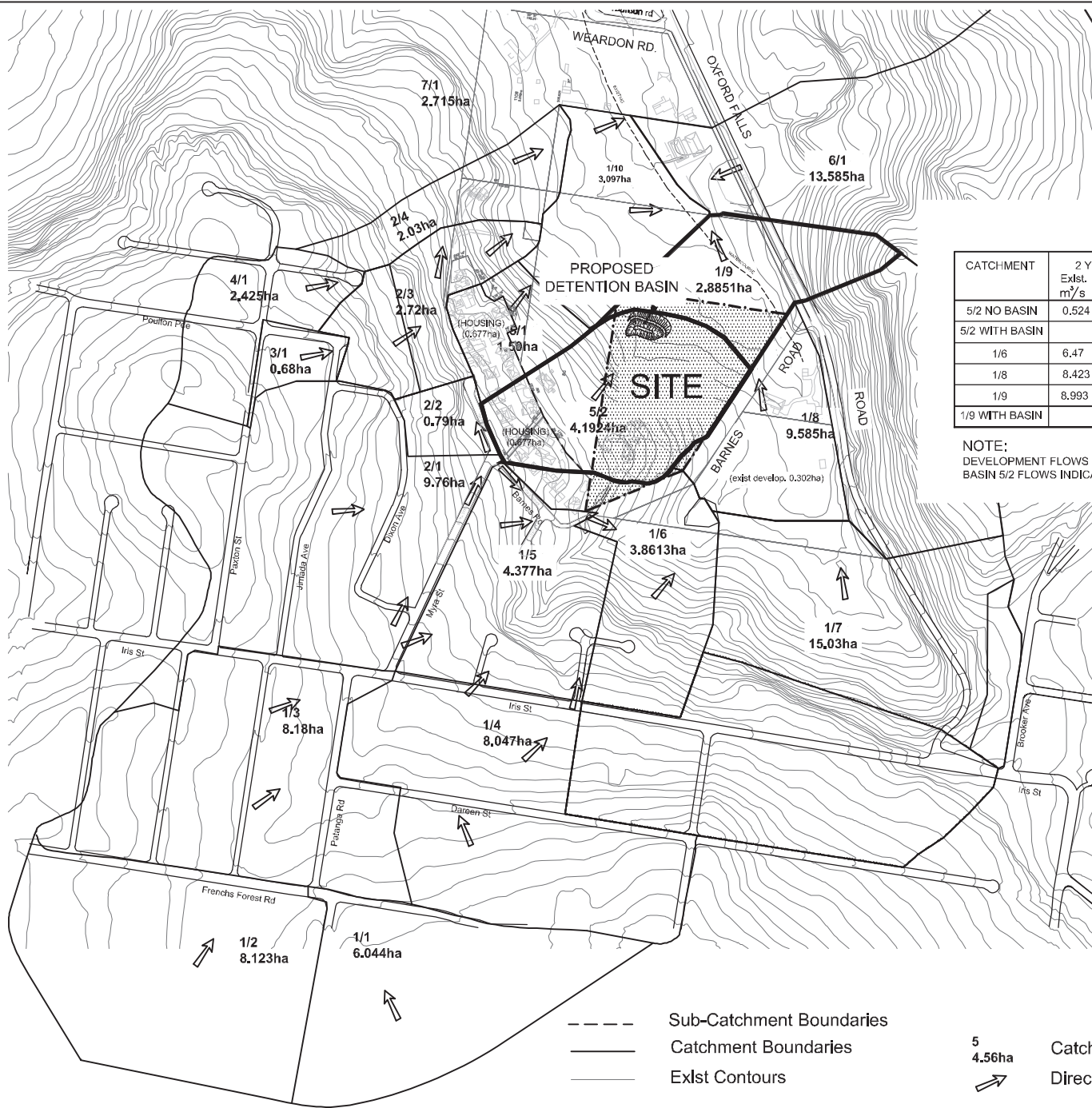




XPRRAFTS CATCHMENT ANALYSIS

CATCHMENT	2 YEAR		5 YEAR		10 YEAR		20 YEAR		50 YEAR		100 YEAR		PMF
	Exlst. m ³ /s	Dev. m ³ /s	Exlst. m ³ /s	Dev. m ³ /s	Exlst. m ³ /s	Dev. m ³ /s	Exlst. m ³ /s	Dev. m ³ /s	Exlst. m ³ /s	Dev. m ³ /s	Exlst. m ³ /s	Dev. m ³ /s	
5/2 NO BASIN	0.524	0.547	0.86	0.89	1.08	1.12	1.37	1.41	1.65	1.70	1.95	1.99	7.25
5/2 WITH BASIN		0.49		0.62		0.814		1.09		1.40		1.72	
1/6	6.47	6.50	11.74	11.75	14.78	14.82	18.52	18.55	21.14	21.18	24.43	24.47	90.7
1/8	8.423	8.47	15.28	15.31	19.09	19.12	24.33	24.36	28.39	28.45	33.50	33.56	128.4
1/9	8.993	9.05	16.11	16.18	20.85	20.92	26.42	26.50	31.11	31.22	36.74	36.84	139.2
1/9 WITH BASIN		8.98		15.91		20.40		25.91		30.69		36.38	

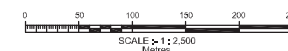
NOTE:
DEVELOPMENT FLOWS FROM CATCHMENTS 1/9 REDUCED BY ADDITION OF BASIN 5/2
BASIN 5/2 FLOWS INDICATE CONTROL DISCHARGE FROM DETENTION BASIN

CATCHMENT SUMMARY

CURRENT CONDITIONS					
CATCHMENT	AREA (ha)	% IMPERVIOUS	AREA IMPERVIOUS (ha)	AREA PERVIOUS (ha)	TOTAL CATCHMENT AREA (ha)
5/2 OLD RESIDENTIAL	0.677	60.000	0.406	0.271	
5/2 RURAL RESIDENT.	3.515	N/A	0.503	3.012	4.192
1/6 RURAL RES.	3.8610	10	0.3861	3.4750	3.8610
1/8 RURAL RES.	9.5850	N/A	0.3020	9.2830	9.5850
1/9 RURAL RES	2.8850	10	0.2890	2.5970	2.8850
POST DEVELOPMENT CONDITIONS					
5/2 OLD RESIDENTIAL	0.677	60.000	0.406	0.271	
5/2 RURAL RES.	3.5150	N/A	0.8930	2.6220	4.192
