# CIVIL WORKS AND STORMWATER DRAINAGE 415 SYDNEY ROAD, BALGOWLAH, NSW 2093

COUNCIL REF.: PLM2025/0039 PROJECT REF. NO.: 202429 SET ISSUE NO.: 01 DATE: 23.06.2025

#### DRAWING SCHEDULE

SHEET NO	SHEET TITLE	REVISON
C001	COVER SHEET & SITE LOCALITY	A
C003	GENERAL NOTES, ABBREVATIONS AND ACRONYMS	A
C010	EXISTING SITE & SURVEY CONTROL PLAN	A
C030	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	A
C031	EROSION AND SEDIMENT CONTROL PLAN	A
C200	PLAN OF CIVIL WORKS	A
C220	DRIVEWAY LONGITUDINAL SECTIONS & CROSS SECTION	A
C221	VERTICAL CLEARANCE CHECKING - DRIVEWAY	A
C600	STORMWATER DRAINAGE LAYOUT PLAN	A
C610	DETAILS OF OSD	A
C620	MISCELLANEOUS DETAILS	A
C765	STORMWATER PRE_DEVELOPMENT CATCHMENT PLAN	A
C775	STORMWATER POST DEVELOPMENT CATCHMENT PLAN	A
C999	SAFETY IN DESIGN REPORT	A



