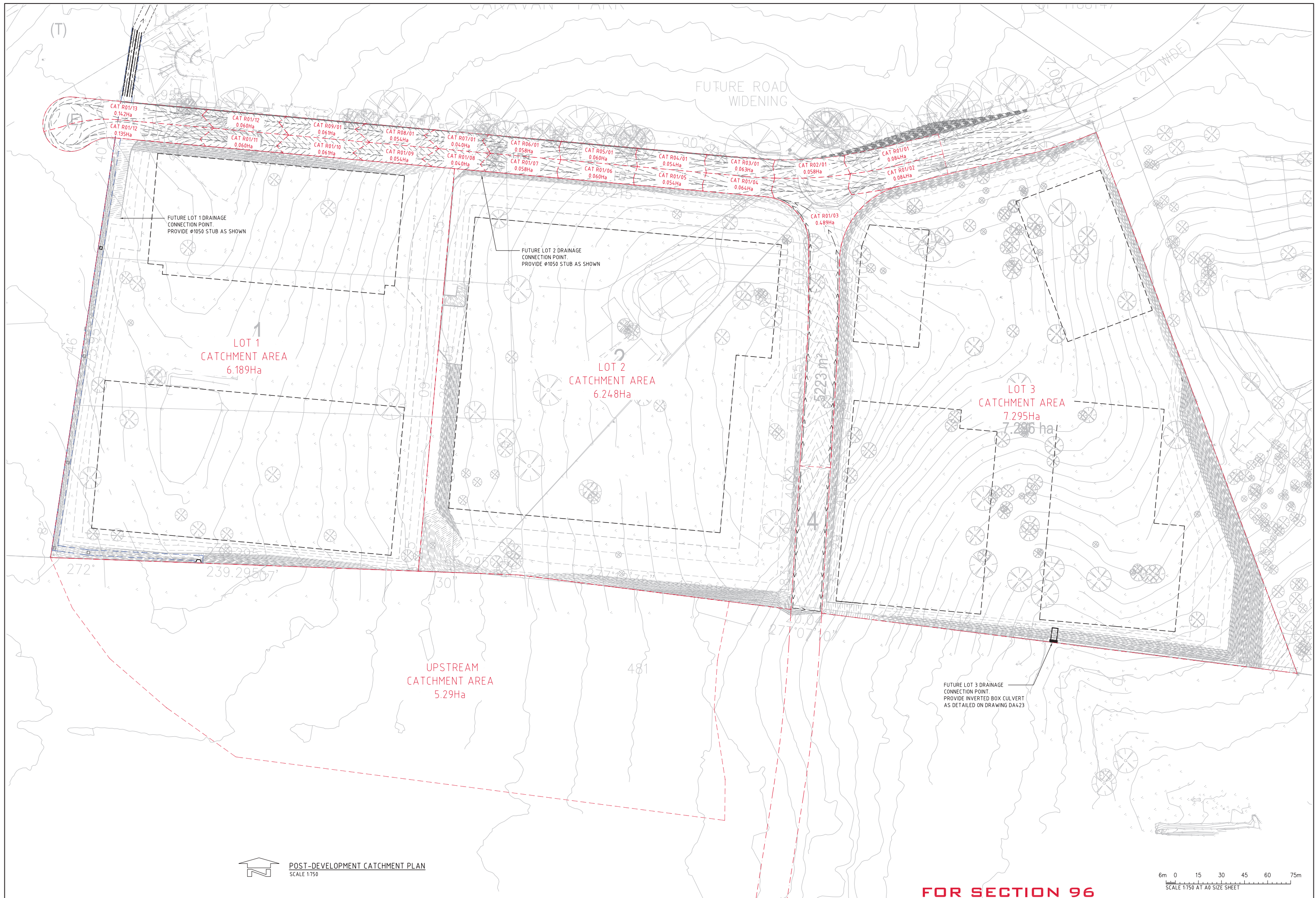


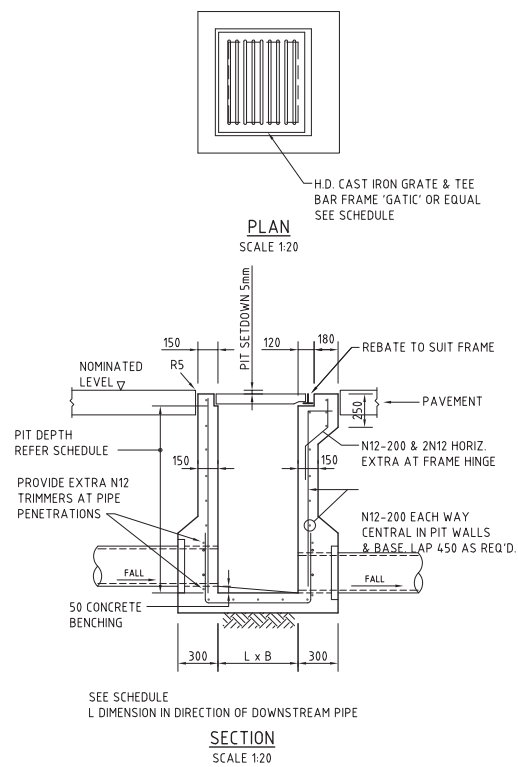


POST-DEVELOPMENT CATCHMENT PLAN
SCALE 1:750

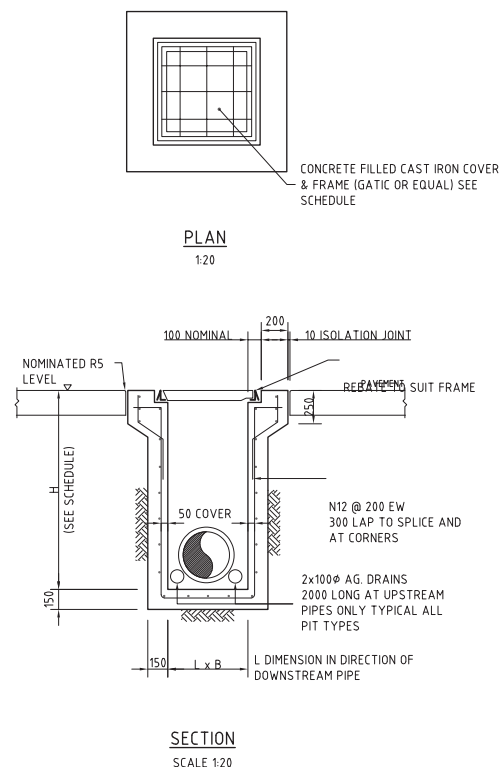
6m 0 15 30 45 60 75m
SCALE 1:750 AT A0 SIZE SHEET

FOR SECTION 96

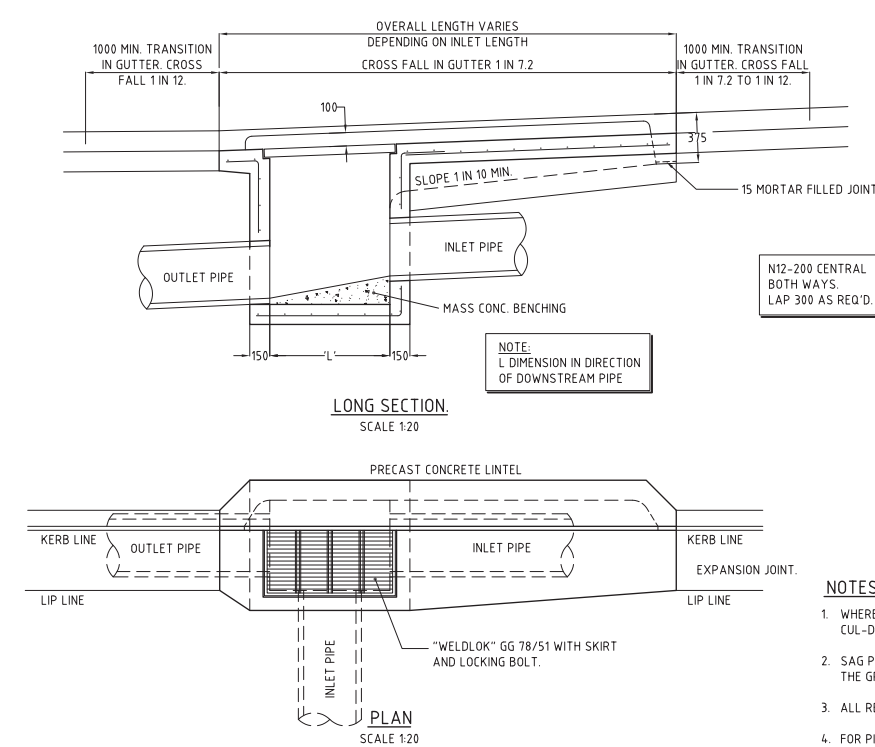
ISSUED FOR SECTION 96 APPLICATION 22.11.17 C				ARCHITECT [watch this SPACE design]				CLIENT LOGOS				PROJECT INFRASTRUCTURE PACKAGE EARTHWORKS & WALLS HOLLINGSWORTH ROAD MARSDEN PARK NSW				Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Windmill Street Wahbi Bay, Sydney NSW 2000 Tel: (02) 8551-7889 Fax: (02) 8541-3721 email: mail@costinroe.com.au				DRAWING TITLE POST-DEVELOPMENT DRAINS CATCHMENT PLAN			
ISSUED FOR INFORMATION ONLY 22.06.17 A				AMENDMENTS				DESIGNED MW				DRAWING No 12829.06-DA442				PRECISION COMMUNICATION ACCOUNTABILITY				ISSUE C			
AMENDMENTS				DATE				DATE				SCALE AS SHOWN				CADD REF C012829.06-DA42				DRAWING No 12829.06-DA442			
DATE				ISSUE				DATE				SCALE AS SHOWN				CADD REF C012829.06-DA42				DRAWING No 12829.06-DA442			



