CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE
4, 6 & 8 ELIZA PLACE, PICTON NSW 2571
(LOTS 502 & 503 DP 1121442 LOT 506 1201969)

NOTE:
IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORKS

DIAL BEFORE YOU DIG www.1100.com.au

NOTES

PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR SHALL:

1. PRODUCE REGISTRATION/ PERMITS FOR ALL PLANT TO BE USED ON THE ROAD RESERVE INC FOOTPATH.
2. PRODUCE INSURANCES REQUIRED AS DEVELOPMENT CONSENT CONDITIONS.
3. HAVE SITE MEETING WITH COUNCILS DEVELOPMENT SECTION.
4. INSTALL SEDIMENT AND EROSION CONTROL DEVICES, AND OBTAIN A COPY OF "URBAN EROSION AND SEDIMENT CONTROL – FIELD GUIDE" AS PUBLISHED BY CALM.
5. BE AWARE OF THE FOLLOWING:

- THESE NOTES DO NOT REPLACE THE NEED TO READ COUNCILS CONSTRUCTION SPECIFICATION.
- THE NEED FOR THE PROVISION OF A WORK–AS–EXECUTED PLAN AND SUPERVISION BY THE THE PERSON DOING THE WORK–AS–EXECUTED PLAN.
- TAKE SPECIAL NOTE OF THE ROLL KERB AND GUTTER PROFILE AND THE SPECIAL ROOF WATER OUTLET.
- ONLY PLASTIC GUIDEPOSTS ARE TO BE USED, OF A TYPE APPROVED BY THE ENGINEER.
- ERRORS AND OVERSIGHTS ON PLANS ARE TO BE RECTIFIED AT THE ENGINEERS DISCRETION.
- TEST RESULTS ARE TO BE SENT TO COUNCIL'S SUPERVISING ENGINEER IMMEDIATELY.
- PROPOSED VARIATIONS TO THE PLANS ARE TO BE REFERRED BACK TO COUNCIL FOR APPROVAL.
- THE CONTRACTOR SHOULD BE AWARE THAT IF HE PROVIDES THE MAINTENANCE BOND ON BEHALF OF THE DEVELOPER, THEN IF THIS IS THE ONLY BOND HELD, IT WILL BE USED TO GUARANTEE PERFORMANCE OF ALL WORK REQUIRED FOR THE DEVELOPMENT, REGARDLESS OF WHO WAS RESPONSIBLE FOR CARRYING OUT THE WORK.

PAVEMENT TESTING NOTES

1. THE ROLLER TEST WILL BE CARRIED OUT BY COUNCILS SUPERVISING ENGINEER, USING A THREE POINT ROLLER (ALSO DESCRIBED AS A STEAM–ROLLER)
2. DENSITY TEST, BEAM TESTS AND CBR TESTS ARE TO BE CARRIED OUT BY A COUNCIL APPROVED NATA REGISTERED LABORATORY (BEAM TESTS ARE ABLE TO BE CARRIED OUT BY COUNCIL – CONTACT MAY BE MADE WITH COUNCILS PAVEMENTS ENGINEER FOR A QUOTE).
3. TEST RESULTS ARE TO BE SENT IMMEDIATELY TO THE COUNCILS SUPERVISING ENGINEER.
4. "STANDARD" COMPACTION TESTING TO BE USED.
5. A THREE POINT ROLLER (ALSO DESCRIBED AS A STEAM–ROLLER), IN ACCORDANCE WITH COUNCILS CONSTRUCTION SPECIFICATION , IS TO BE USED ON ALL BUT THE NARROWEST SHOULDERS, FOR ROLLER TESTING.

STORMWATER DRAINAGE NOTES

1. ALL STORMWATER PIPES 375MM DIA AND GREATER TO BE RUBBER RING JOINTED CLASS "2" OR HIGHER CLASS AS NOTED. FOR SMALLER PIPES, UPVC (SOLVENT WELD – WITH SOME RESTRICTIONS) OR VCP (RRJ) MAY BE USED.
2. TRENCH WIDTH MIN = OUTSIDE DIA OF COLLAR + 200MM.
3. PIPES IN FILL GROUND ARE TO BE PLACED AFTER COMPLETION AND APPROVAL OF FILLING.

EROSION CONTROL DEVICES

1. PROVIDE KERB INLET SEDIMENT TRAPS AT ALL RM10 TYPE PITS. TO RM 23 OF COUNCIL SPEC.

GENERAL NOTES

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL SPEC AND TO THE SATISFACTION OF THE ENGINEER.
2. ATTENTION IS DRAWN TO COUNCIL "TREE PRESERVATION ORDER" UNDER WHICH NO TREES ARE TO BE REMOVED OTHER THAN THOSE AFFECTED BY ROAD, LANDFILL (OR CUT) OR DRAINAGE WORKS. COUNCILS SUPERVISING ENGINEER WILL DETERMINE WHETHER TREES ARE DEEMED TO BE AFFECTED BY THIS CLAUSE.
3. INSPECTION AND APPROVAL OF THE WORKS IS REQUIRED BY THE ENGINEER AT THE FOLLOWING STAGES:

- WHEN DRAINAGE LINES HAVE BEEN LAID, JOINTED AND BEDDED PRIOR TO BACKFILLING.
- WHEN ROADWORKS HAVE BEEN EXCAVATED TO SUBGRADE LEVEL PRIOR TO PLACEMENT OF PAVEMENT MATERIAL. (SEE TESTING)
- WHEN PART (AS SPECIFIED BY COUNCILS SUPERVISING ENGINEER) OF THE PAVEMENT DEPTH HAS BEEN INSTALLED. (SEE TESTING)
- AT COMPLETION OF KERB AND GUTTER SUBGRADE. (SEE TESTING)
- AT COMPLETION OF PAVEMENT SHAPING AND CONSOLIDATION PRIOR TO PRIMING. (SEE TESTING)
- AT SEALING (NOTE 24 HOURS REQUIRED BETWEEN PRIMING AND SEALING.
- AT COMPLETION OF ALL WORK.

NOTE: A MIN 24 HOURS NOTICE IS REQUIRED FOR ALL INSPECTIONS.

4. PAVEMENT TESTING TO BE CARRIED OUT AT THE FOLLOWING STAGES:

- SUBGRADE – DENSITY AND ROLLER TESTS.
- AT INTERMEDIATE LEVELS(IF REQUIRED BY COUNCILS SUPERVISING ENGINEER) – DENSITY AND ROLLER TEST.
- AT KERB AND GUTTER SUBGRADE – ROLLER TEST.
- AT FINISHED PAVEMENT LEVEL : DENSITY , ROLLER AND BENKLEMAN BEAM TESTS.

5. SERVICES SHOWN ON THE PLAN ARE APPROX ONLY AND HAVE BEEN LOCATED FROM SITE INVESTIGATION AND THE RELEVANT AUTHORITY. ALL SERVICES ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE PRIOR TO CONSTRUCTION.
6. ANY ADJUSTMENT TO PUBLIC UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR/DEVELOPER.
7. PUBLIC UTILITY SERVICES (WATER, GAS, ELECTRICITY, TELEPHONE, ETC.) REQUIRE TO BE INSTALLEDIN CONJUNCTION WITH THE WORK , ARE TO BE INSTALLED PRIOR TO THE LAYING OF ANY ROAD PAVEMENT MATERIAL, AS ARE CONDUITS FOR BOTH PUBLIC UTILITIES AND INDIVIDUAL ALLOTMENT SERVICES.
8. SUBSOIL DRAINS ARE TO BE CONSTRUCTED TO THE SATISFACTION OF THE SHIRE ENGINEER AND WHERE DIRECTED BY THE SHIRE ENGINEER.
9. A SMOOTH JUNCTION IS TO BE PROVIDED WITH EXISTING WORK.
10. UNSUITABLE MATERIAL IS TO BE REMOVED FROM ROADS AND LOTS PRIOR TO FILLING.
11. STRIP AND STOCKPILE TOPSOIL FROM ROADWAYS AND SITE REGRADING AREAS AND RE–SPREAD ON FOOTPATHS, BATTERS AND FILL AREAS TO A MAXIMUM DEPTH OF 300MM WITH A MINIMUM DEPTH OF 100MM.
12. DURING CONSTRUCTION NOTIFY THIS OFFICE IF ANY QUERIES ARISE – NEVER ASSUME.
13. LIMIT OF CONSTRUCTION AS SHOWN ON PLANS.
14. ALL PAVEMENTS TO BE CONSTRUCTED IN ACCORDANCE WITH COUNCIL CONSTRUCTION SPECIFICATION.
15. DISTURBED AREAS TO BE BITUMEN STRAW MULCH THEN SPRAY GRASS.
16. PROVIDE A 1M WIDE TURF STRIP BEHIND THE PROPOSED KERB.

LOCALITY PLAN (NTS)

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SHEET NO.	DRAWING TITLE
1	NOTE SHEET
2	SITE PLAN
3	DRIVEWAY PLAN
4	DRIVEWAY LAYOUT
5	PAVEMENT DETAILS
6	DRAINAGE PLANS
7	DRAINAGE SCHEDULES
8	OSD TANK DETAILS
9	WATER QUALITY
10	MINOR CALCULATIONS
11	MAJOR CALCULATIONS
12	RETAINING WALL PLAN
13	SEWER PLAN
14	SEWER SECTIONS 1
15	SEWER SECTIONS 2
16	CUT & FILL PLAN
17	TRAFFIC ISLAND MODIFICATION PLAN

NOTE:
ALL BOUNDARIES SHOWN ARE APPROXIMATE ONLY AND ARE SUBJECT TO FINAL SURVEY BY A REGISTERED SURVEYOR AND THE POSITION SHOWN ON THESE PLANS AND SPATIALLY IN ANY DATA ISSUED HAS BEEN SUPPLIED TO D&M CONSULTING BY 3RD PARTIES. AS SUCH D&M CONSULTING HAVE NO CONTROL OVER THE ACCURACY OF SUCH DATA OR IT'S FITNESS FOR PURPOSE.

CIVIL SETOUT OF WORKS INCLUDING DRAINAGE AND RETAINING WALL POSITIONS IS NOT RELATED SPACIALLY TO THE FINAL SURVEYED BOUNDARIES AND MUST BE ADJUSTED ACCORDINGLY SUCH THAT THE ENTIRE WALL, TOE AND FOOTINGS ARE ENTIRELY CONTAINED WITHIN THE BOUNDARIES OF THE LOT WHICH THE WALL IS RETAINING IN FAVOR OF.

THE CONTRACTOR SHALL CONTACT THE COUNCIL'S INFRASTRUCTURE PLANNING DEPARTMENT IN WRITING A MINIMUM OF 7 DAYS PRIOR TO COMMENCING WORK AND APPLY FOR A 138 CONSENT (SECTION 138 OF THE ROADS ACT FOR APPROVAL TO WORK ON A PUBLIC ROAD) AND INCLUDE COPIES OF CURRENT PUBLIC LIABILITY INSURANCE FOR A VALUE OF $20,000,000 AND PAYMENT OF THE CURRENT FEE. REFERENCES FOR PREVIOUS WORK EXPERIENCE MAY BE REQUESTED BY COUNCIL

REV	AMENDMENTS	REV DATE	INITIALS
—	–	–	–
—	–	–	–
B	DRIVEWAY LAYOUT AMENDED	25/05/22	SDL
A	CIVIL PLANS REVISED TO SUIT NEW ARCH PLANS	13/05/22	SDL
A1	SCALE: AS SHOWN ON SHEET	DATE: 28/09/2020	

D&M CONSULTING
CIVIL & STRUCTURAL ENGINEERS

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CIVIL AND STRUCTURAL ENGINEERS
SHOP 1 & 2,
16 MITCHELL STREET, CAMDEN
PH (02) 4647 4014
EMAIL: engineer@dmceng.com.au

PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE

SHEET: 1/17

DWG NO: 200774

DESIGNED: BW
DRAWN: BW
CHECKED: AJB

ADDRESS: LOTS 502–503 (DP1201968) & LOT 506 (DP1201969)
4–8 ELIZA PLACE
PICTON NSW 2571

CLIENT: ENVIRONMENTAL PROPERTY SERVICES

CERTIFIED DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.

SIGNED & APPROVED: D.TURNER
B.E.(MIEAust) CPEng

KEY:

CL = CONCRETE LEVEL
PL = PAVEMENT LEVEL
FFL = FININSHED FLOOR LEVEL
FGL = FINISHED GROUND LEVEL
EGL = EXISTING GROUND LEVEL
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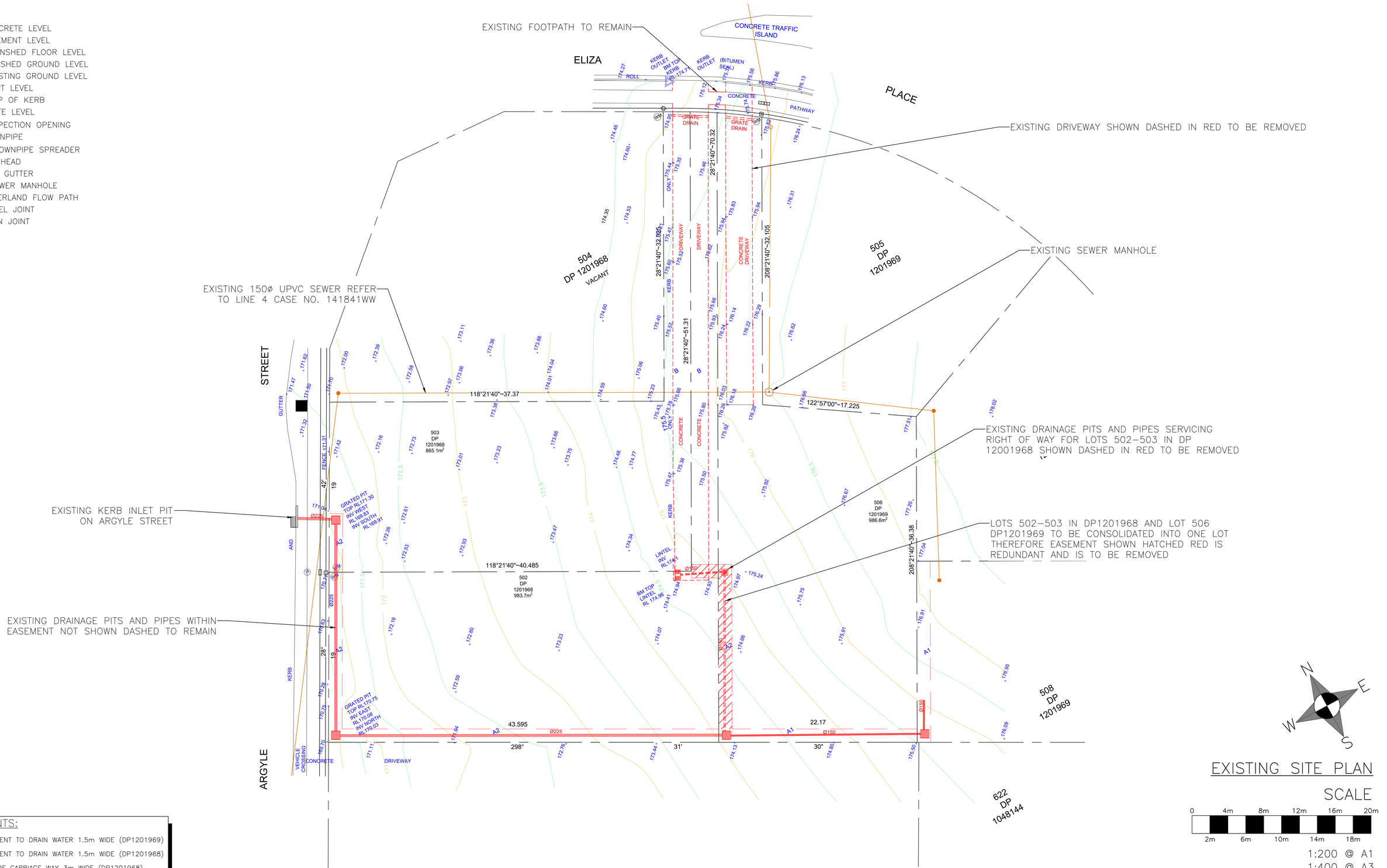

