8.0 Description of the Undertaking

The Undertaking involves expanding the existing landfill footprints (Figure 8-1) through a combination of first vertical expansion above and between the footprints, then a horizontal expansion to extend the footprint; the preferred alternative 3A (Figure 8-2). This section provides a more detailed description of the preferred alternative than discussed in Section 7. The preferred alternative presented herein may be altered and refined as part of future EPA permitting processes, following EA approval.

This section provides a description of the existing site and operations, followed by detailing the design concept and development sequence for the expansion. Lastly, this section describes the closure and post-closure care of the expansion at a high level.

8.1 Existing Landfill Site

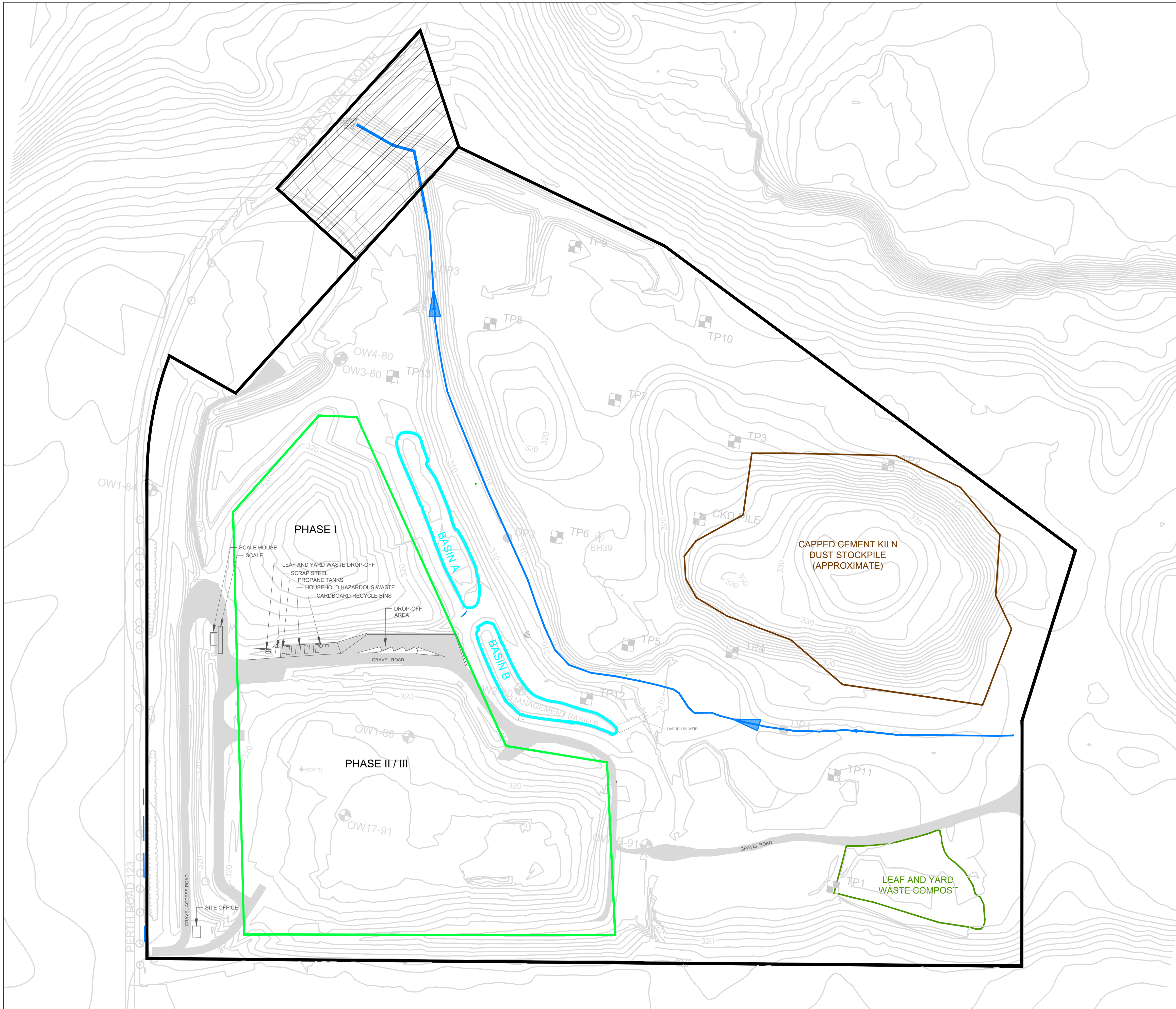
The existing 37 hectare landfill site is comprised of an 8.0 ha approved landfill footprint, scale and scale-house, public drop off depot, and a compost area. The existing site is shown on Figure 8-1. It is comprised of Phase I and Phase II/III with an approved volume [63] of 453,050 m^3.

The site entrance is on Water Street and the peak vehicle traffic rate is approximately 86 vehicles per hour on Saturday mornings (AM), and the peak vehicle traffic rate during the week is 38 vehicles per hour in the AM. Garbage collection vehicles collect waste throughout the town and deliver it to the site on Tuesdays and Fridays. Individual users of the site proceed through the site entrance and visit the scale/scale house, after which users will be permitted to dispose of their wastes within the public drop-off area. The site is open for individual users and collection vehicles during the hours listed in Table 8-1. Site equipment is sometimes used for 30 to 60 minutes before or after these hours to prepare for waste receipt and to compact and cover wastes received during the day.

Table 8-1: Public Operating Hours

Sunday	Closed
Monday	Closed
Tuesday	8:00 am - 4:30 pm
Wednesday	8:00 am - 4:30 pm
Thursday	Closed
Friday	8:00 am - 4:30 pm
Saturday	8:00 am - 12:00 pm

[63] Original Phase I capacity of 104,000 m^3, 276,000 m^3 for Phase II/III, plus 73,050 m^3 of interim capacity for a total of 453,050 m^3 as of the Site's January 10, 2022 Environmental Compliance Approval (ECA). See Section 3.1.2.3 for an explanation of the interim ECAs.



LEGEND

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- EXISTING WATERCOURSE
- EXISTING REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- MONITORING/OBSERVATION WELL
- TESTPIT
- RIGHT-OF-WAY AND SEWER EASEMENT
- EXISTING STORM BASIN
- EXISTING GRAVEL ROAD

N

0 60 120 180 240

Metres

BURNSIDE

Client

TOWN OF ST. MARYS

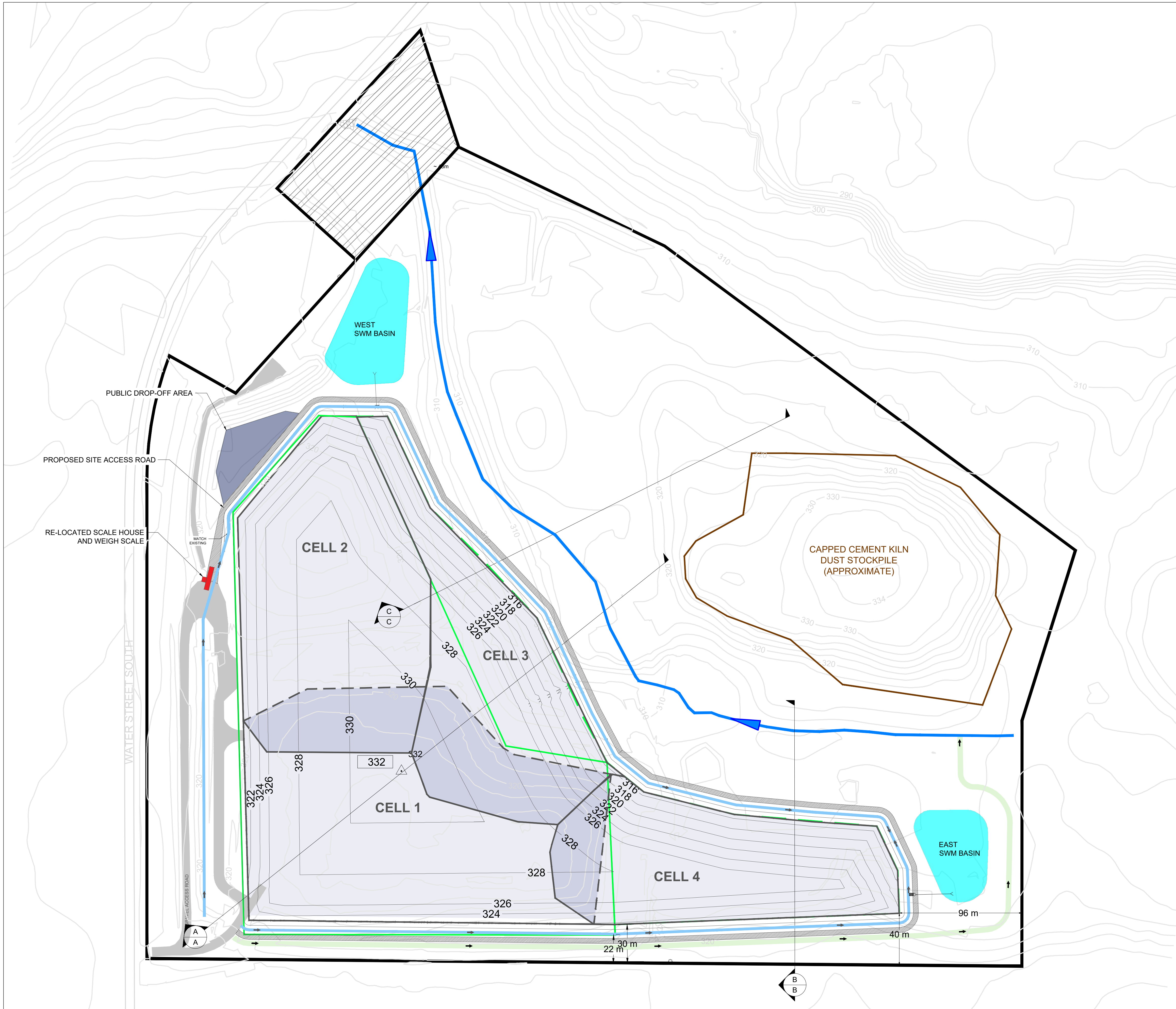
Figure Title

EXISTING CONDITIONS

SITE PLAN

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	**8-1**
Scale		Project No.	
1:3000		300032339	

File:Shared Work Areas (\\pops) E:\032339 - St. Marys Waste\CIVIL\04_MiscDwg\032339 Figure 8-1.dwg Date Plotted: July 6, 2022 - 12:25 PM



LEGEND

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- PROPOSED WATERCOURSE ALIGNMENT
- EXISTING REFUSE LIMIT
- EXPANSION REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- PROPOSED WASTE CONTOURS (2m)
- CROSS-SECTION LABEL
- RIGHT-OF-WAY AND SEWER EASEMENT
- PROPOSED STORMWATER BASIN (APPROXIMATE)
- 332 APPROXIMATE PEAK OF WASTE (masl)
- STORMWATER FLOW DIRECTION
- EXTERNAL DRAINAGE CHANNEL
- ACCESS ROAD
- LANDFILL DITCH

N

0 60 120 180 240

Metres

BURNSIDE

Client

TOWN OF ST. MARYS

Figure Title

ALTERNATIVE METHOD 3A

PROPOSED FINAL REFUSE CONTOURS

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	8-2
Scale		Project No.	
1:3000		300032339	

The existing site infrastructure does not need to be changed to allow immediate (initial) development and operation of the preferred alternative. This infrastructure includes the site entrance, weigh scale, scale house, internal access roads, public drop-off facility, stormwater drainage and buffer areas. Some of these site facilities will need to be relocated as part of the landfill expansion and the timing of the relocation activities is discussed below as part of the development sequence.

