



NATEK PTY LTD

PROPOSED TWO STOREY DWELLING

12 BYKOOL AVENUE, KINGSGROVE



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THIS DRAWING SET IS NOT FOR CONSTRUCTION AND FOR THE PURPOSE OF OBTAINING PRICING FROM A BUILDER. THESE DRAWINGS MUST BE REDEVELOPED BY A REGISTERED ENGINEER PRIOR TO CONSTRUCTION COMMENCING.

REV	DATE	ISSUE / REVISION DESCRIPTION	TITLE	NAME	PROJECT PROPOSED TWO STOREY DWELLING 12 BYKOOL AVENUE,KINGSGROVE		 NATEK PTY LTD NATEK PTY LTD. (www.natek.com.au) PO Box G09 396 Canterbury Road, Canterbury NSW, 2193 Phone: 1300 061 841, Email: info@natek.com.au		CLIENT ELIAS	NATEK JOB No. PJ	DRAWING REF. No. S-000	REV P3
P1	26/09/25	PRELIMINARY ISSUE	DRAFTER	E.N								
P2	01/12/25	PRELIMINARY ISSUE	DESIGNER	P.E								
P3	19/01/26	PRELIMINARY ISSUE	DATE	19/01/26								
-	-	-	SCALE @ A3	N/A	COVER SHEET							
-	-	-	APPROVED BY: E.K ENGINEER – CIVIL MIEAust, EA Ref. 3405628, NSW CONTRACTOR LIC. 386412C, BEng, BSSIS, CPEng, RPEQ, NER APEC Engineer HP(E)Aust, CERT IV Building & Construction, CERT III Floor & Wall Tiling									
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CLIENT REFERENCE No.
2025-18

DESIGN SUMMARY:

CANTERBURY-BANKSTOWN COUNCIL:

TWO STOREY DWELLING DEVELOPMENT

SITE AREA	= 524.8 m ²
FIRST FLOOR ROOF AREA	= 272.1 m ²
TOTAL ROOF AREA	= 284.8 m

1:100 ARI 5MIN.	= 219 mm/hr
1:20 ARI 5MIN.	= 174 mm/hr

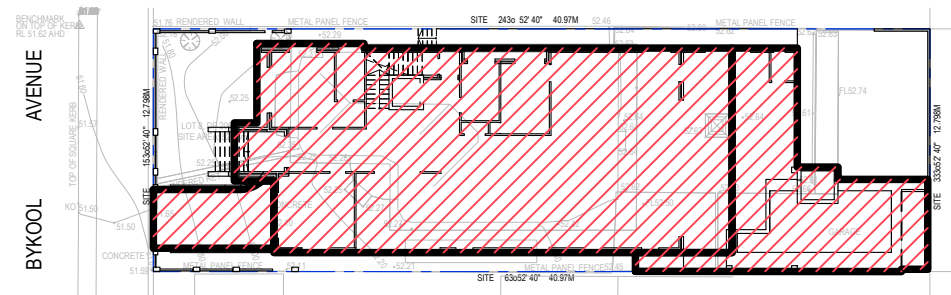
DOWNPIPE SIZE MIN. Ø90

ALL CHARGED LINES MUST BE OF PRESSURE GRADE AND JOINTS ARE TO BE SOLVENT WELDED

THE PIPE SYSTEM INCLUDING DOWNPIPES MUST BE CONSTRUCTED FROM SUITABLY DURABLE MATERIALS.

SEALED CLEANING EYES ARE TO BE PROVIDED AT LOWEST POINTS IN THE SYSTEM AND AT FRONT BOUNDARY PRIOR TO COUNCIL LAND AND SHOULD BE EASE TO ACCESS.

ALL SURFACE PIT SHALL BE CAST-IN-SITU OR PRECAST CONCRETE PIT.



