

STORMWATER LINE 1

**CONCEPT DESIGN
 NOT FOR CONSTRUCTION**

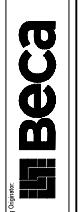
Company: CIVIL ENGINEERING
 Project No: 044-RCT_401_C3-021
 Sheet: C

Project: KOHIMARAMA
 RETIREMENT VILLAGE
 SHEET 1 OF 4

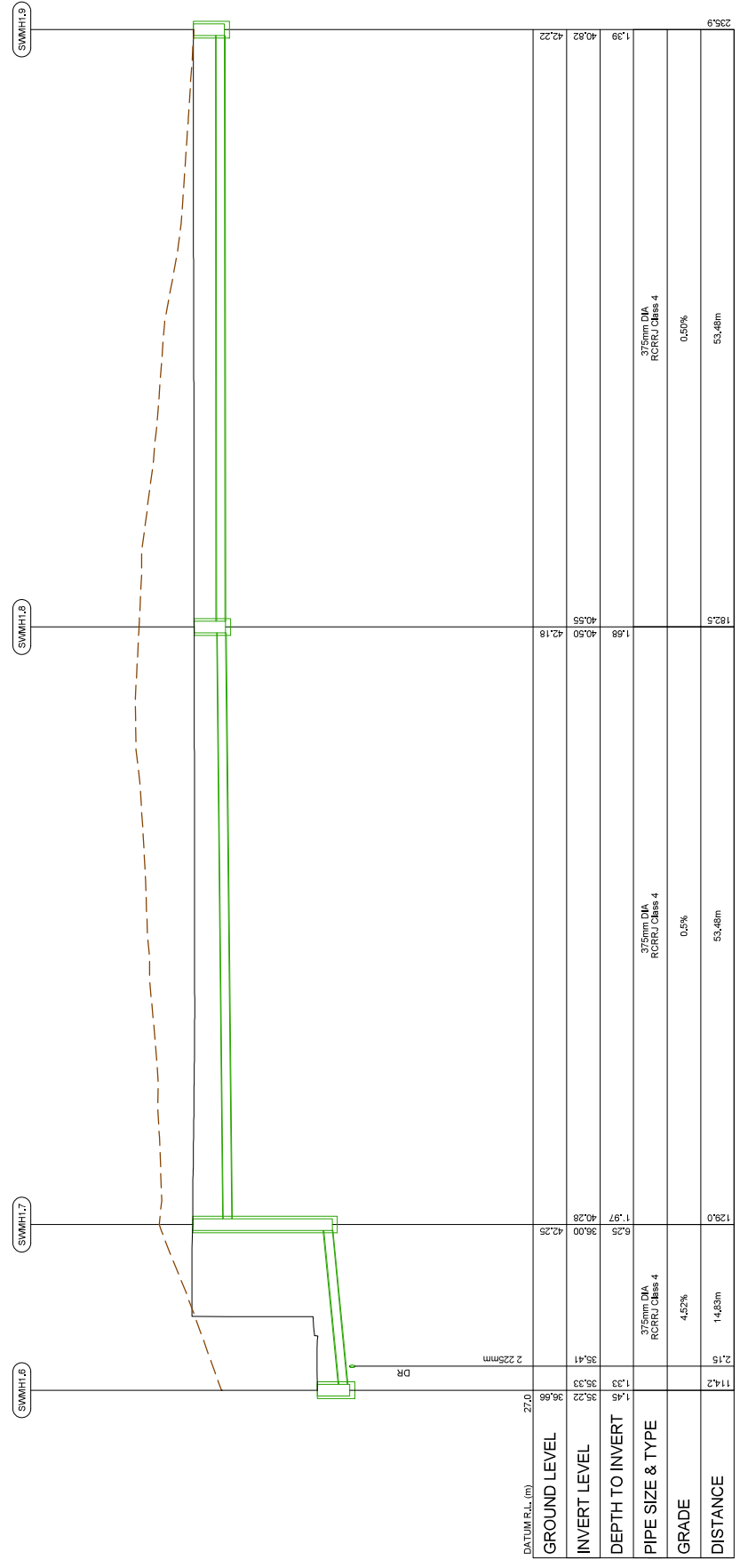


Discipline	Design	Check	Drawn	Checked	Approved	Date
Structural						
Mechanical						
Electrical						
Plumbing						
Sanitary						
Fire Protection						
Legal Services						

Discipline	Design	Check	Drawn	Checked	Approved	Date
Structural						
Mechanical						
Electrical						
Plumbing						
Sanitary						
Fire Protection						
Legal Services						



Discipline	Design	Check	Drawn	Checked	Approved	Date
Structural						
Mechanical						
Electrical						
Plumbing						
Sanitary						
Fire Protection						
Legal Services						



STORMWATER LINE 1

DATUM R.L. (m)	27.0	27.0	27.0	27.0
GROUND LEVEL	36.66	42.25	42.18	42.22
INVERT LEVEL	35.22	40.28	40.55	40.82
DEPTH TO INVERT	1.45	1.97	1.63	1.39
PIPE SIZE & TYPE	375mm DIA RORRO Class 4	375mm DIA RORRO Class 4	375mm DIA RORRO Class 4	375mm DIA RORRO Class 4
GRADE	4.57%	4.57%	0.5%	0.50%
DISTANCE	114.2	128.0	182.5	236.9

**CONCEPT DESIGN
NOT FOR CONSTRUCTION**

Company: CIVIL ENGINEERING
Project No: 044-RCT_401_C3-022
Sheet: C

Project: KOHIMARAMA RETIREMENT VILLAGE
Sheet: CONCEPT DESIGN STORMWATER LONG SECTION SHEET 2 OF 4



Design	Checked	Drawn	Scale	Date
Design	Checked	Drawn	Scale	Date
Design	Checked	Drawn	Scale	Date

Design	Checked	Drawn	Scale	Date
Design	Checked	Drawn	Scale	Date
Design	Checked	Drawn	Scale	Date



Design	Checked	Drawn	Scale	Date
Design	Checked	Drawn	Scale	Date
Design	Checked	Drawn	Scale	Date

