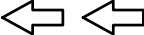
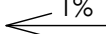
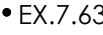
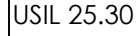
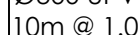
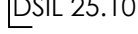
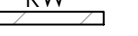
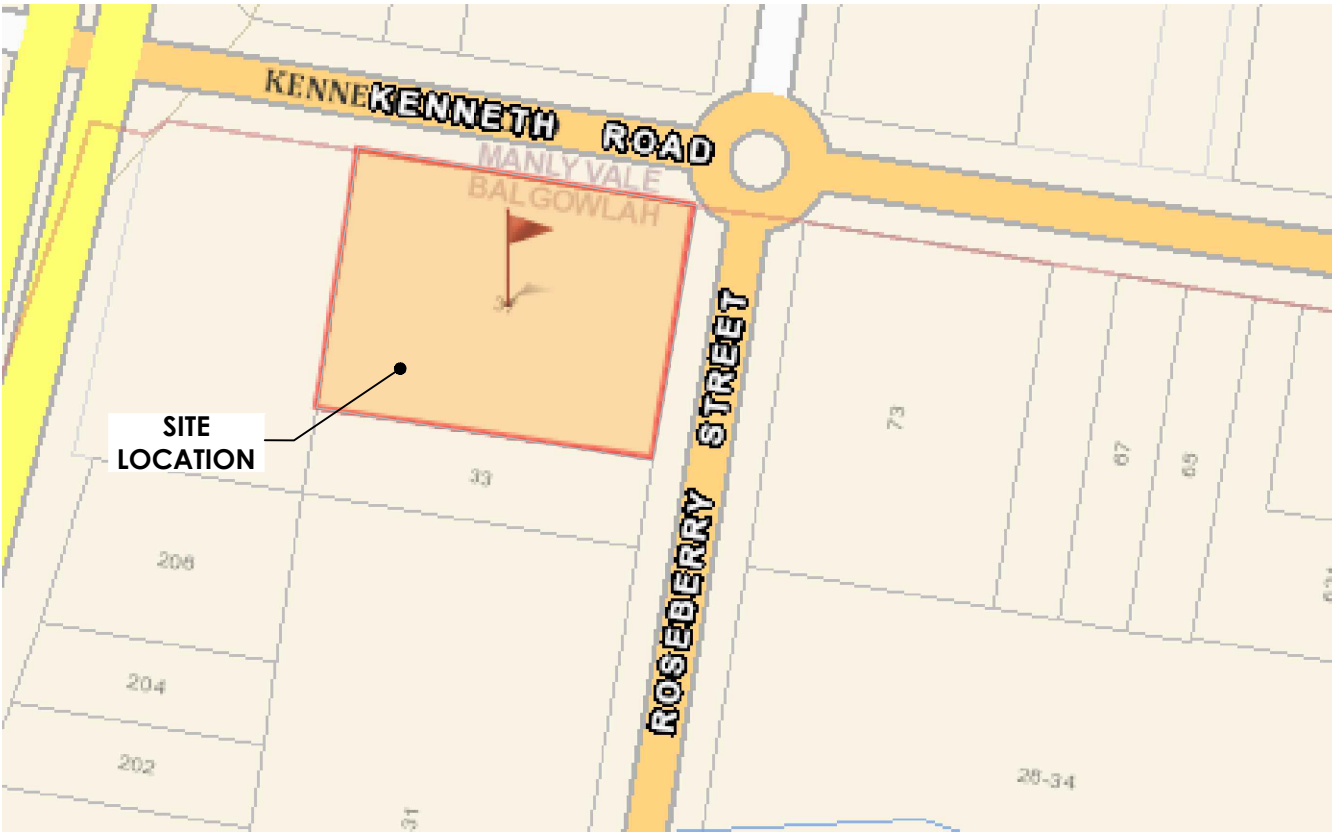
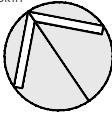


McDONALD'S BALGOWLAH
37 ROSEBERRY STREET, BALGOWLAH NSW 2093
CIVIL SERVICES

LEGEND	
	OVERLAND FLOW PATH 1% AEP
	FALL ARROW
	FINISHED SURFACE LEVEL
	EXISTING SURFACE LEVEL
	KERB AND GUTTER
	KERB ONLY
	KERB RAMP
	SLOTTED KERB
	DOWNPIPE
	GRATED DRAIN
	STORMWATER DRAINAGE STRUCTURE
	EXISTING STORMWATER DRAINAGE LINE
	STORMWATER DRAINAGE LINE WITH;
	INVERT LEVEL UPSTREAM
	PIPE SIZE AND MATERIAL CLASS
	PIPE LENGTH AND GRADE
	INVERT LEVEL DOWNSTREAM
	RETAINING WALL
	HIGH POINT
	PIT NUMBER
	BATTER



DRAWING SCHEDULE	
C100	COVER SHEET, LEGEND, AND DRAWING SCHEDULE
C101	NOTES - SHEET 1
C102	NOTES - SHEET 2
C103	NOTES - SHEET 3
C104	EXISTING SERVICES PLAN
C200	EROSION AND SEDIMENT CONTROL PLAN
C201	EROSION AND SEDIMENT CONTROL DETAILS - SHEET 1
C202	EROSION AND SEDIMENT CONTROL DETAILS - SHEET 2
C300	CIVIL WORKS PLAN
C301	CIVIL WORKS DETAILS
C400	STORMWATER MANAGEMENT PLAN
C401	STORMWATER MANAGEMENT DETAILS - SHEET 1
C402	STORMWATER MANAGEMENT DETAILS - SHEET 2
C403	STORMWATER MANAGEMENT DETAILS - SHEET 3
C500	CATCHMENT PLAN
C501	STORMWATER CATCHMENT ANALYSIS PLAN

				NORTH		CLIENT		ARCHITECT		CIVIL ENGINEER		PROJECT		DRAWING TITLE	
						 						McDONALDS BALGOWLAH		COVER SHEET, LEGEND, AND DRAWING SCHEDULE	
C				ISSUE FOR DA		06.12.24		YS		NP		37 ROSEBERRY STREET		DRAWN	
B				ISSUE FOR DA		29.11.24		YS		NP		BALGOWLAH, NSW 2093		DATE	
A				ISSUE FOR DRAFT DA		15.11.24		YS		NP		DESIGNED		PROJECT NO.	
ISSUE				AMENDMENT		DATE		DRAWN		APP		NP		240001-26	
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SITEWORKS NOTES

1. ORIGIN OF LEVELS :- AUSTRALIAN HEIGHT DATUM (A.H.D.)
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
3. ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS, THE SPECIFICATIONS AND THE DIRECTIONS OF THE PRINCIPAL'S REPRESENTATIVE.
4. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE PRINCIPAL'S REPRESENTATIVE. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
5. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
7. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER COMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
8. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH AN APPROVED NON-NATURAL GRANULAR MATERIAL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS.1289.5.1.1.
9. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
10. ON COMPLETION OF PIPE INSTALLATION ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS.
11. PROVIDE 10mm WIDE EXPANDING CORK JOINTS BETWEEN CONCRETE PAVEMENTS AND ALL BUILDINGS , WALLS, FOOTINGS, COLUMNS, KERBS, DISH DRAINS, GRATED DRAINS, BOLLARD FOOTINGS ETC
12. CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS.
13. ALL BATTERS TO BE GRASSED LINED WITH MINIMUM 100 TOPSOIL AND APPROVED COUCH LAID AS TURF.

SITEWORKS NOTES (CONT.)

1. MAKE SMOOTH TRANSITION TO EXISTING SERVICES AND MAKE GOOD.
2. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY DIVERSION DRAINS AND MOUNDS TO ENSURE THAT AT ALL TIMES EXPOSED SURFACES ARE FREE DRAINING AND WHERE NECESSARY EXCAVATE SUMPS AND PROVIDE PUMPING EQUIPMENT TO DRAIN EXPOSED AREAS.
3. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
4. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
5. ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MIN OF 500mm PAST PAVING.
6. ON COMPLETION OF WORKS ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL INCLUDING, BUT NOT LIMITED TO, KERBS, FOOTPATHS, CONCRETE AREAS, GRASS AND LANDSCAPED AREAS.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

- E1. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT AT THE SUBJECT SITE.
- E2. THE PRINCIPAL'S REPRESENTATIVE WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 2004 (BLUE BOOK).
- E3. ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

CONSTRUCTION SEQUENCE

- E4. THE SOIL EROSION POTENTIAL ON THIS SITE SHALL BE MINIMISED. HENCE WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :
- a. INSTALL SEDIMENT FENCES, TEMPORARY CONSTRUCTION EXIT AND SANDBAG KERB INLET SEDIMENT TRAP.
- b. UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION AND SEDIMENT CONTROL NOTES (CONT.)

EROSION CONTROL

- E5. DURING WINDY CONDITIONS, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
- E6. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

FENCING

- E7. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
- E8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
- E9. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
- E10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS

- E11. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
- E12. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE PRINCIPAL'S REPRESENTATIVE.

SITE INSPECTION & MAINTENANCE

- E13. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AFTER RAINFALL EVENTS TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIR AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.

					NORTH		CLIENT		ARCHITECT		CIVIL ENGINEER		PROJECT		DRAWING TITLE						
													McDONALDS BALGOWLAH		NOTES SHEET 1						
C	ISSUE FOR DA	06.12.24	YS	NP									37 ROSEBERRY STREET BALGOWLAH, NSW 2093		DRAWN		DATE	SCALE	A3	QA CHECK	DATE
B	ISSUE FOR DA	29.11.24	YS	NP											YS		NOV 24			NP	
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EXISTING SERVICES AND FEATURES

- 1. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION, REMOVAL AND DISPOSAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA, AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE PRINCIPAL'S REPRESENTATIVE.
- 2. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
- 3. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN WRITTEN APPROVAL OF THEIR PROGRAMME FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
- 4. EXISTING BUILDINGS, EXTERNAL STRUCTURES, AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY DEMOLITION WORKS.
- 5. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE PRINCIPAL'S REPRESENTATIVE. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE PRINCIPAL'S REPRESENTATIVE.
- 6. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL OF PRINCIPAL'S REPRESENTATIVE FOR TIME OF INTERRUPTION.

SUBGRADE PREPARATION

- 1. REMOVE ALL TOPSOIL, VEGETABLE MATTER AND RUBBLE.
- 2. PROOF ROLL NATURAL SURFACE.
- 3. REMOVE ANY SOFT AREAS.
- 4. PLACE APPROVED NON ORGANIC FILL WITH A MAXIMUM PARTICLE SIZE OF 75mm AND COMPACT IN 200mm MAX. THICK LAYERS. U.N.O.
- 5. COMPACTION IS TO BE CARRIED OUT BY ROLLING AT OPTIMUM MOISTURE CONTENT TO OBTAIN A DENSITY EQUIVALENT TO 98% OF MAXIMUM DRY DENSITY WHEN TESTED BY THE STANDARD COMPACTION TEST. No. E1.1 FROM A.S. 1289.
- 6. COMPACTION SHALL BE CARRIED OUT WITH A VIBRATING ROLLER WITH AT LEAST 10 TONNE STATIC WEIGHT.
- 7. TESTING OF THE SUBGRADE SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. REGISTERED LABORATORY.

CONCRETE NOTES

GENERAL

- 1. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH AS 3600 CURRENT EDITIONS WITH AMENDMENTS, AND THE ACSE CONCRETE SPECIFICATION EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- 2. VERIFY ALL SETTING OUT DIMENSIONS WITH THE ARCHITECT AND/OR THE SURVEYOR.
- 3. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS.
- 4. IN CASE OF DOUBT - ASK.

CONCRETE

- 1. PLACE CONCRETE OF THE FOLLOWING CHARACTERISTIC COMPRESSIVE STRENGTH F'C AS DEFINED IN AS.3600 OR M.R. FORM 609. ADD WATER REDUCING ADMIXTURE EQUAL TO WRDA.

LOCATION	AS.3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
ALL KERB PITS ETC.	25	80	20
VEHICULAR PAVEMENTS	32	80	20

- 2. USE "A.C.S.E. SPECIFICATION TYPE A" CEMENT.
- 3. ALL CONCRETE SHALL BE SUBJECT TO PROJECT CONTROL SAMPLE AND TESTING TO AS.3600.
- 4. CONSOLIDATE BY VIBRATION.