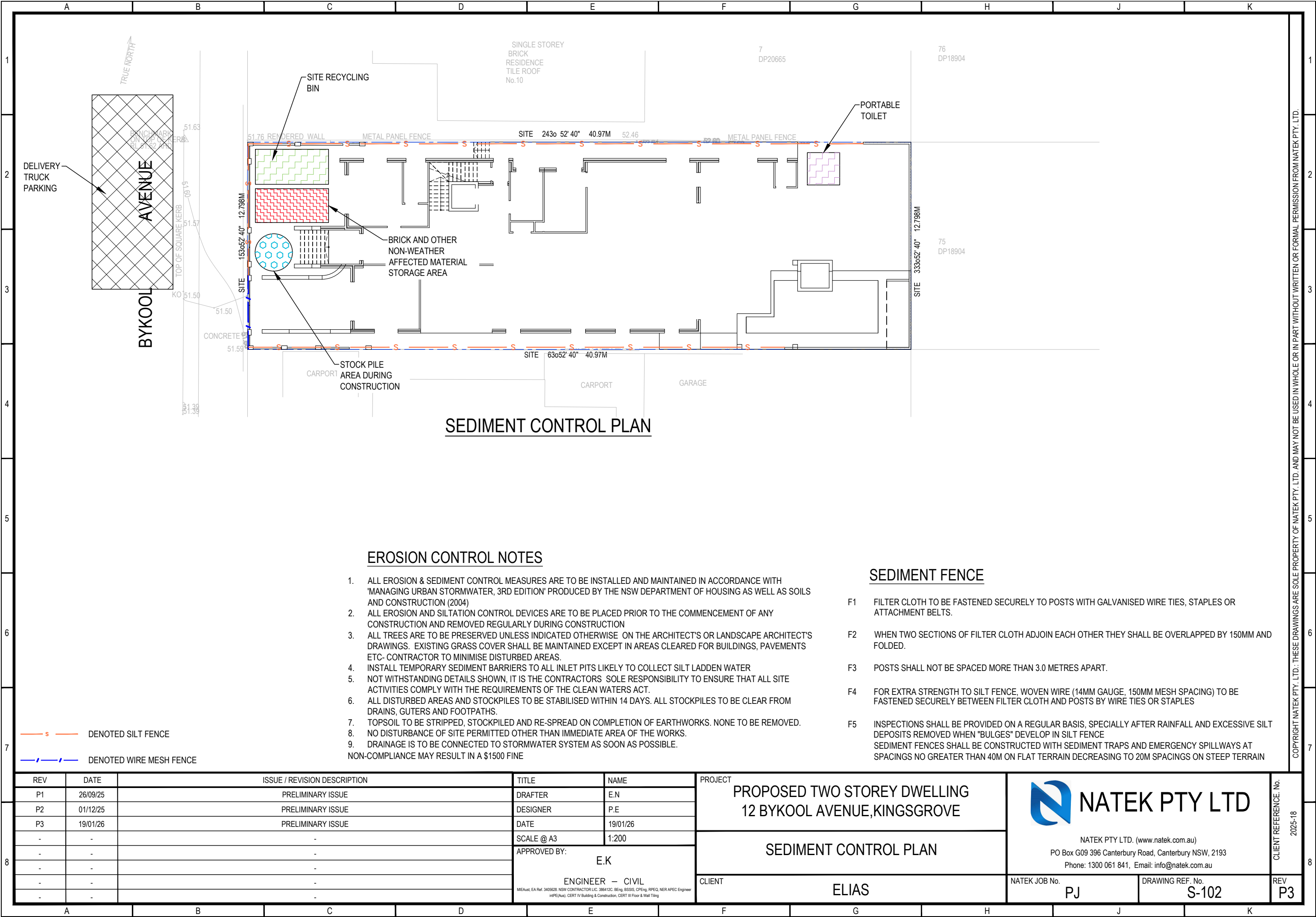
SCALE: 1 IN 400

SITE AREA	= 524.8 m ²
IMPERVIOUS AREA	= 372.5 m ² (71.0%)
PERVIOUS AREA	= 152.3 m ² (29.0%)

HENCE NO OSD IS REQUIRED AS IT IS NOT OVER 75%
REFER TO CANTERBURY-BANKSTOWN DCP 2023, CHAPTER 3.1 - DEVELOPMENT
ENGINEERING STANDARDS, SECTION 4 - ON-SITE DETENTION SYSTEMS.

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P2	01/12/25	PRELIMINARY ISSUE	DESIGNER	P.E						
P3	19/01/26	PRELIMINARY ISSUE	DATE	19/01/26						
-	-	-	SCALE @ A3	1:200	DRAINAGE PLAN		NATEK JOB No. PJ		DRAWING REF. No. S-101	REV P3
-	-	-	APPROVED BY: E.K ENGINEER – CIVIL MIE(Aust, EA Ref. 3405628, NSW CONTRACTOR LIC. 3864130, SEEng, BSSIS, CPDeng, RPEQ, NER APEC Engineer and PE(Aust), CERT IV Building & Construction, CERT III Floor & Wall Tiling							
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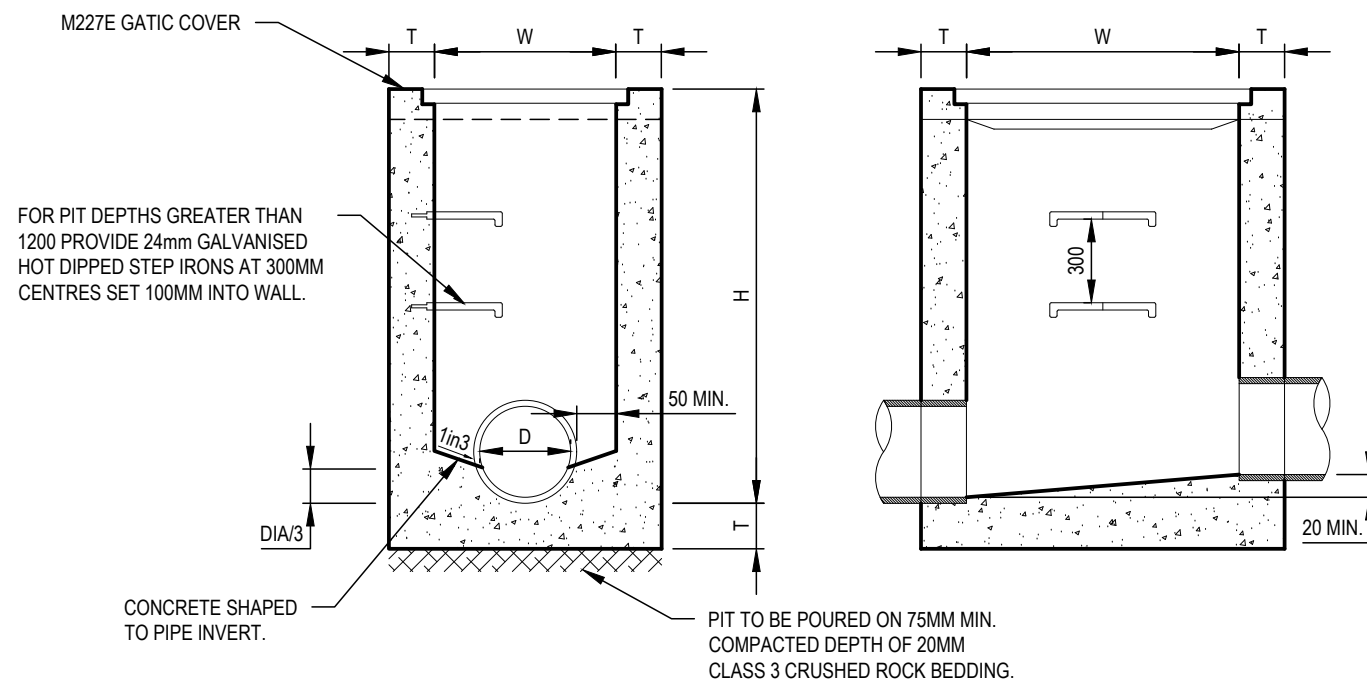




