CHAPMAN RIVER
LOOP TRAIL DETAILED DESIGN
Trail Construction Plans

DRAWING INDEX

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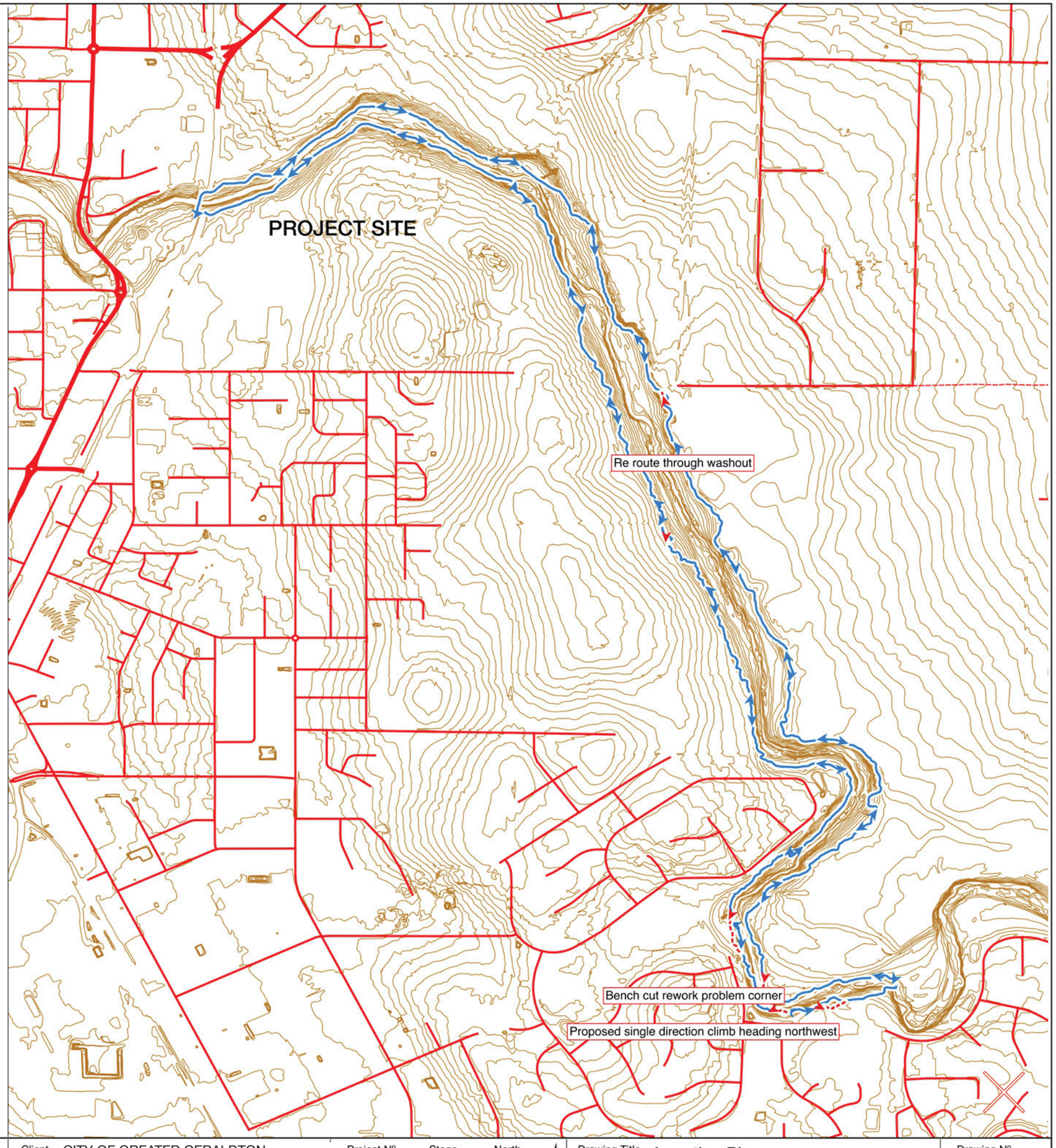

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Client CITY OF GREATER GERALDTON

Project **CHAPMAN RIVER MOUNTAIN BIKE**

Project N° **1630**

Stage **DD**

Plot Date **2018-02-09**

Drawn **DW**

North N

Drawing Title **Location Plan**

Scale @A3 0 50 100 150 200 250 m

Drawing N° **1b**

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TYPICAL LEGEND

- Proposed realigned section of trail
- Existing approved trail alignment
- 6135632_LoopTrail15mBuffer_MGA50_GHD_20170410

DD Features

- Chainage Point
- Turn
- Feature
- Element
- Drainage

Transport

- Highway, Freeway
- Main road sealed
- Minor road sealed
- Minor road unsealed
- Track
- Contours 1m

Environmental

- 6135632_TEC_MGA50_GHD_20170428
- 6135632_WoNS_Lycium_ferocissimum_MGA50_GHD_20170420
- 6135632_CryptogamicSoil_MGA50_GHD_20170418
- 6135632_ConSigFlora_MGA50_GHD_20170418
- 6135632_ConSigFauna_MGA50_GHD_20170418
- 6135632_Features_Lines_MGA50_GHD_20170427
- 6135632_ConSigFauna_Line_MGA50_GHD_20170418
- 6135632_CryptogamicSoil_Buffer_MGA50_GHD_20170418
- 6135632_ConSigFlora_Poly_MGA50_GHD_20170418
- 6135632_ConSigFauna_Poly_MGA50_GHD_20170418

ACRONYMS

PROFILE TYPES

PB - Benched
PE - Excavated
PF - Flat
PL - Lifted
PN - Natural Surface
PP - Partial Bench
PR - Retained
PT - Lifted and Tilted
PU - Upgraded Existing

SURFACING TYPE

SA - Armoured
SG - Grid
SH - Hardened
SI - Imported Material
SN - Endemic Material

MATERIAL

MBC - Concrete
MBF - Fibreglass Reinforced Plastic
MBP - Plastic
MBS - Steel
MBT - Timber
MIL - In Situ Log
MIR - In Situ Rock
MIS - In Situ Soil
MLL - Locally Won Log
MLR - Locally Won Rock
MLS - Locally Won Soil
MPB - Imported Soil Blend
MPF - Imported Sub Surface
MPL - Imported Log
MPM - Imported Soil & Sub Surface
MPR - Imported Rock
MPS - Imported Soil

ELEMENT TYPE

EAN - Anchor
EAR - Amouring
ECA Construction Access
ECO - Corral
EDM - Demarcation
EDP - Decision Point
EFA - Feature Artwork Sculpture
EFG - Feature Gateway Entry
EFS - Feature Stone
EOP - Optional Line
ERB - Roundabout
ERC - Road Crossing
ERT - Retaining
ESR - Start Ramp
ETF - Trail Filter
ETM - Trail Merge

TURN TYPE

TB - Bermed Turn
TC - Climbing Turn
TCI - Insloped Climbing Turn
TDI - Insloped Descending Turn
TDO - Outsloped Descending Turn
TI - Insloped Turn
TO - Outsloped Turn
TRC - Rising Catch Turn
TSC - Climbing Switchback
TSD - Descending Switchback
TSP - Platform Switchback
TTC - Technical Climbing Turn

DRAINAGE TYPE

DAP - Rolling Dip Pit
DAS - Rolling Dip Swale
DCA - Culvert Arch
DCL - Culvert Log
DCP - Culvert Pipe
DCR - Culvert Rock
DCT - Culvert Timber
DDI - Insloped Ditch
DDO - Open Top Drain
DDS - Spillway
DRA - Grade Reversal Swale
DRP - Grade Reversal Pit
DRR - Grade Reversal Outsloped
DRS - Grade Reversal Spillway
DUK - Rock Under Drain
DUS - Sheet Under Drain
DWB - Belt Waterbar
DWK - Rock Waterbar
DWL - Log Waterbar
DWT - Timber Waterbar

FEATURE TYPE

FAR - Armoured Root
FEB - Elevated Balance Beam
FEC - Elevated Log Drop
FED - Elevated Drop Off
FEL - Elevated Log Ride
FEP - Elevated Platform
FET - Elevated Timber Berm
FEW - Elevated Wall Ride
FJD - Double Jump
FJG - Gap Jump
FJH - Hipped Jump
FJK - Kicker Jump
FJM - Demarcation Jump
FJR - Rollable Double Jump
FJS - Step Down Jump
FJT - Table Top Jump
FJU - Step Up Jump
FKA - Rock Armouring
FKC - Rock Causway
FKD - Rock Dual Section
FKE - Rock Exposed Bedrock
FKG - Rock Garden
FML - Landing
FMM - Compression Dip
FMR - Roll In
FMS - Shute
FOC - Chicane Obstacle
FOD - Drop Off Obstacle
FOK - Choke Obstacle
FOS - Step Up Obstacle
FOT - Shute Obstacle
FRH - Roller Hipped
FRI - Roll In
FRK - Rock Rollover
FRL - Log Rollover
FRM - Demarcation Jump Roller
FRR - Roller
FRT - Roller Transfer
FRW - Roller Whoops

GENERAL NOTES

FIELD FLAGGING

1. All trails are pin tagged in the field with trail chainage and reference denoted.

2. Flaggng tape at approx 5m centres denote realigned trail sections.

3. Pink field tags denote a start of trail or trail 'Chainage' point with trail, station (-), chainage (+) and profile type (Px) scribed on tag.

