

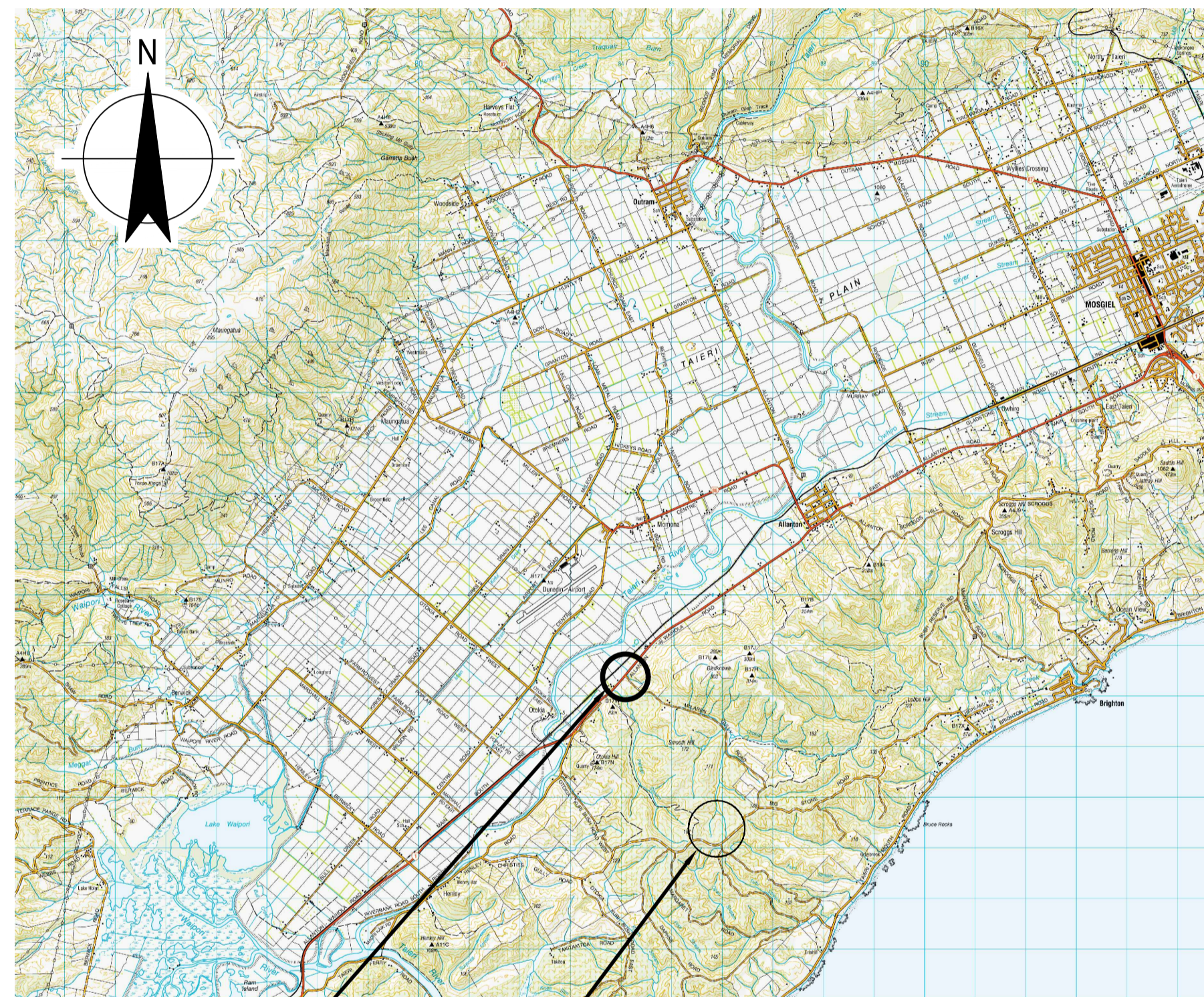
# Appendix 4: Concept Design Plans



# DUNEDIN CITY COUNCIL

## SMOOTH HILL LANDFILL

### 12506381-01



MAIN INTERSECTION WITH SH1

SITE

LOCALITY PLAN  
SCALE 1:2000

DRAWING LIST	
DRG No.	DRAWING TITLE
12506381-01-G001	COVER SHEET, LOCALITY PLAN AND DRAWING LIST
12506381-01-C102	GENERAL ARRANGEMENT PLAN
12506381-01-C103	EXISTING CONTOURS
12506381-01-C104	AUGUST 2020 DESIGN - NOT FOR CONSENT
12506381-01-C201	LANDFILL LINER PLAN
12506381-01-C202	LANDFILL CAPPING PLAN
12506381-01-C204	LANDFILL LONGITUDINAL SECTIONS - SECTION A
12506381-01-C205	LANDFILL LONGITUDINAL SECTIONS - SECTION B
12506381-01-C207	TYPICAL LINER/ CAPPING DETAILS
12506381-01-C208	TEMPORARY WORKS
12506381-01-C209	BULK EARTHWORKS CUT / FILL PLAN
12506381-01-C210	SITE ESTABLISHMENT AND STAGE 1 LINER
12506381-01-C211	STAGE 1 FILLED AND STAGE 2 LINER
12506381-01-C212	STAGE 2 FILLED AND STAGE 3 LINER
12506381-01-C213	STAGE 3 FILLED AND STAGE 4 LINER
12506381-01-C214	FINAL FILLED LANDFORM
12506381-01-C301	EXISTING STORMWATER CATCHMENT PLAN
12506381-01-C302	TYPICAL SWALE DRAIN DETAILS
12506381-01-C303	SWALE DRAIN AND CATCHMENT
12506381-01-C304	SWALE DRAIN LONGITUDINAL SECTIONS - CHANNEL 2
12506381-01-C305	SWALE DRAIN LONGITUDINAL SECTIONS - CHANNEL 4
12506381-01-C308	GROUNDWATER DRAINAGE PLAN
12506381-01-C309	WATER MONITORING LOCATIONS
12506381-01-C310	CONSTRUCTION STAGE CATCHMENTS
12506381-01-C311	POST CONSTRUCTION CATCHMENTS
12506381-01-C401	LEACHATE DRAINAGE PLAN
12506381-01-C402	TYPICAL LEACHATE DRAINAGE DETAILS
12506381-01-C403	LEACHATE TANKFARM AND LOAD OUT BAY
12506381-01-C501	LANDFILL GAS MANAGEMENT - CONCEPTUAL SYSTEM LAYOUT
12506381-01-C502	LANDFILL GAS MANAGEMENT - DETAILS SHEET

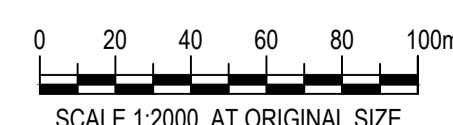
12506381-01-C503	LANDFILL GAS MANAGEMENT - LFG BORE MONITORING NETWORK (EXTREME)
12506381-01-C504	LANDFILL GAS MANAGEMENT - LFG BORE MONITORING NETWORK (RECOMMENDED)
12506381-01-C505	LANDFILL GAS MANAGEMENT - TYPICAL DETAILS
12506381-01-C601	INTERSECTION UPGRADE - SH1 AND MCLARENS GULLY ROAD
12506381-01-C602	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C603	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C604	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C605	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C606	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C607	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C611	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C612	MCLARENS GULLY ROAD IMPROVEMENTS PLAN
12506381-01-C702	LANDFILL FACILITIES PLAN

**NOTE:**

- THIS DRAWING SET MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND CONTRACT DOCUMENTS.