EASEMENTS:

A1 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201969)
A2 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201968)
B – RIGHT OF CARRIAGE WAY 3m WIDE (DP1201968)

EXISTING SITE PLAN

SCALE

0 4m 8m 12m 16m 20m
2m 6m 10m 14m 18m

1:200 @ A1
1:400 @ A3

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PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE
SHEET: 2/17
DWG NO: 200774
DESIGNED: BW
DRAWN: BW
CHECKED: AJB
ADDRESS: LOTS 502–503 (DP1201968) & LOT 506 (DP1201969) 4–8 ELIZA PLACE PICTON NSW 2571
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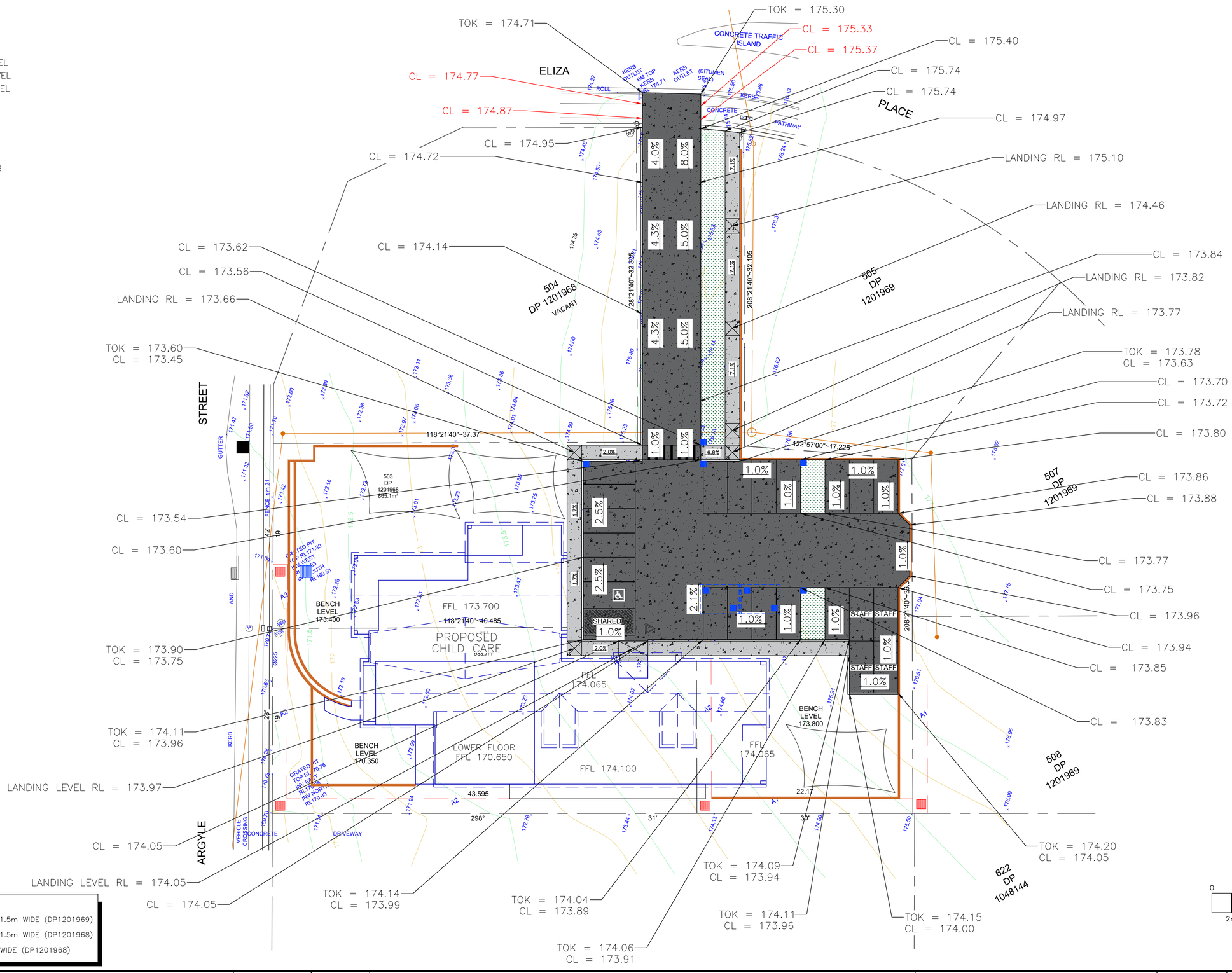

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DRIVEWAY PLAN

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LEGEND

DRIVEWAY/CARPARK PAVEMENT

FOOTPATH PAVEMENT

NOTE:

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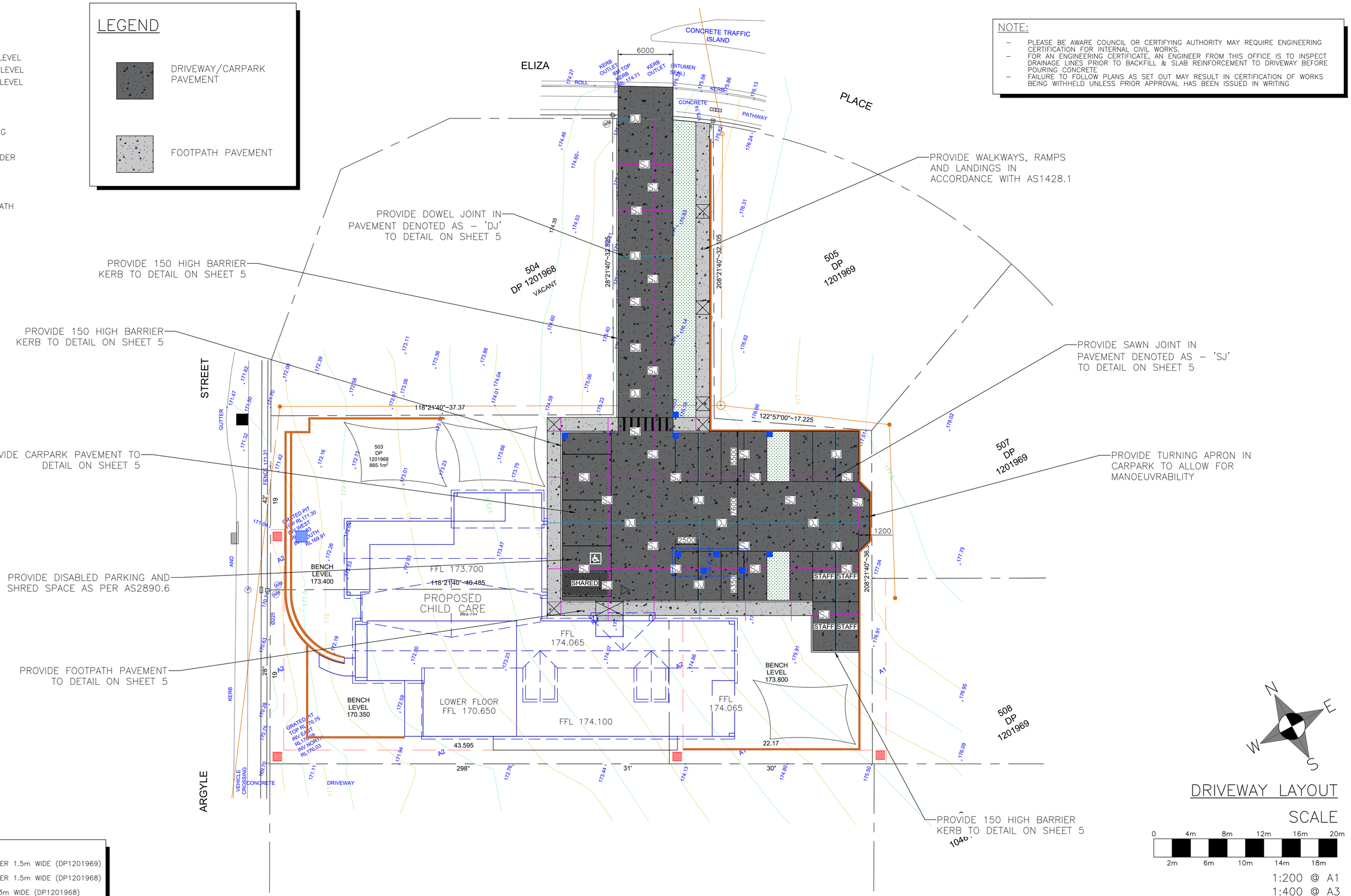
- FAILURE TO FOLLOW PLANS AS SET OUT MAY RESULT IN CERTIFICATION OF WORKS BEING WITHHELD UNLESS PRIOR APPROVAL HAS BEEN ISSUED IN WRITING



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DRIVEWAY LAYOUT

SCALE

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2m 6m 10m 14m 18m

1:200 @ A1
1:400 @ A3

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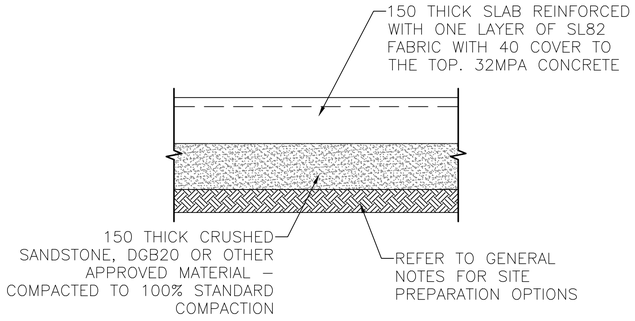
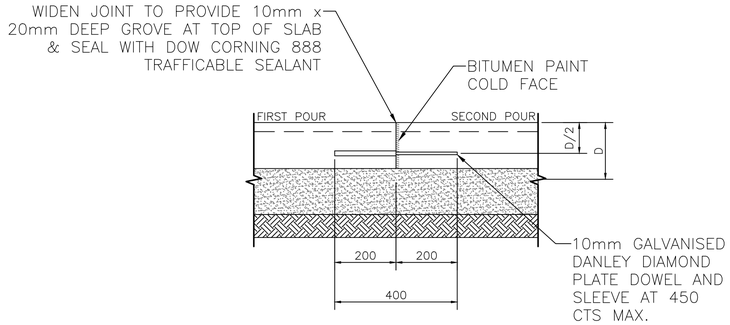


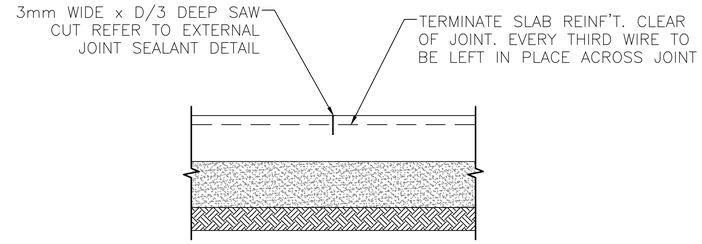
CARPARK SLAB PROFILE – TYPICAL DETAIL

SCALE 1:10



SLAB DOWELED JOINT – DJ

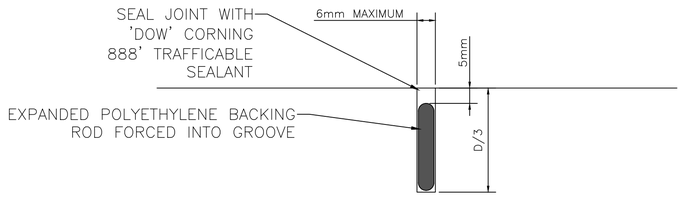
SCALE 1:10



INITIAL SAWCUTS TO BE CARRIED OUT WITHIN 10–24 HOURS AFTER POUR. THE CUTS ARE TO BE MADE BEFORE ANY CRACKING TO HE SLAB OCCUR. THE CONTRACTOR IS RESPONSIBLE FOR THE TIMING OF THE SAWCUTS. ENSURE SAWCUTS EXTEND FOR FULL LENGTH TO FACE OF WALLS

SLAB SAWN JOINT – SJ

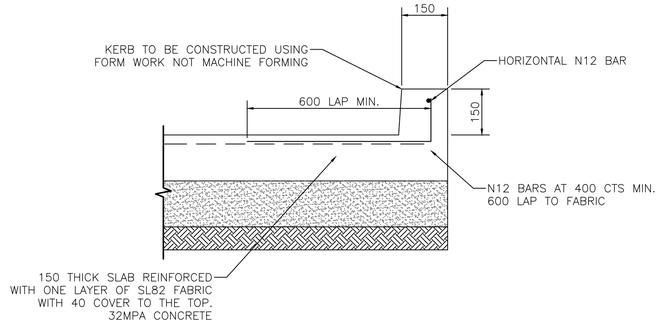
SCALE 1:10



JOINT TO BE SEALED WITHIN SIX WEEKS OF PLACING CONCRETE. JOINT SEALANT TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS

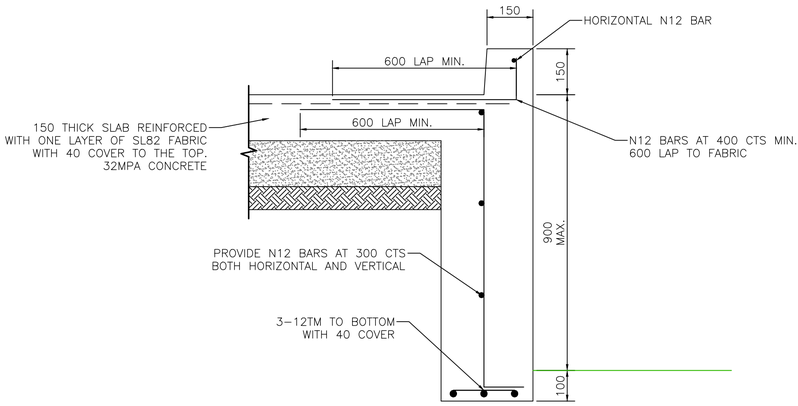
INTERNAL/EXTERNAL PAVEMENT JOINT SEALANT DETAIL

NOT TO SCALE



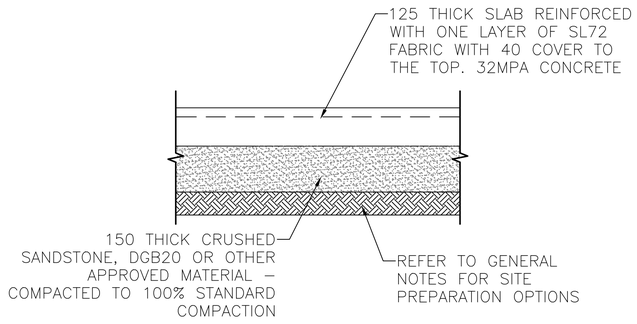
150 HIGH BARRIER KERB DETAIL

SCALE 1:10



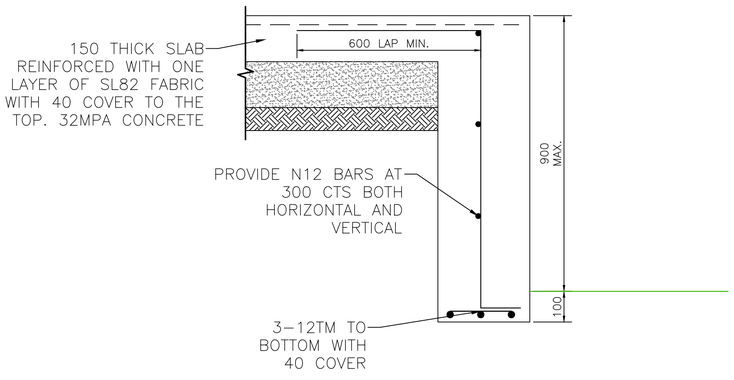
TYPICAL PAVEMENT DROP EDGE BEAM WITH KERB DETAIL

SCALE 1:10



FOOTPATH SLAB PROFILE – TYPICAL DETAIL

SCALE 1:10



TYPICAL PAVEMENT DROP EDGE BEAM WITHOUT KERB DETAIL

SCALE 1:10

STEEL FABRIC REINFORCEMENT LAP DETAIL

SCALE 1:10

–	–	–	–
–	–	–	–
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DOWNPIPE & GUTTER NOTES:

- FOR THE PROPOSED CHILDCARE CENTRE PROVIDE MIN. TWENTY TWO (22) 100ø SEWER GRADE UPVC DOWNPIPES. ROOF HATCHED BLUE TO DISCHARGE TO OSD TANK 1/3, ROOF HATCHED RED TO BYPASS OSD AND DISCHARGE TO PIT 2/5
- PROVIDE EAVES GUTTERS WITH MIN. CROSS-SECTIONAL AREA OF 8,200mm^2
- PROVIDE BOX GUTTERS MIN. 200 (W) X 200 (D) AT MIN. GRADIENT 1:200

NOTES:

- ALL PITS TO BE LOCKED CLOSED.
- LOCATION OF SERVICE TO BE CHECKED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
- ALL CHARGED PIPES TO BE 100Ø UPVC SEWER GRADE PIPES.
- ALL REDUNDANT PIPELINE WITHIN FOOTPATH AREA THAT ARE DISCHARGING TO KERB AND GUTTER MUST BE REMOVED AND FOOTPATH REINSTATED.
- PITS WITHIN TRAFFICABLE AREAS TO BE CALLS C WITH METAL GRATE
- PITS WITHIN LANDSCAPING TO BE MIN CLASS A GRATE
- PIPES WITH <300mm COVER TO BE STEEL DURAGAL PIPES

PROVIDE GRATED DRAIN MIN. 300 WIDE. USE WELDLOK TGF30C OR SIMILAR

PROVIDE SPEL ECOCEPTOR 1500 SERIES WATER QUALITY DEVICE OR APPROVED EQUIVALENT 2/2 TO DETAIL ON SHEET 9
GL = 173.40
INLET IL = 172.60
OUTLET IL = 172.52

PIT AND PIPE SCHEDULE TO DETAIL ON SHEET 7

PIPE 2/2
PIT 1/2
PIPE 1/2
EXISTING PIT 2/1
EX. PIPE 2/1
EXISTING KERB INLET PIT 1/1
PROVIDE BOX GUTTER MIN. 200 (W) X 200 (D) PROVIDE RAINHEAD TO DETAIL ON SHEET 7
EX. PIPE 3/1
100ø SEWER GRADE UPVC DOWNPIPES TO DISCHARGE TO OSD TANK 2/5
PIPE 2/5
PIPE TO CONVERT TO 125 X 75 X 5 DURAGAL RHS TO DISCHARGE TO KERB
PIT 2/5
PROVIDE OUTLET IN KERB & GUTTER 1/5
TOK = TBD
IL = TBD
PROVIDE OUTLET IN KERB & GUTTER 1/6
TOK = TBD
IL = TBD
PIPE 3/2
PIT 3/2
PIPE 4/2
PIPE 1/3
PIT 4/2
PIT 5/2
PIPE 1/2
PIT 1/4
PIPE 1/4
PIPE 6/2
PIT 6/2
PIPE 7/2
PIT 7/2
PIT 8/2
PIPE 8/2
EX. PIPE 6/1
EXISTING PIT 5/1
EX. PIPE 5/1
EXISTING PIT 4/1
EX. PIPE 4/1
PIT 2/6
PIPE 2/6
PIPE TO CONVERT TO 125 X 75 X 5 DURAGAL RHS TO DISCHARGE TO KERB
EXISTING PIT 3/1

ROOF HATCHED BLUE TO DISCHARGE TO OSD TANK
ROOF AREA = 752.1m^2
Q_{10} FLOW = L/S
Q_{100} FLOW = L/S

ROOF HATCHED RED TO BYPASS OSD TANK
ROOF AREA = 26.8m^2
Q_{10} FLOW = L/S
Q_{100} FLOW = L/S

PROVIDE 18,500 LITRE BELOW GROUND TANK 1/3 BY PANTHER CONCRETE TANKS FOR MIXED USE. PROVIDE MIN. 10,000 LITRES FOR RE-USE AND PROVIDE MIN. 8,500 LITRES FOR OSD. ROOF AREA HATCHED BLUE TO DISCHARGE TO TANK. OVERFLOW FROM TANK TO DISCHARGE TO PIT 5/2. WATER FROM TANK TO BE PLUMBED TO ALL TOILETS AND EXTERNAL TAPS. TO DETAIL ON SHEET 8
PIT GL = 173.87
ORIFICE = 90ø
ORIFICE IL =172.57
TANK IL =171.72

100ø SEWER GRADE UPVC DOWNPIPES TO DISCHARGE TO OSD TANK 1/3

ELIZA PLACE
ARGYLE STREET
CONCRETE TRAFFIC ISLAND
PROPOSED CHILD CARE
FFL 173.700
FFL 174.065
FFL 174.100
LOWER FLOOR FFL 170.650
BENCH LEVEL 173.400
BENCH LEVEL 170.350
BENCH LEVEL 173.800
503 DP 1201968 865.1m^2
504 DP 1201968 VACANT
505 DP 1201969
507 DP 1201969
508 DP 1201969
1048144
118°21'40"-37.37
28°21'40"-32.925
208°21'40"-32.105
122°57'00"-17.225
298°
31°
30°
43.595
22.17

SURFACE DRAINAGE NOTES:

THE POSSIBILITY OF SURFACE WATER ENTERING LIVING AREAS IN CLASS 1 BUILDING MAY BE REDUCED BY THE FOLLOWING MEASURES. THE MINIMUM HEIGHT OF THE SLAB ABOVE FINISH GROUND, LANDSCAPING OR PAVING LEVEL SHALL BE 150mm, EXCEPT IN THE FOLLOWING CASES
a) IN SANDY, WELL-DRAINING AREA THE MINIMUM HEIGHT SHALL BE 100mm
b) WHERE ADJOINING PAVED AREAS SLOPE AWAY FROM THE BUILDING THESE HEIGHT CAN BE REDUCE TO 50mm
c) THESE HEIGHT MAY BE FURTHER REDUCED LOCALLY AT ENTRANCES THAT ARE SHIELDED FROM THE WEATHER

N E S W

DRIVEWAY PLAN

SCALE
0 4m 8m 12m 16m 20m
2m 6m 10m 14m 18m
1:200 @ A1
1:400 @ A3

REV	AMENDMENTS	REV DATE	INITIALS
–	–	–	–
–	–	–	–
B	DRIVEWAY LAYOUT AMENDED	25/05/22	SDL
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EMAIL: engineer@dmceng.com.au

PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE
SHEET: 6/17
DWG NO: 200774
DESIGNED: BW
DRAWN: BW
CHECKED: AJB

ADDRESS: LOTS 502-503 (DP1201968) & LOT 506 (DP1201969) 4-8 ELIZA PLACE PICTON NSW 2571
CLIENT: ENVIRONMENTAL PROPERTY SERVICES

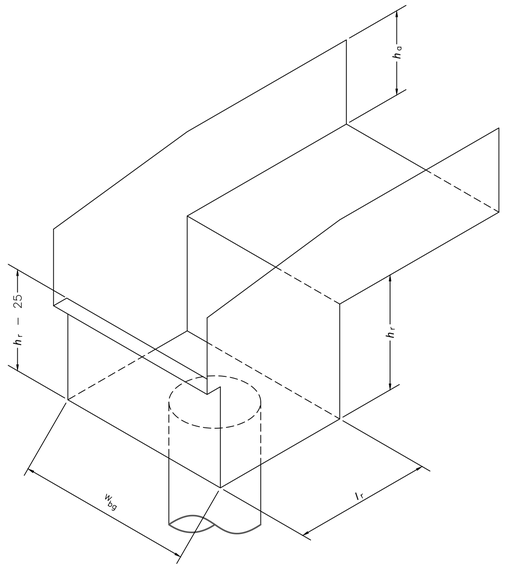
CERTIFIED DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
SIGNED & APPROVED: D.TURNER
B.E.(MIEAust) CPEng

PIT SCHEDULE

NAME	TYPE	GRATE LEVEL (m AHD)
EX. PIT 1/1	1.8m LINTEL KERB INLET PIT	TBD
EX. PIT 2/1	600SQ INLET PIT	171.30
EX. PIT 3/1	600SQ INLET PIT	170.75
EX. PIT 4/1	600SQ INLET PIT	173.90
EX. PIT 5/1	600SQ INLET PIT	175.50
PIT 1/2	1,200SQ INLET PIT	173.30
PIT 2/2	SPEL ECOCEPTOR GPT	173.40
PIT 3/2	600SQ INLET PIT	173.35
PIT 4/2	600SQ INLET PIT	173.45
PIT 5/2	600SQ INLET PIT	173.60
PIT 6/2	600SQ INLET PIT	173.60
PIT 7/2	600SQ INLET PIT	173.70
PIT 8/2	600SQ INLET PIT	173.75
PIT 1/3	600SQ SEALED INSPECTION PIT	173.60
PIT 1/4	600SQ INLET PIT	173.62
PIT 1/5	600SQ INLET PIT	170.25
PIT 1/6	600SQ INLET PIT	170.30

PIPE SCHEDULE

NAME	SIZE	UPSTREAM IL (m AHD)	DOWNSTREAM IL (m AHD)	LENGTH (m)	GRADE	Q_{10} FLOW (L/SEC)	CAPACITY (L/S)
EX. PIPE 1/1	375ø RCP	TBD	TBD	TBD	MIN. 1%		190
EX. PIPE 2/1	225ø UPVC	169.83	169.78	3.8	1.1%		64
EX. PIPE 3/1	225ø UPVC	170.03	169.91	23.8	0.5%		43
EX. PIPE 4/1	225ø UPVC	173.34	170.08	43.5	7.5%		168
EX. PIPE 5/1	150ø UPVC	175.02	173.38	21.9	7.5%		57
EX. PIPE 6/1	150ø UPVC	175.24	175.03	20.2	1.0%		21
PIPE 1/2	225ø UPVC	170.80	170.70	2.2	4.5%		130
PIPE 2/2	225ø UPVC	172.52	172.45	4.6	1.5%		75
PIPE 3/2	225ø UPVC	172.65	172.60	4.4	1.1%		64
PIPE 4/2	225ø UPVC	172.95	172.70	25.0	1.0%		61
PIPE 5/2	225ø UPVC	173.07	172.95	11.5	1.0%		61
PIPE 6/2	150ø UPVC	173.20	173.10	9.6	1.0%		21
PIPE 7/2	150ø UPVC	173.38	173.25	12.5	1.0%		21
PIPE 8/2	150ø UPVC	173.45	173.38	6.4	1.0%		21
PIPE 1/3	150ø UPVC		173.00	4.8			
PIPE 1/4	150ø UPVC	173.12	173.10	1.7	1.2%		23
PIPE 1/5	100ø UPVC	169.80	169.69	10.5	1.0%		7
PIPE 1/6	100ø UPVC	169.85	169.69	10.5	1.5%		8



NOTES:

1. THIS FIGURE APPLIES TO $h_r \geq 1.25D_o$ OR $1.25D_i$
2. FOR h_r AND l_r, SEE FIGURE T3
3. THE WIDTH OF THE RAINHEAD IS EQUAL TO THE WIDTH OF THE BOX GUTTER.
4. THE RAINHEAD SHALL BE FULLY SEALED TO THE BOX GUTTER AND THE FRONT OF THE RAINHEAD LEFT OPEN ABOVE THE OVERFLOW WEIR.

