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SAND BAR OPERATIONS AND MAINTENANCE MANUAL

FOR

3 WASHAGO BAY LANE

TOWNSHIP OF SCUGOG

PROJECT NO. 123113

DATE: September 2025

CIVIL

STRUCTURAL

MECHANICAL

ELECTRICAL

PLANNING

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1.0 INTRODUCTION

As part of the Stormwater Management (SWM) strategy for 3 Washago Bay Lane, this Operations and Maintenance Manual has been prepared in support of the Draft Plan of Subdivision Application. This operations and maintenance manual will provide the required information to facilitate maintenance of the specified Low Impact Development (L.I.D.) facilities.

1.1 Study Area: The subject property is part of Lot 22, Concession 11, in the Geographic Township of Cartwright, Township of Scugog, Regional Municipality of Durham, locally known as 3 Washago Bay Lane. The site is bounded on the north and west by Washago Bay Lane, on the east by View Lake Road, and on the south by existing residential properties and vacant lands. The site encompasses an area of approximately 1.84ha and will consist of 6 residential estate lots for single detached houses and associated driveways, and two road widenings.

A Site Location Plan illustrating the subject site is attached as Figure 1.

1.2 Previous Documentation: This low impact development facilities operations and maintenance manual, in conformance with the guidelines prescribed in the Township of Scugog Design Criteria and Standard Detail Drawings (2003), was based on the following report:

- Functional Servicing and Stormwater Management Report for 3 Washago Bay Lane, Township of Scugog, dated September 2025 and prepared by D.G. Biddle and Associates Ltd.

1.3 Low Impact Development Facilities: Stormwater quality controls for the development are implemented through the use of several sand bars located in the side yard drainage swales of each residential lot. The sand bars are designed to capture and percolate a portion of rainfall events from the individual building rooftops. The sand bars consist of



3 WASHAGO BAY LANE, TOWNSHIP OF SCUGOG

SITE LOCATION PLAN



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SCALE
DRAWN
DESIGN
CHECKED
DATE

N.T.S.
M.R.W
M.R.W.
D.D.M.
AUG 2025

PROJECT
123113

DWG

FIG 1

washed sand wrapped in a geotextile/filter fabric. Sizing calculations are provided in Appendix 1.

Many factors influence the operations and maintenance requirements. For the LID features serving the proposed development, maintenance is generally the responsibility of the developer during the construction period and the homeowner thereafter. The following sections outline recommendations for the general operations and maintenance of the LID features.

2.0 SAND BAR OPERATIONS AND MAINTENANCE ACTIVITIES

Sand bars temporarily store and infiltrate stormwater runoff. Various sandbars are proposed for each residential lot, situated below swales which surround the homes. The sandbars will be covered with 150mm depth of topsoil and finished with sod. The locations of these features are illustrated on the attached Preliminary Lot Grading and Servicing Plan DWG 123113-LG-1.

The sand bars require frequent inspections and maintenance to ensure adequate infiltration for continued operation. The following sections are to be used as an operation and maintenance guide for the developer and/or homeowner for the continued maintenance of the sand bars located on the subject lands.

2.1 Inspections and Monitoring

2.1.1 Frequency of Inspections: During the first two years following construction, inspection should occur more frequently; at least once per season (4 times per year) and after every major storm event (>25mm), to ensure proper function. Following this, inspections should be done twice a year; typically, in the spring and fall, and after every major storm event.

Regular inspections after major rainfall events will help determine whether repairs due to gradual deterioration and abnormal conditions are necessary.

2.1.2 Checklist: Things to look for while inspecting the sand bar features include the following:

- Identifying damage such as vehicular and pedestrian
- Buildup of sediment, debris and/or trash
- Plant/weed overgrowth
- Ponding for more than 48 hours

2.2 Maintenance Procedures: Typical maintenance is minimal and primarily involves the removal of debris/trash and sediment buildup. Maintenance should be performed in the spring following snow melt.

2.2.1 Cleaning: Accumulated leaves, debris and sediment should be cleared out of the sand bars at least twice annually. Sediment removal should occur when dry and when accumulation exceeds a depth of 25mm. Maintaining a litter-free sand bar ensures proper function.

