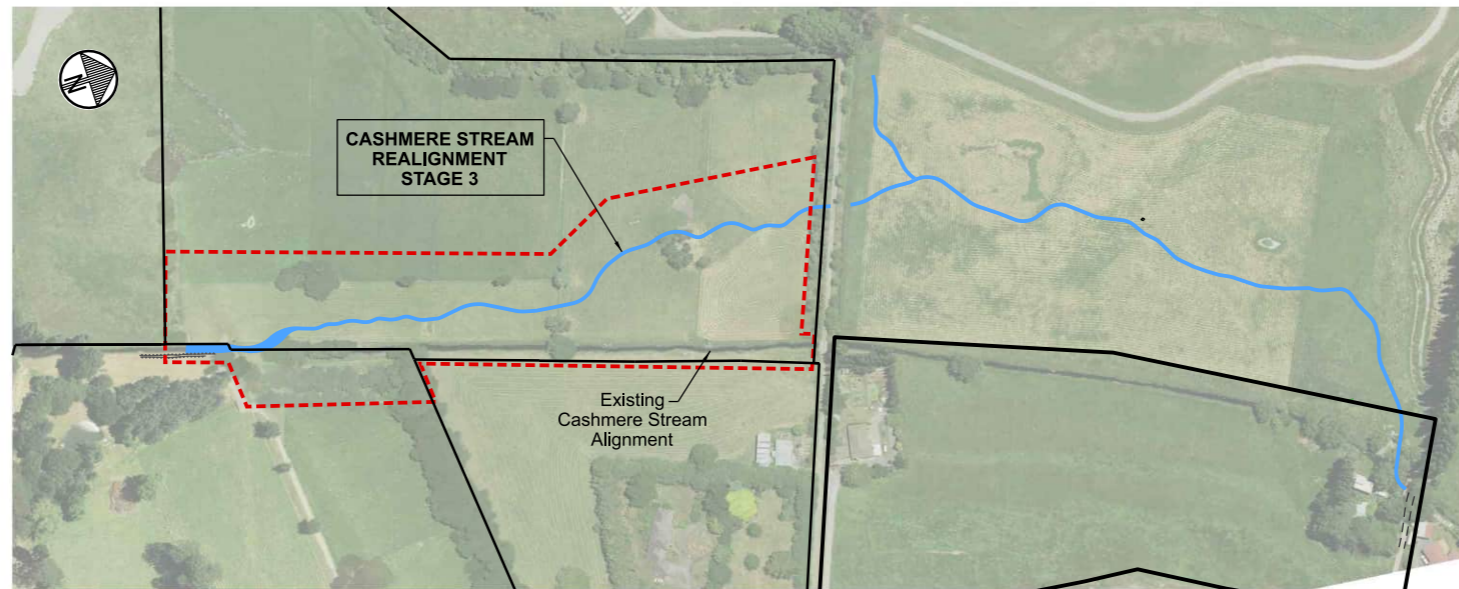


0 10 30 50 100 150 200 300 Original size mm



LOCALITY PLAN
not to scale

DRAWING INDEX

CONSTRUCTION		STATUS		ISSUE		COMMENTS
No.	DRAWING TITLE	CAD No		DAY : 04	01	
				MONTH : 11	02	
				YEAR : 22	23	
C01	Cover Sheet & Locality Plan	DD135001	For Construction	A	1	
D01	Site Extent and Site Access Plan	DD135001	For Construction	A	1	
D02	Overall Stage 3 Realignment Plan	DD135001	For Construction	A	1	
D03	Demolition and Tree Removal Plan	DD135001	For Construction	A	1	
D04	Construction Plan 1: Chainage 0-50	DD135001	For Construction	A	1	
D05	Construction Plan 2: Chainage 50-140	DD135001	For Construction	A	1	
D06	Construction Plan 3: Chainage 140-250	DD135001	For Construction	A	1	
D07	Construction Plan 4: Chainage 250-340	DD135001	For Construction	A	1	
D08	Construction Plan 5: Backfill of existing stream and Fence Layout	DD135001	For Construction	A	1	
D09	Cross sections 1	DD135001	For Construction	A	1	
D10	Cross sections 2	DD135001	For Construction	A	1	
D11	Typical In-stream Features : Details A-B	DD135001	For Construction	A	1	
D12	Typical In-stream Features : Details C-D	DD135001	For Construction	A	1	
D13	Typical In-stream Features : Detail E	DD135001	For Construction	A	1	
D14	Typical In-stream Features : Details F-G	DD135001	For Construction	A	1	
D15	Typical Bank and Invert Details : Details H-I	DD135001	For Construction	A	1	
D16	Typical Bank and Invert Details : Details J-K	DD135001	For Construction	A	1	
D17	Typical Details : Detail L	DD135001	For Construction	A	1	
D18	Typical Details : Details M-N	DD135001	For Construction	A	1	
D19	Typical Details : Details O-R	DD135001	For Construction	A	1	
D20	Detail 1	DD135001	For Construction	A	1	
D21	Details 2-5	DD135001	For Construction	A	1	
D22	Pipework Longitudinal Profiles and Detail	DD135001	For Construction	A	1	
LANDSCAPING				ISSUE		COMMENTS
L01	Planting Plan 1	LP404701	For Construction	A	1	
L02	Planting Plan 2	LP404701	For Construction	A	1	
L03	Planting Plan 3	LP404701	For Construction	A	1	
L04	Planting Plan 4	LP404701	For Construction	A	1	
L05	Overall Plant List	LP404701	For Construction	A	1	

TO BE PROVIDED

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	DESIGNED	NAME	SIGNED	DATE
BENCH MK.	BM 3293	A SMITH			12/2022
RL	23.799	DES. REVIEW	M PENTECOST		12/2022
SURVEY	M.M	DRAWN	M RHIND		12/2022
SURVEY LB	LB 1814	DRW. CHECK	M DUGGAN		12/2022
		FILE LOCATION			
DRAIN. REF.	16717 & 16718	FILENAMES			
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date	

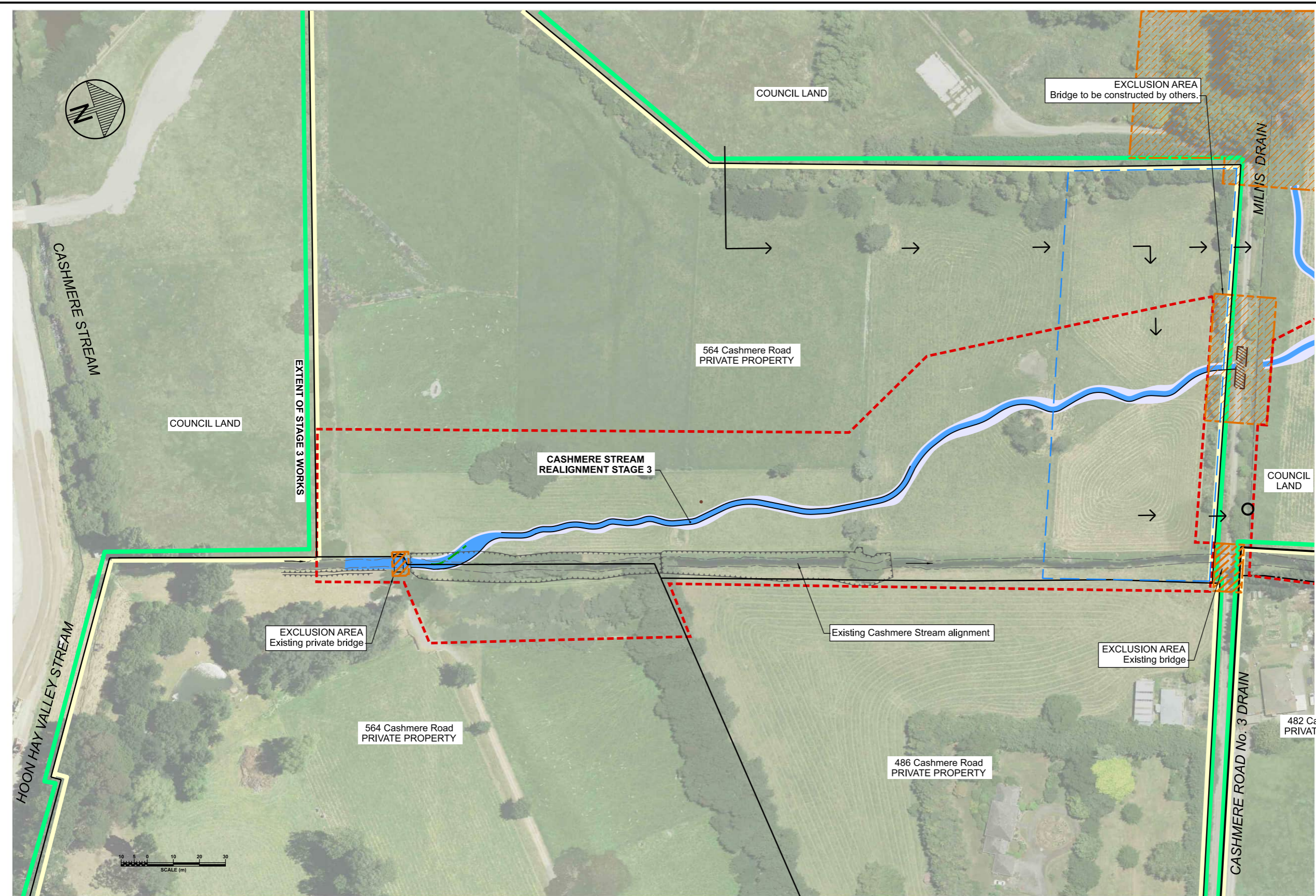
APPROVED		CONSULTANT
FOR TENDER	DATE	SIGNED
FOR CONSTRUCTION	DATE	SIGNED
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.	

CASHMERE STREAM REALIGNMENT STAGE 3

COVER SHEET AND LOCALITY PLAN

DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES
TD	A1	N.T.S.
CAD DRAWING FILE REF.		
DD135001.DGN		
TSD PROJECT FILE NUMBER	SHEET	
CP503560	C01 OF 01	

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- LEGEND**
- Legal boundary
 - Christchurch City Council owned land
 - Land in Private Ownership
 - Cashmere Stream realignment
 - Extent of Stage 3 Works
 - Temporary Lease Area by Christchurch City Council (including stockpile area)
 - Site access by Contractor via Eastman Wetlands
 - Temporary culvert required for Milns Drain
 - Exclusion Areas : (no access by Contractor)

SITE PLAN
SCALE 1:750 A1
1:1500 A3

1	FOR CONSTRUCTION	SIGNED	12/2022
ISSUE	AMENDMENTS	DATE	DATE

Christchurch City Council

TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		DESIGNED	A SMITH	12/2022
RL		DES. REVIEW	M PENTECOST	12/2022
SURVEY		DRAWN	M RHIND	12/2022
SURVEY LB		DRW. CHECK	M DUGGAN	12/2022
		FILE LOCATION		
DRAIN. REF.	16717 & 16718	FILENAMES		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date

APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
Tender Date		
FOR CONSTRUCTION		
DATE	SIGNED	
Consist Date		
CONSULTANT PROJECT REF.		CONSULTANT FILE REF.

**CASHMERE STREAM REALIGNMENT
STAGE 3**

**SITE EXTENT AND
SITE ACCESS PLAN**

DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	A1	SCALES	1:750 A1 1:1500 A1
CAD DRAWING FILE REF.	DD135001.DGN				
TSD PROJECT FILE NUMBER	CP503560	SHEET	D01	OF	22

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LEGEND

GENERAL

- Legal boundary
- Approximate location of existing irrigation lines
- Trees
- Fence

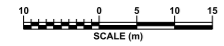
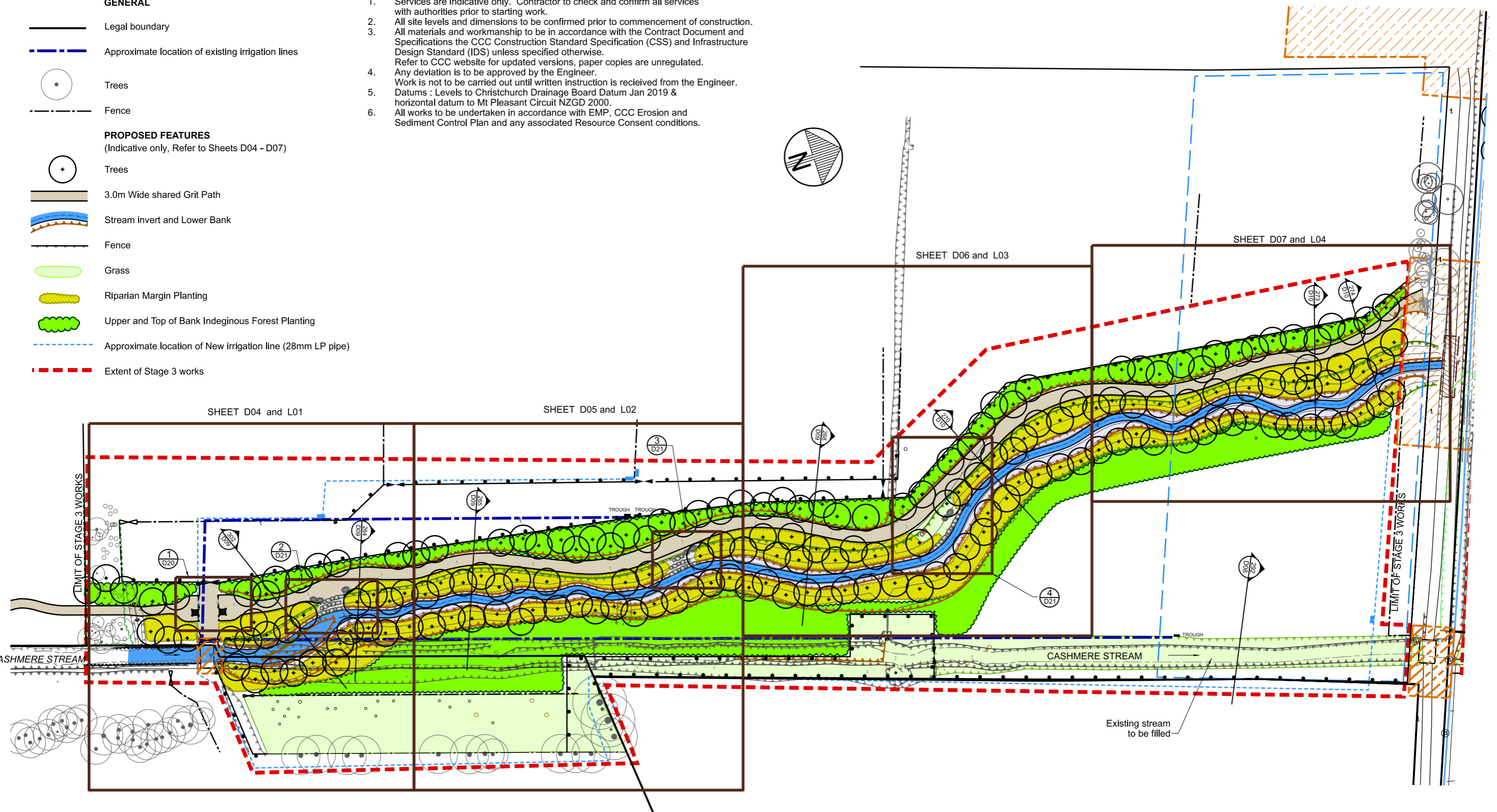
PROPOSED FEATURES

(Indicative only, Refer to Sheets D04 - D07)

- Trees
- 3.0m Wide shared Grit Path
- Stream invert and Lower Bank
- Fence
- Grass
- Riparian Margin Planting
- Upper and Top of Bank Indigenous Forest Planting
- Approximate location of New irrigation line (28mm LP pipe)
- Extent of Stage 3 works

GENERAL NOTES

1. Services are indicative only. Contractor to check and confirm all services with authorities prior to starting work.
2. All site levels and dimensions to be confirmed prior to commencement of construction.
3. All materials and workmanship to be in accordance with the Contract Document and Specifications the CCC Construction Standard Specification (CSS) and Infrastructure Design Standard (IDS) unless specified otherwise. Refer to CCC website for updated versions, paper copies are unregulated.
4. Any deviation is to be approved by the Engineer.
5. Work is not to be carried out until written instruction is received from the Engineer. Datums : Levels to Christchurch Drainage Board Datum Jan 2019 & horizontal datum to Mt Pleasant Circuit NZGD 2000.
6. All works to be undertaken in accordance with EMP, CCC Erosion and Sediment Control Plan and any associated Resource Consent conditions.



PLAN
SCALE 1:500 A1
1:1000 A3

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	DESIGNED	A SMITH	SIGNED	DATE
BENCH MK		DES. REVIEW	M PENTECOST		12/2022
RL		DRAWN	M RHIND		12/2022
SURVEY		DRW. CHECK	M DUGGAN		12/2022
SURVEY LB		FILE LOCATION	S:\Data\Dgn\VR\Drainage\dd1300d1135001.dgn		
DRAIN. REF.	16717	SAP WBS	562/3873	PRINTED ON 31/01/2023 BY JOrdanc	

APPROVED	
FOR TENDER	SIGNED
DATE	SIGNED
Tender Date	
FOR CONSTRUCTION	
DATE	SIGNED
Consist Date	

CONSULTANT	PROJECT TITLE
	CASHMERE STREAM REALIGNMENT STAGE 3
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.

DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES
TD	A1	1:500 A1 1:1000 A3
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CP503560	D02 OF 22	

ISSUE	FOR CONSTRUCTION	SIGNED	DATE
1			12/2022
AMENDMENTS			

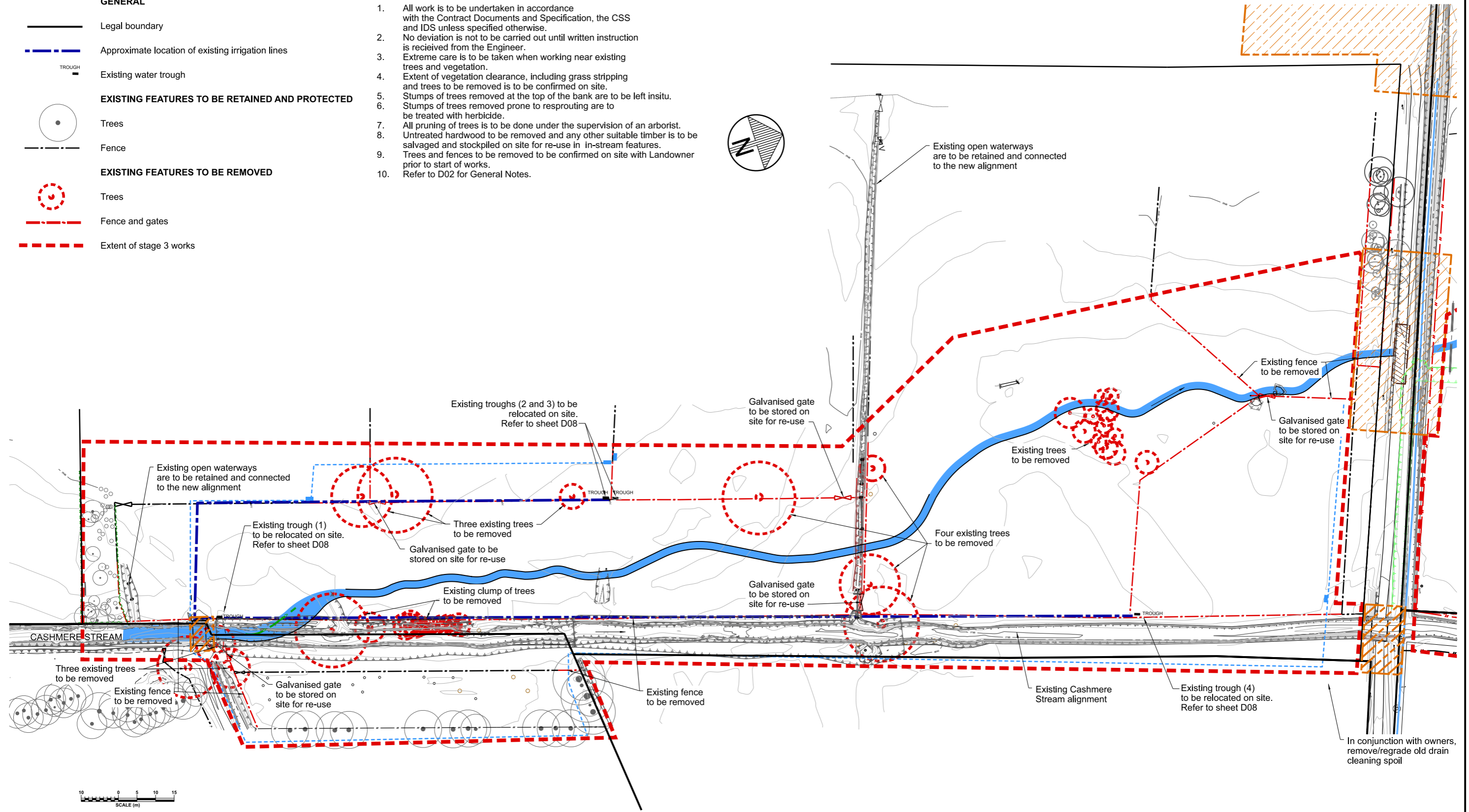
ISSUE	FOR CONSTRUCTION	SIGNED	DATE
1			12/2022

LEGEND

- GENERAL**
- Legal boundary
 - - - - - Approximate location of existing irrigation lines
 - TROUGH
 - Existing water trough
- EXISTING FEATURES TO BE RETAINED AND PROTECTED**
- Trees
 - - - - - Fence
- EXISTING FEATURES TO BE REMOVED**
- Trees
 - - - - - Fence and gates
 - - - - - Extent of stage 3 works

NOTES

1. All work is to be undertaken in accordance with the Contract Documents and Specification, the CSS and IDS unless specified otherwise.
2. No deviation is not to be carried out until written instruction is received from the Engineer.
3. Extreme care is to be taken when working near existing trees and vegetation.
4. Extent of vegetation clearance, including grass stripping and trees to be removed is to be confirmed on site.
5. Stumps of trees removed at the top of the bank are to be left in situ.
6. Stumps of trees removed prone to resprouting are to be treated with herbicide.
7. All pruning of trees is to be done under the supervision of an arborist.
8. Untreated hardwood to be removed and any other suitable timber is to be salvaged and stockpiled on site for re-use in in-stream features.
9. Trees and fences to be removed to be confirmed on site with Landowner prior to start of works.
10. Refer to D02 for General Notes.



P L A N
SCALE 1:500 A1
1:1000 A3

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1	FOR CONSTRUCTION	SIGNED	12/2022
ISSUE	AMENDMENTS	SIGNED	DATE
DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	1:500 A1
CAD DRAWING FILE REF.	DD135001.DGN	A1	1:1000 A3
TSD PROJECT FILE NUMBER	CP503560	SHEET	D03 OF 22

Christchurch City Council

TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	DESIGNED	A SMITH	SIGNED	DATE
BENCH MK.		DES. REVIEW	M PENTECOST	SIGNED	12/2022
RL		DRAWN	M RHIND	SIGNED	12/2022
SURVEY		DRW. CHECK	M DUGGAN	SIGNED	12/2022
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		SAP WBS	562/3873		

APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
		CONSULTANT PROJECT REF.
		CONSULTANT FILE REF.

**CASHMERE STREAM REALIGNMENT
STAGE 3**

**DEMOLITION AND
TREE REMOVAL PLAN**



LEGEND

GENERAL

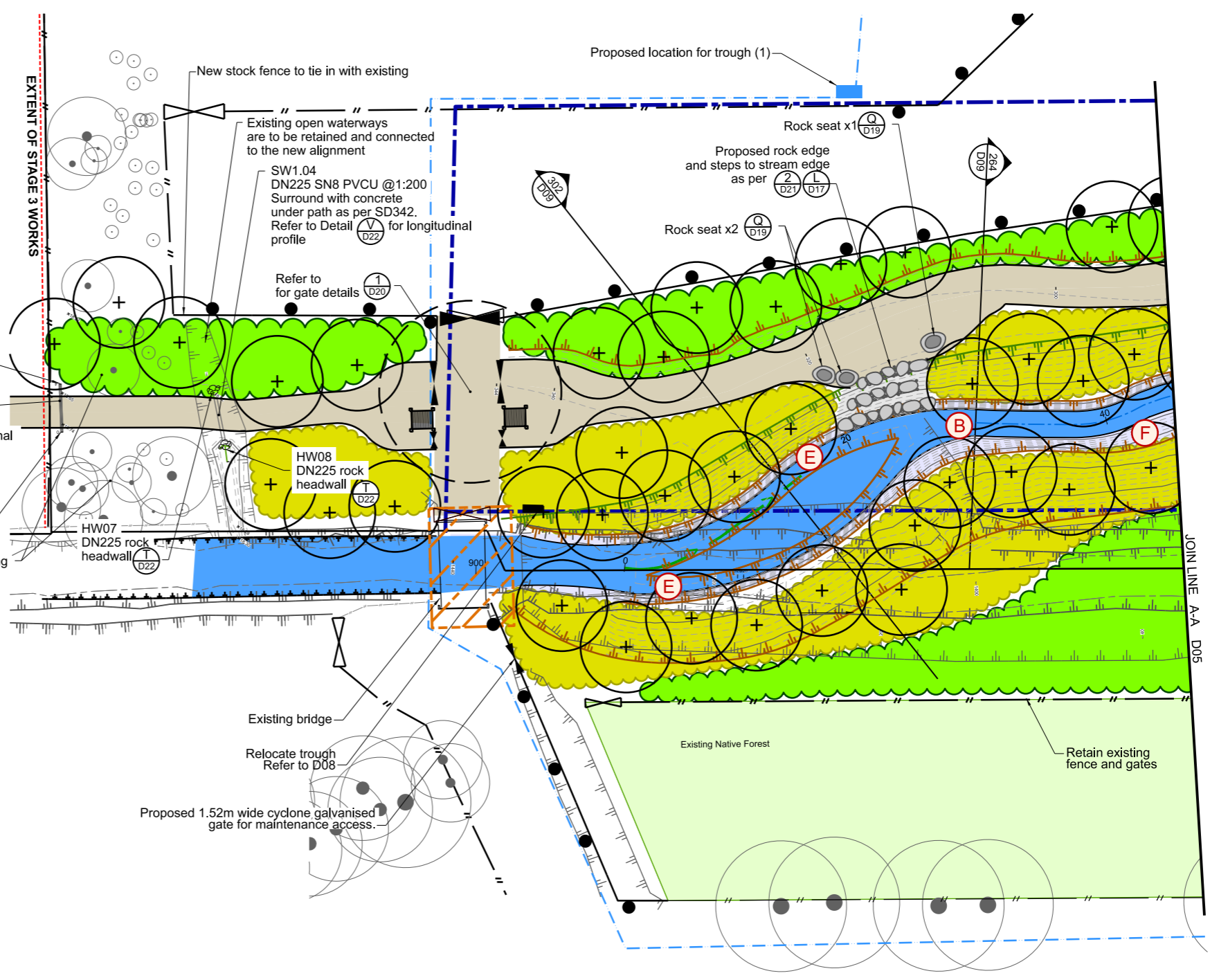
- Legal boundary
- Top of bank (existing stream alignment)
- Approximate location of existing irrigation lines
- Existing tree
- Existing fence

PROPOSED FEATURES

- Top of bank
- Stream invert and lower bank
- 3.0m wide shared grit path (as per Detail R Sheet D19)
- Fence (refer Sheet D08)
- Specimen trees (refer Sheet L01)
- Riparian Margin Planting (refer Sheet L01)
- Upper and Top of Bank Indigenous Forest Planting (refer Sheet L01)
- Grass
- Approximate location of new irrigation line (28mm LP pipe)
- Extent of Stage 3 Works

IN-STREAM FEATURES

- Rock Edge
- Riffle
- Timber Edge
- Log Edge
- Root Wad Edge (Option 2: Stump overhang, unless advised by Freshwater Ecologist)
- Post Snag
- Log Snag



NOTES

1. All work is to be undertaken in accordance with the Contract Document and Specifications, the CSS and IDS unless specified otherwise.
2. No deviation is to be carried out until written instruction is received from the Engineer.
3. Drawing is indicative only, do not scale from drawing. All measurements to be confirmed on site prior to commencement of work.
4. The locations shown for the in-stream features detailed in Sheets D11-D14 are indicative only and are subject to on-site approval by the Engineer (on advice by Ecologist).
5. The Contractor is to ensure that in the construction of all details with in-bank features all exposed soil surfaces are to be covered by mulch matting.
6. Planting is to be as per Sheet L01.
7. Refer to Sheet D02 for General Notes.
8. Refer to Sheet D22 for Pipework longitudinal profiles and detail.

ANY ADDITIONAL IN STREAM FEATURES MUST BE APPROVED BY THE ENGINEER WITH INPUT FROM HYDRAULIC DESIGNERS DUE TO POTENTIAL HYDRAULIC IMPACT ON WATER LEVELS

PLAN CHAINAGE 0 - 50
 scale 1:200 A1
 1:400 A3



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Christchurch City Council
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DATUM	C.D.D.	DESIGNED	A SMITH	SIGNED	DATE
BENCH MK.		DES. REVIEW	M PENTECOST		12/2022
RL		DRAWN	M RHIND		12/2022
SURVEY		DRW. CHECK	M DUGGAN		12/2022
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		PRINTED ON	31/01/2023 BY JOrdaanc		

APPROVED FOR TENDER		CONSULTANT
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
Cons'n Date		
CONSULTANT PROJECT REF.		CONSULTANT FILE REF.

CASHMERE STREAM REALIGNMENT STAGE 3





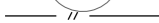
CONSTRUCTION PLAN 1 CHAINAGE 0 - 50

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ISSUE	AMENDMENTS		DATE
DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	A1
GAD DRAWING FILE REF.	DD135001.DGN	SCALES	1:200 A1 1:400 A3
TSD PROJECT FILE NUMBER	CP503560	SHEET	D04 OF 22









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LEGEND








GENERAL

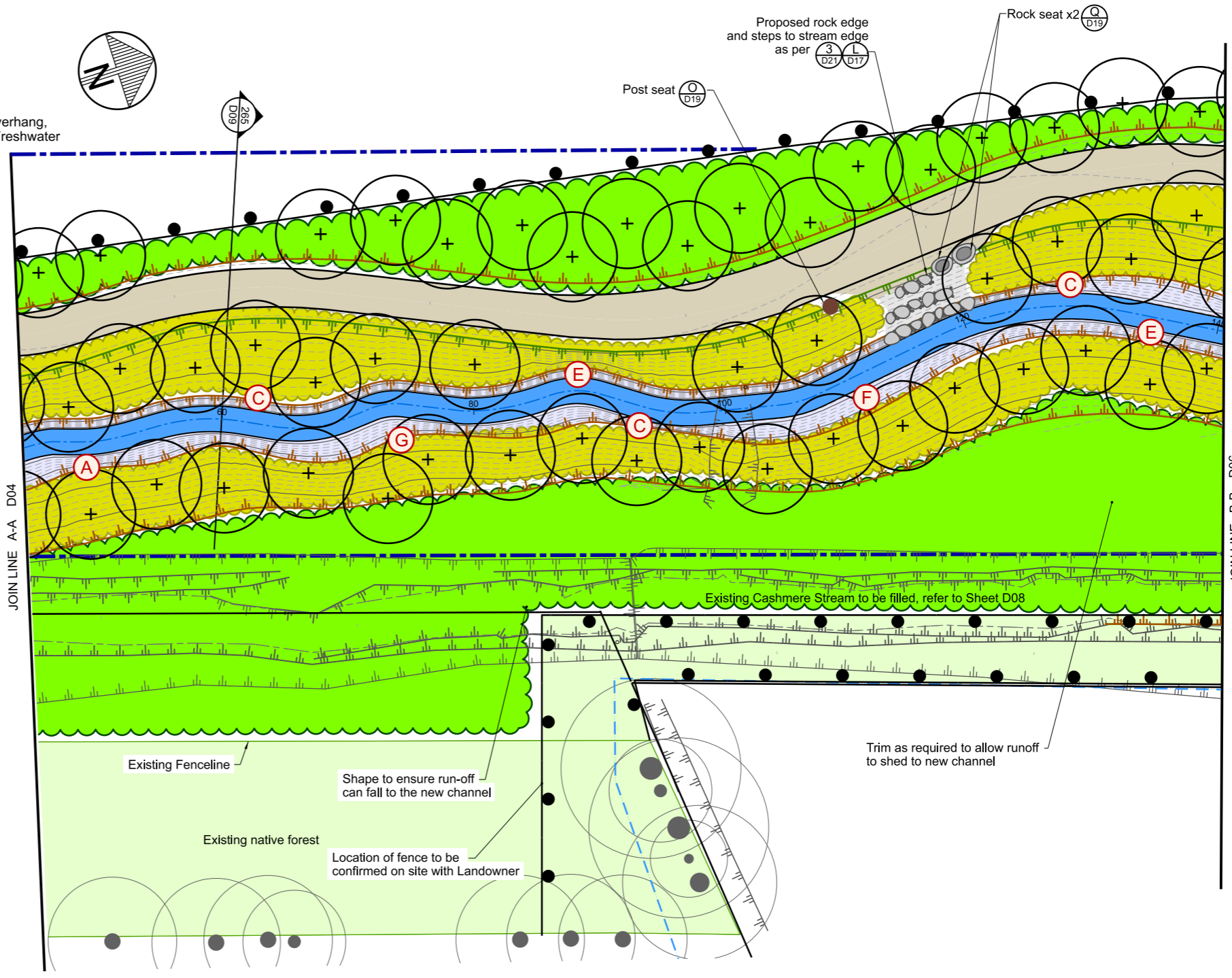
-  Legal boundary
-  Top of bank (existing stream alignment)
-  Approximate location of existing irrigation lines
-  Existing tree
-  Existing fence

PROPOSED FEATURES

-  Top of bank
-  Stream invert and lower bank
-  3.0m wide shared grit path (as per Detail R Sheet D19)
-  Fence (refer Sheet D08)
-  Specimen trees (refer Sheet L02)
-  Riparian Margin Planting (refer Sheet L02)
-  Upper and Top of Bank Indigenous Forest Planting (refer Sheet L02)
-  Approximate location of new irrigation line (28mm LP pipe)

IN-STREAM FEATURES

-  - Rock Edge
-  - Riffle
-  - Timber Edge
-  - Log Edge
-  - Root Wad Edge (Option 2: Stump overhang, unless advised by Freshwater Ecologist)
-  - Post Snag
-  - Log Snag



NOTES

1. All work is to be undertaken in accordance with the Contract Document and Specifications, the CSS and IDS unless specified otherwise.
2. No deviation is to be carried out until written instruction is received from the Engineer.
3. Drawing is indicative only, do not scale from drawing. All measurements to be confirmed on site prior to commencement of work.
4. The locations shown for the in-stream features detailed in Sheets D11-D14 are indicative only and are subject to on-site approval by the Engineer (on advice by Ecologist).
5. The Contractor is to ensure that in the construction of all details with in-bank features all exposed soil surfaces are to be covered by mulch matting.
6. Planting is to be as per Sheet L01.
7. Refer to Sheet D02 for General Notes.
8. Refer to Sheet D22 for Pipework longitudinal profiles and detail.

ANY ADDITIONAL IN STREAM FEATURES MUST BE APPROVED BY THE ENGINEER WITH INPUT FROM HYDRAULIC DESIGNERS DUE TO POTENTIAL HYDRAULIC IMPACT ON WATER LEVELS

PLAN CHAINAGE 50 - 140
scale 1:200 A1
1:400 A3



Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	DESIGNED	A SMITH	SIGNED	DATE
BENCH MK.		DES. REVIEW	M PENTECOST		12/2022
RL		DRAWN	M RHIND		12/2022
SURVEY		DRW. CHECK	M DUGGAN		12/2022
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APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	PROJECT TITLE
Tender Date		
FOR CONSTRUCTION		CONSULTANT PROJECT REF.
DATE	SIGNED	
Constrn Date		CONSULTANT FILE REF.