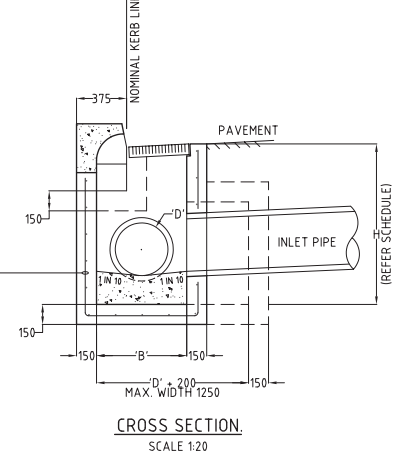
SINGLE GRATED GULLY PIT - SGGP



SEALED JUNCTION PIT - SJP



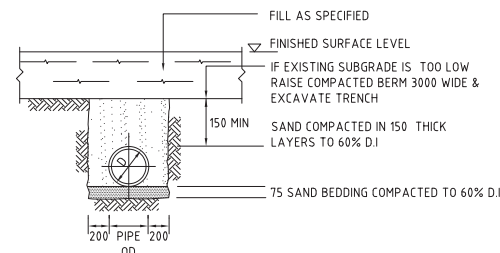
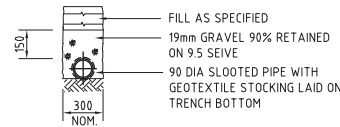
KERB INLET PIT - KIP



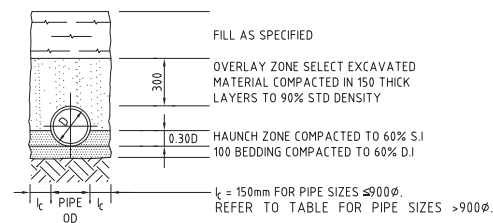
NOTES:

- WHERE GULLY PIT IS LOCATED ON KERB RETURNS OR BULB OF CUL-DE-SACS PROVIDE CURVED PRECAST CONCRETE LINTELS.
- SAG PITS SHALL HAVE LINTEL PLACED CENTRALLY ABOUT THE GRATE.
- ALL REINFORCING TO HAVE 30 MIN. CLAR CONCRETE COVER.
- FOR PITS DEEPER THAN 1200mm CLIMB RAILS SHALL BE PROVIDED.

CONCRETE QUALITY				
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE
PIT	80	20	GP	NIL



SUPPORT TO uPVC PIPES



TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

D ≤ 1350, MAX FILL = 4.0m
D > 1350, MAX FILL = 3.0m

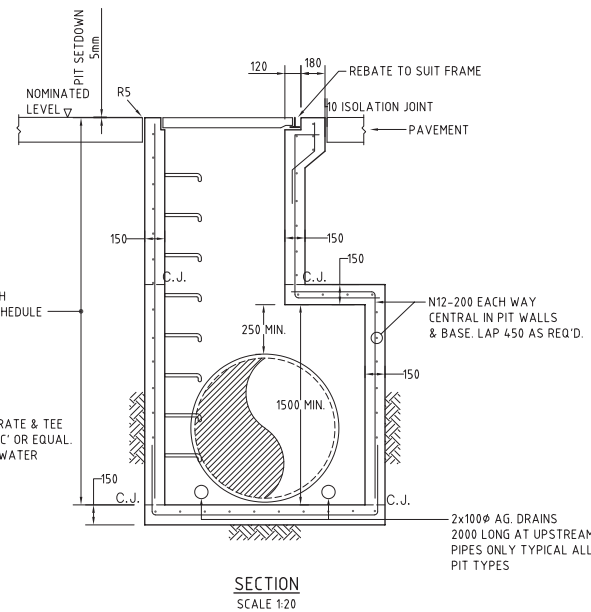
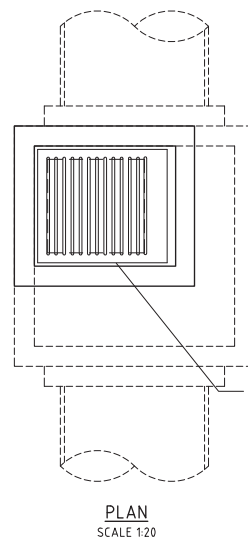
BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
19	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
75	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

SELECT FILL MATERIAL IN ACCORDANCE WITH TABLE 1 AS 3725

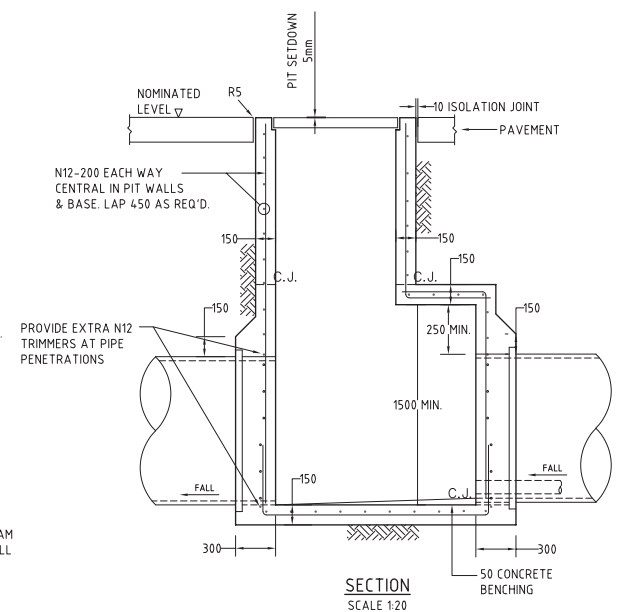
SIDE ZONE WIDTH	
PIPE SIZE	ℓ (mm)
≤900φ	150
1050φ	175
1200φ	200
1350φ	225
1500φ	250
1650φ	275
1800φ	300