REINFORCEMENT

- 1. FIX REINFORCEMENT AS SHOWN ON DRAWINGS. THE TYPE AND GRADE IS INDICATED BY A SYMBOL AS SHOWN BELOW. ON THE DRAWING N IS FOLLOWED BY A NUMERAL WHICH INDICATES THE SIZE IN MILLIMETRES. A MARK NUMERAL (IF USED) FOLLOWS THIS NUMERAL.

N. HOT ROLLED DEFORMED BARS, GRADE 500N
R. HOT ROLLED PLAIN BARS, GRADE 250N
W. COLD DRAWN PLAIN ROUND WIRE, GRADE 500L
SL. SQUARE WELDED MESH, GRADE 500L
RL. RECTANGULAR WELDED MESH, GRADE 500L
LTM. RECTANGULAR WELDED TRENCH MESH, GRADE 500L

CONCRETE NOTES (CONT.)

CURING

- 1. CURING OF ALL CONCRETE SHALL BE IN ACCORDANCE WITH AS3600 AND SHALL COMMENCE WITHIN 2 HOURS OF FINISHING OPERATIONS.
- 2. CURING SHALL BE CONTINUAL SATURATION WITH POTABLE WATER FOR 3 DAYS FOLLOWED BY PREVENTION OF MOISTURE LOSS FOR THE NEXT 4 DAYS, USING POLYTHENE SHEETING OR WET HESSIAN PROTECTED BY WIND OR TRAFFIC AND THEN ALLOWING GRADUAL DRYING OUT.
- 3. CURING COMPOUNDS MAY BE USED PROVIDED THAT THEY COMPLY WITH AS3799 AND NOT AFFECT THE PROPOSED FINISH.
- 4. THE COMPATIBILITY OF CURING COMPOUNDS WITH THE PROPOSED FINISH AND OTHER CONCRETE ADMIXTURES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING AND APPLICATION.
- 5. CURING COMPOUNDS ARE APPLIED UNIFORMLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. PVA - BASED CURING COMPOUNDS ARE NOT ACCEPTABLE.
- 6. CURING SHALL BE UNDERTAKEN BY AN EXPERIENCED CONTRACTOR FAMILIAR WITH THE PROPOSED COMPOUNDS AND THE MANUFACTURER'S SPECIFICATIONS.
- 7. WHERE SHADE TEMPERATURES EXCEEDS 35°C, SPRAY THE EXPOSED SURFACE OF THE CONCRETE PAVEMENT / SLAB DURING THE PLACING OF FINISHING OPERATION WITH A FINE FILM OR APPROVED ALIPHATIC ALCOHOL. REPEAT THE SPRAY IF THE SPRAY SURFACE HAS BEEN RE-WORKED.
- 8. ENSURE ADEQUATE SUPPLY OF ALIPHATIC ALCOHOL ON-SITE PRIOR TO CONCRETE WORKS.

					CLIENT		ARCHITECT		CIVIL ENGINEER		PROJECT		DRAWING TITLE		
											McDONALDS BALGOWLAH		NOTES SHEET 2		
											37 ROSEBERRY STREET BALGOWLAH, NSW 2093		DRAWN	DATE	SCALE
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													DWG. NO.	ISSUE	
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													240001-26		

CONCRETE PAVEMENT JOINT NOTES

1. CONCRETE MIX PARAMETERS ;

- MAXIMUM AGGREGATE SIZE 20mm
- FLEXURAL STRENGTH AT 28 DAYS = 3.5MPa
- FLEXURAL STRENGTH AT 90 DAYS = 3.85 MPa
- MAXIMUM WATER / CEMENT RATIO = 0.55
- MAXIMUM SHRINKAGE LIMIT = 650 MICRON STRAINS (AS 1012 Pt 13)
- MINIMUM CEMENT CONTENT = 300kg/m³
- CEMENT TO BE TYPE "A" (NORMAL CEMENT) TO AS.1315
- SLUMP = 50mm

2. JOINT TO BE SAWN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING. IF AN UNPLANNED CRACK OCCURS THE CONTRACTOR SHALL REPLACE WHOLE SLABS EITHER SIDE OF THE UNPLANNED CRACK, UNLESS DIRECTED OTHERWISE.

3.

a. CONSTRUCT JOINTS AS DETAILED

- b. CONSTRUCTION JOINTS WHERE REQUIRED BUT NOT SHOWN, SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER AND CONSTRUCTED AT THE CONTRACTORS EXPENSE.

- C. ALL LONGITUDINAL CONSTRUCTION JOINTS SHALL BE FORMED AND INCLUDE DOWEL BARS AS SPECIFIED. ALL TRANSVERSE CONSTRUCTION JOINTS SHALL BE FORMED AND INCLUDE DOWEL BARS AS SPECIFIED.

- d. BOND BREAKER TO BE TWO (2) UNIFORM COATS OF BITUMEN EMULSION ALL OVER THE EXPOSED SURFACE AND ON END.

3. DOWELS AND TIE BARS TO MEET STRENGTH REQUIREMENTS OF STRUCTURAL GRADE STEEL IN ACCORDANCE AS. 1302. DOWELS AND TIE BARS SHALL BE :-

- STRAIGHT
- TO LENGTH SPECIFIED
- CLEAN AND FREE FROM MILL SCALE, RUST AND OIL.
- SAWN TO LENGTH NOT CROPPED.

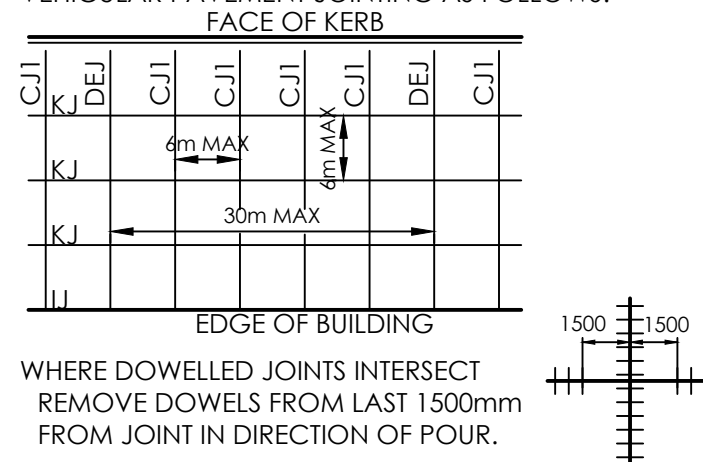
4. DIMENSIONS OF SEALANT RESERVOIR DEPENDANT ON THE SEALANT TYPE ADOPTED. ENGINEERS APPROVAL TO BE OBTAINED FOR SEALANT AND RESERVOIR DIMENSIONS AND DETAIL PROPOSED BY THE CONTRACTOR. REFER DETAIL "B" FOR TYPICAL ARRANGEMENT AND SEALANT.

CONCRETE PAVEMENT JOINT NOTES Cont.

1. PRIOR TO THE PLACEMENT OF CONCRETE IN THE ADJACENT SLAB, SELF EXPANDING CORK FILLER SHALL BE ADHERED TO THE ALREADY CAST AND CLEANED CONCRETE FACE USING AN APPROVED WATERPROOF ADHESIVE. ADHESIVE SHALL BE LIBERALLY APPLIED TO THE FULL FACE OF THE CONCRETE SLAB TO BE COVERED BY THE FILLER, AND ON THE FULL FACE OF THE FILLER TO BE ADHERED.
2. REFER TO COMPACTION NOTES FOR PREPARATION OF SUB-BASE AND SUB-GRADE.
3. ALL WORK TO BE BROOM FINISH.

VEHICULAR PAVEMENT JOINTING

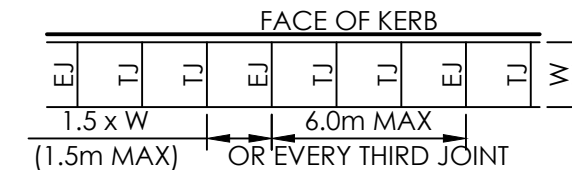
8. ALL VEHICULAR PAVEMENT TO BE JOINTED AS SHOWN ON DRAWINGS.
9. KEYED CONSTRUCTION JOINTS SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 6m CENTRES.
10. SAWN JOINTS SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 6m CENTRES OR 1.5 x THE SPACING OF KEYED JOINTS, WHERE KEY JOINT SPACING IS LESS THAN 4m, WITH DOWELLED EXPANSION JOINTS AT MAXIMUM OF 30m CENTRES.
11. PROVIDE 10mm WIDE FULL DEPTH ISOLATION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVERS.
12. VEHICULAR PAVEMENT JOINTING AS FOLLOWS.



CONCRETE PAVEMENT JOINT NOTES Cont.

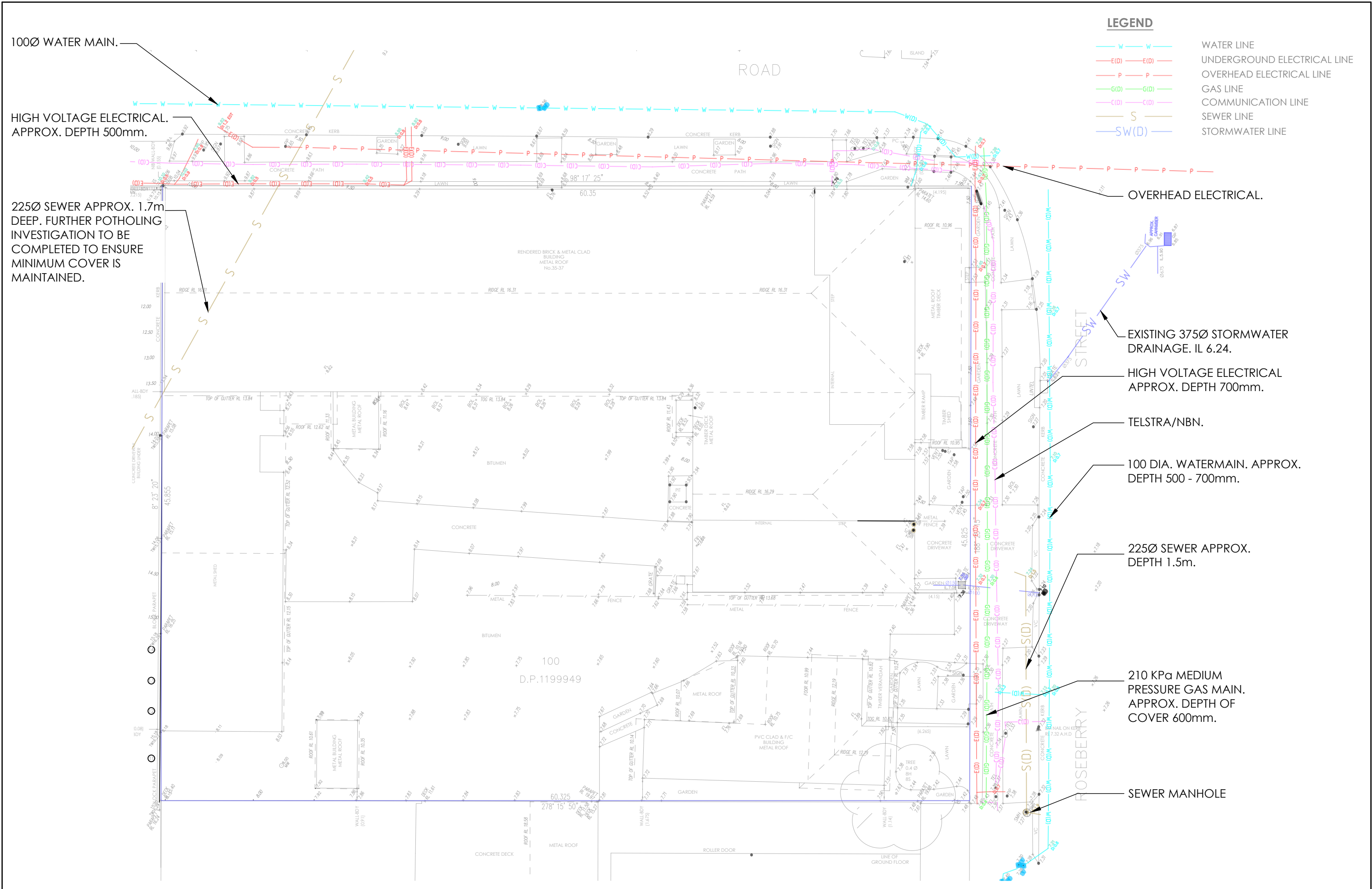
PEDESTRIAN FOOTPATH JOINTING

1. DOWELED JOINTS ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 6.0m CENTRES.
2. TOOLED JOINTS ARE TO BE LOCATED AT A MAX 1.5 x WIDTH OF THE PAVEMENT.
3. WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND/OR ADJACENT PAVEMENT JOINTS.



