



Conor O' Loughlin
Ormond House
Upper Ormond Quay
Dublin 7
D07N5YH

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office,
Cork City.

www.water.ie

9 June 2022

**Re: Design Submission for Newcastle, South Dublin, Dublin (the “Development”)
(the “Design Submission”) / Connection Reference No: CDS22003002**

Dear Conor O' Loughlin,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Irish Water has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before you can connect to our network you must sign a connection agreement with Irish Water. This can be applied for by completing the connection application form at www.water.ie/connections. Irish Water's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU) (https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Irish Water's network(s) (the “**Self-Lay Works**”), as reflected in your Design Submission. Acceptance of the Design Submission by Irish Water does not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Irish Water representative:

Name: Dario Alvarez

Email: dalvarez@water.ie

Yours sincerely,

Yvonne Harris
Head of Customer Operations

Appendix A

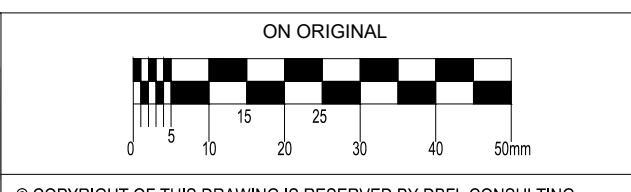
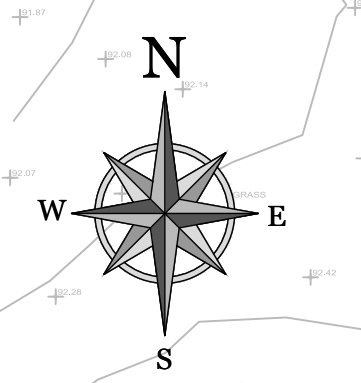
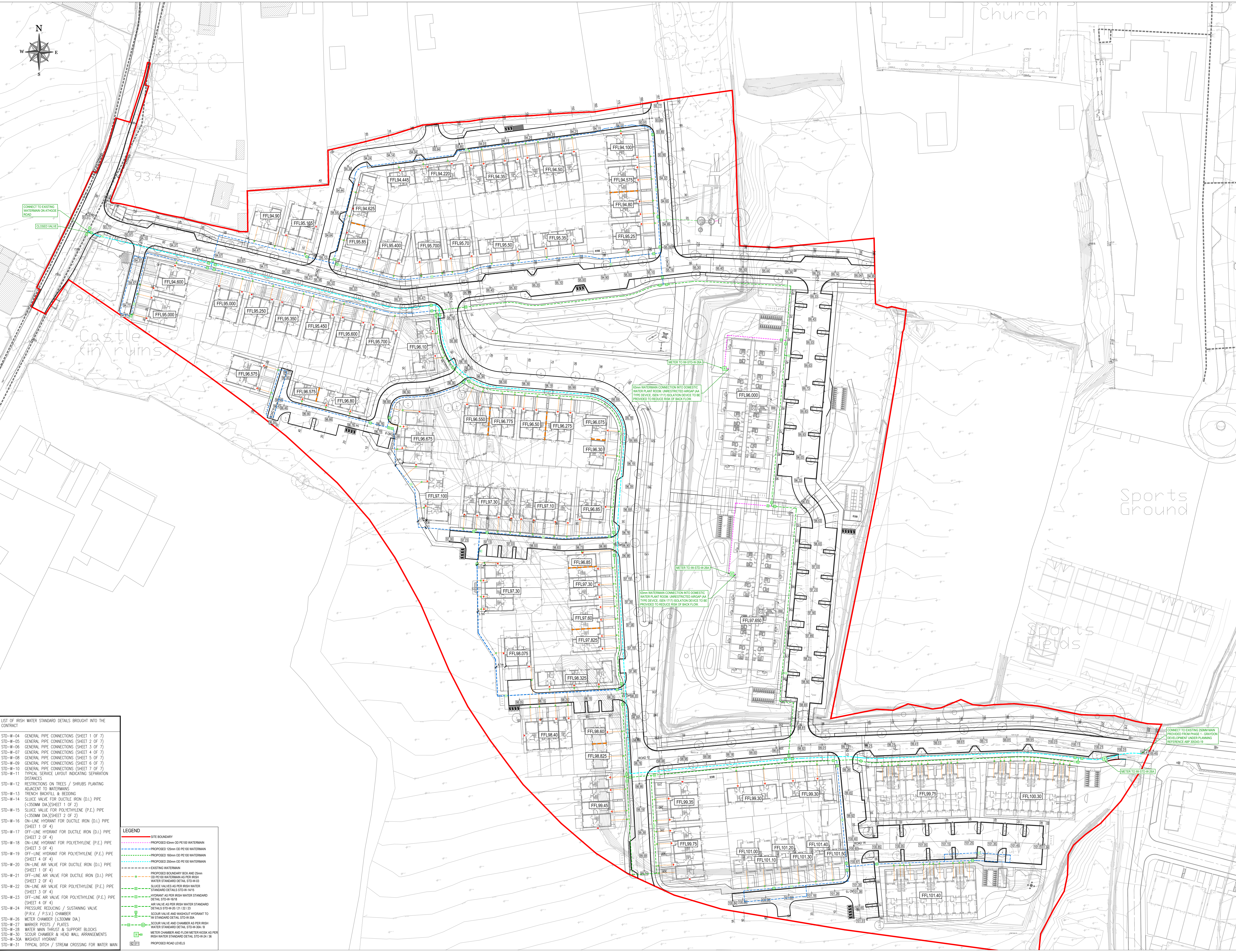
Document Title & Revision

- 210026-DBFL-WM-SP-DR-C-1301 Proposed Watermain Layout
- 210026-DBFL-CS-SP-DR-C-1201 Proposed Drainage Layout
- 210026-DBFL-CS-SP-DR-C-3205 Foul Sewer Longitudinal Sections Sheet 1
- 210026-DBFL-CS-SP-DR-C-3206 Foul Sewer Longitudinal Sections Sheet 2
- 210026-DBFL-CS-SP-DR-C-3207 Foul Sewer Longitudinal Sections Sheet 3

Standard Details/Code of Practice Exemption: N/A

For further information, visit www.water.ie/connections

Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Irish Water will not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.



NO CHANGES OF WHATSOEVER NATURE ARE TO BE MADE TO ANY DETAILS SET OUT OR CONTAINED IN ANY DRAWING SPECIFICATION OR DRAWING UNLESS THE EXPRESS CONSENT HAS BEEN OBTAINED IN ADVANCE, IN WRITING, FROM DBFL.

- NOTES**
1. ALL DRAWINGS TO BE CHECKED BY CONTRACTOR ON SITE AND ENGINEER INFORMED OF DISCREPANCIES BEFORE WORK COMMENCES.
 2. THE CONTRACTOR SHALL VERIFY ALL AS TO THE ACCURACY OF EXISTING ELEVATIONS AND LOCATION OF EXISTING SERVICES ON SITE PRIOR TO COMMENCEMENT OF WORKS ON SITE.
 3. ALL DIMENSIONS AND LEVELS ARE IN METERS AND ARE RELATED TO ORDNANCE DATUM. CO-ORDINATES RELATE TO IRISH TRANSVERSE MERCATOR.
 4. ALL WATERMANS VALVES AND FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE IRISH WATER STANDARD DETAILS AND IRISH WATER CODE OF PRACTICE FOR WATER MAINS/INFRASTRUCTURE.
 5. ALL WATERMANS SHALL BE HERE, PERIOD, 500B17 TO IS EN 12001 - PART 2 (2011) AND IS EN 12002 (2001).
 6. CONNECTION BETWEEN EXISTING AND PROPOSED WATERMANS TO BE MADE IN ACCORDANCE WITH IRISH WATER STANDARD DETAILS STD-W-03 TO STD-W-05. IRISH WATER MAINS SHALL BE POSITIONED AT LEAST 1.0M FROM ALL SERVICES AND AT LEAST 0.5M FROM ALL VALVES IN ACCORDANCE WITH THE REQUIREMENTS OF IRISH WATER STANDARD DETAILS STD-W-06 (WATER MAINS) AND STD-W-07 (SUPPORT BLOCKS/DIMENSIONAL JOINTS) TO BE INSTALLED AT EACH SLICE VALVE AS PER IRISH WATER STANDARD DETAIL STD-W-10.
 8. CONNECTION TO INDIVIDUAL HOUSES IN ACCORDANCE WITH IRISH WATER STD-W-03.
 9. INSTALLATION OF HOUSE VALVES, AIR VALVES AND HYDRANTS SHALL BE IN ACCORDANCE WITH IRISH WATER STANDARD DETAILS STD-W-11 TO STD-W-15.
 10. MARKER POSTS AND PLATES ARE TO BE PROVIDED IN ACCORDANCE WITH IRISH WATER STANDARD DETAIL STD-W-27.
 11. CONNECTION TO EXISTING WATERMANS TO BE COORDINATED BY THE CONTRACTOR WITH IRISH WATER AND/OR THE LOCAL AUTHORITY.
 12. CONTRACTOR TO LIAISE WITH IRISH WATER AND / OR THE LOCAL AUTHORITY AS REQUIRED REGARDING TESTING, CLEANING AND STERILISATION OF WATERMANS.
 13. WATERMANS TO BE PRESSURE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF IRISH WATER AND IS EN 4-21-03. GUIDE TO TESTING OF PRESSURE PIPES AND FITTINGS FOR USE BY PUBLIC WATER SUPPLIERS, OCTOBER 2004. A FORMAL TEST REPORT SHALL BE SUBMITTED TO THE ENGINEER DETAILING THE TEST RESULTS OF ALL TESTS. ALL TESTS SHALL BE UNDERTAKEN BY A COMPETENT PERSON AS PER IRISH WATER STANDARD DETAIL STD-W-16.
 14. ALL VALVES AND HYDRANTS SHALL BE LOCATED IN GRASS AREAS. ALL VALVES AND HYDRANTS SHALL BE FORMED WITH C15/20 CONCRETE 200M AGGREGATE SIZE, BEHIND A CONCRETE REINFORCEMENT LINKS AND SHALL HAVE A BULL-NOSE FINISH. ALL HYDRANTS SHALL BE PROVIDED WITH A STEEL REINFORCEMENT LINKS AND SHALL HAVE A BULL-NOSE FINISH. ALL WATERMANS PIPE MATERIAL TO BE IN COMPLIANCE WITH IRISH WATER CODE OF PRACTICE.

