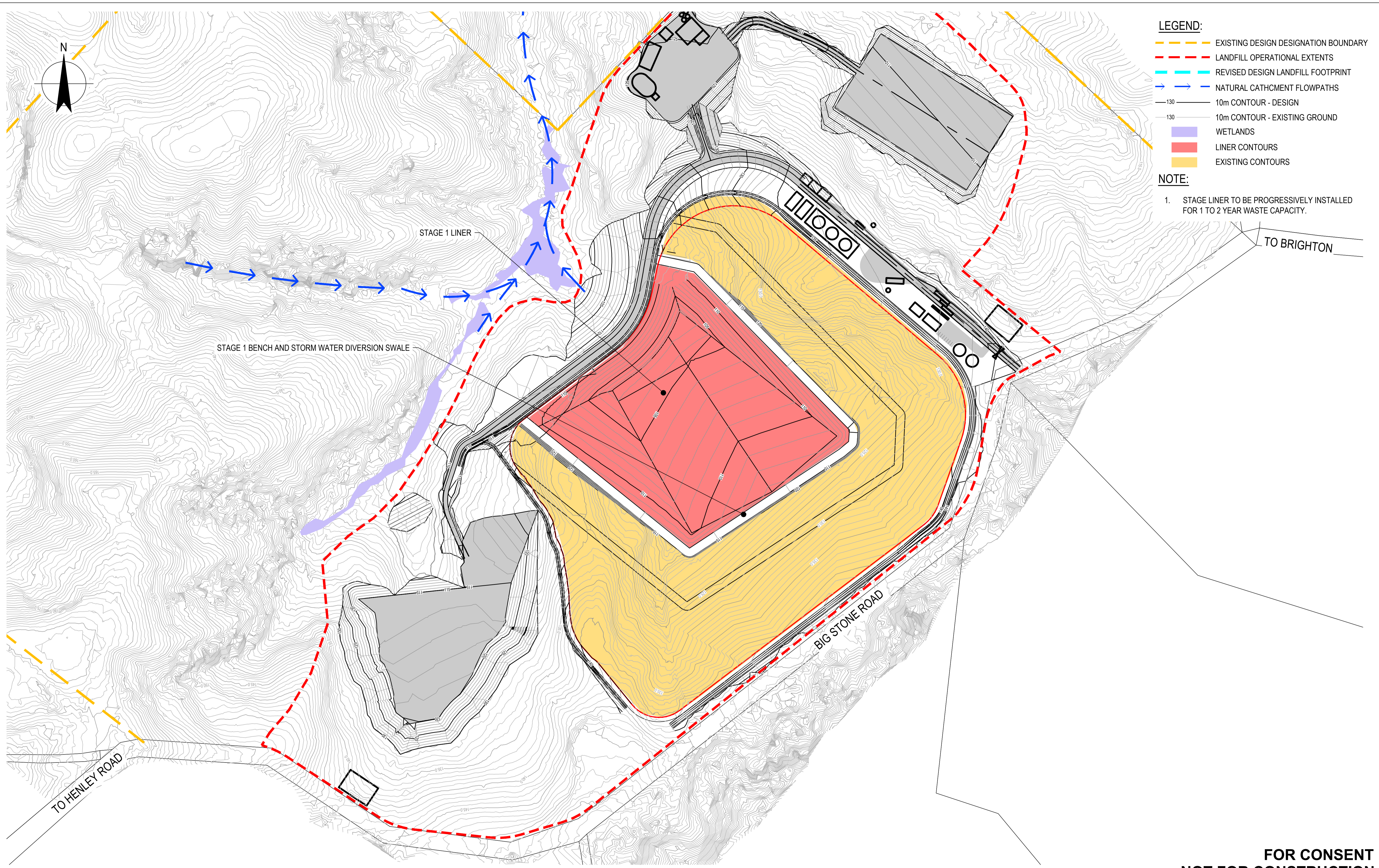


Appendix 4: Concept Design Plans



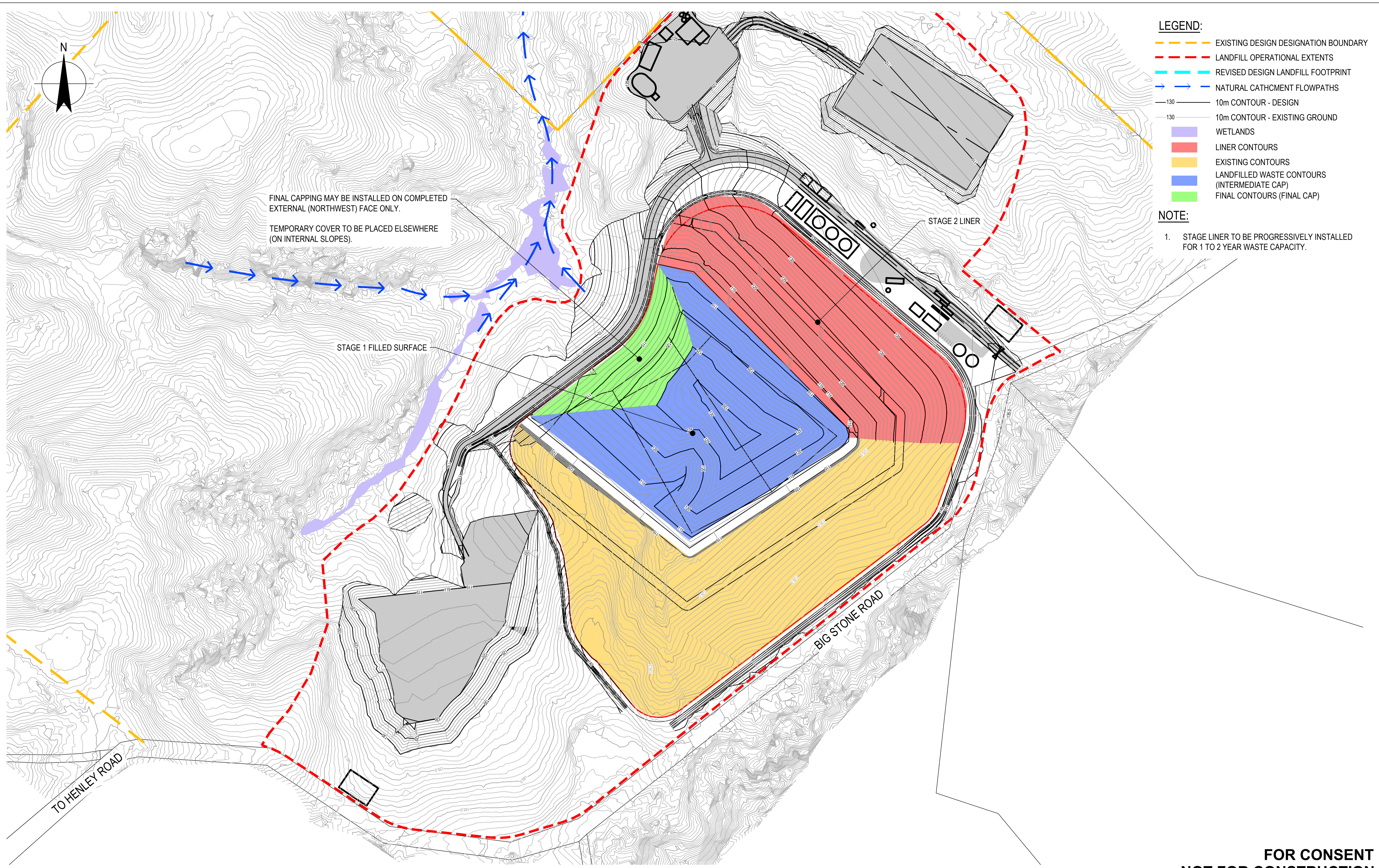
- LEGEND:**
- EXISTING DESIGN DESIGNATION BOUNDARY
 - LANDFILL OPERATIONAL EXTENTS
 - REVISED DESIGN LANDFILL FOOTPRINT
 - NATURAL CATHCMENT FLOWPATHS
 - 130 10m CONTOUR - DESIGN
 - 130 10m CONTOUR - EXISTING GROUND
 - WETLANDS
 - LINER CONTOURS
 - EXISTING CONTOURS
- NOTE:**
1. STAGE LINER TO BE PROGRESSIVELY INSTALLED FOR 1 TO 2 YEAR WASTE CAPACITY.

