REFUELING AND MAINTENANCE WILL BE CONDUCTED 30 m FROM ANY WATERCOURSE.
14. WHERE A SITE REQUIRES DEWATERING AND WHERE THE EXPELLED WATER CAN BE FREELY RELEASED TO A SUITABLE RECEIVER, THE EXPELLED WATER SHALL BE TREATED TO CAPTURE SUSPENDED PARTICLES GREATER THAN 40 MICRON IN SIZE. THE CAPTURED SEDIMENT SHALL BE DISPOSED OF PROPERLY PER MOECC GUIDELINES. THE CLEAN EXPELLED WATER SHALL FREELY RELEASE TO A SUITABLE RECEIVER THAT DOES NOT CREATE DOWNSTREAM ISSUES INCLUDING BUT NOT LIMITED TO EROSION, FLOODING - NUISANCE OR OTHERWISE, INTERFERENCE ISSUES, ETC.
15. EXISTING STORM SEWER AND DRAINAGE DITCHES ADJACENT TO THE WORKS SHALL BE PROTECTED AT ALL TIMES FROM THE ENTRY OF SEDIMENT/SILT THAT MAY MIGRATE FROM THE SITE. FOR STORM SEWERS: ALL INLETS (REAR LOT CATCHBASINS, ROAD CATCHBASINS, PIPE INLETS, ETC.) MUST BE SECURED/FITTED WITH SILTATION CONTROL MEASURES. FOR DRAINAGE DITCHES: THE INSTALLATION OF ROCK CHECK DAMS, SILTATION FENCE, SEDIMENT CONTAINMENT DEVICES MUST BE INSTALLED TO TRAP AND CONTAIN SEDIMENT.
16. IN THE EVENT OF A SPILL (RELEASE OF DELETERIOUS MATERIAL) ON OR EMANATING FROM THE SITE, THE OWNER OR OWNERS AGENT SHALL IMMEDIATELY NOTIFY THE MOECC AND FOLLOW ANY PRESCRIBED CLEAN UP PROCEDURE. THE OWNER OR OWNERS AGENT WILL ADDITIONALLY IMMEDIATELY NOTIFY THE TOWN.

ESC STAGE 1 - DEMOLITION AND TOPSOIL STRIPPING NOTES

1. ALL TEMPORARY SEDIMENT CONTROLS (I.E. FENCING, CHECK DAMS AND CONSTRUCTION ACCESS) TO BE INSTALLED AND INSPECTED BY THE TOWN OF OAKVILLE HILL PRIOR TO ANY TOPSOIL STRIPPING WORKS.
2. TEMPORARY INTERCEPTOR SWALES ALONG THE SITE PERIMETER TO BE SEEDED WITH NURSERY COVER CROP (SUCH AS OATS, BARLEY, CANADA WILD RYE, WINTER WHEAT, OR BUCKWHEAT) USING HYDROSEEDING AND STABILIZED WITH EROSION CONTROL BLANKETS (LAYFIELD LP5-1, 1" OF FILTREXX GROWTH MEDIA OR APPROVED EQUIVALENT) WITHIN 48 HOURS FOLLOWING SWALE GRADING.
3. SURFACE ROUGHENING TO TAKE PLACE WHEREVER POSSIBLE AS A MEANS OF TEMPORARY EROSION AND SEDIMENT CONTROL. SURFACE ROUGHENING TO BE ACHIEVED BY TRACKWALKING PERPENDICULAR TO THE DIRECTION OF FLOW OR WITH A SHEEP'S FOOT PACKER.

BENCHMARK: ELEV. 85.407

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO TOWN OF OAKVILLE VERTICAL BENCH MARK NUMBER 188 HAVING AN ORTHOMETRIC ELEVATION OF 85.407 METERS. ELEVATIONS ARE REFERENCED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1925, PRE-1978 ADJUSTMENT (CGVD-1928:PRE-1978 ADJ.).

