

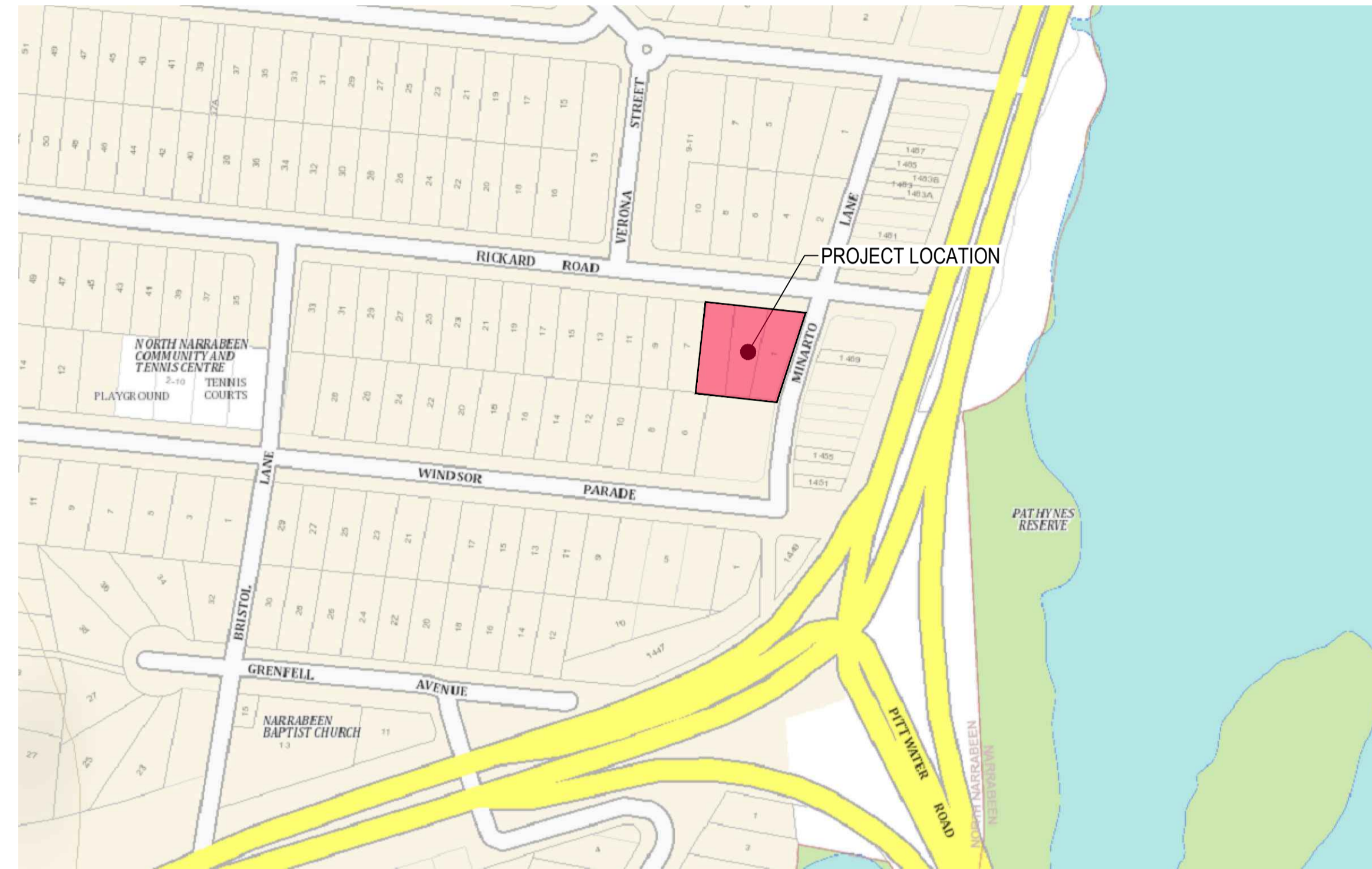
SHOP TOP HOUSING

1-5 RICKARD ROAD, NORTH NARRABEEN, NSW, 2101

CIVIL SERVICES

CIVIL LEGEND	
	KERB AND GUTTER
	VEHICULAR CROSSING
	FINISHED FLOOR LEVEL
	EXISTING SURFACE LEVEL
	PROPOSED SURFACE LEVEL
	STORMWATER DRAINAGE LINE WITH; INVERT LEVEL UPSTREAM PIPE SIZE AND MATERIAL CLASS PIPE GRADE PIPE LENGTH INVERT LEVEL DOWNSTREAM
	ON-SITE DETENTION TANK
	RAINWATER TANK
	WSUD TANK
	STORMWATER OVERLAND FLOW PATH
	PIT LIDS/GRATES

SOIL EROSION AND SEDIMENT CONTROL LEGEND	
	SEDIMENT FENCE
	WRAP INLET GRATE IN FILTER FABRIC. PROVIDE AT ALL EXISTING SURFACE STORMWATER PITS, RAINWATER OUTLETS AND TRENCH DRAINS.
	SAND BAG SEDIMENT TRAP
	STABILISED CONSTRUCTION EXIT
	TEMPORARY STOCKPILE WITH SEDIMENT FENCE SURROUND



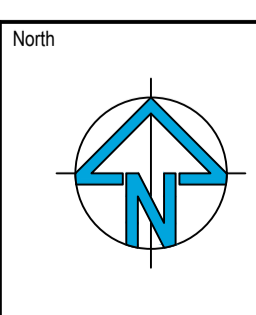
LOCALITY PLAN
NOT TO SCALE

MAP DATA @ SIXMAPS 2024

DRAWING INDEX		
DRAWING NUMBER	DRAWING TITLE	REVISION
C01-0001	COVER SHEET AND DRAWING INDEX	B
C01-0101	NOTES SHEET	B
C03-0001	SOIL EROSION AND SEDIMENT CONTROL PLAN	B
C03-0101	SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	B
C08-0001	STORMWATER MANAGEMENT PLAN	B
C08-0301	STORMWATER DETAILS SHEET 1	B
C08-0302	STORMWATER DETAILS SHEET 2	B
C08-0303	STORMWATER DETAILS SHEET 3	B
C08-0304	STORMWATER DETAILS SHEET 4	B



Issue	Description	Date	Drawn	Approved
B	RE-ISSUE FOR DEVELOPMENT APPLICATION	11.07.24	RP	KP
A	ISSUE FOR DEVELOPMENT APPLICATION	04.07.24	RP	KP



Scale

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NORTH NARRABEEN, NSW, 2101

Drawn	Designed	O.A. Check	Date	Scale @ A1
RP	SH	GL	02.07.24	N/A
Project No. NA231656	Drawing No. C01-0001	Issue B		

NOT FOR CONSTRUCTION

GENERAL NOTES

- ALL WORK TO BE IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, AND TO THE REQUIREMENTS OF COUNCIL ENGINEERS.
- A SURVEY OF THE SITE HAS BEEN UNDERTAKEN BY STUTCHBURY JAQUES PTY LTD LAND SURVEYING CONSULTANTS AS RECEIVED BY ACOR CONSULTANTS PTY LTD ON 06.24.2024. ALL LEVELS TO A.H.D. DRAWINGS SHOW DETAILS AT THE TIME OF SURVEY
- ALL RUBBISH, DEBRIS, UNDERGROWTH, FENCES & TREES NOTED ON THE PLAN WITHIN THE LIMIT OF WORKS ARE TO BE REMOVED FROM SITE AREA TO THE SATISFACTION OF COUNCIL OR THE SUPERINTENDENT
- NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM SITE WITHOUT COUNCIL APPROVAL
- NO WORK WITHIN ADJOINING PROPERTIES TO BE UNDERTAKEN WITHOUT WRITTEN PERMISSION FROM THE OWNERS OR RESPONSIBLE AUTHORITY
- THE CONTRACTOR SHALL OBTAIN LEVELS FROM ESTABLISHED BENCHMARKS ONLY
- THE LOCATION OF RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED BY THE CONTRACTOR AND ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH THE SURVEYOR PRIOR TO THE COMMENCEMENT OF WORK
- THE CONTRACTOR SHALL ERECT A POLLUTION WARNING SIGN AT THE ENTRANCE TO THE SUBDIVISION OR PROPOSED DEVELOPMENT
- SERVICE CONDUITS SHALL BE PLACED AS DIRECTED BY ENDEAVOUR ENERGY, NBN / TELSTRA, AND AS REQUIRED BY THE RELEVANT SERVICE AUTHORITY AND AS PER SERVICE AUTHORITY APPROVED PLANS
- STREET SIGNS REQUIRED WHERE SHOWN. STREET SIGNS TO COUNCIL STANDARD SHALL BE INSTALLED BY THE CONTRACTOR.
- SIGNPOSTING AND LINEMARKING TO CONFORM WITH AS1742.2 & AS1743. RAISED RETRO-REFLECTIVE PAVEMENT MARKERS TO CONFORM WITH AS1906 & AS1743.
- KERB RAMP CROSSINGS TO BE PROVIDED WHERE SHOWN ON PLAN AND CONSTRUCTED AS DETAILED AND TO COUNCIL STANDARDS
- NO TREES ARE TO BE REMOVED OR LOPPED OTHER THAN THOSE SHOWN AND THOSE IN ROAD RESERVES, WITHOUT COUNCILS WRITTEN PERMISSION. A TREE INSPECTION WITH COUNCIL SHALL BE ARRANGED ONCE LOTS HAVE BEEN PEGGED.
- ALL NEW WORKS ARE TO MAKE SMOOTH JUNCTIONS WITH ALL EXISTING CONDITIONS. AC JOINTS TO BE SAW CUT AT CONNECTION TO EXISTING PAVEMENT. THE CONTRACTOR IS TO MAKE ALL DUE ALLOWANCES FOR WORKS DURING CONSTRUCTION.
- SUBSOIL DRAINAGE TO BE PROVIDED BEHIND KERBING AS PER APPROVED PLANS AND AS DIRECTED BY COUNCIL OR THE CERTIFIER DURING CONSTRUCTION.
- THE THICKNESS OF ROAD PAVEMENTS SHALL BE CONFIRMED BY THE CONTRACTOR UPON COMPLETION OF SUBGRADE TESTING UNDERTAKEN BY THE CONTRACTOR.
- SERVICES TO EXISTING DEVELOPMENTS ARE TO BE MAINTAINED AT ALL TIMES.
- PROPOSED SERVICES CROSSING EXISTING ROADS SHALL BE THRUST BORED UNDER THE ROAD SO AS NOT TO DAMAGE EXISTING SURFACES.

