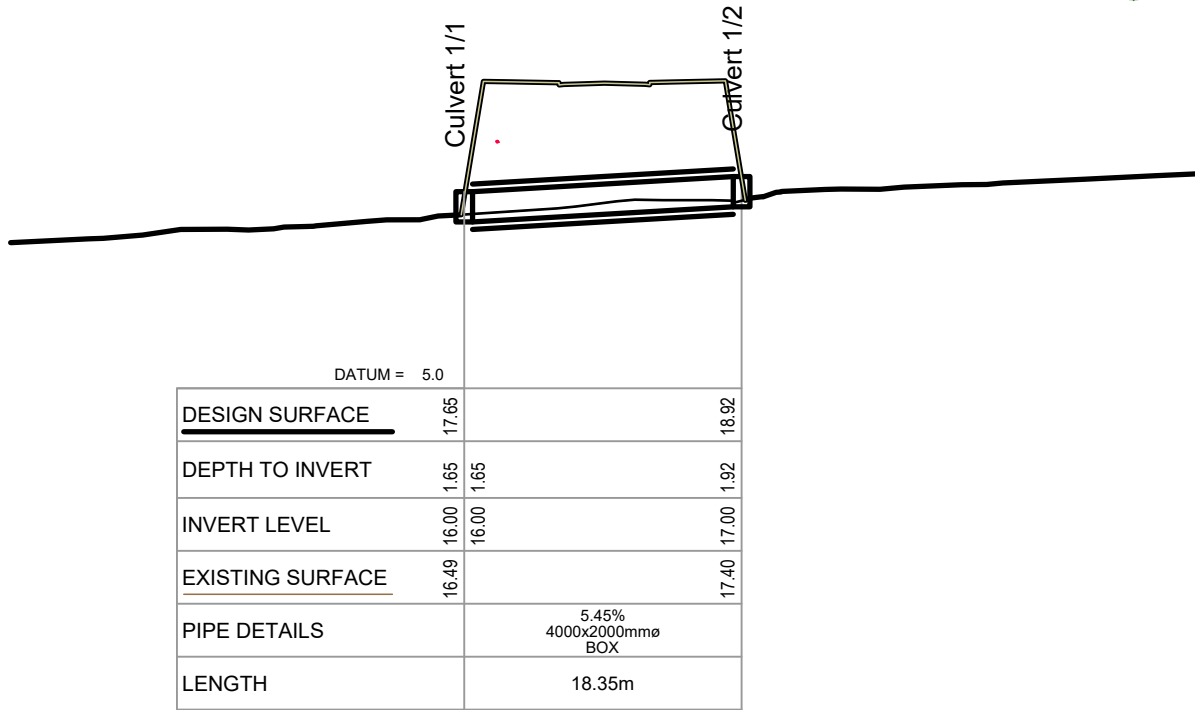
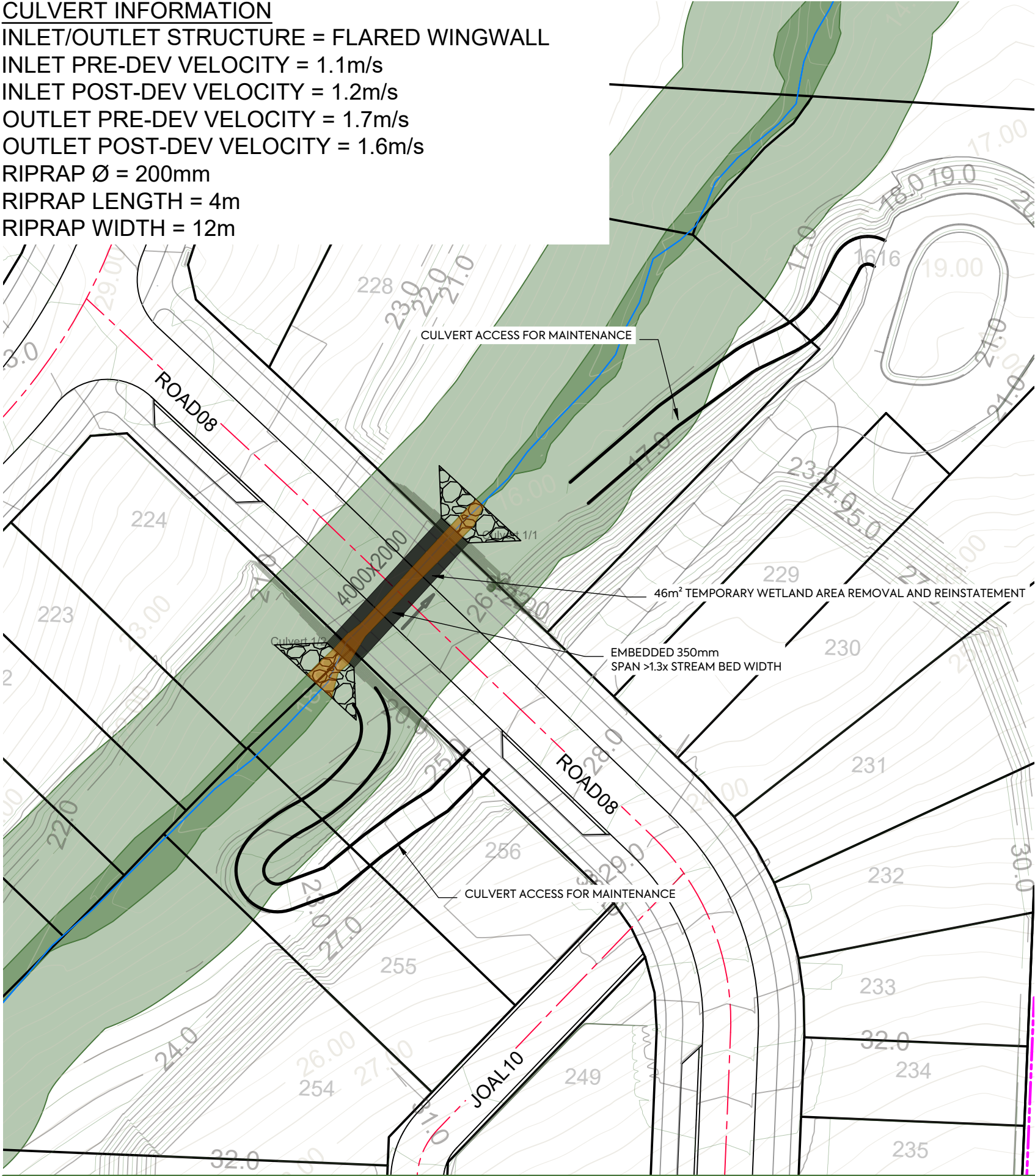
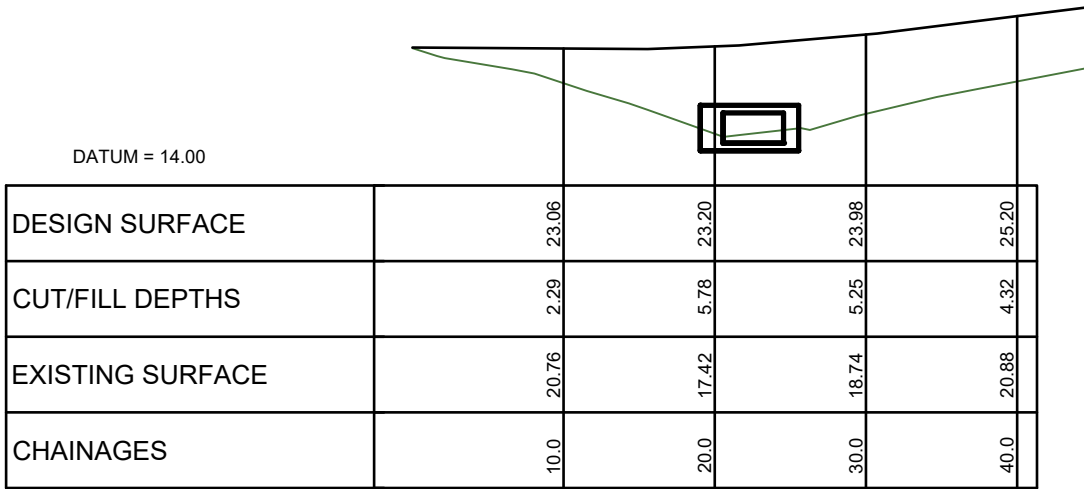


CULVERT INFORMATION
INLET/OUTLET STRUCTURE = FLARED WINGWALL
INLET PRE-DEV VELOCITY = 1.1m/s
INLET POST-DEV VELOCITY = 1.2m/s
OUTLET PRE-DEV VELOCITY = 1.7m/s
OUTLET POST-DEV VELOCITY = 1.6m/s
RIPRAP Ø = 200mm
RIPRAP LENGTH = 4m
RIPRAP WIDTH = 12m