- LIST OF IRISH WATER STANDARD DETAILS BROUGHT INTO THE CONTRACT**
- STD-W-04 GENERAL PIPE CONNECTIONS (SHEET 1 OF 7)
 - STD-W-05 GENERAL PIPE CONNECTIONS (SHEET 2 OF 7)
 - STD-W-06 GENERAL PIPE CONNECTIONS (SHEET 3 OF 7)
 - STD-W-07 GENERAL PIPE CONNECTIONS (SHEET 4 OF 7)
 - STD-W-08 GENERAL PIPE CONNECTIONS (SHEET 5 OF 7)
 - STD-W-09 GENERAL PIPE CONNECTIONS (SHEET 6 OF 7)
 - STD-W-10 GENERAL PIPE CONNECTIONS (SHEET 7 OF 7)
 - STD-W-11 TYPICAL SERVICE LAYOUT INDICATING SEPARATION DISTANCES
 - STD-W-12 RESTRICTIONS ON TREES / SHRUBS PLANTING ADJACENT TO WATERMANS
 - STD-W-13 TRENCH BACKFILL & BEDDING
 - STD-W-14 SLICE VALVE FOR DUCTILE IRON (D.I.) PIPE (<350MM DIA.) (SHEET 1 OF 2)
 - STD-W-15 SLICE VALVE FOR POLYETHYLENE (P.E.) PIPE (<350MM DIA.) (SHEET 2 OF 2)
 - STD-W-16 ON-LINE HYDRANT FOR DUCTILE IRON (D.I.) PIPE (SHEET 1 OF 4)
 - STD-W-17 OFF-LINE HYDRANT FOR DUCTILE IRON (D.I.) PIPE (SHEET 2 OF 4)
 - STD-W-18 ON-LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPE (SHEET 3 OF 4)
 - STD-W-19 OFF-LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPE (SHEET 4 OF 4)
 - STD-W-20 ON-LINE AIR VALVE FOR DUCTILE IRON (D.I.) PIPE (SHEET 1 OF 4)
 - STD-W-21 OFF-LINE AIR VALVE FOR DUCTILE IRON (D.I.) PIPE (SHEET 2 OF 4)
 - STD-W-22 ON-LINE AIR VALVE FOR POLYETHYLENE (P.E.) PIPE (SHEET 3 OF 4)
 - STD-W-23 OFF-LINE AIR VALVE FOR POLYETHYLENE (P.E.) PIPE (SHEET 4 OF 4)
 - STD-W-24 PRESSURE REDUCING / SUSTAINING VALVE (P.R.V. / P.S.V.) CHAMBER
 - STD-W-25 METER CHAMBER (<300MM DIA.)
 - STD-W-26 METER CHAMBER & FLOW METER W/80KA/8
 - STD-W-27 WATER MAIN THRUST & SUPPORT BLOCKS
 - STD-W-28 SCOUR CHAMBER & HEAD WALL ARRANGEMENTS
 - STD-W-29 WASHOUT HYDRANT
 - STD-W-30 TYPICAL DITCH / STREAM CROSSING FOR WATER MAIN

LEGEND

[Red line]	Site boundary
[Blue dashed line]	Proposed 63mm OD PE100 WATERMAIN
[Green dashed line]	Proposed 125mm OD PE100 WATERMAIN
[Orange dashed line]	Proposed 160mm OD PE100 WATERMAIN
[Purple dashed line]	Proposed 225mm OD PE100 WATERMAIN
[Black dashed line]	EXISTING WATERMAIN
[Green dashed line]	PROPOSED BONDING BOX AND 25mm OD PE100 WATERMAIN AS PER IRISH WATER STANDARD DETAIL STD-W-03
[Green dashed line]	SLICE VALVES AS PER IRISH WATER STANDARD DETAILS STD-W-14/15
[Green dashed line]	HYDRANT AS PER IRISH WATER STANDARD DETAIL STD-W-10/11
[Green dashed line]	AIR VALVES AS PER IRISH WATER STANDARD DETAIL STD-W-21/22/23
[Green dashed line]	SCOUR VALVE AND WASHOUT HYDRANT TO IRISH WATER STANDARD DETAIL STD-W-28
[Green dashed line]	SCOUR VALVE AND CHAMBER AS PER IRISH WATER STANDARD DETAIL STD-W-24/25
[Green dashed line]	METER CHAMBER AND FLOW METER W/80KA/8 AS PER IRISH WATER STANDARD DETAIL STD-W-26/27
[Green dashed line]	PROPOSED ROAD LEVELS

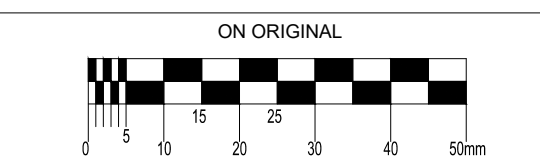
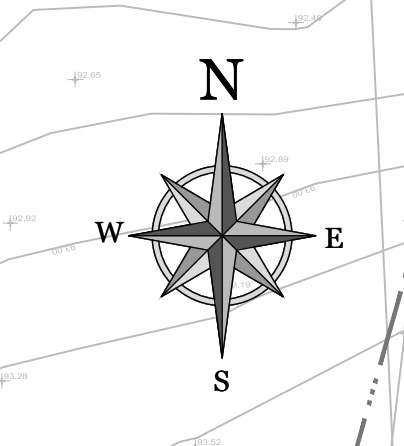
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DBFL Consulting Engineers
Civil & Structural Engineering

NEWCASTLE SOUTH
PROPOSED WATERMAIN LAYOUT

CARN HOMES PROPERTIES LTD

210026-DBFL-WM-SP-DR-C-1001 P02



ATTENUATION FACILITY 1: STORAGE CHAMBER PROVIDING STORAGE FOR 10 YEAR STORM AND ABOVE GROUND DETENTION BASIN TO PROVIDE 5MP FOR 1500 YEAR STORM
 2 ROWS BY UNITS IN EACH ROW L.E. 92.4
 DETENTION BASIN L.S. 93.16
 T.W. 93.16

EXISTING SURFACE WATER NETWORK ON ATHOLE ROAD. ALL OUTFLOWS TO THE SURFACE WATER NETWORK ARE LIMITED TO GREENFIELD RAINOFF RATES TO MATCH THE GREENFIELD SCENARIO. REFER TO INFRASTRUCTURE DESIGN REPORT FOR DETAILS OF CCTV SURVEY UNDERTAKEN ON THE DOWNSTREAM NETWORK AS FAR AS PRACTICABLE.

CLASS 1 BYPASS SEPARATOR OR KINGSPAN NSS610 OR SIMILAR APPROVED
 ENTRY LEVEL 92.26m
 EXIT LEVEL 92.26m

FLOW CONTROL MANHOLE (HYDROBRAKE OPTIMUM OR SIMILAR) RESTRICTING FLOWS TO 2.0L/S
 DESIGN HEAD 1.50M

ATTENUATION FACILITY 1: STORAGE CHAMBER PROVIDING STORAGE FOR 10 YEAR STORM
 10 ROWS BY 35 UNITS PER ROW
 L.S. 92.39m
 T.W. 94.75m

ATTENUATION FACILITY 2: MAX 0.8m DEEP LOW FLOW CHANNEL. TO STORE 5 YEAR CRITICAL STORM MAX 10mm DEEP USABLE DETENTION BASIN TO STORE VOLUME BETWEEN 1 YEAR AND 100 YEAR CRITICAL STORM
 T.W. (100 YEAR) 92.04m
 T.W. (5 YEAR) 93.04m
 VOLUME OF LOW FLOW CHANNEL: 164m³
 VOLUME OF DETENTION BASIN: 270m³
 TOTAL VOLUME PROVIDED: 284m³
 TOTAL (100 YEAR) VOLUME REQUIRED: 270m³
 REFER TO DRAWING 210026-DBFL-CS-SP-DR-C-1254 FOR DETAILS.

EXISTING DRAINAGE DITCH TO MAIN STREET. ALL OUTFLOWS TO THE DRAINAGE DITCH ARE LIMITED TO GREENFIELD RAINOFF RATES TO MATCH THE GREENFIELD SCENARIO. REFER TO INFRASTRUCTURE DESIGN REPORT FOR DETAILS OF CCTV SURVEY UNDERTAKEN ON THE DOWNSTREAM NETWORK.

CLASS 1 BYPASS SEPARATOR OR KINGSPAN NSS610 OR SIMILAR APPROVED
 ENTRY LEVEL 92.26m
 EXIT LEVEL 92.26m

FLOW CONTROL MANHOLE (HYDROBRAKE OPTIMUM OR SIMILAR) RESTRICTING FLOWS TO 2.0L/S
 DESIGN HEAD 1.50M

PROPOSED PUMPING STATION TO PUMP FOULED FLOWS TO PHASE 1 (GRANDON). SEE PHASE 1 FOR TYPICAL FINISH.

ATTENUATION FACILITY 4: ABOVE GROUND DETENTION BASIN PROVIDING STORAGE FOR 10 YEAR STORM
 LOW FLOW CHANNEL, TO CATER FOR THE 15 YEAR STORM (FORM OF STORAGE PROVIDED)
 REFER TO DRAWING 210026-DBFL-CS-SP-DR-C-1266 FOR DETAILS L.E. 94.9
 T.W. 95.9

FLOW CONTROL MANHOLE (HYDROBRAKE OPTIMUM OR SIMILAR) RESTRICTING FLOWS TO 2.0L/S
 DESIGN HEAD 1.50M

ATTENUATION FACILITY 5: LOWER SWALE
 ABOVE GROUND DETENTION BASIN PROVIDING STORAGE FOR 100 YEAR STORM
 L.S. 95.25
 T.W. 95.1

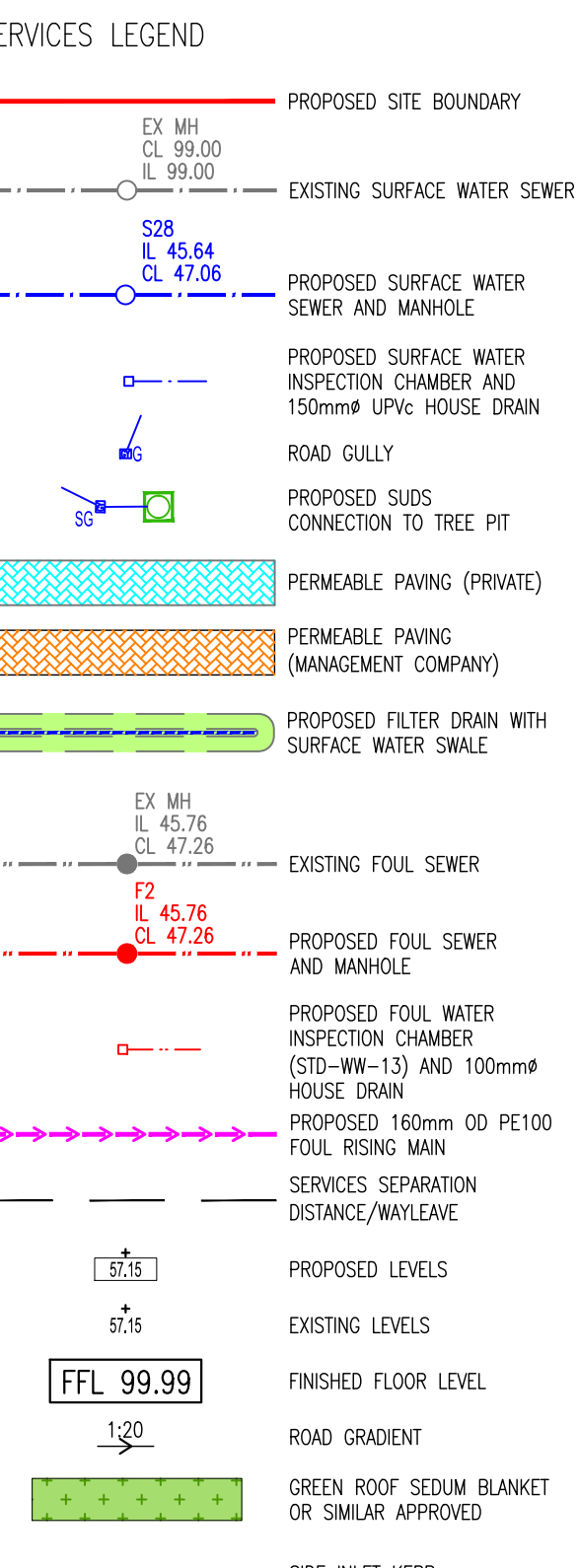
WEIR WITH 160mm OFFICE PLATE TO ATTENUATE STORM FLOWS WITHIN UPPER SWALE AND RELEASE TO LOWER SWALE. L. 96.32m
 WEIR OVERFLOW LEVEL: 95.86m