GENERAL NOTES (cont'd)

- CONTRACTOR IS TO VERIFY THE LOCATION OF ALL EXISTING SERVICES WITH EACH RELEVANT AUTHORITY PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DAMAGE TO SERVICES SHALL BE REPAIRED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY. ANY UTILITIES ADJUSTMENTS REQUIRED TO BE AT THE CONTRACTORS EXPENSE.
- ENSURE ADEQUATE TRENCH FOUNDATION AND BEDDING COMPACTION SPECIFICALLY ADJACENT TO DRAINAGE STRUCTURES AND PROTECTION TO PIPES FROM CONSTRUCTION TRAFFIC. CRACKED STORMWATER PIPES WILL NOT BE ACCEPTED.
- PROVIDE GALVANISED STEEL KERB OUTLETS PLACED IN KERB ON LOW SIDE OF LOTS, 500mm FROM BOUNDARY OR WHERE SHOWN. PROVIDE SUITABLE ADAPTOR TO ALLOW CONNECTION OF 90mm DIA. S.W.PIPE IN ACCORDANCE WITH COUNCIL STANDARDS
- NO MATERIALS TO BE STOCKPILED ON FUTURE ALLOTMENTS WITHOUT APPROVAL IN WRITING FROM THE CLIENTS REPRESENTATIVE.
- MINIMUM SITE DISTURBANCE AND MAXIMUM VEGETATION AND TREE PRESERVATION TO BE MAINTAINED AT ALL TIMES.
- EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES AND THE LENGTH OF TRENCH OPENINGS MINIMISED.
- THE CONTRACTORS ITP SHALL ALLOW FOR A HOLD POINT TO ALLOW CHECK LEVELS AND PROOF ROLL PRIOR TO PLACEMENT OF:
- SUB BASE COURSE
-BASE COURSE MATERIAL
-WEARING COURSE MATERIAL, PRIME COAT TWO WEEKS PRIOR TO AC SEAL, THICKNESS OF AC SEAL AS SPECIFIED.
- ALL PIPES TO BE SOCKET/SPIGOT RUBBER RING JOINT FRC PIPES CLASS '3' OR REINFORCED CONCRETE CLASS '3'. UNLESS NOTED OTHERWISE.
- GRATES TO COMPLY WITH COUNCIL STANDARDS, ALL GRATES TO BE CYCLE FRIENDLY GALVANISED BOLT DOWN TYPE.
- STEP IRONS REQUIRED IN PITS GREATER THAN 1.0m DEPTHS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FULL QA DOCUMENTATION OF THE PROJECT TO ENSURE WORKS MEET THE RELEVANT SECTIONS OF THE CC FOR ROADS AND DRAINAGE WORKS. A COMPLETE ITP PLAN SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO WORKS COMMENCING ON SITE, COVERING ALL ASPECTS OF THE CONTRACT.
- ALL WORKS ARE TO BE SETOUT BY A REGISTERED SURVEYOR.
- THE CLIENT WILL PREPARE WAE DRAWINGS AT COMPLETION TO ENSURE THE WORKS MEET THE REQUIREMENTS OF THE DESIGN.
- A TRAFFIC CONTROL PLAN IS TO BE SUBMITTED TO COUNCIL BY THE CONTRACTOR FOR APPROVAL PRIOR TO WORKS COMMENCING.
- CONTRACTOR IS TO PROVIDE A 3m LONG LENGTH OF 100Ø SUBSOIL DRAINAGE LINE ON THE UPSTREAM SIDE OF DRAINAGE PITS, INCLUDING GEOFABRIC SOCK AND NOM. 20mm GRAVEL
- ALL DRAINAGE TRENCHES WITHIN THE ROAD RESERVE ARE TO BE BACKFILLED WITH CLEAN SHARP SAND.

EXISTING SERVICES AND FEATURES

- 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.
- THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN WRITTEN APPROVAL OF THEIR PROGRAMME FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
- EXISTING BUILDINGS, EXTERNAL STRUCTURES, AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY DEMOLITION WORKS.
- 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.
- 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.

SITWORKS NOTES

- ORIGIN OF LEVELS :- AUSTRALIAN HEIGHT DATUM (A.H.D.)
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
- 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.
- 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.
- WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
- THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
- 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.
- 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.
- ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- 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.
- PROVIDE 10mm WIDE EXPANDING CORK JOINTS BETWEEN CONCRETE PAVEMENTS AND ALL BUILDINGS, WALLS, FOOTINGS, COLUMNS, KERBS, DISH DRAINS, GRATED DRAINS, BOLLARD FOOTINGS ETC
- CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS.
- ALL BATTERS TO BE GRASSED LINED WITH MINIMUM 100 TOPSOIL AND APPROVED COUCH LAID AS TURF.
- MAKE SMOOTH TRANSITION TO EXISTING SERVICES AND MAKE GOOD.
- 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.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
- 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.
- 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.

STORMWATER NOTES

- ALL 375 DIA. DRAINAGE PIPES AND LARGER SHALL BE CLASS "2" APPROVED SPIGOT AND SOCKET FRC OR RCP PIPES WITH RUBBER RING JOINTS. (U.N.O.) ALL DOWNPIPE DRAINAGE LINES SHALL BE SEWER GRADE uPVC WITH SOLVENT WELD JOINTS. (U.N.O.)
- EQUIVALENT STRENGTH REINFORCED CONCRETE PIPES MAY BE USED.
- ALL PIPE JUNCTIONS UP TO AND INCLUDING 450 DIA. AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
- MINIMUM GRADE TO STORMWATER LINES TO BE 1%. (U.N.O.)
- CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
- ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
- PRECAST PITS SHALL NOT BE USED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER.
- WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 50MM CONCRETE BED (OR 75MM THICK BED OF 12MM BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 75MM THICK SAND BED. IN ALL CASES BACKFILL THE TRENCH WITH SAND TO 200MM ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL COMPACTED IN 150MM LAYERS TO 98% STANDARD MAX. DRY DENSITY.
- BEDDING SHALL BE (U.N.O.) TYPE HS2, IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS.
- WHERE STORMWATER LINES PASS UNDER FLOOR SLABS SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
- WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS UNSLOTTED UPVC SEWER GRADE PIPE SHALL BE USED.
- PROVIDE 3.0M LENGTH OF 100 DIA. SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, AT UPSTREAM END OF EACH PIT.

Issue	Description	Date	Drawn	Approved
B	RE-ISSUE FOR DEVELOPMENT APPLICATION	11.07.24	RP	KP
A	ISSUE FOR DEVELOPMENT APPLICATION	04.07.24	RP	KP

North	Scale
PRINT IN COLOUR	

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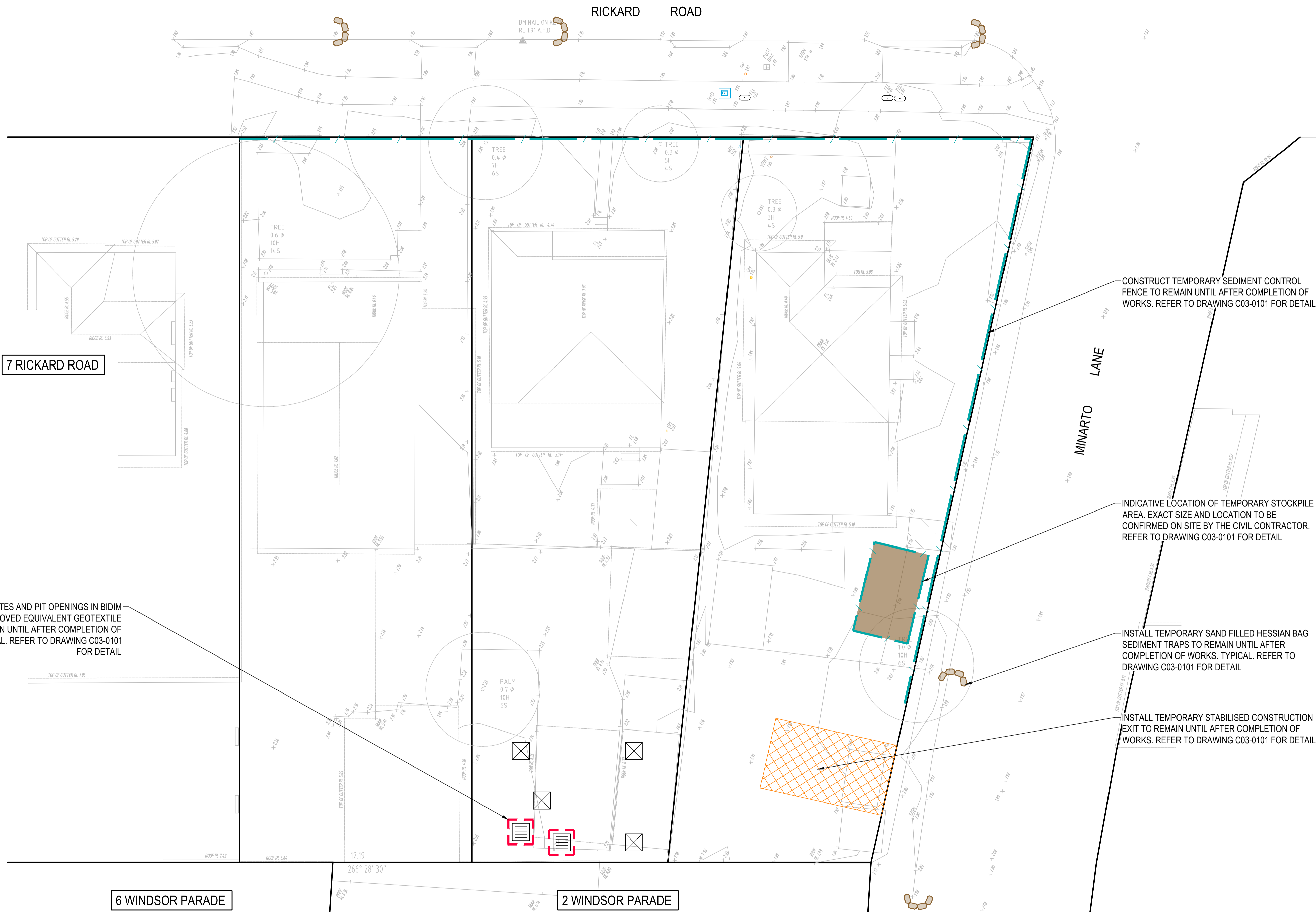


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Project SHOP TOP HOUSING
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Drawing Title CIVIL SERVICES NOTES SHEET				
Drawn RP	Designed SH	O.A. Check GL	Date 02.07.24	Scale @ A1 N/A
Project No. NA231656	Drawing No. C01-0101	Issue B		





7 RICKARD ROAD

6 WINDSOR PARADE

2 WINDSOR PARADE

MINARTO LANE

CONSTRUCT TEMPORARY SEDIMENT CONTROL FENCE TO REMAIN UNTIL AFTER COMPLETION OF WORKS. REFER TO DRAWING C03-0101 FOR DETAIL

INDICATIVE LOCATION OF TEMPORARY STOCKPILE AREA. EXACT SIZE AND LOCATION TO BE CONFIRMED ON SITE BY THE CIVIL CONTRACTOR. REFER TO DRAWING C03-0101 FOR DETAIL

INSTALL TEMPORARY SAND FILLED HESSIAN BAG SEDIMENT TRAPS TO REMAIN UNTIL AFTER COMPLETION OF WORKS. TYPICAL. REFER TO DRAWING C03-0101 FOR DETAIL

INSTALL TEMPORARY STABILISED CONSTRUCTION EXIT TO REMAIN UNTIL AFTER COMPLETION OF WORKS. REFER TO DRAWING C03-0101 FOR DETAIL

WRAP ALL GRATES AND PIT OPENINGS IN BIDIM A14 OR APPROVED EQUIVALENT GEOTEXTILE FABRIC TO REMAIN UNTIL AFTER COMPLETION OF WORKS. TYPICAL. REFER TO DRAWING C03-0101 FOR DETAIL



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North

Scale

SCALE BAR 1:100 @A1 1:200 @A3

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RP	SH	GL	02.07.24	1:100
Project No. NA231656	Drawing No. C03-0001	Issue B		

NOT FOR CONSTRUCTION

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 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.

