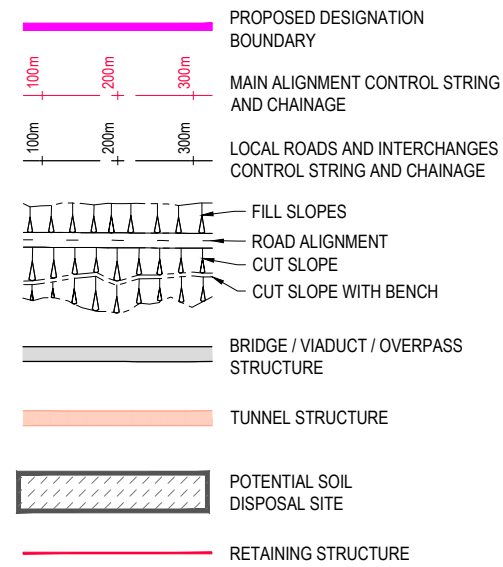


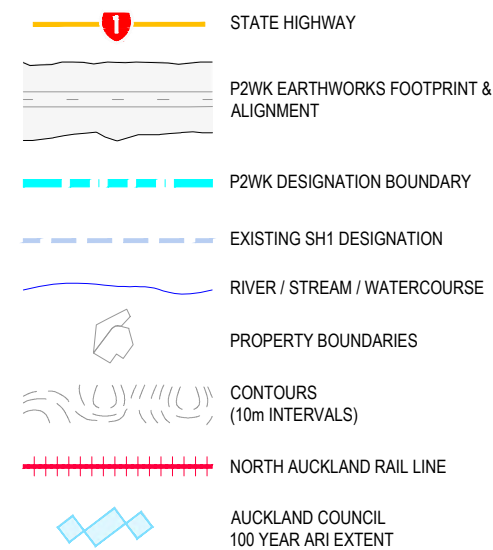
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	STORMWATER DRAWINGS
SW-001	OPERATIONAL WATER MANAGEMENT NOTES AND LEGEND - SHEET 1 OF 1
SW-011	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 1 OF 23
SW-012	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 2 OF 23
SW-013	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 3 OF 23
SW-014	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 4 OF 23
SW-015	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 5 OF 23
SW-016	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 6 OF 23
SW-017	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 7 OF 23
SW-018	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 8 OF 23
SW-019	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 9 OF 23
SW-020	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 10 OF 23
SW-021	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 11 OF 23
SW-022	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 12 OF 23
SW-023	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 13 OF 23
SW-024	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 14 OF 23
SW-025	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 15 OF 23
SW-026	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 16 OF 23
SW-027	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 17 OF 23
SW-028	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 18 OF 23
SW-029	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 19 OF 23
SW-030	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 20 OF 23
SW-031	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 21 OF 23
SW-032	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 22 OF 23
SW-033	OPERATIONAL WATER MANAGEMENT - WATER MANAGEMENT PLAN - SHEET 23 OF 23

LEGEND

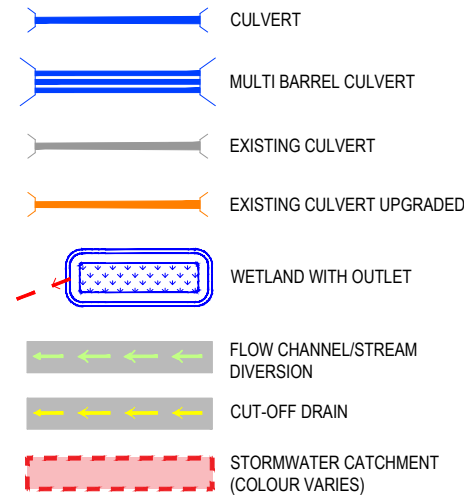
ROAD PLAN - INDICATIVE ALIGNMENT



EXISTING FEATURES



DRAINAGE - INDICATIVE ALIGNMENT



GENERAL NOTES

1. THE ALIGNMENT IS INDICATIVE ONLY.
2. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE STATED.
3. ALL NAMED ROADS ARE ASSUMED TO BE PUBLIC UNLESS STATED OTHERWISE.
4. AERIAL IMAGE FROM AUCKLAND COUNCIL AERIAL SURVEY, 2012.
5. DIGITAL TERRAIN MODEL IS COMBINED FROM AERIAL SURVEY (AUG 2010) & AUCKLAND COUNCIL LIDAR DATA TO NZTM PROJECTION.
6. EXISTING PROPERTY BOUNDARIES SOURCED FROM LINZ, MAY 2019 UPDATE.
7. ALL STREAMS WILL BE BRIDGED, CULVERTED AND/OR DIVERTED.
8. ALL SOIL DISPOSAL SITE LOCATIONS AND SHAPES ARE INDICATIVE ONLY. ALL SOIL DISPOSAL SITE WORKS ARE TO OCCUR OUTSIDE OF ANY STREAM CHANNEL.

OPERATIONAL WATER MANAGEMENT NOTES

1. SOME EXISTING CULVERTS BENEATH STATE HIGHWAY 1 ARE SHOWN, WHERE INDICATIVE DESIGN PROPOSES UPGRADES TO THESE CULVERTS. OTHER EXISTING CULVERTS BENEATH STATE HIGHWAY 1 MAY NOT BE SHOWN.
2. 100 YEAR ARI HEADWATER EXTENTS ARE NOT SHOWN AT SOIL DISPOSAL SITES, AS THE FINAL SURFACE PROFILE IS SUBJECT TO DETAILED DESIGN.
3. 100 YEAR ARI FLOOD EXTENTS SHOWN ARE BASED ON AUCKLAND COUNCIL GIS LAYER, JULY 2013, AND THEREFORE ARE WITHOUT THE PROJECT IN PLACE.
4. WATER MANAGEMENT IS NOT SHOWN FOR ACCESS TRACKS, SUCH AS THOSE PROVIDING ACCESS TO THE INDICATIVE ALIGNMENT WITHIN THE FORESTRY AREA. CROSS DRAINAGE IS TO BE MANAGED BY CULVERTING. LONGITUDINAL DRAINAGE IS TO BE MANAGED BY VEGETATED ROADSIDE DRAINS.
5. NO CULVERTS LONGER THAN 30m WILL BE LOCATED IN A SIGNIFICANT ECOLOGICAL AREA (SEA) AS IDENTIFIED IN THE AUCKLAND UNITARY PLAN. CULVERTS LOCATIONS ARE INDICATIVE ONLY.
6. CULVERT INFORMATION - REFER TO CULVERT SUMMARY TABLE IN STORMWATER REPORT.
7. WETLAND SHAPE IS INDICATIVE ONLY TO PRESENT PROPOSED LOCATION AND SIZING. SHAPING TO CONTOURS IS SUBJECT TO DETAILED DESIGN.
8. STREAM DIVERSIONS AND CUT OFF DRAINS ARE BASED OFF EXISTING CONTOURS. WHERE A SOIL DISPOSAL SITE IS TO BE USED, THE STREAM DIVERSION OR CUT OFF DRAIN SHALL BE AMENDED TO SUIT.