4. ALL PEDESTRIAN FOOTPATH JOINTING LAYOUTS AS FOLLOWS (UNO).
5. ALL RAMPED CROSSINGS SHALL BE DOWELED INTO ADJOINING PATH PAVEMENT.

					NORTH				CLIENT				ARCHITECT				CIVIL ENGINEER				PROJECT		McDONALDS BALGOWLAH		DRAWING TITLE		NOTES SHEET 3					
C	ISSUE FOR DA	06.12.24	YS	NP																	DRAWN		DATE		SCALE		A3		QA CHECK		DATE	
B	ISSUE FOR DA	29.11.24	YS	NP																	37 ROSEBERRY STREET		NOV 24						NP			
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	ISSUE AMENDMENT	DATE	DRAWN	APP																	DESIGNED		PROJECT NO.						DWG. NO.		ISSUE	
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LEGEND

- W — W WATER LINE
- E(D) — E(D) UNDERGROUND ELECTRICAL LINE
- P — P OVERHEAD ELECTRICAL LINE
- G(D) — G(D) GAS LINE
- C(D) — C(D) COMMUNICATION LINE
- S — S SEWER LINE
- SW(D) — SW(D) STORMWATER LINE

HIGH VOLTAGE ELECTRICAL.
APPROX. DEPTH 500mm.

225Ø SEWER APPROX. 1.7m
DEEP. FURTHER POTHOLING
INVESTIGATION TO BE
COMPLETED TO ENSURE
MINIMUM COVER IS
MAINTAINED.

OVERHEAD ELECTRICAL.

EXISTING 375Ø STORMWATER
DRAINAGE. IL 6.24.

HIGH VOLTAGE ELECTRICAL
APPROX. DEPTH 700mm.

TELSTRA/NBN.

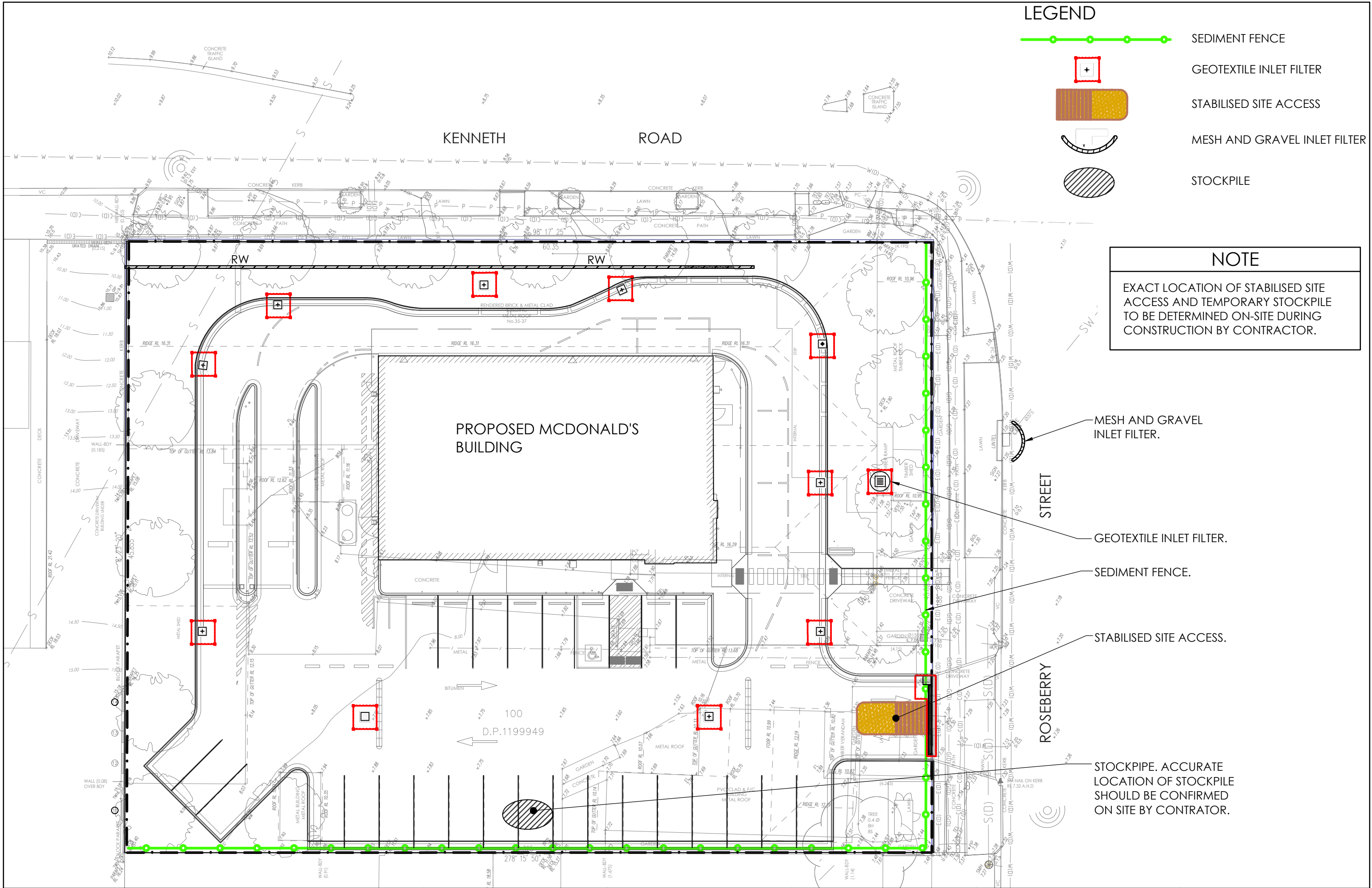
100 DIA. WATERMAIN. APPROX.
DEPTH 500 - 700mm.

225Ø SEWER APPROX.
DEPTH 1.5m.

210 KPa MEDIUM
PRESSURE GAS MAIN.
APPROX. DEPTH OF
COVER 600mm.

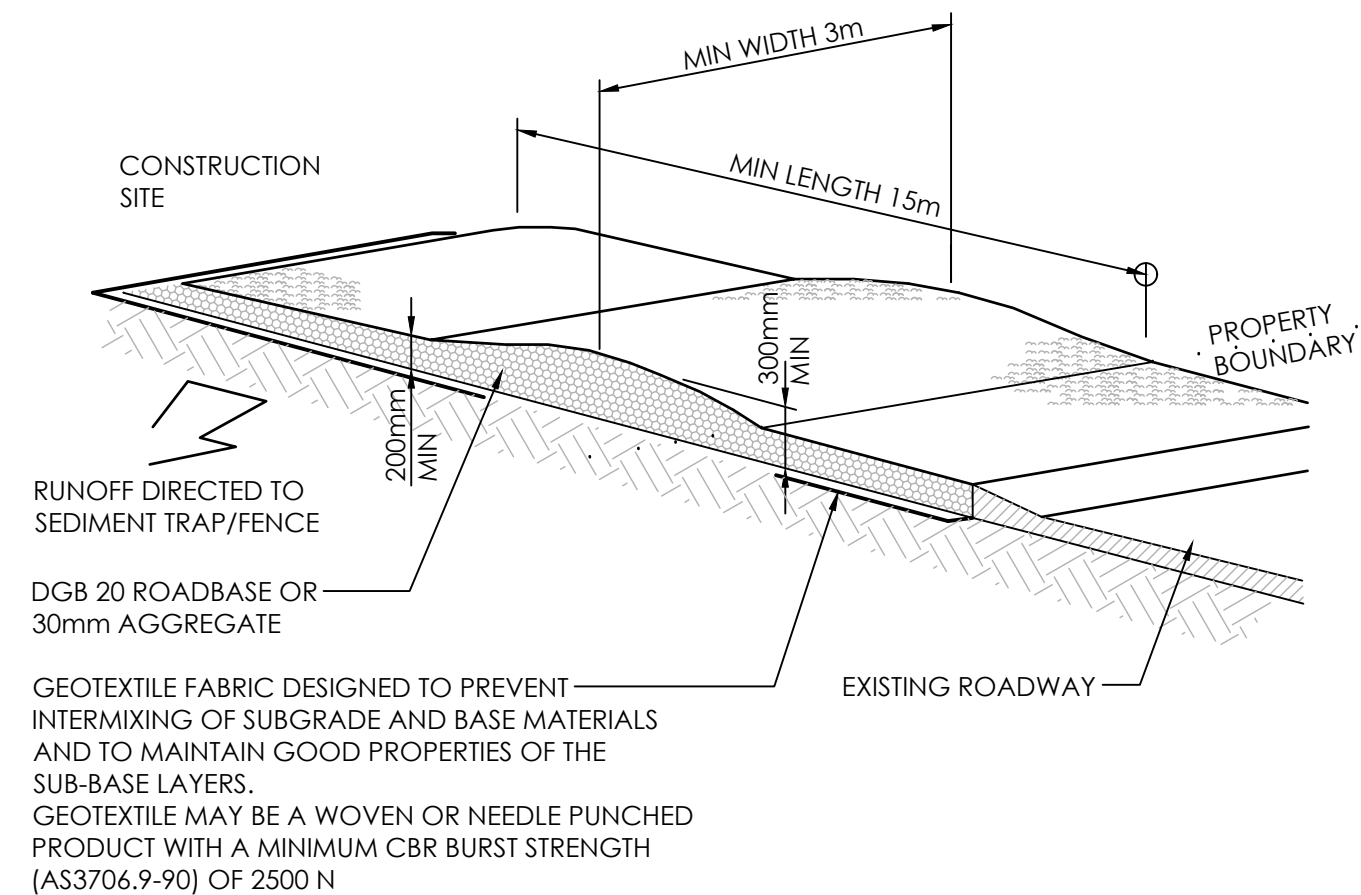
SEWER MANHOLE

						CLIENT		ARCHITECT		CIVIL ENGINEER		PROJECT		DRAWING TITLE			
												McDONALDS BALGOWLAH		EXISTING SERVICES PLAN			
												37 ROSEBERRY STREET BALGOWLAH, NSW 2093		DRAWING NO.		DATE	
C						06.12.24		YS		NP				A3		GA CHECK	
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											McDONALDS BALGOWLAH		EROSION AND SEDIMENT CONTROL PLAN											
											37 ROSEBERRY STREET BALGOWLAH, NSW 2093		DRAWN		DATE		SCALE		A3		GA CHECK		DATE	
													NP		NOV 24		1:250				NP			
													NP		PROJECT NO.		240001-26		DWG. NO.		C200		ISSUE	

SOURCE: MANAGING URBAN STORMWATER
SOILS AND CONSTRUCTION
THIRD EDITION, AUGUST 1998
PRODUCED BY THE DEPARTMENT OF
HOUSING.