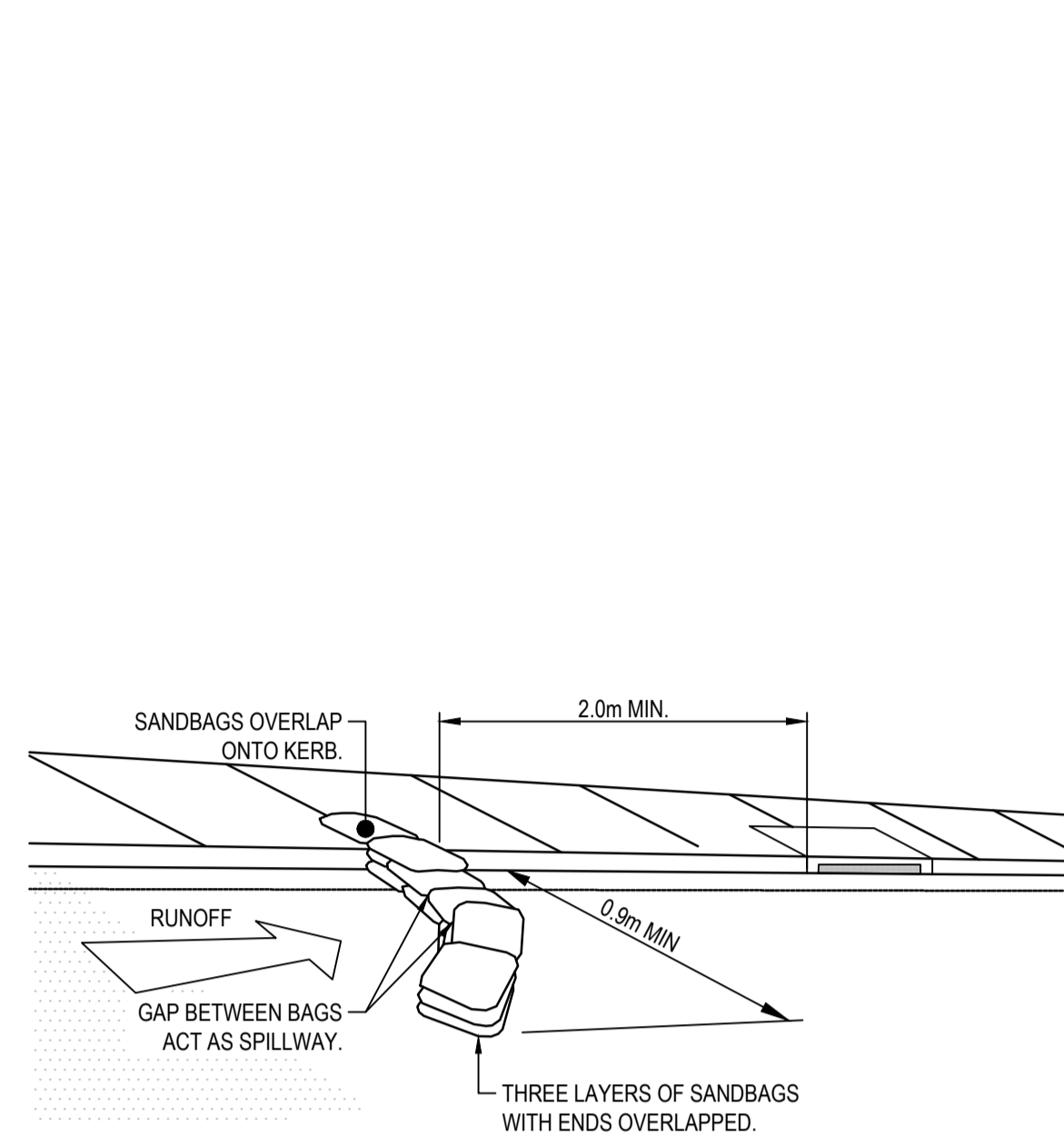
E10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

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.

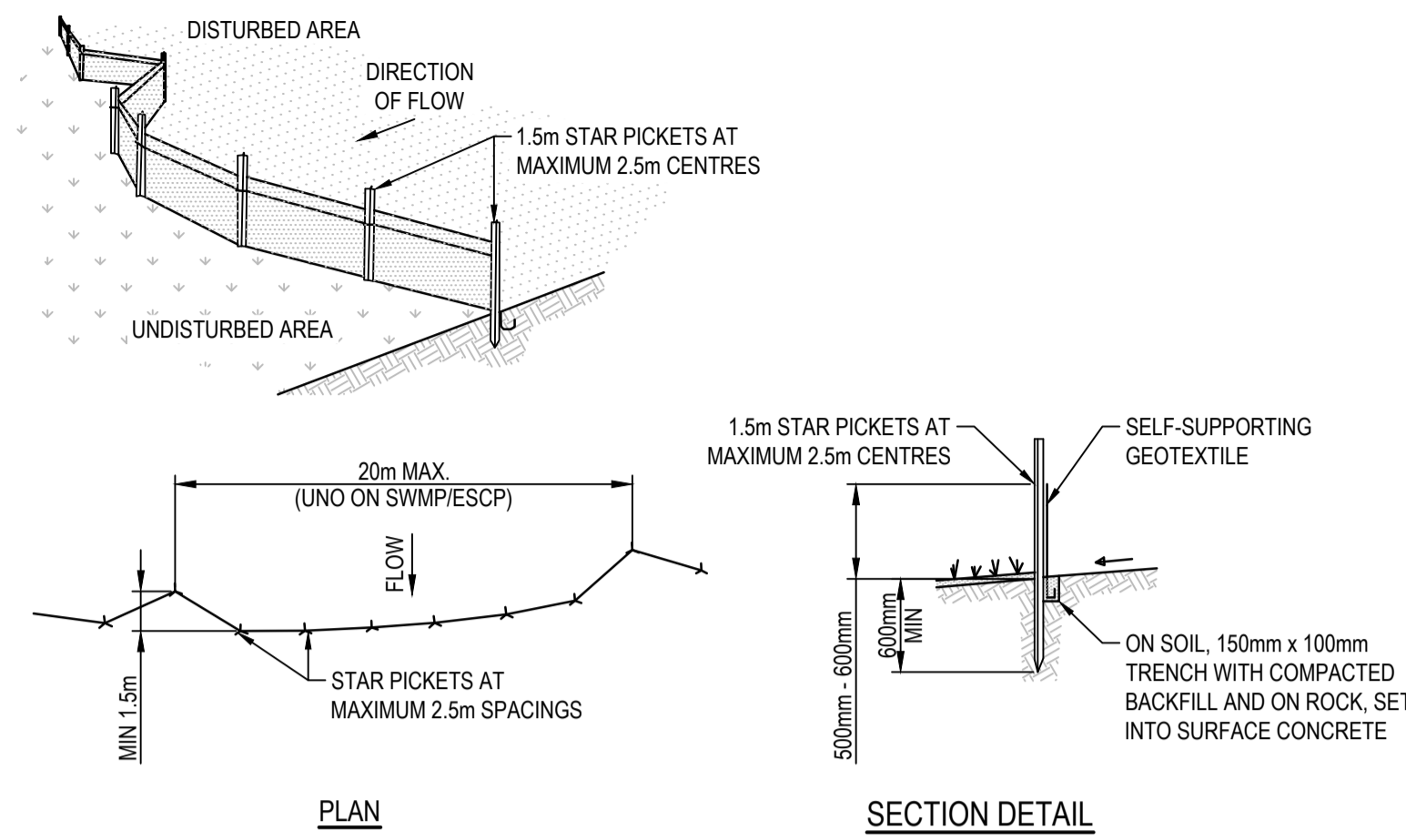
SITE INSPECTION & MAINTENANCE

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.



SANDBAG KERB INLET SEDIMENT TRAP

N.T.S.



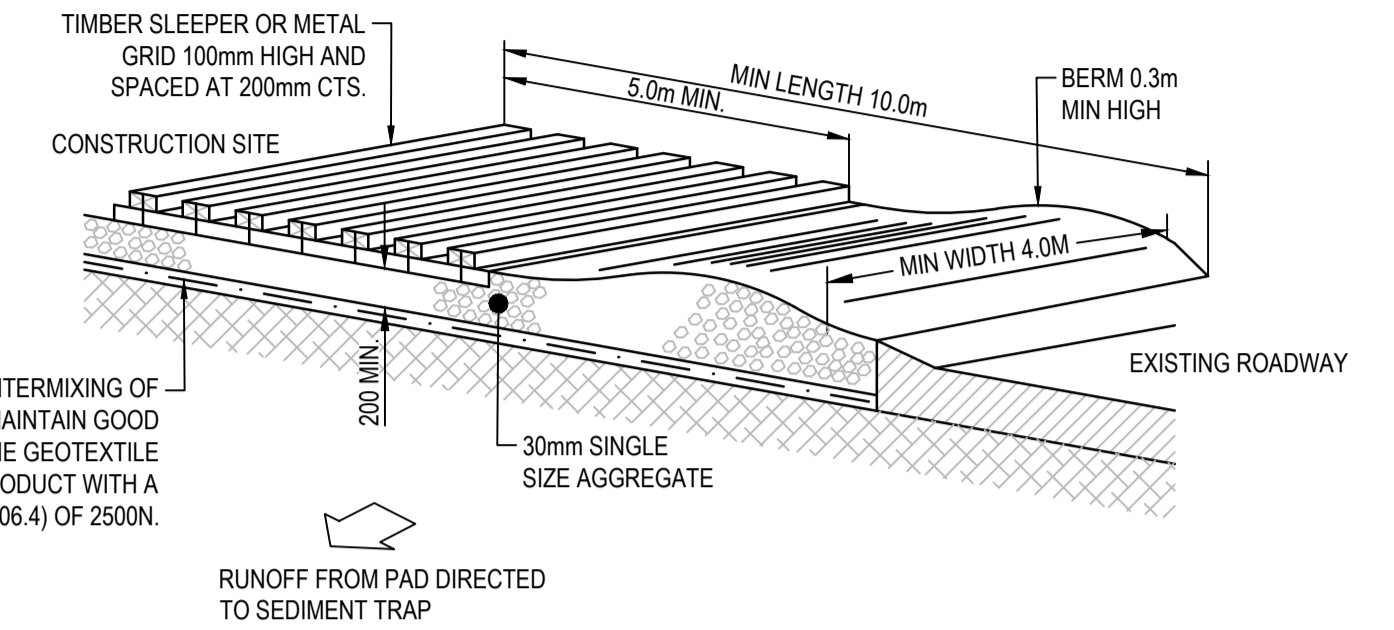
CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 2.5 METRES APART (MAX). ENSURE STAR PICKETS ARE FITTED WITH SAFETY CAPS.
3. DIG A 150mm 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 150mm OVERLAP.