4. White field tags denote a trail 'Turn' with station, chainage (+) and 'Turn Type' (Txx) scribed on tag.

5. Yellow field tags denote technical trail 'Feature' with station, chainage (+) and 'Turn Type' (Txx) scribed on tag.

6. Orange field tags denote trail 'Element' with station, chainage (+) and 'Element Type' (Exx) scribed on tag.

7. Blue field tags denote trail 'Drainage' with station, chainage (+) and 'Drainage Type' (Dxx) scribed on tag.

ALTERATION TO TRAIL DESIGN

1. The realigned trail sections (flagging tape) define a 1m wide construction corridor with the corridor centreline flagged. Any deviation from the trail corridor requires prior approval from the superintendent.

2. All trail turns, features, elements and drainage are flagged with 1m tolerance along the definitive trail alignment.

3. Additional drainage and trail elements (demarcation, corrals and chokes etc.) may be installed as required along the definative trail alignment in accordance with the Western Australian Mountain Bike Management Guidelines.

4. Additional technical trail features require prior approval from the superintendent.

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Client CITY OF GREATER GERALDTON
Project **CHAPMAN RIVER MOUNTAIN BIKE**

Project N° **1630**
Plot Date **2018-02-09**
Stage **DD**
Drawn **DW**
North N

Drawing Title **Master Legend & Acronyms**
Scale @A3 **1:1**
0 5 10 15 20 25 m

Drawing N° **2b**

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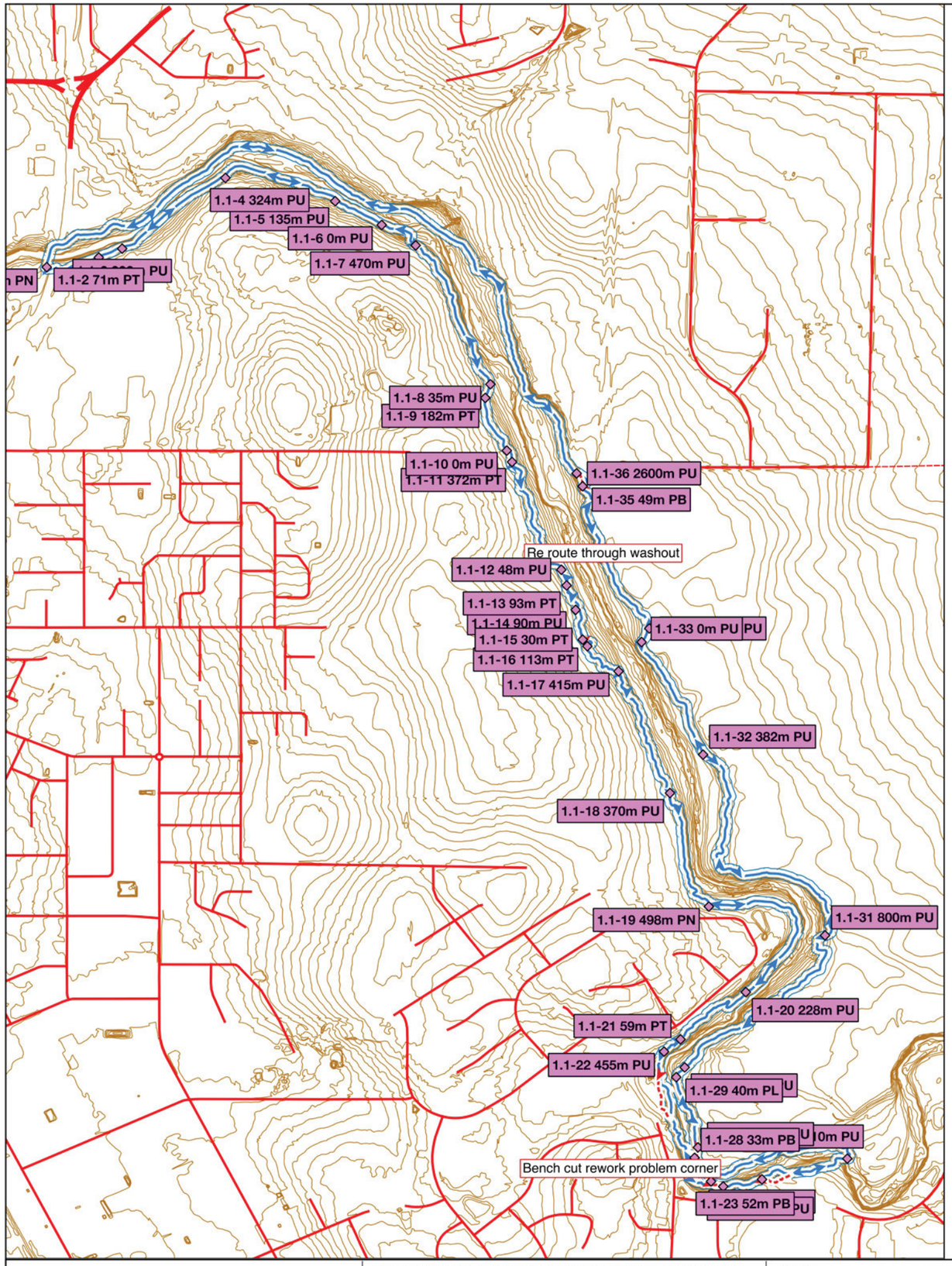

Moderate
Blue Square

LOOP TRAIL

CHAPMAN RIVER MOUNTAIN BIKE TRAIL

TRAIL DESCRIPTION

The Loop Trail is a 11km shared use, dual direction walk and mountain bike loop trail in varied terrain and vegetation. It traverses past a range of threatened and protected species and communities which must not be removed without specific approval on a case by case basis. Minimum sight lines of 15m for all sections, appart from MTB only option line sections, are required and will need vegetation thinning. All technical trail features and trail is to meet the Western Australian Mountain Bike Management Guidelines. All Technical trail features on dual direction trails are to meet Moderate - Blue Square classification unless they are option features, and must be rideable in both diretions.

TRAIL DETAILS

Classification	Class 3 (walk) Moderate - Blue (mtb)
Trail Length	11km
Strategic Value	High
Trail Type	Cross Country
Trail Style	Technical
Use	Shared Use
Direction	Walk Dual Direction MTB - Dual Direction
Orientation	Varies

TREAD PROFILE

Tread Type	Varied Surface
Landscaped Tread Width	600mm
Minimum Tread Width	600mm
Trailbed Width	900mm
Maximum Disturbance Width	1,000mm
Maximum Disturbance Depth	300mm
Spoil Disposal	Rehabilittion

CONSTRUCTION TYPE

Upgrade Existing Trail	8,900m
Retained Existing Trail	1,458m
New Trail Construction	164m

PROFILE TYPE

Upgrade	8,786m
Lifted and Tilted	920m
Natural Surface	649m
Lifted	40m
Bench	134m

CLEARING DETAILS

Max Corridor Width	2,000mm
Minimum Line of Sight	10m
Broad Hazard Clearing	2,000mm
Obstruction Clear Zone @1m	1,000mm
Vegetative Material Retention	Retained for naturalisation
Vegetative Material Disposal	Rehabilitation

GRADIENT & LANDFORM

Average Trail Gradient	4%
Maximum Trail Gradient	20%
Side Slope Range	3-45%
Slope Aspect	Varies
Slope Complexity	Complex
Landform Features	Revetments

VEGETATION CONDITIONS

Vegetation Types	
Vegetation Condition	Degraded > Excellent
Understory Cover	Clear > Dense
Hygiene Condition	NA

GROUND CONDITIONS

Soil Types	Sand, Loam, Gravelly Loam & Gravel
Mineral soil depth range	0mm-50mm
Geology Type	Soil WIth Floating Rock
Hydrology	Multiple Gullies to Riverbed

FINISHING

Surface Types	Endemic & Imported Limestone
Surface Materials	In Situ & Locally Won
Trail Naturalisation	Landscaped Corridor & Shoulder
Trail Blending	Blend excavation & backslope
Compaction Type	Natural Compaction
Compaction Depth	100mm
Demarcation	Maximum 30m separation