COVER TYPE U.N.O	
LOCATION OF PIT	COVER TYPE
EASEMENT (NO VEHICLE TRAFFIC)	LIGHT DUTY GATIC OR GRATE
NATURE STRIP (NO VEHICLE TRAFFIC)	LIGHT DUTY GATIC OR GRATE
R.O.W.	MEDIUM DUTY GATIC OR GRATE
ROAD PAVEMENT (MINOR ROADS)	MEDIUM DUTY GATIC OR GRATE
ROAD PAVEMENT (MAIN ROADS)	HEAVY DUTY GATIC

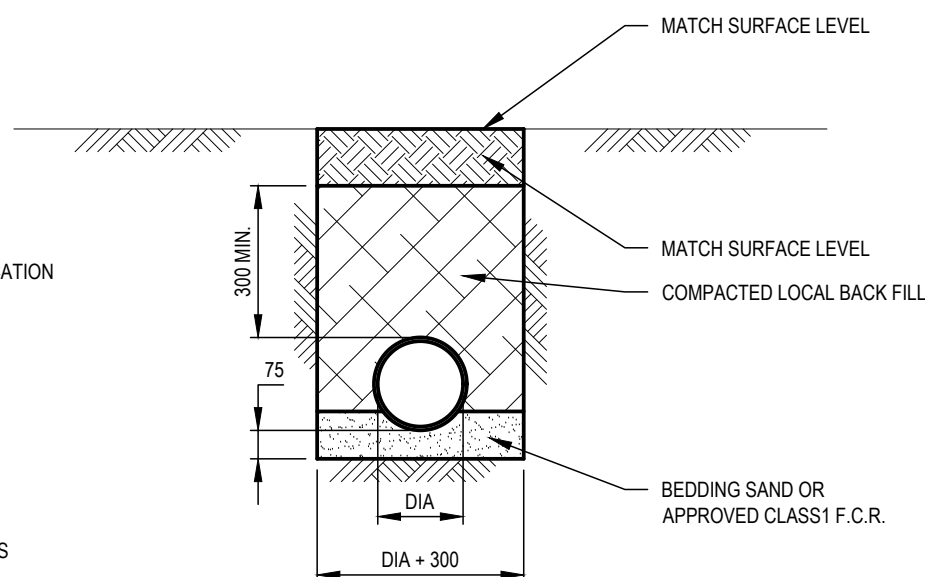
-
- CLASS A LID REFER TO MANUFACTURER'S SPECIFICATION
- PROPRIETARY POLY PIT OR EQUIVALENT PVC PIT PLUMBER TO SELECT THE APPROPRIATE SIZE AND DEPTH OF PIT REFER TO MANUFACTURER'S SPECIFICATIONS
- FLOW
- 200mm
SILT TRAP

PIT WITH SILT TRAP DETAIL FOR
NON-TRAFFICABLE AREAS (IF REQUIRED)