**CASHMERE STREAM REALIGNMENT
STAGE 3**

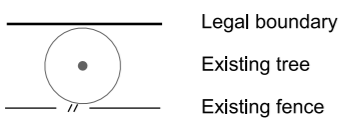
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CHAINAGE 50 - 140**

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ISSUE	AMENDMENTS		DATE
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TSD PROJECT FILE NUMBER	CP503560	SHEET	D05 OF 22

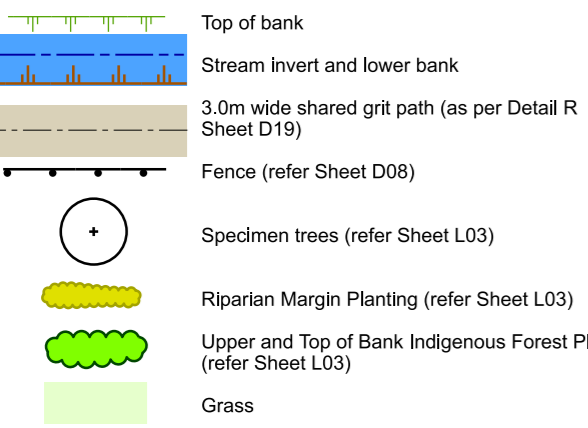
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LEGEND

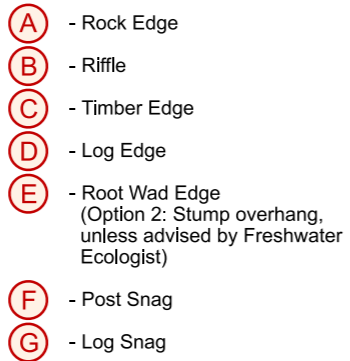
GENERAL



PROPOSED FEATURES



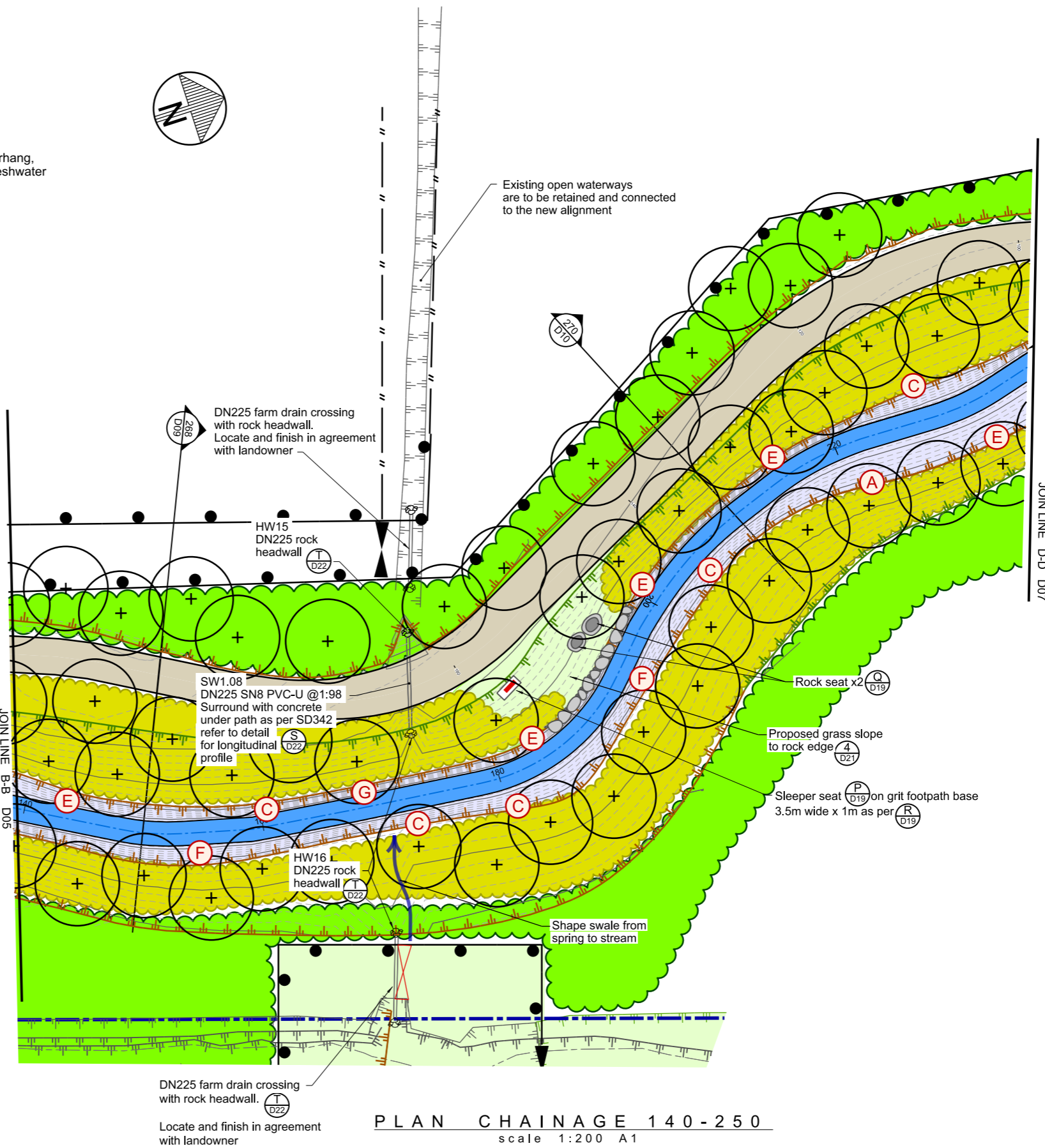
IN-STREAM FEATURES



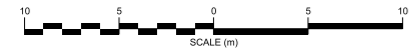
NOTES

1. All work is to be undertaken in accordance with the Contract Document and Specifications, the CSS and IDS unless specified otherwise.
2. No deviation is to be carried out until written instruction is received from the Engineer.
3. Drawing is indicative only, do not scale from drawing. All measurements to be confirmed on site prior to commencement of work.
4. The locations shown for the in-stream features detailed in Sheets D11-D14 are indicative only and are subject to on-site approval by the Engineer (on advice by Ecologist).
5. The Contractor is to ensure that in the construction of all details with in-bank features all exposed soil surfaces are to be covered by mulch matting.
6. Planting is to be as per Sheet L01.
7. Refer to Sheet D02 for General Notes.
8. Refer to Sheet D22 for Pipework longitudinal profiles and detail.

ANY ADDITIONAL IN STREAM FEATURES MUST BE APPROVED BY THE ENGINEER WITH INPUT FROM HYDRAULIC DESIGNERS DUE TO POTENTIAL HYDRAULIC IMPACT ON WATER LEVELS



PLAN CHAINAGE 140 - 250
 scale 1:200 A1
 1:400 A3



DATUM	C.D.D.	DESIGNED	A SMITH	SIGNED	DATE
BENCH MK.		DES. REVIEW	M PENTECOST		12/2022
RL		DRAWN	M RHIND		12/2022
SURVEY		DRW. CHECK	M DUGGAN		12/2022
SURVEY LB		FILE LOCATION			
DRAIN. REF.	16717	S:\Data\Opnl\RD\Drainage\rd1300\rd135001.dwg			
SAP WBS	562/3873	PRINTED ON	31/01/2023	BY	JOrdanc

APPROVED FOR TENDER		CONSULTANT	PROJECT TITLE
DATE	SIGNED		CASHMERE STREAM REALIGNMENT STAGE 3
FOR CONSTRUCTION		CONSULTANT PROJECT REF.	DRAWING TITLE
DATE	SIGNED		CONSTRUCTION PLAN 3 CHAINAGE 140 - 250
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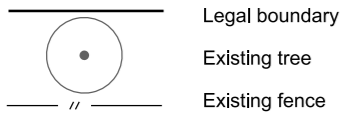
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1	FOR CONSTRUCTION	SIGNED	12/2022
ISSUE	AMENDMENTS		DATE

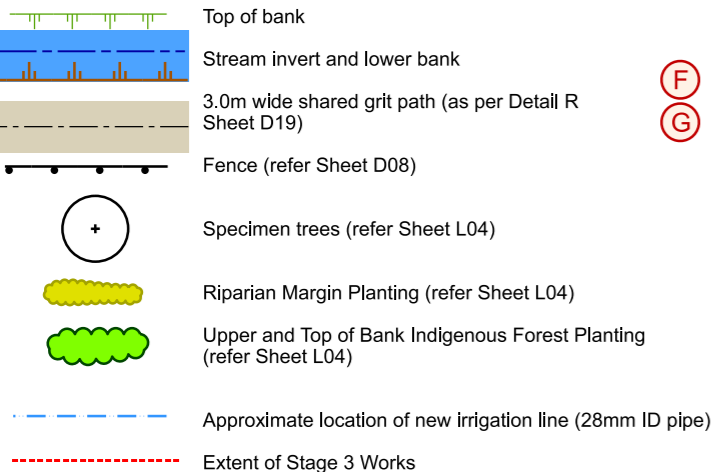
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LEGEND

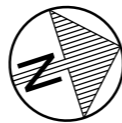
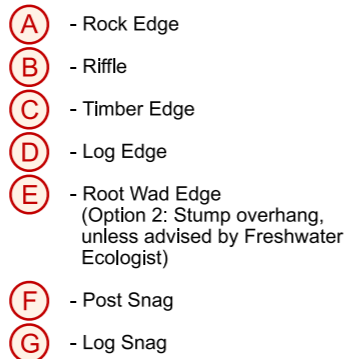
GENERAL



PROPOSED FEATURES



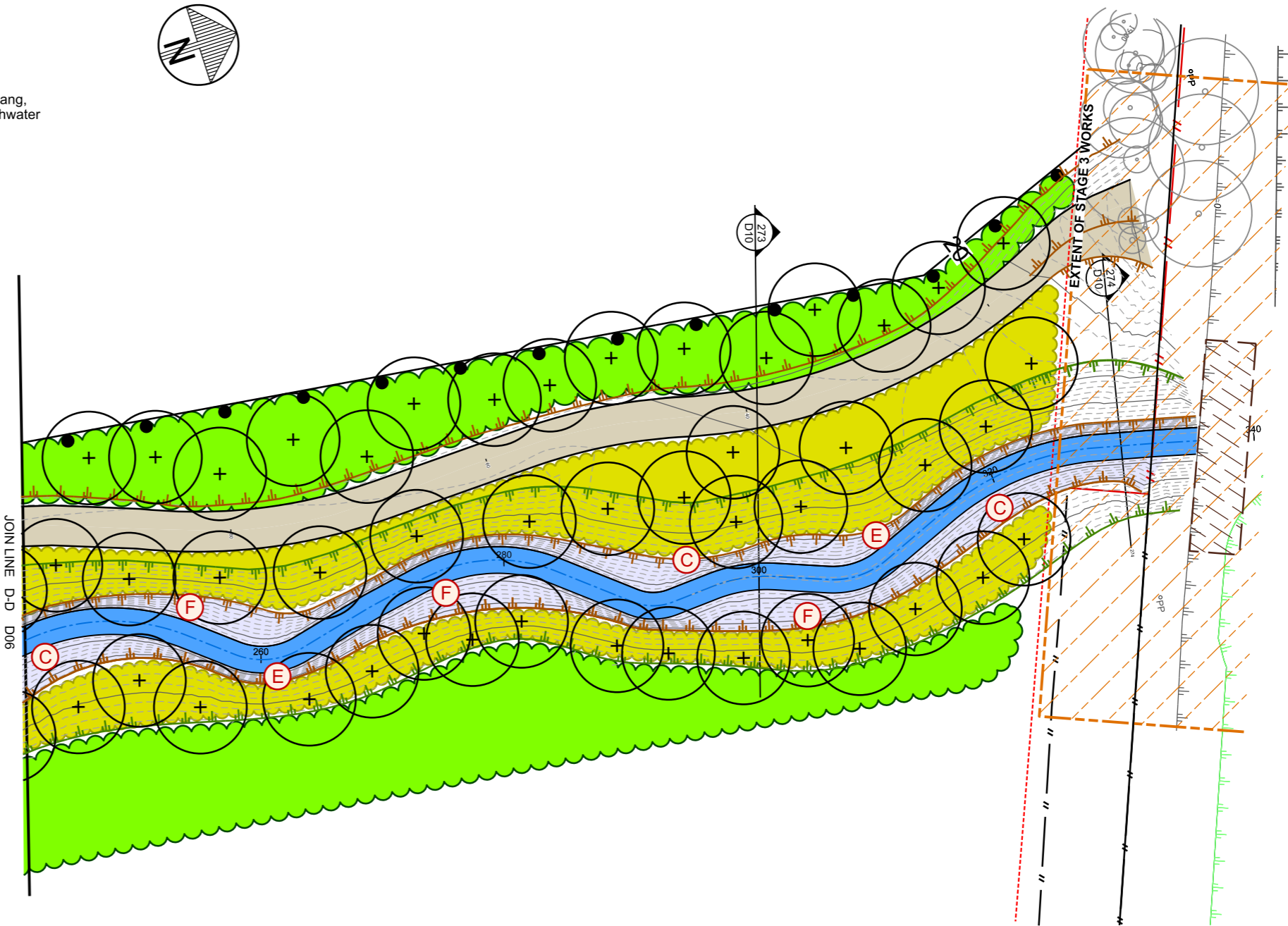
IN-STREAM FEATURES



NOTES

1. All work is to be undertaken in accordance with the Contract Document and Specifications, the CSS and IDS unless specified otherwise.
2. No deviation is to be carried out until written instruction is received from the Engineer.
3. Drawing is indicative only, do not scale from drawing. All measurements to be confirmed on site prior to commencement of work.
4. The locations shown for the in-stream features detailed in Sheets D11-D14 are indicative only and are subject to on-site approval by the Engineer (on advice by Ecologist).
5. The Contractor is to ensure that in the construction of all details with in-bank features all exposed soil surfaces are to be covered by mulch matting.
6. Planting is to be as per Sheet L01.
7. Refer to Sheet D02 for General Notes.
8. Refer to Sheet D22 for Pipework longitudinal profiles and detail.

ANY ADDITIONAL IN STREAM FEATURES MUST BE APPROVED BY THE ENGINEER WITH INPUT FROM HYDRAULIC DESIGNERS DUE TO POTENTIAL HYDRAULIC IMPACT ON WATER LEVELS



PLAN CHAINAGE 250 - 340
 scale 1:200 A1
 1:400 A3



Christchurch City Council
 TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		DESIGNED	A SMITH	12/2022
RL		DES. REVIEW	M PENTECOST	12/2022
SURVEY		DRAWN	M RHIND	12/2022
SURVEY LB		DRW. CHECK	M DUGGAN	12/2022
FILE LOCATION				
DRAIN REF.	16717	FILENAMES		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date

APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
		CONSULTANT PROJECT REF.
		CONSULTANT FILE REF.

**CASHMERE STREAM REALIGNMENT
 STAGE 3**



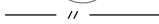
**CONSTRUCTION PLAN 4
 CHAINAGE 250 - 340**

1	FOR CONSTRUCTION	SIGNED	12/2022
ISSUE	AMENDMENTS		DATE
DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES	
TD	A1	1:200 A1	
CAD DRAWING FILE REF.		1:400 A3	
DD135001.DGN			
TSD PROJECT FILE NUMBER	SHEET		
CP503560	D07	OF 22	


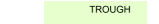


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LEGEND

GENERAL

-  Legal boundary
-  Existing trees
-  Existing fence

PROPOSED FEATURES

-  Fence (post and sheep netting fence)
-  Grass
-  Approximate location of new irrigation line (28mm LP pipe)
-  Filled Channel - as per 292

NOTES

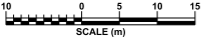
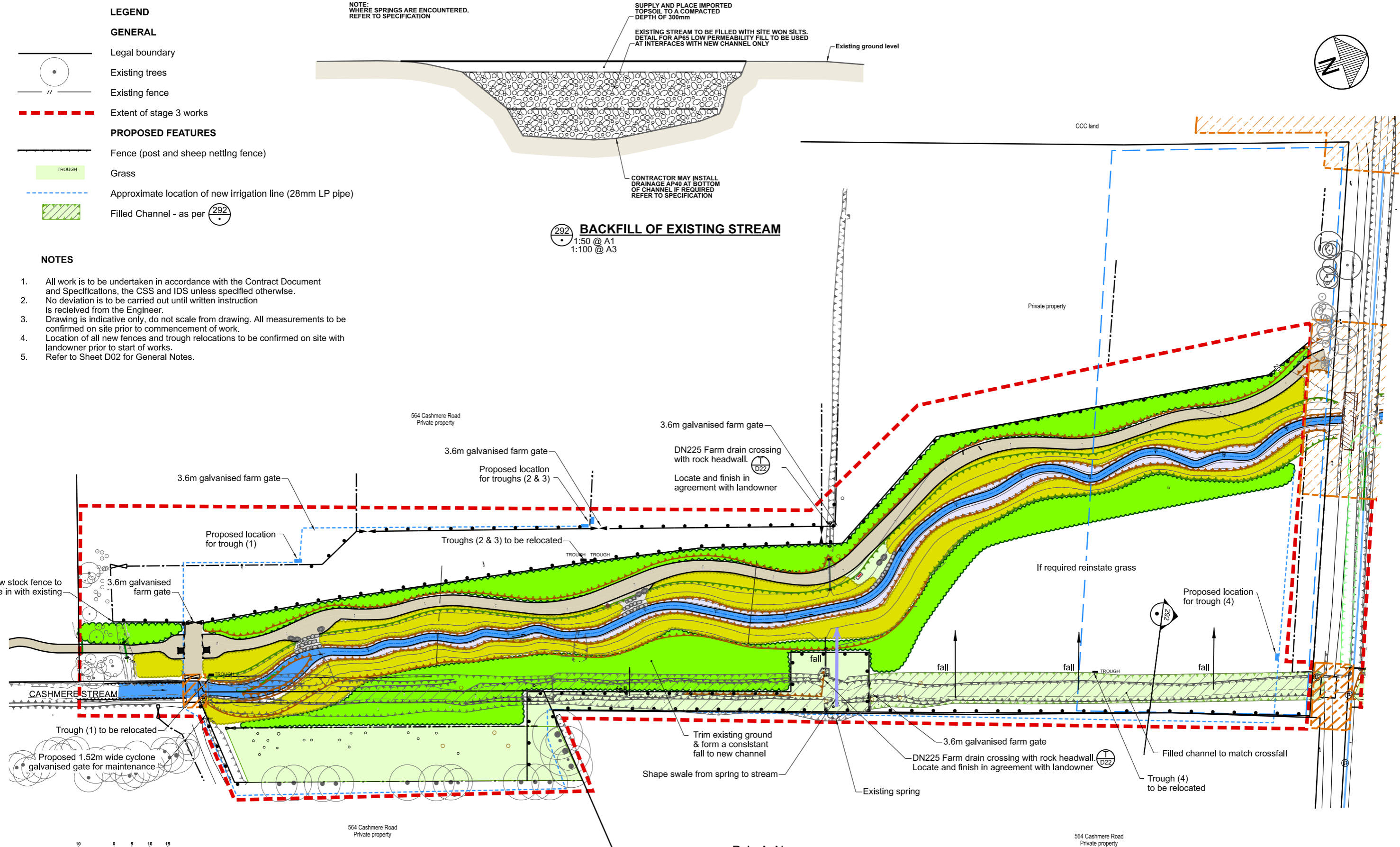
1. All work is to be undertaken in accordance with the Contract Document and Specifications, the CSS and IDS unless specified otherwise.
2. No deviation is to be carried out until written instruction is received from the Engineer.
3. Drawing is indicative only, do not scale from drawing. All measurements to be confirmed on site prior to commencement of work.
4. Location of all new fences and trough relocations to be confirmed on site with landowner prior to start of works.
5. Refer to Sheet D02 for General Notes.