**FOR CONSENT  
NOT FOR CONSTRUCTION**

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
2	RE-ISSUE FOR CONSENT		RG	NE*	SD*	21.05.21
1	FOR CONSENT		SLP	NE*	SD*	14.08.20



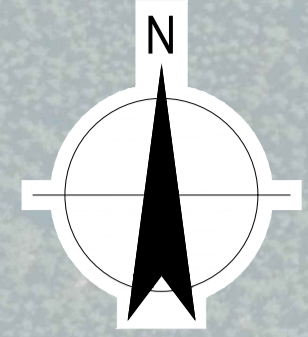
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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*	Date	14.08.20
Scale	AS SHOWN	This Drawing must not be used for Construction unless signed as Approved	

Client	<b>DUNEDIN CITY COUNCIL</b>		
Project	<b>SMOOTH HILL LANDFILL</b>		
Title	<b>COVER SHEET, LOCALITY PLAN AND DRAWING LIST</b>		
Original Size	<b>A1</b>	Drawing No:	<b>12506381-01-G001</b>
Rev:			<b>2</b>



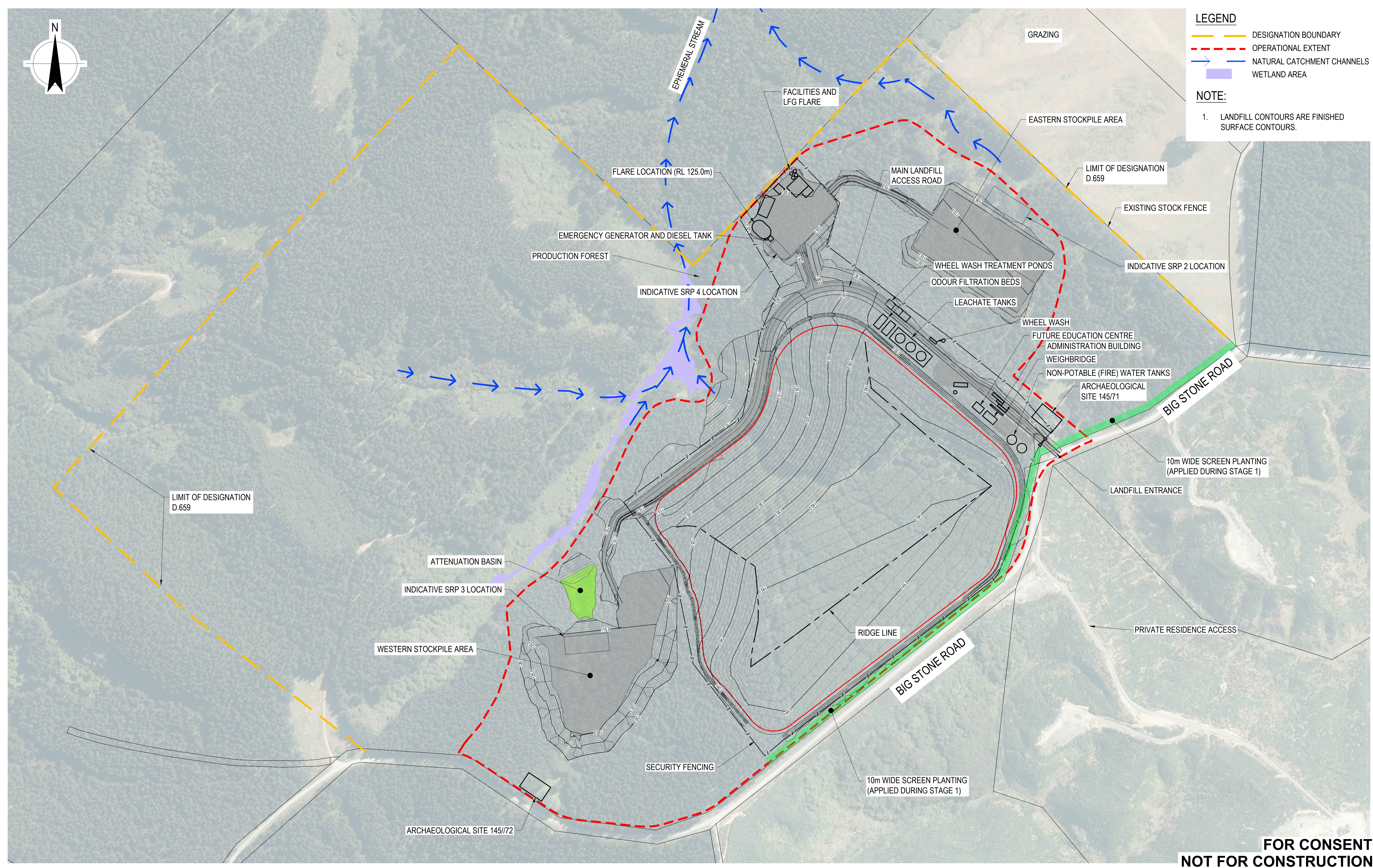


**LEGEND**

- DESIGNATION BOUNDARY
- - - OPERATIONAL EXTENT
- NATURAL CATCHMENT CHANNELS
- WETLAND AREA

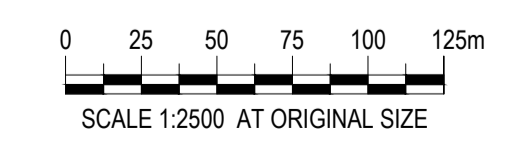
**NOTE:**

- LANDFILL CONTOURS ARE FINISHED SURFACE CONTOURS.