LEGEND:

- LIMIT OF DEVELOPMENT
- LIMIT OF SUBDIVISION
- EROSION SEDIMENTATION CONTROL SILT FENCE (SEE DETAIL ON DRAWING ESC-3)
- TREE PRESERVATION FENCE (SEE DETAIL ON DRAWING ESC-3)
- 168.00 EXISTING CONTOUR AND ELEVATION
- EXISTING STORM DRAINAGE BOUNDARY
- 175.00 SW SWALE ELEVATION
- 0.50% SWALE (SEE DETAIL ON DRAWING ESC-3)
- TEMPORARY CONSTRUCTION ACCESS (SEE DETAIL ON DRAWING ESC-3)
- EXISTING FLOW DIRECTION
- 0.60ha DRAINAGE AREA (ha)
- TEMPORARY STREET CATCHBASIN SEDIMENT CONTROL DEVICE (SEE DETAIL ON DRAWING ESC-3)
- TEMPORARY FILTREX CHECK DAM (SEE DETAIL ON DRAWING ESC-3)
- LOCKABLE GATE (SEE DETAIL ON DRAWING ESC-3)
- EXISTING TREE TO BE REMOVED (REFER TO DRAWING TI-1 PREPARED BY MHBC)

NOTE

- TREE REMOVAL AND TREE TRIMMING SHOULD OCCUR OUTSIDE THE MIGRATORY BREEDING BIRD WINDOW APRIL 1- AUGUST 31

TOPOGRAPHIC SURVEY PROVIDED BY RPE SURVEYING LTD, MAY 2017

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR SITE PLAN APPLICATION - 2ND SUBMISSION	OCT 14/22	P.G.	

SCS consulting group ltd
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3171 LAKESHORE ROAD WEST, OAKVILLE