The site currently employs 1 full-time employee and 5 part-time employees. The Supervisor of Environmental Services and the Supervisor of Operations occasionally attend the site. The employment levels, site entrance, and truck traffic are expected to remain the same throughout the life of the expanded site.

8.2 Design Concept

This section describes the design concept for landfill expansion for the preferred alternative 3A. The expansion provides the additional disposal capacity required to allow operations through the end of the EA Planning Period to December 2056. The expansion will operate in a similar fashion as the existing site, described in Section 8.1 above.

To obtain the required disposal capacity for the planning period, the expansion involves:

- Vertical expansion consisting of Cells 1 and 2 above and between the existing Phase I and Phase II/III waste footprints, followed by
- Horizontal expansion consisting of Cells 3 and 4 that extend the existing waste footprints to the east (and slightly north).

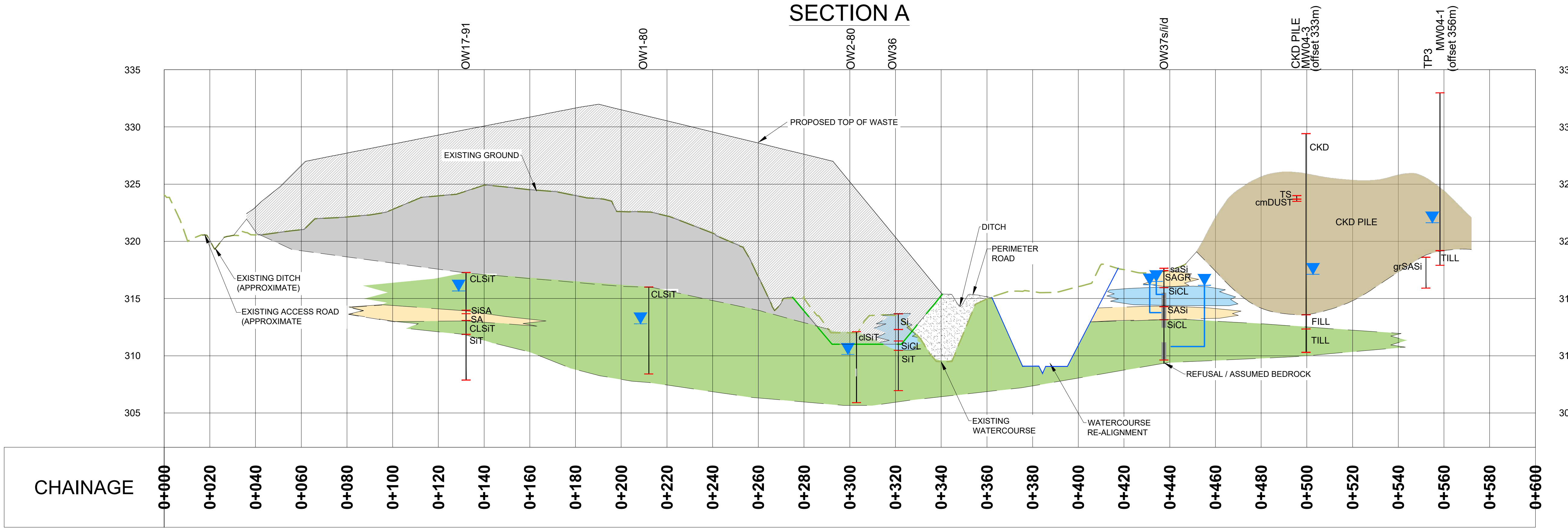
The overall expansion is shown on Figure 8-2 with cross-sections through the site shown as Figure 8-3 (A-A’) and Figure 8-4 (B-B’ and C-C’). The expansion will be built in steps, called Cells 1 to 4. This is sequence of site development is described further in Section 8.7.

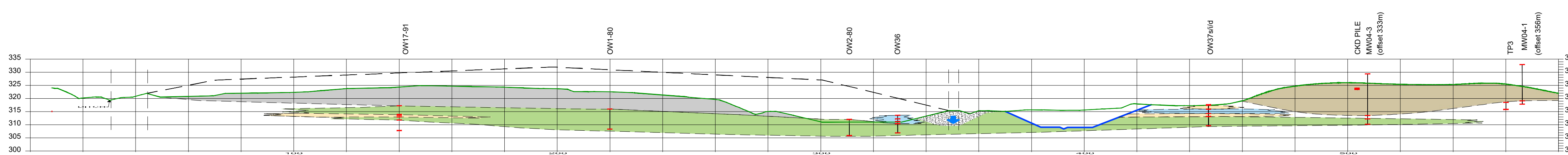
The expansion will add 3.2 ha of disposal footprint to the landfill site and 708,000 m^3 of additional disposal capacity. It is noted that the pre-EA-approval ‘interim operation’ of the landfill has filled above Phase II/III and is included in this additional disposal capacity. This fill, described in Section 3.1.3.8, is the new base for the expanded landfill. The expansion design has incorporated this interim fill while achieving the intended planning period capacity (ending December 31, 2056).

The sub-sections below describe the un-seen components of the expanded landfill, namely:

- Landfill liner – Section 8.2.1
- Leachate Collection System – Section 8.2.2
- Leachate disposal – Section 8.2.3
- Waste footprint construction and site development – Sections 8.2.4 and 8.7