0	ISSUED FOR RMA APPROVALS	WAS	FCW*	BN*	07/19	
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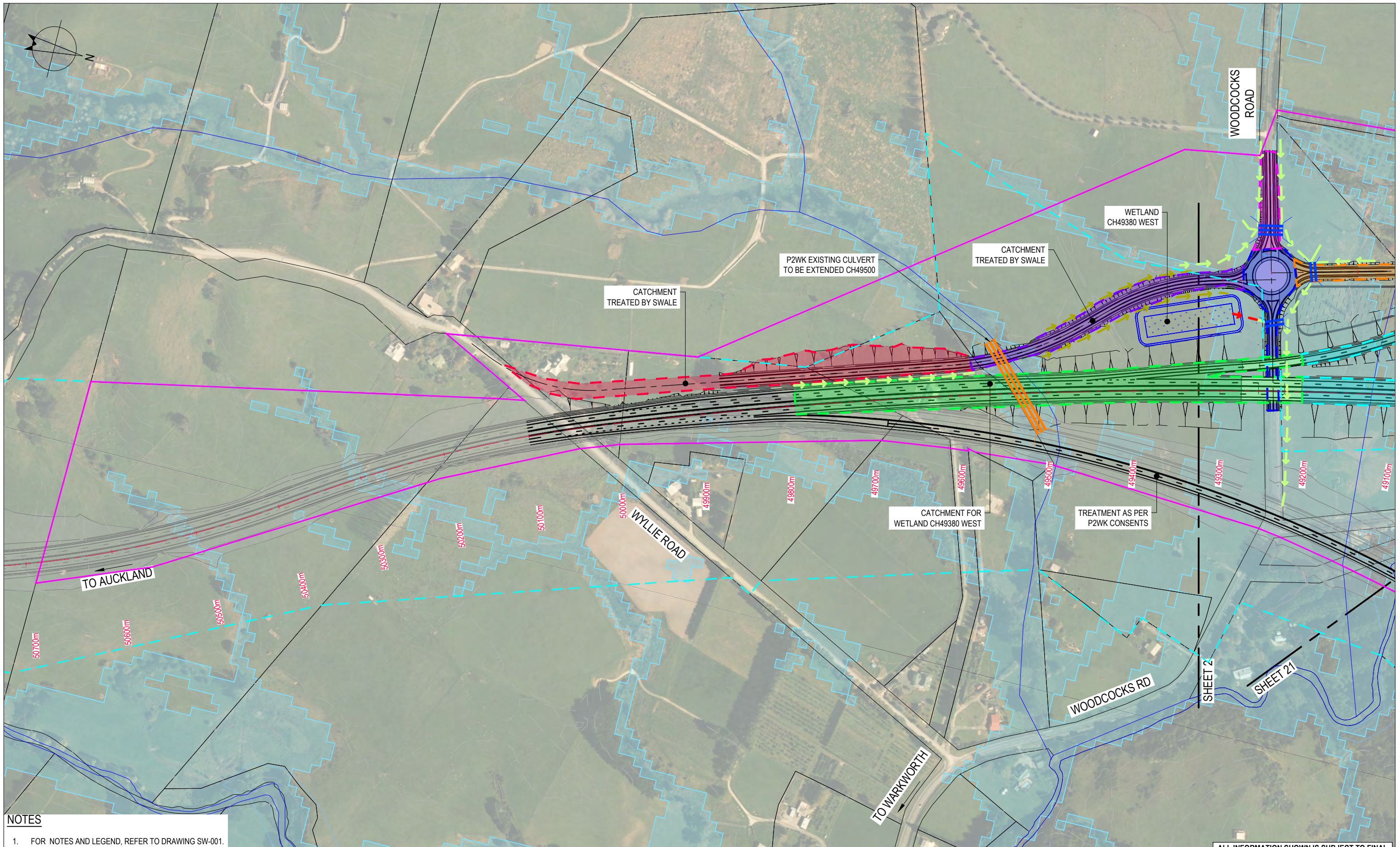
FOR RMA APPROVALS

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Approved BN*		Date JULY 2019	
Scale NTS	This Drawing must not be used for Construction unless signed as Approved		Original Size A1

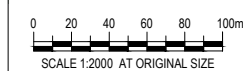
Project **WARKWORTH TO WELLSFORD PROJECT**

Title **OPERATIONAL WATER MANAGEMENT NOTES AND LEGEND**

Contract: **PA4156** Drawing No: **SW-001** Sheet: **1 OF 1** Rev: **0**



NOTES
 1. FOR NOTES AND LEGEND, REFER TO DRAWING SW-001.