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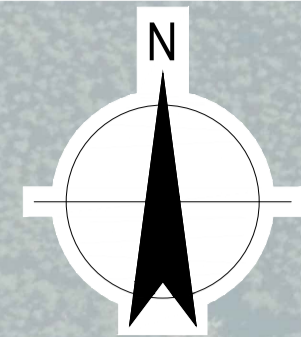
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
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1	FOR CONSENT		SLP	NE*	SD*	14.08.20



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Approved (Project Director) S. DOUGLASS*	Date 14.08.20
Scale 1:2500	This Drawing must not be used for Construction unless signed as Approved

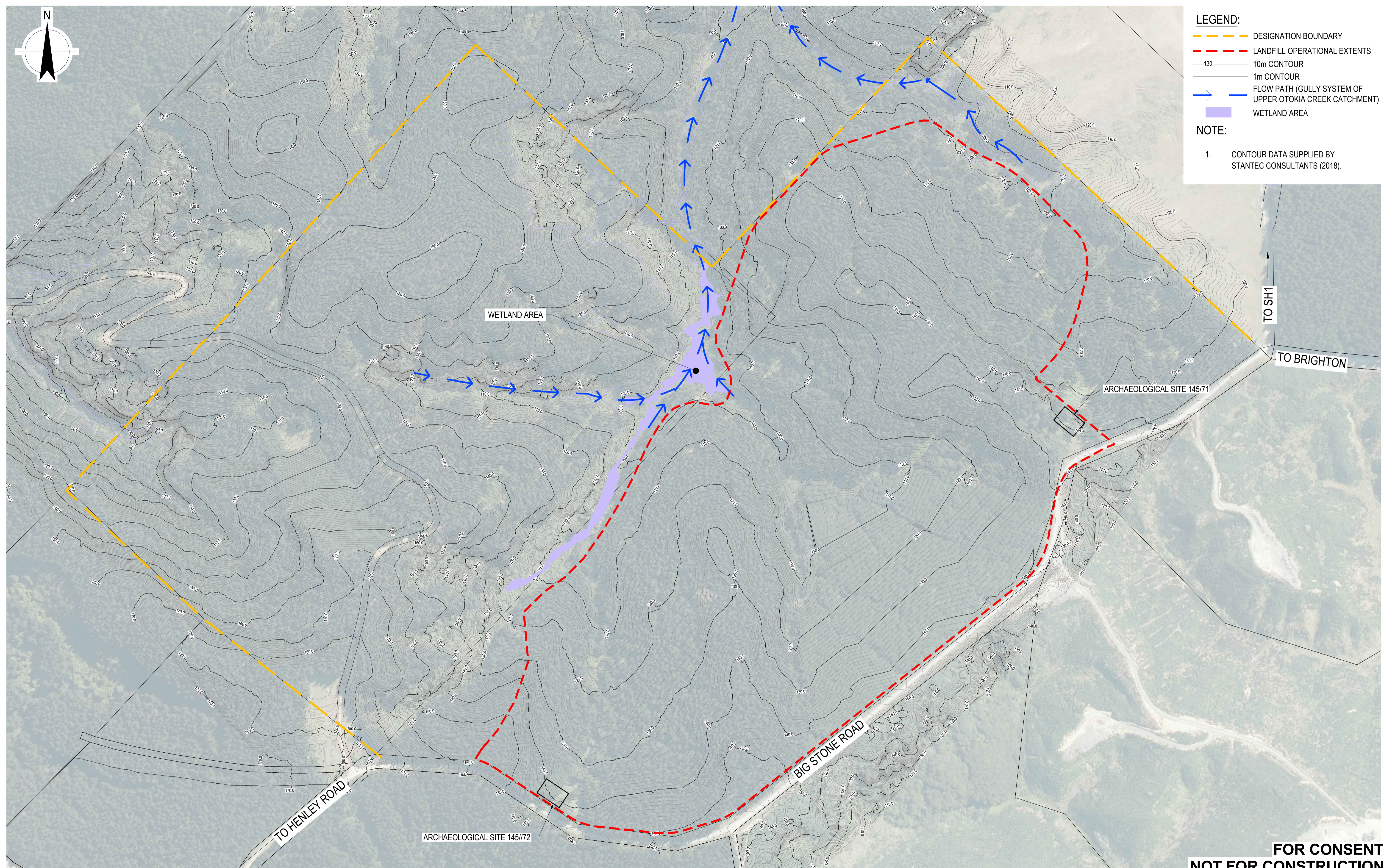
Client	<b>DUNEDIN CITY COUNCIL</b>
Project	<b>SMOOTH HILL LANDFILL</b>
Title	<b>GENERAL ARRANGEMENT PLAN</b>
Original Size	<b>A1</b>
Drawing No:	<b>12506381-01-C102</b>
Rev:	<b>2</b>





- LEGEND:**
- DESIGNATION BOUNDARY
  - - - LANDFILL OPERATIONAL EXTENTS
  - 130 10m CONTOUR
  - 1m CONTOUR
  - FLOW PATH (GULLY SYSTEM OF UPPER OTOKIA CREEK CATCHMENT)
  - WETLAND AREA

- NOTE:**
1. CONTOUR DATA SUPPLIED BY STANTEC CONSULTANTS (2018).



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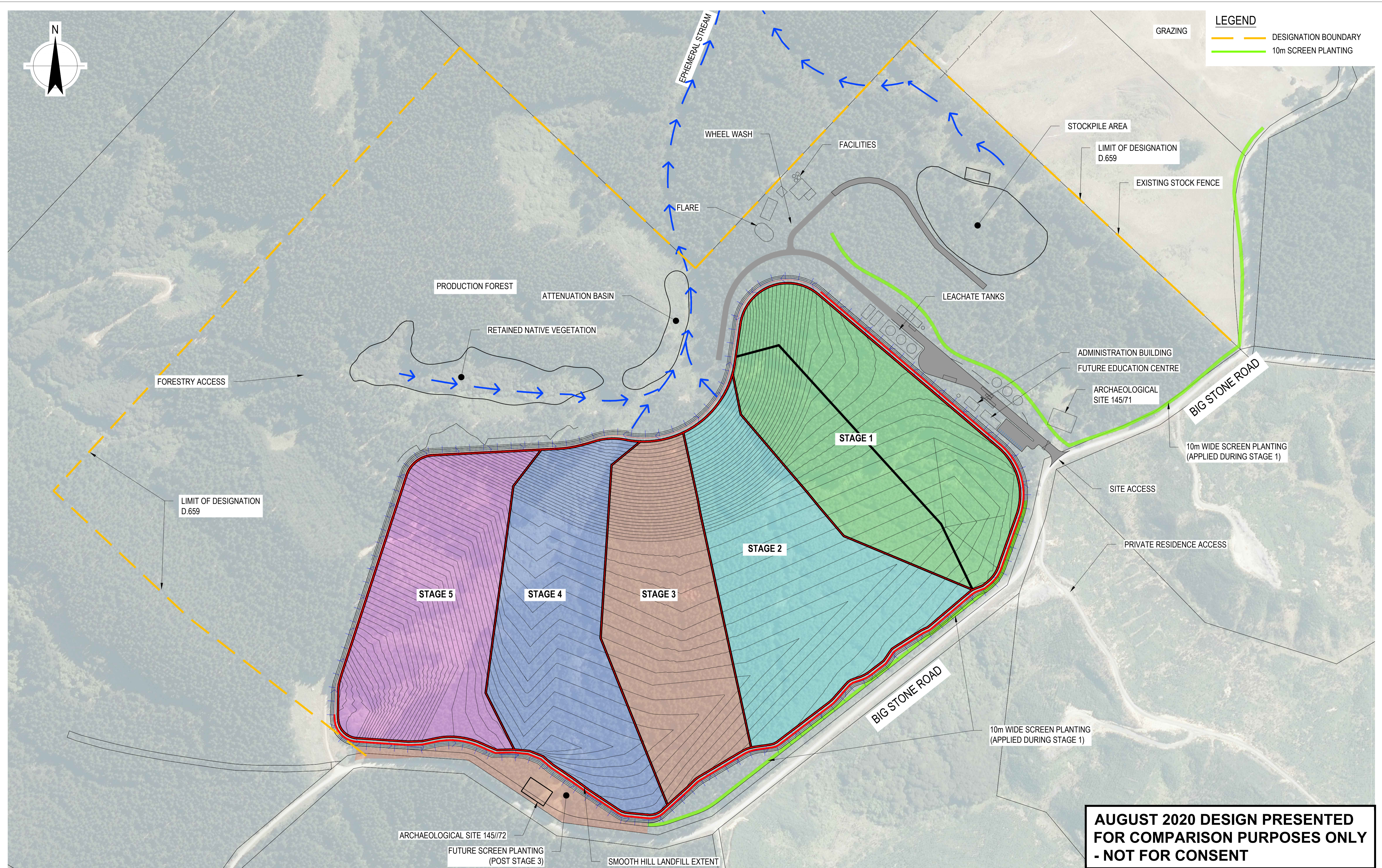
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
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Drafting Check G. DOUGHERTY*	Design Check N. ELDRED*
Approved (Project Director) S. DOUGLASS*	Date 14.08.20
Scale 1:2500	This Drawing must not be used for Construction unless signed as Approved