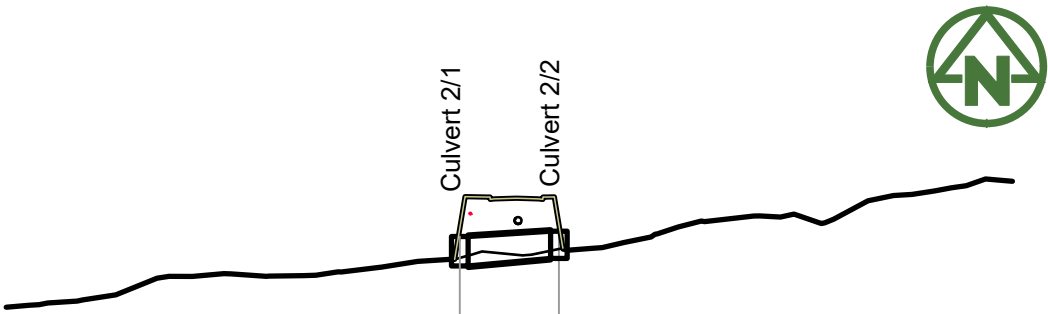
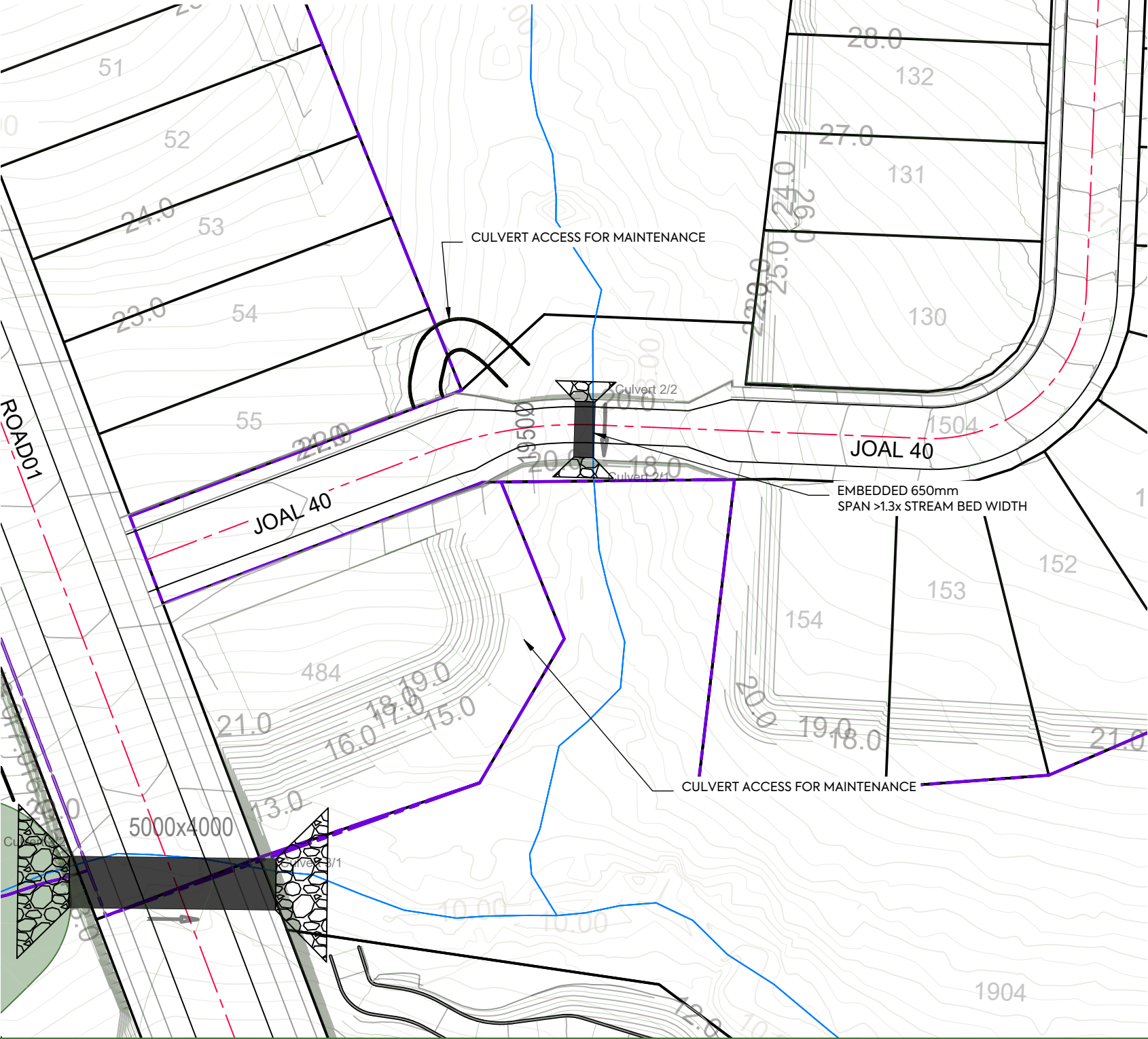
Culvert 01 - LONGSECTION



Culvert 01 - ELEVATION VIEW

SCALE HORIZ=1:500 @ A3 VERT=1:500 @ A3

CULVERT INFORMATION
INLET/OUTLET STRUCTURE = HEADWALL
INLET PRE-DEV VELOCITY = 0.6m/s
INLET POST-DEV VELOCITY = 0.4m/s
OUTLET PRE-DEV VELOCITY = 0.8m/s
OUTLET POST-DEV VELOCITY = 1.4m/s
RIPRAP Ø = 150mm
RIPRAP LENGTH = 2.0m
RIPRAP WIDTH = 5.9m



DATUM = 2.0			
DESIGN SURFACE	18.16		18.46
DEPTH TO INVERT	2.46	2.46	2.26
INVERT LEVEL	15.70	15.70	16.20
EXISTING SURFACE	16.23		16.82
PIPE DETAILS	7.63% 1950mmø RCRRJ Class 4		
LENGTH	5.45m		

Culvert 02 - LONGSECTION

DATUM = 14.00			
DESIGN SURFACE	19.86		20.15
CUT/FILL DEPTHS	3.33		1.68
EXISTING SURFACE	16.53		18.47
CHAINAGES	10.0		20.0

Culvert 02 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3



Culvert 03 - LONGSECTION

Culvert 03 - ELEVATION VIEW

SCALE HORIZ=1:500 @ A3

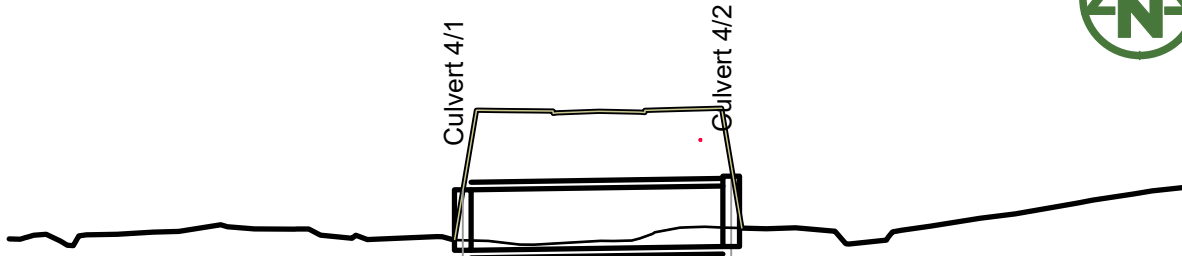
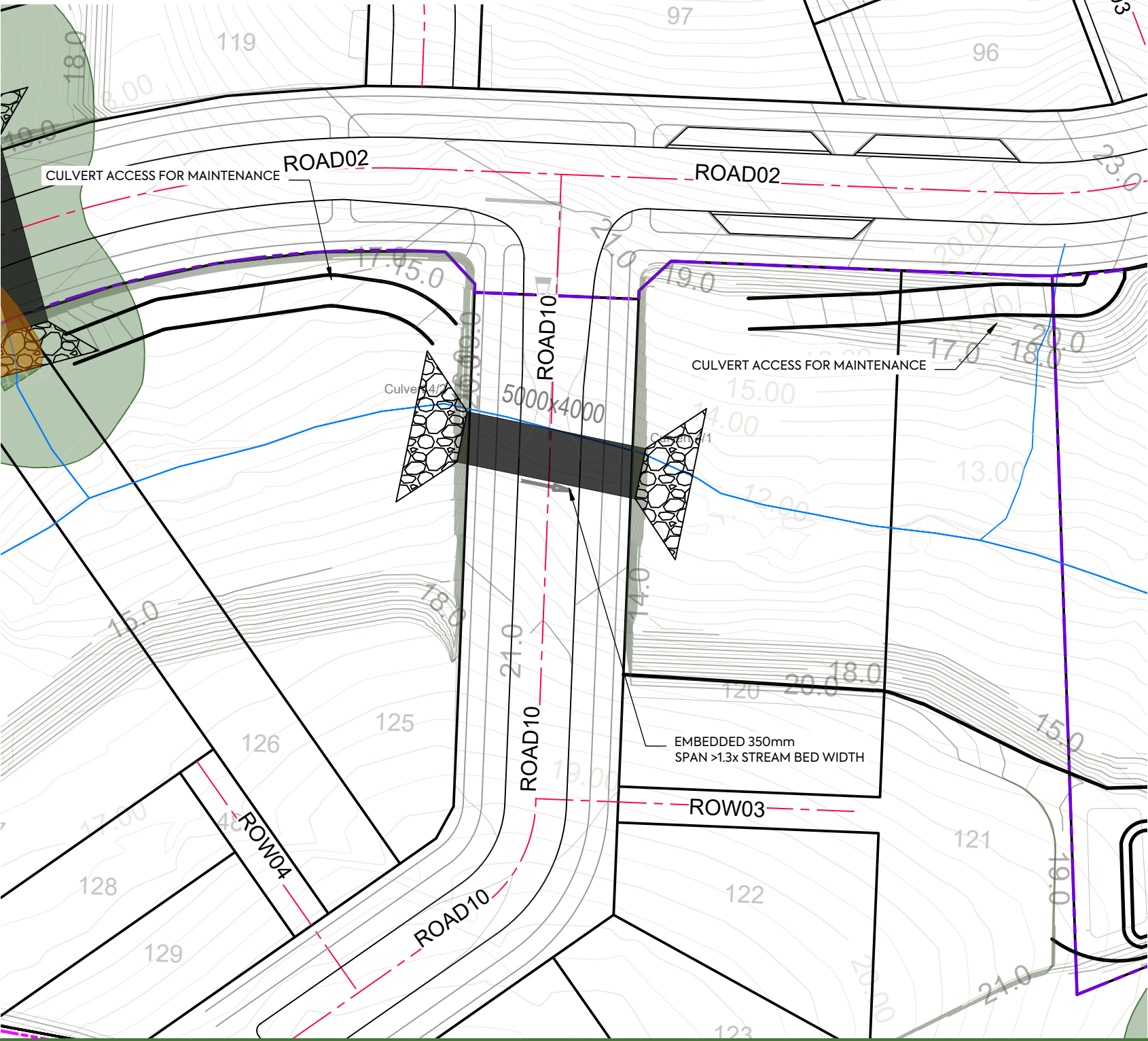
VERT=1:500 @ A3

RIPRAP WIDTH = 15m



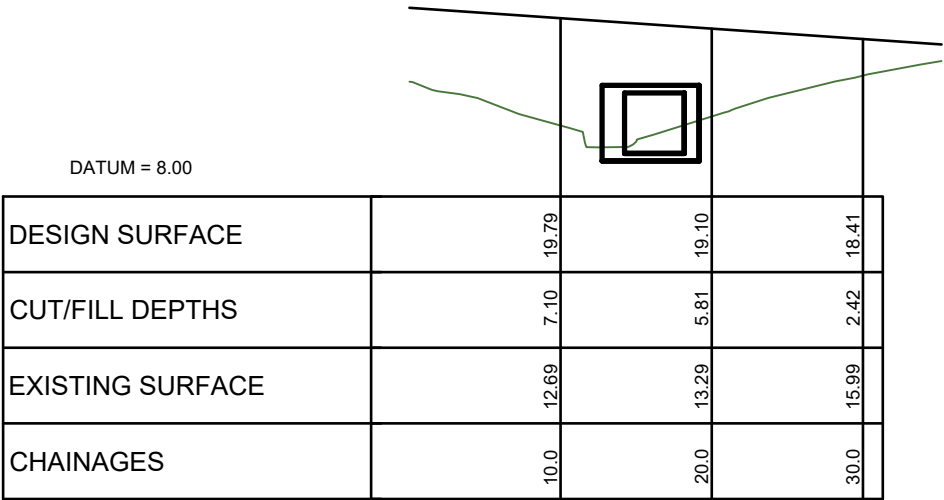
G

CULVERT INFORMATION
INLET/OUTLET STRUCTURE = FLARED WINGWALL
INLET PRE-DEV VELOCITY = 1.6m/s
INLET POST-DEV VELOCITY = 1.5m/s
OUTLET PRE-DEV VELOCITY = 2.0m/s
OUTLET POST-DEV VELOCITY = 1.1m/s
RIPRAP Ø = 250mm
RIPRAP LENGTH = 5m
RIPRAP WIDTH = 15m



DATUM = 0.0			
DESIGN SURFACE	14.50		16.24
DEPTH TO INVERT	3.90	3.90	5.39
INVERT LEVEL	10.60	10.60	10.85
EXISTING SURFACE	11.26		12.09
PIPE DETAILS	1.41% 5000x4000mmø BOX		
LENGTH	17.75m		