SECTION A





BURNSIDE

Client

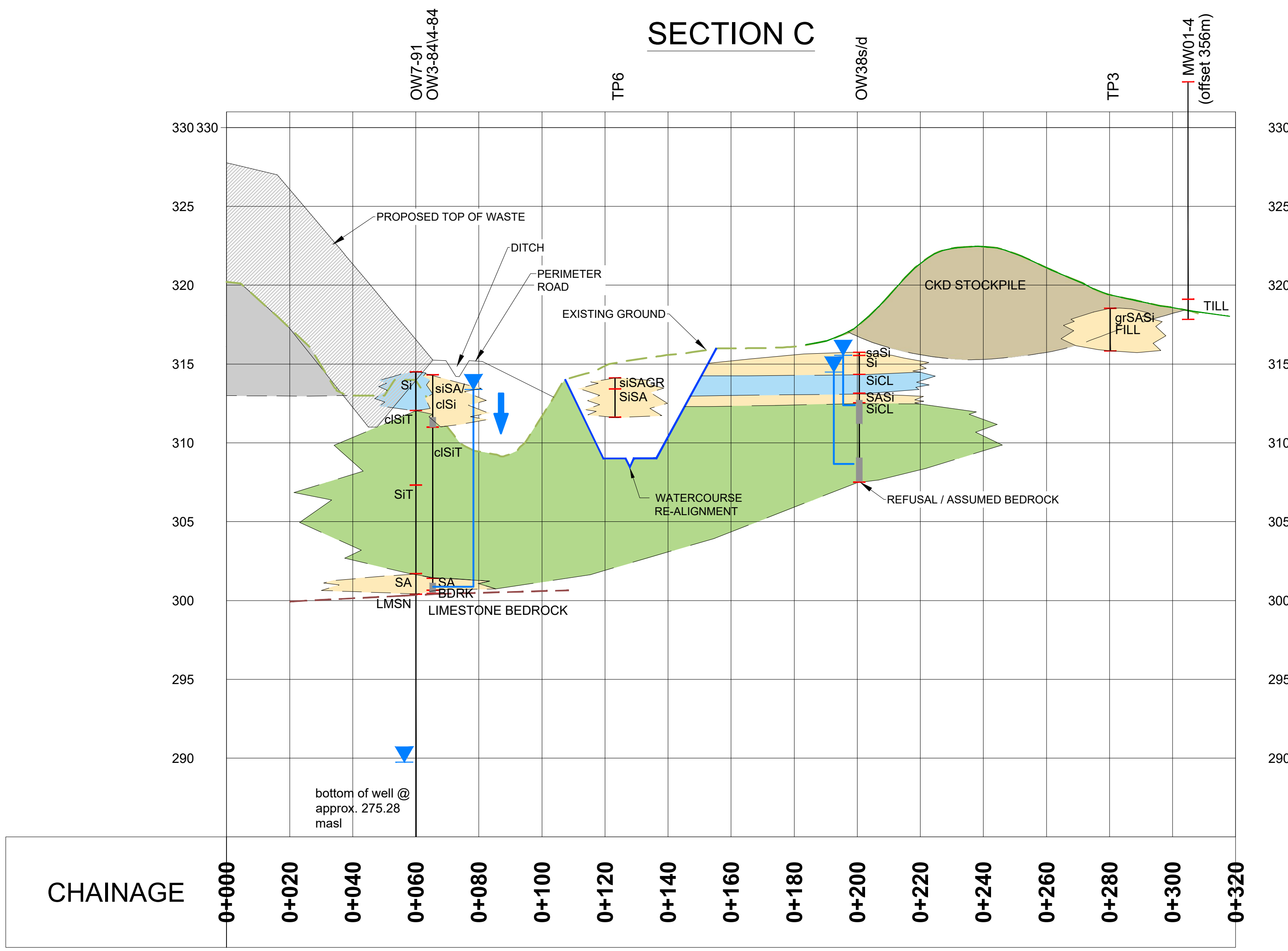
TOWN OF ST. MARYS

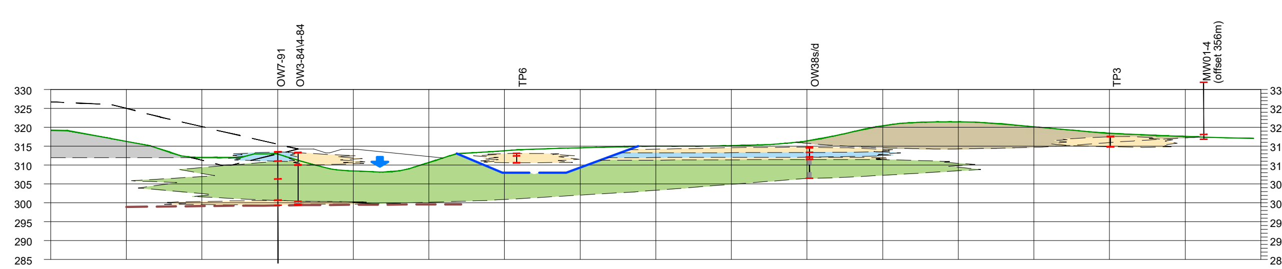
Figure Title

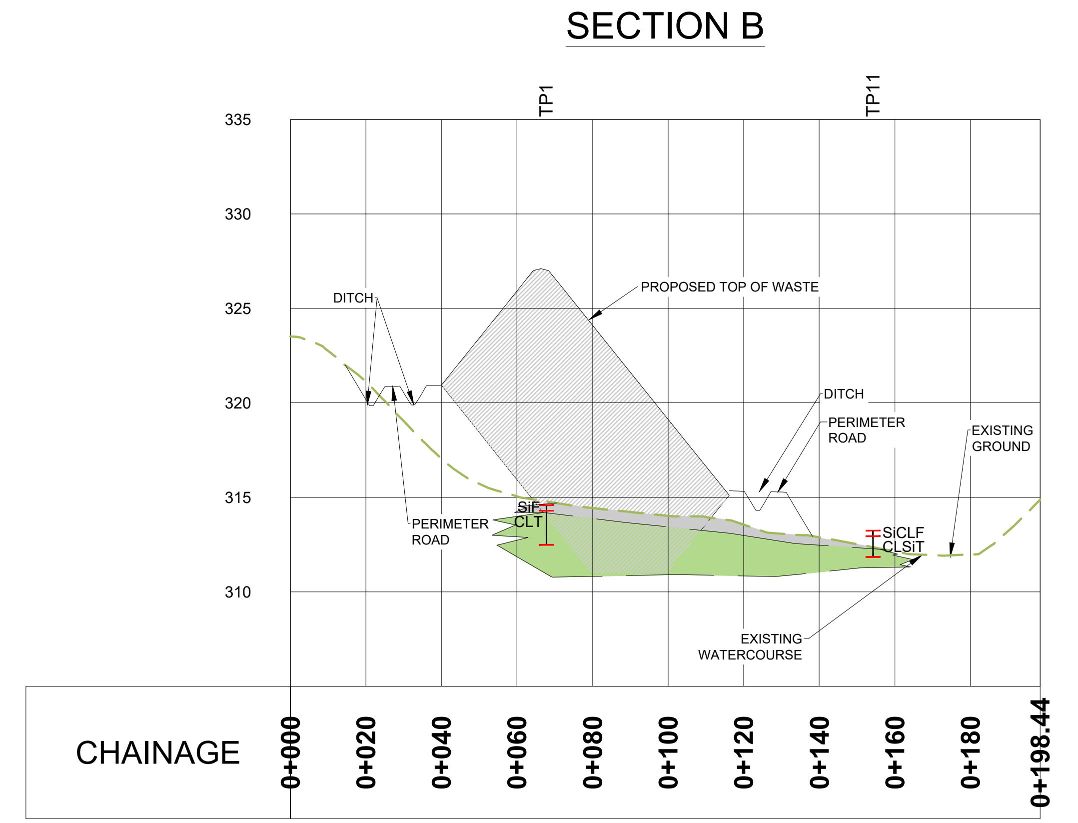
ALTERNATIVE METHOD 3A

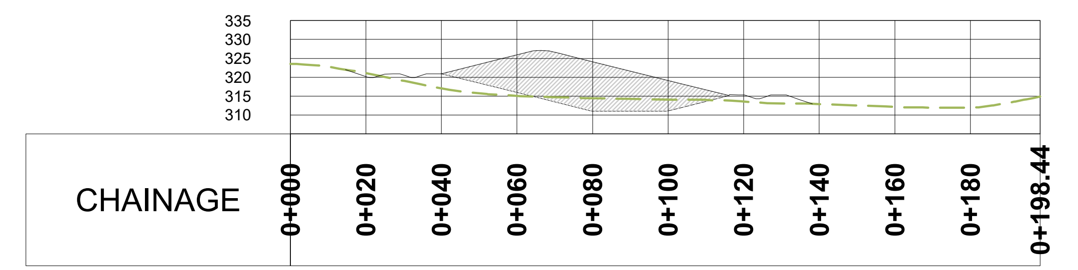
CROSS SECTIONS

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	**8-3**
Scale		Project No.	
1:2,000		300032339	









BURNSIDE

Client

TOWN OF ST. MARYS

Figure Title

ALTERNATIVE METHOD 3A

CROSS SECTIONS

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	**8-4**
Scale		Project No.	
1:3,000		300032339	

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A preliminary site plan, shown on Figure 8-5, has been prepared to support the landfill expansion. This site plan provides preliminary site grading design, including surface drainage, stormwater management and watercourse realignment needed for the expanded landfill. Figure 8-5 shows, conceptually:

- Watercourse realignment with current UTRCA regulation lines – Section 8.2.5
- Stormwater Management features – Section 8.2.6
  - Landfill ditches and inverts
  - External lands drainage ditches and inverts
  - Stormwater Management Basins and contours
  - Capped landfill elevations
- Access roads and elevations – Section 8.2.7
- Scale and Public Drop-Off relocation – Section 8.2.8
- Buffers – Section 8.2.9

8.2.1 Landfill Liner

The existing landfill Phase I and Phase II/III footprints are built upon the site's natural clays. The non-permeable natural clays act as a liner that has been found to be sufficient in limiting, if not entirely stopping, the flow of leachate [64] from leaving the waste footprint and entering groundwater.

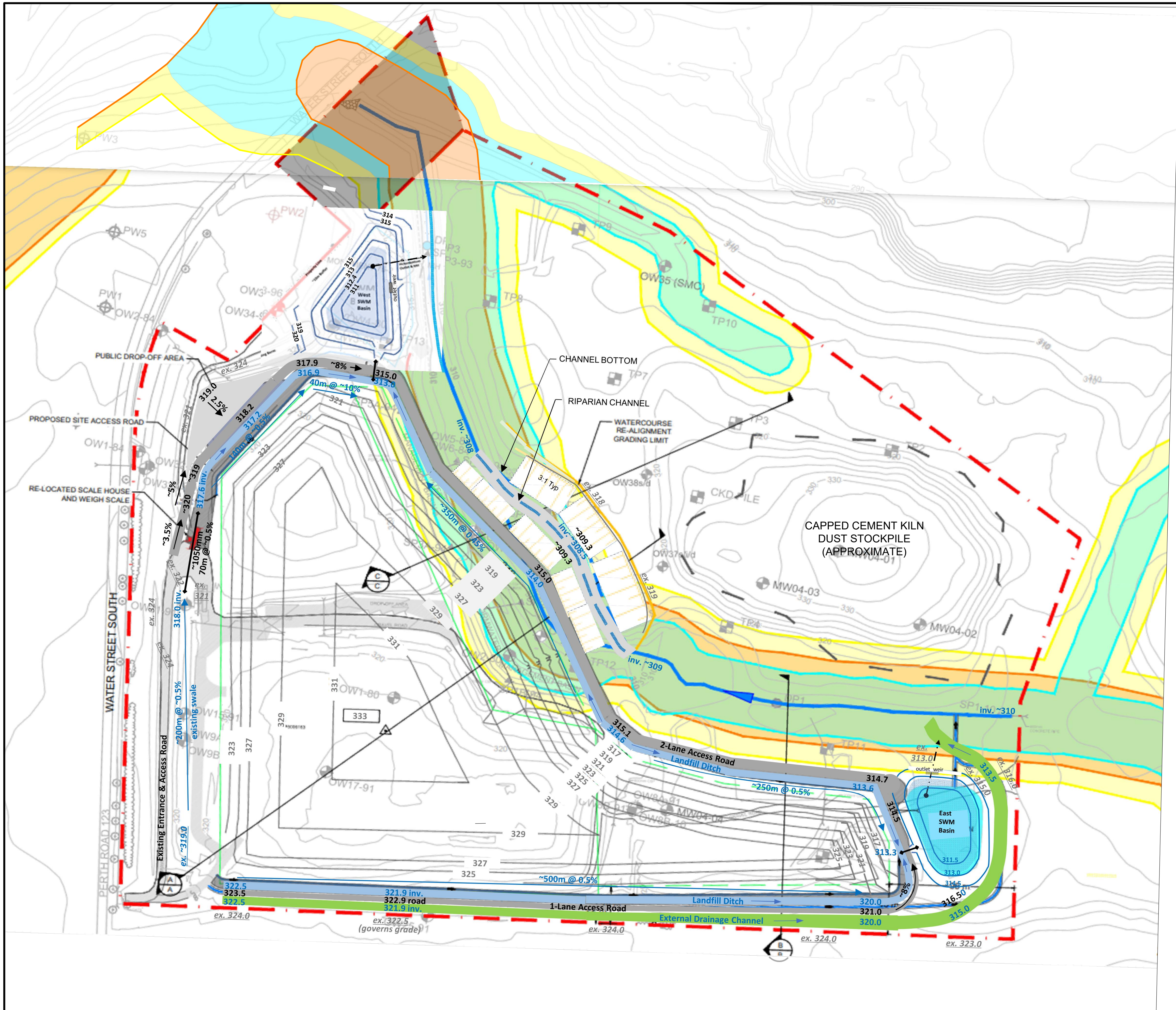
As seen on Figure 8-2:

- Expansion of Cell 1 occurs above the Phase II/III waste footprint, and therefore has no new liner.
- Cell 2 will fill above Phase I and into the 'valley' area between Phase I and Phase II/III. In the valley, the liner will be provided by the site's natural clays.
- Cells 3 and 4 also represent new waste footprint. They are being built within the site's natural clays, acting as a landfill liner for the new footprint.

[64] Leachate is contaminated groundwater generated from landfilled waste mixing with groundwater, rainwater and/or snow melt. Contaminants in the waste are extracted much like a coffee percolator. Water drips into coffee grinds (waste) creating the coffee (leachate).

8.2.2 Leachate Collection System

Phase I of the landfill was built upon the site’s native clays, acting as a liner. Initially, Phase I did not include a leachate collection system. Later, the Town installed a perimeter leachate collection system to prevent leachate seeps on the above grade side slopes of Phase I. At the time, the perimeter leachate collection system drained to a temporary storage tank that was periodically emptied by a vacuum truck. The truck then took the leachate to the St. Marys WWTP.



