

OTEHA VALLEY TO MCCLYMONTS (OV2M)	
IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	3.32
NEW HIGH USE ROAD	0.13
NEW BUSWAY & SHARED-USE PATH	0.98
TOTAL IMP	4.44
TREATMENT	(ha)
EXISTING HIGH USE ROAD	3.32
PROPOSED HIGH USE ROAD	3.45
(100% OF NEW HIGH USE ROAD TREATED)	
(100% OF TOTAL HIGH USE ROAD TREATED)	

EXISTING ALPURT A1 POND 29 (RETAINED)
NOT AFFECTED BY PROPOSED WORK. NO
CHANGES PROPOSED TO EXISTING
WETLAND CATCHMENTS

OTEHA VALLEY EAST WETLAND	
CATCHMENT AREA	(ha)
IMPERVIOUS	1.71
PERVIOUS	0.02
AREA TREATED	(ha)
HIGH USE ROADS POST-DEV	0.74
VOLUMES	(m3)
WATER QUALITY VOLUME	480
DETENTION VOLUME	420
TOTAL LIVE VOLUME	1345

EXISTING ALPURT A1 POND 30 (RETAINED)	
CATCHMENT AREA	(ha)
IMPERVIOUS	2.28
PERVIOUS	1.04
AREA TREATED	(ha)
HIGH USE ROADS PRE-DEV	2.62
HIGH USE ROADS POST-DEV	2.28
VOLUMES	(m3)
WATER QUALITY VOLUME	295
DETENTION VOLUME	550
TOTAL LIVE VOLUME	1670

OTEHA VALLEY WEST WETLAND	
CATCHMENT AREA	(ha)
IMPERVIOUS	0.43
PERVIOUS	0.00
AREA TREATED	(ha)
HIGH USE ROADS POST-DEV	0.43
VOLUMES	(m3)
WATER QUALITY VOLUME	150
DETENTION VOLUME	105
TOTAL LIVE VOLUME	495

NOTES

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- CATCHMENT AREAS FOR EXISTING PONDS ARE NOT SHOWN ON THIS DRAWING SET.
- CATCHMENT BOUNDARIES INCLUDE BOTH IMPERVIOUS AND PERVIOUS AREAS. HIGHLIGHTED AREAS INDICATE IMPERVIOUS AREAS PROPOSED TO BE MITIGATED.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE STORMWATER LAYOUT PLANS (DRG-1400 SERIES).

LEGEND

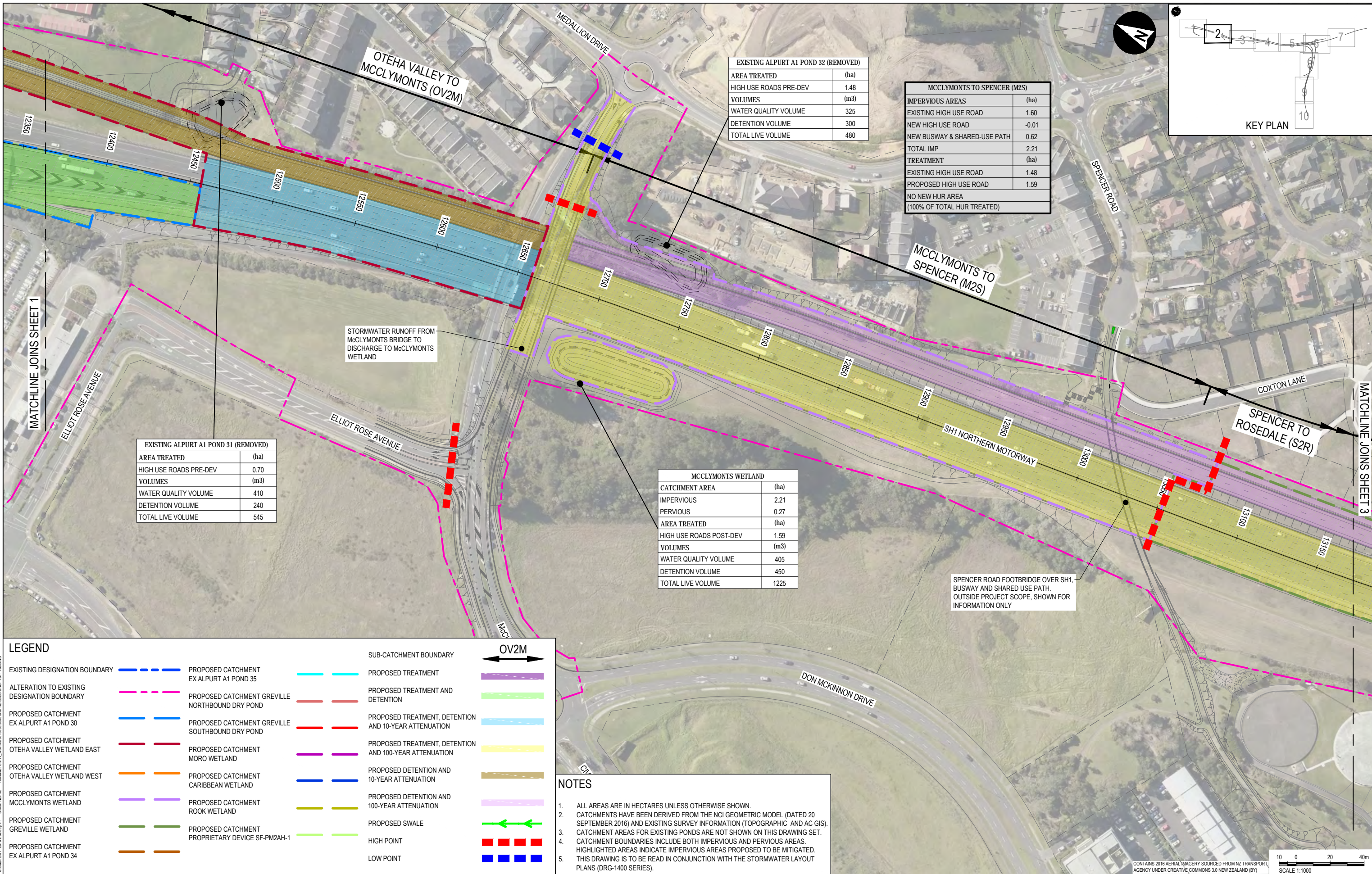
EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT EX ALPURT A1 POND 35	SUB-CATCHMENT BOUNDARY	OV2M
ALTERATION TO EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND	PROPOSED TREATMENT	
PROPOSED CATCHMENT EX ALPURT A1 POND 30	PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND	PROPOSED TREATMENT AND DETENTION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST	PROPOSED CATCHMENT MORO WETLAND	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST	PROPOSED CATCHMENT CARIBBEAN WETLAND	PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT MCCLYMONT'S WETLAND	PROPOSED CATCHMENT ROOK WETLAND	PROPOSED DETENTION AND 10-YEAR ATTENUATION	
PROPOSED CATCHMENT GREVILLE WETLAND	PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1	PROPOSED DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT EX ALPURT A1 POND 34		PROPOSED SWALE	
		HIGH POINT	
		LOW POINT	

File Name: C:\PM\WORK\0310\0310\SPR\0310\SPR_0310_1451_1460.DWG
 Plot Date: 24/11/2016 12:55:30 p.m. Office: NZAL