ATTENUATION FACILITY 3: UPPER SWALE
 ABOVE GROUND DETENTION BASIN PROVIDING STORAGE FOR 100 YEAR STORM
 L.S. 96.30
 T.W. 96.6

Sports Ground

Sports Fields

NOTES:
 GENERAL NOTES:
 1. ALL DRAWINGS TO BE CHECKED BY CONTRACTOR ON SITE AND ANY CORRECTIONS TO BE MADE BEFORE WORK COMMENCES.
 2. ALL DIMENSIONS AND LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
 3. ALL LEVELS ARE IN METRES AND ARE RELATED TO ORDNANCE DATUM. CO-ORDINATES RELATE TO NATIONAL GRID.
 4. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACCURACY OF ALL INFORMATION ON SITE PRIOR TO COMMENCEMENT OF WORKS ON SITE.
 5. ALL WATER MAINS AND SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE IWB WATER MAINS AND SEWERS DESIGN SPECIFICATIONS. WATER MAINS SHALL BE CONSTRUCTED TO STANDARD DETAILS AS PER IWB-08-01.
 6. FOULED SEWER PIPE MATERIAL TO BE IN ACCORDANCE WITH SECTION 1.1 OF THE IWB WATER MAINS AND SEWERS DESIGN SPECIFICATIONS. WHICH IS REPRODUCED IN SPECIFICATION APPROX 51.
 7. SURFACE WATER SEWERS SHALL BE CONSTRUCTED TO THE GREATER OF THE IWB WATER MAINS AND SEWERS DESIGN SPECIFICATIONS OR THE IWB WATER MAINS AND SEWERS DESIGN SPECIFICATIONS FOR SEWERS.
 8. LOCATION AND DEPTH OF EXISTING MANHOLES AND OUTFALL POINTS TO BE VERIFIED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS.
 9. ALL COVER LEVELS TO MATCH FINISHED ROAD/ELEVATIONS/PATH CYCLE TRACK LEVELS UNLESS OTHERWISE STATED.
 10. ALL SURFACE WATER DRAINAGE WORKS CONSTRUCTION TO COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY.
 11. CONTRACTOR TO INCLUDE FOR CCTV SURVEY OF ALL FOULED SURFACE WATER SEWERS (DRAINAGE) UPON COMPLETION OF SAME.
 12. MANHOLE COVERS IN LANDSCAPED AREAS TO BE SURROUNDED BY A CONCRETE CURB 200mm BOUND AND 100mm DEEP FORMED WITH C20/25 CONCRETE. 50MM AGGREGATE SIZE. BEDDED IN CLASS BA MATERIAL.



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PII: 13/06/22	STAGE 3 SHD	PIC: NCS
PII: 02/11/21	STAGE 2 SHD	DWF: NCS
DATE:	DESCRIPTION:	BY: JMS
client approval:	A: Approved with amendments	
validity:	C: Do not use	
ISSUE INFORMATION:	PLANNING	

DBFL Consulting Engineers
 210026-DBFL-CS-SP-DR-C-1201

PROJECT: NEWCASTLE SOUTH
 Drawing Title: PROPOSED DRAINAGE LAYOUT

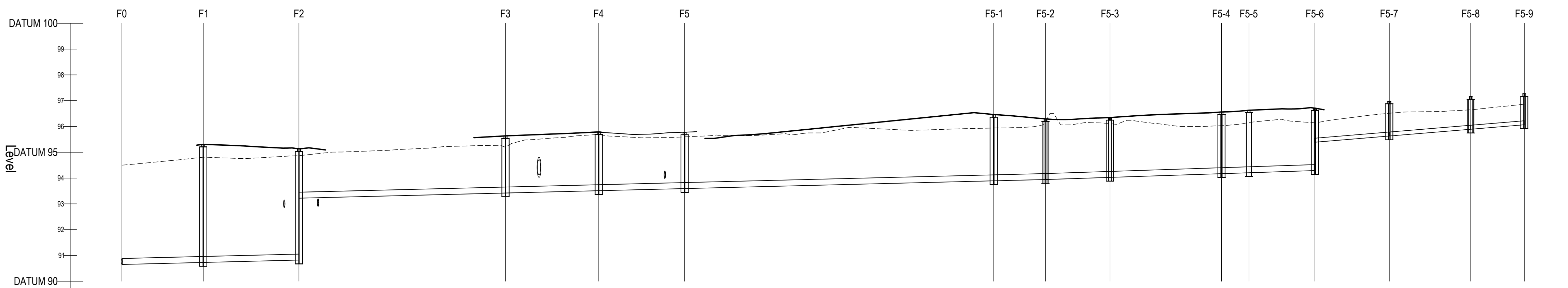
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 designed by: autor: NCS
 checked by: IC: IC
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 drawing no: 210026-DBFL-CS-SP-DR-C-1201
 project no: P02



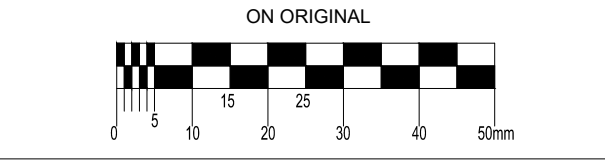
IMAGE 001 - FOUL PUMPING STATION EXAMPLE



IMAGE 002 - DETENTION BASIN EXAMPLE - PHASE 1 GRAYDON DEVELOPMENT

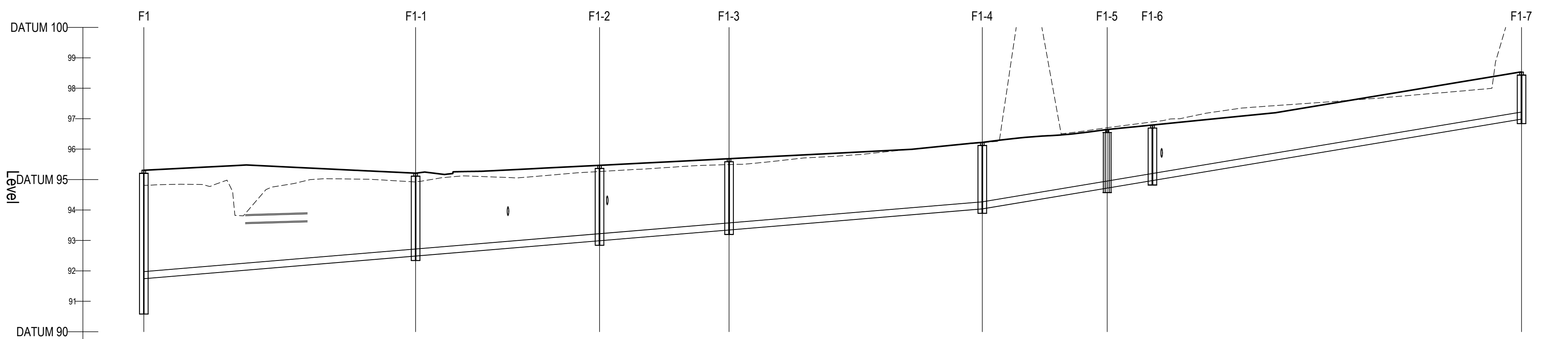


COVER LEVEL		95.887	95.306	95.133	95.634	95.788	95.778	96.461	96.295	96.345	96.561	96.629	96.705	96.979	97.152	97.267
INVERT LEVEL		90.632	90.731	90.624	93.422	93.513	93.586	93.895	93.945	94.029	94.172	94.208	94.250	94.531	94.894	95.057
DEPTH (m)		0.632	4.575	4.310	2.712	2.275	2.183	2.565	2.351	2.316	2.389	2.421	2.415	1.348	1.267	1.200
DISTANCE (m)			15.75	18.54	40.00	18.05	16.63	59.86	10.03	12.50	21.58	5.32	12.78	14.40	15.78	10.37
PIPE SLOPE		1:200	1:200	1:200	1:200	1:200	1:200	1:200	1:150	1:150	1:150	1:150	1:60	1:60	1:60	
PIPE SIZE		225mm	225mm	225mm	225mm	225mm	225mm	225mm	225mm	225mm	225mm	225mm	150mm	150mm	150mm	

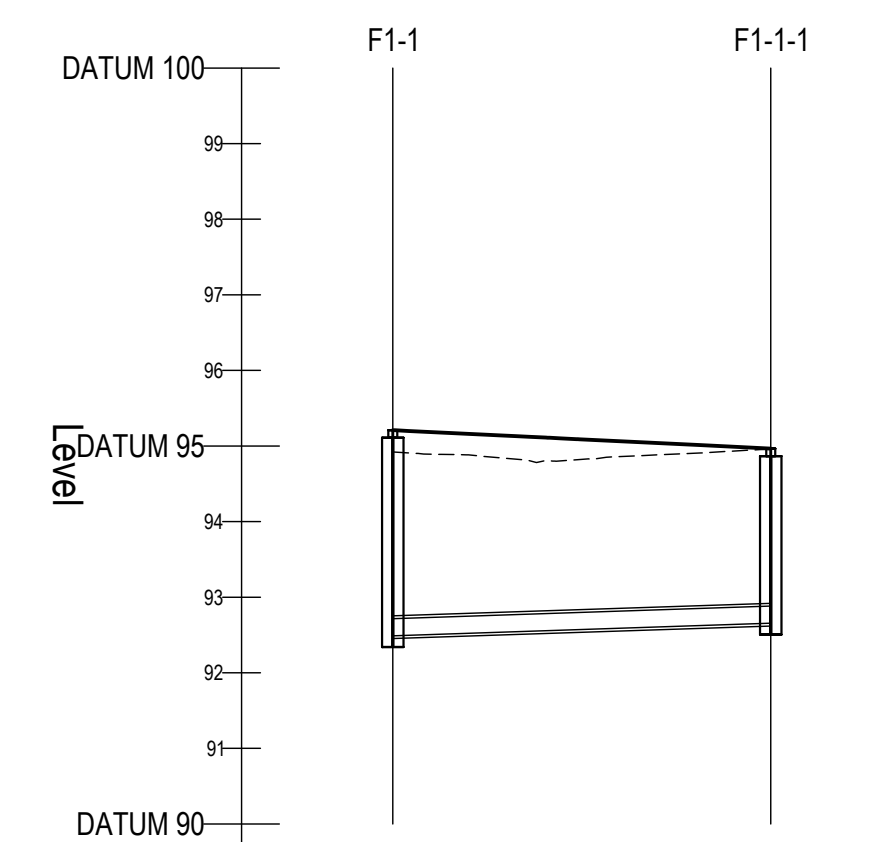


ON ORIGINAL
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 NO CHANGES OF WHATSOEVER NATURE ARE TO BE MADE TO ANY DETAILS SET OUT OR CONTAINED IN ANY DBFL SPECIFICATIONS OR DRAWINGS UNLESS THE EXPRESS CONSENT HAS BEEN OBTAINED IN ADVANCE, IN WRITING, FROM DBFL.