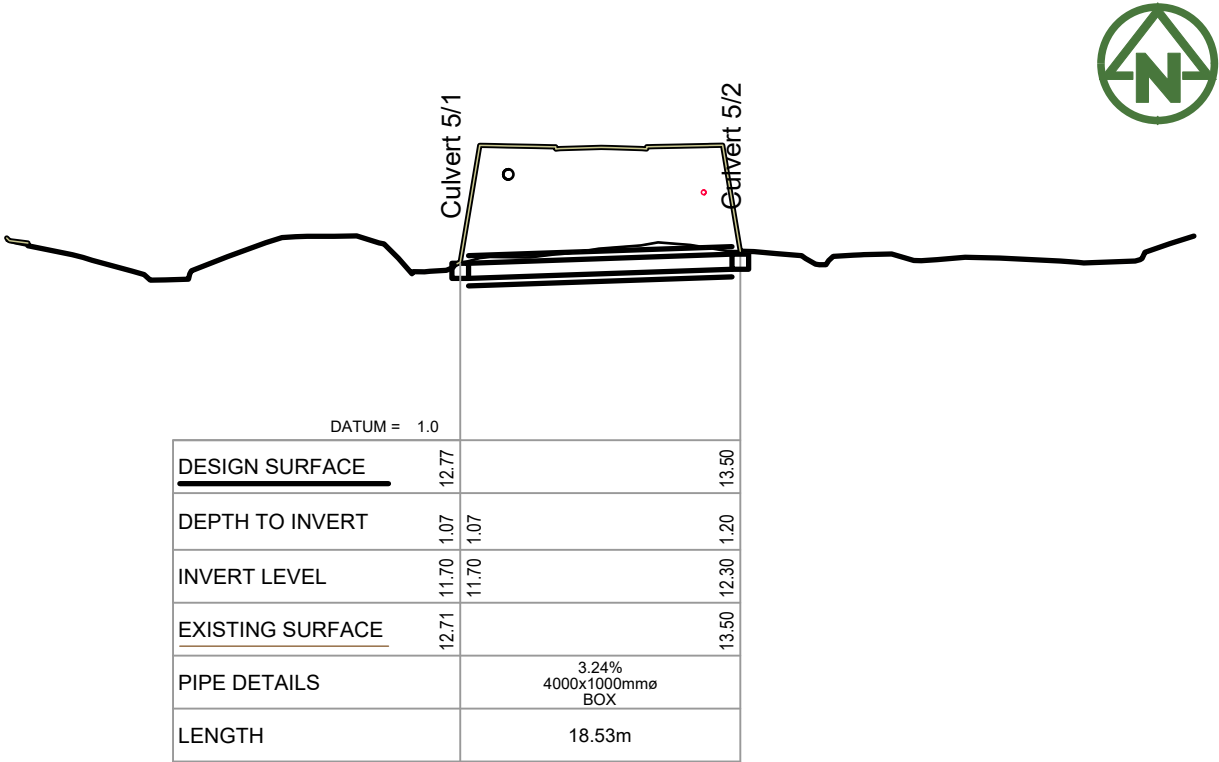
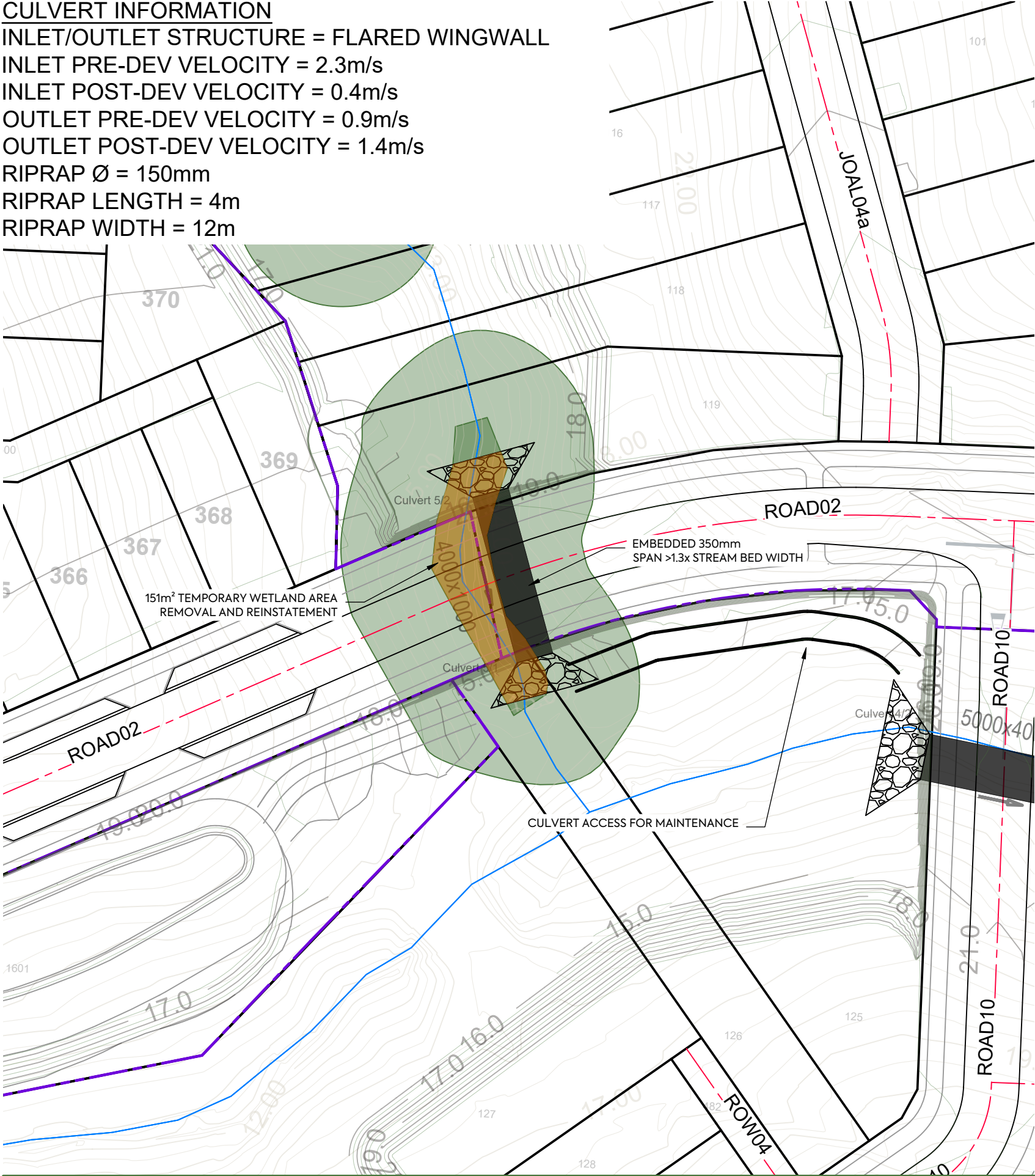
Culvert 04 - LONGSECTION



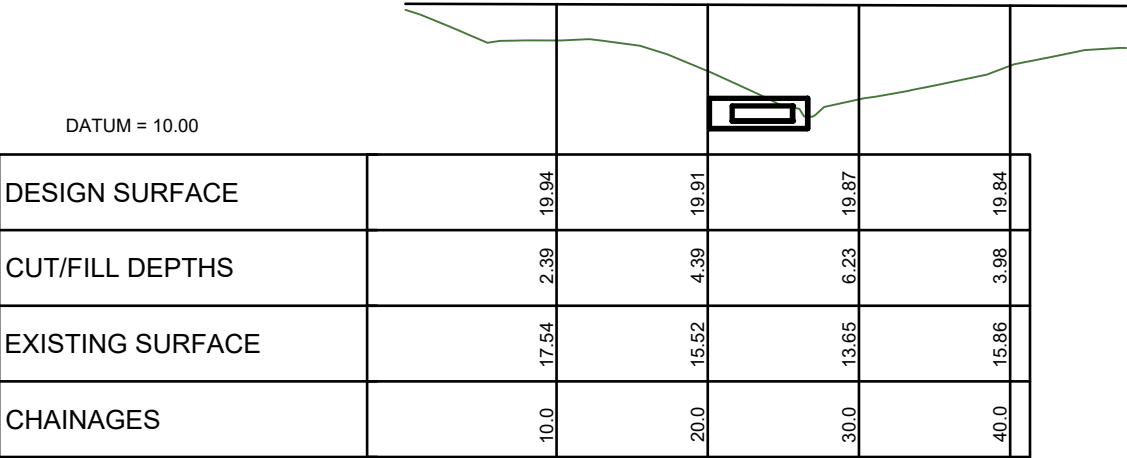
DATUM = 8.00			
DESIGN SURFACE	19.79	19.10	18.41
CUT/FILL DEPTHS	7.10	5.81	2.42
EXISTING SURFACE	12.69	13.29	15.99
CHAINAGES	10.0	20.0	30.0

Culvert 04 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3

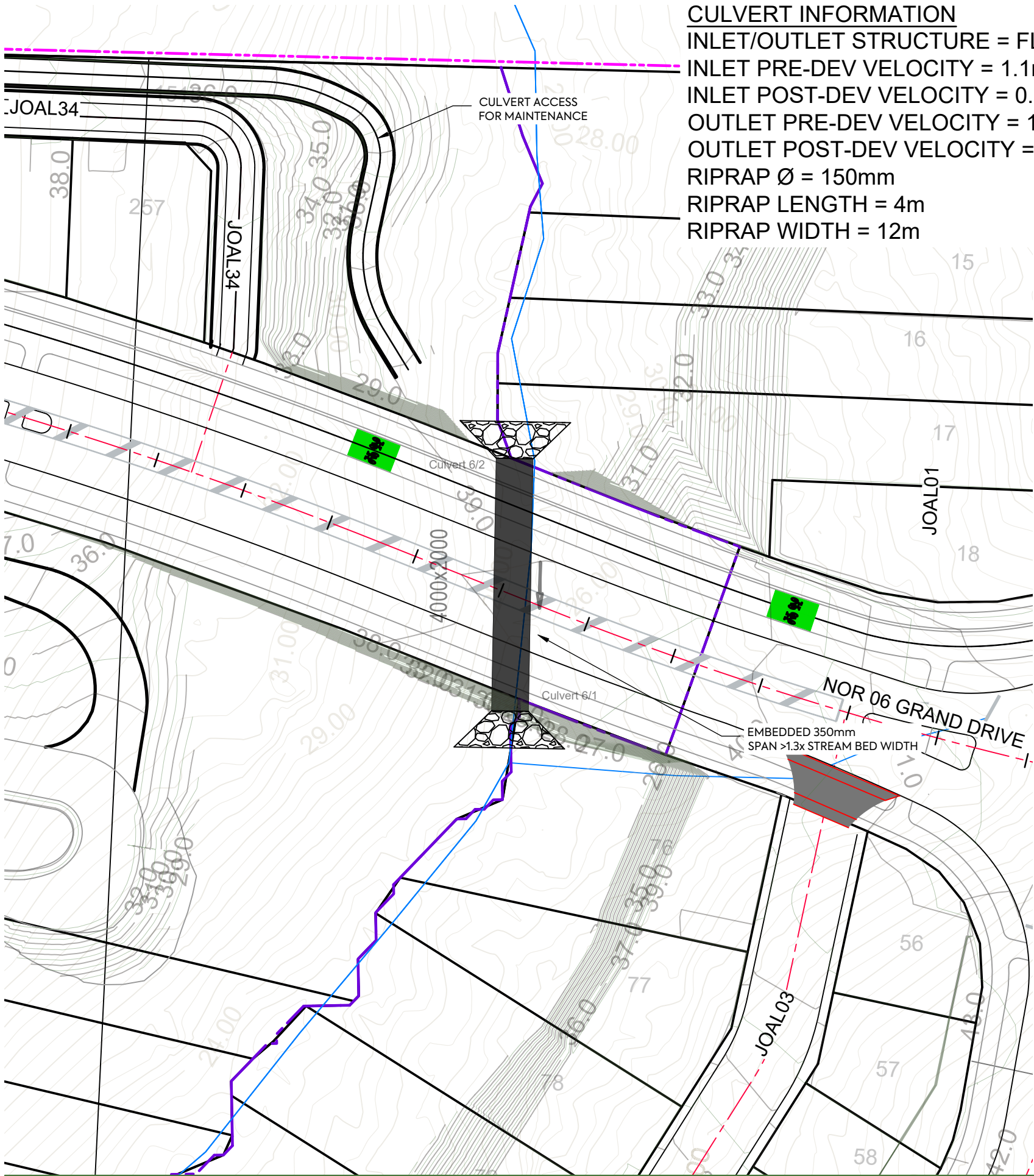
CULVERT INFORMATION
INLET/OUTLET STRUCTURE = FLARED WINGWALL
INLET PRE-DEV VELOCITY = 2.3m/s
INLET POST-DEV VELOCITY = 0.4m/s
OUTLET PRE-DEV VELOCITY = 0.9m/s
OUTLET POST-DEV VELOCITY = 1.4m/s
RIPRAP Ø = 150mm
RIPRAP LENGTH = 4m
RIPRAP WIDTH = 12m