LEGEND

- PROPERTY LINE
- EXISTING WATERCOURSE
- PROPOSED WATERCOURSE ALIGNMENT
- EXISTING REFUSE LIMIT
- EXPANSION REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- MONITORING/OBSERVATION WELL
- TESTPIT
- CROSS-SECTION LABEL
- EXTERNAL DRAINAGE CHANNEL
- ACCESS ROAD
- LANDFILL DITCH

UPPER THAMES RIVER CONSERVATION AUTHORITY REGULATED AREAS

- REGULATION LIMIT 2021
- EROSION HAZARD LIMIT
- FLOODING HAZARD LIMIT

N

0 60 120 180 240
Metres

BURNSIDE

Client

TOWN OF ST. MARYS

Figure Title

ALTERNATIVE METHOD 3A

PROPOSED GRADING AND SITE PLAN

Drawn	Checked	Date	Figure No.
DB	DB	JULY 2022	8-5
Scale		Project No.	
1:3,000		300032339	

File:Shared Work Areas (\\pops)\ E:\032339 - St. Marys Waste\CIVIL\04_MiscDwg\032339 Figure 8-6.dwg Date Plotted: June 9, 2022 - 7:23 PM

Phase II/III was designed with a leachate collection system. This improved upon the Phase I system in that it included collection pipes surrounded by gravel like a French drain. These 'lateral' pipes drained to a perimeter 'header' pipe at the Phase II/III perimeter. The header pipe led to another temporary storage tank. Again, a vacuum truck was used to take the leachate to the St. Marys WWTP. Later, a leachate sewer was added to the site. This eliminated the need for the Phase I and Phase II/III tanks. The sewer directed the leachate to flow to the St. Marys WWTP, eliminating the trucking.

The new waste footprint areas of the expanded landfill will similarly rely upon the native clay liner and a leachate collection system like Phase II/III. The new waste footprint areas are the 'valley' portion of Cell 2 and the expansion footprints of Cells 3 and 4. Building on the Phase II/III site design, a leachate collection pipe network will be installed in compliance with O. Reg. 232/98, as well as other Ministry requirements such as the Ontario Water Resources Act, to prevent contamination to the surrounding environment. Landfill cells will be graded to facilitate the gravity flow of leachate towards the leachate collection system, minimizing the leachate head on the liner.

Direct vertical expansion over the existing landfill cells will utilize the existing landfill liner and collection system. A few of the existing leachate collection system maintenance holes, particularly between Phase I and Phase II/III (where Cell 2 is proposed) and along the northeastern perimeter of Phase II/III, will need to be converted into "clean-outs" and extended to maintain access to the existing leachate collection system.

8.2.3 Leachate Disposal

As discussed above, leachate currently collects on-site and is transported by gravity sewer to the St Marys WWTP for treatment. The Leachate Treatment and Disposal Report (Volume III, Appendix I) assessed the potential for continual leachate disposal at the St. Marys WWTP by:

- Reviewing the anticipated average peak flow (volume), and
- Modelling the likely worst-case chemical quality of leachate.

The plant currently receives an average wastewater flow of 4,374 m^3/day (2018 data) or 79% of its rated capacity. The estimated current and future leachate volume generated by the St. Marys Landfill (including the expansion) represents only 1.0% of the Average Daily Flow currently processed by the WWTP, and an even smaller percentage of the approved rated capacity.

Based on the expected effluent concentration of leachate parameters, the treatment processes at the plant, and the dilution ratio at the WWTP (less than 1.0 percent of total inflow), it is not expected that the additional leachate flow would adversely affect the ability of the St. Marys WWTP to meet its effluent requirements.

In the case of a temporary shut-down of the Town's WWTP, the St. Marys landfill may temporarily store leachate within the prepared base of the landfill. Several days of leachate volume can be stored in this manner without compromising the landfill liner or creating leachate seeps. With proper design and operating plans developed during the EPA approval stage, temporary storage in the landfill base can be used during periods of particularly high flows to reduce the quantity of leachate being sent to the St. Marys WWTP. In turn, this would provide the sewer or the WWTP some time to alleviate a temporary over capacity condition.

As such, the leachate generated via the landfill expansion can continue to be accommodated at the St. Marys WWTP. Improvements to the leachate collection sewer and connections to the new landfill cells are detailed below.

8.2.4 Waste Footprint Construction

There are two components to the site expansion under preferred alternative 3A:

- Vertical expansion consisting of Cells 1 and 2 above and between the existing Phase I and Phase II/III waste footprints, followed by
- Horizontal expansion consisting of Cells 3 and 4 that extend the existing waste footprints to the east (and slightly north).

The expansion will require excavation and grading between Phase I and Phase II/III and for Cells 3 and 4 to achieve the below-grade depths that provide the site capacity. The below-grade excavation will be sloped to promote gravity drainage into the leachate collection system. The general development sequence is as follows:

- Cell 1 operation continues filling above the existing Phase II/III.
  - No excavation is expected.
  - No changes to the existing leachate collection system are anticipated.
- Cell 2 requires some excavation and grading for the 'valley' portion of the cell.
  - Some maintenance holes between Phase I and Phase II/III will be extended or replaced with clean-out pipes.
  - The leachate collection system will be installed in the excavated area. It will be connected to the existing sewer (leading to the St. Marys WWTP).
- Cell 3 will be excavated and graded for the entire expansion footprint.
  - The leachate collection system will be installed, connecting to the existing sewer.
- Cell 4 will be excavated and graded for the entire expansion footprint.
  - The leachate collection system will be installed, likely connecting to the Cell 3 leachate collection system header (which leads to the sewer).

To achieve the necessary disposal capacity, a 230 m portion of the watercourse must be realigned – essentially pushed north. This is described in Section 8.2.5. The realignment provides additional width near the middle of the waste footprint. It is the cross-sectional geometry that provides the disposal capacity without exceeding O.Reg. 232/98 above grade slope requirements (maximum of 4:1 and minimum of 20:1).

As described in Sections 8.2.6 and 8.2.7, the expansion will require excavation and filling to develop the site's perimeter facilities, namely the access roads, internal/external ditching and the relocated stormwater management basins (West and East Basins).

There is a significant amount of excavation and filling required as part of construction. This has been sequenced to reduce the need to import soils from off-site sources. As a result, a significant increase in heavy truck traffic due to construction is not anticipated.

Table 8-2 outlines the overall cut and fill process for the site's construction as well as cover material requirements. During operation of Cells 1 through 3, there is an excess of soil material which can either be used during development of the next cell, or for use as operational or interim cover. During the operation of Cell 4, no construction activities are anticipated.

Table 8-2: Soil Balance

During Operation of†	**Anticipated Cut (m^3)**	**Anticipated Fill (m^3)**	**Net Soil Balance (m^3)**
Cell 1	35,000	25,000	10,000 (excess)
Cell 2	31,000	28,000	3,000 (excess)
Cell 3	37,000	18,000	19,000 (excess)
Cell 4	none	none	none
† Major construction activities requiring earthworks are only anticipated during operation of Cell 1, 2, and 3.			
Cover Soil Requirements	Operational‡ (m^3)	Interim§ (m^3)	Final[1] (m^3)
Cell 1	24,800	14,400	24,300
Cell 2	20,000	10,800	17,700
Cell 3	34,700	9,600	22,900
Cell 4	26,400	7,000	18,600

‡ Operation cover is calculated using assuming 15% of cell capacity.

§ Interim cover assumes full 3D area of each Cell, applied with a thickness of 300mm. Where possible, interim cover will be partly removed before filling continues, so this volume exceeds requirements.

1 Final cover will be applied with a total thickness of 750mm (per O.Reg. 232/98: 600mm general soil, and 150mm of topsoil) over the 3D area that has reached final waste contours (i.e., no further landfilling). It does not include previously placed interim cover.

8.2.5 Watercourse Realignment

Within the landfill property, and within the sewer easement at Water Street South, there is approximately 790 m of watercourse (see Figure 8-1 for existing conditions) which has been significantly altered over the many years of quarrying. The existing watercourse is relatively straight, having a riparian channel less than 1 m deep with a cross-section width of about 2.5 m. The watercourse enters the site from the east, through a 600 mm diameter culvert. It flows to the north-west corner of the site and exits through a 1500 mm diameter culver below Water St. S to the Thames River.

Currently, the watercourse drains approximately 350 ha. of upstream rural lands into the landfill site from the east, then through the site and into the river. It bisects the St. Marys landfill property and drains the entire landfill site, plus approximately 250 ha. of external lands from the southeast. A smaller (~100 ha.) tributary, draining an area north and east of the landfill, was diverted south and into the site's watercourse immediately east of the landfill property boundary.

Preferred Alternative 3A is premised on retaining the watercourse in its present location, except for the realignment of an approximate 230 m reach within the middle of the site. The proposed realignment is shown on Figure 8-5 as well as Sections A and C (Figure 8-3 and Figure 8-4).

The realigned watercourse has been designed to match the existing watercourse within a 50 m to 60 m wide corridor, assuming:

- 3:1 embankment slope,
- 15 m (approximate) wide watercourse bottom,
- 2.5 m to 3.0 m wide riparian channel, and
- 20 m (approximate) setback from top-of-bank to the edge of existing CKD pile embankment.

A new riparian channel can be shaped using natural channel design principles. Additional improvements to the remaining sections of the watercourse through the landfill property will be made, including the addition of channel substrates, installation of habitat features and bank stabilization, where required. All new and remaining riparian areas will be naturalized with trees, shrub and grass plantings.

It is expected that middle of the realignment construction will begin during the operation of Cell 1 as shown on Figure 8-6. This provides some time for stabilization of the realignment and construction required for Cell 3. The completed realignment construction should be finished by the time the excavation of Cell 3 begins, as shown on Figure 8-7. A detailed watercourse realignment plan will be submitted to UTRCA and DFO for review and to secure the relevant permits prior to construction.

Most of the realigned watercourse section will be constructed in the dry, off-line, leaving the upstream and downstream ends to be connected afterwards. Once the banks are vegetated and stabilized, the downstream channel connections will be constructed. Any wildlife within the existing channel will be salvaged and relocated before the existing channel closed off. No in-water work will occur during June and July.

8.2.6 Stormwater Management

Much of the wet weather landfill drainage within active waste cells infiltrates, becomes leachate, and is managed as outlined in Section 8.2.2. Leachate is generated during below-grade operations and from light rainfalls / snowmelt infiltration during above grade operations.

During rainstorms, when waste operations are above grade, the runoff of surface water includes contamination by suspended solids, mostly originating from disturbed soils. Landfill operating measures are intended to minimize wet weather surface water contamination. This includes efforts like minimizing the tipping face (open waste), compacting the waste, placing cover and grading (sloping the surface) to avoid drainage into the waste.

Typical landfill stormwater management controls runoff from the waste footprint and runoff that flows toward the waste footprint. Runoff from within the waste footprint is collected by the internal ditches and directs it to stormwater management ponds for sediment treatment. The ponds detain the flow of runoff, eventually discharging to the watercourse. Inspections and monitoring protect the surface water from contamination.

A ditch dedicated to intercepting runoff from outside the waste footprint will be located inside the south boundary perimeter. This runoff will not contact any waste, so it will convey external surface water around the perimeter of the waste footprint and then discharge directly into the watercourse.

A preliminary design for stormwater management is shown on Figure 8-5 and detailed in the following paragraphs. A detailed Stormwater Management Plan will be developed and submitted to UTRCA and MECP for approval prior to construction.

Landfill perimeter ditches are needed between the access roads and the edge of the landfill to convey landfill runoff to the stormwater management basins. The perimeter ditches are offset from the waste footprint to allow placement of final (closure) cover when filling is complete. The two existing stormwater management basins (A & B) are to be relocated and enlarged (East and West).

