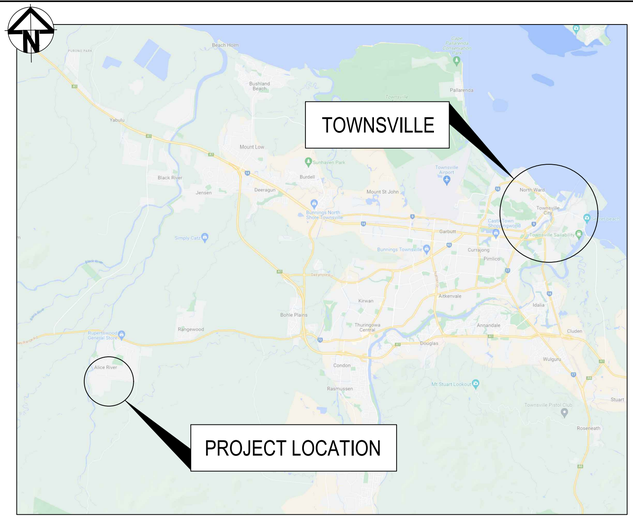
MT MARGARET ESTATE STAGE 11

OPERATIONAL WORKS

ALICE RIVER, QLD 4817



LOCALITY PLAN KEY
NTS

LEGEND

EXISTING		PROPOSED	
	KERB ONLY		KERB ONLY
	KERB AND CHANNEL		KERB AND CHANNEL
	ROAD SHOULDER		ROAD SHOULDER
	CONTOUR (0.250m)		MINOR CONTOUR (0.250m)
	CONTOUR (1.00m)		MAJOR CONTOUR (1.00m)
	ROAD EDGE UNSEALED		ROAD EDGE UNSEALED
	TOP OF BATTER		TOP OF BATTER
	BOTTOM OF BATTER		BOTTOM OF BATTER
			ROAD EDGE GUIDE POST

SERVICES (PUP) LEGEND

	EXISTING	PROPOSED
DRAINAGE (unknown dia.)	D(*)	
DRAINAGE (known dia.)		
WATER MAIN	W(*)	W

(*) - DENOTES QUALITY LEVEL AS PER A.S. 5488-2013.

NOTES:

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS.
2. BEFORE PROCEEDING WITH THE WORK ANY DISCREPANCIES IN THE CONTRACT DOCUMENTS SHALL BE REFERRED FOR DECISION TO THE SUPERINTENDENT.
3. DO NOT SCALE FROM DRAWINGS. IF IN DOUBT, ASK!!
4. CONTRACTOR SHALL VERIFY ALL LOCATIONS OF SERVICES, ALL DIMENSIONS AND LEVELS PRIOR TO CONSTRUCTION.
5. ALL MATERIALS & WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE LOCAL AUTHORITY'S BY-LAWS.
6. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL RELEVANT APPROVALS PRIOR TO COMMENCEMENT OF WORKS.

SURVEY NOTES:

1. SERVICES SHOWN HAVE BEEN LOCATED BY FIELD SURVEY MEASUREMENT FOR SURFACE INFORMATION AND INVERT LEVEL INFORMATION AS SHOWN, WHERE POSSIBLE. SERVICE PROVIDER RECORDS HAVE BEEN USED TO INDICATE UNDERGROUND SERVICE LOCATIONS SHOWN THROUGHOUT THE CONTOUR AND DETAIL SURVEY. PRIOR TO ANY DEMOLITION CONSTRUCTION OR EXCAVATION, THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR LOCATION OF SERVICES.
2. DUE TO THE ACCURACY OF SURVEY PROVIDED ALL SETOUT AND LEVELS MUST BE CONFIRMED ON SITE PRIOR TO COMMENCING ANY WORKS.

LOCALITY PLAN
1:5000

100 0 100 200 300 400 500m

SCALE 1:5000 @ A1 SCALE 1:10 000 @ A3

CIVIL ENGINEERING DRAWINGS		
Sheet Number	Sheet Title	Rev
C001	LOCALITY PLAN AND DRAWING INDEX	K
C011	ROADS CONTROL LINE SETOUT	B
C012	DRAINAGE CONTROL LINE SETOUT ANNOTATED BY TCC 18/12/2024	C D
C051	EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 1	E
C052	EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 2	C
C053	EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 3 ANNOTATED BY TCC 18/12/2024	F
C054	EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 4 ANNOTATED BY TCC 18/12/2024	H
C061	ROADS LONGITUDINAL SECTIONS	A
C062	ROADS LONGITUDINAL SECTIONS AND TYPICAL CROSS SECTION	B
C063	OPEN CHANNEL LONGITUDINAL SECTIONS & TYPICAL SECTIONS	B
C064	OPEN CHANNEL LONGITUDINAL SECTIONS SHEET 2	C
C071	INTERSECTION SETOUT DETAILS SHEET 1	B
C072	INTERSECTION SETOUT DETAILS SHEET 2	B
C073	INTERSECTION SETOUT DETAILS SHEET 3	B
C074	ROADS CROSS SECTIONS SHEET 1	A
C075	ROADS CROSS SECTIONS SHEET 2	A
C076	ROADS CROSS SECTIONS SHEET 3	A
C077	ROADS CROSS SECTIONS SHEET 4	A
C078	ROADS CROSS SECTIONS SHEET 5	A
C081	OPEN CHANNEL CROSS SECTIONS SHEET 1	B
C082	OPEN CHANNEL CROSS SECTIONS SHEET 2	A
C083	OPEN CHANNEL CROSS SECTIONS SHEET 3	A
C084	OPEN CHANNEL CROSS SECTIONS SHEET 4	A
C085	OPEN CHANNEL CROSS SECTIONS SHEET 5	A
C086	OPEN CHANNEL CROSS SECTIONS SHEET 6	B
C101	EROSION AND SEDIMENT CONTROL PLAN	H
C102	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS SHEET 1	B
C103	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS SHEET 2	B
C201	BULK EARTHWORKS NOTES, DETAIL AND LEGEND	F
C202	BULK EARTHWORKS LAYOUT PLAN	H
C301	SURFACE TREATMENT LAYOUT PLAN	E
C401	CULVERT LAYOUT AND LONGITUDINAL SECTIONS	B
C402	DRAINAGE DETAILS	C
C601	WATER LAYOUT PLAN	D
C602	WATER RETICULATION NOTES AND DETAILS	C
C603	WATER CROSSING DETAILS	A

REFERENCED STANDARD DRAWINGS	
DRAWING No.	DRAWING TITLE
SD-020D	TCC - CONCRETE KERBING
SD-060A	TCC - TRAFFIC SIGN INSTALLATION
SD-065A	TCC - STREET NAME SIGN AND INSTALLATION DETAILS
SD-305	KERB AND CHANNEL RESIDENTIAL DRAINAGE CONNECTIONS - LAYOUT
SD1250	TMR - R C BOX CULVERTS AND SLAB LINK BOX CULVERTS - CULVERTS HEIGHT > 600
SD1305	PIPE CULVERTS - HEADWALL AND APRON FOR PIPE DIAMETER 375 TO 675
SD1359	CULVERTS - INSTALLATION, BEDDING AND FILLING/BACKFILLING AGAINST/OVER CULVERTS

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
No.	BY	DATE	DESCRIPTION	
K	BL	30.11.24	FOR APPROVAL - REVISIONS UPDATED	
J	BL	05.07.24	FOR APPROVAL - REVISIONS UPDATED	
H	BL	19.06.24	FOR APPROVAL - REVISIONS UPDATED	
G	BL	10.06.24	FOR APPROVAL - REVISIONS UPDATED	
F	BL	28.05.24	FOR APPROVAL - REVISIONS UPDATED	

HORIZ. DATUM	MT MARGARET GRID	
VERT. DATUM	AHD	
DRG. FILE	0944	DATE
DESIGN	BL	NOV '23
DRAWN	CBP	NOV '23

CERTIFICATION
BA Langtree RPEQ 11932

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS
NICKEL STREET
ALICE RIVER, QLD, 4817
LOCALITY PLAN AND DRAWING INDEX

SCALE	AS SHOWN
SHEET	1 OF 36
REVISION	A B C D E F G H J K
DRG No.	0944 - C001

CONTROL LINE 'A' SETOUT TABLE - DIAMOND DRIVE

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58299.635	861057.877	113d39'48"				
TC	65.189	58359.343	861031.713	113d39'48"				
IP2	85.916	58378.371	861023.374		250	20.775	9d30'03"	41.455
CT	106.644	58398.515	861018.291	104d09'46"				
TC	129.292	58420.475	861012.750	104d09'46"				
IP3	209.683	58501.226	860992.372		250	52.176	36d50'56"	104.352
CT	233.644	58513.491	860967.140					

CONTROL LINE 'B' SETOUT TABLE - TROMMEL STREET

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58392.231	861019.964	15d39'11''				
TC	20.278	58397.702	861039.490	15d39'11"				
IP2	24.106	58398.735	861043.176		500	3.828	0d52'38"	7.656
CT	27.934	58399.824	861046.846	16d31'49"				
TC	142.581	58432.444	861156.754	16d31'49"				
IP3	172.911	58441.193	861186.234		150	30.751	23d10'15"	60.661
CT	203.242	58437.637	861216.779	353d21'34"				
TC	391.215	58415.900	861403.490	353d21'34"				
IP4	409.970	58413.720	861422.218		150	18.854	14d19'41"	37.511
CT	428.725	58416.242	861440.902	7d41'15"				
IP5	530.399	58429.843	861541.662	7d41'15"				

CONTROL LINE 'C' SETOUT TABLE - NICKEL STREET

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58381.286	861548.216	97d41'14"				
IP2	256.189	58635.172	861513.946	97d41'14"				

CONTROL LINE 'D' SETOUT TABLE - COPPER STREET

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58422.925	861343.149	83d21'34"				
TC	18.333	58441.135	861345.269	83d21'34"				
IP2	30.835	58453.618	861346.722		100	12.568	14d19'36"	25.005
CT	43.337	58466.073	861345.041	97d41'10"				
IP3	174.859	58596.422	861327.507					

Townsville City Council
Accepted Subject to Conditions
OPW23/0117
18/07/2024

20 0 20 40 60 80 100m
SCALE 1:1000 @ A1 SCALE 1:2000 @ A3

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
No.	BY	DATE	DESCRIPTION	
B	BL	06.11.23	FOR APPROVAL	
A	CBP	28.09.23	FOR APPROVAL	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION
RPEQ 11932

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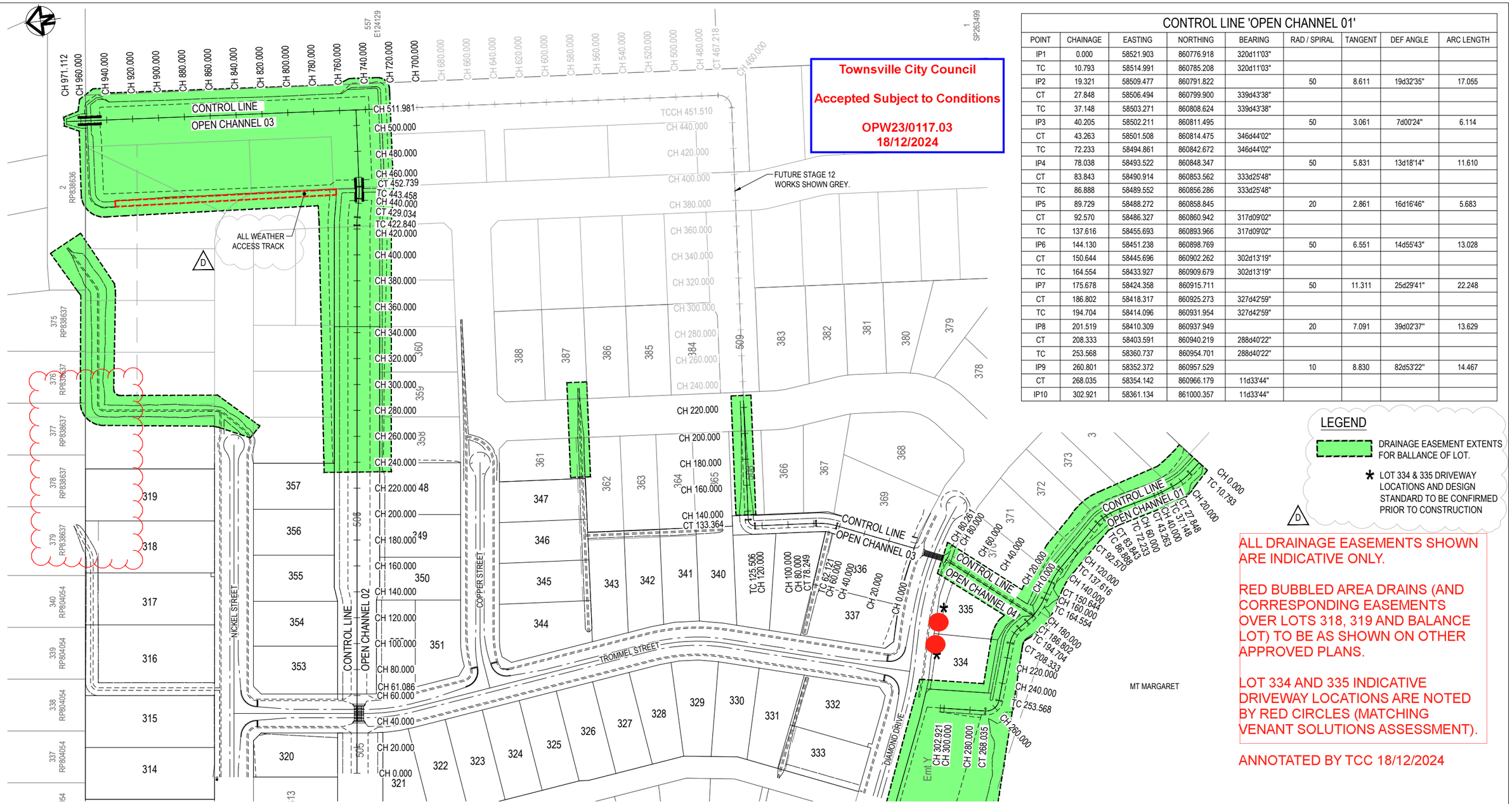
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
ROADS CONTROL LINE SETOUT

SCALE	AS SHOWN
SHEET	2 OF 36
REVISION	A B
DRG No.	0944 - C011



Townsville City Council

Accepted Subject to Conditions

OPW23/0117.03
18/12/2024

CONTROL LINE 'OPEN CHANNEL 01'

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58521.903	860776.918	320d11'03"				
TC	10.793	58514.991	860785.208	320d11'03"				
IP2	19.321	58509.477	860791.822		50	8.611	19d32'35"	17.055
CT	27.848	58506.494	860799.900	339d43'38"				
TC	37.148	58503.271	860808.624	339d43'38"				
IP3	40.205	58502.211	860811.495		50	3.061	7d00'24"	6.114
CT	43.263	58501.508	860814.475	346d44'02"				
TC	72.233	58494.861	860842.672	346d44'02"				
IP4	78.038	58493.522	860848.347		50	5.831	13d18'14"	11.610
CT	83.843	58490.914	860853.562	333d25'48"				
TC	86.888	58489.552	860856.286	333d25'48"				
IP5	89.729	58488.272	860858.845		20	2.861	16d16'46"	5.683
CT	92.570	58486.327	860860.942	317d09'02"				
TC	137.616	58455.693	860893.966	317d09'02"				
IP6	144.130	58451.238	860898.769		50	6.551	14d55'43"	13.028
CT	150.644	58445.696	860902.262	302d13'19"				
TC	164.554	58433.927	860909.679	302d13'19"				
IP7	175.678	58424.358	860915.711		50	11.311	25d29'41"	22.248
CT	186.802	58418.317	860925.273	327d42'59"				
TC	194.704	58414.096	860931.954	327d42'59"				
IP8	201.519	58410.309	860937.949		20	7.091	39d02'37"	13.629
CT	208.333	58403.591	860940.219	288d40'22"				
TC	253.568	58360.737	860954.701	288d40'22"				
IP9	260.801	58352.372	860957.529		10	8.830	82d53'22"	14.467
CT	268.035	58354.142	860966.179	11d33'44"				
IP10	302.921	58361.134	861000.357	11d33'44"				

LEGEND

DRAINAGE EASEMENT EXTENTS FOR BALLANCE OF LOT.

* LOT 334 & 335 DRIVEWAY LOCATIONS AND DESIGN STANDARD TO BE CONFIRMED PRIOR TO CONSTRUCTION

ALL DRAINAGE EASEMENTS SHOWN ARE INDICATIVE ONLY.

RED BUBBLED AREA DRAINS (AND CORRESPONDING EASEMENTS OVER LOTS 318, 319 AND BALANCE LOT) TO BE AS SHOWN ON OTHER APPROVED PLANS.

LOT 334 AND 335 INDICATIVE DRIVEWAY LOCATIONS ARE NOTED BY RED CIRCLES (MATCHING VENANT SOLUTIONS ASSESSMENT).

ANNOTATED BY TCC 18/12/2024

CONTROL LINE 'OPEN CHANNEL 03'

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58486.018	861004.005	23d48'28"				
TC	62.121	58511.095	861060.840	23d48'28"				
IP2	70.185	58514.378	861068.282		50	8.134	18d28'51"	16.127
CT	78.249	58515.134	861076.381	5d19'38"				
TC	125.506	58519.521	861123.435	5d19'38"				
IP3	129.435	58519.986	861128.417		5	5.004	90d02'50"	7.858
CT	133.364	58524.968	861127.949	95d22'28"				
TC	451.510	58841.715	861098.150	95d22'28"				
IP4	459.364	58851.671	861097.214		10	10.000	89d59'60"	15.708
CT	467.218	58852.607	861107.170	5d22'28"				
IP5	971.112	58899.803	861608.849	5d22'28"				

CONTROL LINE 'OPEN CHANNEL 02'

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58371.464	861453.671	97d41'22"				
IP2	35.584	58406.728	861448.909		0	0.000	0d00'14"	0.000
IP3	61.086	58432.001	861445.497	97d41'22"				
TC	422.840	58790.505	861397.118	97d41'08"				
IP4	425.937	58793.576	861396.704		75	3.099	4d43'55"	6.194
CT	429.034	58796.602	861396.037	102d25'02"				
TC	443.458	58810.689	861392.936	102d25'02"				
IP5	448.099	58815.227	861391.936		75	4.646	7d05'24"	9.281
CT	452.739	58819.853	861391.505	95d19'38"				
IP6	511.981	58878.839	861386.005	95d19'38"				

CONTROL LINE 'OPEN CHANNEL 04'

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58422.032	860919.393	40d13'24"				
IP2	80.261	58473.862	860980.675	40d13'24"				

SCALE 1:1500 @ A1 — SCALE 1:3000 @ A3

FOR APPROVAL
19TH JUNE, 2024

REVISIONS				
No.	BY	DATE	DESCRIPTION	
D	BL	19.07.24	FOR APPROVAL - NOTES AND LEGEND ADDED	
C	BL	21.11.23	FOR APPROVAL - LABELS UPDATED	
B	BL	06.11.23	FOR APPROVAL	
A	CBP	28.09.23	FOR APPROVAL	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION

RPEQ 11932

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
DRAINAGE CONTROL LINE SETOUT

SCALE	AS SHOWN
SHEET	3 OF 36
REVISION	A B C D
DRG No.	0944 - C012

JOINS DRG C052

JOINS DRG C052

X 58324.325
Y 861131.660
Z 52.670

X 58397.718
Y 861099.498
Z 53.050

PROPOSED REAR ALLOTMENT SWALE TO TIE IN NEATLY WITH EXISTING OPEN CHANNEL.

REFER TO DRAWING C063 FOR TYPICAL DETAIL OF REAR OF LOT SWALE.

1:10 BATTER DOWN TO EXISTING OPEN CHANNEL

REMOVE TEMPORARY TURNAROUND PROVIDED DURING STAGE 10 WORKS AND CONNECT NEATLY WITH EXISTING ROADWAY.

EX. CULVERT AND HEADWALLS INSTALLED DURING STAGE 10 WORKS

CONTROL LINE 'A'

DIAMOND DR

TROMMEL ST

CONTROL LINE 'B'

X 58292.411
Y 861041.390
Z 55.040

PROPOSED BASIN SURFACE TO MATCH NEATLY WITH EXISTING.

X 58363.184
Y 861010.377
Z 55.475

X 58275.554
Y 861002.922
Z 55.400

PROPOSED BASIN 01

X 58349.774
Y 860970.411
Z 55.800

1 in 5 BATTER TO NATURAL.

ROCK PROTECTION TO EXTEND 2m UP NATURAL CHANNEL. NOMINAL SIZE 200mm, MIN 300mm DEEP ON A39 GEOFABRIC KEYED INTO PROPOSED SURFACE. MATCH CHANNEL PROFILE AS DIRECTED ON SITE BY SUPERINTENDENT.

MOUNT MARGARET

1:6 BATTER MAX. FROM LOT DOWN TO PROPOSED BASIN 01

LOTS 334 AND 335 TO BE FILLED TO REMOVE EXISTING MINOR DRAINAGE CHANNELS.

REFER TO DRAWING C063 FOR TYPICAL DETAIL OF REAR OF LOT SWALE.

REAR OF LOT SWALE TO DISCHARGE NEATLY INTO PROPOSED OPEN CHANNEL.

X 58432.366
Y 861096.7428
Z 53.000

X 58510.503
Y 861066.280
Z 52.360

ALL EXISTING CREEKS AND GULLIES TO BE STRIPPED OF SANDY & LOOSE MATERIAL. CUT TO -0.300m BELOW EXISTING SURFACE BETWEEN LOW BANKS AND FILL AND COMPACT AS PER REQUIREMENTS ON DRG C201. (TYP)

LOTS 336-338 TO BE REPROFILED AS SHOWN TO REMOVE EXISTING DRAINAGE CHANNELS.

REFER TO DRAWING C071 FOR INTERSECTION SETOUT DETAILS.

CONTROL LINE OPEN CHANNEL 03

CONTROL LINE OPEN CHANNEL 02

CONTROL LINE OPEN CHANNEL 01

5/600 RCP(2) TO CONVEY FLOWS FROM UPSTREAM CATCHMENT TO OPEN CHANNEL. REFER TO DRG C401 FOR CULVERT DETAILS AND LONGITUDINAL SECTION.

REFER TO DRAWING C071 FOR TEMPORARY TURN AROUND DETAILS.

X 58511.337
Y 860950.752

X 58509.352
Y 860934.204

1% AEP CUT OFF DRAIN, 3m BASE WIDTH WITH 1 IN 5 BATTERS. REFER TO C063 FOR LONGITUDINAL AND TYPICAL SECTIONS.

SMOOTH PROFILE OF FUTURE STAGE 12 LOTS 370 AND 371 AS SHOWN.

X 58496.835
Y 860908.099

1% AEP CUT OFF DRAIN, 3m BASE WIDTH WITH 1 IN 5 BATTERS. REFER TO C063 FOR LONGITUDINAL AND TYPICAL SECTIONS.

INSTALL ROCK PROTECTION AT INTERSECTION OF NATURAL CHANNEL AND PROPOSED CUT OFF DRAIN. ROCK PROTECTION TO EXTEND 2m UP NATURAL CHANNEL. NOMINAL SIZE 200mm, MIN 300mm DEEP ON A39 GEOFABRIC KEYED INTO PROPOSED SURFACE. MATCH CHANNEL PROFILE AS DIRECTED ON SITE BY SUPERINTENDENT. (TYP)

JOINS ADJACENT

JOINS ADJACENT

JOINS ADJACENT

JOINS ADJACENT

REFER TO DRAWING C001 FOR GENERAL LEGEND

KEY PLAN
NTS

Townsville City Council
Accepted Subject to Conditions
OPW23/0117
18/07/2024

FOR APPROVAL
10TH JUNE, 2024

10 0 10 20 30 40 50m
SCALE 1:500 @ A1 SCALE 1:1 000 @ A3

Langtree Consulting

CERTIFICATION
RPEQ 11932

MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 1

REVISIONS	No.	BY	DATE	DESCRIPTION
	E	BL	10.06.24	FOR APPROVAL - LOT LAYOUT UPDATED
	D	BL	15.12.23	FOR APPROVAL - LOT LAYOUT AND BASIN 01 AMENDED
	C	BL	21.11.23	FOR APPROVAL - GUIDE POSTS ADDED
	B	BL	06.11.23	FOR APPROVAL
	A	CBP	28.09.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID	SCALE	AS SHOWN
VERT. DATUM	AHD	SHEET	4 OF 36
DRG. FILE	0944 DATE	REVISION	A B C D E
DESIGN	BL NOV '23		
DRAWN	CBP NOV '23	DRG No.	0944 - C051

JOINS DRG C053

JOINS DRG C053

MINOR FILLING TO LOTS 348-352 TO SMOOTH PROFILE TO DISCHARGE TO OPEN CHANNEL 02.

CONTINUE ROAD TABLE DRAINS TO DAYLIGHT WITH 1m WIDE BASE, 1 IN 5 BATTERS AT 0.5% MIN. TO NATURAL SURFACE. REFER TO DRAWING C202 FOR EXTENTS

X 58583.882
Y 861339.737
Z 48.710

X 58618.123
Y 861335.368
Z 48.510

MINOR FILLING TO LOTS 322-327 TO SMOOTH PROFILE TO DISCHARGE TOWARDS TROMMEL ST

REAR LEVELS FOR LOTS 321-325 TO MATCH NEATLY WITH EXISTING BERM PROVIDED DURING STAGE 10 WORKS.

COPPER ST

CONTROL LINE 'D'

TROMMEL ST

CONTROL LINE 'B'

EX. OPEN CHANNEL

REFER TO DRAWING C072 FOR INTERSECTION SETOUT DETAILS.

X 58581.073
Y 861318.926
Z 48.710

REFER TO DRAWING C072 FOR COPPER STREET TEMPORARY TURN AROUND SETOUT.

ALL EXISTING CREEKS AND GULLIES TO BE STRIPPED OF SANDY & LOOSE MATERIAL. CUT TO -0.300m BELOW EXISTING SURFACE BETWEEN LOW BANKS AND FILL AND COMPACT AS PER REQUIREMENTS ON DRG C201

LOTS 343-347 TO BE REPROFILED AS SHOWN TO REMOVE EXISTING NATURAL DRAINAGE CHANNEL.

X 58457.905
Y 861261.478
Z 49.825

X 58529.683
Y 861254.865
Z 49.235

X 58604.752
Y 861247.937
Z 48.825

CONTINUE REAR OF LOT SWALE TO DAYLIGHT WITH 1m WIDE BASE, 1 IN 5 BATTERS AT 0.5% MIN. TO NATURAL SURFACE. REFER TO DRAWING C202 FOR EXTENTS

REFER TO DRAWING C063 FOR TYPICAL DETAIL OF OF LOT SWALE.

X 58523.794
Y 861191.216
Z 50.085

DAYLIGHT PROPOSED OPEN CHANNEL AT 1% TO NATURAL. REFER TO DRAWING C064 FOR LONGITUDINAL SECTION

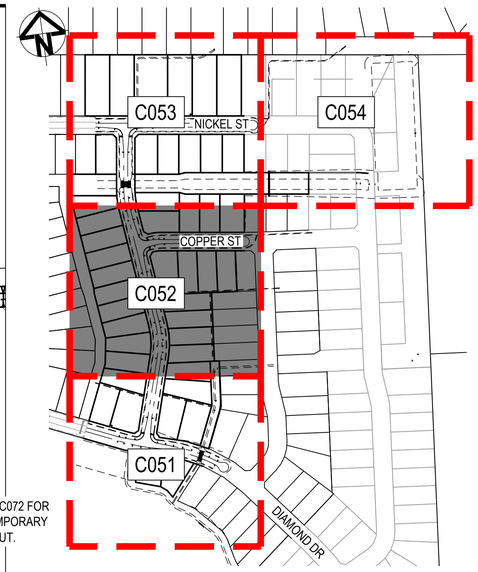
X 58519.877
Y 861148.888
Z 51.060

CONTROL LINE OPEN CHANNEL 03

REFER TO DRAWING C001 FOR GENERAL LEGEND

JOINS DRG C051

JOINS DRG C051



KEY PLAN
NTS

Townsville City Council
Accepted Subject to Conditions
OPW23/0117
18/07/2024

FOR APPROVAL
10TH JUNE, 2024

10 0 10 20 30 40 50m
SCALE 1:500 @ A1 SCALE 1:1 000 @ A3

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CERTIFICATION
RPEQ 11932

MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 2

REVISIONS	No.	BY	DATE	DESCRIPTION
	C	BL	21.11.23	FOR APPROVAL - GUIDE POSTS ADDED
	B	CBP	06.11.23	FOR APPROVAL
	A	CBP	28.09.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID	SCALE	AS SHOWN
VERT. DATUM	AHD	SHEET	5 OF 36
DRG. FILE	0944	DATE	
REVISION	A B C		
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	DRG No. 0944 - C052

ADJUST DRAIN AS NECESSARY (WHILST MAINTAINING CROSS SECTION) TO ENSURE MINIMUM 500mm SEPARATION FROM TOP OF BATTER TO EXTERNAL PROPERTY BOUNDARY.

ANNOTATED BY TCC 18/12/2024

336 RP804054 | 337 RP804054 | 338 RP804054 | 339 RP804054 | 340 RP804054 | 379 RP838637 | 378 RP838637 | 377 RP8386

X 58468.242
Y 861647.319
Z 48.421

X 58462.616
Y 861643.035
Z 48.465

JOINS DRG C054

PROPOSED SWALE, 2m BASE WIDTH WITH 1 IN 5 BATTERS TO DISCHARGE TABLE DRAIN TO EXISTING NORTHERN DRAINAGE CHANNEL.

LOT 314 BOUNDARY LEVELS TO MATCH NEATLY WITH LOT 284.

MINOR FILLING TO LOTS 316-319 TO SMOOTH PROFILE .

284 | 314 | 315 | 316 | 317 | 318 | 319

REMOVE TEMPORARY TURNAROUND PROVIDED DURING STAGE 10 WORKS AND CONNECT NEATLY WITH EXISTING ROADWAY.

X 58450.565
Y 861553.998
Z 48.965

TABLE DRAIN HIGH POINT
CH 115.590
X 58497.241
Y 861543.159
Z 49.415

X 58622.640
Y 861526.216
Z 48.215

CONTROL LINE 'C'

CH 530.399

NICKEL ST

CH 520.000

CONTROL LINE 'B'

REFER TO DRAWING C073 FOR INTERSECTION SETOUT DETAILS.

CH 500.000

CH 480.000

CH 460.000

313 | 320 | 353 | 354 | 355 | 356 | 357

X 58619.831
Y 861505.422
Z 47.990

MINOR FILLING TO LOTS 353-357 TO SMOOTH PROFILE .

REFER TO DRAWING C073 FOR NICKEL STREET TEMPORARY TURN AROUND SETOUT.

PROPOSED OPEN CHANNEL 02 TO TIE IN NEATLY WITH EXISTING CHANNEL CONSTRUCTED DURING STAGE 10 WORKS.

5/1200x750 RCBC. REFER TO DRG C401 FOR CULVERT DETAILS AND LONGITUDINAL SECTION.