EQUIPMENT & ACCESS

Permitted Machine Types	Tracked Mini Excavator Tracked Mini Skid Steer Tracked Mini Dumper
Maximum Machine Width	1000mm Track Width
Construction Access	From Management Road
Setdown Only	Along Management Roads only

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Client CITY OF GREATER GERALDTON

Project **CHAPMAN RIVER MOUNTAIN BIKE**

Project N° **1630** | Stage **DD** | North

Plot Date **2018-02-09** | Drawn **DW**

Drawing Title **Loop Trail Overview**

Scale @A3 **1:10,000** 0 100 200 300 400 m

Drawing N° **3b**

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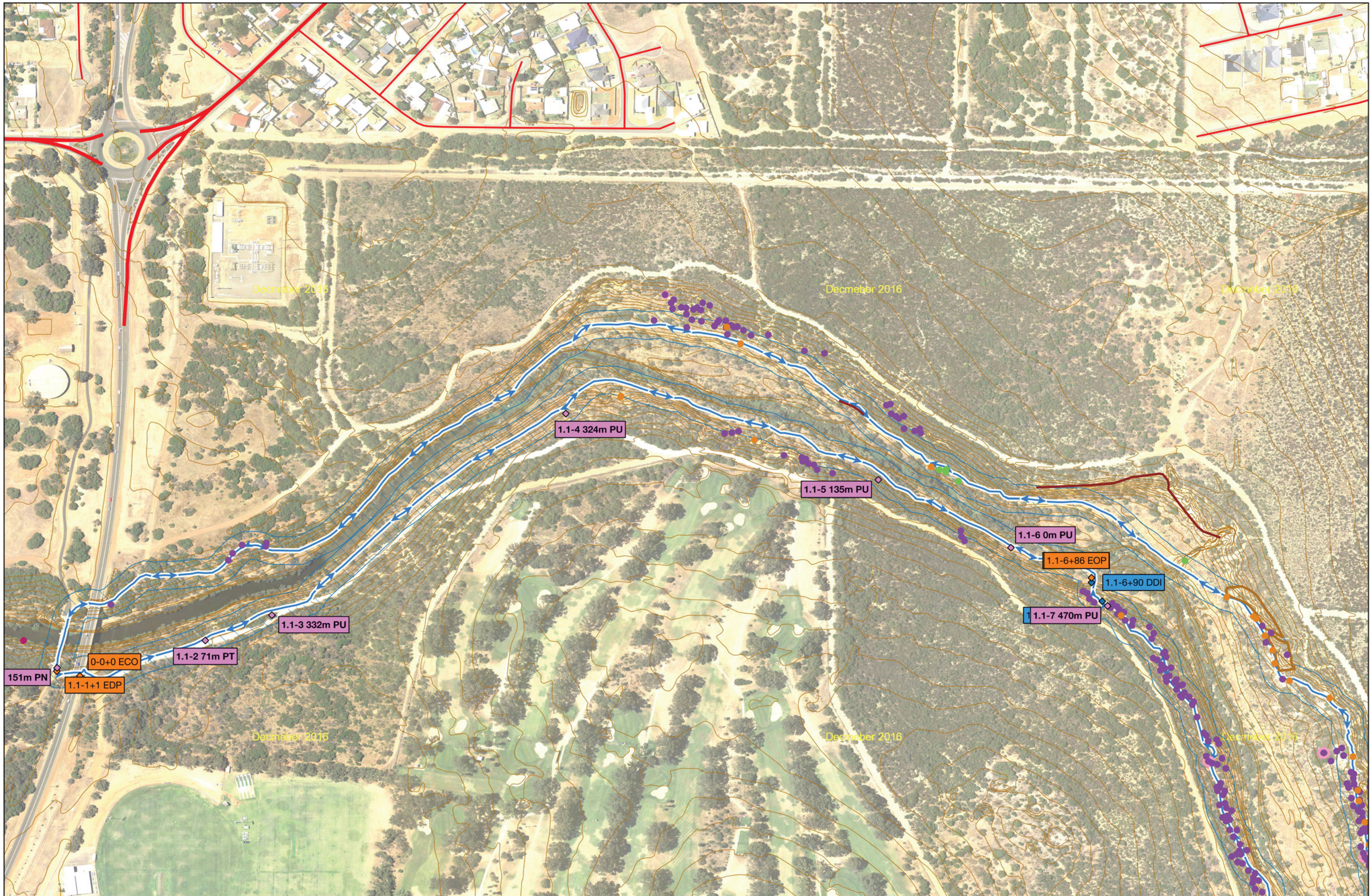

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Client CITY OF GREATER GERALDTON

Project **CHAPMAN RIVER MOUNTAIN BIKE**

Project N° **1630**

Plot Date **2018-02-09**

Stage **DD**

Drawn **DW**

North N

Drawing Title **Loop Trail Detail Plan A**

Scale @A3 **1:2,500**

0 20 40 60 80 100 m

Drawing N° **4b**

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Loop Trail Detail Plan B

Loop Trail Detail Plan C

1.1-14 90m PU
1.1-15 30m PT
1.1-16 113m PT
1.1-16+35 TDI
1.1-16+65 EOP
1.1-17 415m PU
1.1-17+134 FRK
1.1-17+151 FRK
1.1-17+400 DDI
1.1-18 370m PU
1.1-18+47 DDI
1.1-18+54 TRC
1.1-19 498m PN
1.1-31+463 DAP
1.1-32 382m PU
1.1-32+0 DRA
1.1-33 0m PU
1.1-34 478m PU
1.1-8 35m PU
1.1-9 182m PT
1.1-9+129 TRC
1.1-10 0m PU
1.1-11 372m PT
1.1-12 48m PU
1.1-13 93m PT
1.1-14 90m PU
1.1-34+147 FOS
1.1-35 49m PB
1.1-36 2600m PU
Re route through washout

December 2018

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Client CITY OF GREATER GERALDTON
Project **CHAPMAN RIVER MOUNTAIN BIKE**
Project N° **1630**
Plot Date **2018-02-09**
Stage **DD**
Drawn **DW**
North N
Drawing Title **Loop Trail Detail Plan B & C**
Scale @A3 **1:2,500**
0 20 40 60 80 100 m
Drawing N° **5b**

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Client	CITY OF GREATER GERALDTON	Project Nº 1630	Stage DD	North	N
Project	CHAPMAN RIVER MOUNTAIN BIKE	Plot Date 2018-02-09	Drawn DW		

Drawing Title: Loop Trail Detail Plan D

Scale @A3: 1:2,500 (0 20 40 60 80 100 m)

Drawing Nº: 6b

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Type	Trail	St.	+	St. End	Construction Type	Profile Type	Profile Width (m)	Cross Slope Type	Clearing Type	Surfacing Type	Surface Material	Typical Surface Depth (m)	Typical Trail Gradient (%)	Typical Side Slope (%)	Existing Natural Feature	Existing Soil Type	Existing Geology Type	Depth To Mineral Soil (mm)	Material Factor (*)	Soil Blend Material (m3)	Rock Material (m3)
Type	Trail	St.	+			Turn / Drainage / Feature / Element Type	Height / Depth (m)	Length (m)	Width (m)	Radius (m)	Material Type	Fall Zone (m)	Turn Slope (°)	Comments							
Element	0	0	0			ECO - Corral		0	0	0	0				Rework existing traffic choke						
Chainage Point	**1.1**	**1**	**0**	**151**	**Existing Trail**	**PN - Natural Surface**	**1500mm**						**0**	**0**		**Gravelly Soil**		**0**			
Element	1.1	1	1			EDP - Decision Point		0	0	0	0										
Chainage Point	**1.1**	**2**	**0**	**71**	**Upgrade Existing Trail**	**PT - Lifted And Tilted**	**600mm**			**SI - Imported**	**MPS - Imported Soil**	**100mm**	**0**	**0**	**Cleared With Regrowth And Understory**	**Sandy Soil**		**0**			
Chainage Point	**1.1**	**3**	**0**	**332**	**Upgrade Existing Trail**	**PU - Upgrade**	**900mm**	**Outsloped**		**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**4**	**0**	**324**	**Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**		**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**5**	**0**	**135**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Dense Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**6**	**0**	**0**	**Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**		**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Open Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Element	1.1	6	84			EDM - Demarcation		0	0	0	0				Dividing single direction descent and climb						
Element	1.1	6	86			EOP - Optional Line		0	0	0	0				Single direction climb. Single direction descent. Both upgrades of existing trail.						
Drainage	1.1	6	90			DDI - Insloped Ditch									Rock armoured Insloped ditch to collection pit						
Drainage	1.1	6	121			DDS - Spillway					MBT - Timber				Revegetate water shed (rabbit damage) control velocity at outlet with cross laid logs						
Chainage Point	**1.1**	**7**	**0**	**470**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Dense Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**8**	**0**	**35**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**		**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**9**	**0**	**182**	**Upgrade Existing Trail**	**PT - Lifted And Tilted**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported**	**MPS - Imported Soil**	**100mm**	**0**	**0**	**Open Understory**	**Deep Sandy Soil**	**Floating Rock In Soil**	**0**			
Turn	1.1	9	129			TRC - Rising Catch Turn					0 MPS - Imported Soil	0									
Chainage Point	**1.1**	**10**	**0**	**0**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Open Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**11**	**0**	**372**	**Existing Trail**	**PT - Lifted And Tilted**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported**	**MPS - Imported Soil**	**100mm**	**0**	**0**	**Dense Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**12**	**0**	**48**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Dense Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**13**	**0**	**93**	**Upgrade Existing Trail**	**PT - Lifted And Tilted**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported**	**MPS - Imported Soil**	**100mm**	**0**	**0**	**Dense Understory**	**Rocky Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**14**	**0**	**90**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Dense Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**15**	**0**	**30**	**New Trail Construction**	**PT - Lifted And Tilted**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported**	**MPS - Imported Soil**	**100mm**	**0**	**0**	**Dense Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**16**	**0**	**113**	**Existing Trail**	**PT - Lifted And Tilted**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported**	**MPS - Imported Soil**	**100mm**	**0**	**0**	**Dense Understory**	**Deep Sandy Soil**	**Floating Rock In Soil**	**0**			
Turn	1.1	16	35			TDI - Insloped Descending Turn					0 MPS - Imported Soil	0 Flat									
Element	1.1	16	65			EOP - Optional Line		0	0	0	0				Reroute existing trail						
Chainage Point	**1.1**	**17**	**0**	**415**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Dense Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			