Landfill ditches (channels) will have 1 m wide bottoms, 3:1 embankments and gradients of approximately 0.5% to enable some of the suspended solid loads to settle. The ditches convey runoff into stormwater management basins, designed to exceed an enhanced level of water quality treatment. They are designed with capacity to convey runoff from at least a 1:250-year storm. The mild gradient provides non-erosive flow velocities for grass lining, although a few steeper sections will require rip-rap lining.

A separate channel will be constructed to convey external stormwater from the agricultural lands, immediately south of the site and directly into the watercourse tributary. This channel will be similar in design to the landfill channels, except having a 3 m wide bottom.

Over the life of the landfill, its active areas will be capped with clay and vegetated as final cover. Although the potential for stormwater contamination decreases after landfill capping, the surface runoff potential increases. The stormwater basins are designed to attenuate the peak flow of surface water from the capped site, during large storms, to no more than the pre-development flow rates.

New stormwater management basins are proposed to service each of the east (~7.8 ha) and west sides (~9.5 ha) of the site. The stormwater management basins will provide downstream protection using:

- Permanent pools for water quality control;
- Extended Detention for erosion control and accidental spill containment; and
- Conventional detention to attenuate peak flow rates.

The design of the stormwater basins include:

- Permanent pool volumes exceeding an enhanced level of treatment;
- Extended Detention volumes exceeding runoff from 25mm of rain;
- Overcontrolling peak flow rates up to the 1:250-year storm;
- Vertically extending the outlet weir to provide flow attenuation beyond the 1:250-year storm; and
- Significant freeboard for the basins and ditches beyond the 1:250-year storm.

These levels of service were chosen to demonstrate the site's ability to provide adequate infrastructure, plus resiliency to the effects of ongoing Climate Change.

The stormwater basins are designed with a 4:1 embankment both above and below the normal water level except for an approximately 4.2 m wide by 0.6 m high (7:1) safety shelf at the normal water level. The perimeter of the basins will be at an elevation of approximately 315m and this is almost 2 m higher than the 1:250-year storm level and approximately 1.5 m higher than the top (overflow) of the concrete control weirs.

Table 8-3: Stormwater Basin Design Summary

EAST POND

	Std. Criteria	Req'd	Prov'd	to Std		NWL	312.88
Perm Pool	12.5 mm (q)	975	2000	205%	(q=26mm)	**ED WL**	313.27
Ext Det	25 mm (P)	480	800	167%	(P=32mm)	**HWL**	313.63

R_T	Q_{in} (@Tc)	Q_{pre} (target)	Q_{out} m^3/s	to target	Ext Det m^3	V_{det} m^3	V_{tot} m^3	HWL
1:2 yr	0.29	0.23	0.04	17%	800	48	848	313.27
1:25 yr	0.64	0.51	0.39	77%	800	261	1061	313.39
1:100 yr	0.94	0.77	0.68	88%	800	393	1193	313.45
1:250 yr	1.23	1.01	0.94	93%	800	488	1288	313.49
freeboard	-	-	1.95	-	800	800	1600	313.63

WEST POND

	Std. Criteria	Req'd	Prov'd	to Std		NWL	312.69
Perm Pool	12.5 mm (q)	1188	3100	261%	(q=33mm)	**ED WL**	313.01
Ext Det	25 mm (P)	600	950	158%	(P=32mm)	**HWL**	313.25

R_T	Q_{in} (@Tc)	Q_{pre} (target)	Q_{out} m^3/s	to target	Ext Det m^3	V_{det} m^3	V_{tot} m^3	HWL
1:2 yr	0.38	0.29	0.02	6%	950	24	974	313.01
1:25 yr	0.83	0.62	0.47	75%	950	343	1293	313.09
1:100 yr	1.23	0.94	0.85	90%	950	524	1474	313.13
1:250 yr	1.62	1.23	1.17	95%	950	663	1613	313.16
freeboard	-	-	2.33	-	950	1050	2000	313.25

The basins will be equipped with a normally-open outlet (discharge) valve that can be closed in the event of a leachate seep, chemical spill or detection of contaminants through ongoing water quality monitoring. Should monitoring detect contamination in the stormwater basins:

- The pond outlet valve can be closed and the source of contamination is identified.
- MECP approval is sought, usually resulting in:
  - The pond being drained using vacuum trucks or a pump,
  - The water taken to a wastewater treatment plant or infiltrated into the waste,
  - The outlet valve is re-opened to resume normal operation.

8.2.7 Perimeter Access/Maintenance Road

A perimeter access/maintenance road will parallel the perimeter ditches. This road will be used for disposal vehicles accessing Cells 3 and 4. It will be 2-lanes wide along the north perimeter of the landfill. Near the East Stormwater Basin will be a vehicle turn-around (either a hammer head or a cul-de-sac). A single-lane road will continue from the East Basin counter-clockwise around the south side of the landfill, ultimately connecting to an existing site road at the west side of Phase II/III. Construction of perimeter access roads will follow the proposed phasing schedule described in Section 8.2.2.

It is expected that the perimeter road will be paved with gravel and/or a combination of recovered material like crushed concrete, crushed glass, and asphalt grindings. It is also possible that other recovered materials, like chipped or ground tires, could be used. Road gradients should be limited to no more that about 8%. Construction of perimeter access roads will follow the proposed phasing schedule described in Section 8.2.2.

During operations, the access road leading to the tipping face will need to be moved or extended periodically. This road too will be gravel or recovered materials. When no longer required, the Town will decide if they wish to recover the road materials.

The Town will maintain these roads to minimize ruts, potholes, and dust. Water or special surface treatments will be used to limit dust as required, though the Town will consider the potential to impact surface water or the groundwater if too much is applied. In winter, site roads required for access will be plowed and sand (without salt) will be used if required. Further, the Town will continue enforcing the site speed limit (20 km/h) to minimize dust and noise while promoting site safety. During detailed design the Town will consult with the St Marys Fire Department to confirm that site access and interior roads meet fire route requirements in accordance with applicable by-law(s).

8.2.8 Scale and Public Drop-off Relocation

When filling begins in Cell 1 (see the development sequence in Section 8.7), the public drop-off area will need to move to allow Cell 2 preparations. An area has been identified on Figure 8-5 for a potential public drop-off area. Like the existing public drop-off area, we assume the new area will include an elevated platform so users can drive to the top and then deposit their wastes into roll-off bins on the lower level. No change in operations for the drop-off area is expected.

Similarly, the access roads will be built as described above in Section 8.2.7. The change in site design means that the scale and scale house will need to be relocated. An approximate location is shown on Figure 8-5. The existing scale and scale house would be moved to new foundations. Operations would remain the same as currently in place.

8.2.9 Buffers

8.2.9.1 Site Buffer

Within Section 7.0 of O.Reg. 232/98, the MECP specifies the buffer area surrounding the landfill site must be at least 100 m wide at every point, except under conditions in which the buffer area is at least 30 m wide yet allows adequate space for vehicle usage, operations and activities which ensure there is no operation negatively impacting areas outside of this buffer zone. The below descriptions of the buffers (for each direction) around the existing and expanded landfill demonstrate compliance with this regulation.

For the expansion, the conceptual design (Figure 8-2) includes the following buffer widths:

North: The buffer varies from a minimum of approximately 60 m to greater than 100 m. The buffer is adequate to install the perimeter road and ditch as well as maintain or upgrade the existing leachate collection system's perimeter facilities (if required). The proposed expansion does not change the site's existing buffer and remains sufficient to prevent impacts on future use of adjacent land.

East: The eastern waste footprint is 96 m from the site's eastern property boundary. This provides space for the required perimeter facilities and the 'East-Basin' stormwater management pond. As the adjacent land is used by St. Marys Cement and is licensed for aggregate extraction, this buffer distance is sufficient to prevent impacts on future use of the adjacent land.

South: The existing Phase II/III footprint is approximately 30 m from the southern property line. Expansion Cell 4 is similarly offset 30 m from the southern boundary at the Cell's western extent. Moving east along the Cell 4 limit of fill, the offset grows slightly to 35 m. This tapering of the Cell 4 buffer allows space for the interior (landfill) and exterior (surface drainage from off-site) ditches to increase in capacity as they flow eastward and capture a larger drainage area. This buffer is sufficient to minimize negative effects on the current agricultural and future aggregate extraction land uses to the south of the landfill site.

West: The 60 m wide existing buffer between the property line and the Phase I and Phase II/III footprints will remain. As with the other buffer dimensions, this provides sufficient space for perimeter facilities as well as the existing site access road, scale, and scale house. All sensitive receptors are located west of the site along Water St. S. Table 9.1 details minimal effects from landfill operations on these residents.

In all directions, and at all points, the buffer meets or exceeds the requirements of O.Reg. 232/98.

8.2.9.2 Landscaping and Visual Buffers

The following describes the existing and conceptual design requirements for visual buffer of the expanded landfill.

North: This sides of the site is visible from the St. Marys Cement property, an industrial operation. Some trees will be planted in strategic areas to soften the visual impact of the expanded landfill.

East: As with the North side, this sides of the site is also visible from the St. Marys Cement property. Some trees will be planted in strategic areas to soften the visual impact of the expanded landfill.

South: This is farm land that is licensed for aggregate extraction. The southern boundary is partially visible to the public travelling north along Perth Road 123 (which becomes Water Street South as it crosses into St. Marys). Berms or tree plantings will be added to the south slope of Cells 1 and 4, or in the buffer area between the waste footprint and the property line, to soften or eliminate views of the operation.

West: The site is already well screened on the west property boundary by berms that are treed. No changes are anticipated.

The landscaping efforts to implement the above visual buffers is included in the expansion design and coordinated to allow sufficient time for tree growth. If required, berm(s) will be installed at the perimeter of the waste footprint (inside the property line) or built progressively as Cells are developed.

8.3 Ongoing Consultation and Other Approvals

In addition to approval under the *Environmental Assessment Act*, approvals under several provincial statutes may also apply. Table 8-4 identifies many of the approvals and the rationale or reason why they are required. Additional approval requirements may be identified during detailed design. In the course of obtaining these other approvals there will be on-going consultation with regulatory agencies, Indigenous communities and the public. Some of these consultation requirements are typical as part of on-going approval processes and some are at the request of GRT members and in response to comments raised (see Appendix F Comments with Respect to the August 2021 EA). In particular:

- During detailed design and in accordance with approval requirements relevant regulatory agencies will be engaged for pre-submission consultation meetings and in the review and approval of reports and permit applications.
- During detailed design, the Town will consult with utilities including Hydro One and Union Gas to confirm there are no effects to infrastructure in the vicinity of the site.
- During detailed design, the Town will consult with IAAC should details for design aspects of the Project change such that the Project may include physical activities that are described in the Physical Activities Regulations under the Impact Assessment Act.
- During detailed design, the Town will contact the NDMNRF should there be any potential need for a permit under the Petroleum Wells & Oil, Gas and Salt Resource

Act, Public Lands Act or Lakes and Rivers Improvement Act. Obtain approvals as required.