**CONCEPT DESIGN
 NOT FOR CONSTRUCTION**

Company: CIVIL ENGINEERING
 Project No: 044-RCT_401_C3-023
 Rev: C

Project: KOHIMARAMA RETIREMENT VILLAGE
 SHEET 3 OF 4

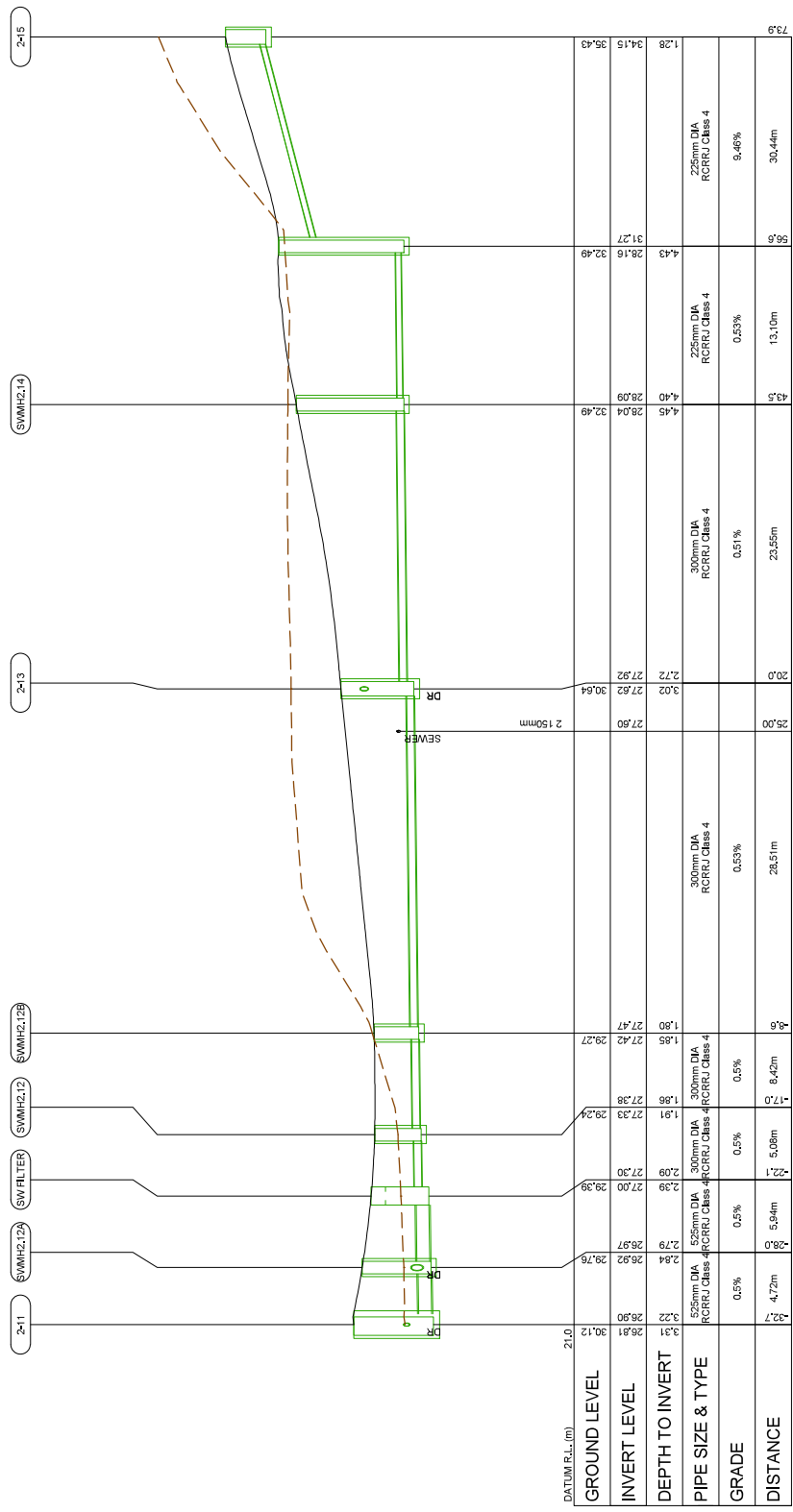


Client: RYMAN HEALTHCARE
 Project: KOHIMARAMA RETIREMENT VILLAGE
 SHEET 3 OF 4

Discipline	Design	Check	Issue	Approved
Structural	13.02.20	13.02.20	13.02.20	13.02.20
Mechanical	13.02.20	13.02.20	13.02.20	13.02.20
Electrical	13.02.20	13.02.20	13.02.20	13.02.20
Plumbing	13.02.20	13.02.20	13.02.20	13.02.20
Civil	13.02.20	13.02.20	13.02.20	13.02.20
Survey	13.02.20	13.02.20	13.02.20	13.02.20



Discipline	Design	Check	Issue	Approved
Structural	13.02.20	13.02.20	13.02.20	13.02.20
Mechanical	13.02.20	13.02.20	13.02.20	13.02.20
Electrical	13.02.20	13.02.20	13.02.20	13.02.20
Plumbing	13.02.20	13.02.20	13.02.20	13.02.20
Civil	13.02.20	13.02.20	13.02.20	13.02.20
Survey	13.02.20	13.02.20	13.02.20	13.02.20