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Client CITY OF GREATER GERALDTON

Project **CHAPMAN RIVER MOUNTAIN BIKE**

Project N° **1630** | Stage **DD**

Plot Date **2018-02-09** | Drawn **DW**

Drawing Title **LOOP TRAIL CHAINAGE**

7b

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Type	Trail	St.	+	St. End	Construction Type	Profile Type	Profile Width (m) / Height / Depth (m)	Cross Slope Type / Length (m)	Clearing Type / Width (m)	Surfacing Type / Radius (m)	Surface Material / Material Type	Typical Surface Depth (m) / Fall Zone (m)	Typical Trail Gradient (%) / Turn Slope (°)	Typical Side Slope (%) / Comments	Existing Natural Feature	Existing Soil Type	Existing Geology Type	Depth To Mineral Soil (mm)	Material Factor (*)	Soil Blend Material (m3)	Rock Material (m3)
Feature	1.1	17	134		FRK - Rock Rollover		0	0	0	0	In Situ Rock				Fill gap in rock to make uniform rock roller.						
Feature	1.1	17	151		FRK - Rock Rollover		0	0	0	0	In Situ Rock				Remove rock to make mellower Roller and reduce exposure risk						
Drainage	1.1	17	400		DDI - Insloped Ditch						MPR - Imported Rock				Limestone armoured						
Drainage	1.1	17	410		DDI - Insloped Ditch						MPR - Imported Rock				Limestone armoured						
Chainage Point	**1.1**	**18**	**0**	**370**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Dense Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Turn	1.1	18	5		TRC - Rising Catch Turn						MPS - Imported Soil		0	Deep Dish	dual direction rising catch out of pit drain excavated inside						
Drainage	1.1	18	47		DDI - Insloped Ditch						MPR - Imported Rock				Limestone						
Turn	1.1	18	54		TRC - Rising Catch Turn						MPS - Imported Soil		0	Deep Dish	Pit drain inside. Build from imported material						
Chainage Point	**1.1**	**19**	**0**	**498**	**Existing Trail**	**PN - Natural Surface**	**900mm**	**Crowned**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Clear Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Drainage	1.1	19	214		DRA - Grade Reversal Swale						MIS - In Situ Soil				Skim section free off loose material. Express water shed to stop silt build up						
Chainage Point	**1.1**	**20**	**0**	**228**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**21**	**0**	**59**	**Upgrade Existing Trail**	**PT - Lifted And Tilted**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported**	**MPB - Imported Soil Blend**	**100mm**	**0**	**0**	**Open Understory**	**Sandy Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**22**	**0**	**455**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**23**	**0**	**52**	**New Trail Construction**	**PB - Bench**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**24**	**0**	**104**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**25**	**0**	**160**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Drainage	1.1	25	30		DDI - Insloped Ditch						MPR - Imported Rock				Lmstone armoured ditch						
Turn	1.1	25	47		TRC - Rising Catch Turn						MLS - Locally Won Soil		0	Shallow Dish							
Element	1.1	26	156		EFG - Feature Bridge		1.5	12	1		MBT - Timber				EBT. Timber bridge VARIATION ON WORKS						
Chainage Point	**1.1**	**27**	**0**	**510**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Dense Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**28**	**0**	**33**	**New Trail Construction**	**PB - Bench**	**600mm**	**Outsloped**	**CB - Broadcast**	**SN - Endemic Material**	**MIS - In Situ Soil**	**N/A**	**0**	**0**	**Dense Understory**	**Sandy Earth Soil**	**Soil Generally Free Of Rock**	**0**			
Chainage Point	**1.1**	**28**	**0**	**230**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Dense Understory**	**Sandy Soil**	**Soil Generally Free Of Rock**	**0**			
Chainage Point	**1.1**	**29**	**0**	**40**	**Upgrade Existing Trail**	**PL - Lifted**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported SN - Endemic**	**MPS - Imported Soil**	**100mm**	**0**	**0**	**Dense Understory**	**Sandy Soil**	**Soil Generally Free Of Rock**	**0**			
Chainage Point	**1.1**	**30**	**0**	**620**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Open Understory**	**Sandy Soil**	**Rock**	**0**			
Drainage	1.1	30	183		DDI - Insloped Ditch						MPR - Imported Rock				Armoured						
Drainage	1.3	30	197		DRA - Grade Reversal Swale																
Turn	1.1	30	242		TRC - Rising Catch Turn						MIS - In Situ Soil		0		Dual direction outsloped belly for water						
Drainage	1.1	30	613		DDI - Insloped Ditch						MPR - Imported Rock				Reset and armour						
Drainage	1.1	30	618		DAS - Swale Daylight						MIS - In Situ Soil				Catch primary watershed from slab rock and express into branch armoured swale						
Chainage Point	**1.1**	**31**	**0**	**800**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Open Understory**	**Clayey Soil**	**Floating Rock In Soil**	**0**			
Drainage	1.1	31	463		DAP - Swale Pit						MIS - In Situ Soil										
Chainage Point	**1.1**	**32**	**0**	**382**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Open Understory**	**Clayey Soil**	**Bedrock / Cap rock**	**0**			
Drainage	1.1	32	0		DRA - Grade Reversal Swale										Express silt catch						
Chainage Point	**1.1**	**33**	**0**	**0**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SI - Imported SN - Endemic**	**MPB - Imported Soil Blend**	**100mm**	**0**	**0**	**Dense Understory**	**Sandy Soil**	**Bedrock / Cap rock Soil Generally Free Of**	**0**			
Chainage Point	**1.1**	**34**	**0**	**478**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Dense Understory**	**Sandy Earth Soil**	**Rock**	**0**			
Feature	1.1	34	147		FOS - Step Up Obstacle		0	0	0		In Situ Rock				Widen existing Roller step up						
Chainage Point	**1.1**	**35**	**0**	**49**	**New Trail Construction**	**PB - Bench**	**600mm**	**Outsloped**	**CB - Broadcast**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			
Chainage Point	**1.1**	**36**	**0**	**2600**	**Upgrade Existing Trail**	**PU - Upgrade**	**600mm**	**Outsloped**	**CP - Pile**	**SN - Endemic Material**	**MIS - In Situ Soil**		**0**	**0**	**Open Understory**	**Sandy Earth Soil**	**Floating Rock In Soil**	**0**			

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Client CITY OF GREATER GERALDTON