NOTE: WHERE SPRINGS ARE ENCOUNTERED, REFER TO SPECIFICATION

SUPPLY AND PLACE IMPORTED TOPSOIL TO A COMPACTED DEPTH OF 300mm
EXISTING STREAM TO BE FILLED WITH SITE WON SILTS. DETAIL FOR AP65 LOW PERMEABILITY FILL TO BE USED AT INTERFACES WITH NEW CHANNEL ONLY

CONTRACTOR MAY INSTALL DRAINAGE AP40 AT BOTTOM OF CHANNEL IF REQUIRED REFER TO SPECIFICATION

292 BACKFILL OF EXISTING STREAM
1:50 @ A1
1:100 @ A3



PLAN
SCALE 1:500 A1
1:1000 A3

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	DESIGNED	A SMITH	SIGNED	DATE
BENCH MK.		DES. REVIEW	M PENTECOST		12/2022
RL		DRAWN	M RHIND		12/2022
SURVEY		DRW. CHECK	M DUGGAN		12/2022
SURVEY LB		FILE LOCATION			
DRAIN. REF.	16717	S:\Data\Opnl\VR\Drainage\dd13\00d1135001.dwg			
SAP WBS	562/3873	PRINTED ON 31/01/2023 BY JORDAN			

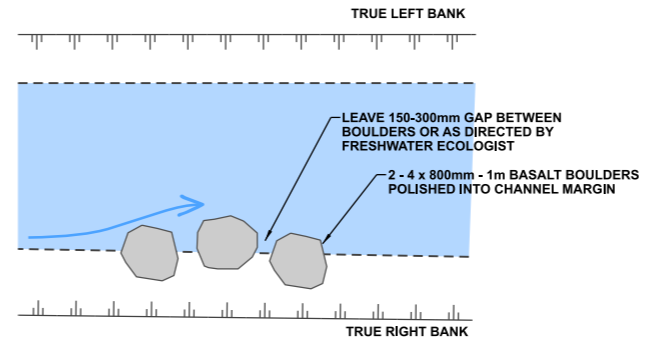
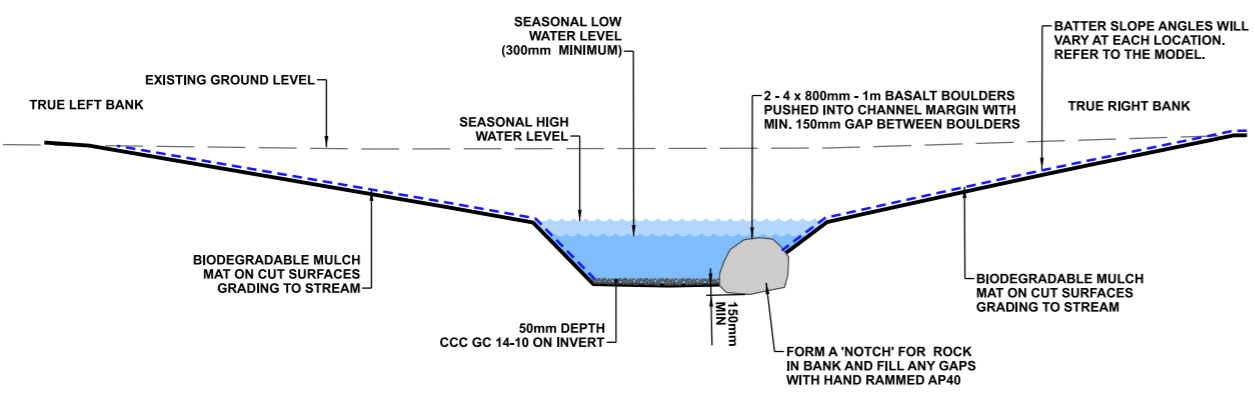
APPROVED FOR TENDER		CONSULTANT	PROJECT TITLE
DATE	SIGNED		CASHMERE STREAM REALIGNMENT
			STAGE 3
FOR CONSTRUCTION		CONSULTANT PROJECT REF.	CONSULTANT FILE REF.
DATE	SIGNED		

CONSTRUCTION PLAN 5: BACKFILL OF EXISTING STREAM & FENCE LAYOUT

DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	A1	SCALES	1:500 A1 1:1000 A3
GAD DRAWING FILE REF.	DD135001.DGN				
TSD PROJECT FILE NUMBER	CP503560	SHEET	D08	OF	22

1	FOR CONSTRUCTION	SIGNED	12/2022
ISSUE	AMENDMENTS		DATE

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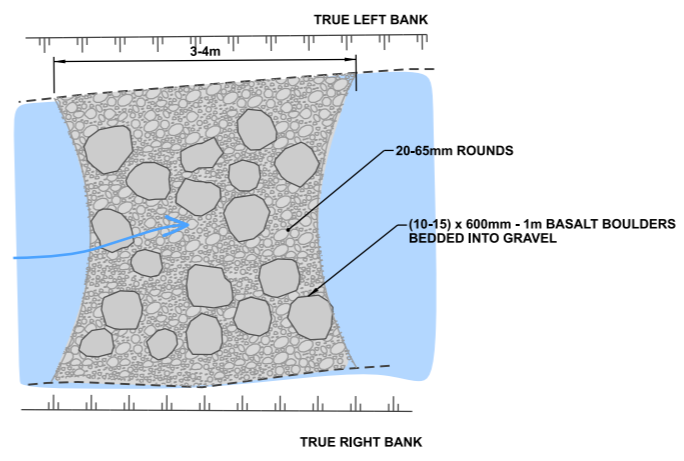
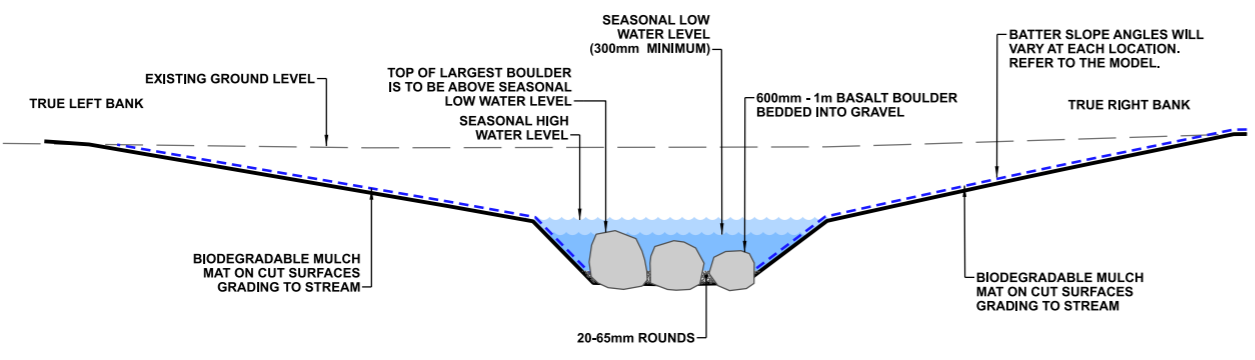


PLAN VIEW OF ROCK EDGE

A TYPICAL DETAIL - ROCK EDGE
1:50 @ A1
1:100 @ A3

DETAIL AIM:

- Spaces are left between the boulders to provide refuge for smaller aquatic species and access to soft substrate.
- Emergent boulders provide egg laying sites for insects.
- Provides flow variation in stream.
- Use in locations where there are bank stability concerns.



PLAN VIEW OF ROCK RIFFLE

B TYPICAL DETAIL - RIFFLE
1:50 @ A1
1:100 @ A3

DETAIL AIM:

- Gravels and boulders in the invert change the velocity of the stream flow providing habitat for aquatic species.
- The largest basalt boulders may be emergent to provide egg laying sites for insects.

NOTES

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4. Drawing is indicative only. Do not scale off drawing. All measurements to be confirmed on site prior to commencement of work.
5. Refer to sheet D02 for general notes.
6. The exact extent and location of these details is subject to on-site approval by the Engineer and Freshwater Ecologist, including detail type, placement of timber, basalt boulders and cobbles.
7. The Contractor is to ensure that all boulders and gravels are to be placed under the direction of CCC's Freshwater Ecologist, including gaps between boulders.
8. Exact numbers of boulders for each location to be determined on site.

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		DESIGNED	A SMITH	12/2022
RL		DES. REVIEW	M PENTECOST	12/2022
SURVEY		DRAWN	C JORDAAN	12/2022
SURVEY LB		DRW. CHECK	M DUGGAN	12/2022
		FILE LOCATION		
DRAIN REF.	16717	FILE NAMES		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date

APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
CONSULTANT PROJECT REF.		CONSULTANT FILE REF.

PROJECT TITLE
CASHMERE STREAM REALIGNMENT STAGE 3

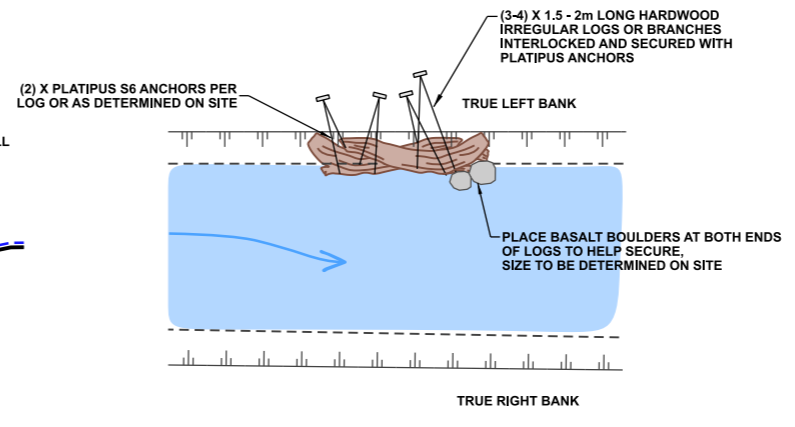
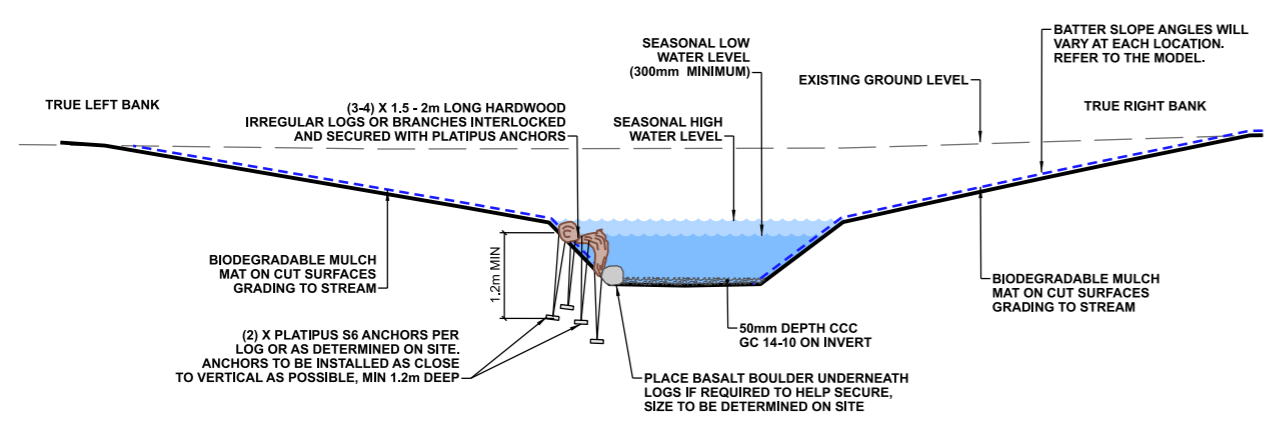
DRAWING TITLE
TYPICAL IN-STREAM FEATURES: DETAILS A-B

DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES
TD	A1	AS SHOWN
CAD DRAWING FILE REF.		
DD135001.DGN		
TSD PROJECT FILE NUMBER	SHEET	
CP503560	D11	OF 22

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6. The exact extent and location of these details is subject to on-site approval by the Engineer and Freshwater Ecologist, including detail type, placement of timber, basalt boulders and cobbles.
7. The Contractor is to ensure that all boulders and gravels are to be placed under the direction of CCC's Freshwater Ecologist.
8. Location and placement of timber and logs to be under the direction of the CCC's Freshwater Ecologist to ensure site specific outcome is achieved.
9. Platipus anchors are to be installed so there is no slack in the stainless steel wire around the timber.

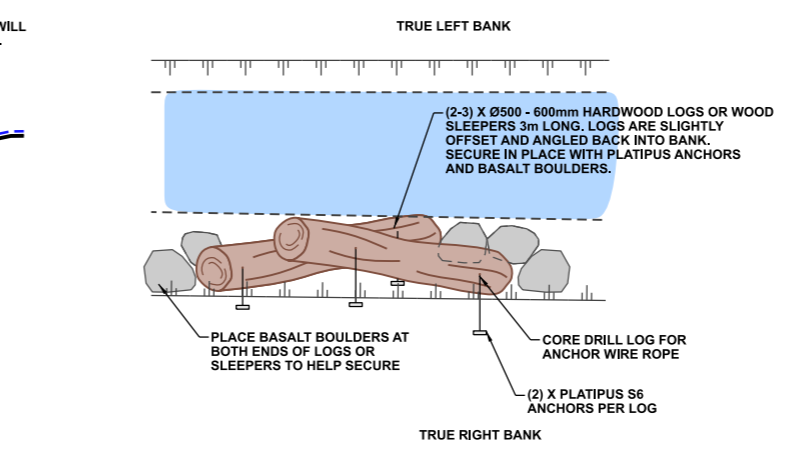
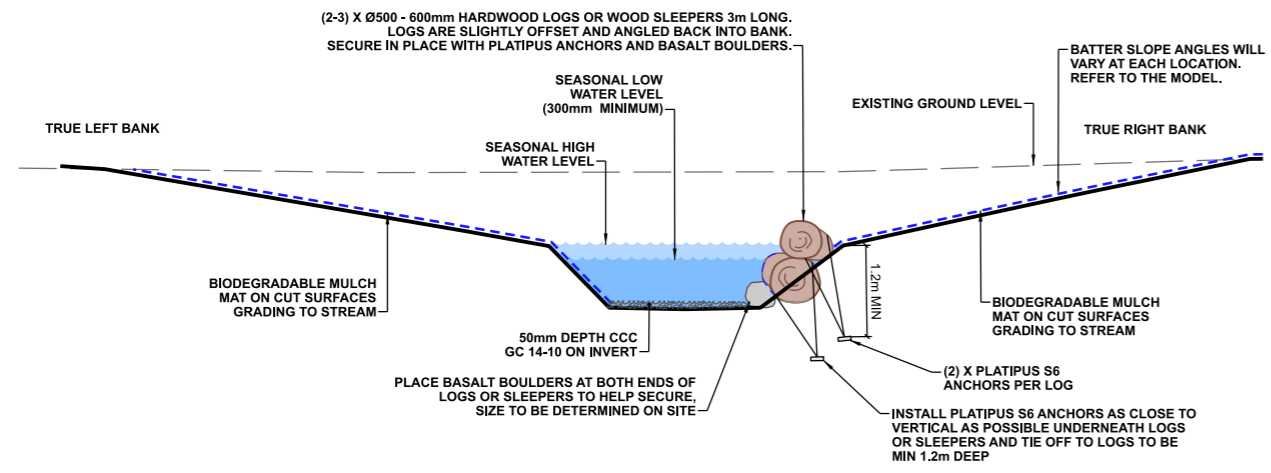


TYPICAL DETAIL - TIMBER EDGE
 1:50 @ A1
 1:100 @ A3

PLAN VIEW OF TIMBER EDGE

DETAIL AIM:

- Weathered hardwood timber (branches or irregular logs) are secured to bank to form an overhang and fish refuge.
- Timber is to be interlocked to secure and provide spaces for refuge and access to soft substrate of the bank.
- Provides flow variation in stream.
- Use in locations where there are bank stability concerns.



TYPICAL DETAIL - LOG EDGE
 1:50 @ A1
 1:100 @ A3

PLAN VIEW OF LOG EDGE

DETAIL AIM:

- Logs or sleepers are secured to bank to form an overhang and fish refuge.
- Timber to provide spaces for refuge and access to soft substrate of the bank.
- Use in locations where there are bank stability concerns.

DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		DESIGNED	A SMITH	12/2022
RL		DES. REVIEW	M PENTECOST	12/2022
SURVEY		DRAWN	C JORDAAN	12/2022
SURVEY LB		DRW. CHECK	M DUGGAN	12/2022
		FILE LOCATION		
DRAIN. REF.	16717	FILENAMES		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date

APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
CONSULTANT PROJECT REF.		CONSULTANT FILE REF.

PROJECT TITLE
**CASHMERE STREAM REALIGNMENT
 STAGE 3**

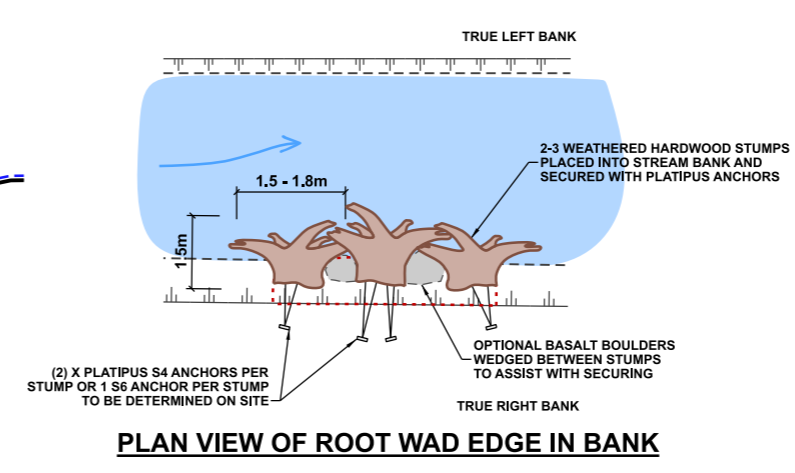
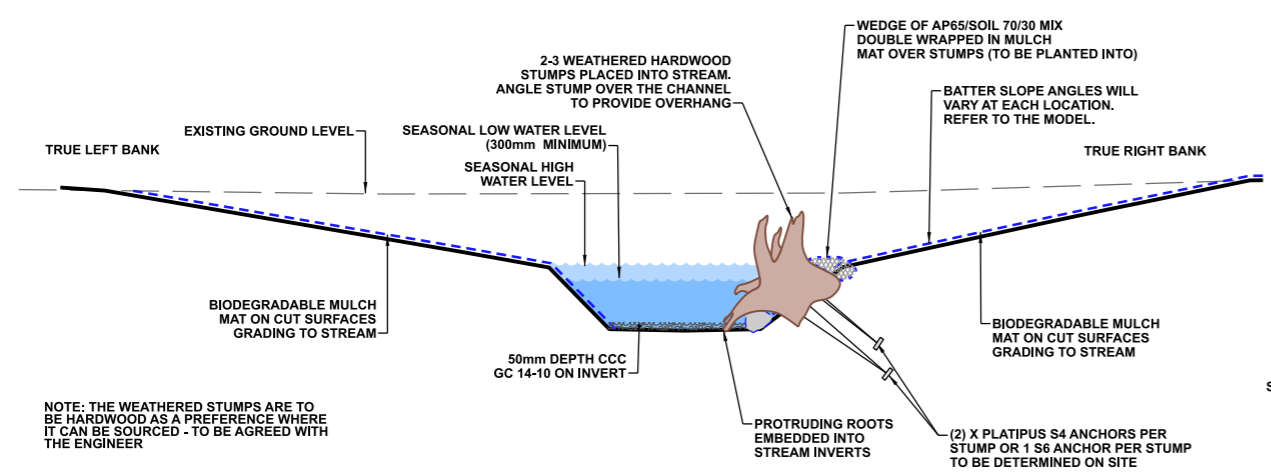
DRAWING TITLE
**TYPICAL IN-STREAM
 FEATURES:
 DETAILS C-D**

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE
DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES	
TD	A1	AS SHOWN	
CAD DRAWING FILE REF.			
DD135001.DGN			
TSD PROJECT FILE NUMBER	SHEET		
CP503560	D12	OF 22	

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5. Refer to sheet D02 for general notes.
6. The exact extent and location of these details is subject to on-site approval by the Engineer and Freshwater Ecologist, including detail type, placement of timber, basalt boulders and cobbles.
7. The Contractor is to ensure that all boulders and gravels are to be placed under the direction of CCC's Freshwater Ecologist.
8. Location and placement of the stumps and posts is to be under the direction of the CCC's Freshwater Ecologist to ensure site specific outcome is achieved.
9. Platipus anchors are to be installed so there is no slack in the stainless steel wire around the timber.