LOCALITY PLAN

## **FOR DA ONLY**

DEVELOPER ARCHITECTS

LOCAL GOVERNMENT AREA

CONSULTANT



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Γ	GENERAL NOTES		SURVEY NOTES		STORMWATER DRAINAGE		SOIL AND WATER MANAGEMENT		WORK HOURS		TEMPORARY TRAFFIC MANAGEMENT	
	REF. DESCRIPTION	DETAILS  ENSURE COUNCIL REQUIREMENTS TO	REF. DESCRIPTION  CONTRACTOR RESPONSIBLE FOR ALL SURVEY	DETAILS  ENSURE COMPREHENSIVE	REF. DESCRIPTION	DETAILS  ENGINES SYSTEM HANDLES		DETAILS	REF. DESCRIPTION	DETAILS  MONDAY TO EPIDAY: 7:00 AM TO 6:00	REF. DESCRIPTION	DETAILS
	ON SITE.	BE MET PRIOR COMMENCEMENT.  WRITTEN NOTICE REQUIRED AT	SU1 WORK, INCLUDING SETTING OUT, MONITORING, AN AS-BUILT SURVEYS.	ENSURE COMPREHENSIVE  D COVERAGE OF SURVEYING NEEDS, PER AS 4971-2008.	REFER TO COMPLIANCE DEMONSTRATION ON SW1 SHEET C775 FOR STORMWATER DRAINAGE DESIGN OBJECTIVES.	ENSURES SYSTEM HANDLES  FREQUENT AND RARE STORM EVENTS, PER COUNCIL'S STANDARD	SEDIMENT CONTROL MEASURES BEFORE DISTURBING WORK AREA, PER COUNCIL	INSURES PRE-CONSTRUCTION PROTECTION, PER MANAGING URBAN	W1 STANDARD CONSTRUCTION WORK HOURS UNLES	MONDAY TO FRIDAY: 7:00 AM TO 6:00 PM; SATURDAY: 8:00 AM TO 1:00 PM. VARIATIONS SUBJECT TO COUNCIL	TRAFFIC & PEDESTRIAN CONTROL MEASURES	S
		LEAST 5 BUSINESS DAYS IN ADVANCE. OTHERWISE REQUIRED BY DA.	SU2 ALL SURVEY WORK MUST BE BY OR UNDER SUPERVISION OF A REGISTERED SURVEYOR.	COMPLIANCE WITH LEGAL AND PROFESSIONAL REQUIREMENTS FOR	NOTIFY COUNCIL 48 HOURS PRIOR TO SW2 COMMENCEMENT OF ANY WORKS, UNLESS NOTED	ENSURES COUNCIL AWARENESS FOR	SATISFACTION AND "SOILS AND CONTRICTION	TORMWATER.	SPECIFIED OTHERWISE IN DA CONSENT.	REVIEW BASED ON COMMUNITY IMPACT.	TO BE IMPLEMENTED DURING ALL CONSTRUCTION WORKS. TRAFFIC CONTROL PLANS TO BE PREPARED PER AS1742.3-2019	ENSURES SAFETY AND
`	READ THIS DRAWING SET WITH OTHER	ENSURE ALIGNMENT WITH ALL DOCUMENTATION.	SUB VERIFY ALL SETTING OUT POINTS AND LINES ON	ACCURACY.  PREVENT ERRORS BY CONFIRMING	OTHERWISE IN DA CONSENT.  ALL PITS AND PIPES TO BE CONSTRUCTED PER	INSPECTIONS.  ENSURES COMPLIANCE WITH LOCAL	EROSION AND SEDIMENT CONTROL MEASURES AS EI	NSURES ONGOING MANAGEMENT,	NO CONSTRUCTION WORK ON SUNDAYS AND W2 PUBLIC HOLIDAYS WITHOUT WRITTEN COUNCIL APPROVAL.	PROHIBITED UNLESS PRIOR WRITTEN CONSENT IS OBTAINED, ENSURING COMMUNITY PEACE.	TM1 AND TRANSPORT FOR NSW "TRAFFIC CONTROLL AT WORK SITE TECHNICAL MANUAL 2022".	AND NSW SPECIFIC
	CONSULTANT DRAWINGS AND SPECIFICATIONS.	REFER DISCREPANCIES TO SUPERINTENDENT BEFORE PROCEEDING.	SITE BEFORE CONSTRUCTION BEGINS.  PRESERVE AND PROTECT ALL EXISTING SURVEY	POSITIONS ON SITE.  MAINTAIN REFERENCE POINTS FOR	SW3 COUNCIL'S STANDARD AND SPECIFICATION INCLUDING BEDDING, COMPACTION AND BACKFILL.	AUTHORITY REQUIREMENTS, ALIGNING WITH COUNCIL	SE2 CONSTRUCTION AND BEYOND IF NECESSARY, PO	POST-CONSTRUCTION, PER COUNCIL OR SUPERINTENDENT DIRECTION.	CONTRACTOR MUST COMPLY WITH ALL RELEVAN	ENSURE NOISE LEVELS DO NOT EXCEED LIMITS SPECIFIED BY LOCAL	PLANS TO BE APPROVED, SIGNED, AND DATE BY AN ACCREDITED PERSON AND SUBMITTED TO COUNCIL FOR APPROVAL PRIOR TO	D CHIDELINES TENSW/ MANUAL
	EXECUTE WORKS AS PER APPROVED DRAWINGS, G4 CODES, STANDARDS, OR SUPERINTENDENT'S	FOLLOW RELEVANT CODES AND LOCAL GOVERNMENT REGULATION	MARKS THROUGHOUT CONSTRUCTION.	ONGOING SURVEYS, REPORT ANY DAMAGE IMMEDIATELY.	SW4 RESERVED.	STANDARDS.  RESERVED.		INSURES FUNCTIONALITY, PER MAINTENANCE PROTOCOLS, CRITICAL	NOISE CONTROL REGULATIONS.	COUNCIL OR STATE REGULATIONS.  SUBMITTED IN WRITING TO THE	COMMENCEMENT.	DE ENSURES SITE ACCESS AND
	DIRECTION.	AND STANDARDS, U.N.O.  ENSURE CLARITY IN MEASUREMENT	IF SURVEY MARKS ARE DISTURBED OR DAMAGED, SU5 REPORT TO SUPERINTENDENT AND REINSTATE AT CONTRACTOR'S COST.	ENSURE CONTINUITY OF SURVEY REFERENCE, WITH CONTRACTOR LIABILITY FOR DAMAGES.	ALL SUBSOIL DRAINAGE IN LANDSCAPED/PLANTING AREAS TO BE 100mm SUBSOIL PIPE, CONNECTION SW5 TO STORMWATER PITS UNDER ROADWAYS TO BE	ENSURING FUNCTIONALITY AND	ACCUMULATED SILT BEFORE 60% CAPACITY LOSS, DISPOSE AS DIRECTED.	OR PREVENTING SEDIMENT DISCHARGE.	W4 ANY REQUEST TO VARY WORK HOURS MUST BE SUBMITTED IN WRITING TO THE COUNCIL.	COUNCIL. INCLUDE JUSTIFICATION AND PROPOSED HOURS, SUBJECT TO	ALL MOVEMENTS TO AND FROM THE SITE TO IN ACCORDANCE WITH RELEVANT COUNCIL REQUIREMENTS AND APPROVED TRAFFIC	EGRESS ALIGN WITH LOCAL REGULATIONS AND
	G5 DIMENSIONS IN METRES, U.N.O.	UNITS.  CONTRACTOR RESPONSIBILITY FOR	SURVEY AREAS OF OVER STRIPPING BEFORE AND	ENSURE ACCURATE MEASUREMENT OF MATERIAL REMOVED, PER DESIGN	150MM PVC CLASS SN8 WITH MINIMUM 600mm COVER.	PROTECTION.	SE4 PLACED DOWNSTREAM TO PREVENT MATERIAL EI	INSURES CONTAINMENT, PER PROSION CONTROL STANDARDS, MINIMISING ENVIRONMENTAL IMPACT.		COUNCIL ASSESSMENT AND APPROVAL.	MANAGEMENT PLAN.	APPROVED PLANS, MINIMIZING DISRUPTION.
	G6 VERIFY DIMENSIONS ON SITE, DO NOT SCALE DRAWINGS.	ACCURACY BEFORE COMMENCING WORKS.	AFTER REMOVAL TO RECORD LEVELS AND EXTENT	REQUIREMENTS.  CONFIRM READINESS FOR FILL	SW6 RESERVED.	RESERVED.	STOCKPILES OF CONSTRUCTION MATERIALS AND SITE DERBIS TO BE LOCATED OF EARLOW DRAINAGE	INSURES PROPER PLACEMENT, PER	CONTRACTOR RESPONSIBLE FOR INFORMING THI W5 COUNCIL OR SUPERINTENDENT OF PLANNED WO		UPON COMPLETION OF WORKS, ALL TEMPORARY TRAFFIC CONTROL DEVICES AN	ENSURES SITE RESTORATION AND REMOVAL OF D. TEMPORARY MEASURES.
	G7 LEVELS IN AUSTRALIAN HEIGHT DATUM, COORDINATES AS PER SURVEY PLAN.	STANDARD REFERENCE SYSTEMS FOR HEIGHTS AND COORDINATES.	SU7 BEFORE PLACING FILL OVER OVER STRIPPED AREAS, SURVEY AND ADVISE SUPERINTENDENT.	PLACEMENT, ENSURING COMPLIANCE WITH DESIGN LEVELS.	STORMWATER OUTLETS TO KERBS SHALL BE CONSTRUCTED IN ACCORDANCE WITH COUNCIL'S STANDARD/TfNSW.	ENSURES COMPLIANCE FOR KERB CONNECTIONS, PER AUTHORITY SPECIFICATIONS. FOR DRAINAGE.	SE5 LINES, WITHIN EROSION CONTAINMENT BOUNDARY SI OR EQUIVALENTLY PROTECTED, NOT	STE MANAGEMENT, PREVENTING SEDIMENT RUNOFF TO PUBLIC SPACES.	CONSTRUCTION PROGRAM MUST INCLUDE	PART OF SITE-SPECIFIC METHODOLOGY, ENSURING	TM3 MEASURES ARE TO BE REMOVED, AND THE SITE IS TO BE LEFT CLEAN AND TIDY, IN	ALIGNING WITH LOCAL COUNCIL STANDARDS FOR
3	G8 CONTRACTOR TO COVER COSTS FOR COORDINATION WITH SERVICE PROVIDERS.	RESPONSIBLE FOR DAMAGES TO EXISTING SERVICES.	SURVEY ALL FILL AREAS BEFORE PLACING SU8 BACKFILL TO ENSURE REQUIRED SUBGRADE	VERIFY SUBGRADE PREPARATION, CRITICAL FOR STRUCTURAL	PIPE TO BE LAID AT UNIFORM GRADE BETWEEN	ENSURES CONSISTENT FLOW AND	STOCKPILES TO BE COVERED OR ACTIVELY	INSURES CONTAINMENT, PER	W6 PROPOSED WORK HOURS AND BE APPROVED BY SUPERINTENDENT.	ALIGNMENT WITH PROJECT SCHEDULE AND REGULATIONS.	ACCORDANCE WITH COUNCIL REQUIREMENT	CLEANUP.