1/6 RURAL RES.	3.7620	N/A	0.3861	3.3760	
1/6 BARNES RD	0.0990	100	0.0990	0	3.8610
1/8 RURAL RES.	9.4970	N/A	0.3020	9.1950	
1/8 BARNES RD	0.0880	100	0.0880	0	9.5850
1/9 RURAL RES.	2.8850	10	0.2890	2.5970	2.8850

----- Sub-Catchment Boundaries
----- Catchment Boundaries
----- Exlst Contours

5
4.56ha
Catchment No & Area
Direction of Catchment Discharge



Issue	App	Date	Description	Client	Datum: AHD		John M. Daly & Associates PTY LTD A.S.N. 88051977989	Project :	LOT 1113 DP752038 BARNES RD - PROPOSED AGED CARE FACILITY			Sheet 1 of 3 sheets
				DUKOR 24 Pty, Limited <th>Origin of Levels :</th> <th>Surveying Engineering Project Management Licensed Water Service Co-ordinators</th> <th colspan="3">STORMWATER STRATEGY - LOCAL CATCHMENT PLAN</th> <th>Ref: 12253(8)E</th>	Origin of Levels :		Surveying Engineering Project Management Licensed Water Service Co-ordinators	STORMWATER STRATEGY - LOCAL CATCHMENT PLAN			Ref: 12253(8)E	
				Designed by : T.H. <th rowspan="3">Date of Survey:</th> <td></td> <td></td> <td></td> <td></td> <td></td>	Date of Survey:							
				Date of Drawing : 11-07-2014								
				Ratio (A1) : 1:2500								
A	T.H.	11-07-2014	ORIGINAL ISSUE				32 Manthe Street P.O. BOX 25 CAMPELLETTOWN N.S.W. 2560 email: admin@jmd.com.au	PH. (02) 4625 5055 FAX. (02) 4628 2013	Locality: FRENCHS FOREST	L.C.A.: WARRINGAH	CAD Ref: S:\DATA\OXFORD FALLS\12253(8)ENC\CAD\EI-IND STRAT\12253(8)E1_CATCHMENT	