RAINHEAD SCHEDULE

RAINHEAD	h_a (mm)	h_r (mm)	l_r (mm)	w_{bg} (mm)
RH1	200	260	220	200

TYPICAL RAINHEAD DETAIL

NOT TO SCALE

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—	–	–	–
—	–	–	–
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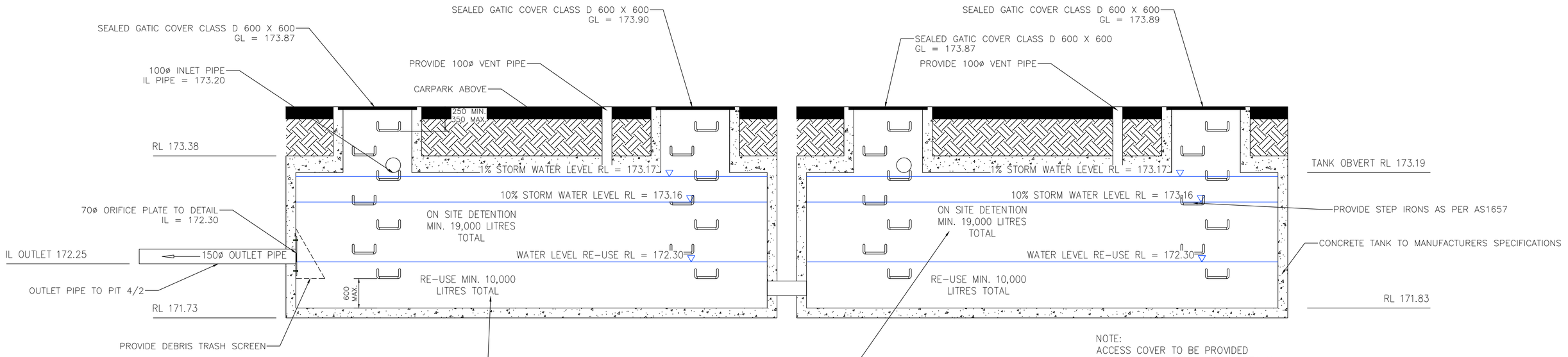
NOTE:

OSD TANK DESIGN BASED ON THE DETAILS AND SPECIFICATIONS OF 14,500 LITRE CONCRETE TANK BY PANTHERS CONCRETE TANK



10,000 LITRES IS THE TOTAL VOLUME OF RE-USE PROVIDED BY BOTH TANKS.
EACH TANK PROVIDES 5,000 LITRES OF RE-USE.

19000 LITRES IS THE TOTAL VOLUME OF OSD PROVIDED BY BOTH TANKS.
EACH TANK PROVIDES 8,500 LITRES OF OSD.

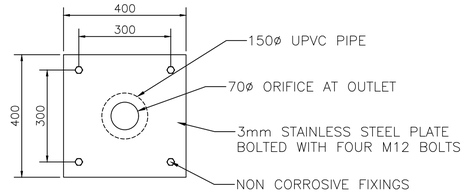
NOTE:
ACCESS COVER TO BE PROVIDED
EVERY 5m FOR BELOW GROUND TANK

OSD TANK 14,500 LITRES
EXTERNAL – 3m (W) X 4m (L) X 1.65m (D)
INTERNAL – 2.8m (W) X 3.8m (L) X 1.36m (D)

OSD TANK 1/3 USING TWO 14,500 LITRE TANKS SECTION DETAIL

SCALE
AT A1 – 1:20
AT A3 – 1:40

PRE AND POST TABLE					
	5 YEAR FLOW RATE (L/s)	10 YEAR FLOW RATE (L/s)	20 YEAR FLOW RATE (L/s)	50 YEAR FLOW RATE (L/s)	100 YEAR FLOW RATE (L/s)
PRE DEVELOPMENT	105	130	150	165	177
POST DEVELOPMENT	96	124	144	162	176
POST DEVELOPMENT PEAK DISCHARGE INCREASE PERCENTAGE	8.57%	4.62%	4.00%	1.82%	0.56%



ORIFICE PLATE 1/3 DETAIL

SCALE
AT A1 – 1:10
AT A3 – 1:20

REV	AMENDMENTS	REV DATE	INITIALS
—	–	–	–
—	–	–	–
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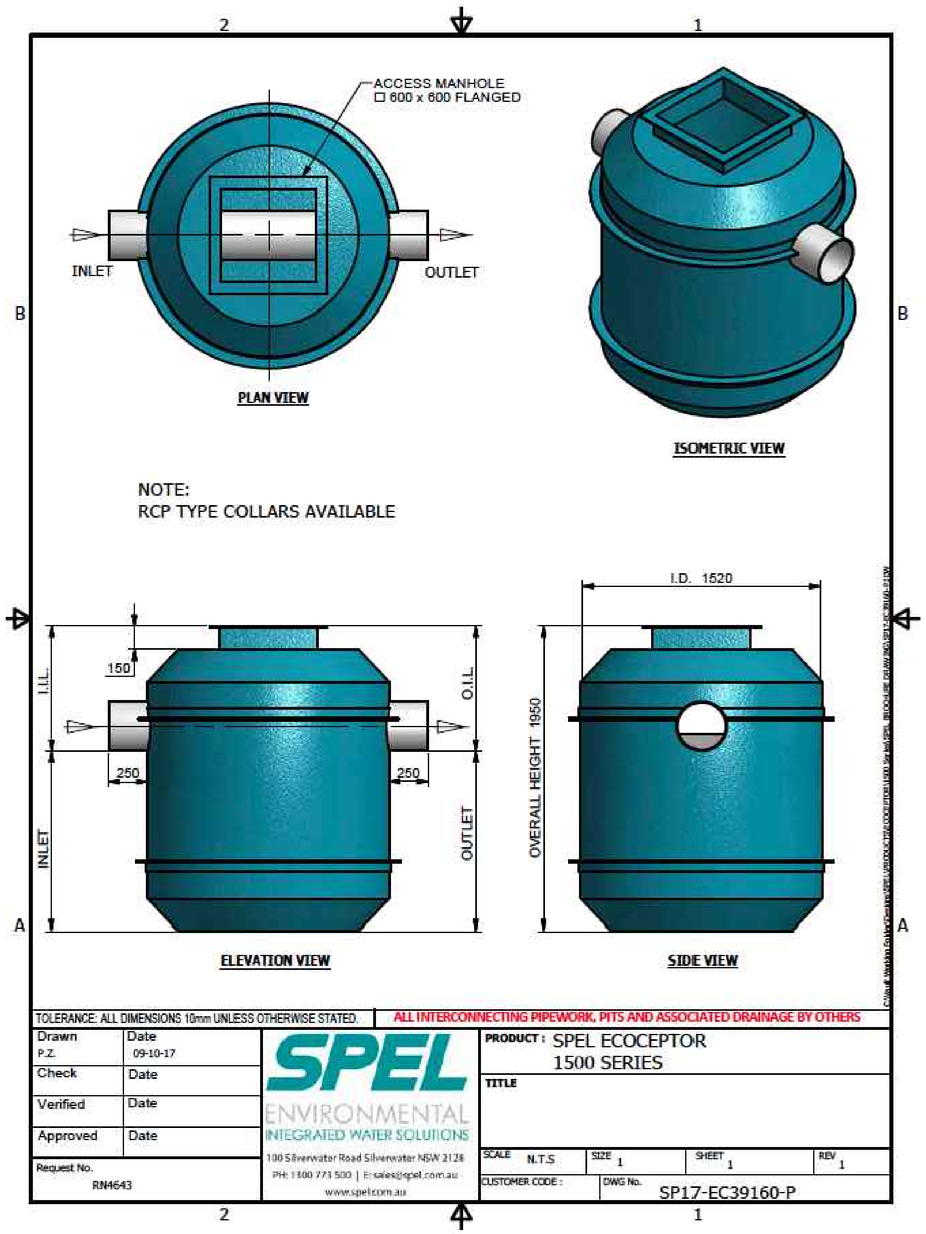


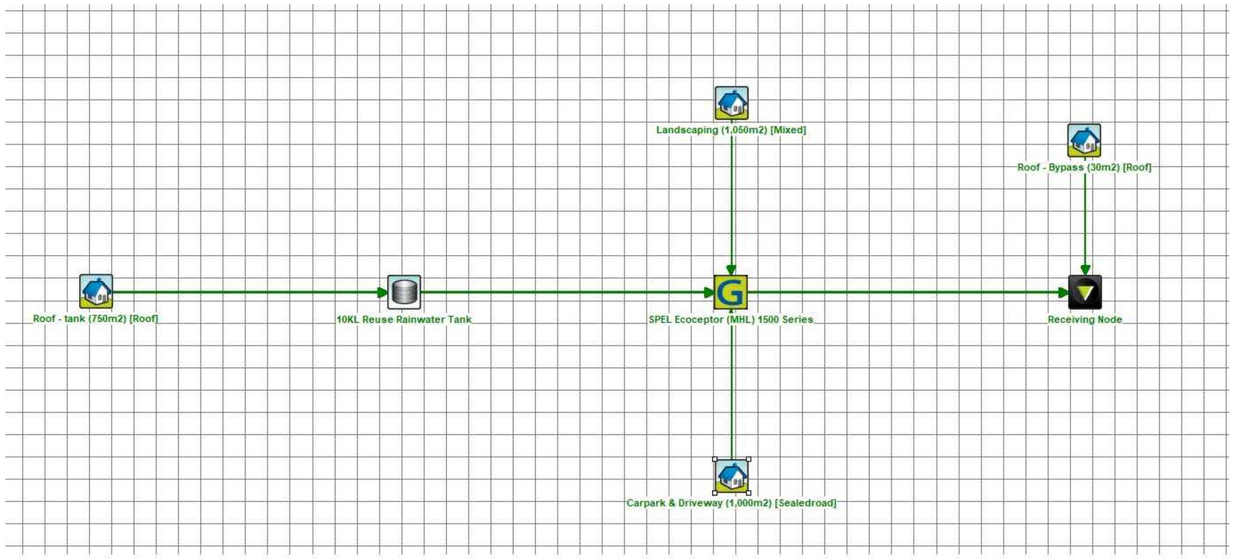
SPEL ECOCEPTOR 1500 SERIES

NOT TO SCALE

Spel Ecoceptor				
	Annual Pollutant Loading (kg/yr)			
	TSS	TP	TN	GP
Pre-Treatment Train	406.00	0.785	4.93	53.80
Post-Treatment Train	116.00	0.236	2.38	2.39
Difference	290.00	0.55	2.55	51.41
Reduction (%)	71.4%	69.9%	51.7%	95.6%
Target (%)	70.0%	45.0%	45.0%	70.0%
	YES	YES	YES	YES

MUSIC RESULTS

NOT TO SCALE



MUSIC MODEL

NOT TO SCALE

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–	–	–	–
–	–	–	–
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1 IN 10 YEAR (10% AEP) – MINOR CALCULATIONS

ILSAX CALCULATION SUMMARY SHEET

DRAINS results prepared from Version 2022.01

Soil Type	3	
AMC	3	

Entire Catchment Area

Paved	0.507 ha	(43.9%)
Supplementary	0 ha	(0%)
Grassed	0.647 ha	(56%)
Total Area	1.154 ha	