- During detailed design, an Indigenous Consultation Plan will be developed to direct consultation with Indigenous communities throughout the remainder of the detailed design, operations and closure/post-closure phases. At a minimum it will include:
  - Opportunities for Indigenous communities to review the detailed design documents and reports required for other approvals;
  - Meetings between the Town and interested Indigenous communities to discuss opportunities for involvement of community members, accommodations, and mutual benefits including opportunities to participate in field monitoring during construction and operation;
  - Town led landfill tours offered to interested Indigenous communities;
  - The Town will notify Indigenous communities if there are changes to the landfill's ECA throughout the operational period and if there are any emergency or spill-related situations that pose a risk to the Thames River; and
  - The Town will notify interested Indigenous communities of the landfill's closure and post closure monitoring plans.
- At the end of detailed design and more than 10 days before the start of construction, the Town will notify the DFO and keep the DFO letter dated October 4, 2021, and/or any subsequent letters and approvals on site during the construction period to ensure all noted mitigation measures are implemented.
- During operations, the Town will share updated Annual Monitoring reports with relevant Regulatory agencies and Indigenous communities.

Table 8-4: Required Approvals and Rationale

Approval	Rationale
Environmental Protection Act	Approval required for expanded landfill, per O. Reg. 232/98. As part of the application process an updated Design & Operations Report will be prepared which will guide site operations.
Ontario Water Resources Act	Approval required for revised site surface water management system.
Conservation Authorities Act	Work within a UTRCA Regulated Area including the realignment of the watercourse and outlets from the new stormwater ponds.
Endangered Species Act	Registration of impacted Eastern Meadowlark habitat under O. Reg. 242/08, Section 23.2 of the Endangered Species Act.
Fisheries Act	In-water work within a watercourse that could potentially cause a HADD to downstream fish habitat in the Thames River.
Fish and Wildlife Conservation Act	Wildlife Scientific Collector Authorization for potential wildlife relocation during construction (i.e., turtle, snake, etc.).

8.4 Complaint Response Framework

The Town has an existing Complaint Response Framework which will be reviewed and updated, as required, for the continued operation of the expanded landfill. The Framework will follow the current ECA's Condition 21, provided here as an example:

21.1 If the Owner receives complaints regarding the operation of the Site which are environmental in nature, or have caused, or are likely to cause, a negative impact to the environment or human health or safety, the Owner shall respond to these complaints according to the following procedure:

(a) The Owner shall record each complaint and the information recorded shall include:

(i) the date, time and nature of the complaint;

(ii) the name, address and telephone number of the complainant if provided;

(iii) the activities taking place on Site at the time of the complaint; and(iv) meteorological conditions;

(b) The Owner, upon notification of the complaint shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

(c) The Owner shall retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the reoccurrence of similar incidents.

In keeping with the Town's current practice, complaints and subsequent communications will be reported as part of the updated Annual Monitoring Program. As part of the updated annual monitoring, review of complaints may lead to recommendations to modify site operations or operating plans. In some cases, modifications may require amendments to the site's ECA or other approvals.

8.5 Emergency Response and Communications Plan

The existing Emergency Response and Communications Plan will be reviewed and updated, as required during the detailed design phase. The revised plan will be in place before construction begins and will include:

- Spill prevention
  - Spills or depositions into watercourses shall be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan.

  - A hydrocarbon spill response kit shall always be on Site during the work.
  - Spills shall be reported to the Ontario Spills Action Centre at 1 800 268-6060.
- Fire prevention
- Protocols for accidents and injuries of staff and site users
- A list of site safety equipment and supplies (i.e., eye wash station, bandages, etc.)
- Contingency plans
- Emergency contact phone numbers (911, local hospital, fire, senior Town staff, etc.)
- Reporting protocols
  - Within/among site and Town staff
  - To external agencies (i.e., MECP)
  - In emergency situations (i.e., fires or calling paramedics/EMTs)
- Permit and Approval requirements
- A training program for how site staff and contractors are to apply the plans
- Ongoing reviews to strengthen effectiveness and ensure continuous improvement.

The Emergency Response and Communications Plan is to be reviewed and updated at least annually. New site staff and contractors working at the site must be made aware of the Plan.

8.6 Construction Activities

Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on-site delivery of materials. Construction will occur in relatively short bursts (likely two-three months at a time) and will occur while landfill operations are on-going.

Construction is required to prepare for each cell's operation (except Cell 1) and for site closure at the end of the planning period. Some post-closure construction efforts will occur, usually focused on small areas of the site to address settlement, cover erosion or desiccation, or a leachate seep. These activities normally take less than a day to address.

The construction sequence for preferred Alternative 3A is discussed in the next section.

8.7 Landfill Expansion Development Sequence

This section describes the incremental development sequence for the landfill expansion. For the conceptual Alternative 3A design, the phasing sequence and size of cells have been chosen to:

- Minimize the visibility of landfill operations from the nearest residential neighbours;
- Allow for the construction of subsequent cells and expansion/modification to leachate collection systems
- Allow for progressive application of final cover;
- Allow for the construction of on-site access roads; and
- Optimize on-site traffic.

The development sequence assumes the first two cells will be constructed above and between Phase I and Phase II/III. Following this, Cells 3 and 4 will be constructed horizontally from the existing footprint, eastward in direction.

Site preparation work in advance of Cells 3 and 4 will involve:

- Relocating existing site infrastructure; scale and scale house, perimeter roads and ditches, the public drop-off area, composting area, soil (cover) stockpile, and stormwater management ponds.
- Decommission monitoring wells impacted by the waste footprint and perimeter facilities and install new monitoring wells.
- Realignment of the watercourse
- Excavation and grading of the horizontal expansion footprint.
- The excavated soils will be temporarily stockpiled for use during construction of perimeter infrastructure or for operation of the expansion area. Some of these soils can be used as operational and closure cover for the existing waste footprint.

The following sections describe the operation of each cell and the construction activities occurring concurrently to prepare for future cells. The first section describes the interim filling which has occurred while approval for this EA has been sought.

8.7.1 Interim Operations (Above Phase II/III)

The site has been operating under interim approvals since approximately 2017. This filling has occurred above the existing Phase II/III footprint (future Cell 1). This filling is ongoing and has been accommodated using existing site infrastructure. Operation will continue under Interim ECA’s until the EA is complete and required approvals are received. Table 8-5 summarizes the interim operating period through September 2022, the annual rate of fill, and the currently approved (total) site capacity (i.e., Phase I, Phase II/III, and interim operations).

Table 8-5: Interim Fill Quantities

Approximate Duration of Fill Activity	69 months (Jan. 2017 through Sep. 30, 2022)
Average Annual Fill Rate (m^3/yr)	10,728
Total Approved Capacity† (m^3)	453,050

† Total approved site capacity obtained through interim ECA approvals (see Section 3.1.8.3).

8.7.2 Cell 1 (Filling Above Phase II/III)

Cell 1 is the first post-EA expansion cell and will be an entirely vertical expansion (i.e., no new footprint will be consumed for this cell) over the existing Phase II/III. Table 8-6 summarizes the anticipated operating life and capacity for Cell 1.

Table 8-6: Cell 1 Fill Quantities

Approximate Duration of Fill Activity	~55-60 months
Cell Area	4.48 ha
Average Annual Fill Rate (m^3/yr)	15,687
Total Cell Capacity (m^3)	165,000

Construction

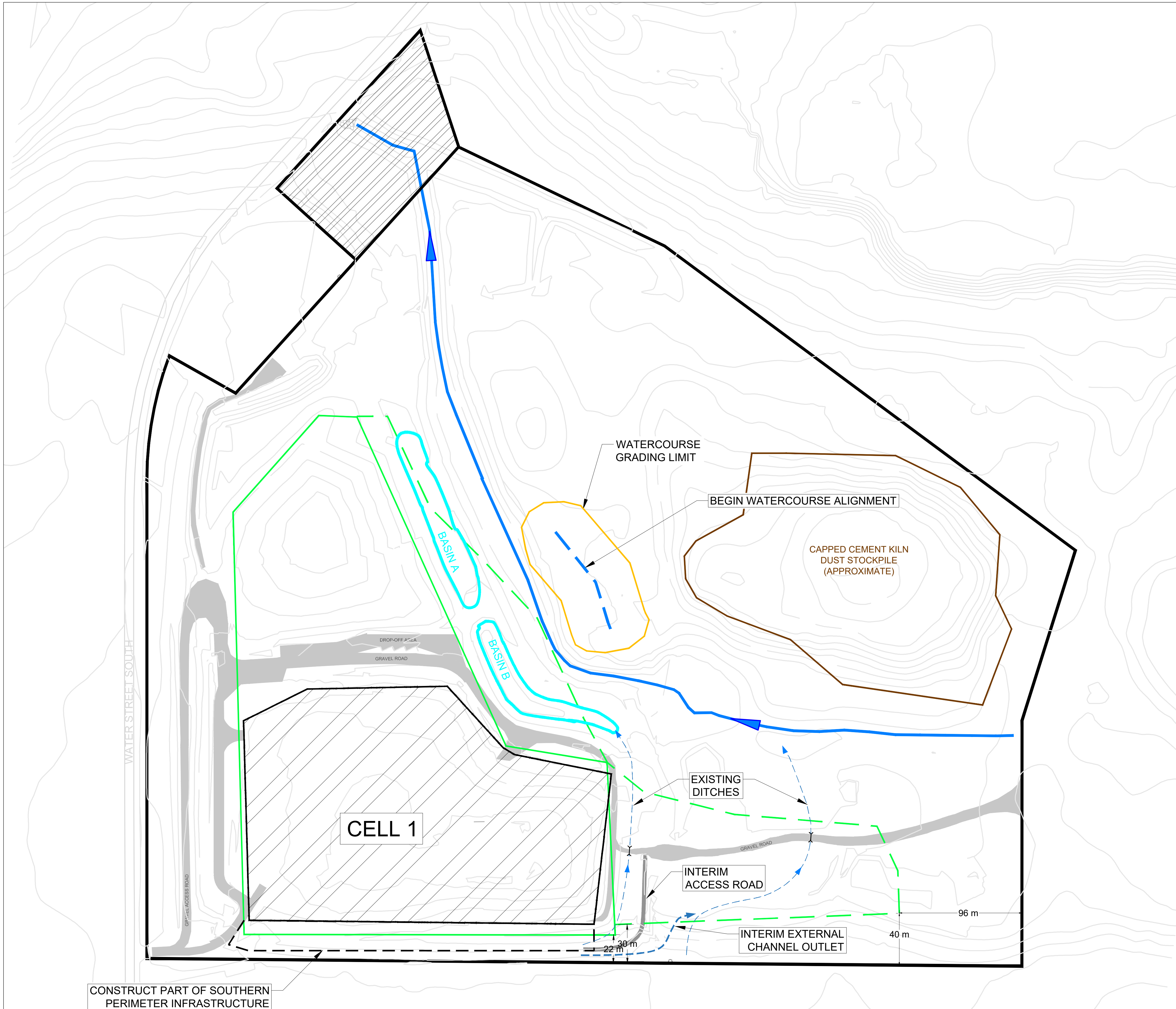
- The following construction activities, shown on Figure 8-6, are assumed to take place during operation of Cell 1.
- Construct Cell 1 southern perimeter berm / infrastructure.
  - Requires some temporary ditching and access road work east of Cell 1.
- Begin off-line watercourse realignment.
- Relocate public drop-off to west of existing footprints.
- Leachate system upgrades/integration:
  - Install leachate collector pipes in valley between existing Phase I and Phase II/III, connect into existing system.
  - Tie into manholes or convert them to clean-out pipes and extend vertically.
- Construction activities discussed above will include general earthworks and granular placement (if applicable) which is expected to be completed by excavators and dozers, with dump trucks used to deliver and relocate materials.
- Upgrades and integration of the leachate collection system will not require special equipment other than for digging trenches (suitable equipment will likely already be

on-site). Construction practices will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).