**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
1		ISSUE FOR CONSENT	PK	NE*	SD*	21.05.21



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	Drafting Check G. DOUGHERTY*	Design Check N. ELDRED*	Project SMOOTH HILL LANDFILL
	Approved (Project Director) S. DOUGLASS*	Date 21.05.21	Title SITE ESTABLISHMENT AND STAGE 1 LINER
	Scale 1:2000	This Drawing must not be used for Construction unless signed as Approved	Original Size A1 Drawing No: 12506381-01-C210 Rev: 1



FINAL CAPPING MAY BE INSTALLED ON COMPLETED EXTERNAL (NORTHWEST) FACE ONLY.
 TEMPORARY COVER TO BE PLACED ELSEWHERE (ON INTERNAL SLOPES).

- LEGEND:**
- EXISTING DESIGN DESIGNATION BOUNDARY
 - LANDFILL OPERATIONAL EXTENTS
 - REVISED DESIGN LANDFILL FOOTPRINT
 - NATURAL CATHCMENT FLOWPATHS
 - 130 10m CONTOUR - DESIGN
 - 130 10m CONTOUR - EXISTING GROUND
 - WETLANDS
 - LINER CONTOURS
 - EXISTING CONTOURS
 - LANDFILLED WASTE CONTOURS (INTERMEDIATE CAP)
 - FINAL CONTOURS (FINAL CAP)

NOTE:

1. STAGE LINER TO BE PROGRESSIVELY INSTALLED FOR 1 TO 2 YEAR WASTE CAPACITY.

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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
1		ISSUE FOR CONSENT	PK	NE*	SD*	21.05.21