REFER TO ENGINEER FOR TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800φ



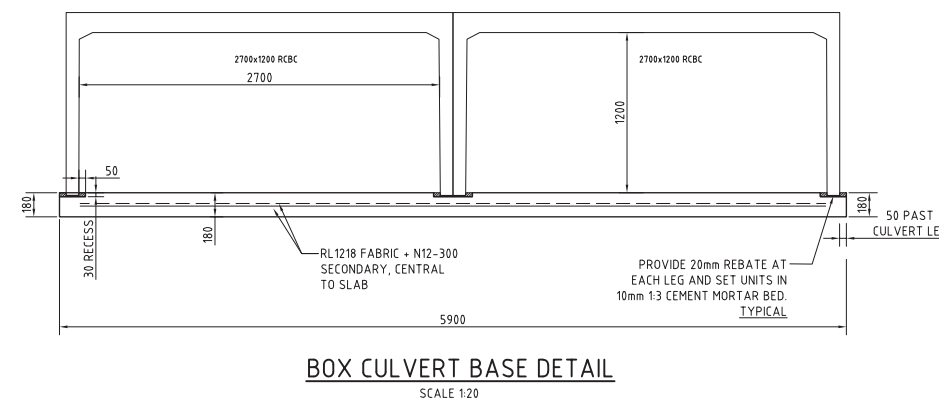
TAPERED SINGLE GRATED GULLY PIT - SGGP

TAPERED SJP DETAIL SIMILAR



TAPERED SINGLE GRATED GULLY PIT - SGGP

TAPERED SJP DETAIL SIMILAR



FOR SECTION 96

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SHEET SIZE

ISSUED FOR SECTION 96 APPLICATION		22.11.17	C
ISSUED FOR INFORMATION		01.08.17	B
ISSUED FOR INFORMATION		22.06.17	A
AMENDMENTS	DATE	ISSUE	AMENDMENTS



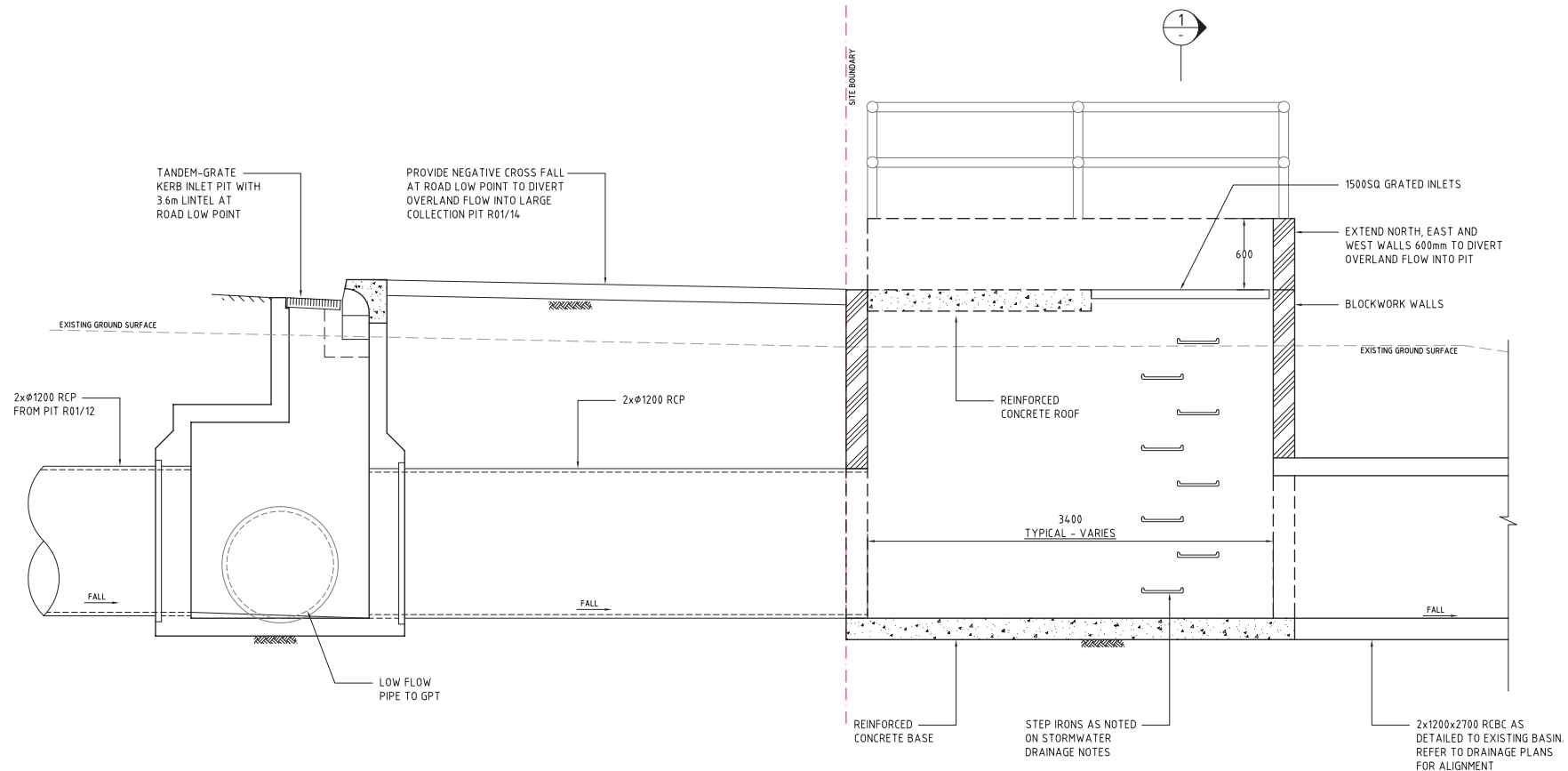
PROJECT
INFRASTRUCTURE PACKAGE
EARTHWORKS & WALLS
HOLLINGSWORTH ROAD MARS DEN PARK NSW