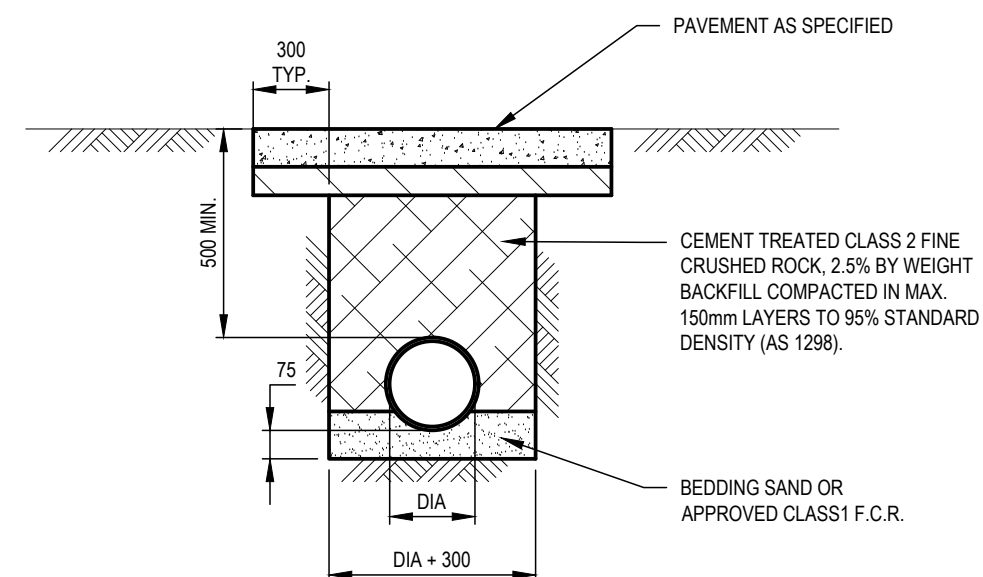
SECTION A-A

SECTION B-B



PIPE BEDDING DETAIL
UNDER LANDSCAPE/NATURE STRIPS

SCALE- 1:20



PIPE BEDDING DETAIL UNDER HEAVY DUTY PAVEMENTS

SCALE- 1:20

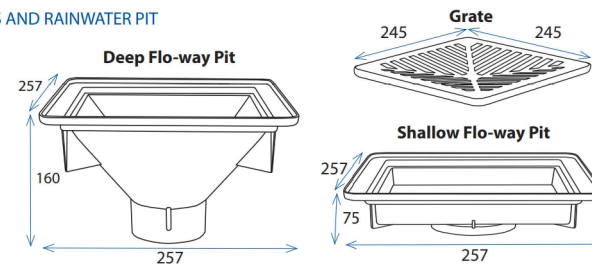
1. CLASS 1 FCR TO BE COMPACTED IN MAX. 150mm LAYERS TO A 95% AUSTRALIAN STANDARD COMPACTION.
2. TRENCHES DEEPER THAN 1.5M ARE TO BE SHORED IN ACCORDANCE WITH THE MINES (TRENCHES) REGULATIONS 1982 AND THE OCCUPATIONAL HEALTH & SAFETY ACT CODE OF PRACTICE FOR SAFETY PRECAUTIONS IN TRENCHING OPERATIONS 1988.

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P3	19/01/26	PRELIMINARY ISSUE	DATE	19/01/26				
-	-	-	SCALE @ A3	N.T.S	DRAINAGE DETAILS - SHEET 1	NATEK JOB No. PJ	DRAWING REF. No. S-200	REV P3
-	-	-	APPROVED BY: E.K					
-	-	-	ENGINEER — CIVIL					
-	-	-	MIEAust, EA Ref. 3405628, NSW CONTRACTOR LIC. 386412C, B.Eng, BSSIS, CP.Eng, RPEQ, NER APEC Engineer inPE(Aus), CERT IV Building & Construction, CERT III Floor & Wall Tiling					
-	-	-			CLIENT	ELIAS		

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EasyDRAIN™ SHALLOW & DEEP FLO-WAY™ PITS & GRATES AND RAINWATER PIT

- Innovative, yet simple approach to solving your drainage problems
- Flo-way Pits are available in two sizes - 75mm shallow and 160mm deep.
- Flo-way Pits suit 90mm or 100mm PVC Pipe.
- Square trap design funnels rainwater direct into a connected stormwater pipe.
- Complete units with grates in black, grey sandstone and terracotta polymer as well as aluminium and EURODESIGN 316 Stainless Steel.



150Ø UPVC SEALED I.O.

100Ø OR 150Ø UPVC S.W. DRAIN

200mm WIDE ACO POLY CRETE CLASS D/F

SURFACE OF GRATING TO BE 3mm BELOW SURROUND

EXPANSION JOINT TO MANUFACTURER'S DETAIL

CEMENT CONCRETE SLAB

SOIL

MIN. GRADE C25 BED AND HAUNCH

150

100-150

100-150

150

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P1	26/09/25	PRELIMINARY ISSUE	DRAFTER	E.N	PROPOSED TWO STOREY DWELLING 12 BYKOOL AVENUE,KINGSGROVE			
P2	01/12/25	PRELIMINARY ISSUE	DESIGNER	P.E				
P3	19/01/26	PRELIMINARY ISSUE	DATE	19/01/26				
-	-	-	SCALE @ A3	N.T.S	DRAINAGE DETAILS - SHEET 2			
-	-	-	APPROVED BY: E.K					
-	-	-	ENGINEER — CIVIL					
-	-	-	MIEAust, EA Ref. 3405626, NSW CONTRACTOR LIC. 386412C, BEng, BSSIS, CPEng, RPEQ, NER APEC Engineer hP(E)(Aus), CERT IV Building & Construction, CERT III Floor & Wall Tiling					
-	-	-			CLIENT	ELIAS		