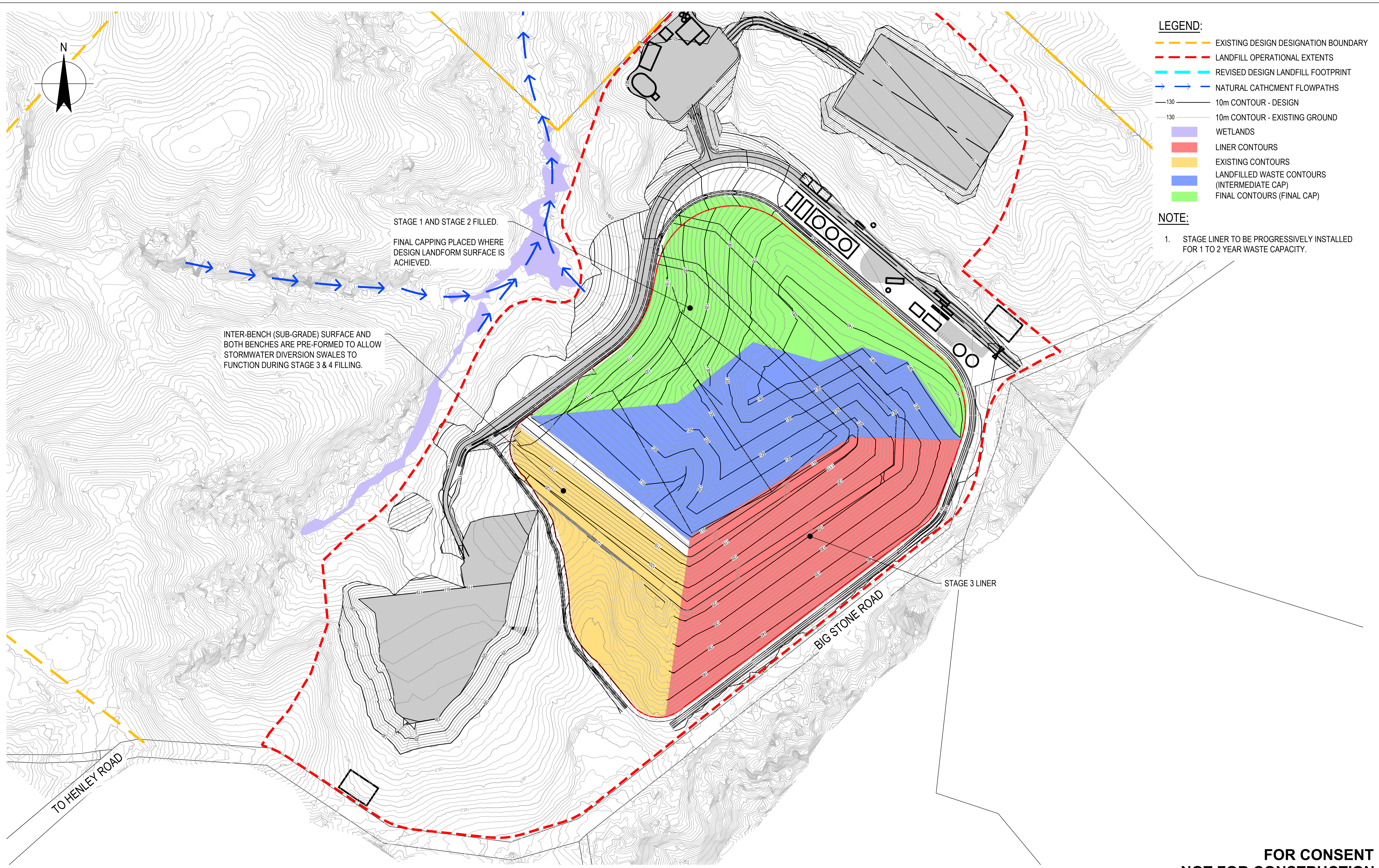


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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*		
Date	21.05.21		
Scale	1:2000		

Client	DUNEDIN CITY COUNCIL		
Project	SMOOTH HILL LANDFILL		
Title	STAGE 1 FILLED AND STAGE 2 LINER		
Original Size	A1	Drawing No:	12506381-01-C211
		Rev:	1



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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
1		ISSUE FOR CONSENT	PK	NE*	SD*	21.05.21

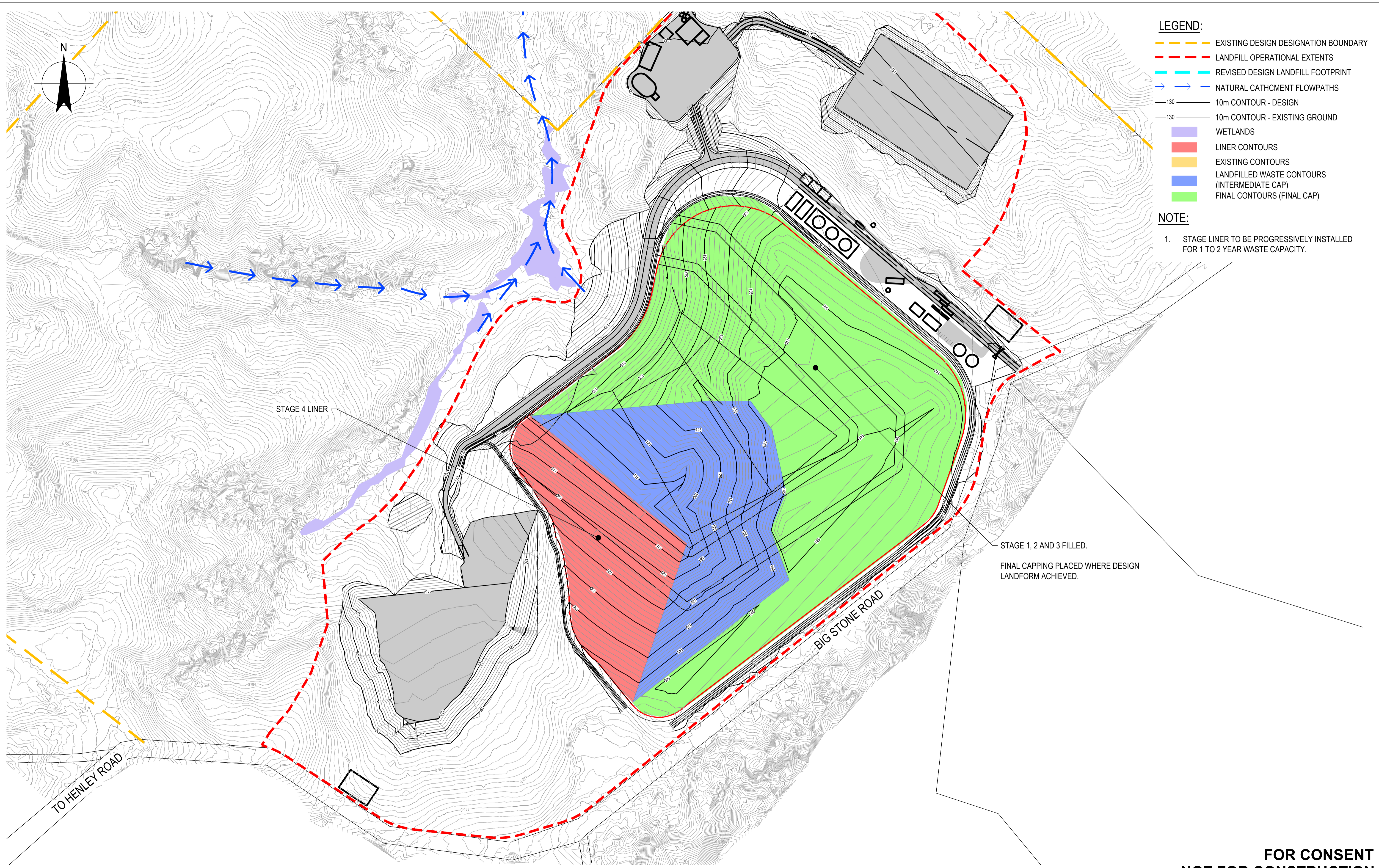


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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*		
Date	21.05.21		
Scale	1:2000		

Client	DUNEDIN CITY COUNCIL		
Project	SMOOTH HILL LANDFILL		
Title	STAGE 2 FILLED AND STAGE 3 LINER		
Original Size	A1	Drawing No:	12506381-01-C212
		Rev:	1