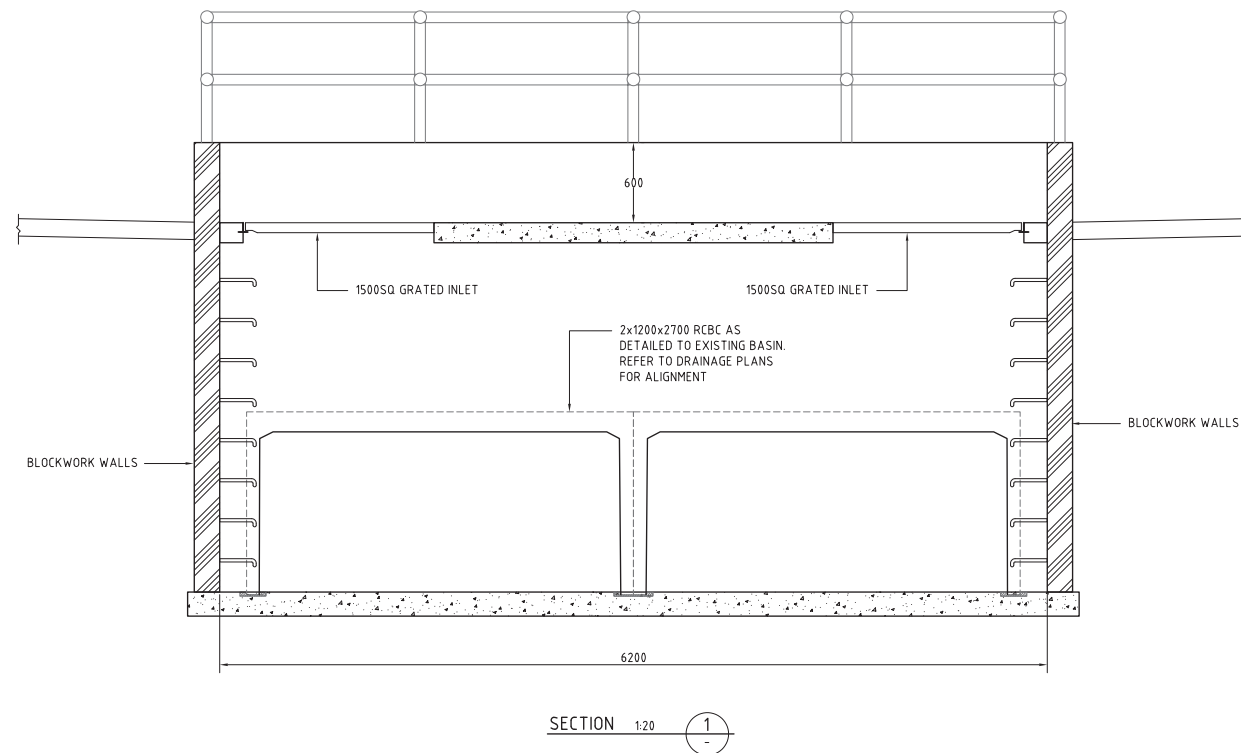
Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Wahbi Bay, Sydney NSW 2000
Tel: (02) 8551-7888 Fax: (02) 8541-3721
email: mail@costinroe.com.au ©

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE	
STORMWATER DRAINAGE DETAILS	
SHEET 1	
DRAWING No	12829.06-DA451
ISSUE	C