REV	DATE	REVISION DETAILS	APPROVED	SCALE	SIZE	PROJECT	TITLE
A	17.10.16	PRELIMINARY ISSUE	G. MOORE	1:1000	A1	NORTHERN CORRIDOR IMPROVEMENTS	STORMWATER CATCHMENT PLAN SHEET 1
B	24.11.16	CONSENT ISSUE	J. HIND				
				DRAWN		APPROVED	
				B. LI		DATE	17/10/16
				DESIGNED		J. HIND	
				M. YU		J. HIND	
				CHECKED			
				D. MACKINSTOSH			
DRAWING No.	PROJECT No.	STAGE	WP	TYPE	NUMBER	REV	
250310	250310	3PRE	3DES	DRG	1451	B	

CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000



Project: 24/11/2016 2:20:59 p.m. Office: NZAK
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CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000

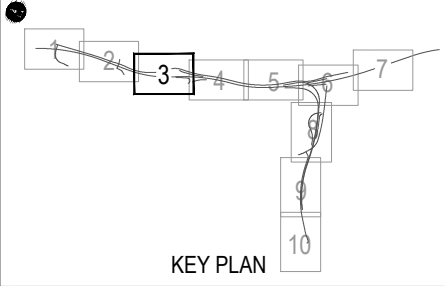
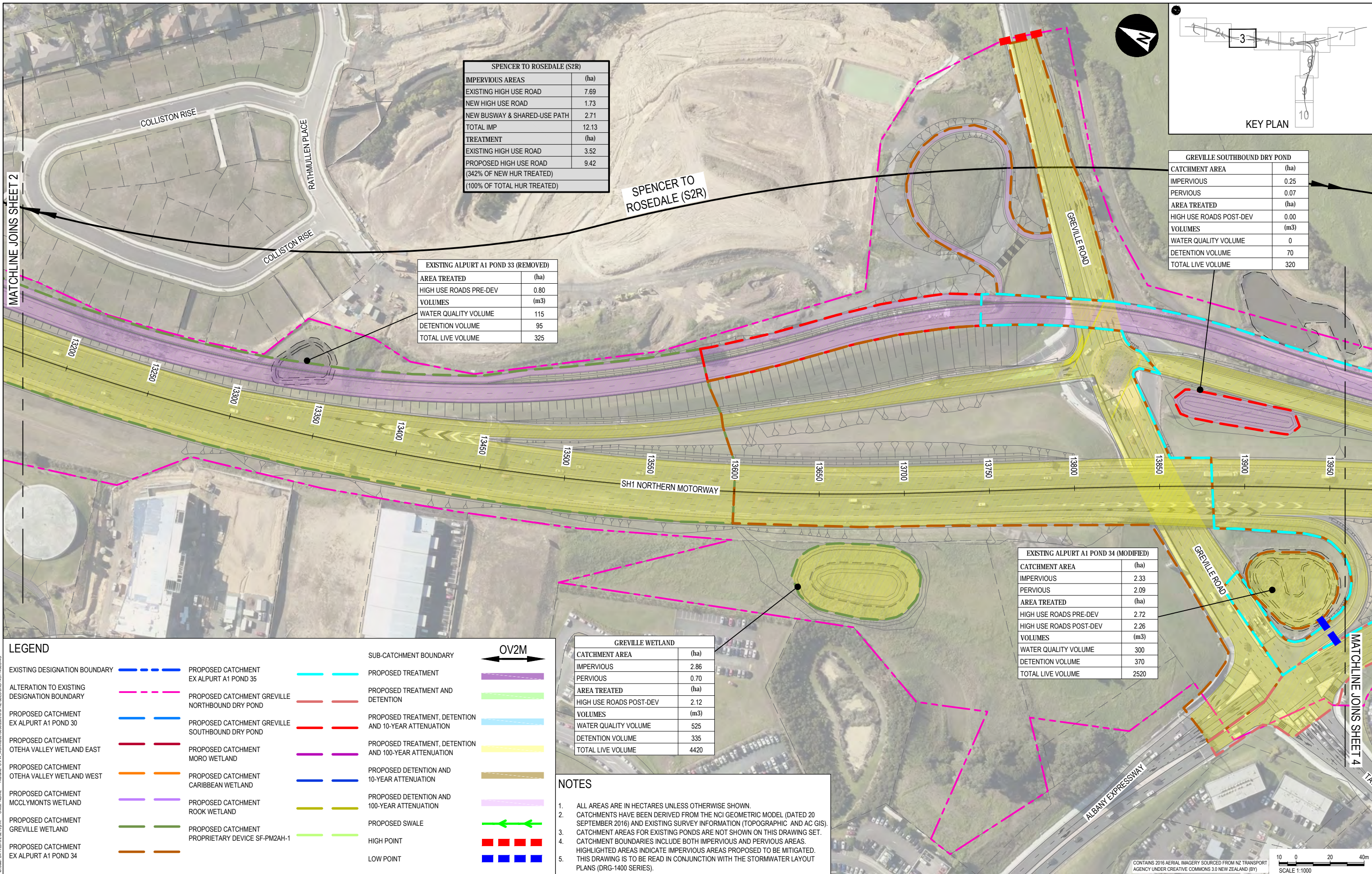


REV	DATE	REVISION DETAILS	APPROVED
A	17.10.16	PRELIMINARY ISSUE	G. MOORE
B	24.11.16	CONSENT ISSUE	J. HIND

SCALE	SIZE
1:1000	A1
DRAWN	
B. LI	
DESIGNED	
M. YU	
CHECKED	
D. MACKINSTOSH	

PRELIMINARY NOT FOR CONSTRUCTION	
APPROVED	DATE
J. HIND	17/10/16
J. HIND	

CLIENT	PROJECT
NORTHERN CORRIDOR IMPROVEMENTS	NORTHERN CORRIDOR IMPROVEMENTS
TITLE	STORMWATER CATCHMENT PLAN SHEET 2
DRAWING No.	250310
PROJECT No.	3PRE
STAGE	3DES
WP	DRG
TYPE	1452
NUMBER	
REV	B



SPENCER TO ROSEDALE (S2R)	
IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	7.69
NEW HIGH USE ROAD	1.73
NEW BUSWAY & SHARED-USE PATH	2.71
TOTAL IMP	12.13
TREATMENT	(ha)
EXISTING HIGH USE ROAD	3.52
PROPOSED HIGH USE ROAD (342% OF NEW HUR TREATED)	9.42
(100% OF TOTAL HUR TREATED)	

EXISTING ALPURAT A1 POND 33 (REMOVED)	
AREA TREATED	(ha)
HIGH USE ROADS PRE-DEV	0.80
VOLUMES	(m3)
WATER QUALITY VOLUME	115
DETENTION VOLUME	95
TOTAL LIVE VOLUME	325

GREVILLE SOUTHBOUND DRY POND	
CATCHMENT AREA	(ha)
IMPERVIOUS	0.25
PERVIOUS	0.07
AREA TREATED	(ha)
HIGH USE ROADS POST-DEV	0.00
VOLUMES	(m3)
WATER QUALITY VOLUME	0
DETENTION VOLUME	70
TOTAL LIVE VOLUME	320

EXISTING ALPURAT A1 POND 34 (MODIFIED)	
CATCHMENT AREA	(ha)
IMPERVIOUS	2.33
PERVIOUS	2.09
AREA TREATED	(ha)
HIGH USE ROADS PRE-DEV	2.72
HIGH USE ROADS POST-DEV	2.26
VOLUMES	(m3)
WATER QUALITY VOLUME	300
DETENTION VOLUME	370
TOTAL LIVE VOLUME	2520