	760	INCLUDES RELOCATION, MODIFICATION, AND ADJUSTMENT.	PROVIDE AS-BUILT SURVEY PLANS UPON SU9 COMPLETION, CERTIFIED BY REGISTERED	STABILITY.  DOCUMENT ACTUAL POSITIONS AND LEVELS, ESSENTIAL FOR FUTURE	SW8 INVERT LEVELS SHOWN, WITH MINIMUM COVER MAINTAINED UNLESS OTHERWISE STATED ON DRAWINGS.	PROTECTION, PER DESIGN AND COUNCIL REQUIREMENTS, CRITICAL FOR FUNCTIONALITY.	GEG MANAGED TO LIMIT MATERIAL DISPERSAL EROM E	ENVIRONMENTAL GUIDELINES, REDUCING DUST AND SEDIMENT OSS	W7 CONTRACTOR MUST MINIMIZE NOISE, VIBRATION, AND DISTURBANCE TO SURROUNDING COMMUNITY	IMPLEMENT MEASURES TO REDUCE IMPACT, PARTICULARLY DURING	TRAFFIC CONTROL PLANS MUST INCLUDE DETAILS OF WORK SITE, PROPOSED MEASURES, WORK DURATION, PEDESTRIAN	COVERS COMPREHENSIVE PLANNING PER AS1742.3-2019, ENSURING ALL
	TEMPORARILY REMOVED ITEMS INCLUDING FENCES, SIGNS, POSTS TO BE REINSTATED; ANY	SITE VISIT AT TENDER STAGE TO	SURVEYOR	MAINTENANCE AND COMPLIANCE.	SW9 RESERVED.	RESERVED.		INSURES REHABILITATION, PER	CONTRACTOR LIABLE FOR BREACHES OF WORK	RESPONSIBLE FOR PENALTIES AND	AND CYCLIST MANAGEMENT, EMERGENCY ACCESS, STAKEHOLDER COMMUNICATION, AI	
	G10 DAMAGES TO THOSE DURING CONSTRUCTION SHALL BE REPORTED TO THE SUPERINTENDENT AND BE REINSTATED IMMEDIATELY AT	UNDERSTAND REMOVAL/REINSTATEMENT NEEDS.	EARTHWORKS REF. DESCRIPTION	DETAILS	SW10 CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS, INCLUDING PIPE ADAPTORS, TO ENSURE PROPER CONNECTIONS	ENSURES COMPATIBILITY, PER MANUFACTURER AND COUNCIL SPECS, FOR SYSTEM INTEGRITY.	REINSTATED PER COUNCIL REQUIREMENTS.	COUNCIL SPECS, FOR LONG-TERM ROSION CONTROL, CRITICAL POST-CONSTRUCTION.	W8 HOUR REGULATIONS, INCLUDING NOISE COMPLAINTS.	CORRECTIVE ACTIONS, ENSURING COMPLIANCE WITH LOCAL LAWS.	ROLES OF PERSONNEL.	ADDRESSED.
	CONTRACTOR'S EXPENSES.  TREE PROTECTION FENCING TO BE INSTALLED	CONTRACTOR RESPONSIBLE FOR ALL	EARTHWORKS TO BE CARRIED OUT IN	ENSURES COMPLIANCE WITH LOCAL AUTHORITY REQUIREMENTS,	BETWEEN DISSIMILAR PIPEWORKS.  ALL CONNECTIONS TO EXISTING DRAINAGE PITS	ENSURES OUALITY CONNECTIONS	PUBLIC ROADS TO BE KEPT CLEAR OF DEBRIS AT ALL TIMES. CONTROL VEHICLE ACCESS TO	NSURES CLEANLINESS, PER SITE	UTILITIES REF. DESCRIPTION	DETAILS	ASPUALTIC CONCRETE	
	BEFORE WORKS, MAINTAINED THROUGHOUT.  CONTRACTOR TO REMOVE CONSTRUCTION WASTE	PROTECTION MEASURES.  ENSURE PROPER DISPOSAL TO FINAL	ACCORDANCE WITH COUNCIL'S SPECIFICATION.	ALIGNING WITH COUNCIL STANDARDS.	SW11 SHALL BE MADE PROFESSIONALLY, WITH INTERNAL WALL AT ENTRY POINT CEMENT RENDERED FOR SMOOTH FINISH	PER TRADESMAN STANDARDS, FOR FLOW AND DURABILITY.	SE8 DDEVENT SEDIMENT TRACKING ESPECIALLY	MANAGEMENT, MINIMIZING PUBLIC MPACT, CRITICAL FOR SAFETY.	CONTRACTOR MUST LODGE A 'BEFORE YOU DIG AUSTRALIA' (BYDA) ENQUIRY AND KEEP THE MOS		AC ASPHALTIC CONCRETE ARI AVERAGE RECURRENCE MIN	MINIMUM
	PER NSW ENVIRONMENT PROTECTION AUTHORITY.  ERECT HOARDING AND SIGNS BEFORE WORK.	INCLUDE NO UNAUTHORIZED ENTRY,	EXCAVATION TO BE CARRIED OUT TO DEPTHS REQUIRED BY STRUCTURAL DESIGN FOR SOUND E2 FOUNDATIONS. ALL EXCAVATIONS MUST BE	ENSURES STABILITY, PER DESIGN AND GEOTECHNICAL REQUIREMENTS,	PRECAST PITS MAY BE USED WITH APPROVAL	ALLOWS FLEXIBILITY, WITH OVERSIGHT FOR QUALITY, PER	WASH OR OTHER MEASURES TO PREVENT	NSURES ROAD PROTECTION, PER	RECENT BYDA UTILITY LOCATION PLANS ON SITE ALL TIMES.	COMPLIANCE.		NATIONAL ASSOCIATION OF TESTING AUTHORITIES,
	MAINTAIN DURING CONSTRUCTION.	CONTACT DETAILS, AND PRINCIPAL CERTIFYING AUTHORITY INFO.	APPROVED BY SUPERINTENDENT BEFORE PLACING MATERIALS OR STRUCTURES.		SW12 FROM COUNCIL AND SUPERINTENDENT.	COUNCIL AND PROJECT REQUIREMENTS.	SEDIMENT DEPOSITION ON ROADS, CLEAN AND RESTORE ROADS PROMPTLY IF AFFECTED.	MMEDIATE ACTION FOR CLEANUP.	NO WORK CAN BE DONE ON ANY UTILITIES U2 WITHOUT FIRST OBTAINING APPROVAL FROM THE	ENSURES LEGAL AND SAFETY COMPLIANCE, PREVENTING UNAUTHORIZED INTERFERENCE WITH	AS AUSTRALIAN STANDARD  BCC BLACKTOWN CITY COUNCIL Nomk	AUSTRALIA NOMINAL KERB
	REVIEW TENDER DOCUMENTATION, INCLUDING DA CONDITIONS, HERITAGE, ARCHAEOLOGICAL, ECOLOGICAL, CONTAMINATION REPORT AND	ENSURE WORKS COMPLY WITH ALL RELEVANT REPORTS, CONDITIONS,	TOPSOIL TO BE STRIPPED FROM WORK AREA, INCLUDING BATTERS, AT LEAST 150mm THICK,	ENSURES REMOVAL OF TOPSOIL LAYER, PER SITE PREPARATION	BULKHEADS TO BE CONSTRUCTED ON ALL STORMWATER LINES WITH STEEP GRADE, PER	ENSURES STABILITY AND DURABILITY FOR STEEP PIPES, ENHANCING	SE10 AT ALL TIMES, INCLUDING WEEKENDS AND PUBLIC S	INSURES DUST CONTROL, PER SITE SAFETY, CRITICAL FOR AIR QUALITY, WITH CONTINUOUS AVAILABILITY.	RELEVANT UTILITY AUTHORITIES.  BEFORE STARTING ANY WORK, THE CONTRACTOR	SERVICES.	BoK BACK OF KERB NTS	NOT TO SCALE
	GEOTECHNICAL REPORTS (IF ANY APPLICABLE).	AND STANDARDS.  FOOTWAYS, ROADS, AND ANY OTHER	DISPOSED OR STOCKPILED AS DIRECTED BY SUPERINTENDENT.	COUNCIL'S SPECIFICATION.	COUNCIL'S SPECIFICATION.  BEDDING AND COVER FOR REINFORCED  CONCRETE PIRE (PCR) TO CONFORM WITH	SAFETY.	CONTRACTOR MAY REGULARLY WET THE SITE TO	INSURES DUST MANAGEMENT, PER	MUST LOCATE, ASSESS, AND FLAG ALL EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO	NOTE OF THE PROPERTY OF THE PROPERTY PROTOCOLS, MINIMIZING	OD OFNITRE LINE	OUTSIDE DIAMETER PROPOSED BOUNDARY
	G15 RESTORE DAMAGED COUNCIL INFRASTRUCTURE AT CONTRACTOR'S COST BEFORE COMPLETION.	INFRASTRUCTURES AS PER COUNCIL'S SPECIFICATIONS.	EXPOSED DELETERIOUS MATERIALS, IF UNSUITABLE ACCORDING TO COUNCIL SPECIFICATION, TO BE REMOVED, DISPOSED, OR	MANAGES UNSUITABLE MATERIALS,	SW14 CONCRETE PIPE (RCP) TO CONFORM WITH COUNCIL'S STANDARD, CONCRETE PIPE ASSOCIATION GUIDE, OR AS 3725; FOR PVC PIPES,	ENSURES COMPLIANCE, PER INDUSTRY AND STANDARD GUIDELINES, FOR BOTH PIPE TYPES.	REDUCE DUST GENERATED FROM SITE ACTIVITIES.	COMPLEMENTING EQUIPMENT USE.	CRITICAL ASSETS, OVERHEAD ASSETS, AND PRIVATE SERVICES.	DAMAGE RISK.	CL COVER LEVEL RAB	ROUND ABOUT
	G16 NO WORK ON ADJOINING LAND WITHOUT LANDOWNER CONSENT, SUBMITTED TO COUNCIL.	CONSENT REQUIRED BEFORE PHYSICAL INTERFERENCE.	TREATED AS RECOMMENDED BY GEOTECHNICAL ENGINEERS. ADDITIONAL EXCAVATION AND	PER GEOTECHNICAL ADVICE, ENSURING FILL SUITABILITY AND	REQUIREMENTS AS AS 2032.  ALL CONCRETE PIPES SHALL BE STEEL	ENSURES DURABILITY AND SEALING,	SE12 BE REPORTED IMMEDIATELY TO THE	NVIRONMENTAL REGULATIONS, IINIMIZING IMPACT.	THE CONTRACTOR MUST COMPLETE A SAFE WOF METHOD STATEMENT (SWMS) FOR ALL WORK U4 AROUND UTILITIES AND ENSURE APPROPRIATE	WORK HEALTH AND SAFETY (WHS)	CH CHAINAGE RCP CJ CONSTRUCTION JOINT	REINFORCED CONCRETE PIPE
	G17 MAINTAIN ACCESS TO ADJOINING PROPERTIES AT ALL TIMES, U.N.O.	ENSURE NEIGHBOR ACCESS UNLESS OTHERWISE NOTED.	REPLACEMENT WITH COMPACTED APPROVED MATERIALS MAY BE ORDERED IF UNSOUND MATERIALS ENCOUNTERED.	STABILITY.	SW15 REINFORCED CONCRETE PIPES AND RUBBER RING JOINTED.	PERFORMANCE.	CONTRACTOR RESPONSIBLE FOR ALL NECESSARY MEASURES AS PER SE1, WITH ADDITIONAL COSTS EI		SAFETY CONTROLS ARE IN PLACE TO PROTECT BOTH PERSONNEL AND ASSETS.	ACT, CRITICAL FOR WORKER AND ASSET PROTECTION.	CONC CONCRETE RK  CL2 PIPE CLASS 2 RL	ROLL KERB REDUCED LEVEL