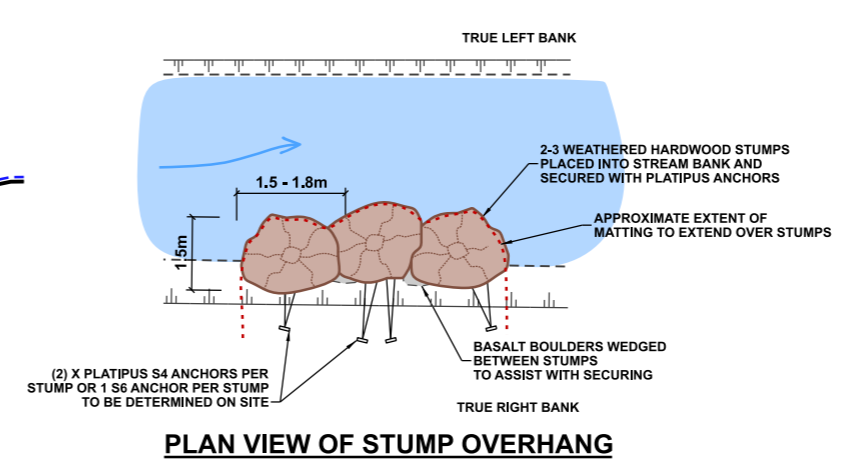
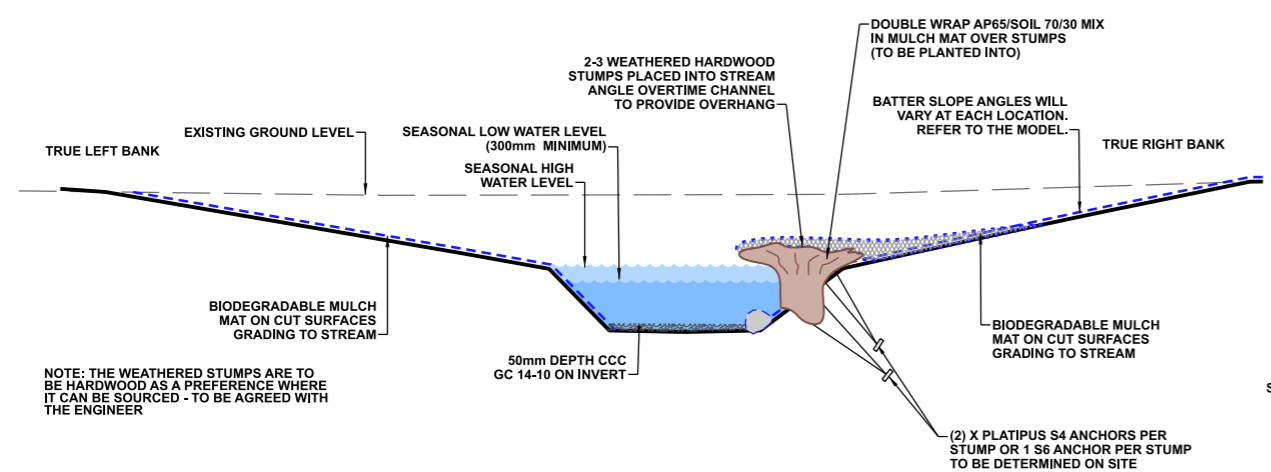


TYPICAL DETAIL - ROOT WAD EDGE - OPTION 1: IN BANK

1:50 @ A1
1:100 @ A3

DETAIL AIM:

- A fish refuge is created by the tangled roots of weathered tree stumps firmly secured to the side of the bank.
- The root wad edge provides variable stream velocity and habitat for aquatic species.
- Use in locations where there are bank stability concerns.



TYPICAL DETAIL - ROOT WAD EDGE - OPTION 2: STUMP OVERHANG

1:50 @ A1
1:100 @ A3

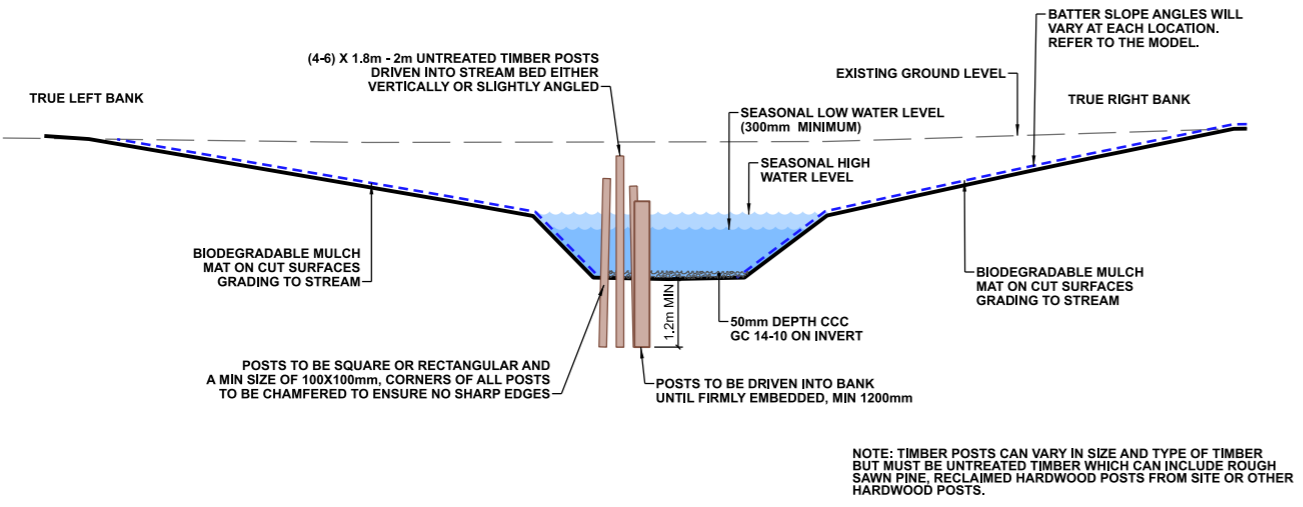
DETAIL AIM:

- A fish refuge is created by the tangled roots of weathered tree stumps firmly secured to the side of the bank.
- The root wad edge provides variable stream velocity and habitat for aquatic species.
- Use in locations where there are bank stability concerns.

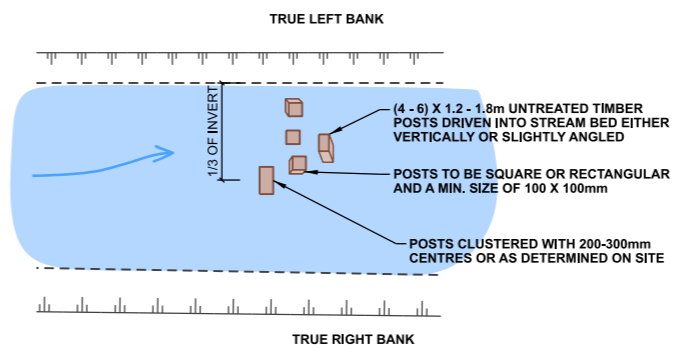
DATUM	C.D.D.	NAME	SIGNED	DATE	APPROVED		CONSULTANT
BENCH MK.		DESIGNED	A SMITH	12/2022	FOR TENDER		
RL		DES. REVIEW	M PENTECOST	12/2022	DATE	SIGNED	
SURVEY		DRAWN	C JORDAAN	12/2022	Tender Date		
SURVEY LB		DRW. CHECK	M DUGGAN	12/2022	FOR CONSTRUCTION		
		FILE LOCATION			DATE	SIGNED	
DRAIN. REF.	16717	FILENAMES			CONSULTANT PROJECT REF.		CONSULTANT FILE REF.
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date			

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ISSUE	AMENDMENTS	SIGNED	DATE
DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	AS SHOWN
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TSD PROJECT FILE NUMBER	CP503560	SHEET	D13 OF 22

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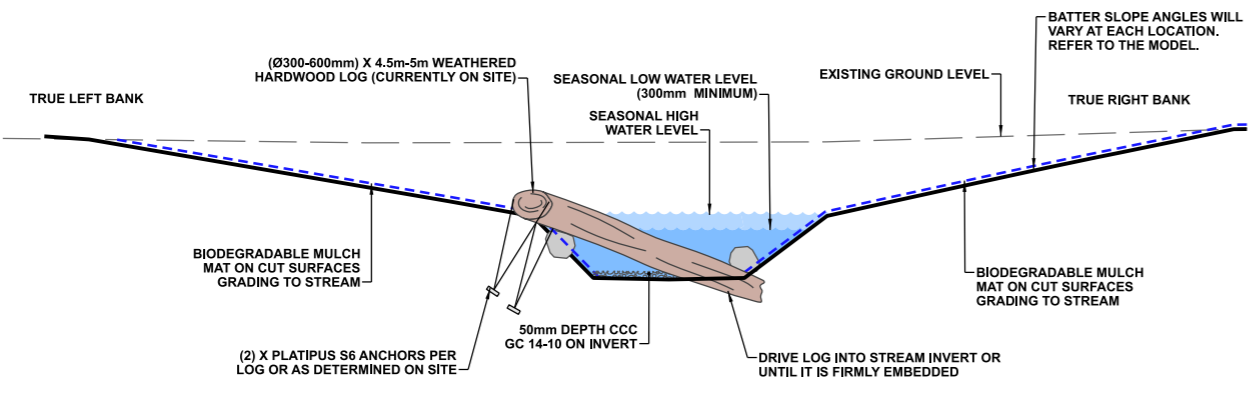
F TYPICAL DETAIL - POST SNAG
 1:50 @ A1
 1:100 @ A3



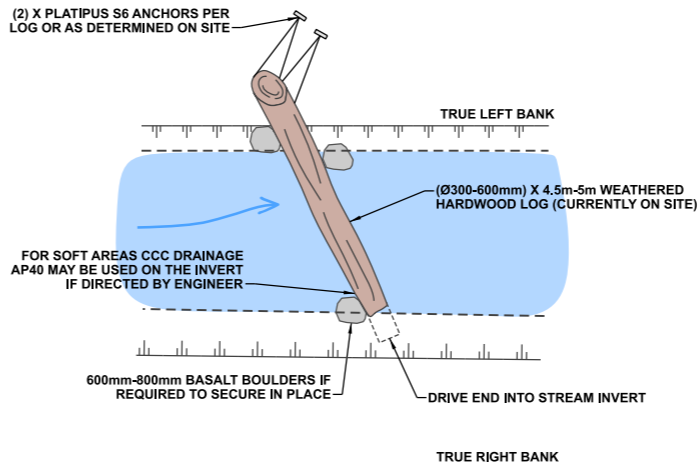
PLAN VIEW OF POST SNAG

DETAIL AIM

- Untreated timber posts are driven into the stream bed in a cluster to trap fine woody debris entering the stream.
- The woody debris snag provides variable stream velocity and habitat for aquatic species.
- Use in locations where there are bank stability concerns.



G TYPICAL DETAIL - LOG SNAG
 1:50 @ A1
 1:100 @ A3



PLAN VIEW OF ROOT WAD EDGE

DETAIL AIM:

- A hardwood log is wedged across the stream profile providing an informal weir and fish refuge.
- The log provides variable stream velocity and habitat for aquatic species.
- Use in locations where there are bank stability concerns.

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7. The Contractor is to ensure that all boulders and gravels are to be placed under the direction of CCC's Freshwater Ecologist.
8. Location and placement of timber and logs is to be under the direction of the CCC's Freshwater Ecologist to ensure site specific outcome is achieved.
9. Platipus anchors are to be installed so there is no slack in the stainless steel wire around the timber.

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE

Christchurch City Council
 TECHNICAL SERVICES & DESIGN

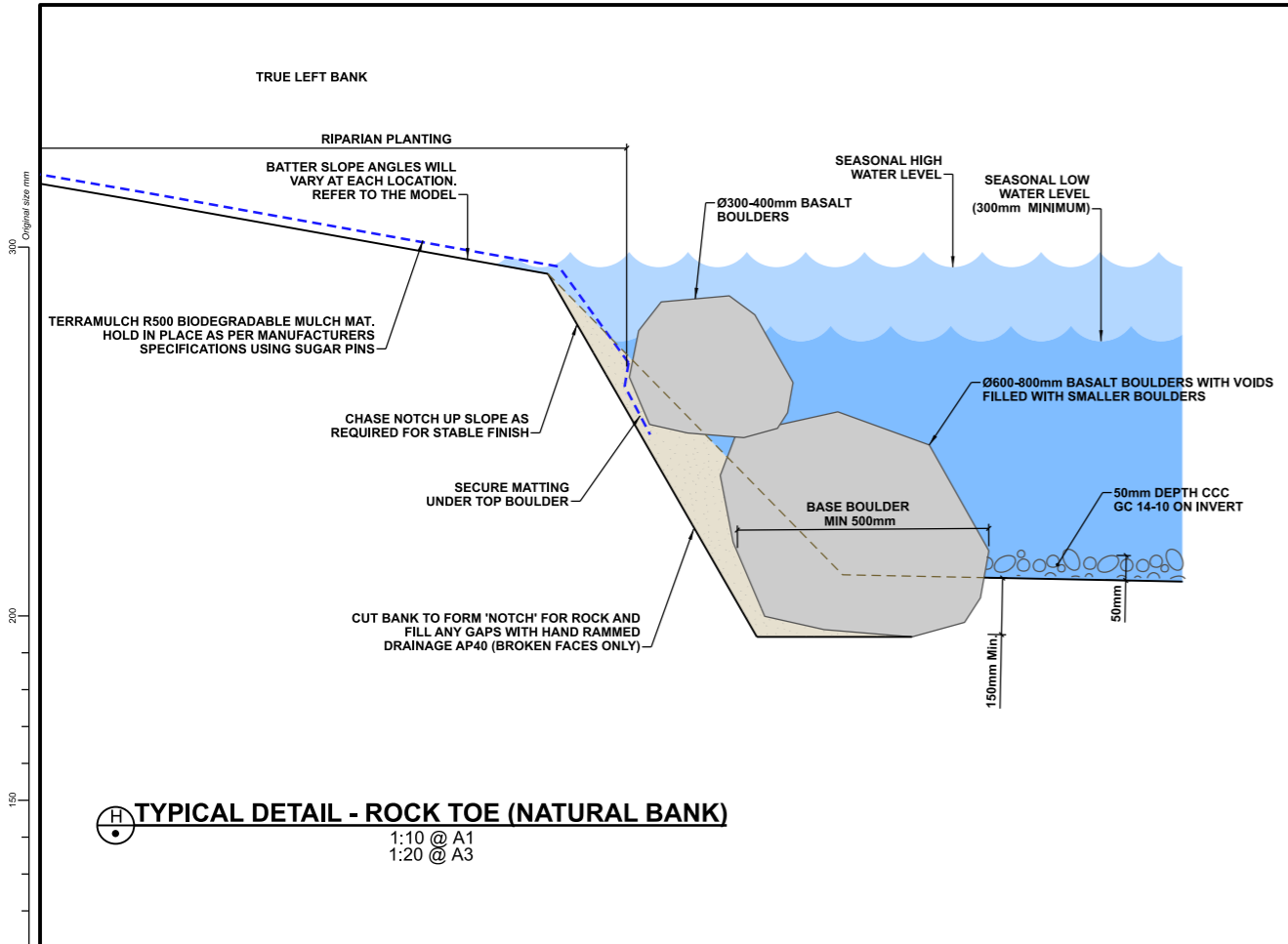
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BENCH MK.		DESIGNED	A SMITH	12/2022
RL		DES. REVIEW	M PENTECOST	12/2022
SURVEY		DRAWN	C JORDAAN	12/2022
SURVEY LB		DRW. CHECK	M DUGGAN	12/2022
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DRAIN. REF.	16717	FILENAME		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date

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FOR TENDER		
DATE	SIGNED	
Tender Date		
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DATE	SIGNED	
Consist Date		
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.	

PROJECT TITLE
CASHMERE STREAM REALIGNMENT STAGE 3

DRAWING TITLE
TYPICAL IN-STREAM FEATURES: DETAILS F-G

DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES
TD	A1	AS SHOWN
CAD DRAWING FILE REF.		
DD135001.DGN		
TSD PROJECT FILE NUMBER	SHEET	
CP503560	D14 OF 22	



TYPICAL DETAIL - ROCK TOE (NATURAL BANK)
 1:10 @ A1
 1:20 @ A3

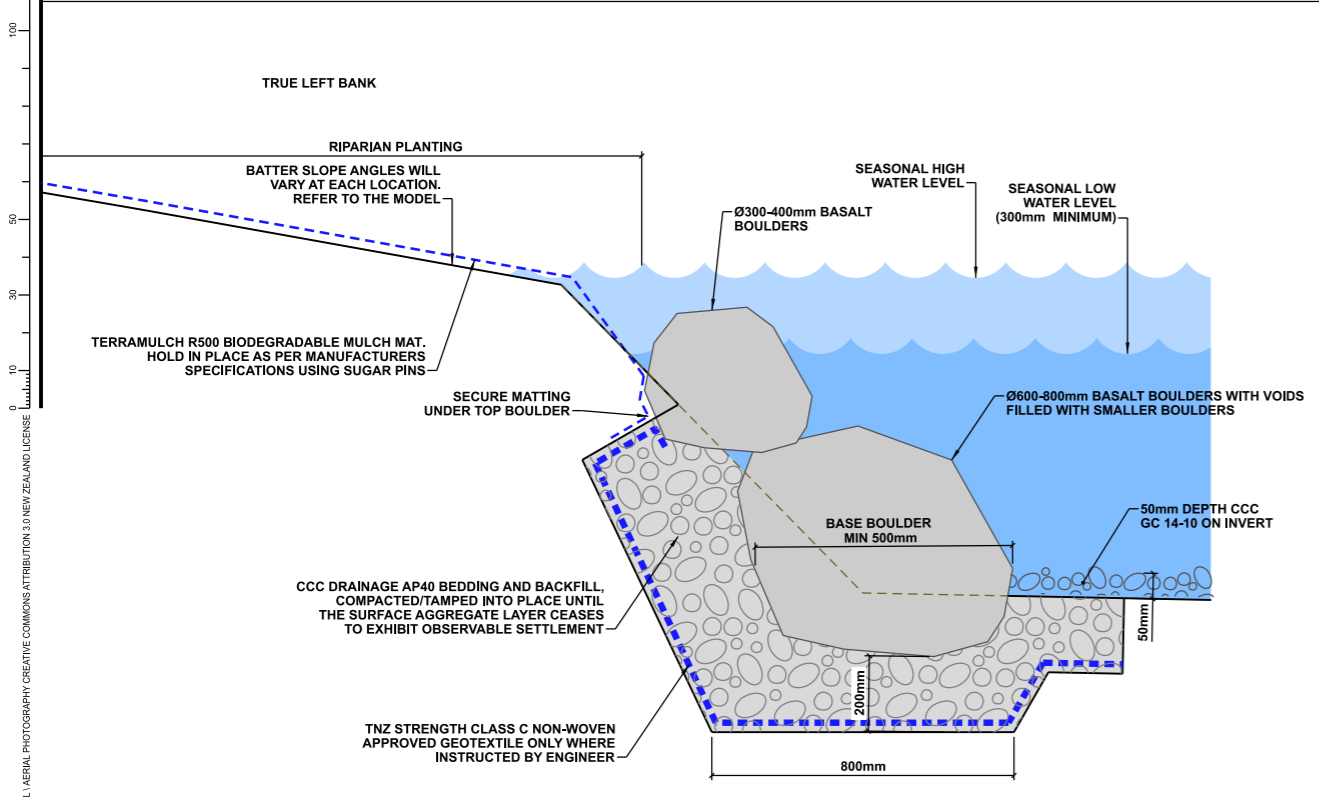
BANK STABILITY FEATURE

DETAIL AIM:

- For use where bank stability is required or is a concern.
- To provide scour protection at the bank margin.

