

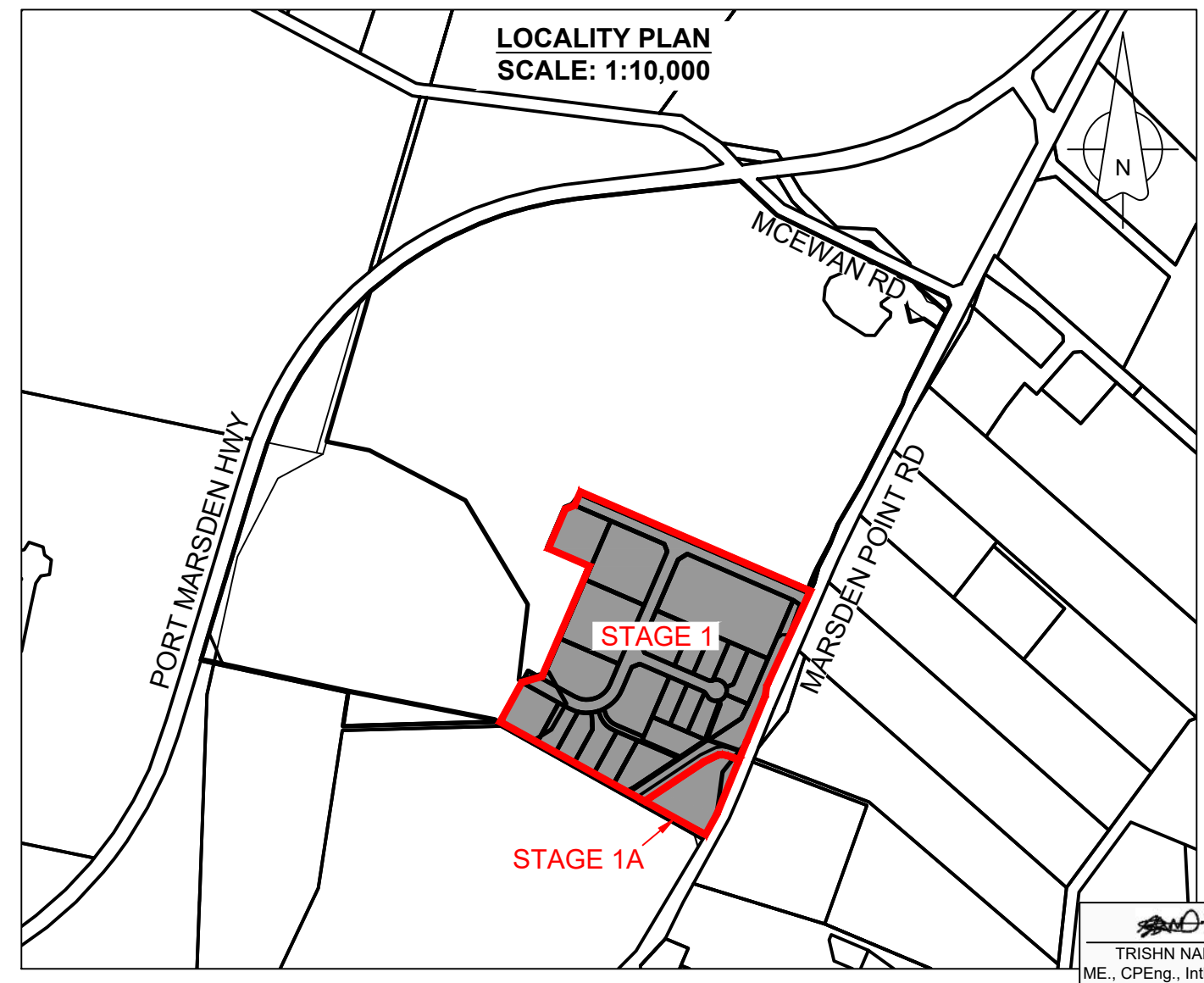
Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

CIVIL ENGINEERING DESIGN FOR ENGINEERING APPROVAL

BREAM BAY BUSINESS HUB - STAGE 1A & 1

PROJECT REF: P0318

SCHEDULE OF DRAWINGS		
SHEET #	TITLE	REV
DD000	COVER SHEET	D
DD001	CONSTRUCTION NOTES	D
DD100	EXISTING SITE PLAN - OVERVIEW	D
DD101	EXISTING SITE PLAN - SHEET 1	D
DD300	ROADING PLAN - OVERVIEW	D
DD301 - 304	ROADING PLAN - SHEETS 1 - 4	D
DD310 - 311	MARSDEN POINT ROAD INTERSECTION PLAN - SHEETS 1 - 2	D
DD320 - 323	ROAD TYPICAL SECTIONS - SHEETS 1 - 4	D
DD325	ROAD TYPICAL PAVEMENT & KERB DETAILS	D
DD326	COMBINED SERVICE TRENCH & PAVEMENT CHECK OUT DETAILS	D
DD327	PRAM CROSSING DETAILS & RAISED SPEED TABLE TYPICAL SECTION	D
DD330 - 333	ROAD LONGITUDINAL SECTIONS - SHEETS 1 - 4	D
DD340 - 342	ROAD 1 CROSS SECTIONS - SHEETS 1 - 3	D
DD343 - 345	ROAD 2 CROSS SECTIONS - SHEETS 1 - 3	D
DD346	ROAD 3 CROSS SECTIONS - SHEET 1	D
DD347	ROW 1 CROSS SECTIONS - SHEET 1	D
DD348 - 349	MARSDEN POINT ROAD CROSS SECTIONS - SHEETS 1 - 2	D
DD360 - 364	ROAD KERB RETURNS - SHEETS 1 - 5	D
DD370	ROAD LINEMARKING & SIGNPOSTING PLANS - OVERVIEW	D
DD371 - 374	ROAD LINEMARKING & SIGNPOSTING PLANS - SHEETS 1 - 4	D
DD380 - 381	VEHICLE CROSSING PLANS - SHEETS 1 - 2	D
DD385	VEHICLE CROSSING DETAILS	D
DD400	STORMWATER PLAN - OVERVIEW	D
DD401 - 404	STORMWATER PLAN - SHEETS 1 - 4	D
DD405 - 406	STORMWATER OVERLAND FLOWPATHS & FLOODED WIDTHS (100YR + CC) - SHEETS 1 - 2	D
DD410 - 411	STAGE 1 STORMWATER CATCHMENTS FOR PIPE NETWORKS (5YR + CC) - SHEETS 1 - 2	D
DD415	POND CATCHMENTS AREAS	D
DD420 - 426	STORMWATER LONGSECTIONS - SHEETS 1 - 7	D
DD430	STORMWATER POND TYPICAL DETAILS	D
DD450	SANITARY SEWER PLAN - OVERVIEW	D
DD451 - 454	SANITARY SEWER PLAN - SHEETS 1 - 4	D
DD460 - 462	SANITARY SEWER LONGSECTIONS - SHEETS 1 - 3	D
DD470 - 475	DRAINAGE TYPICAL DETAILS - SHEETS 1 - 6	D
DD500	POTABLE WATER PLAN - OVERVIEW	D
DD501 - 504	POTABLE WATER PLAN - SHEETS 1 - 4	D
DD510 - 511	POTABLE WATER TYPICAL DETAILS - SHEETS 1 - 2	D
DD600 - 605	FIRST GAS & CHANNEL PIPELINES SURVEY PLAN AND LONGSECTIONS	D



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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
COVER SHEET

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:10000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD000		REVISION D	

GENERAL NOTES:

- 1. ALL WORKS SHALL COMPLY WITH ALL RELEVANT NZ STANDARDS, THE NZ BUILDING CODE & TERRITORIAL AUTHORITY REGULATION INCLUDING THE CURRENT VERSIONS OF NZS 3604 AND NZS 4404. ANY CONFLICTS TO BE DISCUSSED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
- 2. ENGINEERING DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS, ARCHITECTURAL, CIVIL AND ENGINEERING SERVICES DOCUMENTS.
- 3. UNLESS OTHERWISE NOTED ALL LEVELS ARE IN METERS, AND ALL DIMENSIONS ARE METRIC, AND SHALL BE CHECKED BY CONTRACTOR PRIOR TO CONSTRUCTION.
- 4. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM DRAWINGS.
- 5. ALL DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
- 6. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT CODES OF PRACTICE EXCEPT WHERE VARIED BY THE SPECIFICATION AND/OR DRAWINGS.
- 7. WHERE PROPRIETY PRODUCTS ARE SPECIFIED IN THE DOCUMENTS THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE PRODUCT FOR APPROVAL.
- 8. THE CONTRACTOR IS TO DISCUSS THE REQUIREMENTS OF ALL THE SITE INSPECTIONS FOR THE ISSUE OF THE PS4 PRIOR TO CONSTRUCTION.
- 9. ONLY WDC APPROVED CONTRACTORS TO BE USED FOR ALL LIVE CONNECTIONS.
- 10. WDC REQUIRES 24 HOURS NOTICE BEFORE ANY INSPECTION.
- 11. ALL DIMENSIONS AND LEVELS ARE SUBJECT TO FINAL SURVEY.
- 12. ALL WORKS SHALL BE CARRIED OUT UNDER THE CURRENT HEALTH AND SAFETY WORK ACT.
- 13. THESE NOTES APPLY TO THE ENTIRETY OF THE DRAWING SET.

EXISTING SERVICES:

- 1. THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THESE DRAWINGS ARE APPROXIMATE ONLY AND BASED ON INFORMATION PROVIDED BY TERRITORIAL AUTHORITIES AND NETWORK UTILITY OPERATORS. WE ACCEPT NO LIABILITY FOR THE INACCURACIES.
- 2. CONTRACTOR SHALL LOCATE AND PROTECT EXISTING SERVICES PRIOR TO CONSTRUCTION.

ROADING:

- 1. DETAILED PAVEMENT DESIGN IN ACCORDANCE WITH CURRENT AUSTRROADS PAVEMENT DESIGN GUIDELINES FOR ROADS 1, 2, AND 3 IS TO BE COMPLETED AFTER SUBGRADE STRENGTH IS KNOWN AND REVIEWED BY NTA FOR APPROVAL. ASSUMPTION OF 7% CBR WILL NEED TO BE CONFIRMED AS STATED IN PAVEMENT DESIGN INCLUDING THE CONNECTION TO MARSDEN POINT ROAD.
- 2. PAVEMENT AND SURFACE CONSTRUCTION IS TO ONLY OCCUR BETWEEN SEPTEMBER AND MARCH UNLESS APPROVED BY NTA.
- 3. ALL PAVEMENT MATERIALS AND WORK STANDARDS TO BE IN ACCORDANCE WITH ALL RELEVANT NZ STANDARDS, TERRITORIAL AUTHORITY REGULATION INCLUDING THE CURRENT VERSION OF NZS 4404.
- 4. THE CONTRACTOR SHALL REINSTATE ALL DAMAGE TO ADJACENT FEATURES CAUSED BY THE WORKS.
- 5. ROAD MARKINGS AND SIGNAGES SHALL BE IN ACCORDANCE WITH CURRENT NZTA MANUAL OF TRAFFIC SIGNS AND MARKINGS (MOTSAM). ALL SIGNS TO BE VIP GRADE REFLECTIVITY.

CONCRETE:

- 1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH NZS3109 AND NZS3101 SUBJECT TO RELEVANT SECTIONS OF THE SPECIFICATION.
- 2. NO CONCRETE SHALL BE PLACED UNTIL WDC HAS HAD THE OPPORTUNITY TO OBSERVE THAT THE DRAWINGS AND SPECIFICATIONS HAVE BEEN COMPLIED WITH.
- 3. ALL CONCRETE SUPPLY AND PRODUCTION SHALL BE IN ACCORDANCE WITH NZS3104, 3101:2017.
- 4. WHERE THE LOCATION OF CONSTRUCTION JOINTS IS NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, CONSTRUCTION JOINTS SHALL BE COORDINATED WITH THE ENGINEER/WDC AS REQUIRED. THE CONSTRUCTOR SHALL ALLOW FOR ALL SUCH CONSTRUCTION JOINTS.

CONCRETE PAVEMENTS:

- 1. UPON EXPOSURE OF SUBGRADE AT PAVEMENT BASE CONTACT WDC FOR INSPECTION AND INSTRUCTION TO REMOVE AND REPLACE ANY SOFT AREAS PRIOR TO COMMENCING CONSTRUCTION OF PAVEMENT LAYERS. EXCAVATED MATERIAL TO BE REMOVED FROM SITE.
- 2. SUPPLY AND COMPACT BASECOURSE LAYER IN ACCORDANCE WITH CROSS SECTIONS SUPPLIED.
- 3. CONCRETE USED SHALL BE SPECIAL GRADE WITH 28 DAY COMPRESSIVE STRENGTH OF 30MPa.
- 4. ALL JOINTS SHALL BE INSTALLED AT THE LOCATIONS INDICATED. SAW CUT JOINTS SHALL BE CUT WITHIN 24 HOURS OF CONCRETE PLACEMENT.
- 5. ALL CONCRETE SHALL BE CURED BY AN APPROVED METHOD FOR AT LEAST 7 DAYS AFTER POURING. CURING METHOD SHALL BE PROPOSED TO ENGINEER FOR APPROVAL. SOME PROPRIETARY SURFACE TREATMENTS MAY NOT BE APPROVED.
- 6. SLAB SURFACE TOLERANCES SHALL NOT EXCEED 5MM DEVIATION IN A 3M STRAIGHT EDGE.
- 7. SLAB THICKNESSES GIVEN ARE MINIMUM THICKNESSES AND EXCLUSIVE OF ANY APPLIED FINISHES.
- 8. SLAB SURFACES SHALL BE NEATLY BROOM FINISHED.
- 9. ALL SLAB JOINTS ARE TO BE SEALED WITH AN APPROVED WATERPROOF FLEXIBLE SEALANT AFTER 28 DAYS AND PRIOR TO PRACTICAL COMPLETION.

EARTHWORKS:

- 1. ALL EARTH FILL TO BE CONSTRUCTED IN GENERAL ACCORDANCE WITH NZS4431:1989 OR UNLESS SPECIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
- 2. COMPACTION IN BASE OF PIPE TRENCHES TO ACHIEVE CLEGG 10.
- 3. FILL COMPACTION IN MAXIMUM LAYERS OF 200mm THICK WITH A 2 TONNE ROLLER - TRACK ROLLING WITH A DIGGER IS NOT ACCEPTABLE.
- 4. FILL CONTROL TESTING - WDC TO INSPECT AND TEST EVERY 3RD LAYER PLACED (600mm INTERVALS).
- 5. EROSION CONTROL - ALL SILT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH GD05 AND PLACED PRIOR TO COMMENCEMENT OF EARTHWORKS. SUCH MEASURES SHALL BE SUBJECT TO FURTHER ADDITIONS AND ALTERATIONS, WHERE CONSIDERED NECESSARY, AS DIRECTED BY THE PROJECT MANAGER OR NRC, DURING THE PROGRESSION OF WORKS. IT IS ADVISED TO CONTACT NRC PRIOR TO COMMENCEMENT OF EARTHWORKS, AFTER INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES TO ENSURE THEY HAVE BEEN INSTALLED TO THE SATISFACTION OF NRC.

INSPECTIONS / SITE VISITS REQUIRED:

- 1. PRE-CONSTRUCTION SITE MEETING WITH CONTRACTOR AND WDC.
- 2. ALL INSPECTIONS AS REQUIRED IN THE APPROVED INSPECTIONS AND TEST PLAN (ITP). ALL WORKS SHOULD ENSURE THE INSPECTION AND TEST PLAN IS CAREFULLY ACTIONED PRIOR TO PROCEEDING WITH CONSTRUCTION.

EARTHWORKS RESOURCE CONSENT:

BULK EARTHWORKS WILL BE CARRIED OUT IN ACCORDANCE WITH THE NORTHLAND REGIONAL COUNCIL RESOURCE CONSENT FILE NUMBER 43297 (EXPIRY DATE: 31/01/2027).

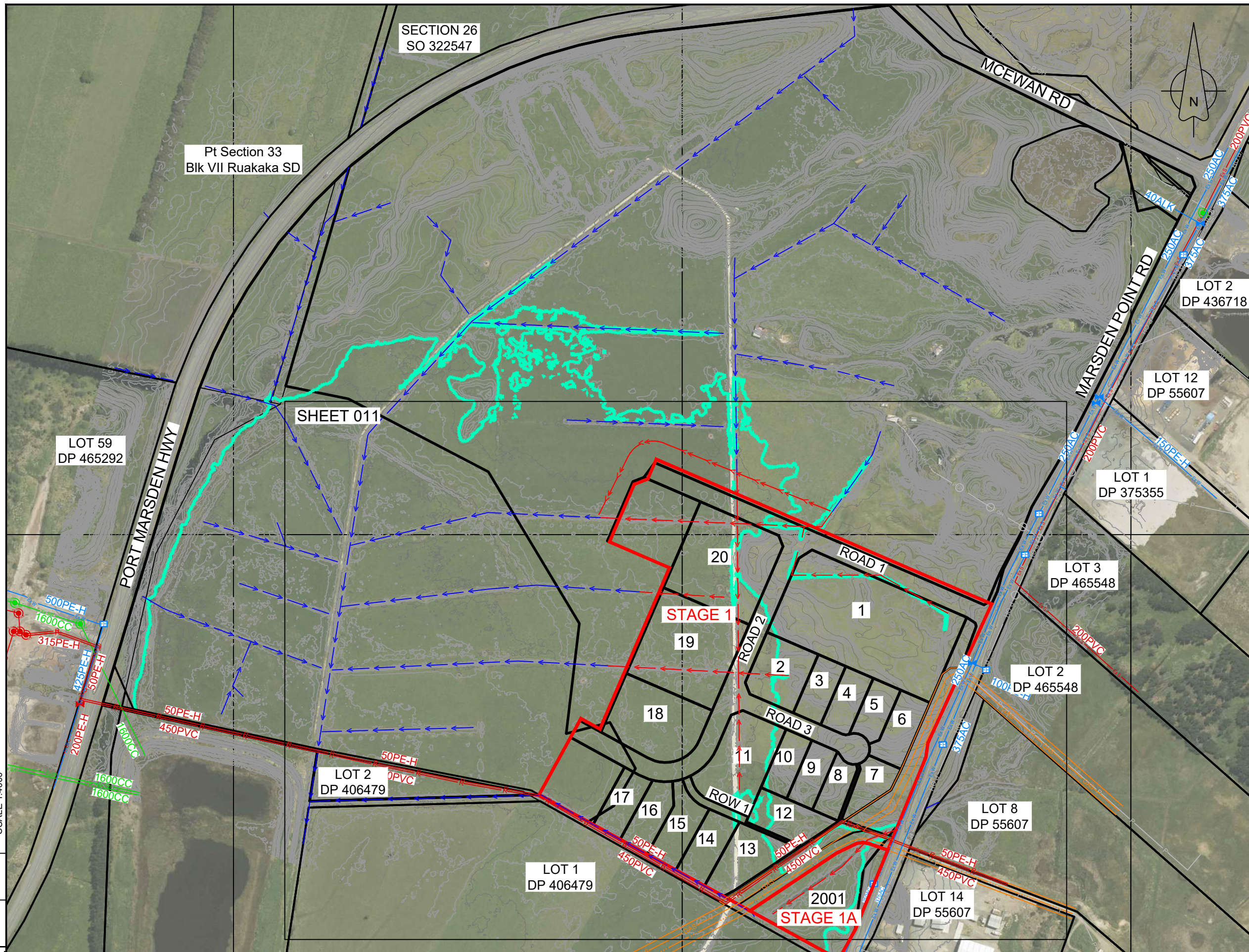
ACID SULPHATE NOTES:

ACID SULPHATE TESTING TO BE COMPLETED ALONG PIPELINE ROUTES TO DETERMINE WHERE ACID RESISTANT MATERIALS ARE REQUIRED. GEOTECHNICAL ENGINEER TO PREPARE PLAN OF ACID SULPHATE AREAS WHERE THE FOLLOWING SPECIFIC ACID SULPHATE NOTES WILL APPLY:

- 1. ALL CONCRETE MANHOLES, CESSPITS, HEADWALLS AND PIPES TO BE HYDRUA CONCRETE.
- 2. ALL STORMWATER, SEWER AND WATERMAIN PIPES TO HAVE FULL SURROUND PIPE EMBEDMENT.
- 3. ALL MANHOLE HAUNCHING TO BE 30MPa CONCRETE.
- 4. ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
- 5. LIME TO BE APPLIED AT A RATE OF 0.5kg/m² DIRECTLY UNDER ALL CONCRETE ROADS, KERBS, FOOTPATHS, AND CROSSINGS.

Approved Plans -
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	C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022			VECTA REF NO P0318	SCALE NTS @ A3	STATUS FOR APPROVAL	
	B	FOR APPROVAL	04-11-2022			DWG NUMBER	DD001		REVISION D
	REV. REVISION DETAILS		DRAWN			APP.			



- NOTES:
1. AERIAL PHOTOGRAPH SOURCED FROM LINZ.
 2. LIDAR 2018 DATA SOURCED FROM NORTHLAND REGIONAL COUNCIL.
 3. COORDINATES ARE IN TERMS OF NZGD 2000 MT EDEN CIRCUIT 2000. VERTICAL DATUM IN TERMS OF ONE TREE POINT 1964.
 4. EXISTING CONTOURS AT 200mm INTERVALS.

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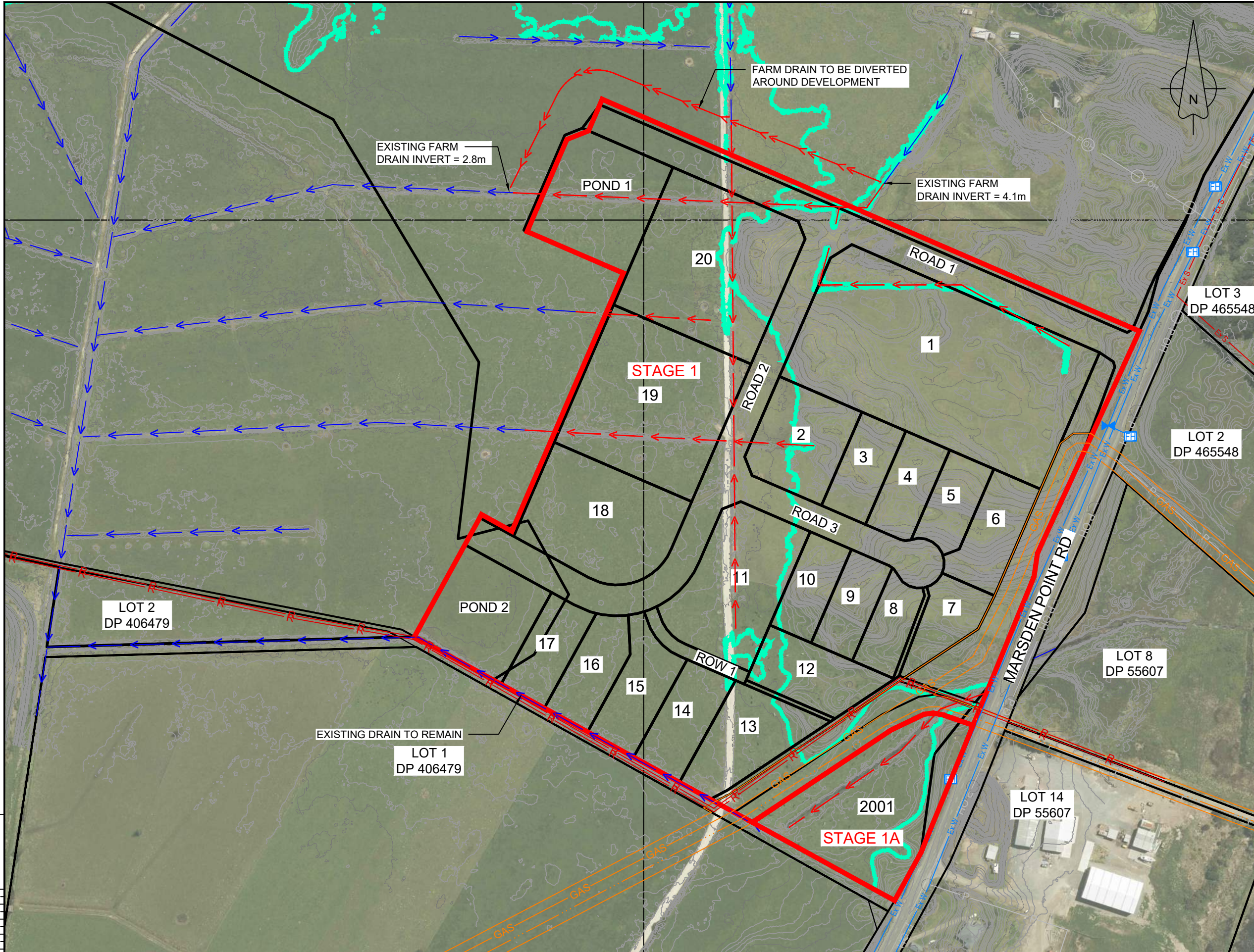
LEGEND:

- P OH — POWER & FIBRE OVERHEAD
- P — POWER UNDERGROUND
- FIBER DT — FIBRE DUCT
- Ex W — EXISTING WATER
- Ex SW — EXISTING SW
- Ex S — EXISTING SS
- ⊙ — EXISTING SW MH
- — EXISTING CESSPIT
- ⊙ — EXISTING SS MH
- ⊕ — EXISTING FIRE HYDRANT
- ⋈ — EXISTING VALVE
- — POLE & PILLAR
- GAS — GAS AND RNZ CORRIDOR
- SEE DD600 FOR SURVEY LOCATED PIPES
- RIVER HAZARD ZONE
- 100 YEAR FLOOD EXTENT (4.19m)
- DRAINS
- FARM DRAIN TO BE CONTROLLED FILLED AS PART OF APPROVED NRC EARTHWORK CONSENT.

TRISHN NAND
ME., CPEng., IntPE(NZ)

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	C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022			VECTA REF NO P0318	SCALE 1:4000 @ A3	STATUS FOR APPROVAL		
	B	FOR APPROVAL	04-11-2022			DWG NUMBER	REVISION			
	REV.		REVISION DETAILS			DRAWN	APP.	DD100		D

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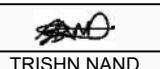


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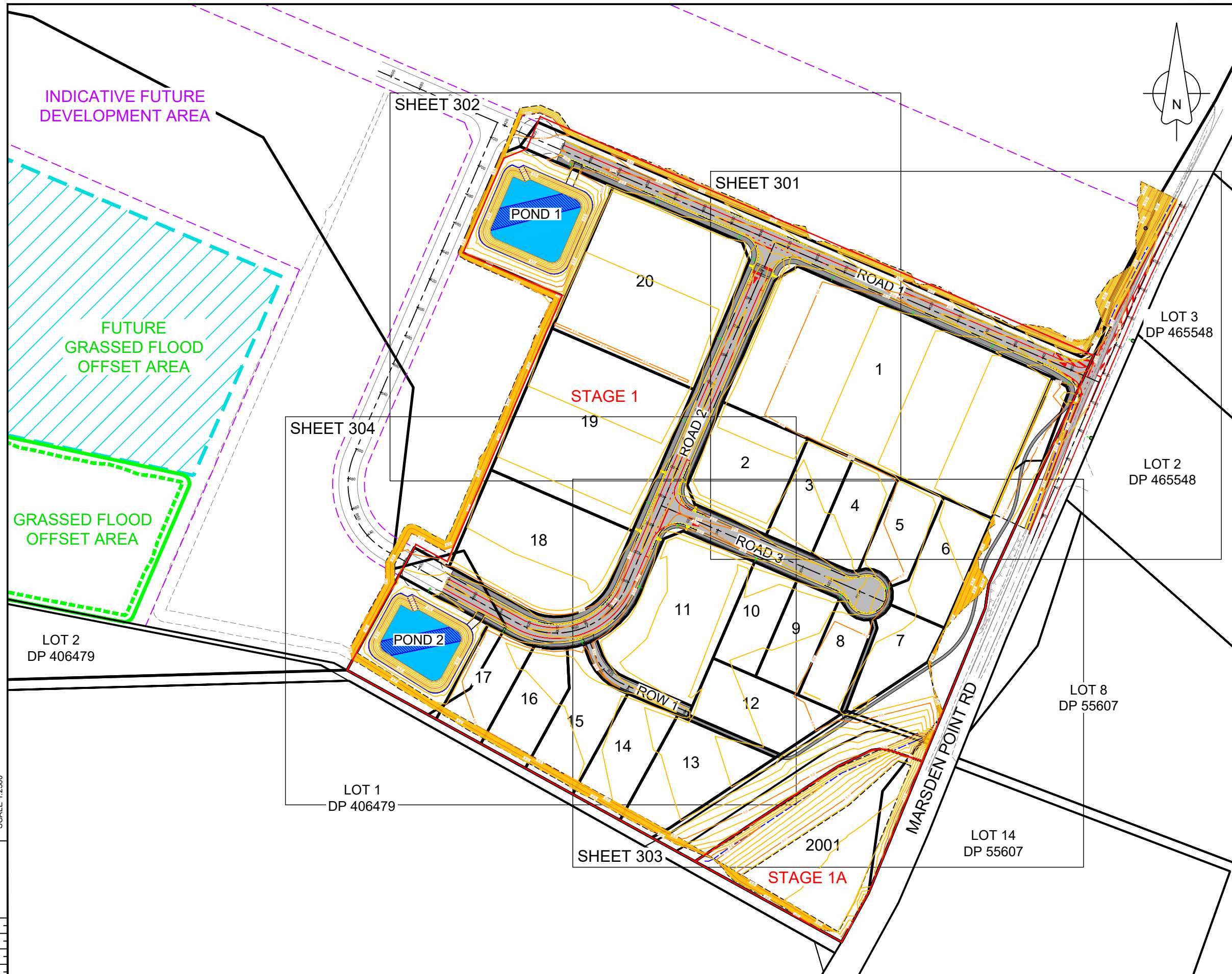
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- RIVER HAZARD ZONE 100 YEAR FLOOD EXTENT (4.19m)
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- FARM DRAIN TO BE CONTROLLED FILLED AS PART OF APPROVED NRC EARTHWORK CONSENT.


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			AP			TN	31-08-2022	AP	AP	TN
	C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022							
			AP			TN				
	B	FOR APPROVAL	04-11-2022							
			AP	TN						
www.vecta.co.nz			REV.	REVISION DETAILS	DRAWN	APP.				



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL PRAM CROSSINGS ARE 1.8m WIDE UNLESS OTHERWISE STATED AND ARE TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 17.
 3. DESIGN CONTOURS AT 200mm INTERVALS.

- KEY:
- MAJOR CONTOURS (1.0m)
 - MINOR CONTOURS (0.2m)
 - LIGHTS - SEE BETACOM DESIGN

Approved Plans -
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Dept.	NTA
Approved by:	NM
Date:	14/12/22



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SCALE 1:2500

0 50 100

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
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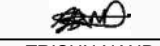
PROJECT DETAILS

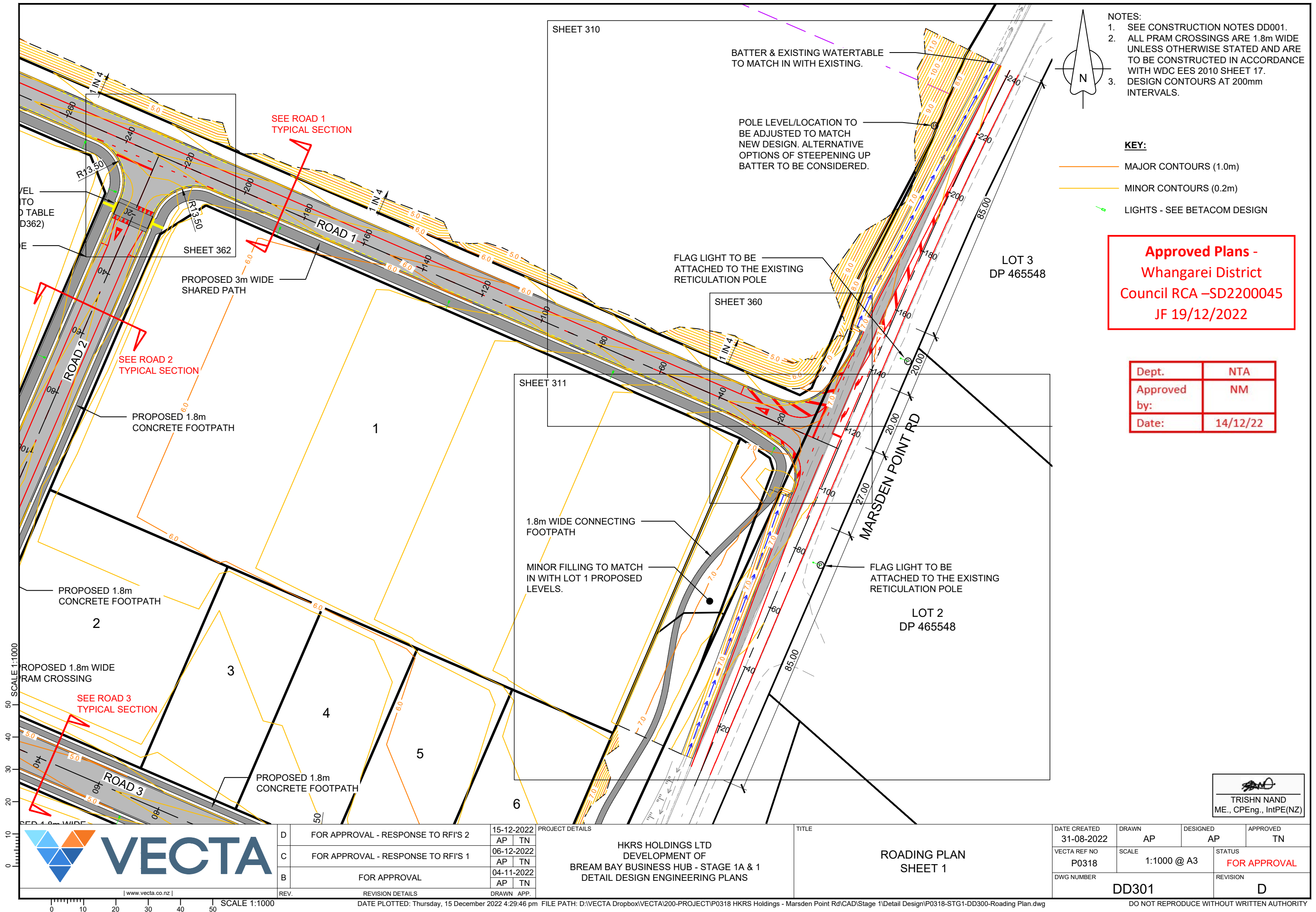
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

ROADING PLAN
OVERVIEW

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:2500 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD300		REVISION D	


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- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL PRAM CROSSINGS ARE 1.8m WIDE UNLESS OTHERWISE STATED AND ARE TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 17.
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Approved Plans -
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Dept.	NTA
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Date:	14/12/22



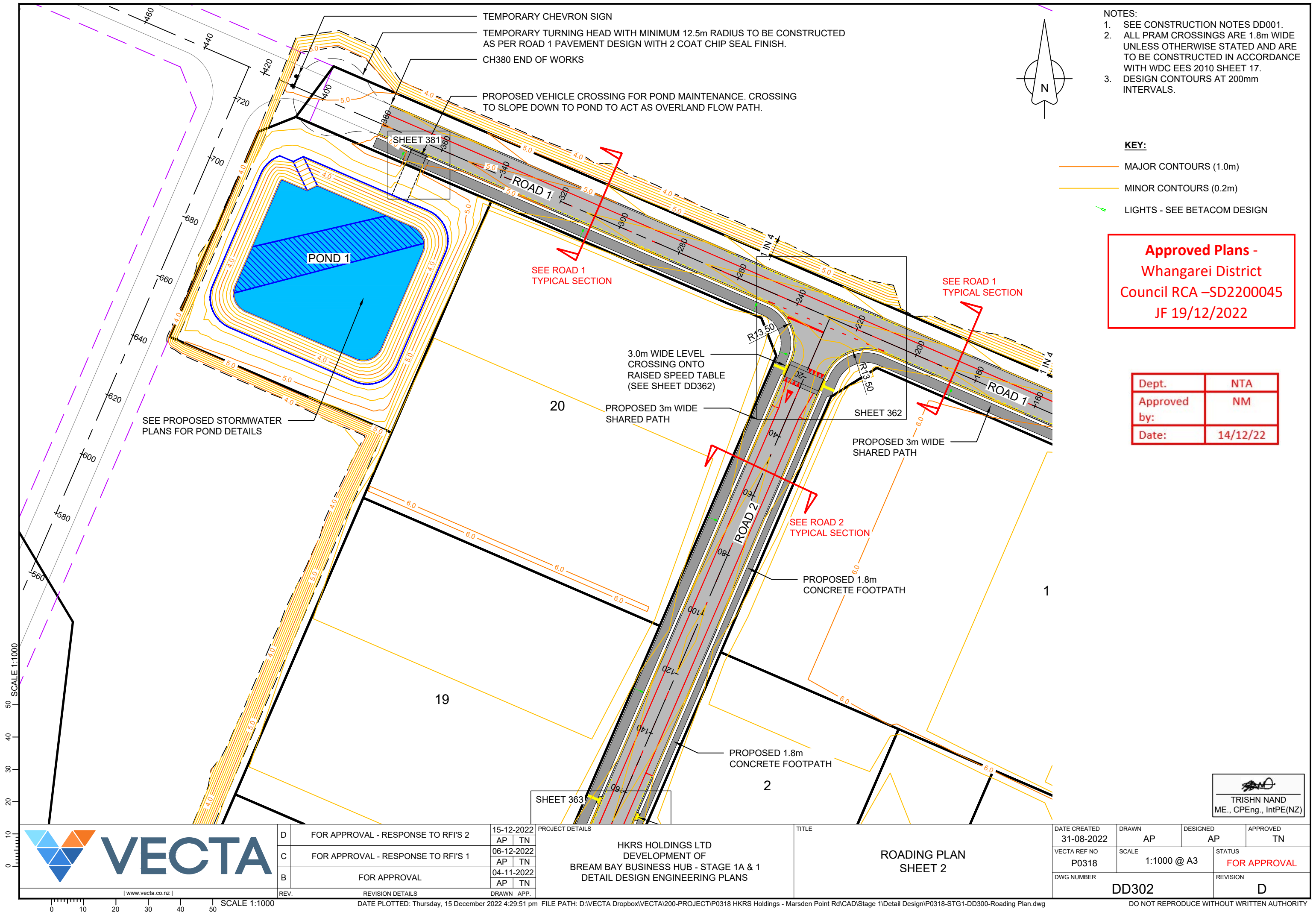
D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
ROADING PLAN SHEET 1

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD301	REVISION D		

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- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
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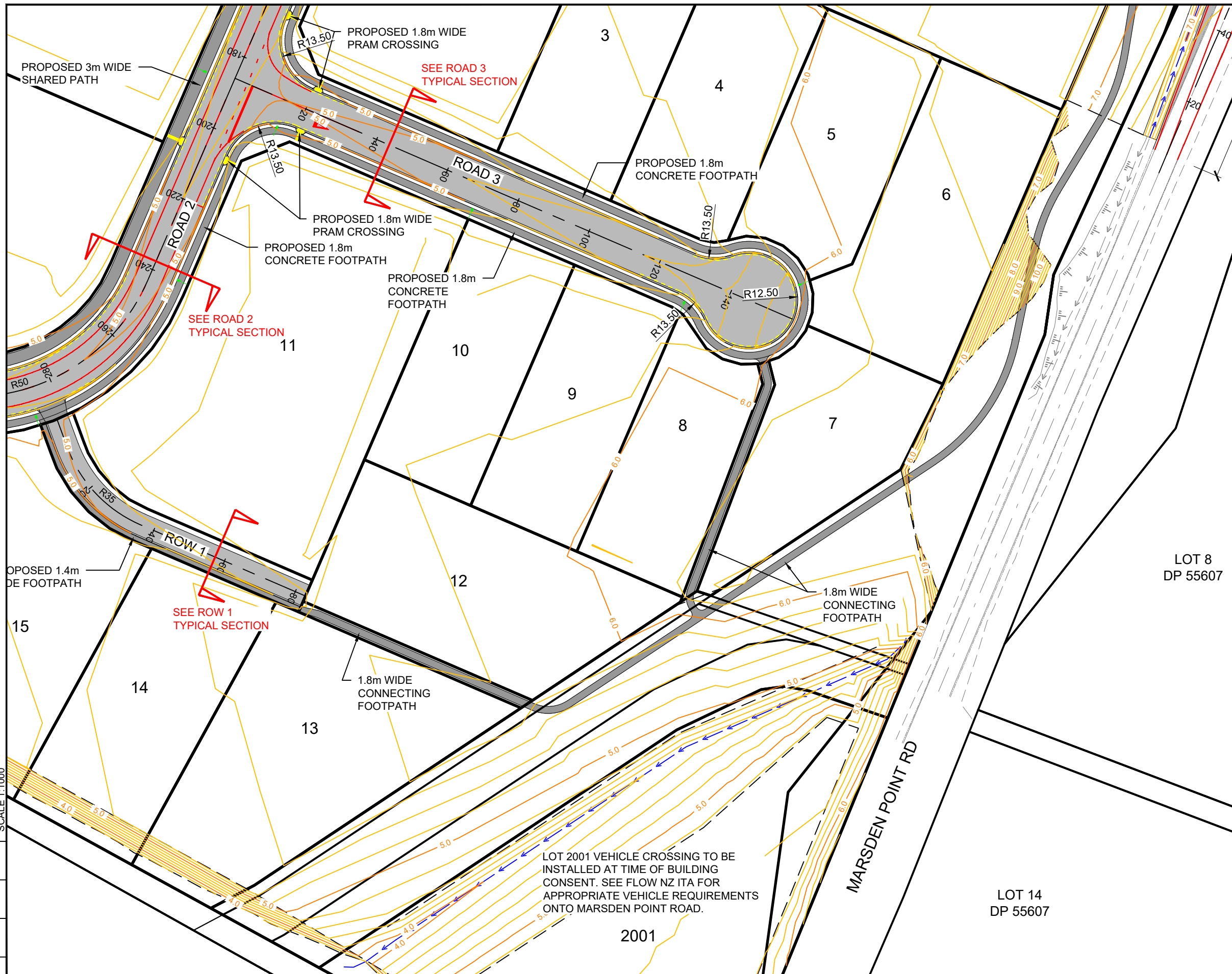
PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
ROADING PLAN SHEET 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD302	REVISION D		

TRISHN NAND
ME., CPEng., IntPE(NZ)





- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL PRAM CROSSINGS ARE 1.8m WIDE UNLESS OTHERWISE STATED AND ARE TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 17.
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- KEY:
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 - MINOR CONTOURS (0.2m)
 - LIGHTS - SEE BETACOM DESIGN

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Dept.	NTA
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SCALE 1:1000

0 10 20 30 40 50

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
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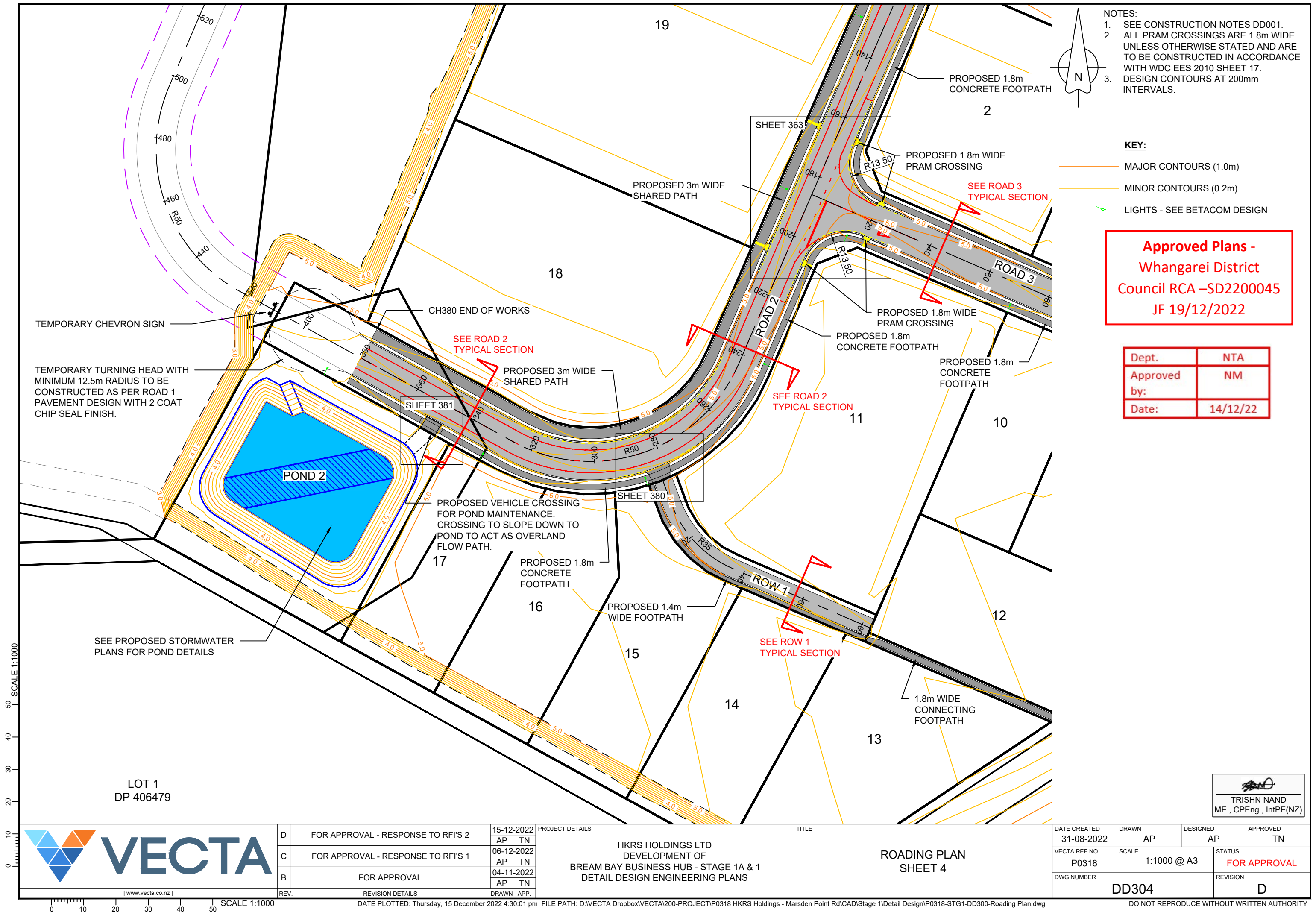
PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

ROADING PLAN
SHEET 3

DATE CREATED	31-08-2022	DRAWN	AP	DESIGNED	AP	APPROVED	TN
VECTA REF NO	P0318	SCALE	1:1000 @ A3	STATUS		FOR APPROVAL	
DWG NUMBER	DD303	REVISION		D			



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
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SCALE 1:1000

0 10 20 30 40 50

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PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
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TITLE

ROADING PLAN
SHEET 4

DATE CREATED	DRAWN		DESIGNED		APPROVED
31-08-2022	AP		AP		TN
VECTA REF NO	SCALE			STATUS	
P0318	1:1000 @ A3			FOR APPROVAL	
DWG NUMBER	DD304			REVISION	
				D	

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY

TRISHN NAND
ME., CPEng., IntPE(NZ)

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.

K&C = KERB AND CHANNEL

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Approved by:	NM
Date:	14/12/22

POLE LEVEL/LOCATION TO BE ADJUSTED TO MATCH NEW DESIGN. ALTERNATIVE OPTIONS OF STEEPENING UP BATTER TO BE CONSIDERED.

MATCH WATER TABLE & BATTER IN WITH EXISTING LEVELS

EXISTING ROAD EDGE LINE
EXISTING EDGE OF SEAL
EXISTING METAL EDGE

PAVEMENT WIDENING

SEE SHEET RC323 MARSDEN POINT ROAD CH170 TYPICAL SECTION

SEE SHEET RC322 MARSDEN POINT ROAD CH140 TYPICAL SECTION

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2
C	FOR APPROVAL - RESPONSE TO RFI'S 1
B	FOR APPROVAL

15-12-2022	AP	TN
06-12-2022	AP	TN
04-11-2022	AP	TN

PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

MARSDEN POINT ROAD INTERSECTION PLAN
SHEET 1

DATE CREATED
31-08-2022

DRAWN
AP

DESIGNED
AP

APPROVED
TN

VECTA REF NO
P0318

SCALE
1:500 @ A3

STATUS
FOR APPROVAL

DWG NUMBER

DD310

REVISION
D

REV. REVISION DETAILS

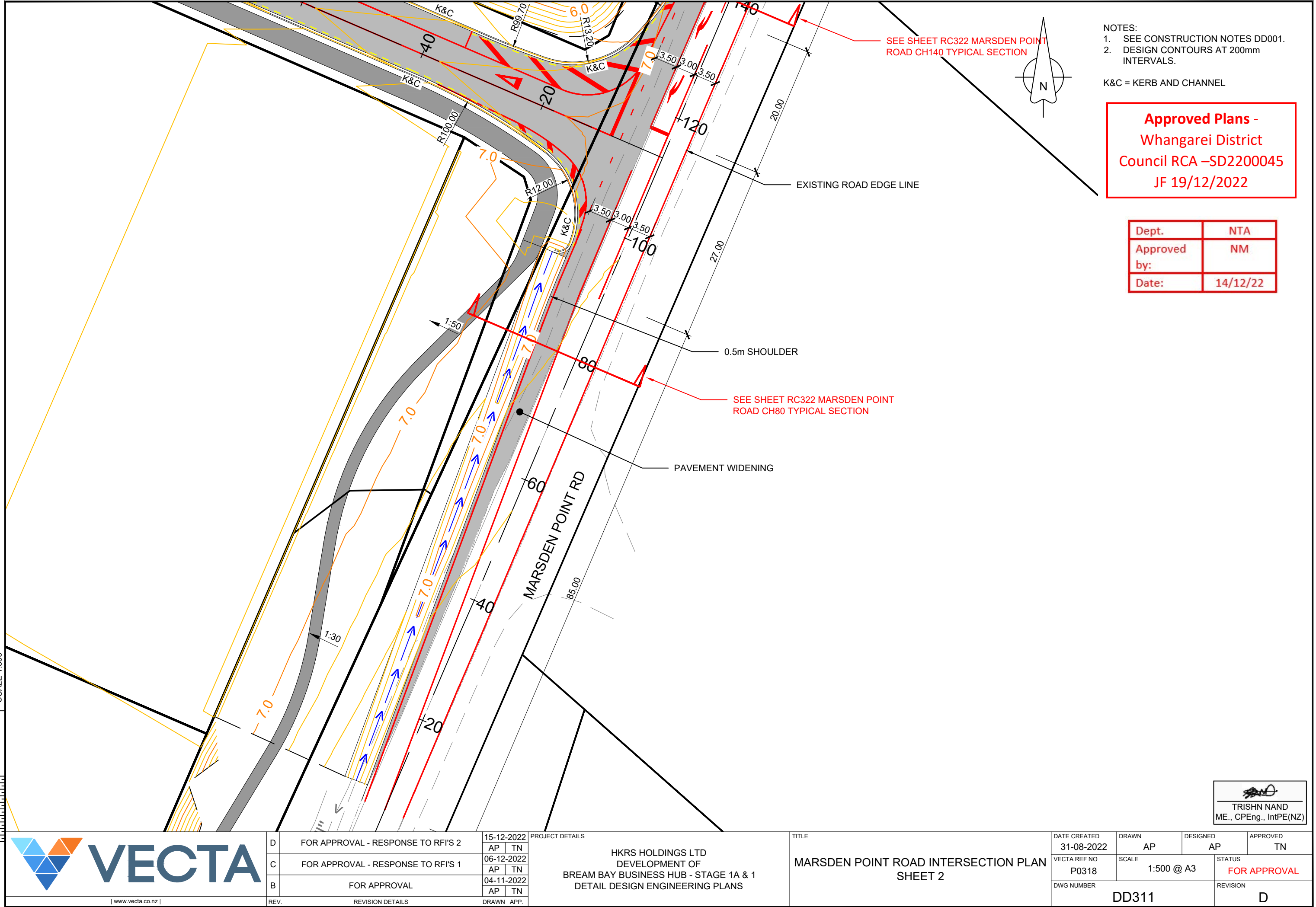
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DATE PLOTTED: Thursday, 15 December 2022 4:30:07 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD310-Intersection Plans.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY

SCALE 1:500
0 10 20

SCALE 1:500



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.

K&C = KERB AND CHANNEL

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

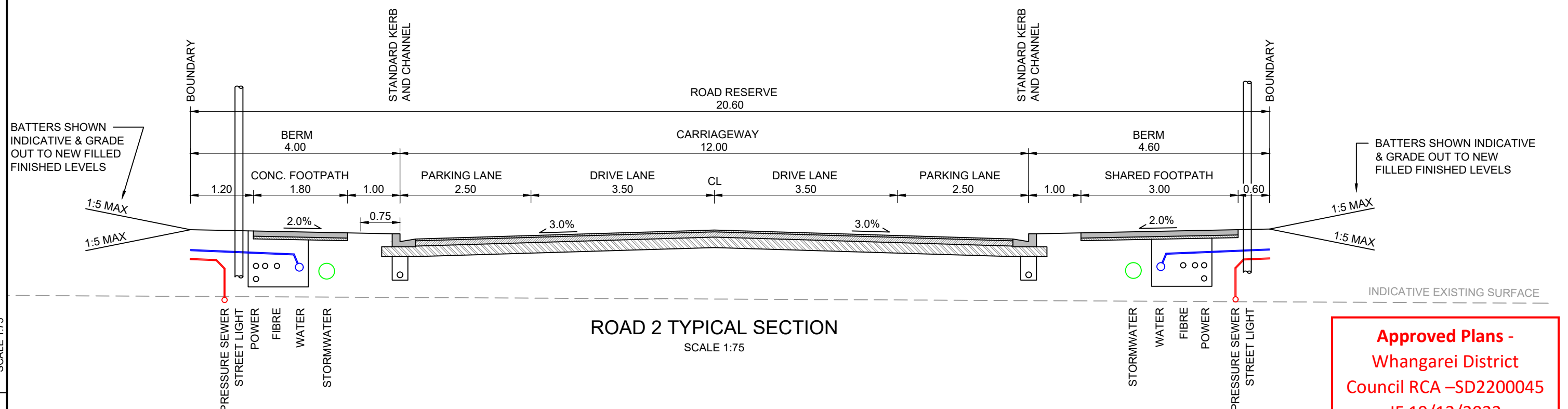
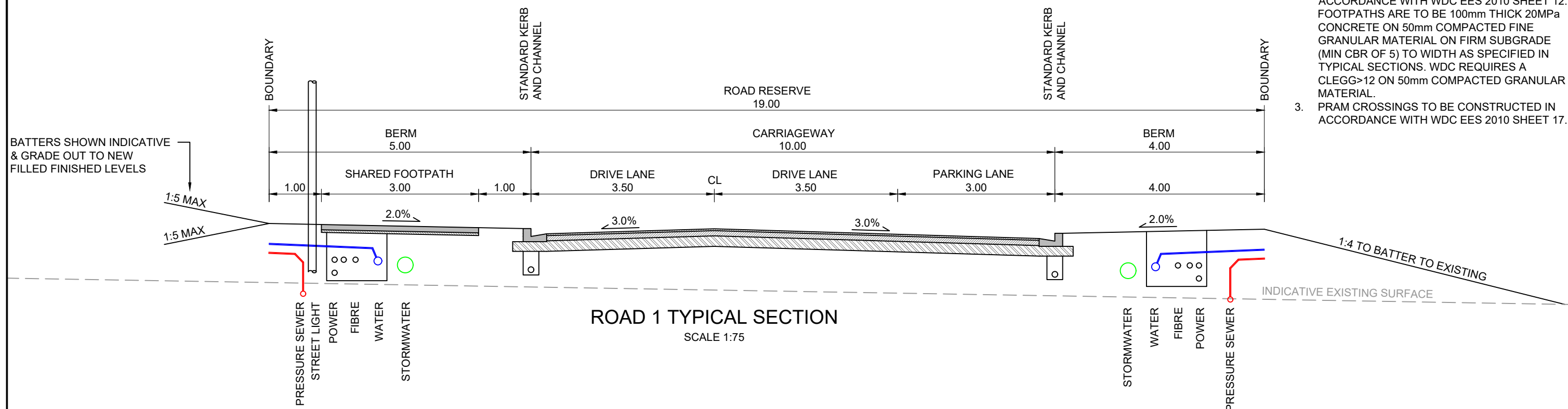
TITLE

MARS DEN POINT ROAD INTERSECTION PLAN
SHEET 2

DATE CREATED	31-08-2022	DRAWN	AP	DESIGNED	AP	APPROVED	TN		
VECTA REF NO	P0318	SCALE	1:500 @ A3		STATUS			FOR APPROVAL	
DWG NUMBER					DD311			REVISION	D

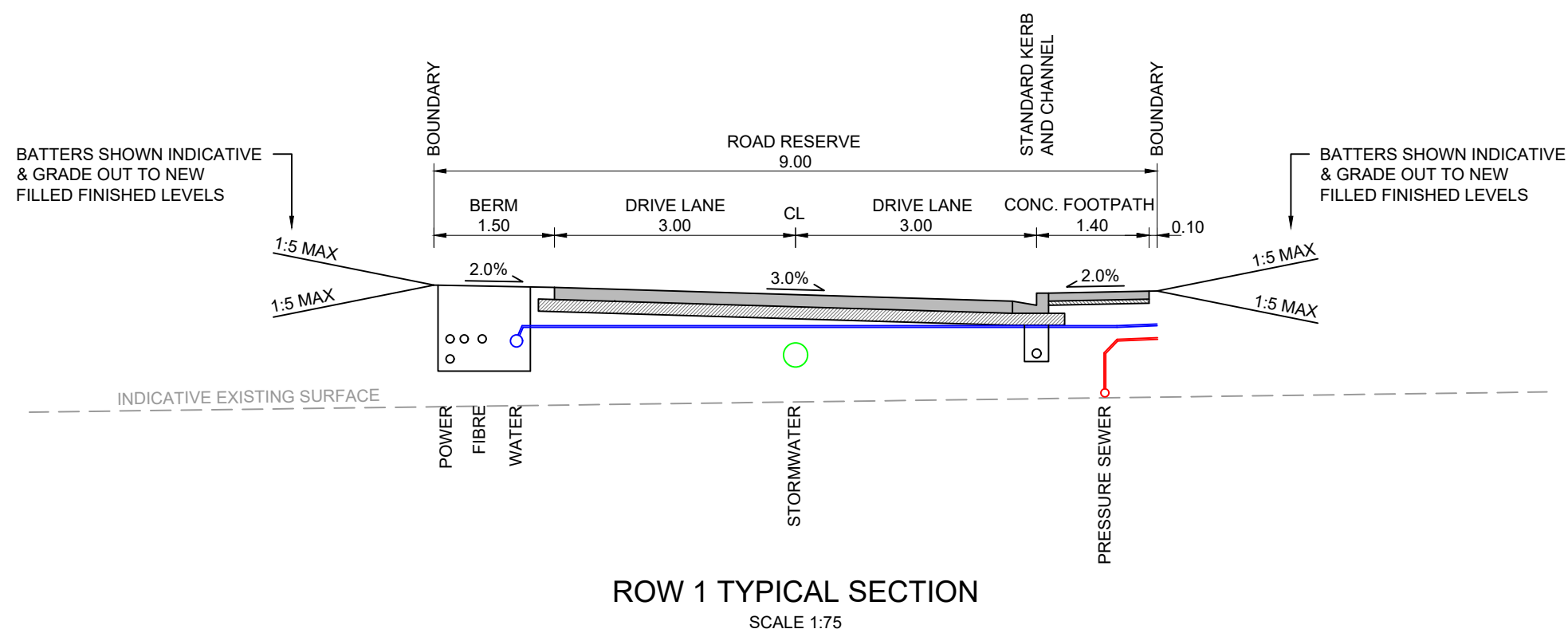
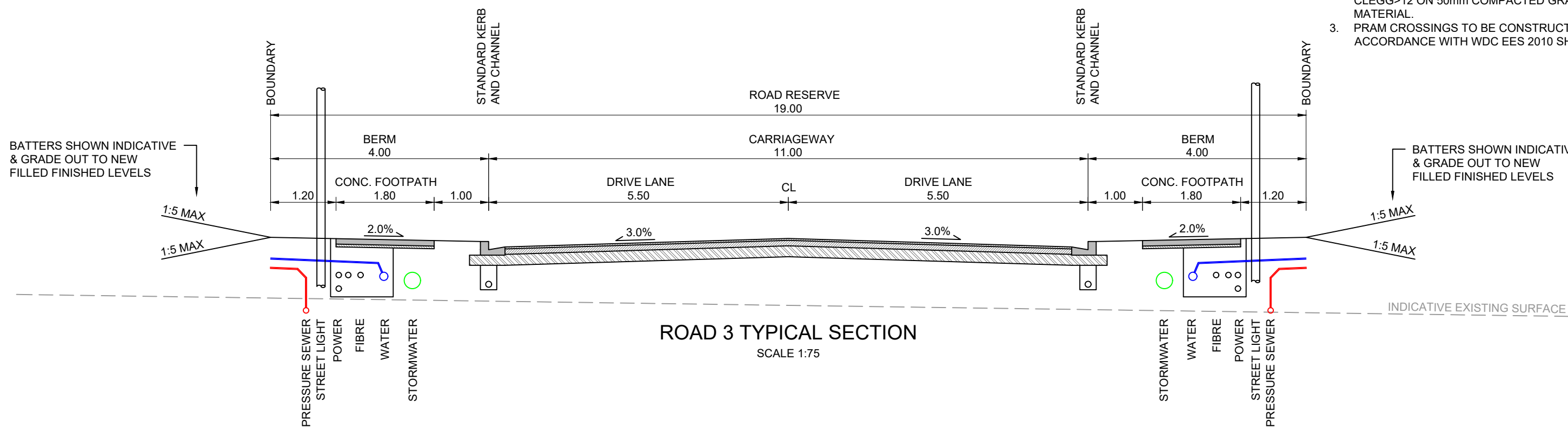
TRISHN NAND
ME., CPEng., IntPE(NZ)

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. FOOTPATHS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 12. FOOTPATHS ARE TO BE 100mm THICK 20MPa CONCRETE ON 50mm COMPACTED FINE GRANULAR MATERIAL ON FIRM SUBGRADE (MIN CBR OF 5) TO WIDTH AS SPECIFIED IN TYPICAL SECTIONS. WDC REQUIRES A CLEGG>12 ON 50mm COMPACTED GRANULAR MATERIAL.
 3. PRAM CROSSINGS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 17.