- NOTES:
1. ALL DRAWINGS TO BE CHECKED BY CONTRACTOR ON SITE AND ENGINEER INFORMED OF DISCREPANCIES BEFORE WORK COMMENCES
 2. ALL LEVELS ARE IN METRES AND ARE RELATED TO ORDNANCE DATUM
 3. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACCURACY OF PAVEMENT LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORKS ON SITE
 4. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NRA SPECIFICATION FOR ROAD WORKS UNLESS NOTED OTHERWISE
 5. THIS DRAWING IS FOR PLANNING PURPOSES ONLY
 6. MANHOLE COVER LEVELS ARE TO CONFORM WITH FINISHED ROAD AND PATH LEVELS
 7. WHERE COVER TO PIPE IS LESS THAN 100mm (ROAD/PATH/VERGE) OR 900mm (OPEN SPACE) SURROUND PIPE IN MINIMUM 150mm CONCRETE

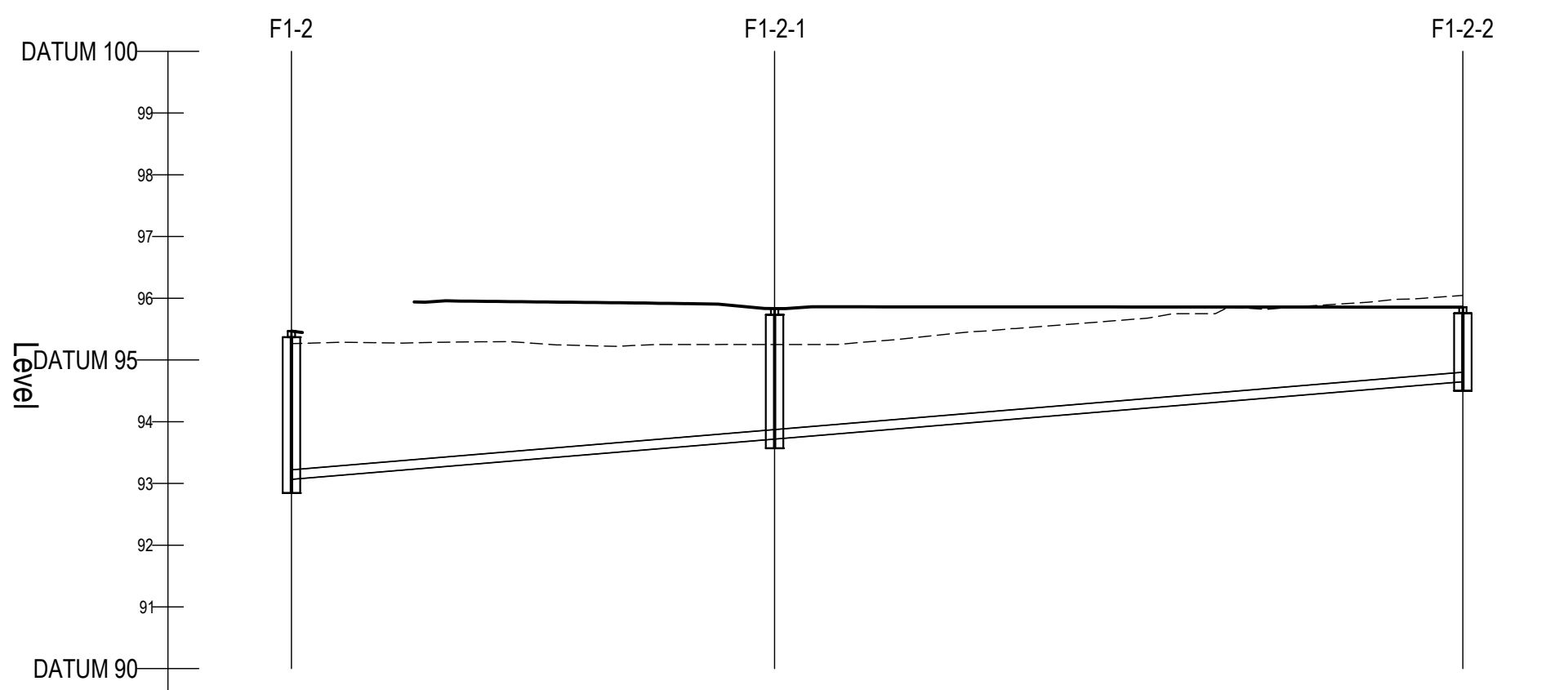
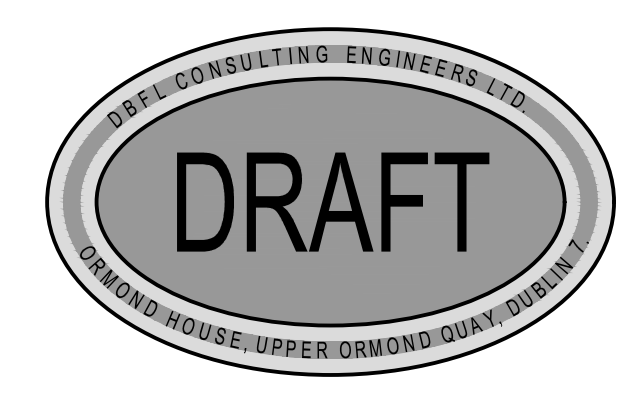


COVER LEVEL		95.306	95.209	95.468	95.885	96.221	96.847	96.792	96.832
INVERT LEVEL		91.747	92.490	93.093	93.347	94.040	94.723	94.970	95.990
DEPTH (m)		4.576	2.719	2.475	2.337	2.181	1.924	1.822	1.543
DISTANCE (m)			44.61	30.18	21.27	41.56	20.50	7.42	60.58
PIPE SLOPE		1:60	1:60	1:60	1:60	1:30	1:30		1:30
PIPE SIZE		225mm	225mm	225mm	225mm	225mm	225mm		225mm

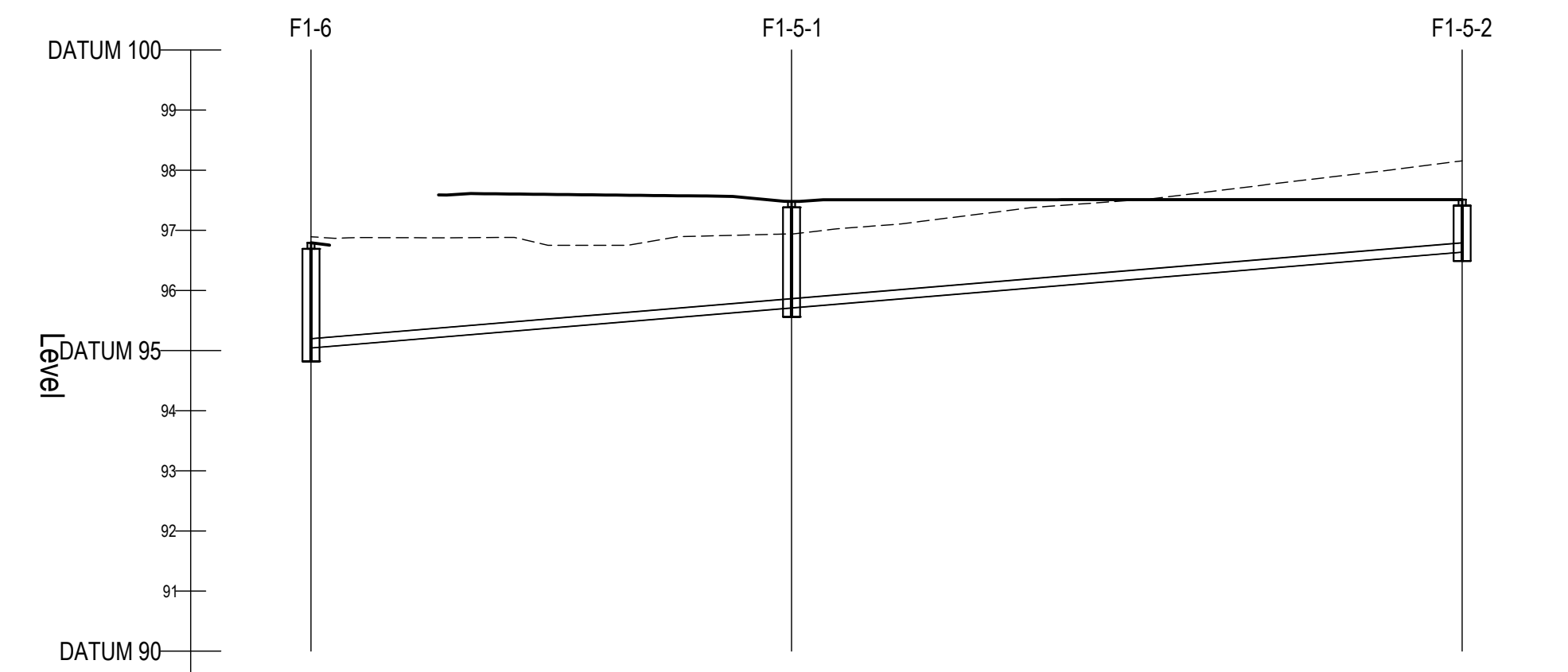


COVER LEVEL		95.209	94.967
INVERT LEVEL		92.490	92.657
DEPTH (m)		2.719	2.310
DISTANCE (m)			25.00
PIPE SLOPE			1:150
PIPE SIZE			225mm

KEY
 - - - - - EXISTING GROUND PROFILE
 ——— PROPOSED GROUND PROFILE



COVER LEVEL		95.468	95.832	95.856
INVERT LEVEL		93.098	93.720	94.649
DEPTH (m)		2.475	2.112	1.207
DISTANCE (m)			39.13	55.74
PIPE SLOPE			1:60	1:60
PIPE SIZE			150mm	150mm



COVER LEVEL		96.792	97.481	97.211
INVERT LEVEL		95.045	95.711	95.640
DEPTH (m)		1.822	1.771	0.871
DISTANCE (m)			39.95	55.75
PIPE SLOPE			1:60	1:60
PIPE SIZE			150mm	150mm

rev	date	description	PJC	NGC
P01	06/05/22	STAGE 3 SHD		
		A - Approved		
		B - Approved with comments		
		C - Do not use		