STORMWATER LONG SECTION

CONCEPT DESIGN
NOT FOR CONSTRUCTION

PROJECT: KOHIMARAMA RETIREMENT VILLAGE
SHEET 4 OF 4

CLIENT: CIVIL ENGINEERING
PROJECT NO: 044-RCT_401_C3-024

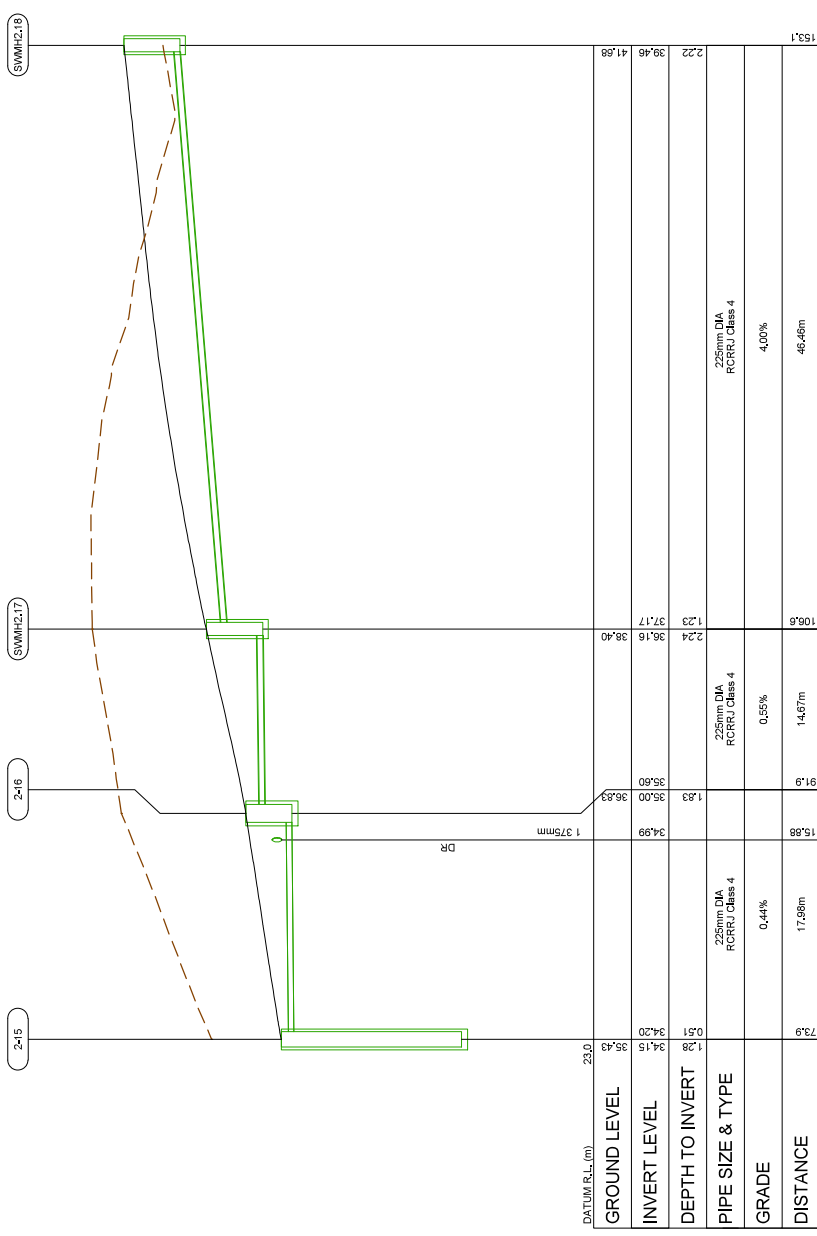


DATE: 15/02/20

Check	By	Date
Design	AN	15/02/20
Check	SS	15/02/20
Approved	SS	15/02/20



Rev	By	CHK	APP	Date
C	CONCEPT DESIGN			13/02/20



STORMWATER LINE 2

**CONCEPT DESIGN
 NOT FOR CONSTRUCTION**

Company: CIVIL ENGINEERING
 Drawing No.: 044-RCT_401_C3-040
 Rev. C

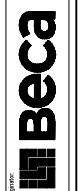
Project: KOHIMARAMA
 RETIREMENT VILLAGE

Sheet: CONCEPT DESIGN
 SITE CROSS SECTIONS
 SHEET 1 OF 2



Client: RYMAN HEALTHCARE

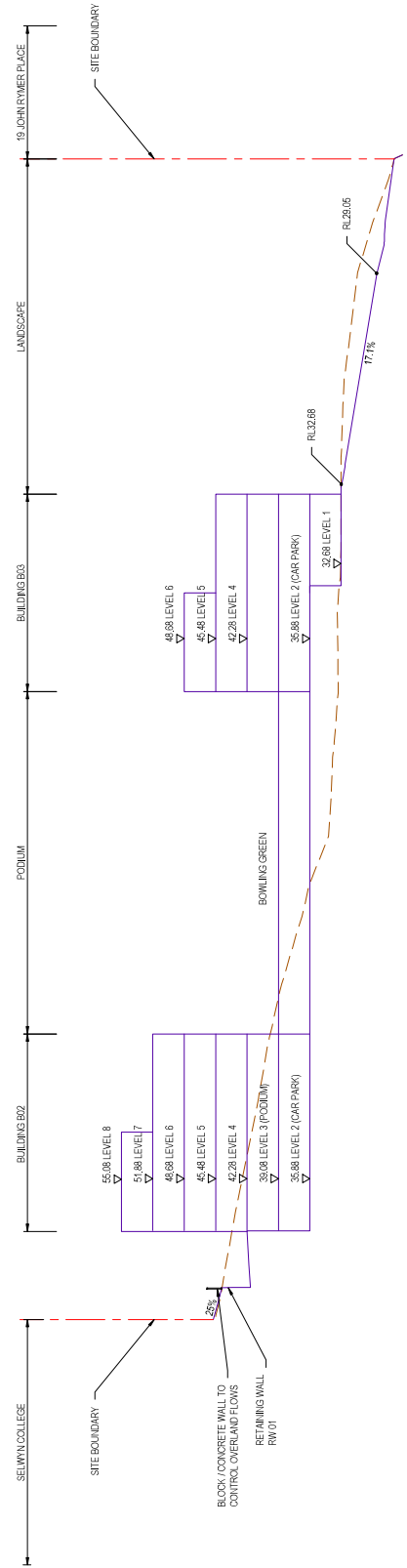
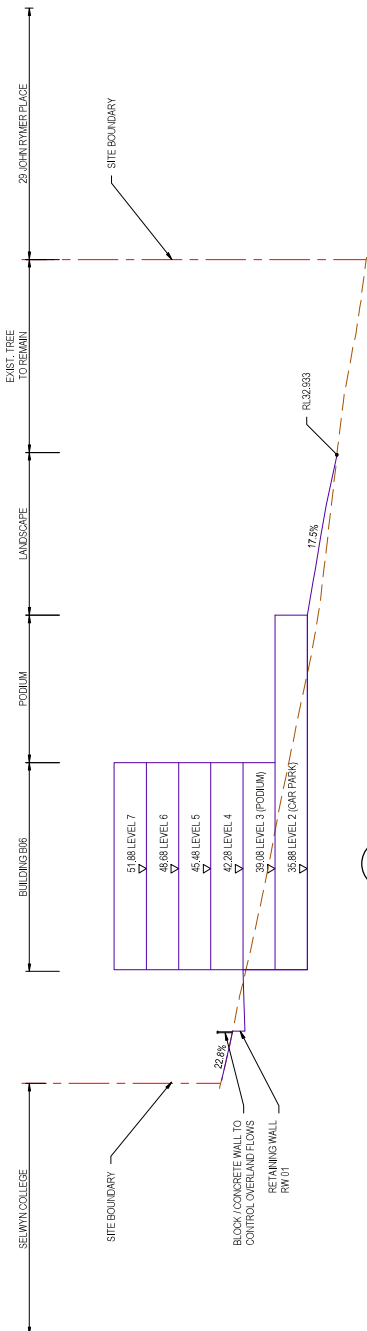
Discipline	Design	Check	Revise	Approved	Date
Structural	24.03.17	24.03.17			
Mechanical	24.03.17	24.03.17			
Electrical	16.02.17	16.02.17			
Plumbing	16.02.17	16.02.17			
Site	16.02.17	16.02.17			

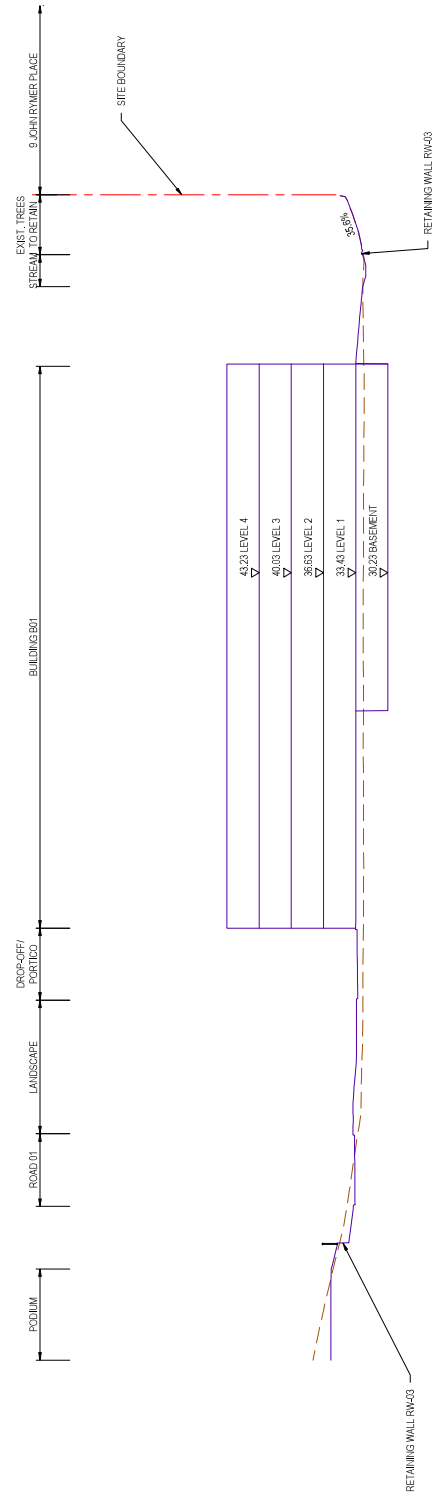
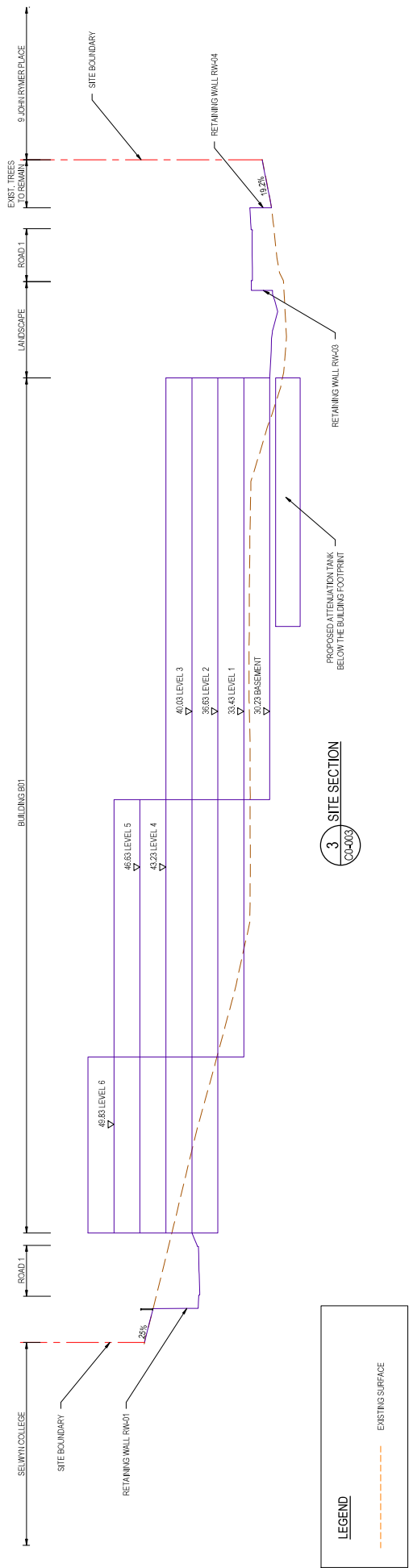