LOCATION AND LAND-USE | **TIME AND RUNOFF** | **INLET DESIGN** | **PIPE SYSTEM DESIGN** | **PIT RESULTS**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
							Kinematic Wave or Friends Formula Parameters						Overflows Approaching Pit				Total	Bypass	Overflow Leaving Pit						U/S Pipe	D/S Pipe	U/S	D/S		Pressure	Water					
Design AEP	Pit Name	Sub-Catchment Area	Land-Use	Percent-age	Constant Flow Time	Length	Slope	Roughness	Total Time tc	Peak Sub-Catchment Flowrate	Origin of Approach	Flowrate	Flow Width	Depth x Velocity	Inlet Family	Inlet Size	Approach Flow	Flow	Flow Width	Depth x Velocity	Peak Flow in Pipe	Reach Length	Pipe Slope	Pipe Diameter	Invert Level	Invert Level	HGL in Pipe	HGL in Pipe	Pipe Flow	Change Coeff.	Surface Elevation	Surface Level	Free-board	Pit Name	Remarks
		(ha)			(minutes)	(m)	(%)	n	(minutes)	(m^3/s) *worst storm	Flows	(m^3/s)	(m)	(m^2/s)			(m^3/s)	(m^3/s)	(m)	(m^2/s)	(m^3/s)	(m)	(%)	(mm)	(m)	(m)	(m)	(m)	(m/s)	Ku	(m)	(m)	(m)		
10%	PIT 1/4	0.0281	Paved	89	5				5	0.01					Grated Drain	4.5m Wide x 0.3	0.01	0	0	0	0.01	1.7	1.18	150	173.12	173.1	173.21	173.2	0.87	5.9	173.28	173.62	0.34	PIT 1/4	
			Supp.	0	2																														
			Grassed	11	5				5																										
10%	PIT 5/2		Paved								PIT 6/2	0	0	0	Surface Inlet Pits - Paved	600 Square Pit	0	0	0	0	0.025	11.5	1.04	225	173.07	172.95	173.2	173.06	1.25	0.3	173.19	173.6	0.41	PIT 5/2	
			Supp.																																
			Grassed																																
10%	PIT 4/2	0.0413	Paved	100	5				5	0.015	PIT 1/4	0	0	0	Surface Inlet Pits - Paved	600 Square Pit	0.015	0.009	1.54	0.01	0.035	25	1	225	172.05	171.8	172.2	172.1	1.14	5.5	172.35	173.45	1.1	PIT 4/2	
			Supp.	0	2						PIT 5/2	0	0	0																					
			Grassed	0	5				5																										
10%	PIT 3/2	0.0318	Paved	12	5				5	0.009	PIT 4/2	0.009	1.54	0.01	Surface Inlet Pits - Grass	600 Square Pit	0.018	0.009	1.54	0.01	0.044	4.4	1.14	225	171.8	171.75	172	171.98	1.06	2.1	172.1	173.35	1.25	PIT 3/2	
			Supp.	0	2																														
			Grassed	88	5				5																										
10%	L ECOCEPTOR 2/2		Paved												Junction Pit or Manhole (se	Junction Pit or M	0				0.043	4.6	1.52	225	171.67	171.6	171.84	171.73	1.68	4.8	171.98	173.4	1.42	ECOCEPTOR 2/2	
			Supp.																																
			Grassed																																
10%	PIT 1/2	0.0102	Paved	0	5				5	0.003	PIT 3/2	0.009	1.54	0.01	Large Pit	Large Pit	0.02	0	0	0	0.063	2.2	4.55	225	170.6	170.5	170.8	170.75	1.52	2.2	170.98	173.3	2.32	PIT 1/2	
			Supp.	0	2						DP 1/9	0.008	0.58	0.03																					
			Grassed	100	5				5																										
10%	EX. PIT 2/1	0.0036	Paved	0	5				5	0.001	PIT 1/2	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0.001	0	0	0	0.095	3.8	1.11	225	169.83	169.788	170.13	170.02	2.12	1.5	170.75	171.3	0.55	EX. PIT 2/1	
			Supp.	0	2																														
			Grassed	100	5				5																										
10%	EX. PIT 1/1		Paved								EX. PIT 2/1	0	0	0	Sutherland Council Inlet, 1%	Sutherland 1.8 n	0	0	0	0	0.089	10	1	375	169.7	169.6	169.92	169.78	1.69	1.4	169.93	171	1.07	EX. PIT 1/1	
			Supp.																																
			Grassed																																
10%	PIT 8/2	0.0185	Paved	0	5				5	0.005					Surface Inlet Pits - Grass	600 Square Pit	0.005	0.001	0.3	0	0.004	6.4	1.09	150	173.45	173.38	173.53	173.52	0.39	5.9	173.55	173.75	0.2	PIT 8/2	
			Supp.	0	2																														
			Grassed	100	5				5																										
10%	PIT 7/2	0.0202	Paved	88	5				5	0.007	PIT 8/2	0.001	0.3	0	Surface Inlet Pits - Grass	600 Square Pit	0.008	0	0	0	0.011	12.5	1.04	150	173.38	173.25	173.48	173.34	1	5.9	173.52	173.7	0.18	PIT 7/2	
			Supp.	0	2																														
			Grassed	12	5				5																										
10%	PIT 6/2	0.0143	Paved	90	5				5	0.005	PIT 7/2	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0.005	0	0	0	0.016	9.6	1.04	150	173.2	173.1	173.32	173.21	1.08	1.4	173.34	173.6	0.26	PIT 6/2	
			Supp.	0	2																														
			Grassed	10	5				5																										
10%	PIT 2/6		Paved								PIT 2/5	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0				0	10.5	1.52	100	169.85	169.69	169.85	169.69	0	1.5	169.85	173.3	3.45	PIT 2/6	
			Supp.																																
			Grassed																																
10%	EX DP 1/7	0.072	Paved	50	5				5	0.022					Downpipe	Downpipe	0.022				0.022	10	1	150	175.13	175.03	175.67	175.52	1.17	2.1	175.82	183.8	7.98	EX DP 1/7	
			Supp.	0	2																														
			Grassed	50	5				5																										
10%	EX PIT 5/1		Paved												Surface Inlet Pits - Grass	600 Square Pit	0	0.003	0.42	0.02	0.042	21.9	7.49	150	175.02	173.38	175.17	173.49	2.89	1.9	175.52	175.5	0	EX PIT 5/1	
			Supp.																																
			Grassed																																
10%	EX PIT 4/1	0.0062	Paved	1	5				5	0.002	EX PIT 5/1	0.003	0.42	0.02	Surface Inlet Pits - Grass	600 Square Pit	0.005	0	0	0	0.046	43.5	7.49	225	173.34	170.08	173.43	170.82	3.03	0	173.43	173.9	0.47	EX PIT 4/1	
			Supp.	0	2																														
			Grassed	99	5				5																										
10%	EX PIT 3/1	0.019	Paved	12	5				5	0.005	EX PIT 4/1	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0.005	0.025	1.37	0.04	0.035	23.8	0.5	225	170.03	169.91	170.8	170.75	0.75	1.5	170.82	170.75	0	EX PIT 3/1	
			Supp.	0	2																														
			Grassed	88	5				5																										
10%	EX DP 6/1	0.08	Paved	50	5				5	0.024					Downpipe	Downpipe	0.024				0.024	20.2	1.04	150	175.24	175.03	175.9	175.52	1.3	1.9	176.06	180	3.94	EX DP 6/1	
			Supp.	0	2																														
			Grassed	50	5				5																										
10%	DP 1/9	0.0752	Paved	100	5				5	0.027					Downpipe	Downpipe	0.027	0.008	0.58	0.03	0.018	40	-2.13	100	172.2	173.05	176.14	173.16	2.1	1.8	176.54	176.55	0.01	DP 1/9	
			Supp.	0	2																														
			Grassed	0	0				0																										
10%	DP 1/8	0.0027	Paved	100	5				5	0.001					Downpipe	Downpipe	0.001				0.001	10	1	100	169.95	169.85	169.98	169.88	0.56	5.9	169.98	176.55	6.57	DP 1/8	
			Supp.	0	2																														
			Grassed	0	5				5																										
10%	PIT 2/5	0.0093	Paved	12	5				5	0.003					Surface Inlet Pits - Grass	600 Square Pit	0.003	0	0	0	0.003	10.5	1.05	100	169.8	169.69	169.86	169.74	0.76	5.9	169.87	173.25	3.38	PIT 2/5	
			Supp.	0	2																														
			Grassed	88	5				5																										
10%	DP LOT 507	0.08	Paved	50	5				5	0.024					Downpipe	Downpipe	0.024				0.024	20.2	1.04	150	175.24	175.03	175.9	175.52	1.3	1.9	176.06	180	3.94	P LOT 507	
			Supp.	0	2																														
			Grassed	50	5				5																										
10%	PIT 5/1		Paved												Surface Inlet Pits - Grass	600 Square Pit	0	0.003	0.42	0.02	0.042	21.9	7.49	150	175.02	173.38	175.17	173.58	2.24	1.9	175.52	175.5	0	PIT 5/1	
			Supp.																																
			Grassed																																
10%	PIT 4/1		Paved								PIT 5/1	0.003	0.42	0.02	Surface Inlet Pits - Grass	600 Square Pit	0.003	0	0	0	0.075	43.5	7.49	225	173.34	170.08	173.55	170.98	1.75	1.1	173.58	173.9	0.32	PIT 4/1	
			Supp.																																
			Grassed																																
10%	PIT 3/1		Paved								PIT 4/1	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0	0.038	1.76	0.05	0.066	23.8	0.5	225	170.03	169.91	170.7	170.4	1.44	2.7	170.98	170.75	0	PIT 3/1	
			Supp.																																
			Grassed																																
10%	PIT 2/1		Paved												Surface Inlet Pits - Grass	600 Square Pit	0	0	0	0	0.092	3.8	1.11	225	169.83	169.788	170.07	170.01	2.06	1.4	170.4	171.3	0.9	PIT 2/1	
			Supp.																																
			Grassed																																
10%	PIT 1/1		Paved								PIT 2/1	0	0	0	Sutherland Council Inlet, 1%	Sutherland 1.8 n	0	0	0	0	0.092	10	1	375	169.7	169.6	169.92	169.78	1.71	1.6	169.94	171	1.06	PIT 1/1	
			Supp.																																
			Grassed																																
10%	DP LOT 508	0.072	Paved	50	5				5	0.022					Downpipe	Downpipe	0.022				0.022	10	1	150	175.13	175.03	175.67	175.52	1.17	2.1	175.82	183.8	7.98	P LOT 508	
			Supp.	0	2																														
			Grassed	50	5				5																										
10%	DP LOT 506	0.0987	Paved	50	5				5	0.03					Downpipe	Downpipe	0.03				0.03	10	1	100	173.49	173.39	175.6	173.58	3.46	4	177.85	179	1.15	P LOT 506	
			Supp.	0	2																														
			Grassed	50	5				5																										
10%	DP LOT 502	0.0984	Paved	50	5				5	0.03					Downpipe	Downpipe	0.03				0.03	10	1	100	170.23	170.13	173.01	170.98	3.45	1.8	174.02	176	1.98	P LOT 502	
			Supp.	0	2																														
			Grassed	50	5				5																										
10%	DP LOT 503	0.0865	Paved	50	5				5	0.026					Downpipe	Downpipe	0.026				0.026	10	1	100	170.06	169.96	172.01	170.4	3.03	1.8	172.8	176.5	3.7	P LOT 503	
			Supp.	0	2																														
			Grassed	50	5				5																										
10%	OSD 1/3		Paved														0																	OSD 1/3	
			Supp.																																
			Grassed																																

REV	AMENDMENTS	REV DATE	INITIALS
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PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE

SHEET: 10/17

DWG NO: 200774

DESIGNED: BW
DRAWN: BW
CHECKED: AJB

ADDRESS: LOTS 502–503 (DP1201968) & LOT 506 (DP1201969)
4–8 ELIZA PLACE
PICTON NSW 2571

CLIENT: ENVIRONMENTAL PROPERTY SERVICES

CERTIFIED DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.

SIGNED & APPROVED: D.TURNER
B.E.(MIEAust) CPEng

1 IN 100 YEAR (1% AEP) – MAJOR CALCULATIONS

ILSAX CALCULATION SUMMARY SHEET

DRAINS results prepared from Version 2022.01

		Entire Catchment Area	
Soil Type 3	Paved	0.507 ha	(43.9%)
	Supplementary	0 ha	(0%)
AMC 3	Grassed	0.647 ha	(56%)
	Total Area	1.154 ha	