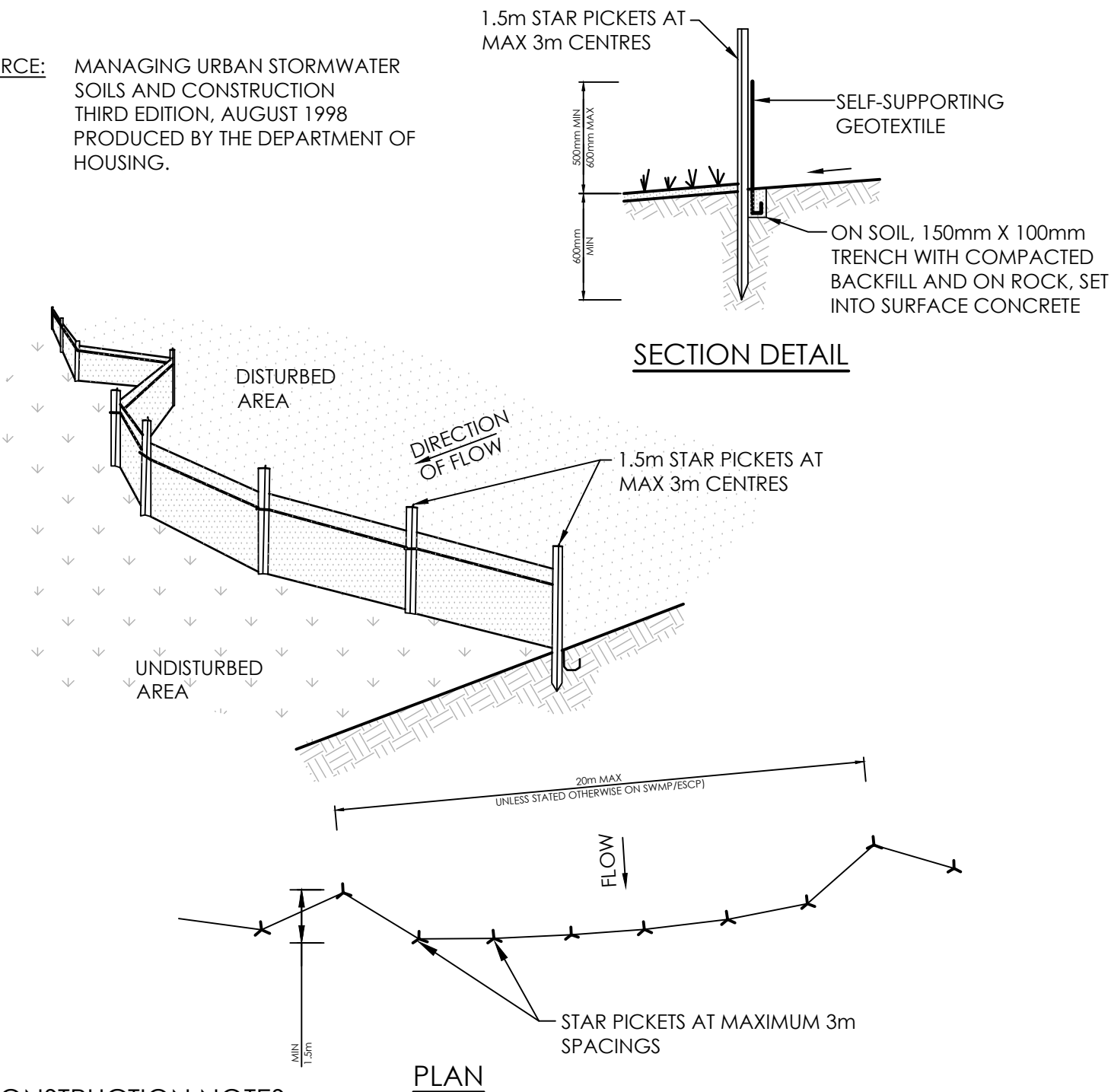


CONSTRUCTION NOTES:

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200MM THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30MM AGREGATE. MINIMUM LENGTH 15M OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMPS IMMEDIATELY WITHIN BUUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP.

STABILISED SITE ACCESS

SOURCE: MANAGING URBAN STORMWATER
SOILS AND CONSTRUCTION
THIRD EDITION, AUGUST 1998
PRODUCED BY THE DEPARTMENT OF
HOUSING.



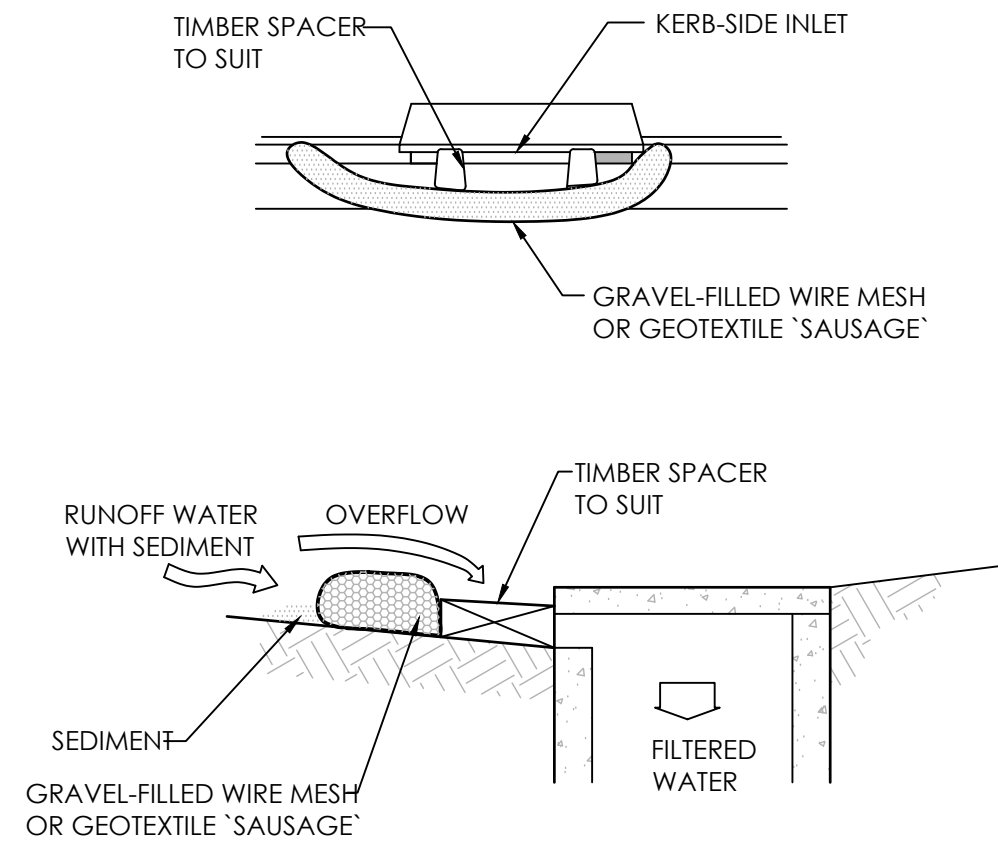
CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES APART.
3. DIG A 150 MM DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150 MM OVERLAP.

SEDIMENT FENCE

				CLIENT		ARCHITECT		CIVIL ENGINEER		PROJECT		DRAWING TITLE			
				McDONALDS		webber		ENTEC		McDONALDS BALGOWLAH		EROSION AND SEDIMENT CONTROL DETAIL			
				37 ROSEBERRY STREET						BALGOWLAH, NSW 2093		SHEET 1			
				DRAWN		DATE		SCALE		A3		QA CHECK			
				YS		NOV 24						NP			
				DESIGNED		PROJECT NO.		DWG. NO.				ISSUE			
				NP		240001-26		C201				C			
				DATE		DRAWN		APP							

SOURCE: MANAGING URBAN STORMWATER
SOILS AND CONSTRUCTION
THIRD EDITION, AUGUST 1998
PRODUCED BY THE DEPARTMENT OF
HOUSING.



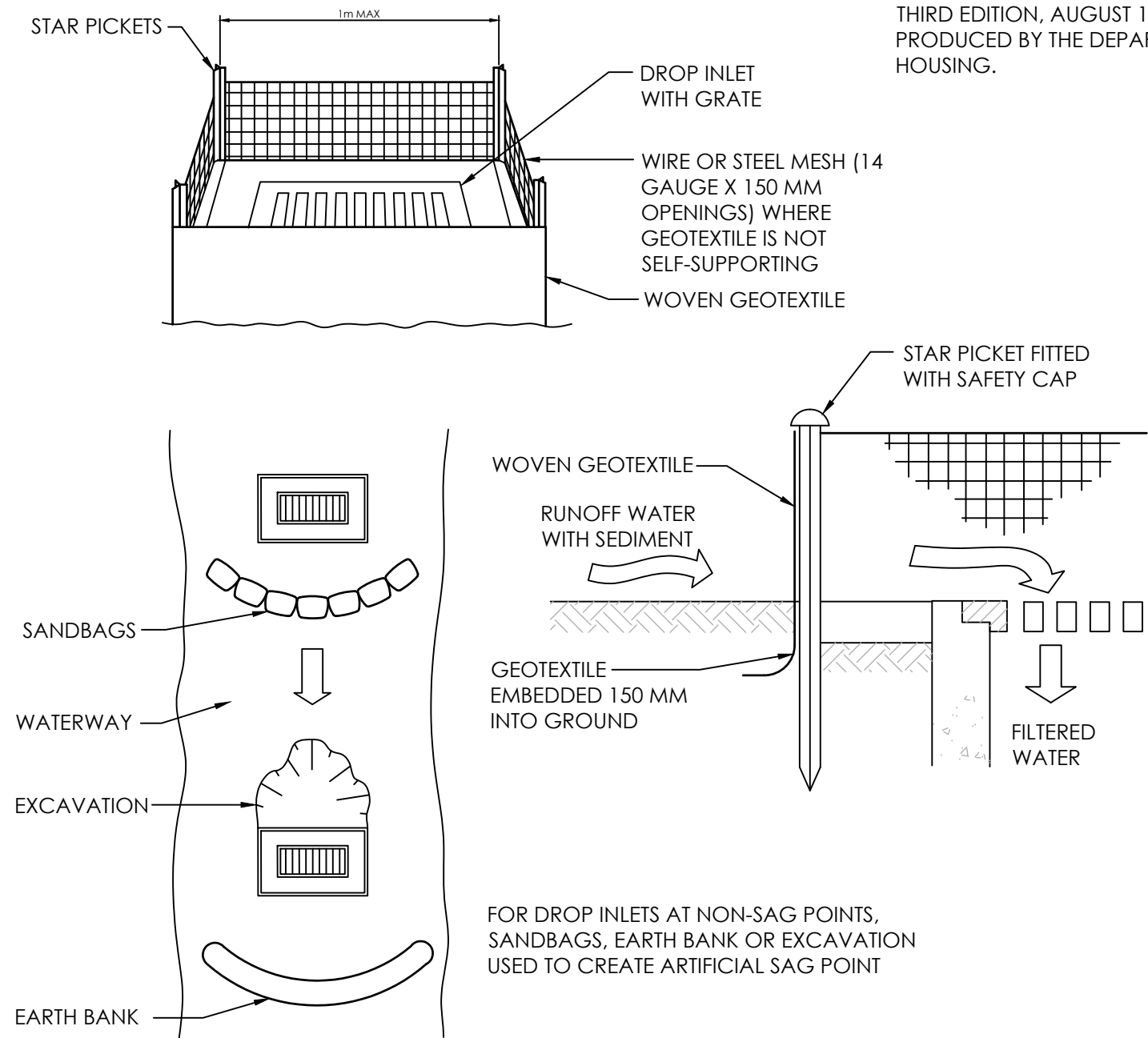
NOTE: THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN AN APPROVED
SWMP/ESCP.

CONSTRUCTION NOTES:

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT.
2. FILL THE SLEEVE WITH 25MM TO 50MM GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150MM HIGH X 400MM WIDE.
4. PLACE THE FILTER AT THE OPENING OF THE KERB INLET LEAVING A 100MM GAP AT THE TOP TO ACT AS AN EMERGENCY SPILLWAY.
5. MAINTAIN THE OPENING WITH SPACER BLOCKS.
6. FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER.
7. FIT TO ALL KERB INLETS AT SAG POINTS.

MESH AND GRAVEL INLET FILTER

SOURCE: MANAGING URBAN STORMWATER
SOILS AND CONSTRUCTION
THIRD EDITION, AUGUST 1998
PRODUCED BY THE DEPARTMENT OF
HOUSING.



CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER FROM GEOTEXTILE OR STRAW BALES.
2. SUPPORT GEOTEXTILE WITH MESH TIED TO POSTS AT 1 METRE CENTRES.
3. DO NOT COVER INLET WITH GEOTEXTILE.
4. CONSTRUCTION DETAILS ARE SIMILAR TO TYPICAL SEDIMENT FENCING DETAIL.

GEOTEXTILE INLET FILTER

										CLIENT		ARCHITECT		CIVIL ENGINEER		PROJECT		DRAWING TITLE			
										 						McDONALDS BALGOWLAH		EROSION AND SEDIMENT CONTROL DETAIL SHEET 2			
																37 ROSEBERRY STREET BALGOWLAH, NSW 2093		DRAWN		DATE	
C										ISSUE FOR DA		06.12.24		YS		NP		SCALE		A3	
B										ISSUE FOR DA		29.11.24		YS		NP		NOV 24		QA CHECK	
A										ISSUE FOR DRAFT DA		15.11.24		YS		NP		C202		DATE	
ISSUE										AMENDMENT		DATE		DRAWN		APP		DWG. NO.		ISSUE	
																		C2001-26		C	

VARYING HEIGHT RETAINING WALL WITH MAX. HEIGHT 1.80m. NEW FENCE TO BE FIXED TO TOP OF WALL. REFER TO ARCHITECT'S DETAIL.