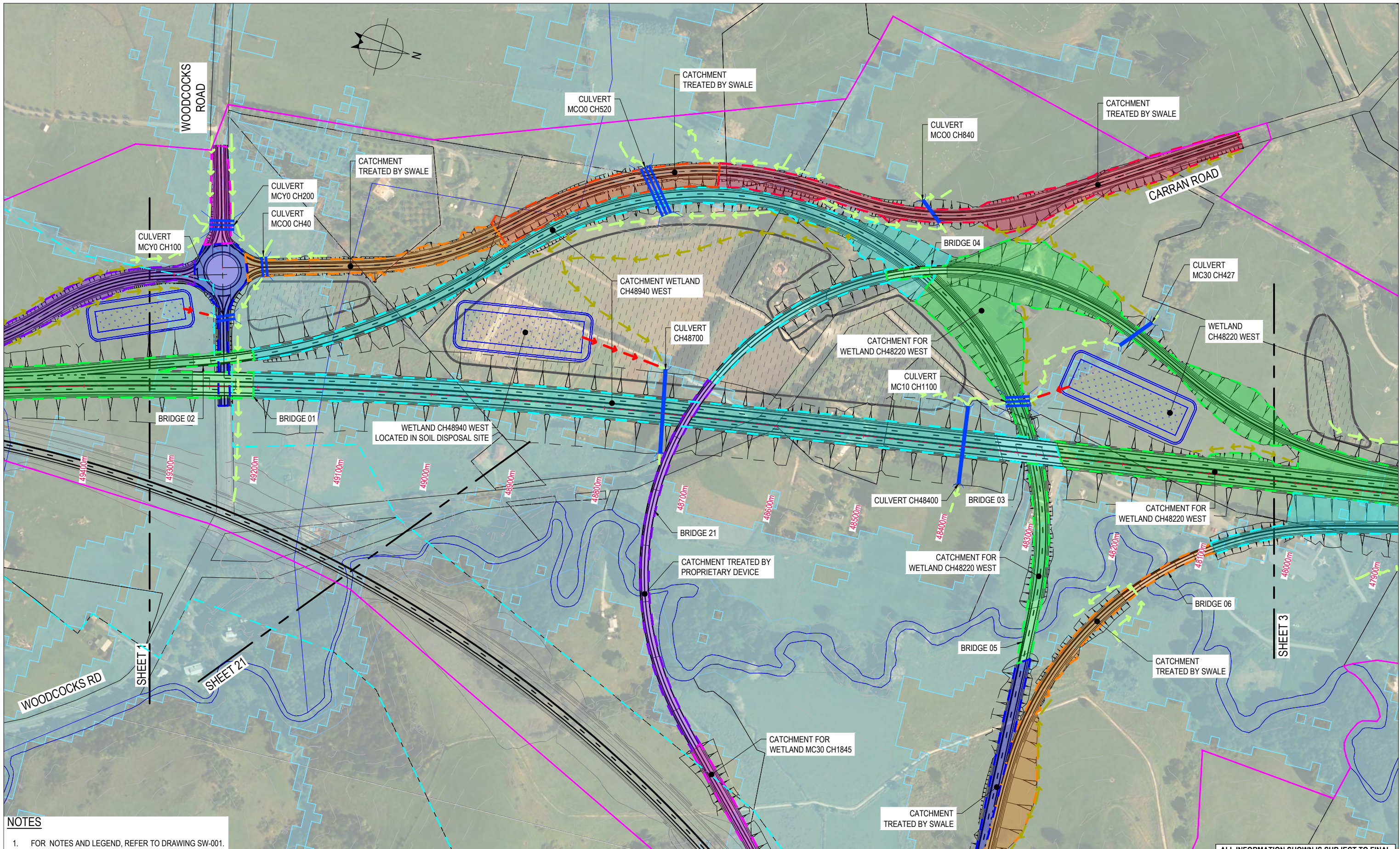
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No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Checked	Approved	Date



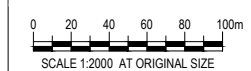
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Project	WARKWORTH TO WELLSFORD PROJECT		
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN		
Contract:	PA4156	Drawing No:	SW-011
Sheet:	1 OF 23	Rev:	0



NOTES
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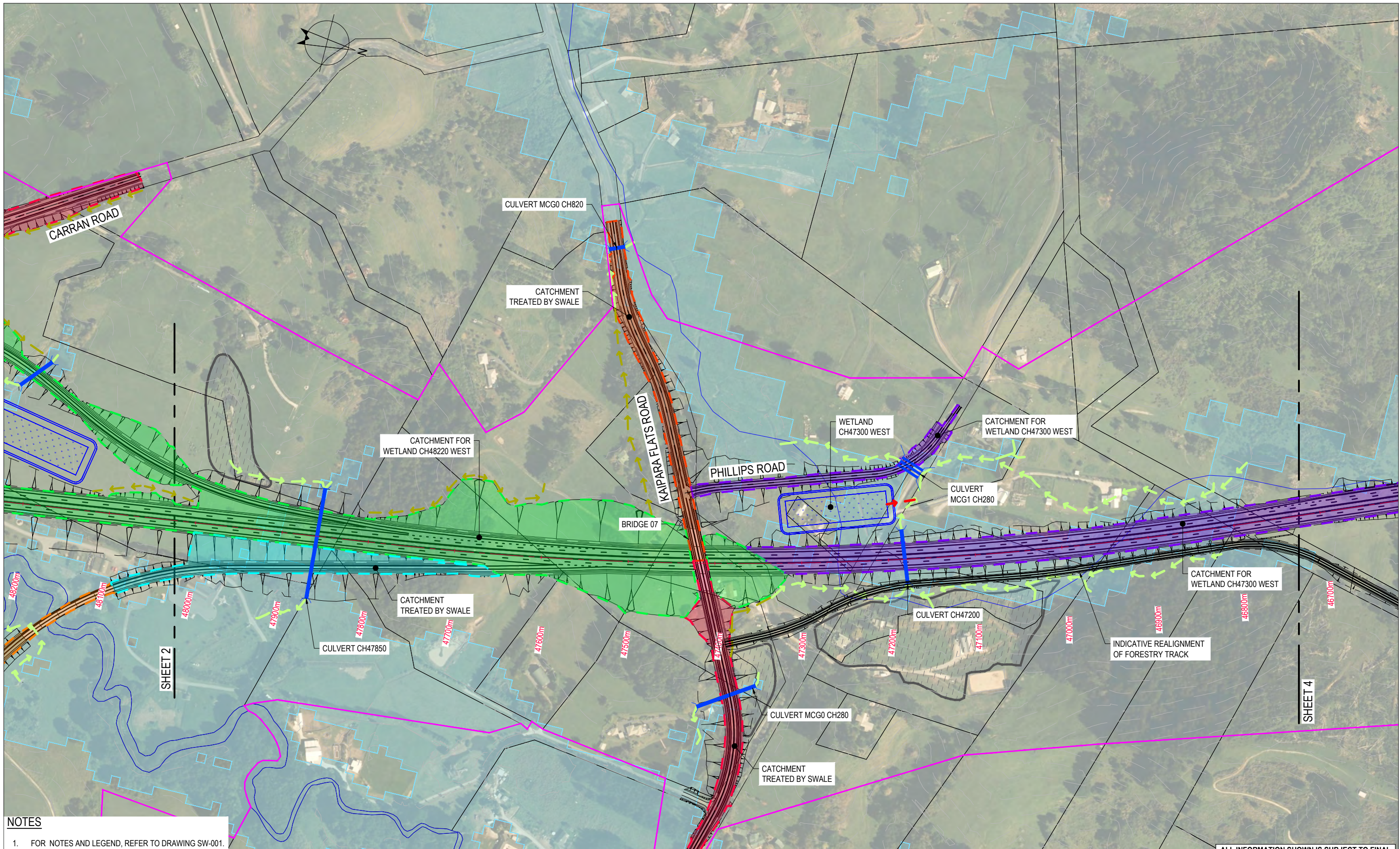
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0		ISSUED FOR RMA APPROVALS	WAS	FCW*	BN*	07/19