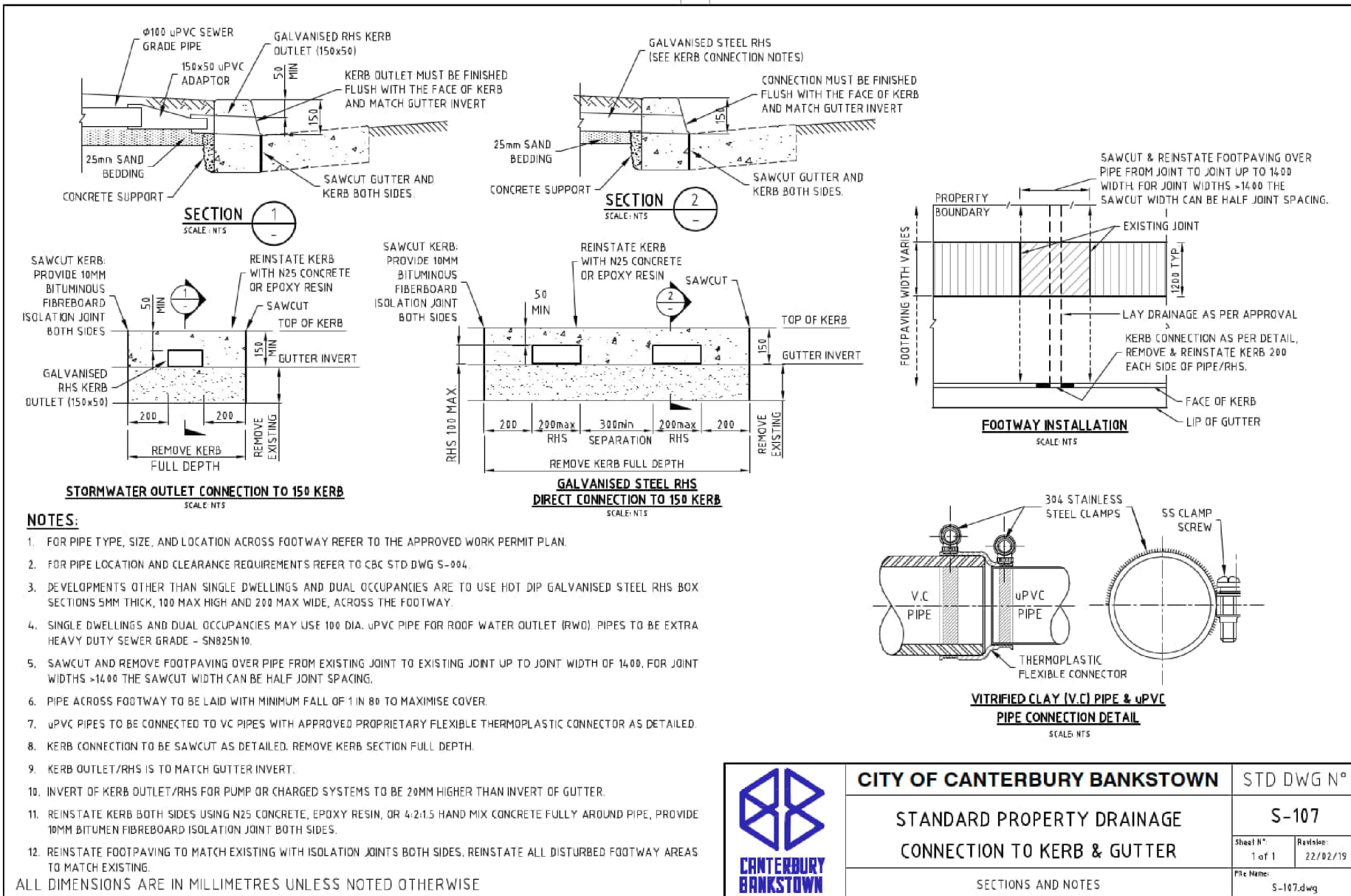
NOTE:

1. CONCRETE TO BE 32 MPa
2. PROVIDE EXPANSION JOINTS AT 12.0M CTS. WITH 12MM DIA. BARS 400MM LENGTH AT 300MM SPACING. PLACE TUBING OVER ONE END INSERTED INTO CONCRETE TO PROVIDE SUPPORT.
3. PROVIDE 0.25mmX DEPTH SAW CUT JOINTS AT 3.0M CTS. SAW CUTS TO BE UNDERTAKEN WITHIN 24 HRS.

NOTE: WHEN PAVEMENT MOVES BEYOND SERVICABILITY
LEVEL - REMOVE ALTERNATE PANELS AND RE-POUR

PAVEMENT INFILL SLAB
100 FLEXIBLE PAVEMENT ON GROUND SL82
FABRIC TOP 25 COVER 50 PACKING SAND
ON WELL COMPACTED SUB GRADE TO 98%
MMDD OR BETTER.