PROPOSED PYLON

1 IN 10 BATTER FROM EXISTING BUILDING EDGE TO NEW KERB.

SLOTTED KERB. GAPS IN KERB AT 2m INTERVAL TO ALLOW OVERLAND FLOW TO LANDSCAPE AREA FOR PASSIVE IRRIGATION.

TRANSITION PAVEMENT LEVEL FROM 150mm STEP TO BE FLUSH THROUGH LOADING AREA.

DDA PARKING SPACE IN ACCORDANCE WITH AS2890.6.

SLOTTED KERB. GAPS IN KERB AT 2m SPACING TO ALLOW OVERLAND FLOW TO LANDSCAPE AREA FOR PASSIVE IRRIGATION.

PROPOSED NEW KERB RAMPS (TYPICAL).

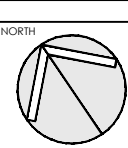
MAKE SMOOTH JUNCTION WITH EXISTING CONCRETE FOOTPATH.

DEMOLISH EXISTING VEHICULAR CROSSING AND CONSTRUCT NEW VEHICULAR CROSSING AND KERB AND GUTTER IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL STANDARD DETAIL.

PROPOSED ELECTRICAL SUBSTATION LOCATION.

EXISTING TREE TO BE RETAINED.

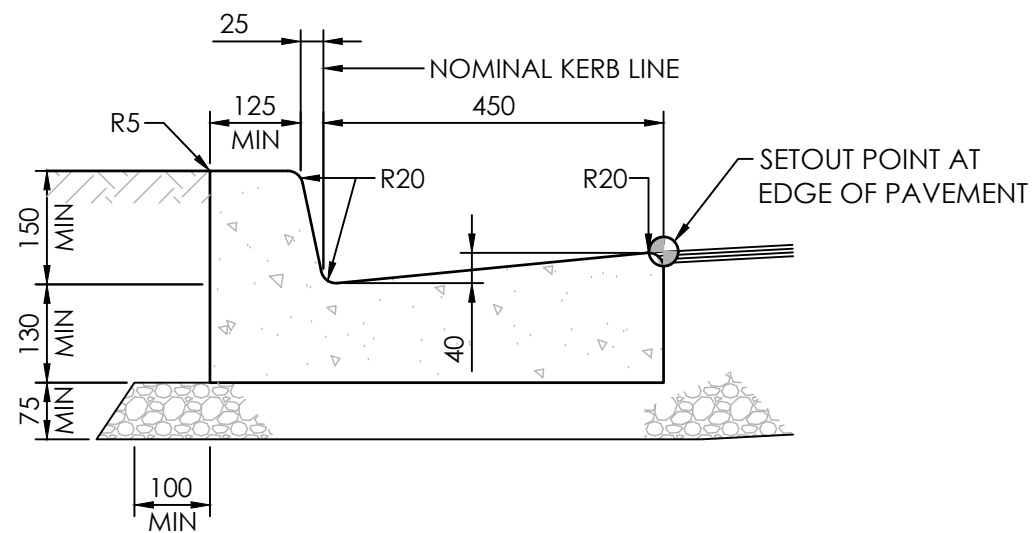
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D	ISSUE FOR DA	09.12.24	YS	NP	
C	ISSUE FOR DA	06.12.24	YS	NP	
B	ISSUE FOR DA	29.11.24	YS	NP	
A	ISSUE FOR DRAFT DA	15.11.24	YS	NP	
ISSUE	AMENDMENT	DATE	DRAWN	APP	



PROJECT
McDONALDS BALGOWLAH

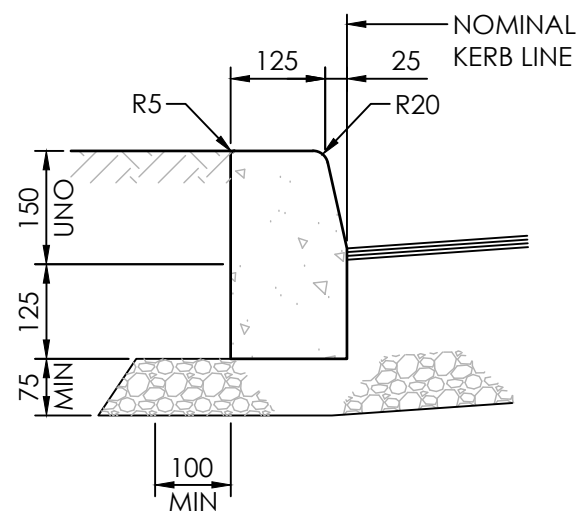
37 ROSEBERRY STREET
BALGOWLAH, NSW 2093

DRAWING TITLE CIVIL WORKS PLAN					
DRAWN YS	DATE NOV 24	SCALE 1:250	A3	QA CHECK NP	DATE
DESIGNED NP	PROJECT NO. 240001-26			DWG. NO. C300	ISSUE E



KERB & GUTTER

SCALE 1:10
SHOWN AS 'K&G'

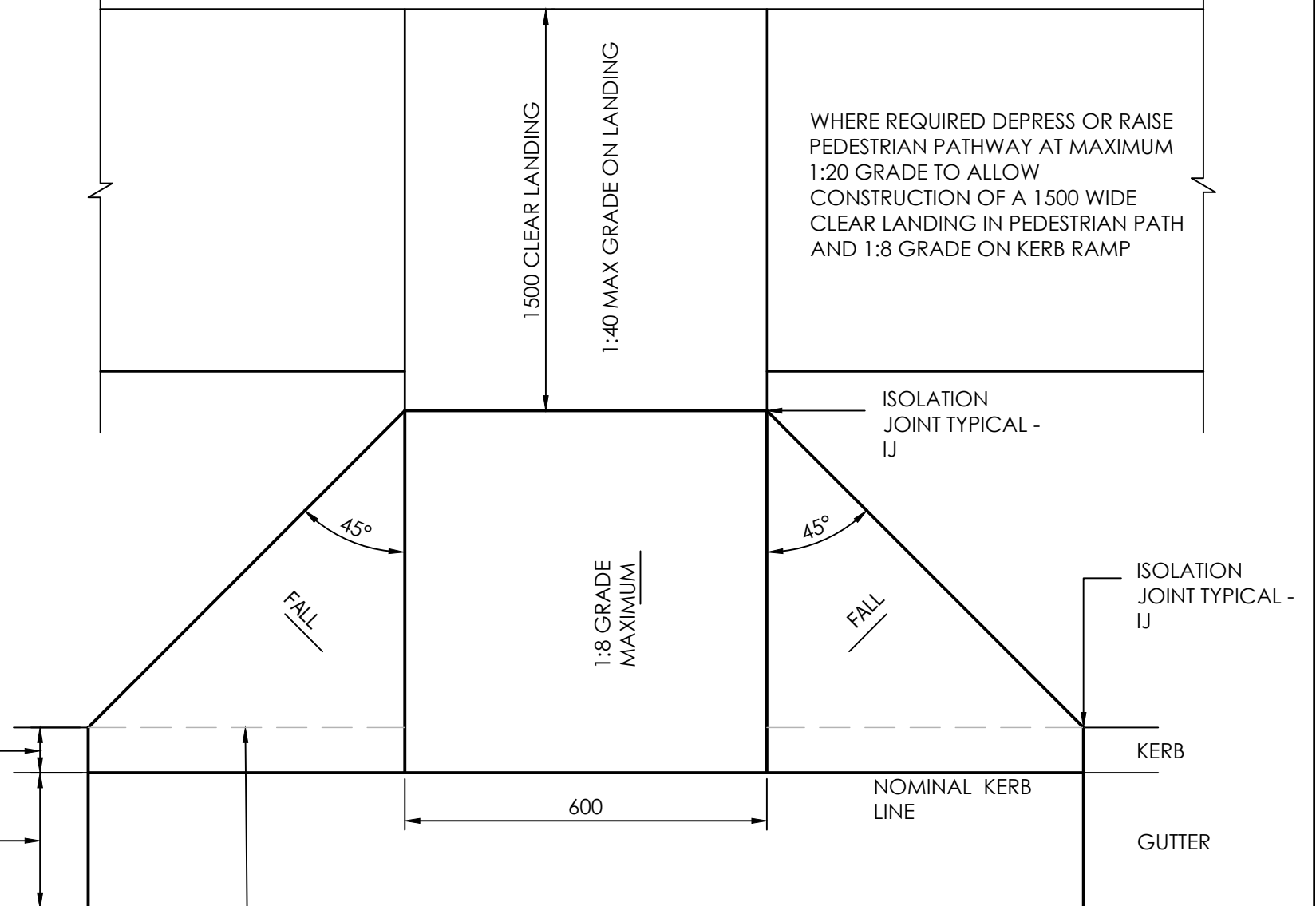


KERB ONLY

SCALE 1:10
SHOWN AS "KO"

WIDTH VARIES TO
SUIT KERB PROFILE

WIDTH VARIES TO
SUIT GUTTER PROFILE



KERB RAMP DETAIL

SCALE 1:10
SHOWN AS 'KR' ON PLAN

NOTE 1: GRADE AT 1:8 UP TO A MAXIMUM OF 1:4 GRADE IF REQUIRED TO ALLOW CONSTRUCTION OF FOOTPATH CLEAR LANDING IN CONSTRAINED AREAS. GREATER THAN 1:8 GRADE ONLY ALLOWABLE WHERE RAMP DOES NOT FORM PART OF THE PEDESTRIAN PATHWAY. 1:4 GRADE ON RAMP SPLAY REQUIRES HANDRAIL TO AS/NZS 1428.1

NOTE 2: REFER TO AS/NZS 1428.4 FOR TACTILE INDICATOR REQUIREMENTS

				NORTH				CLIENT				ARCHITECT				CIVIL ENGINEER				PROJECT				DRAWING TITLE			
																				McDONALDS BALGOWLAH				CIVIL WORKS DETAILS			
C				ISSUE FOR DA				06.12.24				YS				NP				37 ROSEBERRY STREET				DRAWN			
B				ISSUE FOR DA				29.11.24				YS				NP				BALGOWLAH, NSW 2093				DATE			
A				ISSUE FOR DRAFT DA				15.11.24				YS				NP				DESIGNED				PROJECT NO.			
ISSUE				AMENDMENT				DATE				DRAWN				APP				NP				DWG. NO.			
																				240001-26				C301			
																								ISSUE			
																								C			

PIT NOTES

1. PRECAST STORMWATER PITS ARE SHOWN TO COVER INTENT ONLY. EQUIVALENT PRECAST OR CAST-IN-SITU PITS MAY BE USED UPON APPROVAL OF THE CIVIL ENGINEER.

2. PITS SHALL HAVE ADEQUATE CAPACITY TO SUPPORT A COMBINATION OF THE FOLLOWING LOADS:

- LATERAL LOADS
- A. EARTH PRESSURE
 - B. HYDROSTATIC PRESSURE
 - C. COMPACTION PRESSURE 25 kPa MIN.