	WORKMANSHIP AND MATERIALS TO CONFORM TO RELEVANT CODES, SPECIFICATIONS, STANDARDS,	COMPLIANCE WITH RELEVANT REGULATIONS.	STRIPPED FILL AREAS TO BE PROOF ROLLED AND APPROVED BY GEOTECHNICAL ENGINEERS BEFOR	ENSURES SUBGRADE STABILITY, FOR STRUCTURAL INTEGRITY.	RCP TO BE CLASS 2 U.N.O., PVC PIPES TO BE CLAS SW16 SH, PURCHASED FROM COUNCIL-APPROVED QUALITY-ASSURED MANUFACTURER, U.N.O.	ENSURING QUALITY, PER COUNCIL AND MANUFACTURER STANDARDS.	SE13 REFLECTED IN TENDER PRICE, EVEN IF NOT INDICATED ON SEDIMENT AND EROSION CONTROL PLAN.	CONTRACT, WITH COST INCLUSION OR UNFORESEEN MEASURES.	ALL ELECTRICAL APPARATUS MUST BE CONSIDERED LIVE UNTIL PROVEN OTHERWISE. CONTACT WITH LIVE ELECTRICAL APPARATUS CA	ENSURING STRICT ADHERENCE TO	Ø PIPE DIAMETER RRJ	RUBBER RING JOINT
	G19 BY LAWS.  MEW WORKS TO MAKE SMOOTH JUNCTION WITH EXISTING.	ENSURE SEAMLESS INTEGRATION WITH EXISTING STRUCTURES.	PLACEMENT OF FILL.  ALL IMPORTED MATERIALS MUST BE VIRGIN	STRUCTURAL INTEGRATT.	PVC PIPE FOR INTERNAL DRAINAGE (150mm TO	ENSURES COMPLIANCE FOR PROPERTY DRAINAGE, PER	CONCRETE WORKS		CAUSE SEVERE INJURY OR DEATH.  ONLY SUITABLY QUALIFIED AND AUTHORIZED	ENSURES SKILLED PERSONNEL. PER	(NOMINAL INTLINAL)	RETAINING WALL STANDARD
		FOLLOW LOCAL AUTHORITY GUIDELINES.	EXCAVATED NATURAL MATERIAL (VENM) FREE FROM CONTAMINATION. COUNCIL MAY REQUIRE CONTAMINATION REPORT FROM N.A.T.A.	ENGLIDES OF EARLEST ASSOCIATION TO	SW17 300mm DIAMETER) TO CONFORM TO AS 1260-2002, RUBBER RING JOINTED.	STANDARD, FOR SEALING AND DURABILITY.	WORKMANSHIP AND MATERIALS TO CONFORM WITH	DETAILS INSURES COMPLIANCE WITH	U6 PERSONS OR CONTRACTORS ARE PERMITTED TO WORK ON EXISTING OR PROPOSED UTILITY	UTILITY AUTHORITY REGULATIONS, PREVENTING UNQUALIFIED WORK	DICL DUCTILE IRON CEMENT LINED SV	STOP VALVE
	STUDY APPROVED DRAWINGS AND G21 DOCUMENTATION BEFORE STARTING: RAISE	ENSURE UNDERSTANDING AND	LABORATORY PRIOR TO PLACEMENT. ONLY FILL CHARACTERIZED AS VENM OR ENM PER	ENSURES CLEAN FILL ACCORDING TO ENVIRONMENTAL PROTECTION AUTHORITY.	SW18 STORMWATER PIPES ABOVE VIRGIN NATURAL SURFACE LEVEL CONSTRUCTED IN CONTROL FILL.	ENSURES PROPER INSTALLATION, WITH CONTROLLED FILL FOR STABILITY	C1 ASSESS FOR CONCRETE STRUCTURES FORMWORK 5	STANDARDS, PER AS 3600 AND AS 610, CRITICAL FOR QUALITY AND	SERVICES.  THE CONTRACTOR MUST IMMEDIATELY NOTIFY TO THE PROPERTY OF ANY PARAMETERS TO THE PROPERTY OF ANY PARAMETERS.		EJ EXPANSION JOINT SW  ES EXISTING SURFACE ToK	STORMWATER TOP OF KERB
	ISSUES TO SITE SUPERINTENDENT.  CONTRACTOR RESPONSIBLE FOR BREACHES OF	ADDRESS DISCREPANCIES.  COMPLIANCE WITH NSW WATER	NSW EPA GUIDELINES MAY BE USED. COPIES OF VALIDATION REPORTS TO BE PROVIDED TO SUPERINTENDENT AT LEAST 2 WEEKS PRIOR TO		PITS OVER 0.9m DEEP, PER COUNCIL'S STANDARD, SW19 TO HAVE STEP IRONS INSTALLED AT 300mm			SPECIFIES DEFAULT STRUCTURAL CONCRETE GRADE, PER AS 3600,	U7 UTILITY AUTHORITY OF ANY DAMAGE TO THEIR ASSETS. THE CONTRACTOR MUST CONDUCT A DILAPIDATI	UTILITY AUTHORITY REQUIREMENTS, MINIMIZING SERVICE DISRUPTIONS.	EX EXISTING TP	TANGENT POINT TREE PROTECTION ZONE
	NOTIFY OWNER'S REPRESENTATIVE OF WATER IN	PROTECTION LAWS.  MANAGE WATER-RELATED ISSUES	FILL WORKS.  ALL FILL WORKS TO BE UNDER LEVEL 1	ENSURES PROFESSIONAL	SPACING. SW20 RESERVED.	GUIDELINES.  RESERVED.	V	VITH FLEXIBILITY FOR DESIGN VARIATIONS, ENSURING STRENGTH.	SURVEY OF ALL EXISTING UTILITY ASSETS U8 ENCOUNTERED, INCLUDING TAKING TIMESTAMPE	PER SITE MANAGEMENT PRACTICES,	FP FLUSHING POINT IPZ IAD INTER-ALLOTMENT DRAINAGE U/G	UNDERGROUND
	SUBMIT SITE-SPECIFIC CONSTRUCTION METHODOLOGY, INCLUDING OFFICE SETUP,	DURING CONSTRUCTION.  DETAILED PROGRAM ADDRESSING	GEOTECHNICAL SUPERVISION PER AS3798-2007.	OVERSIGHT, PER AS3798-2007, FOR QUALITY AND SAFETY.	CONTRACTOR TO ENSURE PIPES ARE PROTECTED AGAINST DAMAGE FROM CONSTRUCTION WHEELS	ENSURES PIPE INTEGRITY, PER STANDARD, DURING CONSTRUCTION,		INSURES BASE PREPARATION	PHOTOS, AND NOTIFY BOTH THE SUPERINTENDER AND THE UTILITY AUTHORITY.  THE SERVICES DEPICTED IN THIS DRAWING SET	LIABILITY.	HP HIGH POINT uPVC	UNPLASTICISED POLYVINYL CHLORIDE
	TOILETS, STAGING, AND ENVIRONMENTAL PROTECTION.	SITE SETUP AND COMPLIANCE.	CONTRACTOR TO OBTAIN APPROVAL FROM GEOTECHNICAL ENGINEERS FOR USE OF VIBRATORY ROLLERS NEAR PERMANENT	PREVENTS DAMAGE TO EXISTING STRUCTURES, WITH GEOTECHNICAL OVERSIGHT FOR VIBRATION IMPACTS.	LOADS, AND COMPACTION EFFECTS, PER AS/NZS 3725.	CRITICAL FOR LONGEVITY.	PROVIDE A CLEAN, LEVEL AND DRY WORKING SUFACE FOR CONSTRUCTION OF CONCRETE	CRITICAL FOR CONSTRUCTION QUALITY.	ARE BASED ON A COMBINATION OF CONTOUR AN FEATURE SURVEYS AND A 'BEFORE YOU DIG'		KG UPRIGHT KERB & GUTTER TYP	TYPICAL
	G25 FILL IMPORTED PER COUNCIL'S SPECIFICATION; STOP WORK IF CONTAMINATION SUSPECTED UNTIL	ENSURE FILL SUITABILITY, WITH VALIDATION PROCESS IF NEEDED.	STRUCTURES DURING CONSTRUCTION.  NOTICE TO BE PROVIDED TO COUNCIL AT LEAST		SW22 RESERVED. SW23 RESERVED.	RESERVED.	CONCRETE SHALL NOT BE PLACED UNTIL	NSURES QUALITY CONTROL,	ENQUIRY. THE CONTRACTOR MUST SUBMIT THEIR OWN 'BEFORE YOU DIG' ENQUIRY AND ARRANGE PRE-CONSTRUCTION MEETING WITH SERVICE	ENSURES COMPREHENSIVE	LO LOW POINT WAE	WORKS AS EXECUTED
	REPORT ROCK EXCAVATION TO SUPERINTENDENT	ENSURE SAFETY AND PLANNING FOR	TWO BUSINESS DAYS PRIOR TO COMMENCING AND COMPLETING FILL WORKS, UNLESS NOTED OTHERWISE IN DA CONSENT.	inspections, per local regulations, and da consent.	SW24 ALL PROPRIETARY PRODUCTS TO BE INSTALLED A PER MANUFACTURER'S SPECIFICATION.	ENSURES COMPLIANCE, PER MANUFACTURER, FOR BRANDED COMPONENTS, FOR PERFORMANCE.		CRITICAL FOR STRUCTURAL NTEGRITY BEFORE POURING.	AUTHORITIES IF NECESSARY, TO UNDERSTAND T LOCATIONS AND ANY SPECIAL REQUIREMENTS	HE INVESTIGATION, WITH POTENTIAL POTHOLING FOR ACCURACY.	MH MAINTENANCE HOLE	
		ROCK-RELATED WORK. RESERVED.	CONTRACTOR TO PROVIDE SUPERINTENDENT WIT STATEMENT CONFIRMING FILL SUITABILITY FOR	ENSURES DOCUMENTATION FOR	SW25 ALL PITS SHALL BE BENCHED AND FLOW STREAMLINED.	ENSURES EFFICIENT FLOW.	L TC5 FOR COMPACTION VIBRATOR SHALL NOT BE USED. L	NSURES PROPER COMPACTION,	BEFORE STARTING WORK. THE CONTRACTOR MA ALSO NEED TO PERFORM NON-DESTRUCTIVE EXCAVATION (POTHOLING) TO VERIFY THE DEPTH		MAX MAXIMUM  MMDD MODIFIED MAXIMUM	
		TIMING CRITICAL FOR UTILITY INSTALLATION.	AUDIT REPORT, AT LEAST 2 WEEKS PRIOR TO FILL WORKS.	COMPLIANCE, CRITICAL FOR AUDIT AND QUALITY ASSURANCE.	ALL MILD STEEL FIXTURES (GRATES, FRAMES, STE	ENSURES DURABILITY, PER STANDARDS, FOR CORROSION	TO SPREAD CONCRETE.	NSURES COMPLIANCE WITH DESIGN,	OF EXISTING SERVICES.  CHECK THE BYDA NOTIFICATION LETTER TO	ENSURES COORDINATION WITH	DRY DENSITY	