EROSION AND SEDIMENT CONTROL - STAGE 1 DEMOLITION AND TOPSOIL STRIPPING

LICENSED PROFESSIONAL ENGINEER — N. D. MCINTOSH — 100230564 — OCT 14, 2022 — PROVINCE OF ONTARIO

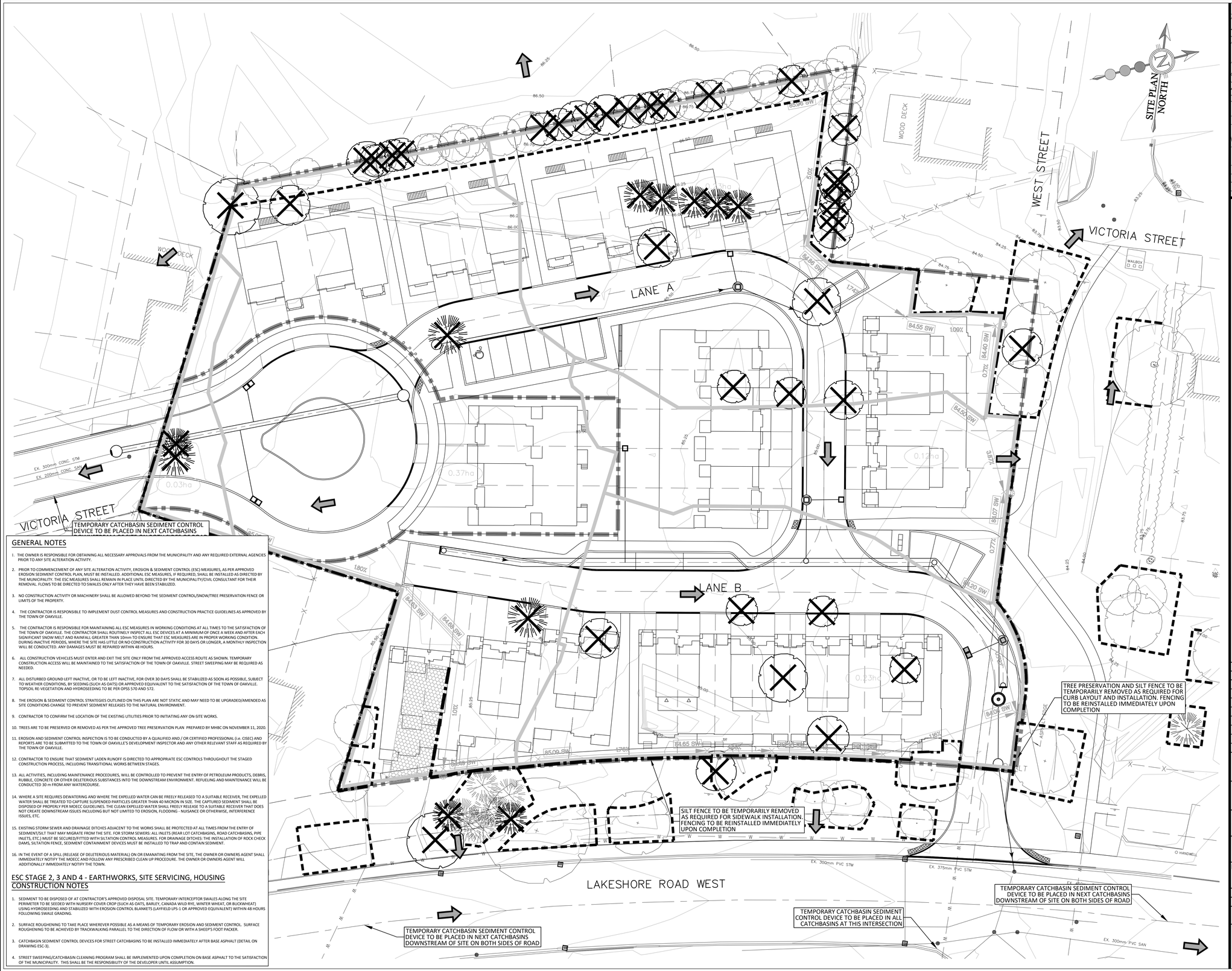
DATE: OCTOBER 2022	DESIGNED BY: N.D.M.	CHECKED BY: P.G.
SCALE: 1:250	DRAWN BY: S.T.	CHECKED BY: P.G.

1 0 5 10 15 20

PROJECT No: 1930

DRAWING No: ESC-1

File: P:\1930 3171 Lakeshore Road West, Oakville\Drawings\Phase 1\Esc\1930D-EROS-ESC-1.dwg – Revised by <CMAIER-DOWNING> : Fri, Oct 14 2022 – 9:27am



GENERAL NOTES

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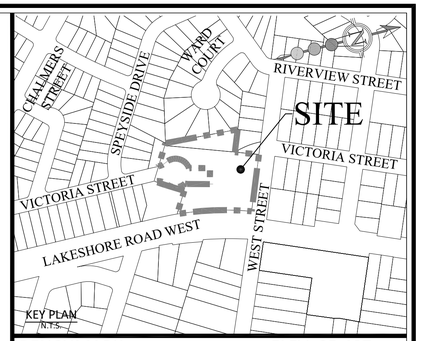
16. IN THE EVENT OF A SPILL (RELEASE OF DELETERIOUS MATERIAL) ON OR EMANATING FROM THE SITE, THE OWNER OR OWNERS AGENT SHALL IMMEDIATELY NOTIFY THE MOECC AND FOLLOW ANY PRESCRIBED CLEAN UP PROCEDURE. THE OWNER OR OWNERS AGENT WILL ADDITIONALLY IMMEDIATELY NOTIFY THE TOWN.