GREVILLE WETLAND	
CATCHMENT AREA	(ha)
IMPERVIOUS	2.86
PERVIOUS	0.70
AREA TREATED	(ha)
HIGH USE ROADS POST-DEV	2.12
VOLUMES	(m3)
WATER QUALITY VOLUME	525
DETENTION VOLUME	335
TOTAL LIVE VOLUME	4420

LEGEND	
EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT EX ALPURAT A1 POND 35
ALTERATION TO EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND
PROPOSED CATCHMENT EX ALPURAT A1 POND 30	PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST	PROPOSED CATCHMENT MORO WETLAND
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST	PROPOSED CATCHMENT CARIBBEAN WETLAND
PROPOSED CATCHMENT MCCLYMONT'S WETLAND	PROPOSED CATCHMENT ROOK WETLAND
PROPOSED CATCHMENT GREVILLE WETLAND	PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1
PROPOSED CATCHMENT EX ALPURAT A1 POND 34	
SUB-CATCHMENT BOUNDARY	PROPOSED TREATMENT
	PROPOSED TREATMENT AND DETENTION
	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION
	PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION
	PROPOSED DETENTION AND 10-YEAR ATTENUATION
	PROPOSED DETENTION AND 100-YEAR ATTENUATION
	PROPOSED SWALE
	HIGH POINT
	LOW POINT

NOTES

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Project: C:\PM\WORK\003\19\08\2010\SPRE_3016_DRG-1451-1480.DWG
 Date: 24/11/2016 12:52:19 p.m. Office: NZAK



CLIENT	REV	DATE	REVISION DETAILS	APPROVED	SCALE	SIZE	PRELIMINARY	PROJECT
	A	17.10.16	PRELIMINARY ISSUE	G. MOORE	1:1000	A1	NOT FOR CONSTRUCTION	NORTHERN CORRIDOR IMPROVEMENTS
	B	24.11.16	CONSENT ISSUE	J. HIND				
					DRAWN B. LI		APPROVED	PROJECT
					DESIGNED M. YU		DATE 17/10/16	TITLE
					CHECKED D. MACKINSTOSH		J. HIND	STORMWATER CATCHMENT PLAN SHEET 3
							J. HIND	DRAWING No.
								PROJECT No.
								STAGE
								WP
								TYPE
								NUMBER
								REV

CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000

NOTES

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4. CATCHMENT BOUNDARIES INCLUDE BOTH IMPERVIOUS AND PERVIOUS AREAS.
5. HIGHLIGHTED AREAS INDICATE IMPERVIOUS AREAS PROPOSED TO BE MITIGATED. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE STORMWATER LAYOUT PLANS (DRG-1400 SERIES).

EXISTING ALPURT A1 POND 35 (MODIFIED)	
CATCHMENT AREA	(ha)
IMPERVIOUS	4.61
PERVIOUS	1.78
AREA TREATED	(ha)
HIGH USE ROADS PRE-DEV	0.00
HIGH USE ROADS POST-DEV	0.00
VOLUMES	(m3)
WATER QUALITY VOLUME	230
DETENTION VOLUME	595
TOTAL LIVE VOLUME	2800

PROPOSED PROPRIETARY DEVICE TO PROVIDE WATER QUALITY TREATMENT PRIOR TO DISCHARGING TO EXISTING ALPURT A1 POND 35 FOR WATER QUANTITY MANAGEMENT

PROPRIETARY DEVICE SF-S2R-1	
CATCHMENT AREA	(ha)
IMPERVIOUS	5.21
PERVIOUS	2.26
AREA TREATED	(ha)
HIGH USE ROADS PRE-DEV	0.00
HIGH USE ROADS POST-DEV	4.02

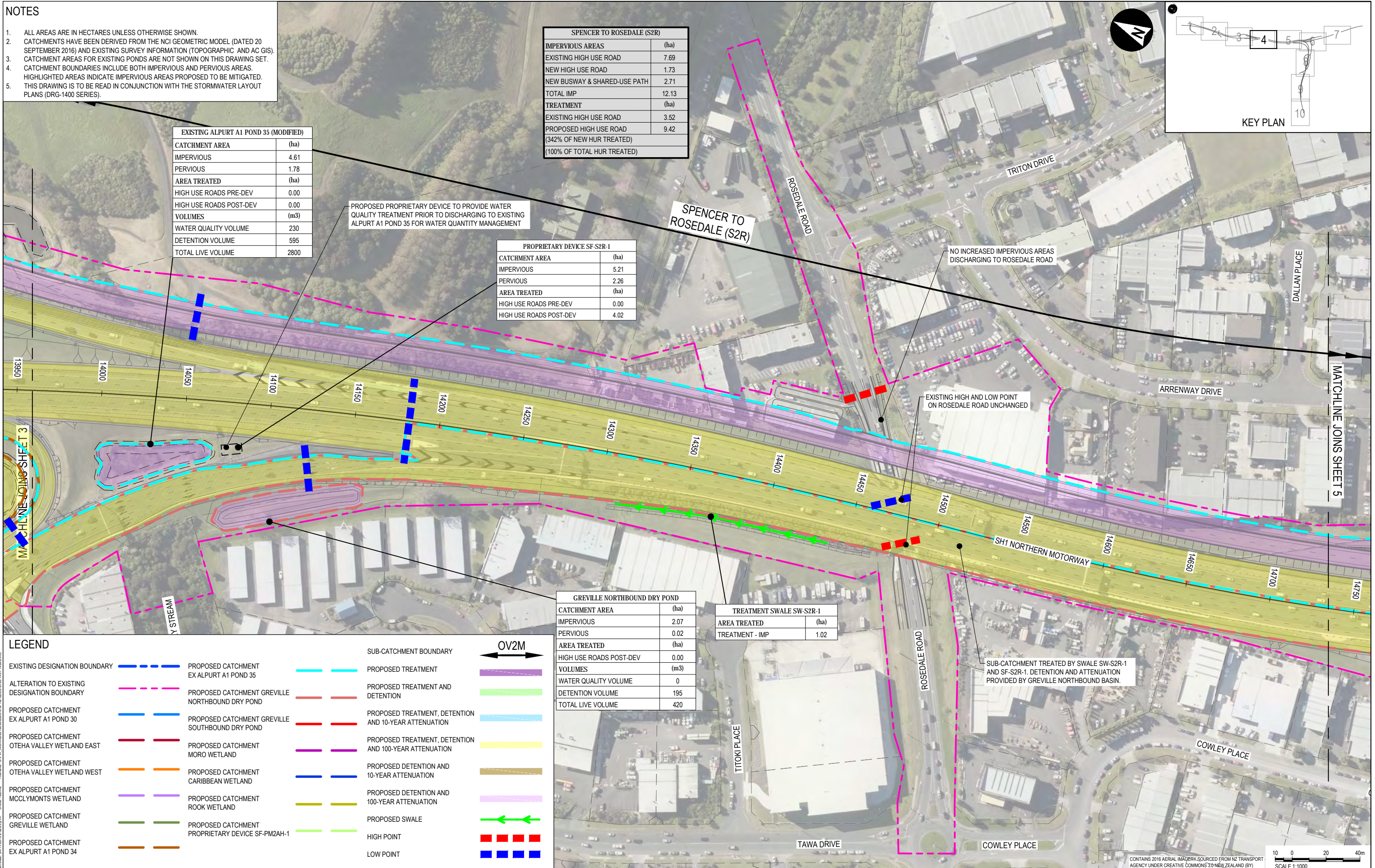
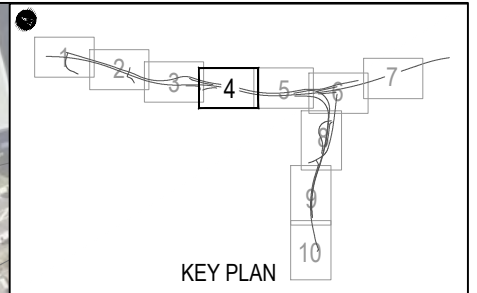
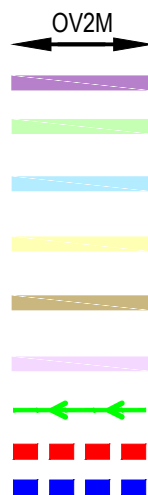
SPENCER TO ROSEDALE (S2R)	
IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	7.69
NEW HIGH USE ROAD	1.73
NEW BUSWAY & SHARED-USE PATH	2.71
TOTAL IMP	12.13
TREATMENT	(ha)
EXISTING HIGH USE ROAD	3.52
PROPOSED HIGH USE ROAD	9.42
(342% OF NEW HUR TREATED)	
(100% OF TOTAL HUR TREATED)	