X 58503.598
Y 861440.379
Z 47.605

X 58514.560
Y 861441.422
Z 47.520

REFER TO C064 FOR LONGITUDINAL AND TYPICAL SECTIONS FOR OPEN CHANNEL 02.

4m WIDE ACCESS PATH

CH 440.000

CONTROL LINE 'OPEN CHANNEL 02'

505 | 506

CT 426.725

CH 420.000

CH 0.000 | CH 20.000 | CH 40.000 | CH 60.000 | CH 61.086 | CH 80.000 | CH 100.000 | CH 120.000 | CH 140.000 | CH 160.000 | CH 180.000 | CH 200.000 | CH 220.000 | CH 240.000 | CH 266.189

X 58502.916
Y 861428.359
Z 47.605

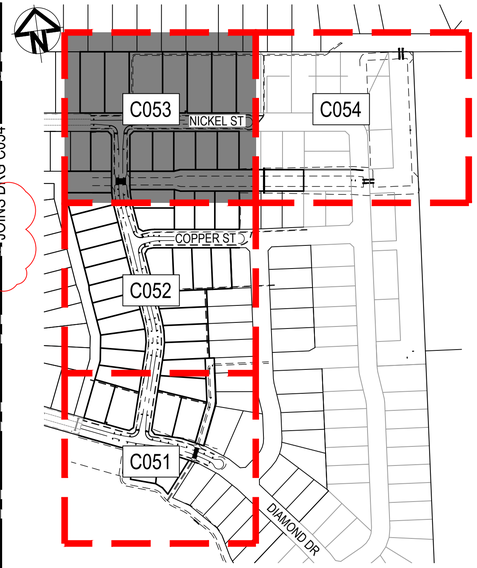
X 58512.497
Y 861424.544
Z 47.520

1:10 BATTER DOWN TO OPEN CHANNEL

321 | 352

REFER TO DRAWING C001 FOR GENERAL LEGEND

JOINS DRG C052 | JOINS DRG C052



KEY PLAN
NTS

Townsville City Council
Accepted Subject to Conditions
OPW23/0117.03
18/12/2024

FOR APPROVAL
10TH JUNE, 2024

10 0 10 20 30 40 50m
SCALE 1:500 @ A1 SCALE 1:1 000 @ A3

Langtree Consulting

CERTIFICATION
BA Langtree RPEQ 11932

MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 3

REVISIONS	No.	BY	DATE	DESCRIPTION
	F	BL	30.11.24	FOR APPROVAL - CHANNEL LAYOUT AMENDED
	E	BL	10.06.24	FOR APPROVAL - LOT LAYOUT UPDATED
	D	BL	26.11.23	FOR APPROVAL - HIGH POINT ON NICKEL ST ADDED
	C	BL	21.11.23	FOR APPROVAL - GUIDE POSTS ADDED
	B	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID	SCALE	AS SHOWN
VERT. DATUM	AHD	SHEET	6 OF 36
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

REVISION	A	B	C	D	E
	F				

DRG No. 0944 - C053

EXISTING OPEN CHANNEL

JOINS DRG C053

X 58803.018
Y 861621.132
Z 46.560

X 58777.990
Y 861607.376
z 46.715

X 58771.773
Y 861606.243
Z 46.750

X 58676.143
Y 861619.184
Z 47.250

ADJUST DRAIN AS NECESSARY (WHILST MAINTAINING CROSS SECTION) TO ENSURE MINIMUM 500mm SEPARATION FROM TOP OF BATTER TO EXTERNAL PROPERTY BOUNDARY.

ANNOTATED BY TCC 18/12/2024

H

X 58662.564
Y 861521.609
Z 47.725

2
RP838636

4.0m WIDE BUND ALONG NORTHERN EDGE OF BASIN
RL 47.650

REFER TO DRAWING C402 FOR BASIN OUTLET DETAILS.

CH 971.112

CH 960.000

CH 940.000

1.5m HIGH BUND FROM CH940.000 TO OUTLET
RL 47.650

X 58907.011
Y 861581.829
Z 46.365

X 58885.781
Y 861583.792
Z 46.365

X 58840.932
Y 861587.625
Z 46.400

CH 920.000

CH 900.000

CONTROL LINE 'OPEN CHANNEL 03'

0.15%

PROPOSED BASIN 02

CH 880.000

CH 860.000

REFER TO DRAWING C064 FOR OPEN CHANNEL 3 LONGITUDINAL SECTION.

CH 840.000

0.17%

CH 820.000

47.000

10.000

10.000

CH 800.000

PROPOSED LOCATION OF STOCKPILED CUT. INSTALL ALL REQUIRED EROSION AND SENDIMENT CONTROLS AS PER DETAIL ON DRG C103

REFER TO DRAWING C064 FOR OPEN CHANNEL 2 LONGITUDINAL SECTION.

ALL BATTERS 1 IN 5 MAX.

CH 780.000

X 58824.251
Y 861413.434
Z 46.675

X 58827.146
Y 861408.347
Z 46.675

CONTROL LINE 'OPEN CHANNEL 03'

0.2%

JOINS DRG C053

4m WIDE ACCESS PATH - RL48.250 ON LOW SIDE OF PATH

CH 760.000

X 58809.996
Y 861400.124
Z 46.750

REFER TO DRAWING C402 FOR CHANNEL RESTRICTION DETAILS.

CONTROL LINE 'OPEN CHANNEL 02'

7.000

10.000

CH 280.000 CH 300.000 CH 320.000 CH 340.000 CH 360.000 CH 380.000 CH 400.000 CH 420.000 TC 422.840 CT 429.034 CH 440.000 TC 443.458 CT 452.739 CH 460.000 CH 480.000 CH 500.000 CH 515.981

CH 740.000

X 58887.443
Y 861375.093
Z 46.645

557
E124129

2m WIDE BUND

TOP OF BUND
Z 48.100

X 58807.699
Y 861383.356
Z 46.750

X 58824.554
Y 861381.023
Z 46.700

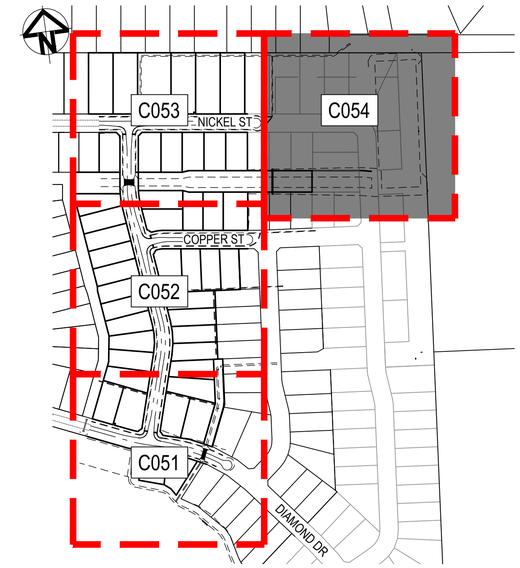
1 IN 5 BATTER TO NATURAL SURFACE. (TYP)

REFER TO DRAWING C001 FOR GENERAL LEGEND

5 0 5 10 15 20 25m

SCALE 1:250 @ A1 SCALE 1:500 @ A3

FOR APPROVAL
10TH JUNE, 2024



KEY PLAN
NTS

Townsville City Council
Accepted Subject to Conditions
OPW23/0117.03
18/12/2024

Langtree Consulting

CERTIFICATION
RPEQ 11932

MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

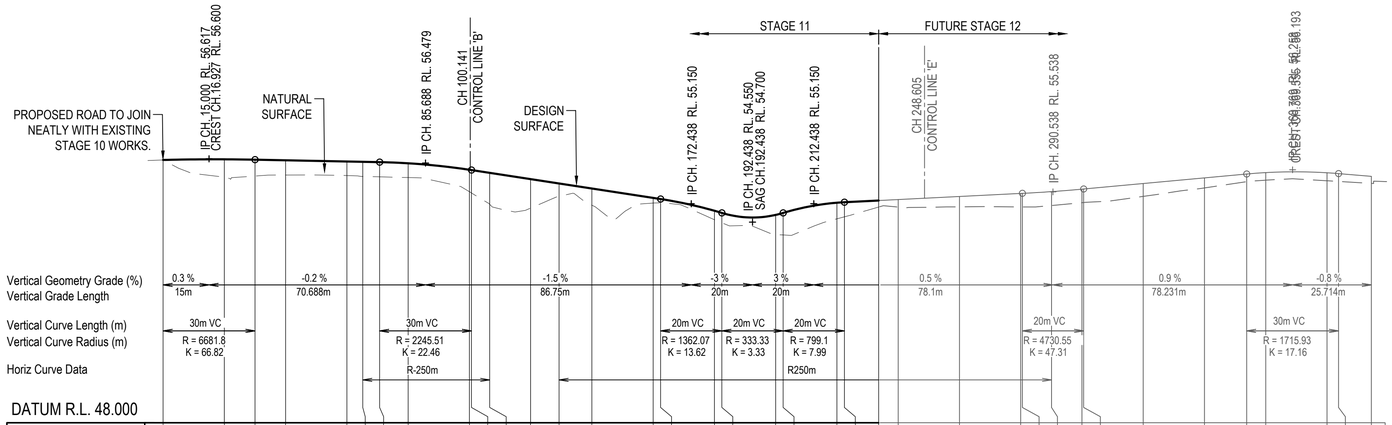
NICKEL STREET
ALICE RIVER, QLD, 4817
EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 4

REVISIONS	No.	BY	DATE	DESCRIPTION
	H	BL	30.11.24	FOR APPROVAL - CHANNEL LAYOUT AMENDED
	G	BL	05.07.24	FOR APPROVAL - CHANNEL RESTRICTIONS AMENDED
	F	BL	19.06.24	FOR APPROVAL - ADJACENT LOT WORKS REMOVED
	E	BL	04.06.24	FOR APPROVAL - OUTLET PROTECTION ADDED
	D	BL	28.05.24	FOR APPROVAL - STORMWATER UPDATED

HORIZ. DATUM	MT MARGARET GRID	SCALE	AS SHOWN
VERT. DATUM	AHD	SHEET	7 OF 36
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

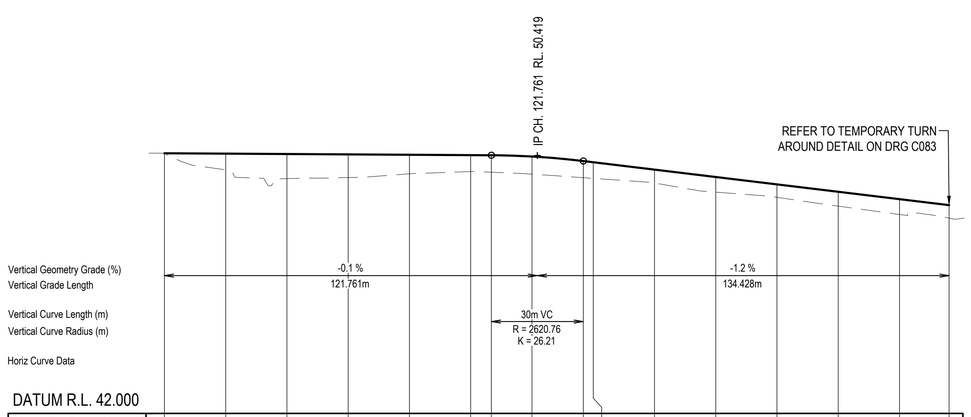
REVISION	A	B	C	D	E
	F	G	H		

DRG No. 0944 - C054



DATUM R.L. 48.000

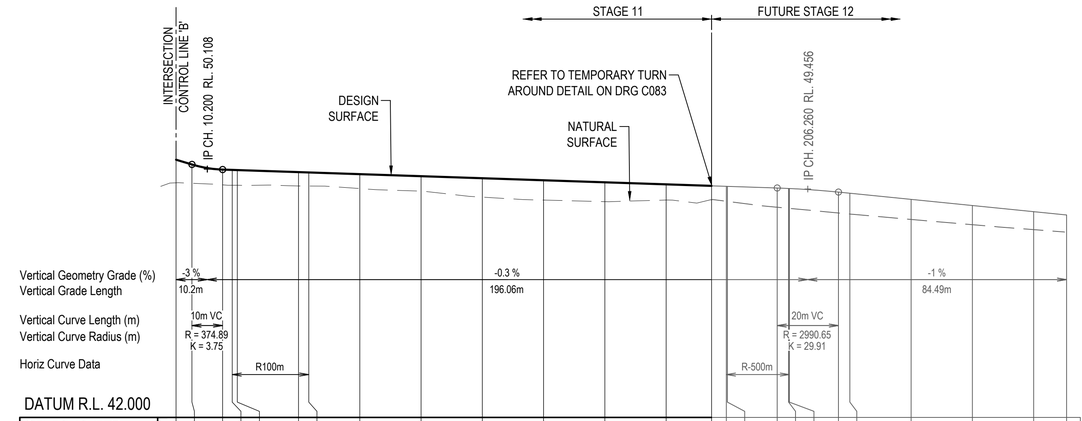
| | | |



CUT DEPTH (-) / FILL DEPTH	0.658	0.753	0.603	0.756	0.623	0.535	0.555	0.576	0.542	0.526	0.438	0.494	0.422	0.468	0.500		
DESIGN SURFACE LEVEL	50.492	50.480	50.468	50.456	50.444	50.432	50.428	50.387	50.239	50.200	49.959	49.718	49.477	49.236	48.995	48.800	
NATURAL SURFACE LEVEL	49.834	49.727	49.665	49.700	49.822	49.897	49.874	49.811	49.696	49.673	49.521	49.224	49.055	48.768	48.496		
CHAINAGE	0.000	20.000	40.000	60.000	80.000	100.000	106.761	120.000	136.761	140.000	160.000	180.000	200.000	220.000	240.000	256.189	

CONTROL LINE 'C' LONGITUDINAL SECTION

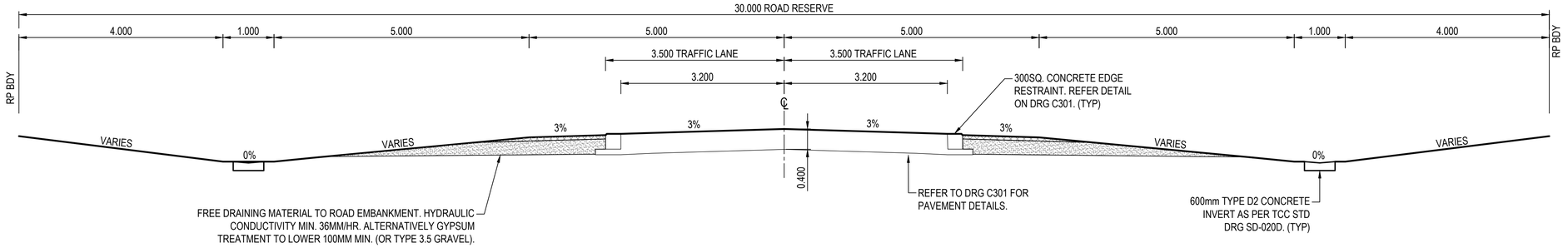
SCALE 1:1000H 1:100V



CUT DEPTH (-) / FILL DEPTH	0.754	0.614	0.499	0.502	0.497	0.453	0.444	0.471	0.488	0.617	0.647	0.631	0.513	0.457	0.488	0.491	0.627	0.647	0.648	0.681	0.680	0.654	0.625	0.587				
DESIGN SURFACE LEVEL	50.414	50.258	50.091	50.081	50.075	50.009	49.998	49.942	49.876	49.809	49.743	49.676	49.610	49.560	49.544	49.543	49.489	49.474	49.473	49.366	49.318	49.118	48.918	48.718	48.610			
NATURAL SURFACE LEVEL	49.660	49.644	49.593	49.579	49.578	49.555	49.554	49.471	49.388	49.192	49.096	49.045	49.097	49.103	49.057	49.053	48.862	48.828	48.825	48.675	48.639	48.464	48.293	48.131				
CHAINAGE	0.000	5.200	15.200	18.333	20.000	40.000	43.337	60.000	80.000	100.000	120.000	140.000	160.000	174.869	179.669	180.000	196.260	200.000	200.254	216.260	220.000	240.000	260.000	280.000	280.750			

CONTROL LINE 'D' LONGITUDINAL SECTION

SCALE 1:1000H 1:100V



TYPICAL ROAD CROSS SECTION

SCALE 1:50

Townsville City Council

Accepted Subject to Conditions

OPW23/0117
18/07/2024

1 0 1 2 3 4 5m — SCALE 1:50 @ A1 — SCALE 1:100 @ A3

20 0 20 40 60 80 100m — SCALE 1:1000 @ A1 — SCALE 1:2000 @ A3

2 0 2 4 6 8 10m — SCALE 1:100 @ A1 — SCALE 1:200 @ A3

FOR APPROVAL
10TH JUNE, 2024

REVISIONS

No.	BY	DATE	DESCRIPTION
B	BL	06.11.23	FOR APPROVAL
A	CBP	28.09.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID	
VERT. DATUM	AHD	
DRG. FILE	0944	DATE
DESIGN	BL	NOV '23
DRAWN	CBP	NOV '23

CERTIFICATION
RPEQ 11932

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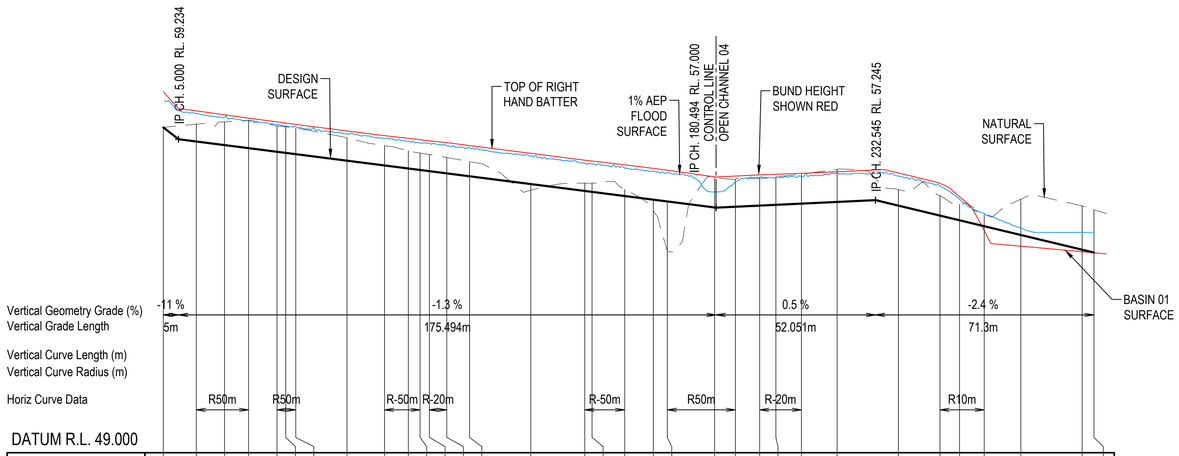
e brett@langtreeconsulting.com.au

MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817

ROADS LONGITUDINAL SECTIONS AND TYPICAL CROSS SECTION

SCALE	AS SHOWN
SHEET	9 OF 36
REVISION	A B
DRG No.	0944 - C062



DATUM R.L. 49.000

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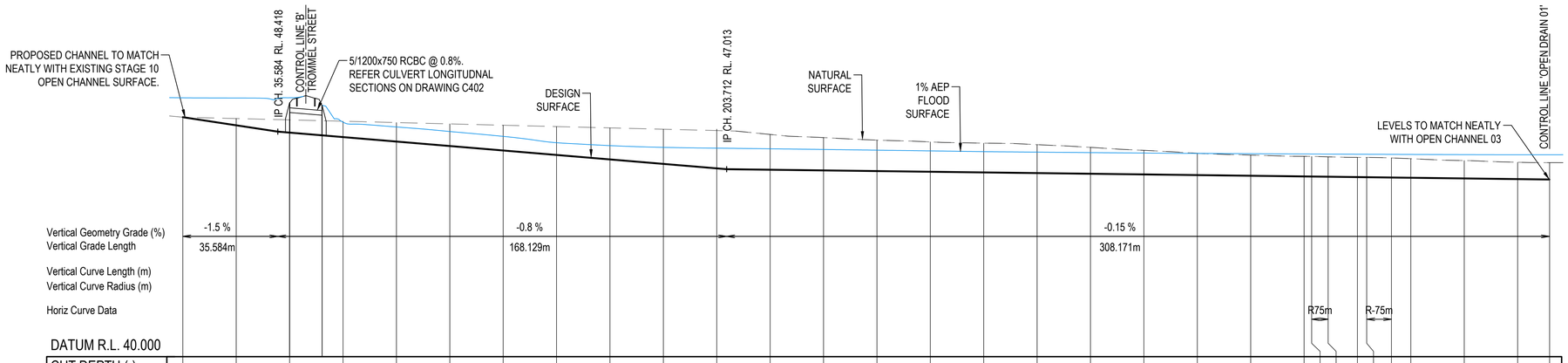
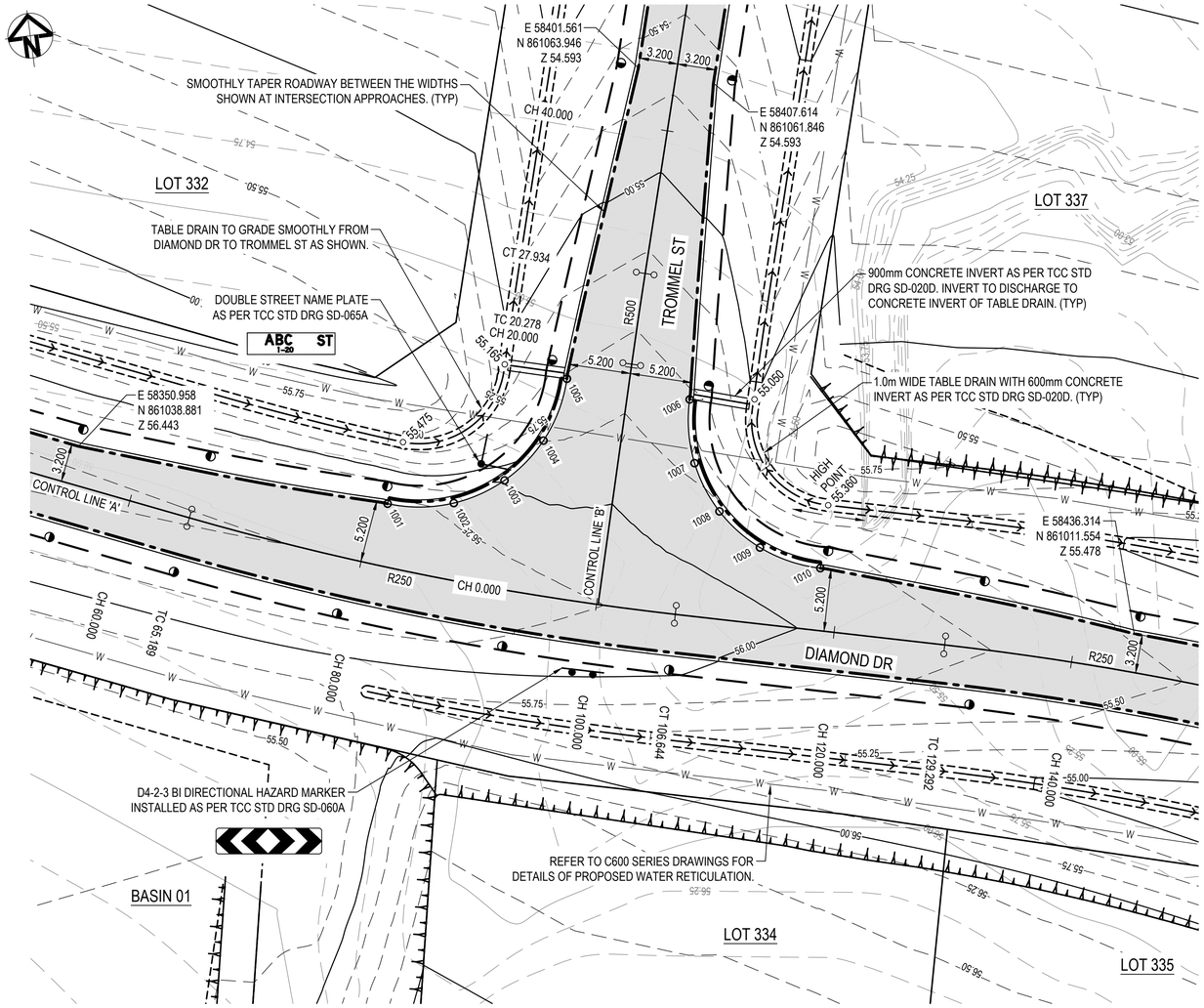

PROPOSED CHANNEL TO MATCH NEATLY WITH EXISTING STAGE 10 OPEN CHANNEL SURFACE.
IP CH. 35.584 RL. 48.418
CONTROL LINE 'B' TROMMEL STREET
5/1200x750 RCBC @ 0.8%. REFER CULVERT LONGITUDNAL SECTIONS ON DRAWING C402
DESIGN SURFACE
IP CH. 203.712 RL. 47.013
NATURAL SURFACE
1% AEP FLOOD SURFACE
LEVELS TO MATCH NEATLY WITH OPEN CHANNEL 03
CONTROL LINE 'OPEN DRAIN 01'
Vertical Geometry Grade (%)
Vertical Grade Length
-1.5 %
35.584m
-0.8 %
168.129m
-0.15 %
308.171m
Vertical Curve Length (m)
Vertical Curve Radius (m)
Horiz Curve Data
R75m
R-75m
DATUM R.L. 40.000

| | | |



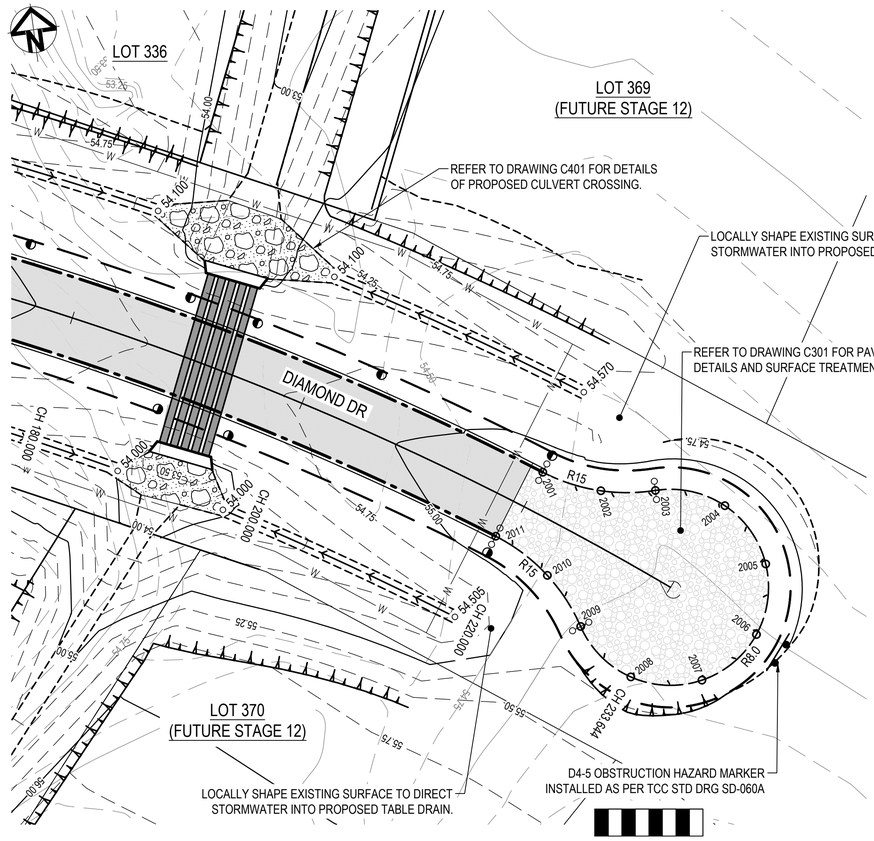
KERB RETURN SETOUT - INTERSECTION OF DIAMOND DR AND TROMMEL ST

SCALE 1:100

SIGNS LEGEND

EXISTING SIGN

NEW SIGN

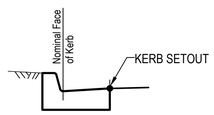


TEMPORARY CULDESAC SETOUT - DIAMOND DR

SCALE 1:100

INTERSECTION SETOUT TABLE - LIP OF KERB

POINT	EASTING	NORTHING	LEVEL
1001	58375.919	861030.670	56.307
1002	58381.405	861029.979	56.195
1003	58385.864	861031.292	55.986
1004	58389.530	861034.148	55.746
1005	58392.167	861039.009	55.519
1006	58402.103	861035.923	55.529
1007	58401.798	861030.593	55.695
1008	58403.319	861026.321	55.801
1009	58406.269	861022.878	55.855
1010	58411.045	861020.492	55.824



'TYPE B1' KERB AND CHANNEL AS PER TCC STD DRG SD-020D

KERB SETOUT DETAIL

N.T.S.