Client	<b>DUNEDIN CITY COUNCIL</b>
Project	<b>SMOOTH HILL LANDFILL</b>
Title	<b>EXISTING CONTOURS</b>
Original Size	A1
Drawing No:	<b>12506381-01-C103</b>
Rev:	<b>2</b>

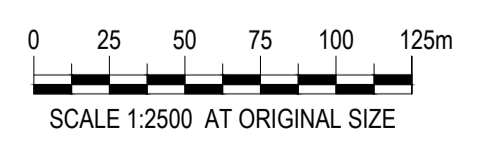




**AUGUST 2020 DESIGN PRESENTED FOR COMPARISON PURPOSES ONLY - NOT FOR CONSENT**

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2	RE-ISSUE FOR CONSENT		RG	NE*	SD*	21.05.21
1	FOR CONSENT		SLP	NE*	SD*	14.08.20

Plot Date: 26 May 2021 - 12:14 PM Plotted by: Rey Emmanuel Geronimo Cad File No: C:\12d\SW\data\P-00-12D-00151-12506381 - Smooth Hill Landfill\_293\CADD\Drawings\51-12506381-01-C104.dwg



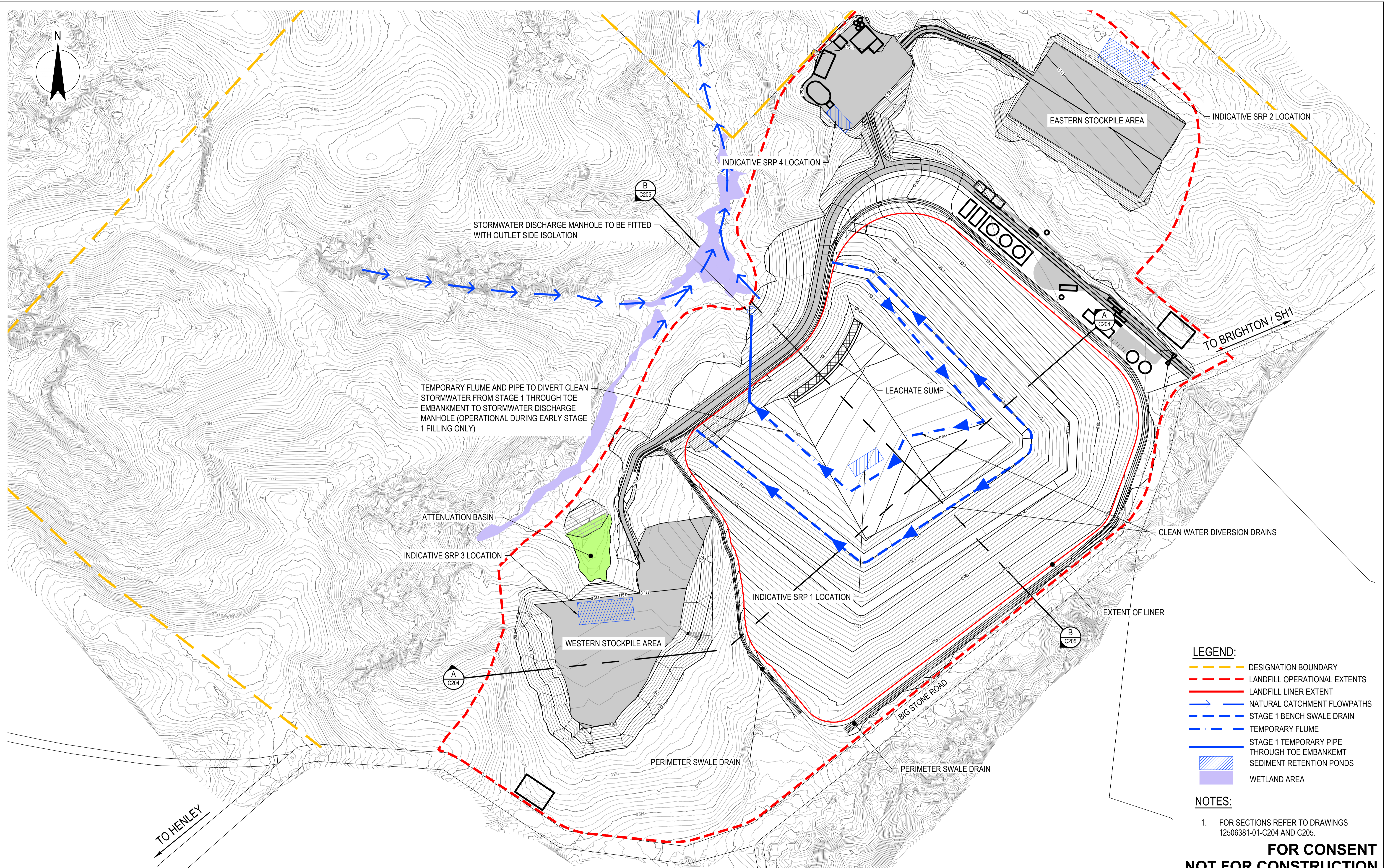
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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*	Date	14.08.20
Scale	1:2500	This Drawing must not be used for Construction unless signed as Approved	