Discipline	Design	Check	Revise	Approved	Date
Structural					
Mechanical					
Electrical					
Plumbing					
Site					

LEGEND

--- EXISTING SURFACE





No.	Rev.	Date	By	CHK	Appr	Disc
C	CONCEPT DESIGN	13.02.20	ESC	BM		
			LOB			



Checked	Checked	Checked	Checked	Checked	Checked
Design	Design	Design	Design	Design	Design
14.02.20	14.02.20	14.02.20	14.02.20	14.02.20	14.02.20
14.02.20	14.02.20	14.02.20	14.02.20	14.02.20	14.02.20

RYMAN HEALTHCARE

Project: KOHIMARAMA RETIREMENT VILLAGE

Sheet: CONCEPT DESIGN SITE CROSS SECTIONS SHEET 2 OF 2

Company: CIVIL ENGINEERING

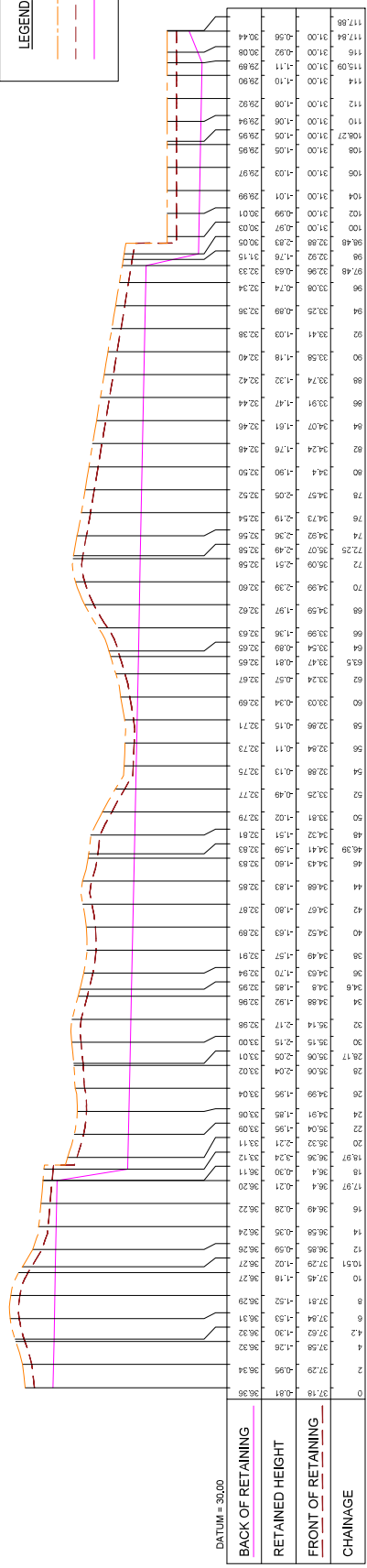
Project No: 044-RCT_401_C3-041

Sheet: C

CONCEPT DESIGN NOT FOR CONSTRUCTION

LEGEND

- RETAINING WALL FINISHED RL
- BACK OF RETAINING WALL RL
- FRONT OF RETAINING WALL RL



**CONCEPT DESIGN
 NOT FOR CONSTRUCTION**

Company: CIVIL ENGINEERING
 Project No: 044-RCT_401_C3-052
 Rev: B

THE PROPOSED RETAINING WALL
 LONGITUDINAL SECTION
 SHEET 3 OF 3

KOHIMARAMA
 RETIREMENT VILLAGE

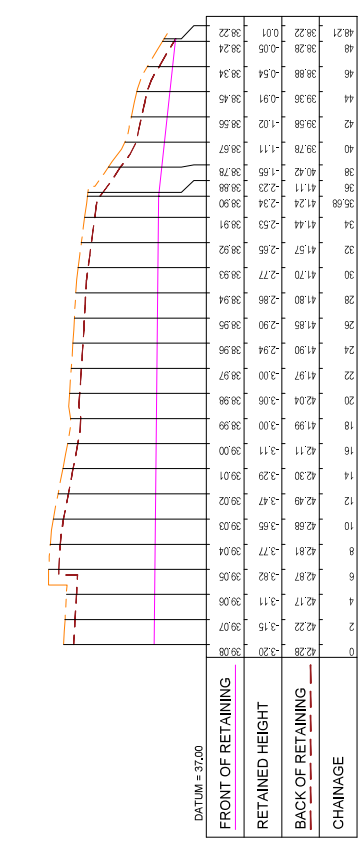


Sheet

Design	Check	Drawn	Checked	Approved	Authorised for Construction
05/20	05/20	24/02/20	24/02/20	05/02/20	05/02/20
05/20	05/20	05/02/20	05/02/20	05/02/20	05/02/20



Company/Contract	Scale	Drawn	Checked	Approved	Authorised for Construction
B	CONCEPT DESIGN	13/02/20	13/02/20	13/02/20	13/02/20



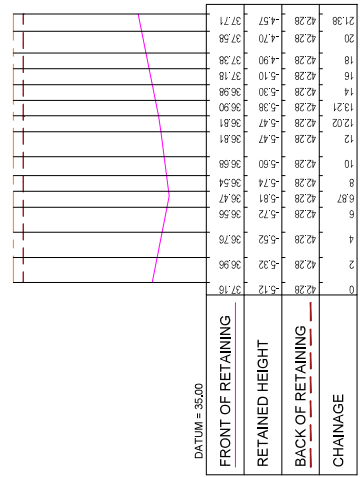
RW 11 LONGSECTION
 A1 SCALE: H:1.20, V:1.00

NOTES

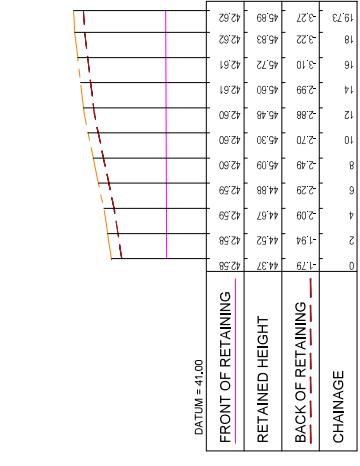
- TOP OF FOOTING TO BE A MINIMUM OF 300mm BELOW THE GROUND LEVEL AT THE FRONT OF THE RETAINING WALL.

LEGEND

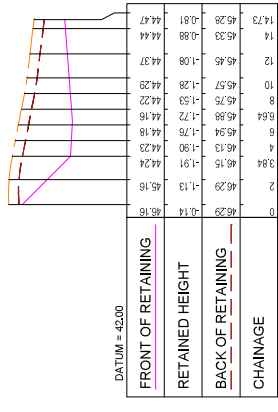
- RETAINING WALL FINISHED RL (Solid Orange Line)
- BACK OF RETAINING WALL RL (Dashed Orange Line)
- FRONT OF RETAINING WALL RL (Solid Purple Line)