Townsville City Council

Accepted Subject to Conditions

OPW23/0117
18/07/2024

CULDESAC SETOUT TABLE - EDGE OF ROADWAY

POINT	EASTING	NORTHING	LEVEL
2001	58504.414	860977.842	55.088
2002	58508.909	860975.707	55.125
2003	58513.324	860975.139	55.152
2004	58518.777	860973.145	55.180
2005	58521.445	860967.989	55.199
2006	58519.924	860962.385	55.210
2007	58515.015	860959.287	55.209
2008	58509.302	860960.325	55.194
2009	58505.795	860964.953	55.164
2010	58503.659	860969.448	55.129
2011	58499.914	860973.177	55.079

5 0 5 10 15 20 25m

SCALE 1:250 @ A1 SCALE 1:500 @ A3

FOR APPROVAL

10TH JUNE, 2024

REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS				
B	BL	21.11.23	FOR APPROVAL - TABLE DRAIN HEIGHTS ADDED	
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION

RPEQ 11932

Langtree Consulting
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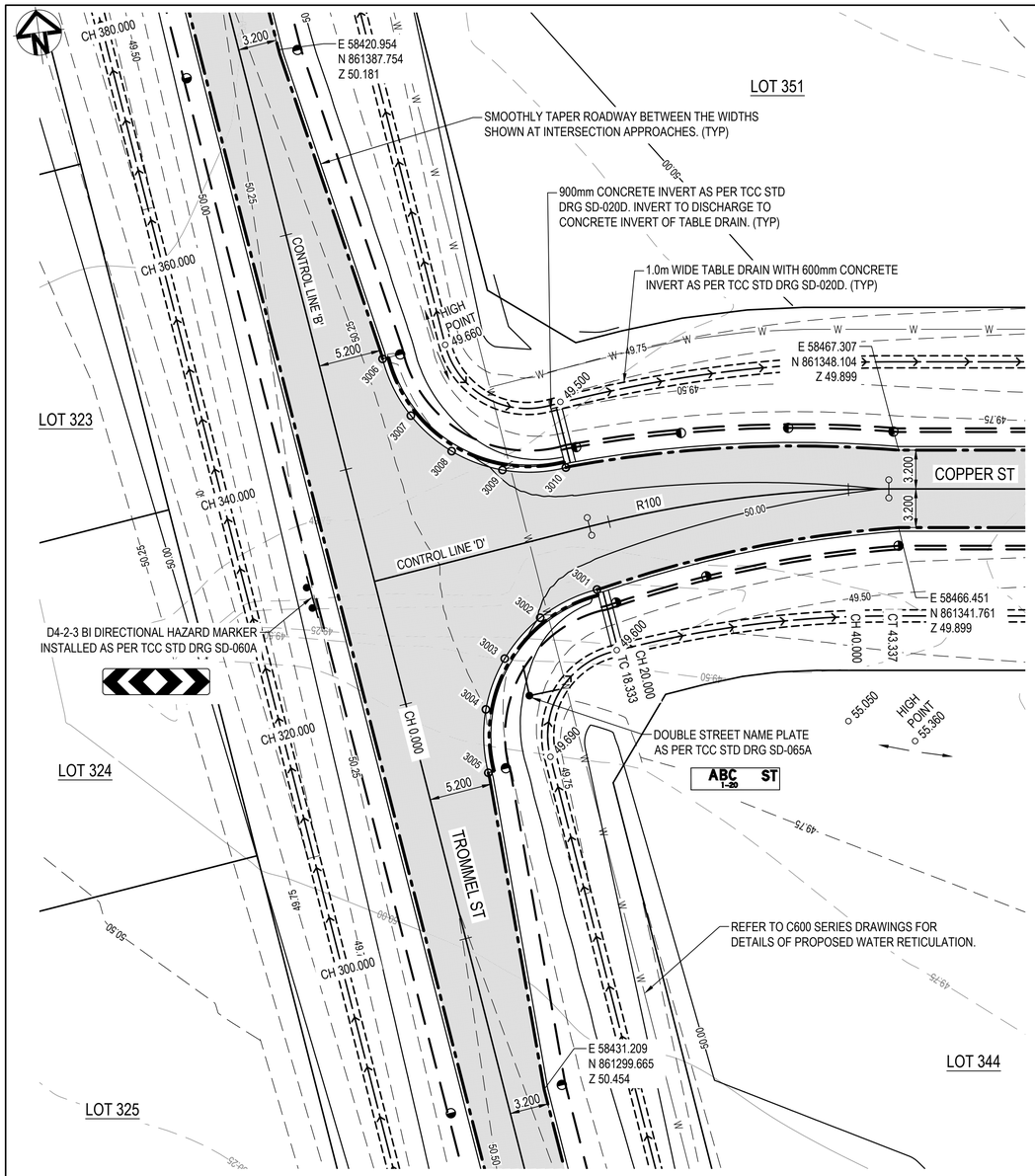
e brett@langtreeconsulting.com.au

MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817

INTERSECTION SETOUT DETAILS SHEET 1

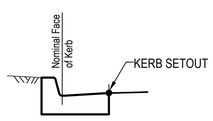
SCALE	AS SHOWN
SHEET	12 OF 36
REVISION	A B
DRG No.	0944 - C071



INTERSECTION SETOUT - TROMMEL ST AND COPPER ST

SCALE 1:250

INTERSECTION SETOUT TABLE - LIP OF KERB			
POINT	EASTING	NORTHING	LEVEL
3001	58441.058	861340.025	49.930
3002	58436.098	861338.337	49.993
3003	58432.735	861335.384	50.121
3004	58430.634	861331.434	50.249
3005	58430.131	861326.218	50.312
3006	58426.049	861361.282	50.204
3007	58427.737	861356.321	50.176
3008	58430.689	861352.959	50.082
3009	58434.640	861350.858	49.981
3010	58439.856	861350.355	49.930



'TYPE B1' KERB AND CHANNEL AS PER TCC STD DRG SD-020D

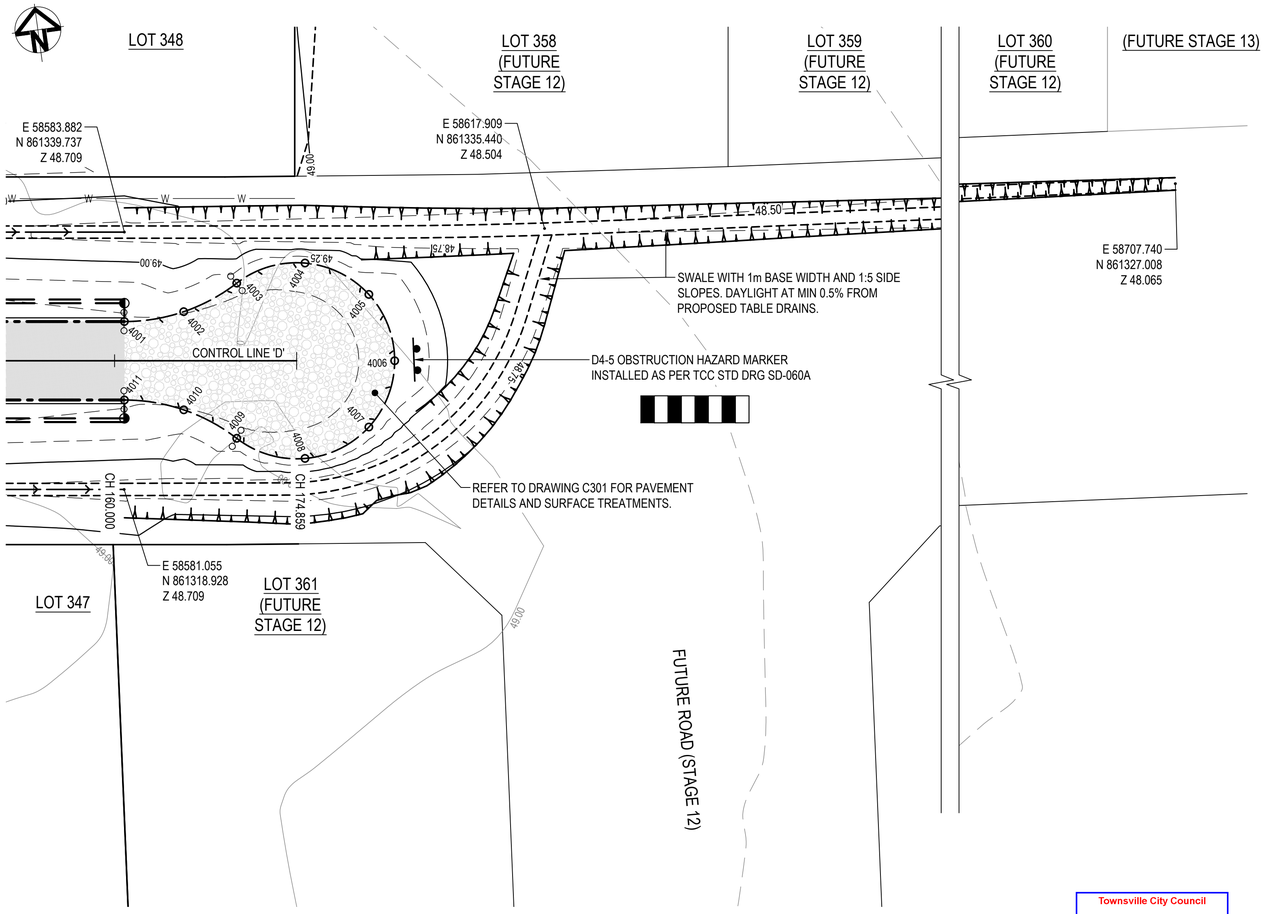
KERB SETOUT DETAIL

N.T.S.

SIGNS LEGEND

EXISTING SIGN

NEW SIGN



TEMPORARY CULDESAC SETOUT - COPPER ST

SCALE 1:250

NOTE:
ALL SETOUT POINTS REFERENCE MT MARGARET LOCAL GRID.

CULDESAC SETOUT TABLE - EDGE OF ROADWAY			
POINT	EASTING	NORTHING	LEVEL
4001	58582.906	861332.502	49.511
4002	58587.815	861332.651	49.496
4003	58592.413	861334.378	49.484
4004	58598.153	861335.259	49.474
4005	58602.977	861332.025	49.467
4006	58604.342	861326.381	49.465
4007	58601.529	861321.300	49.467
4008	58596.021	861319.460	49.474
4009	58590.720	861321.831	49.484
4010	58586.744	861324.715	49.496
4011	58582.051	861326.160	49.511

Townsville City Council
Accepted Subject to Conditions
OPW23/0117
18/07/2024

5 0 5 10 15 20 25m

SCALE 1:250 @ A1 SCALE 1:500 @ A3

FOR APPROVAL
10TH JUNE, 2024

REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS

No.	BY	DATE	DESCRIPTION
B	BL	21.11.23	FOR APPROVAL - TABLE DRAIN HEIGHTS ADDED
A	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM: MT MARGARET GRID
VERT. DATUM: AHD
DRG. FILE: 0944 DATE
DESIGN: BL NOV '23
DRAWN: CBP NOV '23

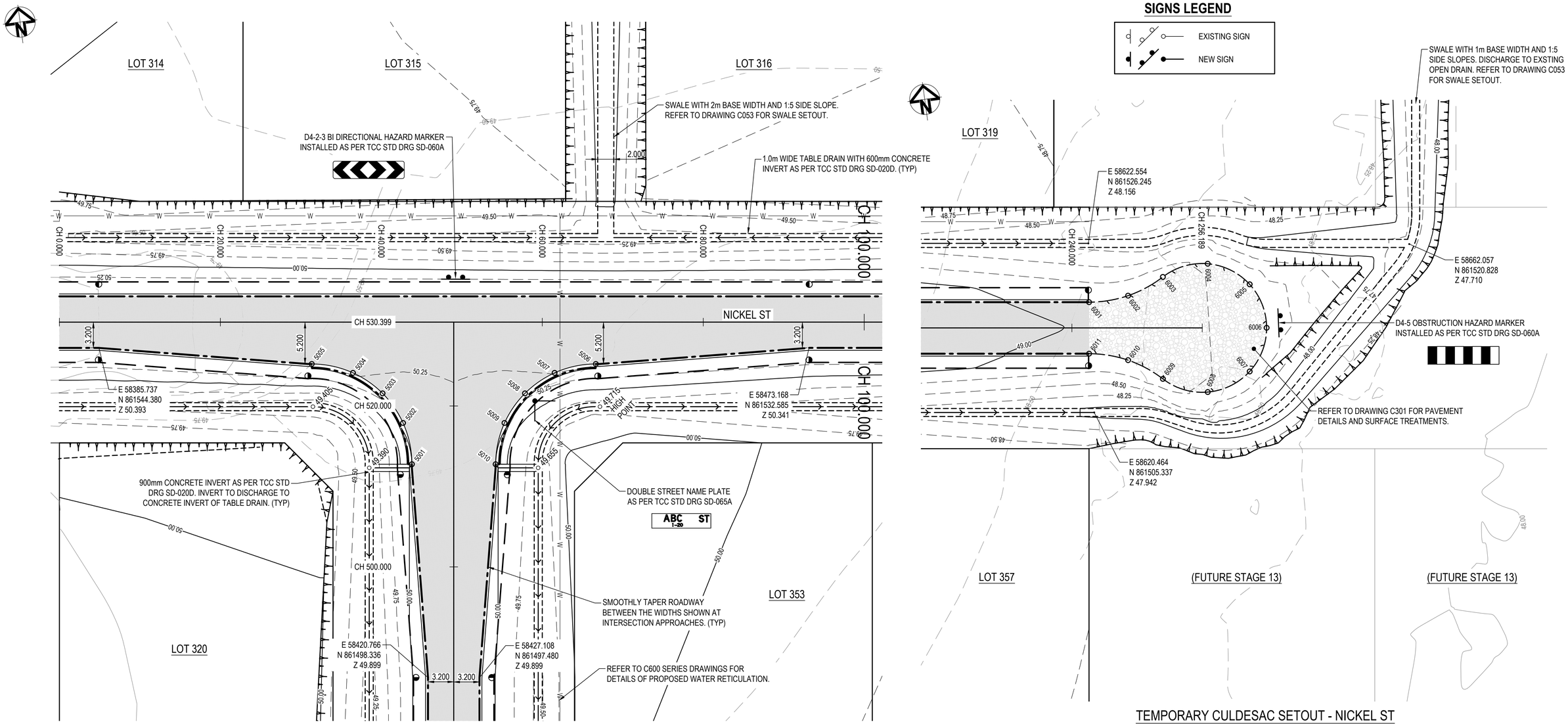
CERTIFICATION
RPEQ 11932

Langtree Consulting
m 0400 699 979
e brett@langtreeconsulting.com.au

MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
INTERSECTION SETOUT DETAILS SHEET 2

SCALE	AS SHOWN
SHEET	13 OF 36
REVISION	A B
DRG No.	0944 - C072



INTERSECTION SETOUT - TROMMEL ST AND NICKEL ST

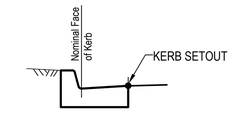
SCALE 1:250

TEMPORARY CULDESAC SETOUT - NICKEL ST

SCALE 1:250

INTERSECTION SETOUT TABLE - LIP OF KERB			
POINT	EASTING	NORTHING	LEVEL
5001	58422.329	861524.866	50.001
5002	58421.921	861530.090	50.047
5003	58419.893	861534.078	50.158
5004	58416.585	861537.091	50.270
5005	58411.656	861538.869	50.318
5006	58446.639	861534.147	50.296
5007	58441.415	861533.740	50.255
5008	58437.427	861531.711	50.150
5009	58434.413	861528.404	50.044
5010	58432.635	861523.475	50.001

CULDESAC SETOUT TABLE - EDGE OF ROADWAY			
POINT	EASTING	NORTHING	LEVEL
6001	58621.661	861518.999	48.873
6002	58626.572	861519.149	48.819
6003	58631.171	861520.876	48.776
6004	58636.911	861521.758	48.737
6005	58641.735	861518.525	48.714
6006	58643.102	861512.890	48.707
6007	58640.290	861507.800	48.714
6008	58634.782	861505.959	48.737
6009	58629.480	861508.329	48.776
6010	58625.504	861511.212	48.819
6011	58620.812	861512.656	48.873



'TYPE B1' KERB AND CHANNEL AS PER TCC STD DRG SD-020D

KERB SETOUT DETAIL

N.T.S.

5 0 5 10 15 20 25m

SCALE 1:250 @ A1 SCALE 1:500 @ A3

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FOR APPROVAL
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REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS				
No.	BY	DATE	DESCRIPTION	
B	BL	21.11.23	FOR APPROVAL - TABLE DRAIN HEIGHTS ADDED	
A	BL	06.11.23	FOR APPROVAL	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION
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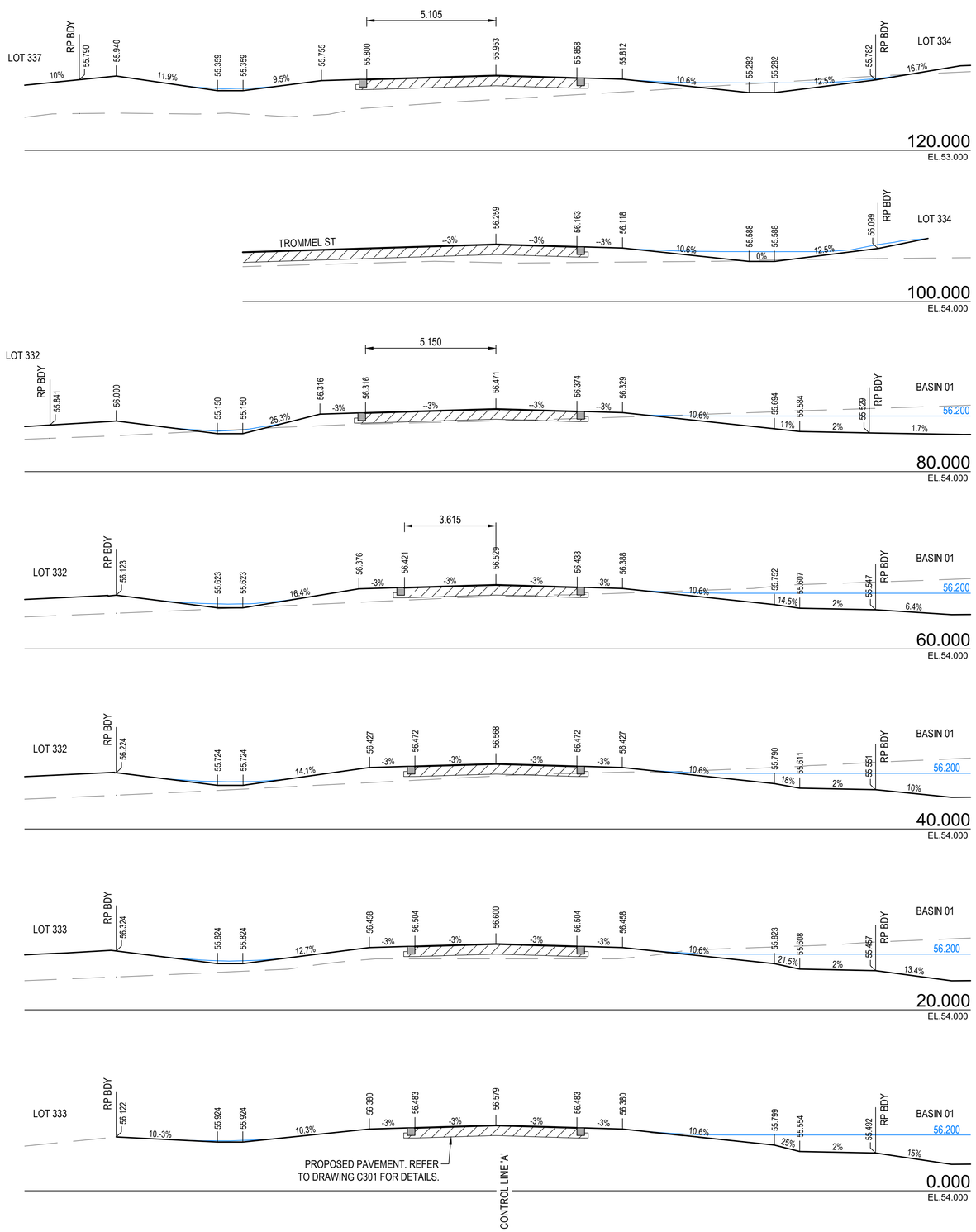
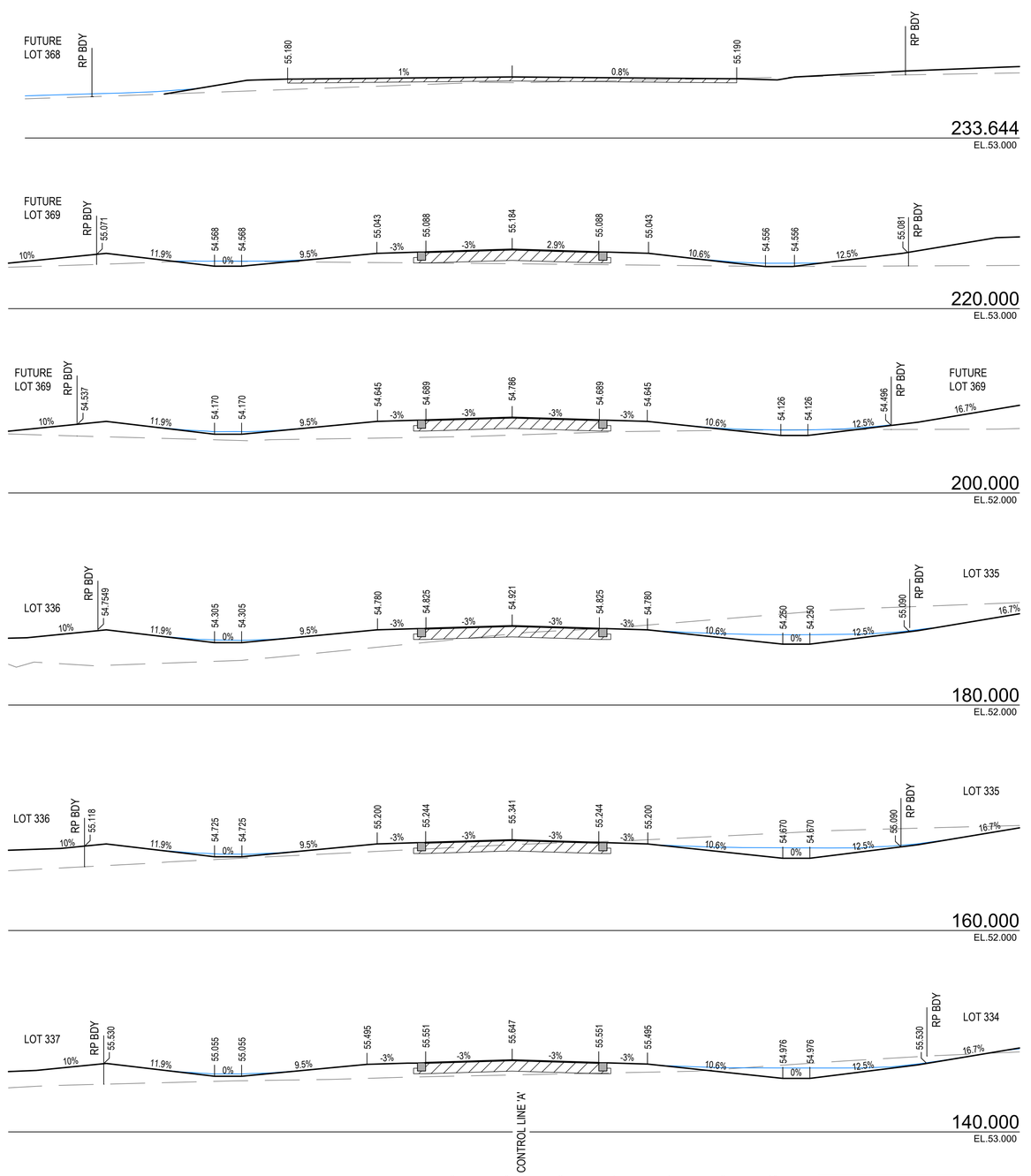
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
INTERSECTION SETOUT DETAILS SHEET 3

SCALE	AS SHOWN
SHEET	14 OF 36
REVISION	A B
DRG No.	0944 - C073





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18/07/2024

ROADS CROSS SECTIONS - DIAMOND DRIVE

SCALE 1:100

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
No.	BY	DATE	DESCRIPTION	
A	BL	06.11.23	FOR APPROVAL	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

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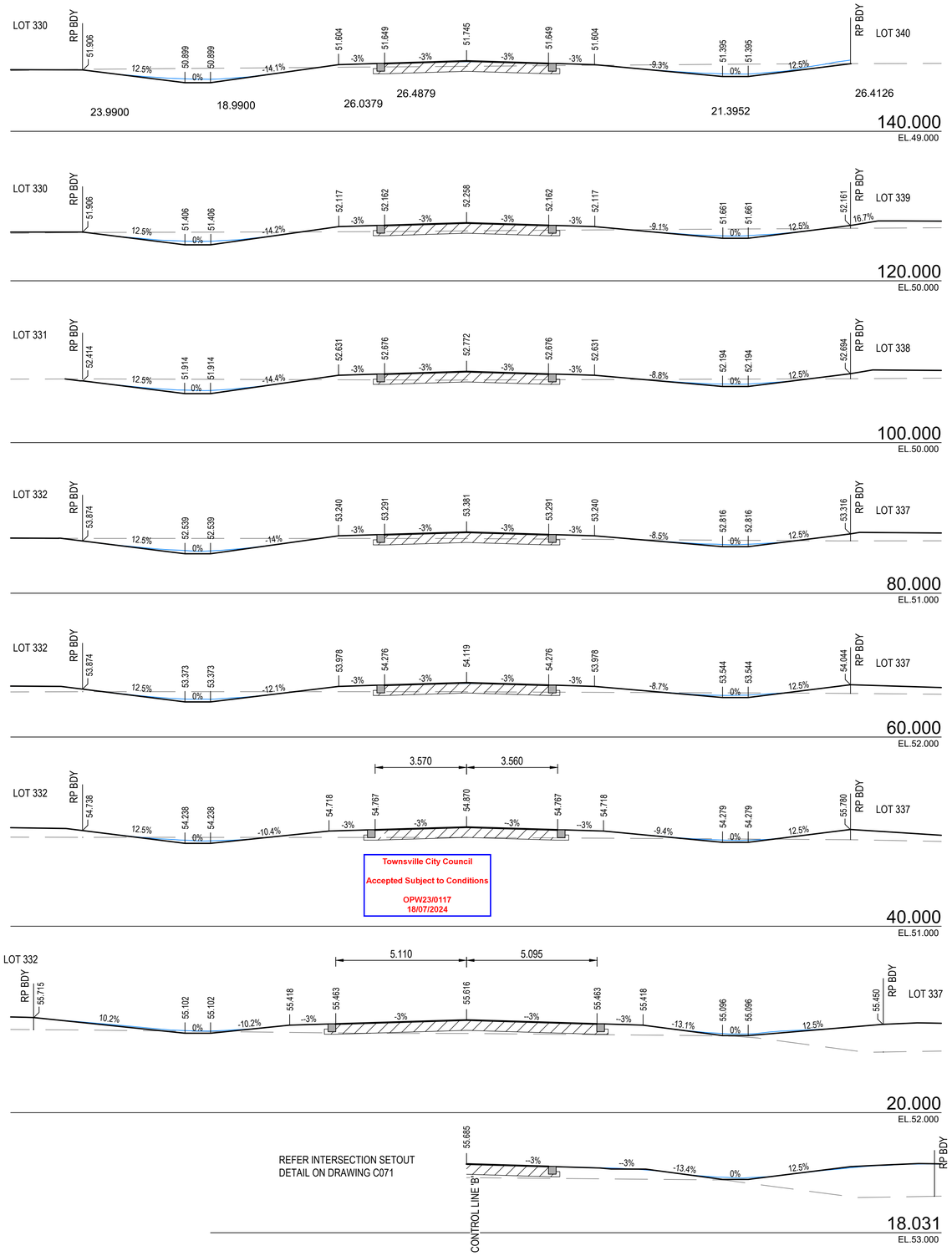
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
ROADS CROSS SECTIONS SHEET 1

SCALE	AS SHOWN
SHEET	15 OF 36
REVISION	A
DRG No.	0944 - C074



FOR APPROVAL
10TH JUNE, 2024

REFER TO DRAWING C074 FOR GENERAL LEGEND

ROADS CROSS SECTIONS - TROMMEL ST

SCALE 1:100

REVISIONS				
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION
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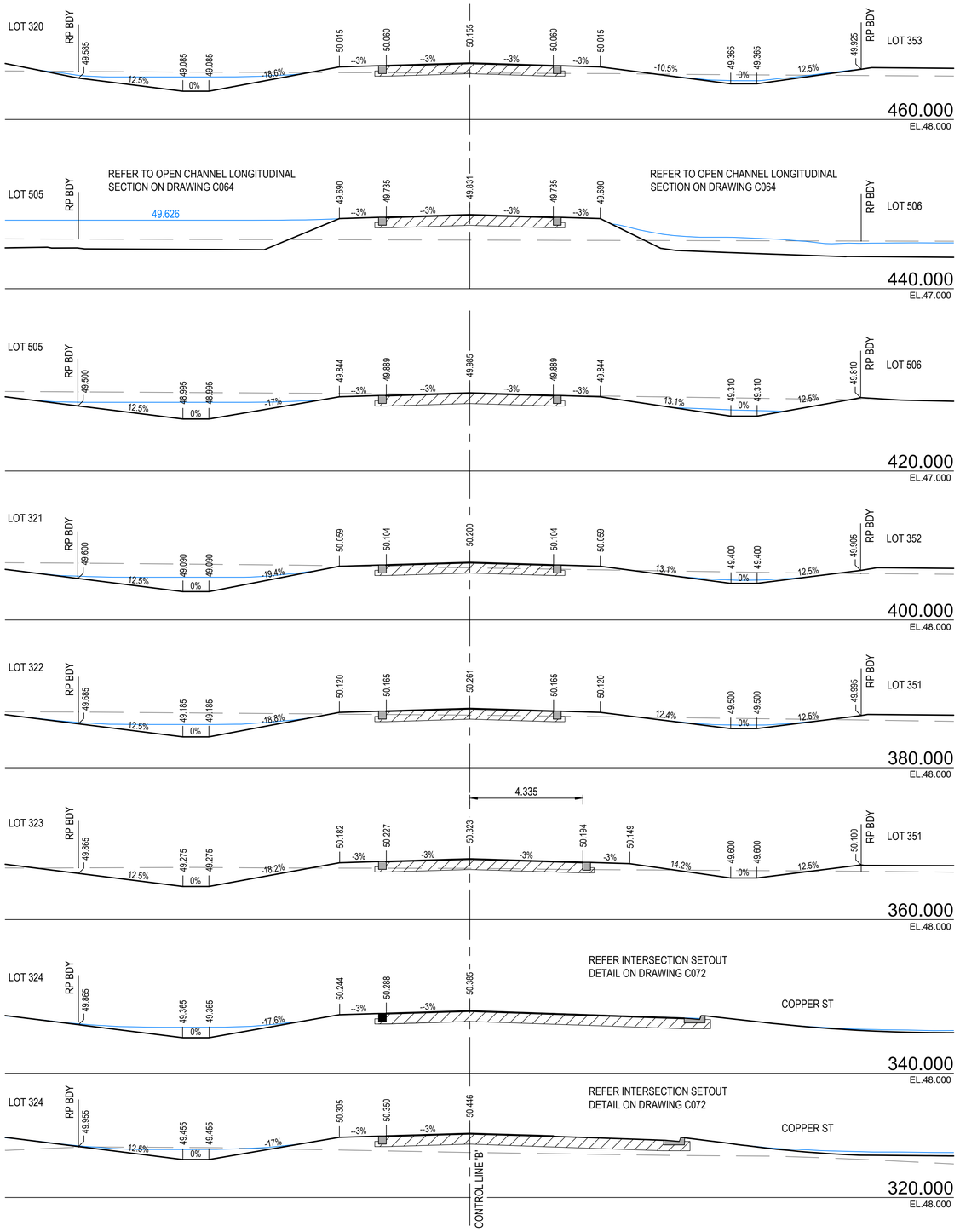
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
ROADS CROSS SECTIONS SHEET 2