Client	<b>DUNEDIN CITY COUNCIL</b>
Project	<b>SMOOTH HILL LANDFILL</b>
Title	<b>AUGUST 2020 DESIGN - NOT FOR CONSENT</b>
Original Size	<b>A1</b>
Drawing No:	<b>12506381-01-C104</b>
Rev:	<b>2</b>





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2	RE-ISSUE FOR CONSENT		RG	NE*	SD*	21.05.21
1	FOR CONSENT		SLP	NE*	SD*	14.08.20

Plot Date: 26 May 2021 - 3:17 PM Plotted by: Rey Emmanuel Geronimo Cad File No: C:\12d\SW\data\P-00-12D-00151-12506381 - Smooth Hill Landfill\_293\CADD\Drawings\51-12506381-01-C201\_liner.dwg

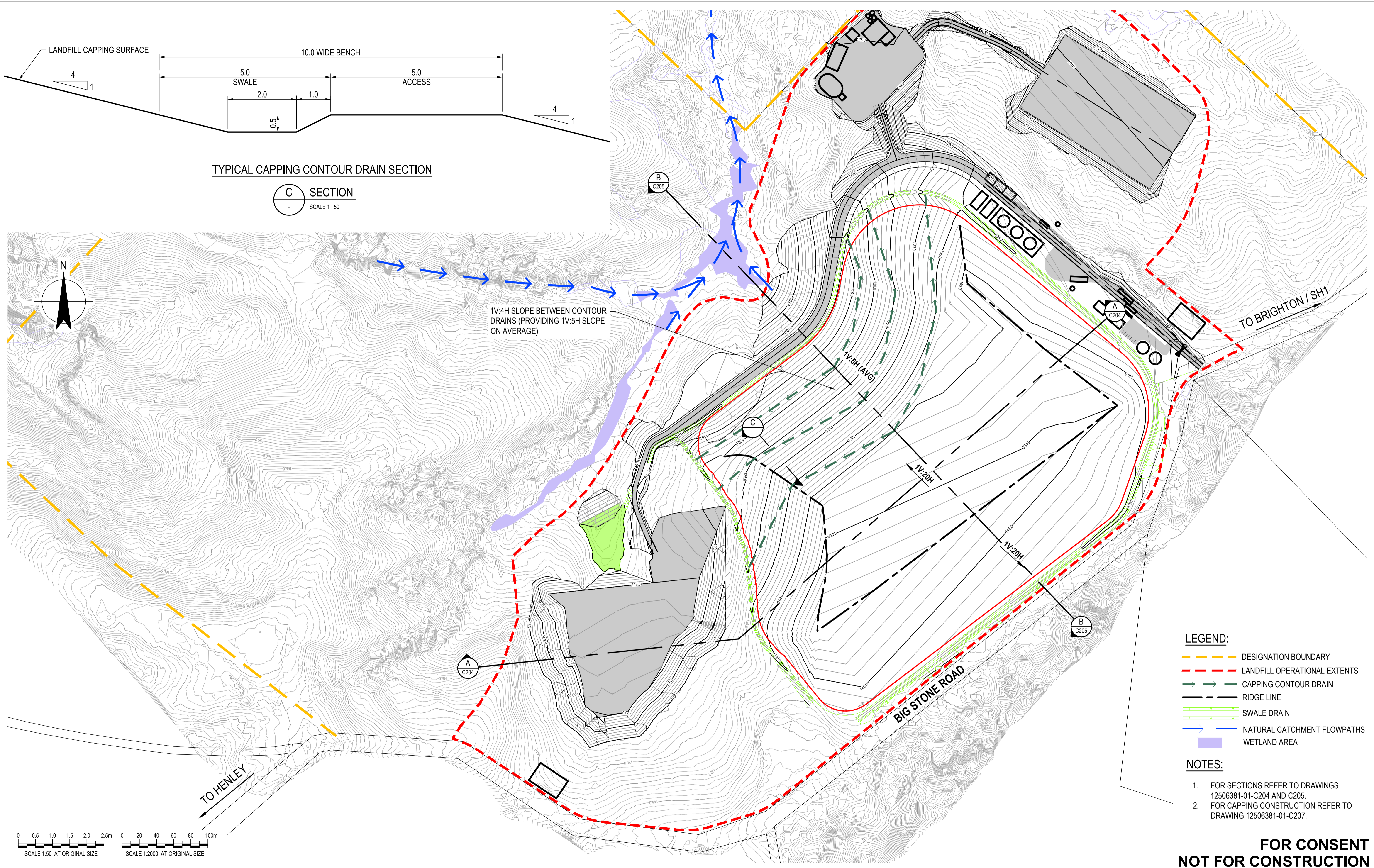


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Client	<b>DUNEDIN CITY COUNCIL</b>		
Project	<b>SMOOTH HILL LANDFILL</b>		
Title	<b>LANDFILL LINER PLAN</b>		
Original Size	<b>A1</b>	Drawing No:	<b>12506381-01-C201</b>
Rev:	<b>2</b>		

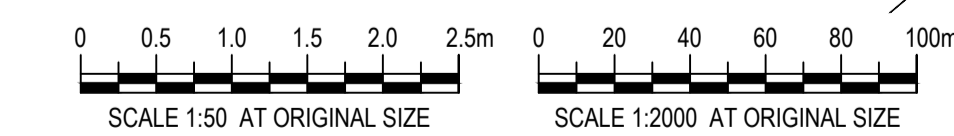




- LEGEND:**
- DESIGNATION BOUNDARY
  - LANDFILL OPERATIONAL EXTENTS
  - CAPPING CONTOUR DRAIN
  - RIDGE LINE
  - SWALE DRAIN
  - NATURAL CATCHMENT FLOWPATHS
  - WETLAND AREA

- NOTES:**
1. FOR SECTIONS REFER TO DRAWINGS 12506381-01-C204 AND C205.
  2. FOR CAPPING CONSTRUCTION REFER TO DRAWING 12506381-01-C207.