2.2.2 Monitoring: Water levels should be monitored at each inspection to verify drawdown of the sand bars.

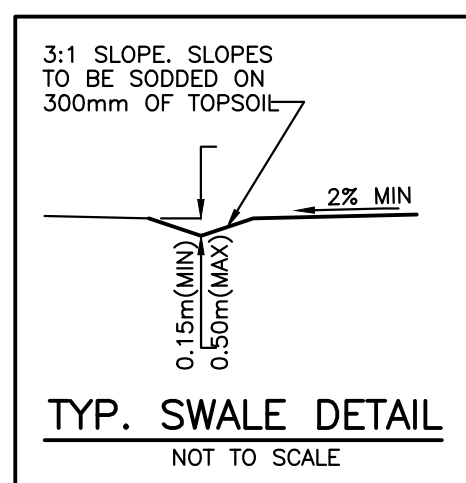
2.3 Conclusions: The preceding manual discusses inspection and maintenance practices for the sand bars. The following is a summary of the inspection and maintenance procedures recommended for these features:

- Inspection should be performed a minimum of 2 times per year.
- Inspection should be performed a minimum of 4 times per year during the two years following construction.
- Cleaning of trash, debris and sediment from the sand bars should occur a minimum of 2 times per year.
- Monitoring of water levels should occur at each inspection.

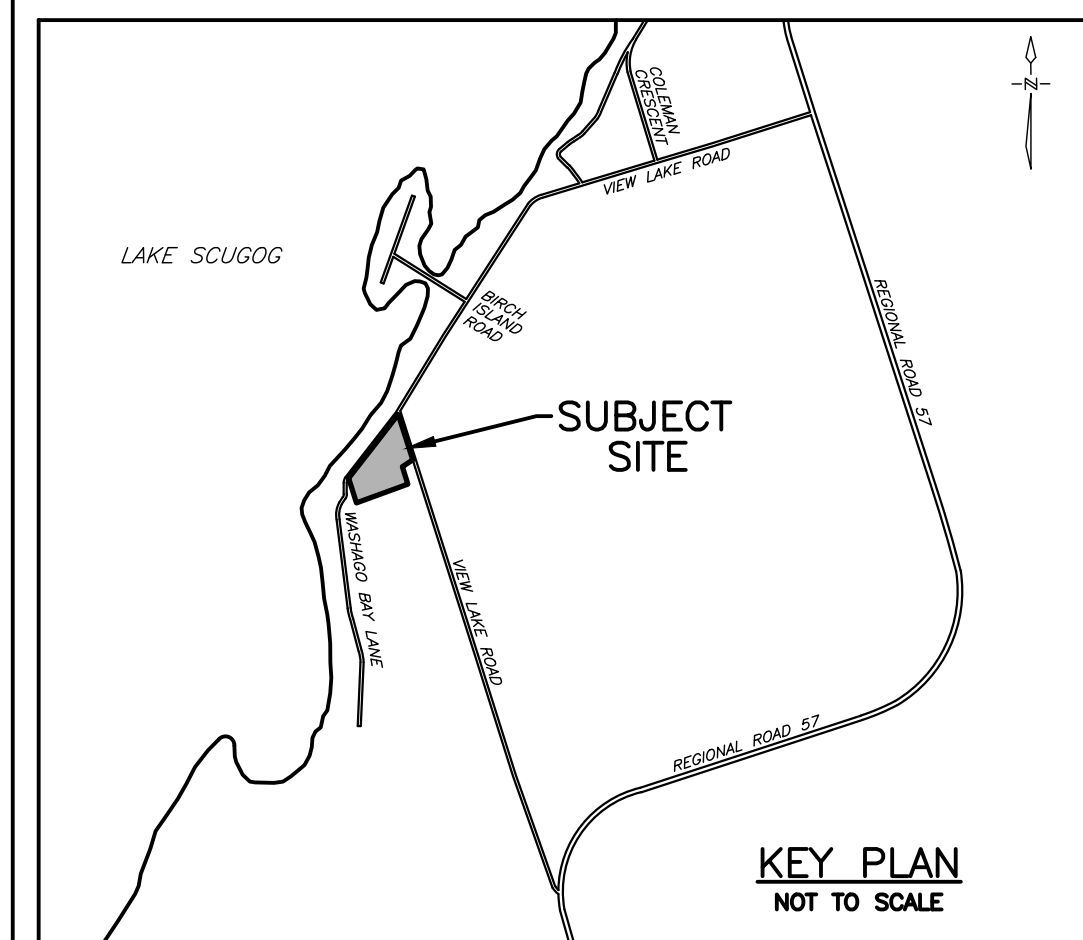
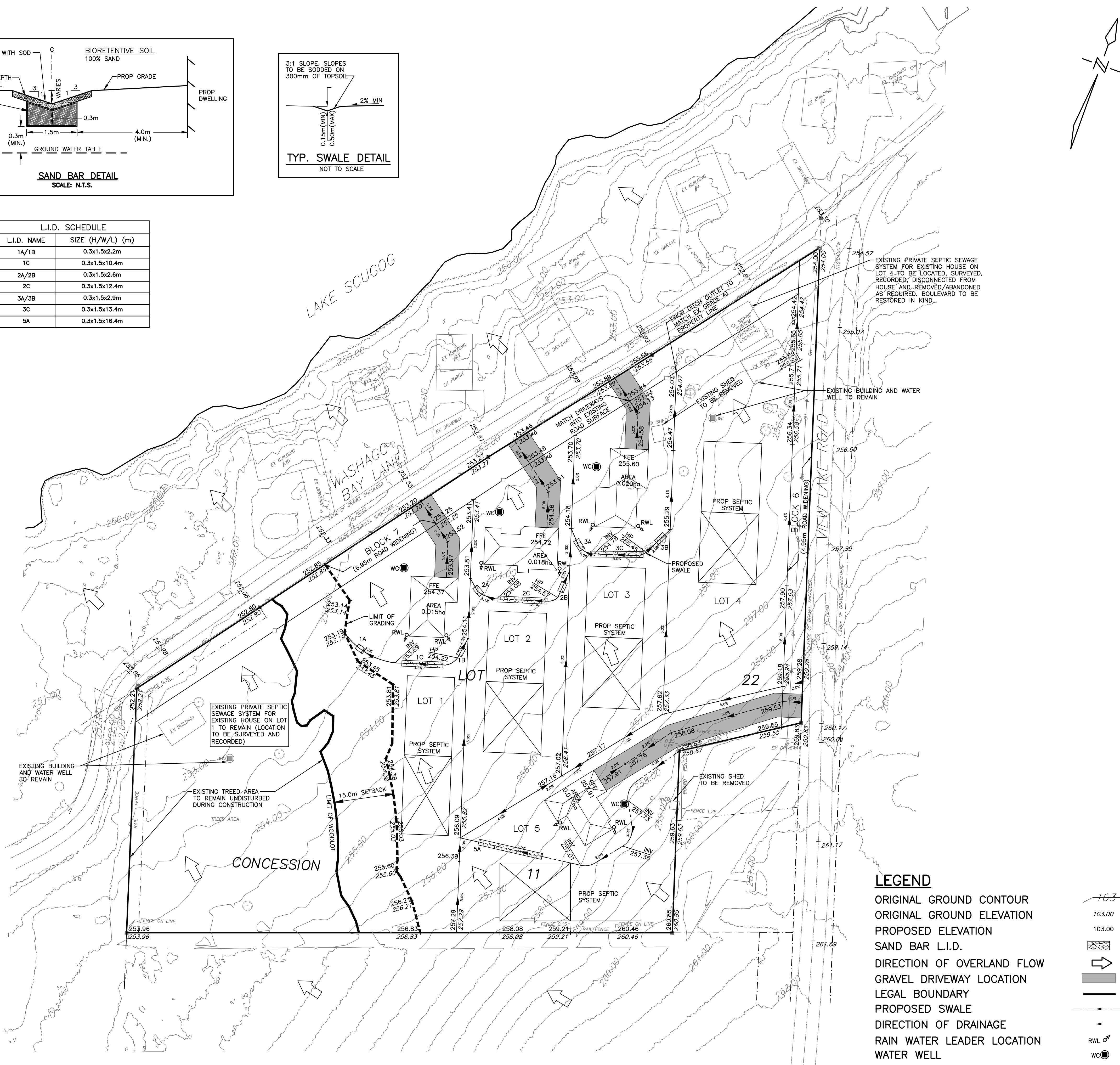
DRAWINGS