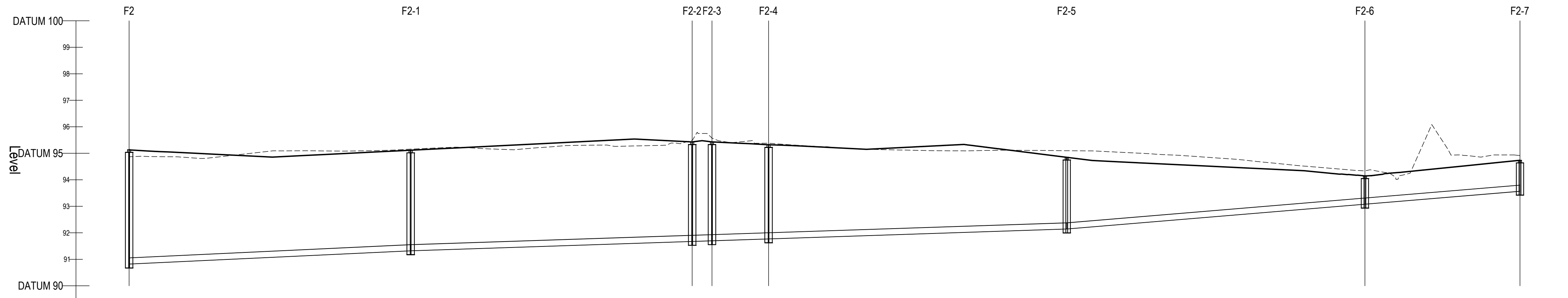
DBFL CONSULTING ENGINEERS
 Civil, Structural & Transportation Engineering
 www.dbfl.ie

DUBLIN OFFICE: Ormond House, Upper Ormond Quay, Dublin 7, D07 W704
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 WATERFORD OFFICE: Suite 10 The Atrium, Maritime Gate, Canada Street, Waterford, X91 WC28
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project ref.
NEWCASTLE SOUTH
 drawing title
FOUL SEWER LONGITUDINAL SECTIONS SHEET 1
 client
CAIRN HOMES PROPERTIES LTD

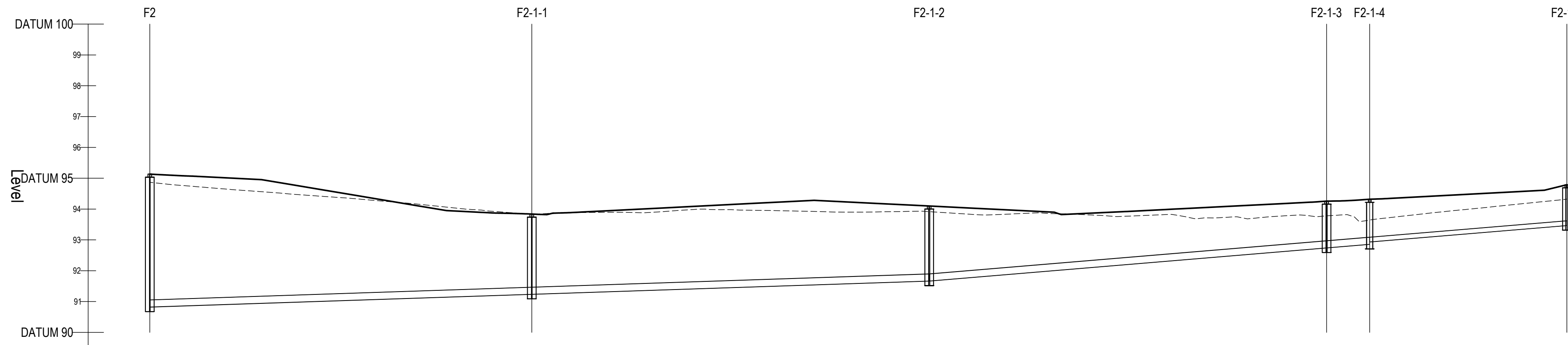
designed by	author	scale	sheet size
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drawing no.	revision		
210026-DBFL-CS-SP-DR-C-3205	P01		

SCALE: H 1:500,V 1:100. DATUM: 90.000



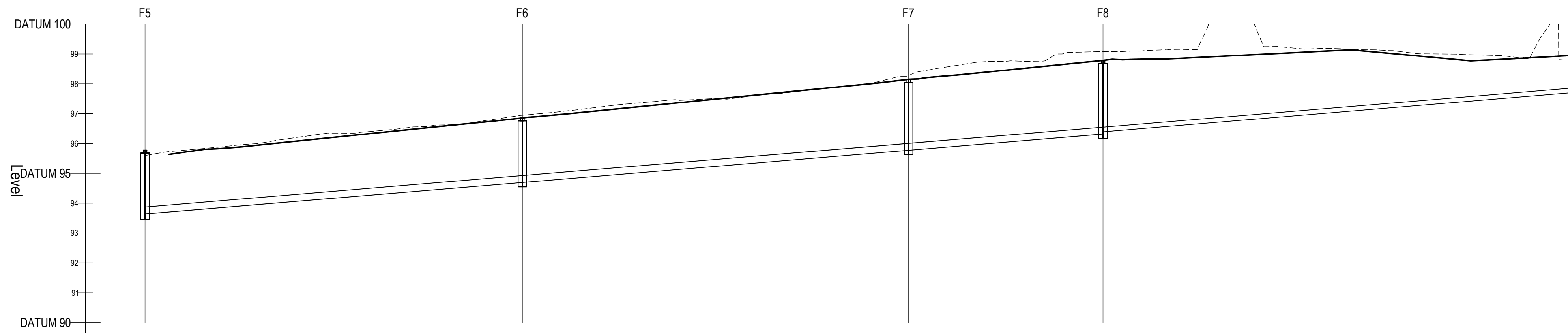
COVER LEVEL	95.13		95.116		95.429	95.429		94.849		94.148		94.737
INVERT LEVEL	90.824		91.323	91.323	91.677	91.701	91.701	92.147	92.147	93.083	93.083	93.570
DEPTH (m)	4.310		3.793		3.753	3.728		2.702		1.065		1.167
DISTANCE (m)		53.02		53.02	3.73	10.65		56.16		56.16		29.21
PIPE SLOPE		1:106		1:150	1:150	1:150		1:150		1:60		1:60
PIPE SIZE		225mm		225mm	225mm	225mm		225mm		225mm		225mm

SCALE: H 1:500,V 1:100. DATUM: 90.000

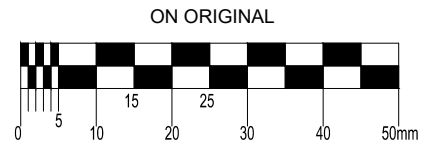


COVER LEVEL	95.133		93.837		94.059		94.258	94.320		94.788	
INVERT LEVEL	90.824		91.237	91.237	91.667	91.667	92.742	92.742	92.859	92.934	93.467
DEPTH (m)	4.310		2.600		2.432		1.516	1.481		1.321	
DISTANCE (m)		62.00		64.50		64.50		7.00	32.00		
PIPE SLOPE		1:150		1:150		1:60		1:60	1:60		
PIPE SIZE		225mm		225mm		225mm		225mm	150mm		

SCALE: H 1:500,V 1:100. DATUM: 90.000



COVER LEVEL	95.778		96.856		96.149		96.782		96.953
INVERT LEVEL	93.644		94.698	94.698	95.777	95.777	96.320	96.395	97.709
DEPTH (m)	2.133		2.158		2.372		2.462		1.244
DISTANCE (m)		63.25		64.75		32.58		78.89	
PIPE SLOPE		1:60		1:60		1:60		1:60	
PIPE SIZE		225mm		225mm		225mm		150mm	



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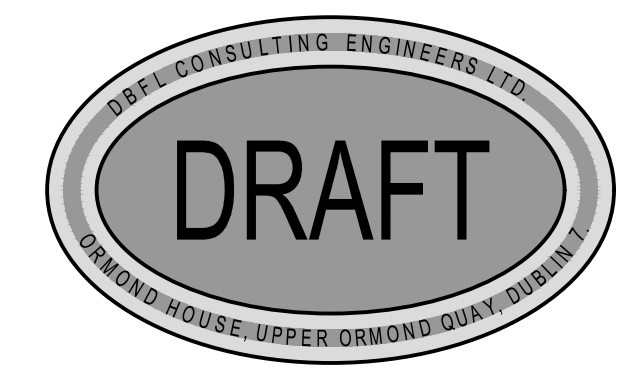
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7. WHERE COVER TO PIPE IS LESS THAN 1200mm (ROAD/PATH/VERGE) OR 900mm (OPEN SPACE) SURROUND PIPE IN MINIMUM 150mm CONCRETE

KEY

--- EXISTING GROUND PROFILE
 — PROPOSED GROUND PROFILE



P01	06/05/22	STAGE 3 SHD	PJC	NGC
rev	date	description	by	chkd.
		A - Approved		
		B - Approved with comments		
		C - Do not use		

suitability S2 - INFORMATION issue purpose PLANNING



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 PHONE +353 51 309 500

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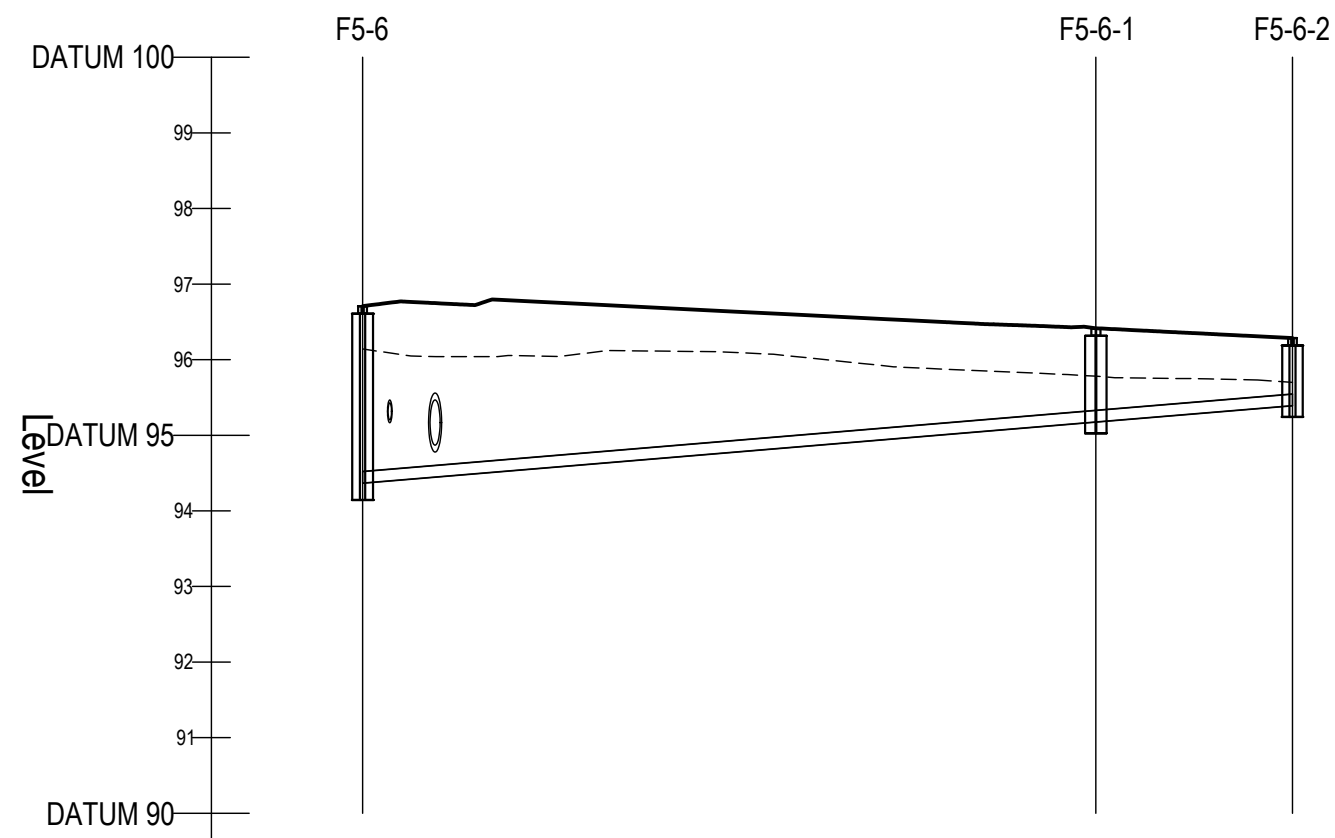
NEWCASTLE SOUTH