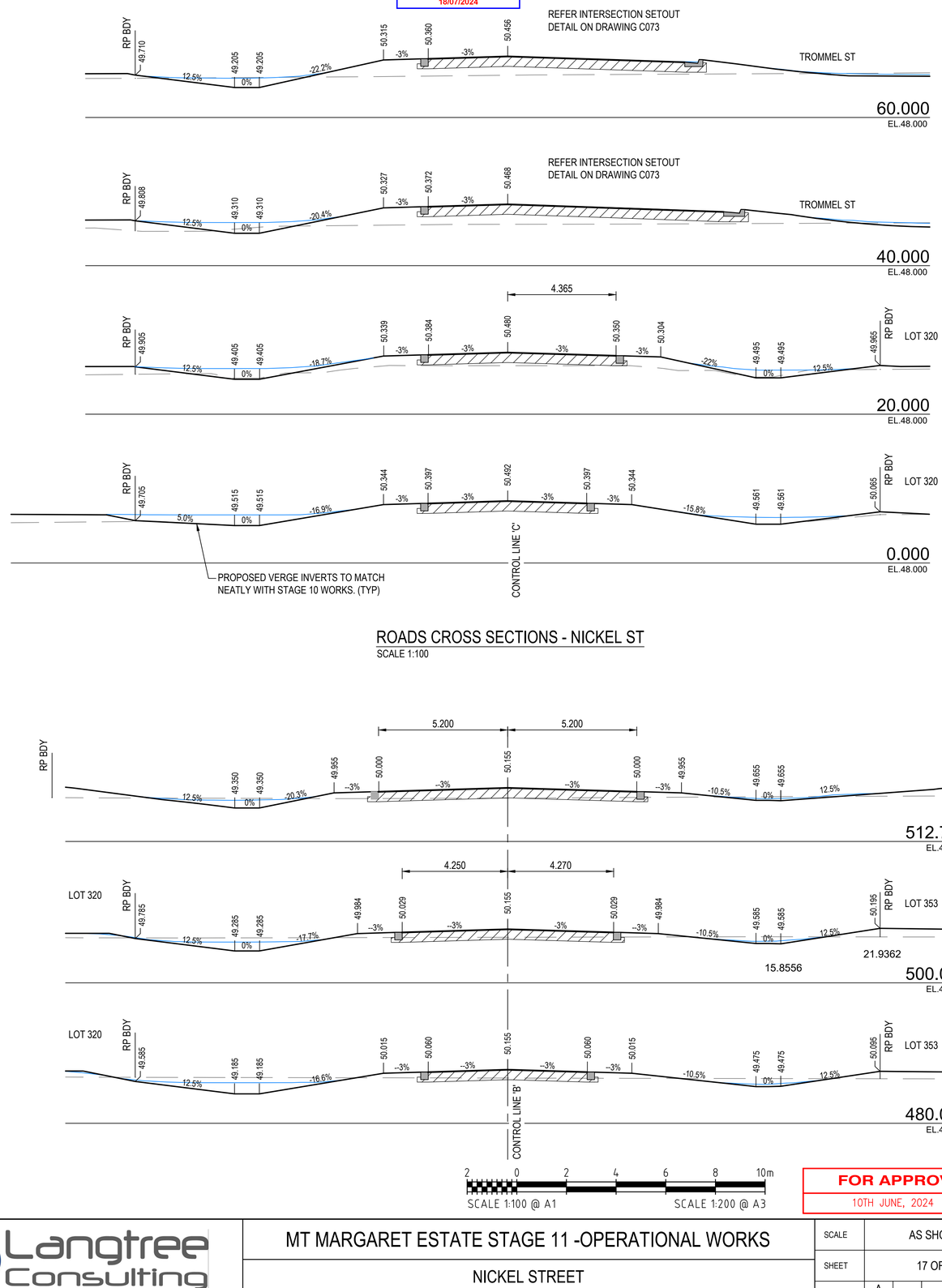
SCALE	AS SHOWN
SHEET	16 OF 36
REVISION	A
DRG No.	0944 - C075

Document Set ID: 26895050
Version: 2, Version Date: 19/02/2024



ROADS CROSS SECTIONS - TROMMEL ST

SCALE 1:100



ROADS CROSS SECTIONS - NICKEL ST

SCALE 1:100

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

REFER TO DRAWING C074 FOR GENERAL LEGEND

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

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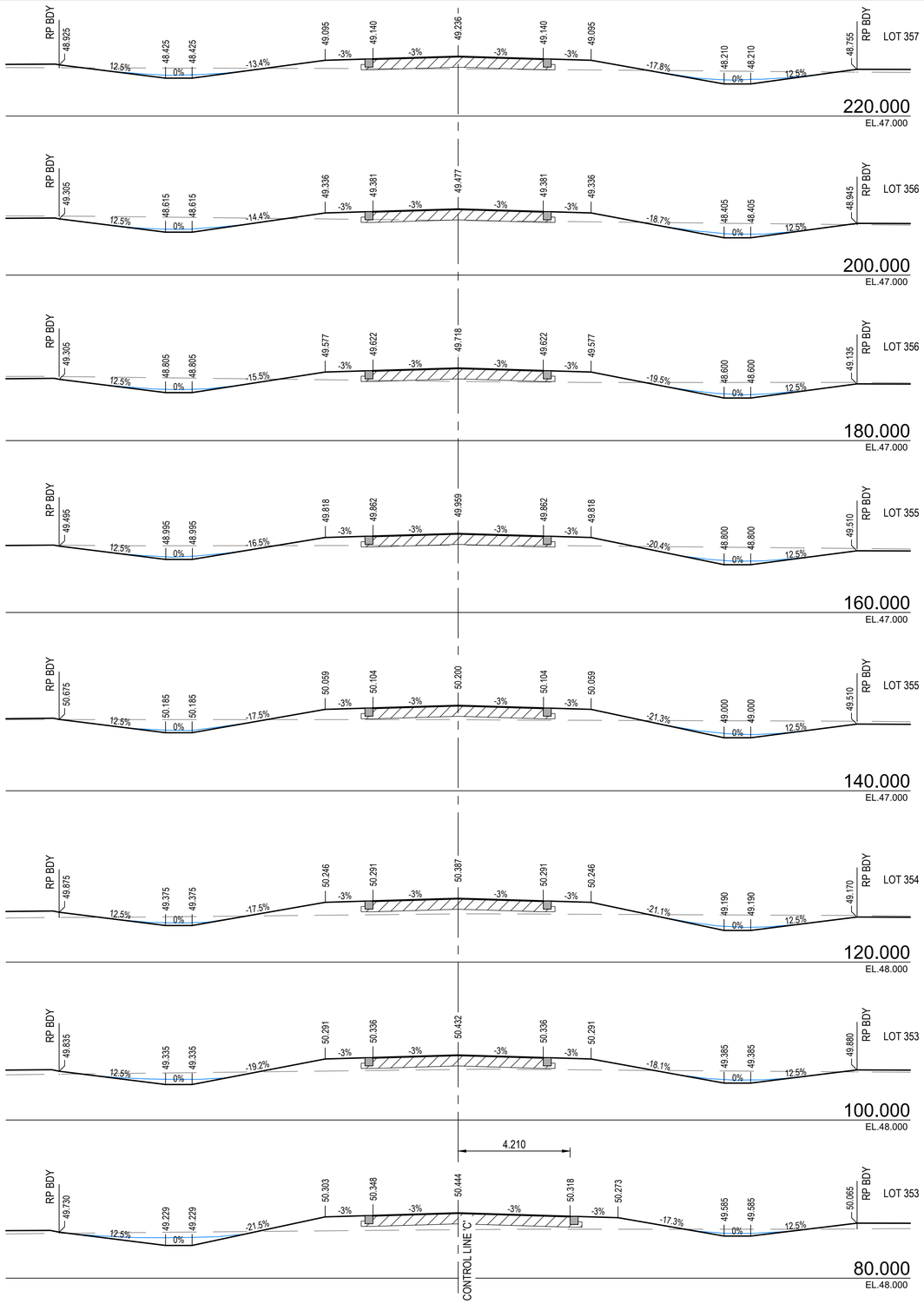
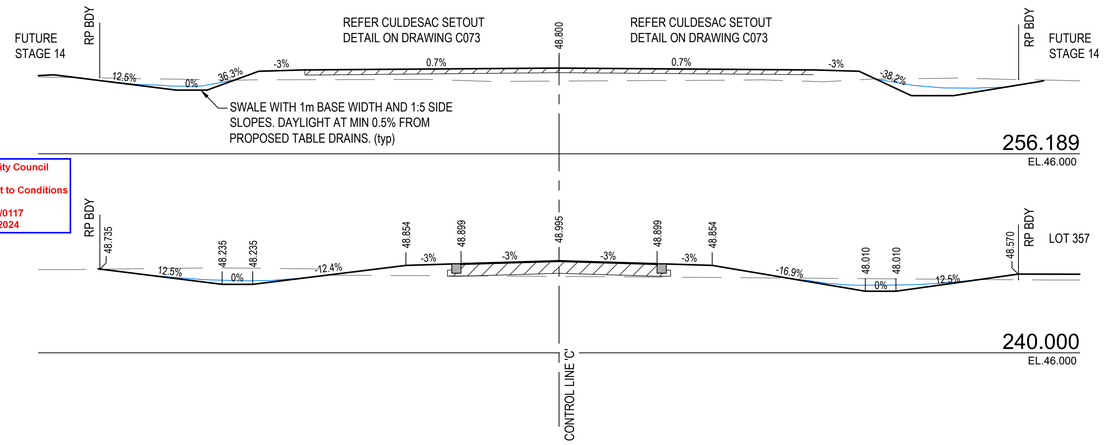
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
ROADS CROSS SECTIONS SHEET 3

SCALE	AS SHOWN
SHEET	17 OF 36
REVISION	A
DRG No.	0944 - C076





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18/07/2024

ROADS CROSS SECTIONS - NICKEL ST

SCALE 1:100

REFER TO DRAWING C074 FOR GENERAL LEGEND

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL

10TH JUNE, 2024

REVISIONS				
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

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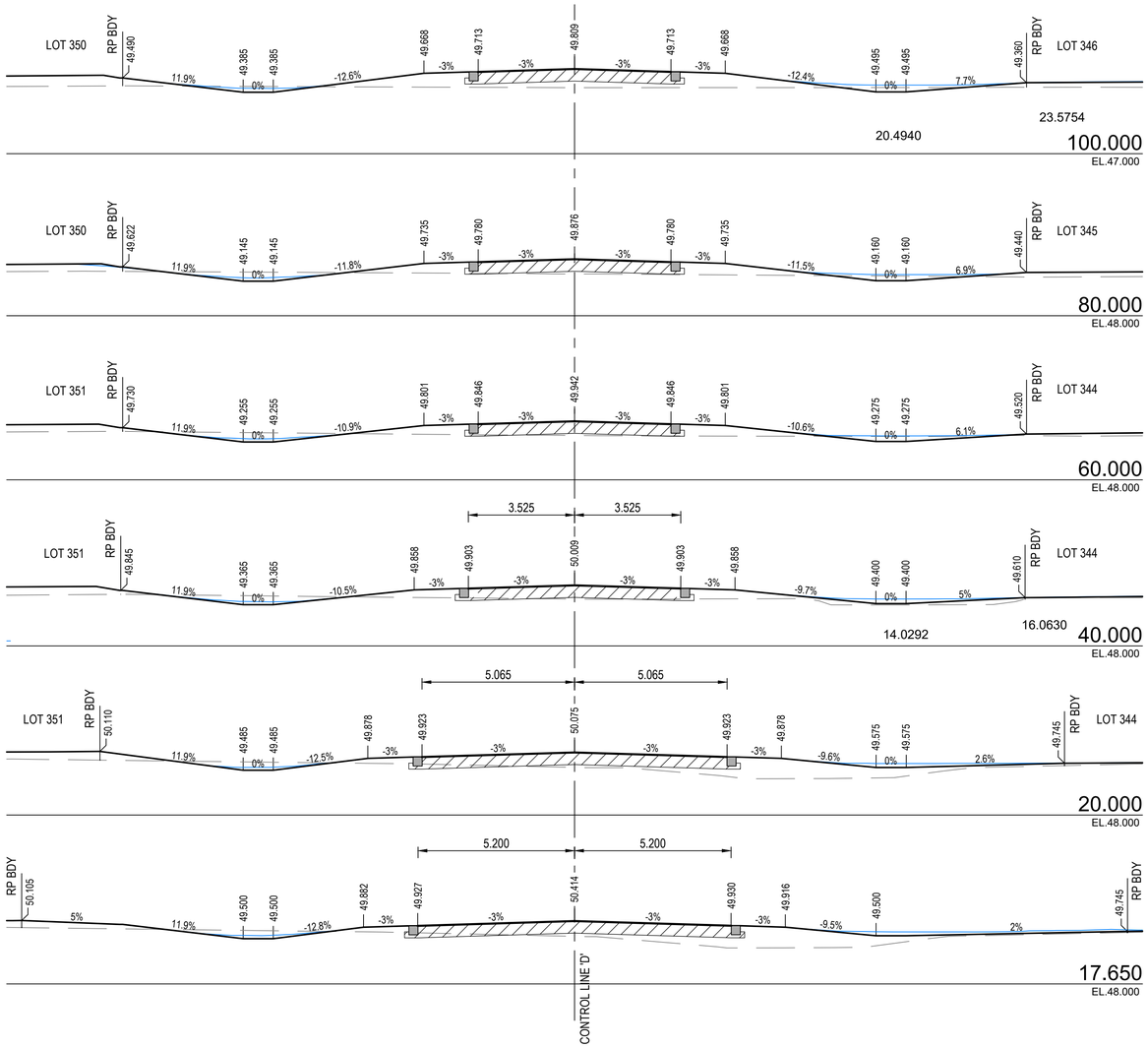
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

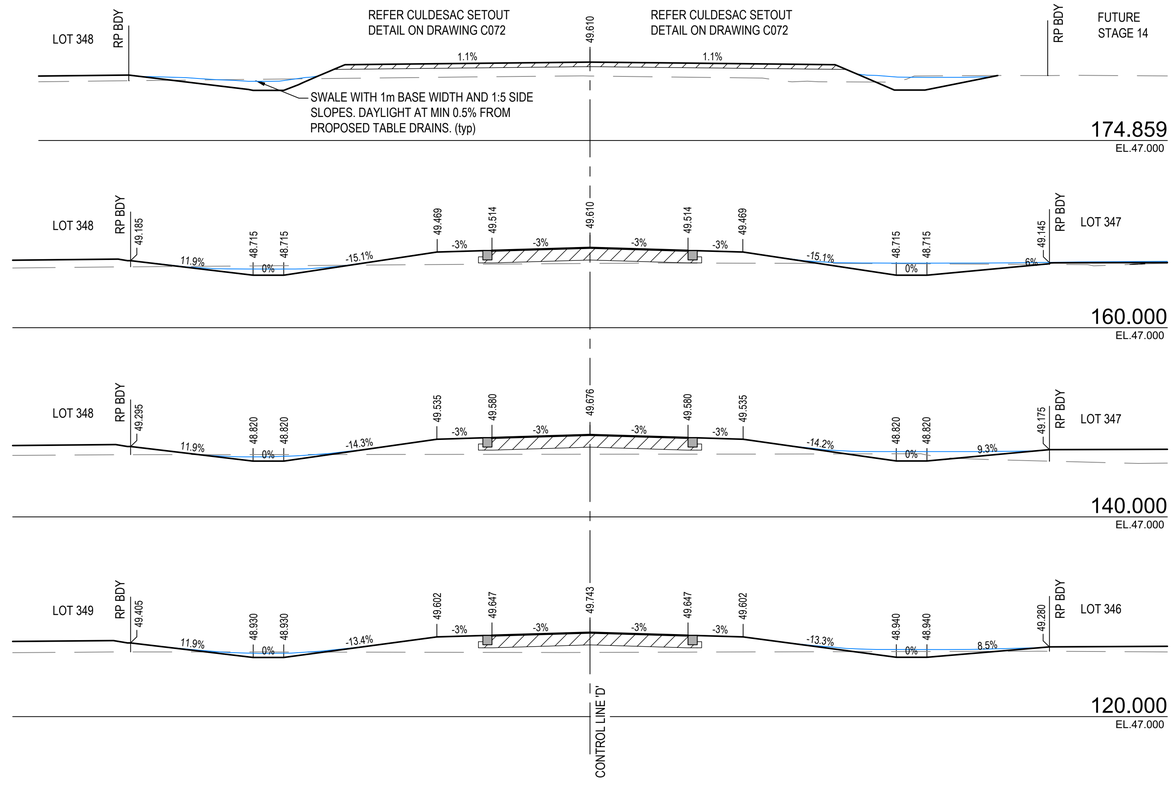
NICKEL STREET
ALICE RIVER, QLD, 4817
ROADS CROSS SECTIONS SHEET 4

SCALE	AS SHOWN
SHEET	18 OF 36
REVISION	A
DRG No.	0944 - C077



ROADS CROSS SECTIONS - COPPER ST

SCALE 1:100



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18/07/2024

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL

10TH JUNE, 2024

REFER TO DRAWING C074 FOR GENERAL LEGEND

REVISIONS				
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

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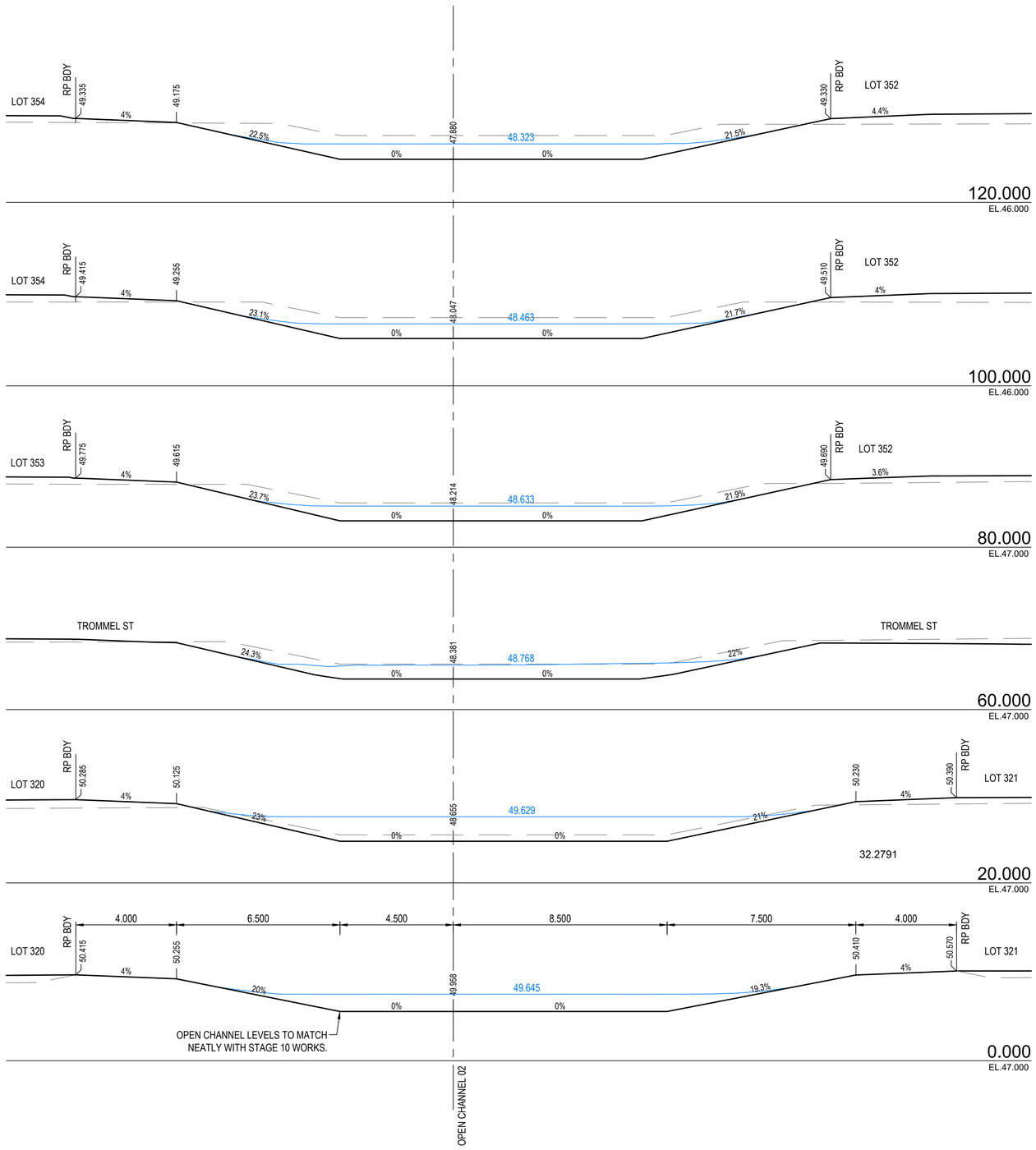
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET

ALICE RIVER, QLD, 4817

ROADS CROSS SECTIONS SHEET 5

SCALE	AS SHOWN
SHEET	19 OF 36
REVISION	A
DRG No.	0944 - C078



OPEN CHANNEL 02 CROSS SECTIONS

SCALE 1:100

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL

10TH JUNE, 2024

Townsville City Council

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18/07/2024

REVISIONS

No.	BY	DATE	DESCRIPTION
B	BL	26.11.23	LABEL AMENDED
A	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID	
VERT. DATUM	AHD	
DRG. FILE	0944	DATE
DESIGN	BL	NOV '23
DRAWN	CBP	NOV '23

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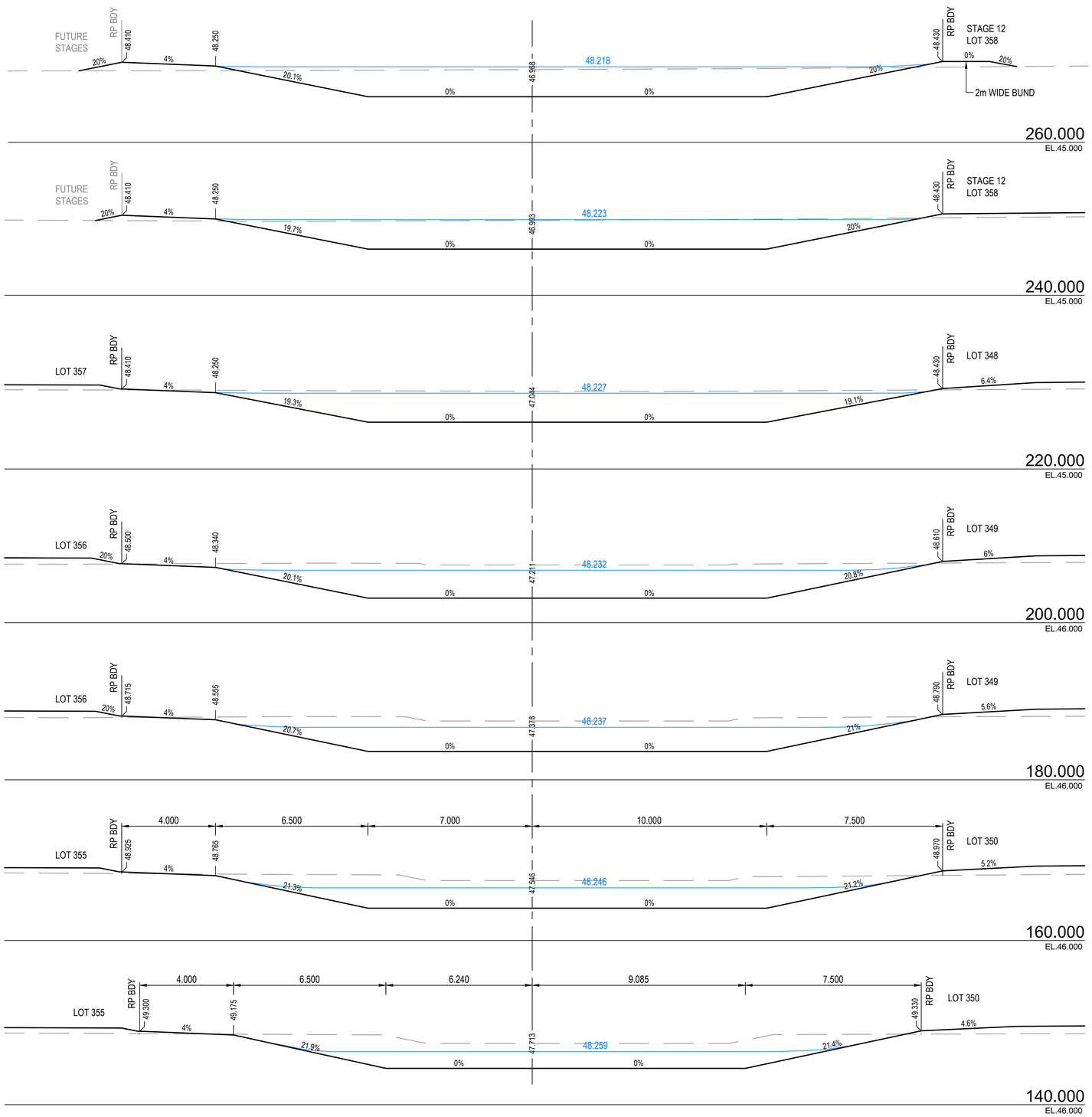
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
OPEN CHANNEL CROSS SECTIONS SHEET 1

SCALE	AS SHOWN
SHEET	20 OF 36
REVISION	A B
DRG No.	0944 - C081



OPEN CHANNEL 02 CROSS SECTIONS

SCALE 1:100

SCALE 1:100 @ A1 — SCALE 1:200 @ A3

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18/07/2024

FOR APPROVAL
10TH JUNE, 2024

REFER TO DRAWING C081 FOR LEGEND

REVISIONS No.	BY	DATE	DESCRIPTION
A	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

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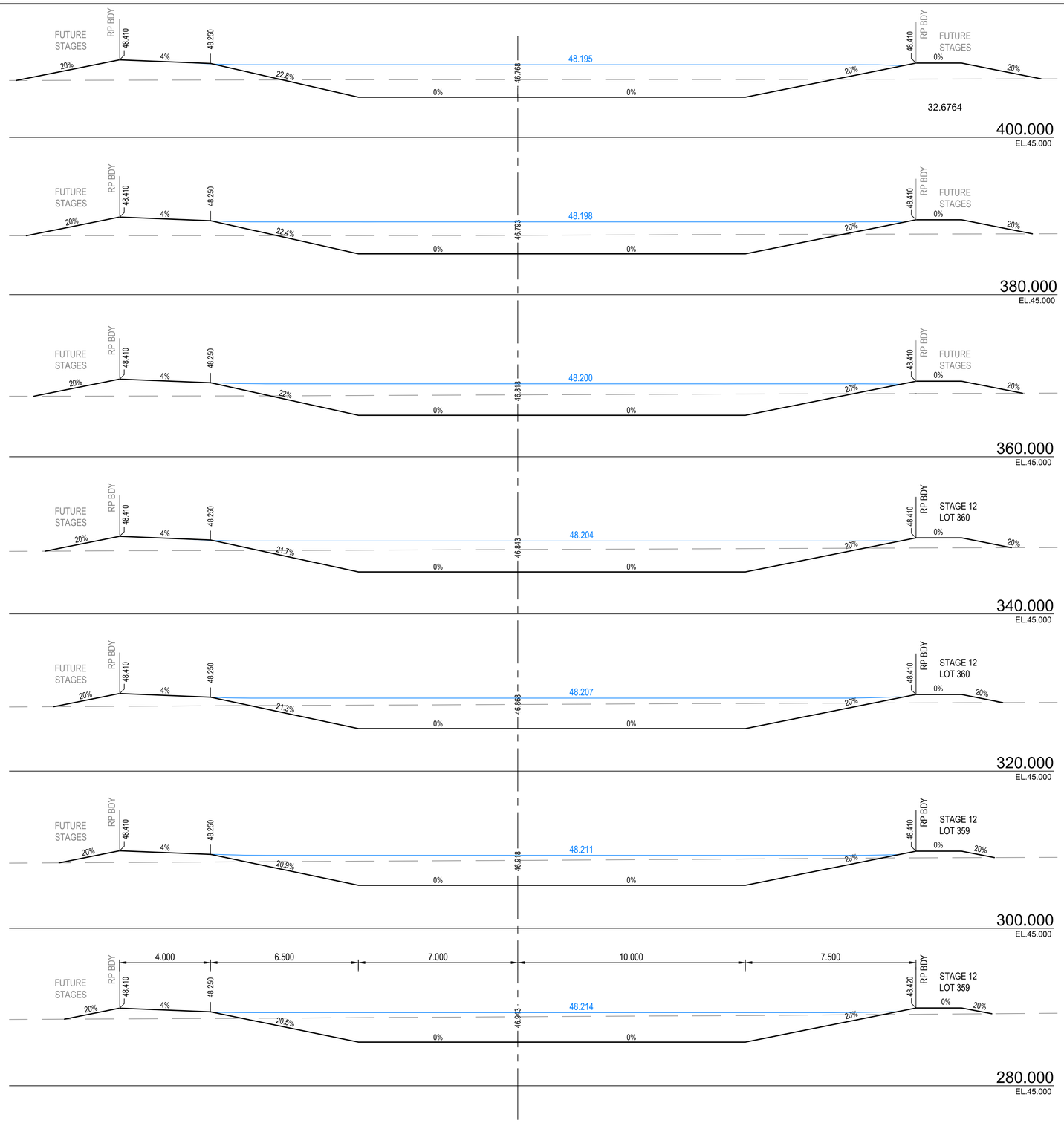
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
OPEN CHANNEL CROSS SECTIONS SHEET 2

SCALE	AS SHOWN
SHEET	21 OF 36
REVISION	A
DRG No.	0944 - C082



REFER TO DRAWING C081 FOR LEGEND

OPEN CHANNEL 02 CROSS SECTIONS

SCALE 1:100

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

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18/07/2024

FOR APPROVAL

10TH JUNE, 2024

REVISIONS				
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

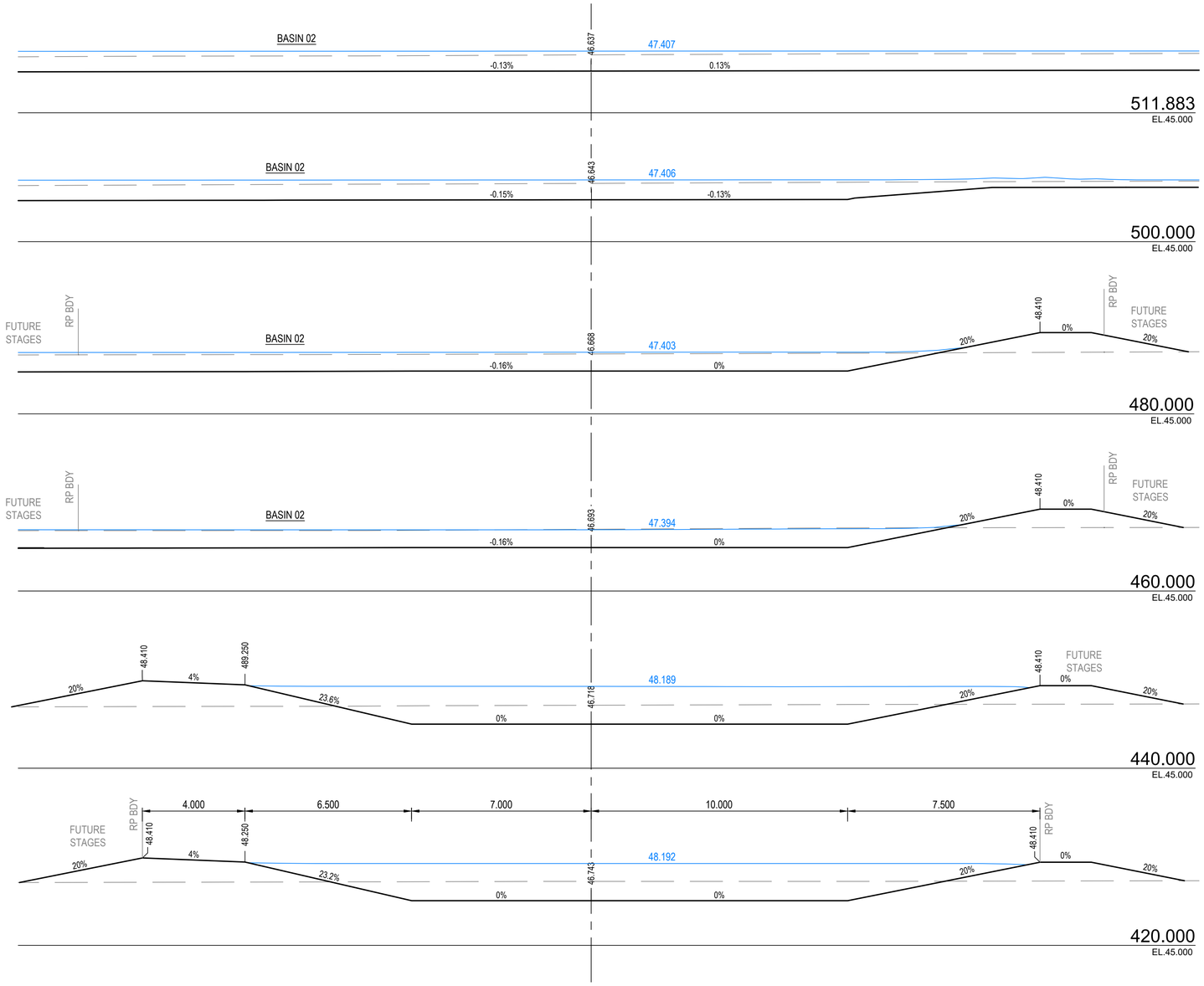
NICKEL STREET

ALICE RIVER, QLD, 4817

OPEN CHANNEL CROSS SECTIONS SHEET 3

SCALE	AS SHOWN
SHEET	22 OF 36
REVISION	A
DRG No.	0944 - C083

Document Set ID: 24898858
Version: 2, Version Date: 18/02/2024



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OPEN CHANNEL 02 CROSS SECTIONS