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Approved BN*	Date JULY 2019		Original Size
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Project	WARKWORTH TO WELLSFORD PROJECT		
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN		
Contract:	PA4156	Drawing No:	SW-012
Sheet:	2 OF 23	Rev:	0



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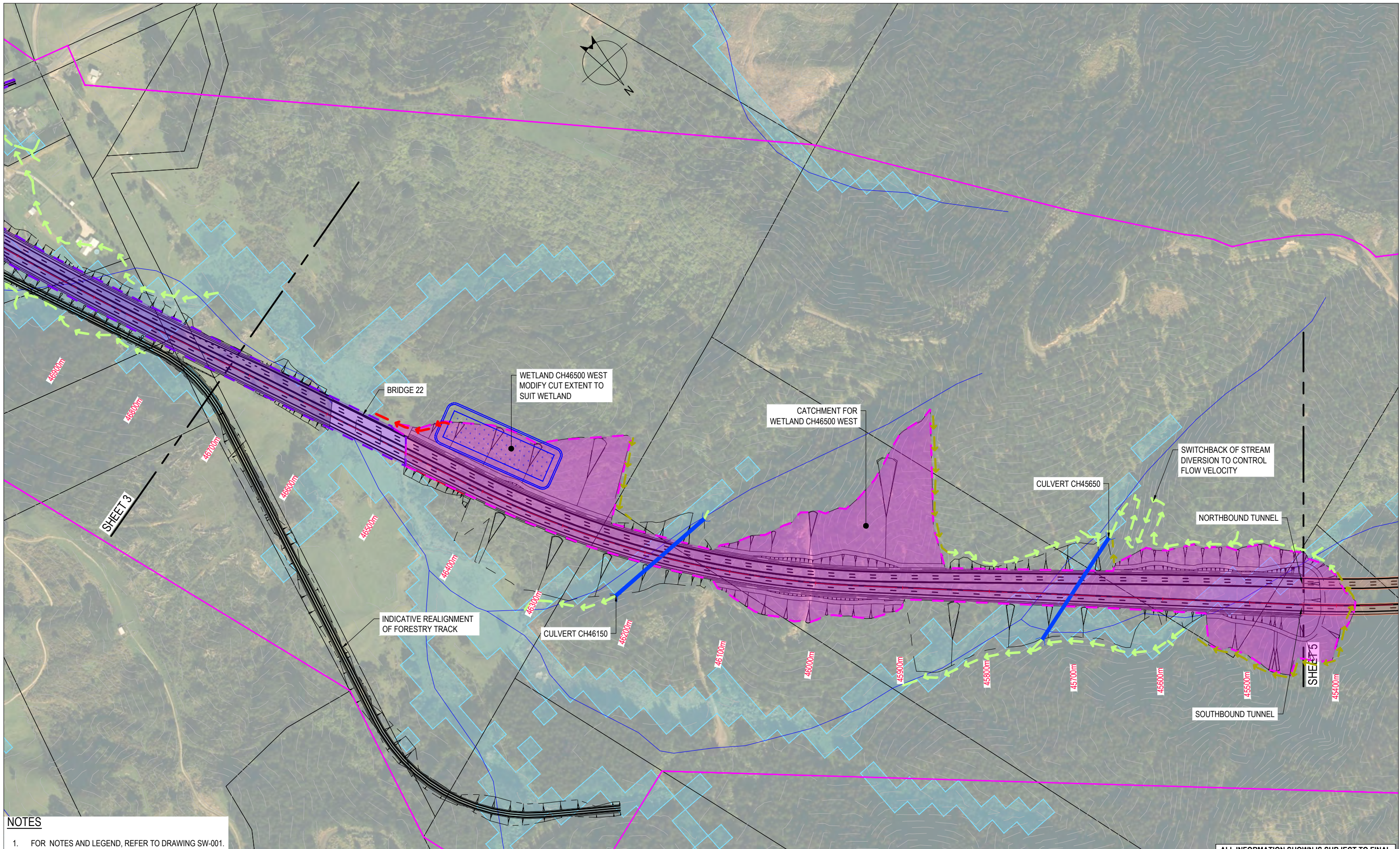
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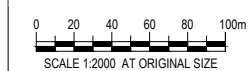
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Project	WARKWORTH TO WELLSFORD PROJECT		
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN		
Contract:	PA4156	Drawing No:	SW-013
Sheet:	3 OF 23	Rev:	0