LOCATION AND LAND-USE					TIME AND RUNOFF						INLET DESIGN								PIPE SYSTEM DESIGN								PIT RESULTS					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Design AEP	Pit Name	Sub-Catchment Area (ha)	Land-Use	Percent-age	Constant Flow Time (minutes)	Length (m)	Kinematic Wave or Friends Formula Parameters Slope (%)	Roughness n	Total Time tc (minutes)	Peak Sub-Catchment Flowrate (m^3/s) *worst storm	Origin of Approach Flows	Flowrate (m^3/s)	Overflows Approaching Pit Flow Width (m)	Depth x Velocity (m^2/s)	Inlet Family	Inlet Size	Total Approach Flow (m^3/s)	Bypass Flow (m^3/s)	Overflow Leaving Pit Flow Width (m)	Depth x Velocity (m^2/s)	Peak Flow in Pipe (m^3/s)	Reach Length (m)	Pipe Slope (m)	Pipe Diameter (mm)	U/S Pipe Invert Level (m)	D/S Pipe Invert Level (m)	U/S HGL in Pipe (m)	D/S HGL in Pipe (m)	Pipe Flow Velocity (m/s)	Pressure Change Coeff. Ku	Water Surface Elevation (m)	Surface Level (m)	Free-board (m)	Pit Name	Remarks
1%	**PIT 1/4**	0.0281	Paved	89	5				5	0.014					Grated Drain	4.5m Wide x 0.3	0.014	0.001	1.97	0	0.013	1.7	1.18	150	173.12	173.1	173.23	173.22	0.95	5.9	173.39	173.62	0.23	**PIT 1/4**	
			Supp.	0	2				5																									
			Grassed	11	5																													
1%	**PIT 5/2**		Paved								PIT 6/2	0	0	0	Surface Inlet Pits - Paved	600 Square Pit	0	0	0	0	0.034	11.5	1.04	225	173.07	172.95	173.22	173.08	1.37	0.3	173.22	173.6	0.38	**PIT 5/2**	
			Supp.																															
			Grassed																															
1%	**PIT 4/2**	0.0413	Paved	100	5				5	0.022	PIT 1/4	0.001	1.97	0	Surface Inlet Pits - Paved	600 Square Pit	0.023	0.015	4	0.02	0.041	25	1	225	172.05	171.8	172.41	172.29	0.89	5.5	172.63	173.45	0.82	**PIT 4/2**	
			Supp.	0	2				5		PIT 5/2	0	0	0																				
			Grassed	0	5																													
1%	**PIT 3/2**	0.0318	Paved	12	5				5	0.013	PIT 4/2	0.015	4	0.02	Surface Inlet Pits - Grass	600 Square Pit	0.028	0.016	4	0.01	0.053	4.4	1.14	225	171.8	171.75	172.15	172.11	1.15	2.1	172.29	173.35	1.06	**PIT 3/2**	
			Supp.	0	2				5																									
			Grassed	88	5																													
1%	**L ECOCEPTOR 2/2**		Paved												Junction Pit or Manhole (se	Junction Pit or M	0				0.053	4.6	1.52	225	171.67	171.6	171.86	171.75	1.74	4.8	172.11	173.4	1.29	**ECOCEPTOR 2/2**	
			Supp.																															
			Grassed																															
1%	**PIT 1/2**	0.0102	Paved	0	5				5	0.004	PIT 3/2	0.016	4	0.01	Large Pit	Large Pit	0.042	0	0	0	0.091	2.2	4.55	225	170.6	170.5	170.84	170.79	1.99	2.2	171.24	173.3	2.06	**PIT 1/2**	
			Supp.	0	2				5		DP 1/9	0.022	1.02	0.04																				
			Grassed	100	5																													
1%	**EX. PIT 2/1**	0.0036	Paved	0	5				5	0.001	PIT 1/2	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0.001	0	0	0	0.126	3.8	1.11	225	169.83	169.788	170.18	170.03	2.73	1.5	170.79	171.3	0.51	**EX. PIT 2/1**	
			Supp.	0	2				5																									
			Grassed	100	5																													
1%	**EX. PIT 1/1**		Paved								EX. PIT 2/1	0	0	0	Sutherland Council Inlet, 1%	Sutherland 1.8 n	0	0	0	0	0.126	10	1	375	169.7	169.6	169.96	169.82	1.84	1.4	170	171	1	**EX. PIT 1/1**	
			Supp.																															
			Grassed																															
1%	**PIT 8/2**	0.0185	Paved	0	5				5	0.007					Surface Inlet Pits - Grass	600 Square Pit	0.007	0.003	0.6	0.01	0.005	6.4	1.09	150	173.45	173.38	173.72	173.72	0.27	5.9	173.74	173.75	0.01	**PIT 8/2**	
			Supp.	0	2				5																									
			Grassed	100	5																													
1%	**PIT 7/2**	0.0202	Paved	88	5				5	0.01	PIT 8/2	0.003	0.6	0.01	Surface Inlet Pits - Grass	600 Square Pit	0.013	0	0	0	0.015	12.5	1.04	150	173.38	173.25	173.55	173.48	0.8	5.9	173.72	173.7	0	**PIT 7/2**	
			Supp.	0	2				5																									
			Grassed	12	5																													
1%	**PIT 6/2**	0.0143	Paved	90	5				5	0.007	PIT 7/2	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0.007	0	0	0	0.021	9.6	1.04	150	173.2	173.1	173.37	173.23	1.25	1.4	173.48	173.6	0.12	**PIT 6/2**	
			Supp.	0	2				5																									
			Grassed	10	5																													
1%	**PIT 2/6**		Paved								PIT 2/5	0	0	0	Surface Inlet Pits - Grass	600 Square Pit	0				0	10.5	1.52	100	169.85	169.69	169.85	169.69	0	1.5	169.85	173.3	3.45	**PIT 2/6**	
			Supp.																															
			Grassed																															
1%	**EX DP 1/7**	0.072	Paved	50	5				5	0.032					Downpipe	Downpipe	0.032				0.032	10	1	150	175.13	175.03	176.16	175.83	1.73	2.1	176.47	183.8	7.33	**EX DP 1/7**	
			Supp.	0	2				5																									
			Grassed	50	5																													
1%	**EX PIT 5/1**		Paved												Surface Inlet Pits - Grass	600 Square Pit	0	0.019	1.05	0.06	0.049	21.9	7.49	150	175.02	173.38	175.17	173.53	2.62	1.9	175.83	175.5	0	**EX PIT 5/1**	
			Supp.																															
			Grassed																															
1%	**EX PIT 4/1**	0.0062	Paved	1	5				5	0.003	EX PIT 5/1	0.019	1.05	0.06	Surface Inlet Pits - Grass	600 Square Pit	0.022	0.01	1.87	0.03	0.059	43.5	7.49	225	173.34	170.08	173.44	170.87	3.25	0	173.44	173.9	0.46	**EX PIT 4/1**	
			Supp.	0	2				5																									
			Grassed	99	5																													
1%	**EX PIT 3/1**	0.019	Paved	12	5				5	0.008	EX PIT 4/1	0.01	1.87	0.03	Surface Inlet Pits - Grass	600 Square Pit	0.018	0.044	1.91	0.05	0.036	23.8	0.5	225	170.03	169.91	170.84	170.79	0.78	1.5	170.87	170.75	0	**EX PIT 3/1**	
			Supp.	0	2				5																									
			Grassed	88	5																													
1%	**EX DP 6/1**	0.08	Paved	50	5				5	0.036					Downpipe	Downpipe	0.036				0.036	20.2	1.04	150	175.24	175.03	176.64	175.83	1.92	1.9	176.99	180	3.01	**EX DP 6/1**	
			Supp.	0	2				5																									
			Grassed	50	5																													
1%	**DP 1/9**	0.0752	Paved	100	5				5	0.04					Downpipe	Downpipe	0.04	0.022	1.02	0.04	0.018	40	-2.13	100	172.2	173.05	176.19	173.17	2.11	1.8	176.56	176.55	0	**DP 1/9**	
			Supp.	0	2				0																									
			Grassed	0	0																													
1%	**DP 1/8**	0.0027	Paved	100	5				5	0.001					Downpipe	Downpipe	0.001				0.001	10	1	100	169.95	169.85	170	169.92	0.36	5.9	170.01	176.55	6.54	**DP 1/8**	
			Supp.	0	2				5																									
			Grassed	0	5																													
1%	**PIT 2/5**	0.0093	Paved	12	5				5	0.004					Surface Inlet Pits - Grass	600 Square Pit	0.004	0	0	0	0.005	10.5	1.05	100	169.8	169.69	169.87	169.76	0.83	5.9	169.92	173.25	3.33	**PIT 2/5**	
			Supp.	0	2				5																									
			Grassed	88	5																													
1%	**DP LOT 507**	0.08	Paved	50	5				5	0.036					Downpipe	Downpipe	0.036				0.036	20.2	1.04	150	175.24	175.03	176.65	175.85	1.92	1.9	177	180	3	**DP LOT 507**	
			Supp.	0	2				5																									
			Grassed	50	5																													
1%	**PIT 5/1**		Paved												Surface Inlet Pits - Grass	600 Square Pit	0	0.02	1.07	0.06	0.048	21.9	7.49	150	175.02	173.38	175.22	173.62	2.6	1.9	175.85	175.5	0	**PIT 5/1**	
			Supp.																															
			Grassed																															
1%	**PIT 4/1**		Paved								PIT 5/1	0.02	1.07	0.06	Surface Inlet Pits - Grass	600 Square Pit	0.02	0.009	4	0.03	0.094	43.5	7.49	225	173.34	170.08	173.57	171.26	2.1	1.1	173.62	173.9	0.28	**PIT 4/1**	
			Supp.																															
			Grassed																															
1%	**PIT 3/1**		Paved								PIT 4/1	0.009	4	0.03	Surface Inlet Pits - Grass	600 Square Pit	0.009	0.066	4	0.05	0.072	23.8	0.5	225	170.03	169.91	170.92	170.57	1.57	2.7	171.26	170.75	0	**PIT 3/1**	
			Supp.																															
			Grassed																															
1%	**PIT 2/1**		Paved												Surface Inlet Pits - Grass	600 Square Pit	0	0	0	0	0.111	3.8	1.11	225	169.83	169.788	170.12	170.03	2.42	1.4	170.57	171.3	0.73	**PIT 2/1**	
			Supp.																															
			Grassed																															
1%	**PIT 1/1**		Paved								PIT 2/1	0	0	0	Sutherland Council Inlet, 1%	Sutherland 1.8 n	0	0	0	0	0.111	10	1	375	169.7	169.6	169.94	169.8	1.79	1.6	169.98	171	1.02	**PIT 1/1**	
			Supp.																															
			Grassed																															
1%	**DP LOT 508**	0.072	Paved	50	5				5	0.032					Downpipe	Downpipe	0.032				0.032	10	1	150	175.13	175.03	176.17	175.85	1.73	2.1	176.49	183.8	7.31	**DP LOT 508**	
			Supp.	0	2				5																									
			Grassed	50	5																													
1%	**DP LOT 506**	0.0987	Paved	50	5				5	0.044					Downpipe	Downpipe	0.044				0.034	10	1	100	173.49	173.39	176.16	173.62	3.93	4	179	179	0	**DP LOT 506**	
			Supp.	0	2				5																									
			Grassed	50	5																													
1%	**DP LOT 502**	0.0984	Paved	50	5				5	0.044					Downpipe	Downpipe	0.044				0.038	10	1	100	170.23	170.13	174.42	171.26	4.42	1.8	175.98	176	0.02	**DP LOT 502**	
			Supp.	0	2				5																									
			Grassed	50	5																													
1%	**DP LOT 503**	0.0865	Paved	50	5				5	0.039					Downpipe	Downpipe	0.039				0.039	10	1	100	170.06	169.96	173.88	170.57	4.47	1.8	175.51	176.5	0.99	**DP LOT 503**	
			Supp.	0	2				5																									
			Grassed	50	5																													
1%	**OSD 1/3**		Paved														0																	**OSD 1/3**	
			Supp.																															
			Grassed																															

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PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE

SHEET: 11/17

DWG NO: 200774

DESIGNED: BW
DRAWN: BW
CHECKED: AJB

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4–8 ELIZA PLACE
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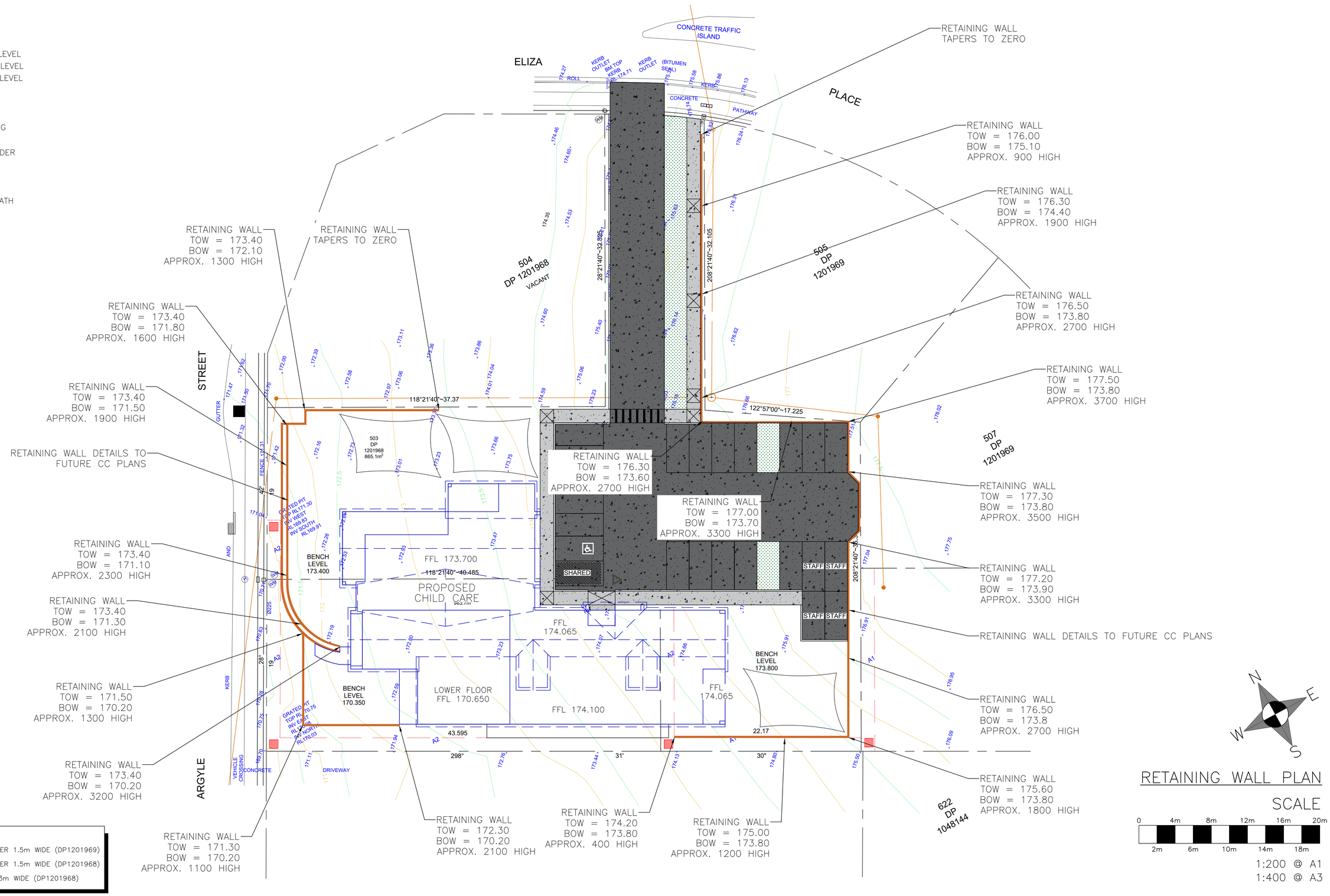
CERTIFIED DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.

SIGNED & APPROVED: D.TURNER
B.E.(MIEAust) CPEng

KEY:

CL = CONCRETE LEVEL
PL = PAVEMENT LEVEL
FFL = FININSHED FLOOR LEVEL
FGL = FINISHED GROUND LEVEL
EGL = EXISTING GROUND LEVEL
IL = INVERT LEVEL
TOK = TOP OF KERB
GL = GRATE LEVEL
I/O = INSPECTION OPENING
DP = DOWNPIPE
DP/S = DOWNPIPE SPREADER
RH = RAINHEAD
BG = BOX GUTTER
SMH = SEWER MANHOLE
OVF = OVERLAND FLOW PATH
DJ = DOWEL JOINT
SJ = SAWN JOINT



EASEMENTS:

A1 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201969)
A2 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201968)
B – RIGHT OF CARRIAGE WAY 3m WIDE (DP1201968)