SCALE 1:100

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL

10TH JUNE, 2024

REFER TO DRAWING C081 FOR LEGEND

REVISIONS				
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION

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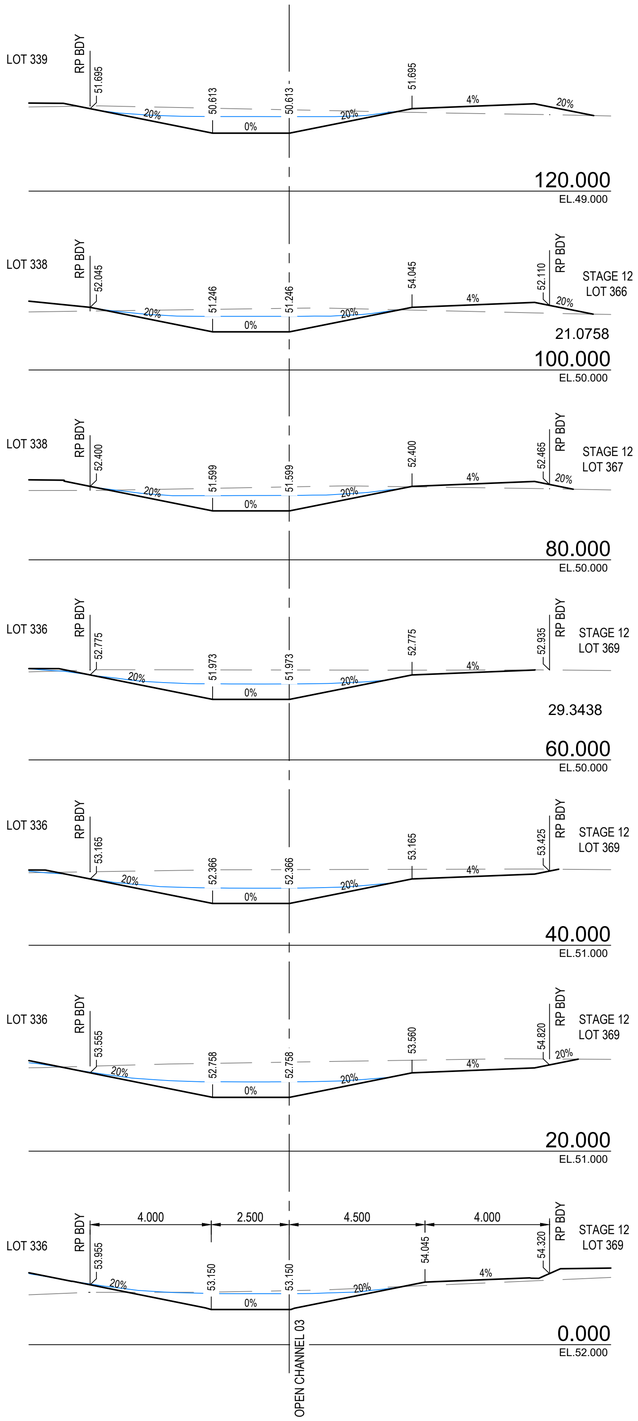
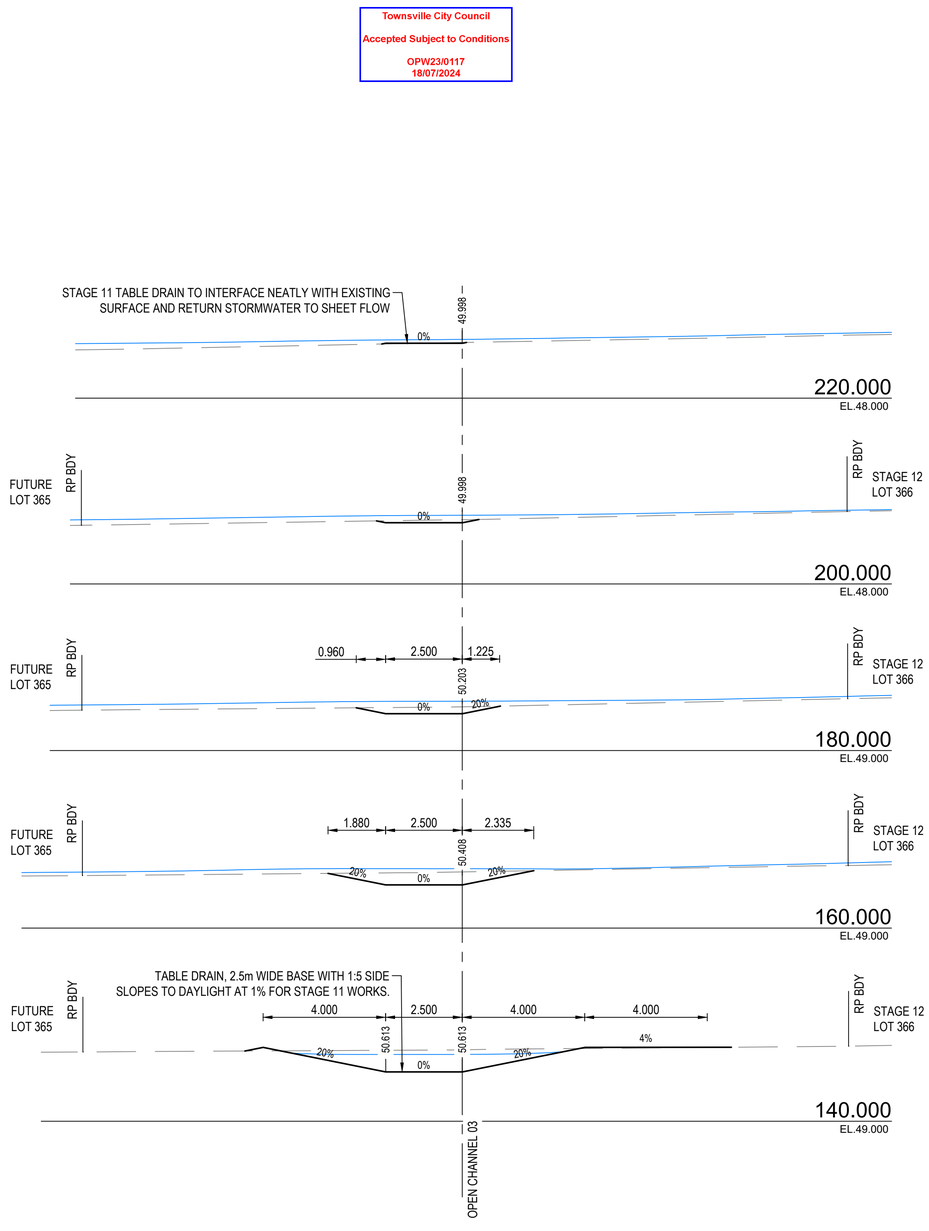
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817

OPEN CHANNEL CROSS SECTIONS SHEET 4

SCALE	AS SHOWN
SHEET	23 OF 36
REVISION	A
DRG No.	0944 - C084





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18/07/2024

OPEN CHANNEL 03 CROSS SECTIONS

SCALE 1:100

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL

10TH JUNE, 2024

REFER TO DRAWING C081 FOR LEGEND

REVISIONS				
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION

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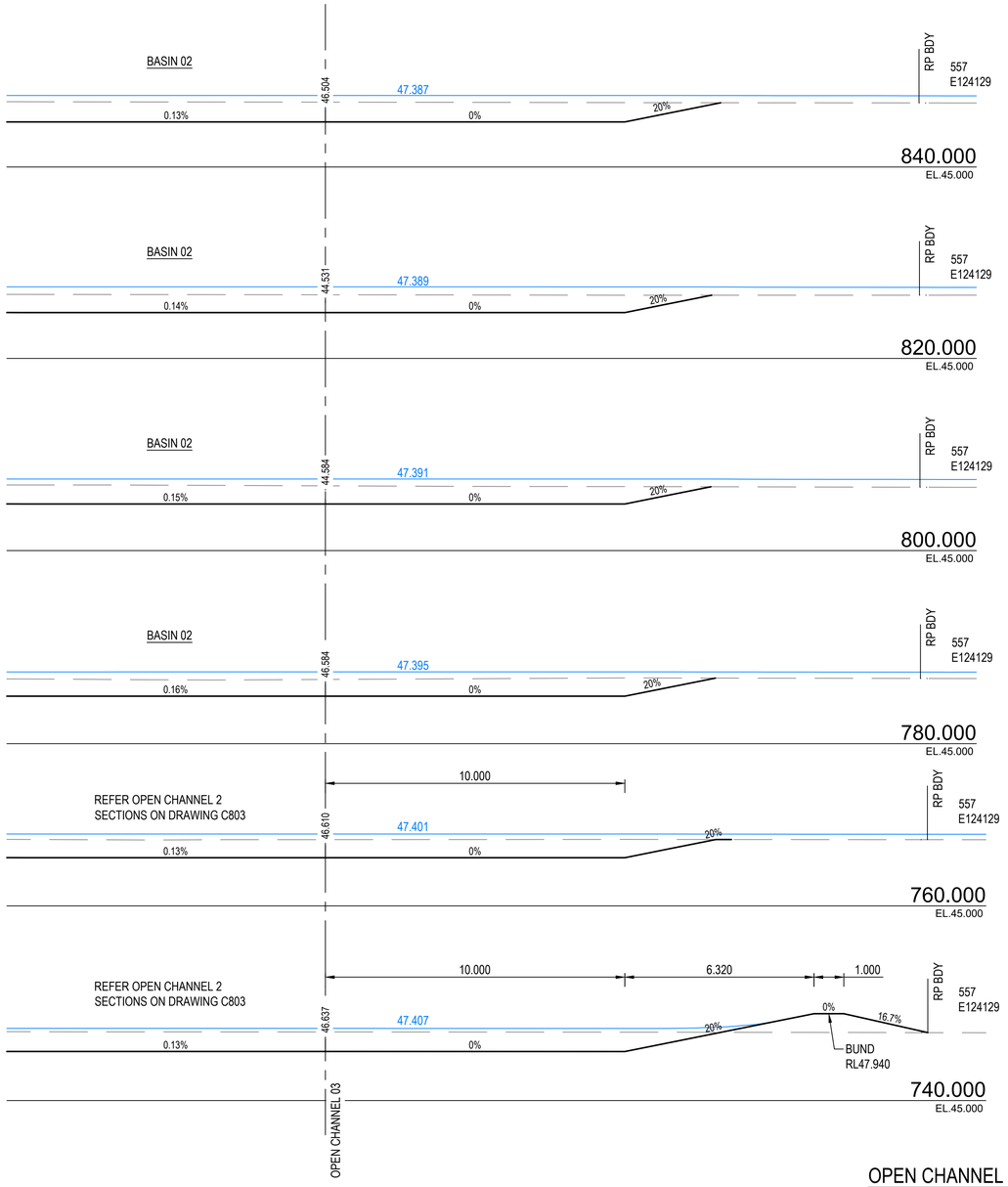
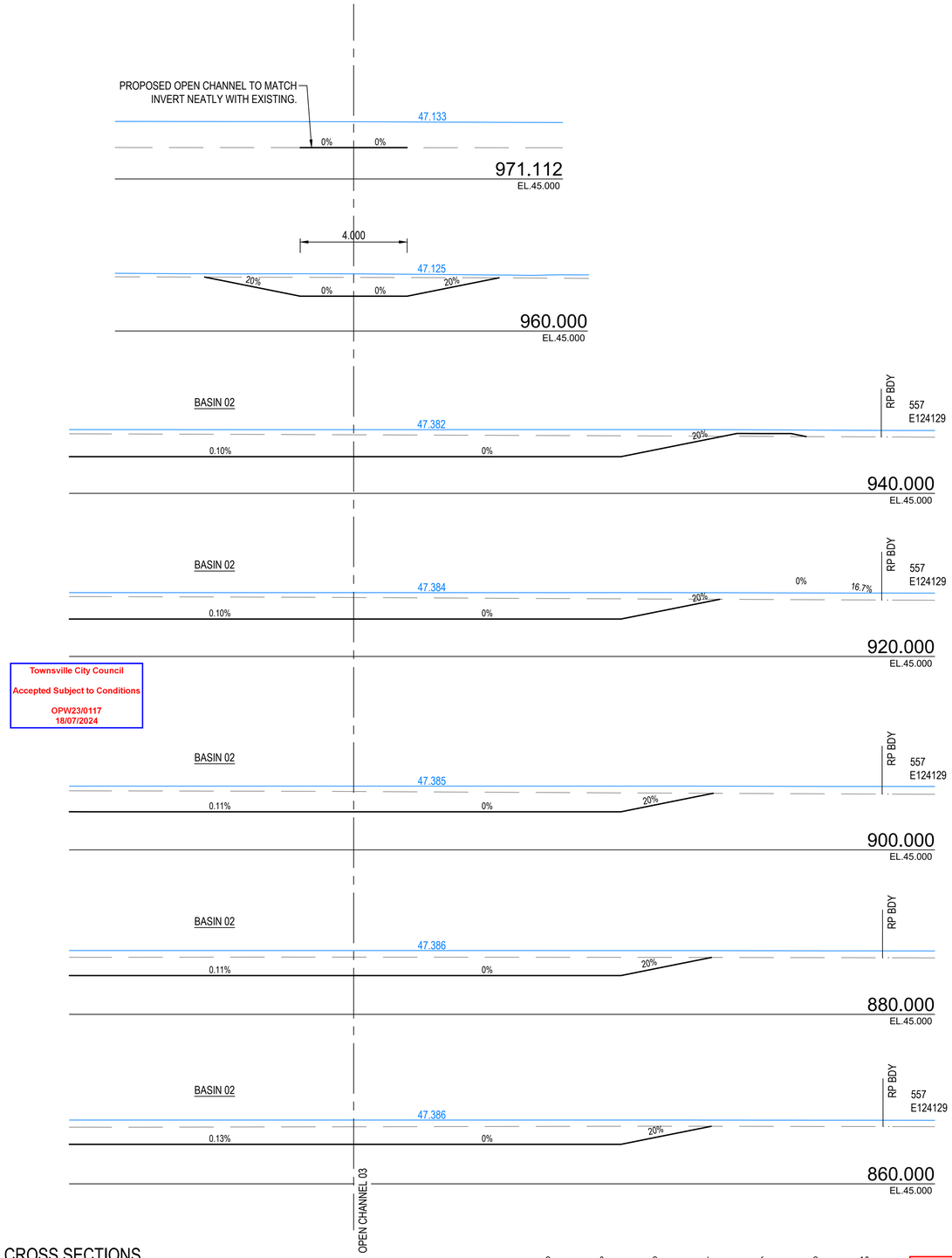
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
OPEN CHANNEL CROSS SECTIONS SHEET 5

SCALE	AS SHOWN
SHEET	24 OF 36
REVISION	A
DRG No.	0944 - C085





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OPW23/0117
18/07/2024

OPEN CHANNEL 03 CROSS SECTIONS

SCALE 1:100

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL

10TH JUNE, 2024

REFER TO DRAWING C081 FOR LEGEND

REVISIONS				
B	BL	19.06.24	FOR APPROVAL - GRADES UPDATED	
A	BL	06.11.23	FOR APPROVAL	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
OPEN CHANNEL CROSS SECTIONS SHEET 6

SCALE	AS SHOWN
SHEET	25 OF 36
REVISION	A B
DRG No.	0944 - C086

EROSION AND SEDIMENT CONTROL SCHEDULE

ESC ITEM	LOCATION	INSTALL	REMOVE
DV1	AS PER LAYOUT PLAN	AFTER TOPSOIL STRIP	AFTER TOPSOIL SPREAD
SF1	AS PER LAYOUT PLAN	BEFORE CLEARING	AFTER GRASS ESTABLISHED
SF2	AS PER LAYOUT PLAN	BEFORE TOPSOIL STRIP	AFTER STOCKPILE REMOVE
TURF STRIP	AS PER LAYOUT PLAN	AFTER TOPSOIL STRIP	N/A
JLF1	AS PER LAYOUT PLAN	AFTER TURF INSTALL	AFTER GRASS ESTABLISHED
JLF2	AS PER LAYOUT PLAN	AFTER TOPSOIL	AFTER GRASS ESTABLISHED
CONSTRUCTION ENTRY / EXIT	AS PER LAYOUT PLAN	BEFORE CLEARING	AFTER SUB BASE
RF1	AS PER LAYOUT PLAN	BEFORE CLEARING	AFTER GRASS ESTABLISHED
RF2	AS PER LAYOUT PLAN	AFTER DRAIN CUT	STAGE 12 EARTHWORK
HYDROMULCH	ROAD RESERVES	AFTER TURF	N/A
HYDROMULCH	AFTER TOPSOIL	AFTER TOPSOIL	N/A

LEGEND

- DIVERSION DRAIN / BUND
- SEDIMENT FENCING
- TURF STRIP
- COIR / JUTE LOG FILTER
- CONSTRUCTION ENTRY / EXIT
- ROCK FILTER DAM
- HYDROMULCH

SF SEDIMENT FENCE
DV DIVERSION DRAIN
JLF JUTE LOG FILTER
RF ROCK FILTER DAM

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OPW23/0117.03
18/12/2024

GENERAL NOTES:

1. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND SEDIMENTATION DURING ALL STAGES OF THE CONSTRUCTION ACTIVITIES UNTIL COMPLETION OF THE WORKS.
2. THE ADOPTED EROSION AND SEDIMENT CONTROL MEASURES ARE APPROPRIATELY AMENDED IF SITE CONDITIONS OR SCOPE OF WORKS SIGNIFICANTLY CHANGES, OR ARE EXPECTED TO SIGNIFICANTLY CHANGE FROM THOSE CONDITIONS ASSUMED DURING DEVELOPMENT OF THE ESCP.
3. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE TOWNSVILLE CITY PLAN VERSION 2022/02 AND THE INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) GUIDELINES 2008.
4. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO GRUBBING WORKS.

LAND CLEARING AND VEGETATION MANAGEMENT:

1. LAND CLEARING SHOULD NOT OCCUR UNLESS PRECEDED BY THE INSTALLATION OF ALL NECESSARY DRAINAGE AND EROSION SEDIMENT CONTROL MEASURES.
2. WHEREVER PRACTICAL, RETAIN VEGETATION COVER ON SITE. LAND CLEARING IS TO BE STAGED TO MINIMISE THE EXTENT AND DURATION OF SOIL EXPOSURE. TIMING OF WORKS MUST BE CONSIDERED WHEN LAND CLEARING - BULK EARTHWORKS SHOULD BE CARRIED OUT DURING THE 'DRY SEASON' WHEN POSSIBLE .
3. RESTRICT MOVEMENT OF CONSTRUCTION EQUIPMENT TO AVOID UNNECESSARY SOIL COMPACTION.
4. AS WORKS PROCEEDS, DISTURBED AREAS SHOULD BE STABILISED, REHABILITATED, AND REVEGETATED AS SOON AS POSSIBLE AFTER EARTHWORKS HAVE BEEN COMPLETED.
5. CLEARING TO BE UNDERTAKEN NO MORE THAN 8 WEEKS AHEAD OF EARTHWORKS IN ACCORDANCE WITH TABLE 4.4.7 OF IECA GUIDELINE.
6. DISTURBED SOILS SURFACES TO BE STABILISED WITH 70% COVER WITHIN 30 DAYS (TABLE 4.4.7 OF IECA MANUAL).
7. REVEGETATION AND LANDSCAPING WORKS IS TO BE CARRIED OUT IN ACCORDANCE WITH DOCUMENTED PLANS.

30 0 30 60 90 120 150m
SCALE 1:1500 @ A1 SCALE 1:3000 @ A3

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
No.	BY	DATE	DESCRIPTION
H	BL	30.11.24	FOR APPROVAL - CHANNEL UPDATED
G	BL	05.07.24	FOR APPROVAL - CHANNEL RESTRICTIONS UPDATED
F	BL	19.06.24	FOR APPROVAL - ESC UPDATED
E	BL	04.06.24	FOR APPROVAL - ESC UPDATED TO SUIT NEW STORMWATER
D	BL	28.05.24	FOR APPROVAL - ESC UPDATED TO SUIT NEW STORMWATER

HORIZ. DATUM	MT MARGARET GRID	
VERT. DATUM	AHD	
DRG. FILE	0944	DATE
DESIGN	BL	NOV '23
DRAWN	CBP	NOV '23

CERTIFICATION
BLangtree RPEQ 11932

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS
NICKEL STREET
ALICE RIVER, QLD, 4817
EROSION AND SEDIMENT CONTROL PLAN

SCALE	AS SHOWN
SHEET	26 OF 36
REVISION	A B C D E F G H
DRG No.	0944 - C101

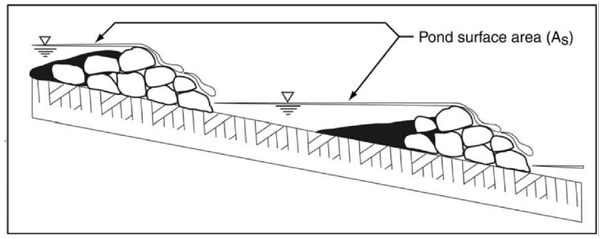
CHECK DAM SEDIMENT TRAPS

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. PRIOR TO PLACEMENT OF THE SEDIMENT TRAP, ENSURE THE DRAINAGE CHANNEL IS DEEP ENOUGH TO PREVENT WATER BEING UNSAFELY DIVERTED OUT OF THE DRAIN ONCE THE CHECK DAMS ARE INSTALLED.
3. LOCATE EACH CHECK DAM SEDIMENT TRAP AS DIRECTED WITHIN THE APPROVED PLANS, OR OTHERWISE AT SUCH A SPACING TO ACHIEVE THE REQUIRED SEDIMENT TRAPPING OUTCOMES.
4. IF THE CHECK DAMS ARE ALSO BEING USED TO CONTROL EROSION WITHIN THE DRAINAGE CHANNEL, THEN LOCATE EACH SUCCESSIVE CHECK DAM SUCH THAT THE CREST OF THE IMMEDIATE DOWNSTREAM DAM IS LEVEL WITH THE CHANNEL INVERT AT THE IMMEDIATE UPSTREAM CHECK DAM.
5. CONSTRUCT EACH CHECK DAM TO THE DIMENSIONS AND PROFILE SHOWN WITHIN THE APPROVED PLAN.
6. WHERE SPECIFIED, THE CHECK DAMS MUST BE CONSTRUCTED ON A SHEET OF GEOTEXTILE FABRIC USED AS A DOWNSTREAM SPLASH PAD.
7. EACH CHECK DAM MUST BE EXTENDED UP THE CHANNEL BANK (WHERE PRACTICABLE) TO AN ELEVATION AT LEAST 150MM ABOVE THE CREST LEVEL OF THE DAM.
8. ENSURE EACH SOCK EXTENDS UP THE CHANNEL BANKS (WHERE PRACTICAL) TO A LEVEL AT LEAST 100MM ABOVE THE CREST LEVEL OF THE CHECK DAM.

MAINTENANCE

1. INSPECT EACH CHECK DAM AND THE DRAINAGE CHANNEL AT LEAST WEEKLY AND AFTER RUNOFF-PRODUCING RAINFALL.
2. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN ANY OF THE CHECK DAMS, THEN CHECK THE SPACING OF THE DAMS AND WHERE NECESSARY INSTALL INTERMEDIATE CHECK DAMS OR A SUITABLE CHANNEL LINER.
3. CHECK FOR DISPLACEMENT OF THE CHECK DAMS.
4. CHECK FOR SOIL SCOUR AROUND THE ENDS OF EACH CHECK DAM. IF SUCH EROSION IS OCCURRING, CONSIDER EXTENDING THE WIDTH OF THE CHECK DAM TO AVOID SUCH PROBLEMS.
5. IF SEVERE SOIL EROSION OCCURS EITHER UNDER OR AROUND THE CHECK DAMS, THEN SEEK EXPERT ADVICE ON AN ALTERNATIVE TREATMENT MEASURE.
6. DE-SILT SEDIMENT TRAP IF THE SEDIMENT LEVEL EXCEEDS 1/3 THE CREST HEIGHT. 7. DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.



CHECK DAM SEDIMENT TRAP
NOT TO SCALE

STABILISED ENTRY / EXIT NOTES:

MATERIALS:

- ROCK: WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 50mm TO 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.
- FOOTPATH STABILISING AGGREGATE: 25 TO 50mm GRAVEL OR AGGREGATE.
- GEOTEXTILE FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

INSTALLATION:

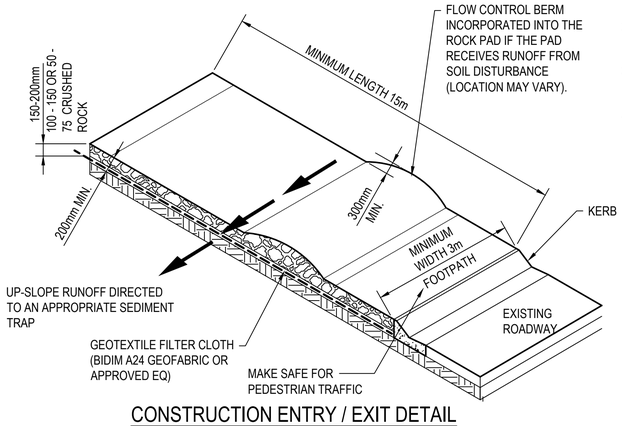
1. REFER TO APPROVED PLANS FOR LOCATION AND DIMENSIONAL DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. CLEAR THE LOCATION OF THE VIBRATION GRID, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE
3. IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
4. ENSURE THAT THE INSTALLATION OF THE VIBRATION GRID INCLUDES ADEQUATE SEDIMENT STORAGE VOLUME UNDER THE GRID. WHERE NECESSARY, INSTALL SUITABLE PRECAST SEDIMENT COLLECTION CHAMBERS.
5. PLACE A ROCK PAD/RAMP FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK OVER THE ROADWAY BETWEEN THE VIBRATION GRID AND THE SEALED STREET TO PREVENT TYRES FROM PICKING UP MORE SOIL AFTER THEY HAVE BEEN CLEANED.
6. THE TOTAL LENGTH OF THE VIBRATION GRIP AND ROCK RAMPS SHOULD BE AT LEAST 15m WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK RAMP SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
7. FLARE THE END OF THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
8. IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, THEN COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE

MAINTENANCE:

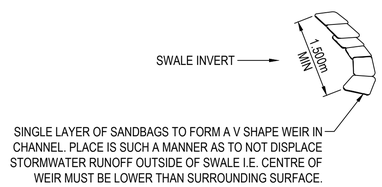
1. INSPECT VIBRATION GRID PRIOR TO FORECAST RAIN, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF-PRODUCING RAINFALL, OR OTHERWISE AT FORTNIGHTLY INTERVALS.
2. IF SAND, SOIL, SEDIMENT OR MUD IS TRACKED OR WASHED ONTO THE ADJACENT SEALED ROADWAY, THEN SUCH MATERIAL MUST BE PHYSICALLY REMOVED, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
3. IF NECESSARY FOR SAFETY REASONS, THE ROADWAY SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIAL FROM THE ROADWAY.
4. WHEN THE VOIDS BETWEEN THE ROCK BECOMES FILLED WITH MATERIAL AND THE EFFECTIVENESS OF THE ROCK RAMPS ARE REDUCED TO A POINT WHERE SEDIMENT IS BEING TRACKED OFF THE SITE, A NEW 100mm LAYER OF ROCK MUST BE ADDED AND/OR THE ROCK PAD MUST BE EXTENDED.
5. ENSURE ANY ASSOCIATED DRAINAGE CONTROL MEASURES ARE MAINTAINED IN ACCORDANCE WITH THEIR DESIRED OPERATIONAL CONDITION.
6. DISPOSE OF SEDIMENT AND DEBRIS IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

REMOVAL:

1. INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY
2. THE VIBRATION GRID SHOULD BE REMOVED ONLY AFTER IT IS NO LONGER NEEDED AS A SEDIMENT CONTROL DEVICE.
3. REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
4. RE-GRADE AND STABILISE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.