drawing title
 FOUL SEWER LONGITUDINAL SECTIONS SHEET 2

client
 CAIRN HOMES PROPERTIES LTD

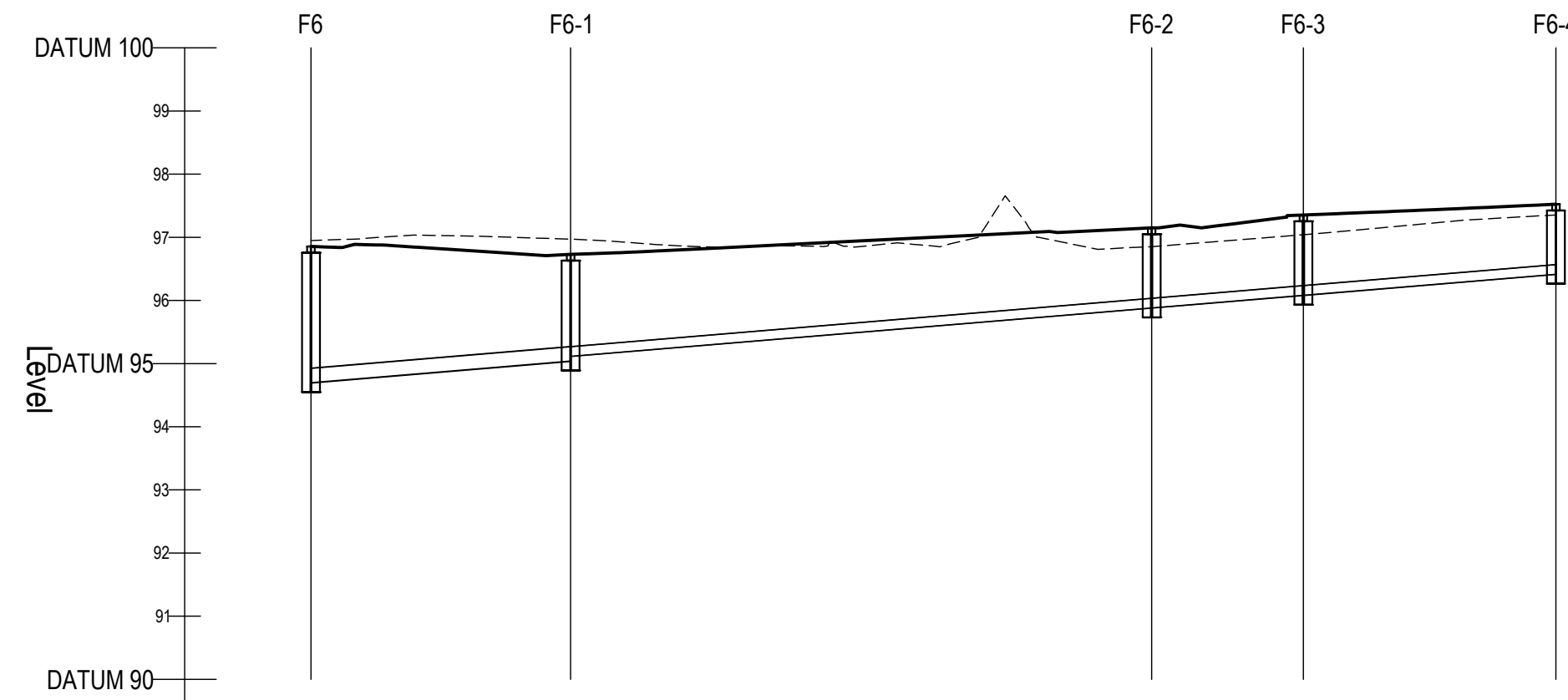
designed by	author	scale	sheet size
NGC	PJC	H: 1:500 V: 1:100	A1
drawing no.		revision	
210026-DBFL-CS-SP-DR-C-3206		P01	

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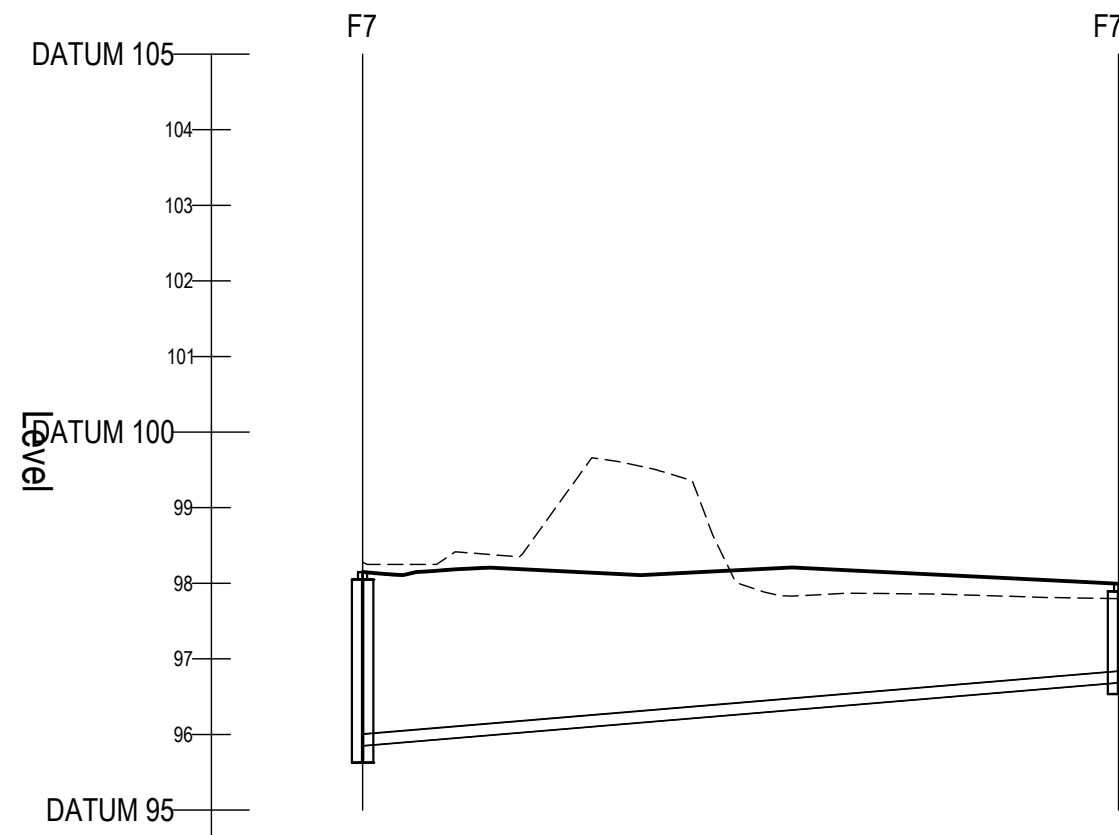
COVER LEVEL		96.706		96.416	96.206
INVERT LEVEL		94.386		95.177 95.177	95.383
DEPTH (m)		2.315		1.239	0.883
DISTANCE (m)			48.50	13.00	
PIPE SLOPE			1.60	1.60	
PIPE SIZE			150mm	150mm	

SCALE: H 1:500,V 1:100. DATUM: 90.000



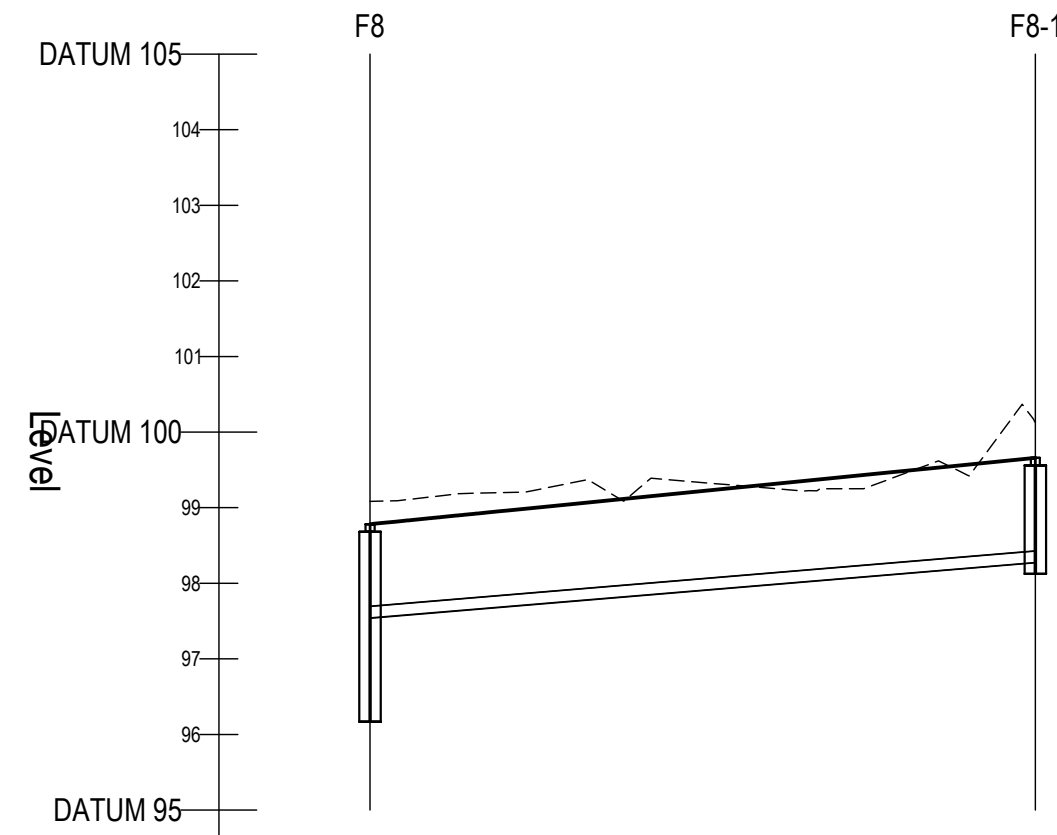
COVER LEVEL			96.656		97.151		97.383		97.524
INVERT LEVEL			94.688		95.041 95.116		96.082 96.082		96.415
DEPTH (m)			2.158		1.630		1.289		1.108
DISTANCE (m)				20.56	46.00		12.01	20.00	
PIPE SLOPE				1.60	1.60		1.60	1.60	
PIPE SIZE				225mm	150mm		150mm	150mm	