GREVILLE NORTHBOUND DRY POND	
CATCHMENT AREA	(ha)
IMPERVIOUS	2.07
PERVIOUS	0.02
AREA TREATED	(ha)
HIGH USE ROADS POST-DEV	0.00
VOLUMES	(m3)
WATER QUALITY VOLUME	0
DETENTION VOLUME	195
TOTAL LIVE VOLUME	420

TREATMENT SWALE SW-S2R-1	
AREA TREATED	(ha)
TREATMENT - IMP	1.02

LEGEND

EXISTING DESIGNATION BOUNDARY	— — — — —	PROPOSED CATCHMENT EX ALPURT A1 POND 35	— — — — —	SUB-CATCHMENT BOUNDARY	— — — — —
ALTERATION TO EXISTING DESIGNATION BOUNDARY	— — — — —	PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND	— — — — —	PROPOSED TREATMENT	— — — — —
PROPOSED CATCHMENT EX ALPURT A1 POND 30	— — — — —	PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND	— — — — —	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	— — — — —
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST	— — — — —	PROPOSED CATCHMENT MORO WETLAND	— — — — —	PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION	— — — — —
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST	— — — — —	PROPOSED CATCHMENT CARIBBEAN WETLAND	— — — — —	PROPOSED DETENTION AND 10-YEAR ATTENUATION	— — — — —
PROPOSED CATCHMENT MCCLYMONT'S WETLAND	— — — — —	PROPOSED CATCHMENT ROOK WETLAND	— — — — —	PROPOSED DETENTION AND 100-YEAR ATTENUATION	— — — — —
PROPOSED CATCHMENT GREVILLE WETLAND	— — — — —	PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1	— — — — —	PROPOSED SWALE	— — — — —
PROPOSED CATCHMENT EX ALPURT A1 POND 34	— — — — —			HIGH POINT	— — — — —
				LOW POINT	— — — — —

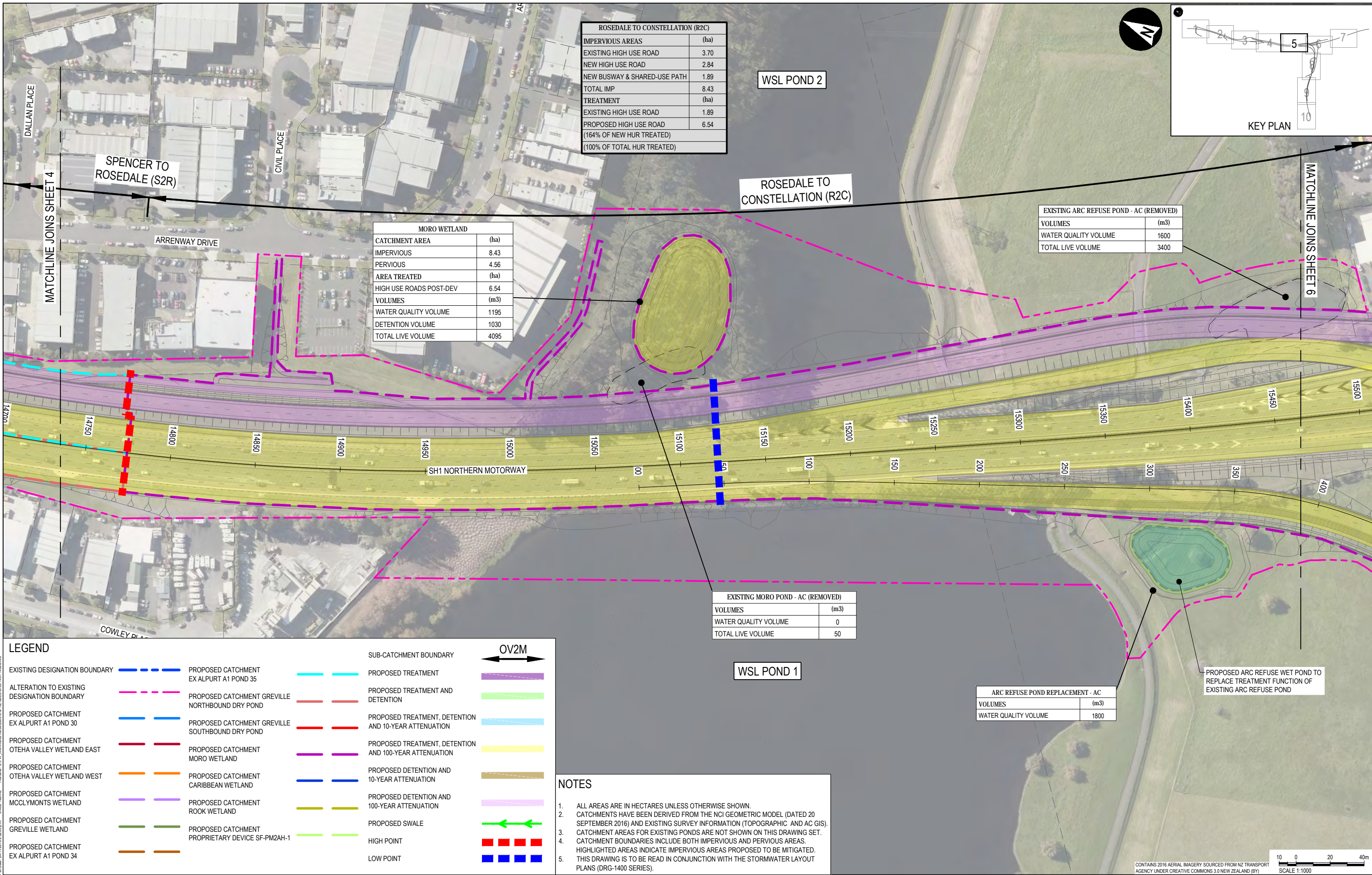


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CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000