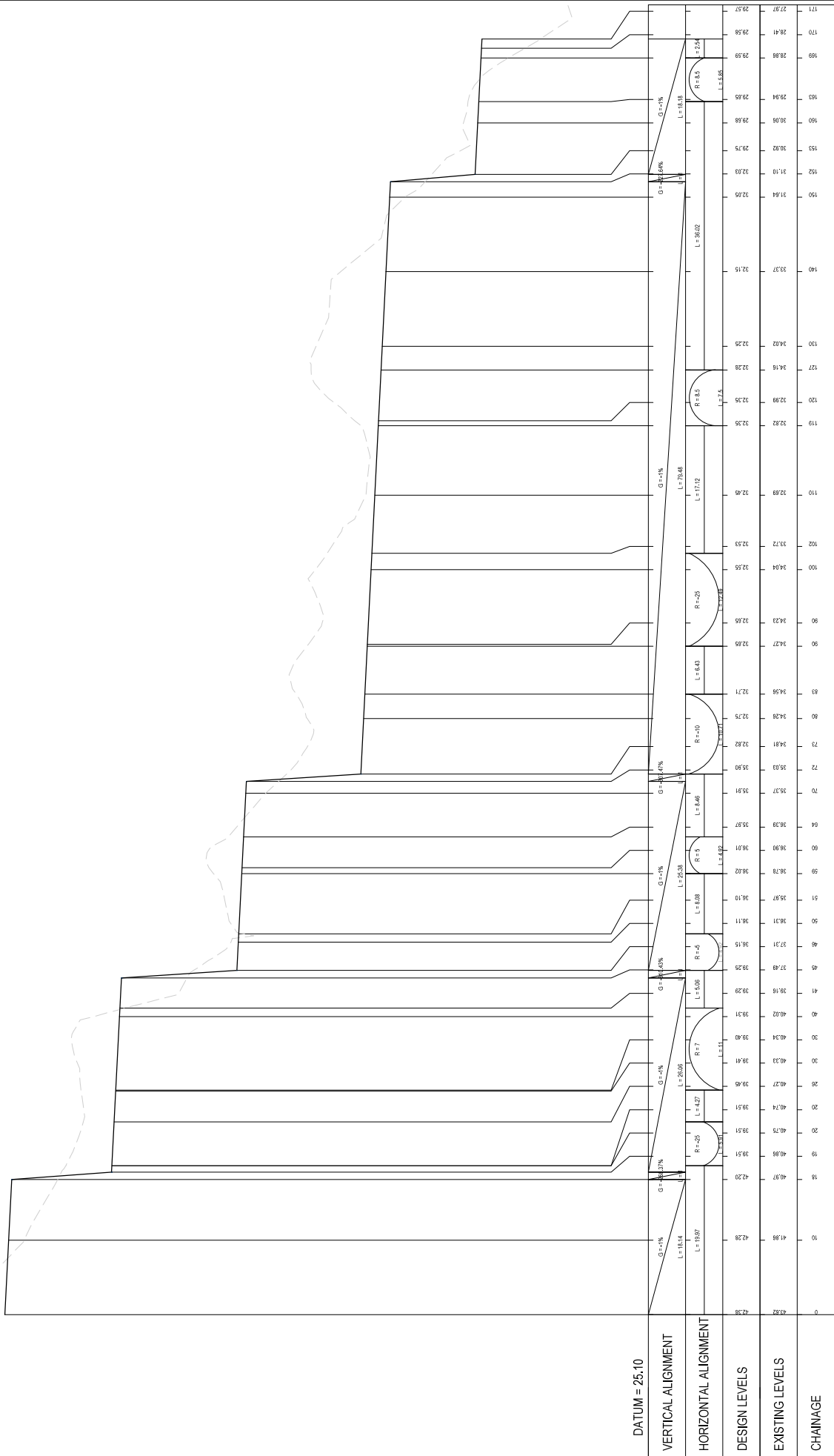
RW 10 LONGSECTION
 A1 SCALE: H:1.20, V:1.00



RW 8A LONGSECTION
 A1 SCALE: H:1.20, V:1.00



RW 12 LONGSECTION
 A1 SCALE: H:1.20, V:1.00



DATUM = 25.10

VERTICAL ALIGNMENT	G=+1%	L=19.97	42.38
HORIZONTAL ALIGNMENT	G=+1%	L=19.14	42.38
DESIGN LEVELS	R=45	L=4.27	38.51
	R=45	L=26.06	38.41
	R=7	L=5.00	39.29
	R=5	L=6.88	36.10
	R=5	L=23.38	36.02
	R=5	L=6.46	35.87
	R=10	L=22.86	35.91
	R=45	L=8.43	32.71
	R=45	L=17.12	32.55
	R=45	L=73.48	32.55
	R=45	L=32.26	32.28
	R=45	L=7.4	32.28
	R=45	L=2.54	32.28
	R=45	L=5.66	32.28
	R=45	L=18.18	29.58
	R=45	L=2.54	29.58
	R=45	L=5.66	29.57

AT SCALE: H:1:500, V:1:100

LONGITUDINAL SECTION SWL 01

**CONCEPT DESIGN
NOT FOR CONSTRUCTION**

Company: CIVIL ENGINEERING
Drawing No: 044-RCT_401_C3-061
Rev: C

Project: KOHIMARAMA
RETIREMENT VILLAGE

Client: KOHIMARAMA
RETIREMENT VILLAGE

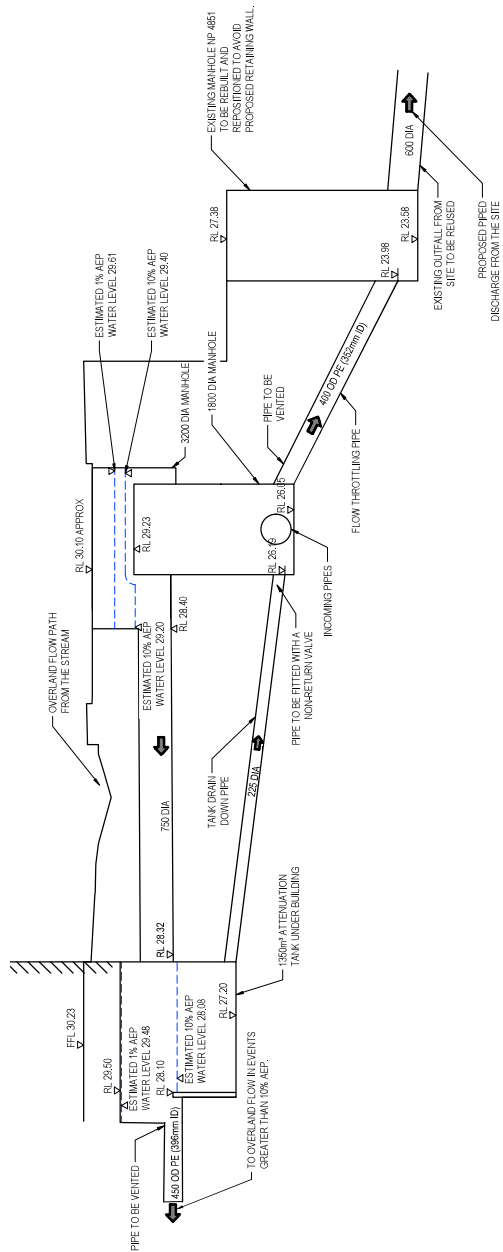


Sheet: DUMP BANK

Design	Checked	Design	Checked	Design	Checked
05.02.20	AM	05.02.20	AM	05.02.20	AM
05.02.20	AM	05.02.20	AM	05.02.20	AM



NO.	REV.	BY	CHK	DATE



CONCEPT DESIGN
NOT FOR CONSTRUCTION

Company: CIVIL ENGINEERING
Drawing No: 044-RCT_401_C3-081
Rev: B

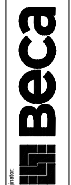
THE SCHEMATIC OF THE CONCEPT ATTENUATION SYSTEM

KOHIMARAMA RETIREMENT VILLAGE

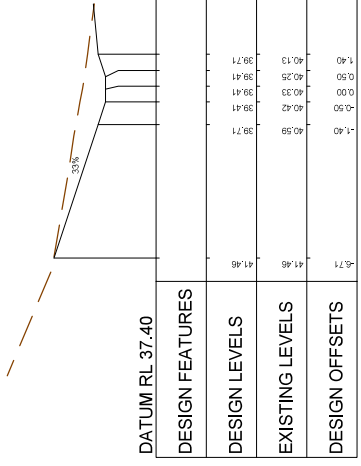


Sheet

Design	Check	Issue	Approved for Construction
Design	Check	Issue	Approved for Construction
Design	Check	Issue	Approved for Construction
Design	Check	Issue	Approved for Construction
Design	Check	Issue	Approved for Construction
Design	Check	Issue	Approved for Construction