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TOTAL IMPERVIOUS AREA

- EXISTING CONDITIONS

5032 m²



EXISTING IMPERVIOUS SURFACE - ROADS/TRACKS



EXISTING IMPERVIOUS SURFACE - BUILDINGS & TENNIS COURT

Issue	App	Date	Description	Client	Datum	Origin of Levels
				DUKOR 24 Pty, Limited	AHD	
				Designed by: T.H.		
				Date of Drawing: 11-07-2014		
				Ratio (A1): 1:500		
A	T.H.	11-07-2014	ISSUED FOR DA			Date of Survey:



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FAX (02) 4628 2013
email: admin@jmd.com.au

Project :		LOT 1113 DP752038 BARNES RD - PROPOSED AGED CARE FACILITY		Sheet 2 of 3 sheets
		STORMWATER STRATEGY - PLAN OF EXISTING SURFACE CONDITIONS		Ref: 12253(0)E1
Locality:	FRENCHS FOREST	L.G.A.:	WARRINGAH	CAD Ref: S: DATA (OXFORD FALLS: 12253(0) ENC: CAD/EI-MND STRAT/12253(0)E1 SUBT

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TOTAL IMPERVIOUS AREA

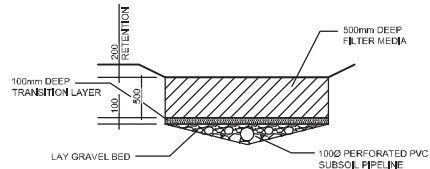
- POST DEVELOPMENT CONDITIONS 6930 m²

TAILOUT CONSTRUCTION TO BE CLEAR OF CREEK RIPARIAN ZONE

FORM GRASSED DIVERSION SWALE TO INTERCEPT ALL UPSTREAM STORMWATER RUNOFF & DIRECT FLOWS TO RAIN GARDEN & DETENTION BASIN

PROPOSED ACCESS ROAD TO BE DRAINED TO PROPOSED RAIN GARDEN

EXISTING BUILDING STRUCTURES TO BE RETAINED



RAINGARDEN TYPICAL SECTION
NOT TO SCALE

ALL ROOF DISCHARGES TO BE INTERCEPTED BY PIPELINE & DRAINED TO 150KL STORAGE TANK. OVERFLOWS FROM TANK TO BE DIRECTED TO PROPOSED RAIN GARDEN AND DETENTION BASIN.

PROPOSED BUILDING EXTENSION & ROOF OVER

PROPOSED CAR PARKING AREA



IMPERVIOUS PAVED SURFACES RESULTING FROM NEW DEVELOPMENT (OTHER THAN BUILDINGS)

SF DENOTES SILT FENCING

SOIL & WATER STRATEGY

ORDER OF WORKS

1. INSTALL SILT FENCING AS INDICATED.
2. CONSTRUCT DETENTION BASIN TO BE USED AS SEDIMENT BASIN DURING CONSTRUCTION. BLOCK OFF OUTLET.
3. AREA NORTH OF BASIN OUTSIDE SEDIMENT FENCE TO REMAIN UNDISTURBED.
4. CONSTRUCT DIVERSION DRAINS
5. PROCEED WITH SITE WORKS, STABILISING DISTURBED AREAS AS SOON AS POSSIBLE AND MAINTAINING DIVERSION DRAINS, BASIN AND SEDIMENT FENCING.
6. INSTALL SANDBAG SEDIMENT TRAPS ALONG INVERTS OF DRAINS AND ROAD EDGES AT CESSATION OF WORKS TO PROTECT AGAINST EROSION OVERNIGHT/OVER WEEKENDS.
7. UPON STABILISATION OF ALL DISTURBED SURFACES, BASIN TO BE CLEANED OF COLLECTED SEDIMENT, STABILISED WITH TURF AND OUTLET STRUCTURE OPENED SO BASIN OPERATES AS DETENTION BASIN.
8. RAIN GARDEN TO BE PROTECTED FROM SEDIMENT DURING CONSTRUCTION.