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JF 19/12/2022

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. FOOTPATHS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 12. FOOTPATHS ARE TO BE 100mm THICK 20MPa CONCRETE ON 50mm COMPACTED FINE GRANULAR MATERIAL ON FIRM SUBGRADE (MIN CBR OF 5) TO WIDTH AS SPECIFIED IN TYPICAL SECTIONS. WDC REQUIRES A CLEGG>12 ON 50mm COMPACTED GRANULAR MATERIAL.
 3. PRAM CROSSINGS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 17.



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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS

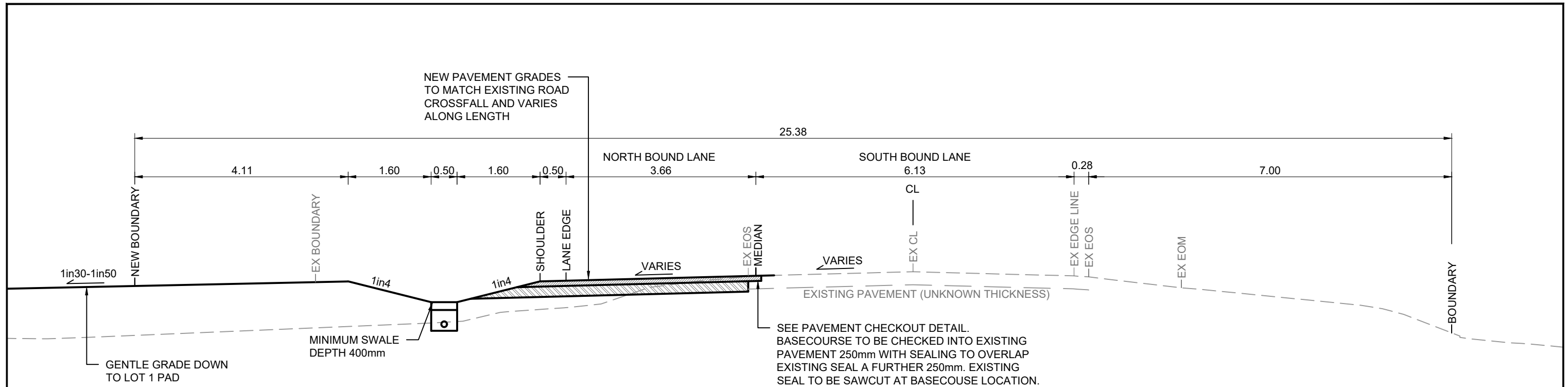
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

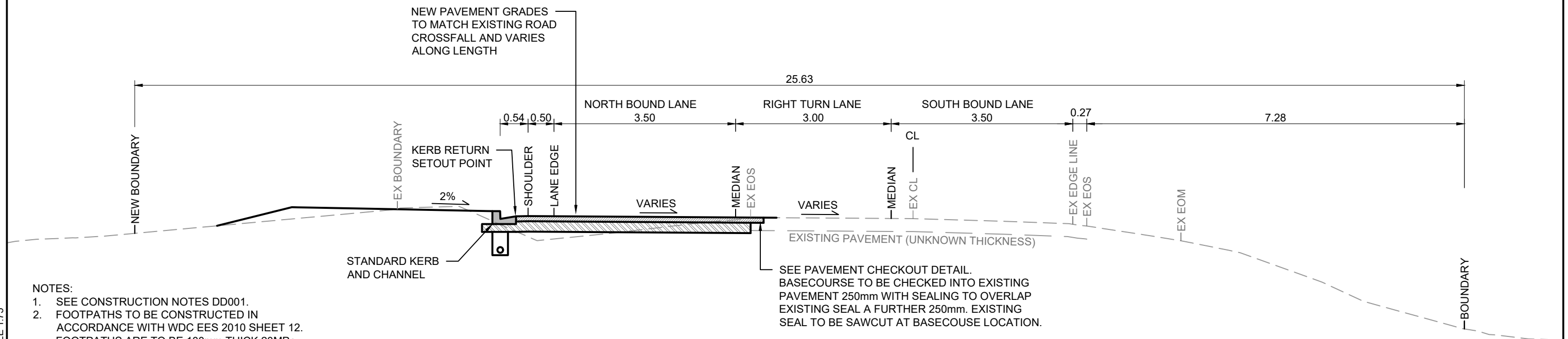
ROAD TYPICAL SECTIONS
(SHEET 2)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:75 @ A3		STATUS FOR APPROVA
DWG NUMBER DD321			REVISION D

TRISHN NAND
ME., CPEng., IntPE(NZ)



MARSDEN POINT ROAD CH80
TYPICAL SECTION
SCALE 1:75



MARSDEN POINT ROAD CH140
TYPICAL SECTION
SCALE 1:75

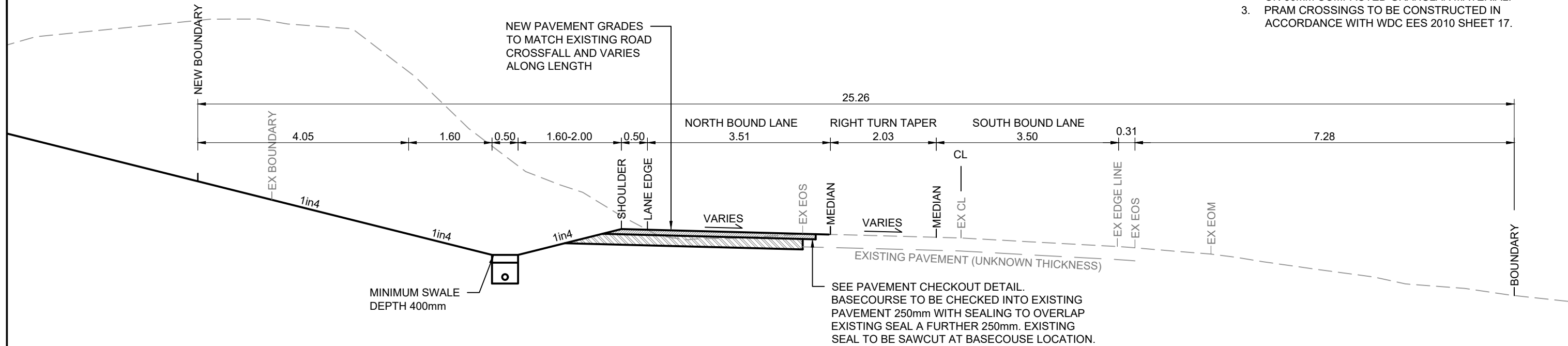
- NOTES:
- SEE CONSTRUCTION NOTES DD001.
 - FOOTPATHS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 12. FOOTPATHS ARE TO BE 100mm THICK 20MPa CONCRETE ON 50mm COMPACTED FINE GRANULAR MATERIAL ON FIRM SUBGRADE (MIN CBR OF 5) TO WIDTH AS SPECIFIED IN TYPICAL SECTIONS. WDC REQUIRES A CLEGG>12 ON 50mm COMPACTED GRANULAR MATERIAL.
 - PRAM CROSSINGS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 17.

Approved Plans -
Whangarei District
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JF 19/12/2022

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	D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	PROJECT DETAILS HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS	TITLE ROAD TYPICAL SECTIONS (SHEET 3)	DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
	C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022			VECTA REF NO P0318	SCALE 1:75 @ A3	STATUS FOR APPROVAL	
	B	FOR APPROVAL	04-11-2022			DWG NUMBER DD322	REVISION D		
		www.vecta.co.nz	REV.			REVISION DETAILS	DRAWN	APP.	

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. FOOTPATHS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 12. FOOTPATHS ARE TO BE 100mm THICK 20MPa CONCRETE ON 50mm COMPACTED FINE GRANULAR MATERIAL ON FIRM SUBGRADE (MIN CBR OF 5) TO WIDTH AS SPECIFIED IN TYPICAL SECTIONS. WDC REQUIRES A CLEGG>12 ON 50mm COMPACTED GRANULAR MATERIAL.
 3. PRAM CROSSINGS TO BE CONSTRUCTED IN ACCORDANCE WITH WDC EES 2010 SHEET 17.

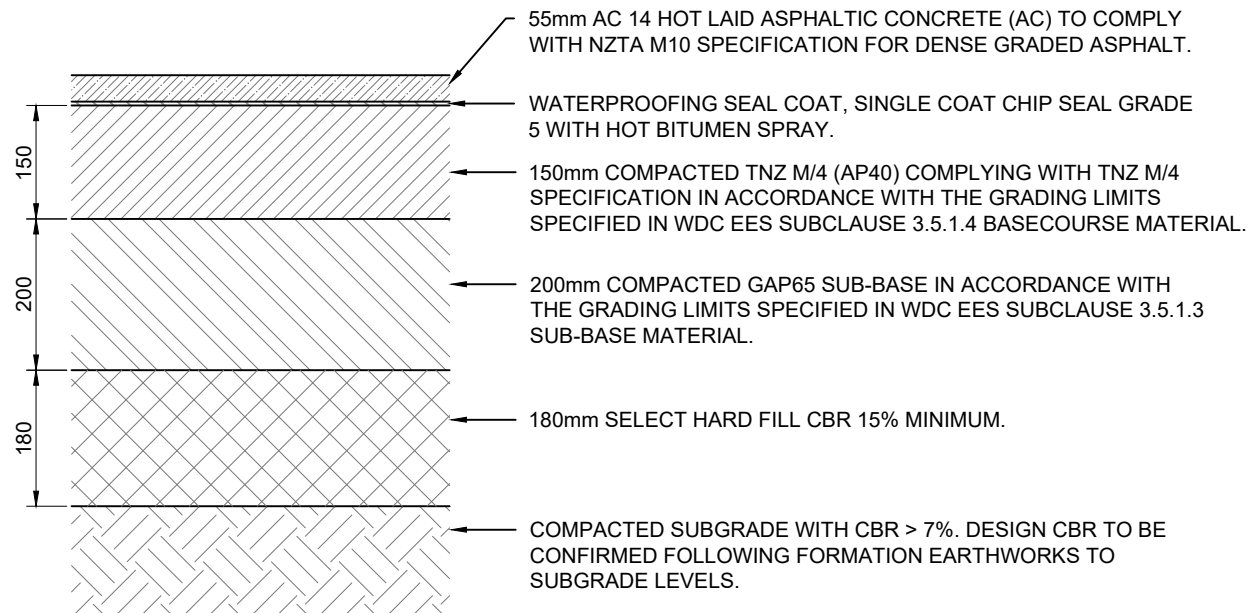


MARSDEN POINT ROAD CH170
TYPICAL SECTION
SCALE 1:75

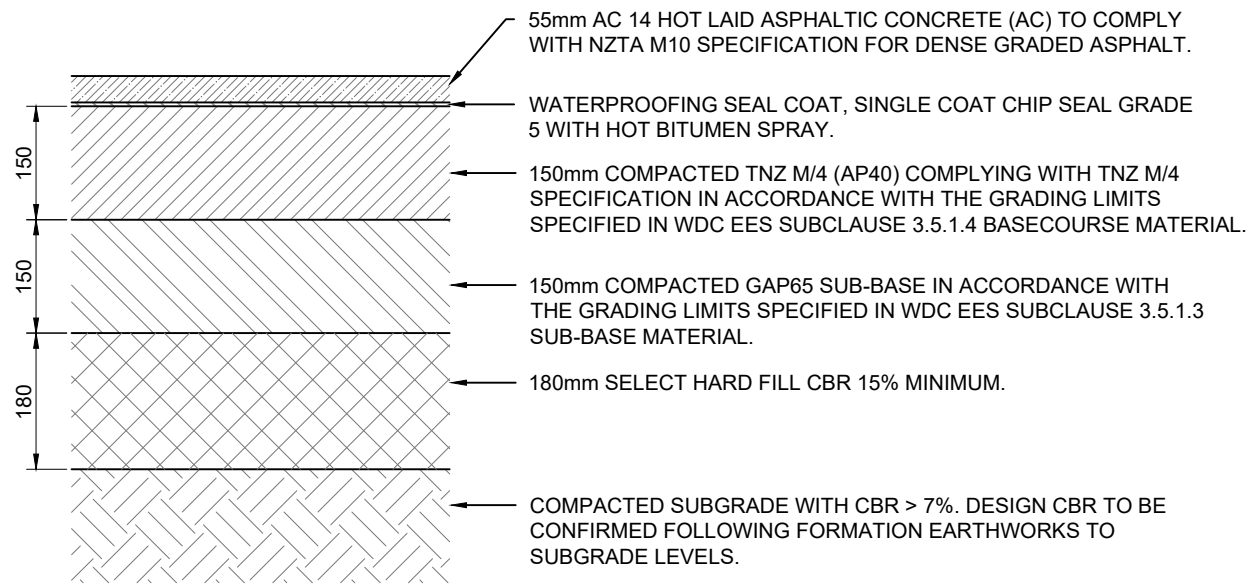
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JF 19/12/2022

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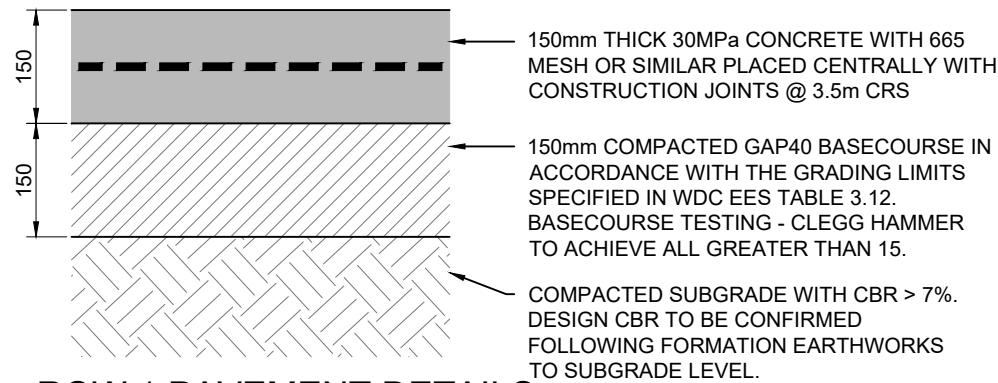
 www.vecta.co.nz	D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	PROJECT DETAILS HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS	TITLE ROAD TYPICAL SECTIONS (SHEET 4)	DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
	C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022			VECTA REF NO P0318	SCALE 1:75 @ A3	STATUS FOR APPROVAL	
	B	FOR APPROVAL	04-11-2022			DWG NUMBER	DD323		REVISION D
	REV. REVISION DETAILS		DRAWN APP.						



MARSDEN POINT ROAD, ROAD 01 & 02 PAVEMENT DETAILS
SCALE 1:10



ROAD 03 PAVEMENT DETAILS
SCALE 1:10



ROW 1 PAVEMENT DETAILS
SCALE 1:10

PAVEMENT TESTING REQUIREMENTS ROAD 01, 02, 03 & MPR

SURFACE TESTING - BENKELMAN BEAM AT 10m CENTRES (STAGGERED) IN THE WHEEL TRACK IN BOTH LANES WITH: ROAD 1, 2 AND MPR ACHIEVING MAX95TH PERCENTILE D0 DEFLECTION OF 0.70mm WITH MAX 95TH PERCENTILE CURVATURE D0-D200 OF 0.15mm; & ROAD 3 ACHIEVING MAX95TH PERCENTILE D0 DEFLECTION OF 1.00mm WITH MAX95TH PERCENTILE CURVATURE OF D0-D200 OF 0.17mm.

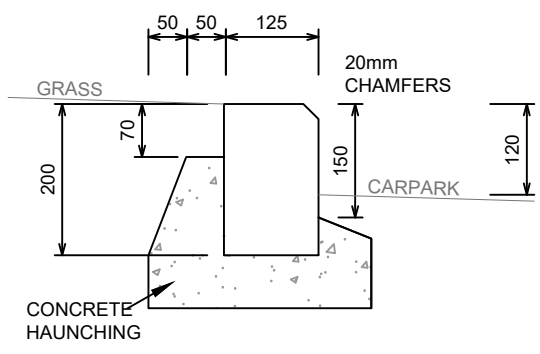
BASECOURSE TESTING - **NUCLEAR DENSOMETER** IN ACCORDANCE WITH NZS4407 TEST 4.2.2 TO ACHIEVE MAXIMUM DRY DENSITY OF ≥95% MINIMUM AND ≥98% MEAN AS PER TNZ B/2. **CLEGG HAMMER** AT 20m CENTRES AT THE EDGES AND CENTRE OF PAVEMENTS TO ACHIEVE CLEGG 40 FOR NOT LESS THAN 90% OF THE SURFACE TESTED AND NO VALUE LESS THAN 35.

SUBBASE TESTING - NUCLEAR DENSOMETER IN ACCORDANCE WITH NZS4407 TEST 4.2.2 TO ACHIEVE MAXIMUM DRY DENSITY OF ≥92% MINIMUM AND ≥95% MEAN AS PER TNZ B/2.

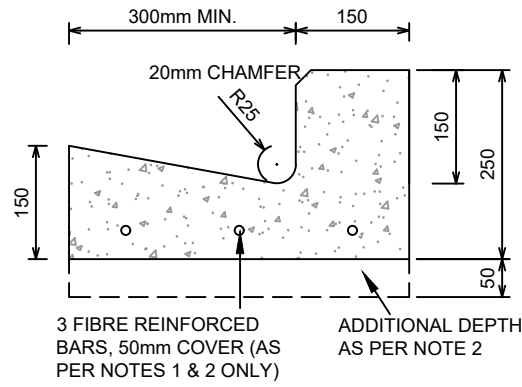
SELECT HARD FILL TESTING - GEOTECHNICAL ENGINEER TO CONFIRM CBR OF 15% ACHIEVED

SUBGRADE CBR OF 7 (FIRST 600mm DEEP) - TO ACHIEVE 30mm/BLOW WITH SCALA PENETROMETER.

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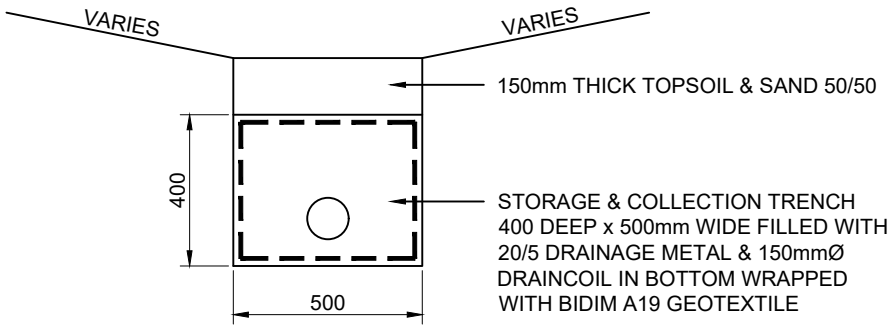


UPRIGHT KERB BLOCK DETAIL
NOT TO SCALE

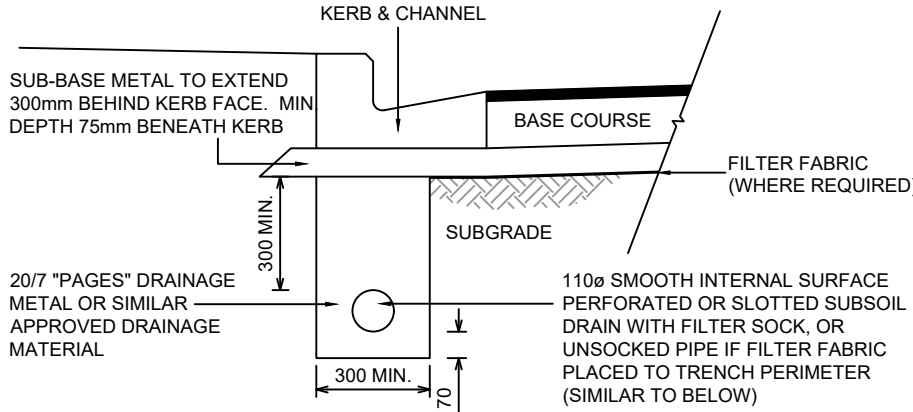


KERB AND CHANNEL
SHEET 13 WDC EES 2010 - NOT TO SCALE

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. CLEGG >15 REQUIRED UNDER ALL KERBS BY WDC.



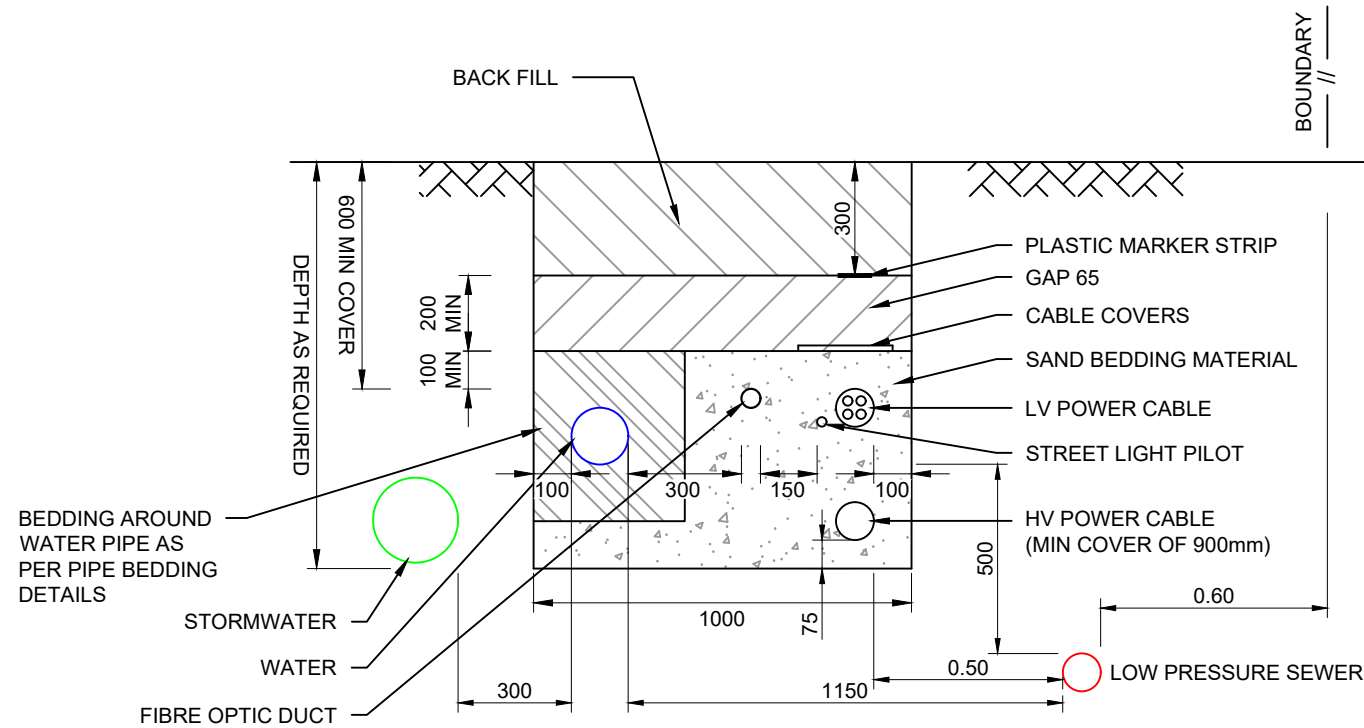
SWALE SUBSOIL DRAIN
NOT TO SCALE



UNDER KERB DRAINAGE
SHEET 14 WDC EES 2010 - NOT TO SCALE

- KERB NOTES:
1. 3/FIBRE REINFORCING BARS TO BE PLACED AROUND ALL CURVES, AND INTERSECTIONS BETWEEN TANGENT POINTS IN BUSINESS ENVIRONMENTS.
 2. COMMERCIAL & INDUSTRIAL CROSSINGS TO BE ADDITIONAL 50mm IN DEPTH AS WELL AS HAVING 3-FIBRE REINFORCED BARS EQUALLY SPACED IN THE CHANNEL.
 3. CONCRETE FOR DISHED CHANNEL, PRAM CROSSING, STANDARD KERB AND CHANNEL AND MOUNTABLE KERB AND CHANNEL & FLUSH EDGE BEAM SHALL BE 30MPa AT 28 DAYS.
 4. CRACK CONTROL JOINTS TO BE FORMED AT MAXIMUM OF 3.5 METRE INTERVALS. TO BE A MINIMUM DEPTH OF 30mm.
 5. PROFILES MAY BE MODIFIED SLIGHTLY TO SUIT KERBING MACHINE.
 6. KERB BLOCKS HAUNCHING TO BE 20MPa AT 28 DAYS.

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COMBINED SERVICE TRENCH

LV POWER CABLE TRENCH

THE MINIMUM CLEAR DISTANCE BETWEEN SERVICES SHALL BE THE GREATER OF THE REQUIRED CLEARANCES BETWEEN THE RELEVANT SERVICES AS FOLLOWS:

STORMWATER:	300 H, 150 V
WASTERWATER:	300 H, 150 V (EXCEPT WATERMAINS AS FOLLOWS) 1000 H, 500 V OR 600 H, 750 V TO WASTEWATERS AS PER TABLE 5.7.
ELECTRICITY:	500 H, 225 V (EXCEPT WATERMAINS > 200mm ID AS FOLLOWS) 1000 H, 225 V TO WATERMAINS > 200mm ID.
TELECOM & GAS:	300 H, 150 V (EXCEPT WATERMAINS > 200mm ID AS FOLLOWS) 600 H, 150 V TO WATERMAINS > 200mm ID.
WATERMAINS:	CLEARANCE TO OTHER SERVICES AS ABOVE. CLEARANCE TO OTHER WATERMAINS AS FOLLOWS: 600 H, 500 V WHERE NEW PIPELINE IS > 375mm ID 300 H, 150 V WHERE NEW PIPELINE IS ≤ 200mm ID AND WHERE EXISTING PIPELINE IS ≤ 375mm ID 600 H, 150 V WHERE NEW PIPELINE IS > 200mm ID AND WHERE EXISTING PIPELINE IS < 375mm ID

NOTES:

- ALL DISTANCES IN MM.
- ALL SERVICES SHALL HAVE 600mm MIN. COVER UNDER FOOTPATHS AND BERMS.
- REFER TO TABLE 5.7 (WASTEWATER) AND 6.4 (WATER) FOR FURTHER NOTES.
- VERTICAL CLEARANCES APPLY WHERE SERVICES CROSS, EXCEPT THAT WATERMAINS SHALL ALWAYS MAINTAIN A CLEARANCE ABOVE A PARALLEL WASTEWATER PIPELINE.

MINIMUM CLEARANCES BETWEEN SERVICES

FOR LIVING 1 AND 2 AND ALL BUSINESS ENVIRONMENTS
WDC EES 2010 SHEET 30

NOTES:

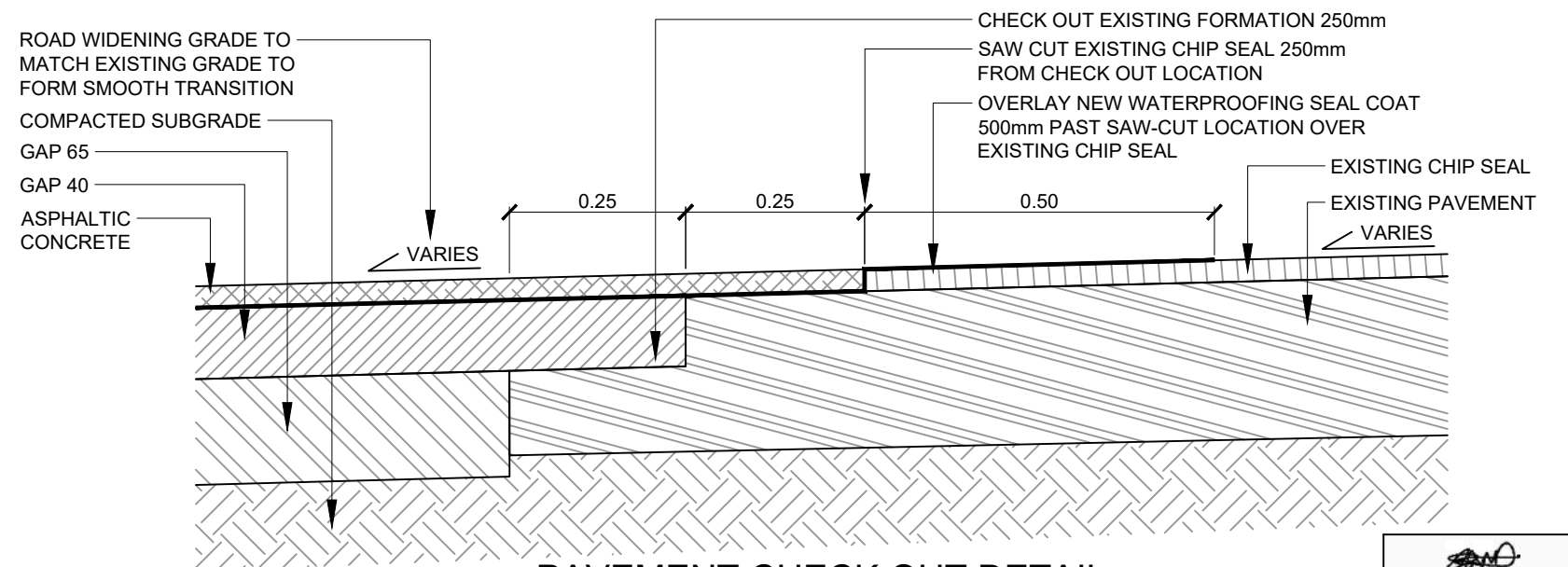
- BEDDING MATERIAL EITHER SAND OR 'CLEAN' SOIL. THERMAL BACKFILL TO BE USED WHERE SPECIFIED
- COVERS TO COMPLY WITH AS/NZS 3000:2000 3.11.3.3 AND AS4705-2000 AND SHALL BE LOCATED 75mm ABOVE CABLES AND DUCTS. CABLE COVERS SHALL BE AT LEAST 150mm IN WIDTH AND OVERLAP AT LEAST 40mm EACH SIDE OF THE CABLE.
- BACKFILL, GENERALLY USE FILL FROM TRENCH BUT ENSURE NO LARGE STONES OR SHARP OBJECTS ARE PLACED BACK IN THE TRENCH.
- MARKER STRIP TO COMPLY WITH AS/NZS 3000:2000 3.11.3.4 AND BE 100mm WIDE, COLOURED ORANGE, WITH THE WORDS 'ELECTRICAL CABLE BELOW'.
- WHERE PRACTICAL PROVIDE SOME SEPARATION (75mm OR GREATER) BETWEEN DIRECT LAID LV AND SL CABLE / FIBRE OPTIC DUCT.

DIRECTLY LAID LV CABLES

NORTHPOWER SHEET 2F250s7

DETECTION/WARNING TAPE

- A DETECTION TAPE SHALL BE LAID DIRECTLY ABOVE ALL RISING MAINS AND ABOVE NEW SEWERS. THE TAPE SHALL HAVE 'SEWERAGE' WRITTEN ON IT IN WHITE AND BE LOCATED AT A DEPTH OF 200-250mm ABOVE THE PIPE CREST. WHERE THE PIPE IS NOT LAID IN A STRAIGHT LINE BETWEEN MANHOLES, THE TAPE SHALL CONTAIN SUFFICIENT METAL TO BE DETECTABLE FROM THE SURFACE BY A STANDARD METAL DETECTOR.
- A METALLIC DETECTION TAPE AND TRACER CABLE SHALL BE LAID DIRECTLY ABOVE ALL NEW NON-METALLIC WATER MAINS INCLUDING RIDER MAINS. DETECTION TAPE SHALL HAVE 'WATER' WRITTEN ON IT IN BLUE, BE LOCATED AT A DEPTH OF 200-250mm BELOW THE FINISHED SURFACE LEVEL, AND CONTAIN SUFFICIENT METAL TO BE DETECTABLE FROM THE SURFACE BY A STANDARD METAL DETECTOR. TRACER CABLE SHALL ALSO BE ATTACHED TO ALL PRINCIPAL MAINS AND RIDER MAINS. THIS WIRE SHALL TAKE THE FORM OF A CONTINUOUS 2.5mm² MULTI-STRAND (POLYTHENE SLEEVED) CABLE, STRAPPED TO THE PIPE WALL BY MEANS OF A MINIMUM OF TWO COMPLETE WRAPS OF HEAVY DUTY ADHESIVE TAPE, AT A MAXIMUM OF 3m INTERVALS. THE TRACER CABLE SHALL BE CONNECTED TO ALL SURFACE BOXES, AND ELECTRICALLY TESTED FOR CONTINUITY BY A REGISTERED ELECTRICIAN FOLLOWING INSTALLATION AND BACKFILLING. RECORDS OF THE ELECTRICAL CONTINUITY TEST SHALL BE PROVIDED BY THE CONTRACTOR.



PAVEMENT CHECK OUT DETAIL

NTS

TRISHN NAND
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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

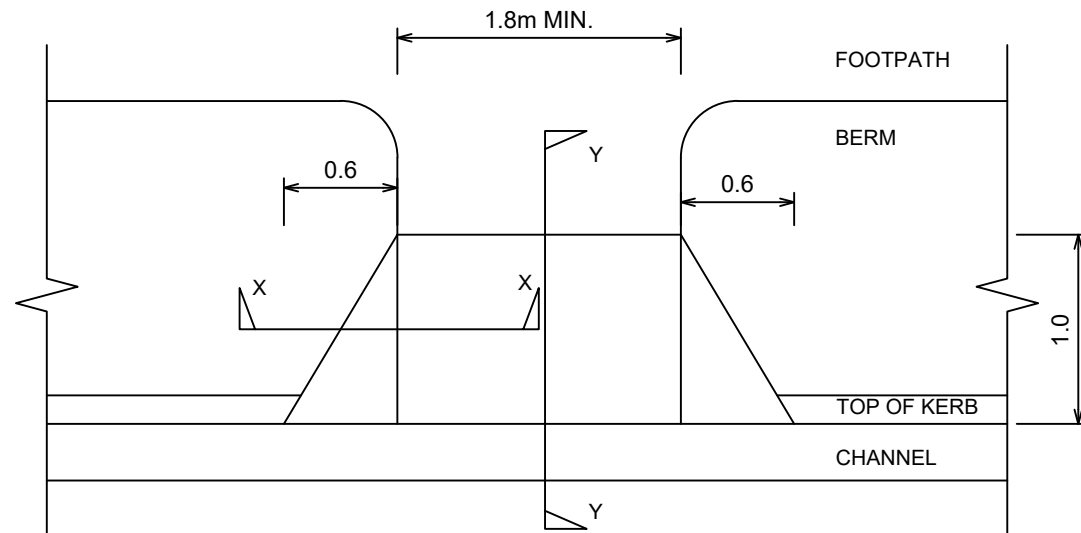
TITLE
COMBINED SERVICE TRENCH & PAVEMENT CHECK OUT DETAILS

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE AS SHOWN @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD326		REVISION D	

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

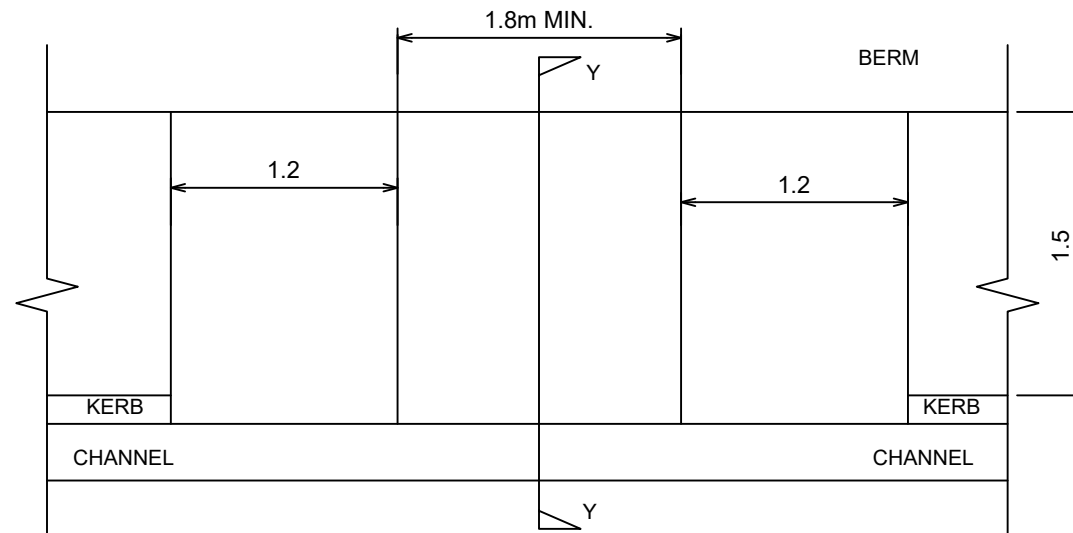
USE DETAIL WHEN FOOTPATH
IS NOT AGAINST BERM



PLAN

SHEET 17 FNDC ES 2022 - NOT TO SCALE

USE DETAIL WHEN FOOTPATH
IS AGAINST BERM



PLAN

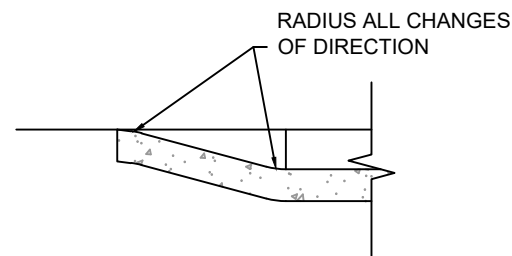
SHEET 17 FNDC ES 2022 - NOT TO SCALE

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

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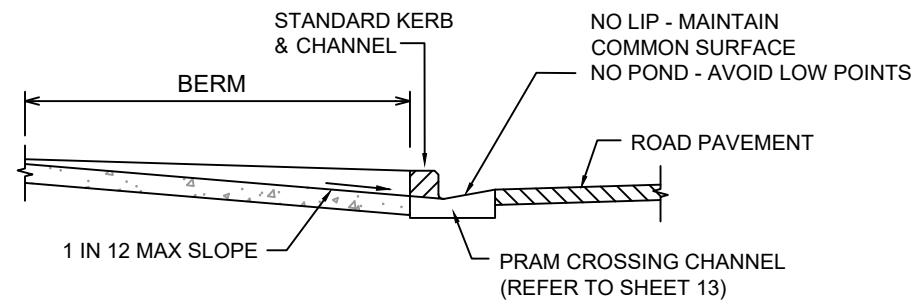
Approved Plans -
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Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22



HALF SECTION X-X

SHEET 17 FNDC ES 2022 - NOT TO SCALE



SECTION Y-Y

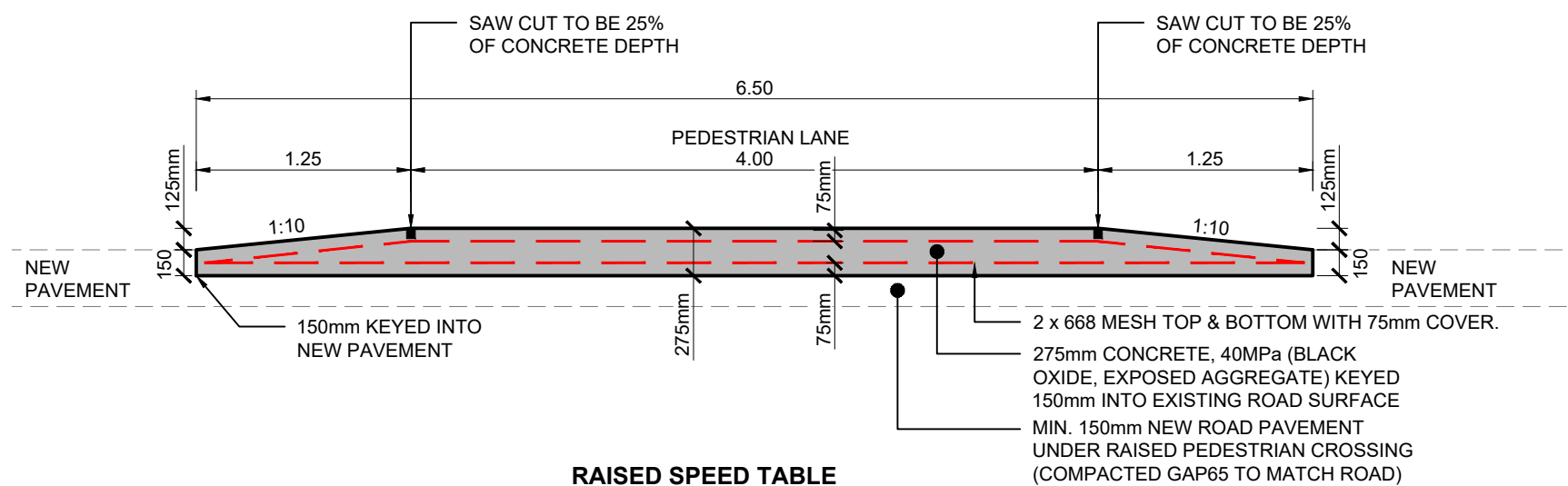
SHEET 17 FNDC ES 2022 - NOT TO SCALE

PRAM CROSSING DETAILS

NOT TO SCALE

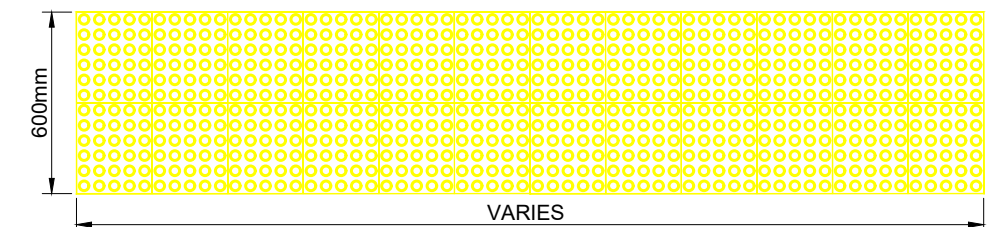
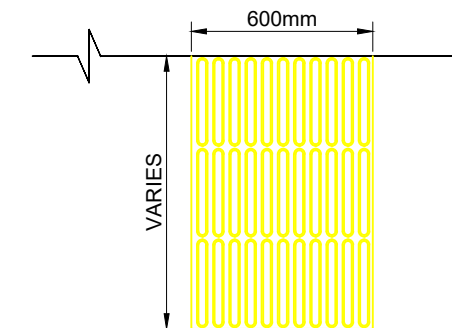
NOTES:

1. MAXIMUM GRADE IS 1:12
2. EDGE OF CROSSING TO BE FINISHED FLUSH WITH EXISTING CHANNEL.
3. CROSSING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS FOR A CONCRETE FOOTPATH UNLESS OTHERWISE APPROVED - SEE SHEET 12 FNDC ES 2022.



RAISED SPEED TABLE

TYPICAL SECTION A
SCALE 1:40



TACTILE GROUND SURFACE INDICATORS (TGSIs)



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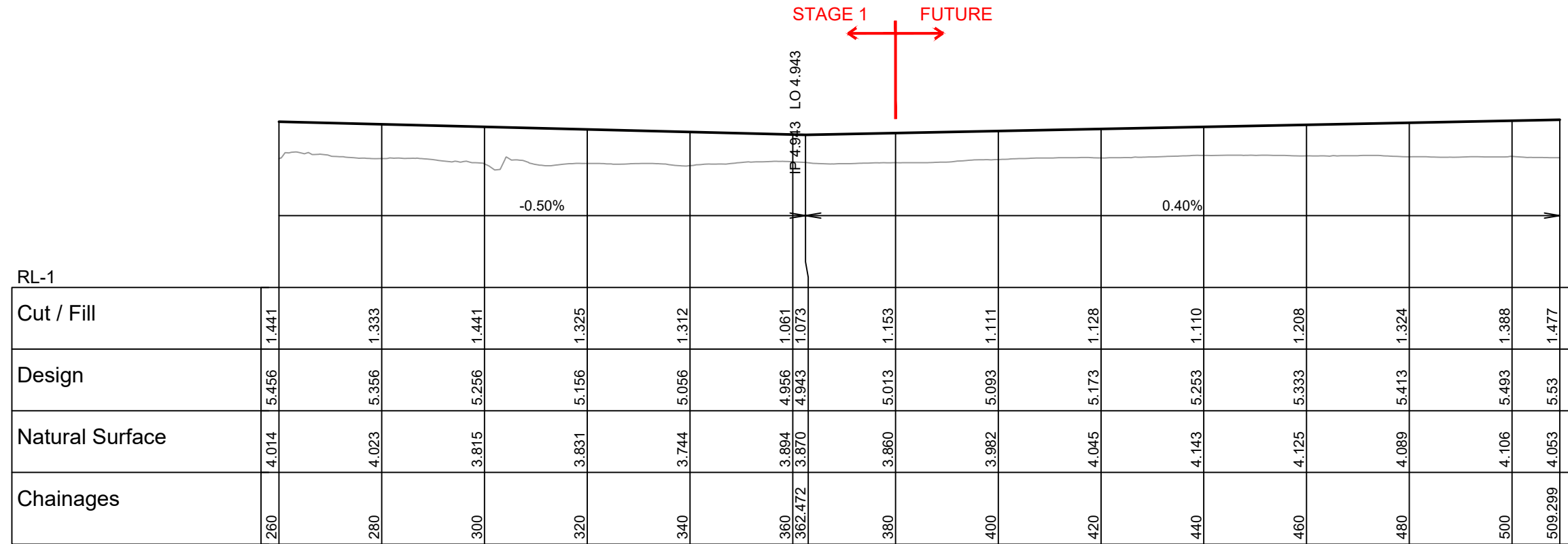
D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
PRAM CROSSING DETAILS &
RAISED SPEED TABLE TYPICAL SECTION

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE AS SHOWN @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD327	REVISION D		

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JF 19/12/2022



HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - Road 1



HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - Road 1

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD LONGITUDINAL SECTIONS
(SHEET 1)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3		STATUS FOR APPROVAL
DWG NUMBER DD330			REVISION D

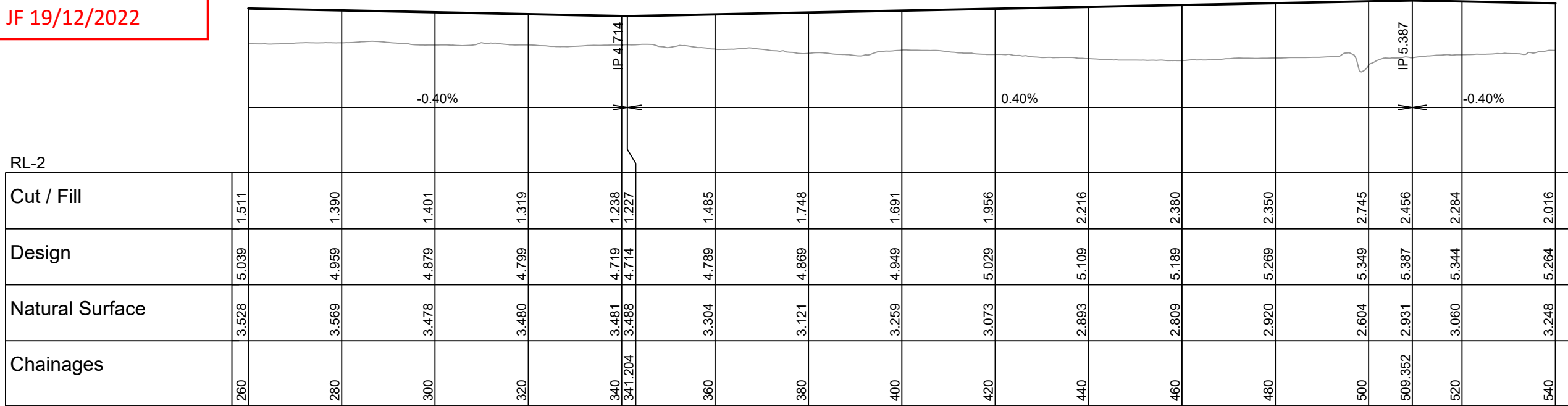
SCALE 1:1000

DATE PLOTTED: Thursday, 15 December 2022 4:30:52 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\IP0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\IP0318-STG1-DD330-Road LS.dwg

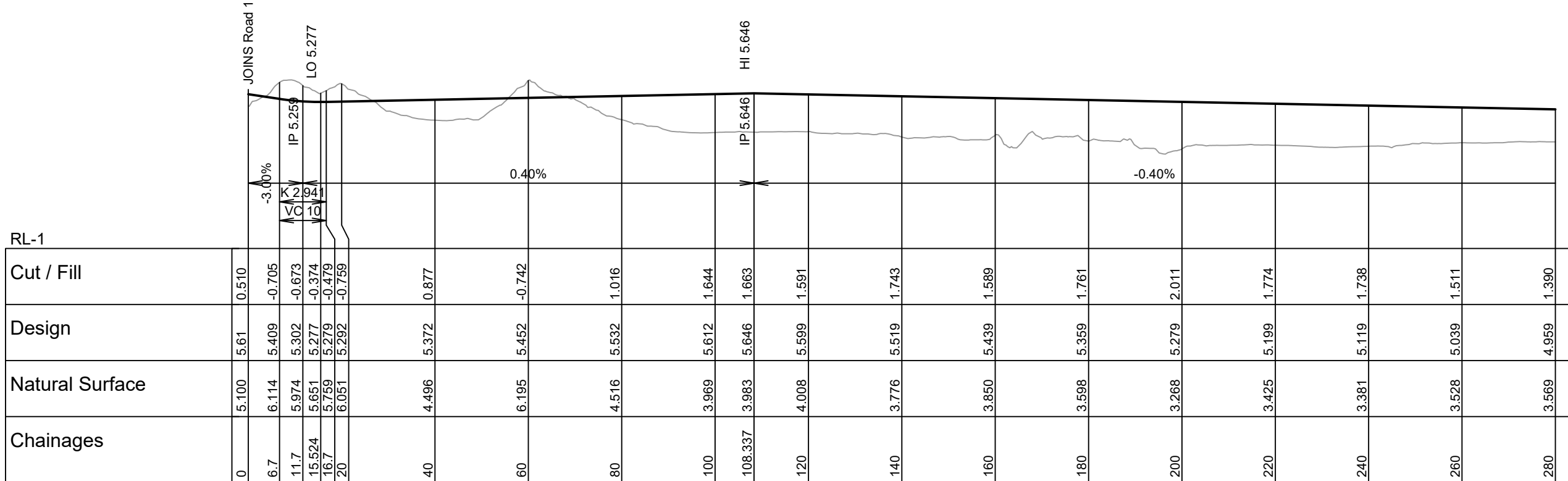
DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

STAGE 1
FUTURE



HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - Road 2



HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - Road 2

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

TRISHN NAND
ME., CPEng., IntPE(NZ)

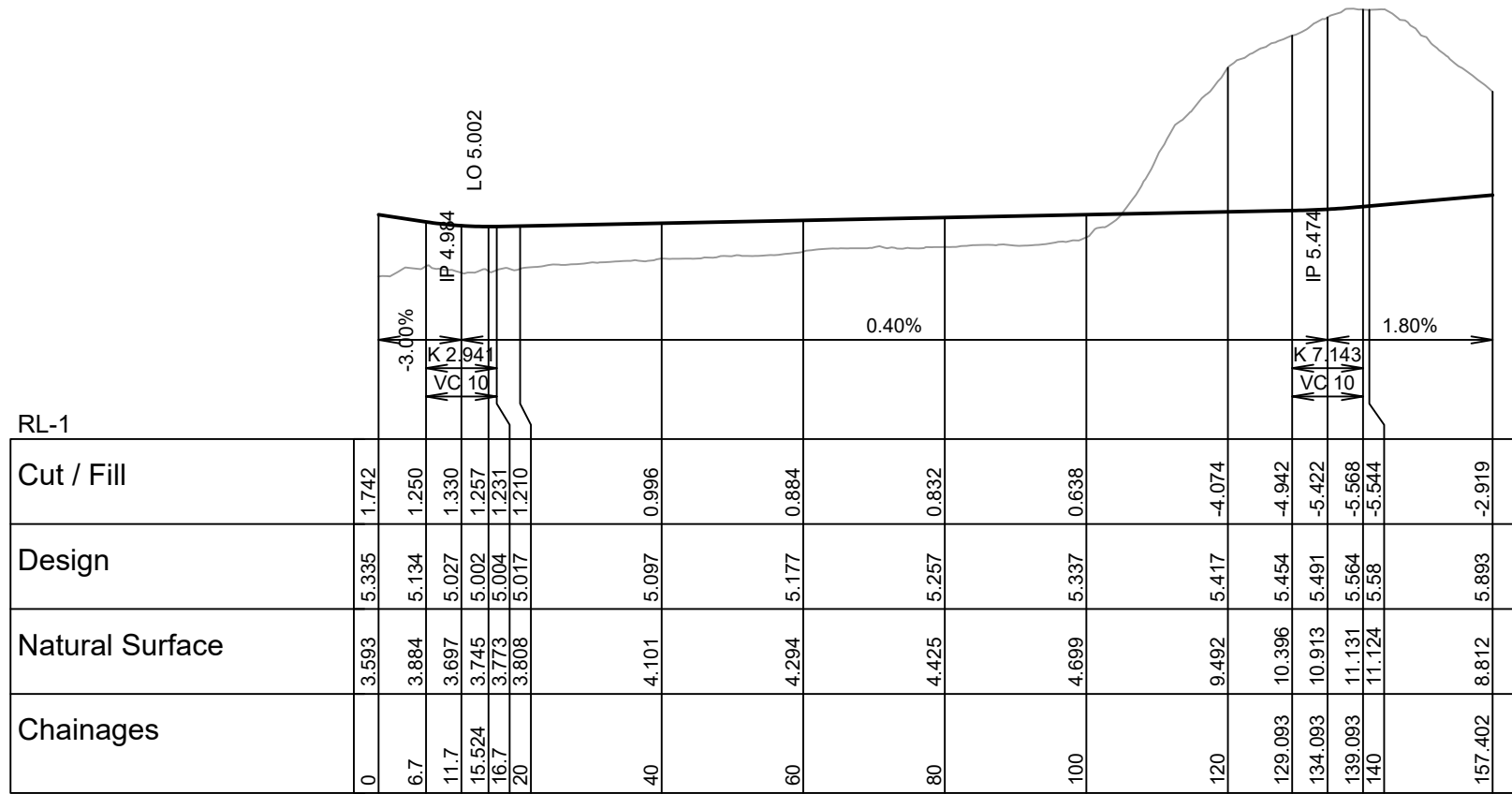


D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

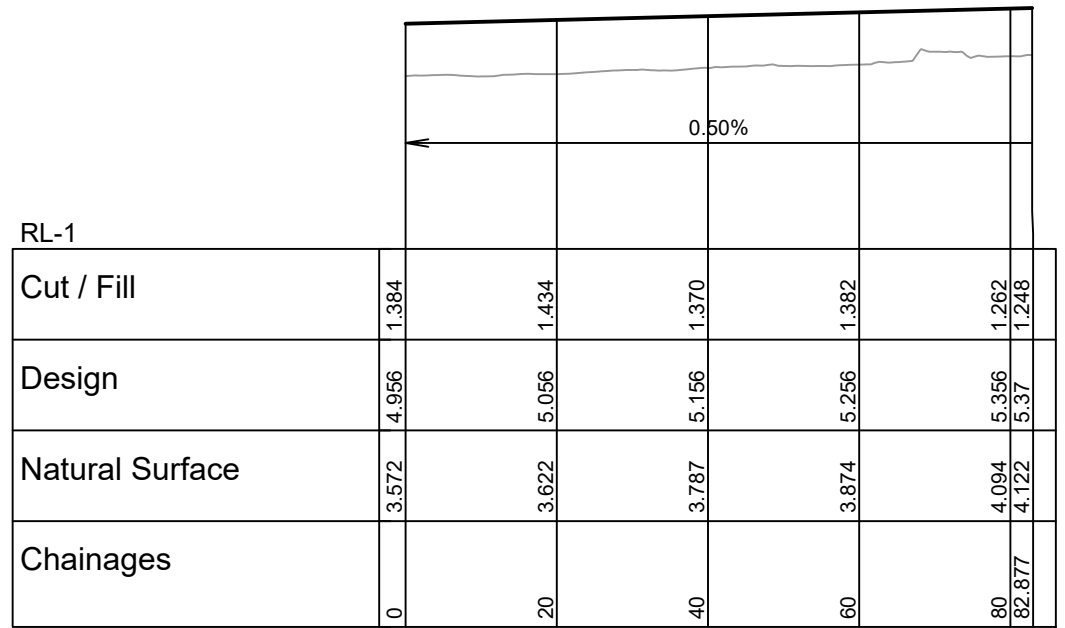
PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD LONGITUDINAL SECTIONS (SHEET 2)

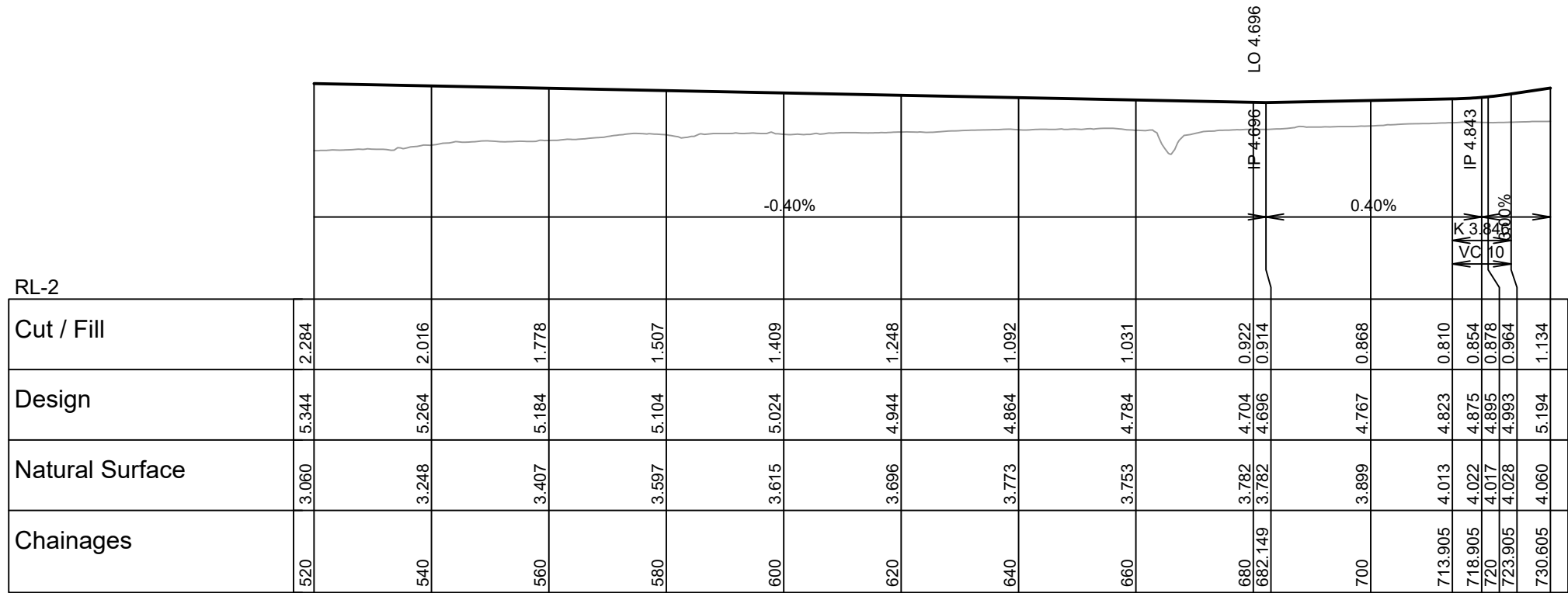
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	REVISION D
DWG NUMBER DD331			



HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - Road 3



HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - ROW 1



HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - Road 2

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

TRISHN NAND
ME., CPEng., IntPE(NZ)

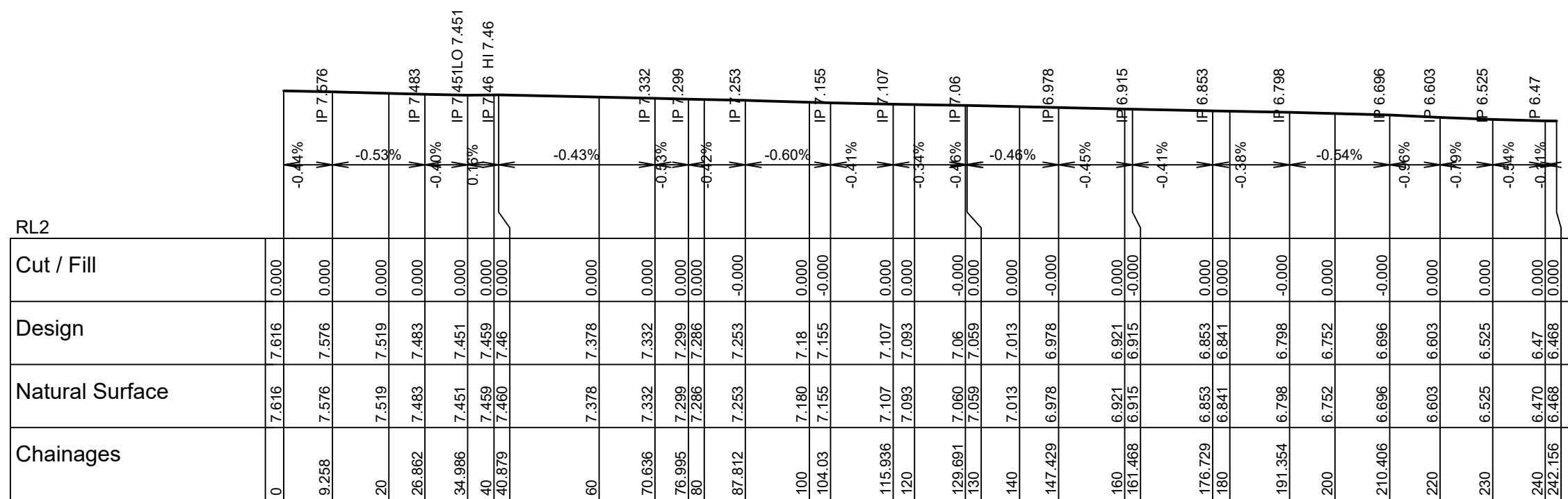


D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD LONGITUDINAL SECTIONS (SHEET 3)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD332	REVISION D		

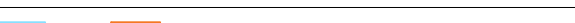


HORIZ 1:1000 VERT 1:200
LONGITUDINAL SECTION - MPR
(MARSDEN POINT ROAD EXISTING CENTRELINE)

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

**Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022**

TRISHN NAND
ME., CPEng., IntPE(NZ)

 www.vecta.co.nz	D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022 AP TN	PROJECT DETAILS HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS	TITLE ROAD LONGITUDINAL SECTIONS (SHEET 4)	DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
	C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022 AP TN			VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
	B	FOR APPROVAL	04-11-2022 AP TN			DWG NUMBER DD333	REVISION D		
	REV.	REVISION DETAILS	DRAWN APP.						