Project **CHAPMAN RIVER MOUNTAIN BIKE**

Project N° **1630** | Stage **DD**

Plot Date **2018-02-09** | Drawn **DW**

Drawing Title **LOOP TRAIL CHAINAGE**

8b

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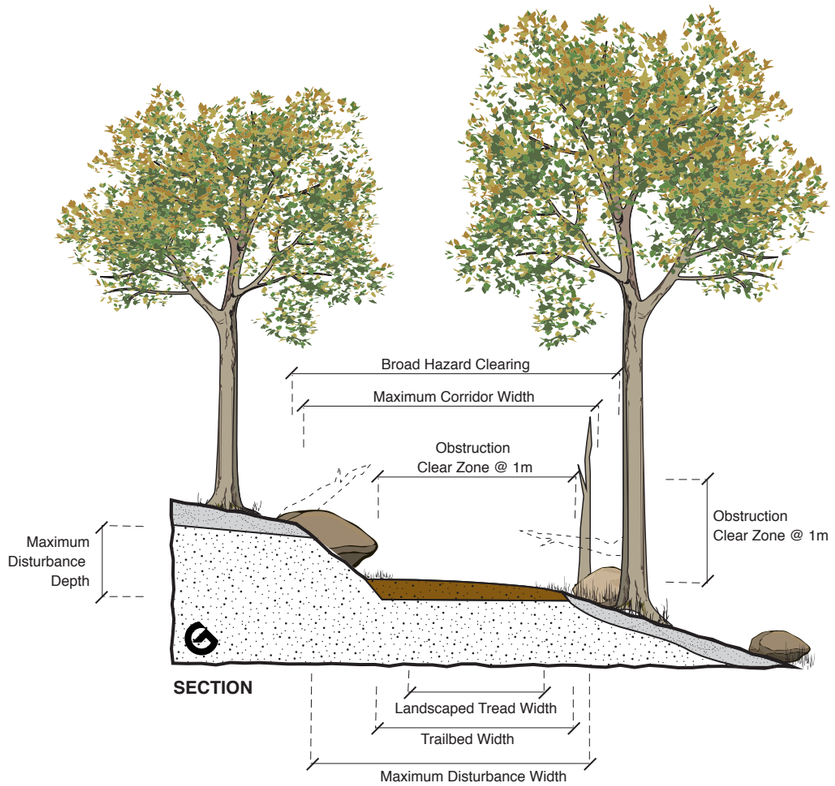
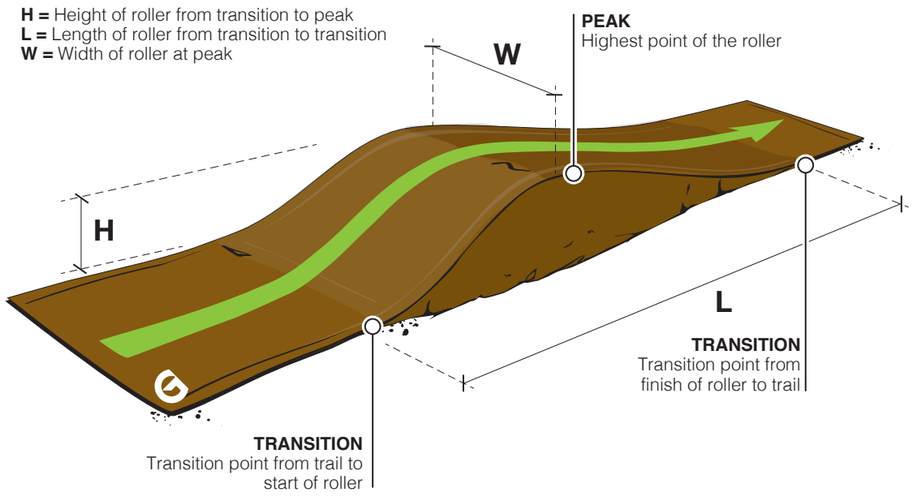
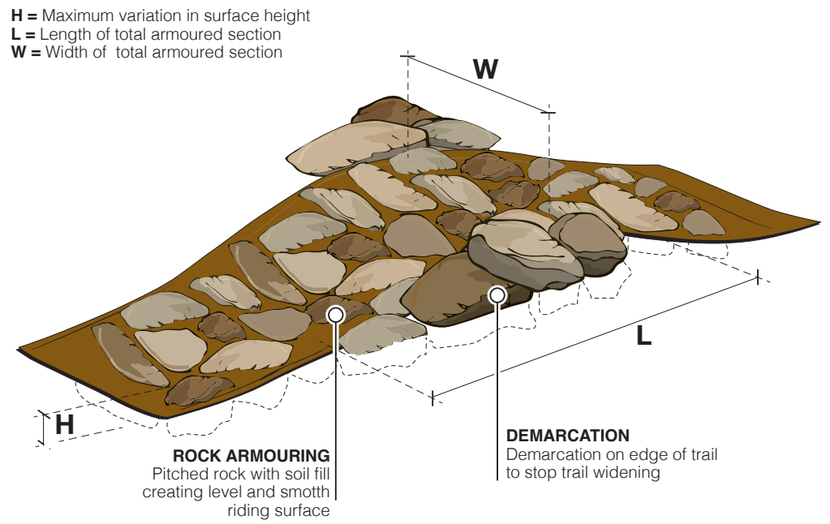


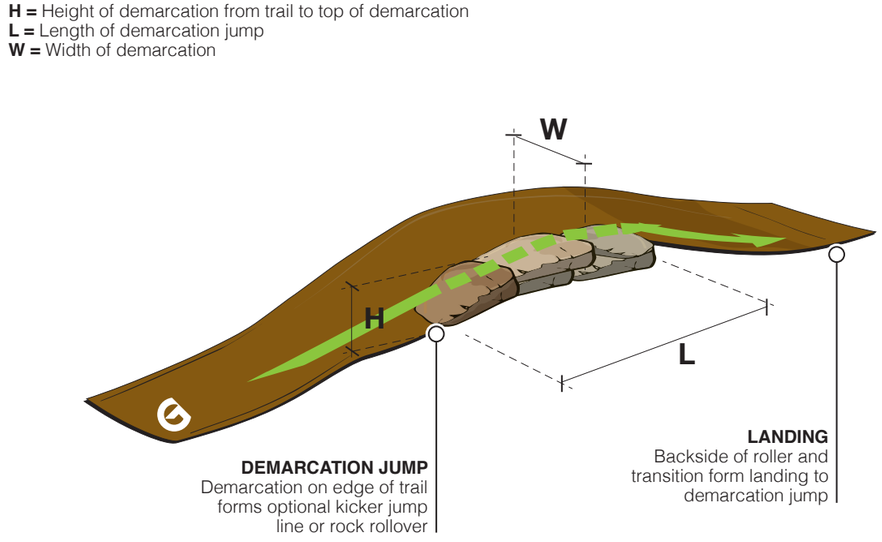
CT CLEARING TRAIL TERMS



FRR FEATURE ROLLER



EAR TYPICAL ROCK ARMOURING



FJM FEATURE DEMARCATION JUMP

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Client	CITY OF GREATER GERALDTON	Project N° 1630	Stage DD	Drawing Title	TYPICAL DRAWINGS 1
Project	CHAPMAN RIVER MOUNTAIN BIKE	Plot Date 2018-02-09	Drawn DW		9b

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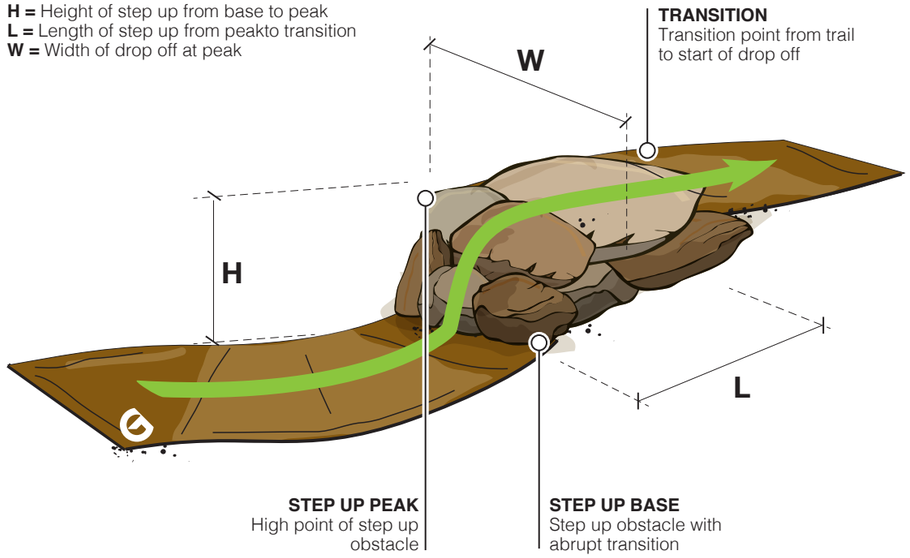
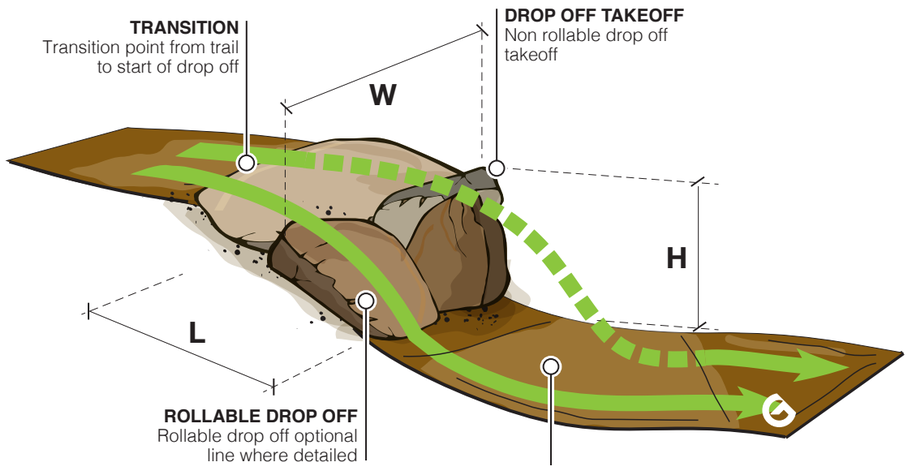
H = Height of step up from base to peak
L = Length of step up from peakto transition
W = Width of drop off at peak