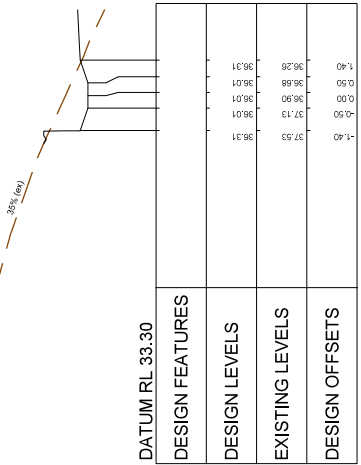


Rev	By	CHK	Appr	Date
B	CONCEPT DESIGN	LM	SC	13.02.20



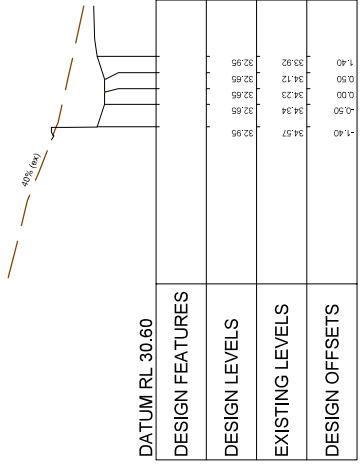
DATUM RL 37.40			
DESIGN FEATURES			
DESIGN LEVELS	41.86	39.71	38.71
EXISTING LEVELS	40.56	39.41	38.41
DESIGN OFFSETS	-5.71	0	0

CHAINAGE 30



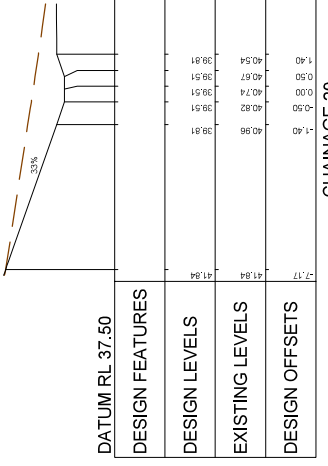
DATUM RL 33.30			
DESIGN FEATURES			
DESIGN LEVELS	36.31	36.01	35.31
EXISTING LEVELS	36.01	35.01	34.51
DESIGN OFFSETS	-1.40	0.00	0.00

CHAINAGE 60



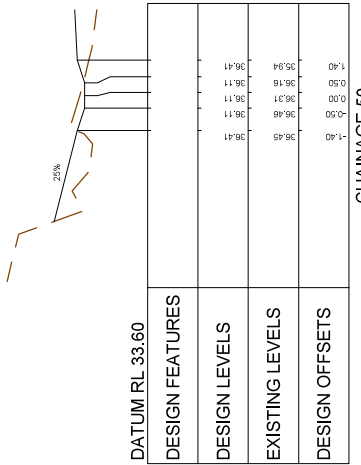
DATUM RL 30.60			
DESIGN FEATURES			
DESIGN LEVELS	32.95	32.65	32.95
EXISTING LEVELS	32.65	32.65	34.57
DESIGN OFFSETS	-1.40	0.00	0.00

CHAINAGE 90



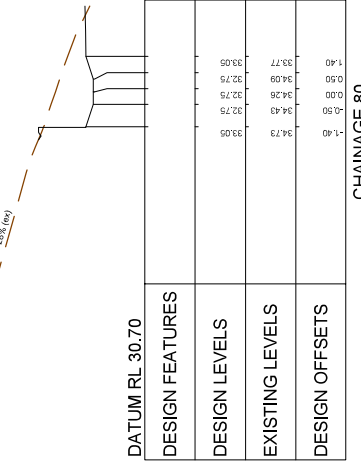
DATUM RL 37.50			
DESIGN FEATURES			
DESIGN LEVELS	41.84	39.51	38.81
EXISTING LEVELS	40.86	39.51	38.51
DESIGN OFFSETS	-7.17	0.00	0.00

CHAINAGE 20



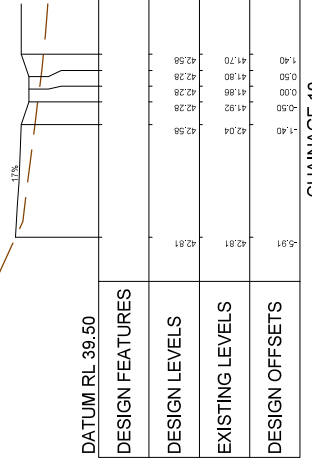
DATUM RL 33.60			
DESIGN FEATURES			
DESIGN LEVELS	36.41	36.11	35.41
EXISTING LEVELS	36.11	35.11	34.41
DESIGN OFFSETS	-1.40	0.00	0.00

CHAINAGE 50



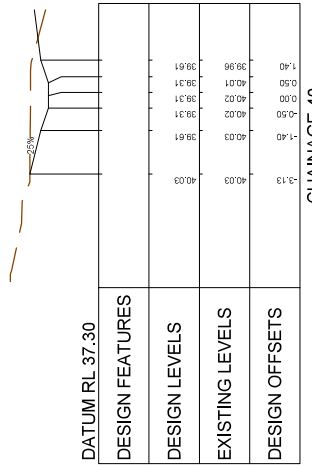
DATUM RL 30.70			
DESIGN FEATURES			
DESIGN LEVELS	33.05	32.75	34.73
EXISTING LEVELS	33.05	32.75	34.43
DESIGN OFFSETS	-1.40	0.00	0.00

CHAINAGE 80



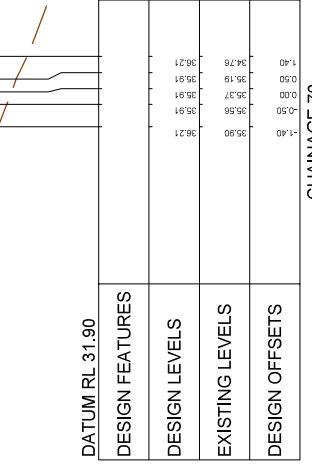
DATUM RL 39.50			
DESIGN FEATURES			
DESIGN LEVELS	42.81	42.04	42.58
EXISTING LEVELS	42.81	41.92	42.28
DESIGN OFFSETS	-5.91	-1.40	0.00

CHAINAGE 10



DATUM RL 31.90			
DESIGN FEATURES			
DESIGN LEVELS	35.91	35.31	35.91
EXISTING LEVELS	35.91	35.31	35.66
DESIGN OFFSETS	-1.40	0.00	0.00

CHAINAGE 70



DATUM RL 31.90			
DESIGN FEATURES			
DESIGN LEVELS	36.21	35.91	35.91
EXISTING LEVELS	36.21	35.91	35.37
DESIGN OFFSETS	-1.40	0.00	0.00

CHAINAGE 90

No.	Revision			
	By	CHK	Appr	Date
A	CONCEPT DESIGN			08.02.20

Checked by	Checked	DATE	Approved by	Approved	DATE
		08.02.20			08.02.20

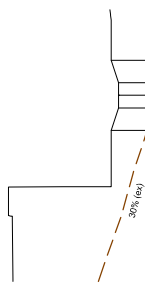
Project: KOHIMARAMA RETIREMENT VILLAGE

Client: RYMAN HEALTHCARE

For: CONCEPT DESIGN OPEN CHANNEL CROSS SECTIONS SHEET 1 OF 2

CONCEPT DESIGN NOT FOR CONSTRUCTION

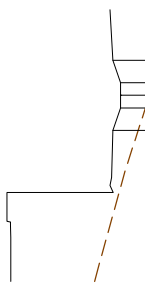
CIVIL ENGINEERING
044-RCT_401_C3-086
A



DATUM RL 24.60

DESIGN FEATURES	1.40	0.50	0.00	-0.50	-1.40
DESIGN LEVELS	27.44	27.78	27.97	28.15	28.44
EXISTING LEVELS	29.87	29.57	29.57	29.87	
DESIGN OFFSETS					

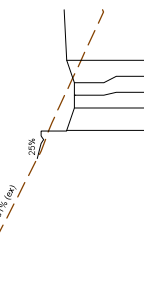
CHAINAGE 171.244



DATUM RL 25.20

DESIGN FEATURES	1.40	0.50	-0.50	-1.40
DESIGN LEVELS	27.99	28.24	28.41	28.58
EXISTING LEVELS	29.88	29.58	29.58	29.88
DESIGN OFFSETS				