PIT R01/13 & PIT R01/14 CONFIGURATION
SCALE 1:20



FOR SECTION 96

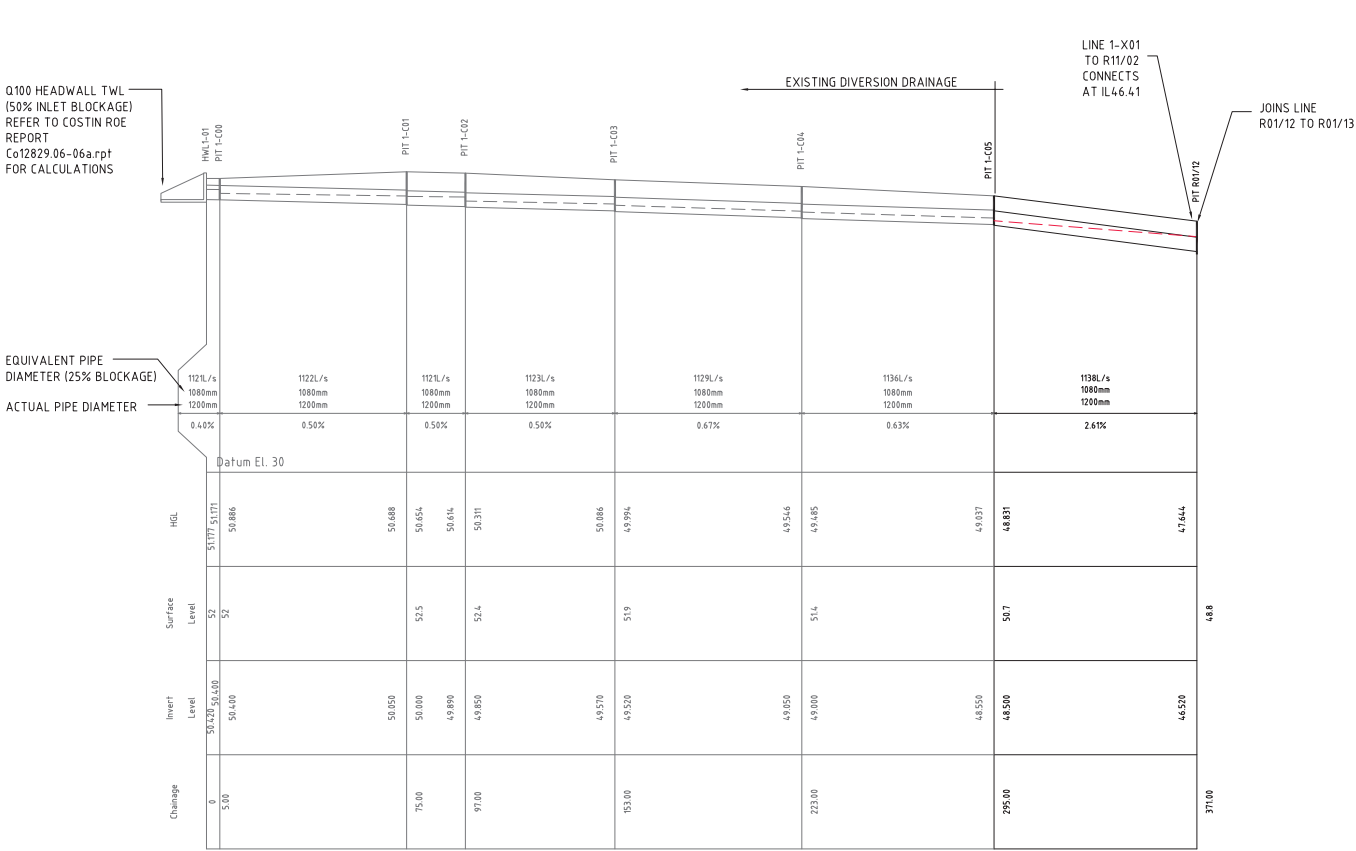
200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SHEET SIZE

ISSUED FOR SECTION 96 APPLICATION			22.11.17			A			AMENDMENTS			DATE			ISSUE			AMENDMENTS			DATE			ISSUE		
AMENDMENTS																										

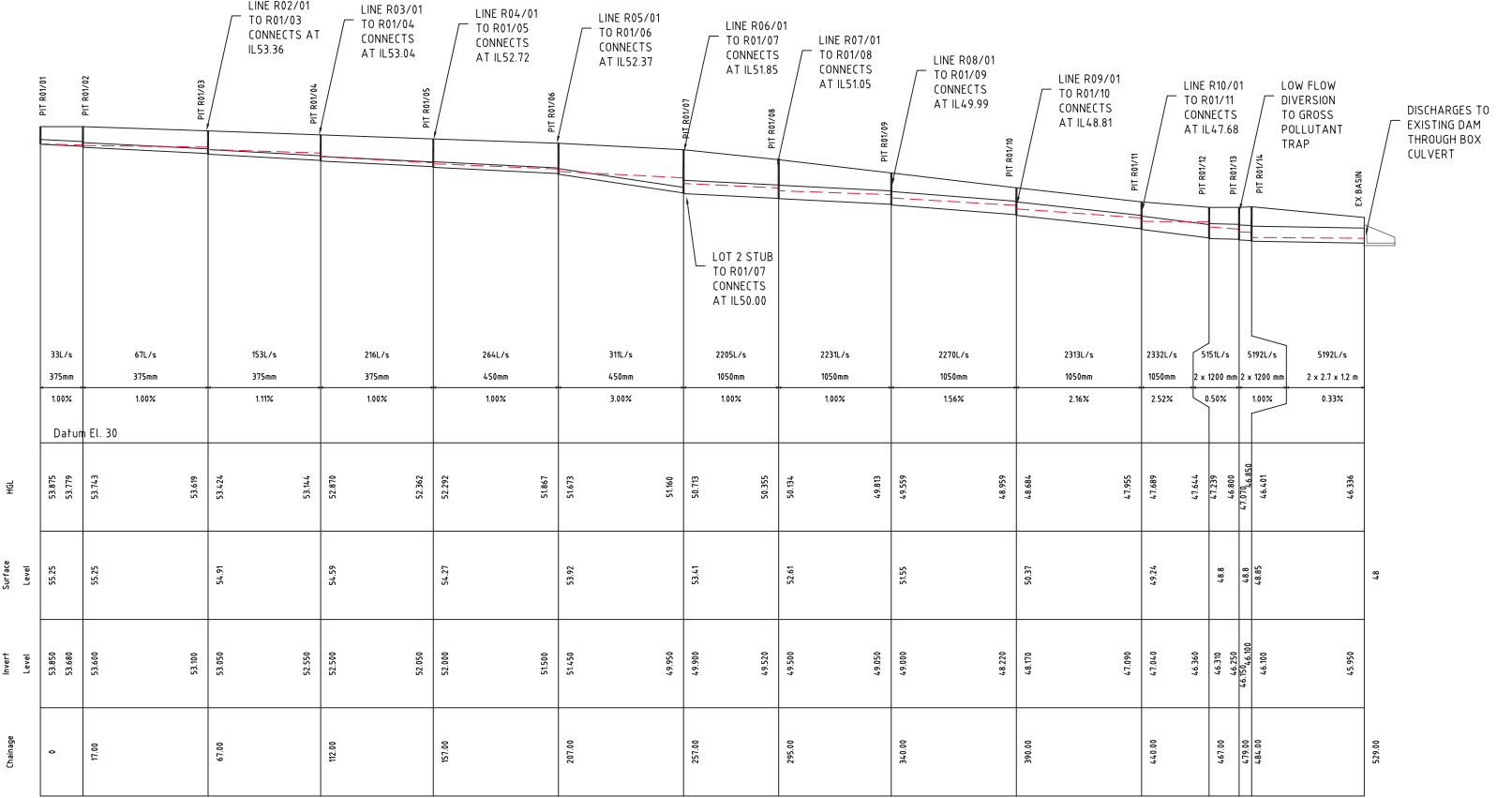
ARCHITECT		CLIENT		PROJECT		COSTIN ROE CONSULTING PTY LTD.		DRAWING TITLE	
[watch this SPACE design]		LOGOS		INFRASTRUCTURE PACKAGE EARTHWORKS & WALLS		Consulting Engineers		STORMWATER DRAINAGE DETAILS	
				HOLLINGSWORTH ROAD MARSDEN PARK NSW		Level 1, 8 Windmill Street		SHEET 2	
						Wahah Bay, Sydney NSW 2000			
						Tel: (02) 8551-7888 Fax: (02) 8541-3721			
						email: mail@costinroe.com.au			