SCALE: H 1:500,V 1:100. DATUM: 95.000



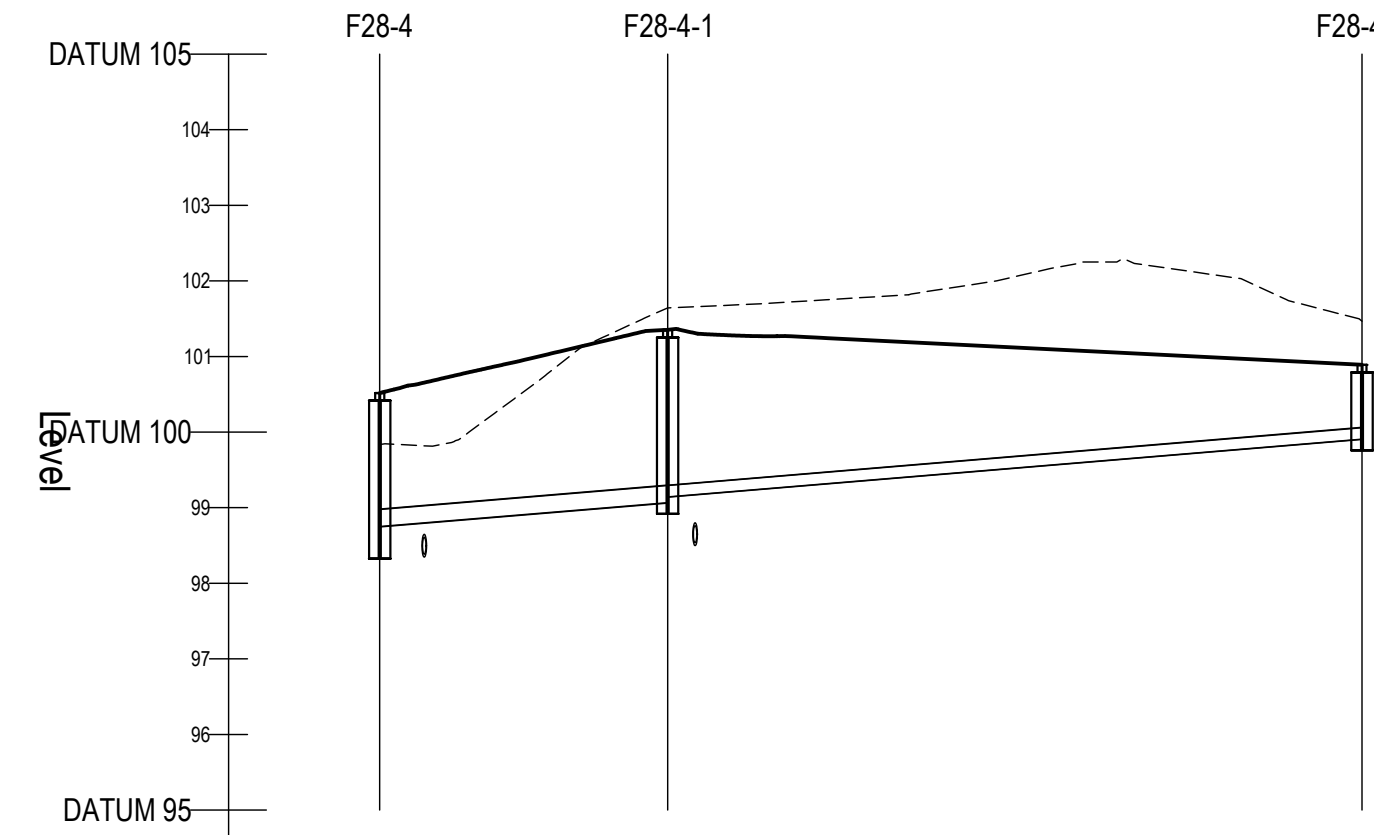
COVER LEVEL			96.149		97.994
INVERT LEVEL			95.652		96.655
DEPTH (m)			2.372		1.339
DISTANCE (m)				50.00	
PIPE SLOPE				1.60	
PIPE SIZE				150mm	

SCALE: H 1:500,V 1:100. DATUM: 95.000



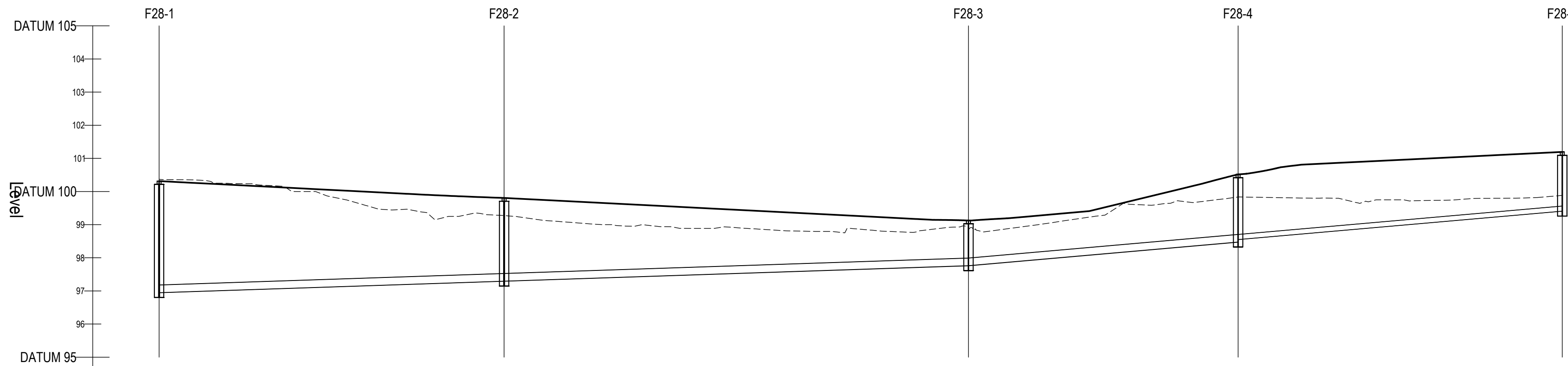
COVER LEVEL			96.782		96.659
INVERT LEVEL			97.542		98.275
DEPTH (m)			2.462		1.384
DISTANCE (m)				44.00	
PIPE SLOPE				1.60	
PIPE SIZE				150mm	

SCALE: H 1:500,V 1:100. DATUM: 95.000



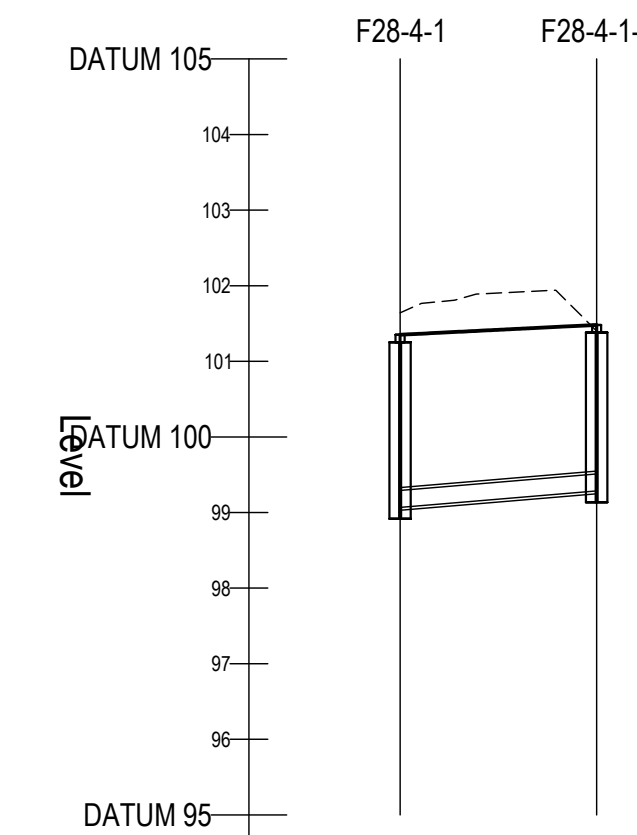
COVER LEVEL			100.516		101.352		100.890
INVERT LEVEL			98.751		99.098 98.143		99.908
DEPTH (m)			2.041		2.284		0.982
DISTANCE (m)				19.04	45.93		
PIPE SLOPE				1.60	1.60		
PIPE SIZE				225mm	150mm		

SCALE: H 1:500,V 1:100. DATUM: 95.000

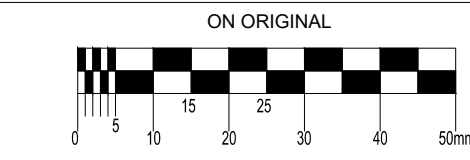


COVER LEVEL			100.314		99.126		100.516		101.194
INVERT LEVEL			96.960		97.783 97.783		98.475 98.551		99.409
DEPTH (m)			3.354		2.329		1.362		1.786
DISTANCE (m)				52.01	70.00		40.65	48.87	
PIPE SLOPE				1:150	1:150		1:57	1:57	
PIPE SIZE				225mm	225mm		225mm	150mm	

SCALE: H 1:500,V 1:100. DATUM: 95.000



COVER LEVEL			101.352		101.482
INVERT LEVEL			99.098		99.285
DEPTH (m)			2.284		2.197
DISTANCE (m)				13.00	
PIPE SLOPE				1.60	
PIPE SIZE				225mm	



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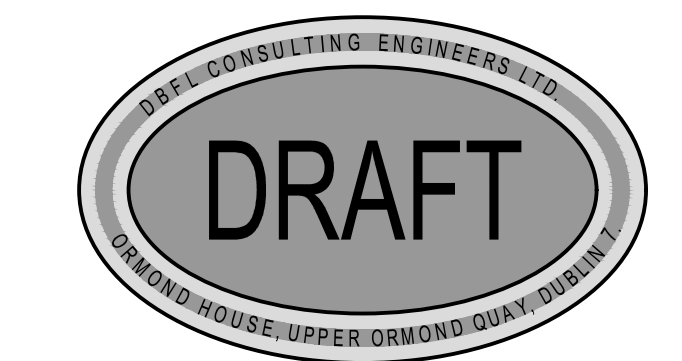
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KEY

- - - - - EXISTING GROUND PROFILE
- PROPOSED GROUND PROFILE



P01	06/05/22	STAGE 3 SHD	PJC	NGC
rev	date	description	by	chkd.
		A - Approved		
		B - Approved with comments		
		C - Do not use		

suitability S2 - INFORMATION issue purpose PLANNING



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project ref.