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2	RE-ISSUE FOR CONSENT		RG	NE*	SD*	21.05.21
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**DUNEDIN CITY COUNCIL** | kaunihera a-rohe o ōtepoti

**GHD**  
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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*		
Date	14.08.20		
Scale	AS SHOWN		

Client	<b>DUNEDIN CITY COUNCIL</b>		
Project	<b>SMOOTH HILL LANDFILL</b>		
Title	<b>LANDFILL CAPPING PLAN</b>		
Original Size	<b>A1</b>	Drawing No:	<b>12506381-01-C202</b>
		Rev:	<b>2</b>

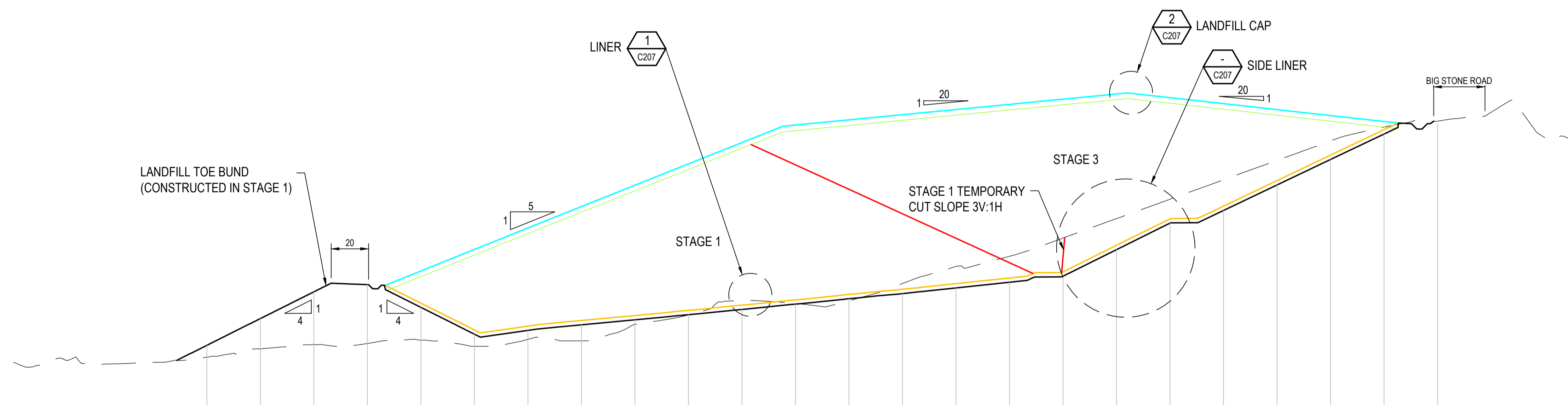






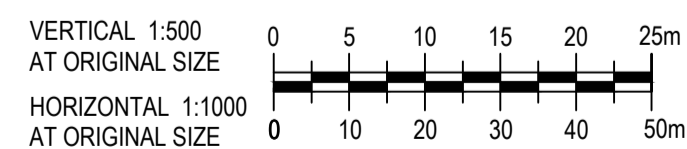
**NOTES:**

- FOR GENERAL ARRANGEMENT PLAN, REFER TO DRAWING 12506381-01-C102.
- FOR SECTION LOCATION REFER TO DRAWING 12506381-01-C201 AND C202



DATUM RL. 88.00	
DESIGN LINER SURFACE LEVEL	108.06 103.06 103.76 104.82 105.75 106.70 107.88 108.68 109.68 110.65 111.71 112.76 113.90 118.86 123.83 126.20 130.96 135.73 140.48
DESIGN CAPPING SURFACE LEVEL	114.07 118.09 122.10 126.11 130.10 134.09 138.08 141.34 142.31 143.28 144.25 145.22 146.19 147.16 148.47 149.35 144.24 143.13 142.02
DESIGN BASE LEVEL CUT - / FILL +	2.23 5.65 9.86 11.00 6.11 2.26 1.67 3.02 0.87 0.05 -1.77 -0.15 0.38 -1.89 -4.01 -4.85 -7.13 -5.80 -4.46 -5.73 -4.59 -3.45 -1.29 -0.47
DESIGN BASE LEVEL BUND / LINER SUBGRADE)	100.16 105.18 110.18 111.52 107.26 102.26 102.96 104.02 104.95 105.90 106.88 107.88 108.88 109.85 110.91 111.96 113.10 118.06 123.03 125.40 130.16 134.93 139.68 141.61
EXISTING SURFACE LEVEL	97.00 96.84 96.65 97.00 97.96 99.53 100.32 100.52 101.15 100.00 101.29 101.00 104.09 105.85 108.65 108.02 108.50 111.74 114.92 116.82 120.23 123.86 127.49 131.12 134.75 138.38 140.97 142.08 143.75 139.01 137.51
CHAINAGE	-32.26 -40.00 -20.00 0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00 160.00 180.00 200.00 220.00 240.00 260.00 280.00 300.00 320.00 340.00 360.00 380.00 400.00 420.00 440.00 460.00 480.00 500.00 520.00 533.71