CONSTRUCTION ENTRY / EXIT DETAIL
NOT TO SCALE



TYPICAL SAND BAG CHECK DAM
NOT TO SCALE

SITE REHABILITATION

1. ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH FOR EXTREME RISK MUST BE SUITABLE WITHIN 30,30,20,10, OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
2. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION WITHIN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 & 100mm; MINIMUM 75% COVER WITHIN 10 DATS IF BETWEEN 100 AND 225mm AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm.
3. THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS IS COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
4. TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO COMPLETION OF WORKS. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATES EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
5. CREEK BANKS AND BEDS MUST BE RETURNED AS CLOSE IN SHAPE AND HYDRAULIC CAPACITY TO ORIGINAL. EROSION CONTROL ON BANKS IS TO BE DUMPED ROCK ON BIDIM.
6. THE ROCK LAYER THICKNESS SHALL BE TWO TIMES D50 AT UPSTREAM AND DOWNSTREAM TERMINATIONS TO PREVENT UNDER CUTTING.
7. ALL DAMAGE TO GRASSED AREAS CAUSED BY MACHINERY SHALL BE RECTIFIED BY COVERING THE DISTURBED AREAS WITH TOPSOIL AND THEN GRASS SEEDING THE AREA OR BY THE PLACEMENT OF TURF. A SILT FENCE SHALL BE CONSTRUCTED ON THE DOWNHILL SIDE OF THE DISTURBED AREA UNTIL GRASS COVER HAS BEEN ESTABLISHED.
8. CULTIVATE TOP 150 MM OF SUBGRADE PRIOR TO PLACEMENT OF ROCK.
9. DO NOT DUMP ROCK DIRECTLY FROM THE TRUCK AT THE TOP OF THE BATTER. USE AN EXCAVATOR TO PLACE THE ROCK AND ENSURE SEGREGATION OF THE ROCK IS MINIMISED. THE FINISHED ROCK MASS SHALL BE WELL INTEGRATED AND IRREGULAR WHILE ACHIEVING FISH PASSAGE REQUIREMENTS
10. ALL EXCAVATED MATERIAL SHALL BE STOCKPILED CLEAR OF THE TOP OF BANK AND CLEAR OF ANY OVERLAND FLOW PATHS AND EXISTING TREES. A SILT FENCE SHALL BE CONSTRUCTED ON THE DOWNHILL SIDE OF THE STOCKPILE. ALL AREAS SHALL BE FILLED WITH SELECTED BACKFILL AND COMPACTED.
11. DESIGNED BATTERS SHALL BE SMOOTHLY TRANSITIONED TO CONNECT TO EXISTING SLOPES. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN (EMP).
12. STREAM BED ROCK PROTECTION:
    - 12.1. MUST NOT BE STEEPER THAN A 1 IN 20 GRADIENT (DOWNSTREAM OF CULVERTS) OR THE NATURAL CHANNEL GRADIENT, WHICHEVER IS STEEPER.
    - 12.2. MUST INCLUDE A LOW FLOW CHANNEL AS INDICATED ON THE DRAWINGS
    - 12.3. MUST ENSURE THAT ROCK IS NOT OVER COMPACTED AND LEFT PROUD AND UNEVEN (TRUCK ROLLED FINISH OR ROUGHER).
    - 12.4. MUST ABUT THE APRON AND STREAM BED AT THE SAME LEVEL TO ENSURE THAT THERE IS NO DROP IN ELEVATION AT THE JOIN
13. ROCK SHALL BE SOUND DURABLE STONE, FREE FROM CRACKS AND SEAMS. THE MINIMUM SPECIFIC GRAVITY OF ROCK SHALL BE 2.6.
14. THE D50 DIMENSION IS THE THEORETICAL DIAMETER OF A SPHERE WITH THE REQUIRED VOLUME AND MASS. TABLE A GIVES A GUIDE TO DIMENSIONS FOR ROCK SIZES WHICH ARE EQUIVALENT TO THE THEORETICAL SPHERICAL DIAMETERS SHOWN. DIMENSIONS FOR VARIOUS LENGTH/WIDTH RATIO ROCKS ARE GIVEN.
15. ROCK SHALL BE PROPORTIONED SO THAT THE LENGTH IS NOT MORE THAN THREE TIMES EITHER THE WIDTH OR THICKNESS OF A SINGLE ROCK.
16. 95% MAXIMUM DRY DENSITY (MODIFIED) TO AS1289. EXACT DIMENSIONS AND CONFIGURATION TO BE ESTABLISHED ON SITE.

Townsville City Council
Accepted Subject to Conditions
OPW23/0117
18/07/2024

SITE MANAGEMENT

1. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
2. THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSIVE EFFECTS OF WIND, RAIN AND SURFACE WATER.
3. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN (ESCP) AND ASSOCIATED DEVELOPMENT CONDITIONS.
4. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
   - ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
   - MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
   - MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
   - PREVENT, OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
   - ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.
5. ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
6. ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT SITE INSPECTIONS, THE SITE'S MONITORING AND MAINTENANCE PROGRAM, OR THE REGULATORY AUTHORITY, IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
7. SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
8. WHEREVER REASONABLE AND PRACTICABLE, BRICK, TILE AND MASONRY CUTTING MUST BE CARRIED OUT ON A PERVIOUS SURFACE, SUCH AS GRASS, OR OPEN SOIL, OR IN SUCH A MANNER THAT ALL SEDIMENT-LADEN RUNOFF IS PREVENTED FROM DISCHARGING INTO A GUTTER, DRAIN, OR WATER BODY.
9. ADEQUATE WASTE COLLECTION BINS MUST BE PROVIDED ON-SITE AND MAINTAINED SUCH THAT POTENTIAL AND ACTUAL ENVIRONMENTAL HARM RESULTING FROM SUCH MATERIAL WASTE IS MINIMISED.
10. CONCRETE WASTE AND CHEMICAL PRODUCTS, INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
11. ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
12. TRENCHES NOT LOCATED WITHIN ROADWAYS MUST BE BACKFILLED, CAPPED WITH TOPSOIL, AND COMPACTED TO A LEVEL AT LEAST 75MM ABOVE ADJOINING GROUND LEVEL AND APPROPRIATELY STABILISED.
13. ALL STORMWATER, SEWER LINE AND OTHER SERVICE TRENCHES, NOT LOCATED WITHIN ROADWAYS, MUST BE MULCHED AND SEEDED, OTHER OTHERWISE APPROPRIATELY STABILISED WITHIN 7 DAYS AFTER BACKFILL.
14. NO MORE THAN 150M OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST TO BE OPEN AT ANY ONE TIME.
15. SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
16. ALL FILL MATERIAL PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300MM TO 90% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289.

DRAINAGE CONTROL

17. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
18. DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAN PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
19. TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
20. WHEREVER REASONABLE AND PRACTICABLE, "CLEAN" SURFACE WATERS MUST BE DIVERTED AWAY FROM SEDIMENT CONTROL DEVICES AND ANY UNTREATED, SEDIMENT-LADEN WATERS.

FOR APPROVAL
10TH JUNE, 2024

REVISIONS

No.	BY	DATE	DESCRIPTION
B	BL	06.11.23	FOR APPROVAL
A	CBP	28.09.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION
RPEQ 11932

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS SHEET 1

SCALE	AS SHOWN
SHEET	27 OF 36
REVISION	A B
DRG No.	0944 - C102

SEDIMENT FENCE

MATERIALS

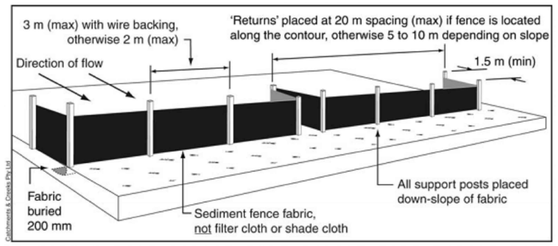
1. FABRIC: POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700MM IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM.
2. SUPPORT POSTS/STAKES AND STEEL STAR PICKETS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION

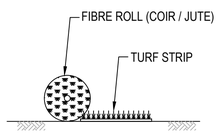
1. WHERE POSSIBLE INSTALL SEDIMENT FENCE AT LEAST 2M FROM THE TOE OF ANY FILLING OPERATIONS THAT MAY RESULT IN SHIFTING SOIL/FILL DAMAGING THE FENCE.
2. ENSURE THE EXTREME ENDS OF THE FENCE ARE TURNED UP THE SLOPE AT LEAST 1.5M OR AS NECESSARY TO MINIMISE WATER BYPASSING AROUND THE FENCE.
3. ENSURE THE SEDIMENT FENCE IS INSTALLED IN A MANNER THAT AVOIDS THE CONCENTRATION OF FLOW ALONG THE FENCE AND THE UNDESIRABLE DISCHARGE OF WATER AROUND THE ENDS OF THE FENCE.
4. IF THE SEDIMENT FENCE IS TO BE INSTALLED ALONG THE EDGE OF THE EXISTING TREES, ENSURE CARE IS TAKEN TO PROTECT THE TREES AND THEIR ROOT SYSTEMS DURING INSTALLATION OF THE FENCE.
5. UNLESS DIRECTED BY THE SITE SUPERVISOR OR THE APPROVED PLANS, EXCAVATE A 200MM WIDE BY 200MM DEEP TRENCH ALONG THE PROPOSED FENCE LINE, PLACING THE EXCAVATED MATERIAL ON THE UP-SLOPE SIDE OF THE TRENCH.
6. ALONG THE LOWER SIDE OF THE TRENCH, APPROPRIATELY SECURE THE STAKES INTO THE GROUND SPACED NO GREATER THAN 3M IF SUPPORTED BY A TOP SUPPORT WIRE OR WEIR MESH BACKING, OTHERWISE NO GREATER THAN 2M.
7. WHEREVER POSSIBLE, CONSTRUCT THE SEDIMENT FENCE FROM A CONTINUOUS ROLL OF FABRIC. TO JOIN FABRIC ATTACH EACH END OF TWO OVERLAPPING STAKES WITH THE FABRIC FOLDING AROUND THE ASSOCIATED STAKE ONE TURN AND WITH TWO STAKES TIED TOGETHER WITH THE WIRE METHOD OR OVERLAP THE FABRIC TO THE NEXT ADJACENT SUPPORT POST.
8. SECURELY ATTACH THE FABRIC TO THE SUPPORT POSTS USING 25 X 12.5MM STAPLES, OR TIE WIRE AT MAXIMUM 150MM SPACING.
9. SECURELY ATTACH THE FABRIC TO THE SUPPORT WIRE/MESH (IF ANY) AT A MAXIMUM SPACING OF 1M.
10. ENSURE THE COMPLETED SEDIMENT FENCE IS AT LEAST 450MM, BUT NOT MORE THAN 700MM HIGH. IF A SPILL THROUGH WEIR IS INSTALLED, ENSURE THE CREST OF THE WEIR IS AT LEAST 300MM ABOVE GROUND LEVEL.
11. BACKFILL THE TRENCH AND TAMP THE FILL TO FIRMLY ANCHOR THE BOTTOM OF THE FABRIC AND MESH TO PREVENT WATER FROM FLOWING UNDER THE FENCE.
12. IF IT IS NOT POSSIBLE TO ANCHOR THE FABRIC IN AN EXCAVATED TRENCH, THEN USE A CONTINUOUS LAYER OF SAND OR AGGREGATE TO HOLD THE FABRIC FIRMLY ON THE GROUND.

MAINTENANCE

1. INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY.
2. REPAIR ANY TORN SECTIONS WITH A CONTINUOUS PIECE OF FABRIC FROM POST TO POST.
3. WHEN MAKING REPAIRS, ALWAYS RESTORE THE SYSTEM TO ITS ORIGINAL CONFIGURATION UNLESS AN AMENDED LAYOUT IS REQUIRED OR SPECIFIED.
4. IF THE FENCE IS SAGGING BETWEEN STAKES, INSTALL ADDITIONAL SUPPORT POSTS.
5. REMOVE ACCUMULATED SEDIMENT IF THE SEDIMENT DEPOSIT EXCEEDS A DEPTH OF 1/3 THE HEIGHT OF THE FENCE.
6. DISPOSE OF SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD



TYPICAL INSTALLATION OF A SEDIMENT FENCE
NOT TO SCALE

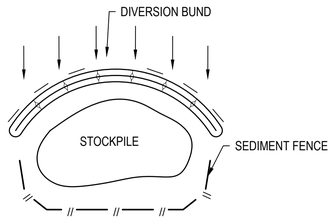


COIR / JUTE LOG TREATMENT
NOT TO SCALE

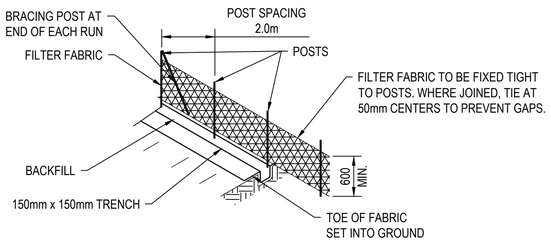
MATERIAL STOCKPILING:

THE CONSTRUCTION CONTRACTOR IS TO ADHERE TO THE FOLLOWING SOIL AND STOCKPILE MANAGEMENT PRACTISES. IN ADDITION, AS THE SITE IS WITHIN THE FIRE ANT BIOSECURITY ZONE 1, RECOMMENDATIONS FOR ADEQUATE STOCKPILING IN ACCORDANCE WITH THE BIOSECURITY ACT 2014 ARE ALSO PROVIDED BELOW. STOCKPILES OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED MUST BE:

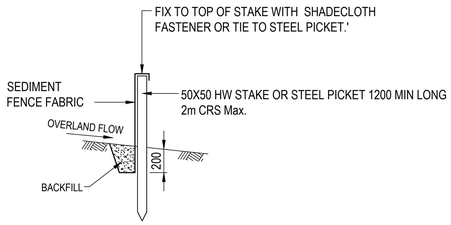
1. APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS;
2. LOCATED AT LEAST 2m FROM ANY HAZARDOUS AREA, RETAINED VEGETATION, OR CONCENTRATED DRAINAGE LINE;
3. LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM;
4. PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 28 DAYS.
5. PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK;
6. PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK;
7. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m2.



STOCKPILE SEDIMENT CONTROL
NOT TO SCALE



SEDIMENT FENCE ISOMETRIC
NOT TO SCALE



SEDIMENT FENCE SECTION
NOT TO SCALE

SEDIMENT BASIN (IF REQUIRED)

GENERAL

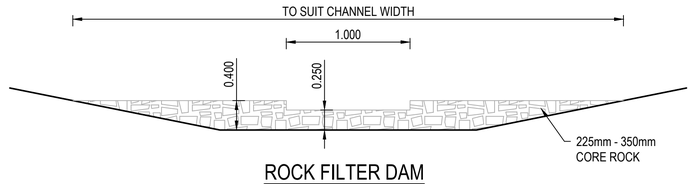
1. SEDIMENT BASIN TO BE LOCATED ABOVE THE 5YR FLOOD LINE.
2. MATERIALS USED IN THE CONSTRUCTION OF SEDIMENT BASINS SHOULD NOT HAVE AN EMERSON NUMBER OF 3 OR ABOVE (I.E. DISPERSIVE SOILS SUCH AS THE SUBSOILS THAT CAN BE ENCOUNTERED AT THE SITE CANNOT BE USED TO CONSTRUCT SEDIMENT BASINS).
3. A " FULL OF SEDIMENT" MARKER MUST BE PLACED IN THE SEDIMENT BASIN TO SHOW THE DESIGN DEPTH OF THE SOIL/STORAGE ZONE VOLUME AND TO INDICATE WHEN REMOVAL OF THE SEDIMENT IS TO BE CARRIED OUT.
4. CONSTRUCTED SEDIMENT BASINS TO BE FULLY OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL THE BASINS CATCHMENT AREA ACHIEVES 70% GROUND COVER ON ALL SOIL SURFACES.
5. FLOCCULATION REQUIREMENTS TO BE IN ACCORDANCE WITH TABLE B17 OF THE IECA GUIDELINES. IN GENERAL 32KG OF GYPSUM TO BE ADDED TO 100M3 OF STORED WATER.

MAINTENANCE

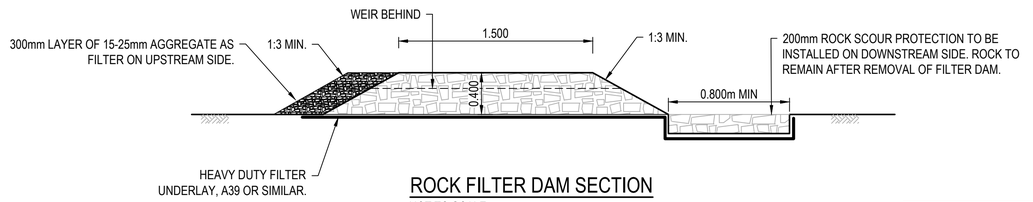
1. INSPECT THE SEDIMENT BASIN DURING THE FOLLOWING PERIODS AS STATED WITHIN PAGE B.52 OF THE IECA GUIDELINES:
   - 1.1. DURING CONSTRUCTION TO DETERMINE WHETHER MACHINERY, FALLING TREES OR CONSTRUCTION ACTIVITY HAS DAMAGED ANY COMPONENT OF THE SEDIMENT BASIN. IF DAMAGE HAS OCCURRED, REPAIR IT.
   - 1.2. AFTER EACH RUNOFF EVENT. INSPECT THE EROSION DAMAGE AT FLOW ENTRY AND EXIT POINTS. IF DAMAGE HAS OCCURRED, MAKE THE NECESSARY REPAIRS.
   - 1.3. AT LEAST WEEKLY DURING THE NOMINATED WET SEASON (IF ANY) OTHERWISE AT LEAST FORTNIGHTLY.
   - 1.4. PRIOR TO, AND IMMEDIATELY AFTER, PERIODS OF "STOP WORK" OR SITE "SHUTDOWN".
2. CLEAN OUT ACCUMULATED SEDIMENT WHEN IT REACHES THE MARKER BOARD/POST, AND RESTORE THE ORIGINAL STORAGE VOLUME. PLACE SEDIMENT IN A DISPOSAL AREA OR, IF APPROPRIATE, MIX WITH DRY SOIL ON THE SITE.
3. DO NOT DISPOSE OF SEDIMENT IN A MANNER THAT WILL CREATE AN EROSION OR POLLUTION HAZARD.
4. CHECK ALL VISIBLE PIPE CONNECTIONS FOR LEAKS, AND REPAIR AS NECESSARY.
5. CHECK FILL MATERIAL IN THE DAM FOR EXCESSIVE SETTLEMENT, SLUMPING OF THE SLOPES OR PIPING BETWEEN THE CONDUIT AND THE EMBANKMENT; MAKE ALL NECESSARY REPAIRS.
6. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE BASIN AND RISER.
7. SUBMERGED INFLOW PIPES MUST BE INSPECTED AND DE-SILTED (AS REQUIRED) AFTER EACH INFLOW EVENT.

REMOVAL OR CONVERSION OF SEDIMENT BASIN

1. WHEN GRADING AND CONSTRUCTION IN THE DRAINAGE AREA ABOVE A TEMPORARY SEDIMENT BASIN IS COMPLETED AND THE DISTURBED AREAS ARE ADEQUATELY STABILISED, THE BASIN MUST BE REMOVED OR OTHERWISE INCORPORATED INTO THE PERMANENT STORMWATER DRAINAGE SYSTEM. IN EITHER CASE, SEDIMENT SHOULD BE CLEARED AND PROPERLY DISPOSED OF AND THE BASIN AREA STABILISED.
2. BEFORE STARTING ANY MAINTENANCE WORK ON THE BASIN OR SPILLWAY, INSTALL ALL NECESSARY SHORT-TERM SEDIMENT CONTROL MEASURES DOWNSTREAM OF THE SEDIMENT BASIN.
3. ALL WATER AND SEDIMENT MUST BE REMOVED FROM THE BASIN PRIOR TO THE DAM'S REMOVAL. DISPOSE OF SEDIMENT AND WATER IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.
4. BRING THE DISTURBED AREA TO A PROPER GRADE, THEN SMOOTH, COMPACT AND STABILISE OR REVEGETATE AS REQUIRED TO ESTABLISH A STABLE LAND SURFACE.



ROCK FILTER DAM
NOT TO SCALE



ROCK FILTER DAM SECTION
NOT TO SCALE

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10TH JUNE, 2024

REVISIONS No.	BY	DATE	DESCRIPTION
B	BL	06.11.23	FOR APPROVAL
A	CBP	28.09.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION
RPEQ 11932

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS SHEET 2

SCALE	AS SHOWN
SHEET	28 OF 36
REVISION	A B
DRG No.	0944 - C103

GENERAL NOTES:

GENERAL:

1. ALL WORKS AND MATERIALS MUST BE IN ACCORDANCE WITH CURRENT TCC SPECIFICATIONS, STANDARD DRAWINGS, LOCAL AUTHORITY POLICIES AND AUSTRALIAN STANDARDS, UNLESS OTHERWISE NOTED
2. THE CONTRACTOR MUST TAKE ALL NECESSARY MEASURES TO PROTECT NEARBY PROPERTY OWNERS FROM DUST POLLUTION DURING ALL PHASES OF WORKS. FINISHED AREAS OF EARTHWORKS MUST BE KEPT WATERED WHERE NECESSARY UNTIL A SATISFACTORY GRASS COVER IS ACHIEVED.
3. ALL CONSTRUCTION WORKS ARE TO BE JOINED NEATLY TO EXISTING SURFACE.
4. PUBLIC UTILITIES - DESPITE THE POSITION OF PUBLIC UTILITIES, FITTINGS, PIPES, POLES, MANHOLES, ETC MAY BE INDICATED ON THE DRAWINGS, NO RESPONSIBILITY WILL BE ACCEPTED BY THE PRINCIPAL FOR THE ACCURACY OF THE REPRESENTATION OR THE OMISSION THEREOF.
5. LOCATION AND LEVEL OF EXISTING SERVICES AND STRUCTURES HAS BEEN PLOTTED FROM AVAILABLE RECORDS AND IS TO BE CONSIDERED INDICATIVE ONLY. THE CONTRACTOR MUST ACCURATELY LOCATE THESE ON SITE PRIOR TO COMMENCING WORKS AND MUST PROTECT ALL EXISTING SERVICES DURING CONSTRUCTION. ANY DAMAGE TO EXISTING SERVICES MUST BE REPAIRED AT THE CONTRACTORS EXPENSE.
6. VEGETATION OUTSIDE WORK AREAS MUST NOT BE DISTURBED UNLESS SPECIFICALLY AUTHORISED BY THE SUPERINTENDENT.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH ALL RELEVANT LEGISLATION.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THE STABILITY OF ANY TEMPORARY WORKS ON THE SITE.
9. THE CONTRACTOR MUST CONFIRM THE ACCURACY OF ALL SETOUT AND CONFIRM ALL LEVELS WITH THE SUPERINTENDENT PRIOR TO COMMENCING CONSTRUCTION.
10. THE SURVEY LEVEL DATUM IS AHD AND THE CO-ORDINATE DATUM IS LOCAL AS PROVIDED BY ROWLANDS SURVEYS.
11. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH TMR SPECIFICATIONS AND THE PROJECT SPECIFICATIONS. IN THE EVENT OF A DISCREPANCY, REFER TO THE SUPERINTENDENT FOR CLARIFICATION.
12. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH DRAWINGS PREPARED BY OTHER RELATED CONSULTANTS, ALL PROJECT SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE WORK. ALL THE DISCREPANCIES MUST BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
13. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK MUST BE AS INDICATED ON THESE DRAWINGS AND MUST BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND/OR FABRICATION IS COMMENCED. THE ENGINEERS DRAWINGS MUST NOT BE SCALED, UNLESS SPECIFICALLY NOTED OTHERWISE.
14. DURING CONSTRUCTION THE CONTRACTOR MUST BE RESPONSIBLE FOR MAINTAINING PROPOSED AND EXISTING WORKS IN A STABLE CONDITION AND ENSURING NO PART MUST BE OVER STRESSED UNDER CONSTRUCTION ACTIVITIES.
15. SAFETY REQUIREMENTS MUST BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WORK PLACE, HEALTH AND SAFETY ACT.
16. THE APPROVAL FOR A SUBSTITUTION MAY BE SOUGHT FROM THE SUPERINTENDENT BUT IS NOT AN AUTHORISATION FOR A VARIATION. ANY VARIATION MUST BE APPROVED BY THE SUPERINTENDENT BEFORE WORK COMMENCES.
17. THE ACCESS FOR THE WORK SITE MUST BE AS INDICATED ON THE CONTRACT OR AS APPROVED BY THE SUPERINTENDENT AND THE LOCAL AUTHORITIES. THE CONTRACTOR MUST OBTAIN ALL NECESSARY AND RELEVENT PERMITS. IT IS THE CONTRACTORS RESPONSIBILITY TO CONSTRUCT AND MAINTAIN ACCESS AS REQUIRED TO ALL PARTS OF CONTRACTORS WORK AREA.
18. THE CONTRACTORS COMPOUND MUST BE LOCATED AS APPROVED BY SUPERINTENDENT.
19. ANY WORKS WITHIN A STATE CONTROLLED ROAD RESERVE MUST BE CARRIED OUT IN ACCORDANCE WITH DTMR CURRENT SPECIFICATIONS AND STANDARD DRAWINGS.
20. CONTRACTOR MUST UNDERTAKE ALL WORKS IN PROXIMITY TO EXISTING SERVICES AND INFRASTRUCTURE IN ACCORDANCE WITH THE RELEVANT UTILITY / AUTHORITY POLICIES AND PROCEDURES.

EROSION & SEDIMENT CONTROL:

1. FOR STANDARD SEDIMENT CONTROL DEVICE DETAILS REFER TO DRAWINGS PROVIDED FOR THIS PROJECT.
2. REFER TO THE EROSION AND SEDIMENT CONTROL PLAN AND IMPLEMENT EROSION CONTROL MEASURES PRIOR TO COMMENCING WORKS ON SITE. MAINTAIN EROSION CONTROL MECHANISMS IN WORKING ORDER DURING ENTIRE CONSTRUCTION.
3. SEDIMENT LOSS FROM THE WORK SITE MUST BE MANAGED IN ACCORDANCE WITH CURRENT RELEVANT ENVIRONMENTAL GUIDELINES LEGISLATION. THIS WILL NECESSITATE THE USE OF APPROPRIATE EROSION AND SEDIMENT CONTROLS. THESE MUST BE IMPLEMENTED AT THE SITE ESTABLISHMENT PHASE AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. PRE-DISTURBANCE SOIL PROFILES AND COMPACTION LEVELS MUST BE REINSTATED.
5. ALL VEHICLES EXITING FROM THE SITE ARE TO BE WASHED DOWN, CLEANED AND TREATED SO AS TO PREVENT MATERIAL BEING TRACKED OR DEPOSITED ON PUBLIC ROADS. INSTALL MEASURES FOR CONTROL OF WASH DOWN.
6. ALL DISTURBED AREAS MUST BE LEFT IN A STABLE CONDITION. REFER TO ROADWORKS AND DRAINAGE LAYOUTS AND TYPICAL SECTIONS AND DETAILS FOR BATTER TREATMENTS.
7. ALL VEGETATION WITHIN 4m OF GENERAL MACHINE OPERATION MUST BE PROTECTED WITH A STAR PICKET AND ROPE FENCE CONSTRUCTED AT LEAST 1m CLEAR OF THE VEGETATION;
8. EROSION AND SEDIMENT CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR WHO MUST COMPLY WITH TMR REQUIREMENTS.
9. IMPLEMENT WORKS SHOWN ON THE SEDIMENT AND EROSION PLAN.
10. PROGRESSIVELY CLEAN UP ALL LITTER AND OIL LEAKS, AND PREVENT WASH OFF OF CEMENT SLURRY AND AC PRIME.
11. SUITABLE DUST CONTROL MEASURES TO BE IMPLEMENTED AT ALL TIMES.
12. THE CONTRACTOR MUST ADVISE THE SUPERINTENDENT ONCE THE EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED.
13. EROSION AND SEDIMENT CONTROL MEASURES MUST REMAIN IN PLACE UNTIL REHABILITATION MEASURES HAVE ESTABLISHED.

EARTHWORKS:

1. ALL EARTHWORKS OPERATION SHALL BE CARRIED OUT IN ACCORDANCE WITH TOWNSVILLE CITY PLAN SCHEDULE 6.4.6.10 EARTHWORKS (CONSTRUCTION) AND SCHEDULE 6.4.6.11 CLEARING AND GRUBBING UNLESS NOTED OTHERWISE.
2. PRIOR TO COMMENCEMENT OF CLEARING OPERATIONS THE LIMITS OF CLEARING ARE TO BE CLEARLY ESTABLISHED AND MARKED. CLEARING OUTSIDE WORK AREAS MUST BE APPROVED BY THE SUPERINTENDENT. ALL TREES IDENTIFIED AS "TO BE RETAINED" ON THE PROJECT DRAWINGS (IF ANY) SHALL BE PROTECTED FROM DAMAGE AND CLEARLY MARKED WITH AN EASILY VISIBLE NON-INJURIOUS AND REMOVABLE MEANS OF IDENTIFICATION.
3. PRIOR TO THE COMMENCEMENT OF EARTHWORKS, ALL AREAS SUBJECT TO EARTHWORKS OPERATIONS SHALL BE CLEARED AND GRUBBED.
4. ALL CONCRETE SLABS, DRAINS AND OTHER STRUCTURES, SERVICES OR DEBRIS ARE TO BE REMOVED FROM SITE AS NECESSARY TO PROPERLY CONSTRUCT THE WORKS. EXCAVATIONS AS A RESULT OF DEBRIS REMOVAL SHALL BE BACKFILLED AND COMPACTED TO THE STANDARD APPROPRIATE FOR THE RELEVANT LOCATION OF THE WORKS.
5. ANY AREA AFFECTED BY EARTHWORKS SHALL BE STRIPPED OF ALL TOPSOIL AND ANY OTHER ORGANIC MATTER IN STOCKPILE FOR RE-SPREADING AS REQUIRED.
6. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT OF THE AVERAGE DEPTHS OF TOPSOIL MATERIAL AND ANY SIGNIFICANT VARIATIONS IN THE DEPTH OF TOPSOIL MATERIAL ENCOUNTERED DURING STRIPPING OPERATIONS.
7. TOPSOIL STOCKPILES ARE TO BE PROTECTED FROM SEDIMENT RUNOFF BY A CATCH DRAIN CONSTRUCTED ALONG UPHILL SIDES AND A SUITABLE SILT FENCE/SEDIMENT TRAP CONSTRUCTED ON THE DOWNHILL SIDES.
8. ALL EARTHWORKS SHALL BE COMPACTED TO MINIMUM 98% STANDARD COMPACTION.
9. UNSUITABLE MATERIAL WILL BE AS DESCRIBED IN AS3798. THE CONTRACTOR SHALL GAIN THE AGREEMENT OF THE SUPERINTENDENT PRIOR TO CLASSIFYING ANY MATERIAL AS BEING UNSUITABLE.

EROSION AND SEDIMENT CONTROL (ESC) MEASURES TO BE INSTALLED PRIOR TO COMMENCEMENT OF WORK.

EROSION PLANS AND BUILDING REPRESENTATIVE FAMILIAR WITH THE PLAN MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION

THIS DEVELOPMENT MAY REQUIRE THE IMPLEMENTATION OF SOIL RETENTION METHODS DURING CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THESE WORKS ARE CERTIFIED BY A SUITABLY QUALIFIED RPEQ AND INSTALLED PRIOR TO UNDERTAKEN THE FILLING AND EXCAVATION WORKS AS INDICATED ON THIS PLAN

ALL ENVIRONMENTAL MEASURES INCLUDING VEGETATION PROTECTION AND EROSION AND SEDIMENT CONTROL SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY WORK

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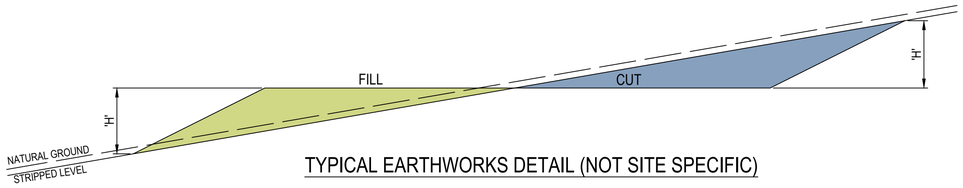


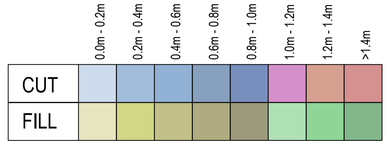
TYPICAL EARTHWORKS DETAIL (NOT SITE SPECIFIC)

BATTER ANGLES - SHORT TERM

SLOPE = H : L (H ≤ 2.0M)	MATERIAL TYPE (REFER GEOTECHNICAL REPORT)					
	STABLE ROCK	SAND	SILT	FIRM CLAY	SOFT CLAY	SOFT SOILS
COMPACTED FILL	1 : 1	1 : 3	1 : 4	1 : 2	N/A	N/A
CUTTING	N/A	1 : 3	1 : 4	1 : 2	1 : 3	N/A

* N/A - REFER TO GEOTECHNICAL REPORT FOR TREATMENT OF UNSUITABLE MATERIAL
Note: ALL BATTER ANGLES APPROXIMATELY ONLY AND ARE TO BE CONFIRMED BY GEOTECHNICAL ENGINEER

LEVEL 1 COMPACTION
ALL FILLING ON SITE TO BE LEVEL 1 COMPACTED FILL AS PER AS1289 UNLESS NOTED OTHERWISE.