ESC STAGE 2, 3 AND 4 - EARTHWORKS, SITE SERVICING, HOUSING CONSTRUCTION NOTES

1. SEDIMENT TO BE DISPOSED OF AT CONTRACTOR'S APPROVED DISPOSAL SITE. TEMPORARY INTERCEPTOR SWALES ALONG THE SITE PERIMETER TO BE SEEDED WITH NURSERY COVER CROP (SUCH AS OATS, BARLEY, CANADA WILD RYE, WINTER WHEAT, OR BUCKWHEAT) USING HYDROSEEDING AND STABILIZED WITH EROSION CONTROL BLANKETS (LAYFIELD LPS-1 OR APPROVED EQUIVALENT) WITHIN 48 HOURS FOLLOWING SWALE GRADING.
2. SURFACE ROUGHENING TO TAKE PLACE WHEREVER POSSIBLE AS A MEANS OF TEMPORARY EROSION AND SEDIMENT CONTROL. SURFACE ROUGHENING TO BE ACHIEVED BY TRACKWALKING PARALLEL TO THE DIRECTION OF FLOW OR WITH A SHEEP'S FOOT PACKER.
3. CATCHBASIN SEDIMENT CONTROL DEVICES FOR STREET CATCHBASINS TO BE INSTALLED IMMEDIATELY AFTER BASE ASPHALT (DETAIL ON DRAWING ESC-3).
4. STREET SWEEPING/CATCHBASIN CLEANING PROGRAM SHALL BE IMPLEMENTED UPON COMPLETION ON BASE ASPHALT TO THE SATISFACTION OF THE MUNICIPALITY. THIS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER UNTIL ASSUMPTION.



BENCHMARK: ELEV. 85.407

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO TOWN OF OAKVILLE VERTICAL BENCH MARK NUMBER 188 HAVING AN ORTHOMETRIC ELEVATION OF 85.407 METERS. ELEVATIONS ARE REFERENCED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1925, PRE-1978 ADJUSTMENT (CGVD-1928:PRE-1978 ADJ.).

LEGEND:

- LIMIT OF DEVELOPMENT
- LIMIT OF SUBDIVISION
- EROSION SEDIMENTATION CONTROL SILT FENCE (SEE DETAIL ON DRAWING ESC-3)
- TREE PRESERVATION FENCE (SEE DETAIL ON DRAWING ESC-3)
- 168.00 EXISTING CONTOUR AND ELEVATION
- EXISTING STORM DRAINAGE BOUNDARY
- 175.00 SW SWALE ELEVATION
- 0.50% SWALE (SEE DETAIL ON DRAWING ESC-3)
- TEMPORARY CONSTRUCTION ACCESS
- 0.60ha DRAINAGE AREA (ha)
- PROPOSED FLOW DIRECTION
- TEMPORARY STREET CATCHBASIN SEDIMENT CONTROL DEVICE (SEE DETAIL ON DRAWING ESC-3)
- TEMPORARY FILTREX CHECK DAM (SEE DETAIL ON DRAWING ESC-3)
- LOCKABLE GATE (SEE DETAIL ON DRAWING ESC-3)
- PROPOSED STORM SEWER AND MANHOLE
- PROPOSED SUPERPIPE
- EXISTING TREE TO BE REMOVED (REFER TO DRAWING T1-1 PREPARED BY MHBC)

TOPOGRAPHIC SURVEY PROVIDED BY RPE SURVEYING LTD, MAY 2017

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR SITE PLAN APPLICATION - 2ND SUBMISSION	OCT 14/22	P.G.	

scs consulting group ltd
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3171 LAKESHORE ROAD WEST, OAKVILLE

EROSION AND SEDIMENT CONTROL - STAGE 2, 3 AND 4 EARTHWORKS, SITE SERVICING, AND HOUSING CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
N. D. MCINTOSH
100230564
OCT 14, 2022
PROVINCE OF ONTARIO

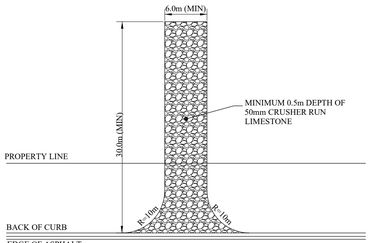
DATE:	OCTOBER 2022	DESIGNED BY: N.D.M.	CHECKED BY: P.G.
SCALE:	1:250	DRAWN BY: S.T.	CHECKED BY: P.G.