NOTE:

- Detail to be used only when other features won't provide sufficient bank stability.
- Use to be only as directed or agreed with Engineer



TYPICAL DETAIL - ROCK TOE
 1:10 @ A1
 1:20 @ A3

BANK STABILITY FEATURE

DETAIL AIM:

- For use where bank stability is required or is a concern.
- To provide scour protection at the bank margin.

NOTE:

- Detail to be used only when other features won't provide sufficient bank stability.
- Use to be only as directed or agreed with Engineer

- NOTES**
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 - The Contractor is to ensure that all boulders and gravels are to be placed under the direction of CCC's Freshwater Ecologist, including gaps between boulders.
 - Exact numbers of boulders for each location to be determined on site.

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1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE

Christchurch City Council
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DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		A SMITH	<i>[Signature]</i>	12/2022
RL		M PENTECOST	<i>[Signature]</i>	12/2022
SURVEY		C JORDAAN	<i>[Signature]</i>	12/2022
SURVEY LB		M DUGGAN	<i>[Signature]</i>	12/2022
DRW. CHECK				
FILE LOCATION				
DRAIN. REF.	16717	FILENAME		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date

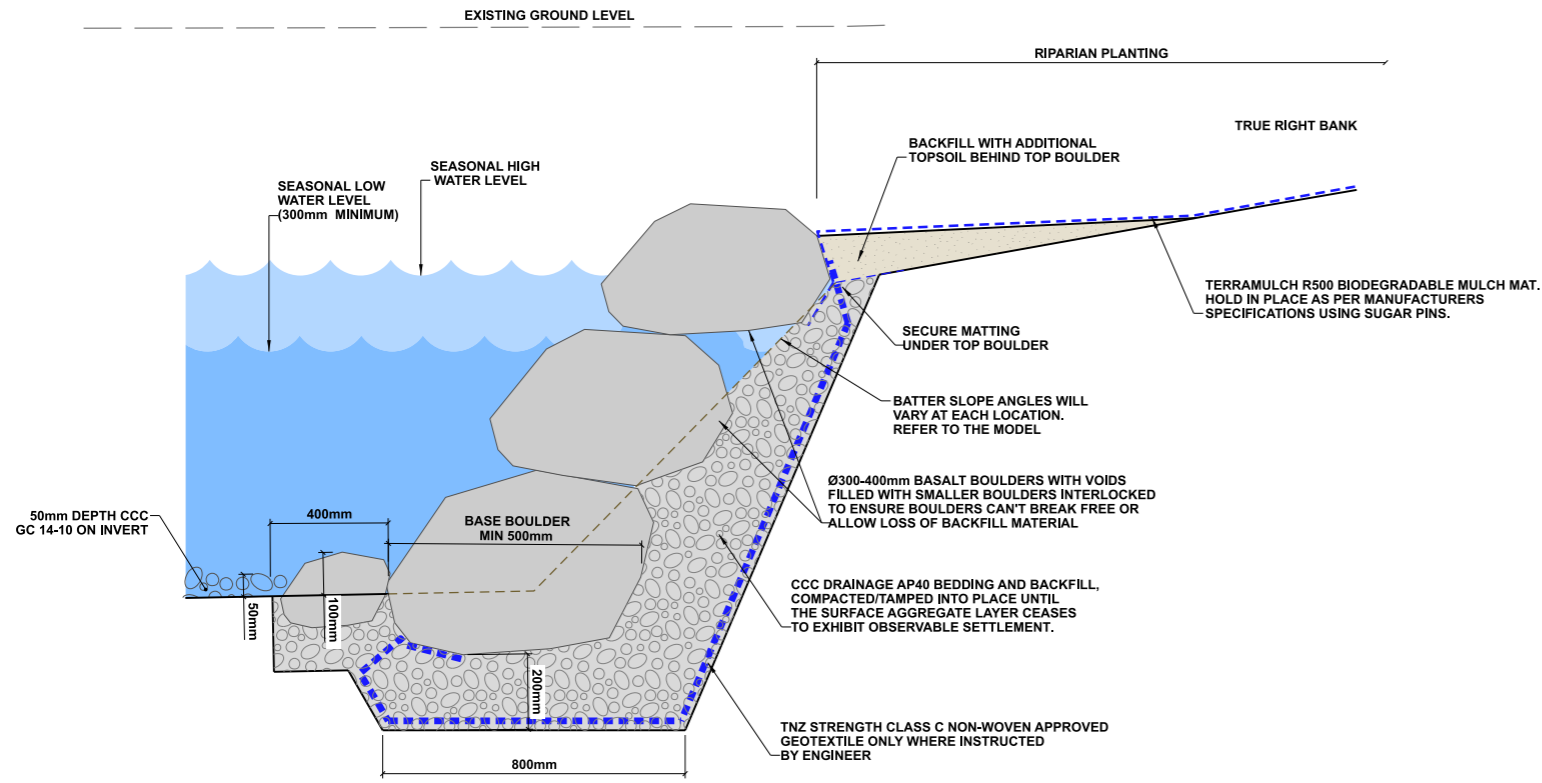
APPROVED		CONSULTANT
FOR TENDER	DATE	SIGNED
	Tender Date	
FOR CONSTRUCTION	DATE	SIGNED
	Consist Date	
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.	

PROJECT TITLE
**CASHMERE STREAM REALIGNMENT
 STAGE 3**

DRAWING TITLE
**TYPICAL BANK
 AND INVERT DETAILS:
 DETAILS H-I**

DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES
TD	A1	AS SHOWN
CAD DRAWING FILE REF.		
DD135001.DGN		
TSD PROJECT FILE NUMBER	SHEET	
CP503560	D15	OF 22

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J TYPICAL DETAIL - ROCK EDGE

1:10 @ A1
1:20 @ A3

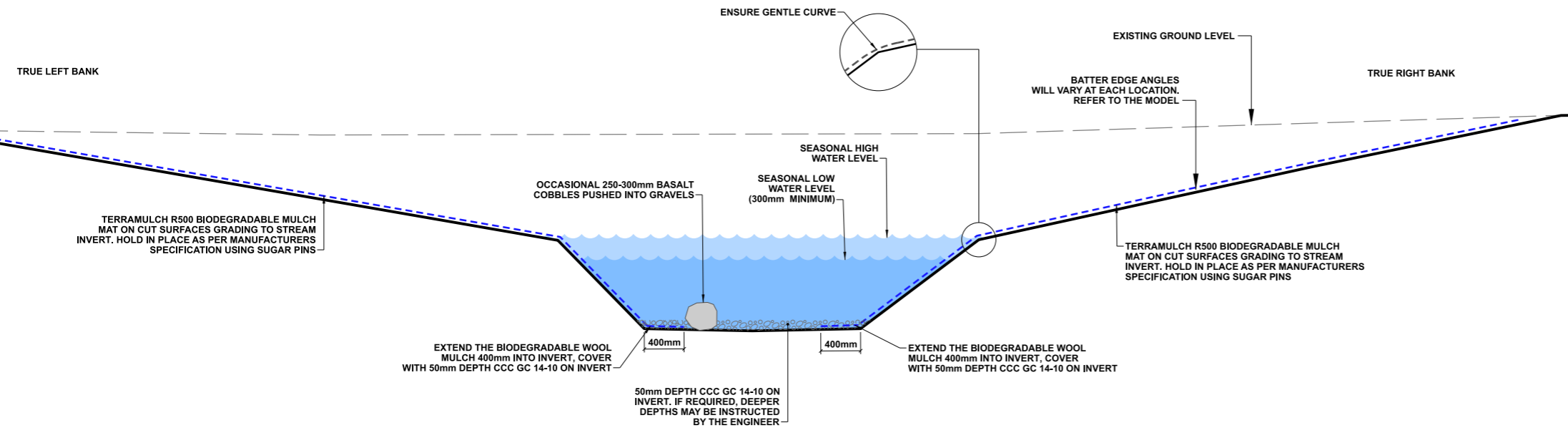
BANK STABILITY FEATURE

DETAIL AIM:

- For use where bank stability is required or is a concern.
- To provide scour protection at the bank margin.

NOTE:

- Detail to be used only when other features won't provide sufficient bank stability.
- Use to be only as directed or agreed with Engineer



K TYPICAL DETAIL - SLOPE AND INVERT DETAIL

1:25 @ A1
1:50 @ A3

DETAIL AIM:

- Retain soft bottom with no matting. CCC CG 14-10 to reduce sediment discharge from the substrate until it settles into a steady state.

NOTES

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TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	DESIGNED	A SMITH	SIGNED	12/2022
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RL		DRAWN	C JORDAAN	SIGNED	12/2022
SURVEY		DRW. CHECK	M DUGGAN	SIGNED	12/2022
SURVEY LB		FILE LOCATION			
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		SAP. WBS	562/3873	PRINTED ON 31/01/2023 BY JORDAANC	

APPROVED	
FOR TENDER	
DATE	SIGNED
Tender Date	
FOR CONSTRUCTION	
DATE	SIGNED
Constr Date	

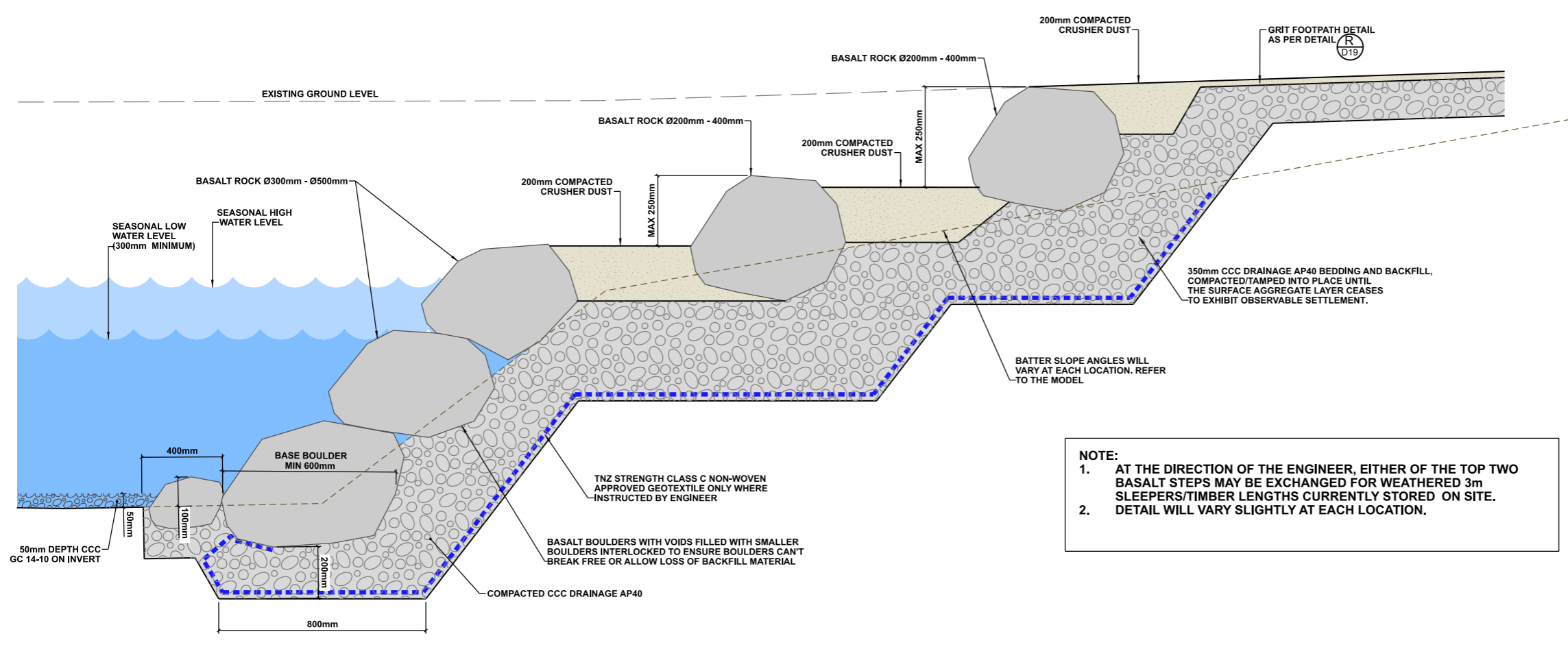
CONSULTANT	
PROJECT TITLE	CASHMERE STREAM REALIGNMENT STAGE 3
CONSULTANT PROJECT REF.	
CONSULTANT FILE REF.	

CASHMERE STREAM REALIGNMENT STAGE 3

TYPICAL BANK AND INVERT DETAILS: DETAILS J-K

DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	A1	SCALES	AS SHOWN
GAD DRAWING FILE REF.	DD135001.DGN				
TSD PROJECT FILE NUMBER	CP503560	SHEET	D16	OF 22	

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NOTE:

1. AT THE DIRECTION OF THE ENGINEER, EITHER OF THE TOP TWO BASALT STEPS MAY BE EXCHANGED FOR WEATHERED 3m SLEEPERS/TIMBER LENGTHS CURRENTLY STORED ON SITE. DETAIL WILL VARY SLIGHTLY AT EACH LOCATION.
- 2.

- NOTES**
1. All work is to be undertaken in accordance with the contract document and specifications, the CSS and IDS unless specified otherwise.
 2. No deviation is to be carried out until written instruction is received from the Engineer.
 3. The Contractor is to check all services with the appropriate authorities prior to commencement of work.
 4. Drawing is indicative only. Do not scale off drawing. All measurements to be confirmed on site prior to commencement of work.
 5. Refer to sheet D02 for general notes.
 6. The exact extent and location of these details is subject to on-site approval by the Engineer and Freshwater Ecologist, including detail type, placement of basalt boulders.
 7. The Contractor is to ensure that all boulders and gravels are to be placed under the direction of CCC's Freshwater Ecologist, including gaps between boulders.
 8. Exact numbers of boulders for each location to be determined on site.

TYPICAL DETAIL - BASALT ROCK STEPS
 1:10 @ A1
 1:20 @ A3

DETAIL AIM:

- For use where pedestrian access to the stream is to be provided, and bank stability is required.

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE



DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK		A SMITH	<i>[Signature]</i>	12/2022
RL		M PENTECOST	<i>[Signature]</i>	12/2022
SURVEY		C JORDAAN	<i>[Signature]</i>	12/2022
SURVEY LB		M DUGGAN	<i>[Signature]</i>	12/2022
DRW. CHECK				
FILE LOCATION				
DRAIN. REF.	16717	FILENAME		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	Consist Date

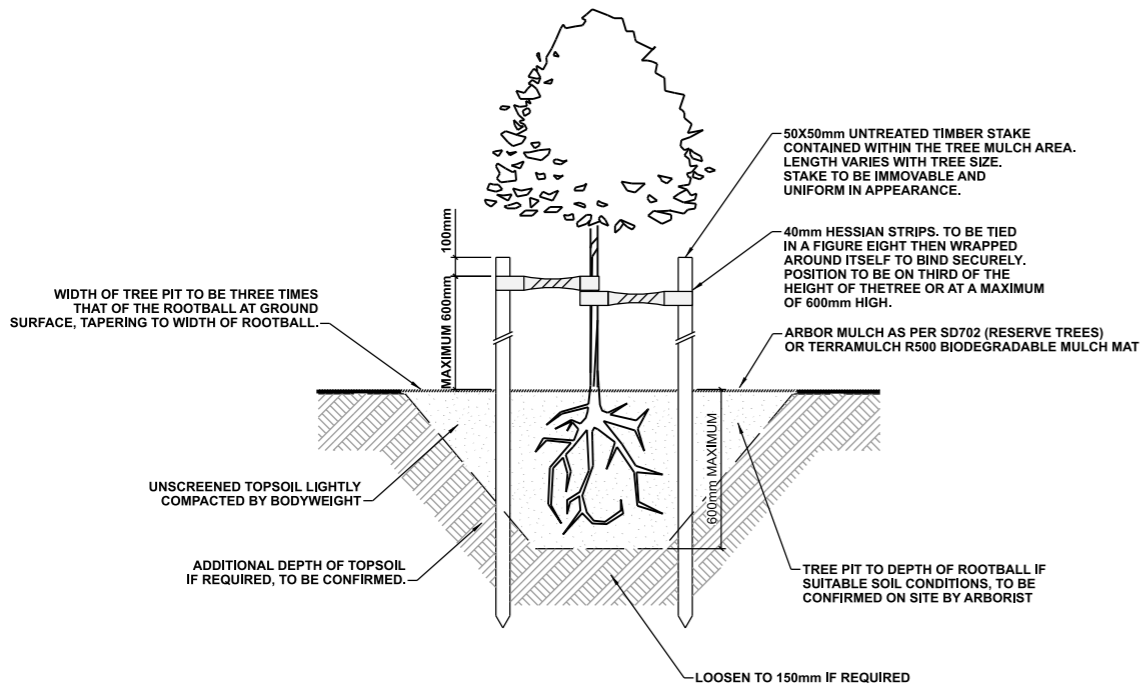
APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.	