	CONSTRUCTION, NO OVER-STRESSING.	ENSURE SAFETY AND INTEGRITY OF STRUCTURES.	ANY FILL WORKS ON LOTS TO BE TESTED BY N.A.T.A. REGISTERED LABORATORY. CERTIFICATIO TO CONFIRM FILL PLACED AS STRUCTURAL FILL	TESTING AND CERTIFICATION PER	GALVANIZED, COMPLYING WITH AS1214 OR AS1650 AS APPROPRIATE.	RESISTANCE, CRITICAL FOR LONGEVITY.	ACCORDANCE WITH STRUCTURAL DESIGN. SI	PER STRUCTURAL ENGINEERING SPECIFICATIONS, CRITICAL FOR PAVEMENT DURABILITY.	U10 IDENTIFY THE RELEVANT UTILITY AUTHORITIES FO THIS PROJECT.	OR SPECIFIC AUTHORITIES FOR THE PROJECT SCOPE.		
	G30 CONTRACTOR RESPONSIBLE FOR EXCAVATION, SHORING, AND STABILITY OF ADJACENT STRUCTURES.	FULL RESPONSIBILITY FOR EXCAVATION SAFETY.	FOR RESIDENTIAL PURPOSES PER AS3798-2007.	AS3798-2007, FOR RESIDENTIAL USE.  ENSURES STRUCTURAL STABILITY,	ALL INTERNAL DOMESTIC STORMWATER DRAINAGE SW27 WORKS WITHIN PROPERTY BOUNDARIES TO	E ENSURES COMPLIANCE, PER STANDARD, FOR PROPERTY DRAINAGE, FOR SAFETY AND	CEMENT MORTAR SHALL BE MIXED IN THE RATIO OF EIGHT APARTS SAND: 1 PART CEMENT, WITH STRENGTH	INSURING ADEQUATE STRENGTH	UNCHARTED UTILITY SERVICES MAY BE PRESENT ON THE SITE. THE CONTRACTOR MUST TAKE ALL NECESSARY STEPS TO IDENTIFY THESE UTILITIES	MANAGES UNKNOWN LITH ITIES PER		
	G31 REINSTATE GRASSED AREAS FOR THE FOOTWAY.	RESTORE LANDSCAPING POST-CONSTRUCTION.	LOT FILL TO BE COMPACTED TO NO LESS THAN 959 E12 SMDD (STANDARD MAXIMUM DRY DENSITY). OTHERWISE NOTED IN COUNCIL'S SPECIFICATION.	PER COMPACTION STANDARDS, CRITICAL FOR LOAD-BEARING	COMPLY WITH AS3500.3:2021.	FUNCTIONALITY.	THE CONTRACTOR IS TO BE AWARE OF ALL		U11 AND ARRANGE FOR THEIR RELOCATION OR PROTECTION AS REQUIRED FOR THE SPECIFIC	SITE SAFETY PROTOCOLS, ENSURING COORDINATION FOR RELOCATION OR		
.	G32 RESERVED.  APPROVALS REQUIRED FOR WORKS UNDER	RESERVED.	IF UNDETECTED CONTAMINATED MATERIALS ENCOUNTERED DURING CONSTRUCTION, ALL	CAPACITY.	ROADWORKS PERMIT	Table 111	C8 STRUCTURAL ENGINEERING SPECIFICATIONS AND REQUIREMENTS THAT ARE PART OF THE STRUCTURAL DESIGN.	ENSURES COMPLIANCE WITH DESIGN NTENT.	WORKS, IN AGREEMENT WITH THE SUPERINTENDENT AND THE RELEVANT UTILITY AUTHORITY.	PROTECTION.		
	G33 ROADS ACT 1993 AND/OR LOCAL GOVERNMENT ACT 1993.	LEGAL COMPLIANCE FOR INFRASTRUCTURE-RELATED WORK.	WORK TO CEASE, NOTIFY SUPERINTENDENT, AND UNDERTAKE "UNEXPECTED FINDS PROTOCOL"	ENSURES SAFETY AND COMPLIANCE, PER ENVIRONMENTAL REGULATIONS, WITH PROTOCOL FOR	REF. DESCRIPTION  ROAD OCCUPANCY AND ROAD OPENING	DETAILS  ENSURE PERMITS FOR OCCUPYING OR OPENING POADS ARE OPTAINED.	KERB WORKS		CONTRACTORS MUST BE AWARE OF AND COMPLY WITH ALL REGULATIONS AND STANDARDS FROM	ENSURES COMPLIANCE, PER UTILITY AUTHORITY GUIDELINES,		
	TREE PROTECTION		WITH ENVIRONMENTAL CONSULTANT TO INVESTIGATE AND ADVISE ON REMEDIAL MEASURE IF REQUIRED.	CONTAMINATION MANAGEMENT.	APPLICATIONS MUST BE LODGED WITH COUNCIL WITH REQUIRED FEES. APPROVALS REQUIRED BEFORE CONSTRUCTION COMMENCEMENT.	OR OPENING ROADS ARE OBTAINED, PER LOCAL COUNCIL PROCEDURES AND STATE REGULATIONS LIKE NSW	REF. DESCRIPTION  ALL KERBS TO BE CONSTRUCTED AS PER COUNCIL OR	DETAILS  ENSURES COMPLIANCE WITH	U12 UTILITY AUTHORITIES CONCERNING THE USE OF MACHINERY AND EQUIPMENT NEAR UTILITY SERVICES.	PREVENTING DAMAGE FROM MACHINERY OPERATIONS.		
	ALL TREES NOT INDICATED ON THE APPROVED	DETAILS	SIGNAGE AND PAVEMENT LINE MARKINGS			ROADS ACT 1993.  ENSURES LEGAL COMPLIANCE AND	K1 THIS TO BE CONSTRUCTED AS PER COUNCIL OR THIS WIS SPECIFICATION, STANDARD.	AUTHORITY REQUIREMENTS.	ALL SERVICES OR UTILITIES MUST BE	ENSURES SAFE DISCONNECTION, PER UTILITY AUTHORITY PROCEDURES,		
	DEVELOPMENT APPLICATION PLANS AS BEING	ENSURES PRESERVATION OF TREES NOT SCHEDULED FOR REMOVAL, PER	REF. DESCRIPTION	DETAILS	RP2 NO CONSTRUCTION WORK AFFECTING ROADS CAN COMMENCE UNTIL PERMITS ARE APPROVED.	SAFETY, WITH CONSTRUCTION DELAYED UNTIL COUNCIL APPROVAL, PER RP1.	EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm	ENSURES MOVEMENT ACCOMMODATION, PER DESIGN, WITH SPECIFIC	U13 DISCONNECTED IN CONSULTATION WITH THE RELEVANT SERVICE PROVIDERS.	MINIMIZING RISKS DURING CONSTRUCTION.		
	REFER TO DA CONSENT FOR OTHER TREE PROTECTION AND PRESERVATION REQUIREMENTS	DA CONSENT AND LOCAL PLANNING REGULATIONS.	M1 RESERVED. M2 RESERVED.	RESERVED.			K2 COMPRESSIBLE CORK FILLER BOARDS, FULL DEPTH, CUPROFILE, LOCATED AT DRAINAGE PITS, TANGENT POINT CURVES, AND MAX 12m CENTERS ELSEWHERE.	TS OF PLACEMENT FOR DURABILITY, PER COUNCIL	WASTE REF. DESCRIPTION	DETAILS		
	WHERE APPLICABLE.  ANY EXISTING TREES WHICH FORM PART OF THE		HERITAGE				WEAKENED PLAN JOINTS TO BE MINIMUM 3mm WIDE,	AND ENGINEERING PRACTICES.	CONTRACTOR TO IMPLEMENT WASTE MATERIAL SORTING, STORAGE, AND REUSE PER APPROVED	ENSURES COMPLIANCE WITH LOCAL		
$\mid \mid$	FINAL LANDSCAPING PLAN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:  • PROTECTING THEM WITH BARRIER FENCING OR		REF. DESCRIPTION	DETAILS  ENSURES DROMBT ACTION DED			K3 WEARENED PLAN JOINTS TO BE MINIMUM 3mm WIDE, LOCATED AT 3m CENTERS.	ENSURES CRACK CONTROL.	W1 WASTE MANAGEMENT PLAN AND COUNCIL'S SITE WASTE MANAGEMENT AND MINIMISATION	AUTHORITY GUIDELINES FOR SUSTAINABILITY AND WASTE REDUCTION.		
	SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.  • ENSURING THAT NOTHING IS NAILED TO ANY	ENSURING ROOT ZONE PROTECTION, NO PHYSICAL DAMAGE, AND EXPERT	IF ANY HISTORICAL RELICS OR ABORIGINAL ARTIFACTS ARE FOUND UNEXPECTEDLY ON THE H1 SITE, THE CONTRACTOR MUST IMMEDIATELY	ENSURES PROMPT ACTION, PER HERITAGE MANAGEMENT PROTOCOLS, CRITICAL FOR LEGAL			K4 RESERVED	RESERVED.	DEVELOPMENT CONTROL PLAN.  CONTRACTOR TO PROVIDE EVIDENCE OF TIPPING W2 DOCKETS FOR ALL DEMOLITION AND			
	PART OF THE TREE.  • CARE IS TAKEN NOT TO CUT ROOTS	CONSULTATION FOR ROOT WORK.	NOTIFY THE SUPERINTENDENT AND CEASE WORK IN THAT AREA UNTIL FURTHER ADVICE IS GIVEN.	AND CULTURAL COMPLIANCE, WITH SUPERINTENDENT OVERSIGHT FOR NEXT STEPS.					CONSTRUCTION WASTE GENERATED ONSITE.	LEGAL WASTE DISPOSAL.  ENSURES SITE CLEANLINESS. PER		DECORE
	UNNECESSARILY. COUNCILS AND/OR INDEPENDENT ARBORISTS TO BE CONSULTED WHERE TREE ROOTS ARE TO BE REMOVED AND/OR CUT.			MEXITORE 6.					CONTRACTOR TO ENSURE ALL LITTER IS MANAGE W3 ONSITE USING WASTE RECEPTACLES, WHICH MU	D SITE MANAGEMENT PRACTICES, PREVENTING LITTER DISPERSAL,	V	BEFORE
		1	I						BE COVERED WHEN NOT IN USE.	CRITICAL FOR ENVIRONMENTAL AND PUBLIC HEALTH.	WIND	v.byda.com.au
											4 3330	
			ARCI	HITECT	DEVELOPER		CONSULTANT	APPROVED BY	MKN PR	DJECT TITLE	SHEET TI	ITLE
, F									MV			
				rococc					MKN 415 SYDNEY	ROAD, BALGOWLAH	GENERAL NOTES, ABBREVA	ATIONS AND ACRONYMS
-			RUVVP	rocess	CHAN	GE	CIVIL CONSULTING ABOVE AND BEYOND		MKN		DRG No.	SHEET No. AMDT
 			rawnrocesso	design com	DEVELOPM	ENTS	IFIELD DOAD, OBERNEIELD DADIY	<u> </u>			<u> </u>	7 (1)