**FOR CONSENT
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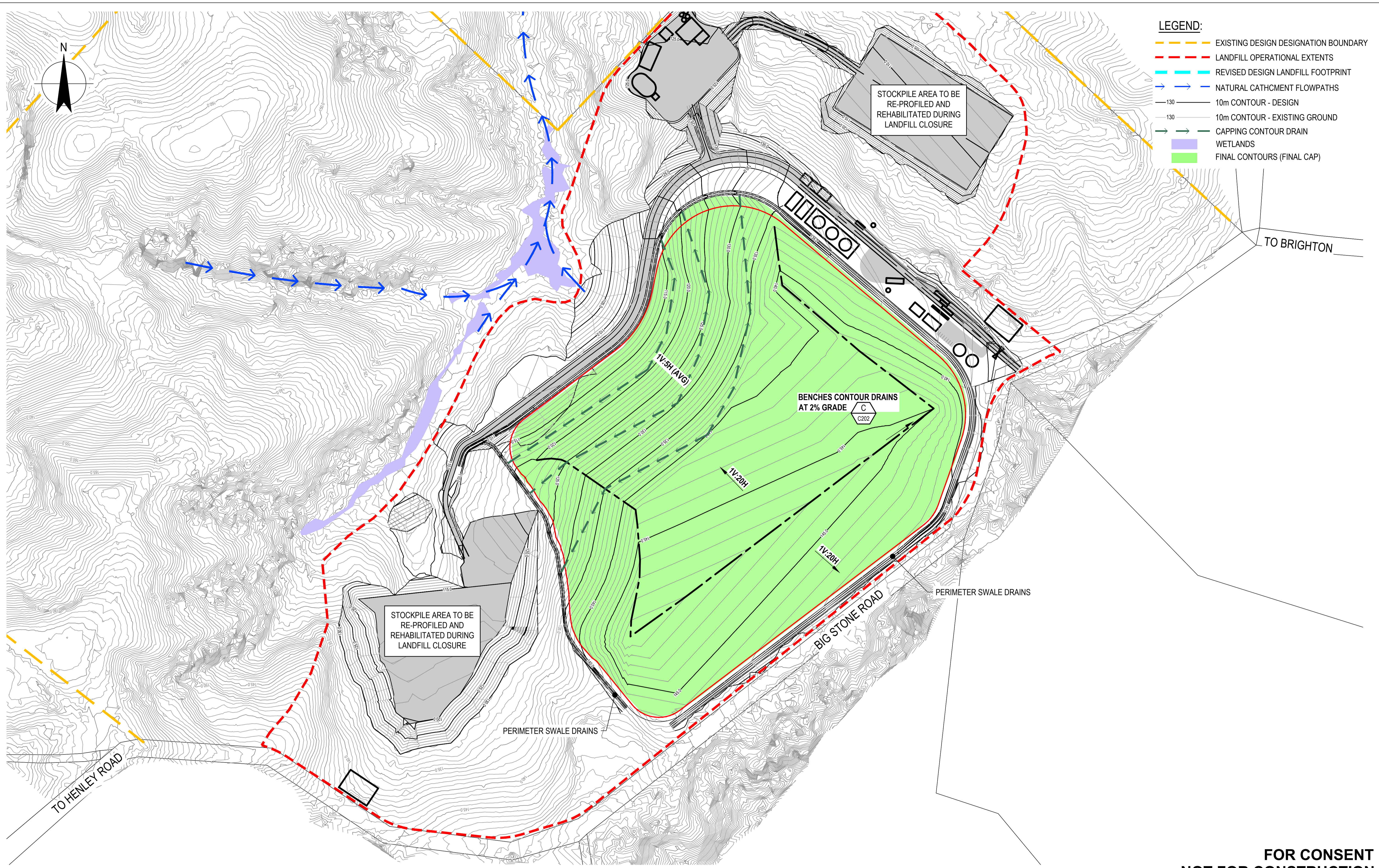
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*		
Date	21.05.21		
Scale	1:2000		

Client	DUNEDIN CITY COUNCIL		
Project	SMOOTH HILL LANDFILL		
Title	STAGE 3 FILLED AND STAGE 4 LINER		
Original Size	A1	Drawing No:	12506381-01-C213
		Rev:	1



- LEGEND:**
- EXISTING DESIGN DESIGNATION BOUNDARY
 - LANDFILL OPERATIONAL EXTENTS
 - REVISED DESIGN LANDFILL FOOTPRINT
 - NATURAL CATHCMENT FLOWPATHS
 - 130 10m CONTOUR - DESIGN
 - 130 10m CONTOUR - EXISTING GROUND
 - CAPPING CONTOUR DRAIN
 - WETLANDS
 - FINAL CONTOURS (FINAL CAP)