NOTES

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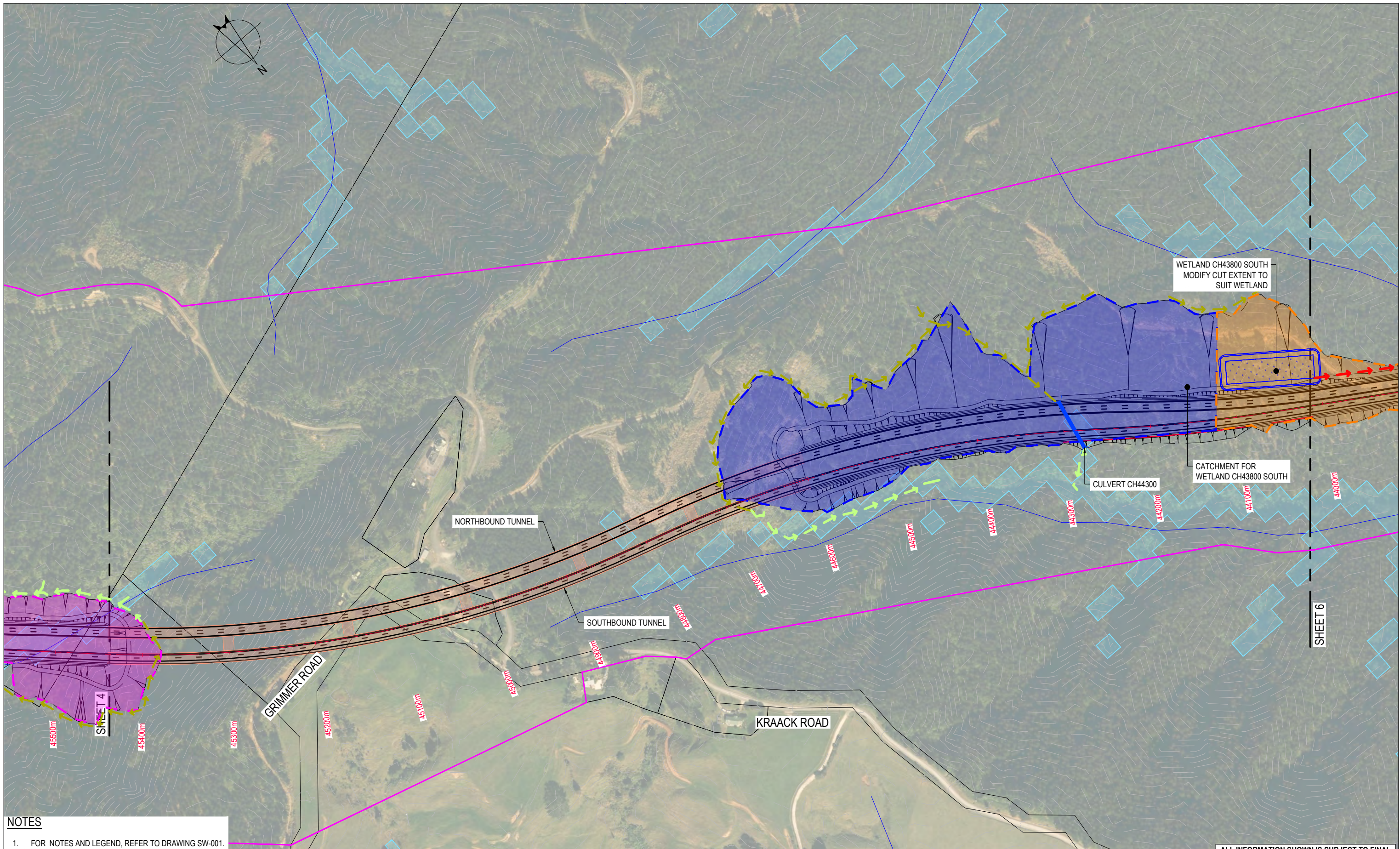


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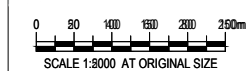
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Project	WARKWORTH TO WELLSFORD PROJECT			
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN			
Contract:	PA4156	Drawing No:	SW-014	Sheet: 4 OF 23
Rev:	0			



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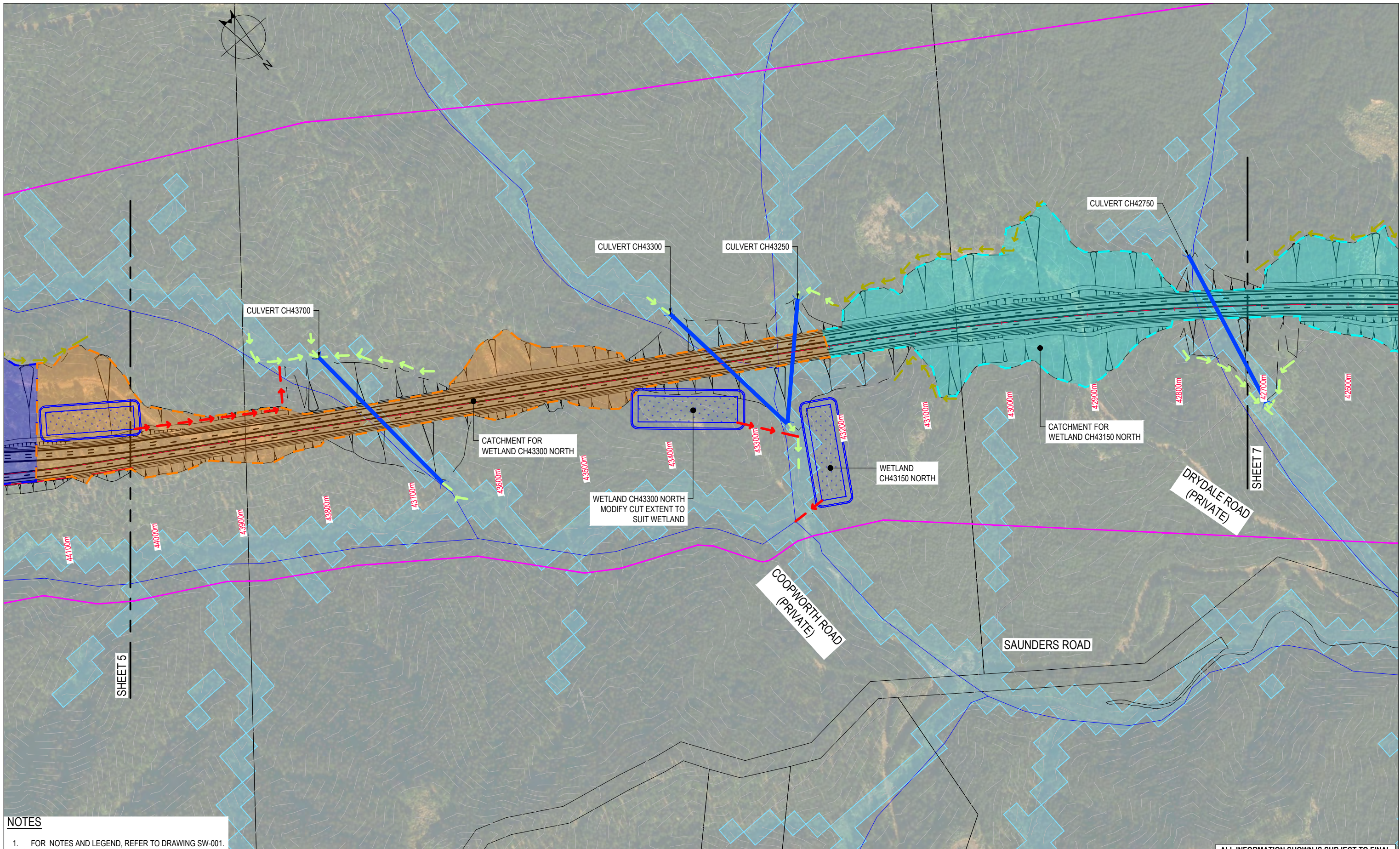
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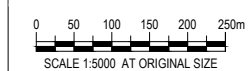
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Project	WARKWORTH TO WELLSFORD PROJECT			
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN			
Contract:	PA4156	Drawing No:	SW-015	Sheet: 5 OF 23 Rev: 0