**LONGITUDINAL SECTION - SECTION B (LANDFILL)**



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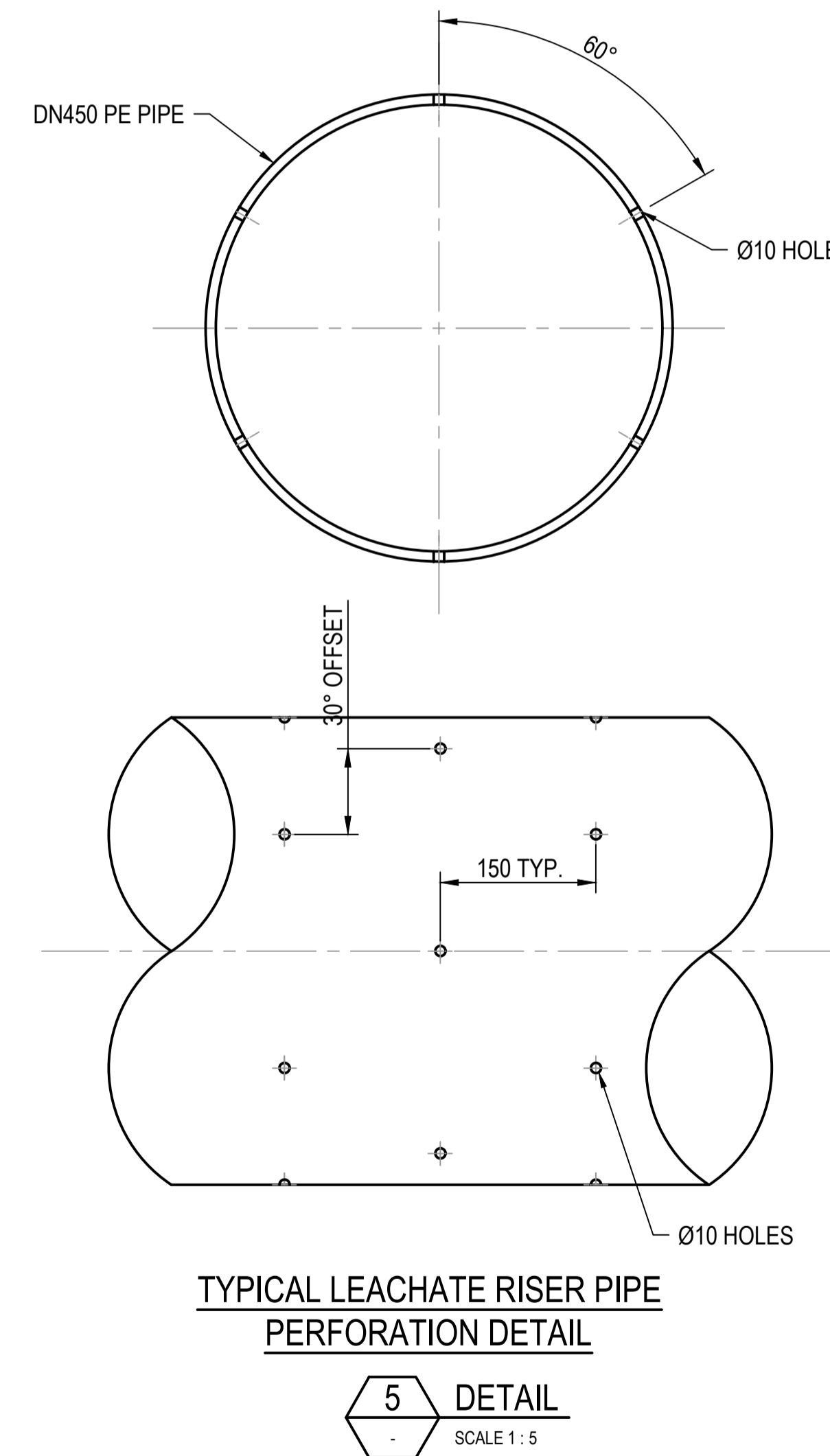
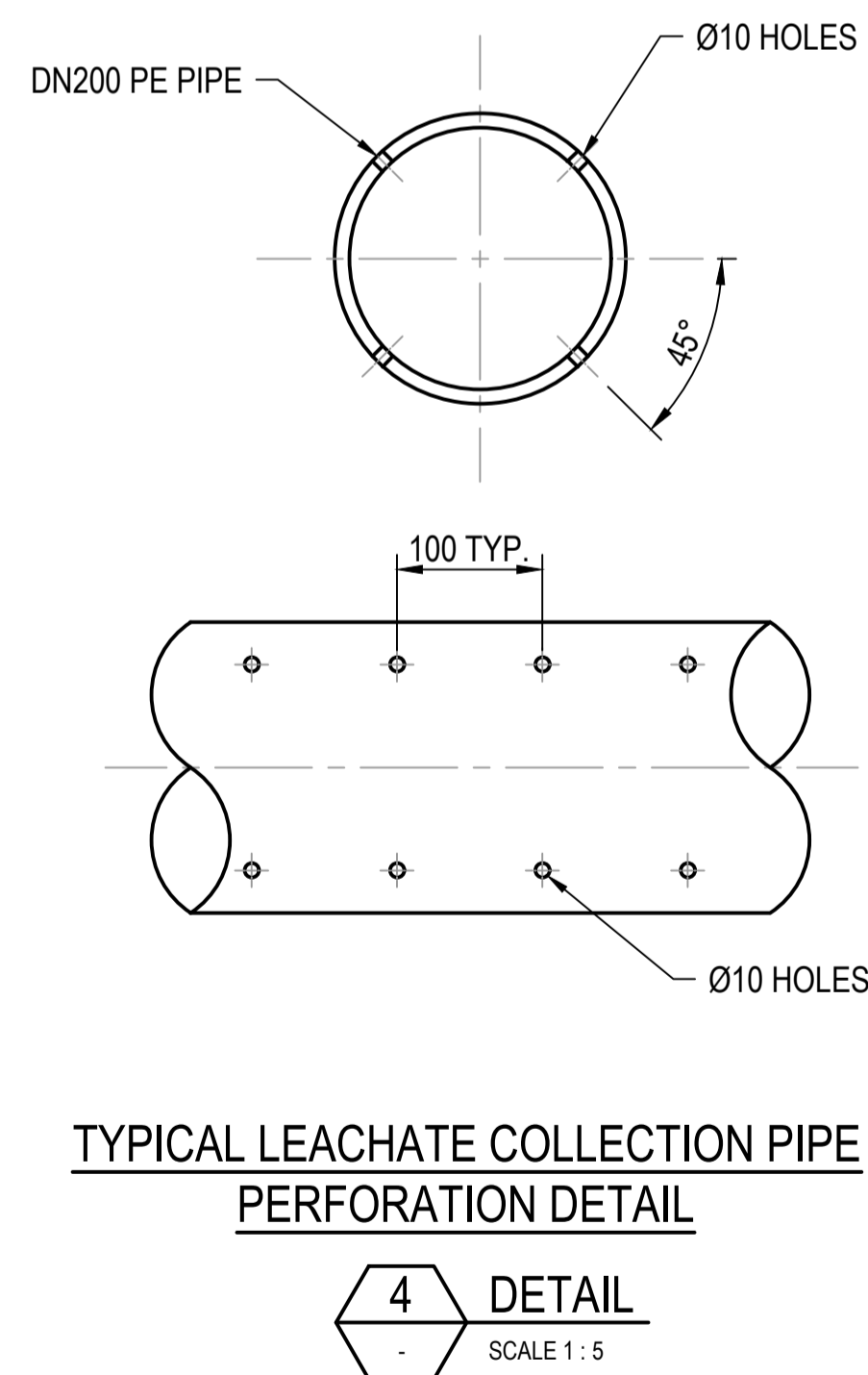
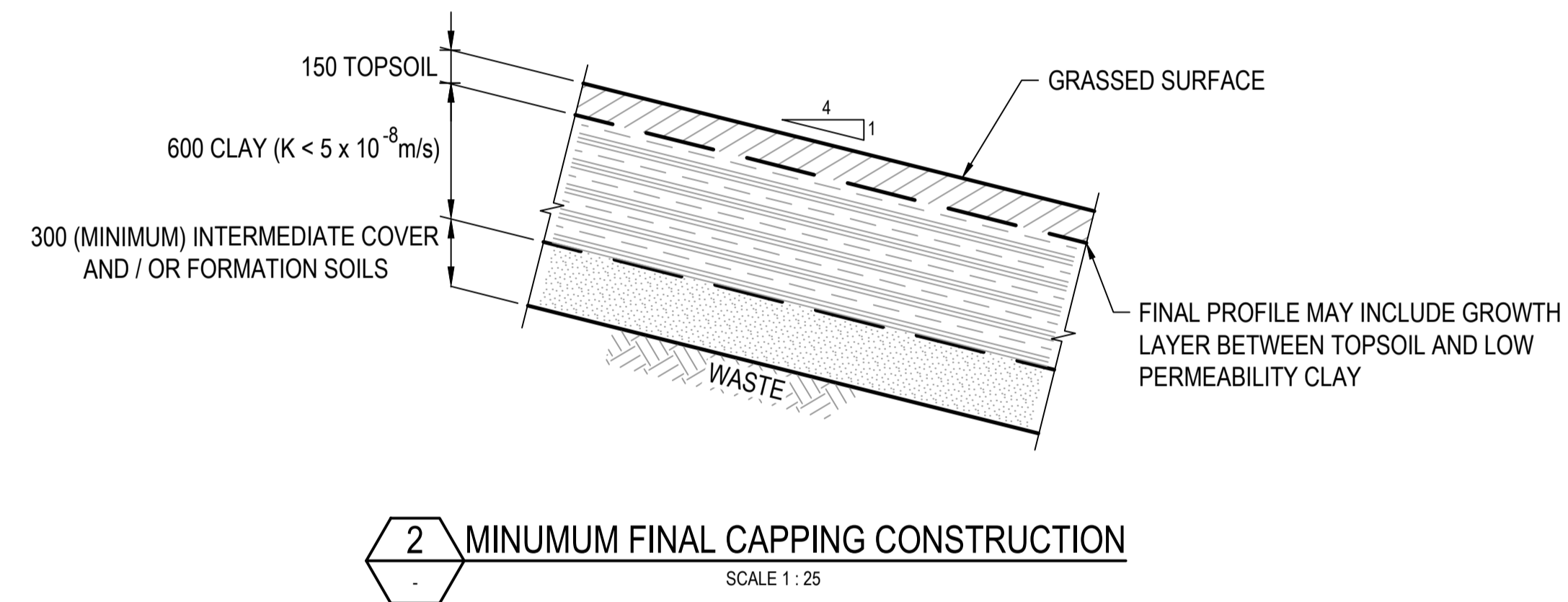
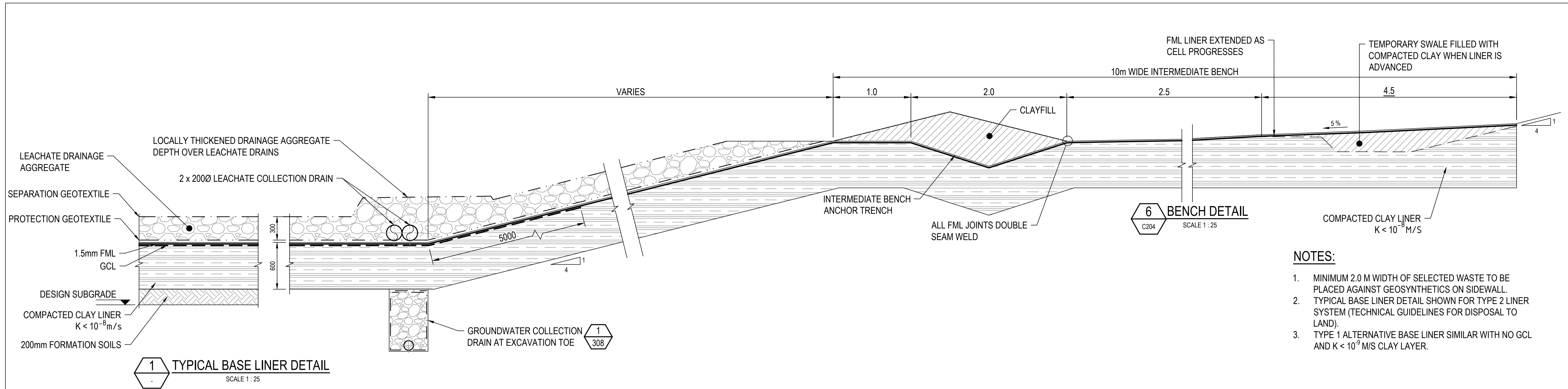
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
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Drafting Check G. DOUGHERTY*	Design Check N. ELDRED*
Approved (Project Director) S. DOUGLASS*	Date 14.08.20
Scale AS SHOWN	This Drawing must not be used for Construction unless signed as Approved