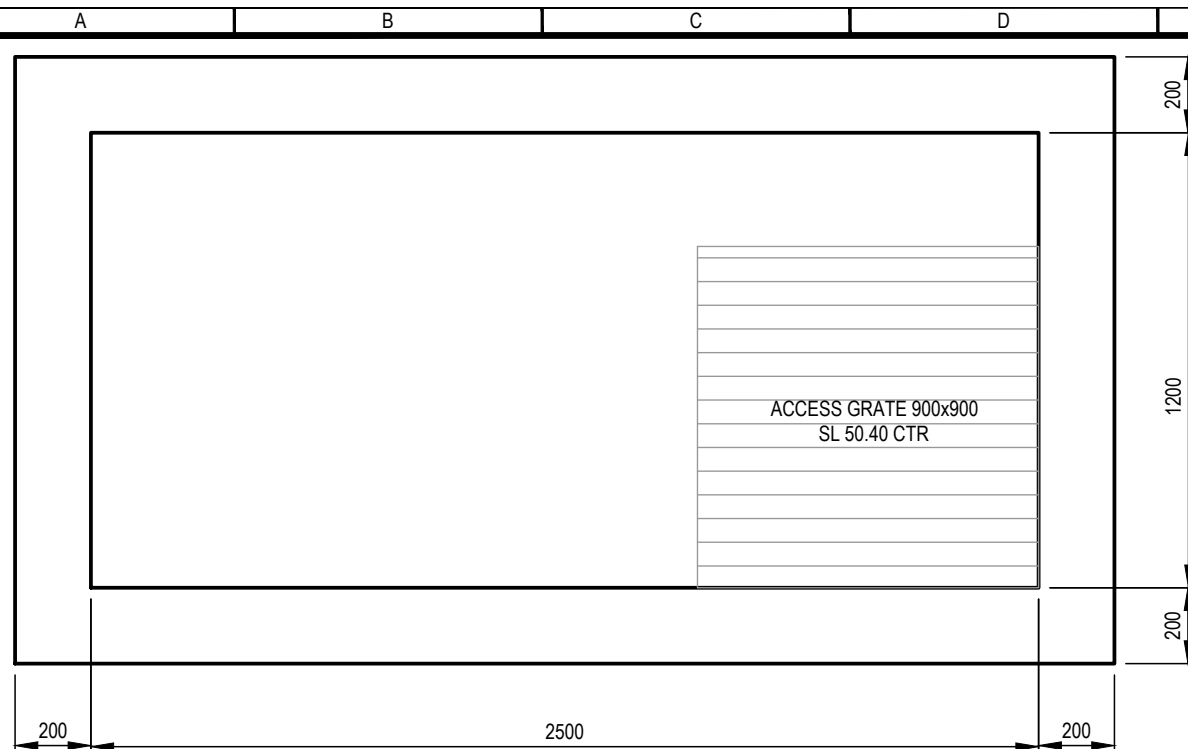
NOTE: WHEN PAVEMENT MOVES BEYOND SERVICABILITY
LEVEL - REMOVE ALTERNATE PANELS AND RE-POUR



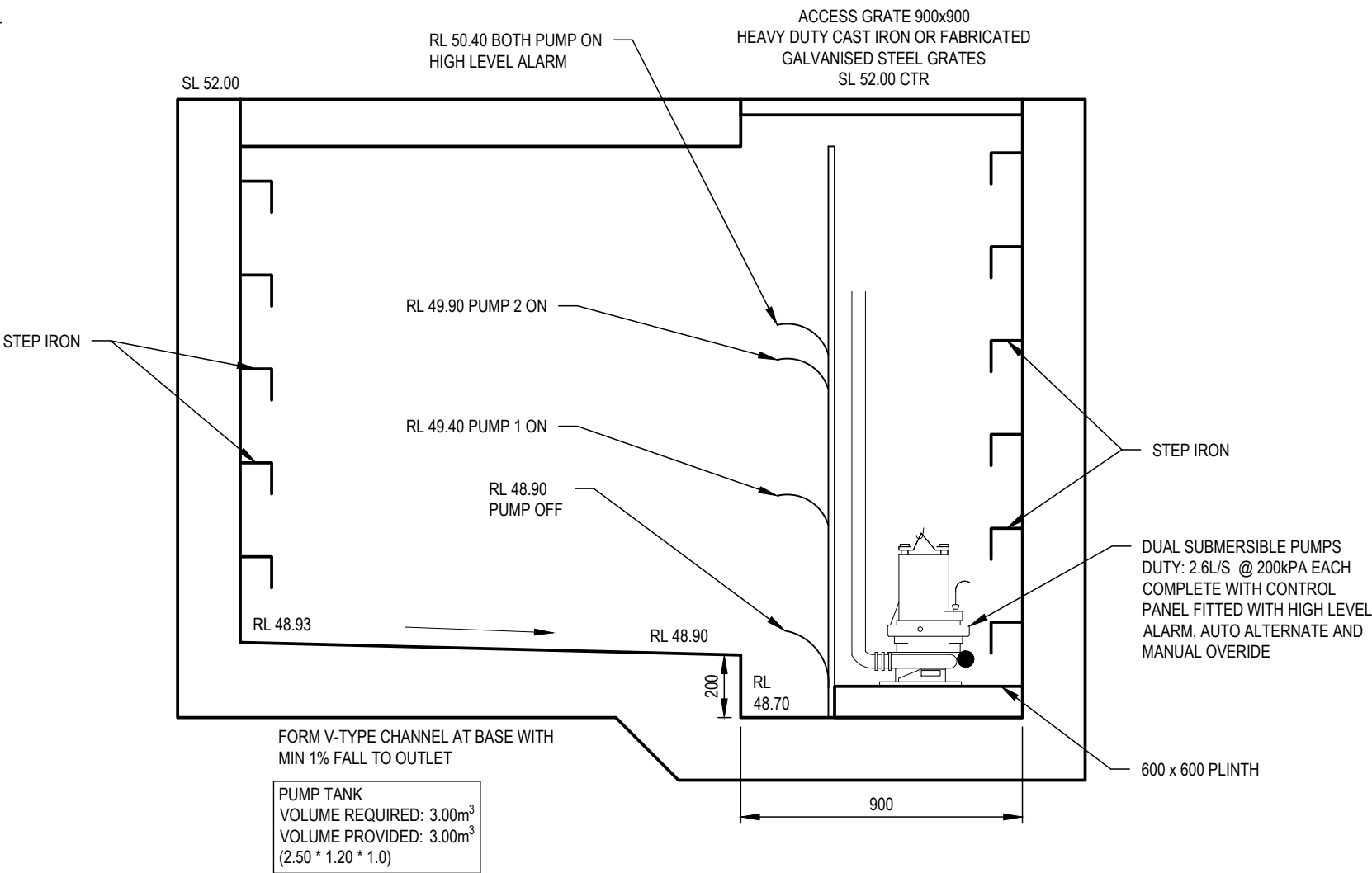
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-	-	-	APPROVED BY: E.K ENGINEER – CIVIL MIEAust, EA Ref: 3405928, NSW CONTRACTOR LIC: 386412C, BEng, BSSIS, CPEng, RPEQ, NER APEC Engineer #PE/Aust, CERT IV Building & Construction, CERT III Floor & Wall Tiling	
-	-	-		
-	-	-		
-	-	-		
-	-	-		