1 0 5 10 15 20

PROJECT No: 1930

DRAWING No: ESC-2

File: P:\1930 3171 Lakeshore Road West, Oakville\Drawings\Phase 1\Esc\1930D-EROS-ESC-2.dwg – Revised by <CMAIER-DOWNING> : Fri, Oct 14 2022 – 9:35am

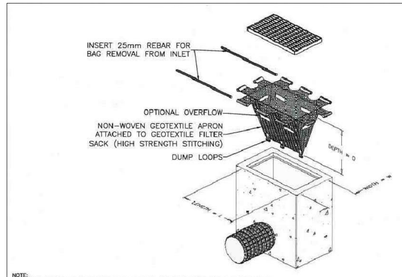


NOTES:

1. UPON REMOVAL OF TEMPORARY CONSTRUCTION ACCESS, ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.

MUD MAT FOR TEMPORARY CONSTRUCTION ACCESS

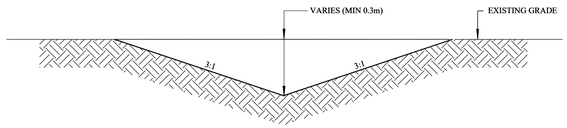
SCALE: N.T.S.



NOTE:
1. FILTER FABRIC TO BE INSPECTED BI-WEEKLY AND REPLACED BY THE OWNER WHEN THE SILT BAG OR SILT SACKS IS 50% FULL OF SEDIMENT.
2. THIS STANDARD SHOULD BE USED DURING ROAD CONSTRUCTION.

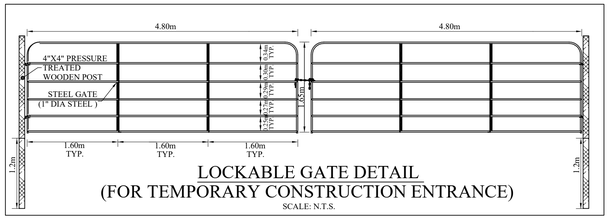
TEMPORARY CATCHBASIN SEDIMENT CONTROL DEVICE

SCALE: N.T.S.



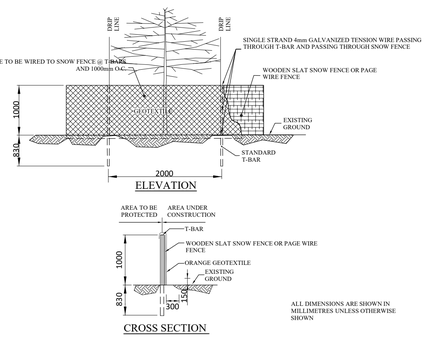
TEMPORARY SWALE

SCALE: N.T.S.



LOCKABLE GATE DETAIL (FOR TEMPORARY CONSTRUCTION ENTRANCE)

SCALE: N.T.S.



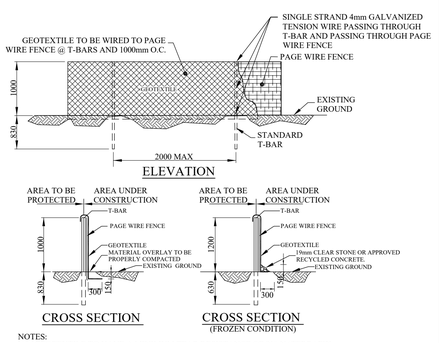
CROSS SECTION

NOTES:

1. ORANGE GEOTEXTILE TO HAVE A HORIZONTAL OVERLAY OF 1000mm AT JOINTS.
2. SNOW FENCE TO BE WOODEN.
3. ALL EXISTING TREES WHICH ARE TO REMAIN, SHALL BE FULLY PROTECTED WITH THE FENCING BEYOND THEIR "DRIP-LINE", TO THE SATISFACTION OF THE TOWN'S LANDSCAPE ARCHITECT. GROUPS OF TREES AND OTHER EXISTING PLANTINGS TO BE PROTECTED, SHALL BE DONE IN A LIKE MANNER WITH FENCING AROUND THE ENTIRE GROUPINGS.
4. THE AREA WITHIN THE PROTECTIVE FENCING SHALL REMAIN UNDISTURBED AND SURPLUS SOIL, EQUIPMENT, DEBRIS OR BUILDING MATERIALS SHALL NOT BE PLACED OVER ROOT SYSTEMS OF THE TREES WITHIN THE PROTECTIVE FENCING. NO CONTAMINENTS WILL BE DUMPED OR FLUSHED WHERE FEEDER ROOTS OF TREES EXIST.
5. THE DEVELOPER OR HIS AGENTS SHALL TAKE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGE TO TREES OR SHRUBS TO BE RETAINED. NO RIGGING CABLES SHALL BE WRAPPED AROUND OR INSTALLED IN TREES.
6. WHERE ROOT SYSTEMS OF PROTECTED TREES ARE EXPOSED DIRECTLY ADJACENT TO, OR DAMAGED BY CONSTRUCTION WORK, THEY SHALL BE TRIMMED NEATLY AND THE AREA BACK-FILLED WITH APPROPRIATE MATERIAL TO PREVENT DESICCATION.
7. WHERE LIMBS OR PORTIONS OF TREES ARE REMOVED TO ACCOMMODATE CONSTRUCTION WORK, THEY SHALL BE REMOVED CAREFULLY. EXPOSED WOOD OVER 25mm TO BE TREATED WITH AN APPROVED TREE WOUND DRESSING.
8. WHERE NECESSARY, THE TREES SHALL BE GIVEN AN OVERALL PRUNING TO RESTORE THE BALANCE BETWEEN ROOTS AND TOP GROWTH, OR TO RESTORE THE APPEARANCE OF THE TREE. PRUNE BRANCHES BY 1 IF REQUIRED TO REMOVE DAMAGED OR OBJECTIONABLE BRANCHES. DO NOT PRUNE LEADERS.
9. TREES THAT HAVE DIED OR HAVE BEEN DAMAGED BEYOND REPAIR SHALL BE REPLACED BY THE DEVELOPER AT HIS OWN EXPENSE WITH TREES OF A SIZE AND SPECIES AS APPROVED BY THE TOWN'S LANDSCAPE ARCHITECT.
10. IF GRADES AROUND TREES TO BE PROTECTED ARE LIKELY TO CHANGE THE DEVELOPER SHALL BE REQUIRED TO TAKE SUCH PRECAUTIONS AS FRY/WELLING AND ROOT-FEEDING TO THE SATISFACTION OF THE TOWN'S LANDSCAPE ARCHITECT.

TREE PRESERVATION FENCE

SCALE: N.T.S.



CROSS SECTION

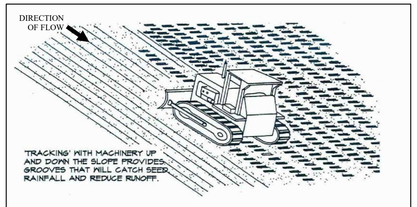
CROSS SECTION (FROZEN CONDITION)

NOTES:

1. GEOTEXTILE TO HAVE A MINIMUM TEAR RESISTANCE OF 210 N (TERRAFIX 270R, LAYFIELD LP4, OR APPROVED EQUIVALENT).
2. GEOTEXTILE TO HAVE A HORIZONTAL OVERLAY OF 1000mm AT JOINTS.
3. PAGE WIRE FENCE OR APPROVED EQUIVALENT.