SEDIMENT CONTROL FENCE

N.T.S.

NOTE
ENSURE THAT ALL UTILITY ASSETS ARE MAINTAINED AND PROTECTED AT ALL TIMES IN THE VICINITY OF THE TEMPORARY CONSTRUCTION EXIT



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 30mm SINGLE SIZE AGGREGATE.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP WHERE THE SEDIMENT IS COLLECTED AND REMOVED.

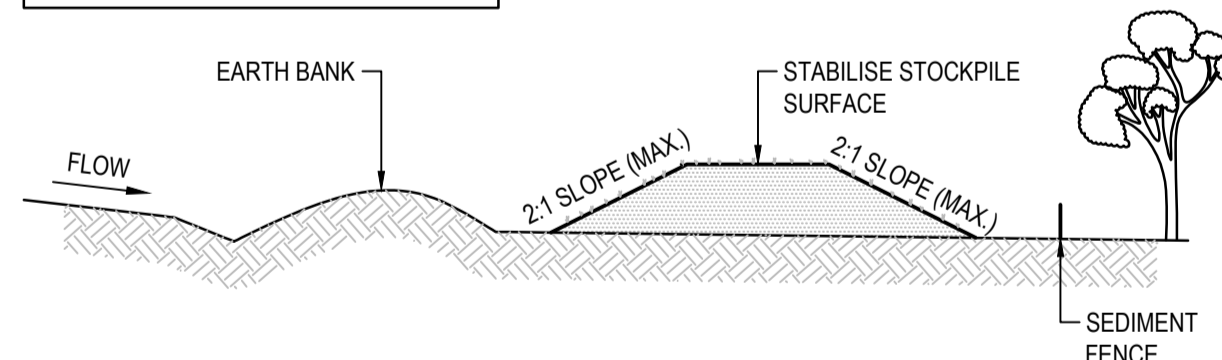
MAINTENANCE NOTES

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT OFF THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OFF THE CONSTRUCTION SITE MUST BE REMOVED IMMEDIATELY.

TEMPORARY STABILISED CONSTRUCTION EXIT

N.T.S.

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

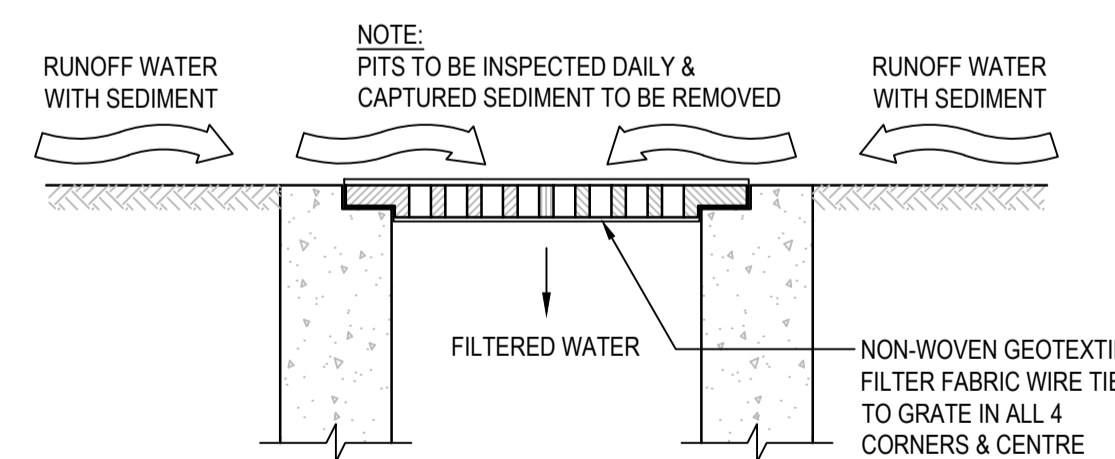


CONSTRUCTION NOTES

1. LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW, FLAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METERS IN HEIGHT.
4. REHABILITATE IN ACCORDANCE WITH THE SWM/IESCP.
5. CONSTRUCT EARTH BANK (STANDARD DRAWING 5-2) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-7) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

STOCKPILES

N.T.S.



INLET TRAP

N.T.S.

NOTE
TO BE USED IN PAVED AREAS WHERE TRAFFIC ACCESS IS REQUIRED



Issue	Description	Date	Drawn	Approved
B	RE-ISSUE FOR DEVELOPMENT APPLICATION	11.07.24	RP	KP
A	ISSUE FOR DEVELOPMENT APPLICATION	04.07.24	RP	KP

North	Scale	Client
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Client	ALDA PROPERTIES PTY LTD
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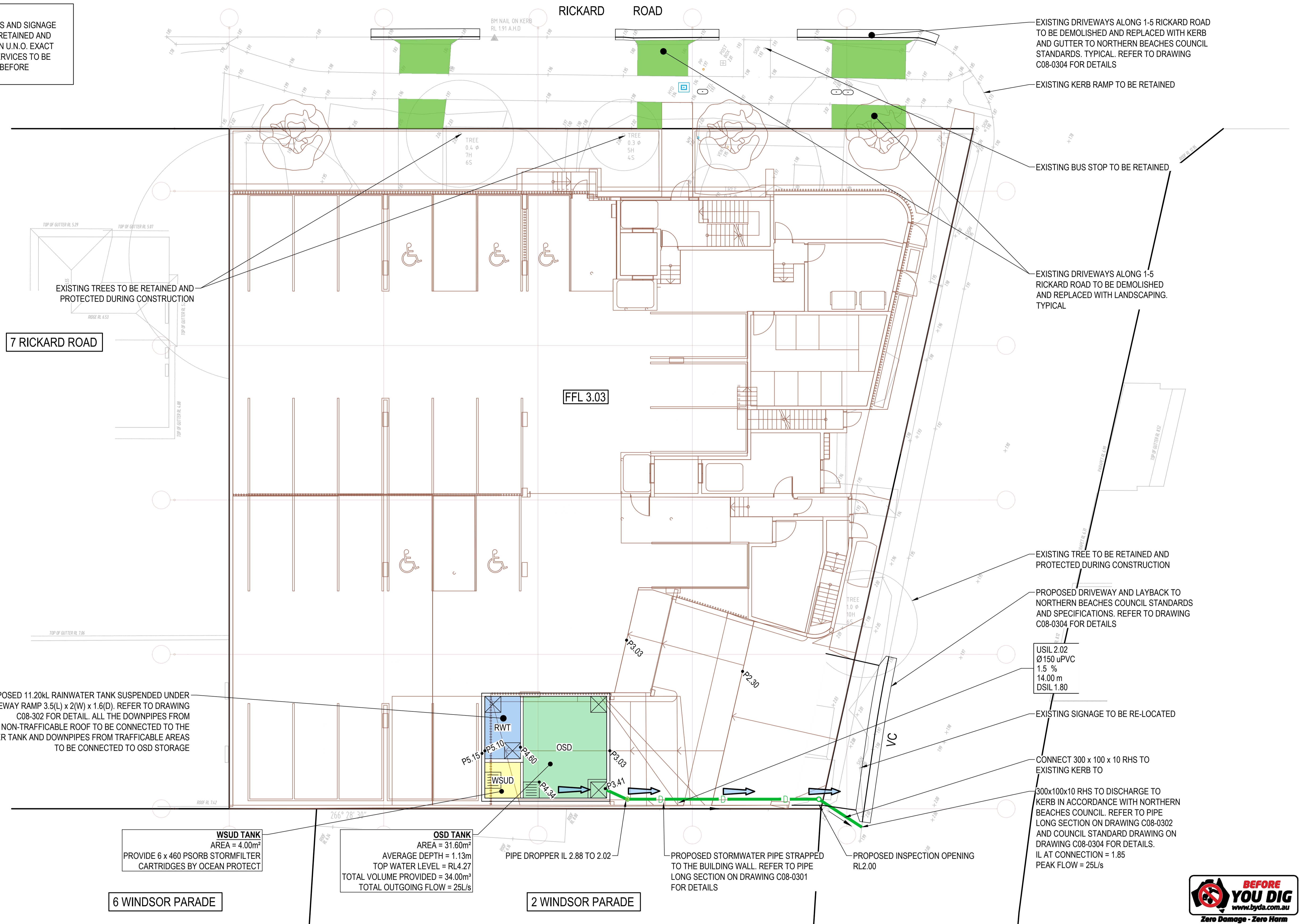
Architect	GARTNER TROVATO ARCHITECTS
ACOR CONSULTANTS	

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Project	SHOP TOP HOUSING
1-5 RICKARD ROAD NORTH NARRABEEN, NSW, 2101	
NOT FOR CONSTRUCTION	

Drawing Title CIVIL SERVICES SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS				
Drawn RP	Designed SH	D.A. Check GL	Date 02.07.24	Scale @ A1 AS SHOWN
Project No. NA231656	Drawing No. C03-0101	Issue B		

NOTES:
 ALL EXISTING SERVICES, FOOTPATHS AND SIGNAGE ALONG THE SITE BOUNDARY TO BE RETAINED AND PROTECTED DURING CONSTRUCTION U.N.O. EXACT SIZE AND LOCATION OF EXISTING SERVICES TO BE DETERMINED BY THE CONTRACTOR BEFORE CONSTRUCTION



7 RICKARD ROAD

6 WINDSOR PARADE

2 WINDSOR PARADE

WSUD TANK
 AREA = 4.00m²
 PROVIDE 6 x 460 PSORB STORMFILTER CARTRIDGES BY OCEAN PROTECT

OSD TANK
 AREA = 31.60m²
 AVERAGE DEPTH = 1.13m
 TOP WATER LEVEL = RL4.27
 TOTAL VOLUME PROVIDED = 34.00m³
 TOTAL OUTGOING FLOW = 25L/s

USIL 2.02
 Ø 150 uPVC
 1.5 %
 14.00 m
 DSIL 1.80



Issue	Description	Date	Drawn	Approved
B	RE-ISSUE FOR DEVELOPMENT APPLICATION	11.07.24	RP	KP
A	ISSUE FOR DEVELOPMENT APPLICATION	04.07.24	RP	KP

North

Scale
 0 1 2 4 6m
 SCALE BAR 1:100 @A1 1:200 @A3

PRINT IN COLOUR

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Project
SHOP TOP HOUSING
 1-5 RICKARD ROAD
 NORTH NARRABEEN, NSW, 2101

Drawn	Designed	O.A. Check	Date	Scale @ A1
RP	SH	GL	02.07.24	1:100
Project No. NA231656	Drawing No. C08-0001	Issue B		

NOT FOR CONSTRUCTION

DESIGN SUMMARY:

RAINWATER TANK DESIGN:

PRE-DEVELOPMENT
SITE AREA = 1426m²
IMPERVIOUS AREA = 769m²
POST-DEVELOPMENT
IMPERVIOUS AREA = 1252m²
PERVIOUS AREA = 159.64m²
INCREASE IN IMPERVIOUS AREA = 483m²

THUS MINIMUM 10,000L IS PROPOSED AS THE INCREASED IMPERVIOUS AREA IS BETWEEN 400-500m² AS PER PITWATER DCP B5.5 - RAINWATER TANKS.