10
5
0

0 5 10 SCALE 1:250



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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

DATE PLOTTED: Thursday, 15 December 2022 4:31:12 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\IP0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\IP0318-STG1-DD340-Road XS.dwg

ROAD 1 (SHEET 1)

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD 1 CROSS SECTIONS
(SHEET 1)

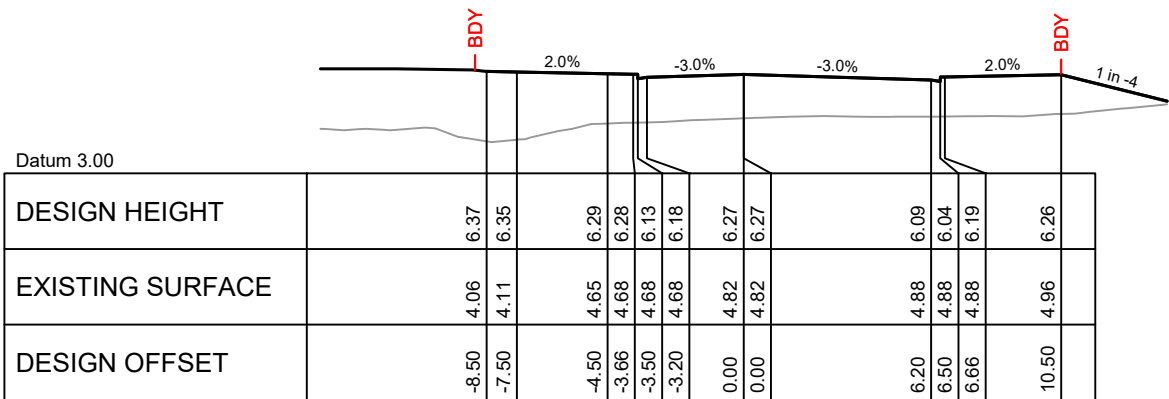
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD340		REVISION D	

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

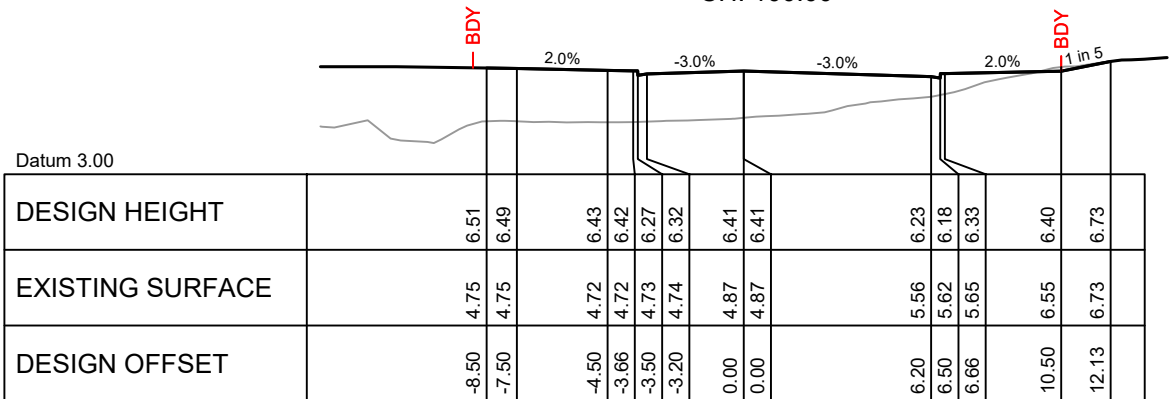
Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

TRISHN NAND
ME., CPEng., IntPE(NZ)

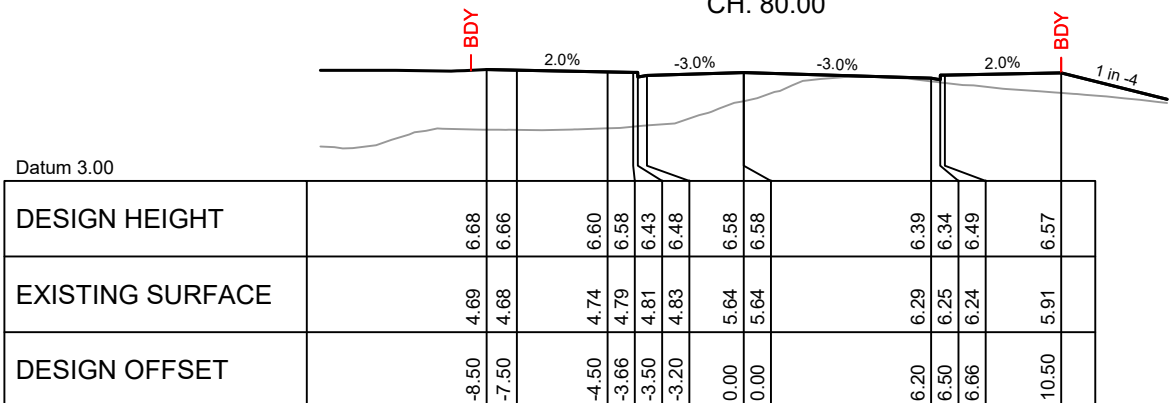
DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



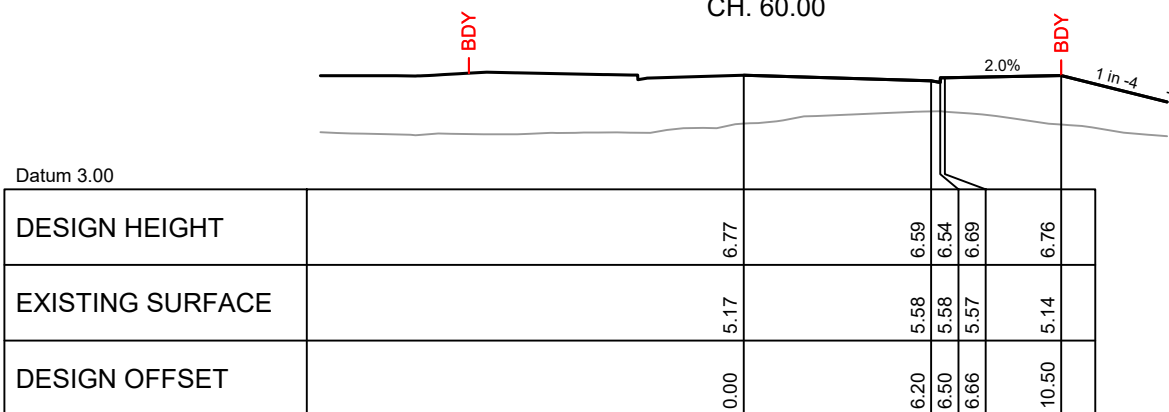
CH. 100.00



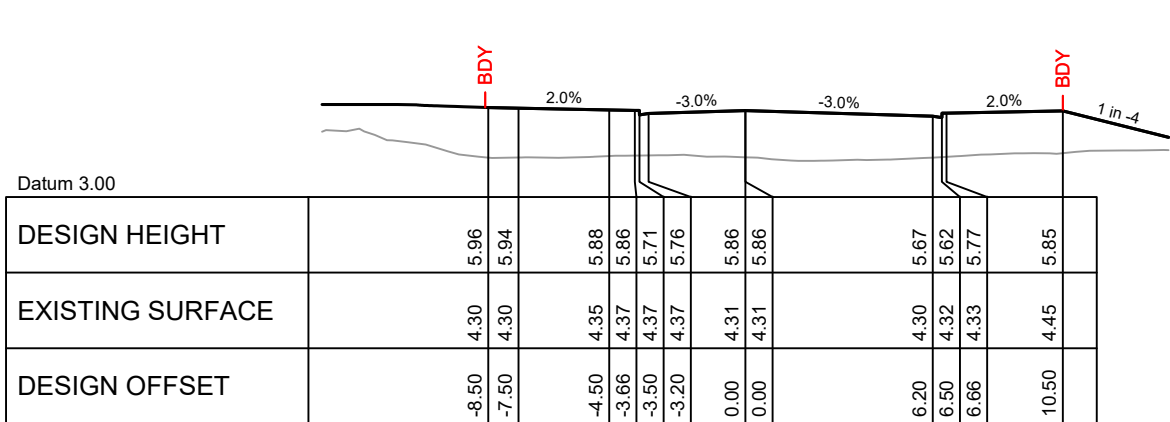
CH. 80.00



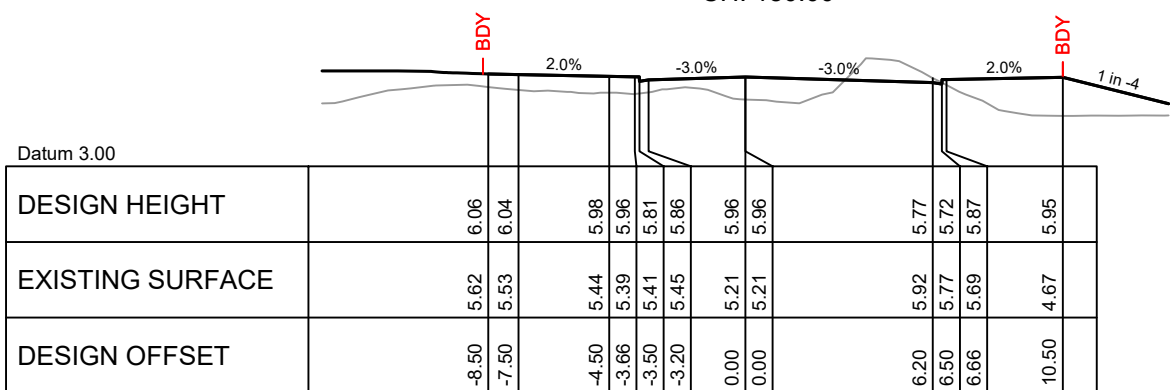
CH. 60.00



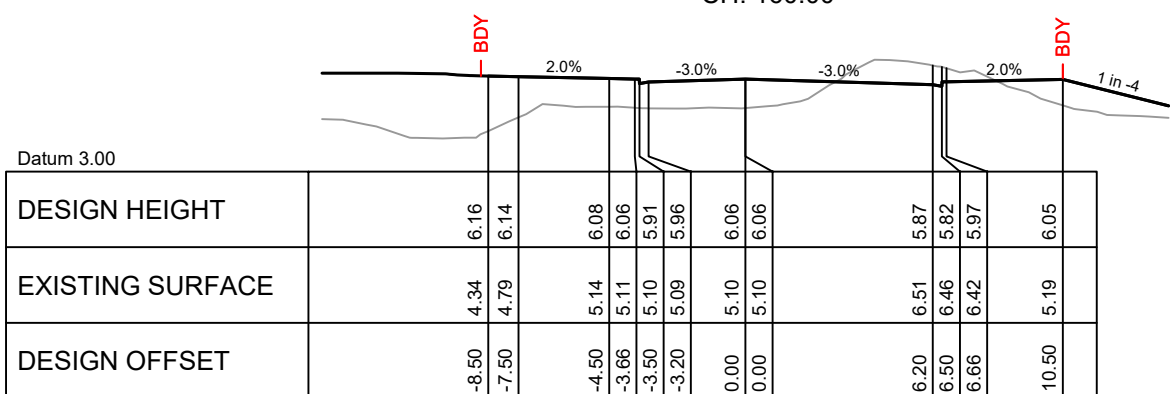
CH. 40.00



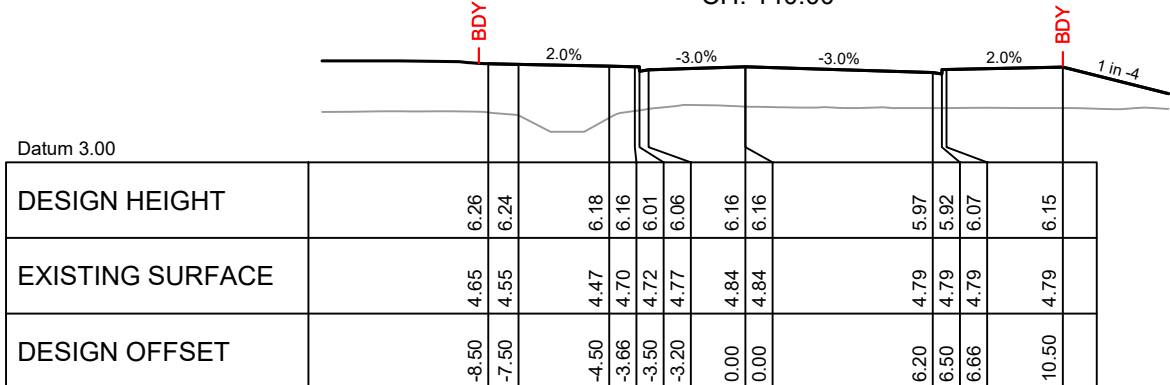
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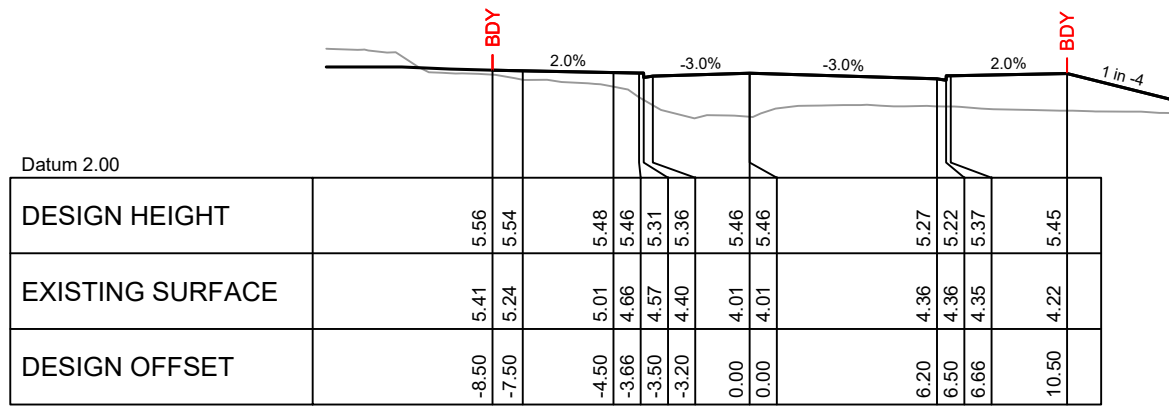
CH. 160.00



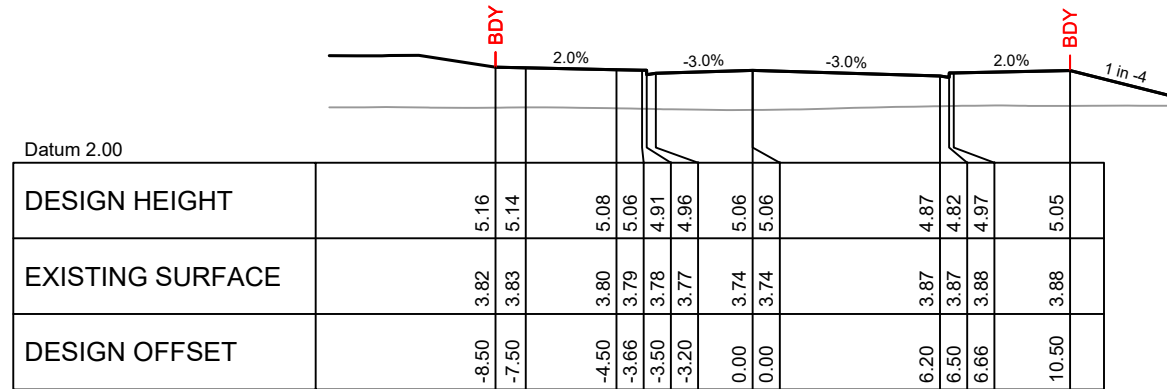
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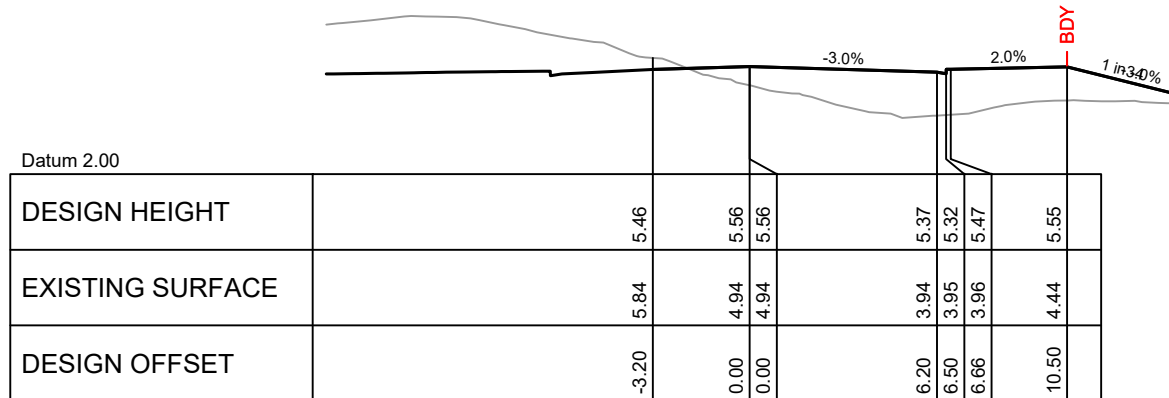
CH. 120.00



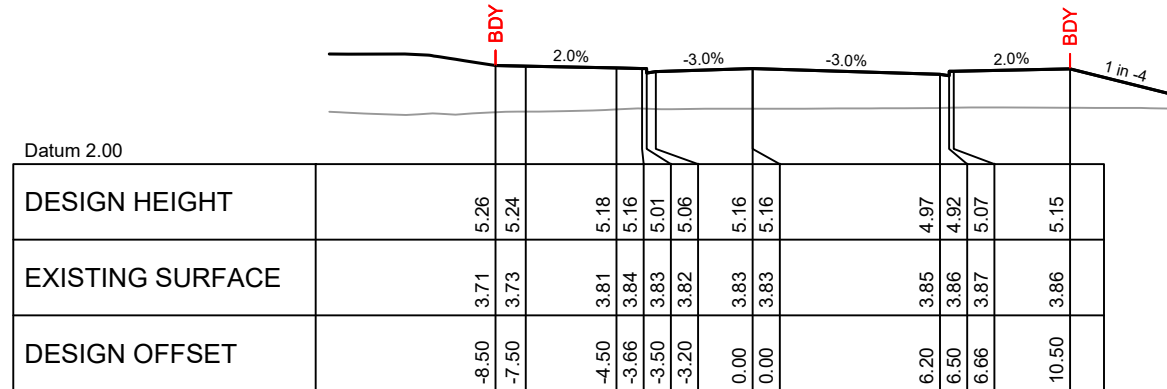
CH. 260.00



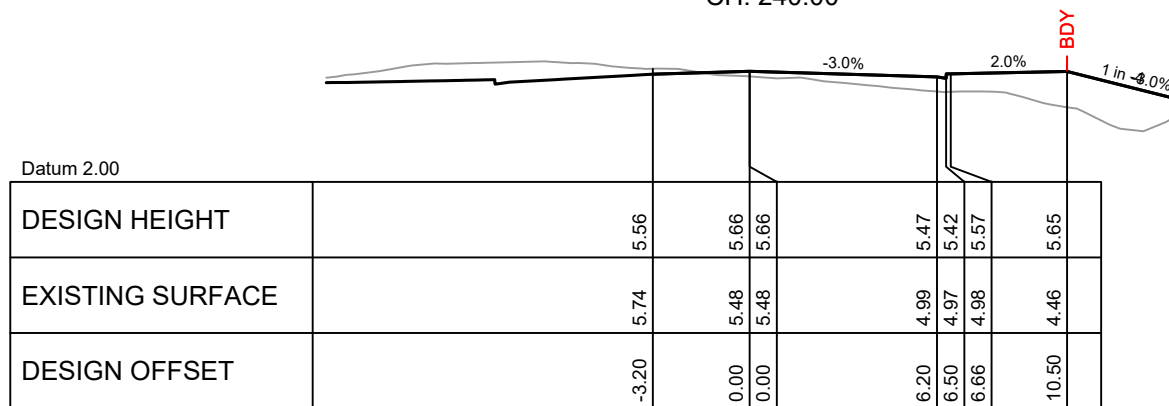
CH. 340.00



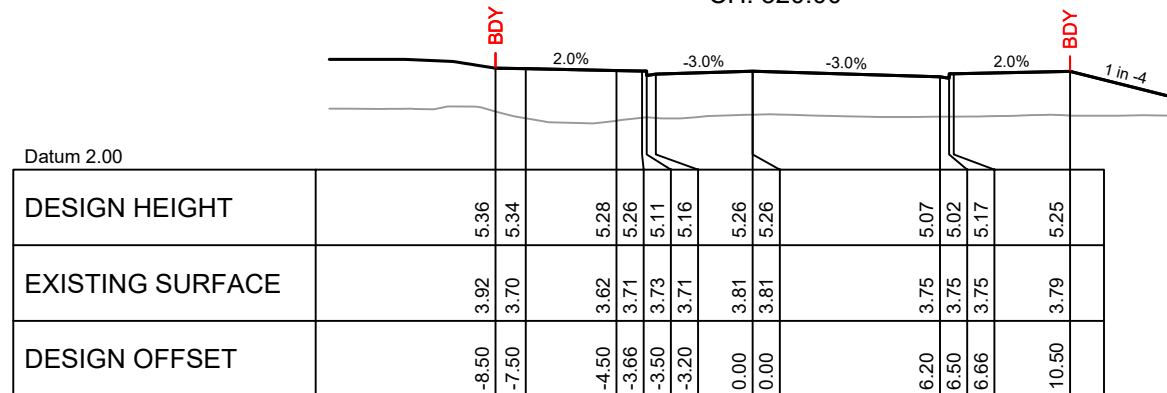
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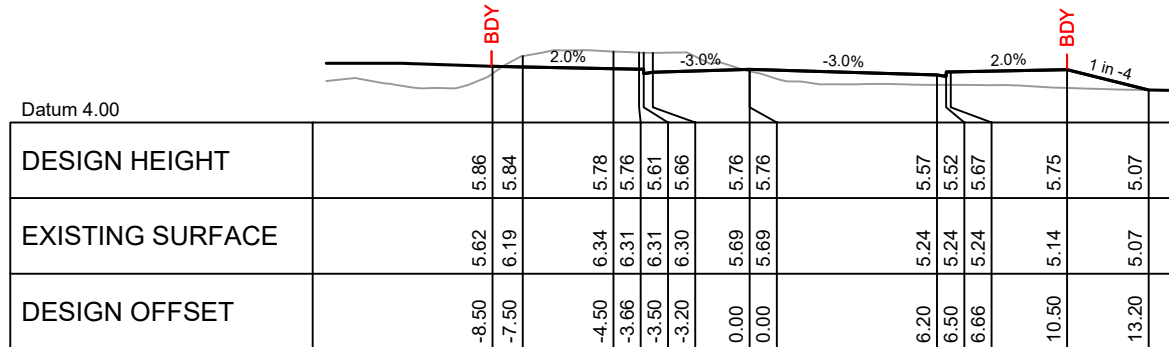
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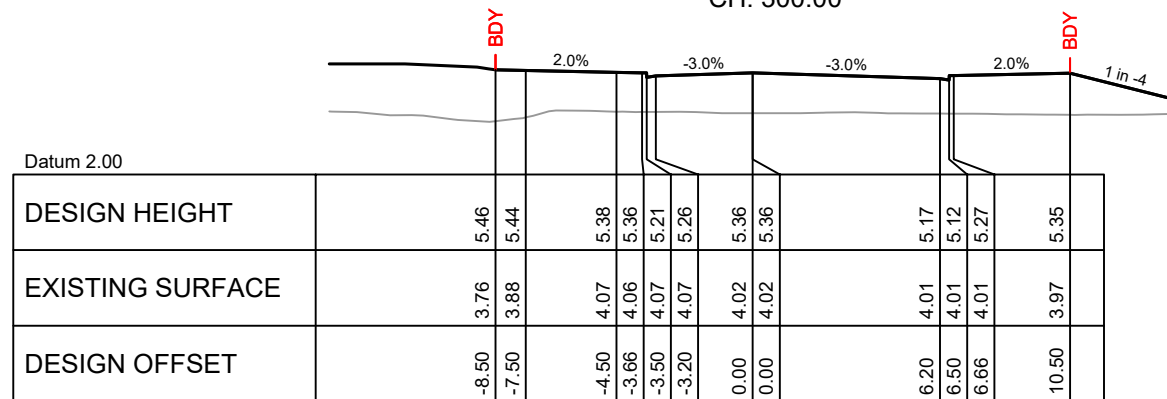
CH. 220.00



CH. 300.00



CH. 200.00



CH. 280.00

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

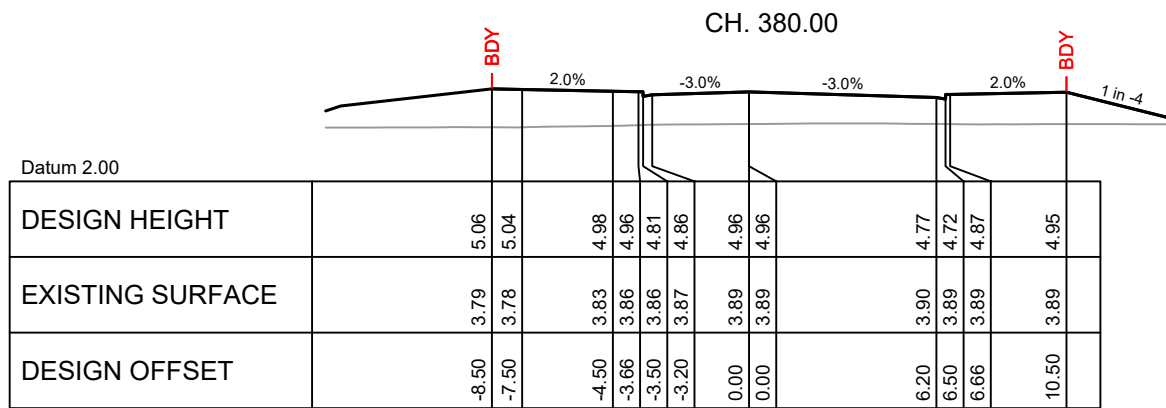
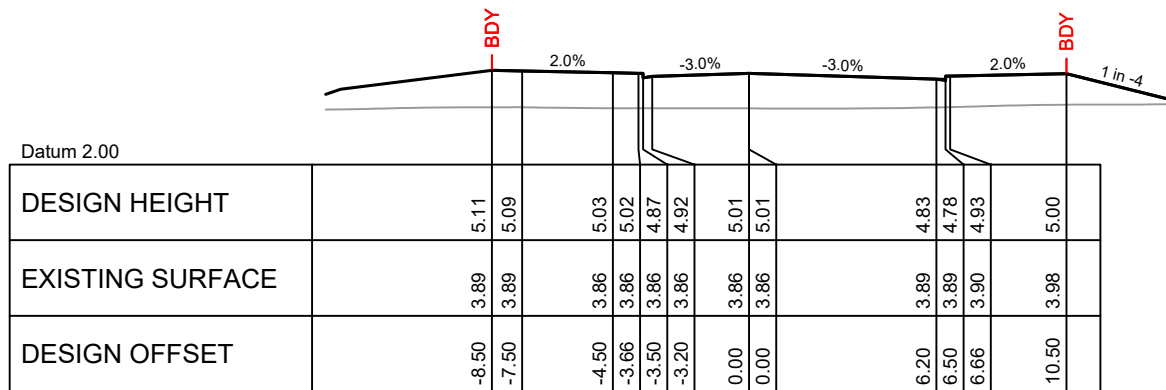
PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD 1 CROSS SECTIONS (SHEET 2)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD341	REVISION D		

TRISHN NAND
ME., CPEng., IntPE(NZ)

10
5
0
SCALE 1:250



CH. 360.00

ROAD 1 (SHEET 3)

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD 1 CROSS SECTIONS (SHEET 3)

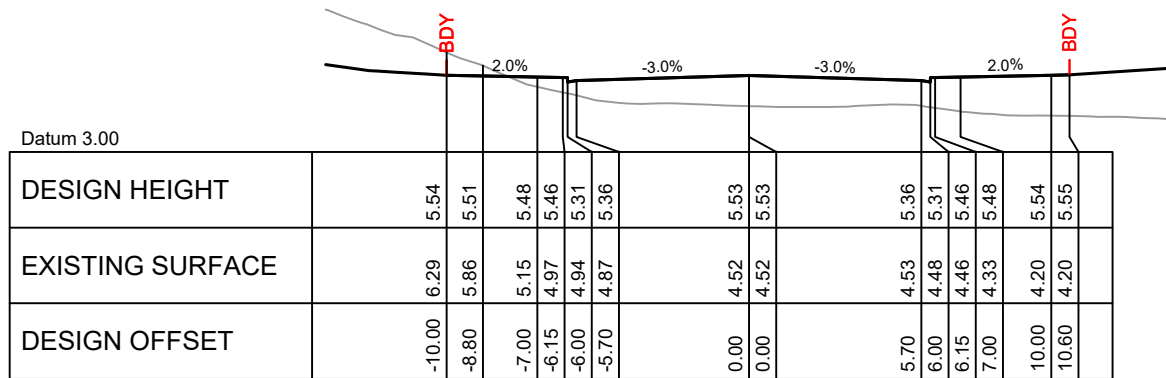
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD342		REVISION D	

TRISHN NAND
ME., CPEng., IntPE(NZ)

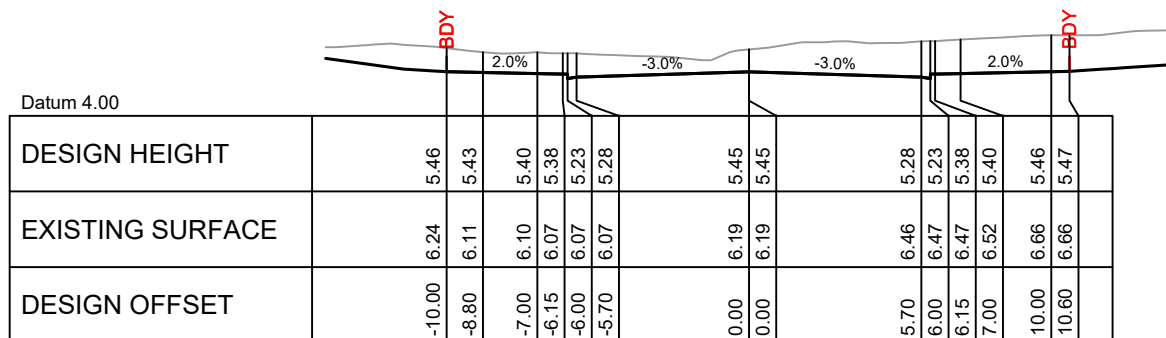
0 5 10 SCALE 1:250

DATE PLOTTED: Thursday, 15 December 2022 4:31:21 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD340-Road XS.dwg

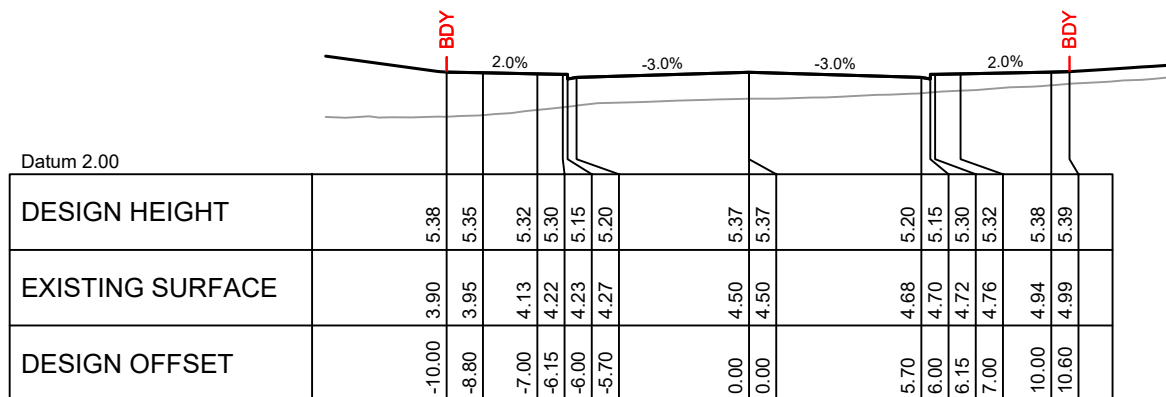
DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



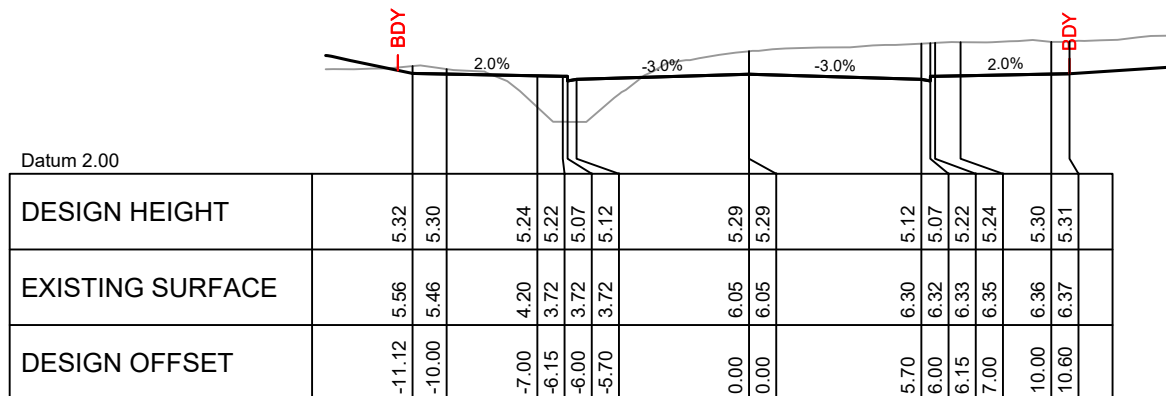
CH. 80.00



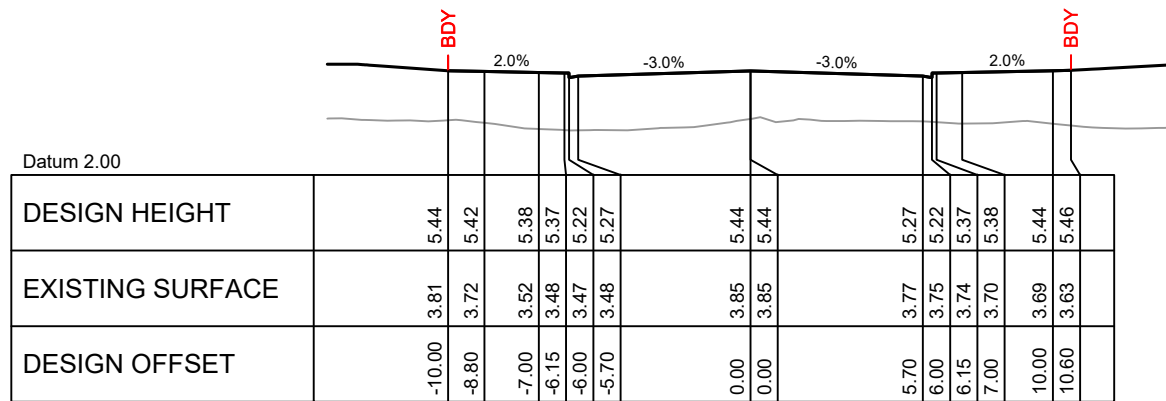
CH. 60.00



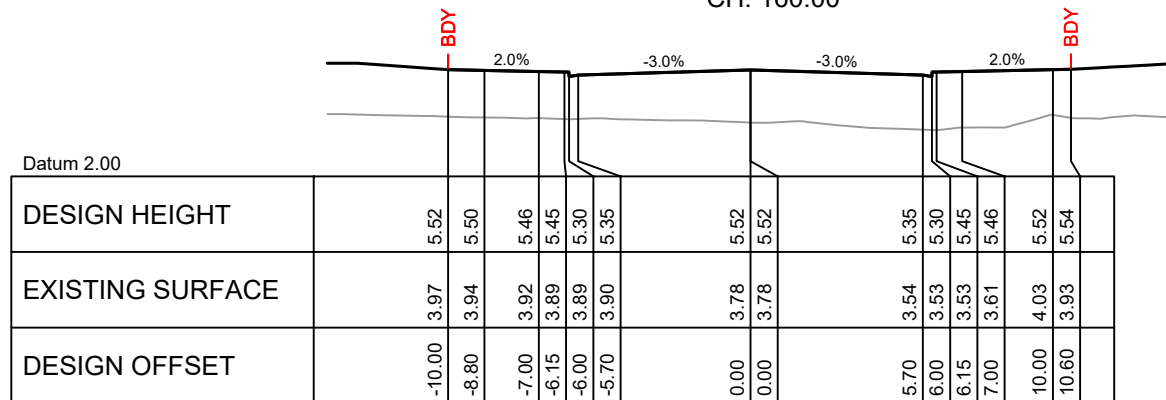
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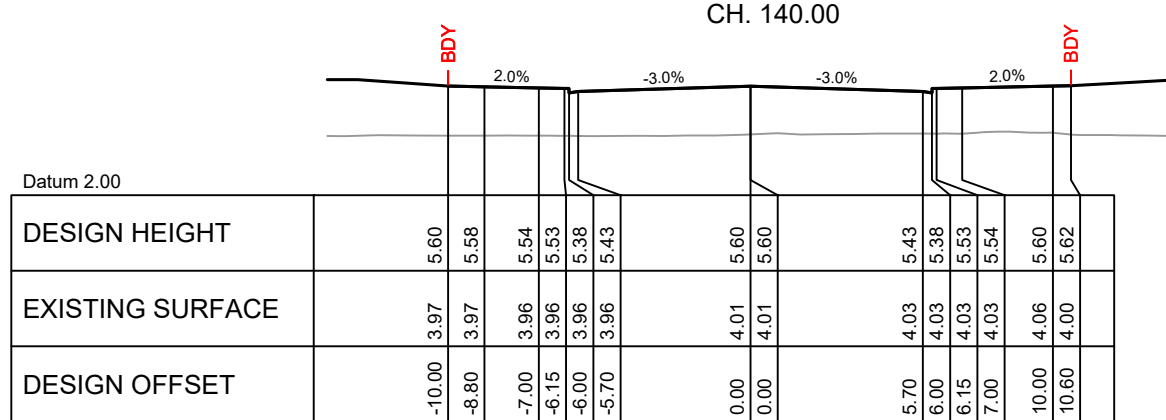
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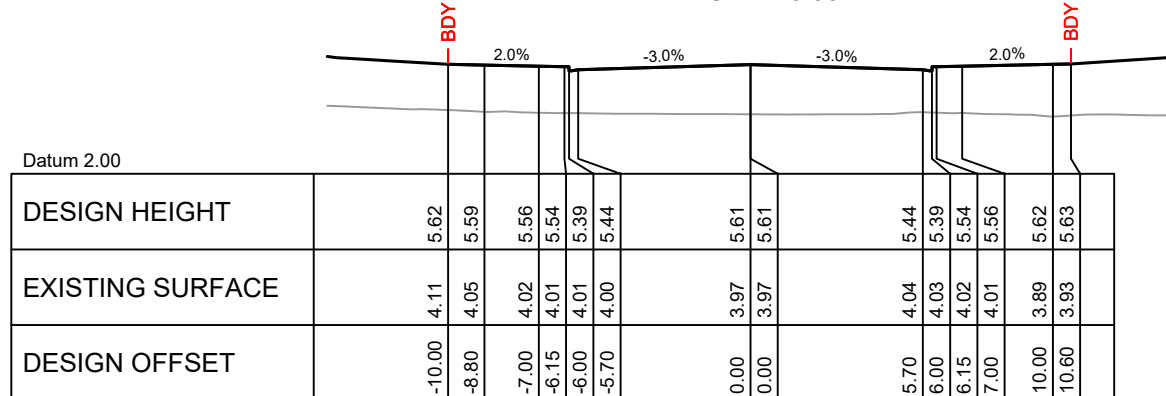
CH. 160.00



CH. 140.00



CH. 120.00



CH. 100.00

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

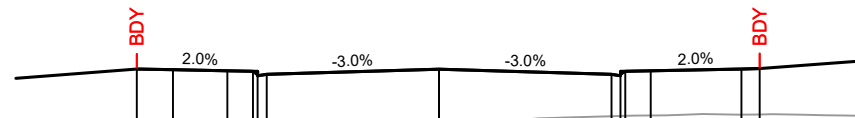
PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD 2 CROSS SECTIONS
(SHEET 1)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3		STATUS FOR APPROVAL
DWG NUMBER DD343		REVISION D	

TRISHN NAND
ME., CPEng., IntPE(NZ)

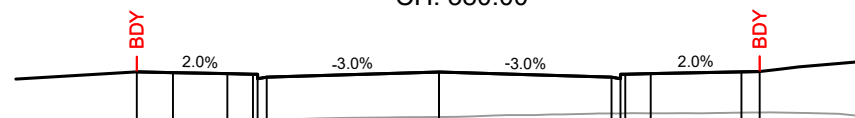
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SCALE 1:250
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Datum 1.00

DESIGN HEIGHT		4.88	4.85	4.82	4.80	4.65	4.70		4.87	4.87		4.70	4.65	4.80	4.82	4.88	4.89
EXISTING SURFACE		2.98	2.98	2.98	2.98	2.98	2.99		3.12	3.12		3.31	3.32	3.33	3.34	3.37	3.37
DESIGN OFFSET		-10.00	-8.80	-7.00	-6.15	-6.00	-5.70		0.00	0.00		5.70	6.00	6.15	7.00	10.00	10.60

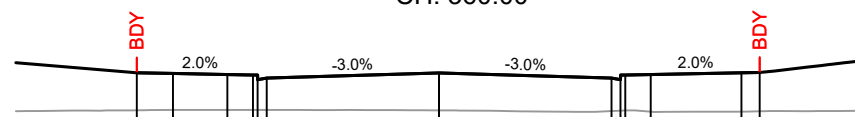
CH. 380.00



Datum 2.00

DESIGN HEIGHT		4.80	4.77	4.74	4.72	4.57	4.62		4.79	4.79		4.62	4.57	4.72	4.74	4.80	4.81
EXISTING SURFACE		3.12	3.11	3.19	3.19	3.20	3.21		3.30	3.30		3.42	3.42	3.42	3.43	3.45	3.45
DESIGN OFFSET		-10.00	-8.80	-7.00	-6.15	-6.00	-5.70		0.00	0.00		5.70	6.00	6.15	7.00	10.00	10.60

CH. 360.00



Datum 2.00

DESIGN HEIGHT		4.72	4.70	4.66	4.65	4.50	4.55		4.72	4.72		4.55	4.50	4.65	4.66	4.72	4.74
EXISTING SURFACE		3.49	3.50	3.50	3.50	3.50	3.50		3.48	3.48		3.46	3.47	3.48	3.44	3.44	3.45
DESIGN OFFSET		-10.00	-8.80	-7.00	-6.15	-6.00	-5.70		0.00	0.00		5.70	6.00	6.15	7.00	10.00	10.60

CH. 340.00

ROAD 2 (SHEET 3)

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

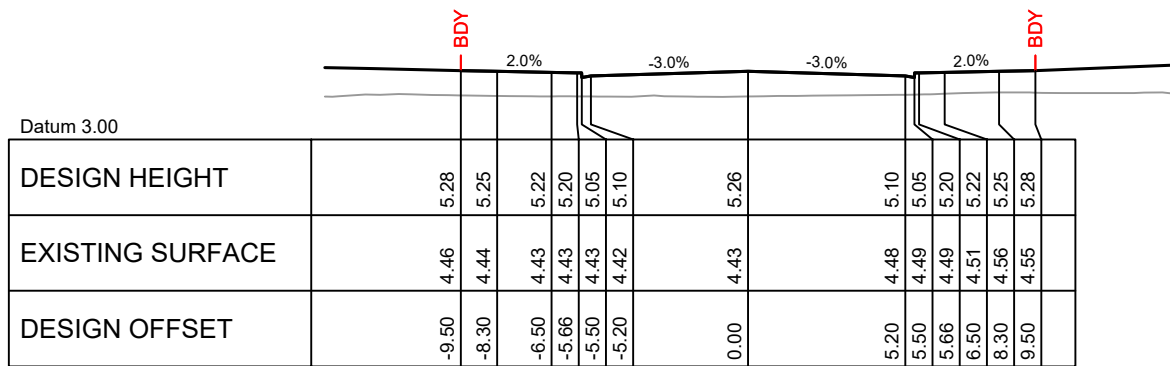
PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD 2 CROSS SECTIONS
(SHEET 3)

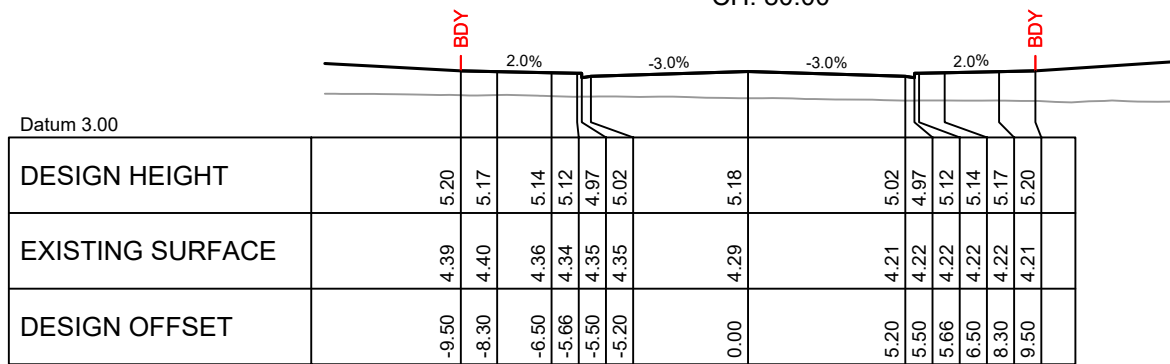
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD345		REVISION D	

TRISHN NAND
ME., CPEng., IntPE(NZ)

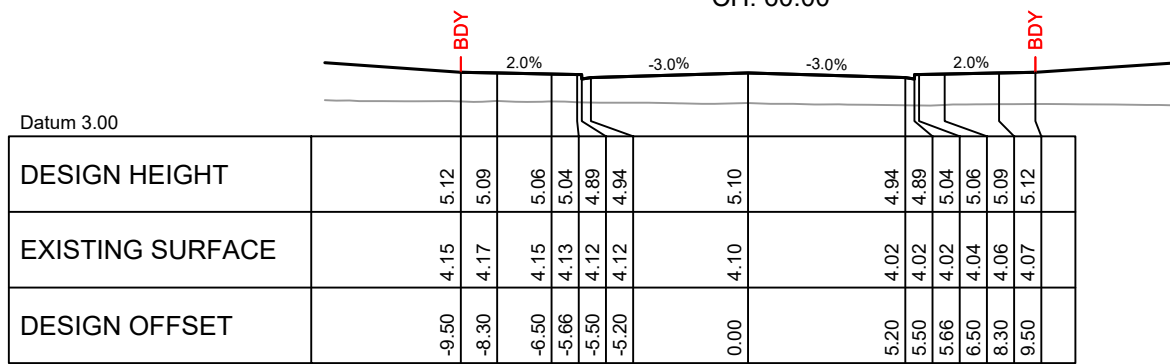
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SCALE 1:250
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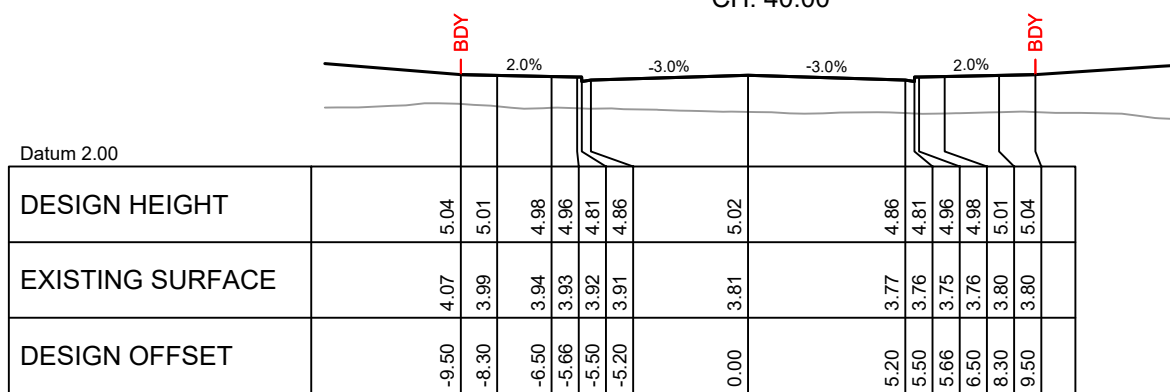
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CH. 60.00



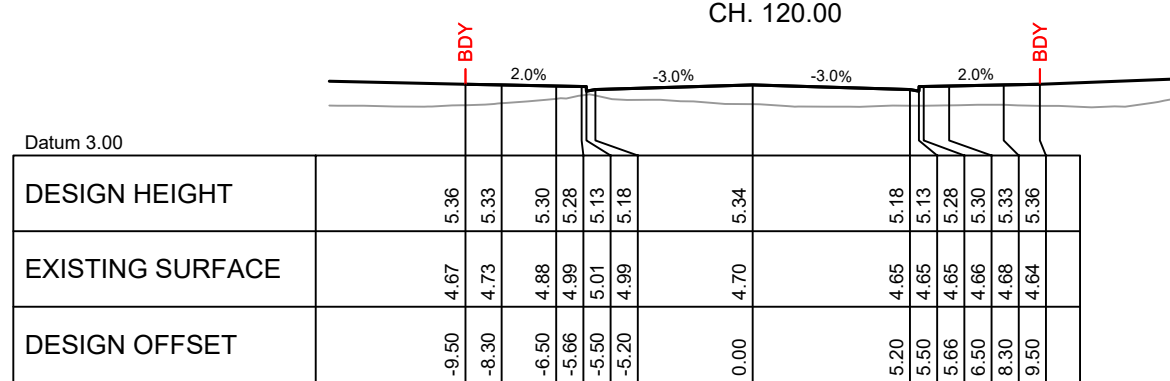
CH. 40.00



CH. 20.00



CH. 120.00



CH. 100.00

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

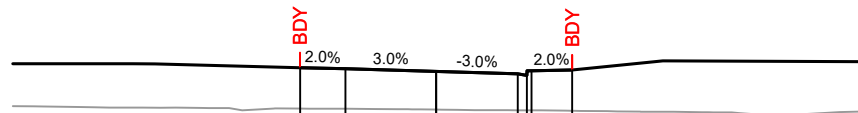
PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
ROAD 3 CROSS SECTIONS
(SHEET 1)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3		STATUS FOR APPROVAL
DWG NUMBER DD346			REVISION D

TRISHN NAND
ME., CPEng., IntPE(NZ)

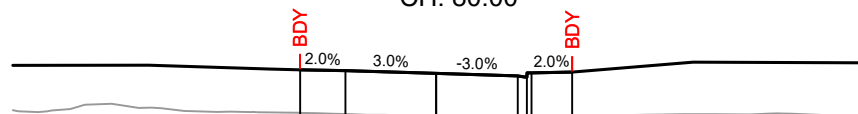
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SCALE 1:250



Datum 2.00

DESIGN HEIGHT		5.48	5.45	5.36	5.36	5.28	5.23	5.38	5.40
EXISTING SURFACE		4.13	4.12	4.09	4.09	4.07	4.07	4.05	
DESIGN OFFSET		-4.49	-3.00	0.00	0.00	2.70	3.00	3.15	4.50

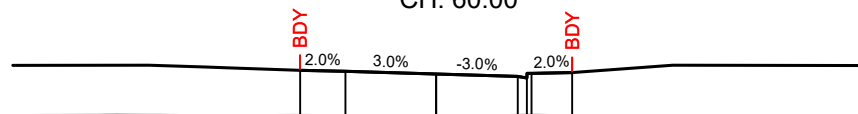
CH. 80.00



Datum 2.00

DESIGN HEIGHT		5.38	5.35	5.26	5.26	5.18	5.13	5.28	5.30
EXISTING SURFACE		3.95	3.91	3.87	3.87	3.86	3.86	3.87	
DESIGN OFFSET		-4.49	-3.00	0.00	0.00	2.70	3.00	3.15	4.50

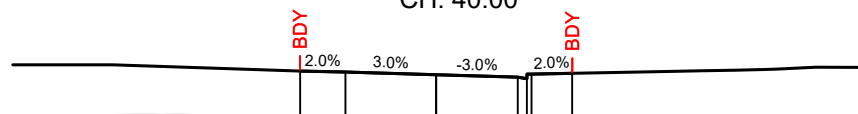
CH. 60.00



Datum 2.00

DESIGN HEIGHT		5.28	5.25	5.16	5.16	5.08	5.03	5.18	5.20
EXISTING SURFACE		3.81	3.80	3.79	3.79	3.81	3.81	3.81	
DESIGN OFFSET		-4.49	-3.00	0.00	0.00	2.70	3.00	3.15	4.50

CH. 40.00



Datum 2.00

DESIGN HEIGHT		5.18	5.15	5.06	5.06	4.98	4.93	5.08	5.10
EXISTING SURFACE		3.66	3.65	3.62	3.62	3.61	3.61	3.61	
DESIGN OFFSET		-4.50	-3.00	0.00	0.00	2.70	3.00	3.15	4.50

CH. 20.00

ROW 1 (SHEET 1)

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
ROW 1 CROSS SECTIONS (SHEET 1)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD347	REVISION D		

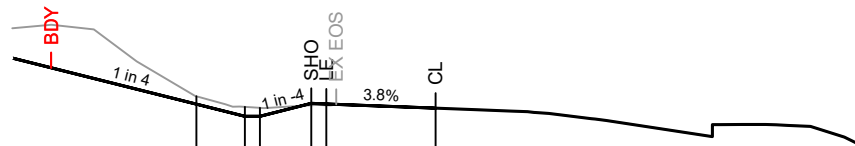
TRISHN NAND
ME., CPEng., IntPE(NZ)

0 5 10 SCALE 1:250

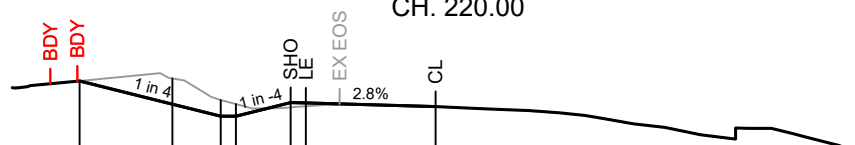
DATE PLOTTED: Thursday, 15 December 2022 4:31:46 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD340-Road XS.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY

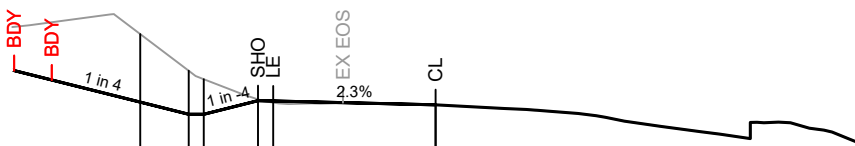
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SCALE 1:250
5
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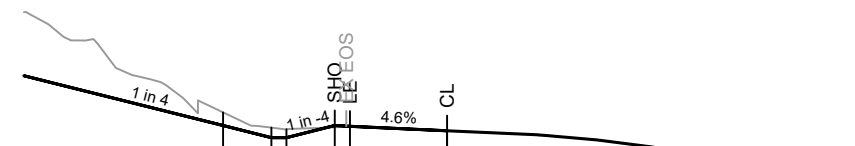
Datum 4.00									
DESIGN HEIGHT			6.74	6.34	6.34	6.76	6.74		6.60
EXISTING SURFACE			7.00	6.65	6.61	6.70	6.70		6.60
DESIGN OFFSET			-7.91	-6.31	-5.81	-4.11	-3.61		0.00



Datum 4.00									
DESIGN HEIGHT		7.60	6.83	6.43	6.43	6.89	6.87		6.75
EXISTING SURFACE		7.60	7.68	6.97	6.83	6.72	6.76		6.75
DESIGN OFFSET		-11.77	-8.70	-7.10	-6.60	-4.79	-4.29		0.00



Datum 4.00									
DESIGN HEIGHT		6.93	6.53	6.53	6.98	6.96		6.84	6.84
EXISTING SURFACE		9.18	7.97	7.69	7.02	6.91		6.84	6.84
DESIGN OFFSET		-9.76	-8.16	-7.66	-5.87	-5.37		0.00	0.00



Datum 3.00									
DESIGN HEIGHT		6.64	6.24	6.24	6.64	6.62		6.47	6.47
EXISTING SURFACE		7.08	6.57	6.52	6.59	6.62		6.47	6.47
DESIGN OFFSET		-7.41	-5.81	-5.31	-3.71	-3.21		0.00	0.00

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Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

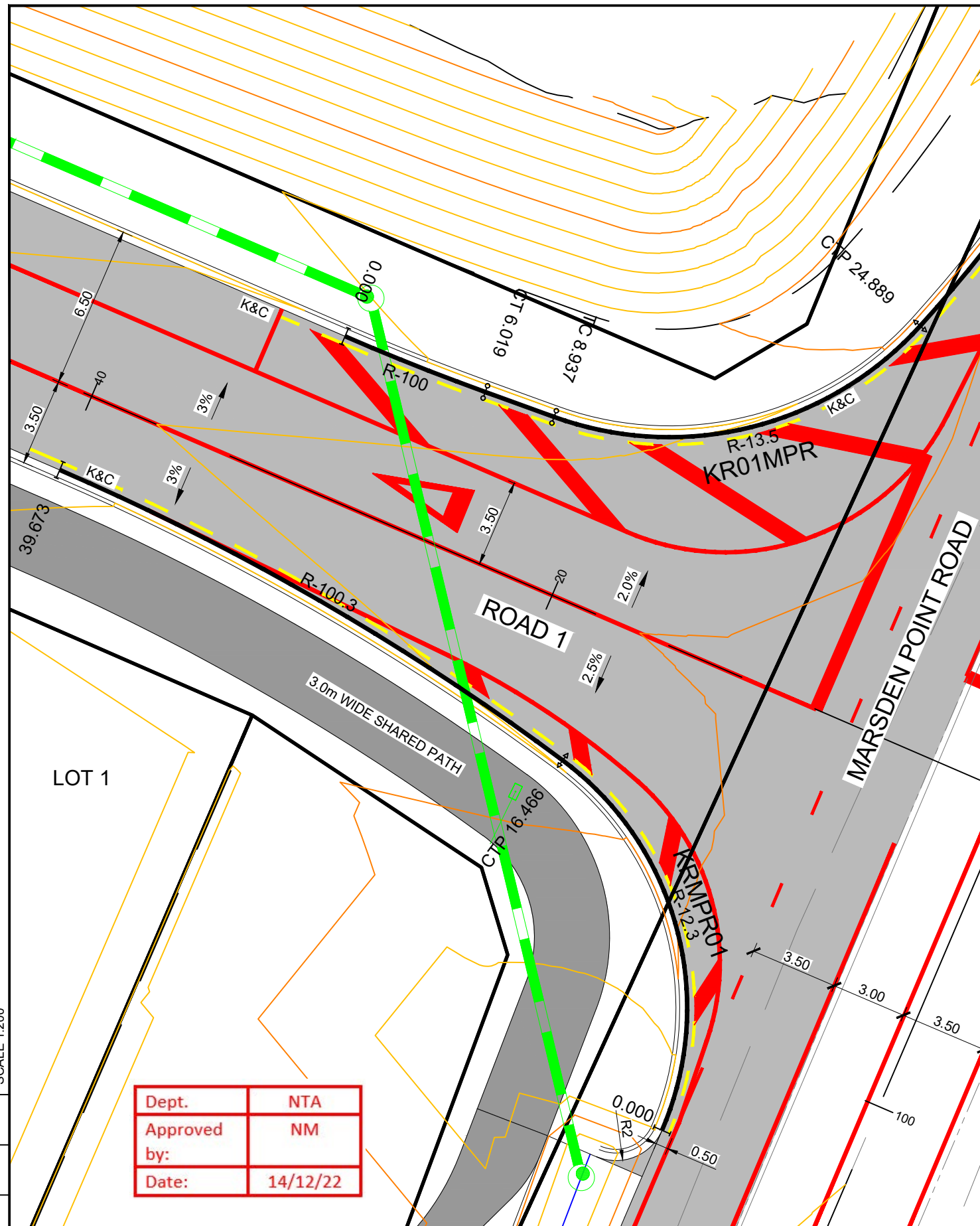
PROJECT DETAILS	
HKRS HOLDINGS LTD	
DEVELOPMENT OF	
BREAM BAY BUSINESS HUB - STAGE 1A & 1	
DETAIL DESIGN ENGINEERING PLANS	

TITLE	
MARSDEN POINT ROAD CROSS SECTIONS	
(SHEET 2)	

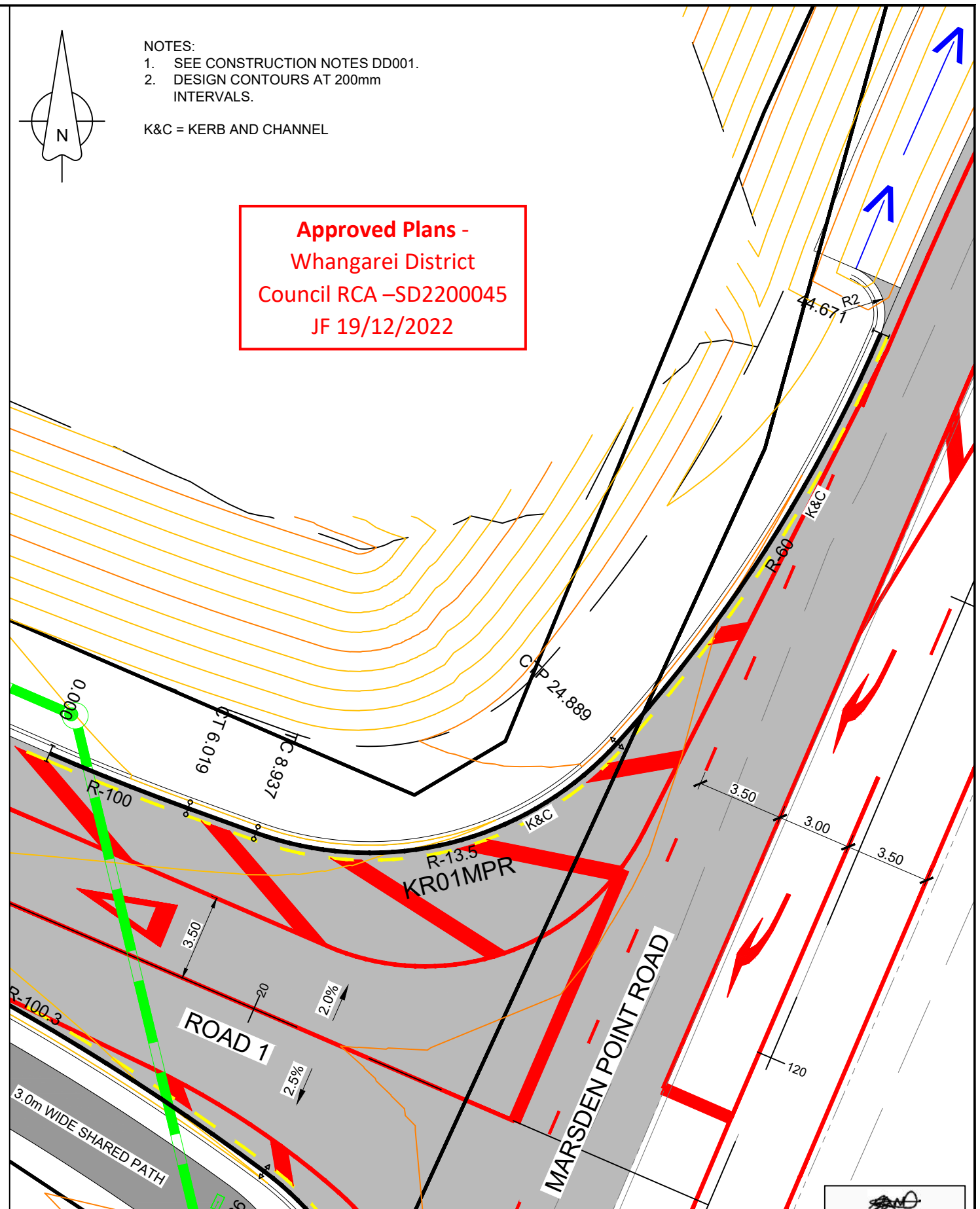
DATE CREATED	31-08-2022	DRAWN	AP	DESIGNED	AP	APPROVED	TN
VECTA REF NO		SCALE		STATUS			
P0318		1:250 @ A3		FOR APPROVAL			
DWG NUMBER				REVISION			
DD349				D			

TRISHN NAND
ME., CPEng., IntPE(NZ)

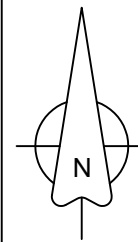
NOTES:
1. SEE CONSTRUCTION NOTES DD001.