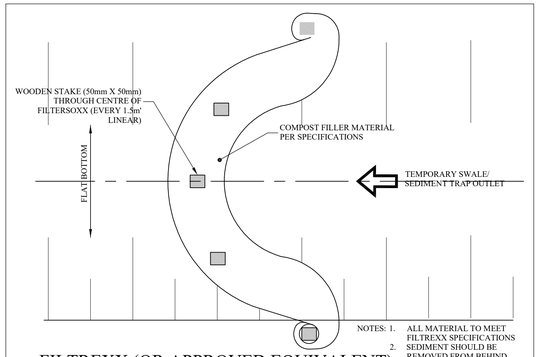
TEMPORARY SINGLE ROW SEDIMENT CONTROL FENCE

SCALE: N.T.S.



TRACK WALKING DETAIL

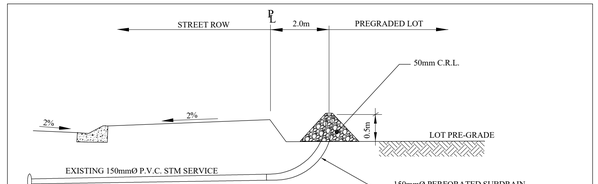
SCALE: N.T.S.



NOTES: 1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS
2. SEDIMENT SHOULD BE REMOVED FROM BEHIND CHECKDAM ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ TOTAL HEIGHT OF THE CHECK DAM.

FILTREXX (OR APPROVED EQUIVALENT) CHECK DAM

SCALE: N.T.S.



NOTE: SUBDRAIN SECURED TO STORM SERVICE WITH PIPE CLAMP

TEMPORARY LOT RISER DRAIN WITH FILTER SOCK

SCALE: N.T.S.

REVISIONS				
No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR SITE PLAN APPLICATION - 2ND SUBMISSION	OCT 14/22	P.G.	

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3171 LAKESHORE ROAD WEST, OAKVILLE

EROSION AND SEDIMENT CONTROL DETAILS PLAN 1

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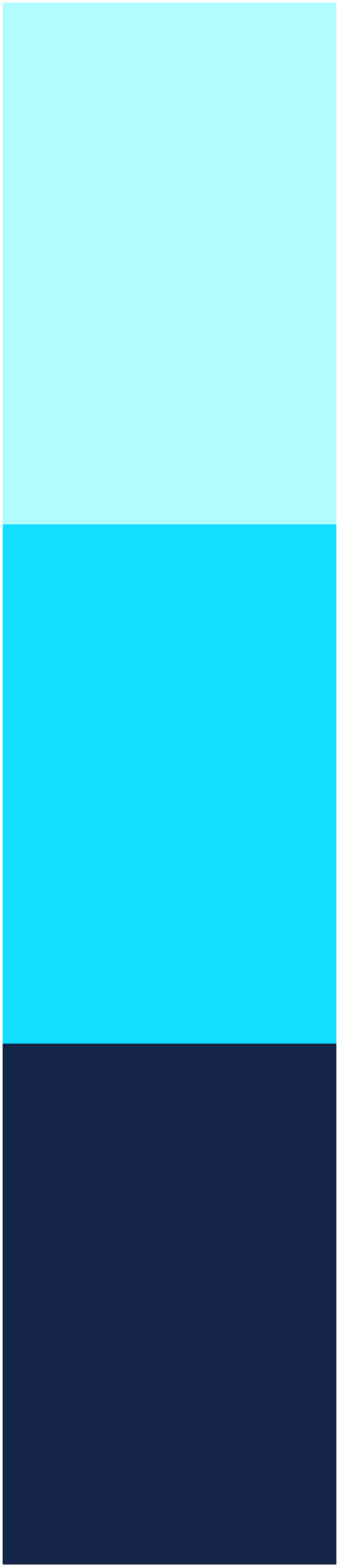
PROJECT No: 1930

DRAWING No: ESC-3



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