PROJECT	PROPOSED TWO STOREY DWELLING 12 BYKOOL AVENUE, KINGS GROVE
DRAINAGE DETAILS - SHEET 3	
CLIENT	ELIAS

 NATEK PTY LTD NATEK PTY LTD. (www.natek.com.au) PO Box G09 396 Canterbury Road, Canterbury NSW, 2193 Phone: 1300 061 841, Email: info@natek.com.au		CLIENT REFERENCE No. 2025-18
NATEK JOB No. PJ	DRAWING REF. No. S-202	REV P3

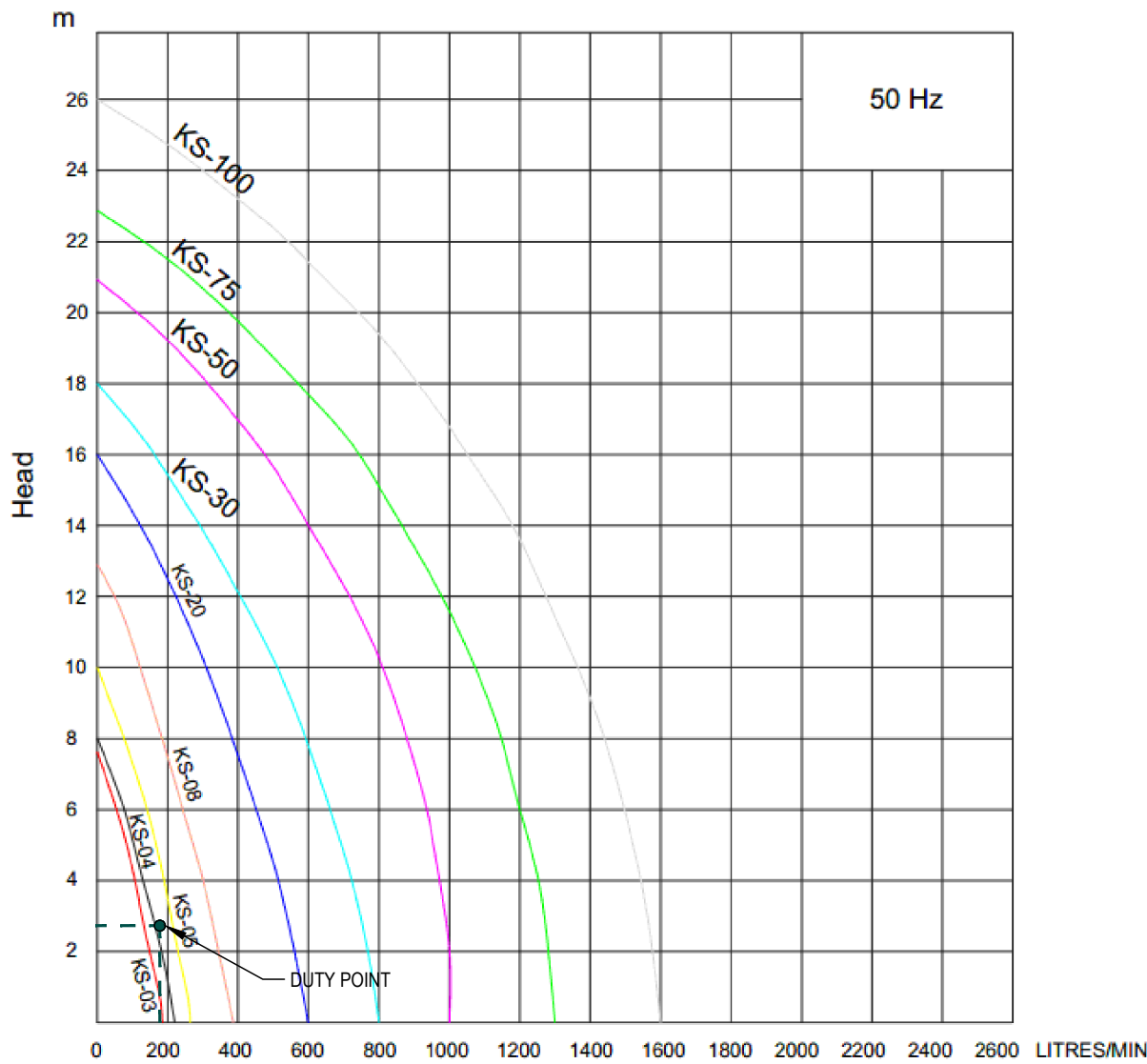


PUMP TANK CALCULATION:	
DRIVEWAY AREA TO PUMP =	37.0 m ² (DRIVEWAY)
BASEMENT AREA TO PUMP =	39.2 m ²
(20% OF BASEMENT WALL 70m PERIMETER x 2.8m HEIGHT)	
CATCHMENT AREA TO PUMP =	76.2 m ²
INTENSITY 20YEAR ARI 2 HOURS =	32.3 mm/h
CO-EFFICIENT =	1.00
FLOW OF CATCHMENT =	0.68 L/s
VOLUME OVER 2 HOURS =	4.90 m ³
PUMP OUT PER SECOND =	2.6 L/s
(DUAL SUBMERSIBLE PUMPS DUTY: 2.6L/S @ EACH)	
VOLUME PUMP OUT IN 0.5 HOURS	4.68 m ³
(ASSUMING ONE PUMP FAILURE)	
WET WELL STORAGE =	3.00 m ³
REQUIRED VOLUME =	3.00 m ³
PROVIDED VOLUME =	3.00 m ³
PUMP SELECTION:	
PUMP-OUT RATE PROVIDED =	2.6L/s = 156L/min
HEAD =	2.63m
PROVIDE TWO AUTO SUBMERSIBLE PUMP KS-05 APPROVED	
EQUIVALENT OPERATING ALTERNATIVE AND PUMPING 156L/min	



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-	-	-	SCALE @ A3	N.T.S	DRAINAGE DETAILS - SHEET 4					
-	-	-	APPROVED BY: E.K							
-	-	-								
-	-	-	ENGINEER – CIVIL		CLIENT	ELIAS	NATEK JOB No. PJ		DRAWING REF. No. S-203	REV P3
-	-	-	MIE(Aust, EA Ref. 3405628, NSW CONTRACTOR LIC. 3864130, BEng, BSSB, CPENG, RPEQ, NER APEC Engineer							
-	-	-	w/PE(Aust), CERT IV Building & Construction, CERT III Floor & Wall Tiling							

MODEL NO.	OUTPUT		DISCHARGE		RATED		MAXIMUM		WEIGHT	DIMENSION
	HP	kW	mm	INCH	HEAD m	CAPACITY LPM	HEAD m	CAPACITY LPM		