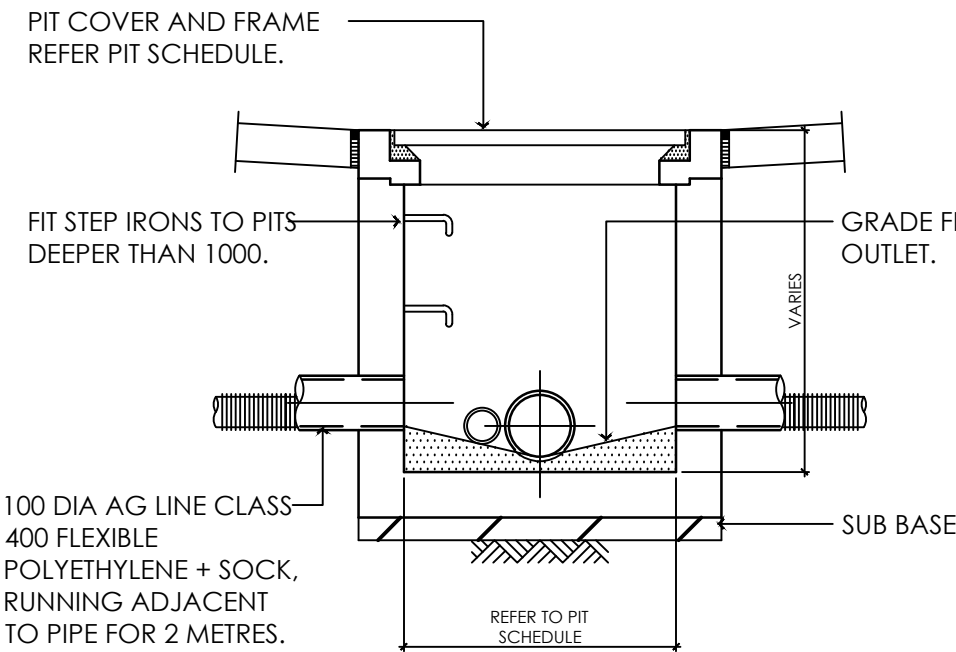
- VERTICAL LOADS
- A. 210 kN

3. MINIMUM CONCRETE STRENGTH FOR PITS SHALL BE: F'c = 25 MPa AT 28 DAYS.

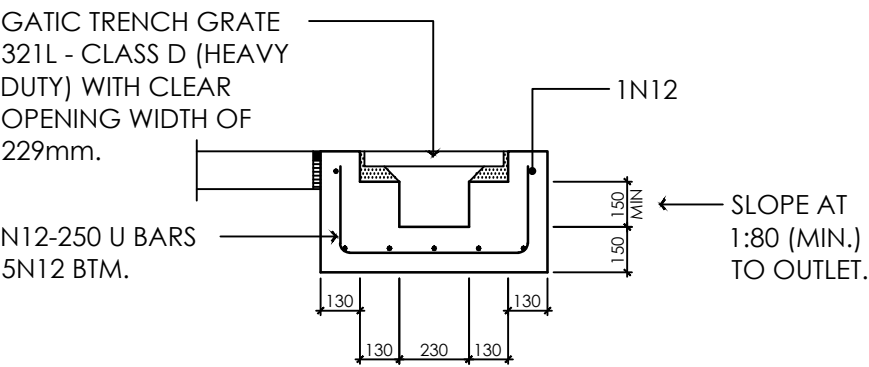
4. PIT COVERS AND FRAMES MUST HAVE ADEQUATE ANCHORAGE TO ENSURE THAT THEY DO NOT COME LOOSE UNDER TRAFFIC.

5. COVERS AND LINTELS FOR THE KERB ENTRY PIT SHALL SUPPORT A TEST LOAD OF 100 kN WITHOUT PERMANENT DEFORMATION OR DAMAGE.

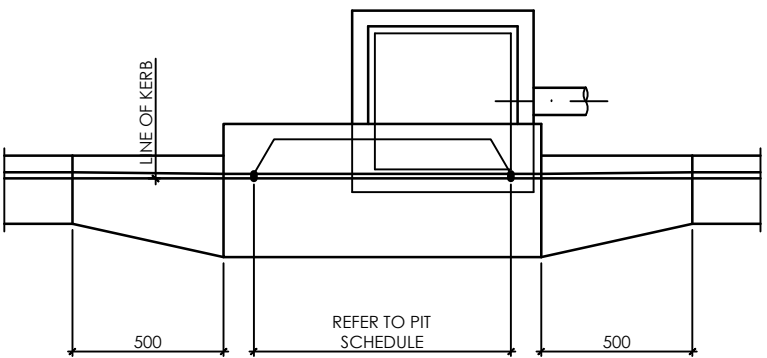
6. THIS DRAWING IS INTENDED TO DETERMINE THE MINIMUM REQUIREMENTS FOR CIVIL DETAILS. ADDITIONAL DETAILS MAY BE INCLUDED WHERE REQUIRED.



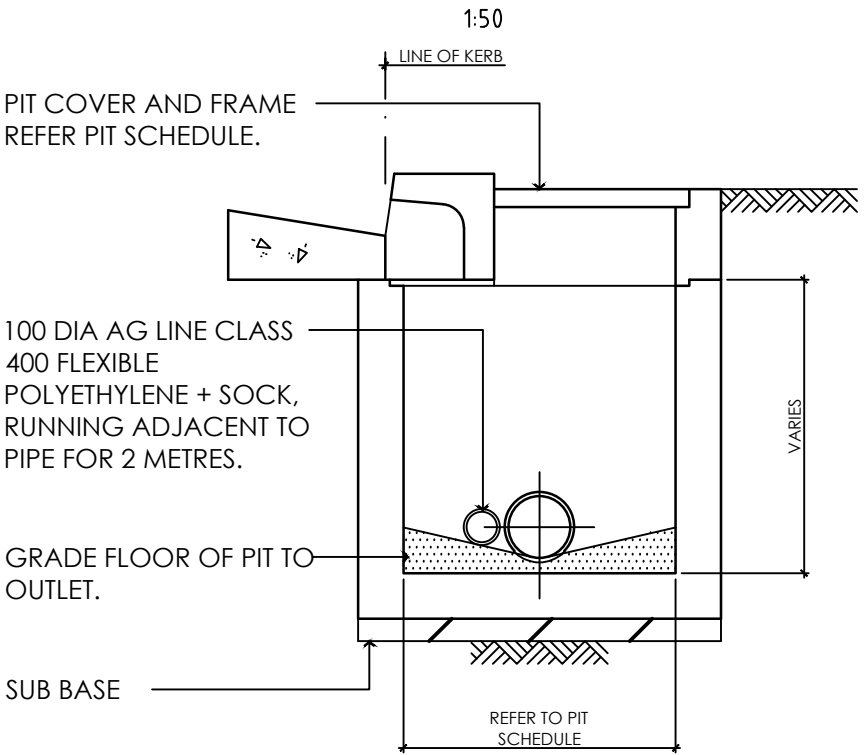
INLET PIT JUNCTION PIT
SIMILAR



GRADED TRENCH DRAIN



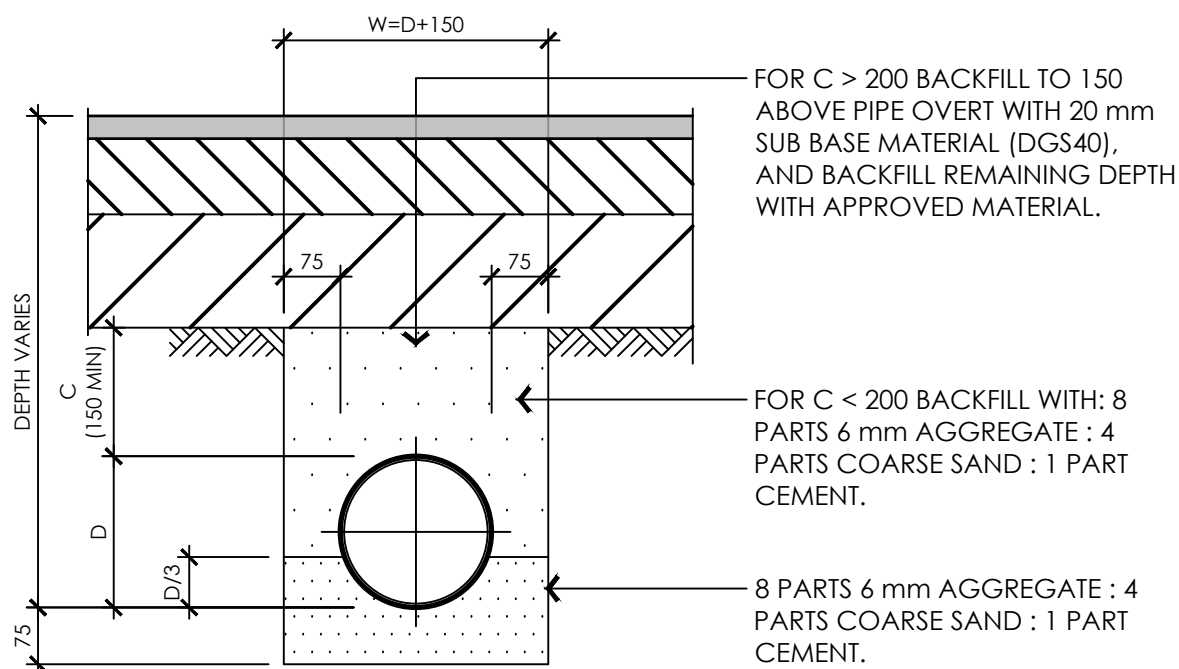
KERB ENTRY PIT PLAN



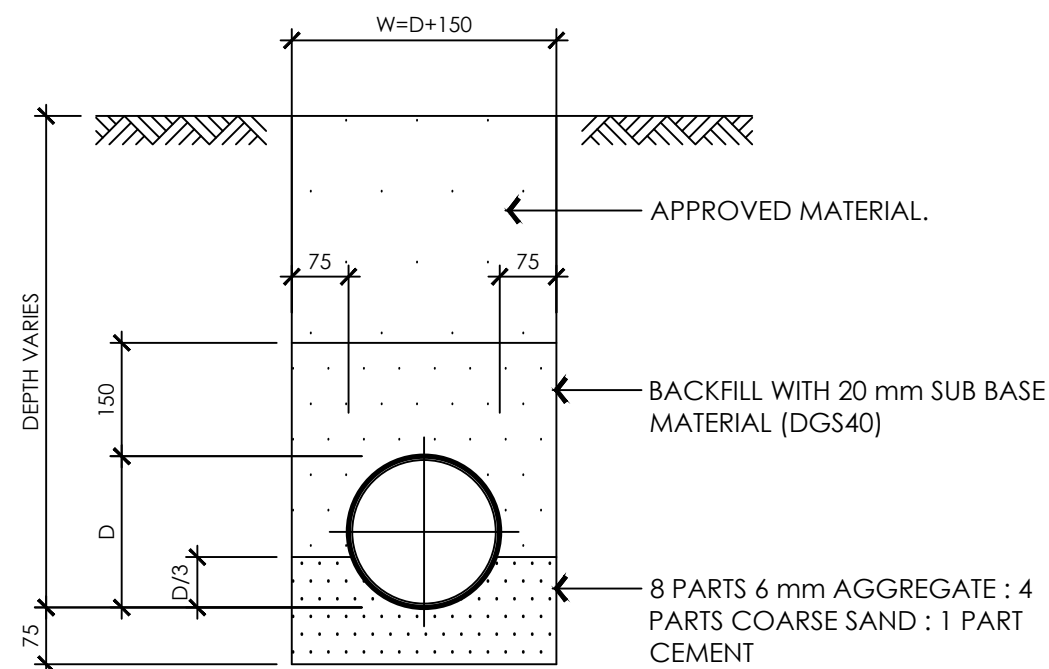
KERB ENTRY PIT SECTION

PIT SCHEDULE				
SIZE	PIT AND LID TYPE	CLASS	PIT NUMBER	COMMENT
450 x 450	SURFACE INLET PIT WITH HEELSAFE GRATE	D	A4, A7	PIT TO BE FITTED WITH 'OCEAN GUARD' FILTER BASKET. IN ACCORDANCE WITH OCEAN PROTECT SPECIFICATION.
600 x 600	SURFACE INLET PIT WITH HEELSAFE GRATE	D	A5, A6, B3, B5	PIT TO BE FITTED WITH 'OCEAN GUARD' FILTER BASKET. IN ACCORDANCE WITH OCEAN PROTECT SPECIFICATION.
600 x 600	SURFACE INLET PIT WITH HEELSAFE GRATE	D	B4	
600 x 900	SURFACE INLET PIT WITH HEELSAFE GRATE	D	A3, B1, B2	
900 x 900	SURFACE INLET PIT WITH HEELSAFE GRATE	B	A1	WATER QUALITY TREATMENT PIT WITH 3x OCEAN PROTECT STORMWATER CARTRIDGES. REFER TO DETAIL ON DRAWING 'C403'.
900 x 900	SURFACE INLET PIT WITH HEELSAFE GRATE	D	A2	
EXISTING	KERB INLET PIT	D	EX1	MAKE NEW CONNECTION TO EXISTING COUNCIL STORMWATER PIT. EXISTING DOWNSTREAM INVERT LEVEL 6.24.