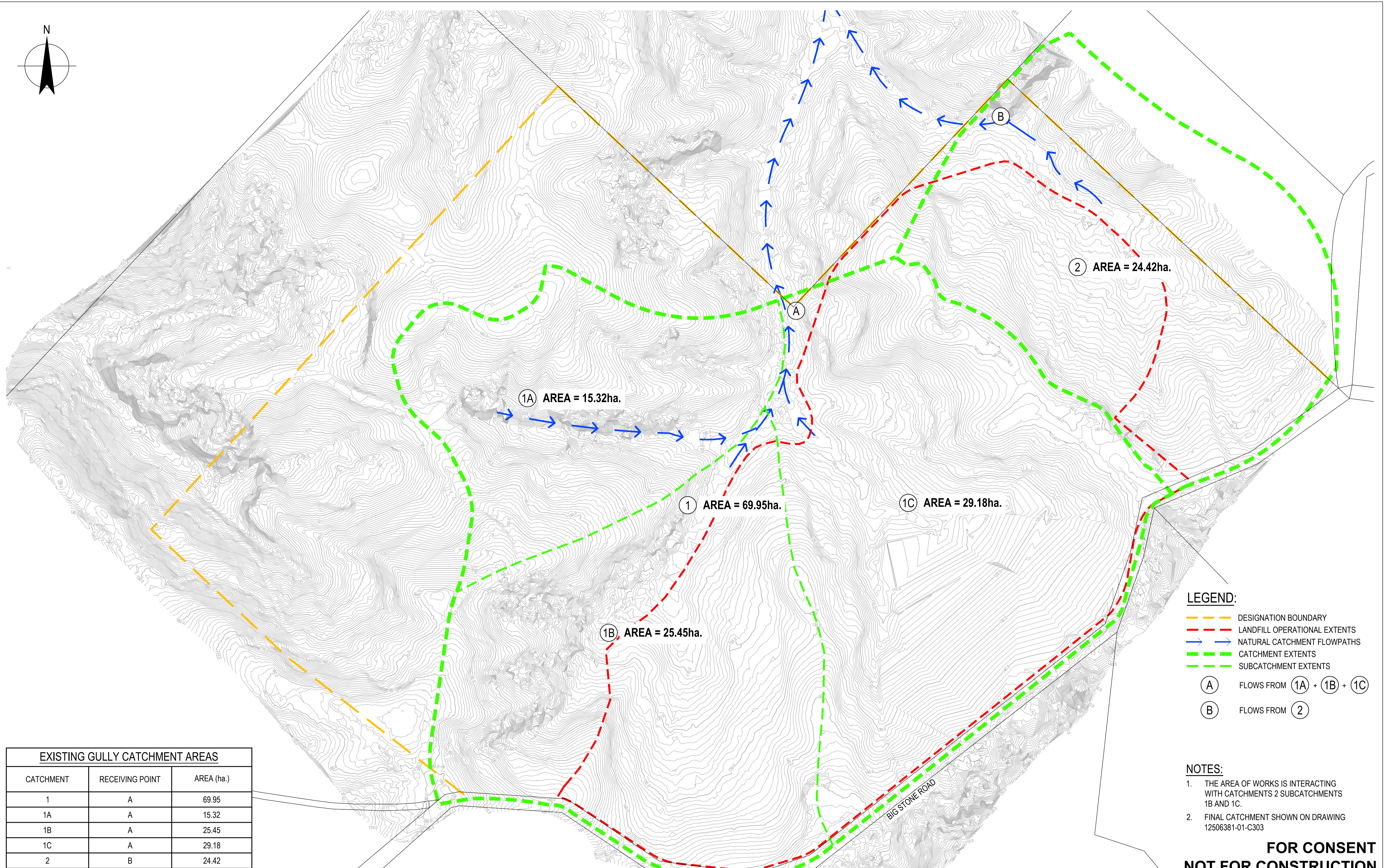
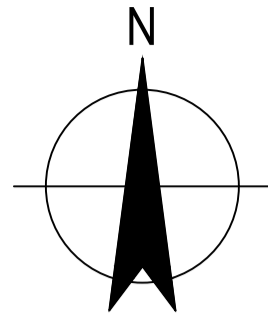
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Drafting Check G. DOUGHERTY*	Design Check N. ELDRED*
Approved (Project Director) S. DOUGLASS*	Date 21.05.21
Scale 1:2000	This Drawing must not be used for Construction unless signed as Approved

Client	DUNEDIN CITY COUNCIL
Project	SMOOTH HILL LANDFILL
Title	FINAL FILLED LANDFORM
Original Size	A1
Drawing No:	12506381-01-C214
Rev:	1



LEGEND:

- DESIGNATION BOUNDARY
- LANDFILL OPERATIONAL EXTENTS
- NATURAL CATCHMENT FLOWPATHS
- CATCHMENT EXTENTS
- SUBCATCHMENT EXTENTS
- A FLOWS FROM 1A + 1B + 1C
- B FLOWS FROM 2

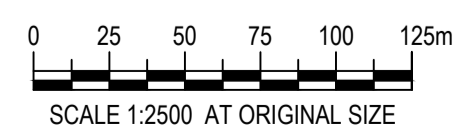
NOTES:

1. THE AREA OF WORKS IS INTERACTING WITH CATCHMENTS 2 SUBCATCHMENTS 1B AND 1C.
2. FINAL CATCHMENT SHOWN ON DRAWING 12506381-01-C303

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NOT FOR CONSTRUCTION**

EXISTING GULLY CATCHMENT AREAS		
CATCHMENT	RECEIVING POINT	AREA (ha.)
1	A	69.95
1A	A	15.32
1B	A	25.45
1C	A	29.18
2	B	24.42

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		JF	NE*	SD*	21.05.21
1	FOR CONSENT		SLP	NE*	SD*	14.08.20



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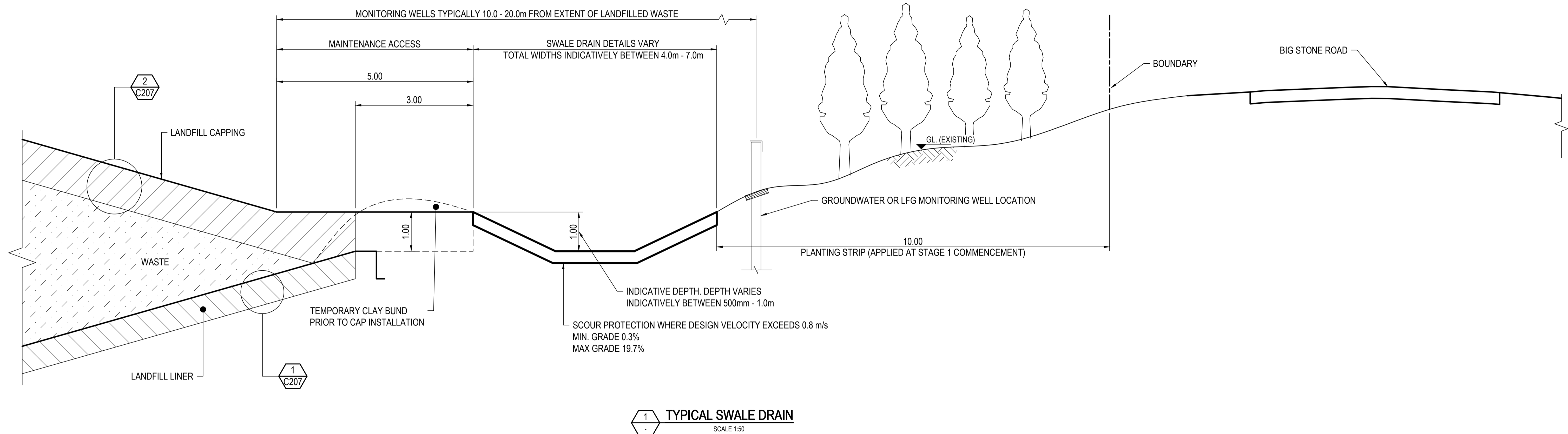
Drawn	J. FLORES	Designer	R. COOMBE
Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*		
Date	14.08.20		
Scale	1:2500		