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188 X 141 X 305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208 X 140 X 359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230 X 156 X 375
KS-10	1	0.75	50 (80)	2"(3")	6	240	13	380	21	290 X 180 X 425
KS-20	2	1.5	80	3"	10	300	16	600	31	278 X 182 X 475
KS-30	3	2.2	80	3"	10	500	18	800	42	390 X 250 X 450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450 X 240 X 530
KS-75	7.5	5.6	100	4"	15	800	23	1300	60	550 X 310 X 590
KS-100	10	7.5	150	6"	18	900	26	1600	70	550 X 310 X 610



Label: Kingsgrove
Latitude: -33.9422 [Nearest grid cell: 33.9 375 (S)]
Longitude: 151.1015 [Nearest grid cell: 151. 1125 (E)]



IFD Design Rainfall Intensity (mm/h)

Issued: 17 March 2025

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).

[FAQ for New ARR probability terminology](#)

Duration	Annual Exceedance Probability (AEP)						
	63.2%	50%#	20%*	10%	5%	2%	1%
1 min	139	154	199	229	258	296	324
2 min	116	127	161	184	206	236	259
3 min	107	117	150	171	193	221	242
4 min	100	110	142	163	183	210	230
5 min	94.7	104	135	155	174	200	219
10 min	74.6	82.7	108	124	140	160	176
15 min	62.0	68.8	89.5	103	116	133	146
20 min	53.4	59.2	77.0	88.7	100.0	115	125
25 min	47.1	52.2	67.7	78.1	87.9	101	110
30 min	42.3	46.8	60.7	69.9	78.8	90.3	98.9
45 min	33.0	36.4	47.0	54.1	60.9	69.9	76.6
1 hour	27.5	30.3	38.9	44.8	50.5	58.0	63.6
1.5 hour	21.1	23.2	29.9	34.4	38.8	44.6	49.1
2 hour	17.5	19.3	24.8	28.6	32.3	37.3	41.1
3 hour	13.6	14.9	19.3	22.3	25.3	29.3	32.4
4.5 hour	10.6	11.7	15.2	17.6	20.1	23.4	26.0
6 hour	8.89	9.84	12.9	15.0	17.2	20.1	22.4
9 hour	7.00	7.80	10.4	12.2	14.0	16.5	18.5
12 hour	5.92	6.63	8.92	10.5	12.2	14.4	16.1

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-	-	-										
-	-	-										
-	-	-			ELIAS		PJ	S-204	P3			