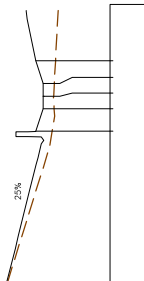
CHAINAGE 170



DATUM RL 26.50

DESIGN FEATURES	1.40	0.50	0.00	-0.50	-1.40
DESIGN LEVELS	29.88	29.68	29.68	29.68	29.68
EXISTING LEVELS	29.88	29.68	29.68	29.68	29.68
DESIGN OFFSETS					

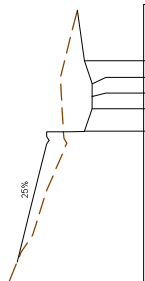
CHAINAGE 160



DATUM RL 29.40

DESIGN FEATURES	1.40	0.50	0.00	-0.50	-1.40
DESIGN LEVELS	31.96	31.61	31.64	31.82	31.69
EXISTING LEVELS	32.36	32.06	32.06	32.06	32.36
DESIGN OFFSETS					

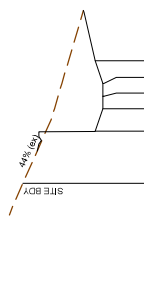
CHAINAGE 150



DATUM RL 30.10

DESIGN FEATURES	1.40	0.50	-0.50	-1.40
DESIGN LEVELS	33.25	33.40	33.37	33.34
EXISTING LEVELS	32.45	32.15	32.15	32.15
DESIGN OFFSETS				

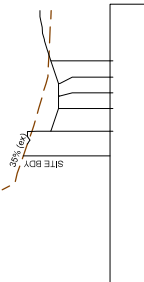
CHAINAGE 140



DATUM RL 30.20

DESIGN FEATURES	1.40	0.50	0.00	-0.50	-1.40
DESIGN LEVELS	33.61	34.02	34.17	34.50	34.50
EXISTING LEVELS	32.55	32.25	32.25	32.25	32.55
DESIGN OFFSETS					

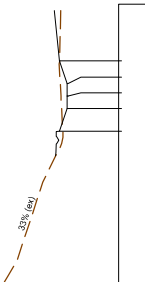
CHAINAGE 130



DATUM RL 30.30

DESIGN FEATURES	1.40	0.50	0.00	-0.50	-1.40
DESIGN LEVELS	32.73	32.88	32.88	32.88	32.88
EXISTING LEVELS	32.55	32.35	32.35	32.35	32.55
DESIGN OFFSETS					

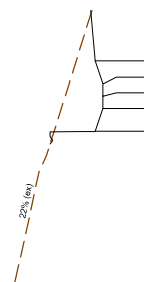
CHAINAGE 120



DATUM RL 30.40

DESIGN FEATURES	1.40	0.50	0.00	-0.50	-1.40
DESIGN LEVELS	32.74	32.69	32.66	32.66	32.66
EXISTING LEVELS	32.75	32.45	32.45	32.45	32.75
DESIGN OFFSETS					

CHAINAGE 110



DATUM RL 30.50

DESIGN FEATURES	1.40	0.50	0.00	-0.50	-1.40
DESIGN LEVELS	32.85	32.55	32.55	32.55	32.85
EXISTING LEVELS	33.60	34.20	34.48	34.48	34.48
DESIGN OFFSETS					

CHAINAGE 100

**CONCEPT DESIGN
NOT FOR CONSTRUCTION**

FOR CONCEPT DESIGN
OPEN CHANNEL CROSS SECTIONS
SHEET 2 OF 2

PROJECT
KOHIMARAMA
RETIREMENT VILLAGE

CLIENT
RYMAN
HEALTHCARE

DATE
16.02.20
16.02.20
16.02.20
16.02.20

DESIGNER
CHECKER
APPROVER
DATE



NO.	REV.	DATE	BY	CHK	APP	DESC
B	CONCEPT DESIGN	13.12.20	SC			

CONCEPT DESIGN
NOT FOR CONSTRUCTION

Company: CIVIL ENGINEERING
Drawing No: 044-RCT_401_C4-001
Rev: C

ROADING DETAILS
SHEET 1 OF 1

KOHIMARAMA
RETIREMENT VILLAGE

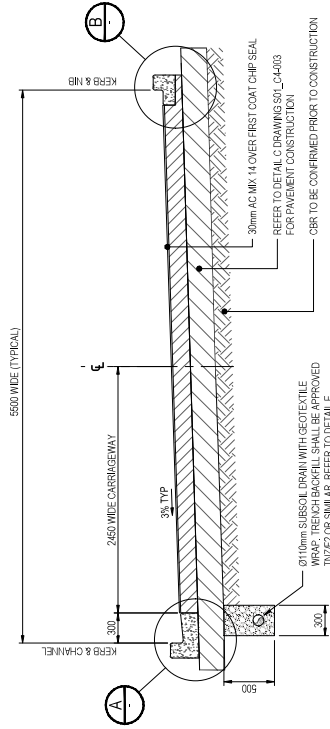


Sheet

Discipline	Design	Check	Rev	15.02.20	Approved For
Structural	JK	JK	15.02.20	15.02.20	15.02.20
Services	JK	JK	15.02.20	15.02.20	15.02.20
Other	JK	JK	15.02.20	15.02.20	15.02.20

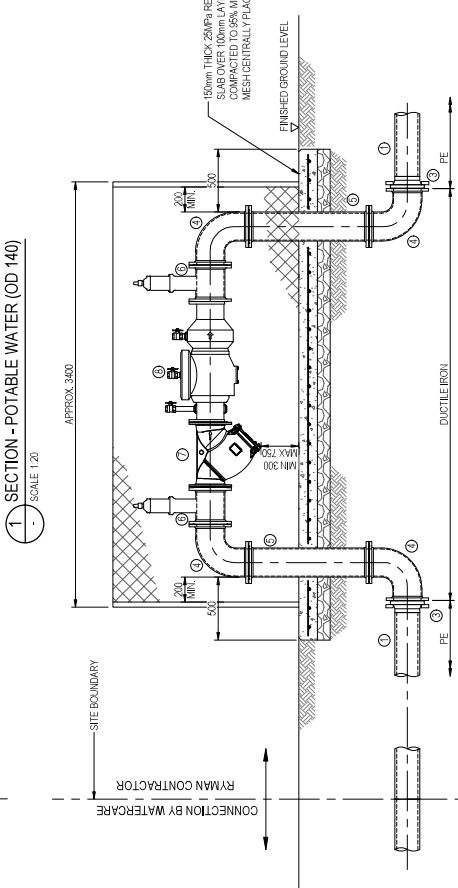
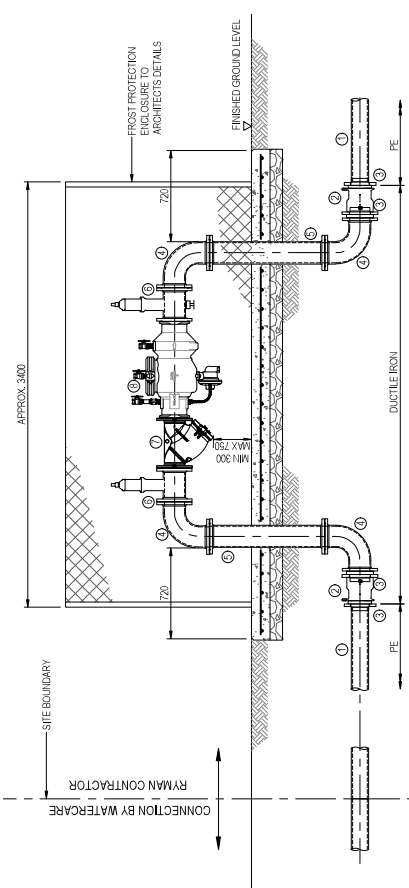
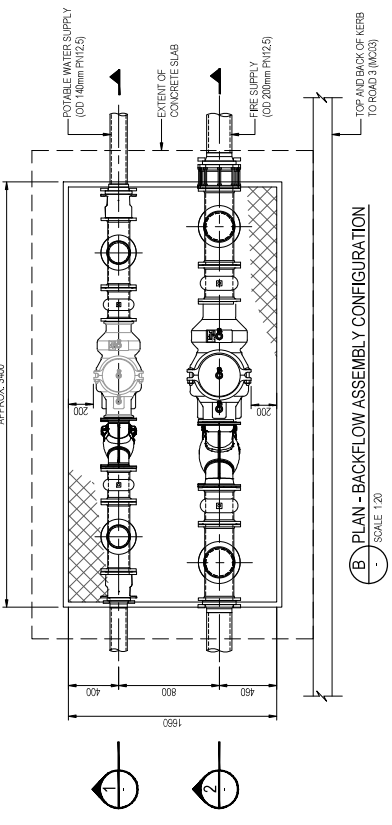
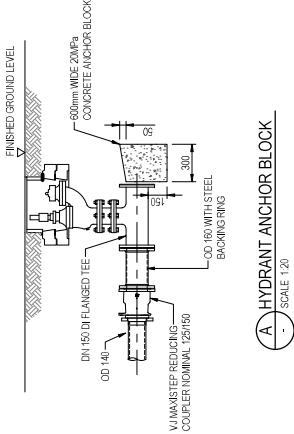