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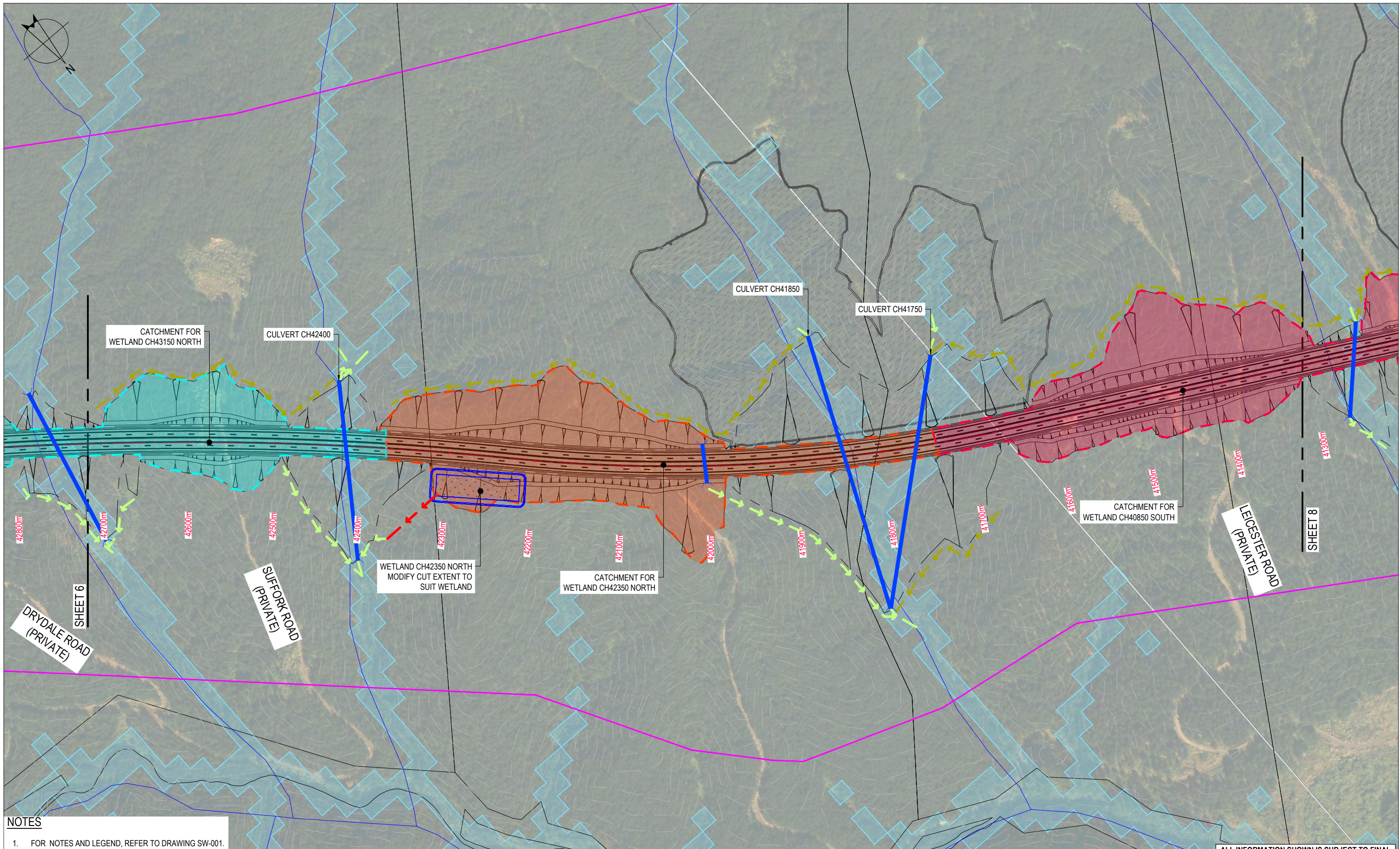
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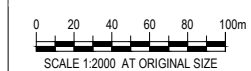
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Project	WARKWORTH TO WELLSFORD PROJECT		
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN		
Contract:	PA4156	Drawing No:	SW-016
Sheet:	6 OF 23	Rev:	0