KRMPR01



KR01MPR



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.

K&C = KERB AND CHANNEL

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS

HKRS HOLDINGS LTD
 DEVELOPMENT OF
 BREM BAY BUSINESS HUB - STAGE 1A & 1
 DETAIL DESIGN ENGINEERING PLANS

TITLE

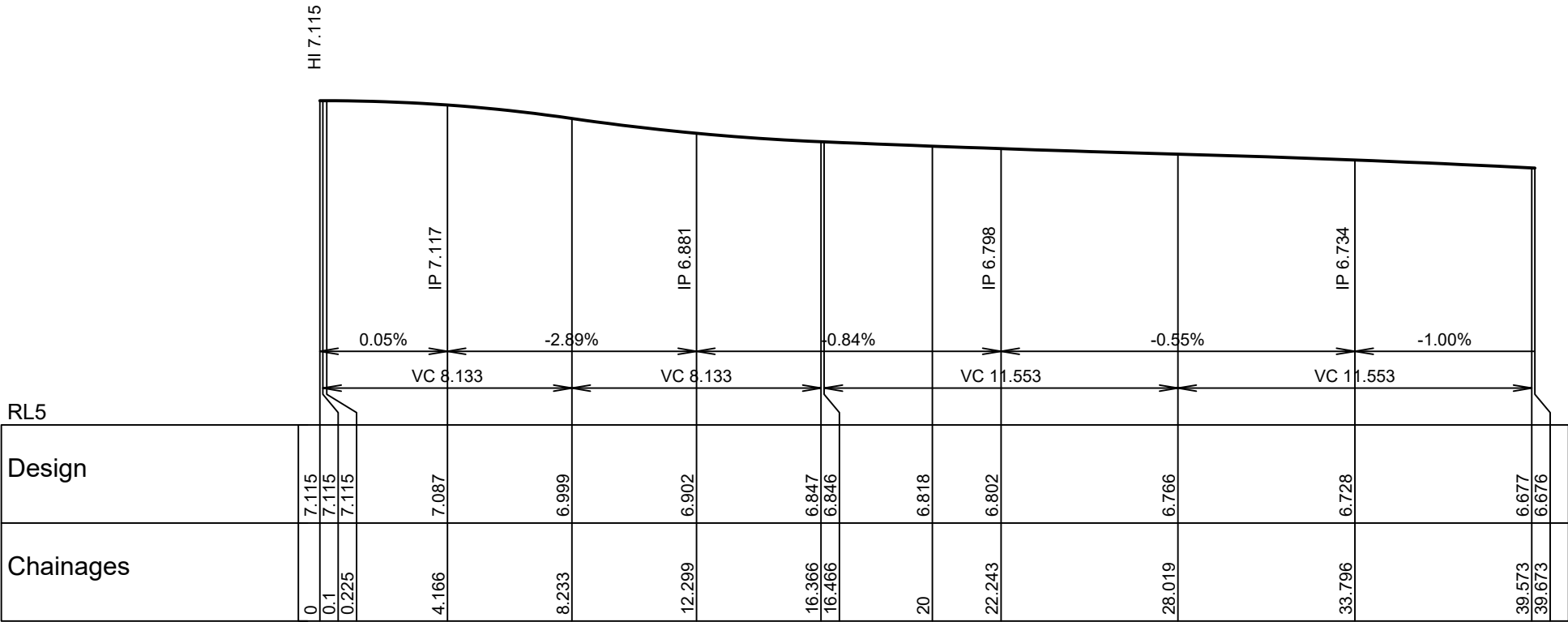
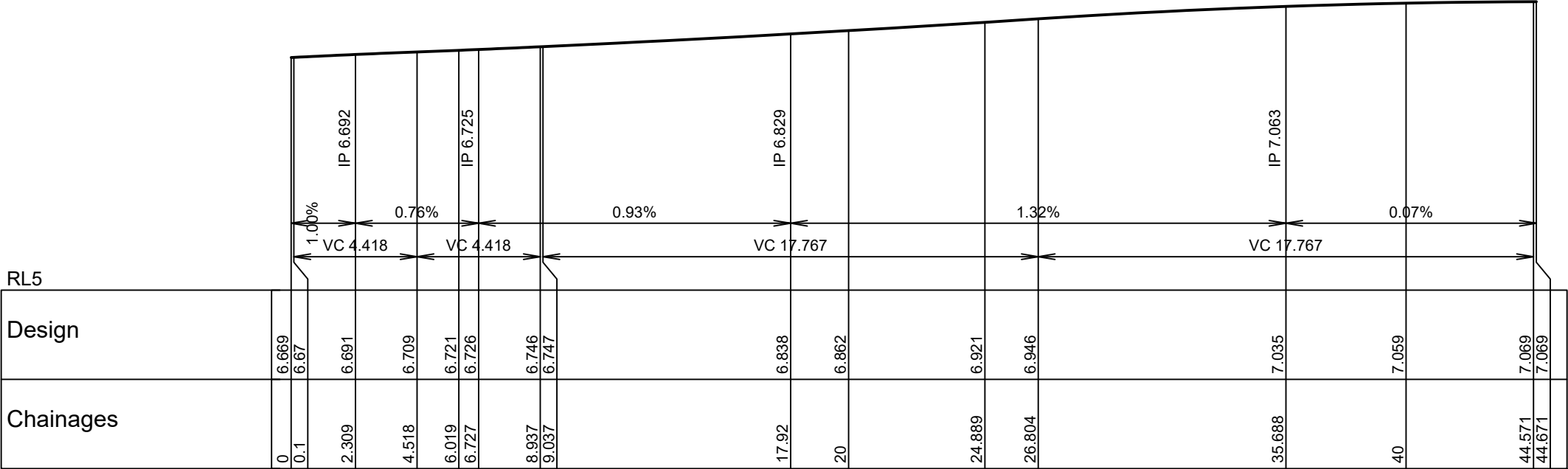
KERB RETURNS
 INTERSECTION OF MARSDEN POINT ROAD
 AND ROAD 1 (SHEET 1)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:200 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD360		REVISION D	

TRISHN NAND
 ME., CPEng., IntPE(NZ)

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.

K&C = KERB AND CHANNEL



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Whangarei District
Council RCA –SD2200045
JF 19/12/2022

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS

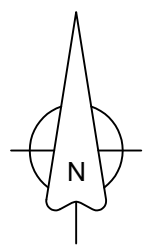
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

KERB RETURNS
INTERSECTION OF MARSDEN POINT ROAD
AND ROAD 1 (SHEET 2)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:200 @ A3		STATUS FOR APPROVAL
DWG NUMBER DD361			REVISION D

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



NOTES:

1. SEE CONSTRUCTION NOTES DD001.
2. DESIGN CONTOURS AT 200mm INTERVALS.

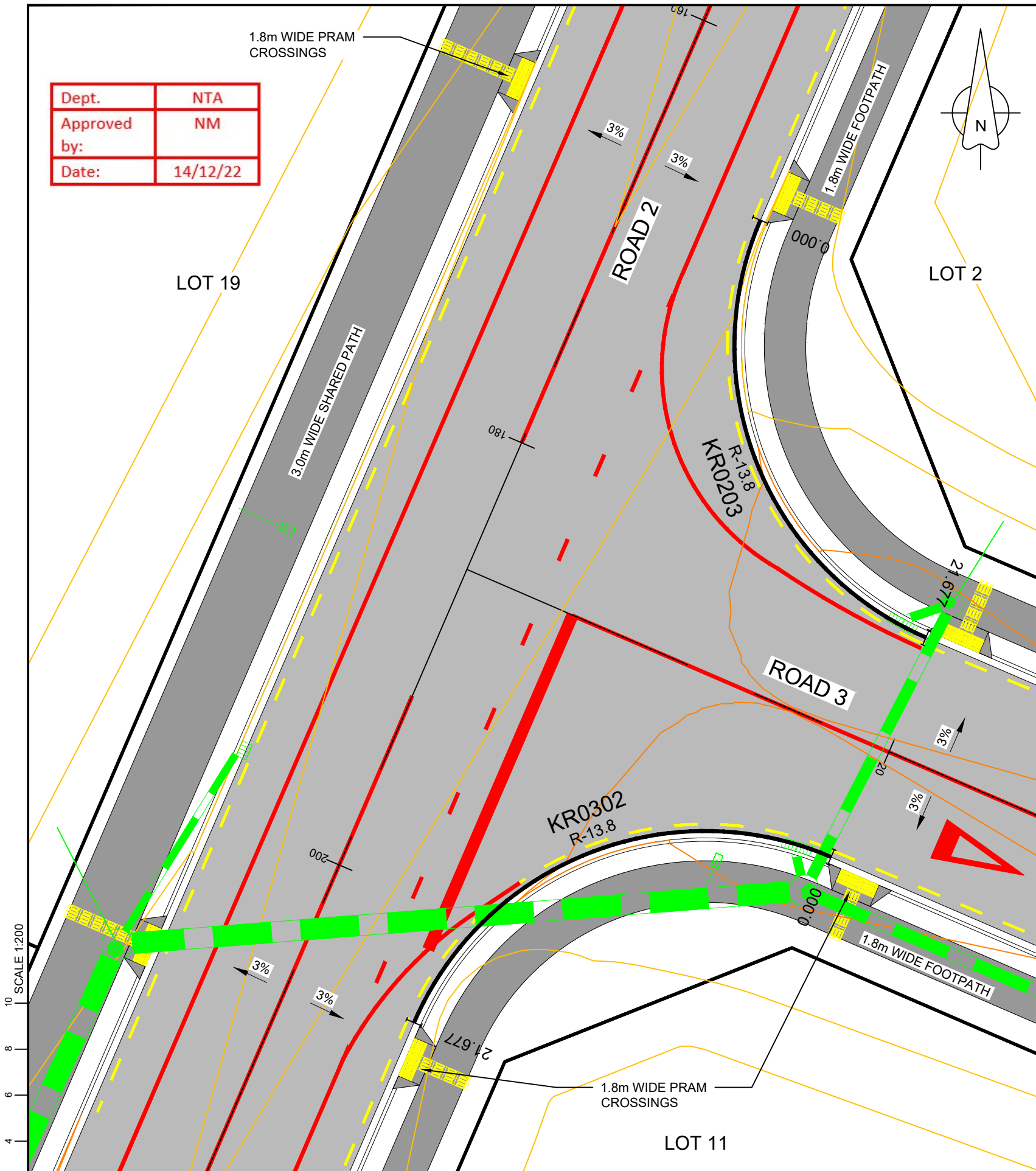
K&C = KERB AND CHANNEL



Horizontal 1:200 Vertical 1:40
LONGITUDINAL SECTION KR0102

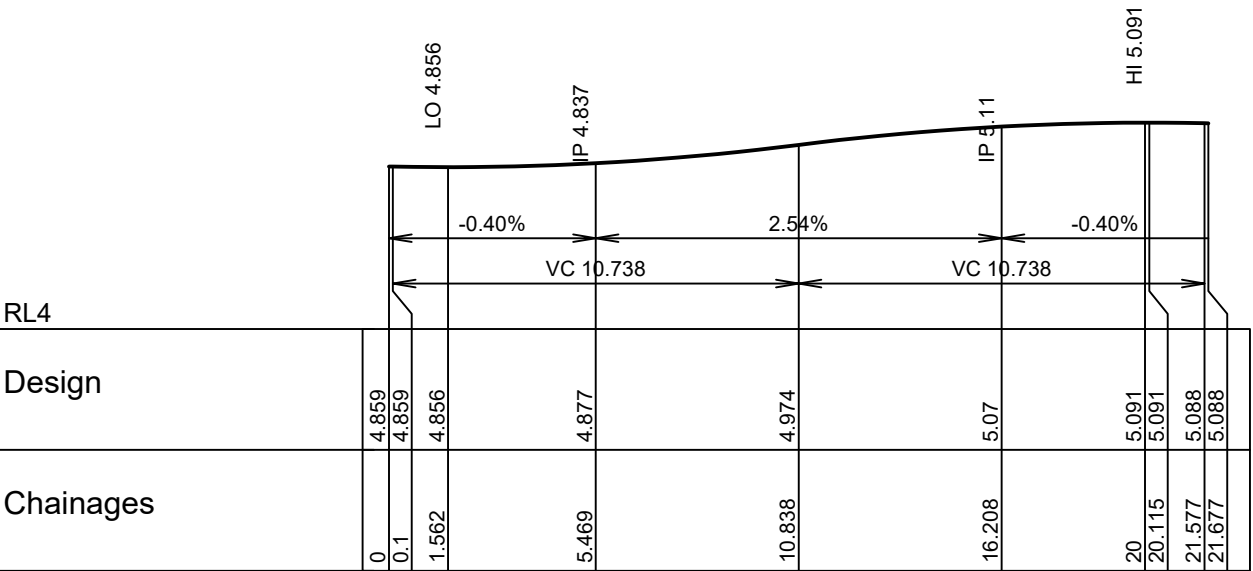

TRISHN NAND
ME., CPEng., IntPE(NZ)

Dept.	NTA
Approved by:	NM
Date:	14/12/22

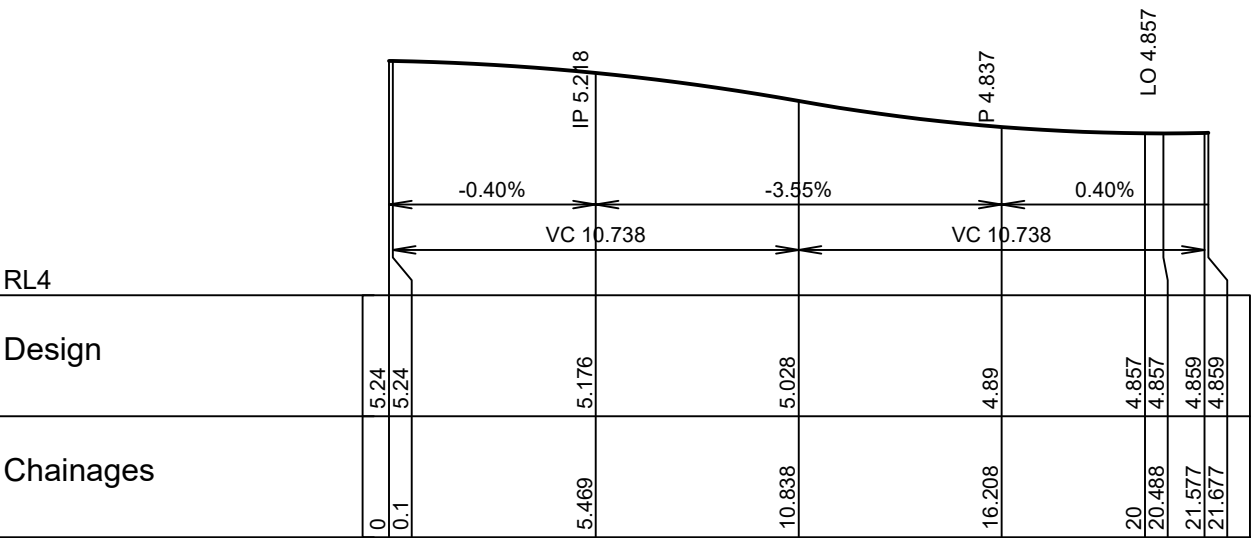


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Whangarei District
Council RCA –SD2200045
JF 19/12/2022

NOTES:
 1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.
 K&C = KERB AND CHANNEL



Horizontal 1:200 Vertical 1:40
 LONGITUDINAL SECTION KR0302



Horizontal 1:200 Vertical 1:40
 LONGITUDINAL SECTION KR0203

TRISHN NAND
 ME., CPEng., IntPE(NZ)

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

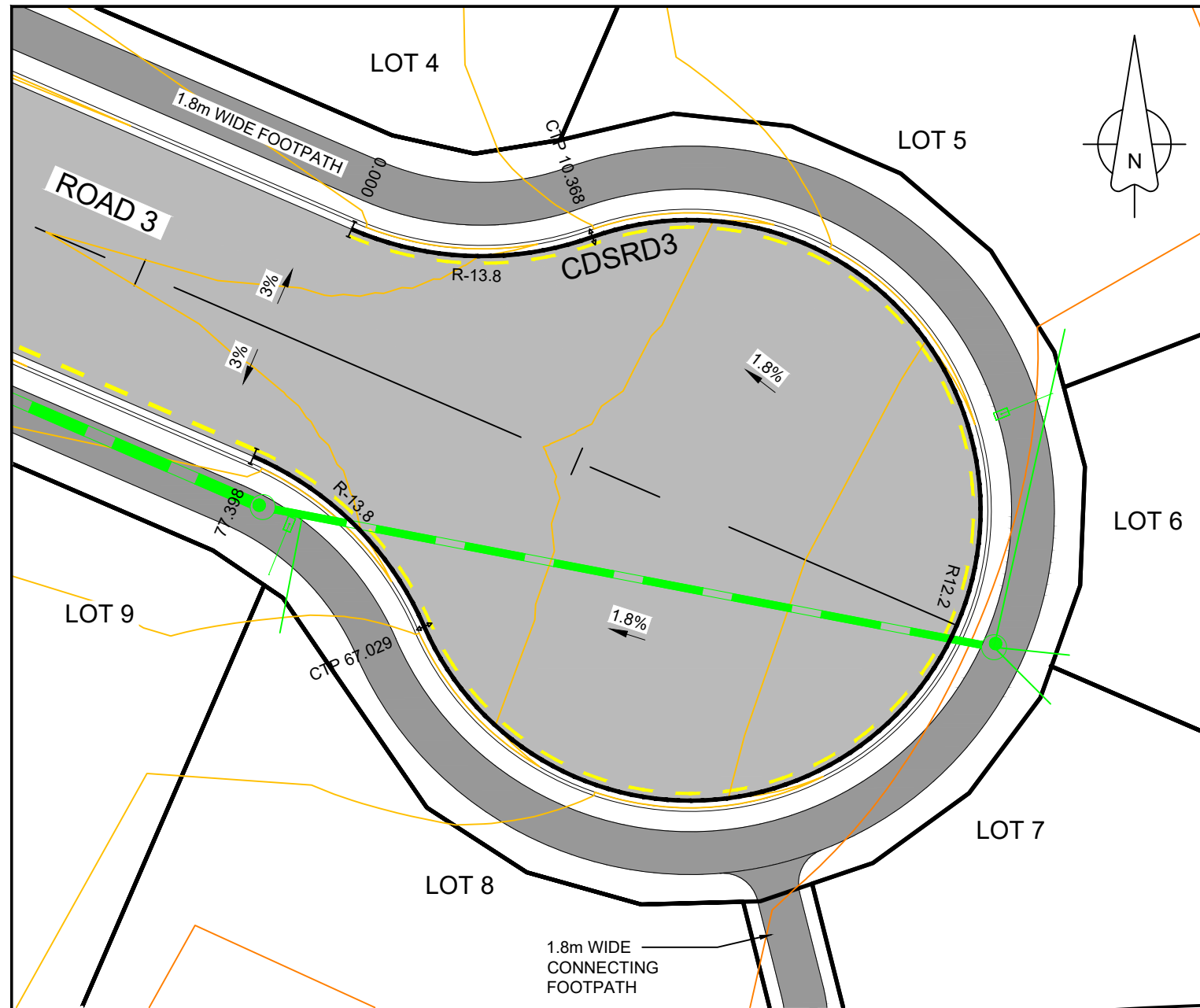
PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
KERB RETURNS INTERSECTION OF ROAD 2 AND 3

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:200 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD363		REVISION D	



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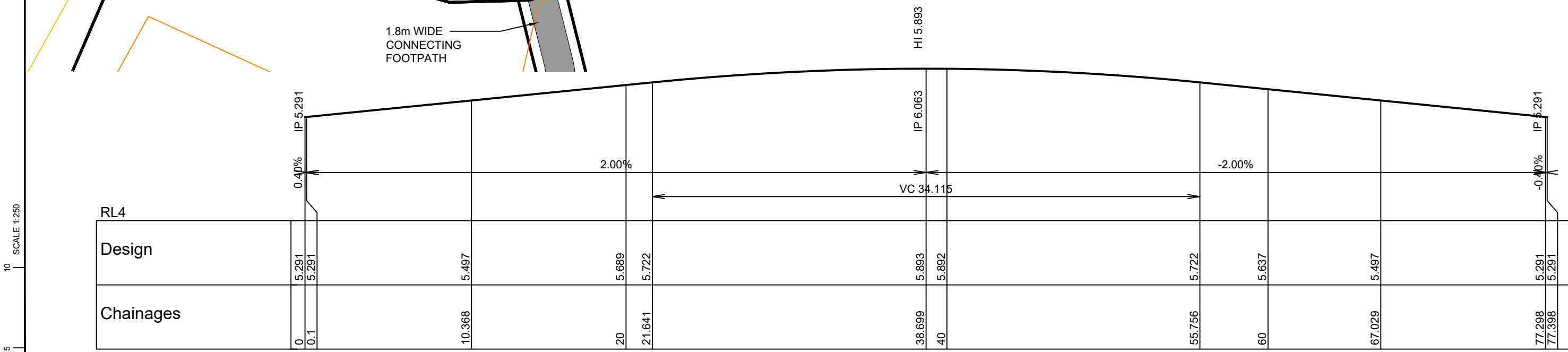


- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.

K&C = KERB AND CHANNEL

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22



Horizontal 1:250 Vertical 1:50
LONGITUDINAL SECTION CDSRD3

TRISHN NAND
ME., CPEng., IntPE(NZ)

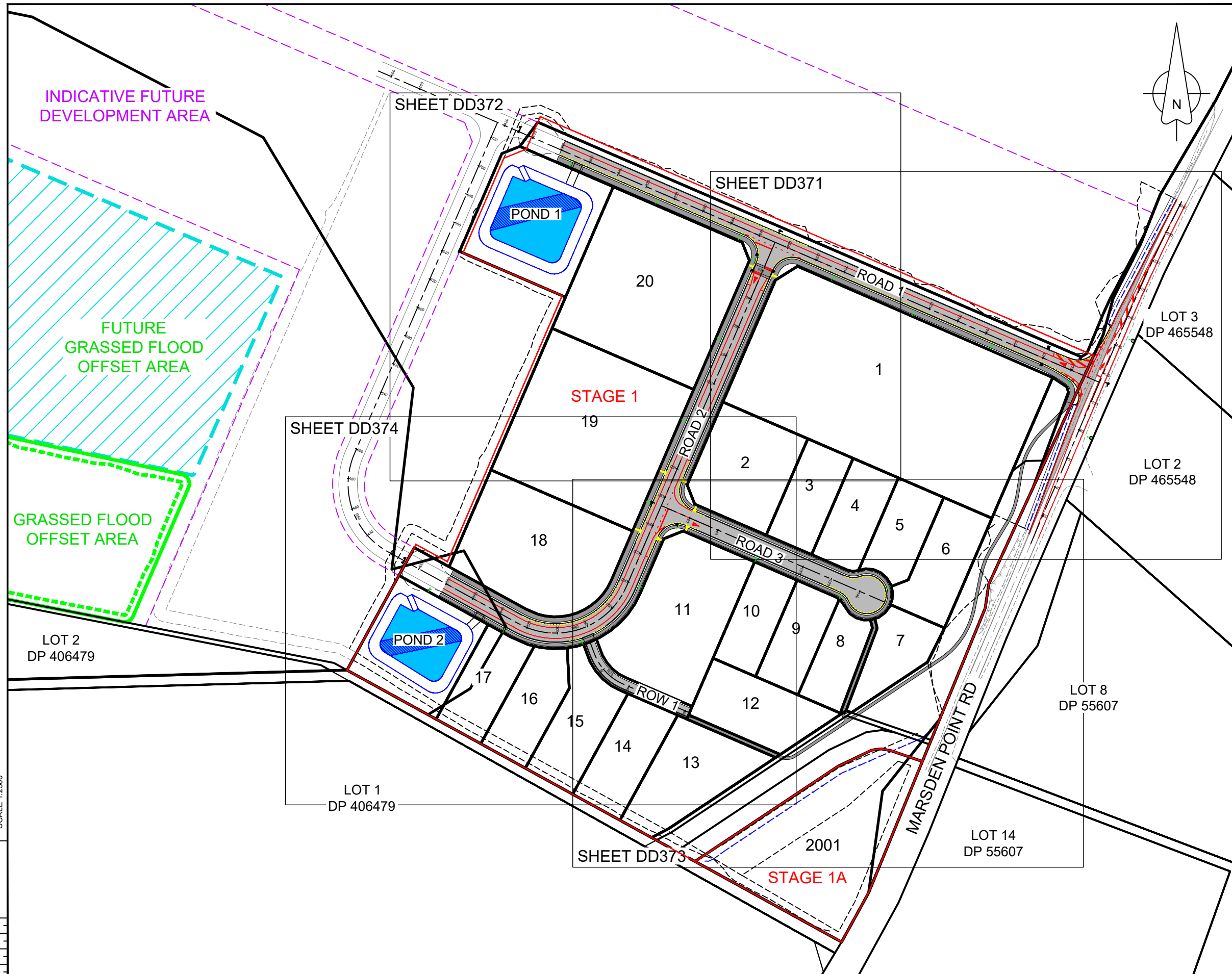
www.vecta.co.nz

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	PROJECT DETAILS	HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS	TITLE	KERB RETURNS ROAD 3 CUL-DE-SAC	DATE CREATED	DRAWN	DESIGNED	APPROVED
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022					31-08-2022	AP	AP	TN
B	FOR APPROVAL	04-11-2022					VECTA REF NO	SCALE	STATUS	FOR APPROVAL
REV.	REVISION DETAILS	DRAWN APP.					P0318	1:250 @ A3	REVISION	
			DWG NUMBER		DD364		D			

DATE PLOTTED: Thursday, 15 December 2022 4:32:21 pm

FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\IP0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\IP0318-STG1-DD360-Road KR.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



- NOTES:
- 1. SEE CONSTRUCTION NOTES DD001.
 - 2. ROAD MARKINGS AND SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT NZTA MANUAL OF TRAFFIC SIGNS AND MARKINGS (MOTSAM).

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22

100
50
0
SCALE 1:2500



VECTA
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SCALE 1:2500

0 50 100

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

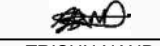
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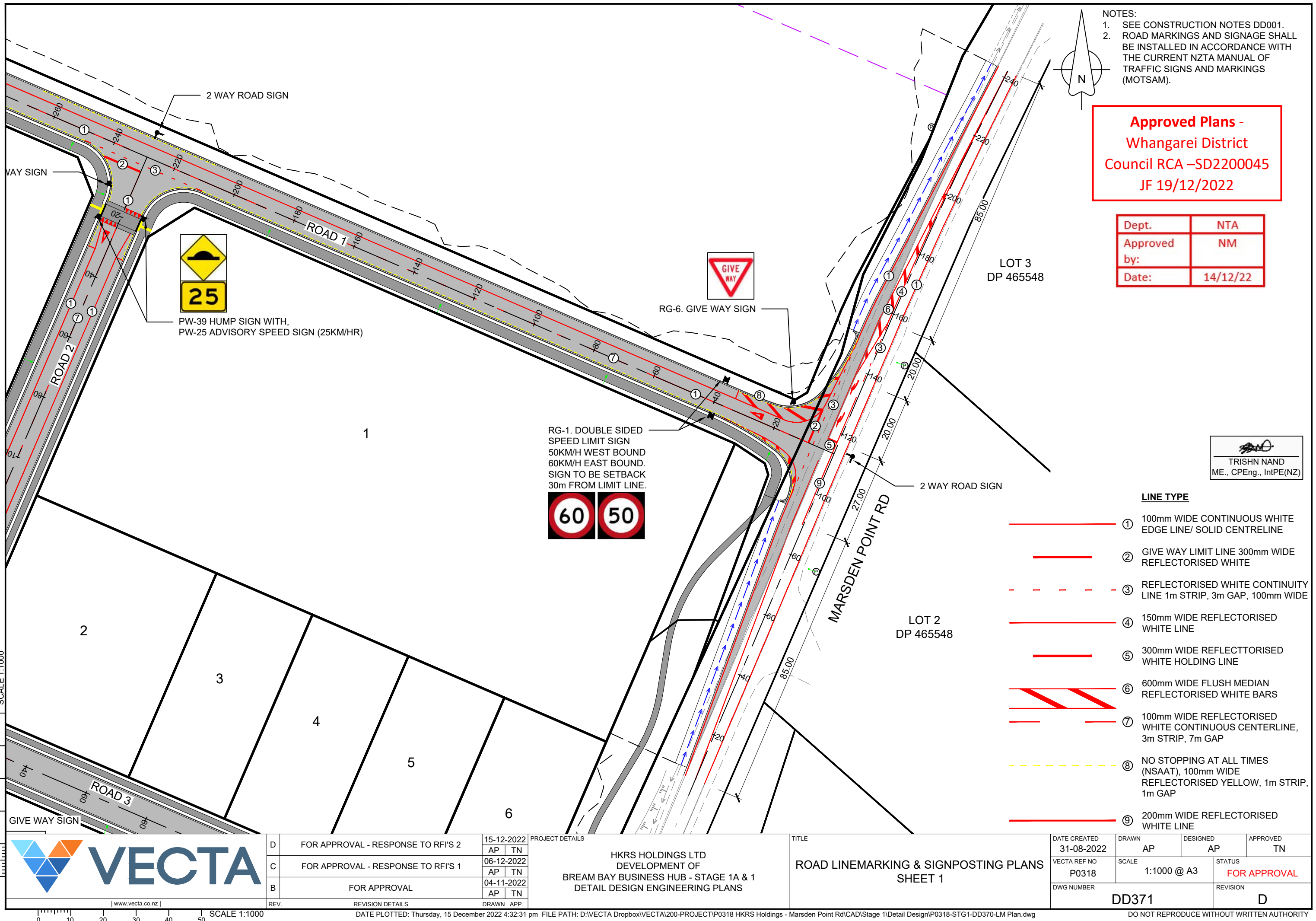
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

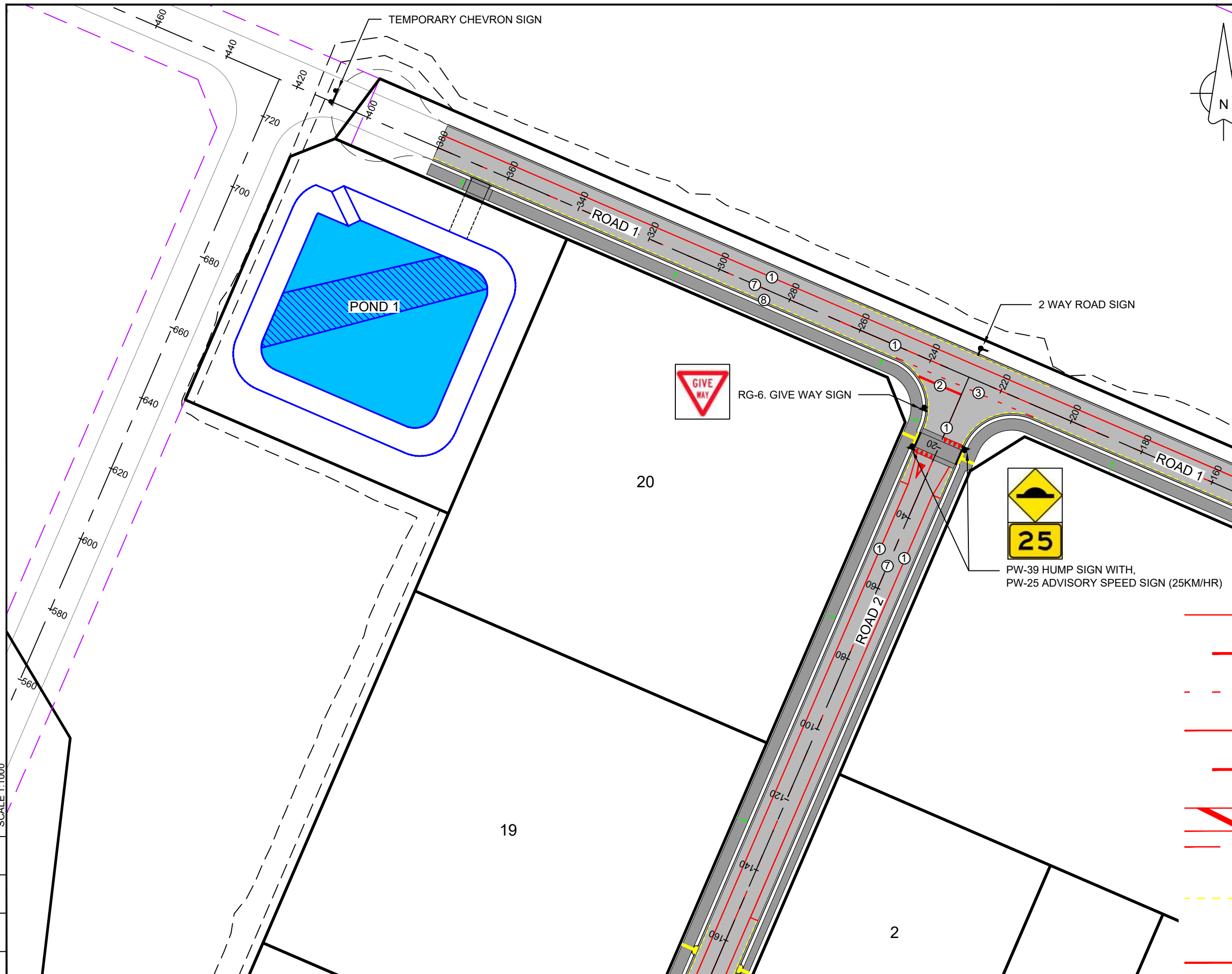
TITLE

ROAD LINEMARKING & SIGNPOSTING PLANS
OVERVIEW

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:2500 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD370	REVISION D		


TRISHN NAND
ME., CPEng., IntPE(NZ)





NOTES:
1. SEE CONSTRUCTION NOTES DD001.
2. ROAD MARKINGS AND SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT NZTA MANUAL OF TRAFFIC SIGNS AND MARKINGS (MOTSAM).

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22



RG-6. GIVE WAY SIGN



PW-39 HUMP SIGN WITH, PW-25 ADVISORY SPEED SIGN (25KM/HR)

TRISHN NAND
ME., CPEng., IntPE(NZ)

LINE TYPE

- ① 100mm WIDE CONTINUOUS WHITE EDGE LINE/ SOLID CENTRELINE
- ② GIVE WAY LIMIT LINE 300mm WIDE REFLECTORISED WHITE
- ③ REFLECTORISED WHITE CONTINUITY LINE 1m STRIP, 3m GAP, 100mm WIDE
- ④ 150mm WIDE REFLECTORISED WHITE LINE
- ⑤ 300mm WIDE REFLECTORISED WHITE HOLDING LINE
- ⑥ 600mm WIDE FLUSH MEDIAN REFLECTORISED WHITE BARS
- ⑦ 100mm WIDE REFLECTORISED WHITE CONTINUOUS CENTERLINE, 3m STRIP, 7m GAP
- ⑧ NO STOPPING AT ALL TIMES (NSAAT), 100mm WIDE REFLECTORISED YELLOW, 1m STRIP, 1m GAP
- ⑨ 200mm WIDE REFLECTORISED WHITE LINE

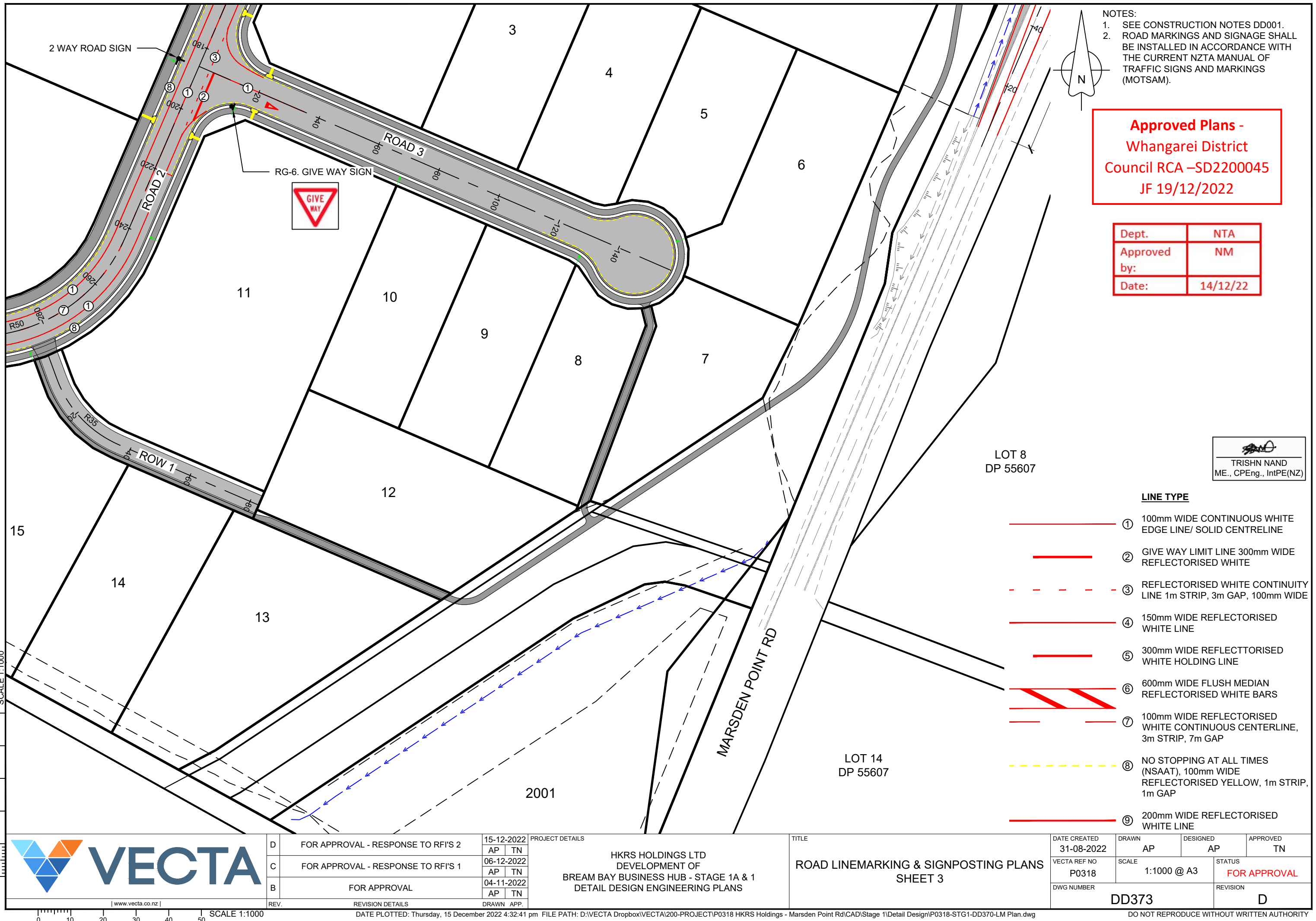
www.vecta.co.nz

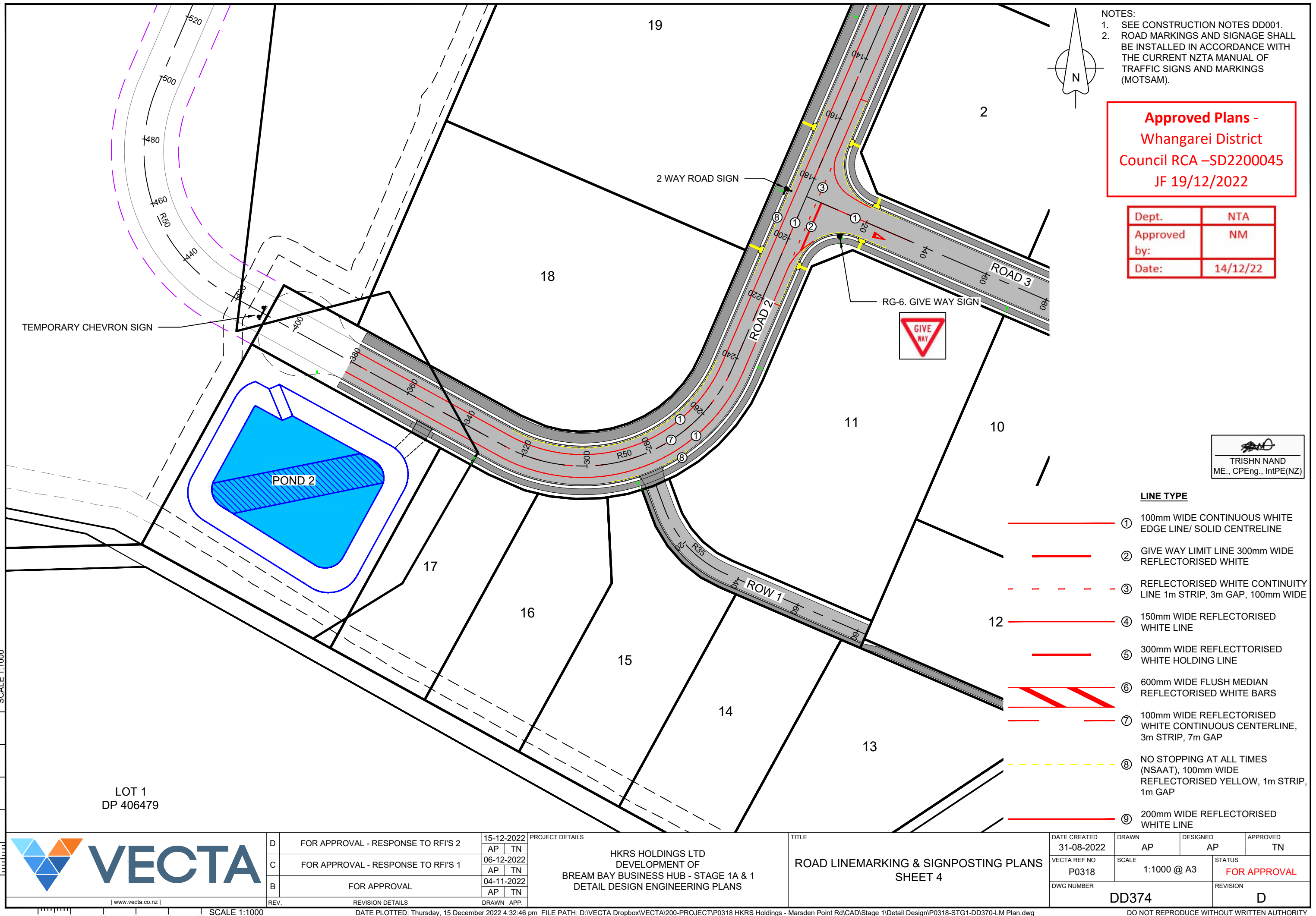
D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN	PROJECT DETAILS HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS	TITLE ROAD LINEMARKING & SIGNPOSTING PLANS SHEET 2	DATE CREATED	31-08-2022	DRAWN	AP	DESIGNED	AP	APPROVED	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN			VECTA REF NO	P0318	SCALE	1:1000 @ A3	STATUS	FOR APPROVAL		
B	FOR APPROVAL	04-11-2022	AP	TN			DWG NUMBER	DD372	REVISION	D				
REV.	REVISION DETAILS	DRAWN	APP.											

DATE PLOTTED: Thursday, 15 December 2022 4:32:36 pm

FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD370-LM Plan.dwg

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NOTES:
1. SEE CONSTRUCTION NOTES DD001.
2. ROAD MARKINGS AND SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT NZTA MANUAL OF TRAFFIC SIGNS AND MARKINGS (MOTSAM).

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22

TRISHN NAND
ME., CPEng., IntPE(NZ)

LINE TYPE

- ① 100mm WIDE CONTINUOUS WHITE EDGE LINE/ SOLID CENTRELINE
- ② GIVE WAY LIMIT LINE 300mm WIDE REFLECTORISED WHITE
- ③ REFLECTORISED WHITE CONTINUITY LINE 1m STRIP, 3m GAP, 100mm WIDE
- ④ 150mm WIDE REFLECTORISED WHITE LINE
- ⑤ 300mm WIDE REFLECTORISED WHITE HOLDING LINE
- ⑥ 600mm WIDE FLUSH MEDIAN REFLECTORISED WHITE BARS
- ⑦ 100mm WIDE REFLECTORISED WHITE CONTINUOUS CENTERLINE, 3m STRIP, 7m GAP
- ⑧ NO STOPPING AT ALL TIMES (NSAAT), 100mm WIDE REFLECTORISED YELLOW, 1m STRIP, 1m GAP
- ⑨ 200mm WIDE REFLECTORISED WHITE LINE

LOT 1
DP 406479

SCALE 1:1000

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

ROAD LINEMARKING & SIGNPOSTING PLANS
SHEET 4

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD374	REVISION D		

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	NTA
Approved by:	NM
Date:	14/12/22

CONSTRUCT COMMERCIAL VEHICLE CROSSING IN ACCORDANCE WITH THE WDC EES 2010 - SHEET 19, RESIDENTIAL & COMMERCIAL CROSSINGS

NSAAT LINEMARKING
MINIMUM 8.0m BOTH SIDES
OF VEHICLE CROSSING

ROAD 2

KERB & CHANNEL

1.8m WIDE FOOTPATH

BOUNDARY

1.4m WIDE FOOTPATH

KERB & CHANNEL

ROM 1

VEHICLE CROSSING: 150mm THICK 30MPa CONCRETE WITH 665 MESH OR SIMILAR PLACED CENTRALLY WITH CONSTRUCTION JOINTS @ 3.5m CRS ON 150mm COMPACTED BASECOURSE.

ROW 1 - VEHICLE CROSSING

SCALE 1:100



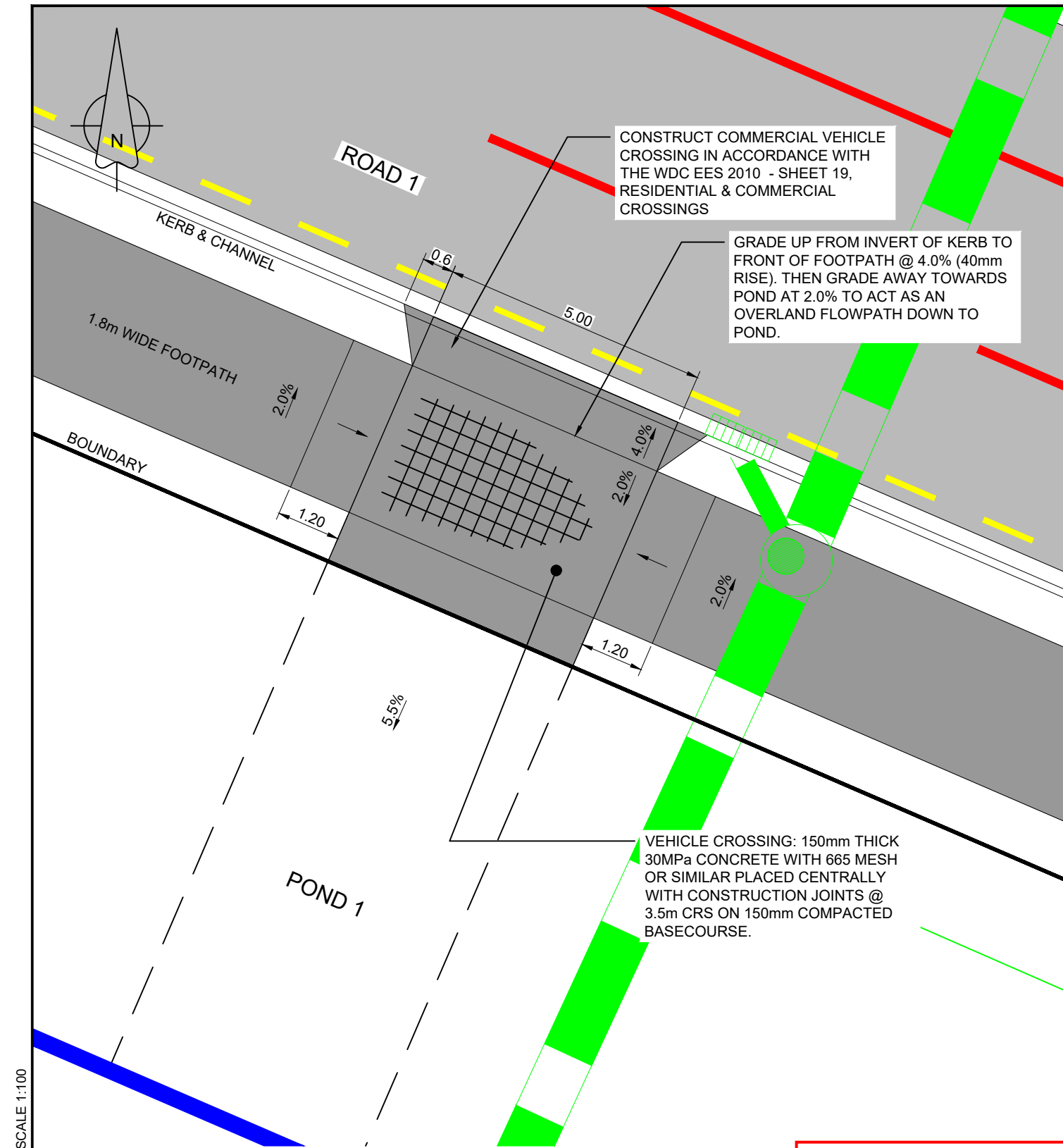
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C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
VEHICLE CROSSINGS
ROW 1

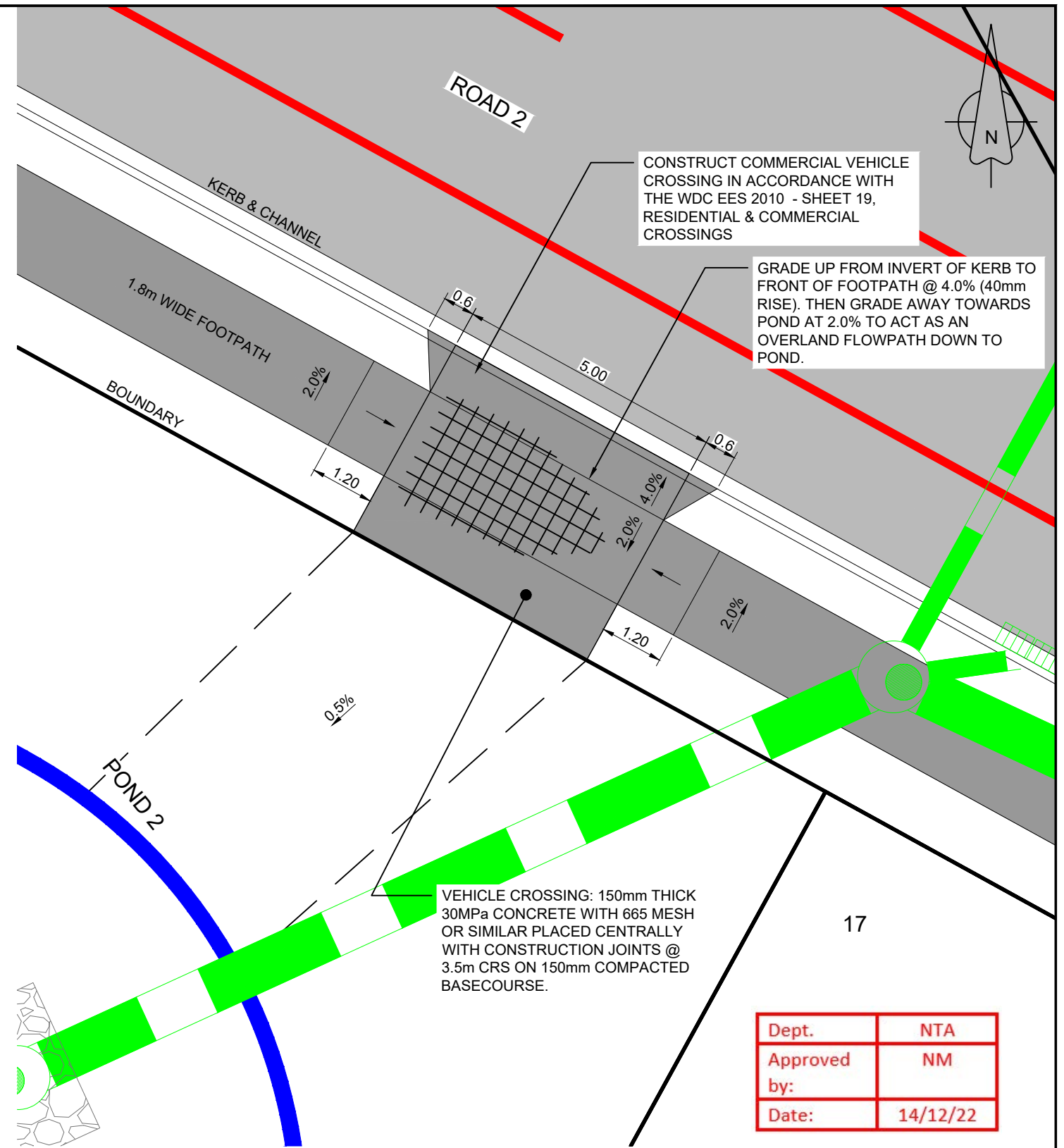
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VECTA REF NO P0318	SCALE 1:100 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD380	REVISION D		

TRISHN NAND
ME., CPEng., IntPE(NZ)



POND 1 - VEHICLE CROSSING
SCALE 1:100

Approved Plans -
Whangarei District
Council RCA -SD2200045
JF 19/12/2022



POND 2 - VEHICLE CROSSING
SCALE 1:100

Dept.	NTA
Approved by:	NM
Date:	14/12/22

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

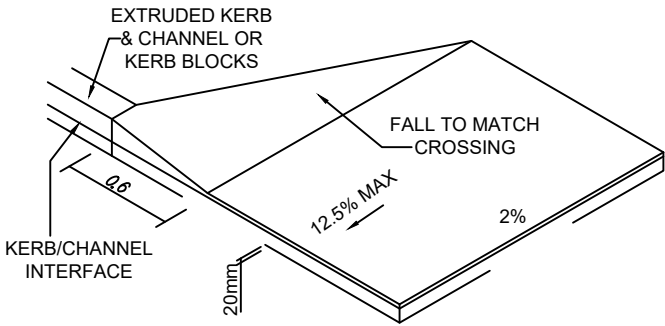
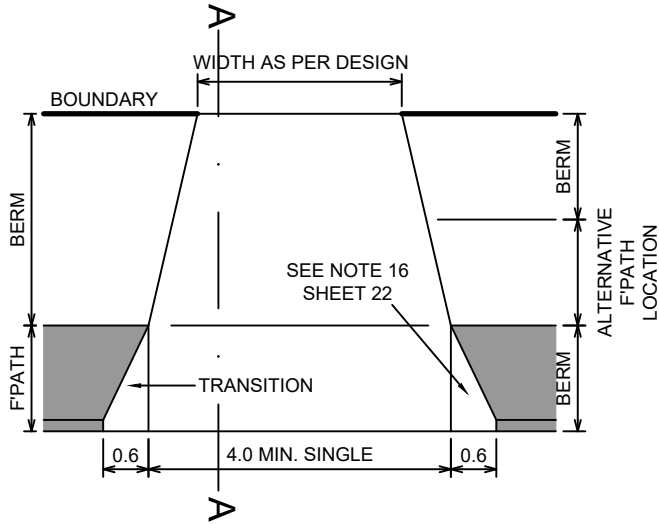
PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
VEHICLE CROSSINGS
POND 1 AND POND 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:100 @ A3		STATUS FOR APPROVAL
DWG NUMBER DD381			REVISION D

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

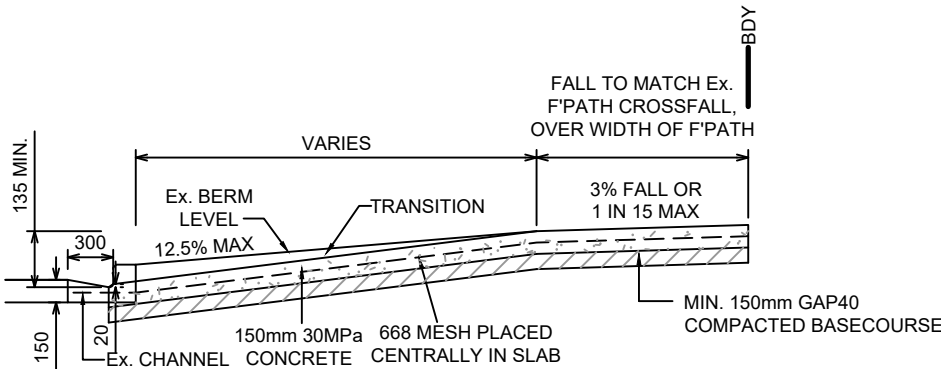


KERB TRANSITION DETAIL

COMMERCIAL/INDUSTRIAL CROSSINGS -
SHEET 19 WDC EES 2010 - NOT TO SCALE

COMMERCIAL/INDUSTRIAL CROSSINGS - SHEET 19 WDC EES 2010 - NOT TO SCALE

1. ALL CONCRETE TO BE 30MPa STRENGTH AT 28 DAYS.
2. CROSSINGS TO BE CONSTRUCTED TO MATCH EXISTING FOOTPATH AND CHANNEL LEVELS AND BE GRADED TO GIVE SUFFICIENT CLEARANCE TO THE UNDERSIDE OF ALL VEHICLES.
3. IF NO FOOTPATH, ALLOWANCE SHALL BE MADE FOR SUCH WITH A 3% CROSSFALL TO THE KERB.
4. GRADIENT OF CROSSING NOT TO EXCEED 12.5% (1 IN 8)
5. CROSSINGS FOR ALL PRIVATEWAYS SHALL BE COMMERCIAL GRADE (PER SHEET 19)
6. EDGES OF FOOTPATH AND BACK OF CHANNEL TO BE SAWCUT.
7. ALL CROSSINGS REQUIRE COUNCIL INSPECTION PRIOR TO POURING CONCRETE.
8. IF THE EDGE OF THE CROSSING IS WITHIN 1m OF A CRACK OR JOINT IN AN EXISTING FOOTPATH THEN THAT SECTION OF FOOTPATH IS TO BE REPLACED.
9. COMMERCIAL AND INDUSTRIAL CHANNELS TO BE REINFORCED WITH AN EXTENSION OF THE 668 MESH.
10. WHERE A STREET SUMP IS LOCATED WITHIN THE PROPOSED CROSSING, THE SUMP SHALL BE RELOCATED TO THE SIDE OF THE CROSSING AND BE RECONNECTED TO THE COUNCIL STORMWATER SYSTEM.
11. REFER TO SHEET 16 FOR VEHICLE CROSSINGS OVER A DRAINAGE SWALE.