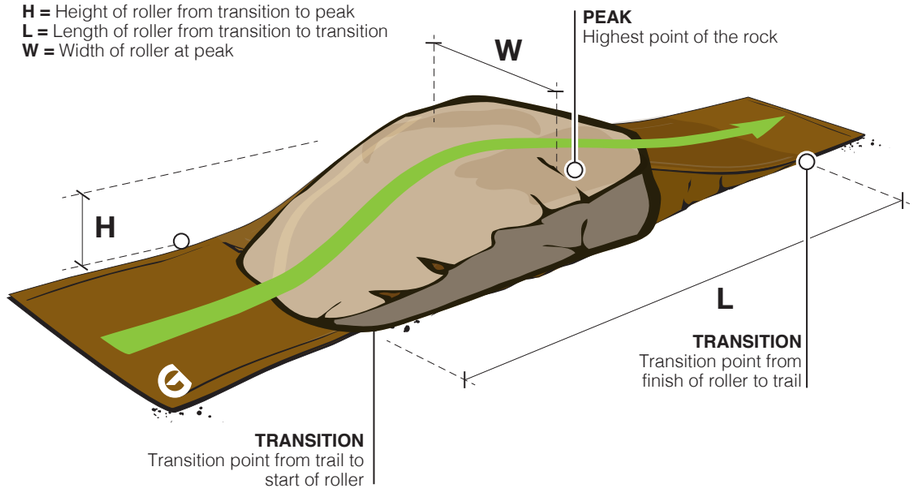
FOS FEATURE STEP UP OBSTACLE

H = Height of drop off from takeoff to landing
L = Length of drop off from transition to landing
W = Width of drop off at takeoff



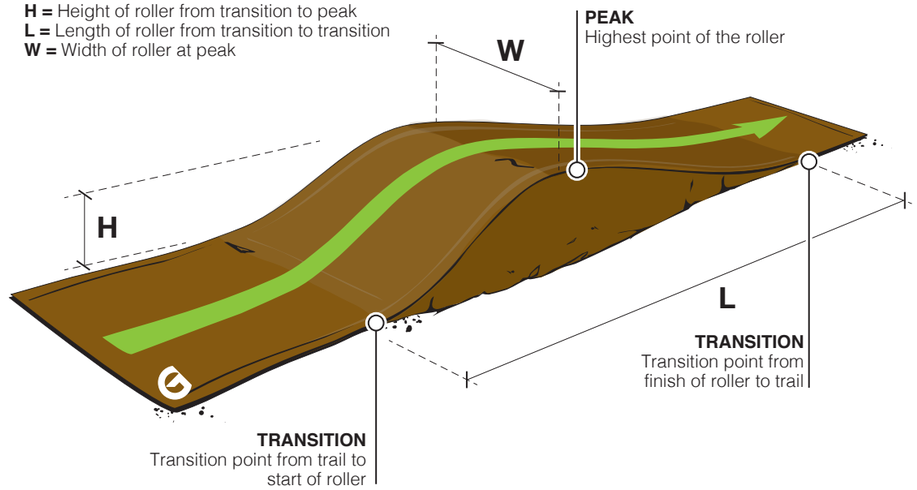
FOD FEATURE DROP OFF OBSTACLE

H = Height of roller from transition to peak
L = Length of roller from transition to transition
W = Width of roller at peak



FRK FEATURE ROCK ROLLOVER

H = Height of roller from transition to peak
L = Length of roller from transition to transition
W = Width of roller at peak



FRR FEATURE ROLLER

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Client CITY OF GREATER GERALDTON
Project **CHAPMAN RIVER MOUNTAIN BIKE**
Project N° **1630**
Stage **DD**
Plot Date **2018-02-09**
Drawn **DW**
Drawing Title **TYPICAL DRAWINGS 2**

10b

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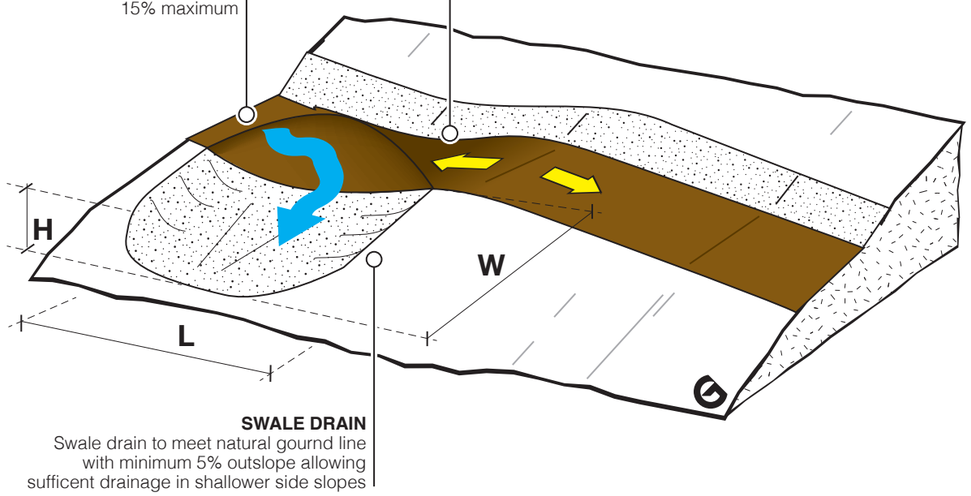
H = Depth of swale drain
L = Length of swale drain paralell to trail
W = Width of swale drain perpendicular to trail

ROLLING GRADE DIP
Raised section of trail to act as sufficient waterbar in shallower side slopes

Knick outslope
15% maximum

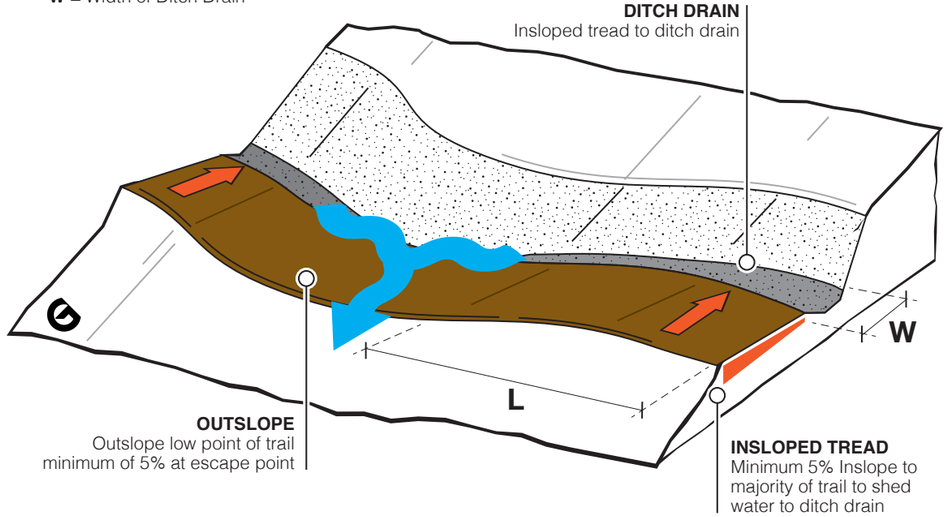


SWALE DRAIN
Swale drain to meet natural gourd line with minimum 5% outslope allowing sufficent drainage in shallower side slopes

DAS ROLLING DIP SWALE

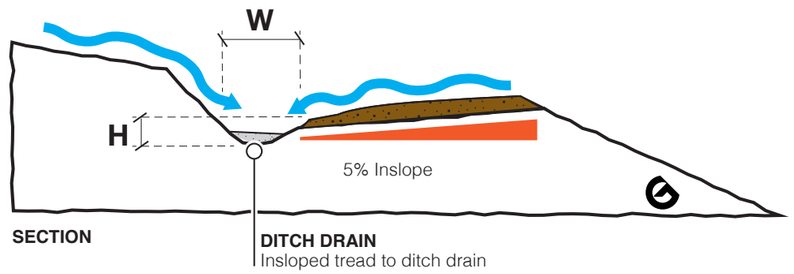
H = Depth of ditch drain from edge of tread
L = Length of ditch drain to escape point
W = Width of Ditch Drain