Operation

Operation of Cell 1 will be the same as the operations described in Section 8.1. Filling of Cell 1 will begin in the northern portion of the cell to allow future construction of the southern berm and facilities (see Figure 8-6). The existing monitoring program (operational and environmental monitoring) will continue during operation of Cell 1, plus any future monitoring programs associated with expansion. Final cover will be applied to Cell 1 in areas which have reached final contours. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).

Cell 1 closure will be completed progressively as final fill contours are achieved. Generally, the south and west limits of the Cell 1 footprint will receive final cover. The north and east sides will receive operational or interim cover so that future filling in Cells 2, 3 and 4 does not require removal of the final cover.



LEGEND

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- EXISTING WATERCOURSE
- PROPOSED WATERCOURSE ALIGNMENT
- EXISTING REFUSE LIMIT
- EXPANSION REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- PROPOSED WASTE CONTOURS (2m)
- RIGHT-OF-WAY AND SEWER EASEMENT
- STORMWATER BASIN

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0 60 120 180 240
Metres

BURNSIDE

Client
TOWN OF ST. MARYS

Figure Title
ALTERNATIVE METHOD 3A
CELL 1 DEVELOPMENT

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	**8-6**
Scale		Project No.	
1:3000		300032339	

File:Shared Work Areas (\\pops) E:\032339 - St. Marys Waste\CIVIL\04_MiscDwg\032339 Figure 8-2 and 8-6 to 8-9.dwg Date Plotted: July 27, 2022 - 4:38 PM

8.7.3 Cell 2 (Filling Above Phase I to Cell 1)

Development of Cell 2 is outlined below. Table 8-7 summarizes the anticipated operating life and capacity.

Table 8-7: Cell 2 Fill Quantities

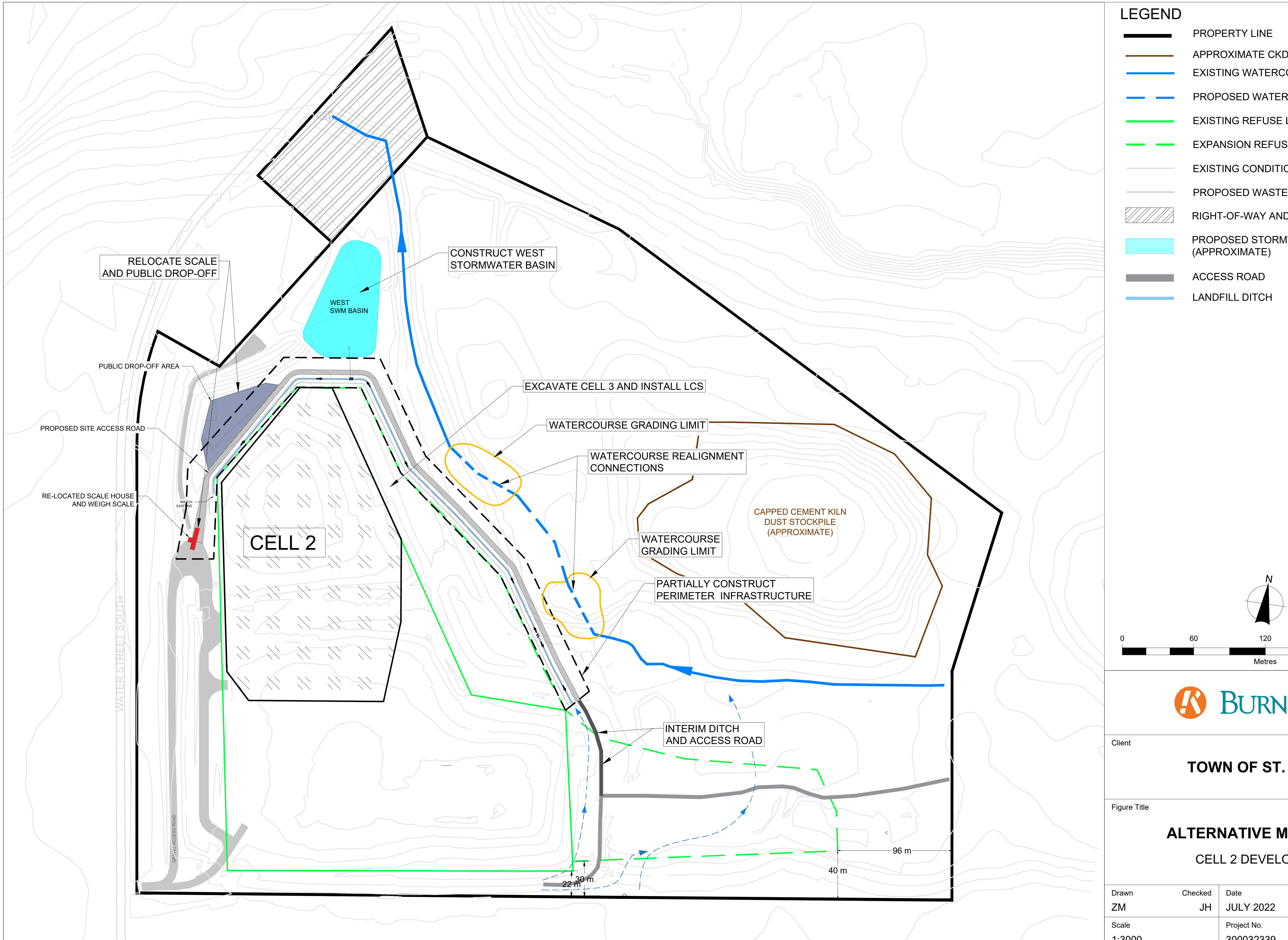
Approximate Duration of fill activity	~91-96 months
Cell Area (includes overlap of Cell 1)	3.46 ha
Average Annual Fill Rate (m^3/yr)	17,017
Total Cell Capacity (m^3)	133,000

Construction

- The construction activities shown on Figure 8-7 will take place during operation of Cell 2.
- Cell 3 below grade excavation.
  - Requires completion of watercourse realignment.
- Construction of perimeter infrastructure from Cell 2 southward to the eastern edge of Cell 4.
- Construct West Stormwater Basin, connect to on-site ditching and watercourse.
- Use excavated materials to back-fill portions of stormwater basin A & B.
- Relocate scale and scale house to match perimeter road alignment.
- Installation of lateral leachate collector pipes in base of Cell 3.
- Apply final cover to Cell 1 in areas which meet final waste contours (this is a component of general operations).
- Construction activities discussed above will include general earthworks and leachate collection system granular placement. Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on site delivery of materials. Upgrades and integration of the leachate collection system will not require special equipment other than for digging trenches (suitable equipment will likely already be on-site).

Operation

- Operation of Cell 2 will be the same as the operations described in Section 8.1. Filling of Cell 2 will begin in the northern and western portion of the cell first, to allow for any remaining construction activities to occur (such as relocation of the drop-off depot). Operation of Cell 2 will include the existing monitoring required for the site (operational and environmental monitoring) as well as any future monitoring programs associated with expansion. As part of site operations, closure cover will be applied to the areas of Cell 1 and Cell 2 that have reached final contours. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).



LEGEND

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- EXISTING WATERCOURSE
- PROPOSED WATERCOURSE ALIGNMENT
- EXISTING REFUSE LIMIT
- EXPANSION REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- PROPOSED WASTE CONTOURS (2m)
- RIGHT-OF-WAY AND SEWER EASEMENT
- PROPOSED STORMWATER BASIN (APPROXIMATE)
- ACCESS ROAD
- LANDFILL DITCH

BURNSIDE

Client

TOWN OF ST. MARYS

Figure Title

ALTERNATIVE METHOD 3A

CELL 2 DEVELOPMENT

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	**8-7**
Scale		Project No.	
1:3000		300032339	

8.7.4 Cell 3 (Eastward Horizontal Expansion)

Development and operation of Cell 3 will proceed as described below. Table 8-8 summarizes the anticipated operating life and capacity.