RAINWATER TANK RE-USE IS BASED ON BMT GUIDELINES:

- 0.31kL/DAY/DWELLING FOR OUTDOOR RE-USE. THIS IS MODELLED AS 0.31*365*16 = 113.15 = 1810kL/year AS DISTRIBUTED RAIN.
- 0.65kL/DAY/DWELLING FOR INTERNAL USE BASED ON A 3 PERSON OCCUPANCY USING TOILETS, WASHING MACHINES AND HOT WATER. 0.65*16 = 10.4kL/day.

OSD DESIGN:

AS PER PRE-DA MEETING NOTES, DATED: 07 SEPTEMBER 2023, UNDER DEVELOPMENT ENGINEER OSD IS NOT REQUIRED AS THE SITE IS FLOOD AFFECTED. HOWEVER COUNCIL HAS ALSO ADVISED THAT STORMWATER RUNOFF FROM THE SITE IS TO BE CONNECTED TO THE KERB WITH MAXIMUM DISCHARGE OF 25L/s.

THUS A COMBINED OSD/RAINWATER TANK IS PROPOSED UNDER DRIVEWAY RAMP TO CONTROL STORMWATER RUNOFF TO 25L/s TO THE KERB OUTLET.

TOTAL ROOF AREA TO OSD = 1249m²

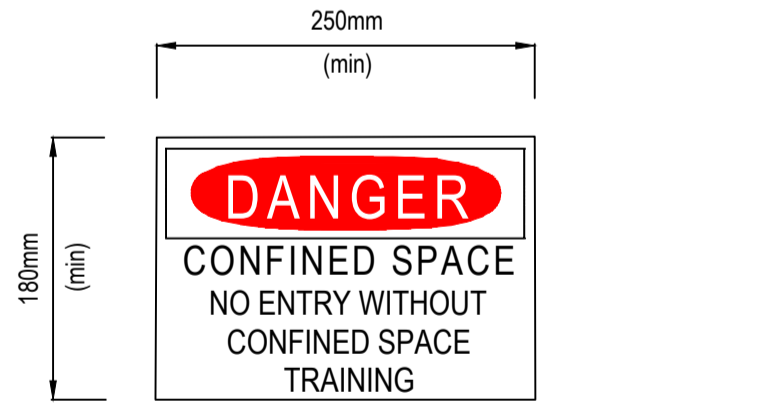
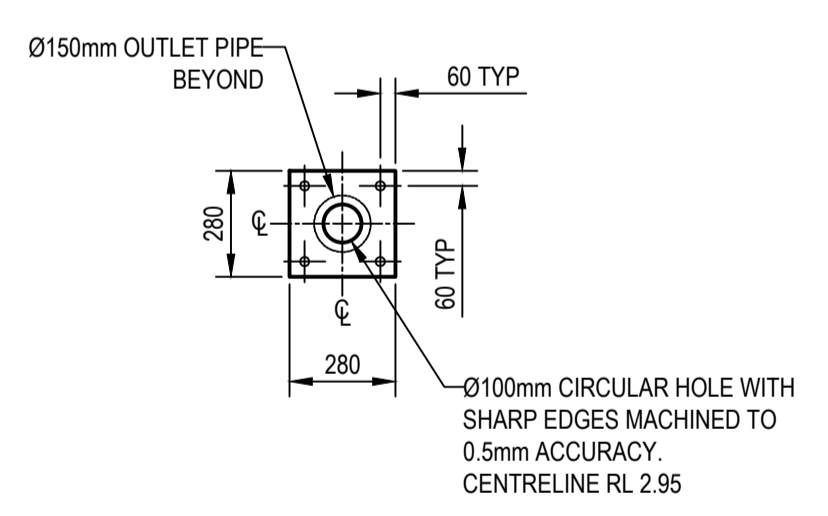
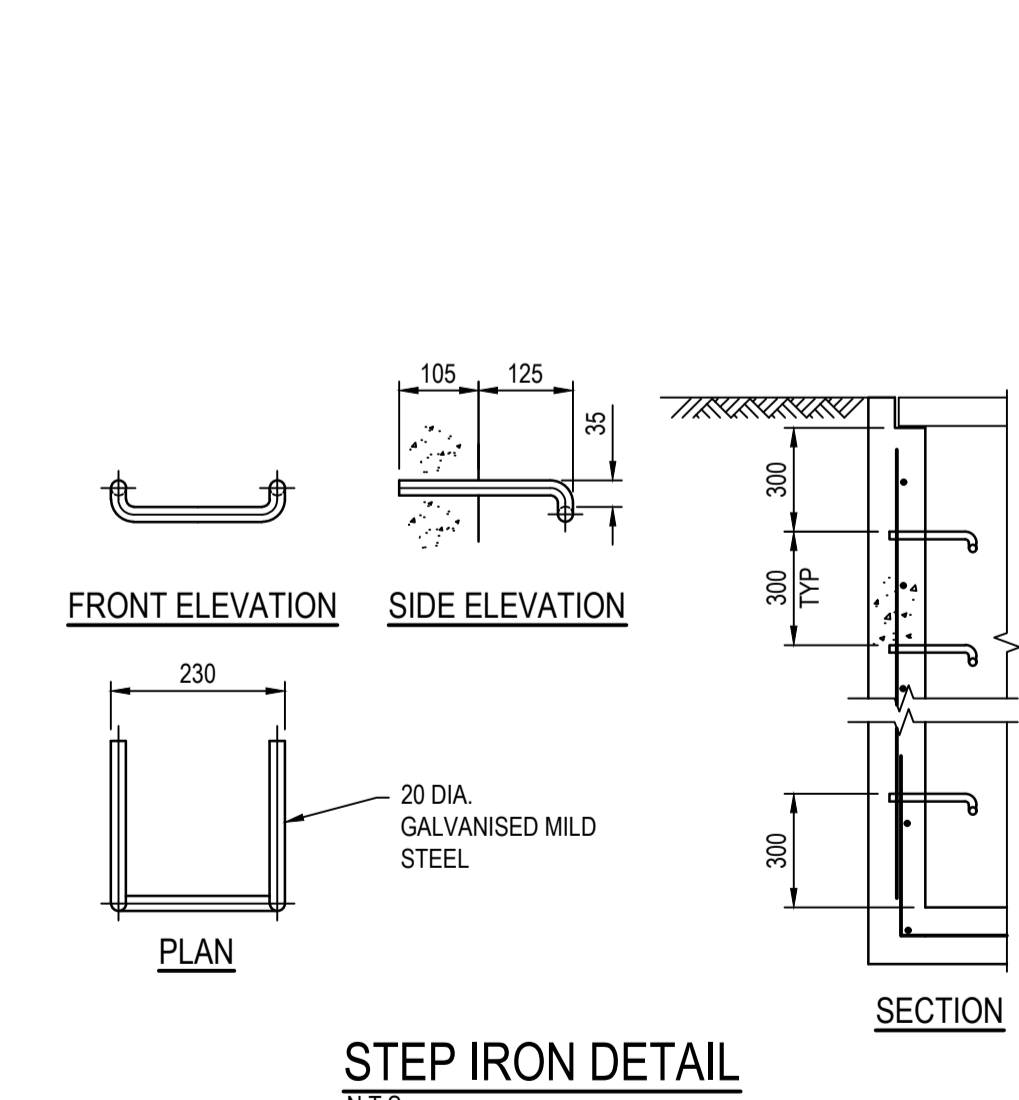
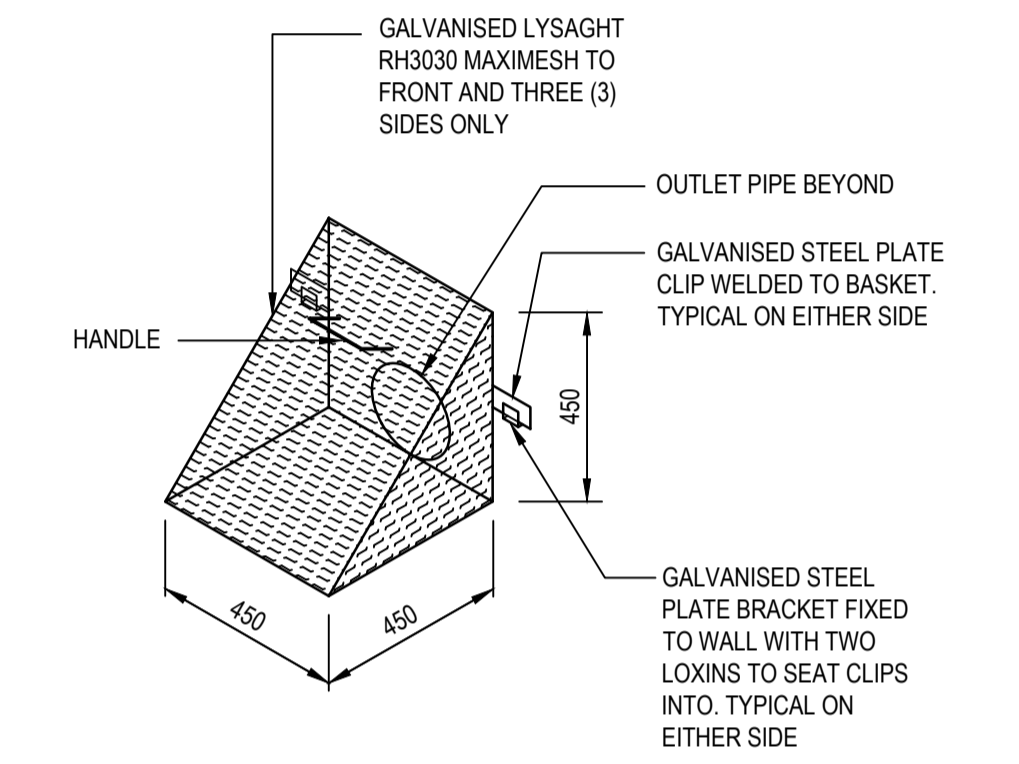
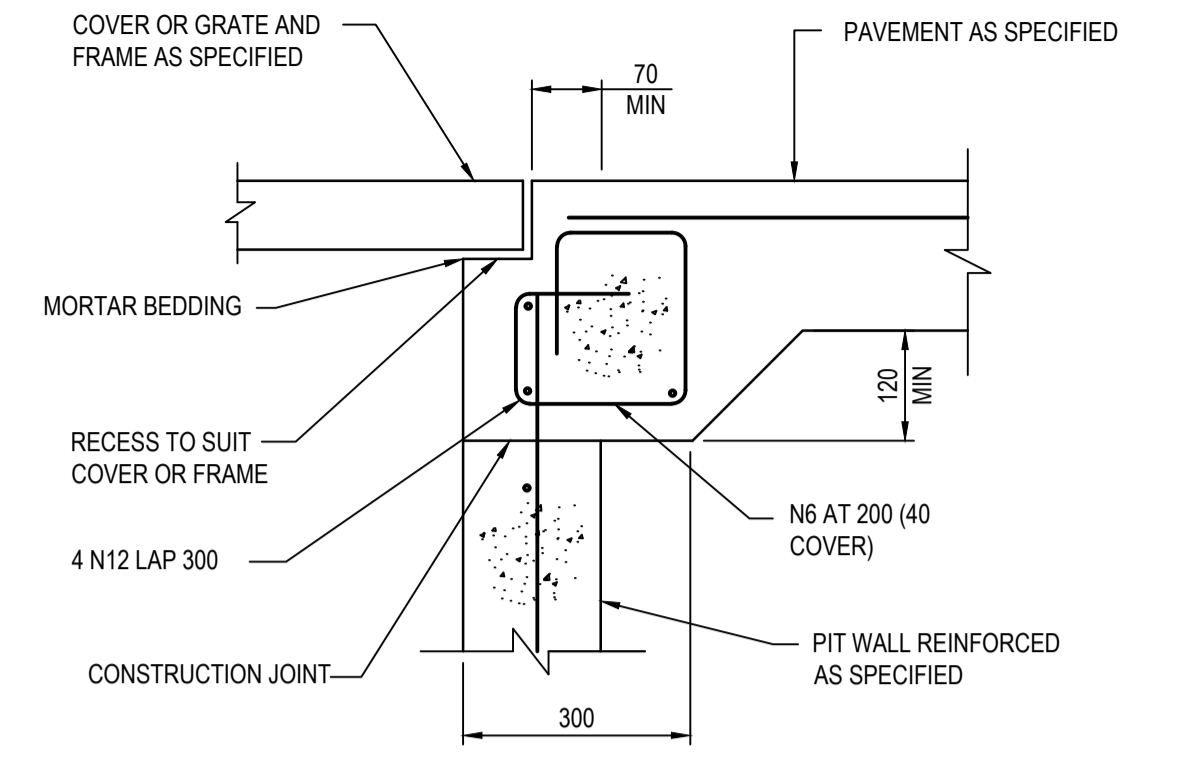
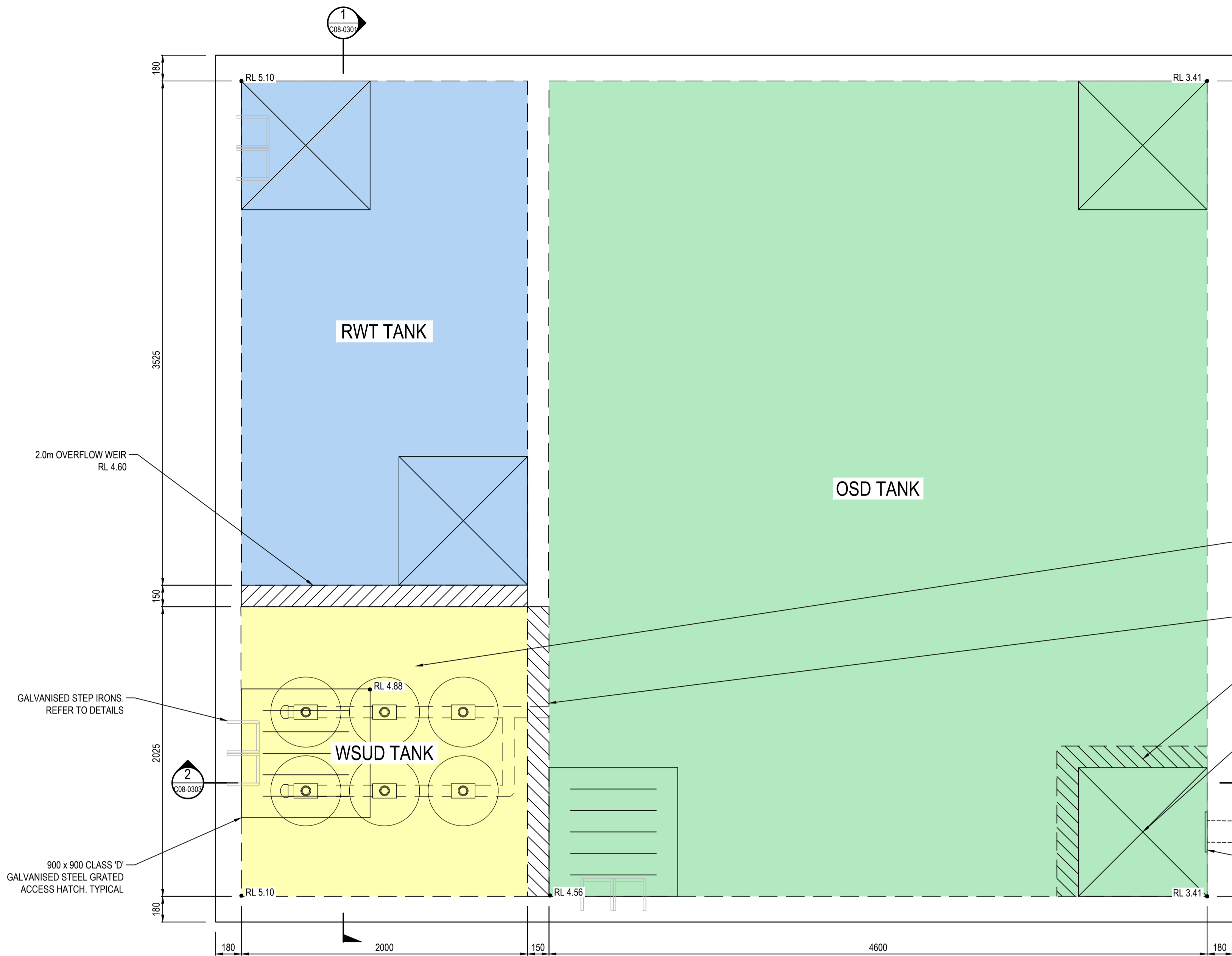
RAINFALL EVENT:	10%	5%	1%
Q PRE-ROOF AREA (L/s) =	56	65	87
Q POST-ROOF AREA (L/s) =	19	21	25