DITCH DRAIN
Insloped tread to ditch drain



OUTSLOPE
Outslope low point of trail minimum of 5% at escape point

INSLOPED TREAD
Minimum 5% Inslope to majority of trail to shed water to ditch drain



SECTION

DITCH DRAIN
Insloped tread to ditch drain

DDI INSLOPED DITCH

COMMON GROUND	In consideration of Common Ground Trails, and the copyright owners permitting to the use of this data, you acknowledge and agree that Common Ground Trails and the copyright give no warranty in relation to the data (including accuracy, reliability or completeness). Data must not be used for direct marketing or be used in breach of privacy laws.	Client CITY OF GREATER GERALDTON Project **CHAPMAN RIVER MOUNTAIN BIKE**	Project N° **1630** Plot Date **2018-02-09**	Stage **DD** Drawn **DW**	Drawing Title **TYPICAL DRAWINGS 3**	**11b**

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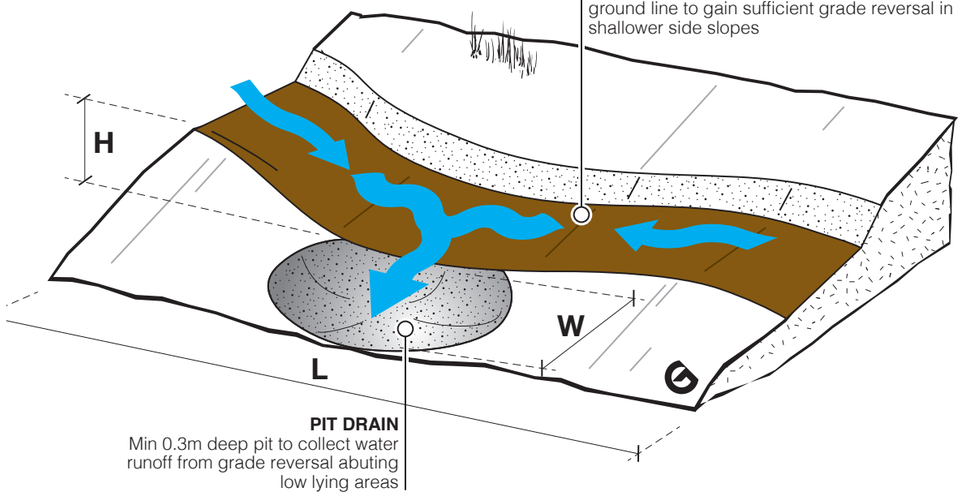
H = Height from peak of trail to base of reversal
L = Length from peak to peak of trail
W = Diameter of pit drain at base of reversal

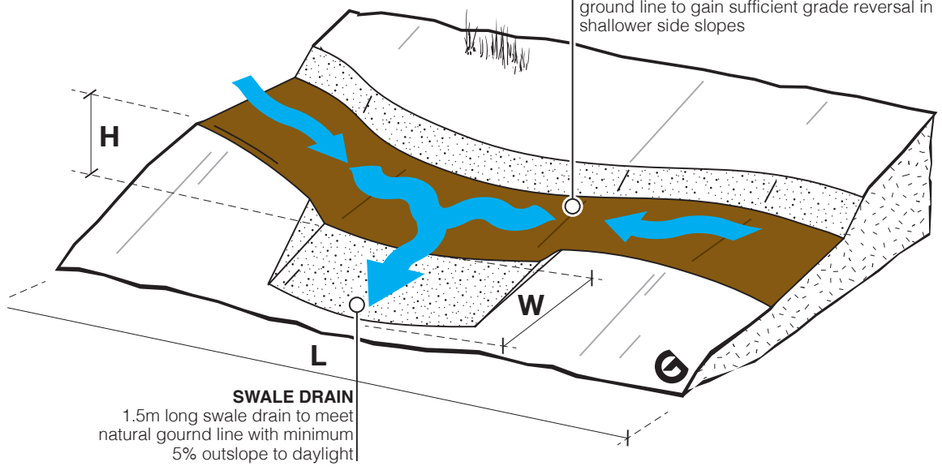


GRADE REVERSAL
Section of trail lowered to below natural ground line to gain sufficient grade reversal in shallower side slopes

PIT DRAIN
Min 0.3m deep pit to collect water runoff from grade reversal abuting low lying areas

DRA GRADE REVERSAL SWALE

H = Height from peak of trail to base of reversal
L = Length from peak to peak of trail
W = Width of swale drain at base of reversal

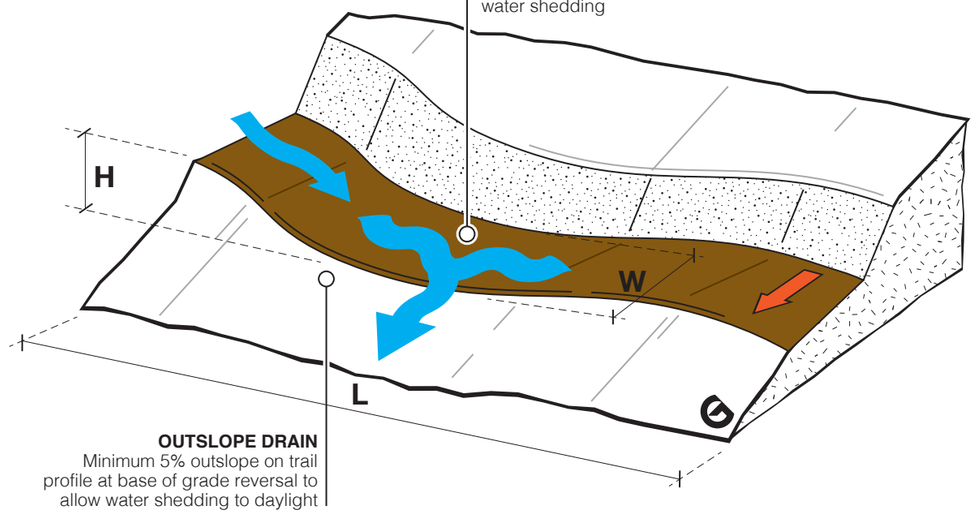


GRADE REVERSAL
Section of trail lowered to below natural ground line to gain sufficient grade reversal in shallower side slopes

SWALE DRAIN
1.5m long swale drain to meet natural gournd line with minimum 5% outslope to daylight

DRP GRADE REVERSAL PIT

H = Height from peak of trail to base of reversal
L = Length from peak to peak of trail
W = Width of trail profile at base of reversal

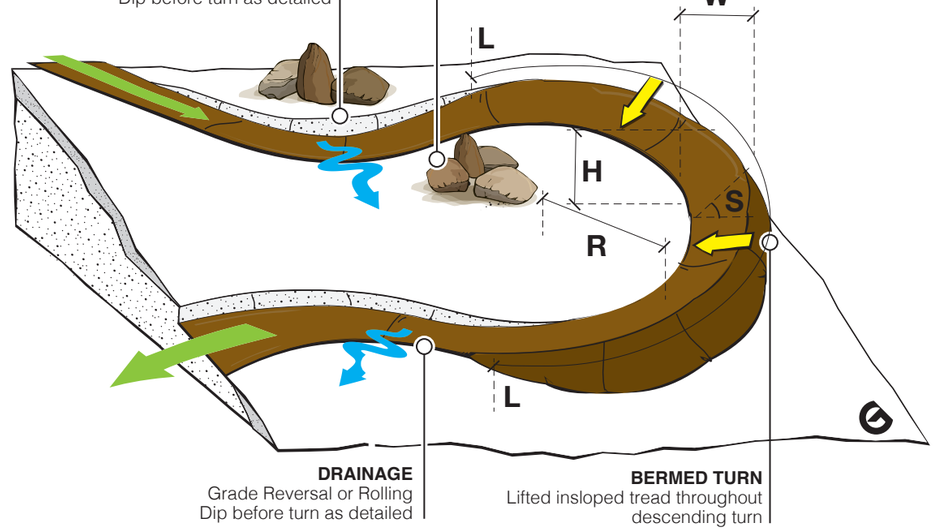


GRADE REVERSAL
Section of trail lowered to promote water shedding

OUTSLOPE DRAIN
Minimum 5% outslope on trail profile at base of grade reversal to allow water shedding to daylight

DRR GRADE REVERSAL OUTSLOPE

H = Height of turn from bottom to top of tread
L = Circumference of turn on centreline of tread
W = Width of tread throughout turn
R = Radius of turn to centre of tread
S = Slope of turn



DRAINAGE
Grade Reversal or Rolling Dip before turn as detailed

Natural or placed barrier

DRAINAGE
Grade Reversal or Rolling Dip before turn as detailed

BERMED TURN
Lifted insloped tread throughout descending turn

TB BERMED TURN

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Client CITY OF GREATER GERALDTON
Project **CHAPMAN RIVER MOUNTAIN BIKE**