PIT SCHEDULE



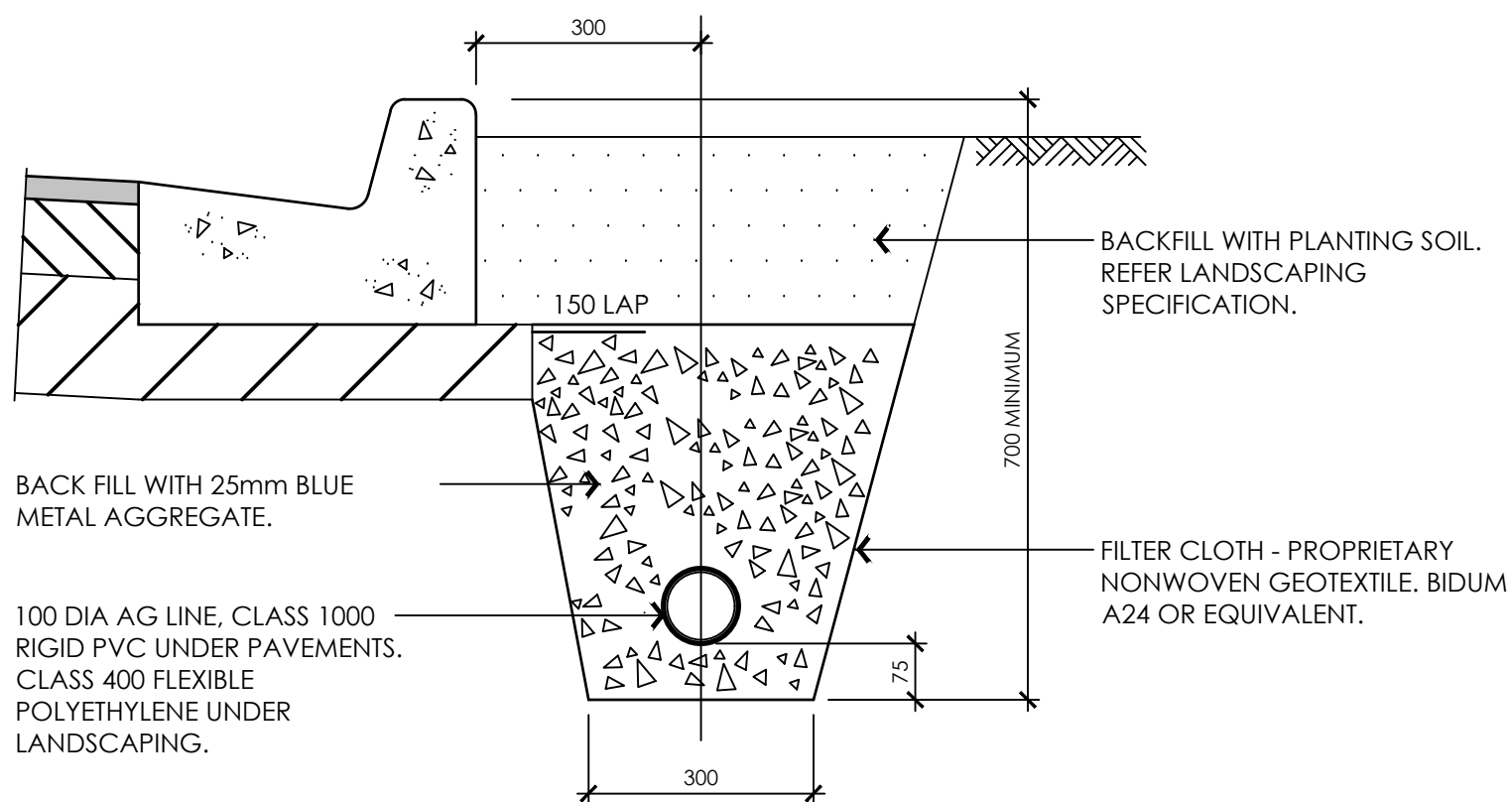
**STORMWATER PIPE BEDDING
DETAIL UNDER PAVEMENT**



**STORMWATER PIPE BEDDING
DETAIL UNDER GROUND**

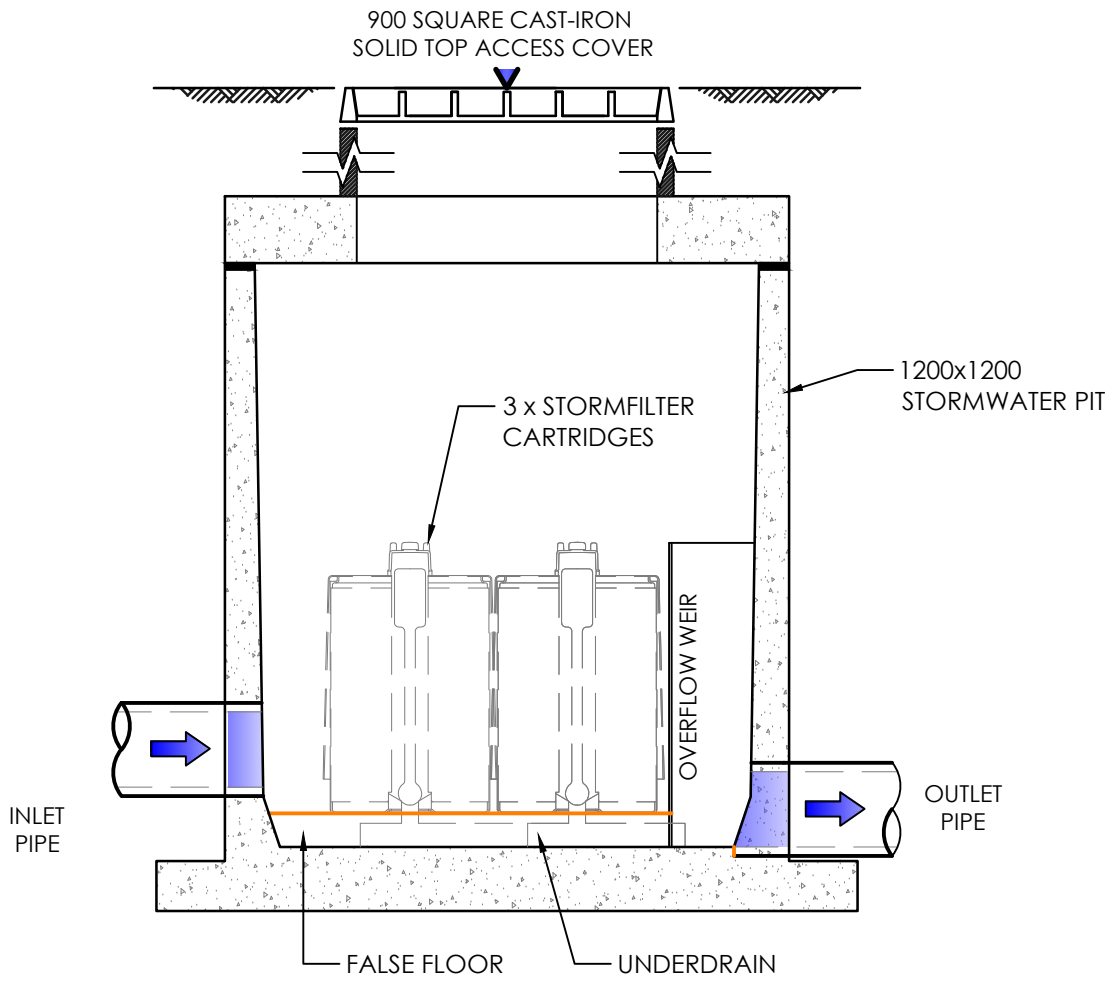
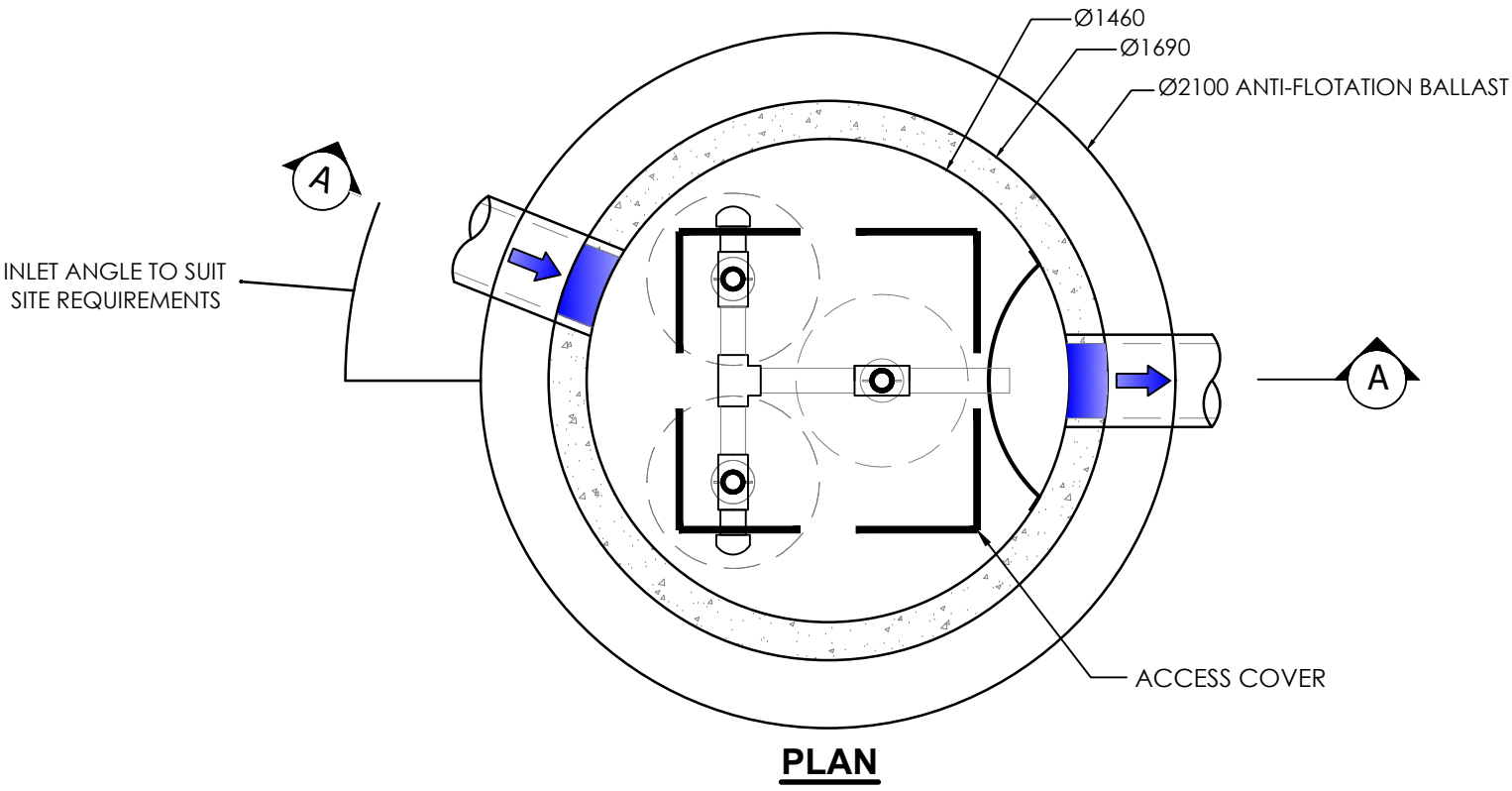
NOTES

1. THIS DRAWING IS INTENDED TO DETERMINE THE MINIMUM REQUIREMENTS FOR CIVIL DETAILS. ADDITIONAL DETAILS MAY BE INCLUDED WHERE REQUIRED.