61 GREENFIELD ROAD, GREENFIELD PARK

ADMIN@MKNCIVIL.COM.AU

rawprocessdesign.com

MKN MKN 23/06/2025
DRWN APPD DATE

AMENDMENTS DESCRIPTION

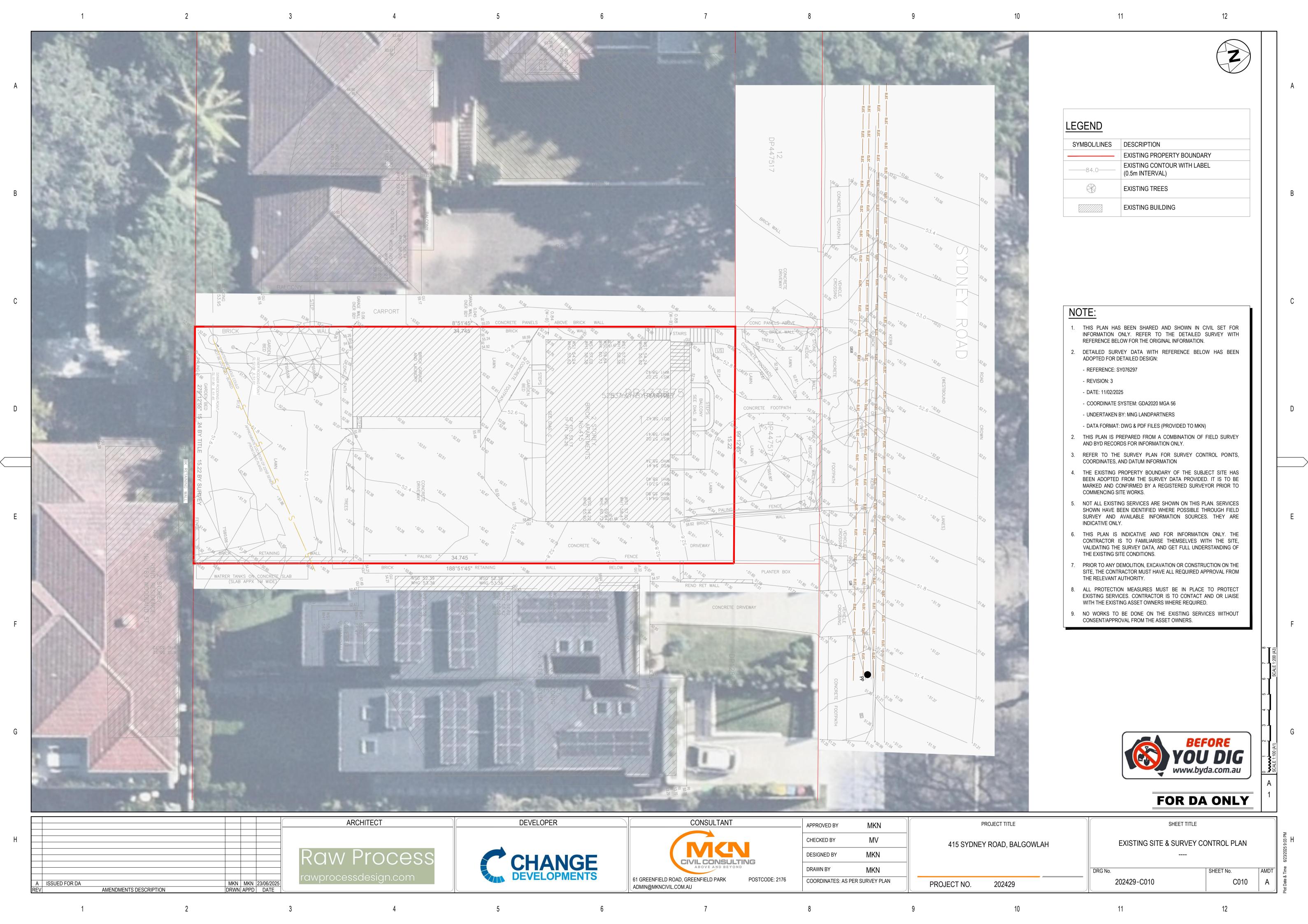
COORDINATES: AS PER SURVEY PLAN

PROJECT NO.