Client **DUNEDIN CITY COUNCIL**
Project **SMOOTH HILL LANDFILL**
Title **EXISTING STORMWATER CATCHMENT PLAN**

Original Size **A1** Drawing No: **12506381-01-C301** Rev: **2**

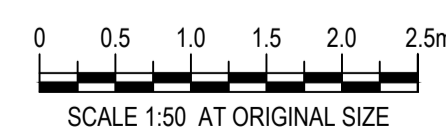
NOTES

1. REFER TO 12506381-01-C402 FOR SWALE DRAIN AT TOE EMBANKMENT.
2. SCOUR PROTECTION SUBJECT TO DETAILED DESIGN MAY INCLUDE TURF REINFORCEMENT THROUGH TO ROCK RIP-RAP OR CHECK DAMS.
3. SWALES SUBJECT TO DETAILED DESIGN



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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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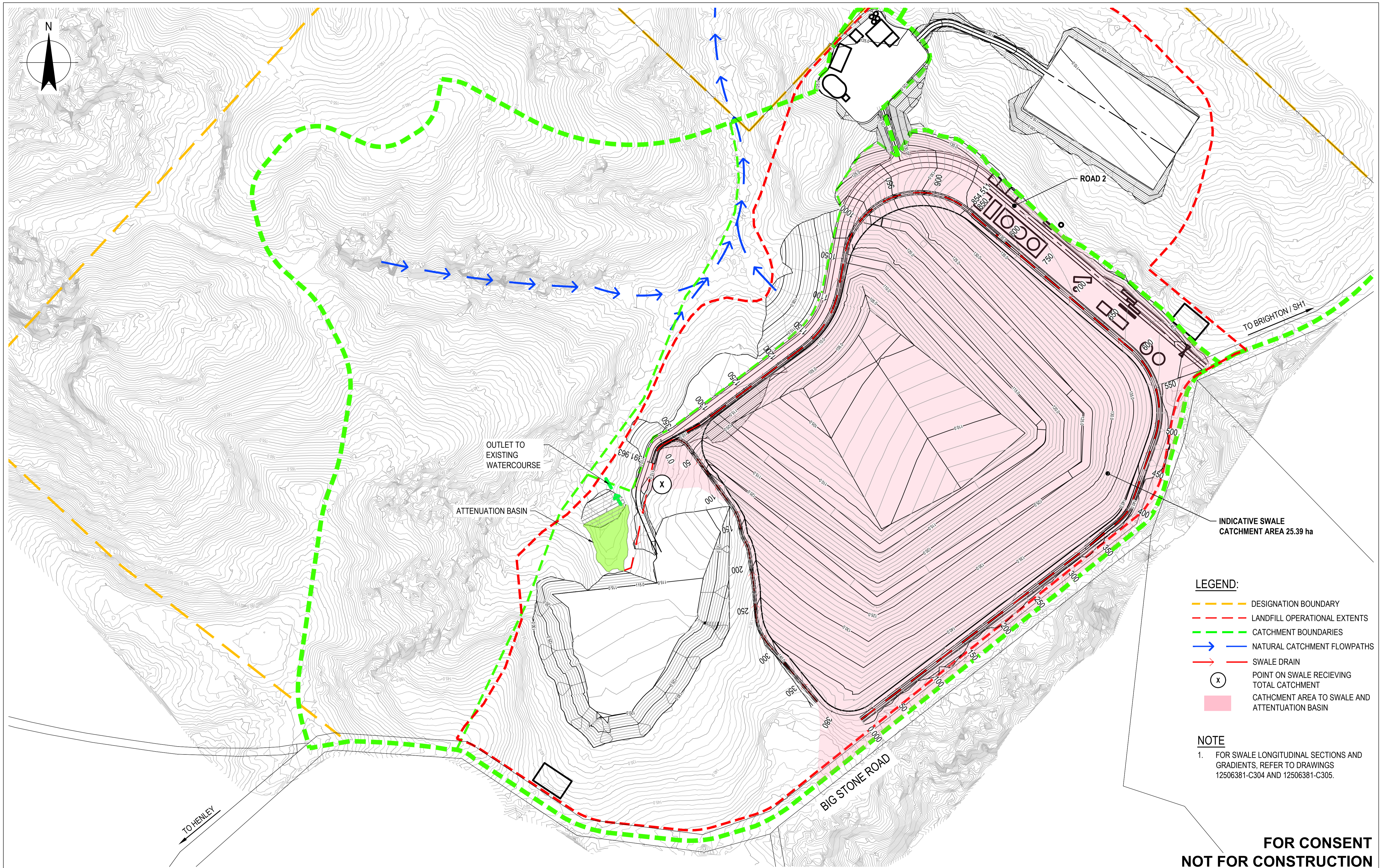
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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*		
Date	14.08.20		
Scale	1:50		

Client **DUNEDIN CITY COUNCIL**
Project **SMOOTH HILL LANDFILL**
Title **TYPICAL SWALE DRAIN DETAILS**

Original Size **A1** Drawing No: **12506381-01-C302**

Rev: **2**



- LEGEND:**
- DESIGNATION BOUNDARY
 - LANDFILL OPERATIONAL EXTENTS
 - CATCHMENT BOUNDARIES
 - NATURAL CATCHMENT FLOWPATHS
 - SWALE DRAIN
 - POINT ON SWALE RECEIVING TOTAL CATCHMENT
 - CATCHMENT AREA TO SWALE AND ATTENUATION BASIN

NOTE

- FOR SWALE LONGITUDINAL SECTIONS AND GRADIENTS, REFER TO DRAWINGS 12506381-C304 AND 12506381-C305.