RETAINING WALL PLAN

SCALE

0 4m 8m 12m 16m 20m
2m 6m 10m 14m 18m

1:200 @ A1
1:400 @ A3

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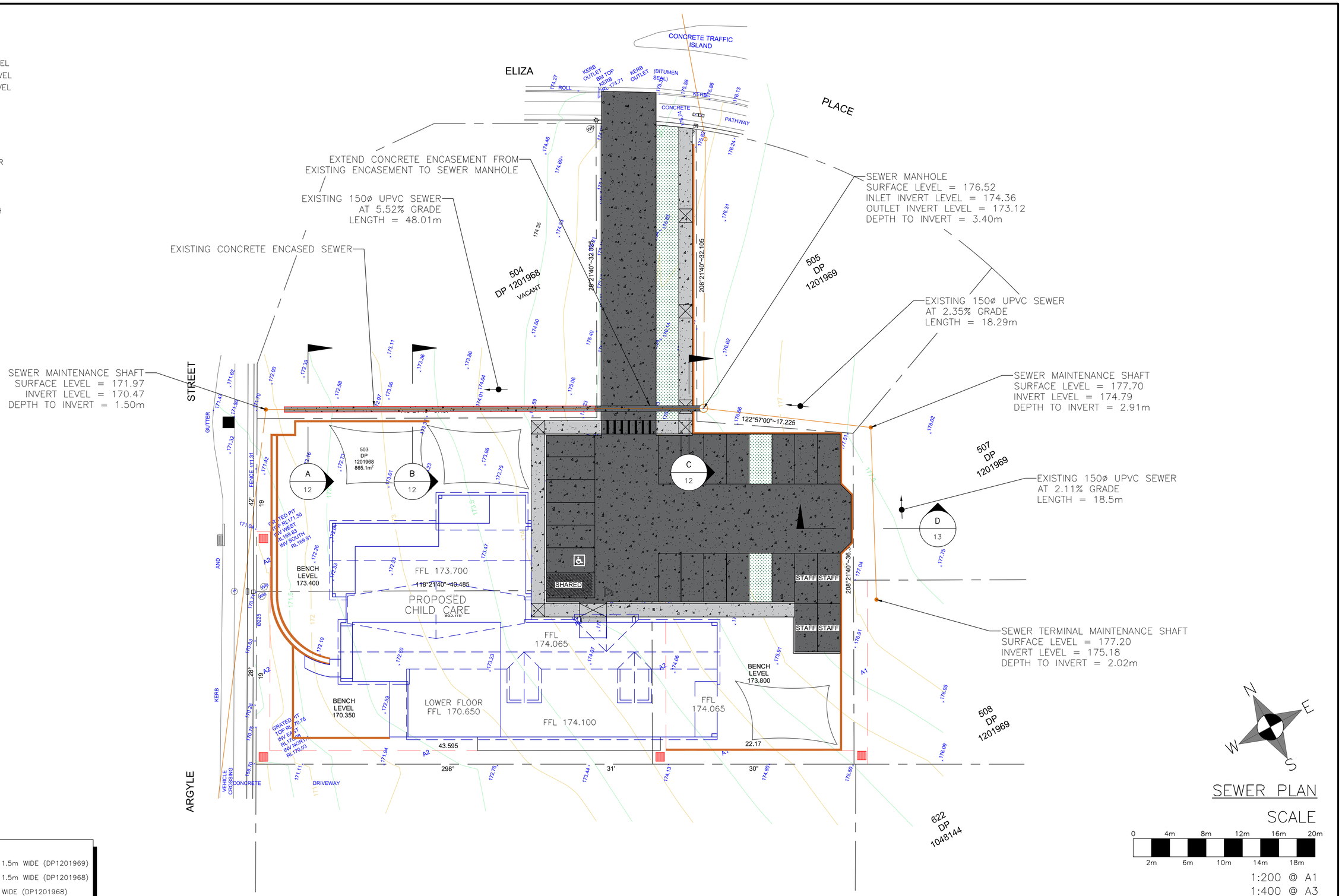
DJ = DOWEL JOINT
SJ = SAWN JOINT



SEWER PLAN

SCALE

0 4m 8m 12m 16m 20m
2m 6m 10m 14m 18m

1:200 @ A1
1:400 @ A3

EASEMENTS:

A1 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201969)
A2 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201968)
B – RIGHT OF CARRIAGE WAY 3m WIDE (DP1201968)

REV	AMENDMENTS	REV DATE	INITIALS
—	–	–	–
—	–	–	–
B	DRIVEWAY LAYOUT AMENDED	25/05/22	SDL
A	CIVIL PLANS REVISED TO SUIT NEW ARCH PLANS	13/05/22	SDL
A1	SCALE: AS SHOWN ON SHEET	DATE: 28/09/2020	

D&M CONSULTING
CIVIL & STRUCTURAL ENGINEERS

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CIVIL AND STRUCTURAL ENGINEERS
SHOP 1 & 2,
16 MITCHELL STREET, CAMDEN
PH (02) 4647 4014
EMAIL: engineer@dmceng.com.au

PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE

SHEET: 13/17

DWG NO: 200774

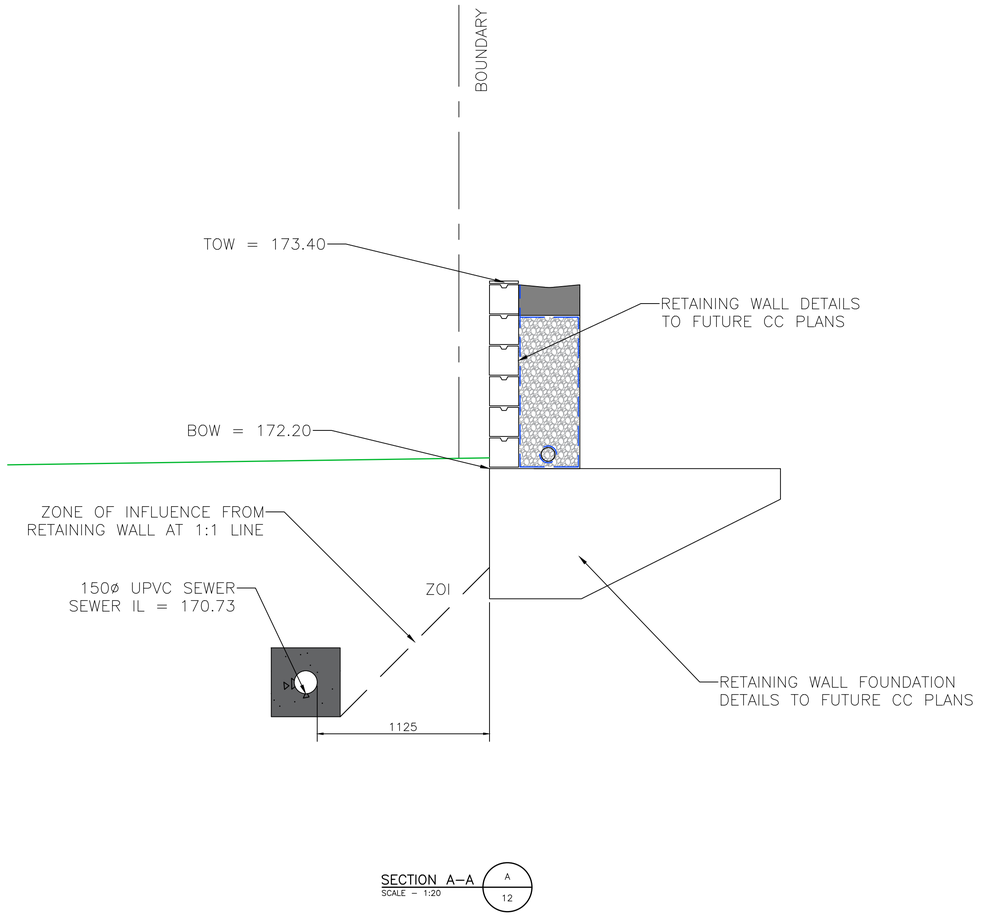
DESIGNED: BW
DRAWN: BW
CHECKED: AJB

ADDRESS: LOTS 502–503 (DP1201968) & LOT 506 (DP1201969)
4–8 ELIZA PLACE
PICTON NSW 2571

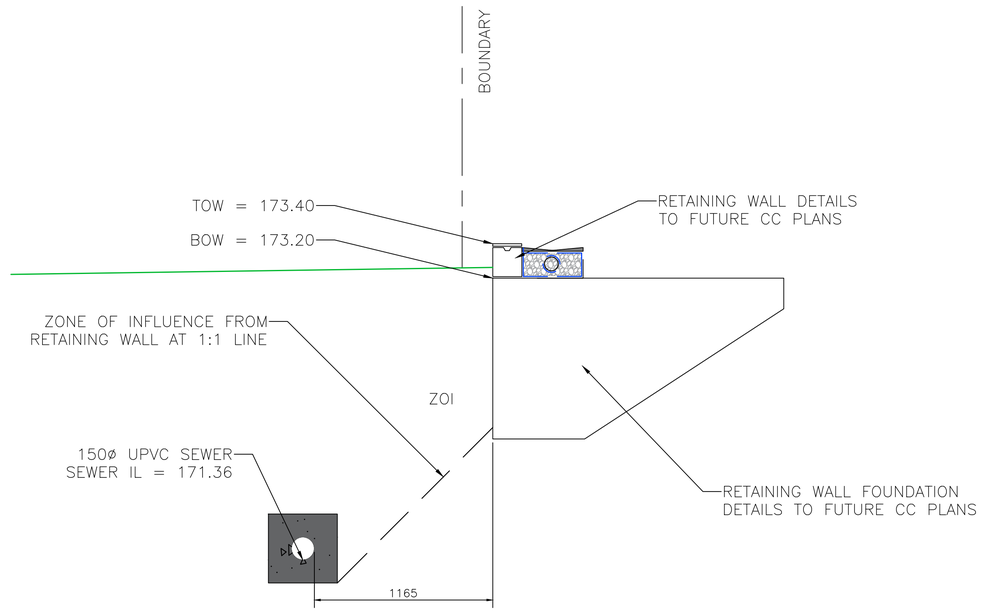
CLIENT: ENVIRONMENTAL PROPERTY SERVICES

CERTIFIED DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.

SIGNED & APPROVED: D.TURNER
B.E.(MIEAust) CPEng



SECTION A–A (A/12)
SCALE – 1:20



SECTION B–B (B/12)
SCALE – 1:20

REV	AMENDMENTS	REV DATE	INITIALS
—	–	–	–
—	–	–	–
B	DRIVEWAY LAYOUT AMENDED	25/05/22	SDL
A	CIVIL PLANS REVISED TO SUIT NEW ARCH PLANS	13/05/22	SDL
A1	SCALE: AS SHOWN ON SHEET	DATE: 28/09/2020	

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EMAIL: engineer@dmceng.com.au

PROJECT: CIVIL DESIGN FOR
PROPOSED CHILDCARE CENTRE

SHEET: 14/17

DWG NO: 200774

DESIGNED: BW
DRAWN: BW
CHECKED: AJB

ADDRESS: LOTS 502–503 (DP1201968) & LOT 506 (DP1201969)
4–8 ELIZA PLACE
PICTON NSW 2571

CLIENT: ENVIRONMENTAL PROPERTY SERVICES

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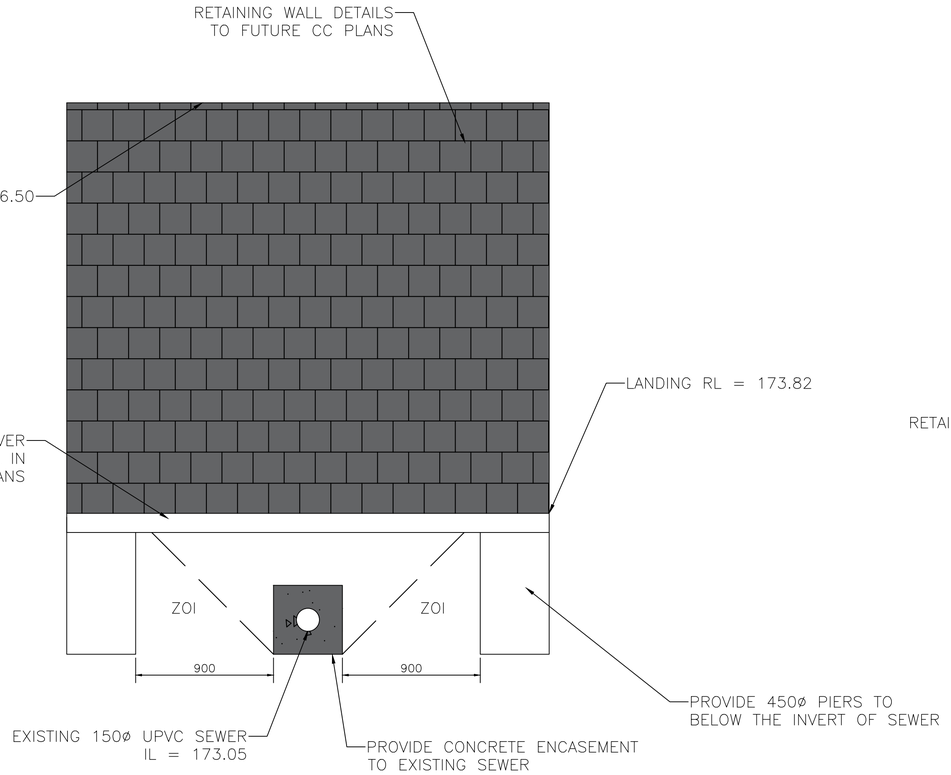
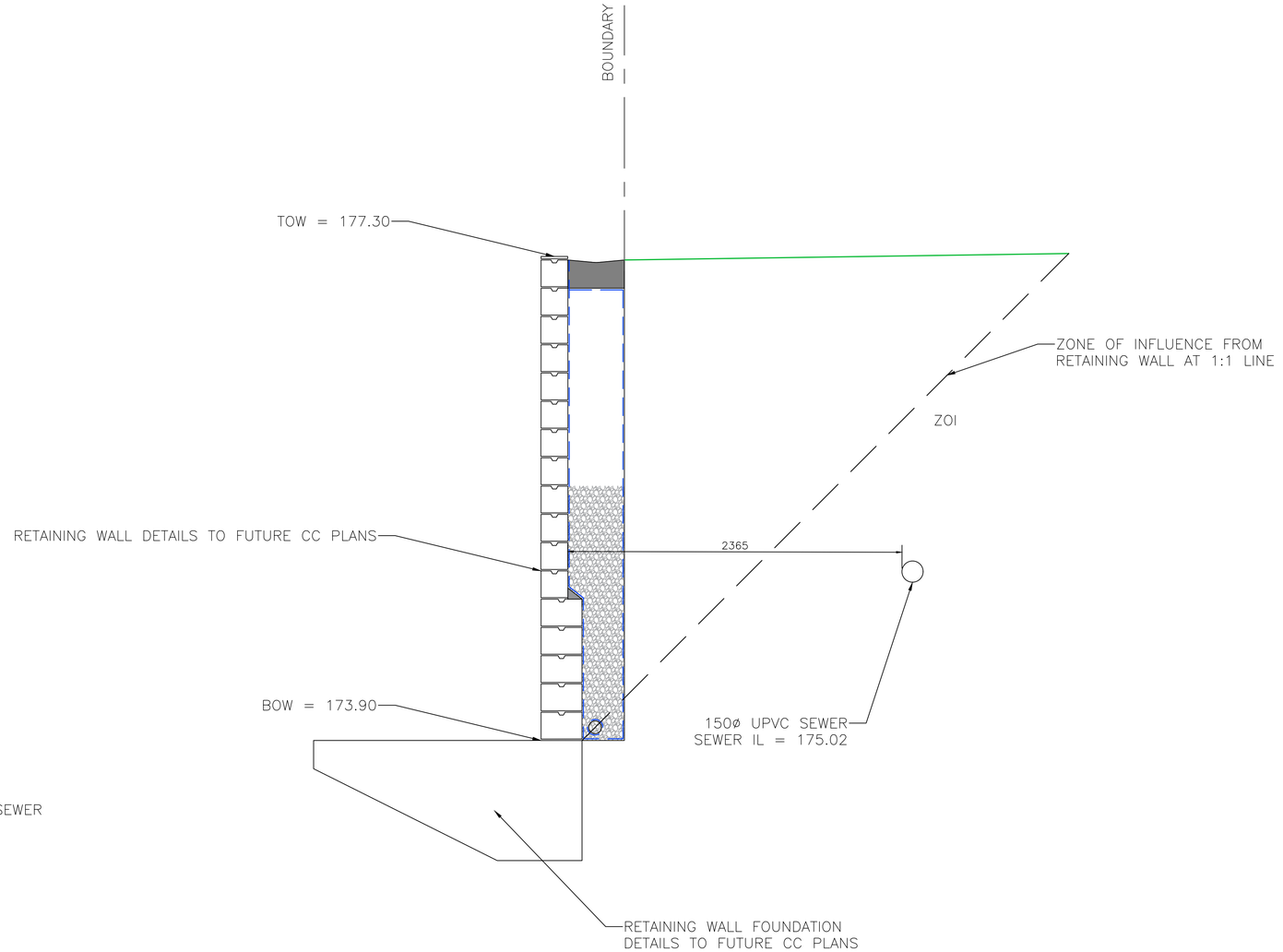