CROSSING SECTION A-A

COMMERCIAL/INDUSTRIAL CROSSINGS -
SHEET 19 WDC EES 2010 - NOT TO SCALE

TRISHN NAND
ME., CPEng., IntPE(NZ)



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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
		AP TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
		AP TN
B	FOR APPROVAL	04-11-2022
		AP TN
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
VEHICLE CROSSING DETAILS

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE AS SHOWN @ A3		STATUS FOR APPROVAL
DWG NUMBER DD385			REVISION D



- NOTES:
- 1. SEE CONSTRUCTION NOTES DD001.
 - 2. DESIGN CONTOURS AT 200mm INTERVALS.
 - 3. FUTURE DEVELOPMENT AREA SHOWN INDICATIVE ONLY.

- LEGEND:
- PROPOSED STORMWATER PIPE
 - MH PROPOSED MANHOLE
 - CP PROPOSED CESSPIT
 - HW PROPOSED HEADWALL
 - PROPOSED CONNECTION (TO BE SIZED AT BUILDING CONSENT STAGE)
 - PROPOSED FLOWPATH

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

SW CONNECTION SIZES	
LOT #	SW CONNECTION SIZE Ø (mm)
1	450
2	250
3	200
4	200
5	200
6	225
7	200
8	200
9	200
10	200
11	300
12	225
13	250
14	200
15	225
16	200
17	200
18	300
19	350
20	350
2001	350

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

TRISHN NAND
ME., CPEng., IntPE(NZ)

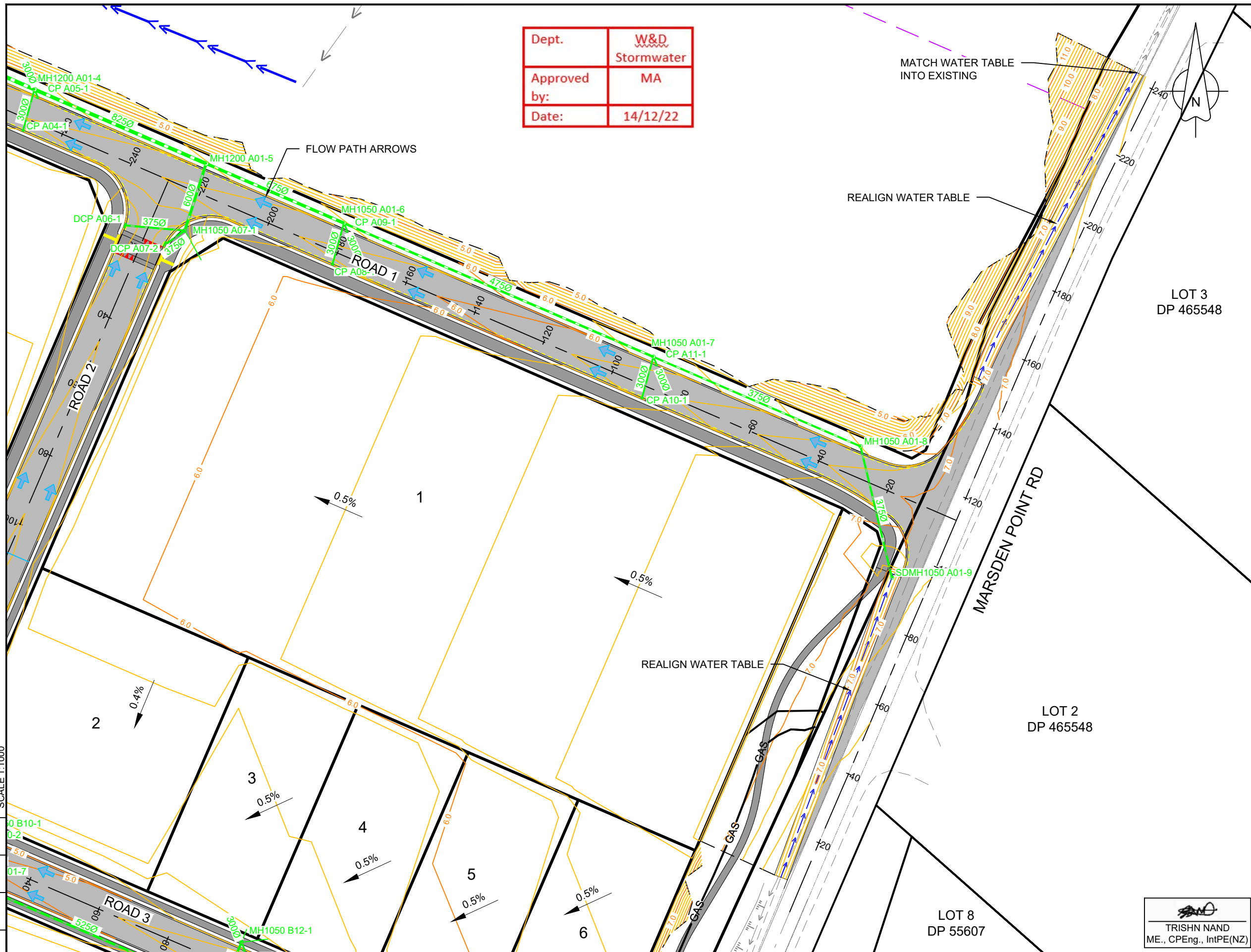
Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.
 3. FUTURE DEVELOPMENT AREA SHOWN INDICATIVE ONLY.

- LEGEND:**
- PROPOSED STORMWATER PIPE
 - MH PROPOSED MANHOLE
 - CP PROPOSED CESSPIT
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 - PROPOSED CONNECTION (TO BE SIZED AT BUILDING CONSENT STAGE)
 - PROPOSED FLOWPATH

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

SW CONNECTION SIZES	
LOT #	SW CONNECTION SIZE Ø (mm)
1	450
2	250
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9	200
10	200
11	300
12	225
13	250
14	200
15	225
16	200
17	200
18	300
19	350
20	350
2001	350





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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

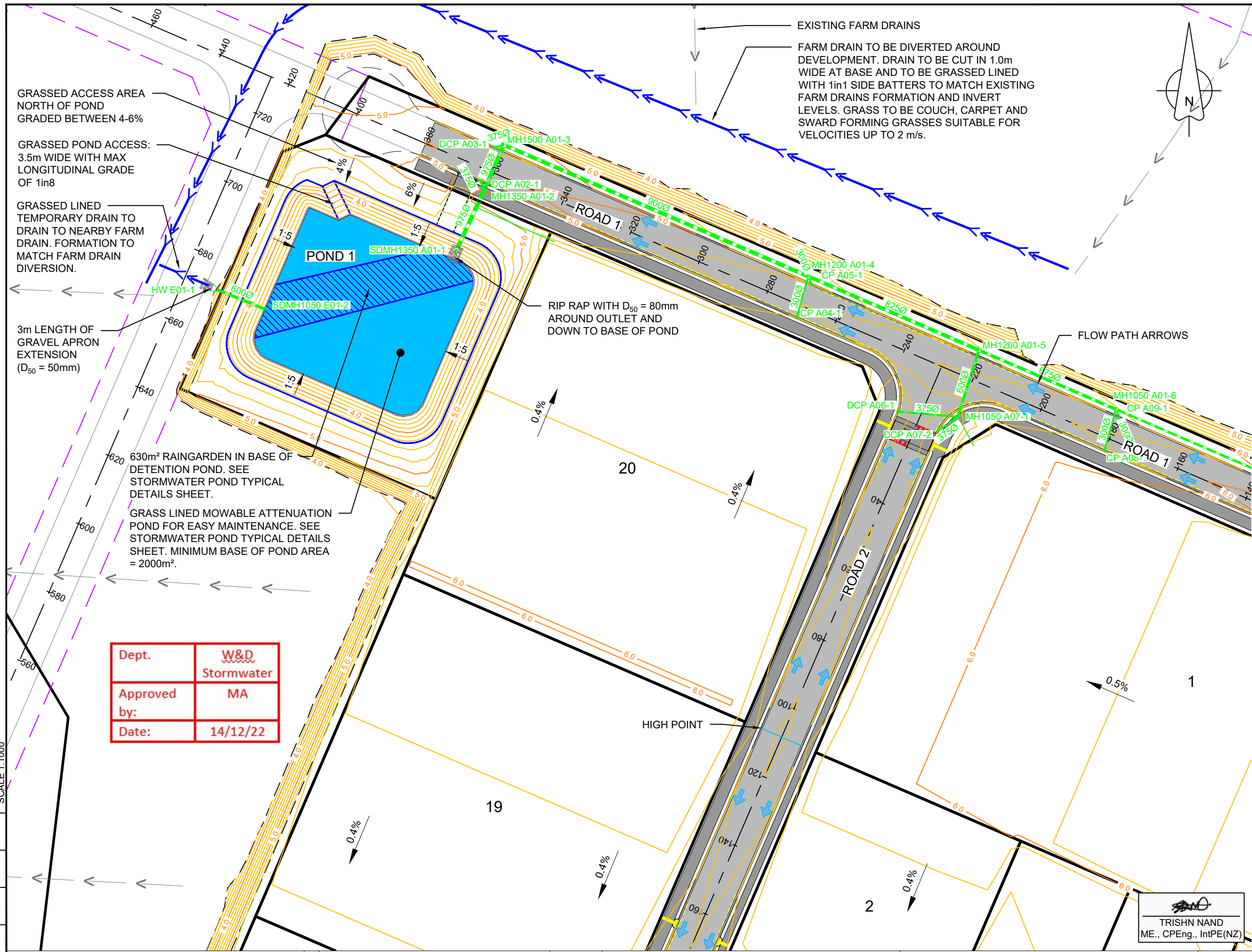
TITLE

STORMWATER PLAN
SHEET 1

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER	DD401	REVISION D	

DATE PLOTTED: Thursday, 15 December 2022 4:33:11 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD400-Drainage Plan.dwg

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- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.
 3. FUTURE DEVELOPMENT AREA SHOWN INDICATIVE ONLY.

LEGEND:

- PROPOSED STORMWATER PIPE
- MH PROPOSED MANHOLE
- CP PROPOSED CESSPIT
- HW PROPOSED HEADWALL
- PROPOSED CONNECTION (TO BE SIZED AT BUILDING CONSENT STAGE)
- PROPOSED FLOWPATH

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

SW CONNECTION SIZES	
LOT #	SW CONNECTION SIZE Ø (mm)
1	450
2	250
3	200
4	200
5	200
6	225
7	200
8	200
9	200
10	200
11	300
12	225
13	250
14	200
15	225
16	200
17	200
18	300
19	350
20	350
2001	350

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

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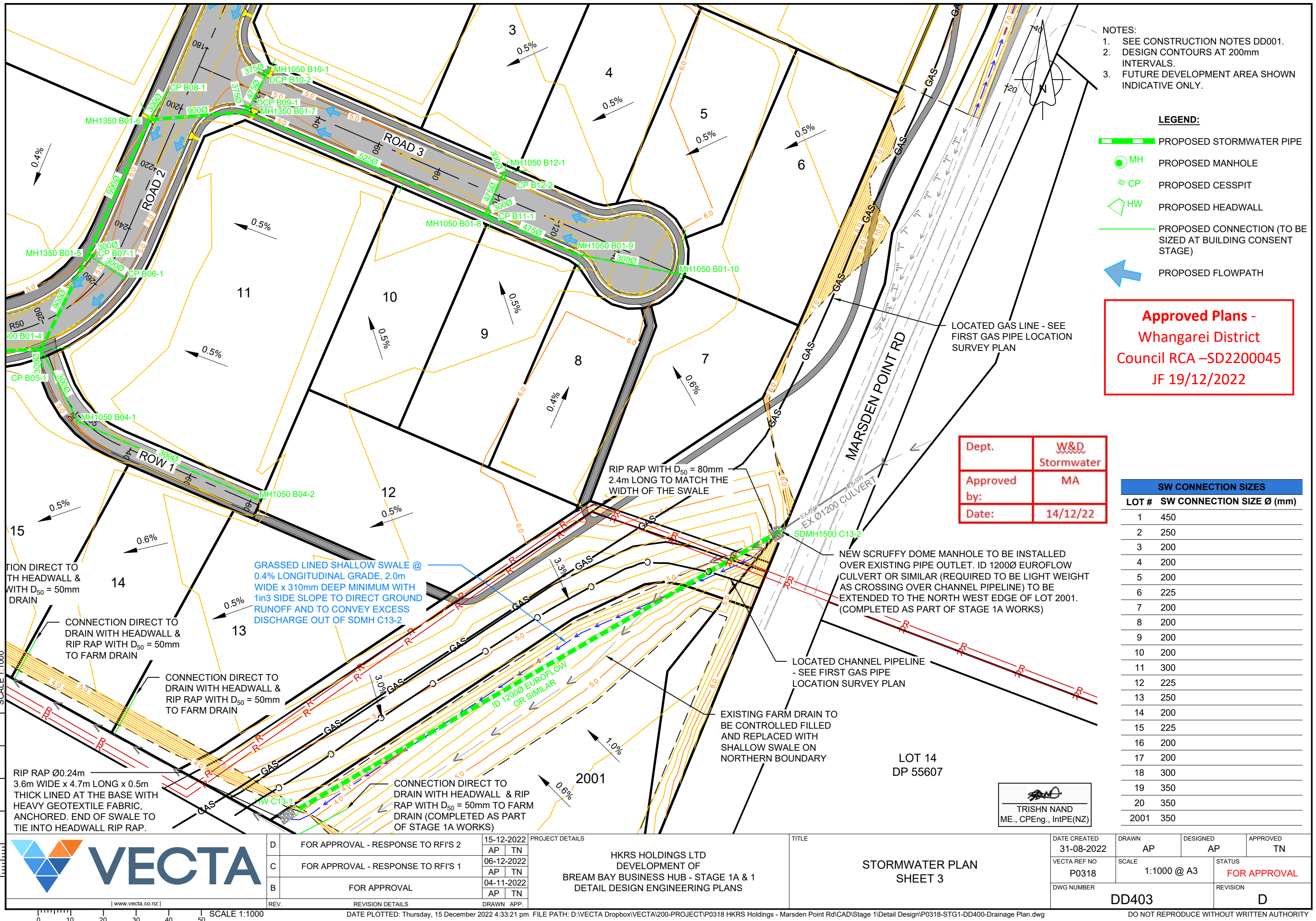
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C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

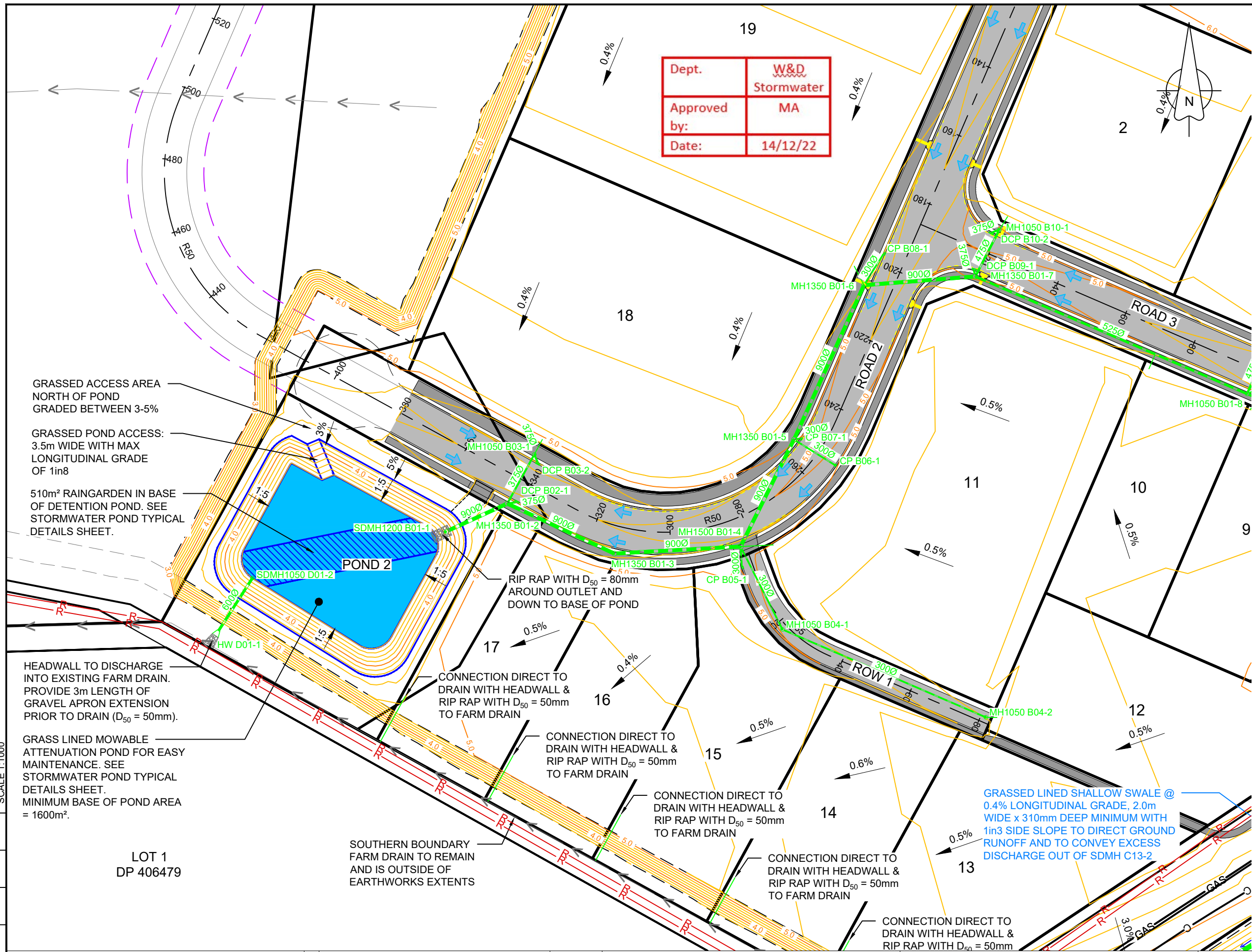
PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER PLAN
SHEET 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3		STATUS FOR APPROVAL
DWG NUMBER DD402			REVISION D

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Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.
 3. FUTURE DEVELOPMENT AREA SHOWN INDICATIVE ONLY.

LEGEND:

- PROPOSED STORMWATER PIPE
- MH PROPOSED MANHOLE
- CP PROPOSED CESSPIT
- HW PROPOSED HEADWALL
- PROPOSED CONNECTION (TO BE SIZED AT BUILDING CONSENT STAGE)
- PROPOSED FLOWPATH

Approved Plans -
Whangarei District
Council RCA -SD2200045
JF 19/12/2022

TRISHN NAND
ME., CPEng., IntPE(NZ)

SW CONNECTION SIZES	
LOT #	SW CONNECTION SIZE Ø (mm)
1	450
2	250
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4	200
5	200
6	225
7	200
8	200
9	200
10	200
11	300
12	225
13	250
14	200
15	225
16	200
17	200
18	300
19	350
20	350
2001	350

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SCALE 1:1000

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

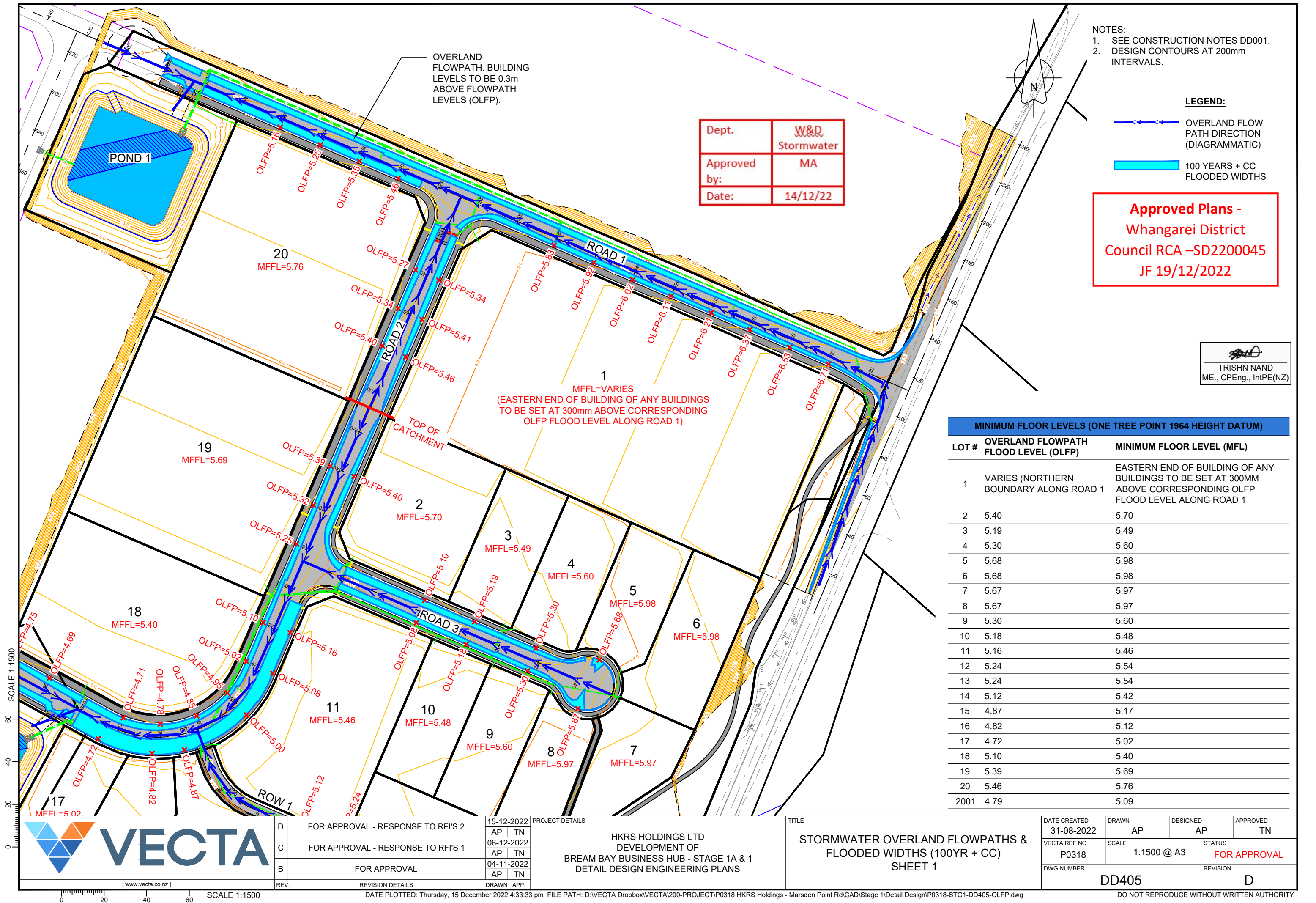
PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

STORMWATER PLAN
SHEET 4

DATE CREATED	DRAWN	DESIGNED	APPROVED
31-08-2022	AP	AP	TN
VECTA REF NO	SCALE	STATUS	
P0318	1:1000 @ A3	FOR APPROVAL	
DWG NUMBER		REVISION	
DD404		D	



NOTES:
1. SEE CONSTRUCTION NOTES DD001.
2. DESIGN CONTOURS AT 200mm INTERVALS.

LEGEND:

- OVERLAND FLOW PATH DIRECTION (DIAGRAMMATIC)
- 100 YEARS + CC FLOODED WIDTHS

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JF 19/12/2022

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ME., CPEng., IntPE(NZ)

MINIMUM FLOOR LEVELS (ONE TREE POINT 1964 HEIGHT DATUM)

LOT #	OVERLAND FLOWPATH FLOOD LEVEL (OLFP)	MINIMUM FLOOR LEVEL (MFL)
1	VARIES (NORTHERN BOUNDARY ALONG ROAD 1	EASTERN END OF BUILDING OF ANY BUILDINGS TO BE SET AT 300MM ABOVE CORRESPONDING OLFP FLOOD LEVEL ALONG ROAD 1
2	5.40	5.70
3	5.19	5.49
4	5.30	5.60
5	5.68	5.98
6	5.68	5.98
7	5.67	5.97
8	5.67	5.97
9	5.30	5.60
10	5.18	5.48
11	5.16	5.46
12	5.24	5.54
13	5.24	5.54
14	5.12	5.42
15	4.87	5.17
16	4.82	5.12
17	4.72	5.02
18	5.10	5.40
19	5.39	5.69
20	5.46	5.76
2001	4.79	5.09

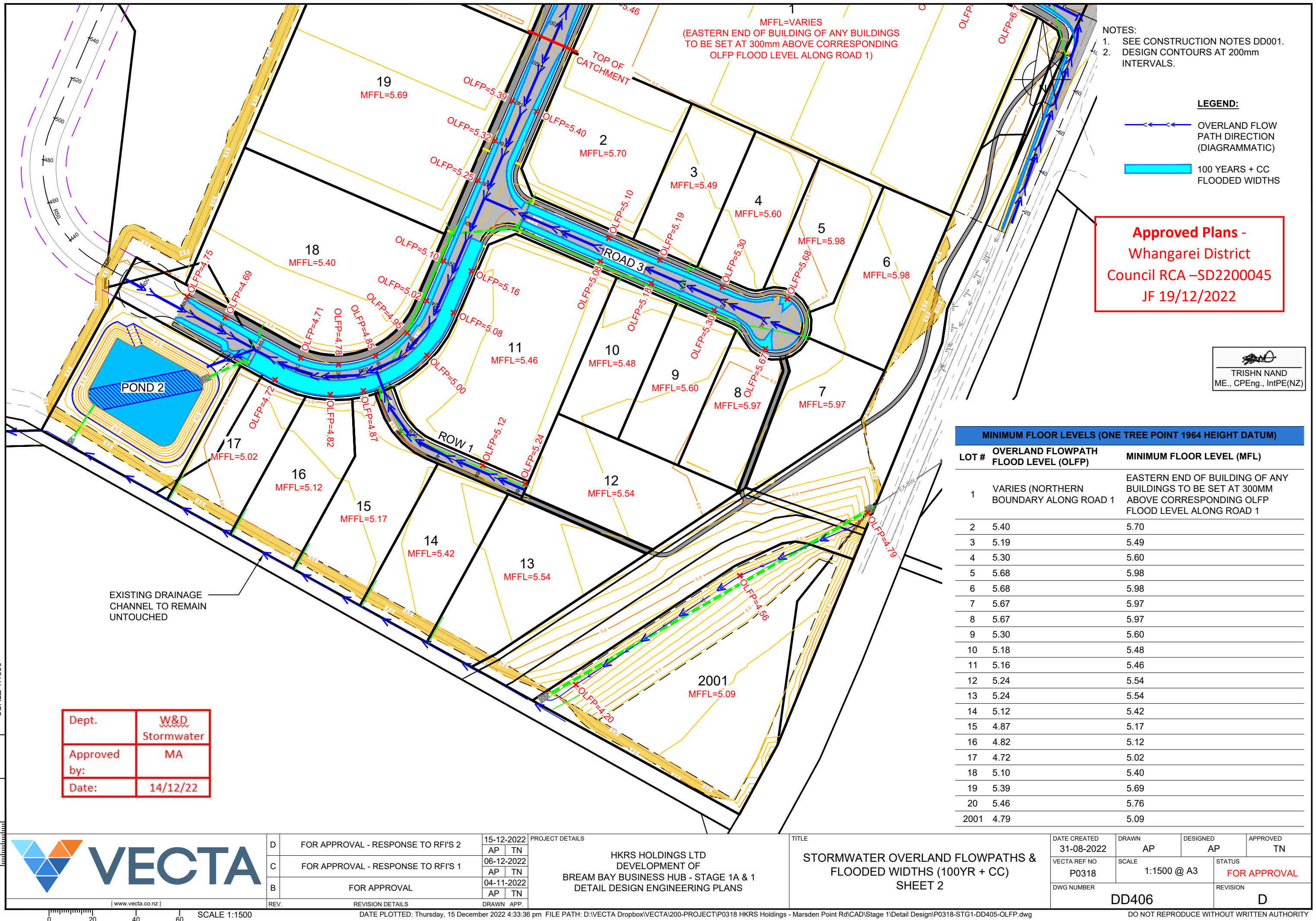


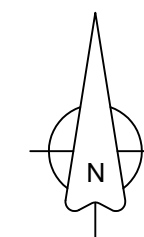
D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER OVERLAND FLOWPATHS &
FLOODED WIDTHS (100YR + CC)
SHEET 1

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1500 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD405	REVISION D		

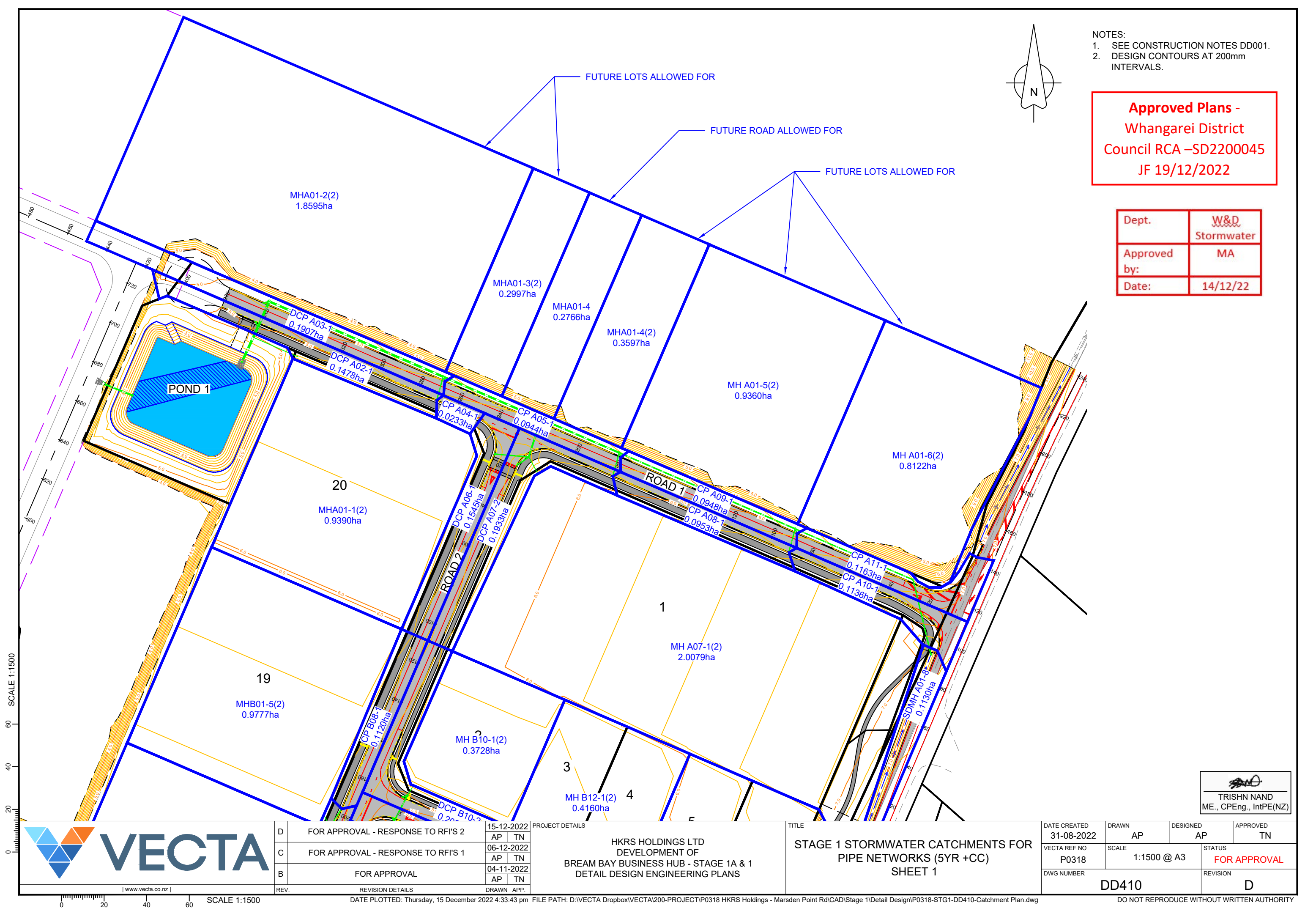




- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22



SCALE 1:1500
0 20 40 60



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS

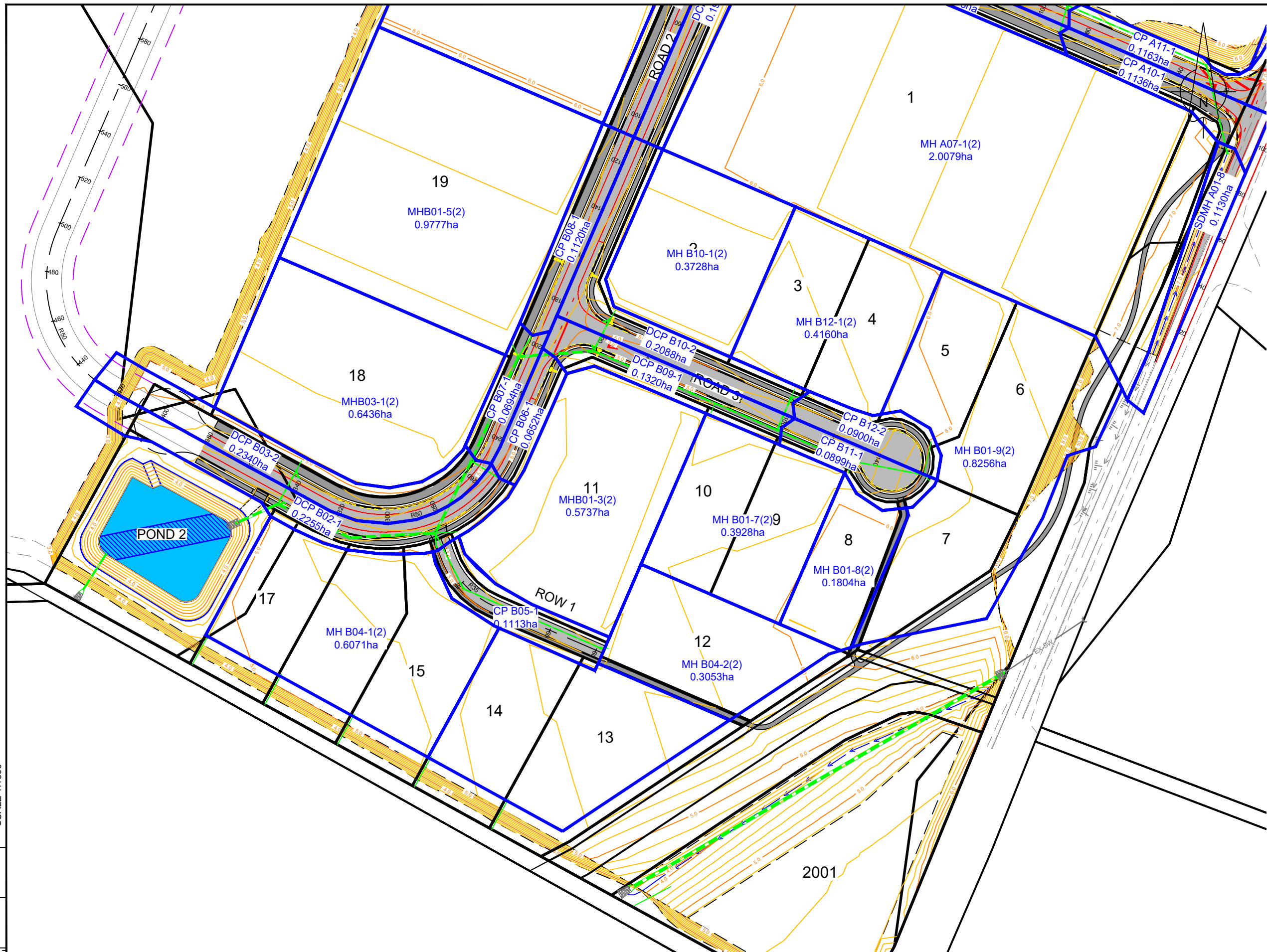
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

STAGE 1 STORMWATER CATCHMENTS FOR
PIPE NETWORKS (5YR +CC)
SHEET 1

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1500 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD410	REVISION D		

TRISHN NAND
ME., CPEng., IntPE(NZ)



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. DESIGN CONTOURS AT 200mm INTERVALS.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

SCALE 1:1500



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS

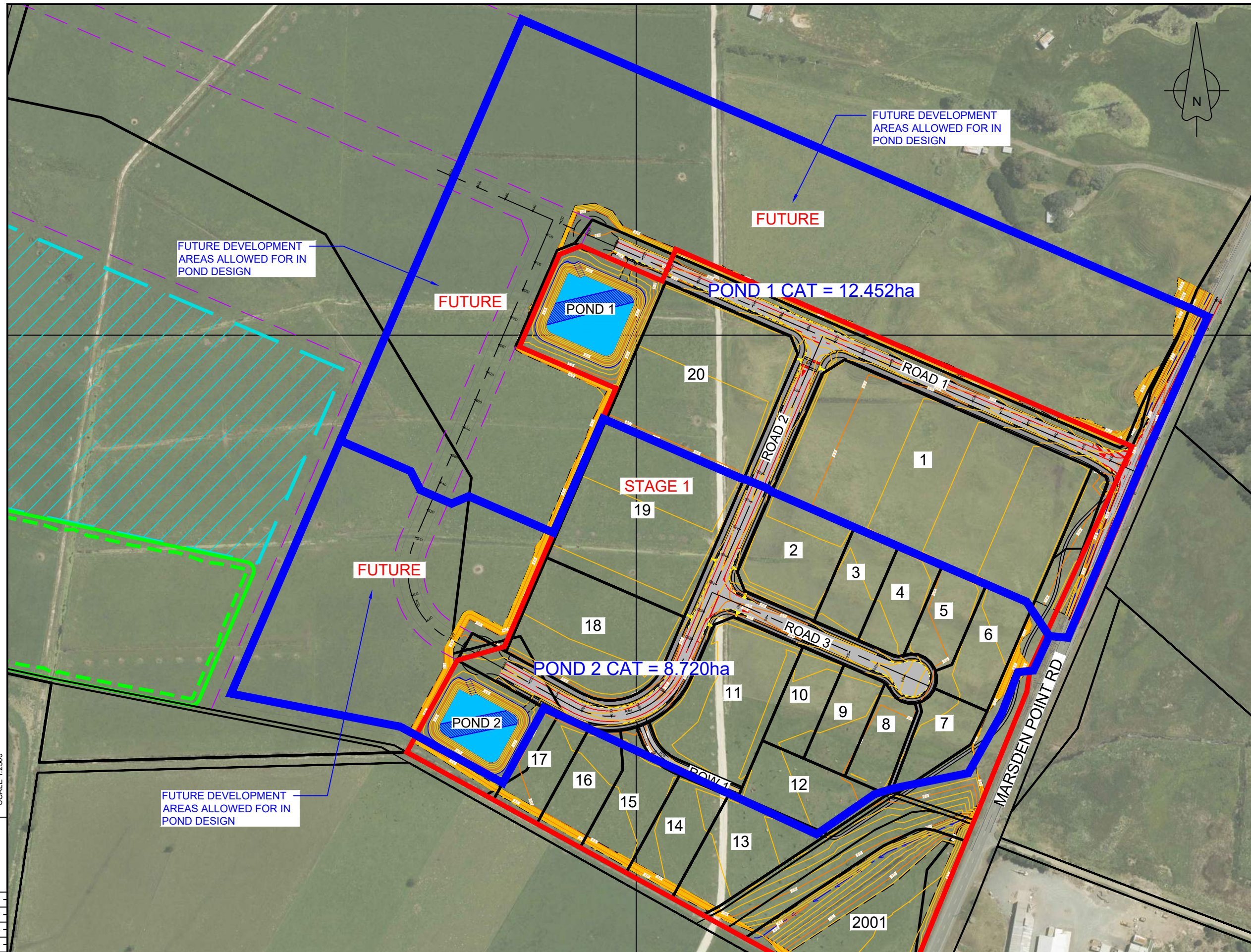
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

STAGE 1 STORMWATER CATCHMENTS FOR
PIPE NETWORKS (5YR +CC)
SHEET 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1500 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD411	REVISION D		

TRISHN NAND
ME., CPEng., IntPE(NZ)



- NOTES:
- 1. SEE CONSTRUCTION NOTES DD001.
 - 2. DESIGN CONTOURS AT 200mm INTERVALS.

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Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

SCALE 1:2500



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SCALE 1:2500

0 50 100

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

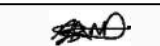
PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

POND CATCHMENT AREAS

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:2500 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD415		REVISION D	


TRISHN NAND
ME., CPEng., IntPE(NZ)

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

SDMH1350 A01-1 MH1350 A01-2 MH1500 A01-3 MH1200 A01-4 MH1200 A01-5 MH1050 A01-6 MH1050 A01-7

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Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
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Date:	14/12/22

Flow (L/s)	1089.7		921		739.4		689.8		302.8		162.2		
Vn - Velocity (m/s)	1.46		1.23		1.16		1.29		2.49		1.42		
Pipe Size/Type	Ø975 RCRRJ Class 4		Ø975 RCRRJ Class 4		Ø900 RCRRJ Class 4		Ø825 RCRRJ Class 4		Ø675 RCRRJ Class 4		Ø475 uPVC SN16		
Grade (%)	0.1%		0.12%		0.12%		0.12%		1.48%		0.5%		
Datum	-14.000												
Depth To Invert	0.975	0.975	2.679	2.659	2.553	2.478	2.817	2.742	2.931	2.781	2.387	2.187	2.218
HGL Levels	3.530		3.540	3.631 3.615	3.637	3.842 3.806	3.954	3.999 3.995	4.110	4.284 4.266	4.318	4.395 4.381	4.599
Invert Levels	2.286	2.286	2.304	2.324	2.340	2.415	2.522	2.597	2.657	2.807	3.402	3.602	4.052
Finished Surface	3.261		4.983		4.893		5.339		5.588		5.789		
Chainage	0.000		17.895		30.895		119.929		169.854		209.929		

LINE A01

STORMWATER DESIGN NOTE:
STORMWATER PIPE NETWORK DESIGNED FOR 1:5 ARI (YEARS) + CLIMATE
CHANGE. FREEBOARD OF 0.3m ACHIEVED THROUGHOUT NETOWRK.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER LONGSECTIONS
(SHEET 1)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD420	REVISION D		

SCALE 1:1000

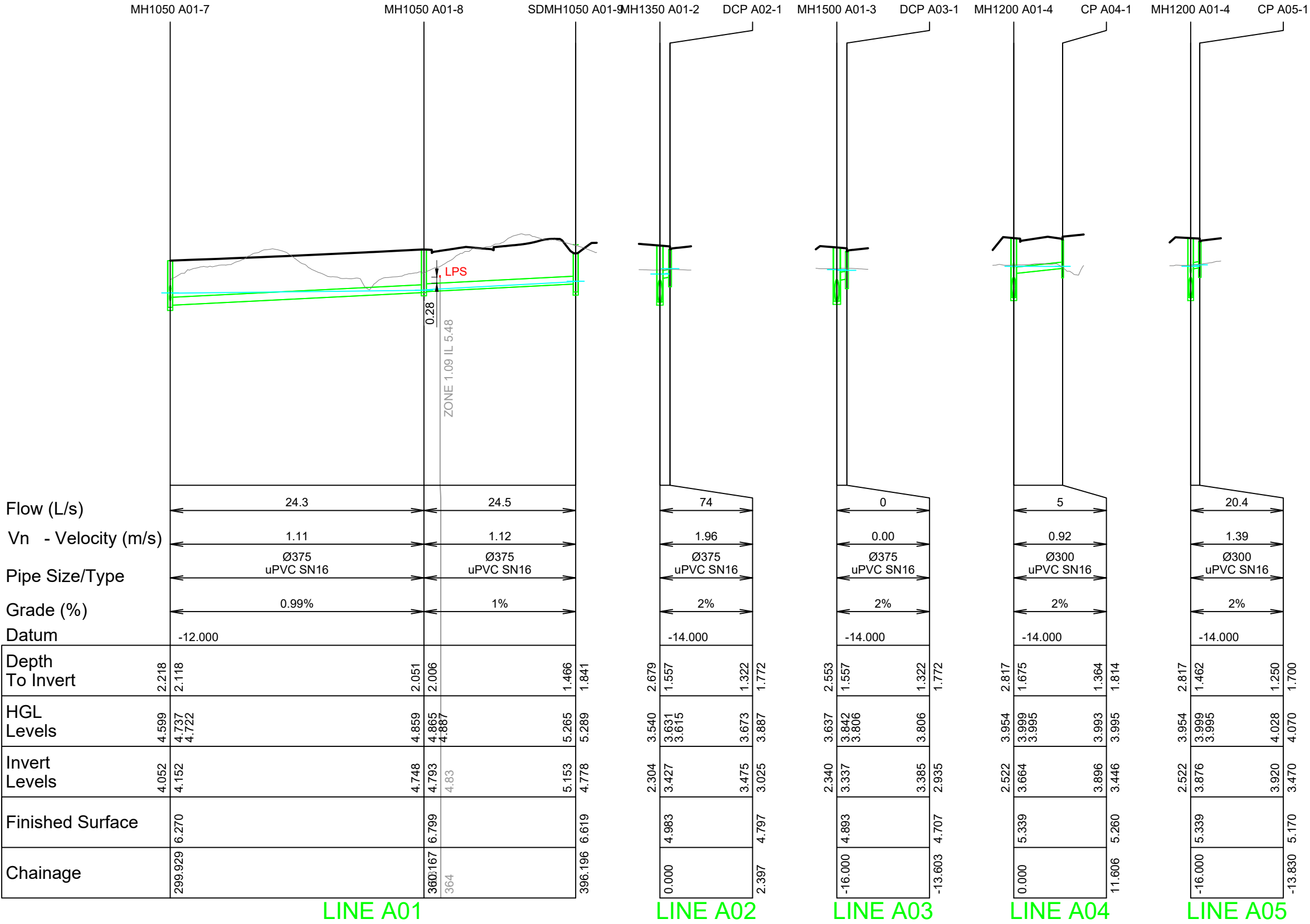
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NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22



STORMWATER DESIGN NOTE:
STORMWATER PIPE NETWORK DESIGNED FOR 1:5 ARI (YEARS) + CLIMATE
CHANGE. FREEBOARD OF 0.3m ACHIEVED THROUGHOUT NETOWRK.


TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER LONGSECTIONS
(SHEET 2)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	REVISION D
DWG NUMBER DD421			

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

MH1050 A07-1 DCP A06-1 MH1200 A01-5 MH1050 A07-1 DCP A07-2 MH1050 A01-6 CP A08-1 MH1050 A01-6 CP A09-1 MH1050 A01-7 CP A10-1 MH1050 A01-7 CP A11-1 SDMH1200 B01-1 MH1350 B01-2

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

Flow (L/s)	33.4
Vn - Velocity (m/s)	1.57
Pipe Size/Type	Ø375 uPVC SN16
Grade (%)	2%
Datum	-13.000
Depth To Invert	2.271 2.046 1.438 1.888
HGL Levels	4.312 4.525 4.522 4.528 4.551
Invert Levels	3.069 3.294 3.618 3.168
Finished Surface	5.340 5.057
Chainage	0.000 16.193

LINE A06

Flow (L/s)	305.4	42.6
Vn - Velocity (m/s)	2.17	2.15
Pipe Size/Type	Ø600 RCRRJ Class 4	Ø375 uPVC SN16
Grade (%)	1%	4%
Datum	-14.000	
Depth To Invert	2.931 2.706 2.271 1.859 1.323 1.773	
HGL Levels	4.110 4.284 4.266 4.312 4.525 4.522 4.528 4.571	
Invert Levels	2.657 2.882 3.069 3.481 3.734 3.284	
Finished Surface	5.588 5.340 5.057	
Chainage	-22.145 -3.389 2.931	

LINE A07

Flow (L/s)	20.8
Vn - Velocity (m/s)	1.79
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	4%
Datum	-13.000
Depth To Invert	2.387 1.907 1.364 1.814
HGL Levels	4.318 4.395 4.381 4.455 4.498
Invert Levels	3.402 3.881 4.346 3.896
Finished Surface	5.789 5.710
Chainage	0.000 11.606

LINE A08

Flow (L/s)	20.8
Vn - Velocity (m/s)	1.61
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	3%
Datum	-14.000
Depth To Invert	2.387 1.484 1.250 1.700
HGL Levels	4.318 4.395 4.381 4.479 4.522
Invert Levels	3.402 4.305 4.370 3.920
Finished Surface	5.789 5.620
Chainage	0.000 2.170

LINE A09

Flow (L/s)	23.6
Vn - Velocity (m/s)	1.85
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	4%
Datum	-13.000
Depth To Invert	2.218 1.904 1.364 1.814
HGL Levels	4.599 4.737 4.722 4.947 5.002
Invert Levels	4.052 4.366 4.830 4.380
Finished Surface	6.270 6.194
Chainage	-16.000 -4.394

LINE A10

Flow (L/s)	24.1
Vn - Velocity (m/s)	1.68
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	3%
Datum	-13.000
Depth To Invert	2.218 1.481 1.250 1.700
HGL Levels	4.599 4.737 4.866 4.972 5.030
Invert Levels	4.052 4.789 4.854 4.404
Finished Surface	6.270 6.104
Chainage	0.000 2.170

LINE A11

Flow (L/s)	841.9
Vn - Velocity (m/s)	1.32
Pipe Size/Type	Ø900 RCRRJ Class 4
Grade (%)	0.12%
Datum	-15.000
Depth To Invert	0.900 0.900 2.304 3.662
HGL Levels	3.530 3.530 3.547 3.662
Invert Levels	2.352 2.352 2.374 2.374
Finished Surface	3.252 4.678
Chainage	0.000 18.071

LINE B01

STORMWATER DESIGN NOTE:
STORMWATER PIPE NETWORK DESIGNED FOR 1:5 ARI (YEARS) + CLIMATE
CHANGE. FREEBOARD OF 0.3m ACHIEVED THROUGHOUT NETOWRK.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022 AP TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022 AP TN
B	FOR APPROVAL	04-11-2022 AP TN
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER LONGSECTIONS
(SHEET 3)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD422	REVISION D		

SCALE 1:1000

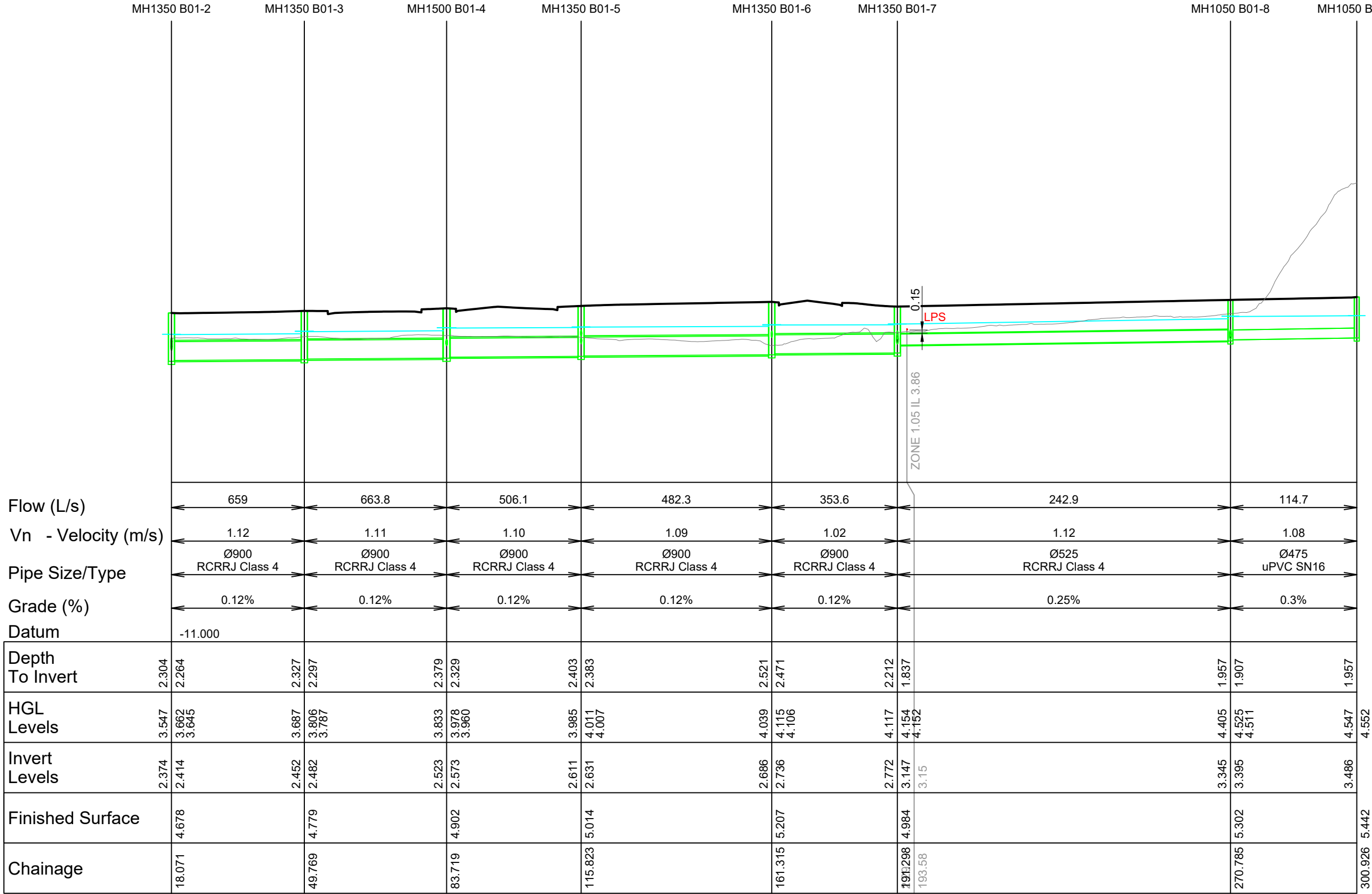
DATE PLOTTED: Thursday, 15 December 2022 4:34:06 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\IP0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\IP0318-STG1-DD420-Drainage LS.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22



LINE B01

STORMWATER DESIGN NOTE:
STORMWATER PIPE NETWORK DESIGNED FOR 1:5 ARI (YEARS) + CLIMATE
CHANGE. FREEBOARD OF 0.3m ACHIEVED THROUGHOUT NETOWRK.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

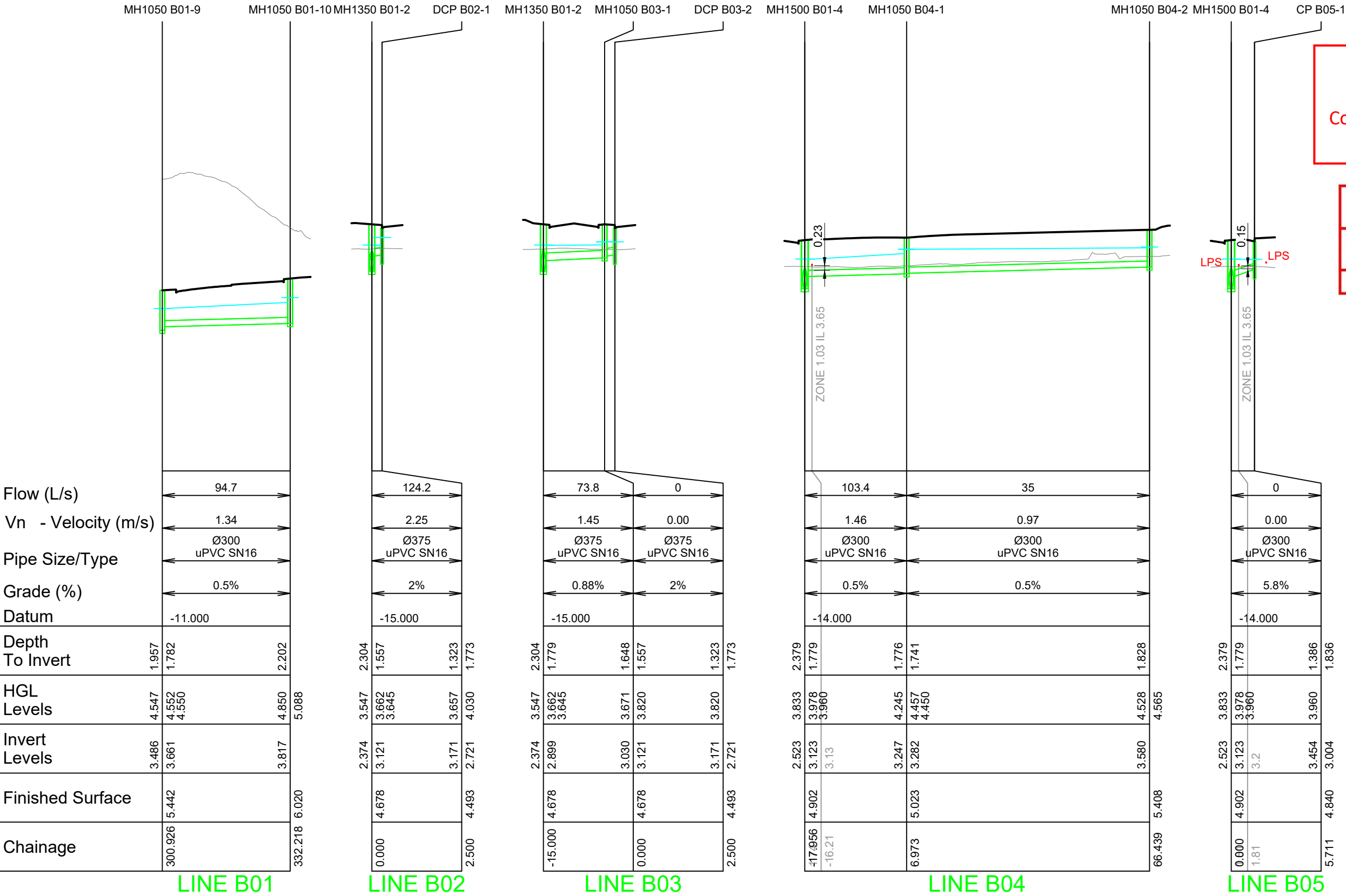
TITLE
STORMWATER LONGSECTIONS
(SHEET 4)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD423		REVISION D	

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22



STORMWATER DESIGN NOTE:
STORMWATER PIPE NETWORK DESIGNED FOR 1:5 ARI (YEARS) + CLIMATE
CHANGE. FREEBOARD OF 0.3m ACHIEVED THROUGHOUT NETOWRK.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER LONGSECTIONS
(SHEET 5)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD424	REVISION D		

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

MH1350 B01-5 CP B06-1 MH1350 B01-5 CP B07-1 MH1350 B01-6 CP B08-1 MH1350 B01-7 DCP B09-1 MH1350 B01-7 MH1050 B10-1 DCP B10-2 MH1050 B01-8 CP B11-1 MH1050 B01-8 MH1050 B12-1

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22

Flow (L/s)	13.8
Vn - Velocity (m/s)	1.24
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	2%
Datum	-14.000
Depth To Invert	2.403 1.799 1.364 1.814
HGL Levels	3.985 4.011 4.007 4.010 4.025
Invert Levels	2.611 3.215 3.481 3.031
Finished Surface	5.014 4.845
Chainage	0.000 13.317

LINE B06

Flow (L/s)	15.6
Vn - Velocity (m/s)	1.28
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	2%
Datum	-14.000
Depth To Invert	2.403 1.453 1.251 1.701
HGL Levels	3.985 4.011 4.007 4.008 4.032
Invert Levels	2.611 3.561 3.597 3.147
Finished Surface	5.014 4.848
Chainage	0.000 1.818

LINE B07

Flow (L/s)	23.3
Vn - Velocity (m/s)	1.67
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	3%
Datum	-14.000
Depth To Invert	2.521 1.690 1.251 1.701
HGL Levels	4.039 4.115 4.106 4.111 4.150
Invert Levels	2.686 3.517 3.818 3.368
Finished Surface	5.207 5.070
Chainage	0.000 10.047

LINE B08

Flow (L/s)	29.2
Vn - Velocity (m/s)	1.51
Pipe Size/Type	Ø375 uPVC SN16
Grade (%)	2%
Datum	-14.000
Depth To Invert	2.212 1.537 1.324 1.774
HGL Levels	4.117 4.154 4.152 4.152 4.180
Invert Levels	2.772 3.447 3.482 3.032
Finished Surface	4.984 4.806
Chainage	0.000 1.754