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No	Revision	Note	Drawn	Job Manager	Project Director	Date
2	RE-ISSUE FOR CONSENT		JF	NE*	SD*	21.05.21
1	FOR CONSENT		SLP	NE*	SD*	14.08.20



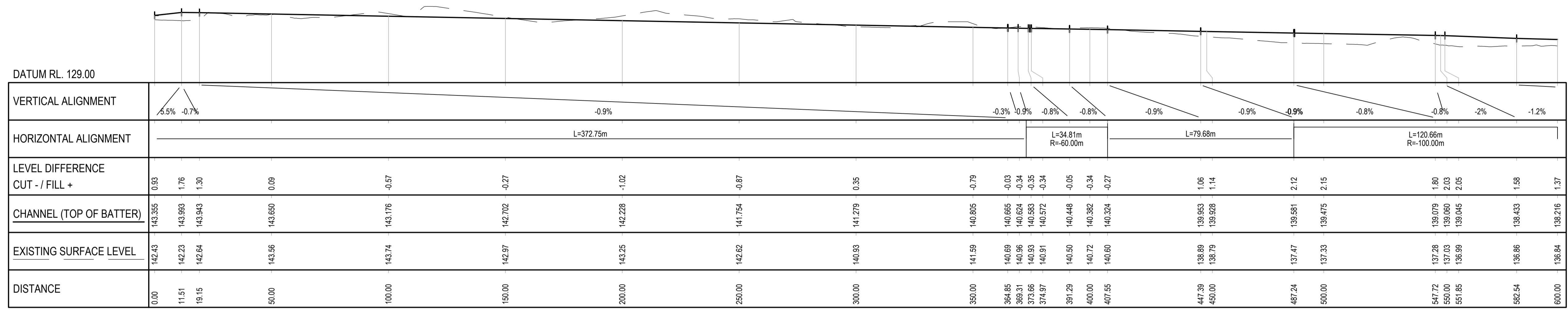
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Drafting Check	G. DOUGHERTY*	Design Check	N. ELDRED*
Approved (Project Director)	S. DOUGLASS*	Date	14.08.20
Scale	1:2000	This Drawing must not be used for Construction unless signed as Approved	

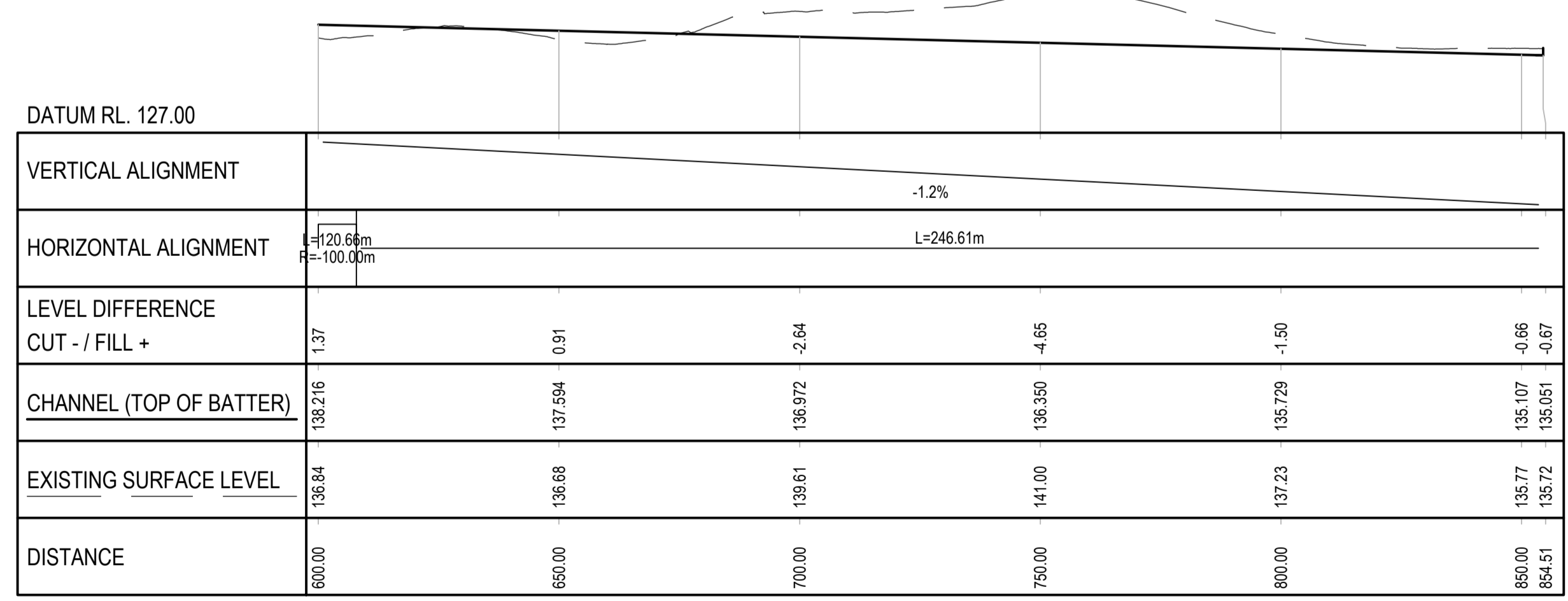
Client	DUNEDIN CITY COUNCIL		
Project	SMOOTH HILL LANDFILL		
Title	SWALE DRAIN AND CATCHMENT		
Original Size	A1	Drawing No:	12506381-01-C303
Rev:	2		

- NOTES:**
- FOR GENERAL ARRANGEMENT PLAN, REFER TO DRAWING 12506381-01-C102.
 - FOR CHAINAGE LOCATIONS, REFER TO DRAWING 12506381-01-C303.