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:	PRECISION	COMMUNICATION	ACCOUNTABILITY
MW	DS	JUN 17	XC	A0	AS SHOWN	C012829.06-DA452			

DRAWING No	12829.06-DA452	ISSUE	A
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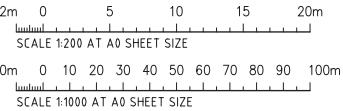


LONG SECTION - HWL1-01 TO PIT R01/12
SCALE 1:1000 HORIZONTAL
1:200 VERTICAL



LONG SECTION - PIT R03/01 TO R01/04
SCALE 1:1000 HORIZONTAL
1:200 VERTICAL

NOTE:
H.G.L & FLOWRATE SHOWN FOR Q20 A.R.I STORM EVENT



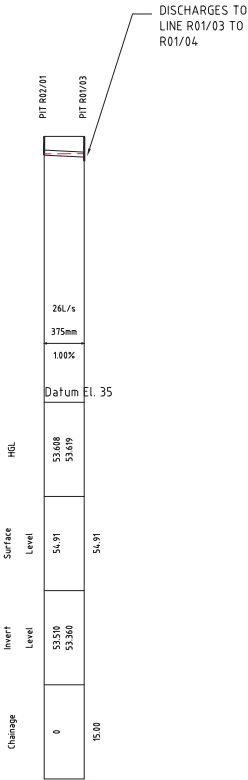
ISSUED FOR SECTION 96 APPLICATION	22.11.17	C
REVISED AS CLOUDED FOR UPDATED DRAINAGE LAYOUT	15.08.17	B
ISSUED FOR INFORMATION	01.08.17	A
AMENDMENTS	DATE	ISSUE



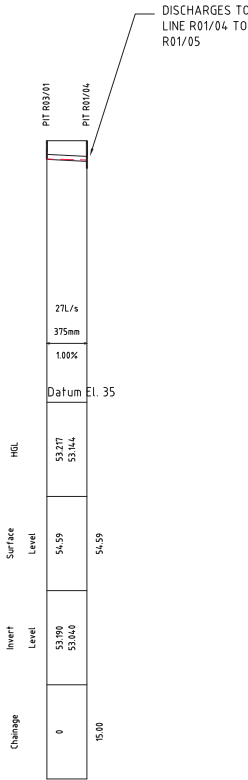
PROJECT	INFRASTRUCTURE PACKAGE EARTHWORKS & WALLS
DESIGNED	DS
DRAWN	DS
CHECKED	XC
DATE	JUN 17
SIZE	A0
SCALE	AS SHOWN
CAD REF:	CO12829.06-DA61



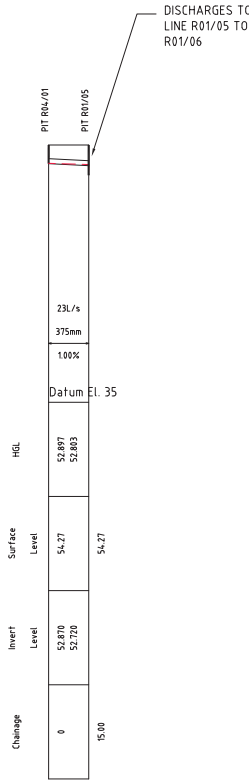
DRAWING TITLE	STORMWATER DRAINAGE LONG SECTIONS - SHEET 1
DRAWING No	12829.06-DA461
ISSUE	B