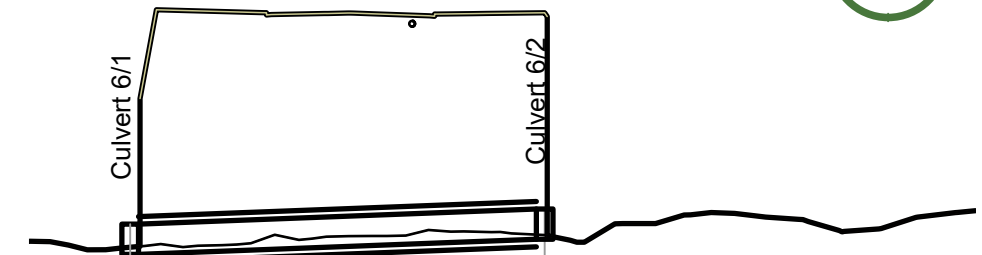
Culvert 05 - LONGSECTION



Culvert 05 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3

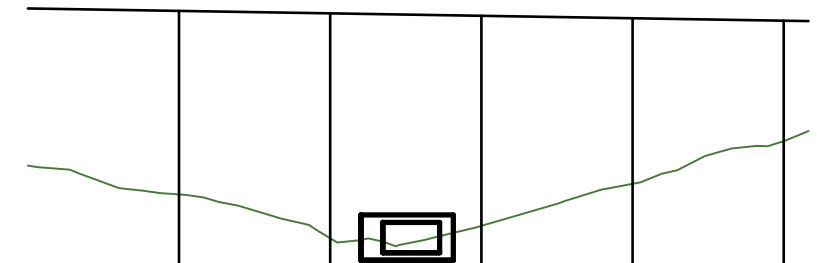


- INLET PRE-DEV VELOCITY = 1.1m/s
- INLET POST-DEV VELOCITY = 0.8m/s
- OUTLET PRE-DEV VELOCITY = 1.5m/s
- OUTLET POST-DEV VELOCITY = 0.6m/s
- RIPRAP Ø = 150mm
- RIPRAP LENGTH = 4m
- RIPRAP WIDTH = 12m



	DATUM =	16.0	
<u>DESIGN SURFACE</u>	23.68		20.18
DEPTH TO INVERT	0.48	0.48	14.08
INVERT LEVEL	23.20	23.20	24.20
<u>EXISTING SURFACE</u>	23.68		24.48
PIPE DETAILS		3.65% 4000x2000mmø BOX	
LENGTH		27.42m	

Culvert 06 - LONGSECTION

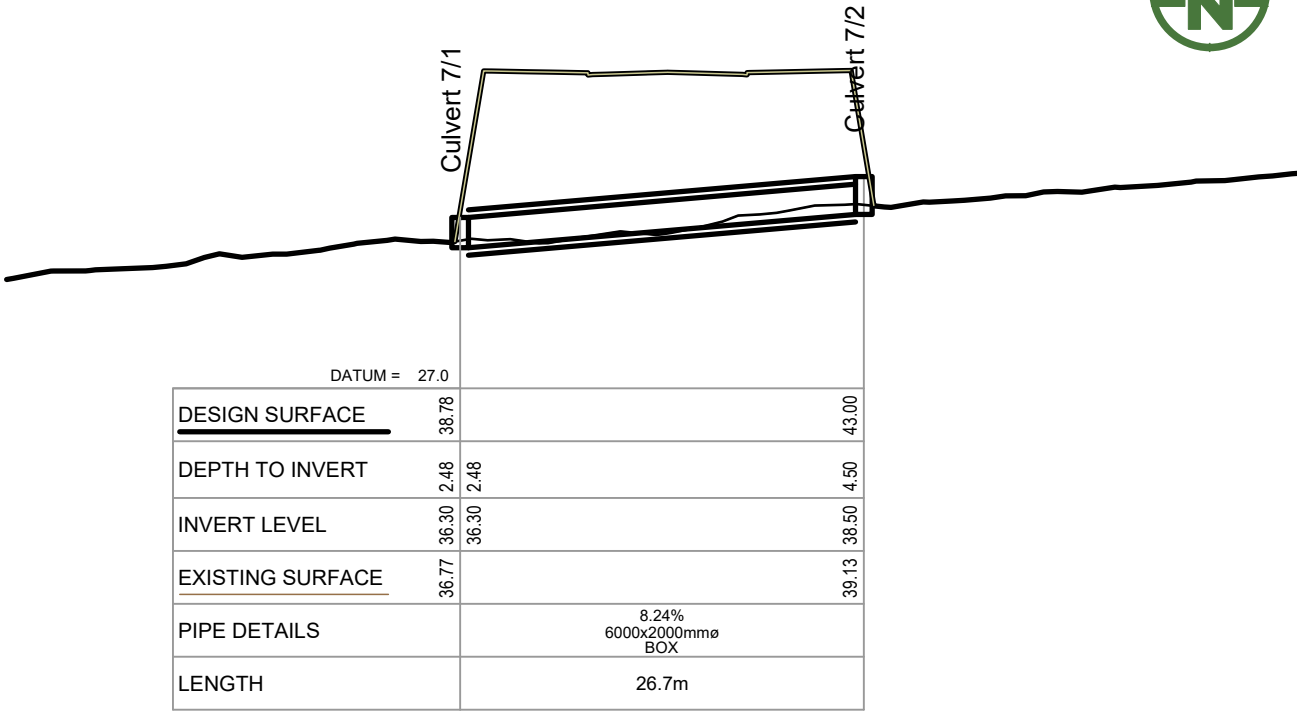
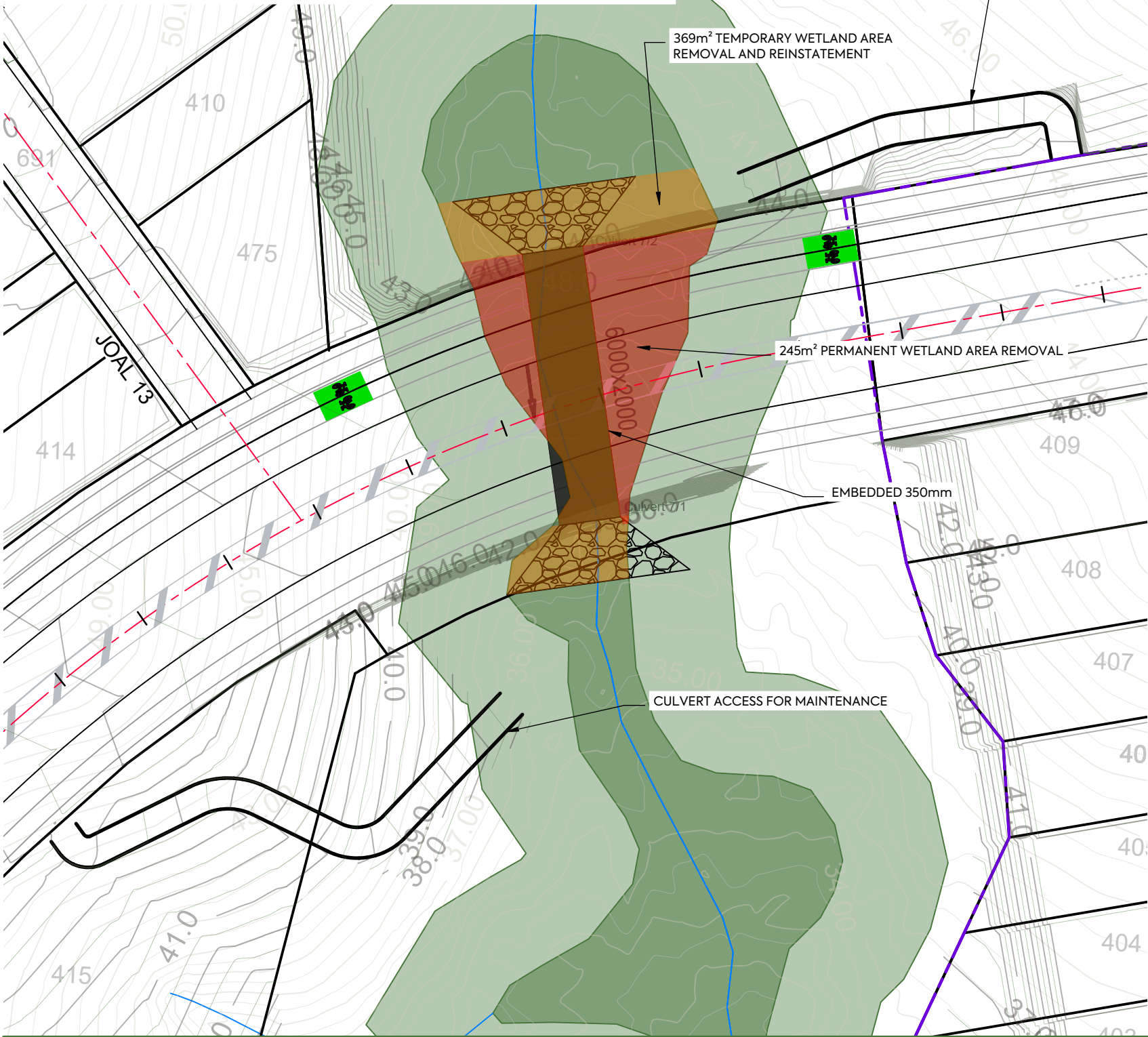


DATUM = 22.00							
DESIGN SURFACE	40.03		39.86		39.70		39.38
CUT/FILL DEPTHS	12.14		14.87		13.89		7.97
EXISTING SURFACE	27.89		24.99		25.81		31.41
CHAINAGES	10.0		20.0		30.0		50.0