SECTION C–C (C / 13)
SCALE – 1:20



SECTION D–D (D / 13)
SCALE – 1:20

REV	AMENDMENTS	REV DATE	INITIALS
—	–	–	–
—	–	–	–
B	DRIVEWAY LAYOUT AMENDED	25/05/22	SDL
A	CIVIL PLANS REVISED TO SUIT NEW ARCH PLANS	13/05/22	SDL
A1	SCALE: AS SHOWN ON SHEET	DATE: 28/09/2020	

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PH (02) 4647 4014
EMAIL: engineer@dmceng.com.au

PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE

SHEET: 15/17

DWG NO: 200774

DESIGNED: BW
DRAWN: BW
CHECKED: AJB

ADDRESS: LOTS 502–503 (DP1201968) & LOT 506 (DP1201969)
4–8 ELIZA PLACE
PICTON NSW 2571

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NOTE:
IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORKS

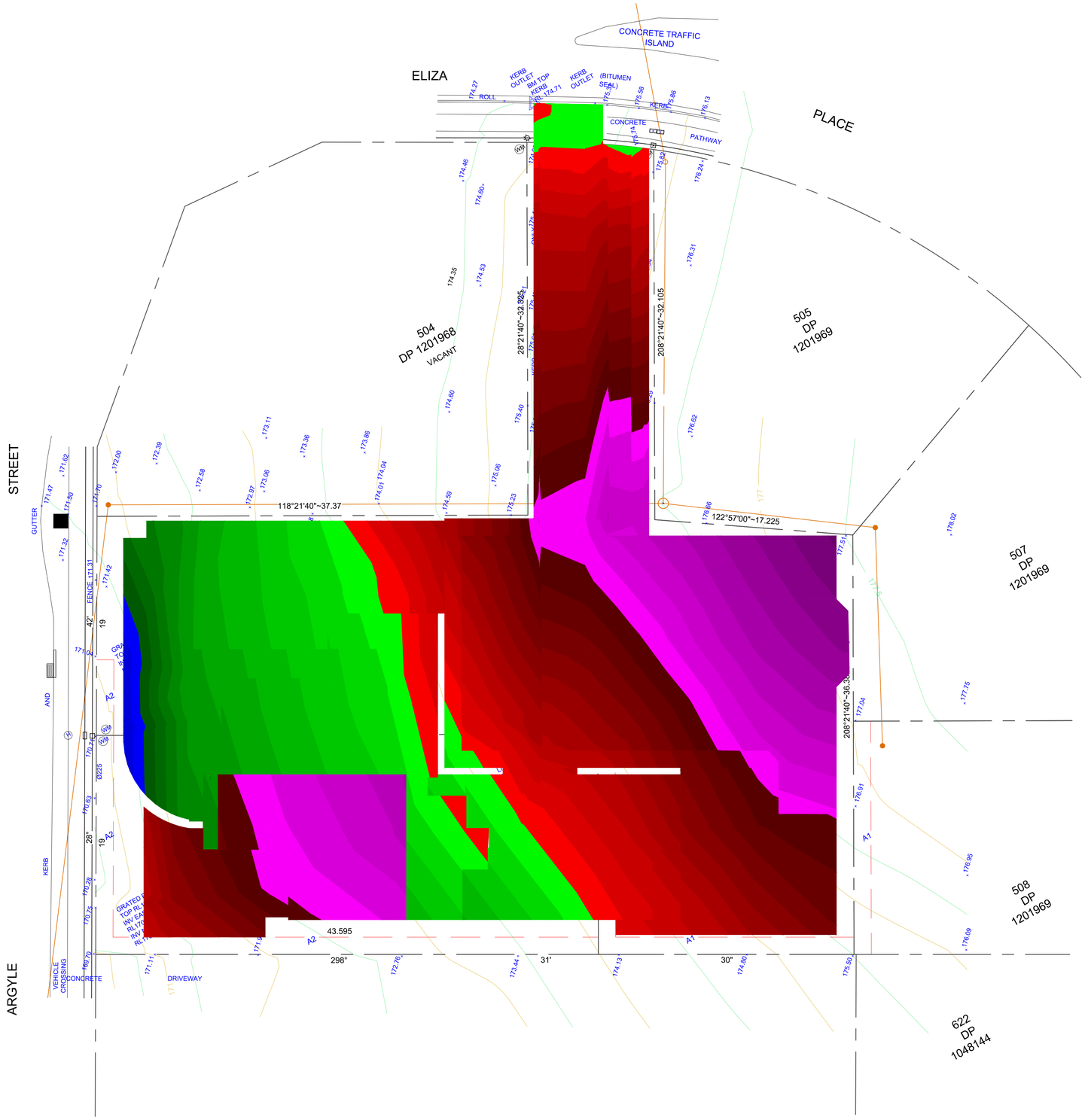
DIAL BEFORE YOU DIG www.1100.com.au

CUT/FILL	RANGE	COLOUR CODE
CUT	3.8m – 4.0m	MAGENTA 088
CUT	3.6m – 3.8m	MAGENTA 104
CUT	3.4m – 3.6m	MAGENTA 120
CUT	3.2m – 3.4m	MAGENTA 136
CUT	3.0m – 3.2m	MAGENTA 152
CUT	2.8m – 3.0m	MAGENTA 168
CUT	2.6m – 2.8m	MAGENTA 184
CUT	2.4m – 2.6m	MAGENTA 200
CUT	2.2m – 2.4m	MAGENTA 216
CUT	2.0m – 2.2m	MAGENTA 248
CUT	2.0m – 1.8m	RED 088
CUT	1.8m – 1.6m	RED 104
CUT	1.6m – 1.4m	RED 120
CUT	1.4m – 1.2m	RED 136
CUT	1.2m – 1.0m	RED 152
CUT	1.0m – 0.8m	RED 168
CUT	0.8m – 0.6m	RED 184
CUT	0.6m – 0.4m	RED 200
CUT	0.4m – 0.2m	RED 216
CUT	0.2m – 0.0m	RED 248
FILL	0.0m – 0.2m	GREEN 248
FILL	0.2m – 0.4m	GREEN 216
FILL	0.4m – 0.6m	GREEN 200
FILL	0.6m – 0.8m	GREEN 184
FILL	0.8m – 1.0m	GREEN 168
FILL	1.0m – 1.2m	GREEN 152
FILL	1.2m – 1.4m	GREEN 136
FILL	1.4m – 1.6m	GREEN 120
FILL	1.6m – 1.8m	GREEN 104
FILL	1.8m – 2.0m	GREEN 088
FILL	2.0m – 2.2m	BLUE 248
FILL	2.2m – 2.4m	BLUE 216
FILL	2.4m – 2.6m	BLUE 200
FILL	2.6m – 2.8m	BLUE 184
FILL	2.8m – 3.0m	BLUE 168
FILL	3.0m – 3.2m	BLUE 152
FILL	3.2m – 3.4m	BLUE 136
FILL	3.4m – 3.6m	BLUE 120
FILL	3.6m – 3.8m	BLUE 104
FILL	3.8m – 4.0m	BLUE 088

TOTAL CUT TO DESIGN SURFACE = 2,700m^3

TOTAL FILL TO DESIGN SURFACE = 500m^3

NOTE: CUT AND FILL TO DESIGN SURFACE



EASEMENTS:

A1 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201969)

A2 – EASEMENT TO DRAIN WATER 1.5m WIDE (DP1201968)

B – RIGHT OF CARRIAGE WAY 3m WIDE (DP1201968)

N E S W

CUT & FILL PLAN

SCALE

0 4m 8m 12m 16m 20m

2m 6m 10m 14m 18m

1:200 @ A1

1:400 @ A3

REV	AMENDMENTS	REV DATE	INITIALS
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PROJECT: CIVIL DESIGN FOR PROPOSED CHILDCARE CENTRE

SHEET: 16/17

DWG NO: 200774

DESIGNED: BW
DRAWN: BW
CHECKED: AJB

ADDRESS: LOTS 502–503 (DP1201968) & LOT 506 (DP1201969)
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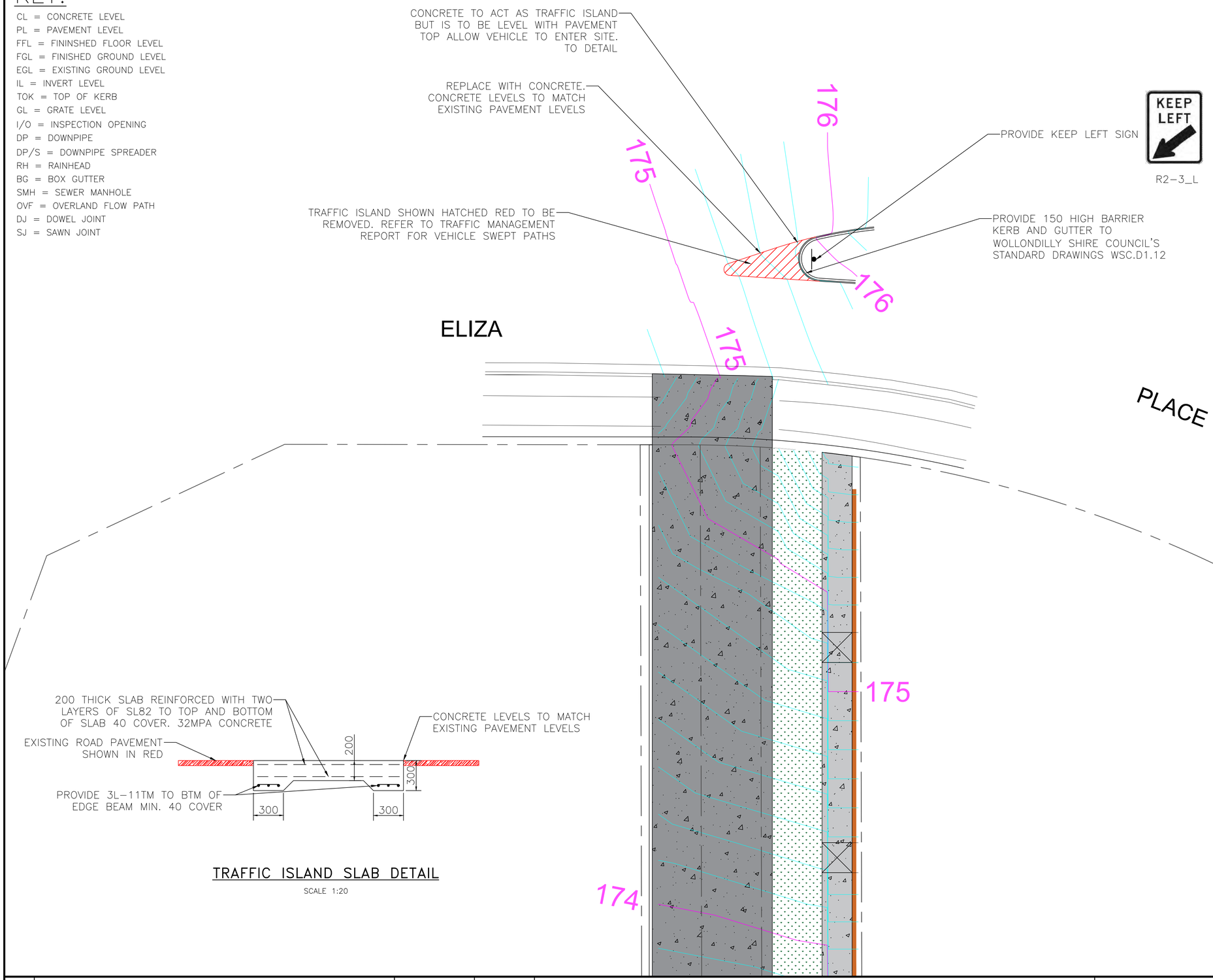
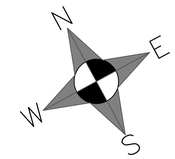
KEY:

CL = CONCRETE LEVEL
PL = PAVEMENT LEVEL
FFL = FININSHED FLOOR LEVEL
FGL = FINISHED GROUND LEVEL
EGL = EXISTING GROUND LEVEL
IL = INVERT LEVEL
TOK = TOP OF KERB
GL = GRATE LEVEL
I/O = INSPECTION OPENING
DP = DOWNPIPE
DP/S = DOWNPIPE SPREADER
RH = RAINHEAD
BG = BOX GUTTER
SMH = SEWER MANHOLE
OVF = OVERLAND FLOW PATH
DJ = DOWEL JOINT
SJ = SAWN JOINT



TRAFFIC ISLAND SLAB DETAIL

SCALE 1:20



TRAFFIC ISLAND PLAN

SCALE

0 4m 8m 12m 16m 20m
2m 6m 10m 14m 18m

1:200 @ A1
1:400 @ A3

REV	AMENDMENTS	REV DATE	INITIALS
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