Table 8-8: Cell 3 Fill Quantities

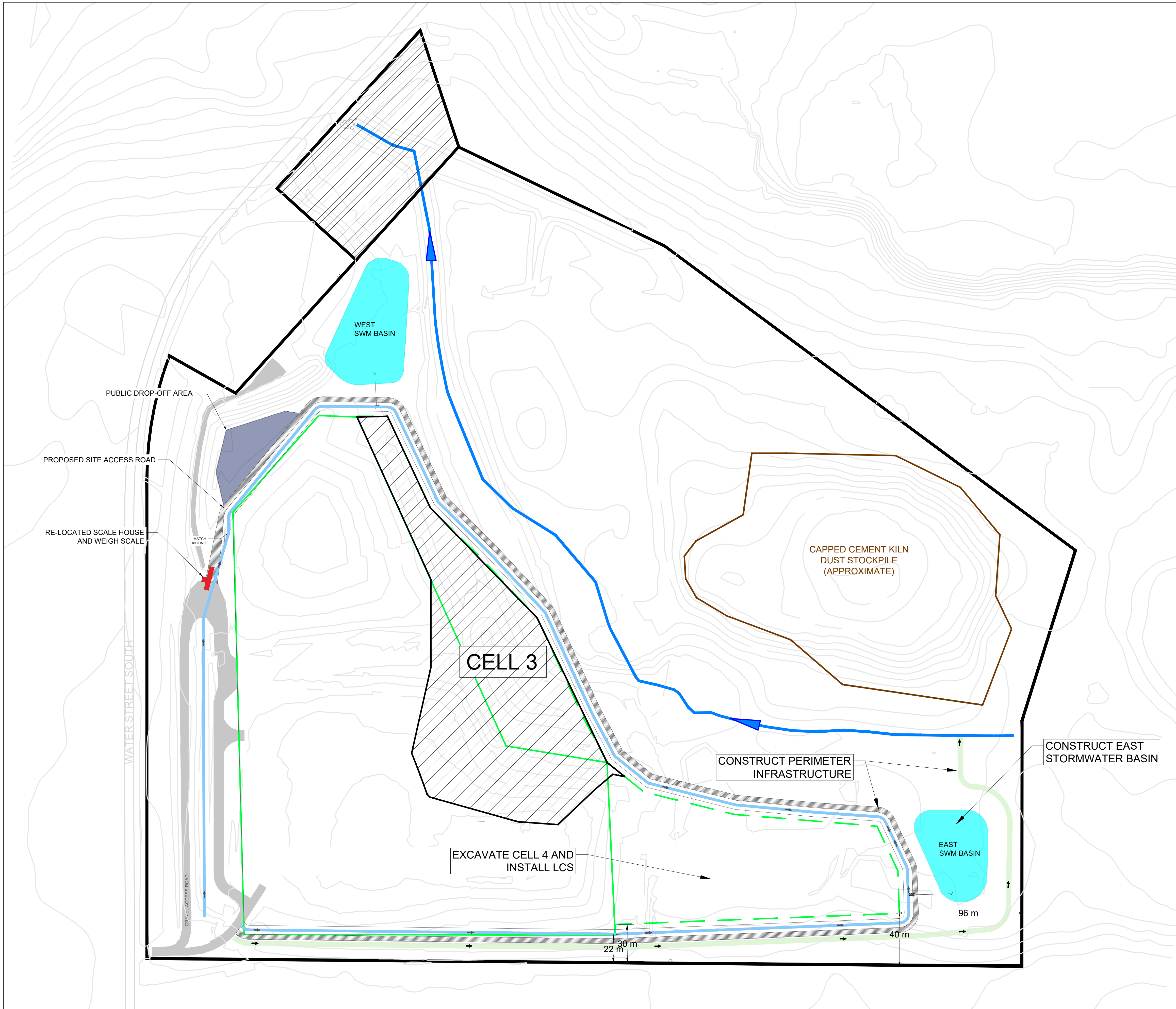
Approximate Duration of fill activity	~139 – 144 months
Cell Area (includes overlap of Cell 1 & 2)	3.17 ha
Average Annual Fill Rate (m^3/yr)	19,088
Total Cell Capacity (m^3)	231,000

Construction

- The construction activities shown on Figure 8-8 will take place during operation of Cell 3.
- Excavate Cell 4 below grade footprint.
- Install lateral leachate collector pipes in Cell 4, connect to main collection pipe in Cell 3.
- Construct remaining perimeter road and ditching around Cell 4, plus external drainage channel.
- Construct East Stormwater basin, tie into on-site ditching and watercourse.
- Construction activities during Cell 3 operation will include general earthworks and granular placement (if applicable). Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on site delivery of materials. Upgrades and integration of the leachate collection system will not require special equipment other than for digging trenches (available on-site equipment can be used).

Operation

- Operation of Cell 3 will be the same as the operations described in Section 8.1. Filling of Cell 3 will begin in the northern portion of the cell. This will allow construction of the southern berm and facilities. Operation of Cell 3 will include the existing monitoring required for the site (operational and environmental monitoring) as well as any future monitoring programs associated with expansion. As part of site operations, closure cover will be applied to Cells 1 through 3 in areas which have reached final contours and will not accept waste further. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).



LEGEND

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- EXISTING WATERCOURSE
- EXISTING REFUSE LIMIT
- EXPANSION REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- PROPOSED WASTE CONTOURS (2m)
- RIGHT-OF-WAY AND SEWER EASEMENT
- PROPOSED STORMWATER BASIN (APPROXIMATE)
- EXTERNAL DRAINAGE CHANNEL
- ACCESS ROAD
- LANDFILL DITCH

BURNSIDE

Client

TOWN OF ST. MARYS

Figure Title

ALTERNATIVE METHOD 3A

CELL 3 DEVELOPMENT

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	**8-8**
Scale		Project No.	
1:3000		300032339	

File:Shared Work Areas (\\pops)\ E:\032339 - St. Marys Waste\CIVIL\04_MiscDwg\032339 Figure 8-2 and 8-6 to 8-9.dwg Date Plotted: July 26, 2022 - 5:25 PM

8.7.5 Cell 4 (Eastward Horizontal Expansion)

The final cell to be developed under the preferred Alternative 3A is Cell 4, shown on Figure 8-9. Table 8-9 summarizes the anticipated operating life and capacity.

Table 8-9: Cell 4 Fill Quantities

Approximate Duration of fill activity	~ 103 – 108 months
Cell Area (includes overlap of Cell 1 & 3)	2.27 ha
Average Annual Fill Rate (m^3/yr)	21,518
Total Cell Capacity (m^3)	176,000

Construction

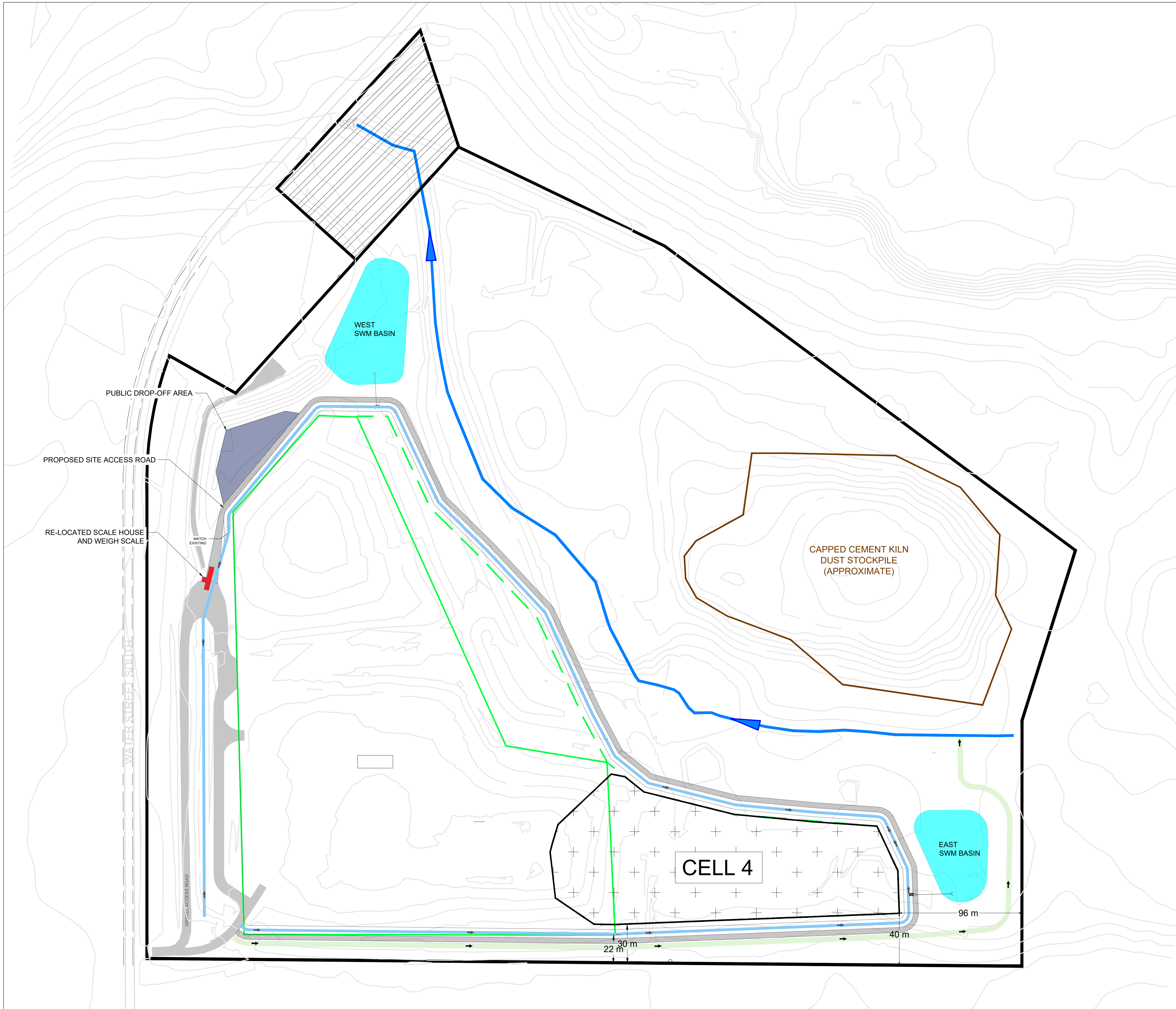
- Preparation for operation of Cell 4 will have been completed just before Cell 3 operations are complete (i.e., Cell 3 capacity has been consumed). The only construction to occur during Cell 4 operation (filling) is to place final closure cover above the portions of Cell 3 that have reached final contours. Final closure cover placement will involve construction truck(s), a bulldozer and a compactor.
- Following the end of waste filling in Cell 4, the remainder of the final closure cover will be placed for the site. See “Closure” below.

Operation

Operation of Cell 4 will be the same as the operations described in Section 8.1. The operating area is shown on Figure 8-5d. Filling of Cell 4 will begin in the western portion of the cell first. Operation of Cell 4 will include the existing monitoring required for the site (operational and environmental monitoring) as well as any updated monitoring programs associated with expansion. As part of site operations, closure cover will be applied to the entire site in areas which have reached final contours and will not accept waste further. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).

8.7.6 High Level Closure and Post-Closure Care

At least two years prior to the closure of the landfill site a Closure Plan will be prepared and circulated to MECP in accordance with the ECA for site operations. At the end of the Planning Period, once the site accepts the final load of waste, the entire site will be closed in accordance with O.Reg. 232/98. Closure of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives). Infrastructure facilities such as the composting facility, public drop-off and scale/scale-house can remain in operation. The Town will develop an after-use plan which will identify uses for the site such as naturalization, continued use as a transfer station, conversion to a park, etc.



LEGEND

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- EXISTING WATERCOURSE
- EXISTING REFUSE LIMIT
- EXPANSION REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- PROPOSED WASTE CONTOURS (2m)
- RIGHT-OF-WAY AND SEWER EASEMENT
- PROPOSED STORMWATER BASIN (APPROXIMATE)
- EXTERNAL DRAINAGE CHANNEL
- ACCESS ROAD
- LANDFILL DITCH

BURNSIDE

Client

TOWN OF ST. MARYS

Figure Title

ALTERNATIVE METHOD 3A

CELL 4 DEVELOPMENT

Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	**8-9**
Scale		Project No.	
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8.7.6.1 Post-Closure Care

Post-closure care occurs following the full closure of site (i.e., after completing Cell 4). During the Post-Closure Care period, the site and its facilities will be monitored and inspected. Site facilities such as the final cover, leachate collection system, ditches, culverts, and stormwater management ponds will be inspected and repaired as required. The updated monitoring program will include monitoring of groundwater (including leachate), surface water and landfill gas. Should any of the monitoring activities detect issues, then contingency plans will be implemented to address the concern. All monitoring and post-close care efforts will be documented in Annual Monitoring Reports.