WSUD TREATMENT PROPOSED:

- 11.20kL RAINWATER TANK
- 6 x 460mm PSORB STORMFILTER CARTRIDGES HAVE BEEN INCORPORATED INTO THE DEVELOPMENT TO SATISFY THE FOLLOWING POLLUTANT TARGET CONTROLS. REFER TO SCREENSHOT 2 FOR MUSIC SETUP AND RESULTS.

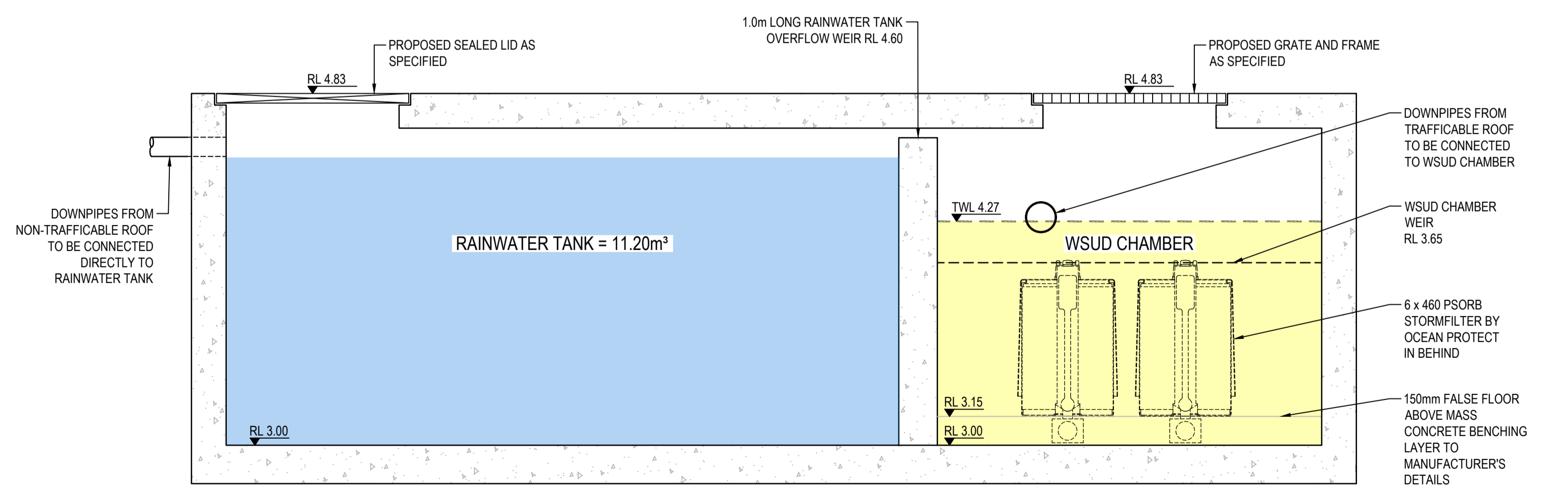
WATER QUALITY TREATMENT OUTCOMES:

TSS (TOTAL SUSPENDED SOLIDS) = 85%
TP (TOTAL PHOSPHORUS) = 65%
TN (TOTAL NITROGEN) = 45%
GROSS POLLUTANTS = 90%

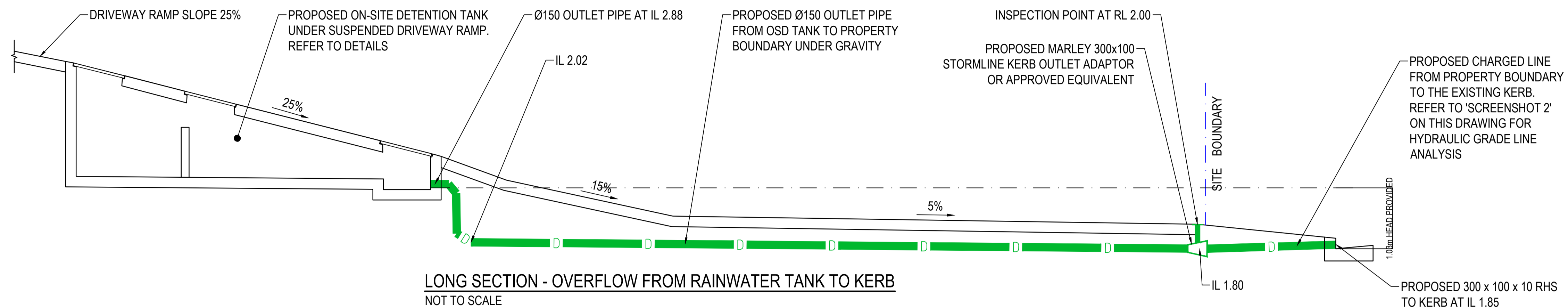


NOTES

1. A CONFINED SPACE SIGN SHALL BE PLACED NEXT TO EACH AND EVERY ACCESS POINT THEY ARE VISIBLE TO PERSON ENTERING ANY BELOW GROUND TANK OR PIT.
2. COLOURS:
"DANGER" AND BACKGROUND - WHITE
ELLIPTICAL AREA - RED
LETTERING AND BORDER - BLACK
3. MINIMUM OF THE SIGN:
LARGE ENTRIES - 300mm x 450mm
SMALL ENTRIES - 250 mm x 180mm
4. SIGN TO BE MADE FROM COLOUR BONDED ALUMINIUM OR POLYPROPYLENE
5. SIGN FIXED USING HILTI CHEMSETS OR EPOXY