LINE B09

Flow (L/s)	88.5	45.8
Vn - Velocity (m/s)	1.01	2.62
Pipe Size/Type	Ø475 uPVC SN16	Ø375 uPVC SN16
Grade (%)	0.3%	6.63%
Datum	-14.000	
Depth To Invert	2.212 1.787 1.749 1.649 1.324 1.774	
HGL Levels	4.117 4.154 4.152 4.162 4.193 4.188 4.189 4.249	
Invert Levels	2.772 3.197 3.239 3.339 3.483 3.033	
Finished Surface	4.984 4.988	
Chainage	0.000 14.032 16.207	

LINE B10

Flow (L/s)	18.8
Vn - Velocity (m/s)	2.74
Pipe Size/Type	Ø300 uPVC SN16
Grade (%)	14.67%
Datum	-14.000
Depth To Invert	1.957 1.732 1.250 1.700
HGL Levels	4.405 4.525 4.511 4.511 4.534
Invert Levels	3.345 3.570 3.882 3.432
Finished Surface	5.302 5.131
Chainage	0.000 2.121

LINE B11

Flow (L/s)	66.5
Vn - Velocity (m/s)	1.48
Pipe Size/Type	Ø475 uPVC SN16
Grade (%)	1.06%
Datum	-14.000
Depth To Invert	1.957 1.897 1.749 4.547
HGL Levels	4.405 4.525 4.511 4.516
Invert Levels	3.345 3.405 3.553
Finished Surface	5.302 5.302
Chainage	0.000 14.000

LINE B12

STORMWATER DESIGN NOTE:
STORMWATER PIPE NETWORK DESIGNED FOR 1:5 ARI (YEARS) + CLIMATE
CHANGE. FREEBOARD OF 0.3m ACHIEVED THROUGHOUT NETOWRK.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER LONGSECTIONS
(SHEET 6)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD425	REVISION D		

SCALE 1:1000

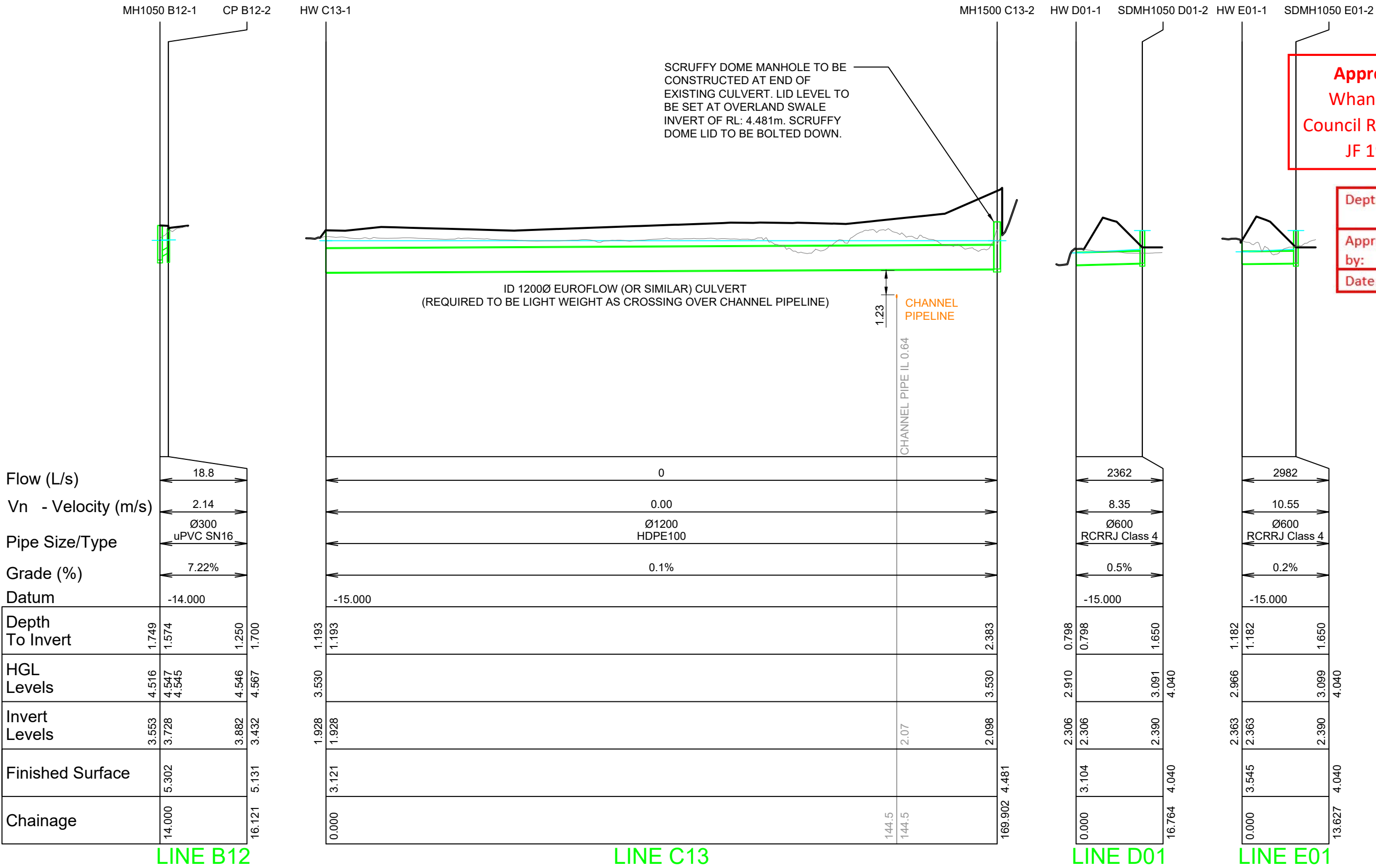
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NOTES:
1. SEE CONSTRUCTION NOTES DD001.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Stormwater
Approved by:	MA
Date:	14/12/22



STORMWATER DESIGN NOTE:
STORMWATER PIPE NETWORK DESIGNED FOR 1:5 ARI (YEARS) + CLIMATE CHANGE. FREEBOARD OF 0.3m ACHIEVED THROUGHOUT NETOWRK.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER LONGSECTIONS (SHEET 7)

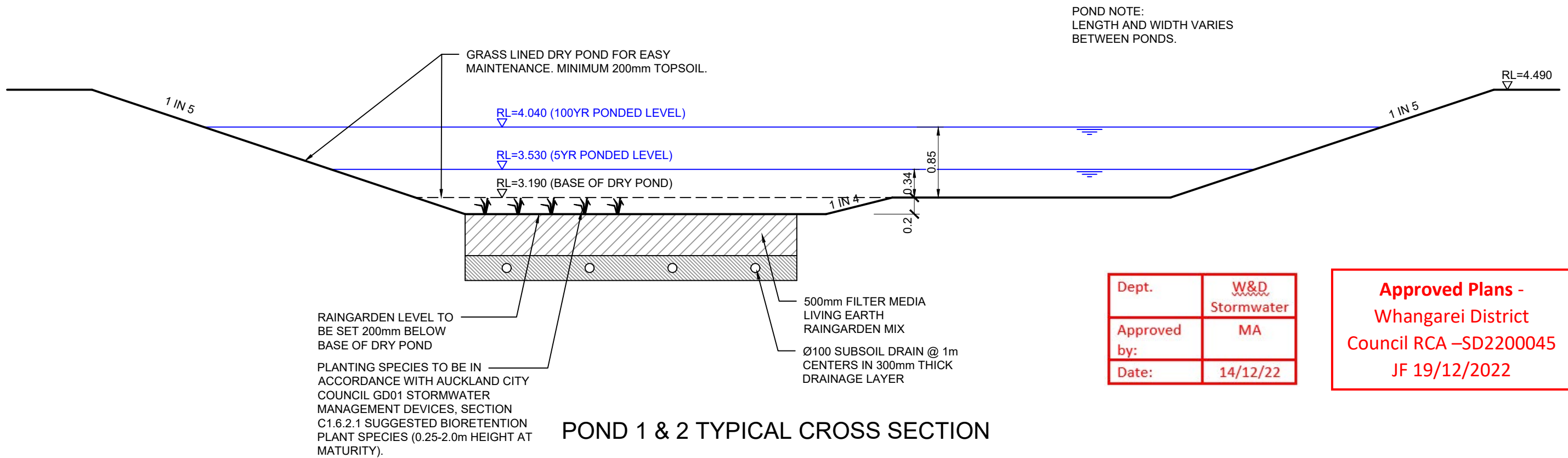
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VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD426	REVISION D		

10
8
6
4
2
0

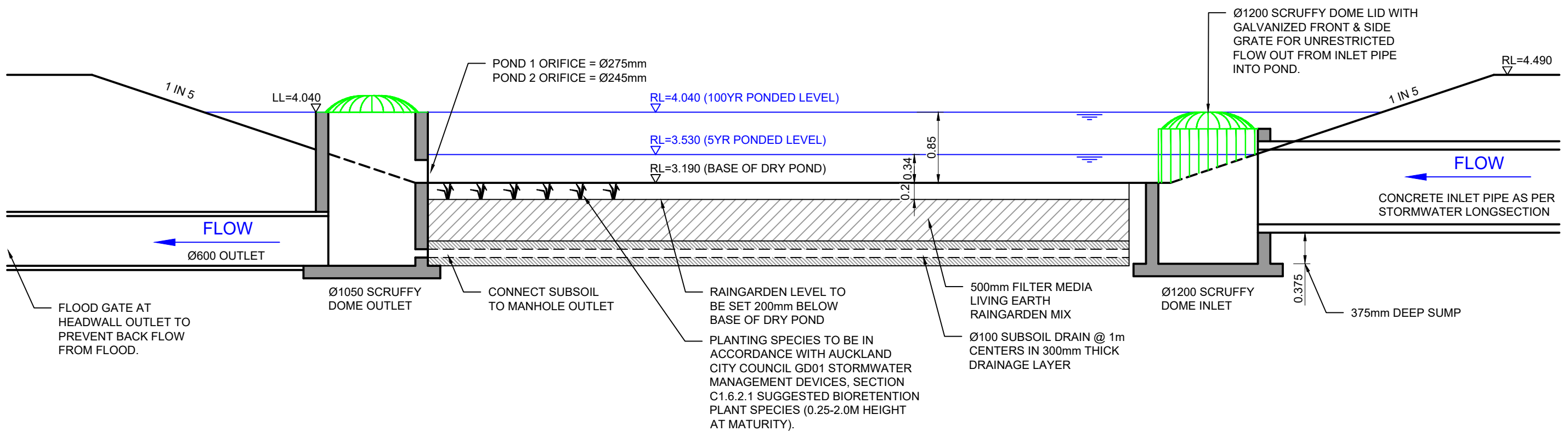
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POND 1 & 2 TYPICAL CROSS SECTION



POND 1 & 2 TYPICAL LONG SECTION

NOTES:
1. SEE CONSTRUCTION NOTES DD001.

TRISHN NAND
ME., CPEng., IntPE(NZ)

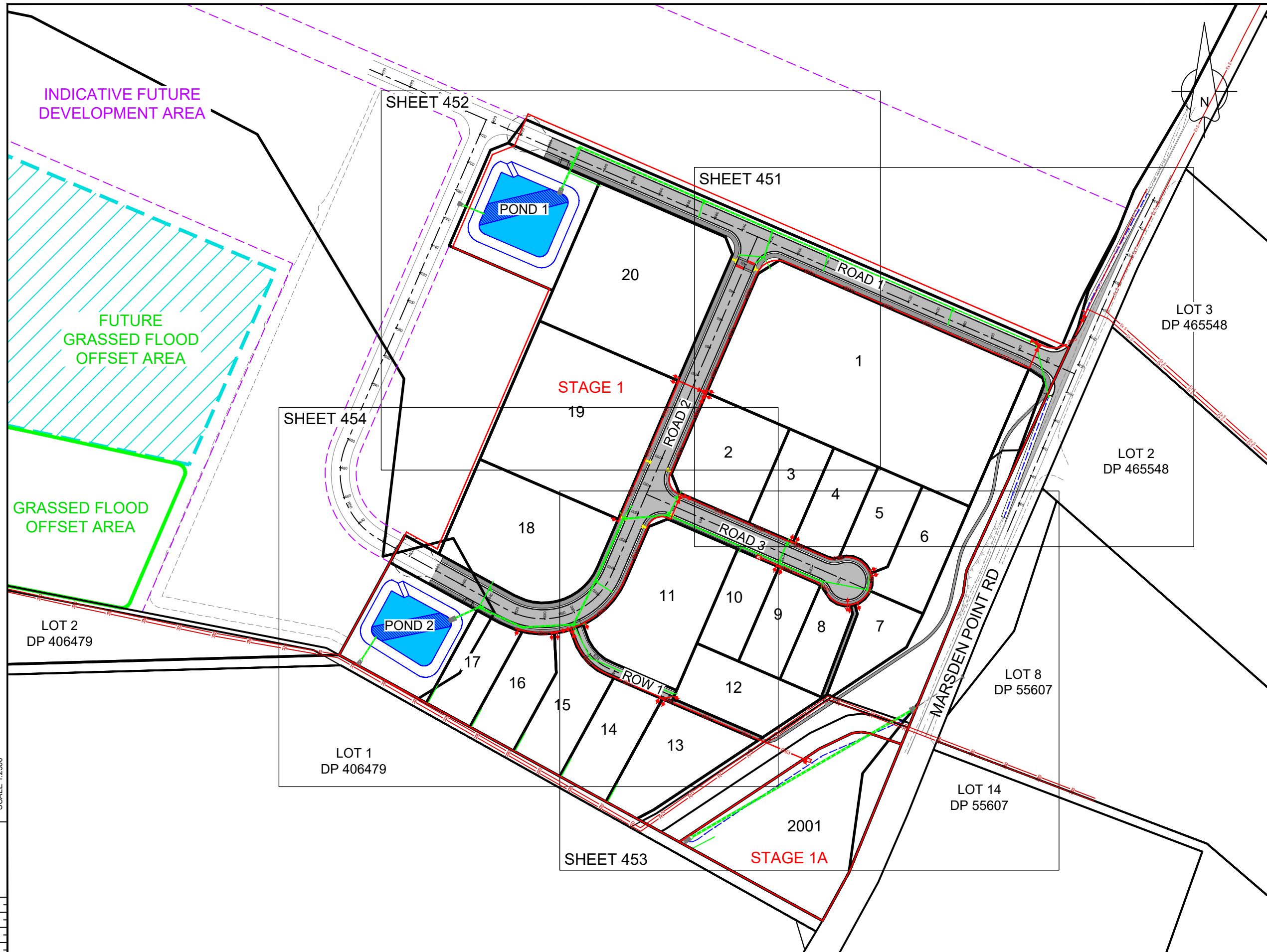


D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
STORMWATER POND TYPICAL DETAILS POND 1 & 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:50 @ A3	STATUS FOR APPROVAL	REVISION D
DWG NUMBER DD430			



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL LOW PRESSURE SEWER (LPS) SHALL BE PE100 SRD11 AND PN16.
 3. ALL LPS SIZES ARE OUTSIDE DIAMETER (OD).
 4. LPS LATERALS FROM LPS TANK TO MAIN SHALL BE 40mm OD.
 5. SEWER CONNECTIONS ARE DIAGRAMMATIC ONLY AND BOUNDARY KITS ARE TO BE INSTALLED IN ROAD RESERVE.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Wastewater
Approved by:	CK
Date:	14/12/22

100
50
0
SCALE 1:2500



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SCALE 1:2500

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

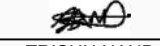
PROJECT DETAILS

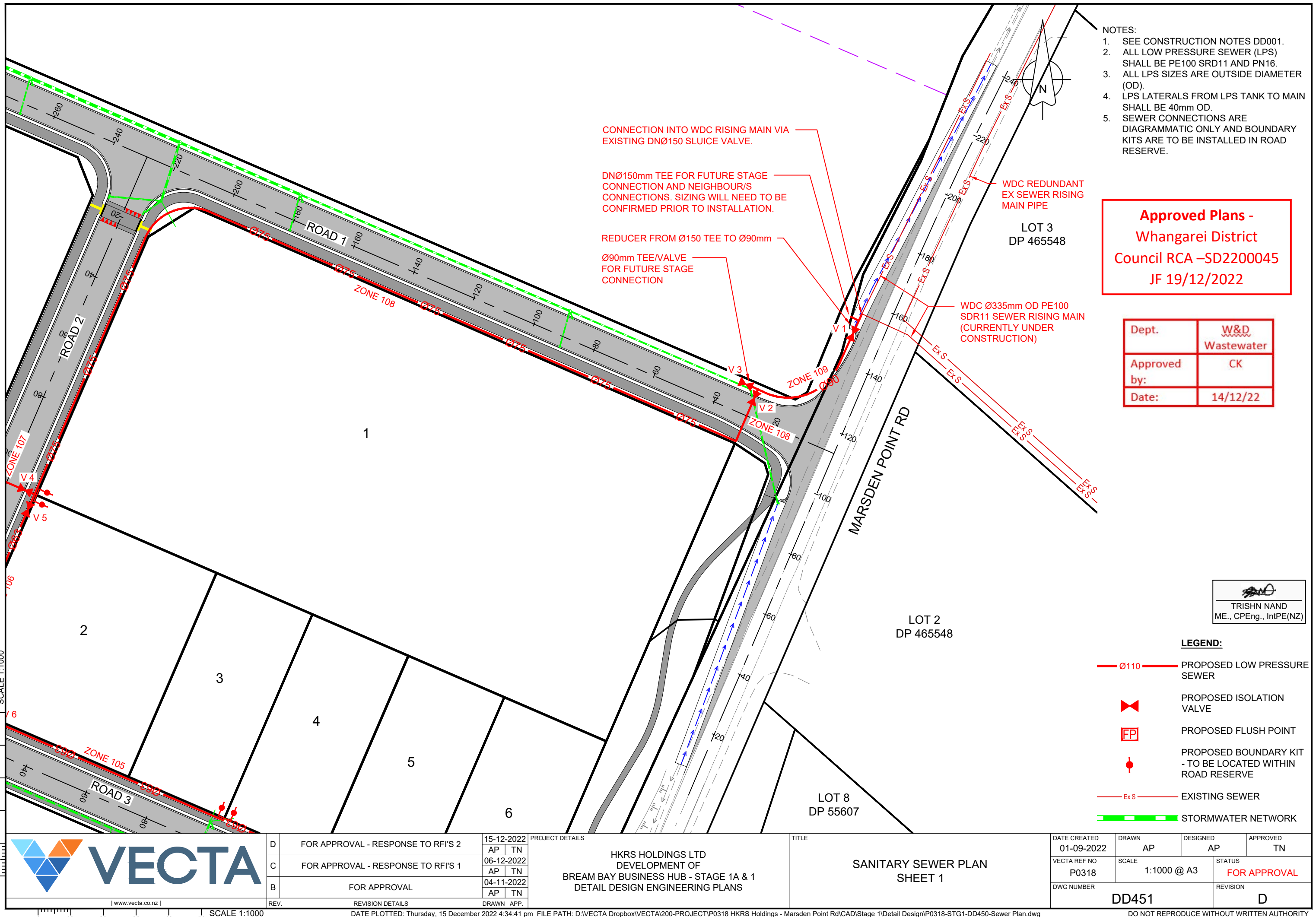
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

SANITARY SEWER PLAN
OVERVIEW

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:2500 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD450		REVISION D	


TRISHN NAND
ME., CPEng., IntPE(NZ)



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL LOW PRESSURE SEWER (LPS) SHALL BE PE100 SRD11 AND PN16.
 3. ALL LPS SIZES ARE OUTSIDE DIAMETER (OD).
 4. LPS LATERALS FROM LPS TANK TO MAIN SHALL BE 40mm OD.
 5. SEWER CONNECTIONS ARE DIAGRAMMATIC ONLY AND BOUNDARY KITS ARE TO BE INSTALLED IN ROAD RESERVE.

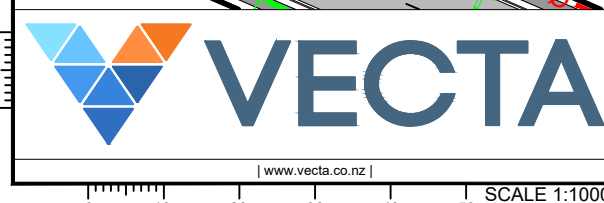
Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Wastewater
Approved by:	CK
Date:	14/12/22


TRISHN NAND
ME., CPEng., IntPE(NZ)

LEGEND:

-  PROPOSED LOW PRESSURE SEWER
-  PROPOSED ISOLATION VALVE
-  PROPOSED FLUSH POINT
-  PROPOSED BOUNDARY KIT - TO BE LOCATED WITHIN ROAD RESERVE
-  EXISTING SEWER
-  STORMWATER NETWORK



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

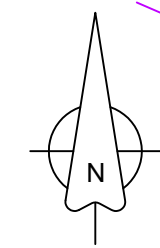
PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

SANITARY SEWER PLAN
SHEET 1

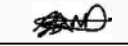
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VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD451	REVISION D		



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL LOW PRESSURE SEWER (LPS) SHALL BE PE100 SRD11 AND PN16.
 3. ALL LPS SIZES ARE OUTSIDE DIAMETER (OD).
 4. LPS LATERALS FROM LPS TANK TO MAIN SHALL BE 40mm OD.
 5. SEWER CONNECTIONS ARE DIAGRAMMATIC ONLY AND BOUNDARY KITS ARE TO BE INSTALLED IN ROAD RESERVE.

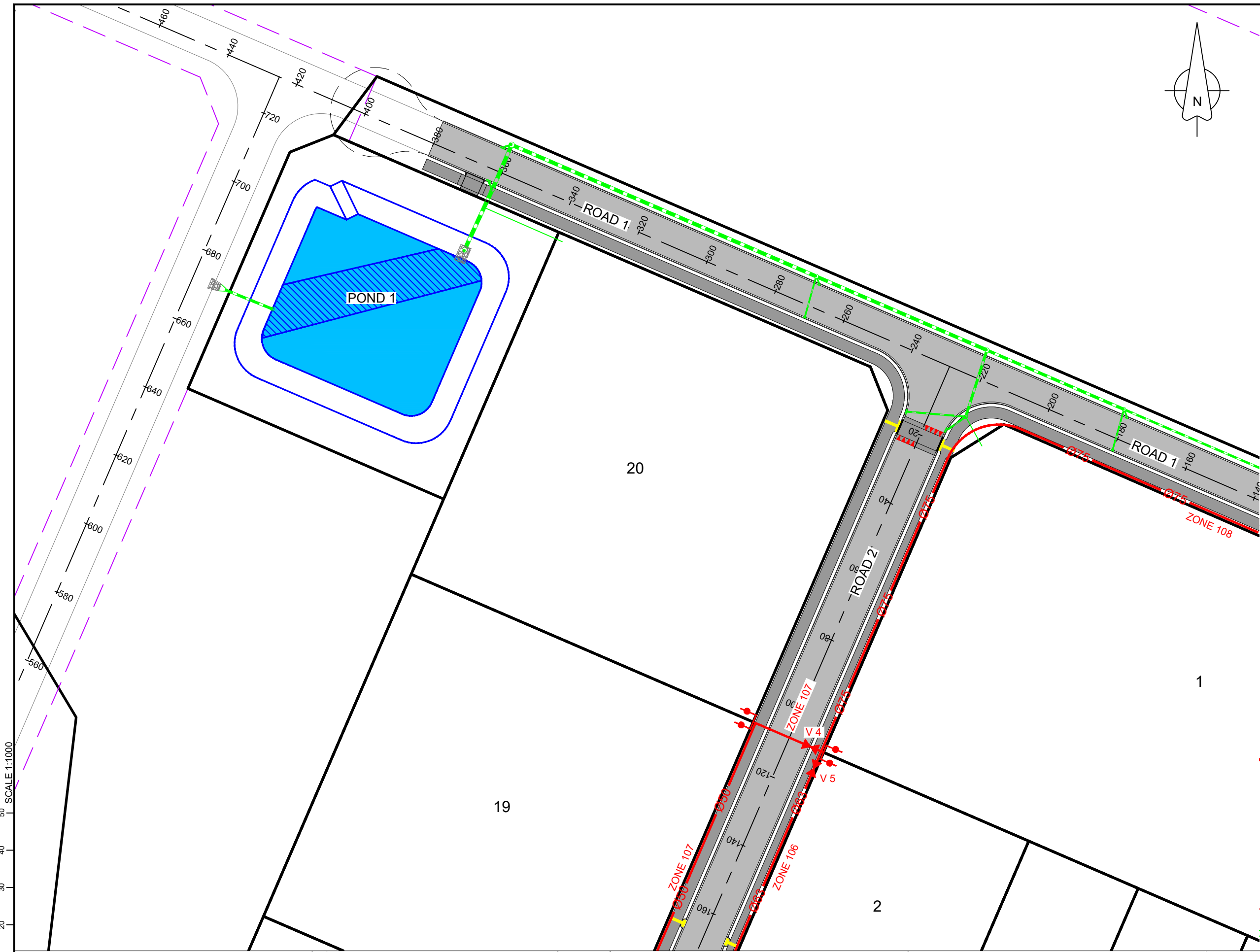
Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Wastewater
Approved by:	CK
Date:	14/12/22


TRISHN NAND
ME., CPEng., IntPE(NZ)

LEGEND:

-  Ø110 PROPOSED LOW PRESSURE SEWER
-  PROPOSED ISOLATION VALVE
-  PROPOSED FLUSH POINT
-  PROPOSED BOUNDARY KIT - TO BE LOCATED WITHIN ROAD RESERVE
-  EXISTING SEWER
-  STORMWATER NETWORK



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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
		AP TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
		AP TN
B	FOR APPROVAL	04-11-2022
		AP TN
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS

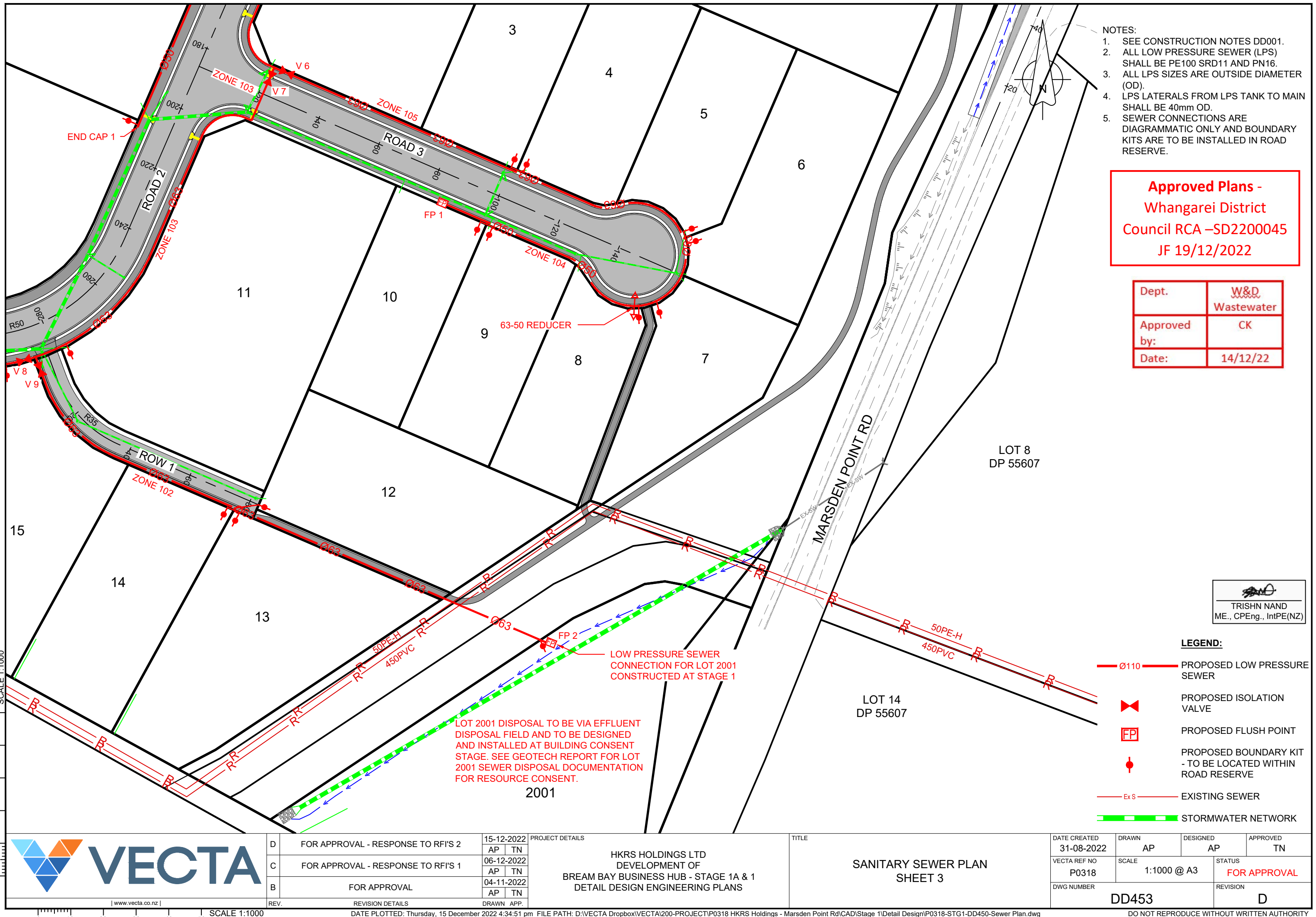
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

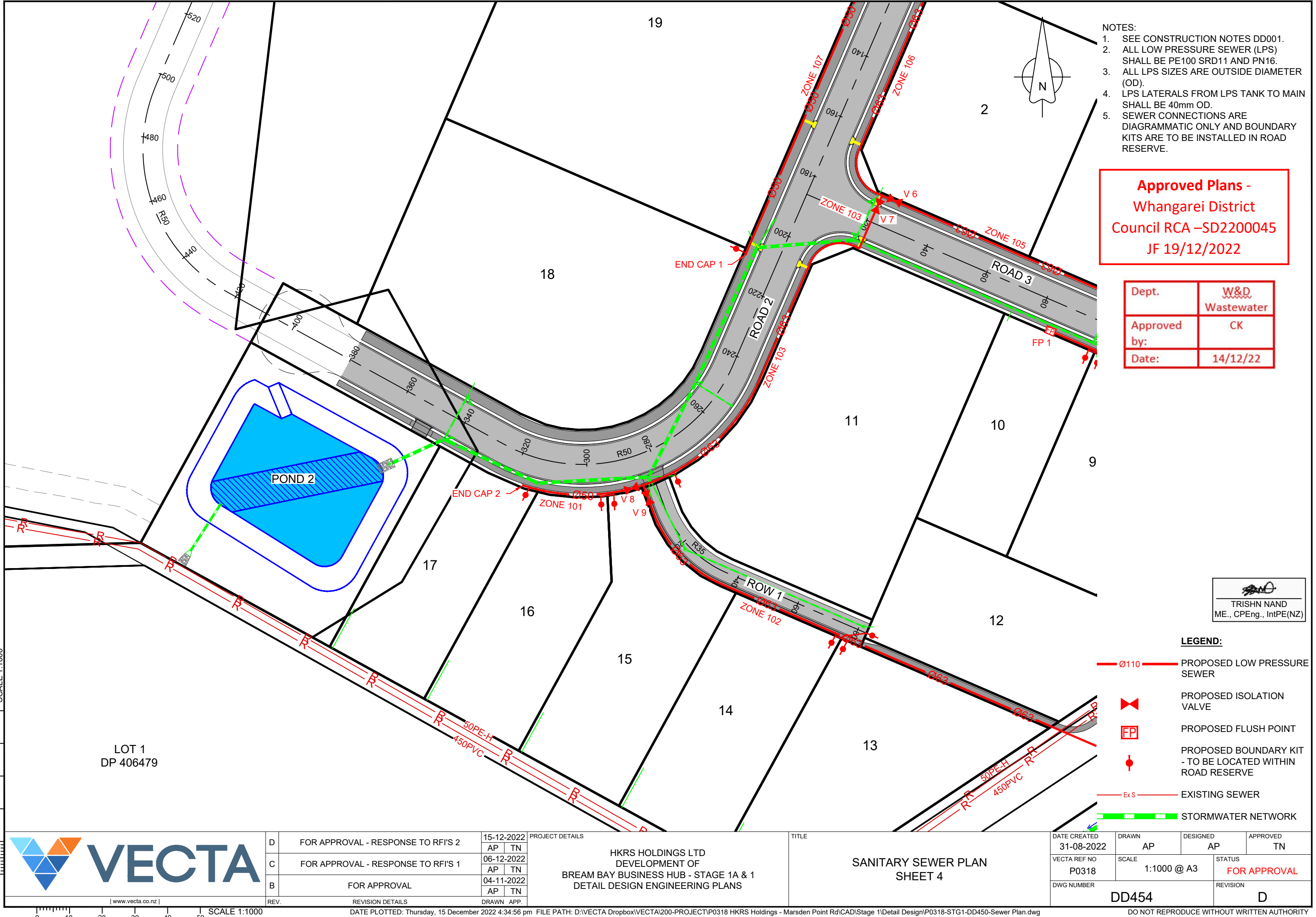
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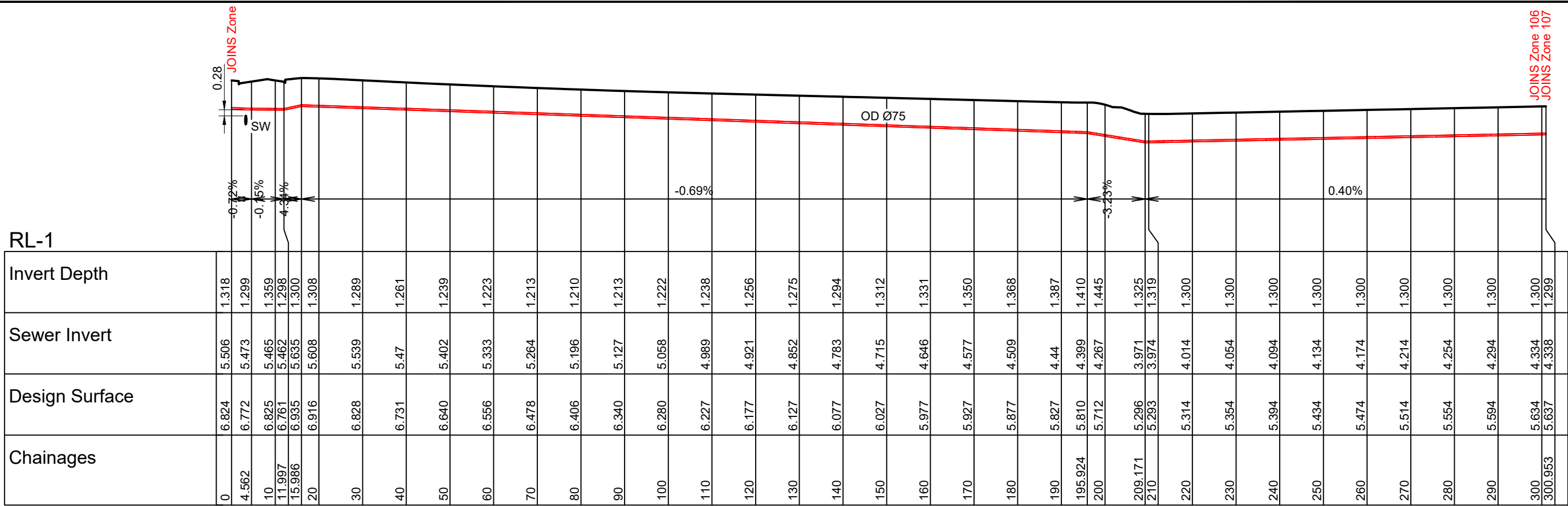
SANITARY SEWER PLAN
SHEET 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD452	REVISION D		

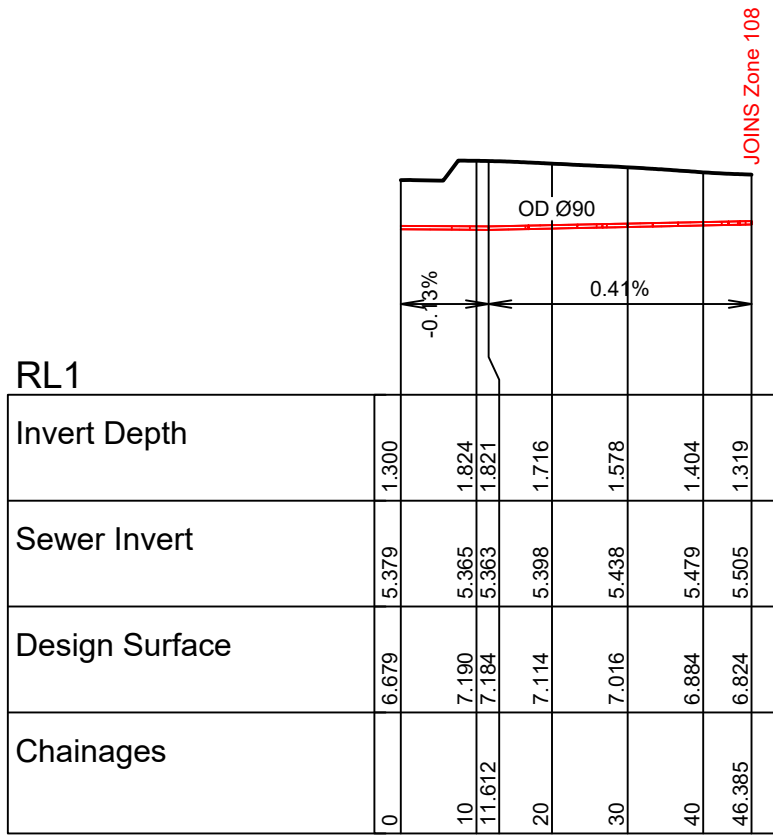
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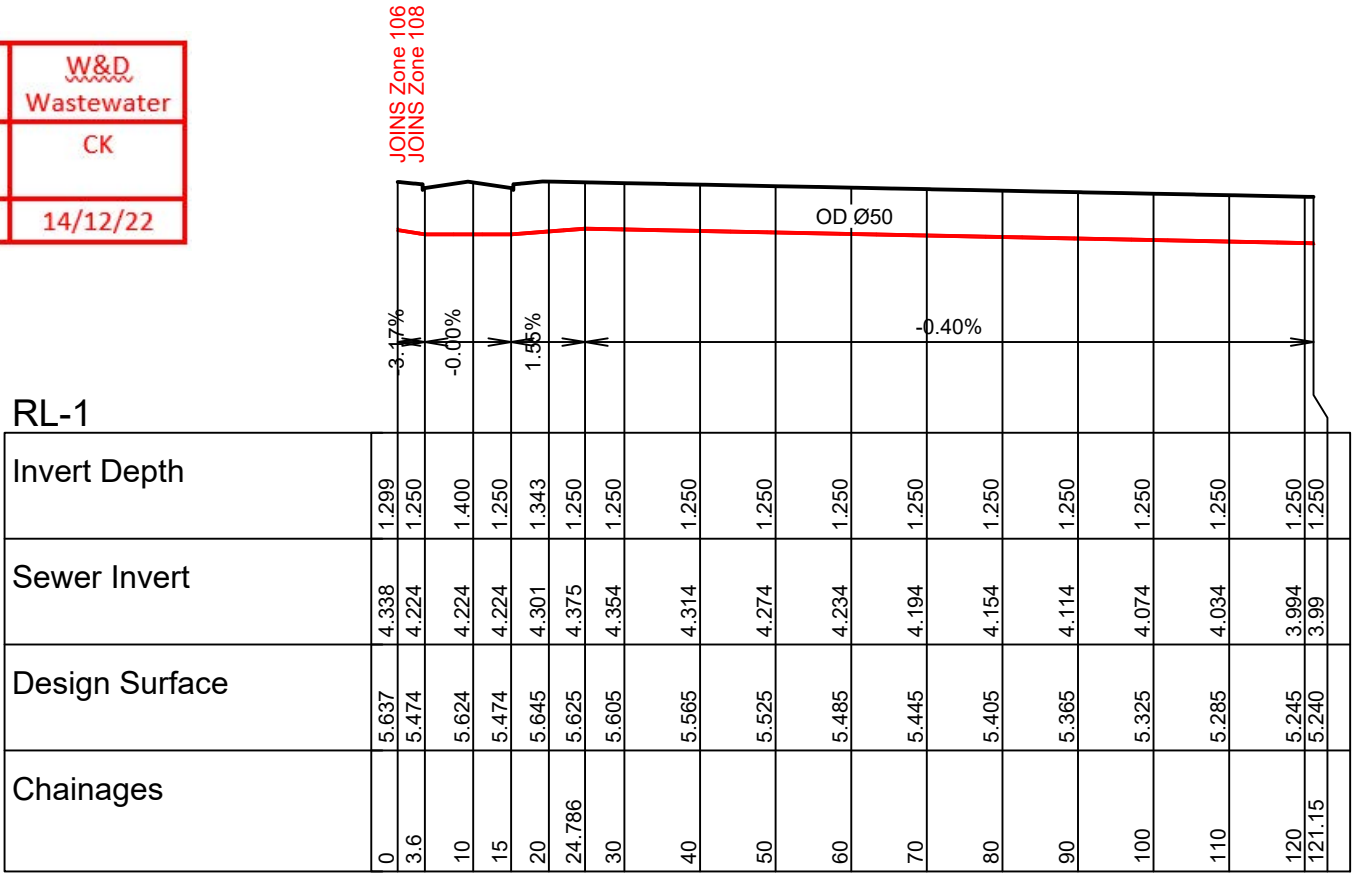


Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 108



Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 109

Dept.	W&D Wastewater
Approved by:	CK
Date:	14/12/22



Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 107

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

- NOTES:
- SEE CONSTRUCTION NOTES DD001.
 - ALL LOW PRESSURE SEWER (LPS) SHALL BE PE100 SRD11 AND PN16.
 - ALL LPS SIZES ARE OUTSIDE DIAMETER (OD).
 - LPS LATERALS FROM LPS TANK TO MAIN SHALL BE 40mm OD.
- KEY:
- SW = PROPOSED STORMWATER PIPE
GAS = FIRST GAS PIPELINE
CHANNEL = CHANNEL PIPELINE



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

SANITARY SEWER LONGSECTIONS
(SHEET 1)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD460		REVISION D	

TRISH N AND
ME., CPEng., IntPE(NZ)

RL-1

Invert Depth	1.300	1.337	1.348	1.300	1.298	1.298	1.299	1.300	1.300
Sewer Invert	4.638	4.451	4.265	4.157	4.14	4.099	4.059	4.018	3.984
Design Surface	5.938	5.788	5.613	5.457	5.438	5.398	5.358	5.318	5.284
Chainages	0	10	20	25.811	30	40	50	60	68.416

Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 104

RL-1

Invert Depth	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.278	1.299	1.300
Sewer Invert	4.337	4.297	4.257	4.217	4.177	4.137	4.109	4.033	3.725	3.729
Design Surface	5.637	5.597	5.557	5.517	5.477	5.437	5.409	5.389	5.024	5.029
Chainages	0	10	20	30	40	50	56.913	60	72.557	76.408

Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 106

RL-1

Invert Depth	1.299	1.300	1.420	1.300	1.127	1.307	1.299	1.397	1.382	1.301	1.304	1.300	1.296	1.293	1.293	1.296	1.299	1.302	1.305	1.297	1.283	1.306
Sewer Invert	3.73	3.566	3.566	3.566	3.866	3.722	3.72	3.717	3.823	3.951	3.929	3.892	3.855	3.819	3.782	3.745	3.709	3.672	3.639	3.644	3.652	3.622
Design Surface	5.029	4.866	4.986	4.866	4.993	5.029	5.019	5.114	5.205	5.253	5.233	5.192	5.152	5.111	5.075	5.042	5.008	4.974	4.944	4.941	4.935	4.928
Chainages	0	3.6	10	14	15.778	17.704	20	26.804	30	33.857	40	50	60	70	80	90	100	110	118.997	120	121.748	123.688

Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 103

Dept.	W&D Wastewater
Approved by:	CK
Date:	14/12/22

RL-1

Invert Depth	1.299	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300
Sewer Invert	3.73	3.77	3.81	3.85	3.89	3.93	3.97	4.009	4.049	4.089	4.129	4.157	4.205	4.359	4.512	4.666	4.755	4.734	4.683	4.637	4.637	4.637
Design Surface	5.029	5.069	5.109	5.149	5.189	5.229	5.269	5.309	5.349	5.389	5.429	5.472	5.557	5.755	5.909	6.017	6.048	6.056	6.024	5.938	5.938	5.938
Chainages	0	10	20	30	40	50	60	70	80	90	100	106.868	110	120	130	140	145.78	150	160	168.879	168.879	168.879

Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 105

- NOTES:
- SEE CONSTRUCTION NOTES DD001.
 - ALL LOW PRESSURE SEWER (LPS) SHALL BE PE100 SRD11 AND PN16.
 - ALL LPS SIZES ARE OUTSIDE DIAMETER (OD).
 - LPS LATERALS FROM LPS TANK TO MAIN SHALL BE 40mm OD.

KEY:
SW = PROPOSED STORMWATER PIPE
GAS = FIRST GAS PIPELINE
CHANNEL = CHANNEL PIPELINE

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
SANITARY SEWER LONGSECTIONS
(SHEET 2)

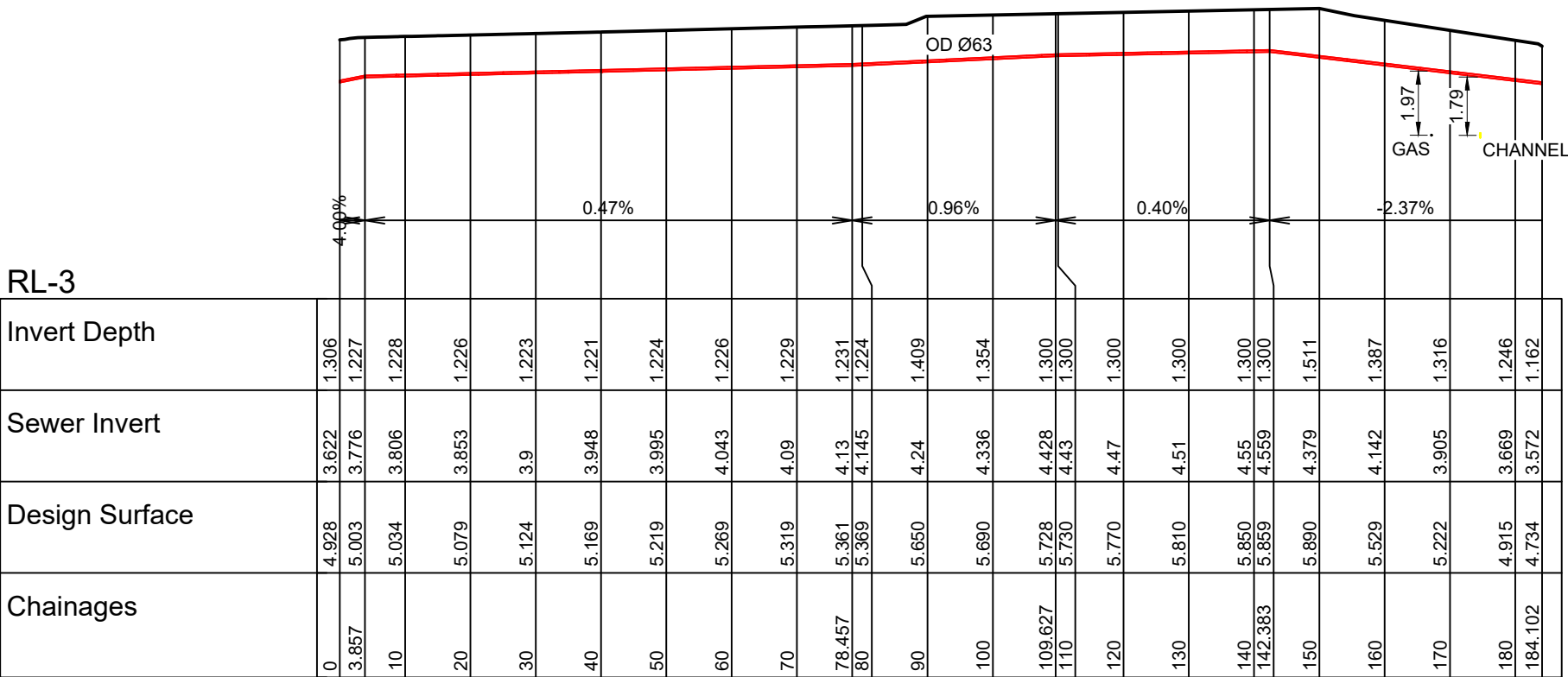
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD461	REVISION D		

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL LOW PRESSURE SEWER (LPS) SHALL BE PE100 SRD11 AND PN16.
 3. ALL LPS SIZES ARE OUTSIDE DIAMETER (OD).
 4. LPS LATERALS FROM LPS TANK TO MAIN SHALL BE 40mm OD.

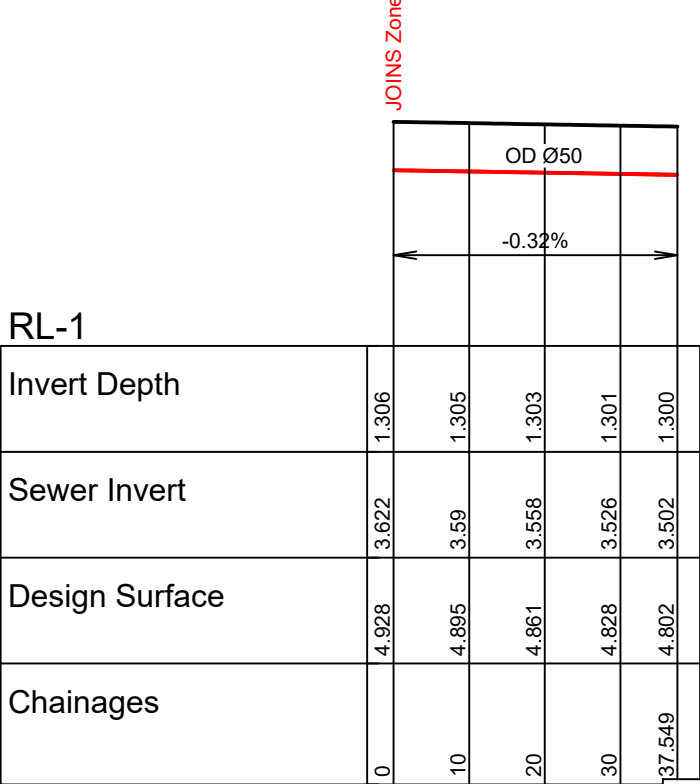
KEY:
SW = PROPOSED STORMWATER PIPE
GAS = FIRST GAS PIPELINE
CHANNEL = CHANNEL PIPELINE

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	W&D Wastewater
Approved by:	CK
Date:	14/12/22



Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 102



Horizontal 1:1000 Vertical 1:200
SEWER LONGSECTION Zone 101



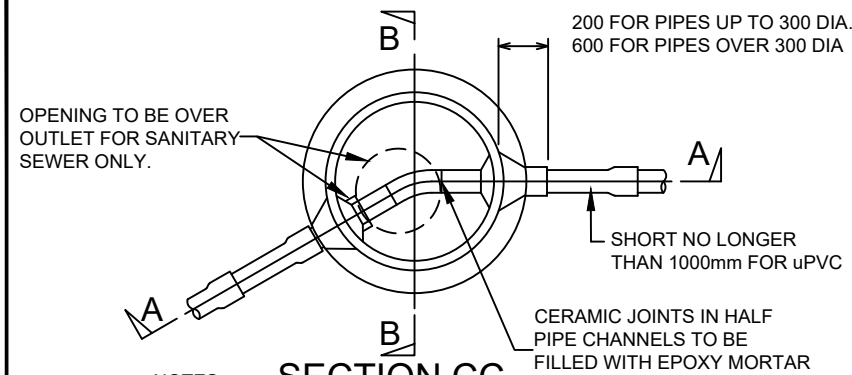
D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

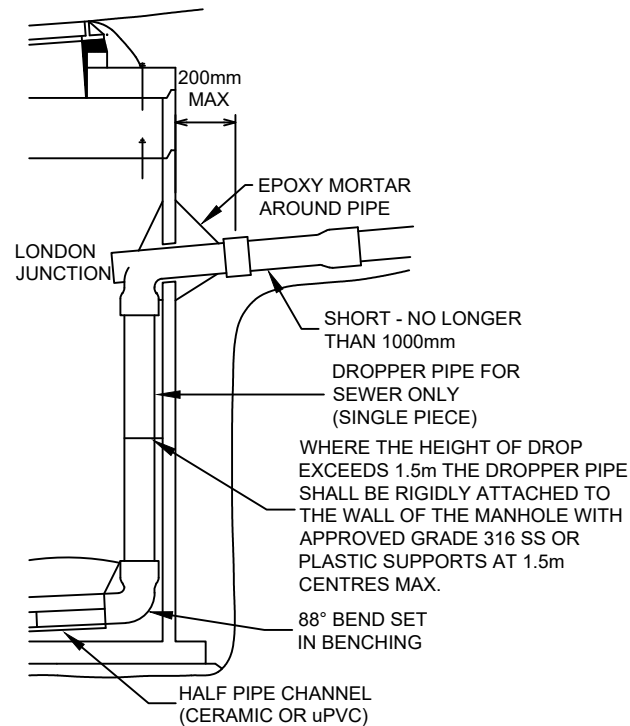
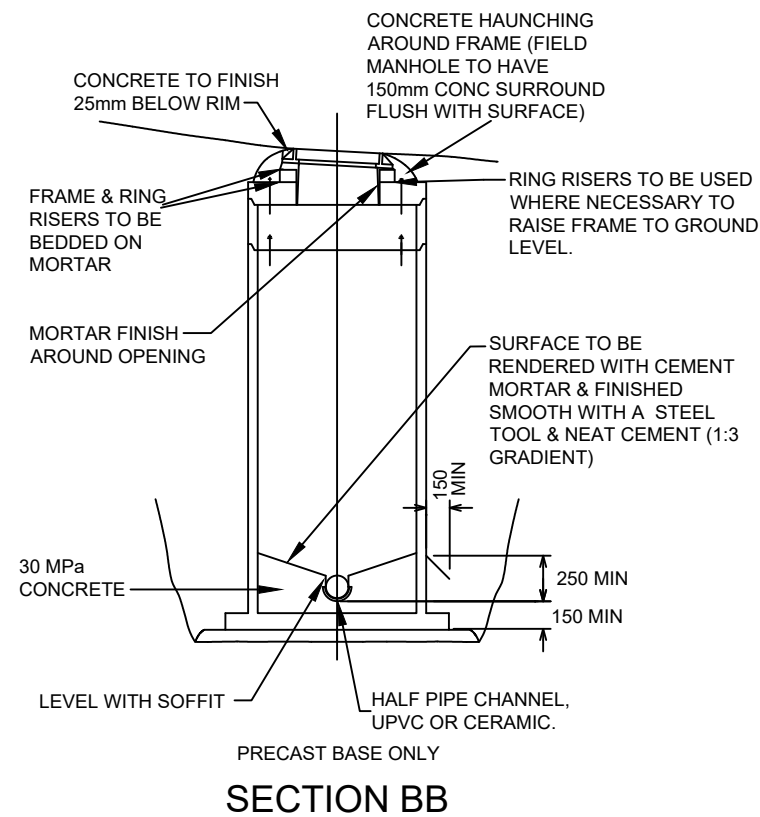
TITLE
SANITARY SEWER LONGSECTIONS
(SHEET 3)

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000(H) @ A3 1:200(V) @ A3		STATUS FOR APPROVAL
DWG NUMBER DD462			REVISION D

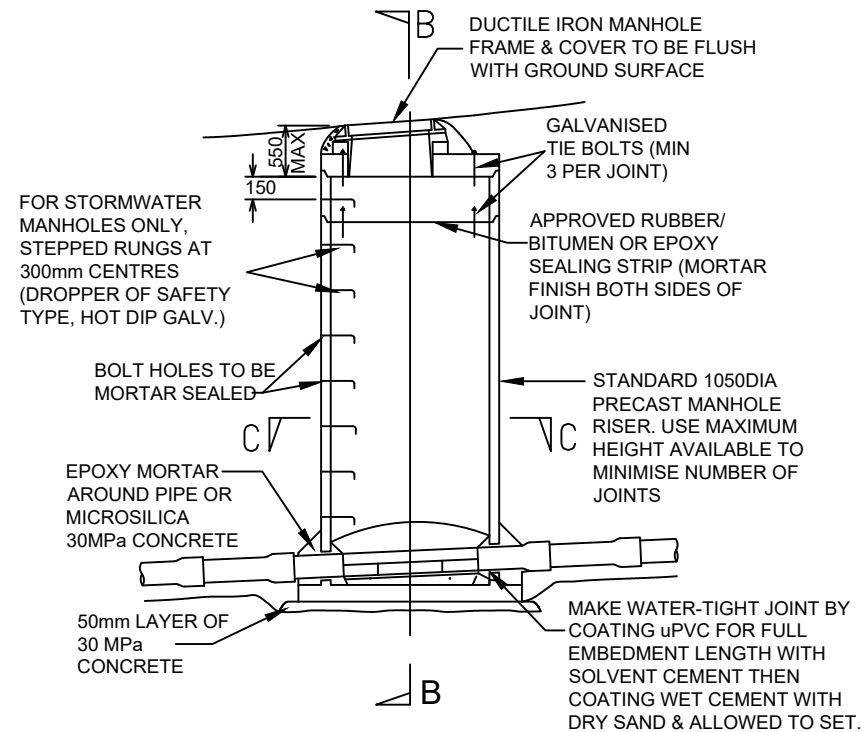
Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



- NOTES:
1. THIS DETAIL IS APPLICABLE FOR PIPE DIAMETERS UP TO 600mm & FOR MANHOLE DEPTHS UP TO 5.0m.
 2. ALL STEEL FITTINGS TO BE HOT DIP GALVANISED ZINC COATINGS TO BE NOT LESS THAN 700g/m
 3. 150mm THICK REINFORCED CONCRETE LIDS WITH HEAVY DUTY DUCTILE IRON FRAMES & COVERS TO BE USED IN DRIVEWAYS, CARRIAGEWAYS & BERMS. 100mm THICK CONCRETE LIDS WITH LIGHT DUTY CAST IRON FRAMES & COVERS MAY BE USED ELSEWHERE.
 4. PRECAST MANHOLE BASES SHALL BE USED IN ALL INSTANCES WITH MINIMUM SIZED HOLES CUT FOR PIPE ENTRY.
 5. NO ADDITIONAL THIN PLASTERING OF BENCHING OR INVERTS IS PERMITTED.
 6. ALL MANHOLE THROATS ARE TO BE PAINTED GREEN FOR STORMWATER, RED FOR SEWER. PAINTING ON MANHOLE COVERS IS OPTIONAL. IF COVERS ARE PAINTED THEY SHALL BE GREEN FOR STORMWATER, RED FOR SEWER WITH 50mm WIDE WHITE STRIP PAINTED THROUGH THE CENTRE OF THE COVER.
 7. ALL CONCRETE TO BE 20MPa AT 28 DAYS UNLESS SPECIFIED AS WEAK MIX.
 8. STORMWATER MANHOLES DO NOT REQUIRE HALF PIPE CHANNELS, OR SHORT PIPE SECTIONS BEYOND THE ENTRY OR EXITS.
 9. STEPPED RUNGS NOT TO BE PROVIDED FOR SEWER MANHOLES.
 10. BASE TO BE COMPACTED TO RESILIENT MODULUS OF 40MPa FOR ALL PIPES, MANHOLES, SUMPS, PITS, ETC.



- NOTE:
1. THIS DETAIL IS APPLICABLE FOR PIPE DIAMETERS UP TO 250mm & FOR MANHOLE DEPTHS UP TO 5.0m & FOR MANHOLE DIAMETERS > 1200mm
 2. FOR MANHOLE DIAMETERS < 1200mm AN EXTERNAL DROP MUST BE USED (SEE NZS 4404, SHEET CM-004)



STANDARD PRECAST MANHOLE
(SEWER & STORMWATER)
SHEET 37 WDC EES 2010 - NOT TO SCALE

- NOTES:
1. SEE CONSTRUCTION NOTES DD001.