202429

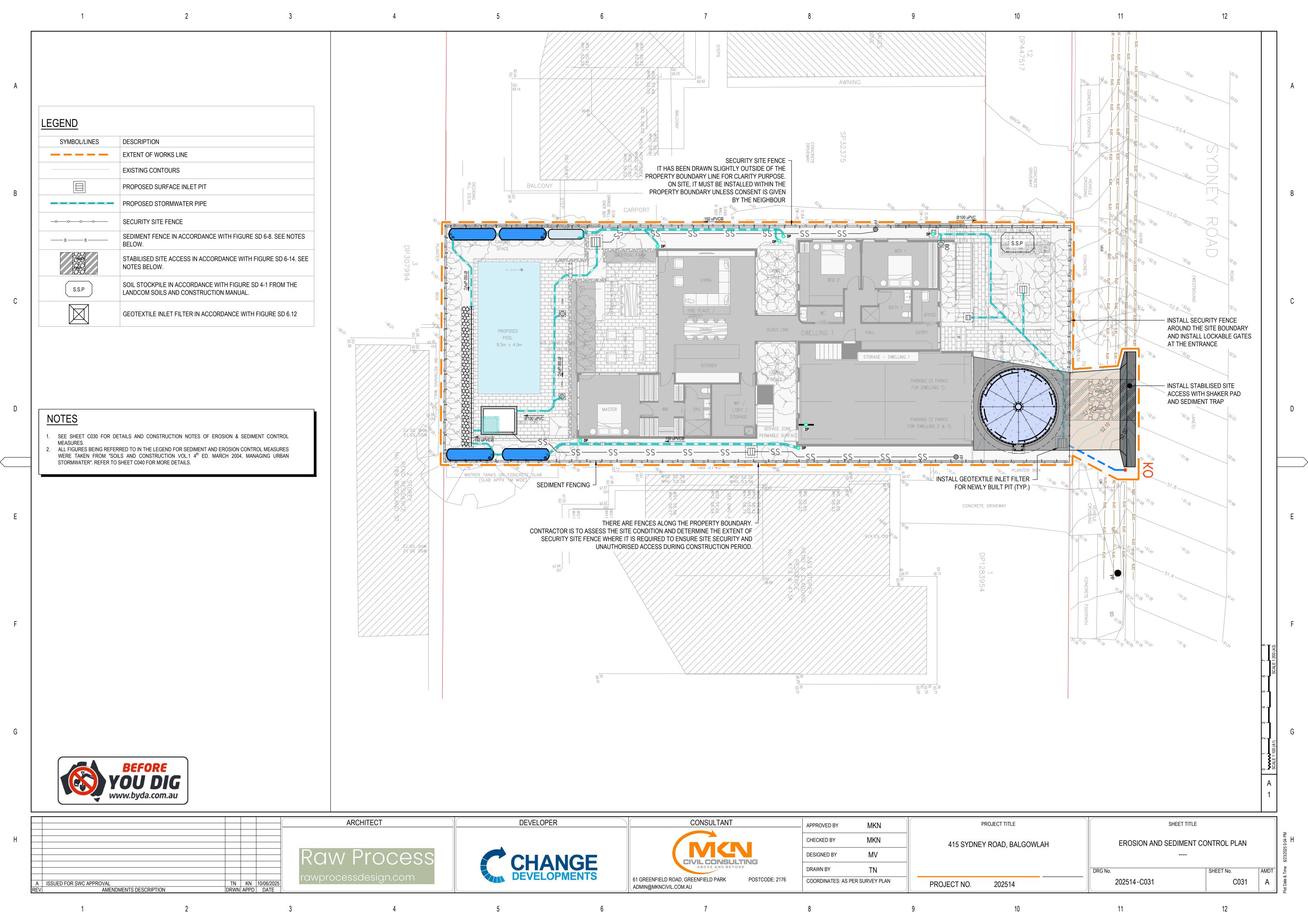
C003

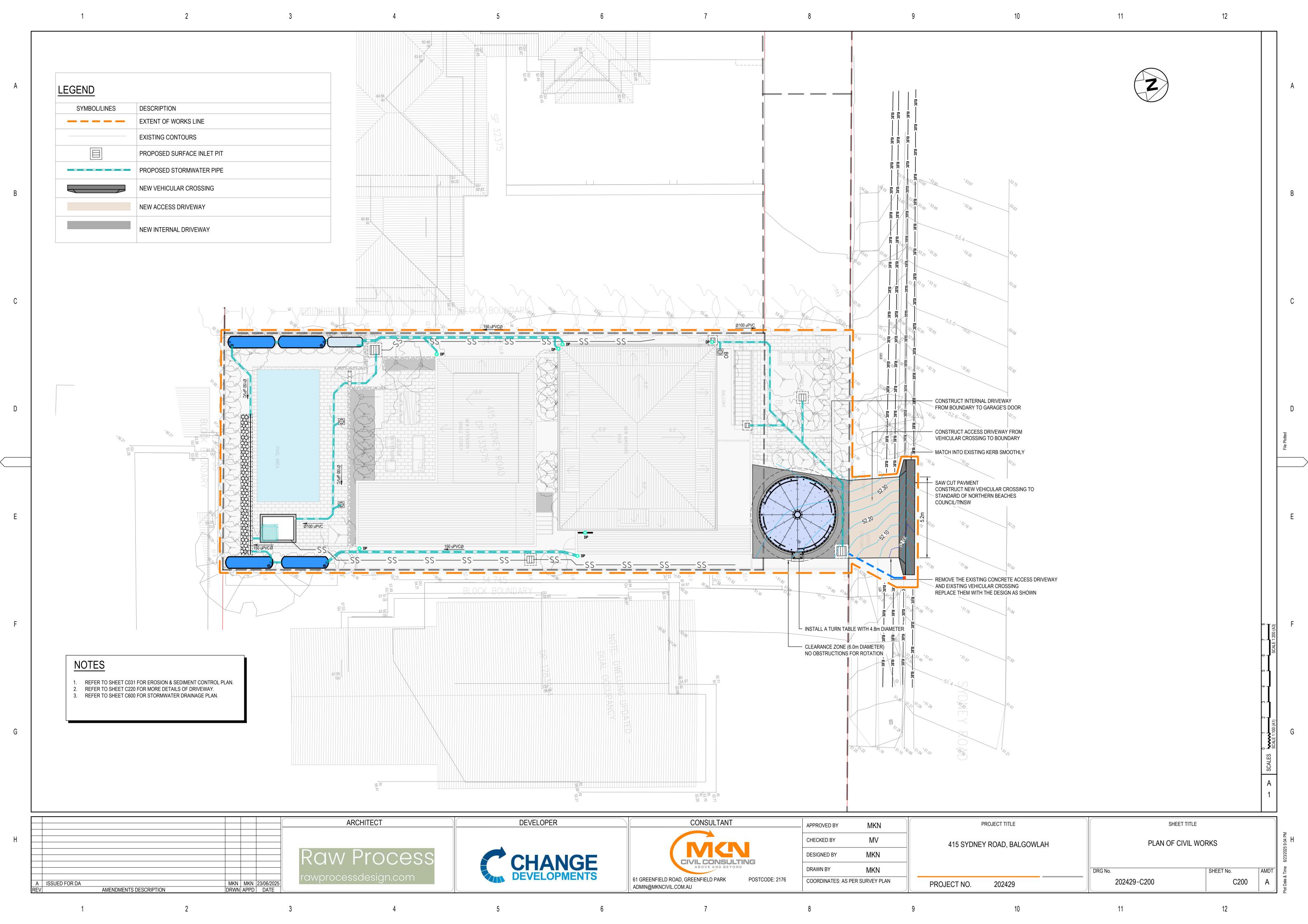
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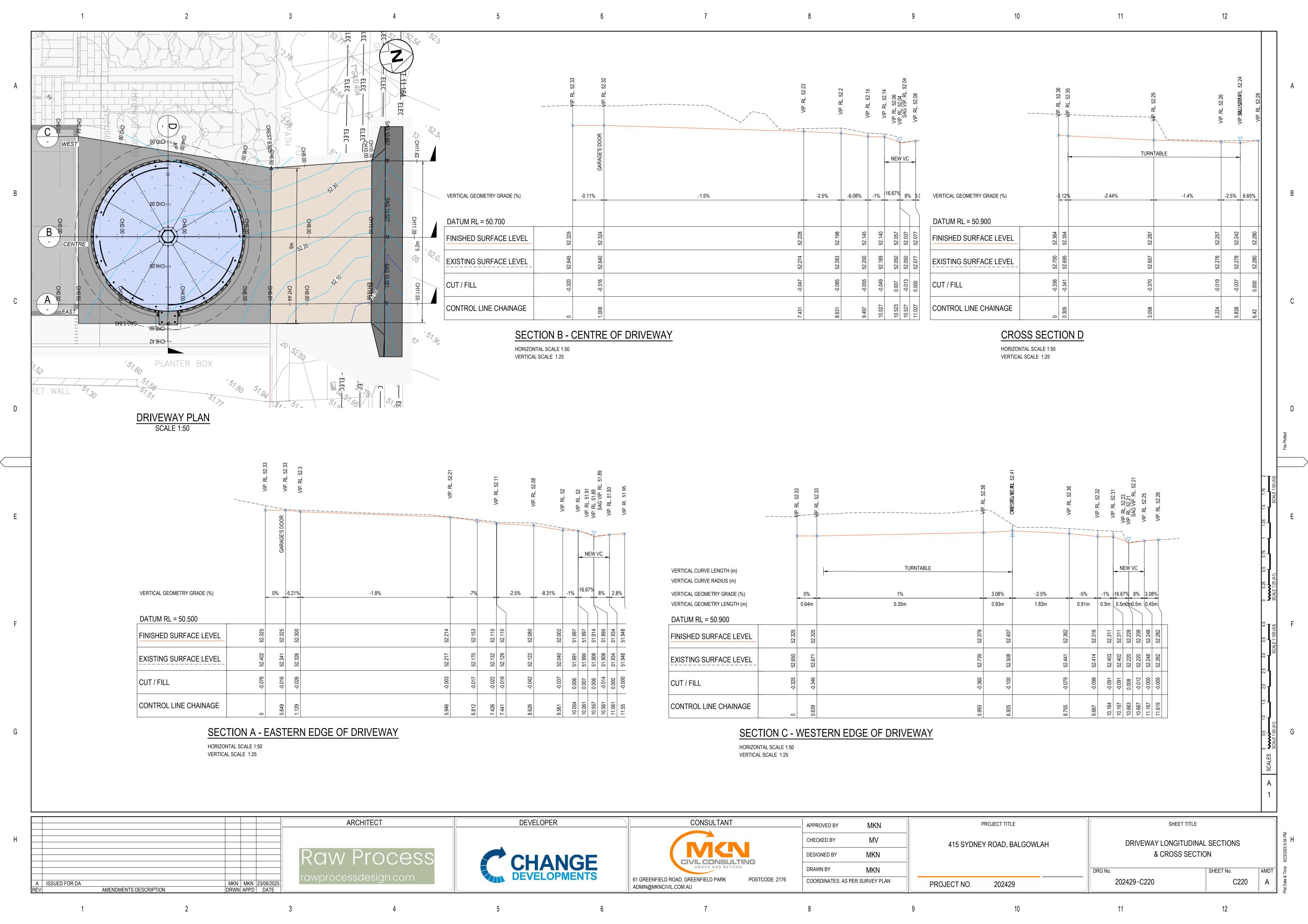