NEWCASTLE SOUTH

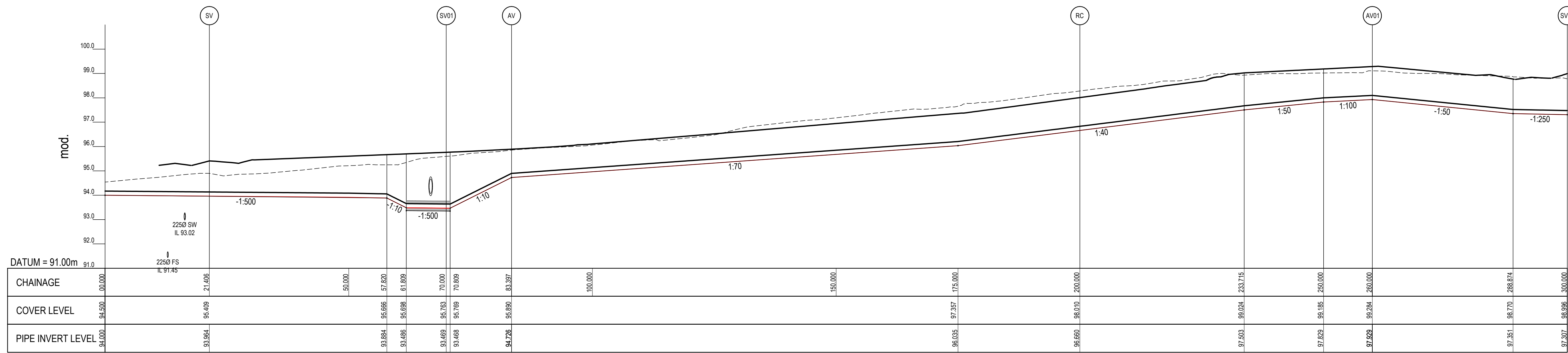
drawing title

FOUL SEWER LONGITUDINAL SECTIONS SHEET 3

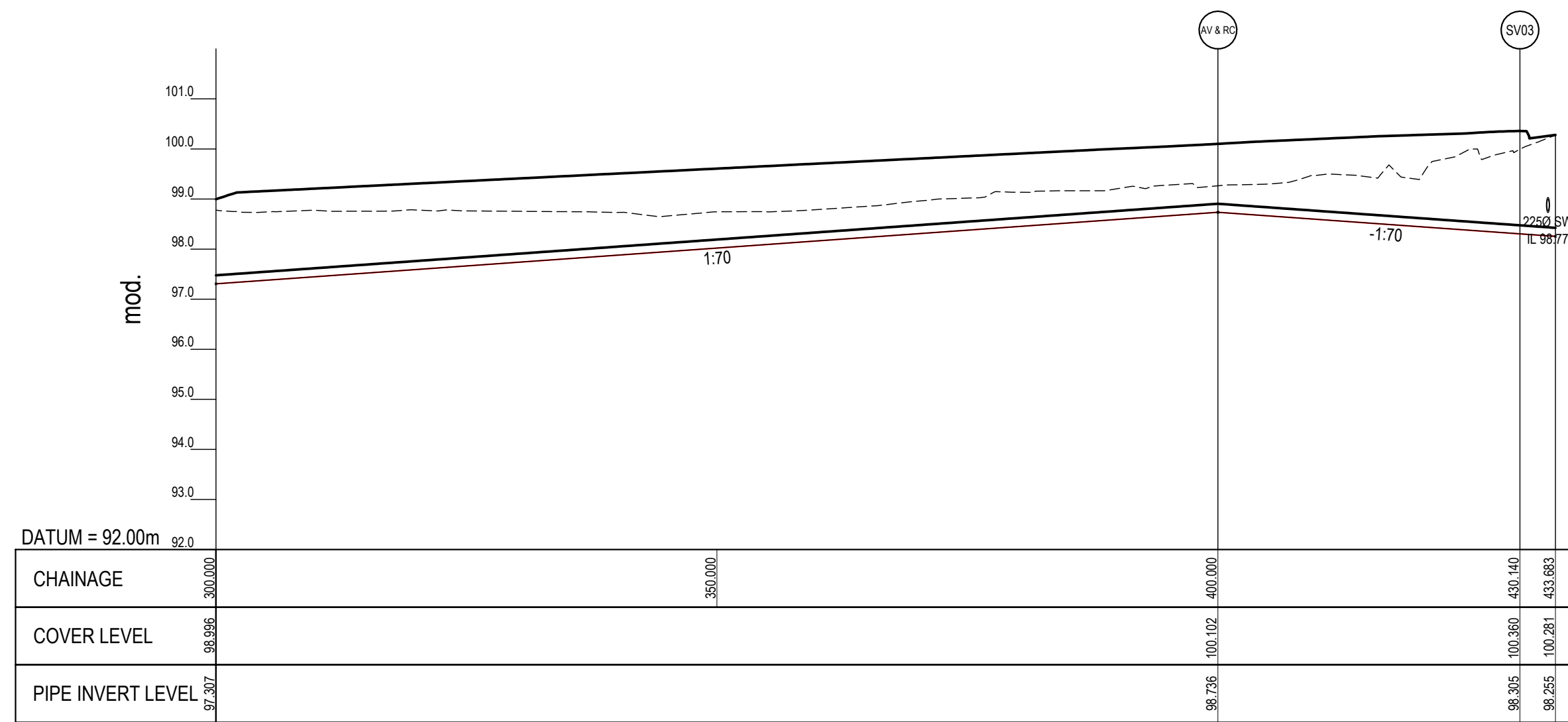
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CAIRN HOMES PROPERTIES LTD

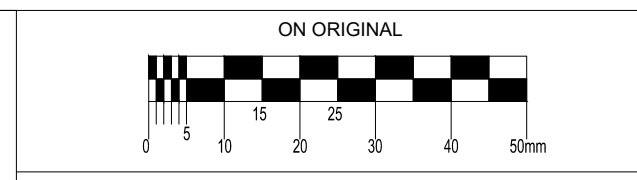
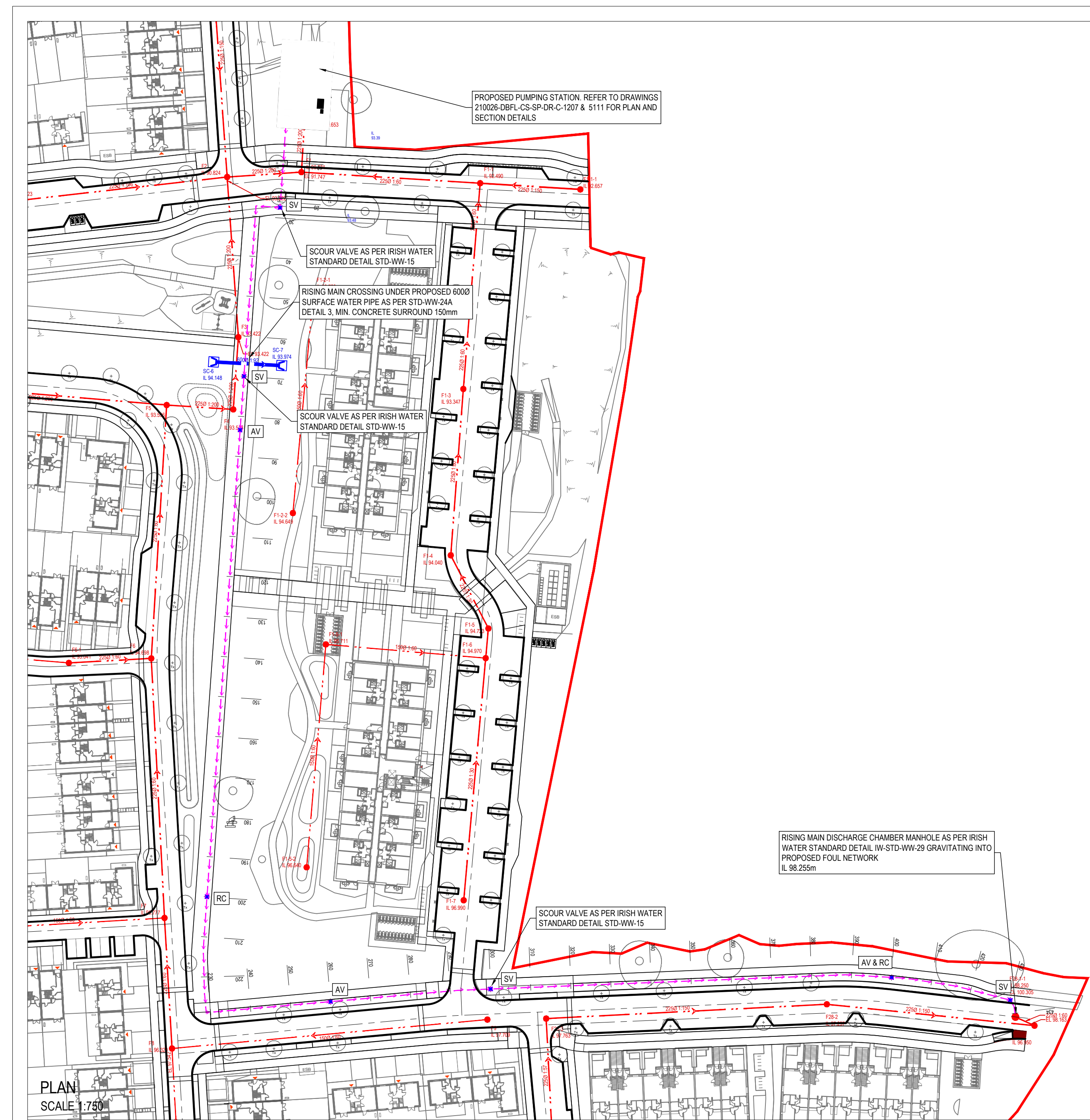
designed by	author	scale	sheet size
NGC	PJC	H: 1:500 V: 1:100	A1
drawing no.			revision
210026-DBFL-CS-SP-DR-C-3207			P01



Rising Main
Horizontal Scale = 1:500, Horizontal Scale = 1:100



Rising Main
Horizontal Scale = 1:500, Horizontal Scale = 1:100



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- LEGEND
- KEY
- EXISTING GROUND PROFILE
 - PROPOSED GROUND PROFILE
 - PROPOSED 150mm OD PE100 FOUL RISING MAIN
 - PROPOSED FOUL SEWER AND MANHOLE
 - RC: RISING MAIN RODDING CHAMBER AS PER IW-STD-35A
 - SV: SLUICE VALVE CHAMBER AS PER IW-STD-17
 - AV: SLUICE VALVE CHAMBER AS PER IW-STD-18

rev	date	description	PJC	NGG
P01	13/06/22	STAGE 3 SHD		
A-		Approved		
B-		Approved with comments		
C-		Do not use		

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drawing title
RISING MAIN LONGITUDINAL SECTIONS
client
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drawing no.	revision		
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