North		Scale		Client ALDA PROPERTIES PTY LTD		Architect GARTNER TROVATO ARCHITECTS		ACOR Consultants Pty Ltd Suite 2, Level 1, 33 Herbert Street St Leonards NSW 2065 T +61 2 9438 5098		Project SHOP TOP HOUSING		Drawing Title CIVIL SERVICES STORMWATER DETAILS SHEET 1	
0		1:100		11.07.24		11.07.24		11.07.24		11.07.24		02.07.24	
A		B		RP		RP		RP		GL		AS SHOWN	
Issue		Description		Date		Date		Date		Date		Date	
1		RE-ISSUE FOR DEVELOPMENT APPLICATION		11.07.24		04.07.24		04.07.24		02.07.24		02.07.24	
2		ISSUE FOR DEVELOPMENT APPLICATION		04.07.24		04.07.24		04.07.24		02.07.24		02.07.24	
Project No.		Drawing No.		O.A. Check		Date		Scale @ A1		Issue		Issue	
NA231656		C08-0301		GL		02.07.24		AS SHOWN		B		B	



HYDRAULIC GRADE LINE ANALYSIS

Project	NA231656		
Site address	RICHARD RD		
Design by	SH		
Phone			
FROM NOE	OSD		TO NODE: KERB
Coefficients			
Gravity acceleration	g	9.81	m/s ²
Roughness Coefficient	k	0.005	10 ⁻³ m (pvc pipe)
Bendloss Coefficient	K _b	0.47	90° bend
Water density	ρ	1000	kg/m ³
Runoff Coefficient	C _{roof}	0.85	
Absolute viscosity	μ	0.001	water
Minor Loss Coefficient	ξ	1	

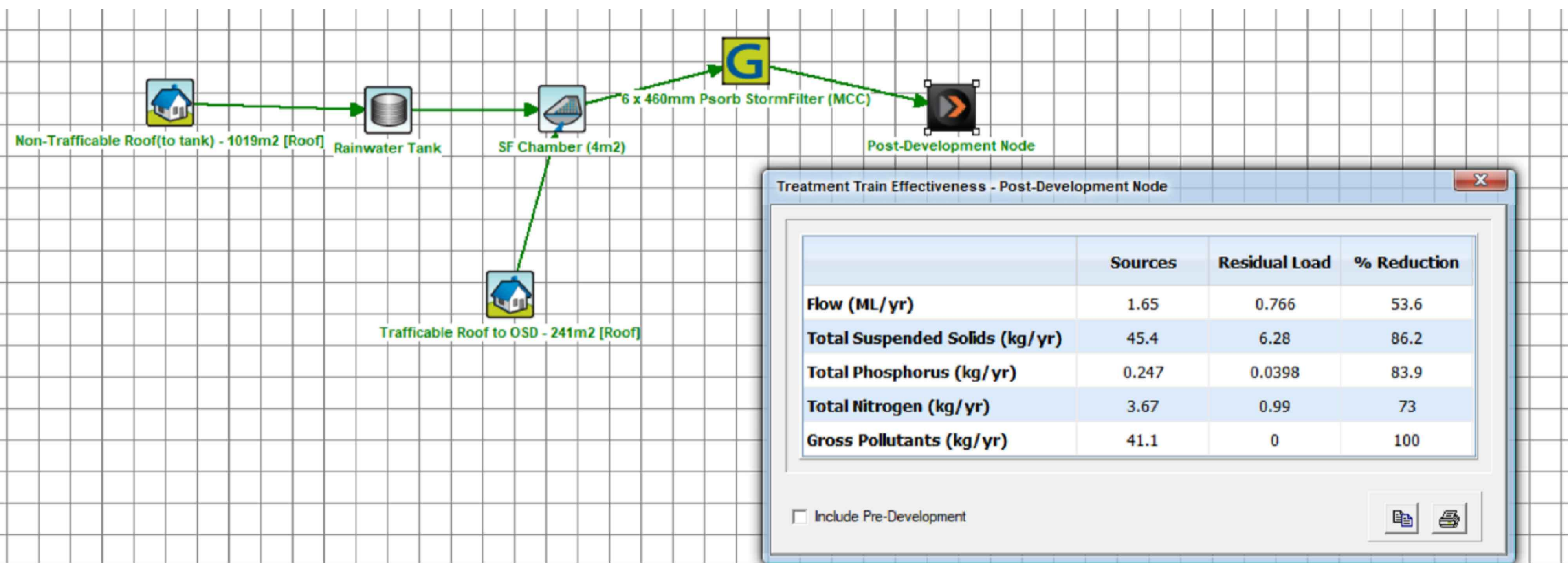
Length of pipe	L	2.7	m
Pipe diameter	h _d	0.15	m
Catchment Area	A _{catch}	400	m ²
Rainfall 100 year	I _{5min}	262	mm/h

Flow Rate	Q	24.74	l/s
Flow Velocity	V	1.40	m/s

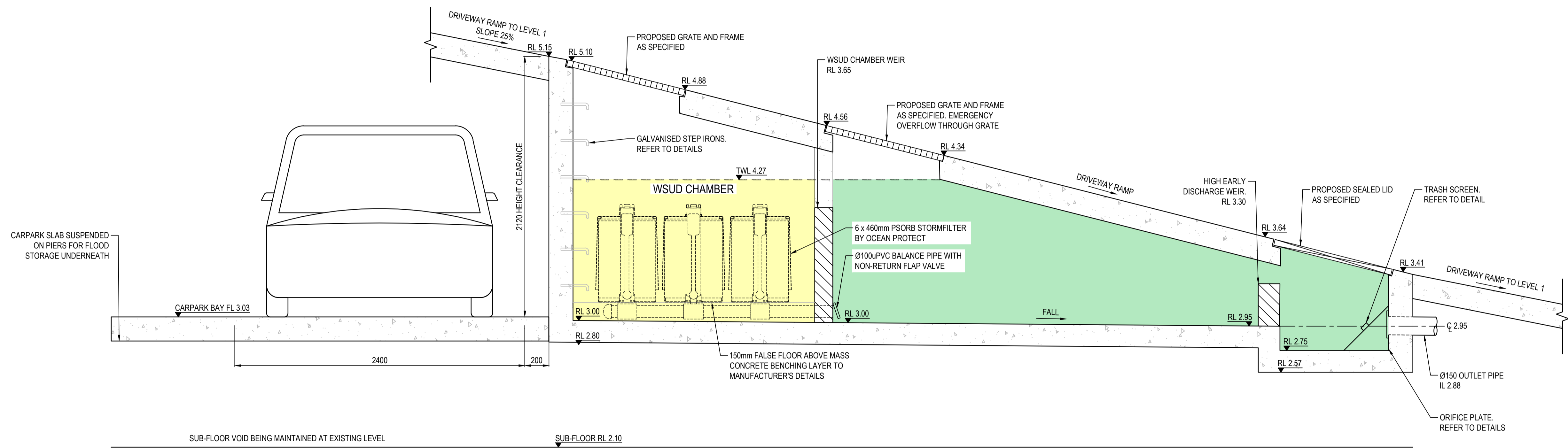
Fiction loss			
Reynolds No	Re	210037	Turbulent
Roughness Ratio		3.3333E-05	
Friction coefficient	λ	0.015	(The Moody Diagram)

Friction loss	h _f	0.03	m
Bend loss (x6)	h _b	0.60	m
Exist loss	h _e	0.40	m
Total head loss =	H _L	1.03	m
Total head provided =	H	1.03	m

SCREENSHOT 2 - HYDRAULIC GRADE LINE ANALYSIS



SCREENSHOT 1 - MUSIC MODEL RESULTS
SEE NEXT PAGE FOR WATER QUALITY DESIGN DETAILS



SECTION 2
SCALE = 1:20

Issue	Description	Date	Drawn	Approved
B	RE-ISSUE FOR DEVELOPMENT APPLICATION	11.07.24	RP	KP
A	ISSUE FOR DEVELOPMENT APPLICATION	04.07.24	RP	KP