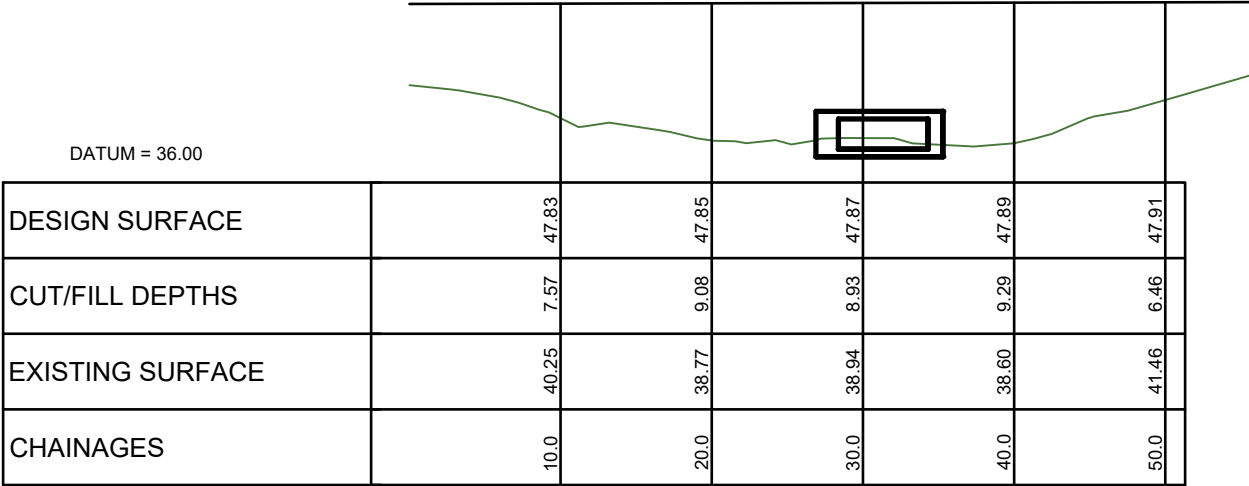
SCALE HORIZ=1:500 @ A3

VERT=1:500 @ A3

CULVERT INFORMATION
INLET/OUTLET STRUCTURE = FLARED WINGWALL
INLET PRE-DEV VELOCITY = 0.3m/s
INLET POST-DEV VELOCITY = 0.8m/s
OUTLET PRE-DEV VELOCITY = 1.0m/s
OUTLET POST-DEV VELOCITY = 0.9m/s
RIPRAP Ø = 150mm
RIPRAP LENGTH = 6m
RIPRAP WIDTH = 18m

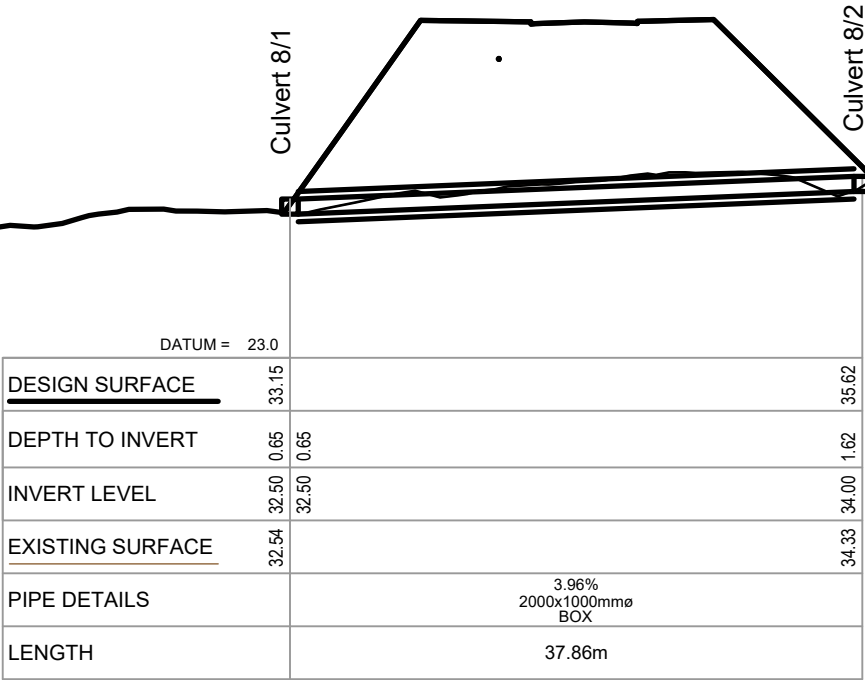
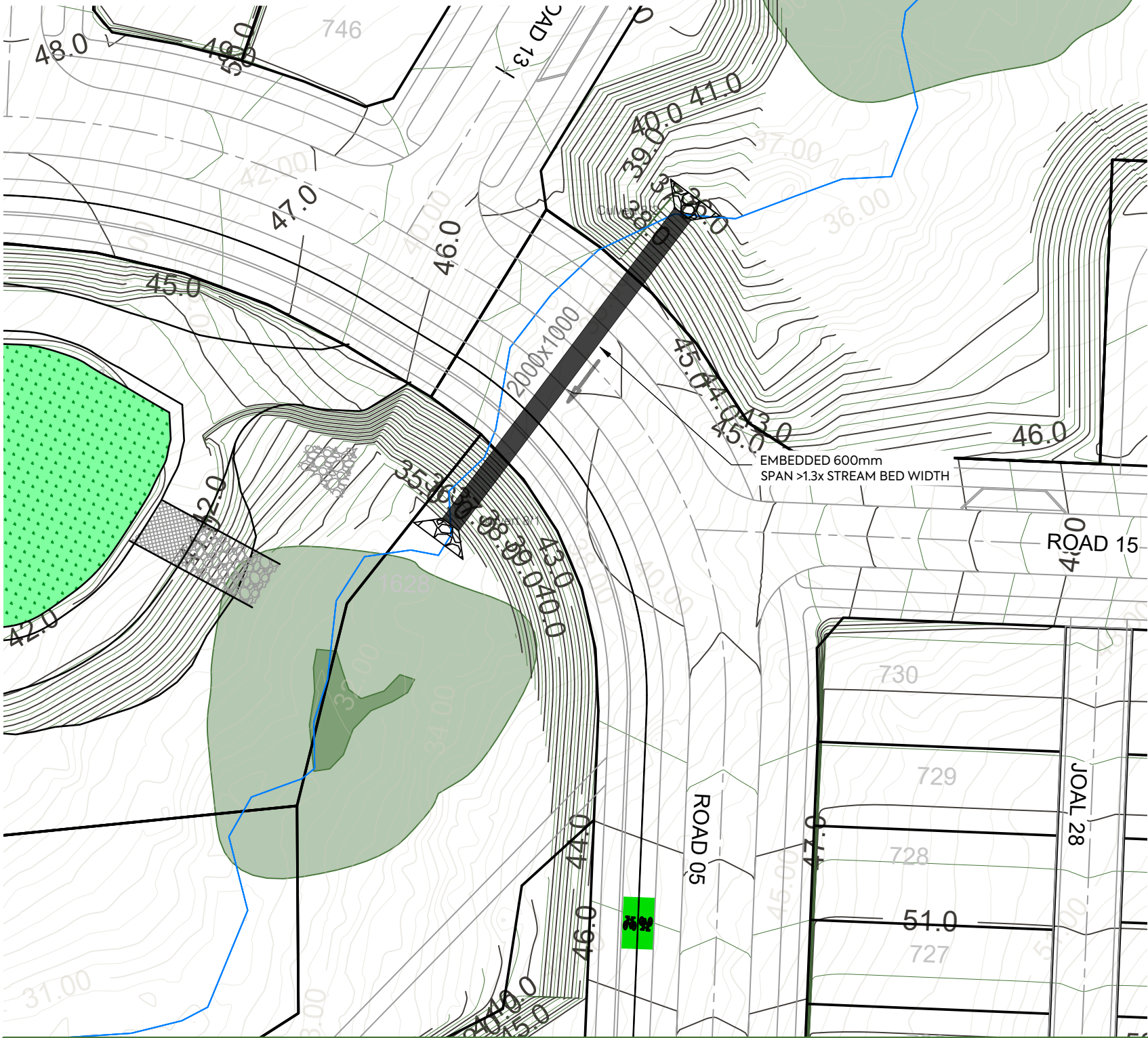


Culvert 07 - LONGSECTION

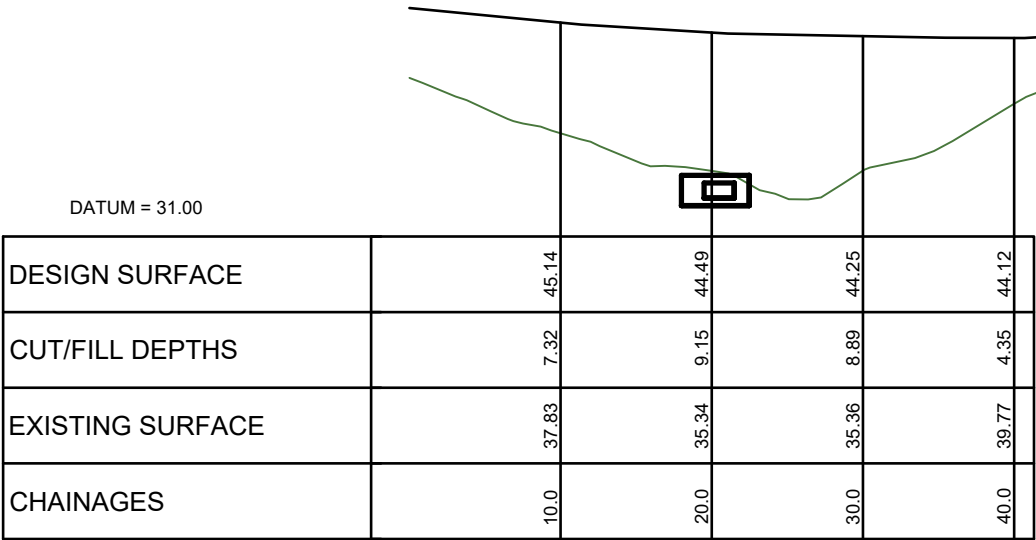


Culvert 07 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3

CULVERT INFORMATION
INLET/OUTLET STRUCTURE = FLARED WINGWALL
INLET PRE-DEV VELOCITY = 1.6m/s
INLET POST-DEV VELOCITY = 0.6m/s
OUTLET PRE-DEV VELOCITY = 1.2m/s
OUTLET POST-DEV VELOCITY = 0.6m/s
RIPRAP Ø = 150mm
RIPRAP LENGTH = 2m
RIPRAP WIDTH = 6m