REV	DATE	REVISION DETAILS	APPROVED	SCALE	SIZE	PROJECT	TITLE
A	17.10.16	PRELIMINARY ISSUE	G. MOORE	1:1000	A1	NORTHERN CORRIDOR IMPROVEMENTS	STORMWATER CATCHMENT PLAN SHEET 4
B	24.11.16	CONSENT ISSUE	J. HIND				
				DRAWN		PRELIMINARY NOT FOR CONSTRUCTION	DATE
				B. LI		APPROVED	17/10/16
				DESIGNED		J. HIND	
				M. YU		J. HIND	
				CHECKED			
				D. MACKINSTOSH			
DRAWING No.	PROJECT No.	STAGE	WP	TYPE	NUMBER	REV	
	250310	3PRE	3DES	DRG	1454	B	



ROSEDALE TO CONSTELLATION (R2C)	
IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	3.70
NEW HIGH USE ROAD	2.84
NEW BUSWAY & SHARED-USE PATH	1.89
TOTAL IMP	8.43
TREATMENT	(ha)
EXISTING HIGH USE ROAD	1.89
PROPOSED HIGH USE ROAD	6.54
(164% OF NEW HUR TREATED)	
(100% OF TOTAL HUR TREATED)	

MORO WETLAND	
CATCHMENT AREA	(ha)
IMPERVIOUS	8.43
PERVIOUS	4.56
AREA TREATED	(ha)
HIGH USE ROADS POST-DEV	6.54
VOLUMES	(m3)
WATER QUALITY VOLUME	1195
DETENTION VOLUME	1030
TOTAL LIVE VOLUME	4095

EXISTING ARC REFUSE POND - AC (REMOVED)	
VOLUMES	(m3)
WATER QUALITY VOLUME	1600
TOTAL LIVE VOLUME	3400

EXISTING MORO POND - AC (REMOVED)	
VOLUMES	(m3)
WATER QUALITY VOLUME	0
TOTAL LIVE VOLUME	50

ARC REFUSE POND REPLACEMENT - AC	
VOLUMES	(m3)
WATER QUALITY VOLUME	1800

LEGEND				
EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT EX ALPURT A1 POND 35	SUB-CATCHMENT BOUNDARY	PROPOSED TREATMENT	OV2M
ALTERATION TO EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND	PROPOSED TREATMENT AND DETENTION	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	
PROPOSED CATCHMENT EX ALPURT A1 POND 30	PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST	PROPOSED CATCHMENT MORO WETLAND	PROPOSED DETENTION AND 10-YEAR ATTENUATION	PROPOSED DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST	PROPOSED CATCHMENT CARIBBEAN WETLAND	PROPOSED DETENTION AND 10-YEAR ATTENUATION	PROPOSED SWALE	
PROPOSED CATCHMENT MCCLYMONT'S WETLAND	PROPOSED CATCHMENT ROOK WETLAND	PROPOSED SWALE	HIGH POINT	
PROPOSED CATCHMENT GREVILLE WETLAND	PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1	PROPOSED SWALE	LOW POINT	
PROPOSED CATCHMENT EX ALPURT A1 POND 34				

NOTES

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Proj Date: 24/11/2016 12:52:39 p.m. Office: NZAKL
 Rev: 01 Rev: NZAKL
 File Name: C:\PM\WORK\0310\19\03\2010\SPRE\DRG-1451-1460.DWG

CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000



REV	DATE	REVISION DETAILS	APPROVED
A	17.10.16	PRELIMINARY ISSUE	G. MOORE
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SCALE	SIZE
1:1000	A1
DRAWN	
B. LI	
DESIGNED	
M. YU	
CHECKED	
D. MACKINSTOSH	

PRELIMINARY NOT FOR CONSTRUCTION	
APPROVED	DATE
J. HIND	17/10/16
J. HIND	

PROJECT	TITLE
NORTHERN CORRIDOR IMPROVEMENTS	STORMWATER CATCHMENT PLAN SHEET 5
DRAWING No.	PROJECT No.
250310	3PRE
STAGE	WP
3PRE	3DES
TYPE	NUMBER
DRG	1455
REV	REV
	B

LEGEND

EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT EX ALPURT A1 POND 35	PROPOSED TREATMENT	SUB-CATCHMENT BOUNDARY	OV2M
ALTERATION TO EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND	PROPOSED TREATMENT AND DETENTION		
PROPOSED CATCHMENT EX ALPURT A1 POND 30	PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION		
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST	PROPOSED CATCHMENT MORO WETLAND	PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION		
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST	PROPOSED CATCHMENT CARIBBEAN WETLAND	PROPOSED DETENTION AND 10-YEAR ATTENUATION		
PROPOSED CATCHMENT MCCLYMONT'S WETLAND	PROPOSED CATCHMENT ROOK WETLAND	PROPOSED DETENTION AND 100-YEAR ATTENUATION		
PROPOSED CATCHMENT GREVILLE WETLAND	PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1	PROPOSED SWALE		
PROPOSED CATCHMENT EX ALPURT A1 POND 34		HIGH POINT		
		LOW POINT		

ROSEDALE TO CONSTELLATION (R2C)

IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	3.70
NEW HIGH USE ROAD	2.84
NEW BUSWAY & SHARED-USE PATH	1.89
TOTAL IMP	8.43
TREATMENT	(ha)
EXISTING HIGH USE ROAD	1.89
PROPOSED HIGH USE ROAD	6.54
(164% OF NEW HUR TREATED)	
(100% OF TOTAL HUR TREATED)	

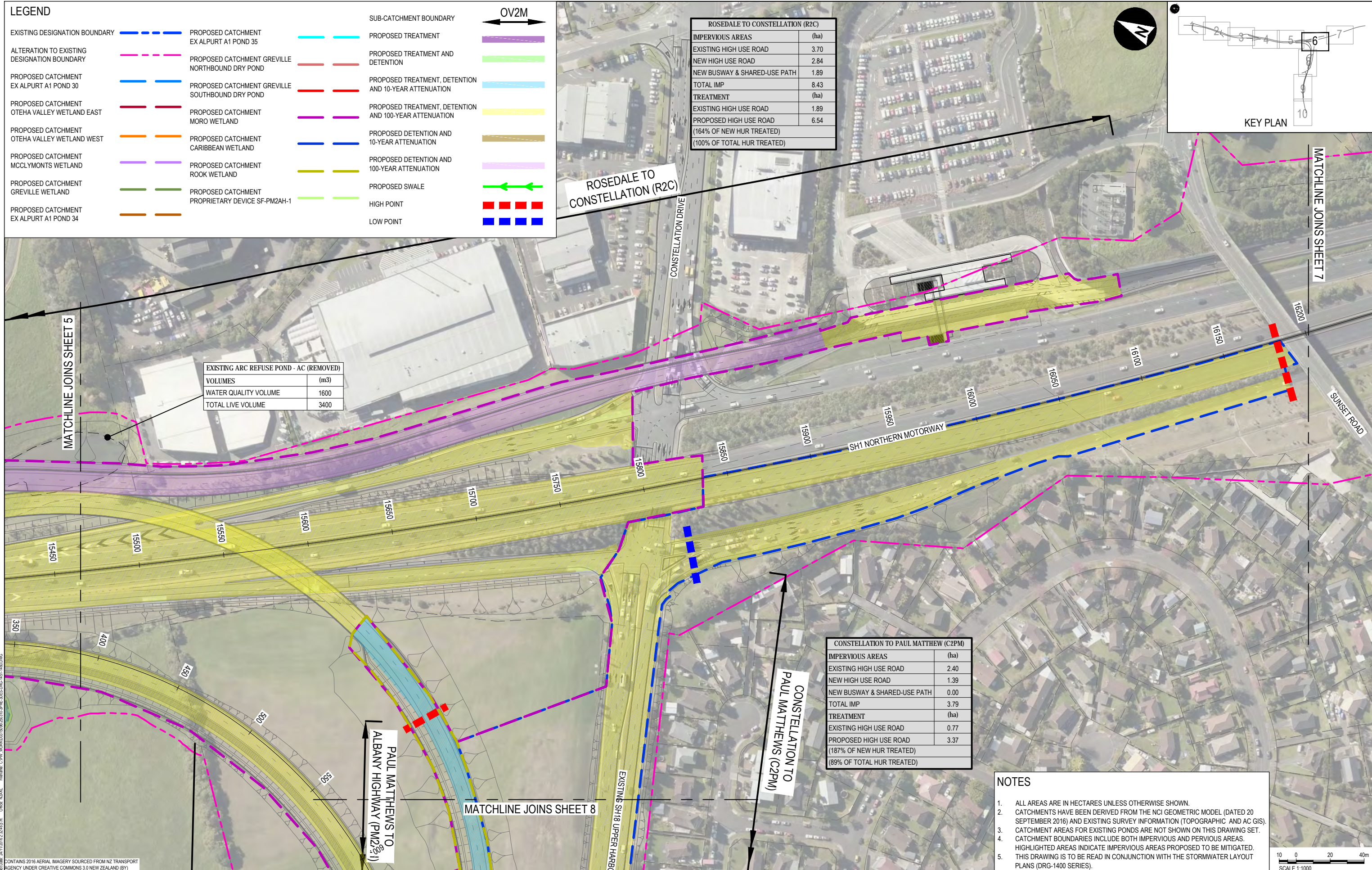
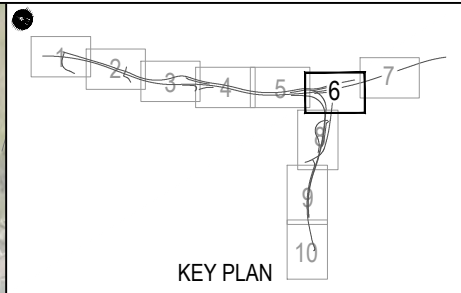
CONSTELLATION TO PAUL MATTHEW (C2PM)

IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	2.40
NEW HIGH USE ROAD	1.39
NEW BUSWAY & SHARED-USE PATH	0.00
TOTAL IMP	3.79
TREATMENT	(ha)
EXISTING HIGH USE ROAD	0.77
PROPOSED HIGH USE ROAD	3.37
(187% OF NEW HUR TREATED)	
(89% OF TOTAL HUR TREATED)	

EXISTING ARC REFUSE POND - AC (REMOVED)

VOLUMES	(m3)
WATER QUALITY VOLUME	1600
TOTAL LIVE VOLUME	3400

- NOTES**
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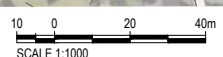


REV	DATE	REVISION DETAILS	APPROVED
A	17.10.16	PRELIMINARY ISSUE	G. MOORE
B	24.11.16	CONSENT ISSUE	J. HIND

SCALE	1:1000
SIZE	A1
DRAWN	B. LI
DESIGNED	M. YU
CHECKED	C. MCGREGOR

PRELIMINARY NOT FOR CONSTRUCTION
APPROVED
J. HIND
J. HIND

PROJECT	NORTHERN CORRIDOR IMPROVEMENTS					
TITLE	STORMWATER CATCHMENT PLAN SHEET 6					
DRAWING No.	PROJECT No.	STAGE	WP	TYPE	NUMBER	REV
250310	250310	3PRE	3DES	DRG	1456	B



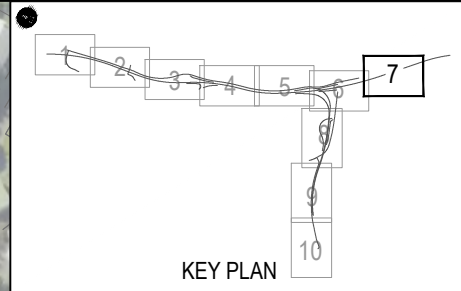
LEGEND

EXISTING DESIGNATION BOUNDARY		PROPOSED CATCHMENT EX ALPURT A1 POND 35		SUB-CATCHMENT BOUNDARY	
ALTERATION TO EXISTING DESIGNATION BOUNDARY		PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND		PROPOSED TREATMENT	
PROPOSED CATCHMENT EX ALPURT A1 POND 30		PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND		PROPOSED TREATMENT AND DETENTION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST		PROPOSED CATCHMENT MORO WETLAND		PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST		PROPOSED CATCHMENT CARIBBEAN WETLAND		PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT MCCLYMONT'S WETLAND		PROPOSED CATCHMENT ROOK WETLAND		PROPOSED DETENTION AND 10-YEAR ATTENUATION	
PROPOSED CATCHMENT GREVILLE WETLAND		PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1		PROPOSED DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT EX ALPURT A1 POND 34				PROPOSED SWALE	
				HIGH POINT	
				LOW POINT	

OV2M

NOTES

1. ALL AREAS ARE IN HECTARES UNLESS OTHERWISE SHOWN.
2. CATCHMENTS HAVE BEEN DERIVED FROM THE NCI GEOMETRIC MODEL (DATED 20 SEPTEMBER 2016) AND EXISTING SURVEY INFORMATION (TOPOGRAPHIC AND AC GIS).
3. CATCHMENT AREAS FOR EXISTING PONDS ARE NOT SHOWN ON THIS DRAWING SET.
4. CATCHMENT BOUNDARIES INCLUDE BOTH IMPERVIOUS AND PERVIOUS AREAS. HIGHLIGHTED AREAS INDICATE IMPERVIOUS AREAS PROPOSED TO BE MITIGATED.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE STORMWATER LAYOUT PLANS (DRG-1400 SERIES).