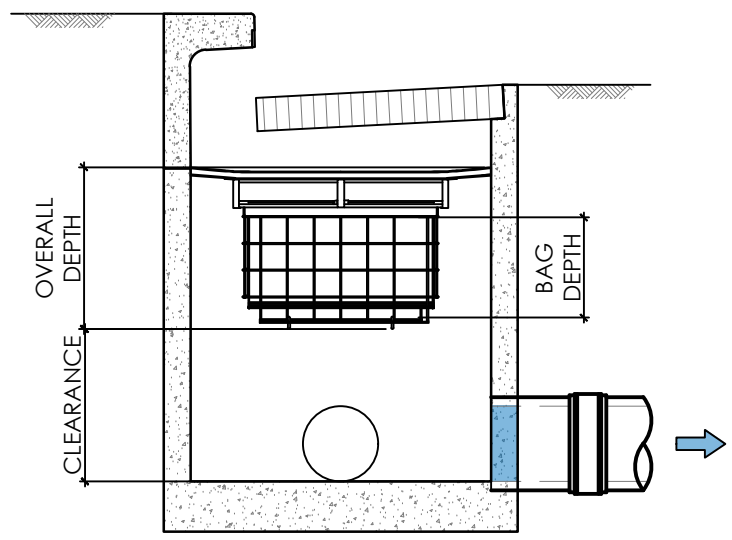


AGRICULTURAL DRAIN DETAIL

										CLIENT		ARCHITECT		CIVIL ENGINEER		PROJECT		DRAWING TITLE			
										McDONALDS		webber		ENTEC		McDONALDS BALGOWLAH		STORMWATER MANAGEMENT DETAILS			
										37 ROSEBERRY STREET								SHEET 2			
										BALGOWLAH, NSW 2093		CONSULTANTS									
										240001-26		C402		C							



FILTER CARTRIDGE PIT



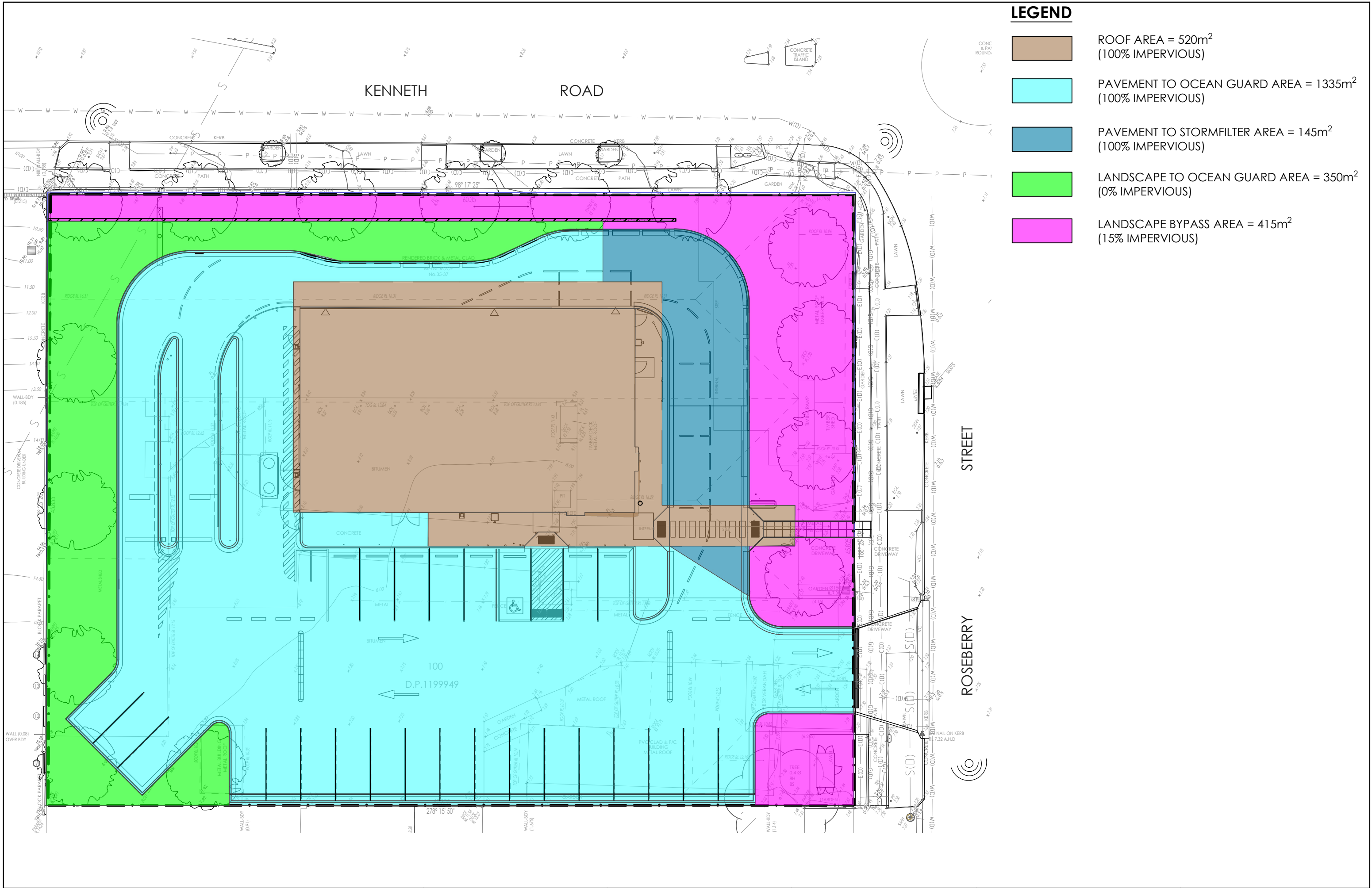
FILTER BASKET PIT

PLAN ID	MAXIMUM PIT PLAN DIMENSIONS
S	450mm x 450mm
M	600mm x 600mm
L	900mm x 900mm
XL	1200mm x 1200mm

DEPTH ID	BAG DEPTH	OVERALL DEPTH
1	170	270
2	300	450
3	600	700

PLAN ID	DEPTH ID			
	S	1	2	3
	M	-	-	-
	L	-	-	-
	XL	-	-	-

FILTER BASKET SIZING



LEGEND



ROOF AREA = 520m²
(100% IMPERVIOUS)



PAVEMENT TO OCEAN GUARD AREA = 1335m²
(100% IMPERVIOUS)



PAVEMENT TO STORMFILTER AREA = 145m²
(100% IMPERVIOUS)

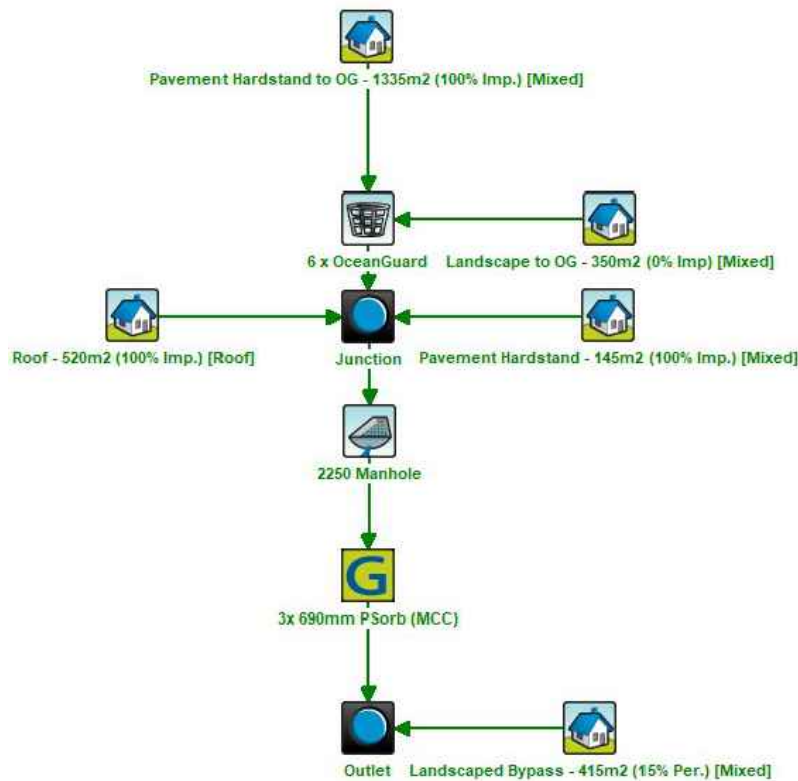


LANDSCAPE TO OCEAN GUARD AREA = 350m²
(0% IMPERVIOUS)



LANDSCAPE BYPASS AREA = 415m²
(15% IMPERVIOUS)

					NORTH		CLIENT  	ARCHITECT 	CIVIL ENGINEER 	PROJECT McDONALDS BALGOWLAH 37 ROSEBERRY STREET BALGOWLAH, NSW 2093	DRAWING TITLE CATCHMENT PLAN				
D	ISSUE FOR DA	12.12.24	YS	NP	DRAWN YS						DATE NOV 24	SCALE 1:250	A3	QA CHECK NP	DATE
C	ISSUE FOR DA	06.12.24	YS	NP											
B	ISSUE FOR DA	29.11.24	YS	NP											
A	ISSUE FOR DRAFT DA	15.11.24	YS	NP											
ISSUE	AMENDMENT	DATE	DRAWN	APP											



MUSIC MODEL

	Sources	Residual Load	% Reduction
Flow (ML/yr)	2.07	2.07	0
Total Suspended Solids (kg/yr)	494	63.7	87.1
Total Phosphorus (kg/yr)	0.9	0.291	67.6
Total Nitrogen (kg/yr)	4.68	2.55	45.4
Gross Pollutants (kg/yr)	51.8	2.43	95.3

MUSIC RESULTS

WSUD ANALYSIS

1. WSUD REQUIREMENTS AS STATED IN THE COUNCIL WATER MANAGEMENT POLICY SECTION 4.1.1 ARE ACHIEVED USING PROPRIETARY FILTER DEVICES SUPPLIED BY OCEAN PROTECT WHICH HAVE BEEN APPROVED FOR USE BY NORTHERN BEACHES COUNCIL.
2. NATURAL FILTRATION SYSTEMS SUCH AS BIO-RETENTION ARE NOT APPROPRIATE FOR USE FOR THE DEVELOPMENT AS THERE IS LIMITED AVAILABLE LANDSCAPE SPACE AND DEPTH OF STORMWATER DRAINAGE.
3. PASSIVE IRRIGATION OF LANDSCAPE AREAS FOR INFILTRATION HAS BEEN MADE USING A SLOTTED KERB FROM THE VEHICLE HARDSTAND. THIS HAS NOT BEEN INCORPORATED INTO THE MUSIC MODEL TO ENSURE ALL COUNCIL TARGETS ARE ACHIEVED WITHOUT THE LANDSCPE BUFFER REQUIREMENTS.

Latitude: -33.7865 [Nearest grid cell: 33.7875 (S)]

Longitude:151.2676 [Nearest grid cell: 151.2625 (E)]

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IFD Design Rainfall Intensity (mm/h)

Issued: 23 October 20

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP)

[FAQ for New ARR probability terminology](#)

TableChart

Unit: mm/h

	Annual Exceedance Probability (AEP)						
Duration	63.2%	50%#	20%*	10%	5%	2%	1%
1 min	150	168	225	265	304	358	400
2 min	126	140	183	213	242	283	316
3 min	116	129	170	198	226	264	295
4 min	109	121	160	188	215	252	281
5 min	103	115	152	179	205	241	269
10 min	81.0	90.7	122	144	166	195	218
15 min	67.5	75.7	102	120	138	163	182
20 min	58.2	65.3	87.8	103	119	140	157
25 min	51.5	57.7	77.4	91.1	105	123	138
30 min	46.3	51.8	69.4	81.6	93.8	110	123
45 min	36.2	40.4	53.7	62.9	72.2	84.8	94.6
1 hour	30.4	33.5	44.4	51.0	58.5	68.0	78.0

BOM IFD TABLE FOR BALGOWLAH

PRE-DEVELOPMENT CATCHMENT FLOWS (l/s)

Q ₅	20%	AEP	=	110
Q ₁₀	10%	AEP	=	128
Q ₂₀	5%	AEP	=	147
Q ₁₀₀	1%	AEP	=	193

POST-DEVELOPMENT CATCHMENT FLOWS (l/s)

Q ₅	20%	AEP	=	100
Q ₁₀	10%	AEP	=	118
Q ₂₀	5%	AEP	=	136
Q ₁₀₀	1%	AEP	=	182

ONSITE DETENTION ANALYSIS

1. THE PROPOSED SITE IS LOCATED IN A MEDIUM RISK FLOOD PRECINCT AND AS SUCH IS CONSIDERED TO BE FLOOD AFFECTED BY NORTHERN BEACHES COUNCIL.
2. ONSITE DETENTION IS THEREFORE NOT REQUIRED IN ACCORDANCE WITH SECTION 9.3.3.2 OF THE COUNCIL WATER MANAGEMENT POLICY.
3. NOTWITHSTANDING THE PROPOSED McDONALD'S DEVELOPMENT INCREASES LANDSCAPED PERVIOUS AREAS AND AS SUCH POST-DEVELOPMENT CATCHMENT FLOWS ARE REDUCED FROM PRE-DEVELOPMENT FLOWS AS SHOWN ABOVE.