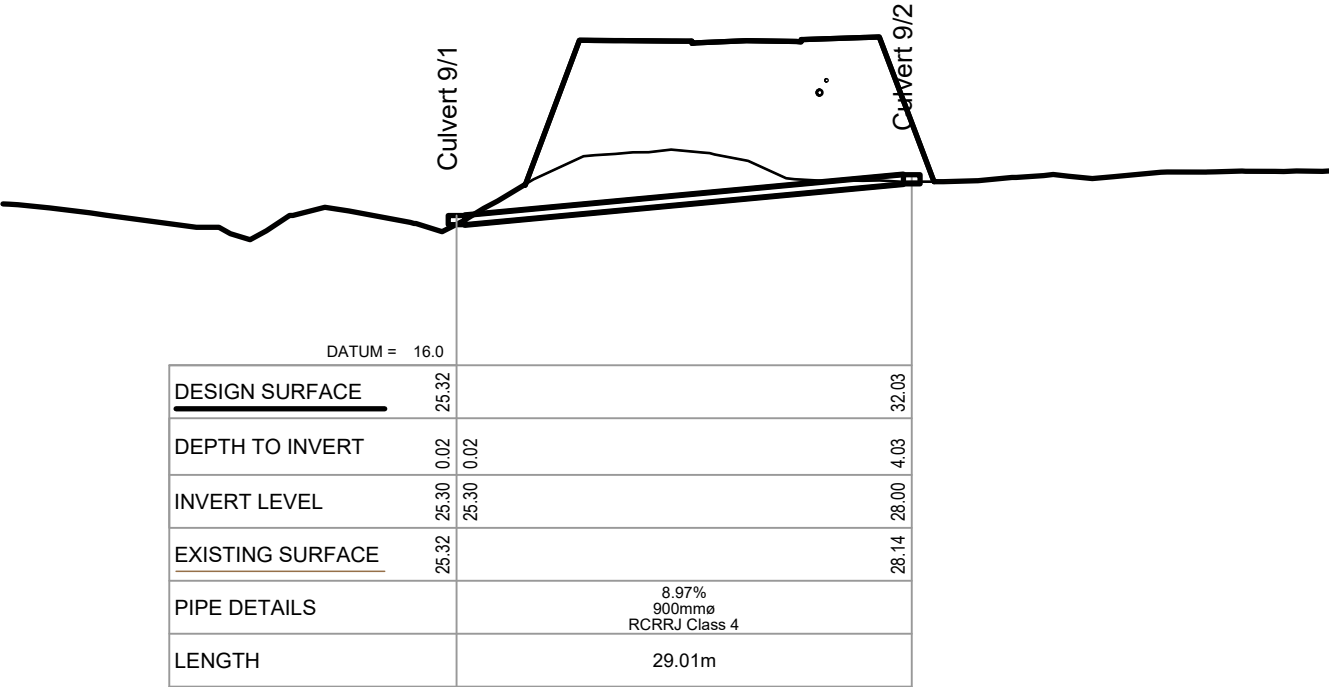
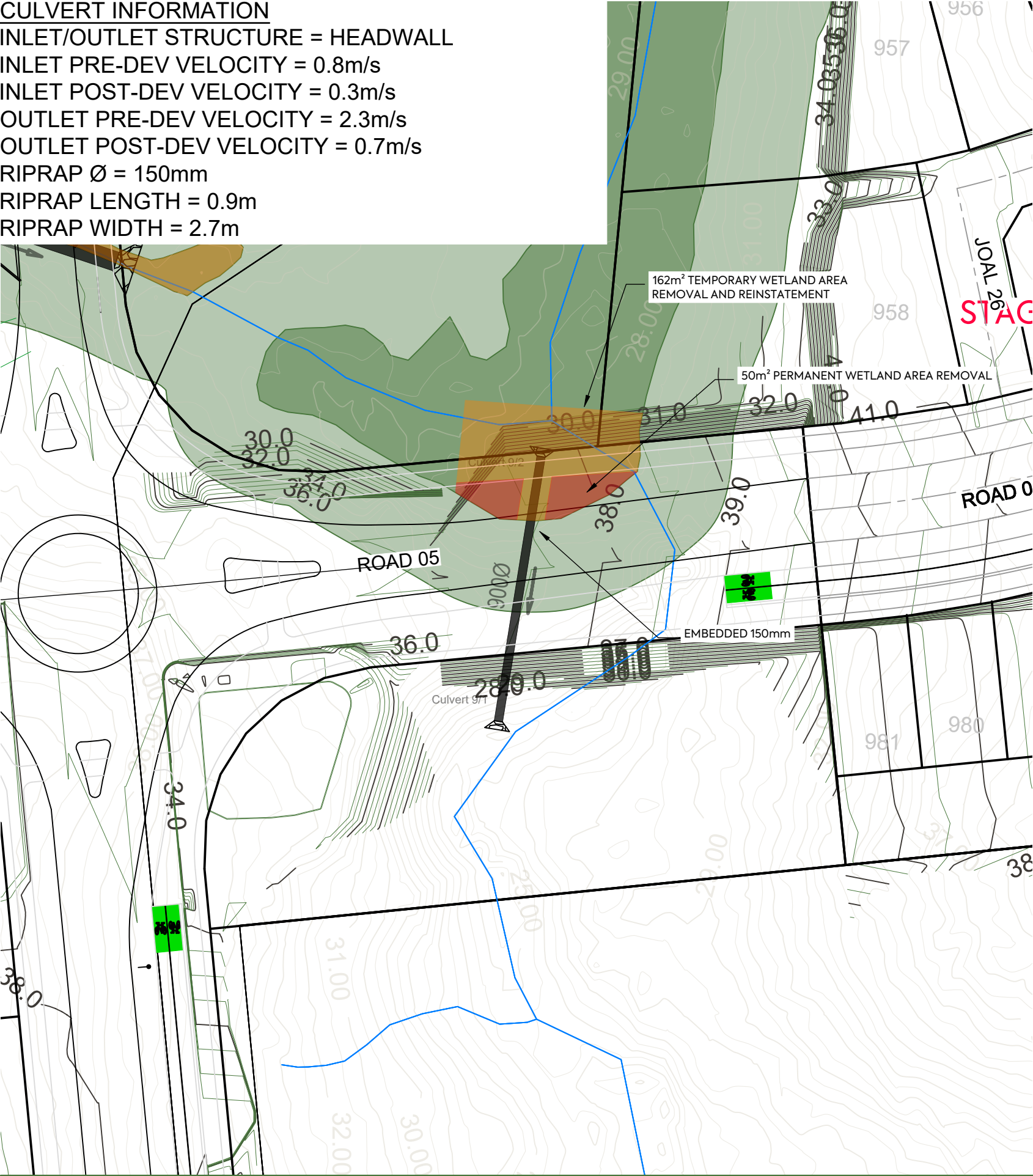


Culvert 08 - LONGSECTION

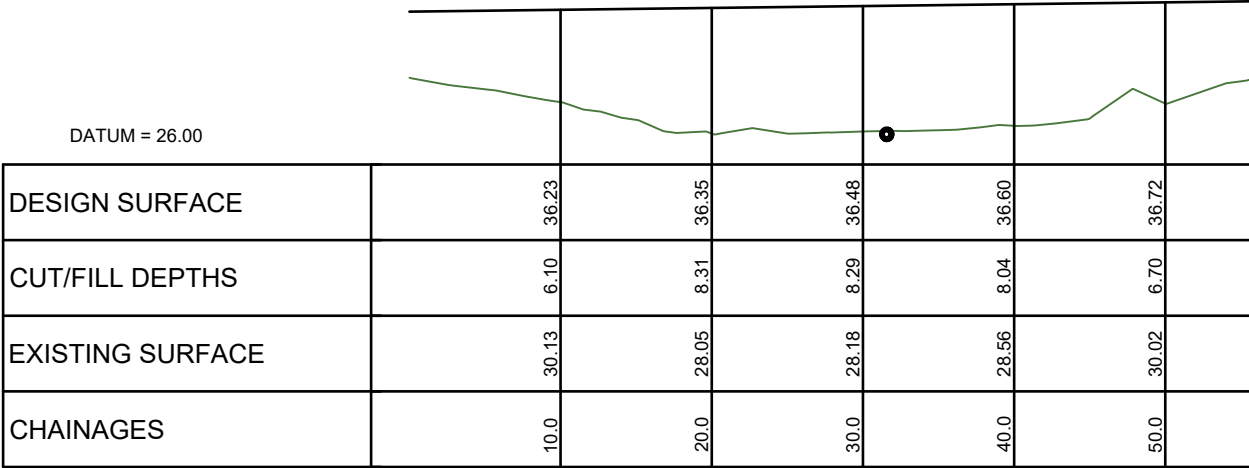


Culvert 08 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3

CULVERT INFORMATION
INLET/OUTLET STRUCTURE = HEADWALL
INLET PRE-DEV VELOCITY = 0.8m/s
INLET POST-DEV VELOCITY = 0.3m/s
OUTLET PRE-DEV VELOCITY = 2.3m/s
OUTLET POST-DEV VELOCITY = 0.7m/s
RIPRAP Ø = 150mm
RIPRAP LENGTH = 0.9m
RIPRAP WIDTH = 2.7m

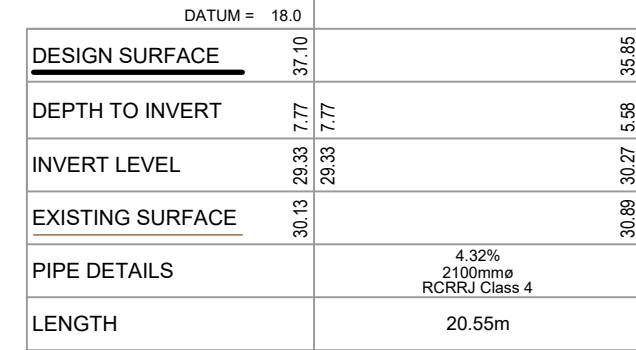
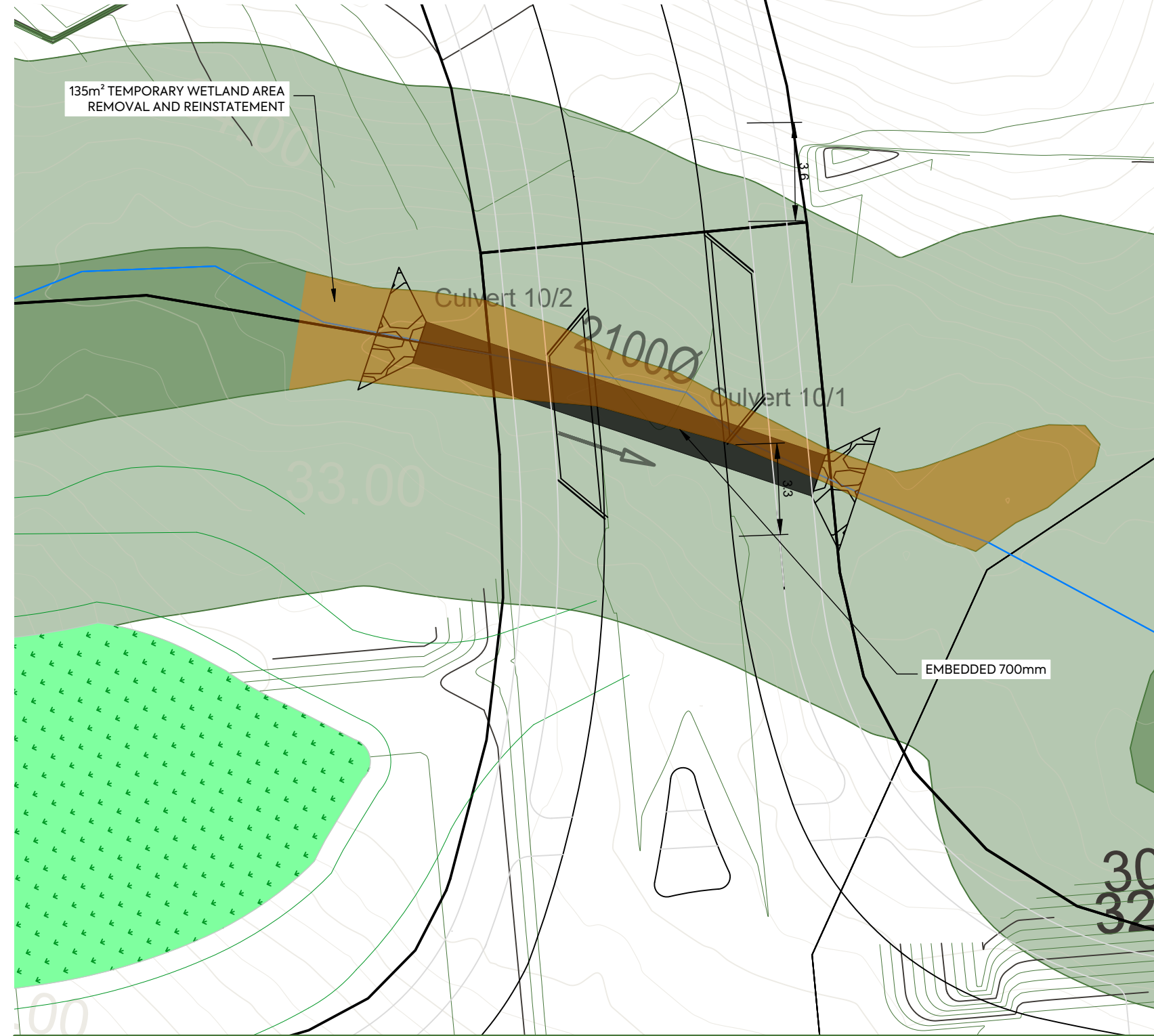