PROJECT TITLE
**CASHMERE STREAM REALIGNMENT
 STAGE 3**

DRAWING TITLE
**TYPICAL DETAILS:
 DETAIL L**

DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES
TD	A1	AS SHOWN
CAD DRAWING FILE REF.		
DD135001.DGN		
TSD PROJECT FILE NUMBER	SHEET	
CP503560	D17	OF 22

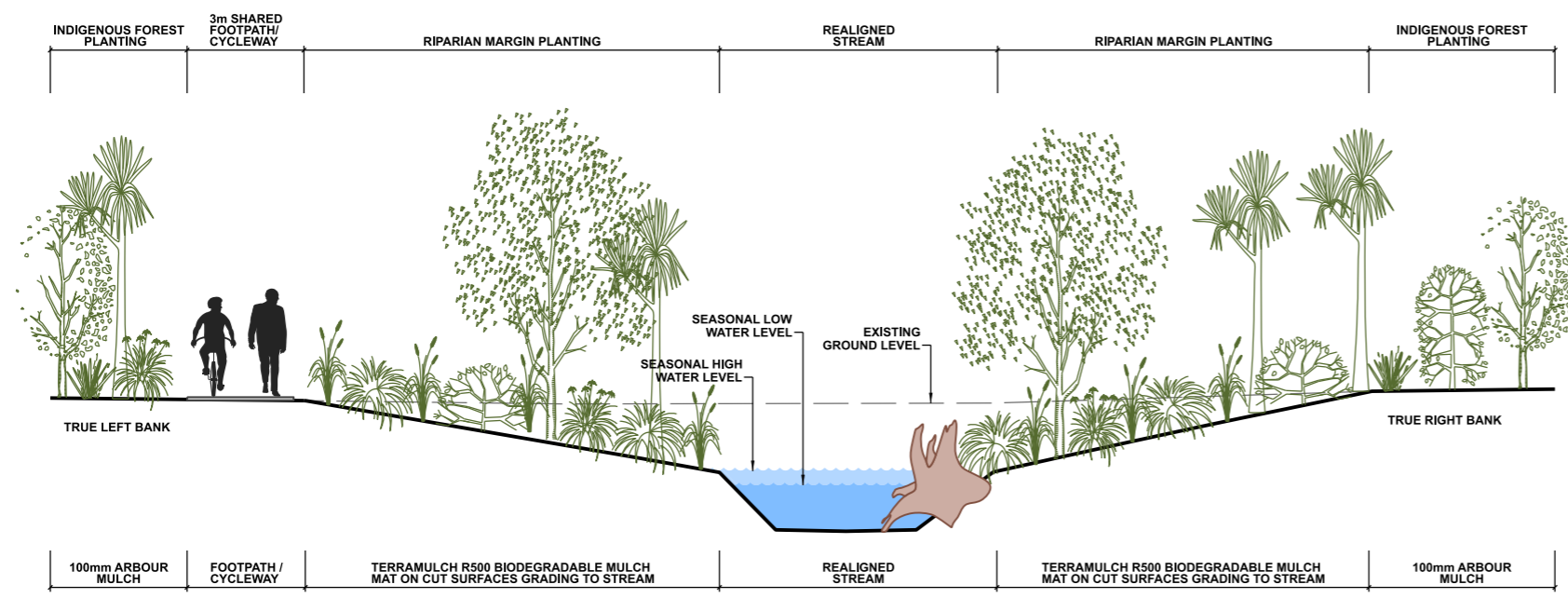
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M TYPICAL DETAIL - TREE PIT
 1:20 @ A1
 1:40 @ A3

NOTE:
 1. TREE PIT LOCATIONS TO BE CONFIRMED ON SITE BY ARBORIST PRIOR TO PLANTING.

- NOTES**
1. All work is to be undertaken in accordance with the contract document and specifications, the CSS and IDS unless specified otherwise.
 2. No deviation is to be carried out until written instruction is received from the Engineer.
 3. The Contractor is to check all services with the appropriate authorities prior to commencement of work.
 4. Drawing is indicative only. Do not scale off drawing. All measurements to be confirmed on site prior to commencement of work.
 5. Refer to sheet D02 for general notes.
 6. Refer to sheets L01-L05 for planting plans.



N TYPICAL DETAIL - PLANTING CROSS-SECTION
 1:50 @ A1
 1:100 @ A3

DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		A SMITH	<i>[Signature]</i>	12/2022
RL		M PENTECOST	<i>[Signature]</i>	12/2022
SURVEY		C JORDAAN	<i>[Signature]</i>	12/2022
SURVEY LB		M DUGGAN	<i>[Signature]</i>	12/2022
DRW. CHECK				
FILE LOCATION				
DRAIN. REF.	16717	FILENAME		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	

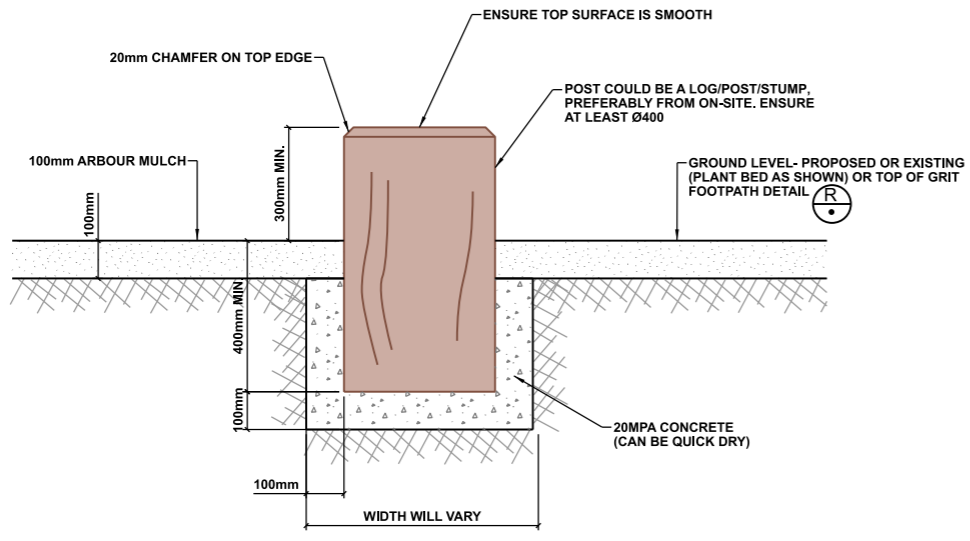
APPROVED		CONSULTANT
FOR TENDER	DATE	SIGNED
FOR CONSTRUCTION	DATE	SIGNED
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.	

CASHMERE STREAM REALIGNMENT STAGE 3

TYPICAL DETAILS: DETAILS M-N

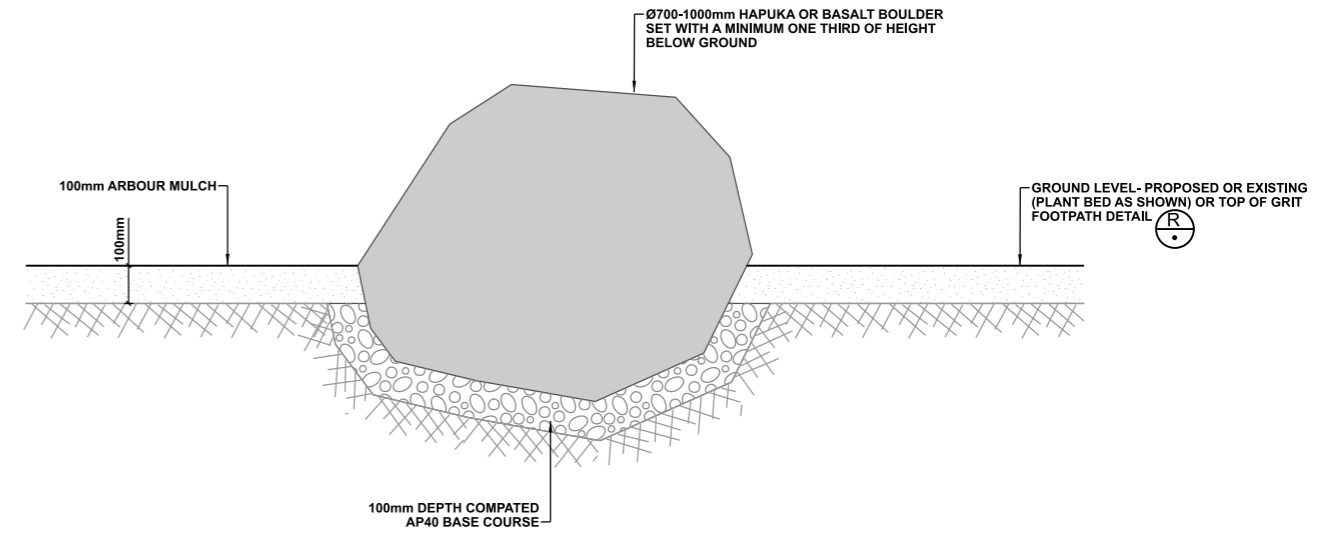
1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE
DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	AS SHOWN
CAD DRAWING FILE REF.	DD135001.DGN	A1	
TSD PROJECT FILE NUMBER	CP503560	SHEET	D18 OF 22

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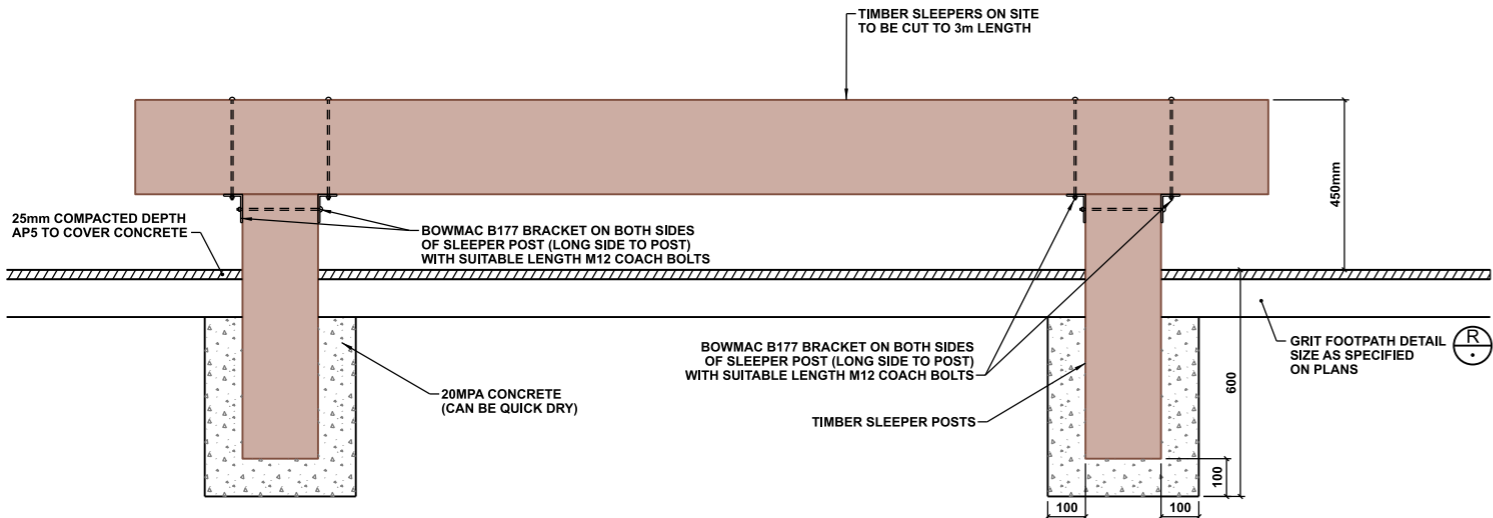
TYPICAL DETAIL - POST IN PLANT BED (INFORMAL SEAT)

D05
D21
1:10 @ A1
1:20 @ A3

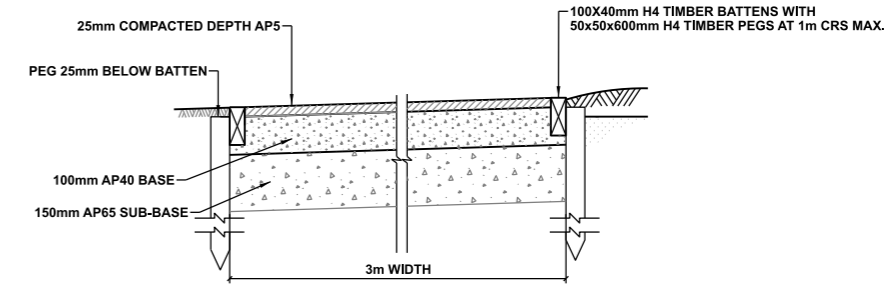


TYPICAL DETAIL - ROCK IN PLANT BED (INFORMAL SEAT)

D04
D06
D21
1:10 @ A1
1:20 @ A3

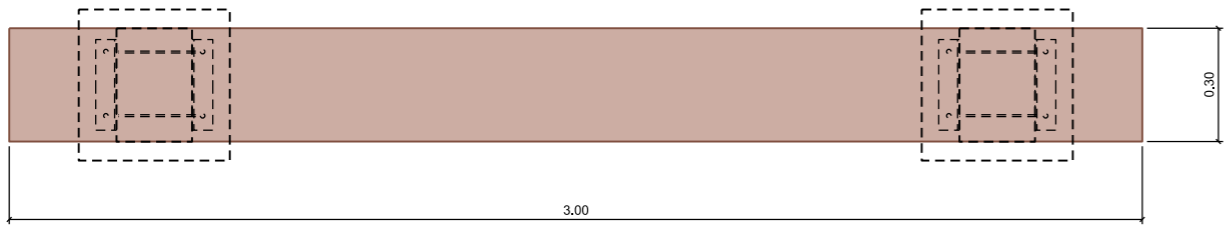


ELEVATION



TYPICAL DETAIL - 3m WIDE GRIT FOOTPATH

D19
D20
D21
1:10 @ A1
1:20 @ A3



PLAN

NOTE: DETAIL TO BE USED IF SLEEPERS ON SITE ARE DEEMED SUITABLE FOR USE BY ENGINEER

SLEEPER SEATS DETAIL

D06
D21
1:10 @ A1
1:20 @ A3

NOTES

1. All work is to be undertaken in accordance with the contract document and specifications, the CSS and IDS unless specified otherwise.
2. No deviation is to be carried out until written instruction is received from the Engineer.
3. The Contractor is to check all services with the appropriate authorities prior to commencement of work.
4. Drawing is indicative only. Do not scale off drawing. All measurements to be confirmed on site prior to commencement of work.
5. Refer to sheet D02 for general notes.

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		DESIGNED	A SMITH	12/2022
RL		DES. REVIEW	M PENTECOST	12/2022
SURVEY		DRAWN	C JORDAAN	12/2022
SURVEY LB		DRW. CHECK	M DUGGAN	12/2022
		FILE LOCATION		
DRAIN. REF.	16717	FILENAME		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	

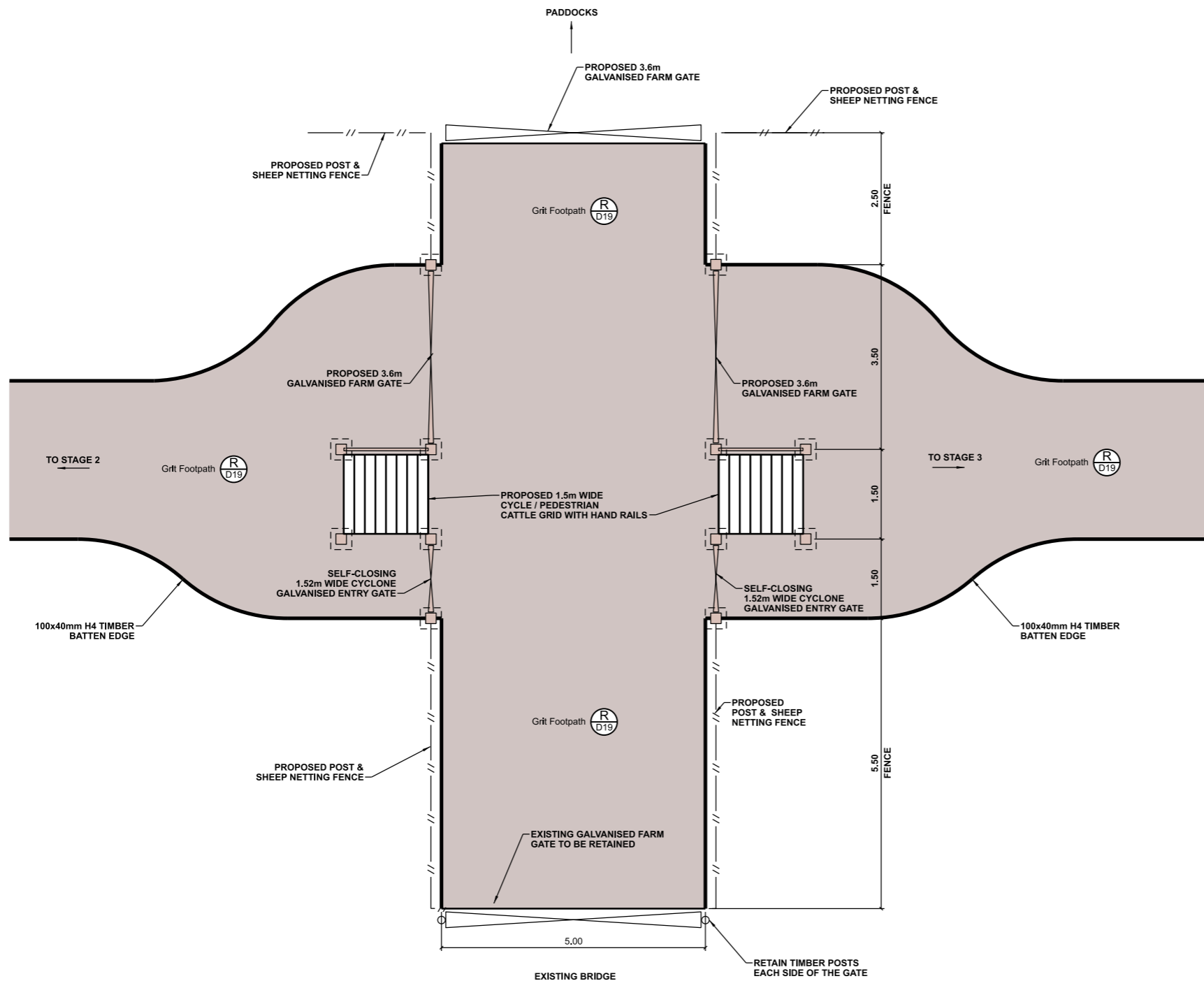
APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.	

PROJECT TITLE
CASHMERE STREAM REALIGNMENT STAGE 3

DRAWING TITLE
TYPICAL DETAILS: DETAILS O-R

DOCUMENT NUMBER	ORIGINAL SHEET SIZE	SCALES
TD	A1	AS SHOWN
CAD DRAWING FILE REF.		
DD135001.DGN		
TSD PROJECT FILE NUMBER	SHEET	
CP503560	D19 OF 22	

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PLAN
 1:50 @ A1
 1:100 @ A3

NOTES

1. All work is to be undertaken in accordance with the contract document and specifications, the CSS and IDS unless specified otherwise.
2. Any deviation is not to be carried out until written instruction is received from the CCC Contracts Engineer.
3. The contractor is to check all services with the appropriate authorities prior to commencement of work.
4. Drawing is indicative only. Do not scale off drawing. All measurements to be confirmed on site prior to commencement of work.
5. Refer to sheet D02 for general notes.

DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		A SMITH	<i>[Signature]</i>	12/2022
RL		M PENTECOST	<i>[Signature]</i>	12/2022
SURVEY		M RHIND	<i>[Signature]</i>	12/2022
SURVEY LB		M DUGGAN	<i>[Signature]</i>	12/2022
DRW. CHECK				
FILE LOCATION				
DRAIN. REF.	16717	FILENAME		
SAP WBS	562/3873	PRINTED ON \$DATES	BY \$USERNAMES	

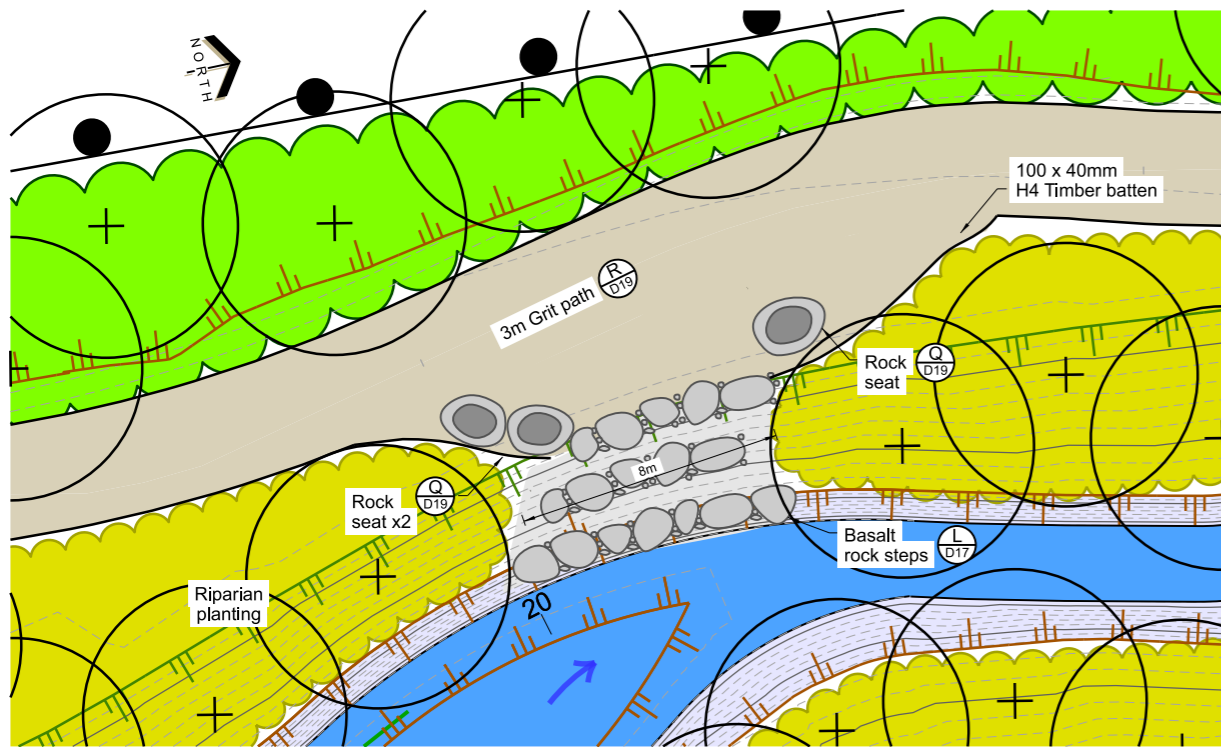
APPROVED FOR TENDER		CONSULTANT
DATE	SIGNED	
-		
FOR CONSTRUCTION		
DATE	SIGNED	
-		
CONSULTANT PROJECT REF.	CONSULTANT FILE REF.	

PROJECT TITLE
CASHMERE STREAM REALIGNMENT STAGE 3

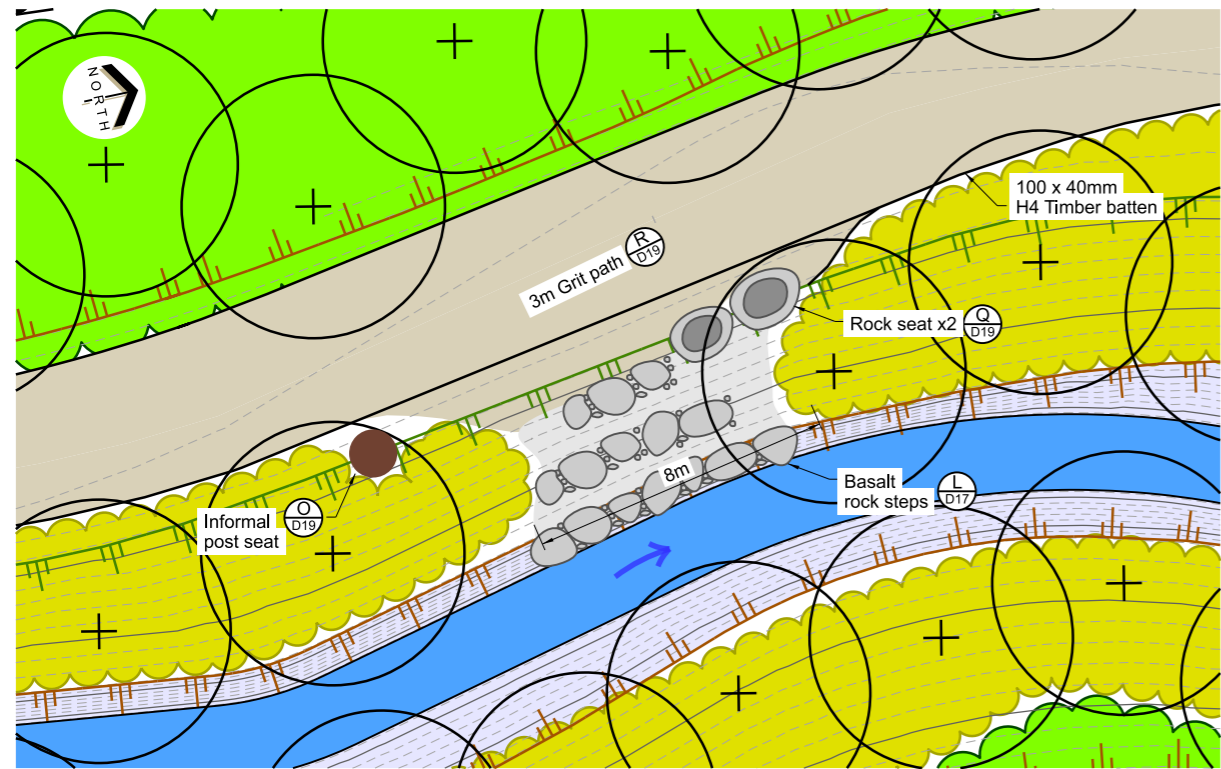
DRAWING TITLE
DETAIL 1

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE
DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	SCALES
CAD DRAWING FILE REF.	DD135001.DGN	A1	AS SHOWN
TSD PROJECT FILE NUMBER	CP503560	SHEET	D20 OF 22

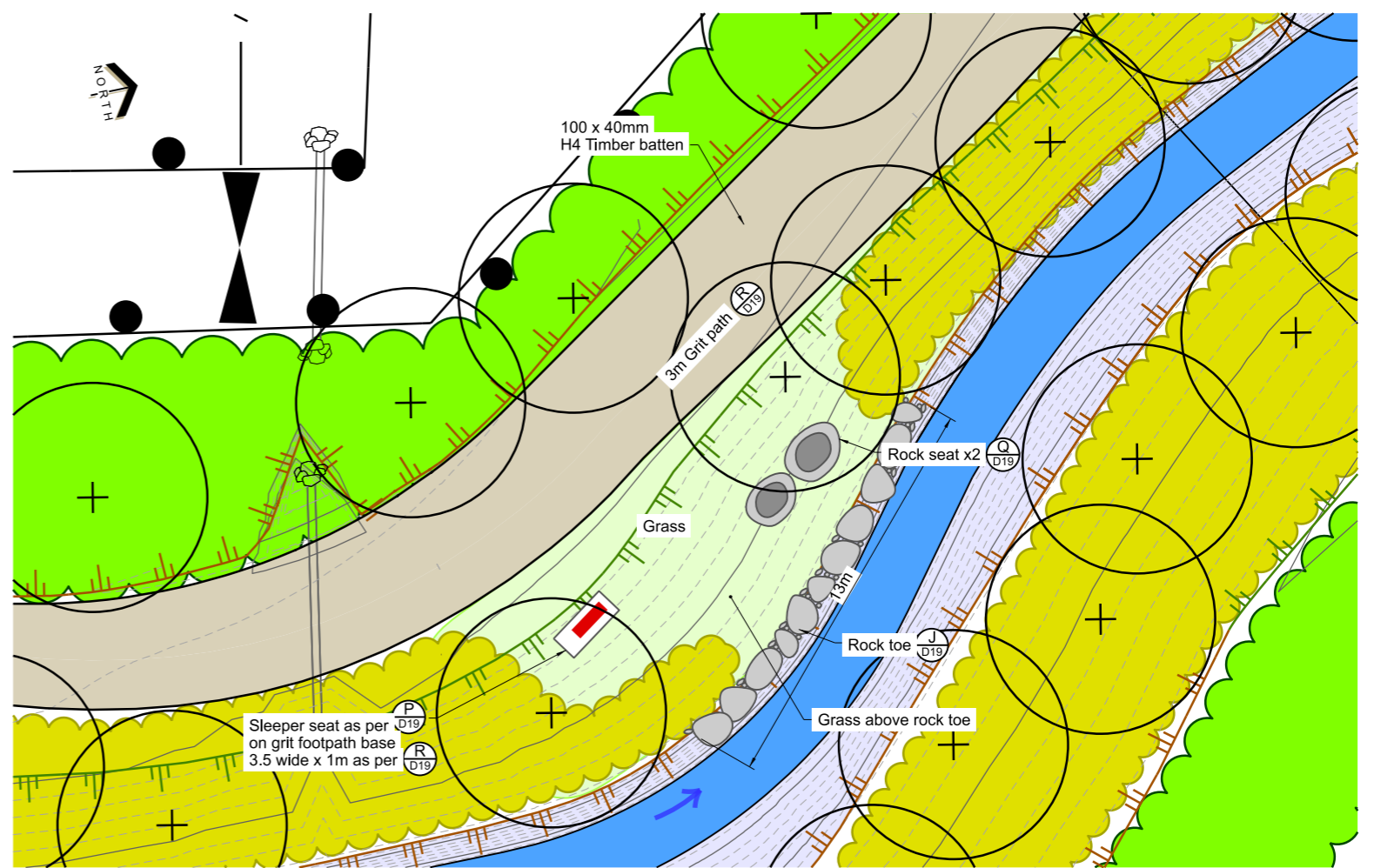
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2 PLAN
SCALE 1:100 A1
1:200 A3



3 PLAN
SCALE 1:100 A1
1:200 A3



4 PLAN
SCALE 1:100 A1
1:200 A3

NOTES

- All work to be undertaken in accordance with the Contract Document and Specifications, the CSS and IDS unless specified otherwise.
- No deviation is to be carried out until written instruction is received from the Engineer.
- The Contractor is to check all services with the appropriate authorities prior to the commencement of work.
- Drawing is indicative only. Do not scale off drawing. All measurements to be confirmed on site prior to the commencement of work.
- Refer to Sheet D02 for General Notes.
- Location of all informal seats to be confirmed on site with the Engineer and Landscape Architect.

DATUM	C.D.D.	DESIGNED	NAME	SIGNED	DATE
BENCH MK.		DESIGNED	A SMITH	<i>[Signature]</i>	12/2022
RL		DES. REVIEW	M PENTECOST	<i>[Signature]</i>	12/2022
SURVEY		DRAWN	M RHIND	<i>[Signature]</i>	12/2022
SURVEY LB		DRW. CHECK	M DUGGAN	<i>[Signature]</i>	12/2022
FILE LOCATION					
DRAIN. REF.	16717	S:\Data\Opnl\RD\Drainage\dd1300\dd135001.dwg			
SAP WBS	562/3873	PRINTED ON 31/01/2023 BY JORDAN			

APPROVED		CONSULTANT
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	
CONSULTANT PROJECT REF.		CONSULTANT FILE REF.

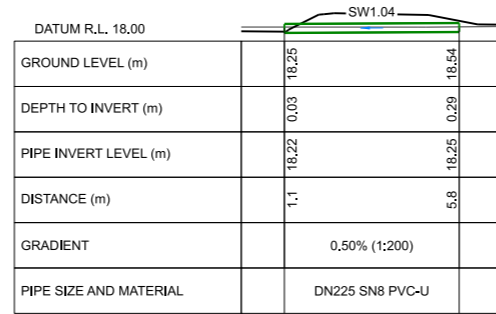
ISSUE	FOR CONSTRUCTION	AMENDMENTS	SIGNED	DATE
1	FOR CONSTRUCTION			12/2022

DOCUMENT NUMBER	TD	ORIGINAL SHEET SIZE	A1	SCALES	1:100 A1 1:200 A3
GAD DRAWING FILE REF.	DD135001.DGN				
TSD PROJECT FILE NUMBER	CP503560	SHEET	D21		OF 22

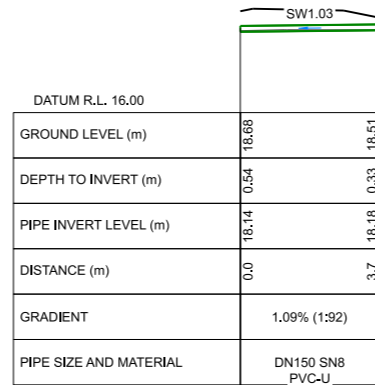
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PIPE STRUCTURES			
ID	TYPE	DETAILS	CO-ORD (CENTROID)
HW01	DN225 ROCK HEADWALL	CL = 18,090 SW1.01 INV OUT = 18,852	E: 388443.82 N: 800540.00
HW02	DN225 ROCK HEADWALL	CL = 18,960 SW1.01 INV IN = 18,722	E: 388444.02 N: 800544.79
HW09	DN225 ROCK HEADWALL	CL = 18,933 SW1.05 INV OUT = 18,571	E: 389047.42 N: 800522.82
HW10	DN225 ROCK HEADWALL	CL = 18,791 SW1.05 INV IN = 18,553	E: 389048.29 N: 800522.48
HW14	DN225 ROCK HEADWALL	CL = 18,681 SW1.03 INV IN = 18,140	E: 389141.82 N: 800595.48
HW03	DN225 ROCK HEADWALL	CL = 18,679 SW1.02 INV OUT = 18,441	E: 388587.58 N: 800541.31
HW04	DN225 ROCK HEADWALL	CL = 18,628 SW1.02 INV IN = 18,390	E: 388586.73 N: 800546.36
HW07	DN225 ROCK HEADWALL	CL = 18,536 SW1.04 INV OUT = 18,247	E: 389140.89 N: 800607.52
HW13	DN225 ROCK HEADWALL	CL = 18,510 SW1.03 INV OUT = 18,180	E: 389138.19 N: 800596.11
HW08	DN225 ROCK HEADWALL	CL = 18,461 SW1.04 INV IN = 18,224	E: 389145.51 N: 800607.46
HW15	DN225 ROCK HEADWALL	CL = 18,194 SW1.08 INV OUT = 17,956	E: 389158.87 N: 800804.94
HW16	DN225 ROCK HEADWALL	CL = 18,105 SW1.08 INV IN = 17,867	E: 389167.47 N: 800803.38

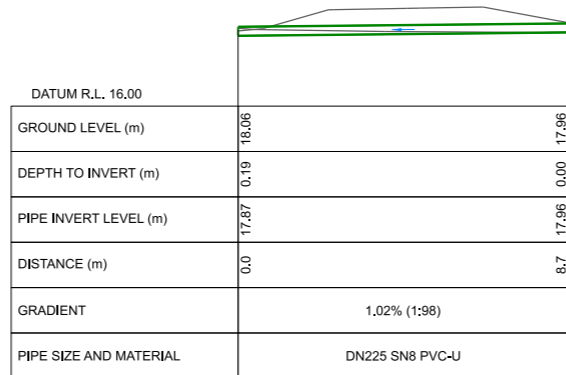
PIPE DATA - NETWORK SW1							
PIPE ID	TYPE	2D LENGTH	3D LENGTH	GRADE	US IL	DS IL	MAX. DEPTH
SW1.01	DN225 SN8 PVC-U	4.8	4.8	2.71%	18.85	18.72	0.5
SW1.02	DN225 SN8 PVC-U	5.1	5.1	1.00%	18.44	18.39	0.7
SW1.04	DN225 SN8 PVC-U	4.6	4.6	0.50%	18.25	18.22	0.5
SW1.05	DN225 SN8 PVC-U	4.4	4.4	0.40%	18.57	18.55	0.6
SW1.03	DN150 SN8 PVC-U	3.7	3.7	1.09%	18.18	18.14	0.6
SW1.08	DN225 SN8 PVC-U	8.7	8.7	1.02%	17.96	17.87	0.2



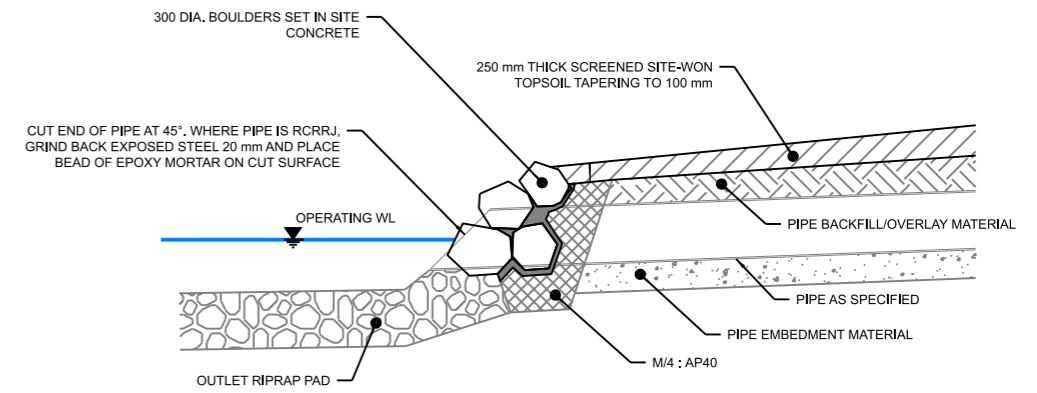
V LONGITUDINAL PROFILE 0.0 m TO 6.9 m (SW1.04)
D04
 HORIZONTAL SCALE 1:100 @ A1
 VERTICAL SCALE 1:100 @ A1



U LONGITUDINAL PROFILE 0.0 m TO 3.7 m (SW1.03)
D04
 HORIZONTAL SCALE 1:100 @ A1
 VERTICAL SCALE 1:100 @ A1



S LONGITUDINAL PROFILE 0.0 m TO 8.9 m (SW 1.08)
D06
 HORIZONTAL SCALE 1:100 @ A1
 VERTICAL SCALE 1:100 @ A1



T ROCK HEADWALL DETAIL
 SCALE 1:20 @ A1
 1:40 @ A3
D06
D08

NOTES

- All work is to be undertaken in accordance with the contract document and specifications, the CSS and IDS unless specified otherwise.
- Refer to sheet D02 for general notes.

1	FOR CONSTRUCTION		12/2022
ISSUE	AMENDMENTS	SIGNED	DATE



DATUM	C.D.D.	NAME	SIGNED	DATE
BENCH MK.		A SMITH	<i>[Signature]</i>	12/2022
RL		M PENTECOST	<i>[Signature]</i>	12/2022
SURVEY		M RHIND	<i>[Signature]</i>	12/2022
SURVEY LB		M DUGGAN	<i>[Signature]</i>	12/2022

APPROVED		CONSULTANT
FOR TENDER	DATE SIGNED	
FOR CONSTRUCTION	DATE SIGNED	
DATE SIGNED	CONSULTANT PROJECT REF.	CONSULTANT FILE REF.

PROJECT TITLE
**CASHMERE STREAM REALIGNMENT
 STAGE 3**

DRAWING TITLE
**PIPEWORK LONGITUDINAL
 PROFILES AND DETAIL**

DOCUMENT NUMBER TD	ORIGINAL SHEET SIZE A1	SCALES AS SHOWN
GAD DRAWING FILE REF. DD135001.DGN	TSD PROJECT FILE NUMBER CP503560	SHEET D22 OF 22