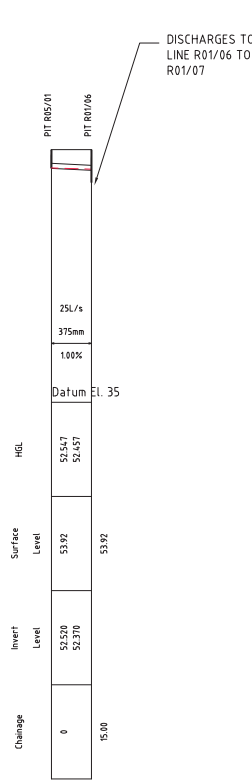
LONG SECTION - PIT R02/01 TO R01/03
SCALE 1:1000 HORIZONTAL
1:200 VERTICAL



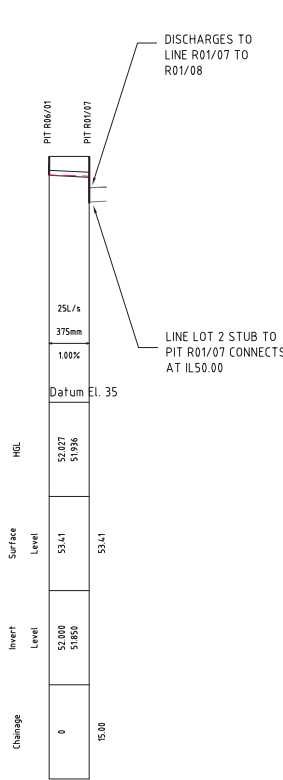
LONG SECTION - PIT R03/01 TO R01/04
SCALE 1:1000 HORIZONTAL
1:200 VERTICAL



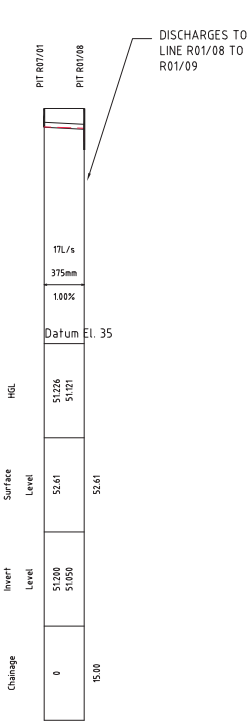
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SCALE 1:1000 HORIZONTAL
1:200 VERTICAL



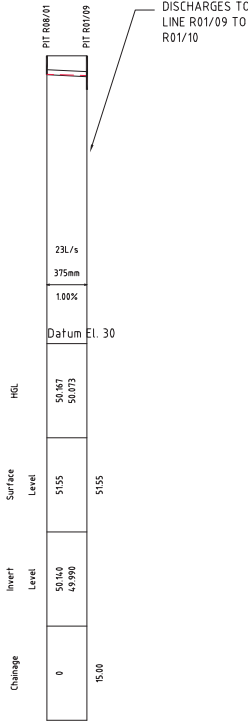
LONG SECTION - PIT R05/01 TO R01/06
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



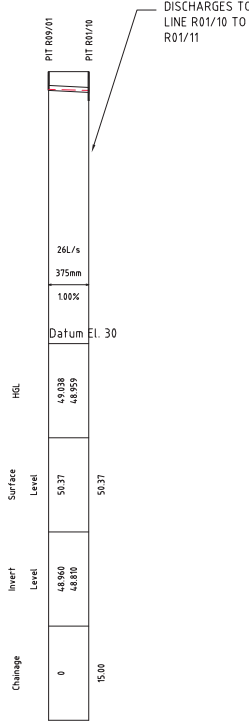
LONG SECTION - PIT R06/01 TO R01/07
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



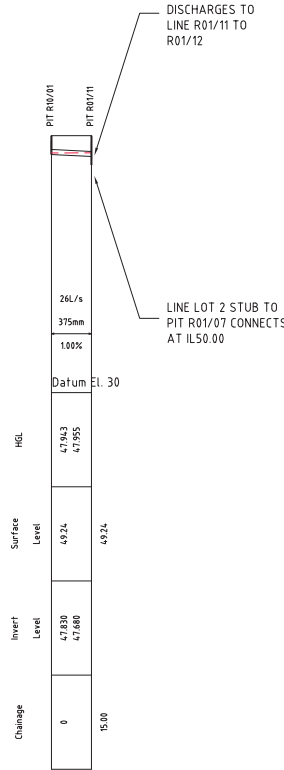
LONG SECTION - PIT R07/01 TO R01/08
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



LONG SECTION - PIT R08/01 TO R01/09
SCALE 1:500 HORIZONTAL
1:100 VERTICAL

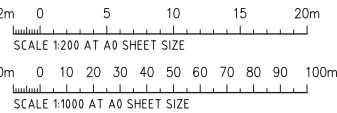


LONG SECTION - PIT R09/01 TO R01/10
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



LONG SECTION - PIT R10/01 TO R01/11
SCALE 1:1000 HORIZONTAL
1:200 VERTICAL

NOTE:
H.G.L & FLOWRATE SHOWN FOR Q20 A.R.I STORM EVENT



FOR SECTION 96