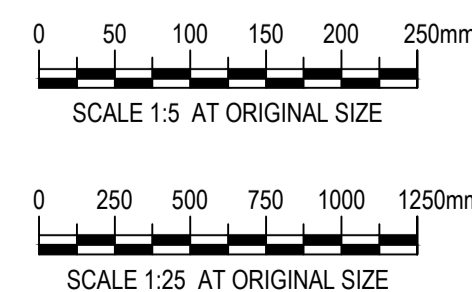
Client	<b>DUNEDIN CITY COUNCIL</b>
Project	<b>SMOOTH HILL LANDFILL</b>
Title	<b>LANDFILL LONGITUDINAL SECTION - SECTION B</b>
Original Size	<b>A1</b>
Drawing No:	<b>12506381-01-C205</b>
Rev:	<b>2</b>





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1	FOR CONSENT		SLP	NE*	SD*	14.08.20

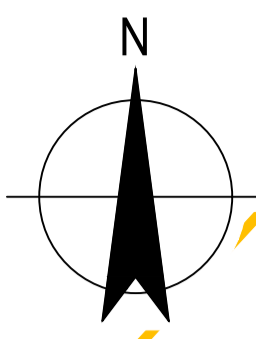


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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*		
Date	14.08.20		
Scale	AS SHOWN		

Client	<b>DUNEDIN CITY COUNCIL</b>		
Project	<b>SMOOTH HILL LANDFILL</b>		
Title	<b>TYPICAL LINER / CAPPING DETAILS</b>		
Original Size	<b>A1</b>	Drawing No:	<b>12506381-01-C207</b>
Rev:	<b>2</b>		





- LEGEND:**
- DESIGNATION BOUNDARY
  - LANDFILL OPERATIONAL EXTENTS
  - NATURAL CATCHMENT FLOWPATHS
  - CUT / FILL INTERFACE (ZERO CUT)
  - FILL DEPTH 1m CONTOUR
  - CUT DEPTH 1m CONTOUR

- NOTES:**
1. CONTOUR SHOW CUT/FILL DEPTHS. NEGATIVE VALUES ARE CUT AND POSITIVE VALUES ARE FILL.
  2. CONTOURS SHOW DEPTH OF CUT AND FILL TO PRODUCE BASE LINER SUB GRADE.



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Drafting Check G. DOUGHERTY*	Design Check N. ELDRED*
Approved (Project Director) S. DOUGLASS*	
Date 14.08.20	
Scale 1:2000	This Drawing must not be used for Construction unless signed as Approved

Client	<b>DUNEDIN CITY COUNCIL</b>	
Project	<b>SMOOTH HILL LANDFILL</b>	
Title	<b>BULK EARTHWORKS CUT/FILL PLAN</b>	
Original Size	Drawing No: <b>12506381-01-C209</b>	Rev: <b>2</b>