North	Scale
PRINT IN COLOUR	

Client
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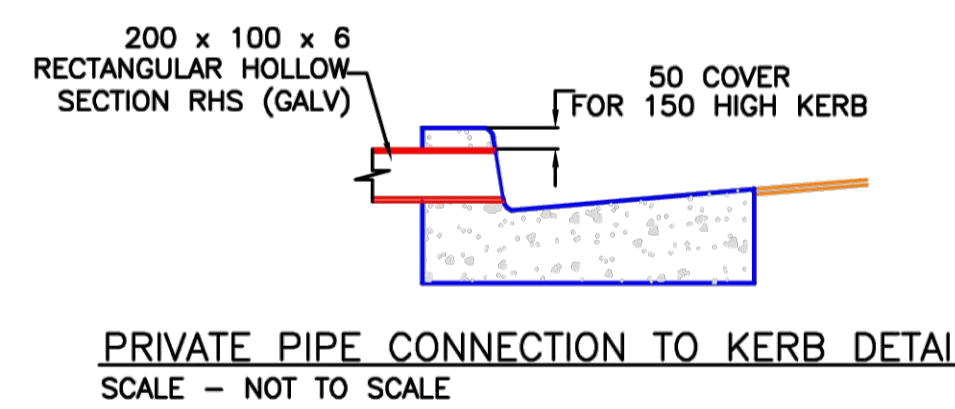
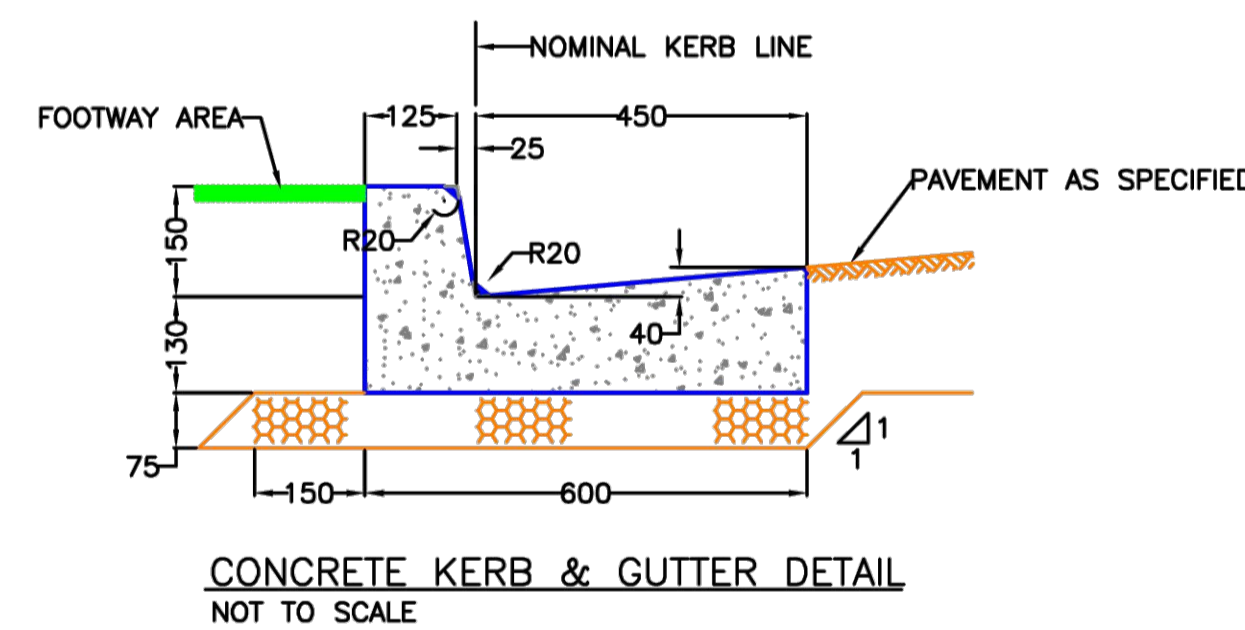
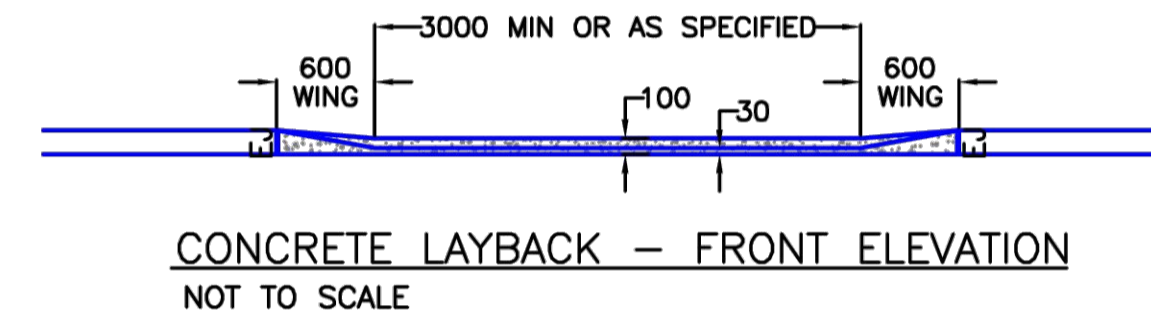
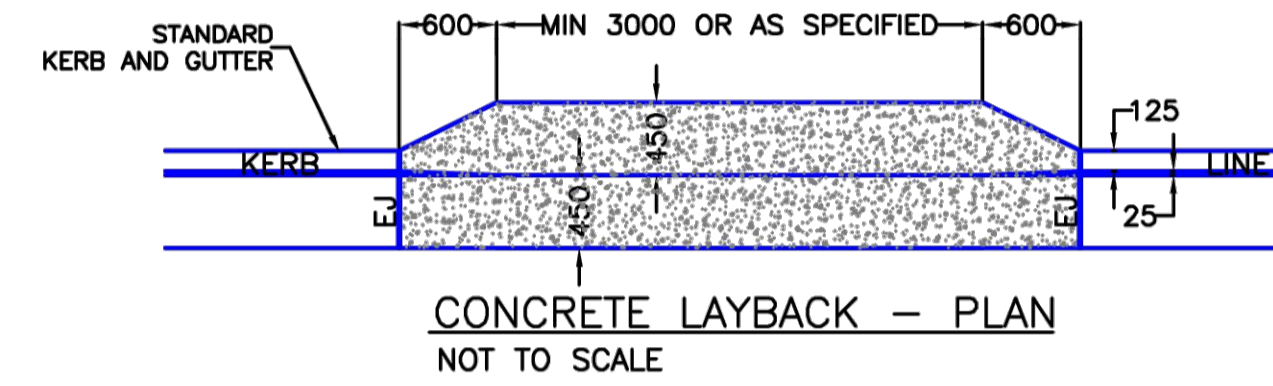
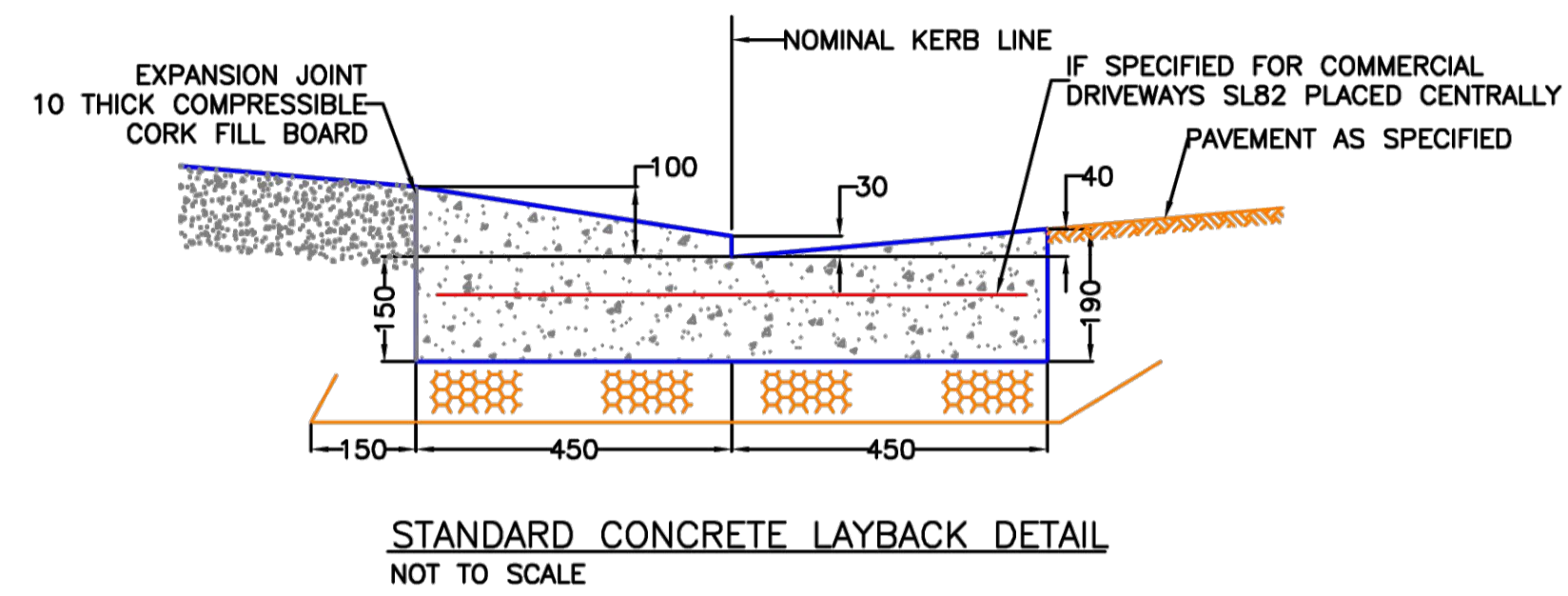
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Drawing Title CIVIL SERVICES STORMWATER DETAILS SHEET 3				
Drawn RP	Designed SH	O.A. Check GL	Date 02.07.24	Scale @ A1 AS SHOWN
Project No. NA231656	Drawing No. C08-0303	Issue B		



STANDARD KERB AND GUTTER NOTES

1. KERB AND GUTTER, CONCRETE EDGING, DISH DRAINS AND THE LIKE SHALL BE POURED IN PLAIN CONCRETE AND FINISHED WITH A STEEL TROWEL.
2. THE MINIMUM COMPRESSIVE STRENGTH SHALL BE 25MPa AT 28 DAYS.
3. FOR ELEMENTS CONSTRUCTED USING SLIPFORM, REINFORCEMENT WILL NOT BE REQUIRED PROVIDED THAT THE CONCRETE COMPRESSIVE STRENGTH IS NOT LESS THAN 32MPa AT 28 DAYS.
4. WHERE COUNCIL OR ITS REPRESENTATIVE DIRECTS THAT THE GUTTER IS TO BE RETAINED, THE CONTRACTOR SHALL PLACE A 75mm DEEP SAW CUT IN THE GUTTER INVERT AND REMOVE THE KERB AND OR LAYBACK.
5. WHERE EXISTING KERB AND ASSOCIATED ELEMENT IS TO BE REPLACED SAW CUT IN THE ASPHALT MINIMUM 500mm FROM LIP OF GUTTER, COMPACT SUBGRADE AND INSTALL ASPHALT STRIP TO MAKE SMOOTH TRANSITION.
6. THE CONSTRUCTION OF ALL VEHICLE CROSSINGS AND ASSOCIATED WORKS WITHIN THE ROAD RESERVE MUST BE UNDERTAKEN BY A COUNCIL APPROVED CONTRACTOR.

LEVEL DATUM: AHD		PLOT DATE: 07/07/2022		DESIGN APPROVED		APPROVED FOR CONSTRUCTION		A 0 0.10 0.20 0.30 0.40 0.50 METRES 1:20 @ A3			STANDARD DRAWINGS CONCRETE KERB DETAILS AND NOTES CONCRETE DISH DRAIN AND LAYBACK DETAILS & NOTES DRAWING NO. 3	REVISION: 1
CO-ORD SYSTEM: N.A.		PRELIMINARY		DESIGNED BY: THOMAS LAU		PROJ. MGR: N.A.		B 0 0.2 0.4 0.8 1 METRES 1:40 @ A3				
SURVEYED: N.A.		DRAWN BY: THOMAS LAU		DATED: 20/04/18		DATE: (**/**/****)		C 0 0.5 1.0 1.5 2.0 2.5 METRES 1:100 @ A3				
WORK-AS-EXECUTED		BY: N.A.		INITIATED BY: STEVE WATSON (ASSET MANAGER)		APPROVED BY: E. HAVENSTEIN		PRINCIPAL ENGINEER				
I 16/06/22 INITIATE DRAWINGS		AMENDMENTS		DATE: **/**/****		INITIALS						

No	DATE	DESCRIPTION	DATE	Drawn	Approved
B	11.07.24	RE-ISSUE FOR DEVELOPMENT APPLICATION	RP	KP	
A	04.07.24	ISSUE FOR DEVELOPMENT APPLICATION	RP	KP	

North

Scale

Client
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NOT FOR CONSTRUCTION

Drawn RP	Designed SH	O.A Check GL	Date 02.07.24	Scale @ A1 AS SHOWN
Project No. NA231656	Drawing No. C08-0304	Issue B		