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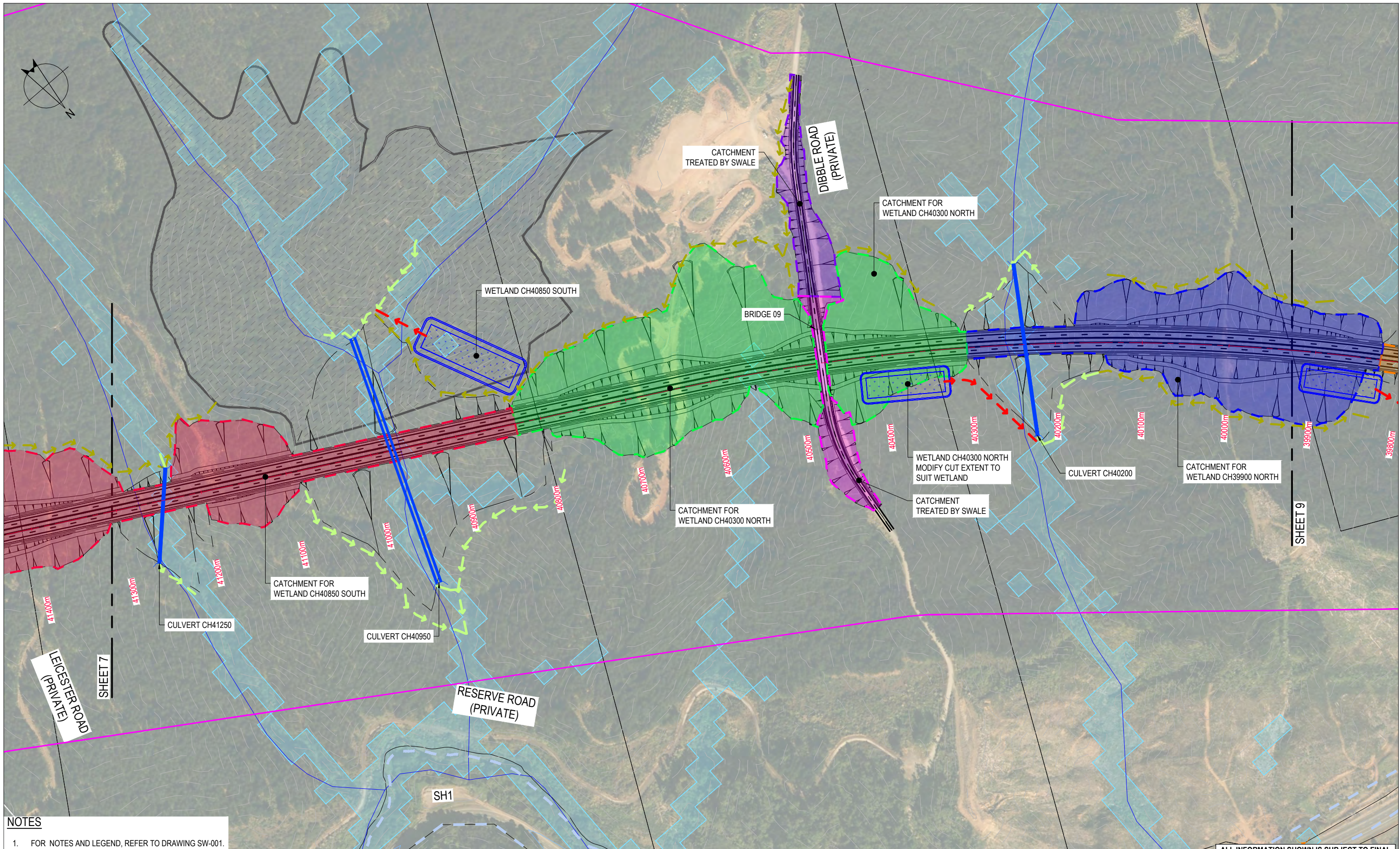
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Project	WARKWORTH TO WELLSFORD PROJECT		
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN		
Contract:	PA4156	Drawing No:	SW-017
Sheet:	7 OF 23	Rev:	0



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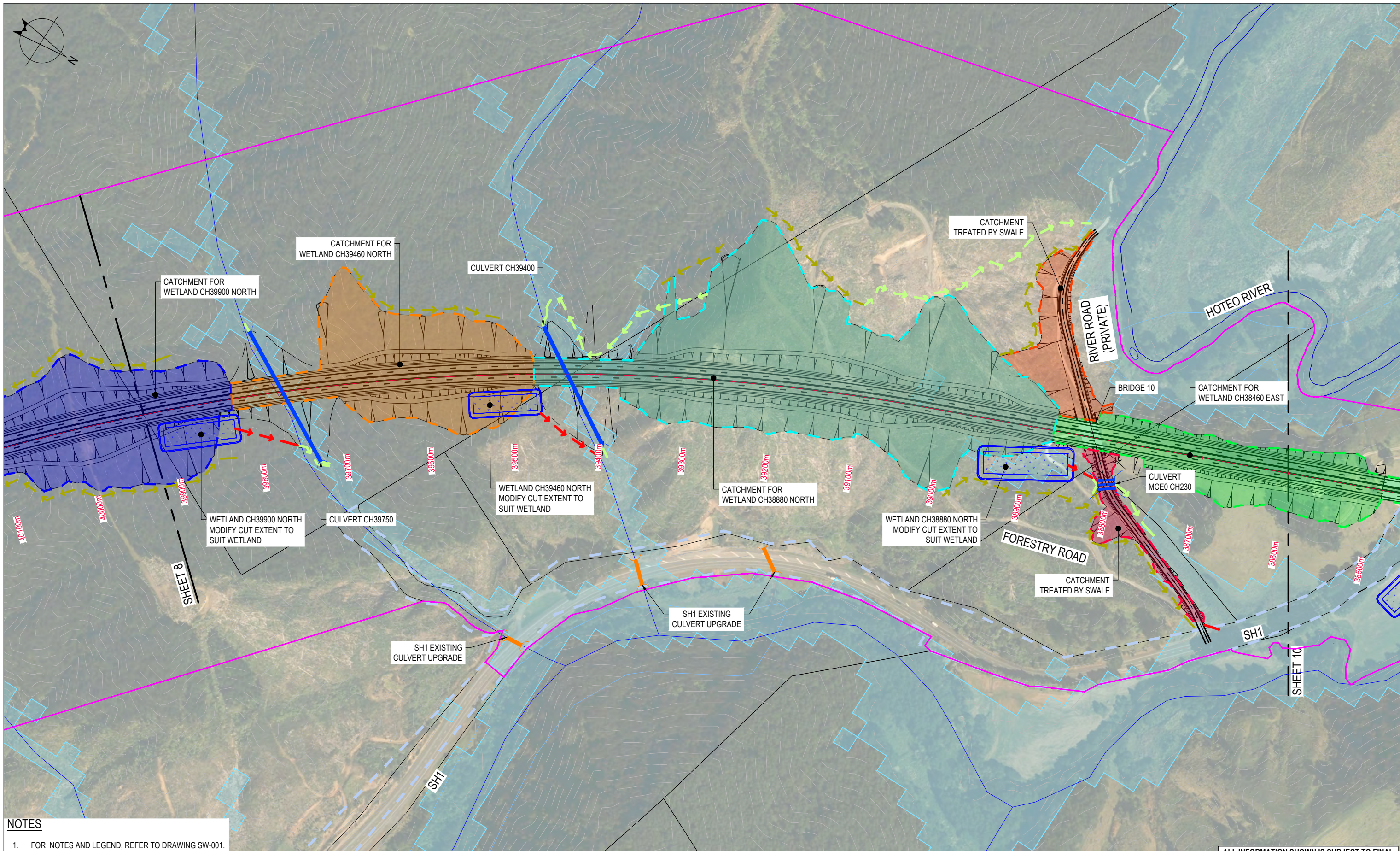
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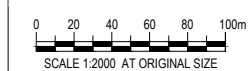
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Project	WARKWORTH TO WELLSFORD PROJECT		
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN		
Contract:	PA4156	Drawing No:	SW-018
Sheet:	8 OF 23	Rev:	0