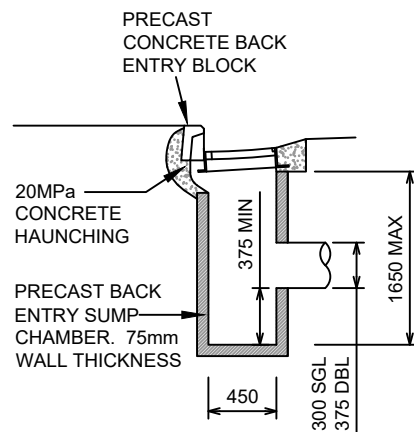
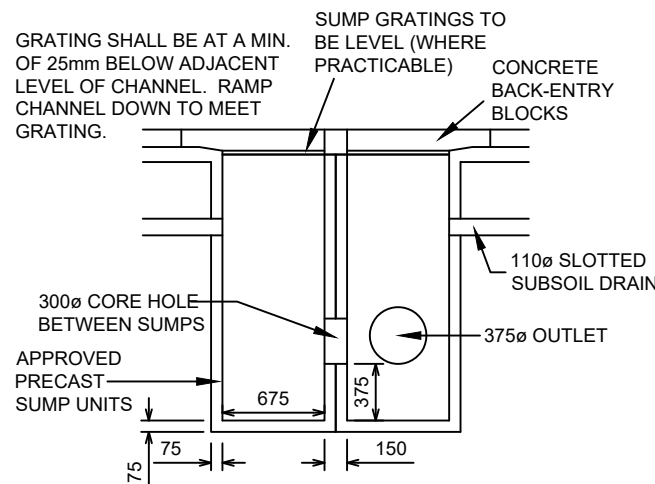
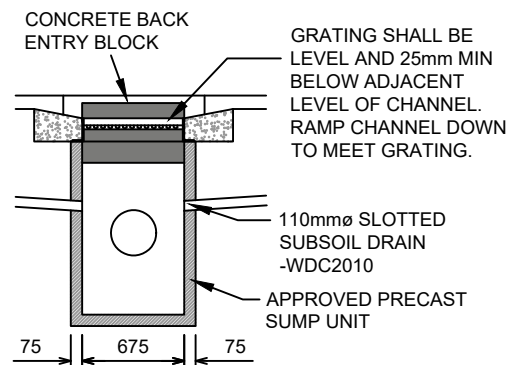
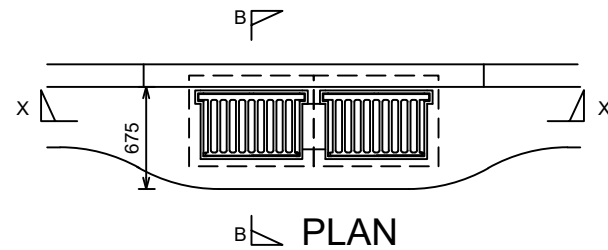
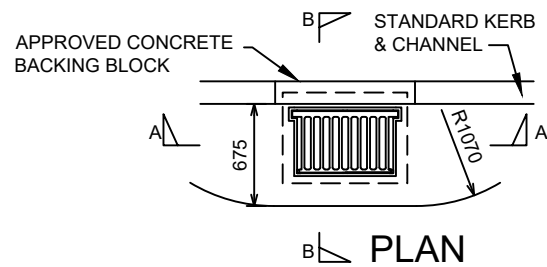


D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

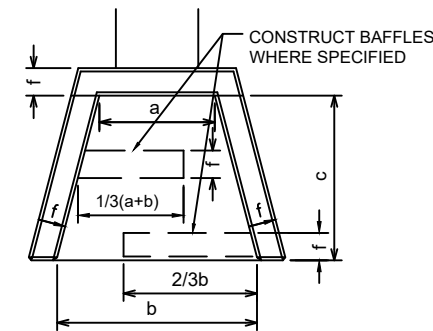
PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
DRAINAGE TYPICAL DETAILS - SHEET 1
TYPICAL MANHOLE DETAILS

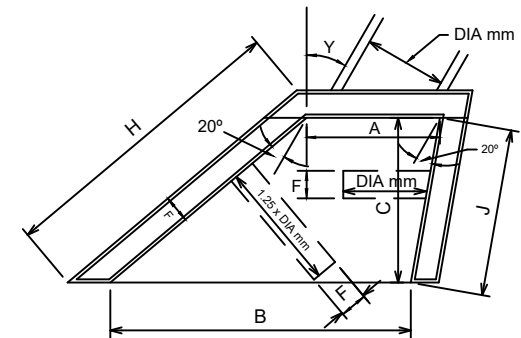
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE NTS @ A3		STATUS FOR APPROVAL
DWG NUMBER DD470			REVISION D



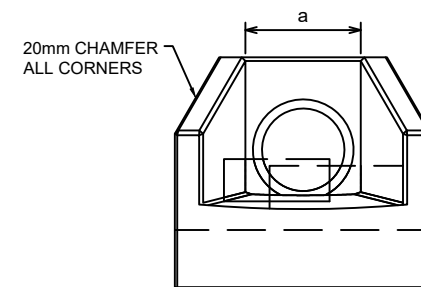
- CATCHPIT NOTES:**
1. CONCRETE TO BE ORDINARY GRADE (20MPa) IN ACCORDANCE WITH NZS 3109.
 2. SUMP OUTLET PIPES TO BE 1:100 MIN GRADIENT.
 3. GRATES TO BE CYCLE FRIENDLY AND TO BE PLACED OUTSIDE KERB RAMP/PRAM CROSSINGS.



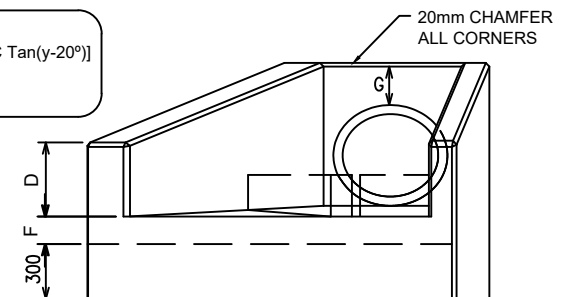
SHEET 35 WDC EES 2010 - NOT TO SCALE



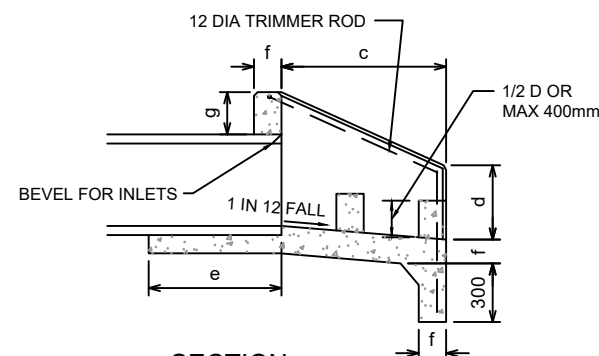
SHEET 35 WDC EES 2010 - NOT TO SCALE



SHEET 35 WDC EES 2010 - NOT TO SCALE



SHEET 35 WDC EES 2010 - NOT TO SCALE



SHEET 35 WDC EES 2010 - NOT TO SCALE

PRINCIPAL DIMENSIONS (mm)							
DIA OF PIPE	a	b	c	d	e	f	g
150	300	450	600	200	325	100	150
230	380	600	700	250	425	100	150
300	450	750	750	300	525	100	150
375	550	900	850	350	625	100	150
450	630	1100	900	400	725	150	230
525	700	1200	1000	450	825	150	230
600	800	1400	1100	550	900	150	230
750	1000	1700	1200	600	1050	150	300
900	1170	2000	1450	650	1225	150	300
1050	1380	2300	1700	750	1375	150	300
1200	1520	2600	2100	750	1550	150	450
1350	1680	2800	2400	750	1725	150	450

- NOTES:**
1. REINFORCE FLOORS & WALLS WITH:

150 - 375	665 MESH
450 - 600	633 MESH OR D10 RODS AT 250 CRS
675 - 900	D12 RODS AT 250 CRS
1050 - 1350	D12 RODS AT 150 CRS
 2. ALL REINFORCEMENT SHALL BE PLACED CENTRALLY IN WALLS AND FLOOR, AND SHALL BE CONTINUOUS BETWEEN WALLS AND FLOOR.
 3. LAPS IN STRUCTURAL GRADE BARS TO BE 300 MIN.

4. THERE SHALL BE A LEAST 2 BARS - WHETHER MESH OR M.S. OVER THE TOP OF THE PIPE.
5. CONCRETE IS TO BE ORDINARY GRADE (17.5MPa) IN ACCORDANCE WITH NZS 3109.
6. BAFFLES ARE TO BE CONSTRUCTED AS SHOWN WHEN OUTLET VELOCITIES AND SOIL CONDITIONS DICTATE, IN EXTREME CASES SPECIFIC DESIGN MAY BE REQUIRED BY THE COUNCIL.
7. INLET STRUCTURES SHALL HAVE REVERSE APRON FALL AND NO BAFFLES.

INLET AND OUTFALL STRUCTURES

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

- NOTES:**
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL INLET AND OUTLET HEADWALL STRUCTURES TO BE FITTED WITH THE RELEVANT HYND'S WINGWALL GRILLE FOR ALL HEADWALLS >Ø375.

TRISHN NAND
 ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS

HKRS HOLDINGS LTD
 DEVELOPMENT OF
 BREAM BAY BUSINESS HUB - STAGE 1A & 1
 DETAIL DESIGN ENGINEERING PLANS

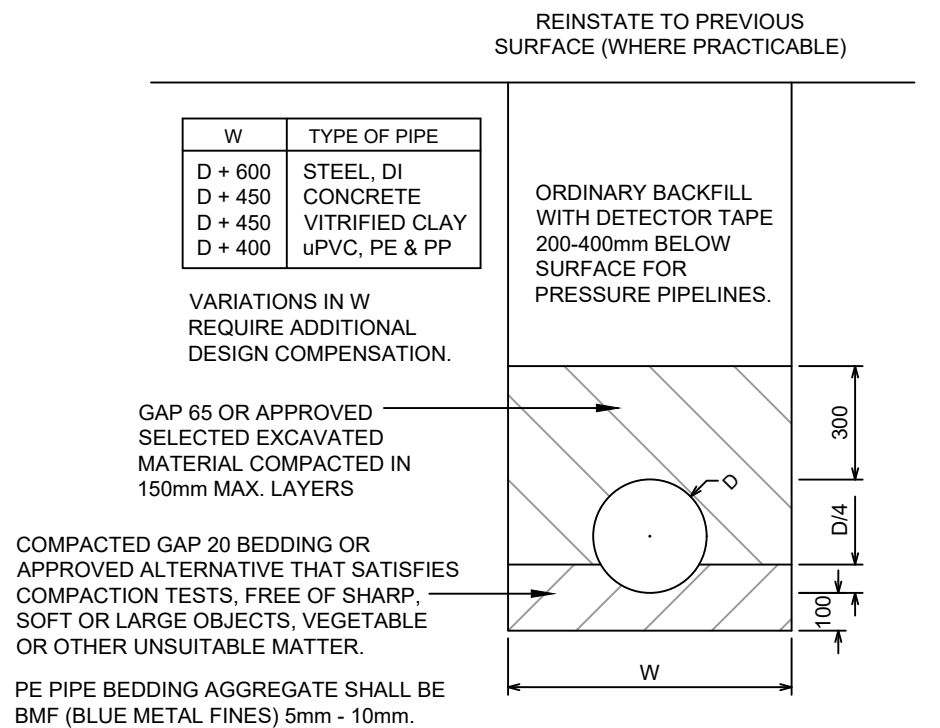
TITLE

DRAINAGE TYPICAL DETAILS - SHEET 2

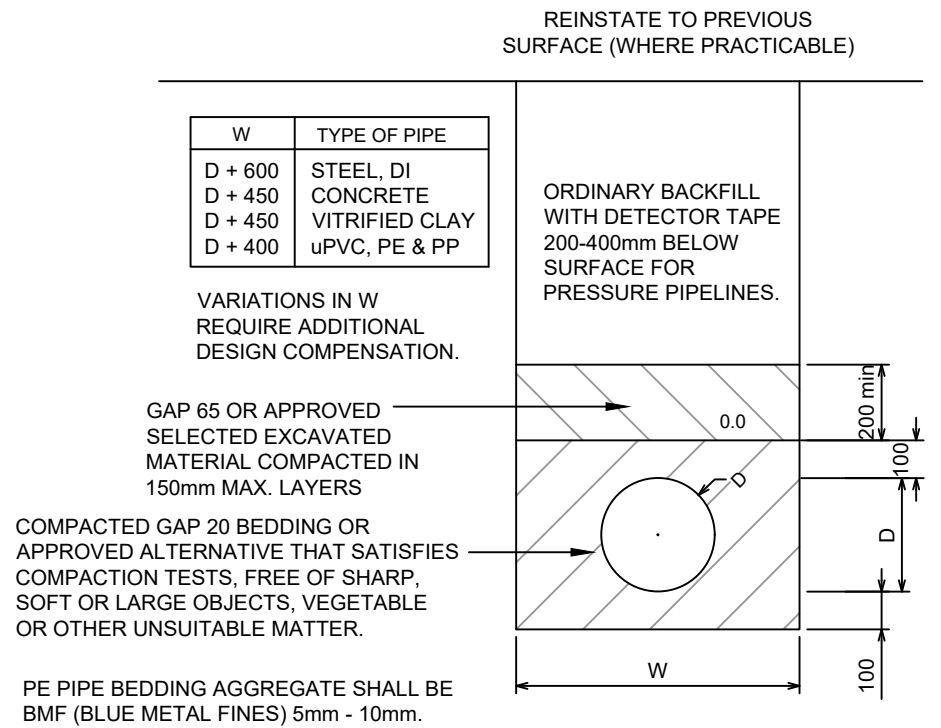
TYPICAL SUMP & HEADWALL DETAILS

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE NTS @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD471		REVISION D	

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



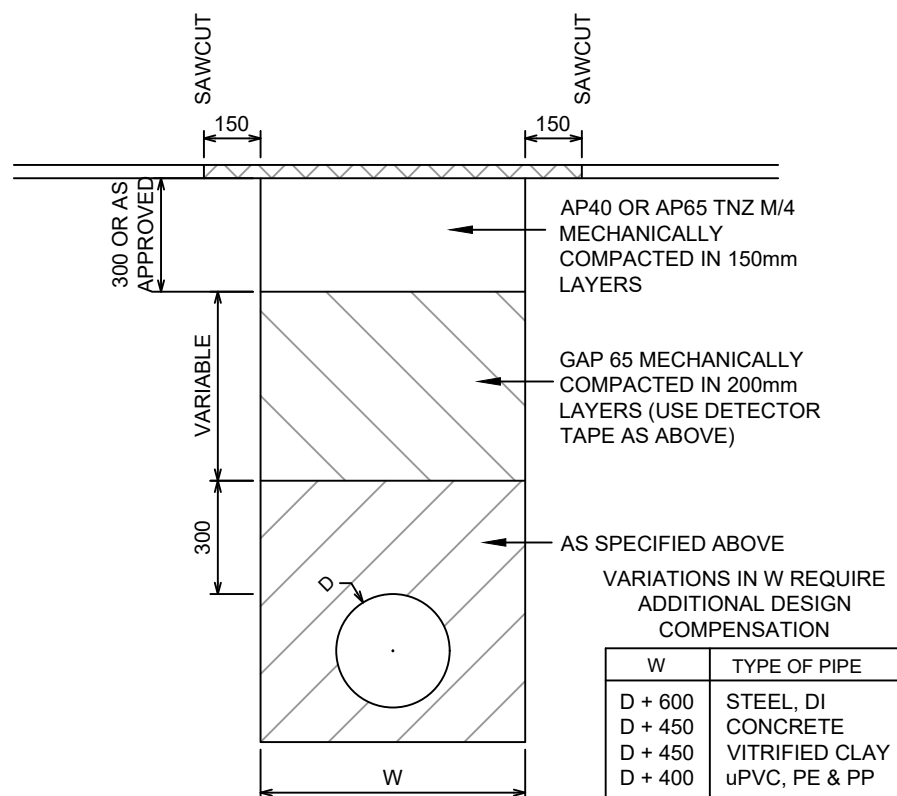
CONCRETE, DUCTILE IRON,
STEEL OR VITRIFIED CLAY PIPE
SHEET 31 WDC EES 2010 - NOT TO SCALE
(WHERE SPECIFICALLY APPROVED)



PVC, PE & PP PIPE
SHEET 31 WDC EES 2010 - NOT TO SCALE
(PVC & PP NOT APPROVED FOR WATER SUPPLY)

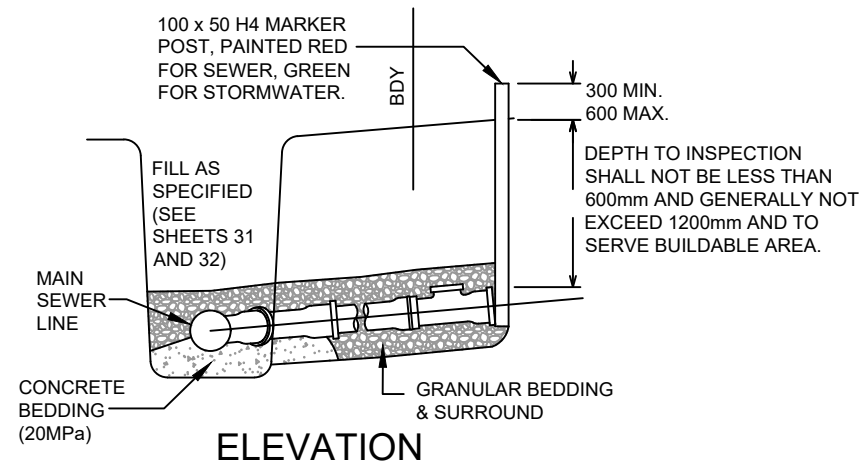
NOTES

- CONCRETE PIPES TO BE RCRRJ TO AS/NZS 4058 INSTALLED TO MANUFACTURERS' REQUIREMENTS.
- ORDINARY BACKFILL SHALL BE FREE FROM STONES OR ROCKS GREATER THAN 150mm NOMINAL DIAMETER COMPACTED IN 300mm LAYERS.
- REPLACE TOPSOIL TO ORIGINAL DEPTH AS NECESSARY.
- EXISTING SEALED ROADWAY EXCAVATIONS ARE TO BE RESURFACED WITH 50mm OF ASPHALTIC CONCRETE.
- CLEGG HAMMER TEST:
0-300mm DEPTH RANGE CLEGG READING NOT LESS THAN 45.
300mm-1.5m DEPTH RANGE CLEGG READING NOT LESS THAN 30.
1.5m-TOP OF PIPE BEDDING MATERIAL CLEGG READING NOT LESS THAN 25.
- PRIVATEWAY BASE COURSE METALLING WITHIN PIPE TRENCHES MAY BE IN ACCORDANCE WITH THE PRIVATEWAY STANDARDS.
- TRENCH WIDTH SHALL NOT EXCEED W AT THE PIPE CROWN LEVEL.
- UNSATISFACTORY TRENCH MATERIAL IS TO BE UNDERCUT AND REPLACED WITH COMPACTED HARDFILL. IN POOR SOILS SUCH AS SWAMP, PEAT, AND IN ROCK THE MINIMUM DEPTH OF GRANULAR BEDDING MATERIAL BELOW THE INVERT IS TO BE 200mm OR SPECIFIC DESIGN AS NECESSARY.
- PIPELINES AT 1:8 GRADIENT OR STEEPER SHALL HAVE CEMENT STABILISED BEDDING AND/OR SURROUNDS.
- PIPELINES AT 1:3 GRADIENT OR STEEPER SHALL HAVE WEAK MIX CONCRETE BEDDING (10MPa) IN ACCORDANCE WITH SHEET 32. LARGE PIPES WILL REQUIRE SPECIFIC PIER DESIGN.
- CONCRETE BEDDING SHALL BE ALLOWED TO CURE FOR 48 HOURS PRIOR TO BACKFILLING.
- BACKFILLING - CARRIAGEWAYS MAY BE WITH 'FLOWABLE FILL' (LOW STRENGTH FLY-ASH CONCRETE).
- GRANULAR BEDDING IS TO SATISFY N.Z.S. 7643 APPENDIX B.
- MINIMUM COVER OVER PIPES (UNLESS SPECIFICALLY DESIGNED OR PROTECTED IN ACCORDANCE WITH SHEET 32).
14.A. 600mm IF NOT SUBJECTED TO TRAFFIC LOADING
14.B. 900mm UNDER CARRIAGEWAYS AND TRAFFICKED AREAS.
- SAND IS NOT PERMITTED AS PE PIPE BEDDING.



ADDITIONAL BACKFILL REQUIREMENTS
UNDER CARRIAGEWAYS
(ALL TYPES OF PIPE)
NOT TO SCALE

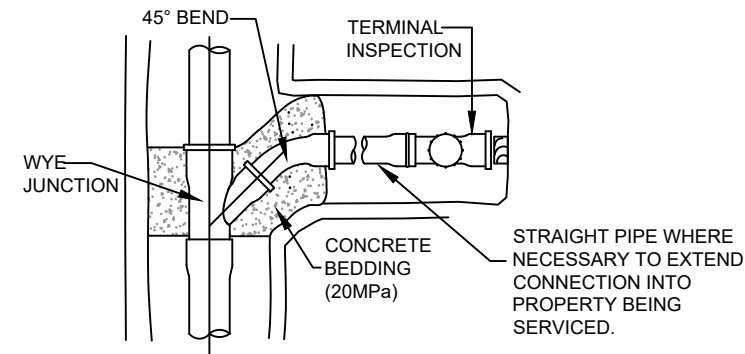
NOTES:
1. SEE CONSTRUCTION NOTES DD001.



MARKING OF SS & SW CONNS

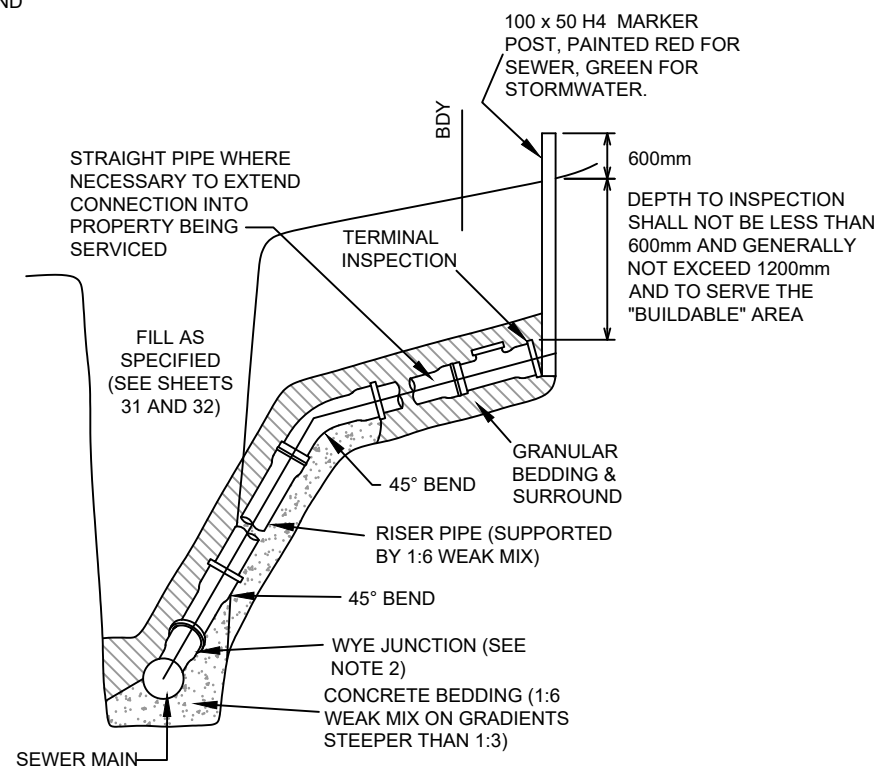
CONNECTIONS SHALL BE SEALED WITH REMOVABLE CAPS UNTIL REQUIRED. THE CAPS ARE TO BE PAINTED:
RED FOR SEWER WITH 'SS' PAINTED/FIXED ONTO THE END CAP.
GREEN FOR STORMWATER WITH 'SW' PAINTED/FIXED ONTO THE END CAP.

POSITIONS ARE ALSO TO BE MARKED WITH A WOODEN STAKE (MIN 100x50) EXTENDING FROM THE INVERT OF THE CONNECTION TO 600mm ABOVE GROUND LEVEL. STAKES ARE TO BE PAINTED:
RED FOR SEWER WITH 'SS' PAINTED/FIXED ONTO THE STAKE
GREEN FOR STORMWATER WITH 'SW' PAINTED/FIXED ONTO THE END CAP.



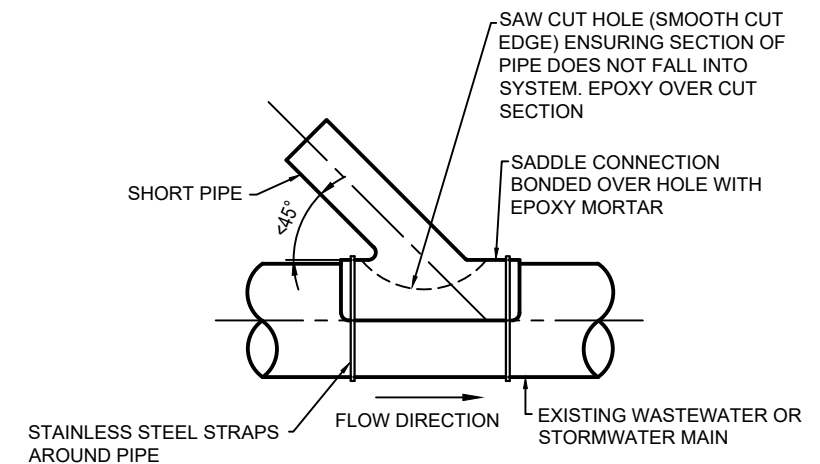
NOTES:

- THE TERMINAL INSPECTION SHALL BE LOCATED NOT LESS THAN 300mm INSIDE THE PROPERTY BEING SERVICED AND BE FREE OF OBSTRUCTIONS.
- FOR STORMWATER CONNECTIONS, JUNCTIONS TO BE (IN ORDER OF PREFERENCE):
 - PREFABRICATED STANDARD WYE JUNCTIONS
 - PREFABRICATED FACTORY SPECIAL CONNECTION, EPOXY MORTARED SADDLED FLANGE CONNECTION WITH APPROPRIATE INSERT ADAPTOR >DN 225.
- TERMINAL BLANK END REQUIRED FOR STORMWATER CONNECTIONS.
- PIPES AND FITTINGS ARE TO BE SEWER GRADE uPVC, OR CONCRETE TO RELEVANT NZ STANDARD.
- PIPELINES THAT ARE LIKELY TO CARRY COMMERCIAL OR INDUSTRIAL WASTE ARE TO SATISFY THE MANUFACTURER'S REQUIREMENTS.
- SPECIFIC DESIGN MAY BE REQUIRED IN POTENTIALLY UNSTABLE AREAS.
- JOINT FLEXIBILITY IS TO BE MAINTAINED WHERE PIPELINES ARE IN CONTACT WITH CONCRETE. PIPES SHALL BE SEPARATED FROM CONCRETE USING DPC.
- AS-BUILT PLANS ARE REQUIRED FOR ALL CONNECTIONS.



RAMPED RISER CONNECTION

SHEET 36 WDC EES 2010 - NOT TO SCALE
(REQUIRES SPECIFIC APPROVAL)



SADDLE CONNECTION

IF MAIN > 225mm

NOTES:

- SEE CONSTRUCTION NOTES DD001.

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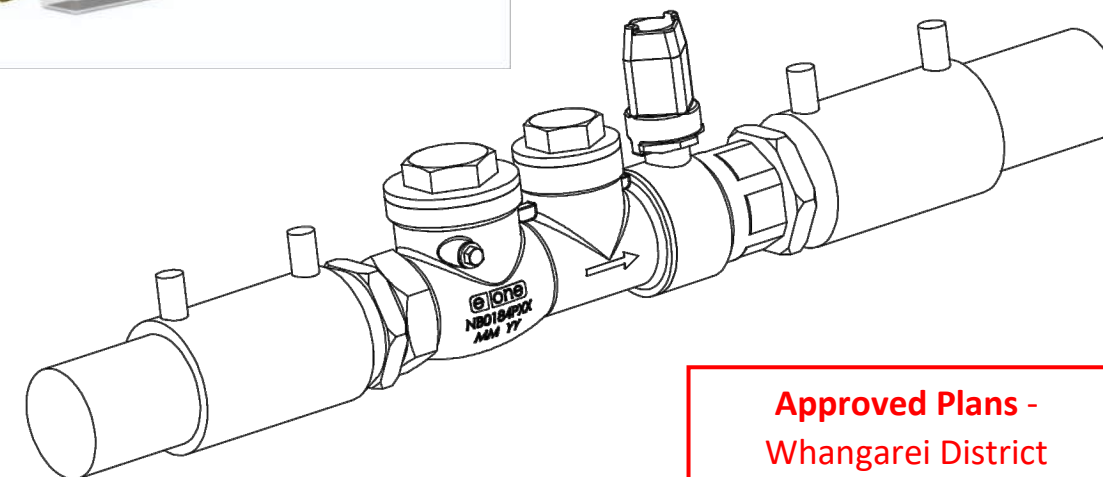
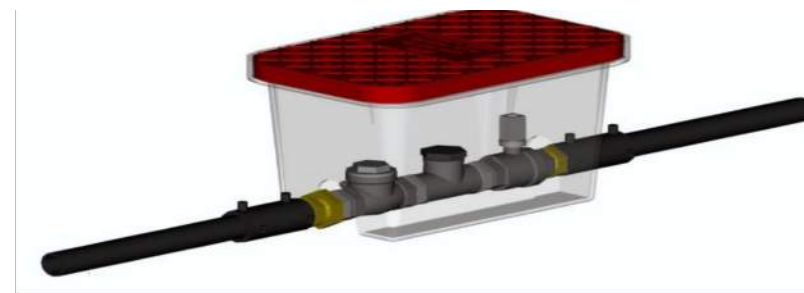
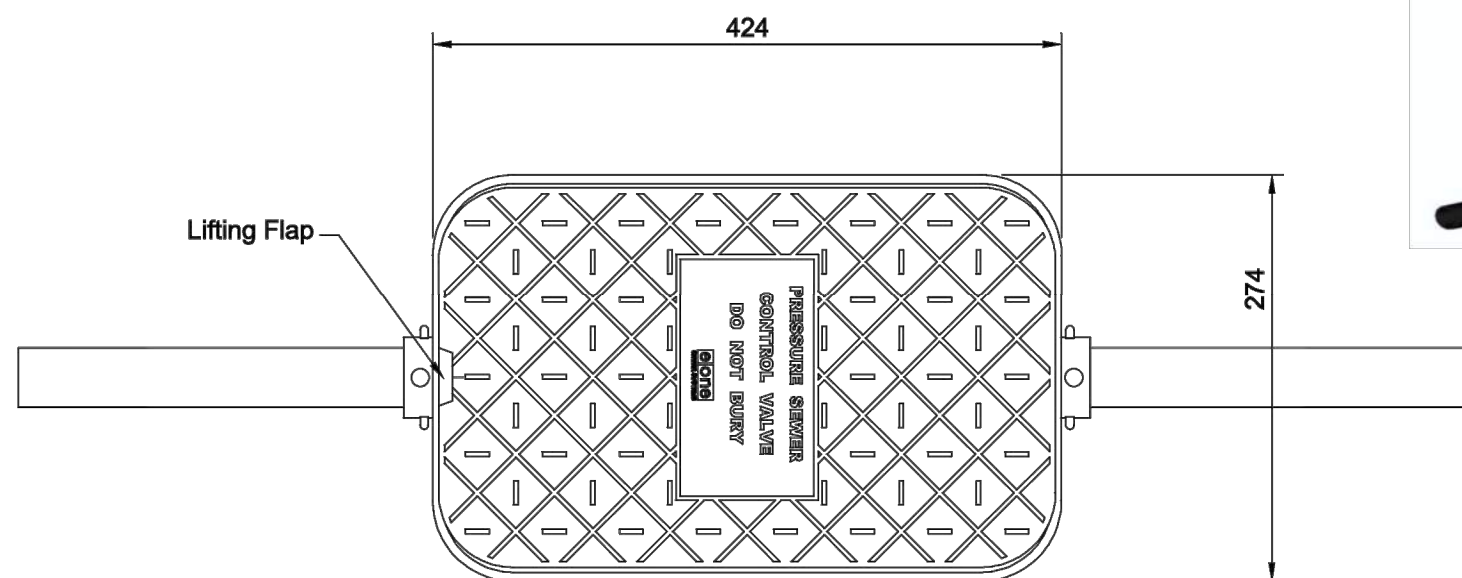


D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

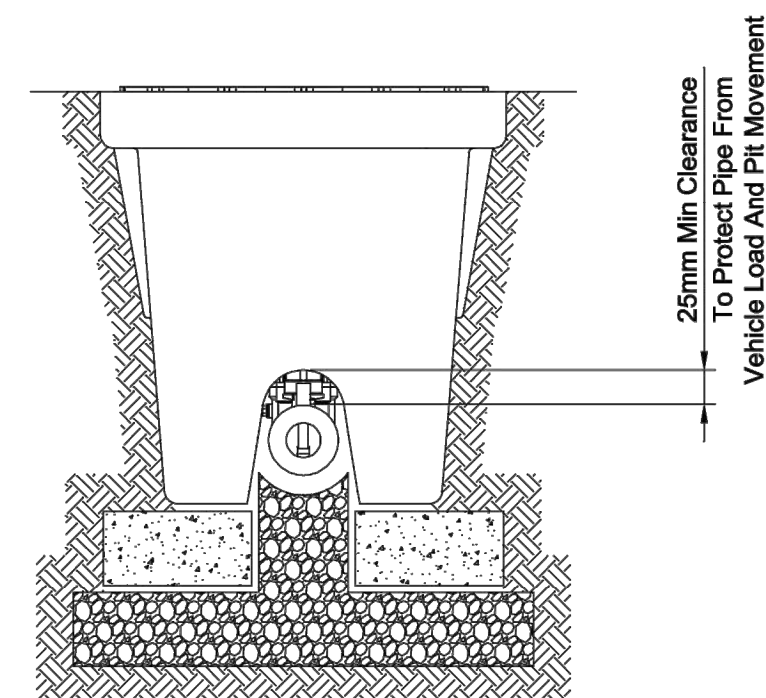
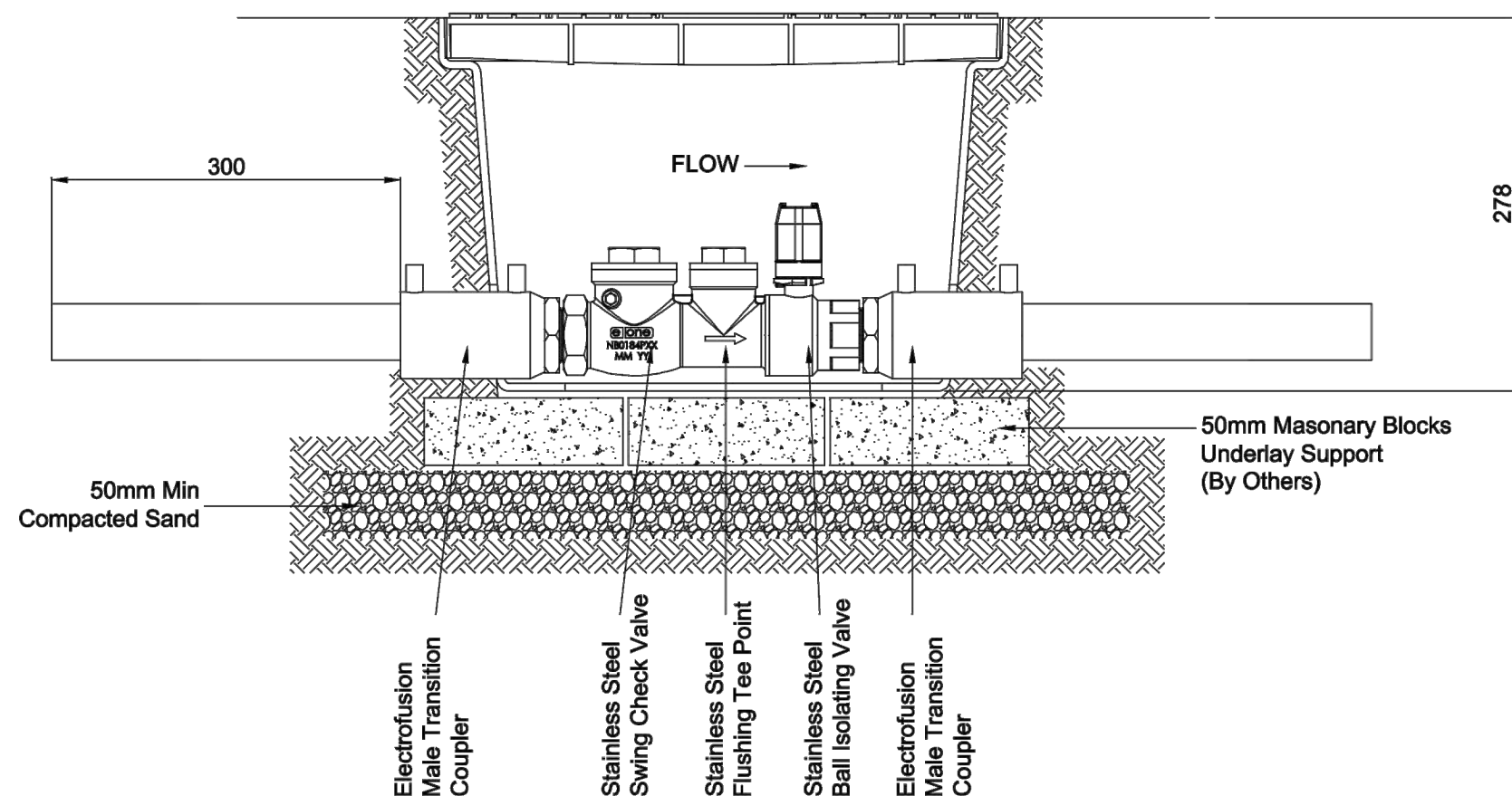
TITLE
DRAINAGE TYPICAL DETAILS - SHEET 4
TYPICAL STORMWATER
CONNECTION DETAILS

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE NTS @ A3		STATUS FOR APPROVAL
DWG NUMBER DD473			REVISION D



Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Each boundary kit supplied with
300mm length DN40 PE100 PN16 stubs
each end E/F welded and complete unit pressure
tested to 16 Bar by Ecoflow



NOTES:
1. SEE CONSTRUCTION NOTES DD001.

TRISHN NAND
ME., CPEng., IntPE(NZ)

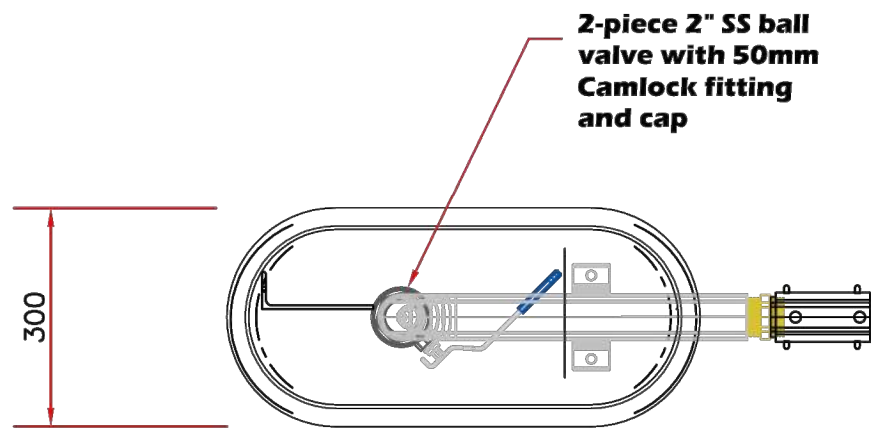
D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
		AP TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
		AP TN
B	FOR APPROVAL	04-11-2022
		AP TN
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

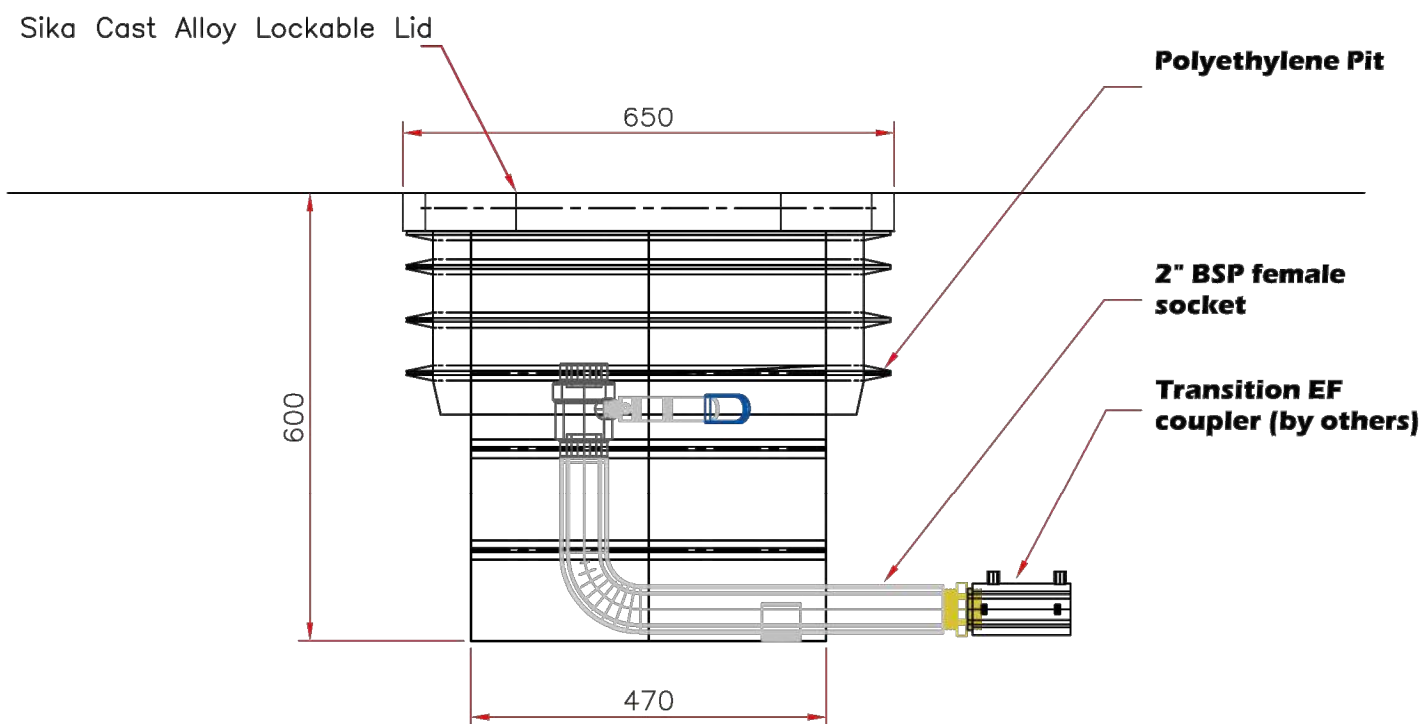
TITLE
DRAINAGE TYPICAL DETAILS - SHEET 5
LOW PRESSURE SEWER BOUNDARY KIT DETAIL

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE NTS @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD474		REVISION D	

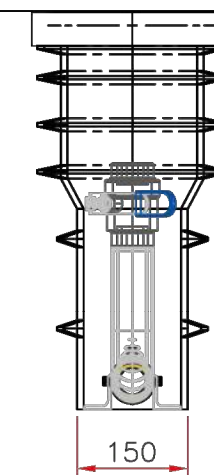
Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



Plan View



Front View



Side View

NOTES:
1. SEE CONSTRUCTION NOTES DD001.



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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
		AP TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
		AP TN
B	FOR APPROVAL	04-11-2022
		AP TN
REV.	REVISION DETAILS	DRAWN APP.

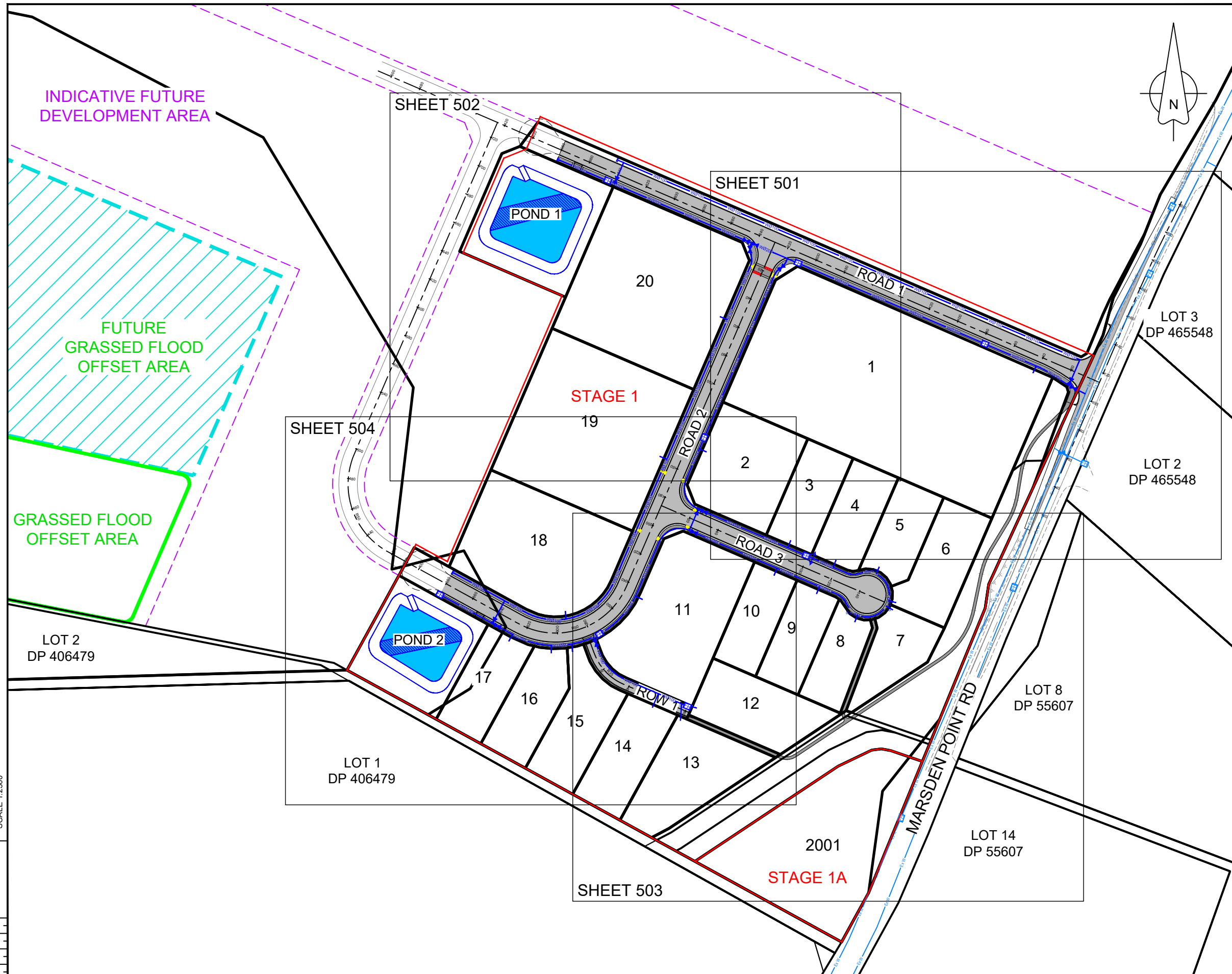
PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
DRAINAGE TYPICAL DETAILS - SHEET 6
LOW PRESSURE SEWER
FLUSHING POINT DETAIL

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE NTS @ A3		STATUS FOR APPROVAL
DWG NUMBER DD475			REVISION D

DATE PLOTTED: Thursday, 15 December 2022 4:35:42 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD470-Drainage Details.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
 3. ALL WATER PIPES TO BE PE100 PN12.5.
 4. 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVE IN BERM.
 5. ALL VALVES AND FIRE HYDRANTS TO BE LOCATED OUTSIDE OF TRAFFIC LANES AND WHERE POSSIBLE WITHIN GRASS BERM.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	Water Services
Approved by:	TG
Date:	12/12/22



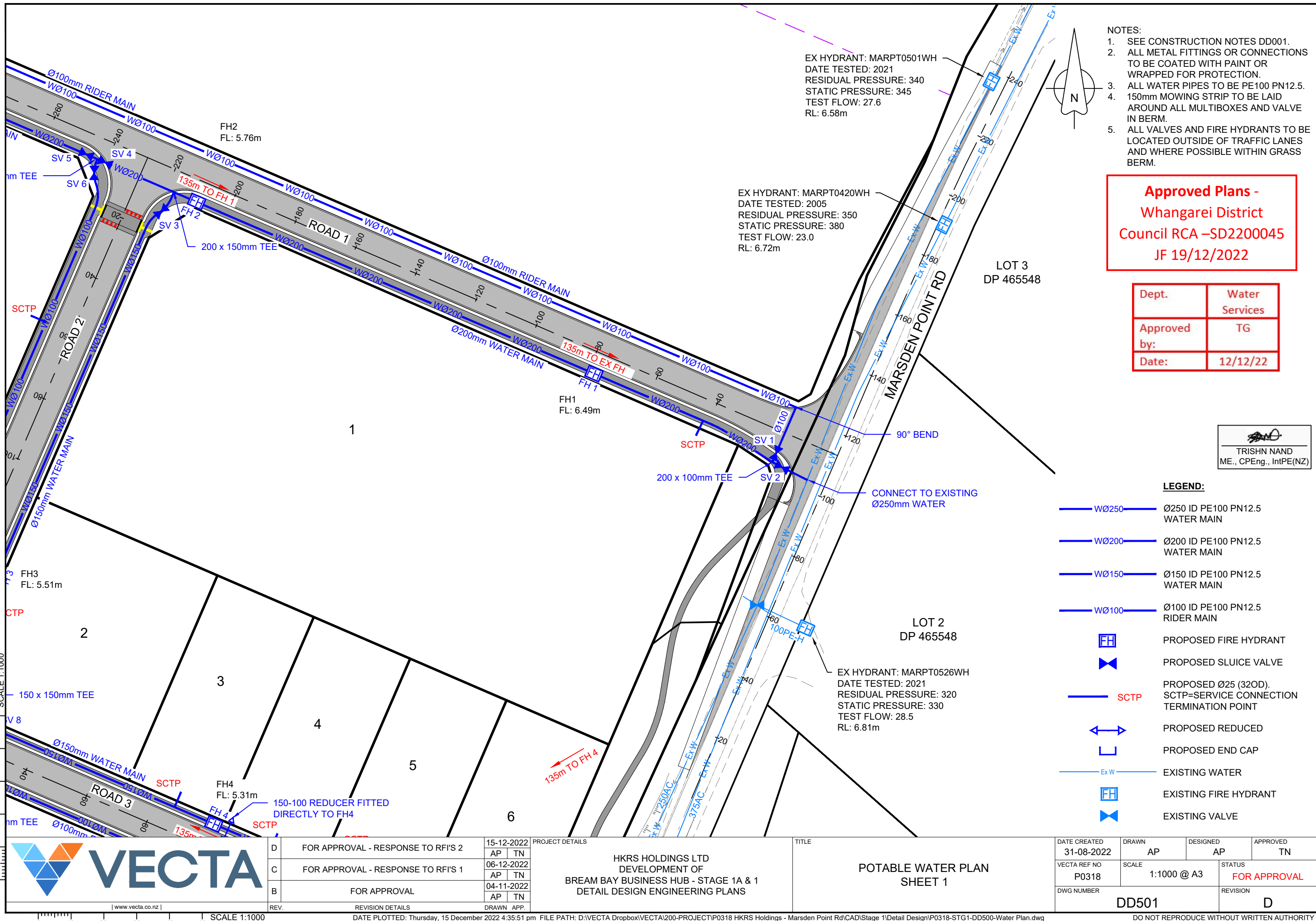
www.vecta.co.nz

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN	PROJECT DETAILS	HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS	TITLE	POTABLE WATER PLAN OVERVIEW	DATE CREATED	DRAWN	DESIGNED	APPROVED
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN					31-08-2022	AP	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN					VECTA REF NO	SCALE	STATUS	FOR APPROVAL
REV.					REVISION DETAILS	DRAWN	APP.	DWG NUMBER	DD500	REVISION		D

DATE PLOTTED: Thursday, 15 December 2022 4:35:48 pm

FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD500-Water Plan.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



- NOTES:
- 1. SEE CONSTRUCTION NOTES DD001.
 - 2. ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
 - 3. ALL WATER PIPES TO BE PE100 PN12.5.
 - 4. 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVE IN BERM.
 - 5. ALL VALVES AND FIRE HYDRANTS TO BE LOCATED OUTSIDE OF TRAFFIC LANES AND WHERE POSSIBLE WITHIN GRASS BERM.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	Water Services
Approved by:	TG
Date:	12/12/22

TRISHN NAND
ME., CPEng., IntPE(NZ)

- LEGEND:**
- WØ250 Ø250 ID PE100 PN12.5 WATER MAIN
 - WØ200 Ø200 ID PE100 PN12.5 WATER MAIN
 - WØ150 Ø150 ID PE100 PN12.5 WATER MAIN
 - WØ100 Ø100 ID PE100 PN12.5 RIDER MAIN
 - FH PROPOSED FIRE HYDRANT
 - PROPOSED SLUICE VALVE
 - PROPOSED Ø25 (32OD). SCTP=SERVICE CONNECTION TERMINATION POINT
 - PROPOSED REDUCED
 - PROPOSED END CAP
 - Ex W EXISTING WATER
 - FH EXISTING FIRE HYDRANT
 - EXISTING VALVE

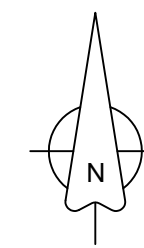
VECTA
www.vecta.co.nz

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
POTABLE WATER PLAN
SHEET 1

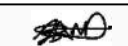
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD501	REVISION D		



- NOTES:
1. SEE CONSTRUCTION NOTES DD001.
 2. ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
 3. ALL WATER PIPES TO BE PE100 PN12.5.
 4. 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVE IN BERM.
 5. ALL VALVES AND FIRE HYDRANTS TO BE LOCATED OUTSIDE OF TRAFFIC LANES AND WHERE POSSIBLE WITHIN GRASS BERM.

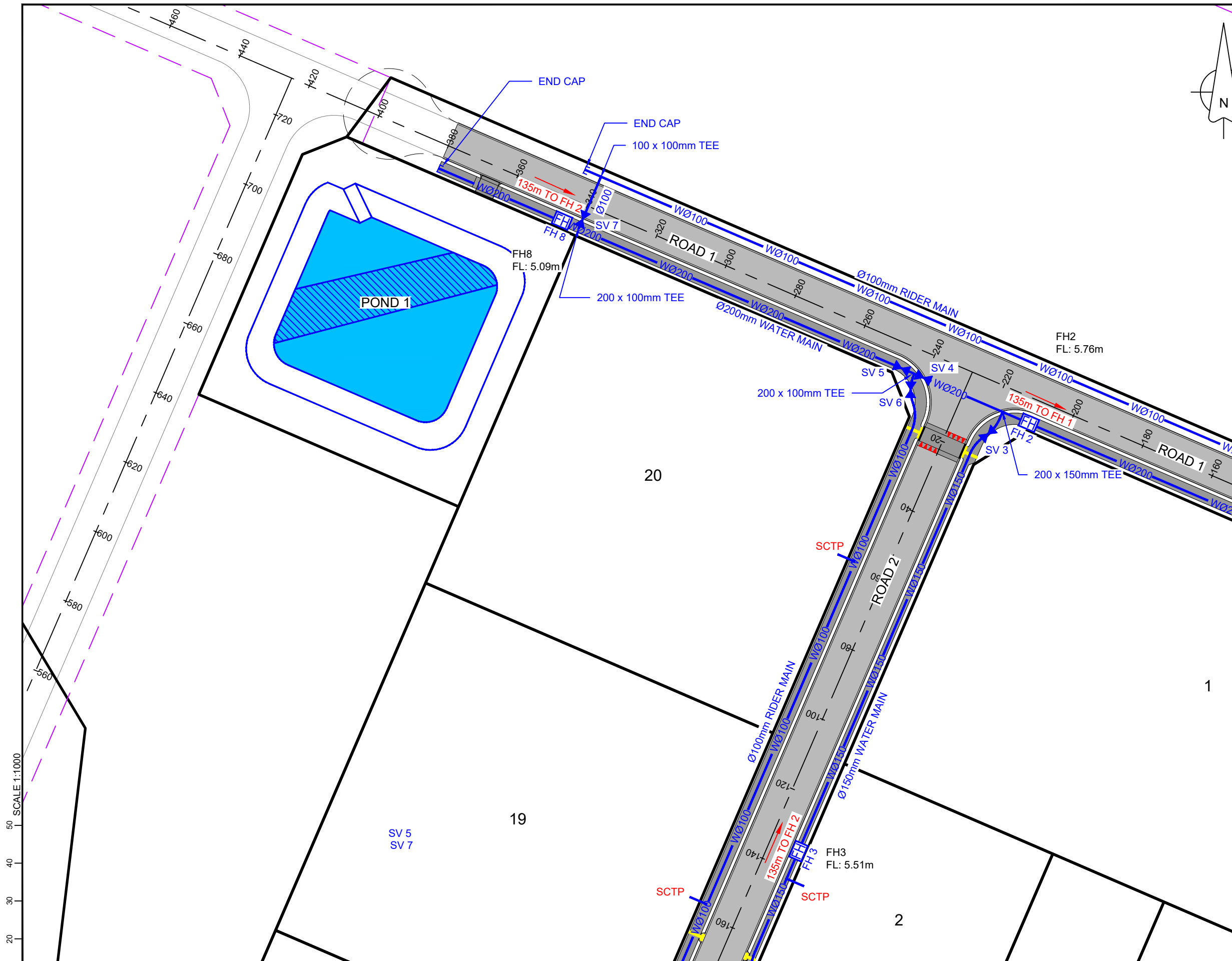
Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	Water Services
Approved by:	TG
Date:	12/12/22


TRISHN NAND
ME., CPEng., IntPE(NZ)

LEGEND:

- WØ250 Ø250 ID PE100 PN12.5 WATER MAIN
- WØ200 Ø200 ID PE100 PN12.5 WATER MAIN
- WØ150 Ø150 ID PE100 PN12.5 WATER MAIN
- WØ100 Ø100 ID PE100 PN12.5 RIDER MAIN
- FH PROPOSED FIRE HYDRANT
- SV PROPOSED SLUICE VALVE
- SCTP PROPOSED Ø25 (320D). SCTP=SERVICE CONNECTION TERMINATION POINT
- PROPOSED REDUCED
- PROPOSED END CAP
- Ex W EXISTING WATER
- FH EXISTING FIRE HYDRANT
- SV EXISTING VALVE





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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

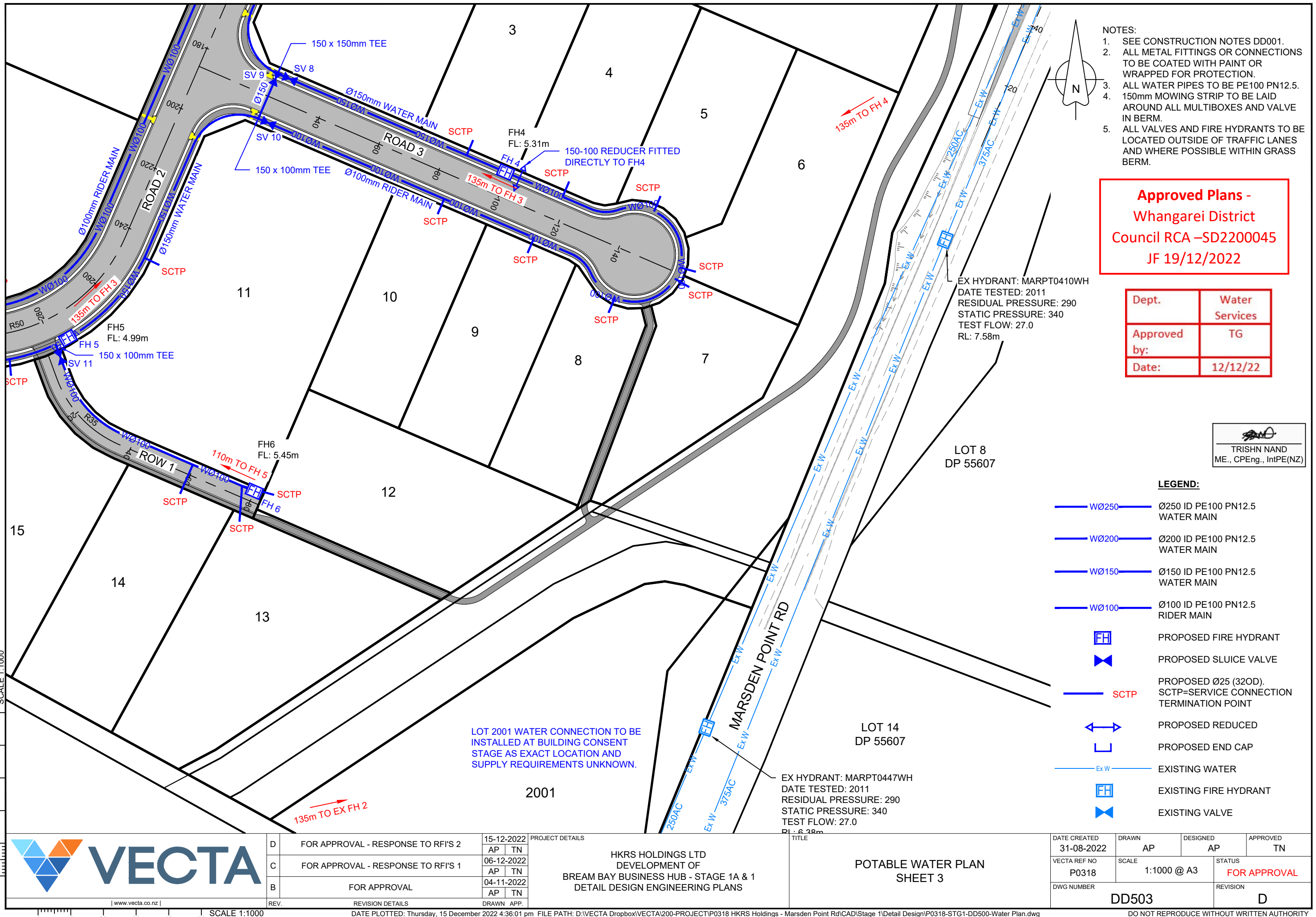
TITLE

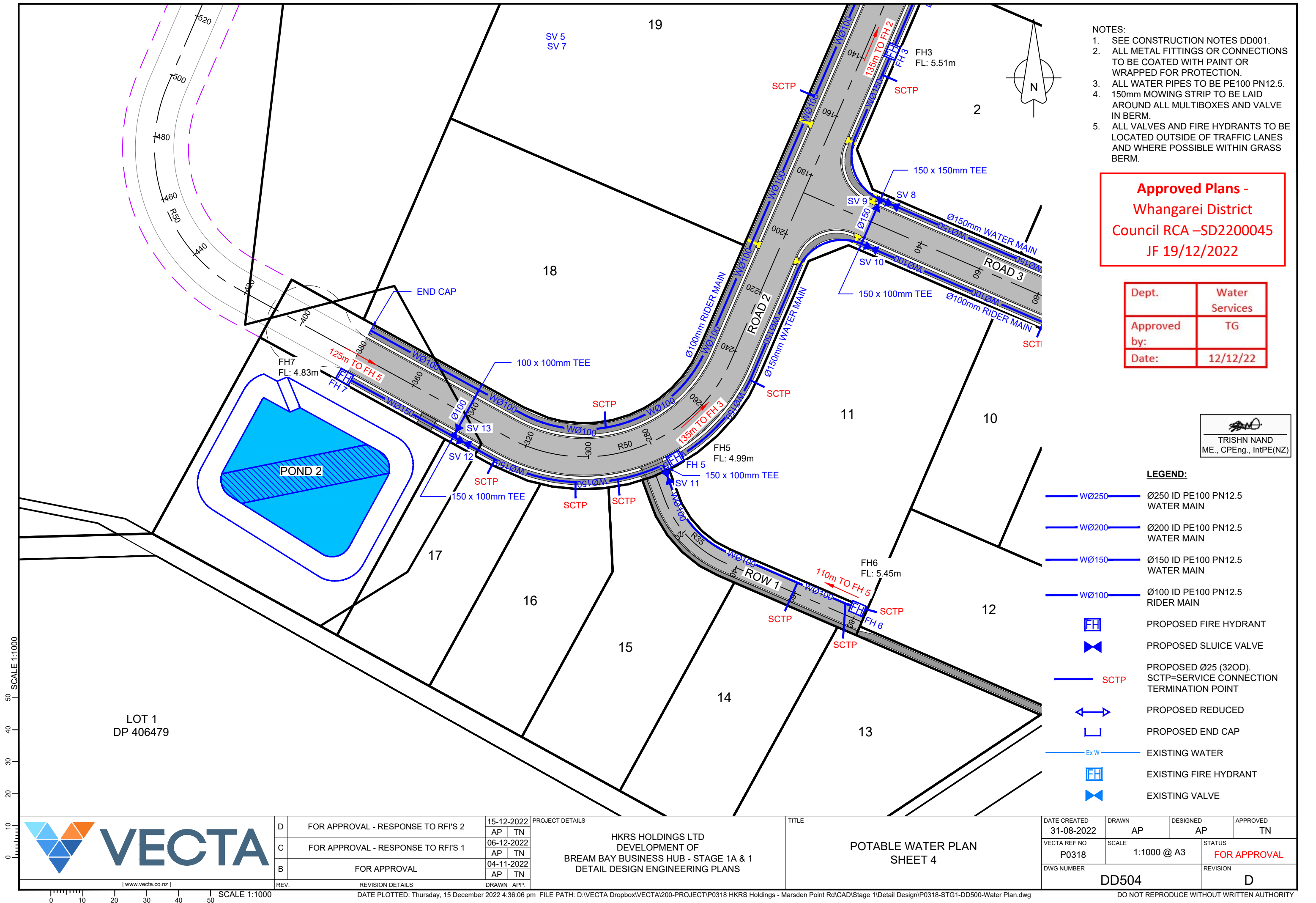
POTABLE WATER PLAN
SHEET 2

DATE CREATED	31-08-2022	DRAWN	AP	DESIGNED	AP	APPROVED	TN
VECTA REF NO	P0318	SCALE	1:1000 @ A3	STATUS	FOR APPROVAL		
DWG NUMBER	DD502	REVISION	D				

DATE PLOTTED: Thursday, 15 December 2022 4:35:56 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD500-Water Plan.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY





- NOTES:
- 1. SEE CONSTRUCTION NOTES DD001.
 - 2. ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
 - 3. ALL WATER PIPES TO BE PE100 PN12.5.
 - 4. 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVE IN BERM.
 - 5. ALL VALVES AND FIRE HYDRANTS TO BE LOCATED OUTSIDE OF TRAFFIC LANES AND WHERE POSSIBLE WITHIN GRASS BERM.