Discipline	Design	Check	Rev	13.02.20	Approved For
Structural	JK	JK	13.02.20	13.02.20	13.02.20
Services	JK	JK	13.02.20	13.02.20	13.02.20
Other	JK	JK	13.02.20	13.02.20	13.02.20



1 TYPICAL ROAD CROSS SECTION
SCALE 1:25

PART	POTABLE	FIRE
1	OD 140 PE 100 PN 12.5 SR 13.6	OD 200 PE 100 PN 12.5 SR 13.6
2	WING CHAMFER MANHOLE REDUCING COUPLER (NOMINAL 125 / 50)	N/A
3	OD 160 STEEL BACKING RINGS FLANGE FIXED WITH 8 M16 BOLTS	OD 200 STEEL BACKING RINGS FLANGE FIXED WITH 8 M16 BOLTS
4	DN 150 FLANGE 90° DI BRND	DN 200 FLANGE 90° DI BRND
5	DN 150 DISPOOL PIECE	DN 200 DISPOOL PIECE
6	DN 150 SLUICE VALVE	DN 200 SLUICE VALVE
7	DN 150 STRAINER	DN 200 STRAINER
8	DN 150 RPZ	DN 200 RPZ



CONCEPT DESIGN
NOT FOR CONSTRUCTION

Project: KOHIMARAMA RETIREMENT VILLAGE
 Title: WATER SUPPLY DETAILS
 Sheet: SHEET 1 OF 2

Company: CIVIL ENGINEERING
 Drawing No.: 044-RCT_01_C4-021
 Rev: C

Client: RYMAN HEALTHCARE
 Project: KOHIMARAMA RETIREMENT VILLAGE
 Title: WATER SUPPLY DETAILS
 Sheet: SHEET 1 OF 2

Discipline	Design	Check	Rev	Date
Structural	11.02.19	11.02.19	11.02.19	11.02.19
Mechanical	11.02.19	11.02.19	11.02.19	11.02.19
Electrical	11.02.19	11.02.19	11.02.19	11.02.19
Plumbing	11.02.19	11.02.19	11.02.19	11.02.19
Other				

Checked: [Signature]
 Drawn: [Signature]
 Date: 13.02.20

Discipline	Design	Check	Rev	Date
Structural				
Mechanical				
Electrical				
Plumbing				
Other				

Scale: DWP SCALE

CONCEPT DESIGN NOT FOR CONSTRUCTION

Company: CIVIL ENGINEERING
 Drawing No: 044-RCT_401_C4-061
 Rev: B

Project: KOHIMARAMA RETIREMENT VILLAGE

Client: KOHIMARAMA RETIREMENT VILLAGE



Sheet: 15 OF 15

Discipline	Author	Checked	Date
Structural	JK	JK	15.02.20
Mechanical	SM	SM	15.02.20
Electrical	SS	SS	15.02.20

Discipline	Author	Checked	Date
Structural	JK	JK	15.02.20
Mechanical	SM	SM	15.02.20
Electrical	SS	SS	15.02.20

Discipline	Author	Checked	Date
Structural	JK	JK	13.02.20
Mechanical	SM	SM	13.02.20
Electrical	SS	SS	13.02.20

DATE: 14 FEB 2020

SCALE: AS SHOWN

PROJECT: KOHIMARAMA RETIREMENT VILLAGE

SHEET: 15 OF 15

DATE: 14 FEB 2020

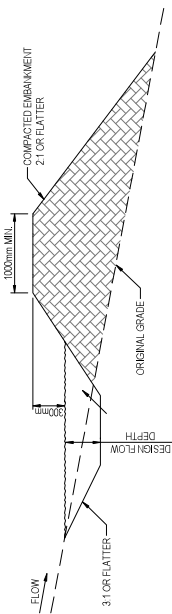
SCALE: AS SHOWN

PROJECT: KOHIMARAMA RETIREMENT VILLAGE

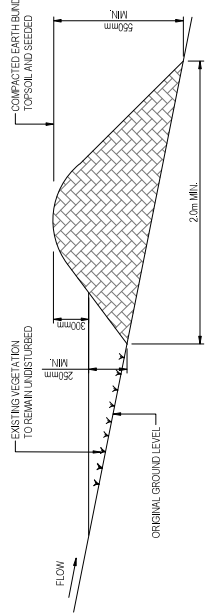
SHEET: 15 OF 15

DATE: 14 FEB 2020

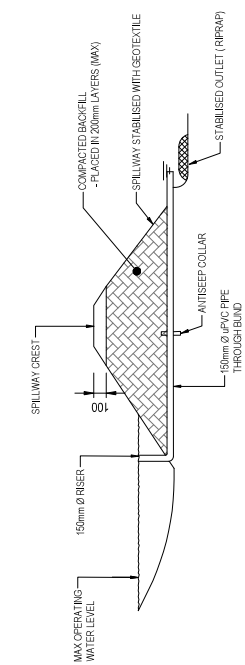
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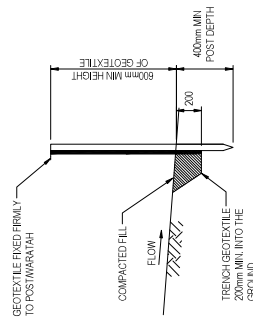
C. DIRTY WATER RUN-OFF DIVERSION CHANNEL
N.T.S.



D. CLEAN WATER RUN-OFF DIVERSION BUND
N.T.S.



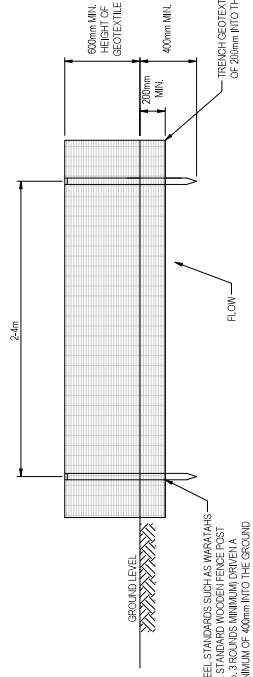
A. CROSS-SECTION OF A SEDIMENT POND EMBANKMENT
N.T.S.



E. SILT FENCE (FROM GD05)
N.T.S.



B. TYPICAL TEMPORARY SEDIMENT CONTROL POND
N.T.S.



F. STANDARD FABRIC JOINT

CROSS SECTION

ELEVATION

PERSPECTIVE VIEW

RYMAN HEALTHCARE

CONCEPT DESIGN NOT FOR CONSTRUCTION

KOHIMARAMA RETIREMENT VILLAGE

CIVIL ENGINEERING

044-RCT_401_C4-061

15 OF 15

14 FEB 2020

AS SHOWN

KOHIMARAMA RETIREMENT VILLAGE

15 OF 15

14 FEB 2020

AS SHOWN