-123113-LG-1 PRELIMINARY SITE GRADING AND SERVICING PLAN





L.I.D. SCHEDULE	
L.I.D. NAME	SIZE (H/W/L) (m)
1A/1B	0.3x1.5x2.2m
1C	0.3x1.5x10.4m
2A/2B	0.3x1.5x2.6m
2C	0.3x1.5x12.4m
3A/3B	0.3x1.5x2.9m
3C	0.3x1.5x13.4m
5A	0.3x1.5x16.4m



BENCHMARK #0011919U247G

TOWNSHIP: CAESAREA CONCRETE BOX CULVERT (1906) UNDER ABANDONED C.P.R. GRADE, 6.4 CM NORTHWEST OF MAIN CORNERS, 1.1 CM NORTHWEST OF CROSSING OF ROAD ALLOWANCE BETWEEN CONCESSIONS IX AND X, TOWNSHIP OF POINT CARTWRIGHT, 640 M SOUTH OF POINT WHERE RIGHT-OF-WAY CROSSES NORTH-SOUTH SHORE ROAD IN CONCESSION X, BOLT IN WEST FACE OF CULVERT, 94 CM FROM NORTH FACE, 36 CM BELOW TOP, 30 CM NORTH OF WATER PASSAGE.

ELEV. = 267.966m

SITE GRADING NOTES

1. A ROAD OCCUPANCY PERMIT WILL BE REQUIRED FOR ANY WORKS WITHIN THE MUNICIPAL RIGHT OF WAY.
2. ALL WORKS OR RESTORATION WITHIN THE MUNICIPAL RIGHT OF WAY SHALL BE COMPLETED AS PER CITY OF TOWNSHIP OF SCUGOG FIELD STAFF DIRECTION.
3. THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. CONCERNED UTILITIES TO BE GIVEN ADVANCED NOTICE FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITIES SHOWN ON THE DRAWINGS.
4. QUANTITIES, DIMENSIONS AND ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING MATERIALS OR COMMENCING CONSTRUCTION.
5. ALL SLOPES SHALL BE CONSTRUCTED AT 3:1 (MAXIMUM) UNLESS OTHERWISE NOTED ON THE DRAWINGS.
6. ALL SWALES SHALL BE CONSTRUCTED WITH 2% MINIMUM GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
7. ALL SLOPES, SWALES AND OPEN SPACE AREAS SHALL BE SODDED ON A MINIMUM OF 150mm OF TOPSOIL.
8. ALL UNFURBED AREAS ABUTTING MUNICIPAL RIGHT OF WAYS SHALL BE SODDED ON A MINIMUM OF 150mm OF TOPSOIL.
9. RAIN WATER LEADERS TO DISCHARGE TO GRADE.

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	B

ACCEPTED TO BE IN ACCORDANCE WITH THE
TOWNSHIP OF SCUGOG STANDARDS, THE
ACCEPTANCE IS NOT TO BE CONSTRUED AS
VERIFICATION OF ENGINEERING CONTENT

APPROVED

DEPARTMENT OF WORKS
REGIONAL MUNICIPALITY OF DURHAM

DATE _____ DATE _____

CORPORATION OF THE TOWNSHIP OF SCUGOG
PUBLIC WORKS DEPARTMENT

3 WASHAGO BAY LANE

PRELIMINARY GRADING AND SERVICING PLAN



SCALE:	1:500	PROJECT NO.	123113
DRAWN BY:	M.W.	DRAWING NO.	LG-1
DESIGN BY:	J.G.C.		
CHECKED BY:	D.D.M.		
DATE:	AUGUST 2025		

APPENDIX 1

-SAND BAR SIZING CALCULATIONS



PROJECT 3 Washago Bay Lane, Township of Scugog
PROJECT # 123113

Sand Bar Sizing

Location	<u>LOT 1</u>	<u>LOT 2</u>	<u>LOT 3</u>	<u>LOT 5</u>		
Drainage (Roof) Area	154	182	200	169	m2	
Storm event	15	15	15	15	mm	
Porosity	0.35	0.35	0.35	0.35		
Volume of Water	2.3	2.7	3.0	2.5	m3	
Vol. of Water & Sand Needed	6.6	7.8	8.6	7.2	m3	
Max Ponding	5	5	5	5	mm	
*Infiltration Rate	14	14	14	14	mm/hr	(Interpolated)
Drainage Time	48	48	48	48	hr	
Max LID Depth	$\frac{(infiltration\ rate) \times (drainage\ time - \frac{ponding}{infiltration\ rate})}{porosity}$					
Max LID Depth	1.9	1.9	1.9	1.9	m	
Dimensions						
Depth**	0.3	0.3	0.3	0.3	m	
Length	7.4	8.8	9.6	8.2	m	
Width	1.5	1.5	1.5	1.5	m	
Vol. Provided	3.3	4.0	4.32	3.7	m3	
Sand Bars Provided	2	2	2	2		
***Total Volume	6.7	7.9	8.6	7.4	m3	

* The hydraulic conductivity of the silty sand till/sandy silt till within the subject site, according to Section 1.0 of the Hydrogeological Assessment for Proposed Residential Development - 3 Washago Bay Lane prepared by Soil Engineers Ltd. (July 2025), is 1.18×10^{-6} m/sec which translates to an infiltration rate of approximately 14 mm/hr.

**Due to shallow groundwater levels it is recommended reported in section 7.1 of the Hydrogeological Assessment, a maximum depth of 0.30m for the sandbars will be utilized

**Equivalent volume as if two identical sand bars had been provided for each lot.

Total volume of drainage to be infiltrated from Sand Bars during a single storm event up to 15mm = **10.7 m3**