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

Dept.	Water Services
Approved by:	TG
Date:	12/12/22

TRISHN NAND
ME., CPEng., IntPE(NZ)

LEGEND:

- WØ250 Ø250 ID PE100 PN12.5 WATER MAIN
- WØ200 Ø200 ID PE100 PN12.5 WATER MAIN
- WØ150 Ø150 ID PE100 PN12.5 WATER MAIN
- WØ100 Ø100 ID PE100 PN12.5 RIDER MAIN
- FH PROPOSED FIRE HYDRANT
- SV PROPOSED SLUICE VALVE
- SCTP PROPOSED Ø25 (32OD). SCTP=SERVICE CONNECTION TERMINATION POINT
- PROPOSED REDUCED
- PROPOSED END CAP
- Ex W EXISTING WATER
- FH EXISTING FIRE HYDRANT
- SV EXISTING VALVE



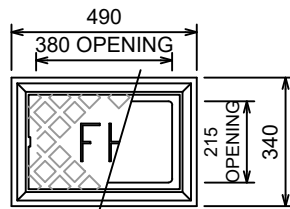
D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

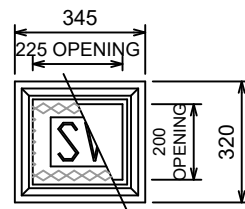
TITLE
POTABLE WATER PLAN
SHEET 4

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1000 @ A3	STATUS FOR APPROVAL	
DWG NUMBER DD504	REVISION D		

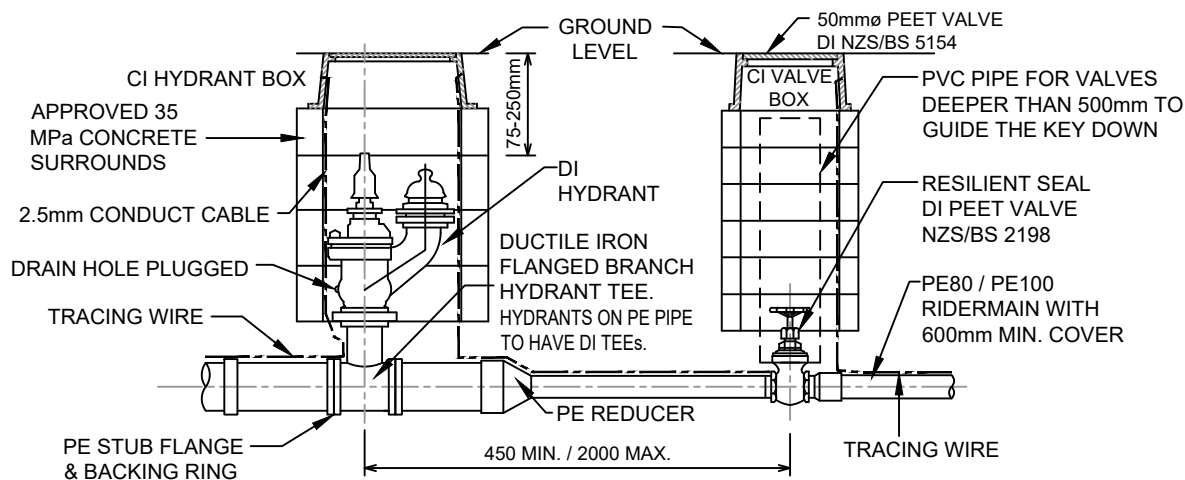
"TALL TYPE" SCREW
DOWN DI HYDRANT
TO NZS 4522:2010. TO
CLOSE CLOCKWISE
WHEN VIEWED FROM
ABOVE.



CAST IRON HYDRANT BOX



CAST IRON VALVE BOX



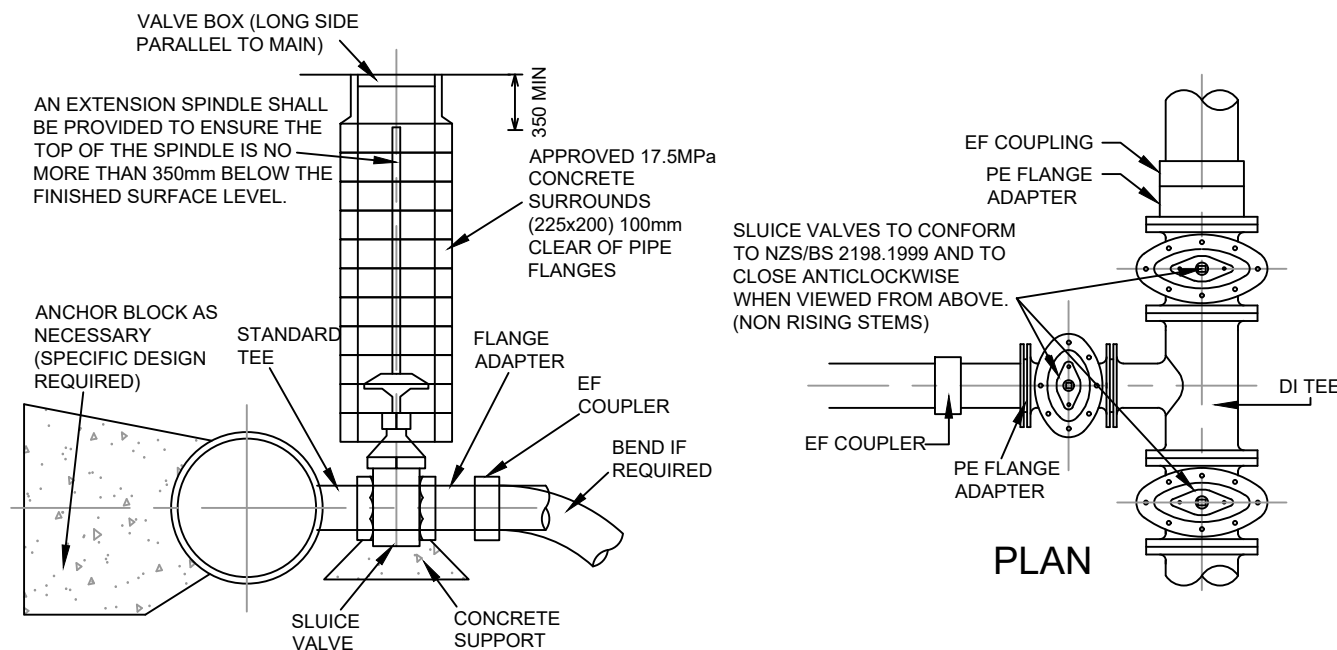
ELEVATION

NOTES

1. DEFLECTION OF JOINTS IS NOT TO EXCEED THE MANUFACTURER'S RECOMMENDATION.
2. WHERE THERE ARE MORE THAN 15 CONNECTIONS FROM A RIDER MAIN, AN ISOLATING PEET VALVE SHOULD BE PROVIDED IN THE MIDDLE OF THE RIDER MAIN.
3. ALL UNDERGROUND BOLTS TO BE STAINLESS STEEL AND WRAPPED WITH DENSO TAPE, MASTIC AND POLYTAPE.
4. SERVICE CONNECTIONS TO TERMINATE JUST OUTSIDE FRONT BOUNDARY WITH AN APPROVED MANIFOLD, METER BOX (INCLUDING BASE) AND DIAPHRAGM VALVE INCLUDING DUAL CHECK VALVE.
5. DIMENSIONS TO BE SUPPLIED WITH AS-BUILTS.

FH & VALVE INSTALLATION DETAILS

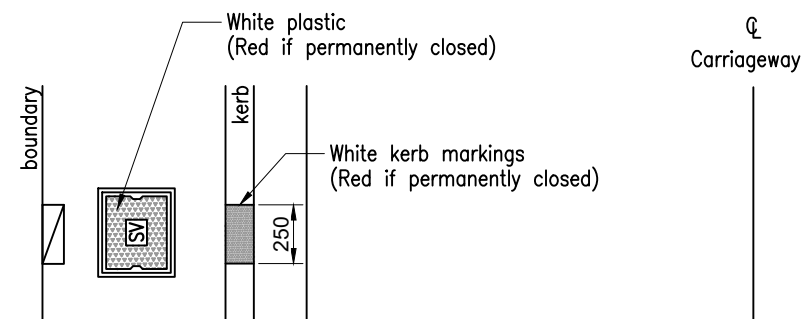
SHEET 45 WDC EES 2010 - NOT TO SCALE



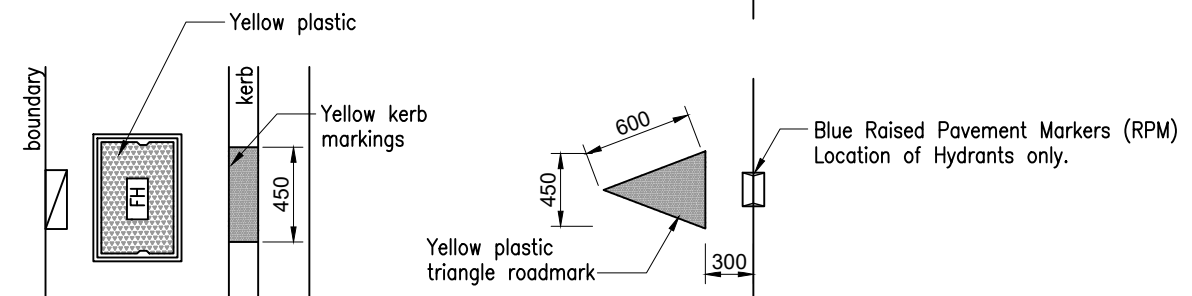
ELEVATION

VALVE INSTALLATION DETAILS

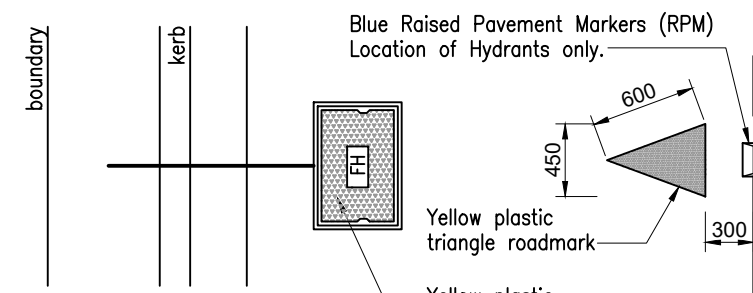
SHEET 49 WDC EES 2010 - NOT TO SCALE



SLUICE VALVE MARKING

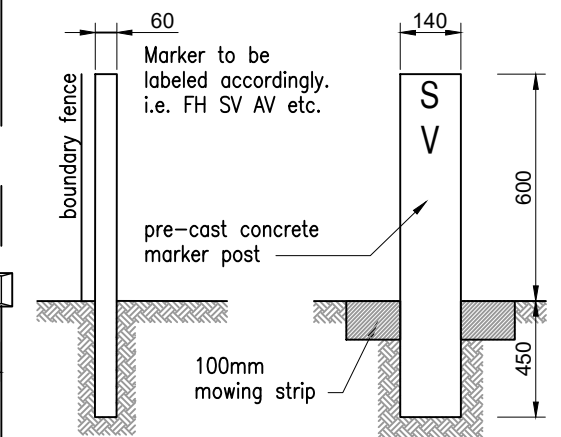


Hydrant located in Berm area



Hydrant located in Carriageway

HYDRANT MARKINGS



HYDRANT / SLUICE VALVE
MARKER POSTS

Note:

Pre-cast concrete marker post to be painted white for valves and yellow for hydrants.

NOTES:

1. SEE CONSTRUCTION NOTES DD001.



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D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS

HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE

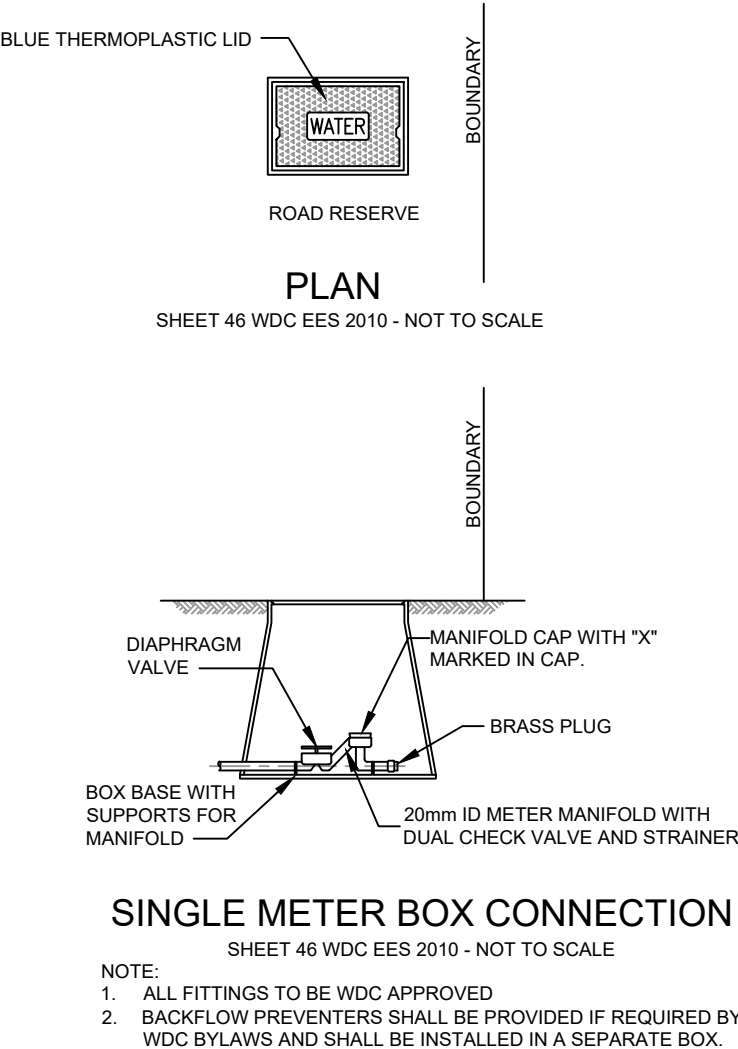
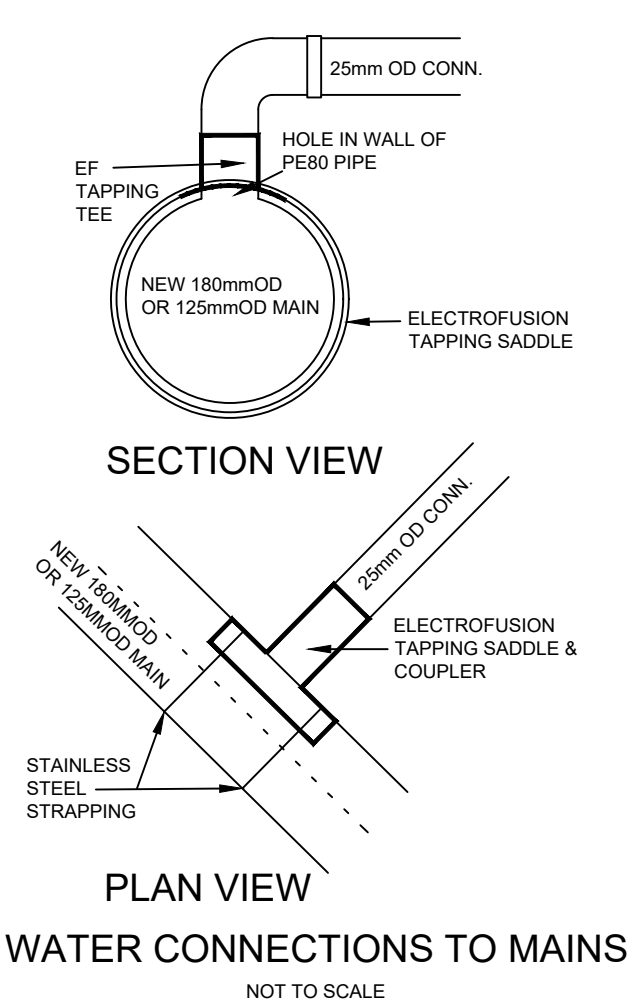
POTABLE WATER TYPICAL DETAILS
SHEET 1

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE NTS @ A3		STATUS FOR APPROVAL
DWG NUMBER DD510			REVISION D

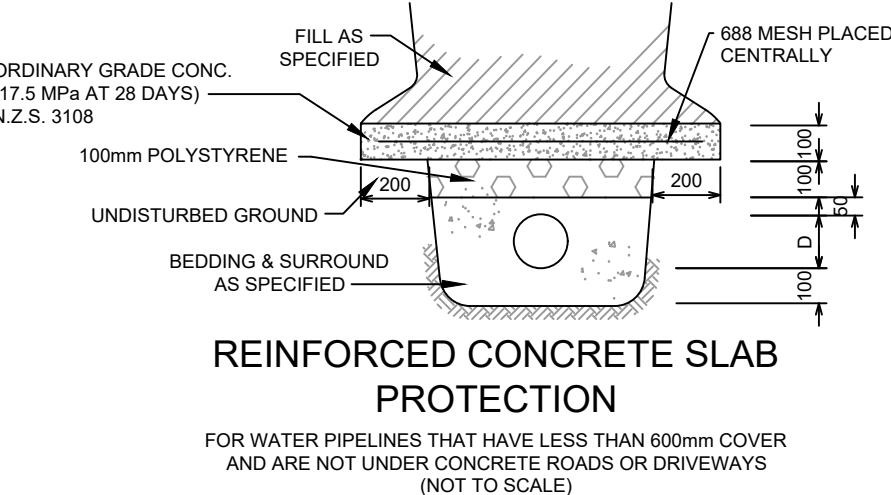
DATE PLOTTED: Thursday, 15 December 2022 4:36:12 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD510-Water Details.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



- GENERAL:
- WEAK MIX CONCRETE:
1 PART CEMENT TO 6 PARTS AGGREGATE.
 - CEMENT STABILISED BEDDING AND BACK FILL:
1 PART CEMENT TO 20 PARTS AGGREGATE.
 - ALLOW 48 HOURS CURING PRIOR TO BACK FILLING
ANY CONCRETE OR STABILISED MATERIAL.



NOTES:
1. SEE CONSTRUCTION NOTES DD001.

TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
POTABLE WATER TYPICAL DETAILS SHEET 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE NTS @ A3		STATUS FOR APPROVAL
DWG NUMBER DD511			REVISION D

NOTES:
THIS SURVEY HAS BEEN COMPLETED UNDER INSTRUCTION
BY THE CLIENT FOR ITS INTENDED PURPOSE. THIS DATA
MAY NOT BE SUITABLE FOR OTHER PURPOSES AND
THEREFORE WRITTEN AUTHORITY IS NEEDED FROM
VECTA FOR ANY OTHER USE OR REPRODUCTION.

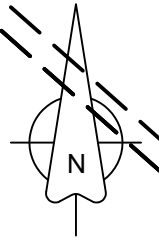
MAJOR CONTOURS ARE AT 1m INTERVALS
MINOR CONTOURS ARE AT 0.2m INTERVALS
LOCAL AUTHORITY: WHANGAREI DISTRICT COUNCIL
COORDINATE SYSTEM: NZGD MT EDEN 2000
LEVELS DATUM: ONE TREE POINT DATUM 1964
ORIGIN OF COORDINATES: DD 7 (AAV6)
ORIGIN OF LEVELS: DD 7 (AAV6)
RL= 3.868m

SURVEY DATE:
16TH JULY 2021 (FIRST GAS PIPELINE)
18TH JULY 2022 (CHANNEL PIPELINE)

THE UNDERGROUND SERVICES SHOWN ON THIS PLAN HAVE
BEEN LOCATED AND GROUND MARKED BY A FIRST GAS
REPRESENTATIVE ONSITE, WITH THAT MARKED LOCATION THEN
SURVEYED BY VECTA. NO EXCAVATION OR TEST PITS WERE
COMPLETED TO CONFIRM THE POSITIONS OR DEPTHS OF THE
SERVICE AND FIRST GAS SHOULD BE CONSULTED ON THE
ACCURACY OF THE GROUND MARKED LOCATIONS/DEPTHS OF
THE PIPE.

UNDERGROUND SERVICES SHOWN ON THIS PLAN HAVE NOT
BEEN VERIFIED BY VECTA AND ALL UNDERGROUND
INFORMATION DISPLAYED ON THIS PLAN HAS BEEN PROVIDED
TO VECTA BY THIRD PARTIES. AS A RESULT, VECTA ACCEPTS NO
LIABILITY FOR THE SERVICES SHOWN OR OMITTED FROM THIS
PLAN

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022



Part Section
8 Block

Lot 8
DP 55607


TRISHN NAND
ME., CPEng., IntPE(NZ)

LEGEND

	PARCEL BOUNDARY
	ABBUTALL BOUNDARY
	EASEMENT BOUNDARY
	FIRST GAS PIPELINE
	CHANNEL PIPELINE
130	CHAINAGE LABELS



D	FOR APPROVAL - RESPONSE TO RFI'S 2
C	FOR APPROVAL - RESPONSE TO RFI'S 1
B	FOR APPROVAL

15-12-2022	AP	TN
06-12-2022	AP	TN
04-11-2022	AP	TN

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
FIRST GAS & CHANNEL PIPELINES
SURVEY PLAN

DATE CREATED 31-08-2020	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:1250 @ A3		STATUS FOR APPROVAL
DWG NUMBER			REVISION

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DATE PLOTTED: Thursday, 15 December 2022 4:36:24 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\P0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\P0318-STG1-DD600-First Gas.dwg

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10
SCALE 1:250

5
0

0



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SCALE 1:250

DATE PLOTTED: Thursday, 15 December 2022 4:36:31 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\IP0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\IP0318-STG1-DD600-First Gas.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY

DATUM R.L.-1.00

Design Level	5.42		5.40	5.39		5.36		5.34		5.31	5.31		5.30		5.33		5.33		5.32		5.31		5.29		5.27		5.25		5.22		5.20	5.19		5.16		5.12		5.09		5.06	5.04	5.03
Depth to Design Surface	-3.6		-3.6	-3.6		-3.5		-3.4		-3.3	-3.3		-3.2		-3.1		-3		-2.9		-2.9		-2.9		-2.8		-2.9		-2.9		-3	-3		-3		-3		-3		-3.1	-3.1	
Ground Level	3.32		3.28	3.29		3.34		3.39		3.45	3.46		3.59		3.78		3.97		4.05		4.06		4.07		4.07		4.06		4.04		4.03	3.99		3.92		3.84		3.79		3.74	3.72	3.68
Depth to Existing Surface	-1.5		-1.5	-1.5		-1.5		-1.5		-1.5	-1.4		-1.5		-1.6		-1.6		-1.7		-1.7		-1.6		-1.6		-1.7		-1.8		-1.8	-1.8		-1.8		-1.7		-1.7		-1.7	-1.8	
Gas Pipe	1.8		1.8	1.8		1.9		1.9		2.0	2.0		2.1		2.2		2.3		2.4		2.4		2.4		2.4		2.4		2.3		2.2	2.2		2.2		2.1		2.1		2.0	2.0	1.9
Chainages	240.00		243.78	245.00		250.00		255.00		260.00	261.68		265.00		270.00		275.00		277.00		280.00		285.00		290.00		295.00		300.00		302.95	305.00		310.00		315.00		320.00		325.00	327.62	330.00

LONGITUDINAL SECTION gaspipe

Horizontal Scale 1 : 250

Vertical Scale 1 : 250

DATUM R.L.-1.00

Design Level	6.31		6.32		6.32		6.32		6.30		6.24	6.22		6.14		6.06		5.97		5.91		5.87	5.85		5.79		5.69		5.53		5.47		5.44		5.42		5.40	5.39		5.36
Depth to Design Surface	-1.6		-1.6		-1.5	-1.5		-1.7		-2	-2.2	-2.2		-2.4		-2.6		-2.8		-3		-3.2	-3.2		-3.3		-3.4		-3.5		-3.6		-3.6		-3.6		-3.6		-3.5	
Ground Level	6.30		6.35		6.38	6.39		6.18		5.88	5.65	5.60		5.37		5.14		4.82		4.57		4.39	4.31		4.02		3.67		3.55		3.43		3.37		3.32		3.28	3.29		3.34
Depth to Existing Surface	-1.6		-1.6		-1.6	-1.6		-1.6		-1.6	-1.6	-1.6		-1.6		-1.6		-1.6		-1.7		-1.7	-1.7		-1.6		-1.4		-1.5		-1.6		-1.6		-1.5		-1.5	-1.5		-1.5
Gas Pipe	4.7		4.8		4.8	4.8		4.6		4.3	4.0	4.0		3.7		3.5		3.2		2.9		2.7	2.7		2.4		2.2		2.0		1.8		1.8		1.8		1.8		1.8	1.9
Chainages	160.00		165.00		170.00	171.52		175.00		180.00	183.89	185.00		190.00		195.00		200.00		205.00		208.47	210.00		215.00		220.00		225.00		230.00		235.00		240.00		243.78	245.00		250.00

LONGITUDINAL SECTION gaspipe

Horizontal Scale 1 : 250

Vertical Scale 1 : 250

THE UNDERGROUND SERVICES SHOWN ON THIS PLAN HAVE BEEN LOCATED AND GROUND MARKED BY A FIRST GAS REPRESENTATIVE ONSITE, WITH THAT MARKED LOCATION THEN SURVEYED BY VECTA. NO EXCAVATION OR TEST PITS WERE COMPLETED TO CONFIRM THE POSITIONS OR DEPTHS OF THE SERVICE AND FIRST GAS SHOULD BE CONSULTED ON THE ACCURACY OF THE GROUND MARKED LOCATIONS/DEPTHS OF THE PIPE.

UNDERGROUND SERVICES SHOWN ON THIS PLAN HAVE NOT BEEN VERIFIED BY VECTA AND ALL UNDERGROUND INFORMATION DISPLAYED ON THIS PLAN HAS BEEN PROVIDED TO VECTA BY THIRD PARTIES. AS A RESULT, VECTA ACCEPTS NO LIABILITY FOR THE SERVICES SHOWN OR OMITTED FROM THIS PLAN

Approved Plans -
Whangarei District
Council RCA -SD2200045
JF 19/12/2022

LEGEND

- PROPOSED DESIGN LEVEL
- EXISTING GROUND LEVEL
- FIRST GAS PIPELINE (CENTRE OF PIPE)

LOCAL AUTHORITY: WHANGAREI DISTRICT COUNCIL
LEVELS DATUM: ONE TREE POINT DATUM 1964
ORIGIN OF COORDINATES: DD 7 (AAV6)
ORIGIN OF LEVELS: DD 7 (AAV6)
RL= 3.868m

SURVEY DATE:
16TH JULY 2021 (FIRST GAS PIPELINE)
18TH JULY 2022 (CHANNEL PIPELINE)

TRISHN NAND
ME., CPEng., IntPE(NZ)

D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022
B	FOR APPROVAL	04-11-2022
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
HKRS HOLDINGS LTD
DEVELOPMENT OF
BREAM BAY BUSINESS HUB - STAGE 1A & 1
DETAIL DESIGN ENGINEERING PLANS

TITLE
FIRST GAS PIPELINE LONGSECTION
SHEET 2

DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3	STATUS FOR APPROVAL	
DWG NUMBER	DD602		REVISION D

10
SCALE 1:250

DATUM R.L.-2.00

Design Level	5.09		5.06	5.04	5.03		5.00		4.97		4.94		4.83						
Depth to Design Surface	-3		-3	-3.1	-3.1		-3.2		-3.3		-3.6		-3.8						
Ground Level	3.79		3.74	3.72	3.68		3.61		3.54		3.48		3.42		3.37		3.43	3.46	3.64
Depth to Existing Surface	-1.7		-1.7	-1.7	-1.8		-1.8		-1.8		-2.1		-2.4		-2.7		-2.6	-2.5	-2.6
Gas Pipe	2.1		2.0	2.0	1.9		1.8		1.7		1.3		1.0		0.6		0.8	1.0	1.1
Chainages	320.00		325.00	327.62	330.00		335.00		340.00		345.00		350.00		355.00		360.00	362.56	365.00

LONGITUDINAL SECTION gaspipe

Horizontal Scale 1 : 250
Vertical Scale 1 : 250

THE UNDERGROUND SERVICES SHOWN ON THIS PLAN HAVE BEEN LOCATED AND GROUND MARKED BY A FIRST GAS REPRESENTATIVE ONSITE, WITH THAT MARKED LOCATION THEN SURVEYED BY VECTA. NO EXCAVATION OR TEST PITS WERE COMPLETED TO CONFIRM THE POSITIONS OR DEPTHS OF THE SERVICE AND FIRST GAS SHOULD BE CONSULTED ON THE ACCURACY OF THE GROUND MARKED LOCATIONS/DEPTHS OF THE PIPE.

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LEGEND	
—	PROPOSED DESIGN LEVEL
---	EXISTING GROUND LEVEL
— GAS —	FIRST GAS PIPELINE (CENTRE OF PIPE)

Approved Plans -
Whangarei District
Council RCA –SD2200045
JF 19/12/2022

LOCAL AUTHORITY: WHANGAREI DISTRICT COUNCIL
LEVELS DATUM: ONE TREE POINT DATUM 1964
ORIGIN OF COORDINATES: DD 7 (AAV6)
ORIGIN OF LEVELS: DD 7 (AAV6)
RL= 3.868m

SURVEY DATE:
16TH JULY 2021 (FIRST GAS PIPELINE)
18TH JULY 2022 (CHANNEL PIPELINE)


TRISHN NAND
ME., CPEng., IntPE(NZ)



D	FOR APPROVAL - RESPONSE TO RFI'S 2	15-12-2022	AP	TN
C	FOR APPROVAL - RESPONSE TO RFI'S 1	06-12-2022	AP	TN
B	FOR APPROVAL	04-11-2022	AP	TN
REV.	REVISION DETAILS	DRAWN	APP.	

PROJECT DETAILS
HKRS HOLDINGS LTD DEVELOPMENT OF BREAM BAY BUSINESS HUB - STAGE 1A & 1 DETAIL DESIGN ENGINEERING PLANS

TITLE
FIRST GAS PIPELINE LONGSECTION SHEET 3

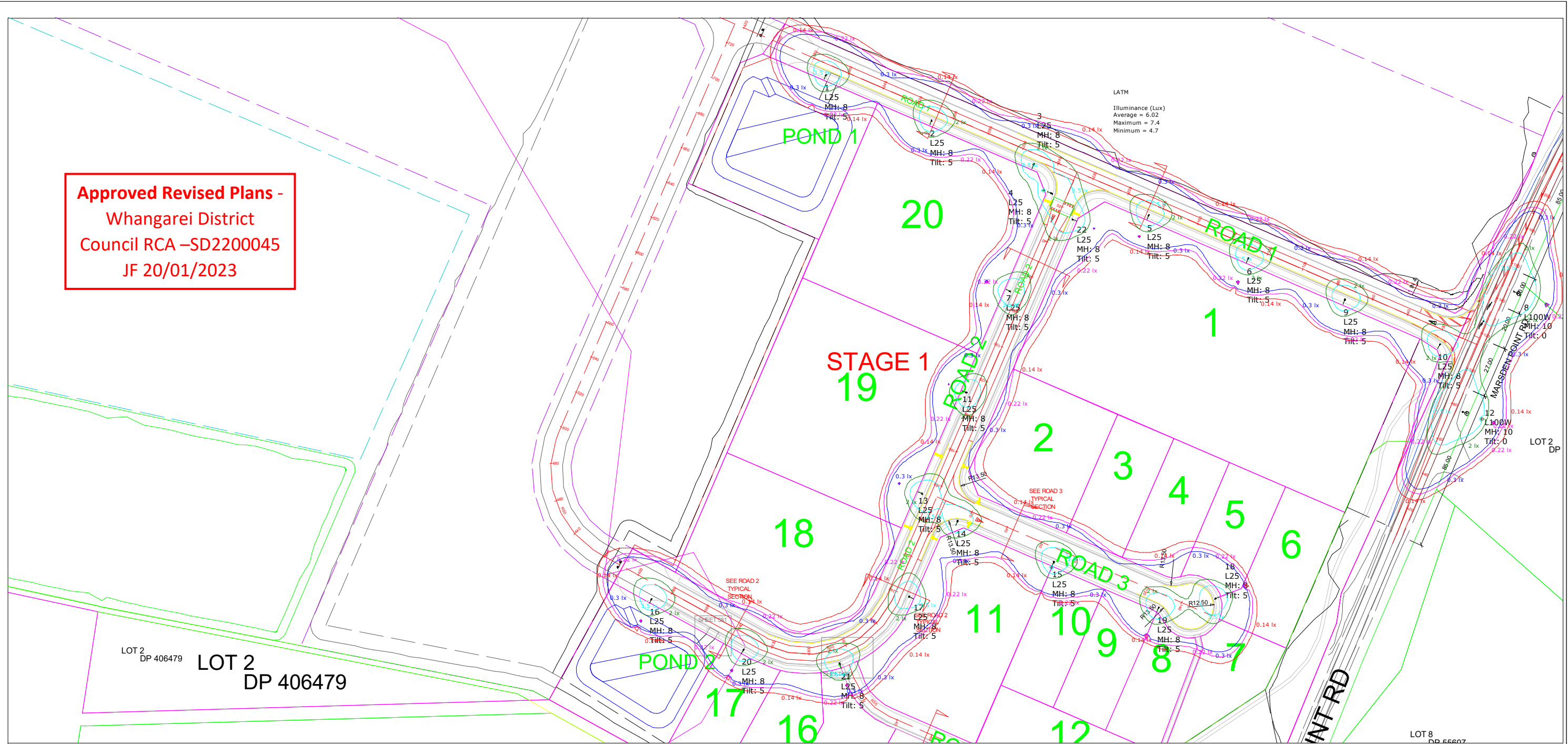
DATE CREATED 31-08-2022	DRAWN AP	DESIGNED AP	APPROVED TN
VECTA REF NO P0318	SCALE 1:250 @ A3		STATUS FOR APPROVAL
DWG NUMBER DD603			REVISION D

5
0

0 5 10 SCALE 1:250

DATE PLOTTED: Thursday, 15 December 2022 4:36:36 pm FILE PATH: D:\VECTA Dropbox\VECTA\200-PROJECT\IP0318 HKRS Holdings - Marsden Point Rd\CAD\Stage 1\Detail Design\IP0318-STG1-DD600-First Gas.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



Lighting Legend:-

1. Luminaire type identified individually for each location and height.
2. Magenta isolux line shows a AS/NZS 1158.3.1 PR4 0.22 Lux compliance.
3. Luminaires are indicated by BLACK rectangle.
4. Column location is around 2.6m behind the optical centre
5. Maintenance Factor is 0.8

6. 6A HRC Fuse is required for AT TDM Chapter 12.
7. Luminaires will be CMS ready, Specify 7 pin NEMA socket and Zodion SS6 photocell. Philips Xitanium driver with DALI.
8. Columns - CSP Pacific 8m with 2.0m outreach.
9. The luminaires used must comply with AT Design Manual Glare Requirement.
10. Power density is 0.021 W/m2

LTP SUMMARY TABLE

Eh(ave)	Eph(min)	UE2	IG80	IPEAK
>1.30	>0.22	<8	393	1191

BETACOM 80 MACES RD, BROMLEY CHRISTCHURCH NEW ZEALAND TEL: +64 3 384 4049 sales@betacom.co.nz www.betacom.co.nz	This lighting design submission is confidential and intended for the exclusive use of the Client(s) named. It is not to be copied or provided to any third party without the express written permission of Betacom (1988) Limited. The design calculations are based on specified parameters supplied by the client and other design inputs as specified on this documentation. Installed lighting parameters will vary due to installation tolerances and luminaire output variances.	REV	DATE	COMMENTS	DESIGNED	PROJECT	CLIENT	REVISION		
		R0	25/03/2022	Original design	A.RUITER			R5		
		R1	06/04/2022	FLAGS LIGHTS ADDED TO MARSDEN RD.	A.RUITER	BREAM BAY BUSINESS PARK CAT PR4	Aaron Parker MACROVENTURES	SHEET		
		R2	06/09/2022	REVISED DESIGN AS PER NEW CAD FILE.	A.RUITER			A3		
		R3	29/11/2022	REVISED AS PER PEER REVIEW.	A.RUITER			CONTACT Jeff.Richardson@betacom.co.nz	DOCUMENT NO. Bream Bay Business hub.AGI	PAGE NO. Page 1 of 5
		R4	12/12/2022	REVISED AS PER PEER REVIEW.	A.RUITER					
R5	21/12/2022	LATM ADDED.	A.RUITER							

P Category Lighting - AS/NZS 1158.3.1:2020

Betacom

I-table Filename: C:\Users\andre\Desktop\Use ful folders\I TABLES FOR PERFECT LITE\TECEO 1 5068 16 XP-G3 500mA WW 730 25.8W 7x7 III-Medium 407512 Flat glass 230V TF.cie

Job Name: BREAM BAY BUSINESS HUB

Luminaire Description: 5068 WW 25.8W 3142 lms
Lamp Wattage & Type: LED 25.8
Initial Lamp Flux: 3142 lms
Maintenance Factor: 0.8
Upcast Angle: 5 degrees
Arrangement: Single Side
Offset Distance: 2.6 m
Upward Waste Light Ratio: .0 %
Light Source: LED - Light Emitting Diode

Lighting Category: PR4

Illuminance Criteria: Average Illuminance (Eav) >= 1.30 lx
(Maintained values) Minimum Illuminance (Eph) >= 0.22 lx
Illuminance Uniformity (Up) <= 8
Minimum Illuminance (Epv) >= NOT assessed

Calculation Grid: 20 x 11 points - Figure 3.7 of AS/NZS 1158.2

Mounting Height Maximum Spacing for different Road Reserve Widths

19.0 20.0
+-----+
8.0 | 59.3 56.7 |
+-----+

Value/s in above table are all in metres.
The table contains maximum spacings which, for the specified luminaire and lamp combination, provide compliance with the User Defined light technical parameters (LTPs) nominated above.

P Category Lighting - AS/NZS 1158.3.1:2020

Betacom

LUMINAIRE INTENSITY REPORT

I-table Filename: C:\Users\andre\Desktop\Use ful folders\I TABLES FOR PERFECT LITE\TECEO 1 5068 16 XP-G3 500mA WW 730 25.8W 7x7 III-Medium 407512 Flat glass 230V TF.cie

Luminaire Description: 5068 WW 25.8W 3142 lms
Lamp Wattage & Type: LED 25.8W
Initial Lamp Flux: 3142 lms
Upcast angle: 5 degrees
Upward Waste Light Ratio: .0 %
Light Source: LED - Light Emitting Diode

Maximum intensity at G=80: 125 Cd/1000 lamp lumens (393 Cds)
(at C = 15 degrees)

Maximum intensity at G=90: 0 Cd/1000 lamp lumens (0 Cds)
(at C = 0 degrees)

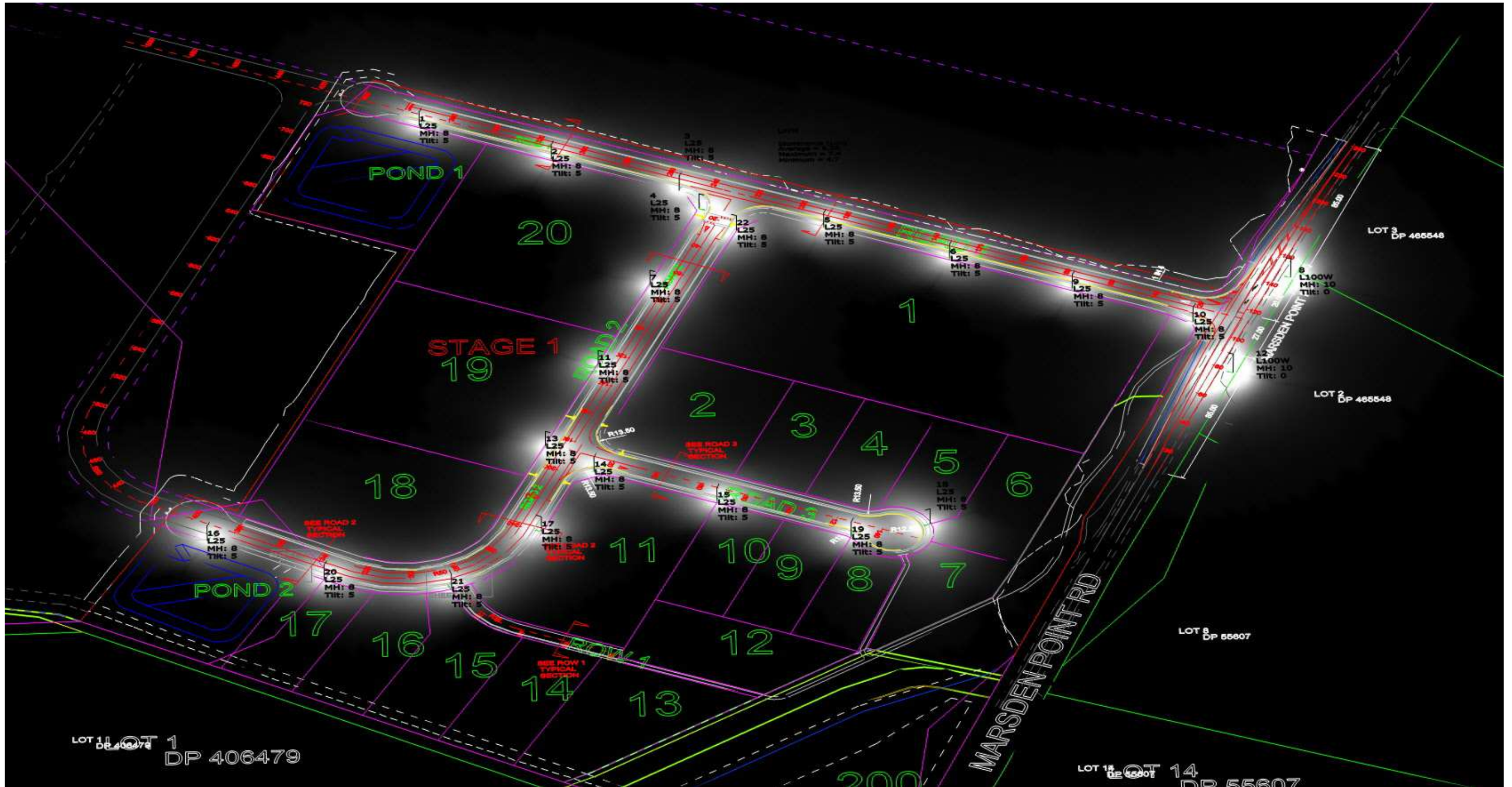
Peak intensity: 379 Cd/1000 lamp lumens (1191 Cds)
(at: C = 15 degrees & G = 67.5 degrees)
Intensity at G=90 degrees: 0 Cd/1000 lamp lumens (0 Cds)
(in Peak Intensity vertical plane)

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Whangarei District
Council RCA –SD2200045
JF 20/01/2023

Luminaire Schedule						
Symbol	Qty	Label	Tag	LLF	Luminaire Watts	Total Watts
—□	20	TECEO 1 5068 16 XP-G3 500mA W	L25	0.800	25.8	516
—□	2	SL99N23303L100	L100W	0.800	101.82	203.64

Calculation Summary					
Label	CalcType	Units	Avg	Max	Min
LATM	Illuminance	Lux	6.02	7.4	4.7

BETACOM 80 MACES RD, BROMLEY CHRISTCHURCH NEW ZEALAND TEL: +64 3 384 4049 sales@betacom.co.nz www.betacom.co.nz	This lighting design submission is confidential and intended for the exclusive use of the Client(s) named. It is not to be copied or provided to any third party without the express written permission of Betacom (1988) Limited. The design calculations are based on specified parameters supplied by the client and other design inputs as specified on this documentation. Installed lighting parameters will vary due to installation tolerances and luminaire output variances.	REV	DATE	COMMENTS	DESIGNED	PROJECT BREAME BAY BUSINESS PARK CAT PR4	CLIENT Aaron Parker MACROVENTURES	REVISION R5
		R0	25/03/2022	Original design	A.RUITER			SHEET A3
		R1	06/04/2022	FLAGS LIGHTS ADDED TO MARSDEN RD.	A.RUITER			PAGE NO. Page 2 of 5
		R2	06/09/2022	REVISED DESIGN AS PER NEW CAD FILE.	A.RUITER	CONTACT Jeff.Richardson@betacom.co.nz	DOCUMENT NO. Breame Bay Business hub.AGI	
		R3	29/11/2022	REVISED AS PER PEER REVIEW.	A.RUITER			
		R4	12/12/2022	REVISED AS PER PEER REVIEW.	A.RUITER			
		R5	21/12/2022	LATM ADDED.	A.RUITER			



SIMULATED RENDER

BETACOM

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REV	DATE	COMMENTS	DESIGNED
R0	25/03/2022	Original design	A.RUITER
R1	06/04/2022	FLAGS LIGHTS ADDED TO MARS DEN RD.	A.RUITER
R2	06/09/2022	REVISED DESIGN AS PER NEW CAD FILE.	A.RUITER
R3	29/11/2022	REVISED AS PER PEER REVIEW.	A.RUITER
R4	12/12/2022	REVISED AS PER PEER REVIEW.	A.RUITER
R5	21/12/2022	LATM ADDED.	A.RUITER

PROJECT

BREAM BAY BUSINESS PARK
CAT PR4

CONTACT

Jeff.Richardson@betacom.co.nz

CLIENT

Aaron Parker
MACROVENTURES

DOCUMENT NO.

Bream Bay Business hub.AGI

Approved Revised Plans -
Whangarei District
Council RCA -SD2200045
JF 20/01/2023

REVISION

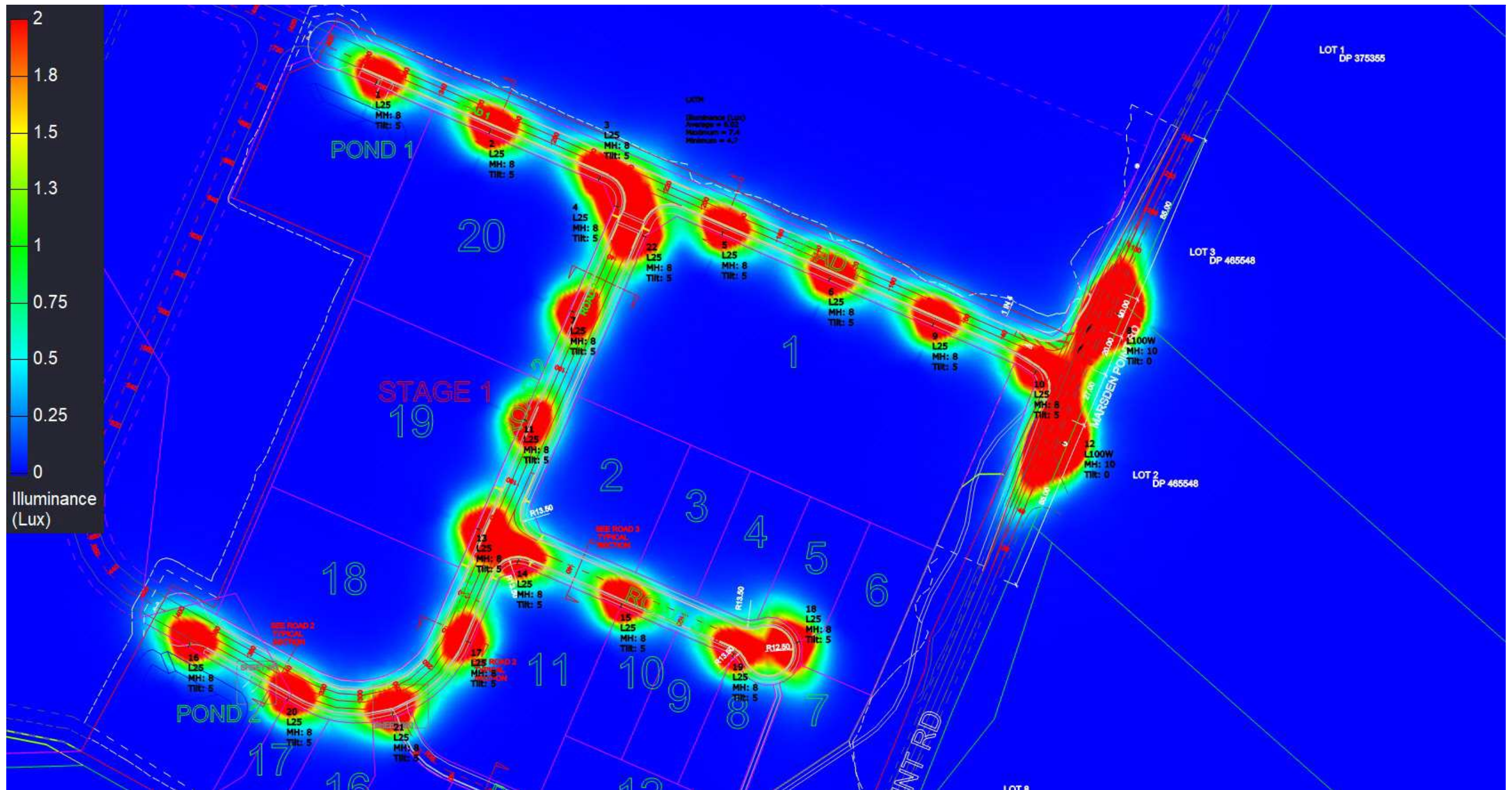
R5

SHEET

A3

PAGE NO.

Page 3 of 5



SIMULATED ISOLUX

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Council RCA—SD2200045
JF 20/01/2023

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R2	06/09/2022	REVISED DESIGN AS PER NEW CAD FILE.	A.RUITER
R3	29/11/2022	REVISED AS PER PEER REVIEW.	A.RUITER
R4	12/12/2022	REVISED AS PER PEER REVIEW.	A.RUITER
R5	21/12/2022	LATM ADDED.	A.RUITER

PROJECT
BREAM BAY BUSINESS PARK
CAT PR4

CONTACT
Jeff.Richardson@betacom.co.nz

CLIENT
Aaron Parker
MACROVENTURES

DOCUMENT NO.
Bream Bay Business hub.AGI

REVISION
R5

SHEET
A3

PAGE NO.
Page 4 of 5

Luminaire Location Summary						
		Insertion Point				
LumNo	Label	X	Y	Z	Orient	Tilt
1	TECEO 1 5068 16 XP-G3 500mA W	372471.348	913007.965	8	66.642	5
2	TECEO 1 5068 16 XP-G3 500mA W	372526.989	912984.004	8	66.642	5
3	TECEO 1 5068 16 XP-G3 500mA W	372580.65	912961.119	8	66.642	5
4	TECEO 1 5068 16 XP-G3 500mA W	372588.674	912948.718	8	338.692	5
5	TECEO 1 5068 16 XP-G3 500mA W	372640.985	912934.458	8	66.642	5
6	TECEO 1 5068 16 XP-G3 500mA W	372693.279	912911.648	8	66.642	5
7	TECEO 1 5068 16 XP-G3 500mA W	372566.812	912897.418	8	337.816	5
8	SL99N23303L100	372836.329	912895.346	10	158.296	0
9	TECEO 1 5068 16 XP-G3 500mA W	372744.123	912889.936	8	66.642	5
10	TECEO 1 5068 16 XP-G3 500mA W	372793.912	912866.364	8	64.115	5
11	TECEO 1 5068 16 XP-G3 500mA W	372543.907	912844.343	8	336.642	5
12	SL99N23303L100	372809.28	912832.241	10	160.105	0
13	TECEO 1 5068 16 XP-G3 500mA W	372520.782	912791.051	8	336.642	5
14	TECEO 1 5068 16 XP-G3 500mA W	372540.652	912773.619	8	66.762	5
15	TECEO 1 5068 16 XP-G3 500mA W	372591.266	912752.167	8	67.016	5
16	TECEO 1 5068 16 XP-G3 500mA W	372379.647	912732.664	8	63.686	5
17	TECEO 1 5068 16 XP-G3 500mA W	372518.086	912735.002	8	154.522	5
18	TECEO 1 5068 16 XP-G3 500mA W	372679.187	912735.74	8	202.036	5
19	TECEO 1 5068 16 XP-G3 500mA W	372646.263	912728.127	8	67.818	5
20	TECEO 1 5068 16 XP-G3 500mA W	372427.812	912706.182	8	61.197	5
21	TECEO 1 5068 16 XP-G3 500mA W	372480.244	912698.577	8	107.059	5
22	TECEO 1 5068 16 XP-G3 500mA W	372604.097	912933.365	8	156.642	5

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JF 20/01/2023

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REV	DATE	COMMENTS	DESIGNED
R0	25/03/2022	Original design	A.RUITER
R1	06/04/2022	FLAGS LIGHTS ADDED TO MARSDEN RD.	A.RUITER
R2	06/09/2022	REVISED DESIGN AS PER NEW CAD FILE.	A.RUITER
R3	29/11/2022	REVISED AS PER PEER REVIEW.	A.RUITER
R4	12/12/2022	REVISED AS PER PEER REVIEW.	A.RUITER
R5	21/12/2022	LATM ADDED.	A.RUITER

PROJECT

BREAM BAY BUSINESS PARK
CAT PR4

CONTACT

Jeff.Richardson@betacom.co.nz

CLIENT

Aaron Parker
MACROVENTURES

DOCUMENT NO.

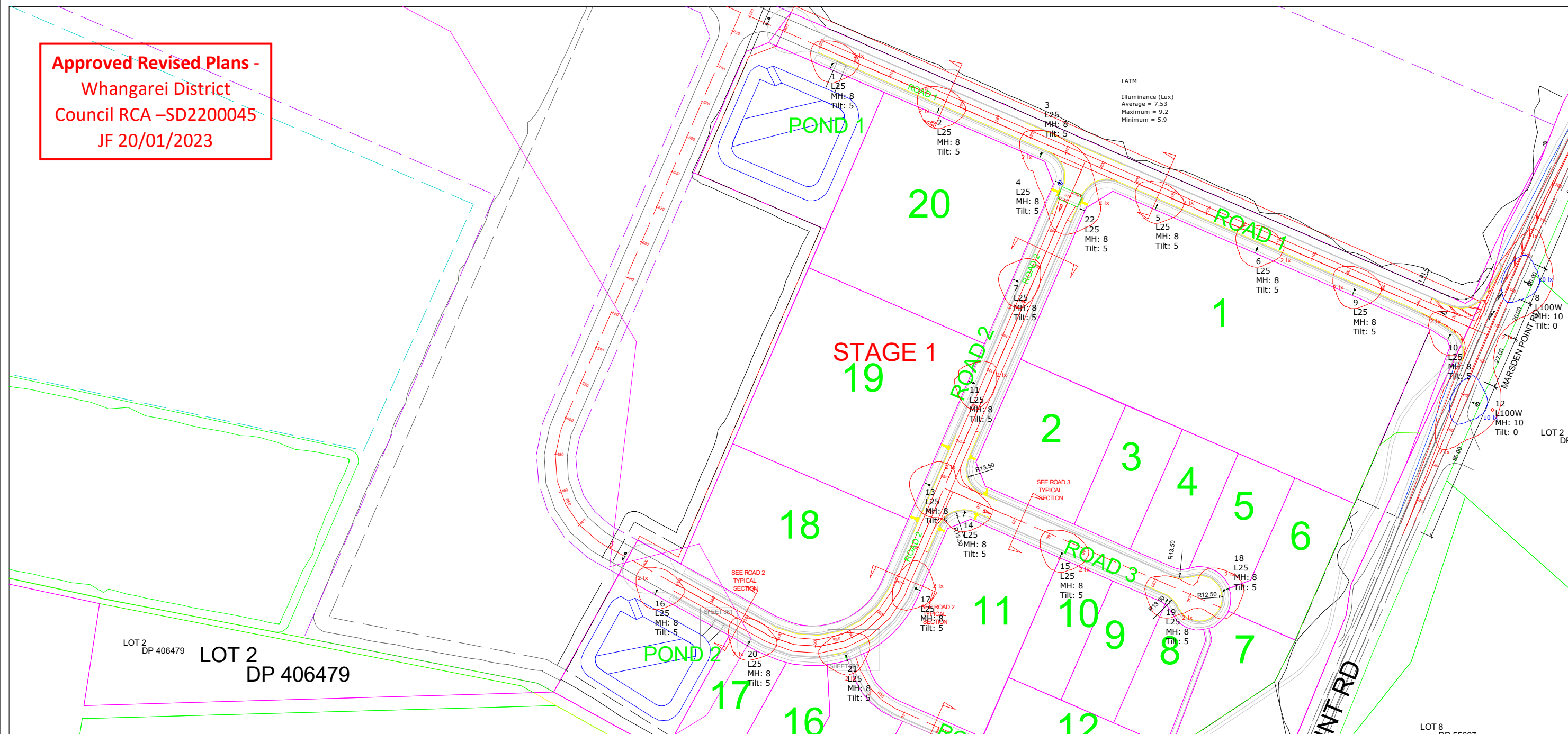
Bream Bay Business hub.AGI

REVISION
R5

SHEET
A3

PAGE NO.
Page 5 of 5

Approved Revised Plans -
Whangarei District
Council RCA –SD2200045
JF 20/01/2023



Lighting Legend:-

1. Luminaire type identified individually for each location and height.
2. RED isolux line shows a 2 Lux level spill compliance.
3. Luminaires are indicated by BLACK rectangle.
4. Column location is around 2.6m behind the optical centre
5. Maintenance Factor is 1

6. 6A HRC Fuse is required for AT TDM Chapter 12.

7. Luminaires will be CMS ready, Specify 7 pin NEMA socket and Zodion SS6 photocell. Philips Xitanium driver with DALI.

8. Columns - CSP Pacific 8m with 2.0m outreach.

9. The luminaires used must comply with AT Design Manual Glare Requirement.

10. Power density is 0.021 W/m2

LTP SUMMARY TABLE

Eh(ave)	Eph(min)	UE2	IG80	IPEAK
>1.30	>0.22	<8	393	1191

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R4	12/12/2022	REVISED AS PER PEER REVIEW.	A.RUITER
R5	21/12/2022	LATM ADDED.	A.RUITER

PROJECT	CONTACT
BREAM BAY BUSINESS PARK CAT PR4	Jeff.Richardson@betacom.co.nz

CLIENT	DOCUMENT NO.
Aaron Parker MACROVENTURES	Spill MF1.AGI

REVISION	SHEET	PAGE NO.
R5	A3	Page 1 of 1