EARTHWORKS TABLE

SITE PREPARATION	CUT (m³)	FILL (m³)	NETT (m³)
BULK EARTHWORKS FROM EXISTING SURFACE	-39449.675	+35220.561	-4229.113

EARTHWORKS VOLUMES ARE TAKEN FROM EXISTING SURFACE LEVEL TO FINISHED SURFACE LEVEL INCLUDING 400mm ROAD BOX.
CONTRACTOR IS TO CONFIRM VOLUMES PRIOR TO TENDER OR COMMENCEMENT OF WORKS ON SITE.
DETAILED EXCAVATION OF TRENCHES / SERVICES / STORMWATER EXCLUDED.

F

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
No.	BY	DATE	DESCRIPTION
F	BL	05.07.24	FOR APPROVAL - CUT/FILL UPDATED
E	BL	05.07.24	FOR APPROVAL - CUT/FILL UPDATED
D	BL	28.05.24	FOR APPROVAL - CUT/FILL UPDATED
C	BL	15.12.23	FOR APPROVAL - CUT/FILL UPDATED
B	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID	
VERT. DATUM	AHD	
DRG. FILE	0944	DATE
DESIGN	BL	NOV '23
DRAWN	CBP	NOV '23

CERTIFICATION
RPEQ 11932

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
BULK EARTHWORKS NOTES, DETAIL AND LEGEND

SCALE	AS SHOWN
SHEET	29 OF 36
REVISION	A B C D E F
DRG No.	0944 - C201

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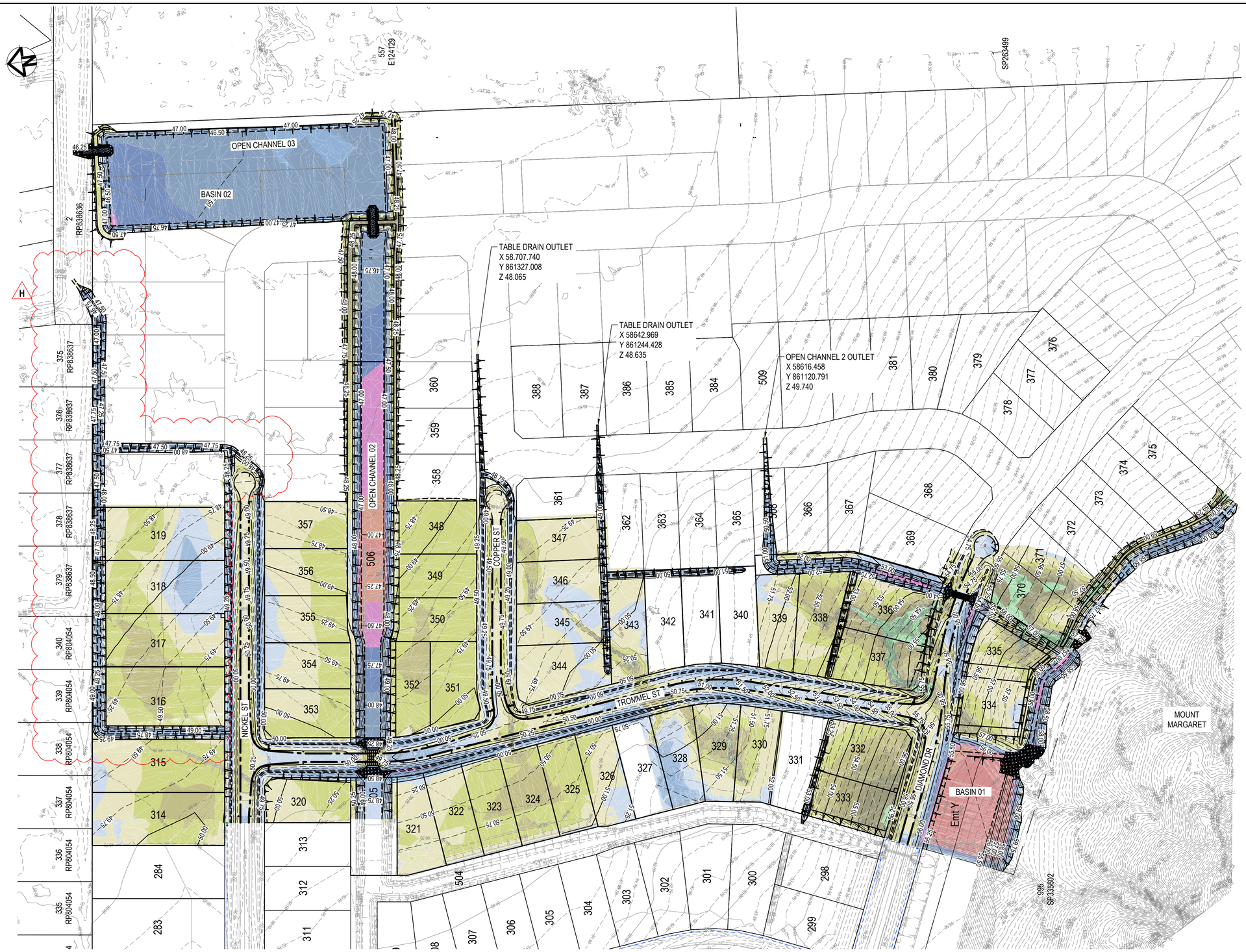

30 0 30 60 90 120 150m
SCALE 1:1500 @ A1 SCALE 1:3000 @ A3

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
H	BL	30.11.24	FOR APPROVAL - EARTHWORKS UPDATED	
G	BL	05.07.24	FOR APPROVAL - EARTHWORKS UPDATED	
F	BL	19.06.24	FOR APPROVAL - EARTHWORKS UPDATED	
E	BL	10.06.24	FOR APPROVAL - LOT LAYOUT UPDATED	
D	BL	28.05.24	FOR APPROVAL - CUT/FILL UPDATED	
No.	BY	DATE	DESCRIPTION	

HORIZ. DATUM	MT MARGARET GRID	
VERT. DATUM	AHD	
DRG. FILE	0944	DATE
DESIGN	BL	NOV '23
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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
BULK EARTHWORKS LAYOUT PLAN

SCALE	AS SHOWN
SHEET	30 OF 36
REVISION	A B C D E F G H
DRG No.	0944 - C202

SURFACE TREATMENT LEGEND:

P1 — PAVEMENT 1 *
PRIME
AMC00 @ 0.8L/m2
SEAL
1ST COAT CL170 @ 1.5L/m2 & 14mm @ 95m2 /m3
2ND COAT CL170 @ 1.1L/m2 & 7mm @ 120m2 /m3
150mm TYPE 2.1 BASE
125mm TYPE 2.3 SUB BASE
125mm TYPE 2.5 LOWER SUB BASE
TOTAL PAVEMENT DEPTH = 400mm

P2 — PAVEMENT 2
150mm TYPE 2.3 SUB BASE

L1 — AREA TO BE HYDROMULCHED

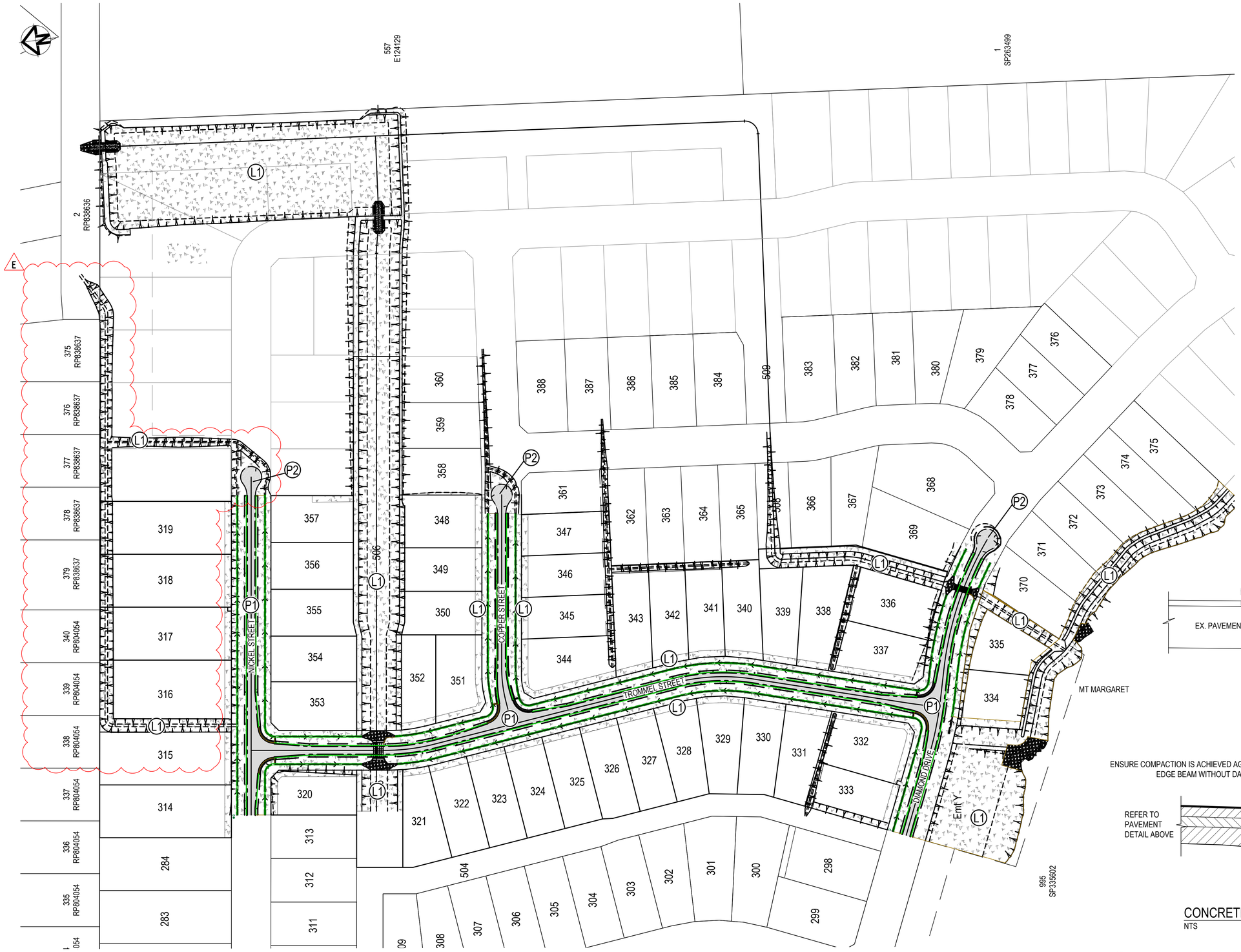
L2 — ROCK PROTECTION D_{50}=200mm ROCK ON A39 BIDIM, 300mm DEEP

TURF STRIP

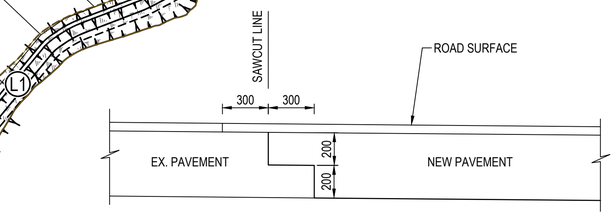
* PAVEMENT DEPTH SHOWN IS PRELIMINARY ONLY AND BASED ON A SUBGRADE OF CBR 3%. PAVEMENT DESIGN AND MATERIAL IS TO BE CONFIRMED BY LANGTREE CONSULTING FOLLOWING GEOTECHNICAL TESTING OF SUBGRADE.

PAVEMENT NOTES

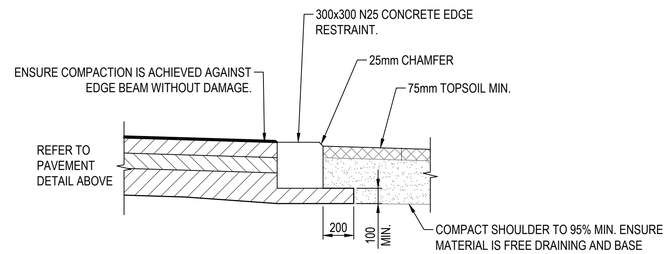
1. THE PROPOSED WORK SHOULD BE CUT IN TO EXPOSE THE EDGE OF THE EXISTING PAVEMENT AND NOT SIMPLY BUTTED AGAINST THE EDGE OF THE EXISTING SURFACE. REFER DETAIL



SURFACE TREATMENT LAYOUT
NTS



PAVEMENT CUT BACK DETAIL
NTS



CONCRETE EDGE RESTRAINT DETAIL
NTS

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30 0 30 60 90 120 150m
SCALE 1:1500 @ A1 SCALE 1:3000 @ A3

FOR APPROVAL
10TH JUNE, 2024

REVISIONS	No.	BY	DATE	DESCRIPTION
	E	BL	30.11.24	FOR APPROVAL - SURFACE TREATMENT UPDATED
	D	BL	19.06.24	FOR APPROVAL - SURFACE TREATMENT UPDATED
	C	BL	10.06.24	FOR APPROVAL - LOT LAYOUT UPDATED
	B	BL	04.06.24	FOR APPROVAL - ROCK PROTECTION ADDED
	A	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL		NOV '23
DRAWN	CBP		NOV '23

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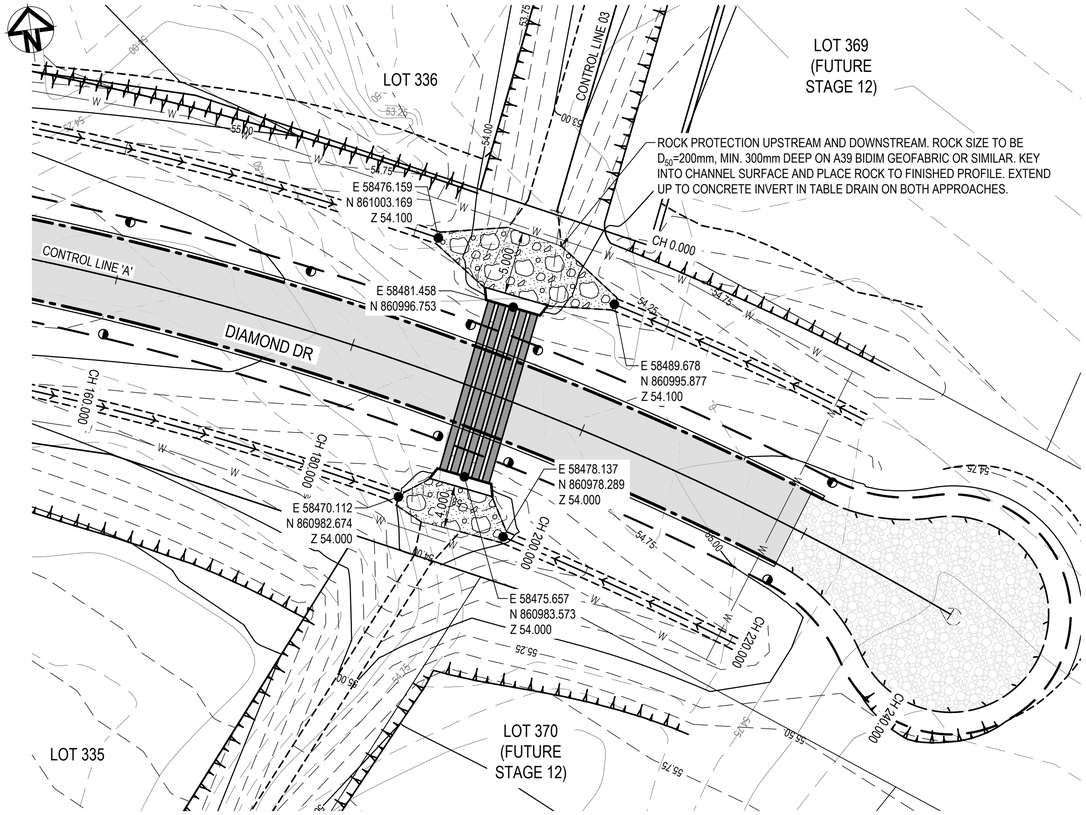
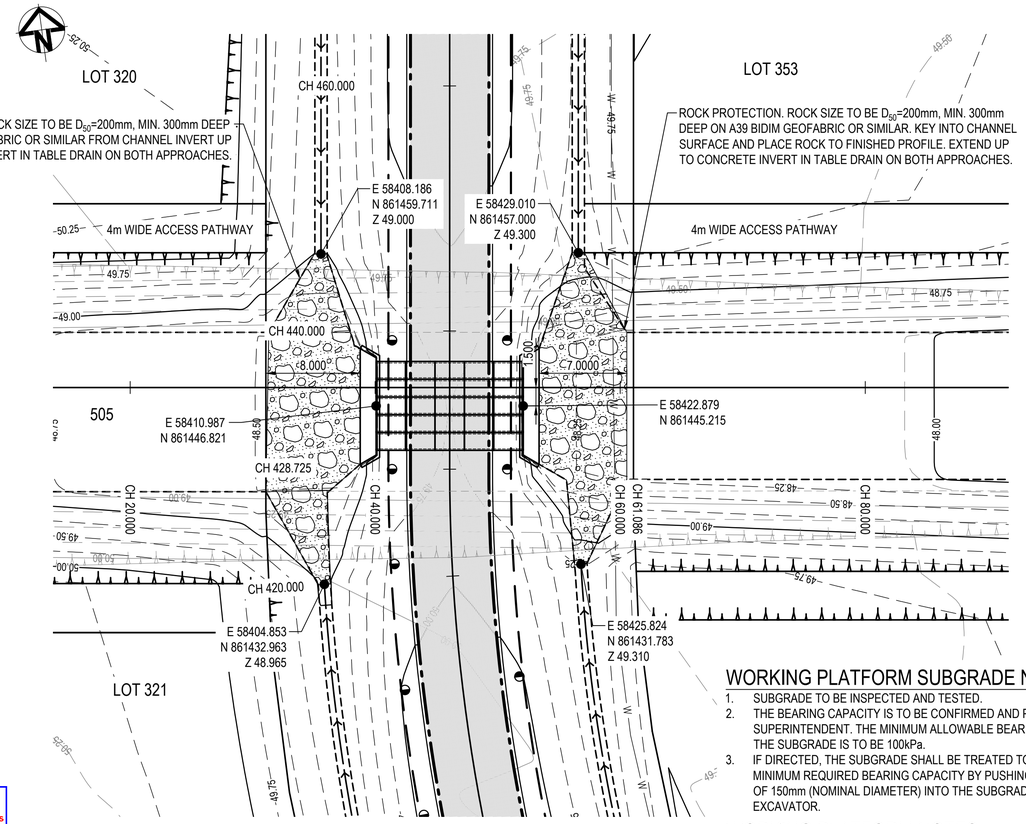
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
SURFACE TREATMENT LAYOUT PLAN

SCALE	AS SHOWN
SHEET	31 OF 36
REVISION	A B C D E
DRG No.	0944 - C301



CULVERT 01 LAYOUT - DIAMOND DR
SCALE 1:250



CULVERT 02 LAYOUT - TROMMEL ST
SCALE 1:250

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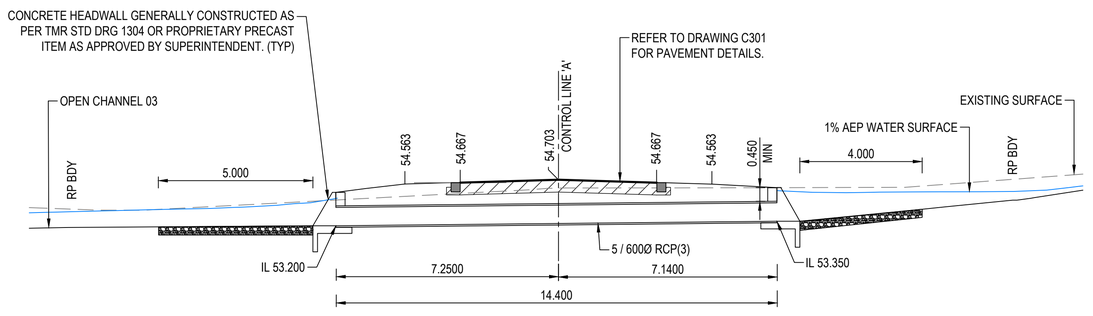
WORKING PLATFORM SUBGRADE NOTES:

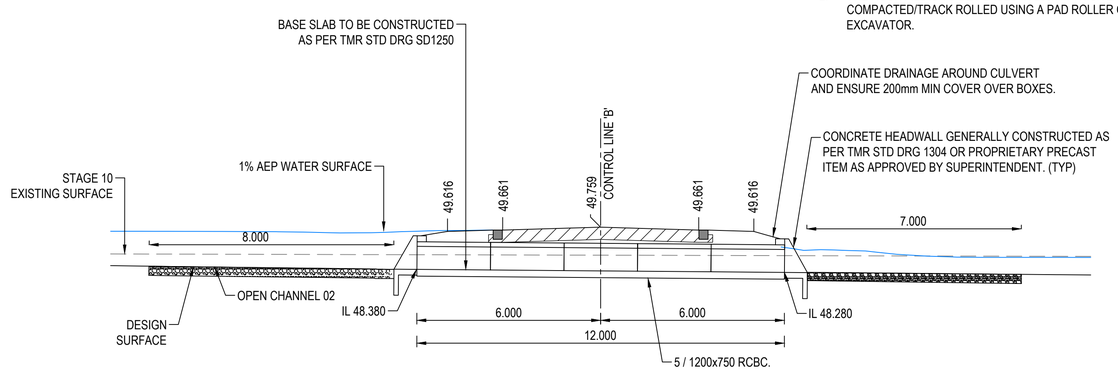
1. SUBGRADE TO BE INSPECTED AND TESTED.
2. THE BEARING CAPACITY IS TO BE CONFIRMED AND PROVIDED TO THE SUPERINTENDENT. THE MINIMUM ALLOWABLE BEARING CAPACITY OF THE SUBGRADE IS TO BE 100kPa.
3. IF DIRECTED, THE SUBGRADE SHALL BE TREATED TO ACHIEVE THE MINIMUM REQUIRED BEARING CAPACITY BY PUSHING ROCK SPALLS OF 150mm (NOMINAL DIAMETER) INTO THE SUBGRADE WITH AN EXCAVATOR.

WORKING PLATFORM NOTES:

1. WORKING PLATFORMS TO COMPRISE OF STRONG DURABLE ROCK WITH MAXIMUM SIZE OF 150mm AND BE WELL GRADED WITH SMALLER ROCK.
2. THE ROCK FILL IS TO BE PLACED IN 250mm THICK LAYERS AND COMPACTED/TRACK ROLLED USING A PAD ROLLER OR MEDIUM SIZED EXCAVATOR.



CULVERT 01 LONGITUDINAL SECTION - DIAMOND DR
SCALE 1:100



CULVERT 02 LONGITUDINAL SECTION - TROMMEL ST
SCALE 1:100

5 0 5 10 15 20 25m
SCALE 1:250 @ A1 SCALE 1:500 @ A3

2 0 2 4 6 8 10m
SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL
10TH JUNE, 2024

REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS No.	BY	DATE	DESCRIPTION
B	BL	21.11.23	FOR APPROVAL - PIPE CLASS / ROCK PROTECTION UPDATED
A	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION
RPEQ 11932

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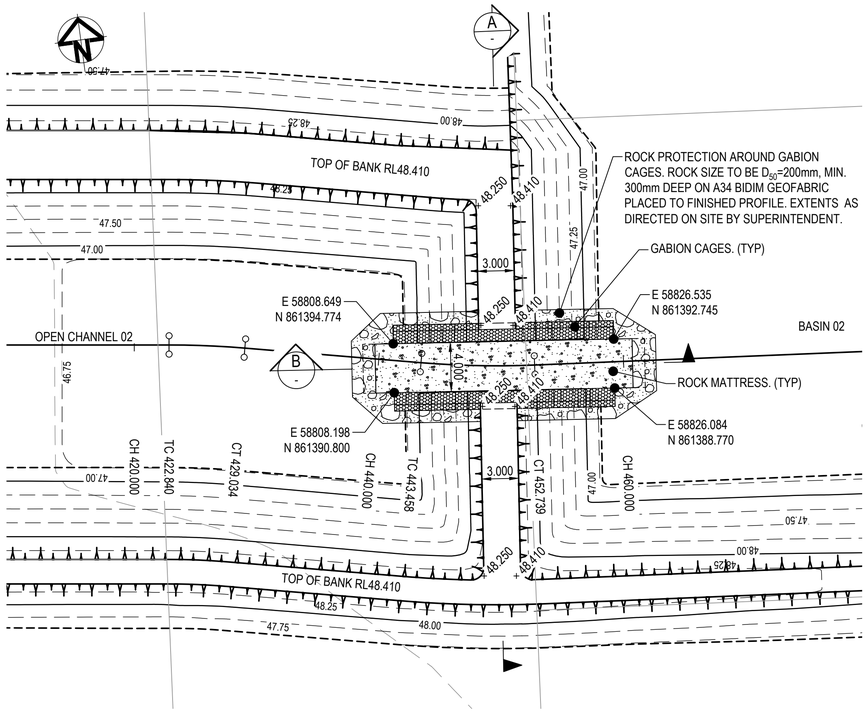
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817

CULVERT LAYOUT AND LONGITUDINAL SECTIONS

SCALE	AS SHOWN
SHEET	32 OF 36
REVISION	A B
DRG No.	0944 - C401



OPEN CHANNEL 02 OUTLET TO BASIN 2 LAYOUT

SCALE 1:250

NOTES:

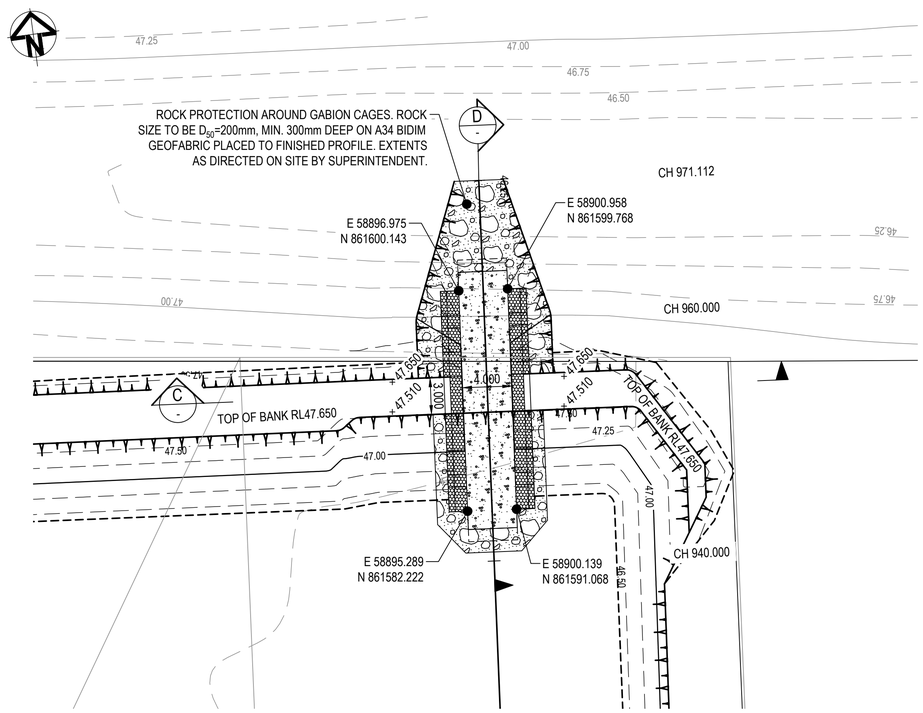
1. GABIONS AND ROCK MATTRESS TO BE CONSTRUCTED IN ACCORDANCE WITH MRTS03 (WIRE TO BE PVC COATED)
2. ENSURE MATRESS IS TIED TO FACE OF GABION.
3. GEOTEXTILE BIDIM A34 TO BE PROVIDED UNDER MATTRESS AND BEHIND GABIONS
4. FILL TO EMBANKMENT TO BE A COHESIVE, NON DISPERSIVE, LOW PERMEABILITY MATERIAL (PREFERABLY GC OR SC CLASSIFICATION) COMPACTED TO MIN 98% RDD.
5. ENSURE BASE IS FIRM AND WELL COMPACTED PRIOR TO CONSTRUCTION OF WALL.

WORKING PLATFORM SUBGRADE NOTES:

1. SUBGRADE TO BE INSPECTED AND TESTED.
2. THE BEARING CAPACITY IS TO BE CONFIRMED AND PROVIDED TO THE SUPERINTENDENT. THE MINIMUM ALLOWABLE BEARING CAPACITY OF THE SUBGRADE IS TO BE 100kPa.
3. IF DIRECTED, THE SUBGRADE SHALL BE TREATED TO ACHIEVE THE MINIMUM REQUIRED BEARING CAPACITY BY PUSHING ROCK SPALLS OF 150mm (NOMINAL DIAMETER) INTO THE SUBGRADE WITH AN EXCAVATOR.

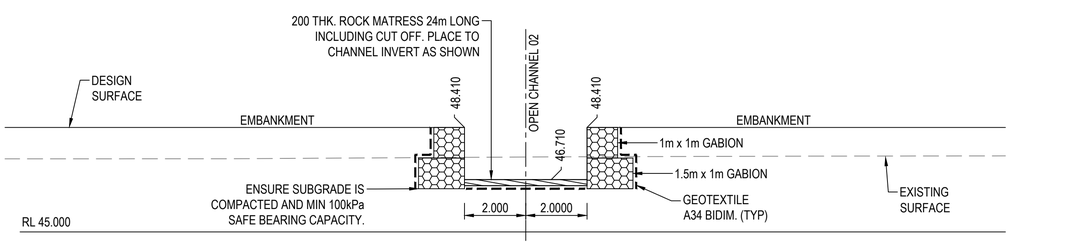
WORKING PLATFORM NOTES:

1. WORKING PLATFORMS TO COMPRISE OF STRONG DURABLE ROCK WITH MAXIMUM SIZE OF 150mm AND BE WELL GRADED WITH SMALLER ROCK.
2. THE ROCK FILL IS TO BE PLACED IN 250mm THICK LAYERS AND COMPACTED/TRACK ROLLED USING A PAD ROLLER OR MEDIUM SIZED EXCAVATOR.