BASIN CONTROL OUTLET PIT
LOW LEVEL 5 YEAR ORIFICE PIPE OUTLET
HIGH LEVEL 100 YEAR WEIR OUTLET
OUTLET PIPE TO BE SIZED TO DISCHARGE 100 YEAR PREDEVELOPED FLOWS

3m WIDE BASIN EMBANKMENT TO CONTAIN POST DEVELOPMENT STORAGE VOLUME & 20% ADDITIONAL STORAGE FREEBOARD.

FORM RAINGARDEN (Min. BED AREA 350 m²)
DISCHARGE DIRECTED TO OSD BASIN

FORM GRASSED DIVERSION SWALE TO INTERCEPT ALL UPSTREAM STORMWATER RUNOFF & DIRECT FLOWS TO RAIN GARDEN AND DETENTION BASIN

STORMWATER DETENTION BASIN

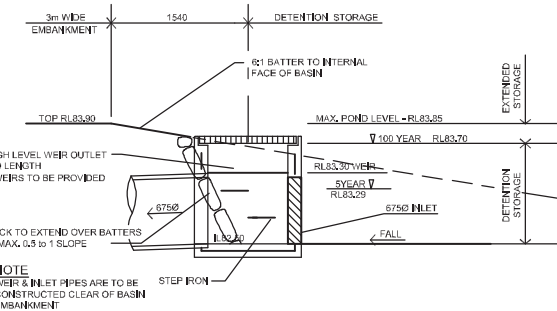
MAXIMUM PRE-DEVELOPED DISCHARGE
5 YEAR 860 l/sec
100 YEAR 1949 l/sec

BASIN CONFIGURATION
FLOOR 3x25 76m² RL82.50
BATTER SLOPES 6:1

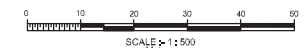
5 YEAR WATER LEVEL RL83.29
100 YEAR WATER LEVEL RL83.70

ALL STORMWATER FLOWS DIRECTED TO RAINGARDEN

STORMWATER FROM NEW DRIVEWAYS TO BE DIRECTED TO DETENTION BASIN



DISCHARGE CONTROL PIT DETAIL
NOT TO SCALE



Issue	App	Date	Description	Client	Datum	Drawn	Checked	Project	Location	Scale	Sheet
				DUKOR 24 Pty, Limited	AHD			LOT 1113 DP752038 BARNES RD - PROPOSED AGED CARE FACILITY	FRENCHS FOREST	1:500	3 of 3
				Designed by: T.J.H.	Origin of Levels:			STORMWATER STRATEGY - PLAN OF PROPOSED DEVELOPED CONDITIONS & SOIL & WATER MANAGEMENT PLAN	L.G.A.: WARRINGAH		Ref: 12253(0)E1
B	T.J.H.	14-08-2014	SOIL AND WATER MANAGEMENT DETAILS ADDED	Date of Drawing: 11-07-2014							
A	T.J.H.	11-07-2014	ISSUED FOR DA	Ratio (A1): 1:500	Date of Survey:						



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Project: LOT 1113 DP752038 BARNES RD - PROPOSED AGED CARE FACILITY

STORMWATER STRATEGY - PLAN OF PROPOSED DEVELOPED CONDITIONS & SOIL & WATER MANAGEMENT PLAN

Locality: FRENCHS FOREST L.G.A.: WARRINGAH CAD Ref: S:\DATA\OXFORD FALLS\12253(0) ENC\CAD\EI-IND STRAT\12253(0)E1.PLAN

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