Project N° **1630**
Stage **DD**
Plot Date **2018-02-09**
Drawn **DW**

Drawing Title **TYPICAL DRAWINGS 4**

12b

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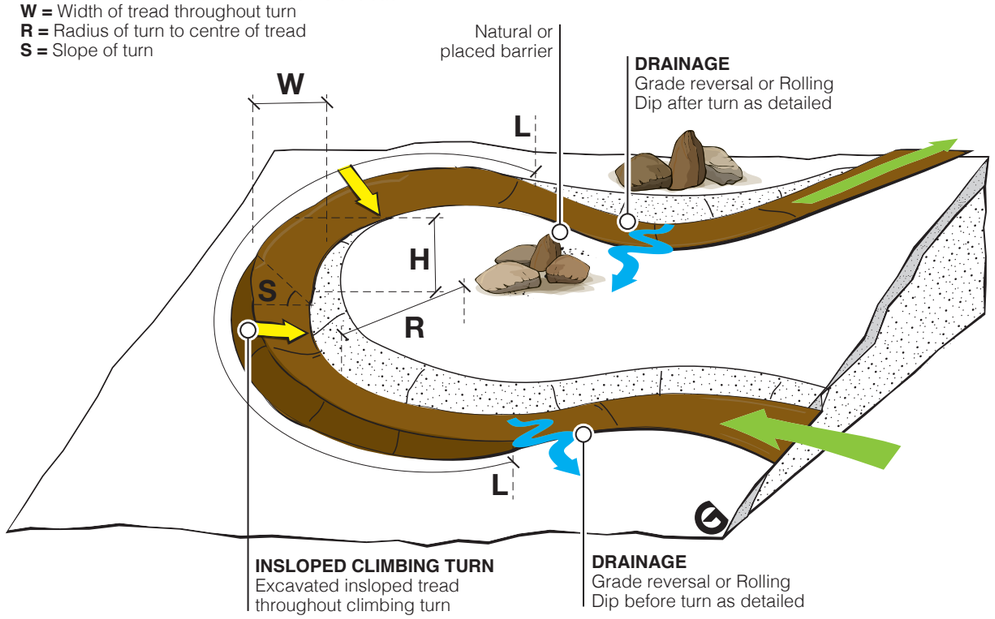
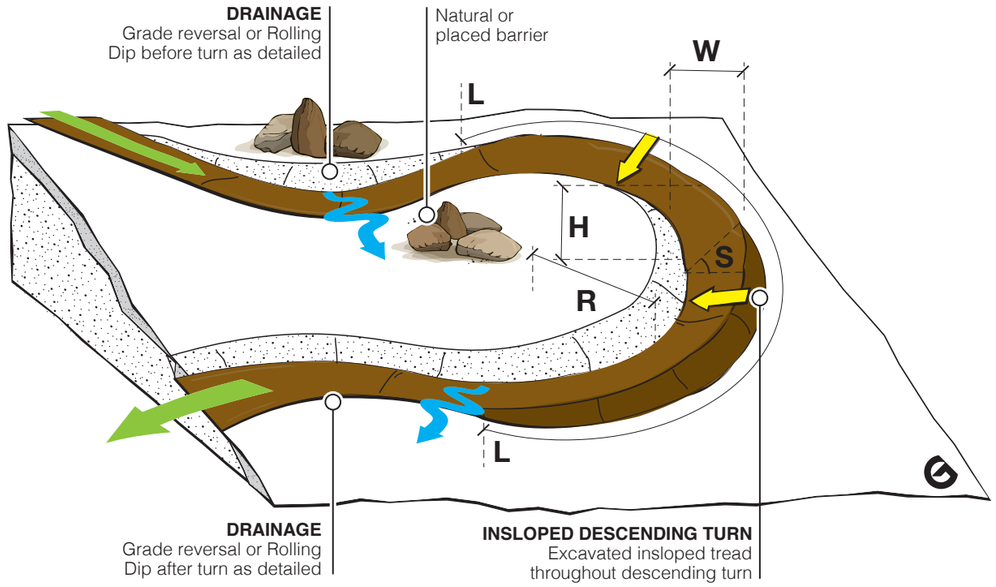
H = Height of turn from bottom to top of tread
L = Circumference of turn on centreline of tread
W = Width of tread throughout turn
R = Radius of turn to centre of tread
S = Slope of turn



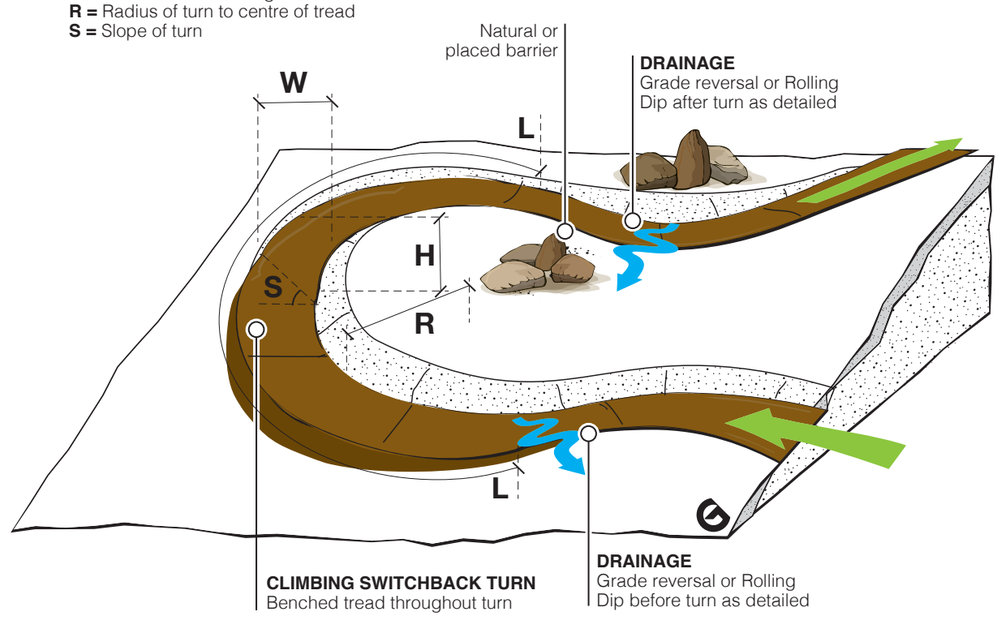
TCI INSLOPED CLIMBING TURN

H = Height of turn from bottom to top of tread
L = Circumference of turn on centreline of tread
W = Width of tread throughout turn
R = Radius of turn to centre of tread
S = Slope of turn



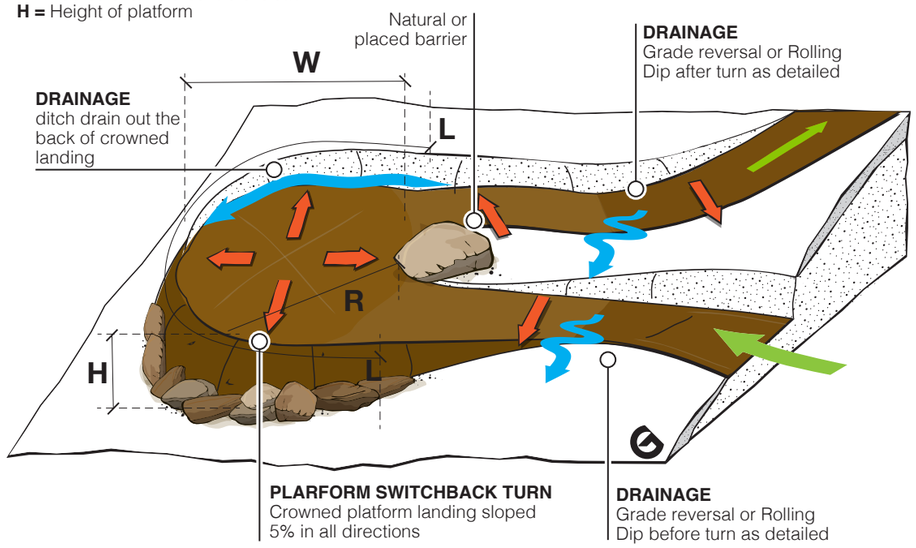
TDI INSLOPED DESCENDING TURN

H = Height of turn from bottom to top of tread
L = Circumference of turn on centreline of tread
W = Width of tread throughout turn
R = Radius of turn to centre of tread
S = Slope of turn



TSC CLIMBING SWITCHBACK

H = Height of turn from bottom to top of tread
L = Circumference of turn on centreline of tread
W = Width of tread throughout turn
R = Radius of turn to centre of tread
H = Height of platform



TSP PLATFORM SWITCHBACK

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