Culvert 09 - LONGSECTION

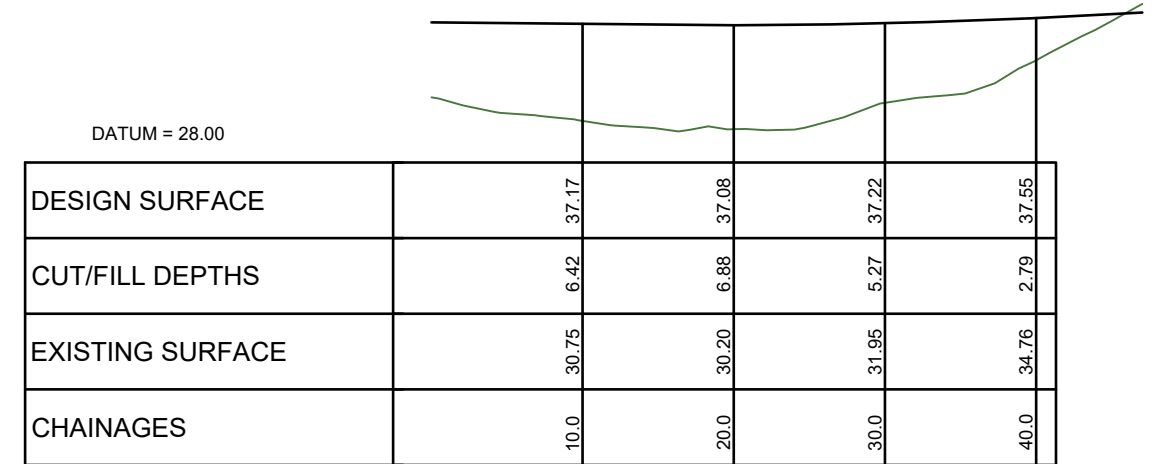


Culvert 09 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3

RIPRAP WIDTH = 6.3m

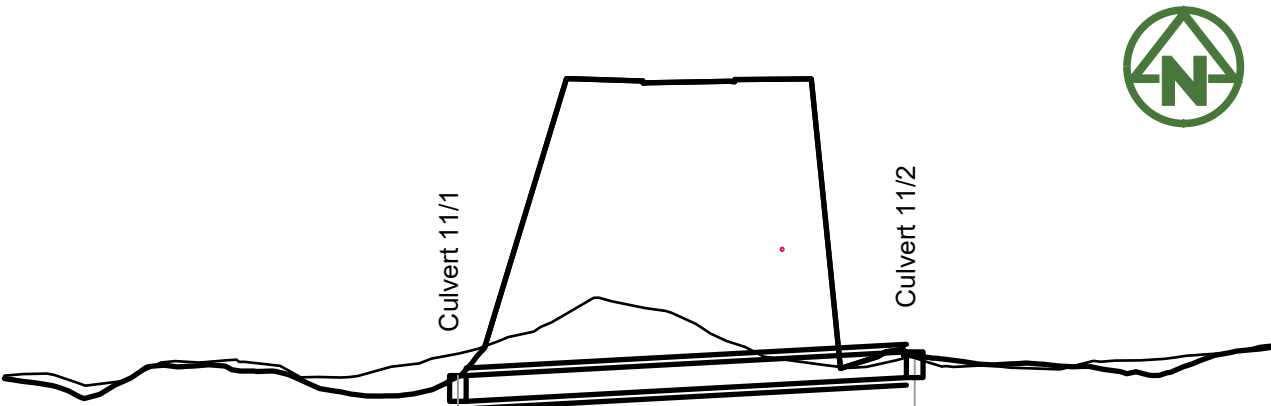
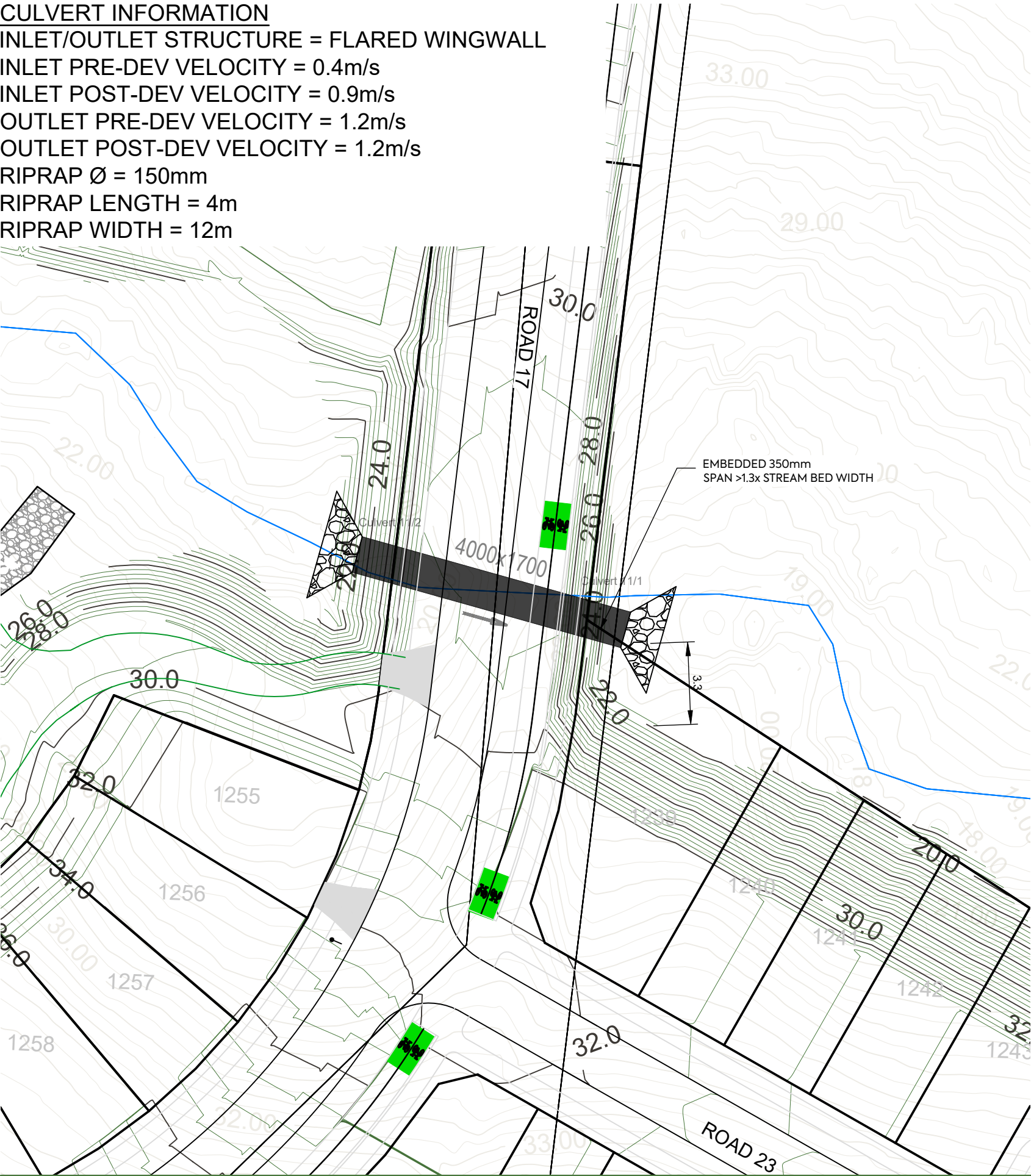


Culvert 10 - LONGSECTION



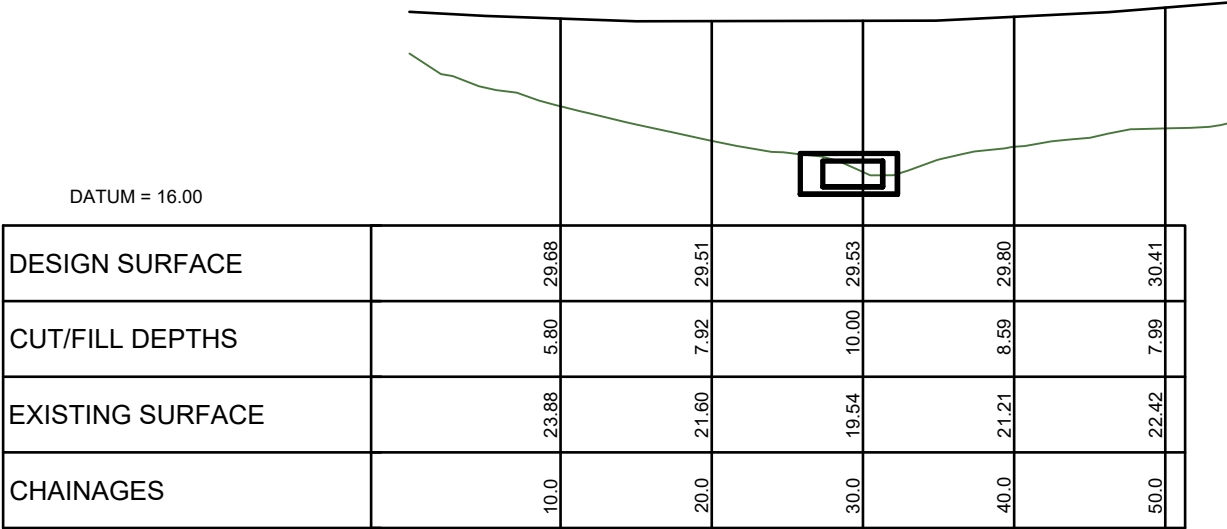
VERT=1:500 @ A3

CULVERT INFORMATION
INLET/OUTLET STRUCTURE = FLARED WINGWALL
INLET PRE-DEV VELOCITY = 0.4m/s
INLET POST-DEV VELOCITY = 0.9m/s
OUTLET PRE-DEV VELOCITY = 1.2m/s
OUTLET POST-DEV VELOCITY = 1.2m/s
RIPRAP Ø = 150mm
RIPRAP LENGTH = 4m
RIPRAP WIDTH = 12m