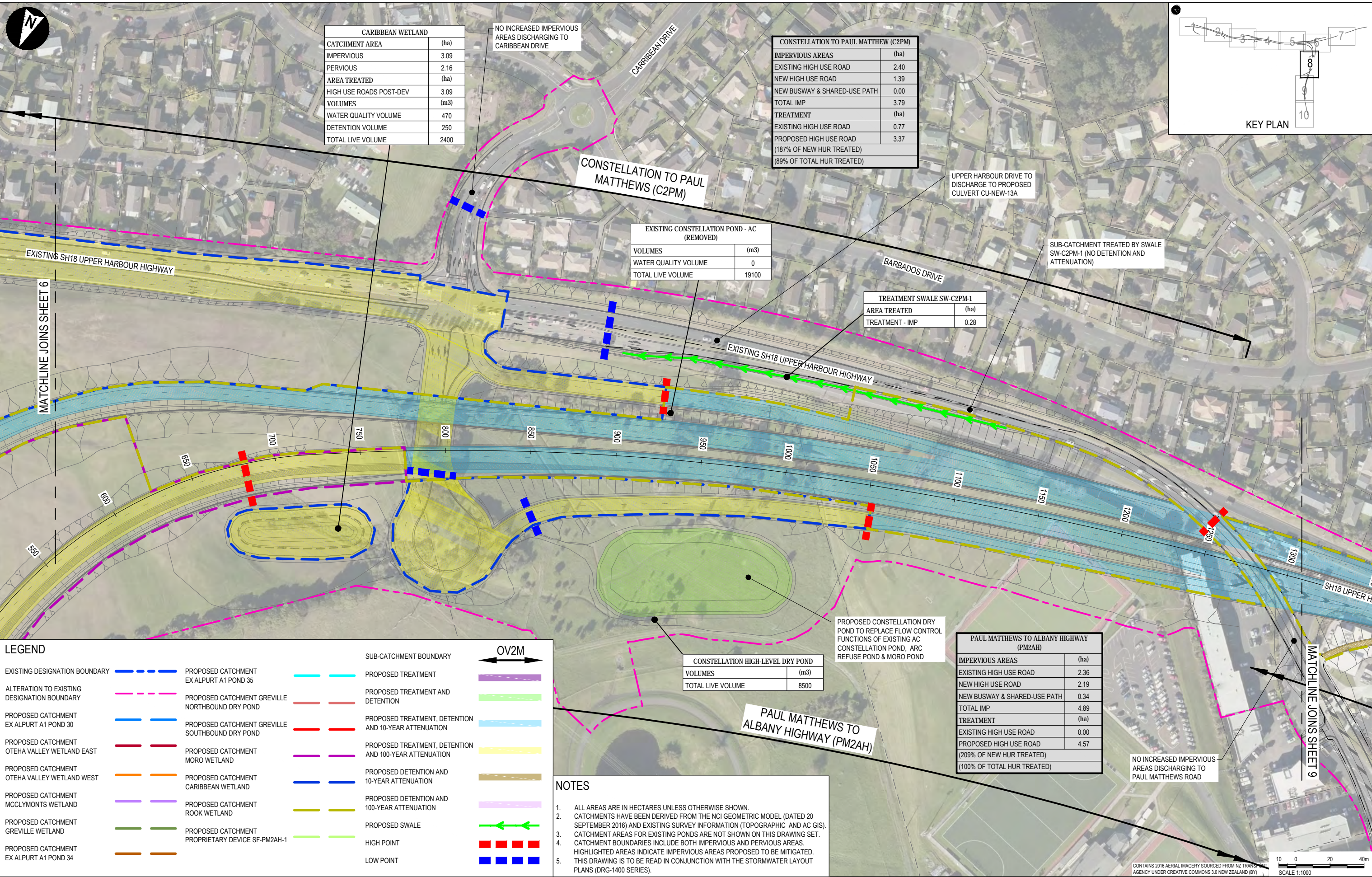


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CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000



CLIENT		REV		DATE	REVISION DETAILS	APPROVED	SCALE	SIZE	PRELIMINARY	PROJECT
		A	17.10.16	PRELIMINARY ISSUE	G. MOORE	1:1000	A1	NOT FOR CONSTRUCTION	NORTHERN CORRIDOR IMPROVEMENTS	
		B	24.11.16	CONSENT ISSUE	J. HIND				STORMWATER CATCHMENT PLAN SHEET 7	
									APPROVED	TITLE
									J. HIND	DATE
									J. HIND	17/10/16
DRAWING No.	PROJECT No.	STAGE	WP	TYPE	NUMBER	REV				
250310	3PRE	3DES	DRG	1457	B					



PROJ Date: 24/11/2016 10:08:59 a.m. Office: NZAKL
 File Name: C:\PM\WORK\0303\19\30\2010\SPRE_3016\DRG-1451-1460.DWG

LEGEND		OV2M	
EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT EX ALPURT A1 POND 35	PROPOSED TREATMENT	PROPOSED TREATMENT AND DETENTION
ALTERATION TO EXISTING DESIGNATION BOUNDARY	PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION
PROPOSED CATCHMENT EX ALPURT A1 POND 30	PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND	PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST	PROPOSED CATCHMENT MORO WETLAND	PROPOSED DETENTION AND 10-YEAR ATTENUATION	PROPOSED DETENTION AND 100-YEAR ATTENUATION
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST	PROPOSED CATCHMENT CARIBBEAN WETLAND	PROPOSED SWALE	HIGH POINT
PROPOSED CATCHMENT MCCLYMONT'S WETLAND	PROPOSED CATCHMENT ROOK WETLAND	LOW POINT	
PROPOSED CATCHMENT GREVILLE WETLAND	PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1		
PROPOSED CATCHMENT EX ALPURT A1 POND 34			

NOTES

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- CATCHMENT AREAS FOR EXISTING PONDS ARE NOT SHOWN ON THIS DRAWING SET.
- CATCHMENT BOUNDARIES INCLUDE BOTH IMPERVIOUS AND PERVIOUS AREAS. HIGHLIGHTED AREAS INDICATE IMPERVIOUS AREAS PROPOSED TO BE MITIGATED.
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CARIBBEAN WETLAND	
CATCHMENT AREA	(ha)
IMPERVIOUS	3.09
PERVIOUS	2.16
AREA TREATED	(ha)
HIGH USE ROADS POST-DEV	3.09
VOLUMES	(m ³)
WATER QUALITY VOLUME	470
DETENTION VOLUME	250
TOTAL LIVE VOLUME	2400

NO INCREASED IMPERVIOUS AREAS DISCHARGING TO CARIBBEAN DRIVE

CONSTELLATION TO PAUL MATTHEW (C2PM)	
IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	2.40
NEW HIGH USE ROAD	1.39
NEW BUSWAY & SHARED-USE PATH	0.00
TOTAL IMP	3.79
TREATMENT	(ha)
EXISTING HIGH USE ROAD	0.77
PROPOSED HIGH USE ROAD (187% OF NEW HUR TREATED)	3.37
(89% OF TOTAL HUR TREATED)	

EXISTING CONSTELLATION POND - AC (REMOVED)	
VOLUMES	(m ³)
WATER QUALITY VOLUME	0
TOTAL LIVE VOLUME	19100

TREATMENT SWALE SW-C2PM-1	
AREA TREATED	(ha)
TREATMENT - IMP	0.28

UPPER HARBOUR DRIVE TO DISCHARGE TO PROPOSED CULVERT CU-NEW-13A

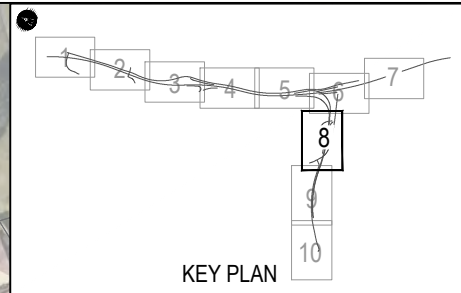
SUB-CATCHMENT TREATED BY SWALE SW-C2PM-1 (NO DETENTION AND ATTENUATION)

PAUL MATTHEWS TO ALBANY HIGHWAY (PM2AH)	
IMPERVIOUS AREAS	(ha)
EXISTING HIGH USE ROAD	2.36
NEW HIGH USE ROAD	2.19
NEW BUSWAY & SHARED-USE PATH	0.34
TOTAL IMP	4.89
TREATMENT	(ha)
EXISTING HIGH USE ROAD	0.00
PROPOSED HIGH USE ROAD (209% OF NEW HUR TREATED)	4.57
(100% OF TOTAL HUR TREATED)	

NO INCREASED IMPERVIOUS AREAS DISCHARGING TO PAUL MATTHEWS ROAD

CONSTELLATION HIGH-LEVEL DRY POND	
VOLUMES	(m ³)
TOTAL LIVE VOLUME	8500

PROPOSED CONSTELLATION DRY POND TO REPLACE FLOW CONTROL FUNCTIONS OF EXISTING AC CONSTELLATION POND, ARC REFUSE POND & MORO POND



CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSIT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000



REV	DATE	REVISION DETAILS	APPROVED
A	17.10.16	PRELIMINARY ISSUE	G. MOORE
B	24.11.16	CONSENT ISSUE	J. HIND

SCALE	SIZE
1:1000	A1
DRAWN	
B. LI	
DESIGNED	
M. YU	
CHECKED	
D. MACKINSTOSH	

PRELIMINARY NOT FOR CONSTRUCTION	
APPROVED	DATE
J. HIND	17/10/16
J. HIND	

PROJECT	TITLE
NORTHERN CORRIDOR IMPROVEMENTS	STORMWATER CATCHMENT PLAN SHEET 8
DRAWING No.	PROJECT No.
250310	3PRE
STAGE	WP
3PRE	3DES
TYPE	NUMBER
DRG	1458
REV	B

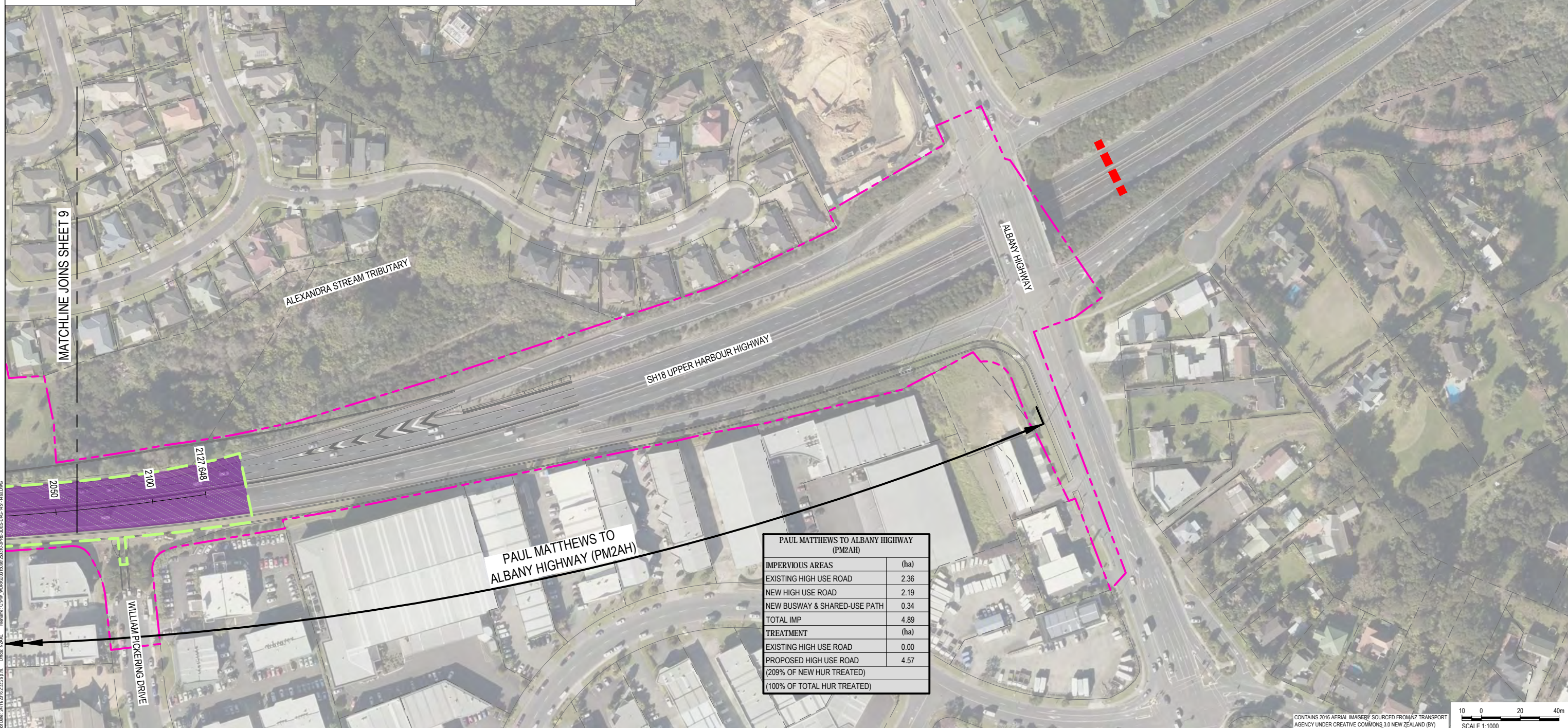
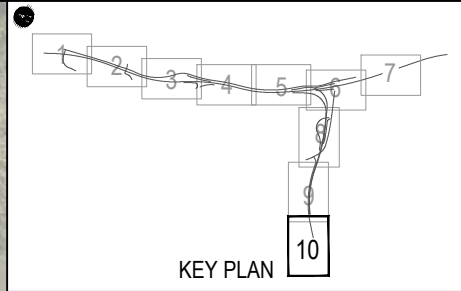
LEGEND

EXISTING DESIGNATION BOUNDARY		PROPOSED CATCHMENT EX ALPURT A1 POND 35		SUB-CATCHMENT BOUNDARY	
ALTERATION TO EXISTING DESIGNATION BOUNDARY		PROPOSED CATCHMENT GREVILLE NORTHBOUND DRY POND		PROPOSED TREATMENT	
PROPOSED CATCHMENT EX ALPURT A1 POND 30		PROPOSED CATCHMENT GREVILLE SOUTHBOUND DRY POND		PROPOSED TREATMENT AND DETENTION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND EAST		PROPOSED CATCHMENT MORO WETLAND		PROPOSED TREATMENT, DETENTION AND 10-YEAR ATTENUATION	
PROPOSED CATCHMENT OTEHA VALLEY WETLAND WEST		PROPOSED CATCHMENT CARIBBEAN WETLAND		PROPOSED TREATMENT, DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT MCCLYMONT'S WETLAND		PROPOSED CATCHMENT ROOK WETLAND		PROPOSED DETENTION AND 10-YEAR ATTENUATION	
PROPOSED CATCHMENT GREVILLE WETLAND		PROPOSED CATCHMENT PROPRIETARY DEVICE SF-PM2AH-1		PROPOSED DETENTION AND 100-YEAR ATTENUATION	
PROPOSED CATCHMENT EX ALPURT A1 POND 34				PROPOSED SWALE	
				HIGH POINT	
				LOW POINT	

OV2M

NOTES

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Proj Date: 24/11/2016 10:28:59 a.m. Office: NZAL
 File Name: C:\PM\WORK\003\18\98\2010\SPRE_30185_DRG-1451-1460.DWG

CONTAINS 2016 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY) SCALE 1:1000



REV	DATE	REVISION DETAILS	APPROVED
A	17.10.16	PRELIMINARY ISSUE	G. MOORE
B	24.11.16	CONSENT ISSUE	J. HIND

SCALE	1:1000
SIZE	A1
DRAWN	B. LI
DESIGNED	M. YU
CHECKED	D. MACKINSTOSH

PRELIMINARY NOT FOR CONSTRUCTION
APPROVED
J. HIND
J. HIND

PROJECT	NORTHERN CORRIDOR IMPROVEMENTS				
TITLE	STORMWATER CATCHMENT PLAN SHEET 10				
DRAWING No.	PROJECT No.	STAGE	WP	TYPE	NUMBER
250310	250310	3PRE	3DES	DRG	1460
REV	B				