LONGITUDINAL SECTION - CHNL02 (SOUTH EDGE OF LANDFILL)

HORZ 1:1000 VERT 1:500



LONGITUDINAL SECTION - CHNL02 (EAST EDGE OF LANDFILL)

VERTICAL 1:500 AT ORIGINAL SIZE
 HORIZONTAL 1:1000 AT ORIGINAL SIZE
 HORZ 1:1000 VERT 1:500

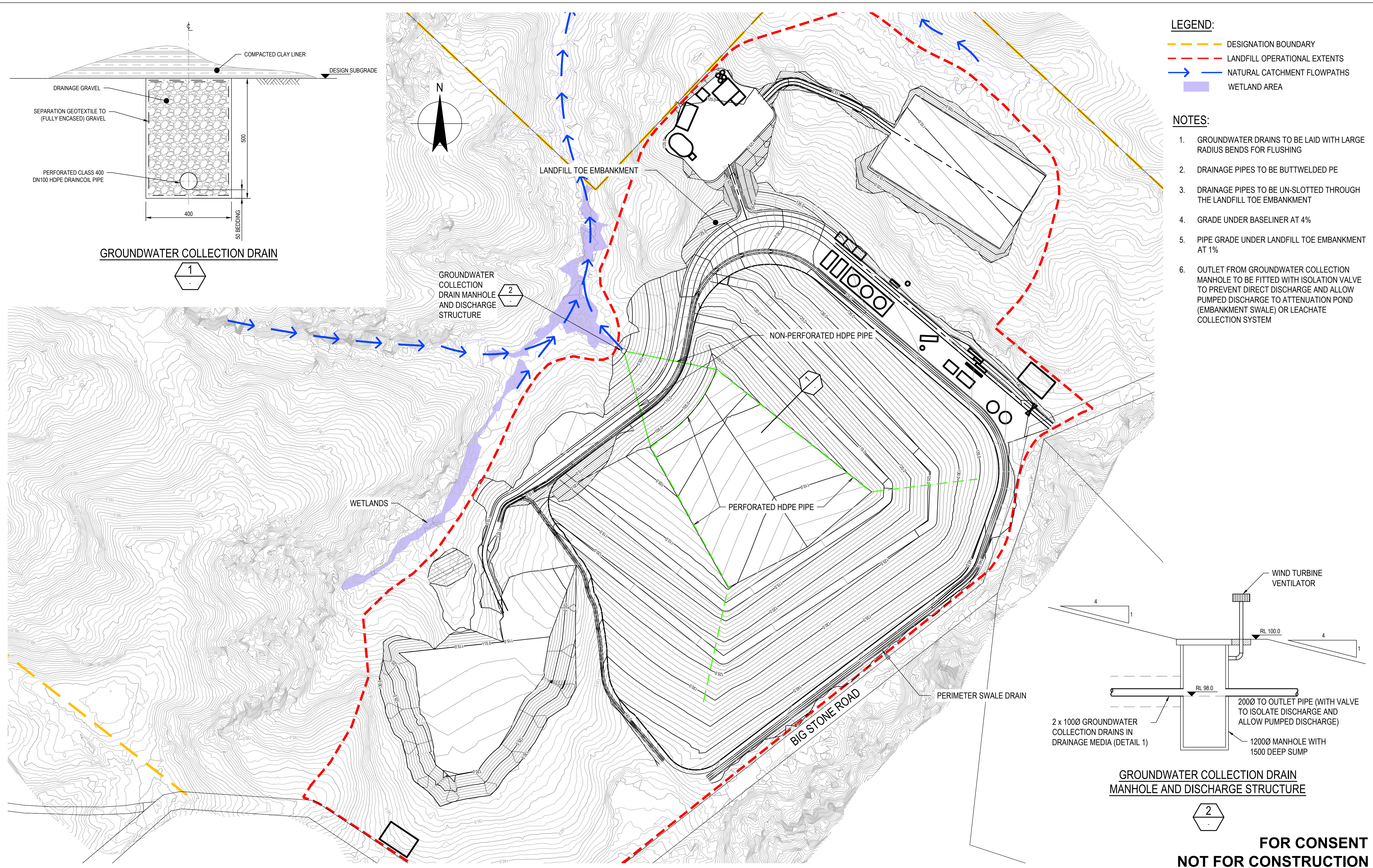
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No	Revision	Note	Drawn	Job Manager	Project Director	Date
2	RE-ISSUE FOR CONSENT		JF	NE*	SD*	21.05.21
1	FOR CONSENT		SLP	NE*	SD*	14.08.20



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Client	DUNEDIN CITY COUNCIL
Project	SMOOTH HILL LANDFILL
Title	SWALE DRAIN LONGITUDINAL SECTIONS CHANNEL 2
Original Size	A1
Drawing No:	12506381-01-C304
Rev:	2

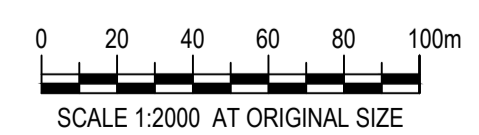


- LEGEND:**
- DESIGNATION BOUNDARY
 - LANDFILL OPERATIONAL EXTENTS
 - NATURAL CATCHMENT FLOWPATHS
 - WETLAND AREA

- NOTES:**
1. GROUNDWATER DRAINS TO BE LAID WITH LARGE RADIUS BENDS FOR FLUSHING
 2. DRAINAGE PIPES TO BE BUTTWELDED PE
 3. DRAINAGE PIPES TO BE UN-SLOTTED THROUGH THE LANDFILL TOE EMBANKMENT
 4. GRADE UNDER BASELINER AT 4%
 5. PIPE GRADE UNDER LANDFILL TOE EMBANKMENT AT 1%
 6. OUTLET FROM GROUNDWATER COLLECTION MANHOLE TO BE FITTED WITH ISOLATION VALVE TO PREVENT DIRECT DISCHARGE AND ALLOW PUMPED DISCHARGE TO ATTENUATION POND (EMBANKMENT SWALE) OR LEACHATE COLLECTION SYSTEM

**FOR CONSENT
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No	Revision	Note	Drawn	Job Manager	Project Director	Date
2	RE-ISSUE FOR CONSENT		JF	NE*	SD*	21.05.21
1	FOR CONSENT		SLP	NE*	SD*	14.08.20



DO NOT SCALE	Drawn J. FLORES	Designer R. COOMBE	Client DUNEDIN CITY COUNCIL
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	Approved (Project Director) S. DOUGLASS*	Date 14.08.20	Title GROUNDWATER DRAINAGE PLAN
	Scale 1:2000	This Drawing must not be used for Construction unless signed as Approved	Original Size A1 Drawing No: 12506381-01-C308 Rev: 2