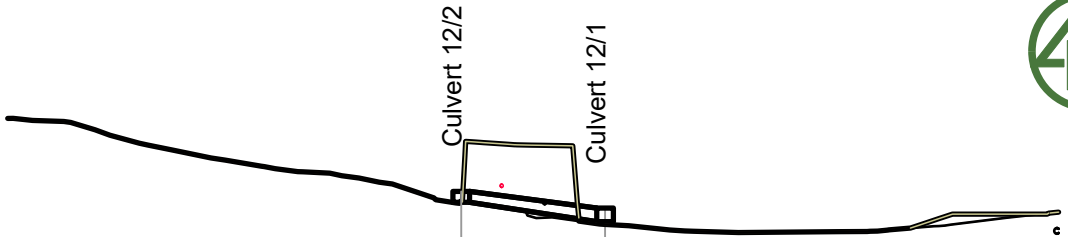
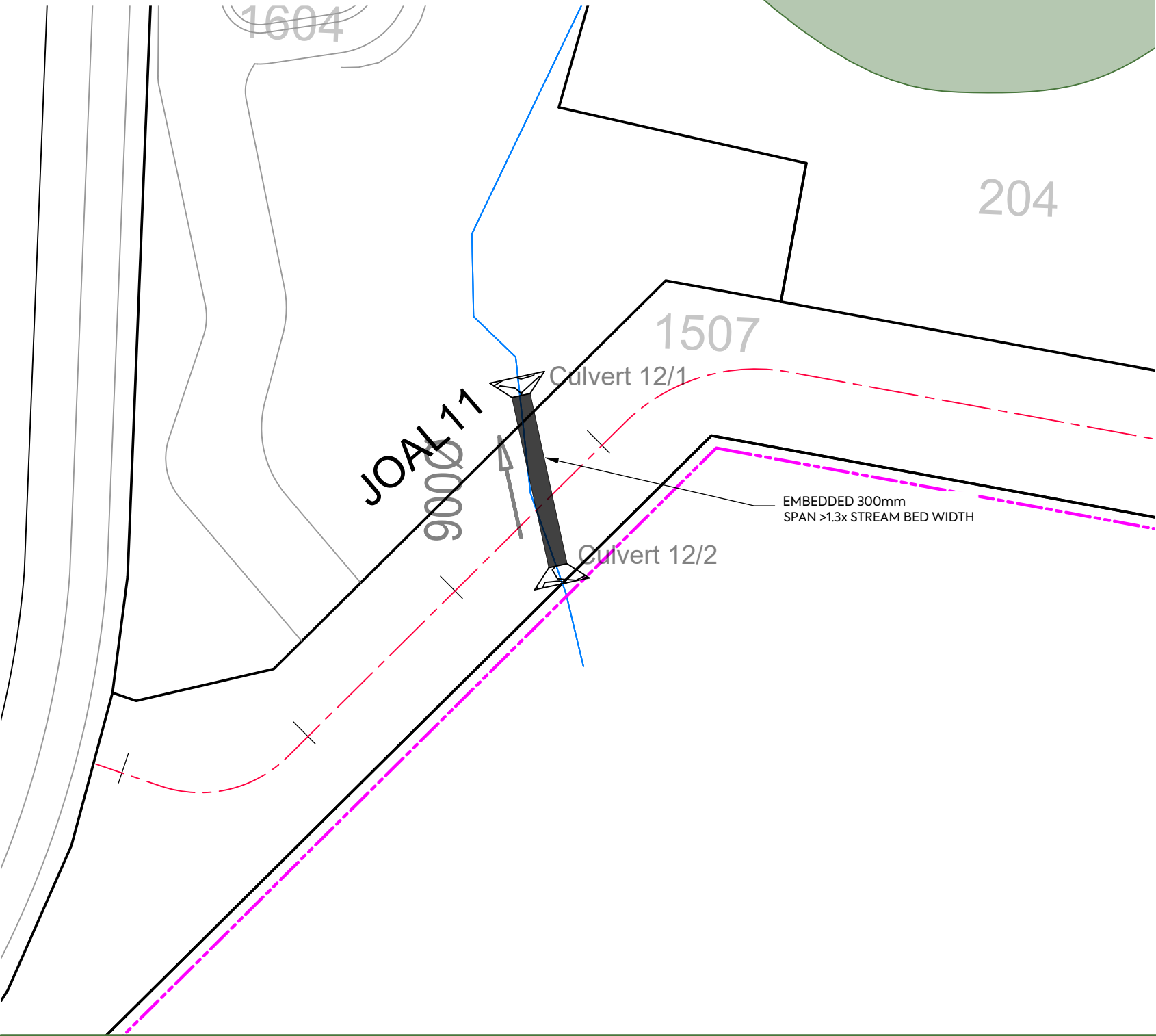
DATUM = 12.0			
DESIGN SURFACE	18.95		20.32
DEPTH TO INVERT	1.62	1.62	1.42
INVERT LEVEL	17.33	17.33	18.90
EXISTING SURFACE	20.48		20.20
PIPE DETAILS	5.2% 4000x1700mmø BOX		
LENGTH	30.22m		

Culvert 11 - LONGSECTION



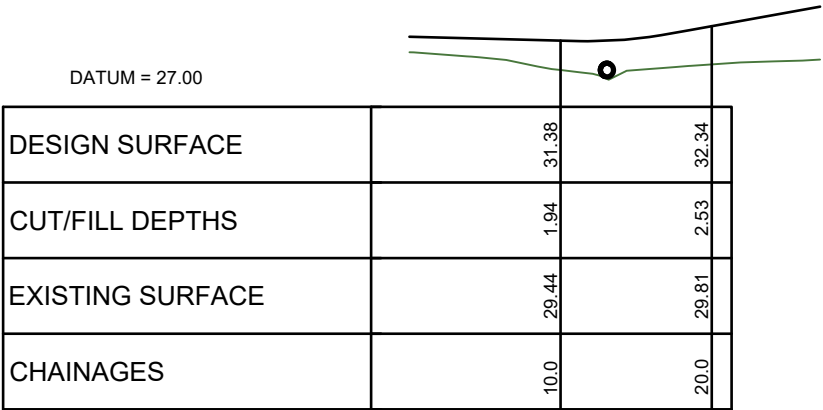
Culvert 11 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3

CULVERT INFORMATION
INLET/OUTLET STRUCTURE = HEADWALL
INLET PRE-DEV VELOCITY = UNDEFINED
INLET POST-DEV VELOCITY = UNDEFINED
OUTLET PRE-DEV VELOCITY = 0.1m/s
OUTLET POST-DEV VELOCITY = 0.2m/s
RIPRAP Ø = 150mm
RIPRAP LENGTH = 0.9m
RIPRAP WIDTH = 2.7m



DATUM = 16.0			
DESIGN SURFACE	30.23	28.72	
DEPTH TO INVERT	0.05	-0.18	-0.18
INVERT LEVEL	30.18	28.90	28.90
EXISTING SURFACE	30.23	28.72	
PIPE DETAILS	13.47% 900mmø RCRRJ		
LENGTH	8.41m		

Culvert 12 - LONGSECTION



DATUM = 27.00			
DESIGN SURFACE	31.38	32.34	
CUT/FILL DEPTHS	1.94	2.53	
EXISTING SURFACE	29.44	29.81	
CHAINAGES	10.0	20.0	

Culvert 12 - ELEVATION VIEW
SCALE HORIZ=1:500 @ A3
VERT=1:500 @ A3

LEGEND:

PRE-DEVELOPMENT WATER LEVEL
POST-DEVELOPMENT WATER LEVEL

EXISTING MOTORWAY APPROX. LEVEL
RL=27.00

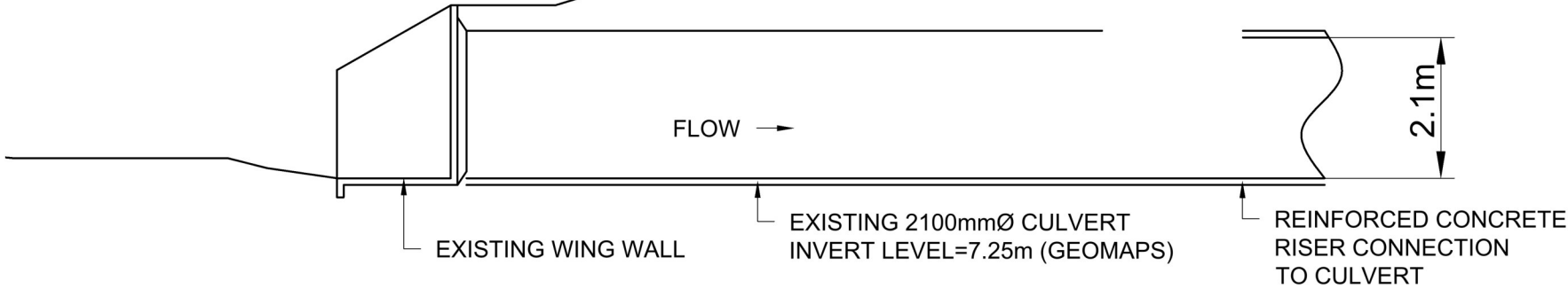
100-ARI WATER LEVEL 3.8CC
(100% BLOCKED CULVERT)
RL=21.39m (POST-DEVELOPMENT)

100-ARI WATER LEVEL 3.8CC
RL=16.73m (POST-DEVELOPMENT)
RL=17.02m (PRE-DEVELOPMENT)

10-ARI WATER LEVEL 3.8CC
RL=14.06m (POST-DEVELOPMENT)
RL=13.86m (PRE-DEVELOPMENT)

2-ARI WATER LEVEL 3.8CC
RL=11.50m (POST-DEVELOPMENT)
RL=11.4m (PRE-DEVELOPMENT)

EXISTING FINISHED
GROUND PROFILE



E	UPDATED FLOOD LEVELS	JDK			19/12/25
D	REMOVED RISER	JDK			05/12/25
C	FOR DISCUSSION	ZW	JDK	JDK	02/12/25
B	FOR DISCUSSION	ZW	JDK	JDK	01/12/25
A	FIRST ISSUE	ZW			20/11/25
REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE



CLIENT:
VINEWAY LTD

PROJECT:
DELMORE
53A, 53B & 55 RUSSELL ROAD
OREWA
STAGE 1

TITLE:
STORMWATER
EXISTING NZTA CULVERT
UPGRADE PLAN

PURPOSE OF ISSUE:
RESOURCE CONSENT

SCALE:
1:100m@A3
DO NOT SCALE

DRAWING NO:
3725-1-4815

REV:
E