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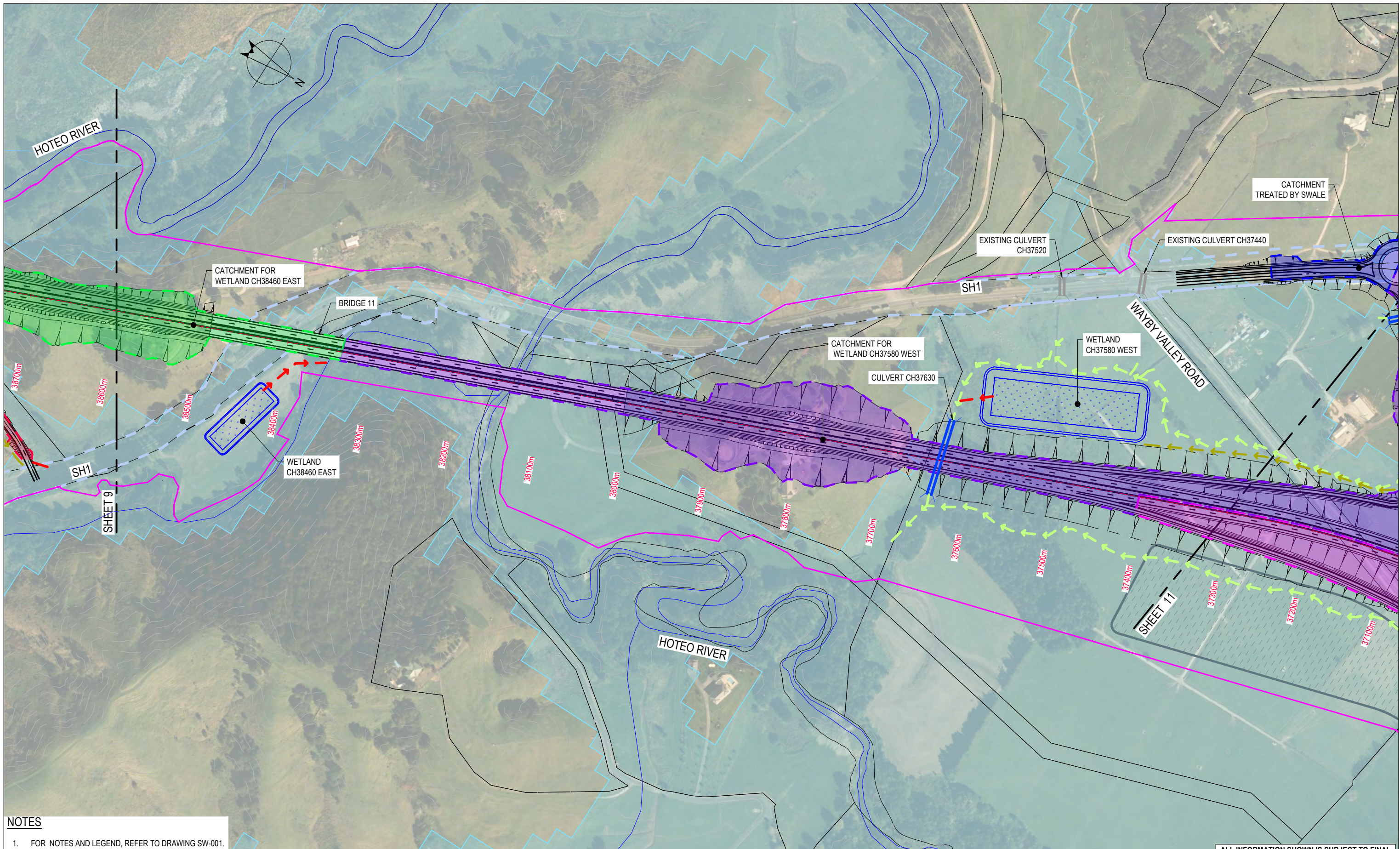
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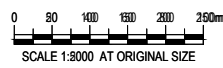
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Project	WARKWORTH TO WELLSFORD PROJECT		
Title	OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN		
Contract:	PA4156	Drawing No:	SW-019
Sheet:	9 OF 23	Rev:	0



NOTES

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Project **WARKWORTH TO WELLSFORD PROJECT**

Title **OPERATIONAL WATER MANAGEMENT WATER MANAGEMENT PLAN**

Contract: **PA4156** Drawing No: **SW-020** Sheet: **10 OF 23** Rev: **0**