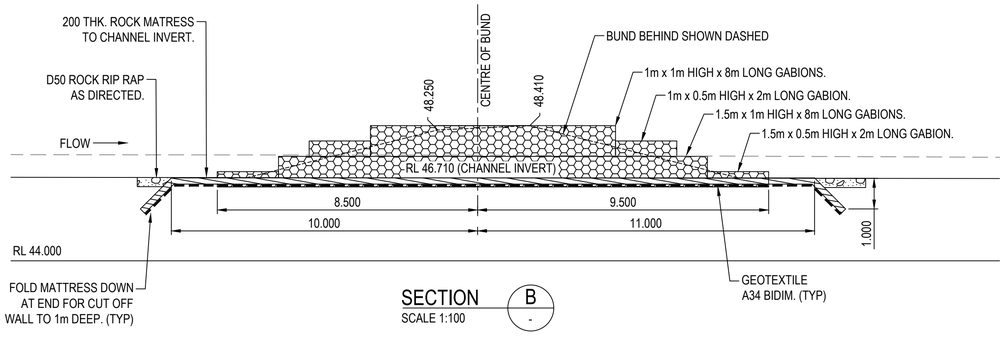
OUTLET TO EXISTING DRAINAGE CHANNEL LAYOUT

SCALE 1:250



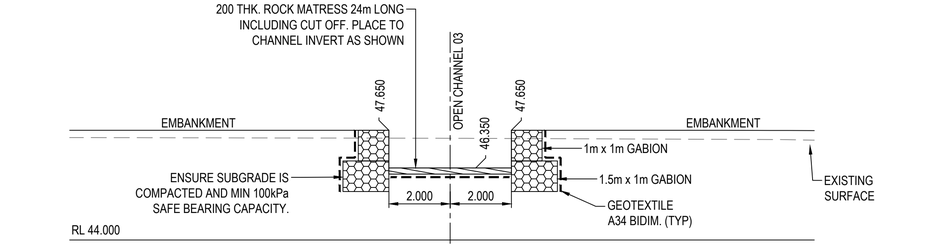
SECTION A

SCALE 1:100



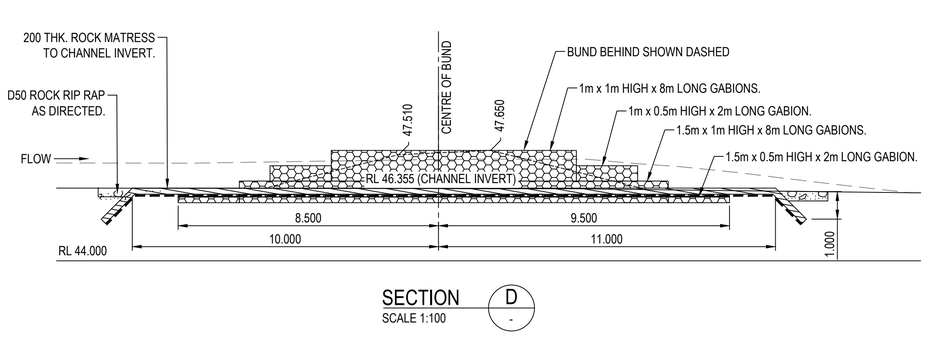
SECTION B

SCALE 1:100



SECTION C

SCALE 1:100



SECTION D

SCALE 1:100

SCALE 1:100 @ A1 | SCALE 1:200 @ A3 | SCALE 1:250 @ A1 | SCALE 1:500 @ A3

Townsville City Council
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18/07/2024

FOR APPROVAL
10TH JUNE, 2024

REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS No.	BY	DATE	DESCRIPTION
C	BL	05.07.24	FOR APPROVAL - LAYOUT AND DETAILS AMENDED
B	BL	04.06.24	FOR APPROVAL - GABION SIZES AMENDED
A	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL		NOV '23
DRAWN	CBP		NOV '23

CERTIFICATION
RPEQ 11932

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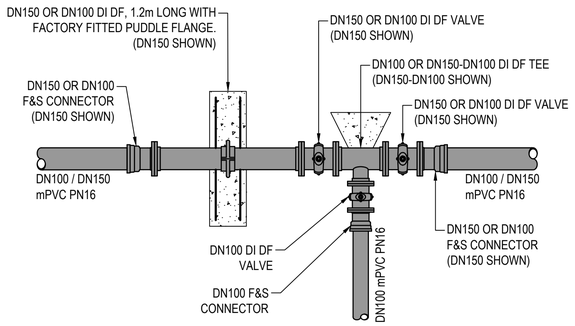
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
DRAINAGE DETAILS

SCALE	AS SHOWN
SHEET	33 OF 36
REVISION	A B C
DRG No.	0944 - C402



STANDARD TEE DETAIL - DN100 & DN150-DN100 MAIN

SCALE 1:25

VALVE MARKERS, HYDRANT MARKERS AND PAVEMENT MARKINGS ARE TO BE INSTALLED/REINSTATED IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS

ALL ENVIRONMENTAL PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING COMMENCING.

ALL WATER AND SEWER CONSTRUCTION WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORKPLACE HEALTH AND SAFETY ACT 2011.

CONTACT THE DIVISION OF WORKPLACE HEALTH AND SAFETY FOR INFORMATION PHONE : 1300 362 128

SYMBOLS LEGEND

PROPOSED FIRE HYDRANT	FH	EXISTING FH	FH
PROPOSED VALVE		EXISTING VALVE	
PROPOSED SCOUR VALVE		EXISTING SCOUR	
PROPOSED DEAD END		EXISTING DEADEND	
PROPOSED REDUCER		EXISTING REDUCER	
PROPOSED CONNECTOR		EXISTING ZONE VALVE	
PROPOSED WATER METER	SC	EXISTING WATER METER	SC

SERVICES (PUP) LEGEND

	EXISTING	PROPOSED
COMMUNICATIONS	C(*)	
DRAINAGE (unknown dia.)	D(*)	
DRAINAGE (known dia.)		
ELECTRICITY	E(*)	
O/H ELECTRICITY		
GAS	G(*)	
SEWERAGE	S(*)	S
WATER MAIN	W(*)	W
ABANDONED		

(*) - DENOTES QUALITY LEVEL AS PER A.S. 5488-2013.

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18/07/2024

PROVIDE TEMPORARY HYDRANT FOR SCOUR PURPOSES AND END CAP FOR CONTINUATION IN FUTURE STAGES.

PROVIDE TEMPORARY HYDRANT FOR SCOUR PURPOSES AND END CAP FOR CONTINUATION IN STAGE 12.

MAKE CONNECTION TO EXISTING DN250 PE WATER MAIN. REFER TO DETAIL ON C602

PROVIDE END CAP FOR CONTINUATION IN STAGE 12.

EX. DN250 PE PN100 SDR11 WDT

100 DI DF TEE

150x150x100 DI DF TEE

REMOVE TEMPORARY HYDRANT AND END CAP. ALLOW TO CONNECT TO EXISTING BY COUNCIL AT DEVELOPERS COST.

NOTE:
PROPERTY SERVICES ACROSS ROADS TO BE IN ACCORDANCE WITH SEQCODE STD DRAWINGS SEQ-WAT-1108-1 & 1108-2

REMOVE TEMPORARY END CAP. ALLOW TO CONNECT TO EXISTING BY COUNCIL AT DEVELOPERS COST.

EXISTING DN250 PE WATER MAIN TO BE REMOVED AND REPLACED WITH DN300 mPVC PN16 ALONG SOUTHERN SIDE OF DIAMOND DR.

NICKEL ST · COPPER ST · TROMMEL ST · DIAMOND DR

DN150 mPVC PN16 · DN100 mPVC PN16 · DN300 mPVC PN16 · 2 x OD25PE · OD25PE

2 0 2 4 6 8 10m

SCALE 1:100 @ A1 SCALE 1:200 @ A3

FOR APPROVAL
10TH JUNE, 2024

REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS No.	BY	DATE	DESCRIPTION
D	BL	10.06.24	FOR APPROVAL - LOT LAYOUT UPDATED
C	BL	28.05.24	FOR APPROVAL - WATER SERVICES AMENDED
B	BL	21.11.23	FOR APPROVAL - PIPE MATERIALS AMENDED
A	BL	06.11.23	FOR APPROVAL

HORIZ. DATUM	MT MARGARET GRID		
VERT. DATUM	AHD		
DRG. FILE	0944	DATE	
DESIGN	BL	NOV '23	
DRAWN	CBP	NOV '23	

CERTIFICATION
RPEQ 11932

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MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
WATER LAYOUT PLAN

SCALE	AS SHOWN
SHEET	34 OF 36
REVISION	A B C D
DRG No.	0944 - C601

Document Set ID: 26899090
Version: 2, Version Date: 18/07/2024

GENERAL

G1. READ THESE DRAWINGS IN CONJUNCTION WITH SURVEY, OTHER ENGINEERING DRAWINGS, SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED. THE NOTES SHALL APPLY UNLESS OTHERWISE VARIED BY THE DRAWINGS OR SPECIFICATIONS.
G2. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. SIMILAR ALTERNATIVES HAVING THE REQUIRED PROPERTIES MAY BE OFFERED FOR APPROVAL.
G3. REFER ANY DISCREPANCY TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.
G4. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS IN METRES UNLESS NOTED OTHERWISE.
G5. VERIFY SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED.
G6. THE DATUM FOR ALL LEVELS IS THE AUSTRALIAN HEIGHT DATUM IN METRES AND PROJECTIONS ARE BASED ON PM 112800 WITH RL560.874.
G7. THE CONTRACTOR SHALL PROTECT FROM DAMAGE AND SUPPORT ALL SERVICES THAT MAY BE AFFECTED BY THESE WORKS.
G8. THE CONTRACTOR SHALL RETAIN AND PROTECT ALL SIGNIFICANT TREES UNLESS WRITTEN INSTRUCTIONS ARE ISSUED BY THE SUPERINTENDENT.
G9. THE SERVICES ON THESE PLANS HAVE BEEN DETERMINED BY SURVEY AND/OR FROM OLD RECORDS SUPPLIED ELECTRONICALLY. THEREFORE THE LOCATION OF SERVICES AND FEATURES MAY NOT BE ACCURATE OR COMPLETE.
G10. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL LOCATE:-
- ALL EXISTING SERVICES WHICH CROSS THE PATH OF THE NEW MAIN AND ALL EXISTING NEARBY SERVICES WHICH MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION.
- EXISTING WATER SERVICES WHERE THE NEW WORKS CONNECT.

G11. PIPE LENGTHS TO BE CONFIRMED BY CONTRACTOR.
G12. DESIGN LEVELS TO BE CONFIRMED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR TO ENSURE MIN. COVER OF 600mm IS MAINTAINED TO ALL PIPEWORK. MINIMUM COVER UNDER ROADWAYS SHALL BE 900mm.
G13. PIPE LEVELS AND GRADES SHALL BE ADJUSTED AS REQUIRED AS PER TRC SUPERINTENDENT DIRECTIONS TO AVOID EXISTING SERVICES AND TO ALLOW FOR REQUIRED FITTINGS.

REINSTATEMENT OF CONCRETE ELEMENTS

RC1. CONCRETE ELEMENTS INCLUDING KERBS, FOOTPATHS, MEDIANS, DRIVEWAYS, ETC. SHALL BE SAW CUT TO ALLOW TRENCHING AND SHALL BE RETAINED WITH MATCHING SURFACE TEXTURE AND TREATMENT AS ADJOINING SURFACES. NEW SURFACE SHALL MATCH SMOOTHLY WITH ADJOINING SURFACES.

CONFINED SPACE NOTES

CS1. WARNING SIGNAGE IS TO BE PROVIDED FOR ALL CONFINED SPACES IN ACCORDANCE WITH AS1319 - SAFETY SIGNAGE FOR THE OCCUPATIONAL ENVIRONMENT.
CS2. ALL CONSTRUCTION AND O & M WORKS IN ACCORDANCE WITH AS2865:2009 - SAFE WORKING IN A CONFINED SPACE.

FENCING NOTES

F1. ALL TEMPORARY AND PERMANENT FENCING SHALL BE IN ACCORDANCE WITH AS1725.

BLASTING NOTES

B1. ALL BLASTING TO BE IN ACCORDANCE WITH AS2187 AND STATUTORY REQUIREMENTS.
B2. ALL AFFECTED UTILITIES AND STAKEHOLDERS ARE TO BE CONSULTED FOR APPROVAL IN ADVANCE OF THE WORKS.
B3. ALL RELEVANT APPROVALS ARE TO BE OBTAINED IN ADVANCE OF THE WORKS.

PIPEWORK

P1. ALL PIPE TO BE OF MATERIAL TYPE, CLASS AND COATINGS AS INDICATED ON THE DRAWINGS.
P2. LENGTHS OF PIPE, SPACING OF FITTINGS, BEND ANGLES, ETC. MUST BE CONFIRMED ON SITE PRIOR TO ORDERING MATERIALS. AMENDMENTS TO BE MADE ON SITE IF REQUIRED.
P3. ALL DI FITTINGS TO BE COATED AND LINED WITH FUSION BONDED EPOXY (AS/NZS 4158)
P4. ALL BURIED PIPE, UNO. MAXIMUM DI JOINT DEFLECTIONS :-
- DN300 AND LESS = 3°
- DN375 - DN450 = 2°
- GREATER THAN DN450 = 1°

NO DI SPIGOT SHALL BE INSERTED INTO PVC SOCKETS.
P5. CUT TO FIT PIPEWORK TO BE DETERMINED ON SITE AND CARRIED OUT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
P6. PVC-M PIPES WHERE SPECIFIED SHALL BE SERIES 2 WITH RUBBER RING JOINTS TO AS4765 , UNLESS NOTED OTHERWISE.
P7. BURIED SLUICE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS ON WSAA STANDARD DRAWING WAT-1301.
P8. ALL SPIGOT AND SOCKET ENDED VALVES AND VERTICAL BENDS OF DN200 AND GREATER TO BE RESTRAINED WITH STAINLESS STEEL HOLD DOWN STRAPS AND ANCHOR BLOCKS IN ACCORDANCE WITH WSAA STANDARD DRAWING WAT-1207.
P9. PE SLEEVING SHALL BE PROVIDED ON ALL BURIED DICL PIPE AND FITTINGS APPLIED IN ACCORDANCE WITH AS 3680 AND THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.
P10. ALL SURFACE FITTINGS AND MARKERS FOR DECOMMISSIONED FITTINGS ARE TO BE REMOVED.
P11. MAXIMUM DEFLECTION FOR mPVC IS 1° AT JOINTS
P12. DETECTABLE MARKER TAPE TO BE LAID ALONG THE LENGTH OF ALL NON-METALLIC MAINS AT MIN. 150mm BELOW FSL
P13. ALL CREEK / OVERLAND FLOW CROSSINGS TO BE DICL CL35.

TESTING

T1. PRESSURE TESTING OF PIPES SHALL COMPLY WITH CLAUSE 19.4 OF WSA 03-2011. HYDRAULIC TESTING OF PIPEWORK SHALL BE CARRIED OUT AT THE LOWEST POINT OF THE LINE AT PRESSURE OF 1200 kPa.

FLANGES

F1. ALL FLANGES TO BE PN16 TO AS4087 WITH RAISED FACE FLANGES, UNO. CONSTRUCTOR TO CONFIRM FLANGE COMPATIBILITY FOR VALVES AND FITTINGS.
F2. ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS (GRADE 316) AND NUTS (GRADE 308) COMPLYING WITH AS4087 AND FLANGED GASKETS COMPLYING WITH AS4087, UNO.
F3. ALL BURIED FLANGED JOINTS SHALL BE DENSO WRAPPED, OR APPROVED EQUIVALENT, FOR CORROSION PROTECTION.

VALVES

V1. ALL SLUICE VALVES ARE TO BE PN16 RESILIENT SEATED VALVES TO AS2638.2, COATED AND LINED WITH FUSION BONDED EPOXY (AS/NZS 4158) AND CLOCKWISE OPENING.
V2. SLUICE VALVE SURFACE BOX TO BE TYPE A1 IN ACCORDANCE WITH WSAA STD. DRG. WAT-1303.
V3. ALL AIR VALVES ARE TO BE INSTALLED IN ACCORDANCE WITH WSAA STD. DRG. WAT-1302.

HYDRANTS

H1. FIRE HYDRANTS TO BE SPRING "MAXI FLOW" 2000 TYPE MANUFACTURED TO AS3952.
H2. HYDRANTS ARE TO BE COATED WITH A THERMOSETTING EPOXY POWDER TO AS2638 AND AS3952.

GEOTEXTILE FILTER FABRIC

GF1. GEOTEXTILE SHALL BE BIDIM A14 OR EQUIVALENT, A NON-WOVEN FABRIC MADE FROM FILAMENTS OF SYNTHETIC FIBRES WHICH MEETS THE REQUIREMENTS OF APPENDIX J OF AS/NZS 2566.2:2002. THE GEOTEXTILE SHALL BE UNAFFECTED BY BACTERIA AND FUNGI AND BE SUITABLE FOR BURIAL.

ASBESTOS HANDLING

AH1. THE CONTRACTOR RESPONSIBLE FOR THE REPAIR AND REMOVAL OF ASBESTOS CEMENT WATER PIPES IS TO ENSURE COMPLIANCE WITH LEGISLATIVE REQUIREMENTS OF THE QUEENSLAND'S WORKPLACE HEALTH AND SAFETY ACT 2011, REGULATIONS 2011, HOW TO MANAGE AND CONTROL ASBESTOS IN THE WORKPLACE CODE OF PRACTICE 2011, AND HOW TO SAFELY REMOVE ASBESTOS CODE OF PRACTICE 2011.
AH2. ASBESTOS REMOVAL WORK MUST BE CARRIED OUT ONLY BY A LICENSED ASBESTOS REMOVALIST WHO IS APPROPRIATELY LICENSED TO CARRY OUT THE WORK. NO WORK ON ASBESTOS PIPES SHOULD TAKE PLACE UNLESS AN ASSESSMENT OF THE MATERIAL WAS UNDERTAKEN TO DETERMINE THE LEVEL OF RISK AND IDENTIFICATION OF APPROPRIATE CONTROL MEASURES TO MITIGATE THE RISK.
AH3. AS PER THE ASBESTOS REGULATIONS AN “ASBESTOS REMOVAL CONTROL PLAN” MUST BE COMPLETED PRIOR TO THE ASBESTOS REMOVAL.
AH4. WORKPLACE HEALTH AND SAFETY REGULATION 2011 REQUIRES THE CONTRACTOR TO NOTIFY WORKPLACE HEALTH AND SAFETY QUEENSLAND PRIOR TO ANY PLANNED ASBESTOS REMOVAL WORKS.
AH5. IMPORTANT ACTIONS BY THE CONTRACTOR DURING THE REMOVAL OF ASBESTOS PIPES ARE:
- THE WORK AREA SHOULD BE CORDONED OFF (E.G. WITH BARRIER TAPE) TO ENSURE UNPROTECTED PEOPLE CANNOT ENTER THE AREA;
- PEOPLE INVOLVED IN THE REMOVAL PROCESS SHOULD WEAR SUITABLE PROTECTIVE EQUIPMENT;
- THE PRODUCT SHOULD BE WET DOWN PRIOR TO REMOVAL, EXCEPT WHERE THIS WOULD BE DANGEROUS;
- DAMAGE OR BREAKAGE OF THE MATERIAL SHOULD BE MINIMISED;
- PLASTIC DROP SHEETS SHOULD BE USED, AND ALL SURFACES THEN WET WIPED AFTER REMOVAL IS COMPLETED;
- PEOPLE INVOLVED IN REMOVAL SHOULD GO THROUGH SOME FORM OF DECONTAMINATION PROCESS;
- WORK SHOULD BE PERFORMED IN WELL-VENTILATED AREAS, AND IN THE OPEN AIR WHERE POSSIBLE;
- POWER TOOLS SHOULD NEVER BE USED, AS THEY ARE LIKELY TO DISPERSE FIBRES INTO THE AIR.

AH6. IMPORTANT ACTIONS BY THE CONTRACTOR FOR DISPOSING OF ASBESTOS PIPES ARE:
- ASBESTOS IS GENERALLY DOUBLE BAGGED IN 0.2MM THICK PLASTIC BAGS AT THE WORKPLACE BEFORE BEING FULLY SEALED AND TAKEN AWAY. SEALED DRUMS MAY SOMETIMES ALSO BE USED TO DISPOSE OF ASBESTOS;
- THE SEALED ASBESTOS MUST BE TAKEN TO A LANDFILL APPROVED BY THE LOCAL AUTHORITY FOR SPECIALISED BURIAL.

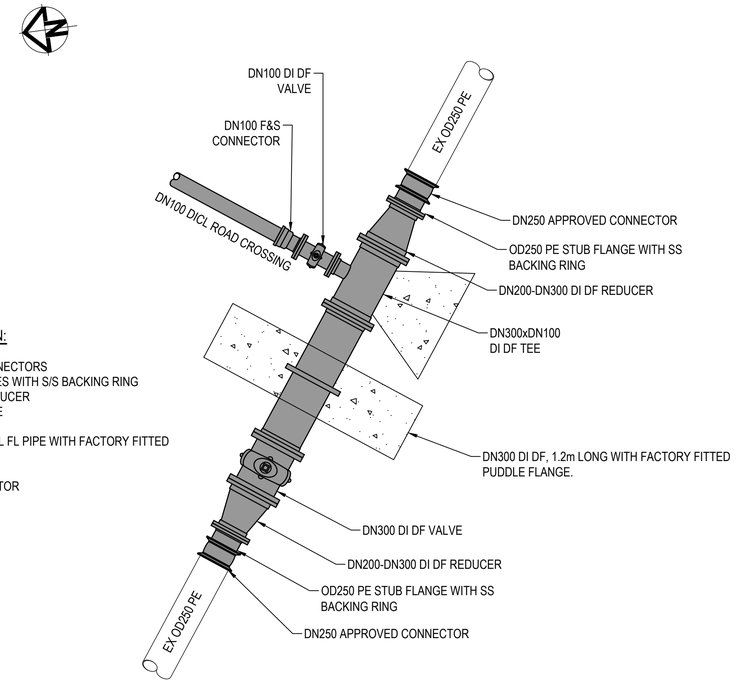
AH7. ANY ASBESTOS TRANSPORT AND DISPOSAL MUST BE IN ADHERENCE TO THE REGULATIONS UNDER QUEENSLAND'S ENVIRONMENTAL PROTECTION REGULATION 2008 PART 2-ENVIRONMENTALLY RELEVANT ACTIVITIES.

THRUST BLOCKS

T1. THRUST BLOCK DETAILS SHALL COMPLY WITH WSAA STANDARD DRAWING WAT-1205. ACTUAL SIZE OF THRUST BLOCK TO BE DETERMINED ON SITE BY THE SUPERINTENDENT.
T2. BENDS AND FITTINGS WITH RUBBER RING JOINTS TO HAVE CONCRETE THRUST BLOCKS IN ACCORDANCE WITH WSAA STD DRG WAT-1205.

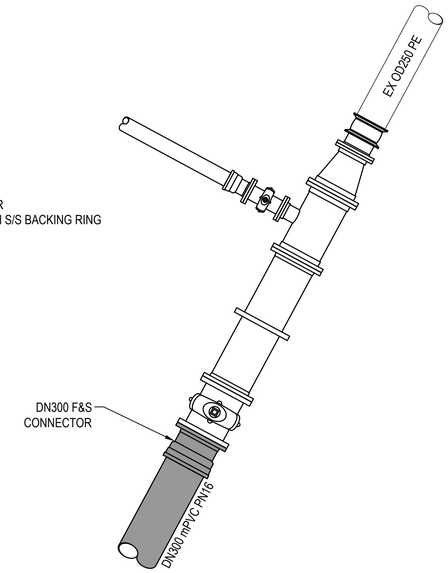
BEDDING AND BACKFILL

B1. TRENCHING, BEDDING AND BACKFILL TO COMPLY WITH WSAA STD DRG WAT-1201 TO WAT-1204.
B2. UNLESS DIRECTED OTHERWISE TRENCH TO BE TYPE B..



DURING CONSTRUCTION:
INSTALL
2 - DN250 APPROVED CONNECTORS
2 - OD250 PE STUB FLANGES WITH S/S BACKING RING
2 - DN200-DN300 DI DF REDUCER
1 - DN300xDN100 DI DF TEE
1 - DN300 DI DF VALVE
1 - DN300 x 1.2m LONG DI FL FL PIPE WITH FACTORY FITTED PUDDLE FLANGE
1 - DN100 DI DF VALVE
1 - DN100 DF F&S CONNECTOR

CONNECTION TO EXISTING OD250 PE WATER MAIN - CONSTRUCTION
SCALE 1:25



POST CONSTRUCTION:
REMOVE
1 - DN250 APPROVED CONNECTOR
1 - OD250 PE STUB FLANGES WITH S/S BACKING RING
1- DN200-DN300 DI DF REDUCER

INSTALL
1 - DN300 F&S CONNECTOR

CONNECTION TO EXISTING OD250 PE WATER MAIN - POST CONSTRUCTION
SCALE 1:25

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18/07/2024

0.5 0 0.5 1 1.5 2 2.5m
SCALE 1:25 @ A1 SCALE 1:50 @ A3

FOR APPROVAL
10TH JUNE, 2024

REVISIONS				
No.	BY	DATE	DESCRIPTION	
C	BL	10.06.24	FOR APPROVAL - NOTES AMENDED	
B	BL	21.11.23	FOR APPROVAL - THRUST BLOCKS SHOWN	
A	BL	06.11.23	FOR APPROVAL	

HORIZ. DATUM	MT MARGARET GRID		
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DESIGN	BL	NOV '23	
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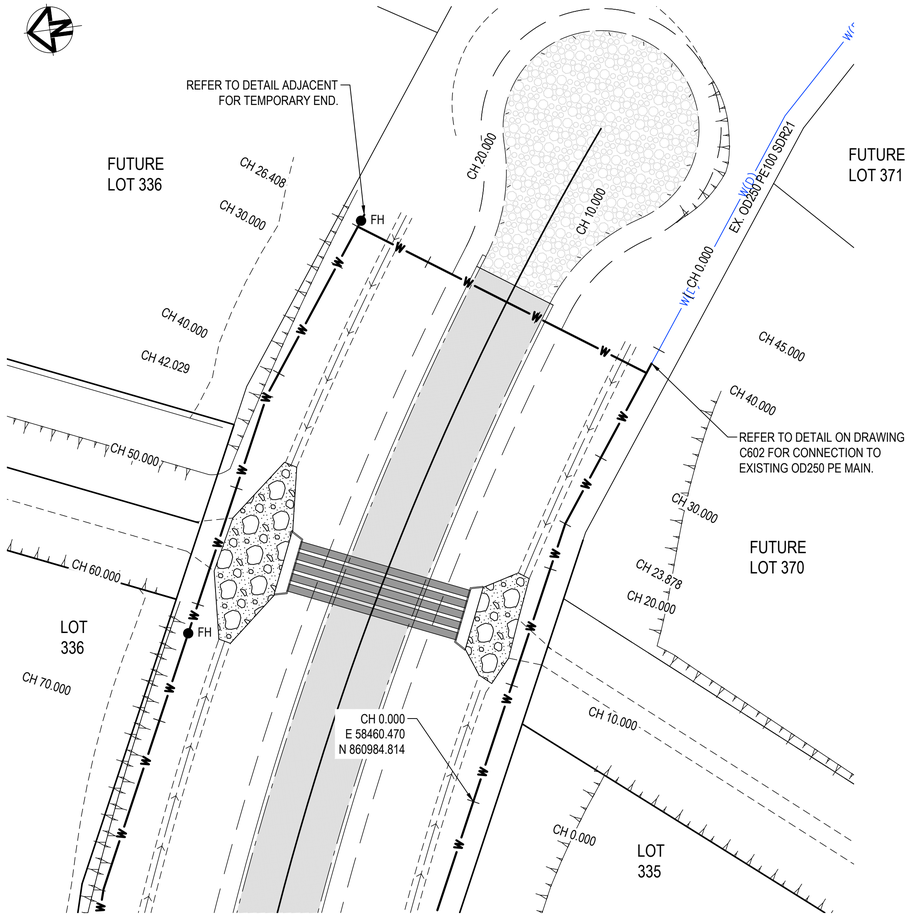
MT MARGARET ESTATE STAGE 11 -OPERATIONAL WORKS

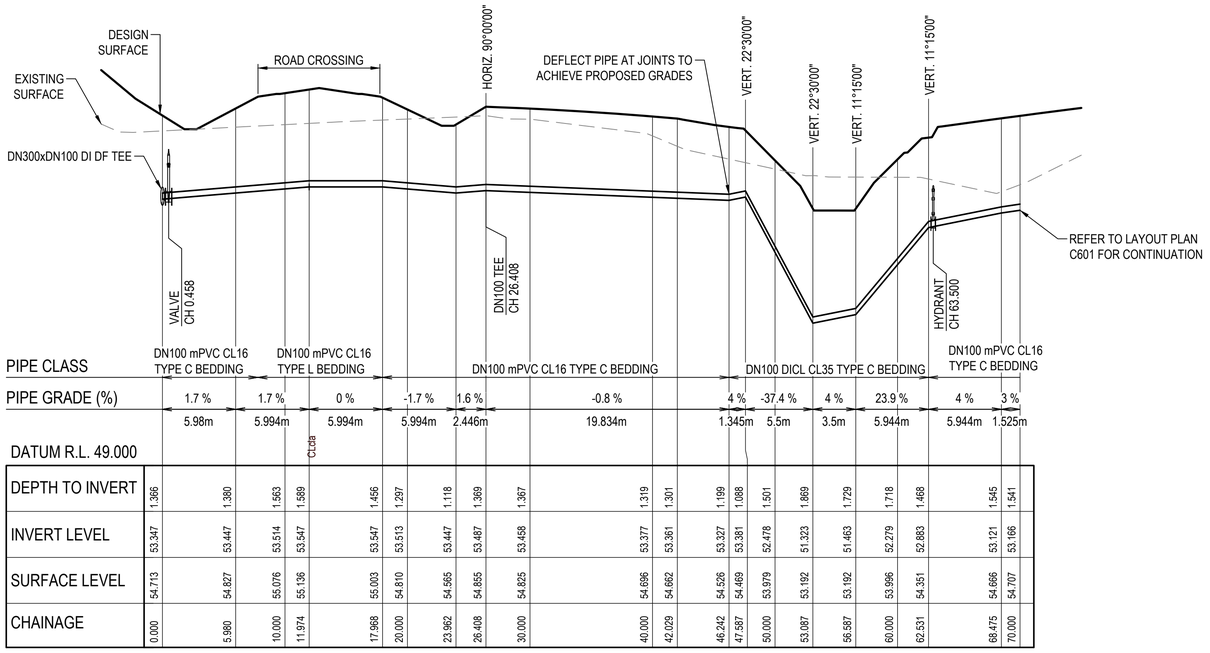
NICKEL STREET
ALICE RIVER, QLD, 4817

WATER RETICULATION NOTES AND DETAILS

SCALE	AS SHOWN
SHEET	35 OF 36
REVISION	A B C
DRG No.	0944 - C602



WATER LAYOUT AT CULVERT CROSSING
SCALE 1:250



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