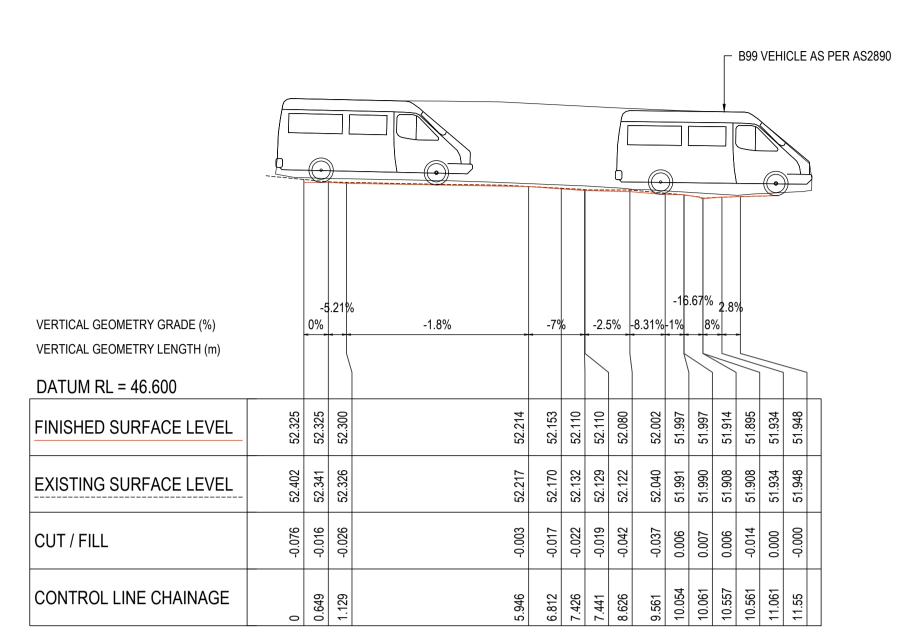
NOTES 1.5m STAR PICKETS AT MAX 2.5m CENTERS 1. CONTRACTOR TO IMPLEMENT EROSION AND SEDIMENT SELF-SUPPORTING CONTROL MEASURES BEFORE DISTURBING WORK AREA, PER GEOTEXTILE COUNCIL SATISFACTION AND "SOILS AND CONTRUCTION VOL.1 4<sup>th</sup> ED. MARCH 2004, MANAGING URBAN STORMWATER". DIRECTION √ 1.5m STAR PICKETS AT 600 TO 600mm OF FLOW MAX 2.5m CENTERS ☐ STABILISE STOCKPILE EARTH BANK SEDIMENT FENCE DISTURBED AREA 600 MIN OF FLOW ON SOIL, 150mmx100mm TRENCH WITH COMPACTED BACKFILL AND ON ROCK, SET INTO SURFACE CONCRETE. **SECTION DETAIL** CONSTRUCTION NOTES (UNLESS STATED OTHERWISE ON SWMP/ESCP) 1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS. 2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS. FLOW 3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT. 4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR STAR PICKETS AT SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10. MAX 2.5m CENTERS 5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE. PLAN STOCKPILES (SD 4-1) CONSTRUCTION NOTES 1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT. 2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE 3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS. 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY. 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP. 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE. SEDIMENT FENCE (SD 6-8) STAR PICKETS 1 METRE MAX. ─ DROP INLET WITH GRATE - WIRE OR STEEL MESH OPENINGS) WHERE GEOTEXTILE IS NOT SELF-SUPPORTING CONSTRUCTION SITE • WOVEN GEOTEXTILE ─ STAR PICKET FITTED WITH SAFETY CAP WOVEN GEOTEXTILE **RUNOFF WATER** WITH SEDIMENT **RUNOFF DIRECTED** TO SEDIMENT TRAP/FENCE GEOTEXTILE SANDBAGS -**EMBEDDED** FILTERED DGB 20 ROADBASE OR 150mm INTO <sup>네</sup> WATER 30mm AGGREGATE GROUND WATERWAY **EXISTING** ROADWAY GEOTEXTILE FABRIC DESIGNED TO PREVENT **EXCAVATION** INTERMIXING OF SUBGRADE AND BASE MATERIALS AND TO MAINTAIN GOOD PROPERTIES OF THE SUB-BASE LAYERS. GEOFABRIC MAY BE A WOVEN OR NEEDLE-PUNCHED PRODUCT WITH A MINIMUM CBR FOR DROP INLETS AT NON-SAG POINTS, BURST STRENGTH (AS3706.4-90) OF 2500 N EARTH BANK SANDBAGS, EARTH BANK OR EXCAVATION USED TO CREATE ARTIFICIAL SAG POINT CONSTRUCTION NOTES **CONSTRUCTION NOTES** FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES. 1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE. 2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE 2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE. STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES. 3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE. 3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING. 4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE. 4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS 5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE. GEOTEXTILE INLET FILTER (SD 6-12) STABILISED SITE ACCESS (SD 6-14) DEVELOPER CONSULTANT ARCHITECT PROJECT TITLE SHEET TITLE APPROVED BY MKN CHECKED BY MV EROSION AND SEDIMENT CONTROL NOTES AND DETAILS 415 SYDNEY ROAD, BALGOWLAH Raw Process **DESIGNED BY** MKN **CIVIL CONSULTING** DRAWN BY MKN SHEET No. awprocessdesign.com 61 GREENFIELD ROAD, GREENFIELD PARK POSTCODE: 2176 C030 COORDINATES: AS PER SURVEY PLAN 202429-C030 A ISSUED FOR DA PROJECT NO. 202429 MKN | MKN |23/06/2025 ADMIN@MKNCIVIL.COM.AU DRWN APPD DATE AMENDMENTS DESCRIPTION

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LONGITUDINAL SECTION - EAST

HORIZONTAL SCALE 1:100 VERTICAL SCALE 1:100

						)				
VERTICAL GEOMETRY GRADE (%)  DATUM RL = 46.800		-0.11%	-1.5%	-2.5%	-6.08%	-16 -1%	8	3.09	%	
FINISHED SURFACE LEVEL	52.325	52.324	52.228	52.198	52.145	52.140	52.057	52.037	52.077	52.088
EXISTING SURFACE LEVEL	52.645	52.640	52.274	52.283	52.200	52.189	52.050	52.050	52.077	52.088
CUT / FILL	-0.320	-0.316	-0.047	-0.085	-0.055	-0.049	0.007	-0.013	0.000	-0.000
CONTROL LINE CHAINAGE	0	1.008	7.431	8.631	9.497	10.027	10.523	10.527	11.027	11.387

LONGITUDINAL SECTION - CENTRE

HORIZONTAL SCALE 1:100 VERTICAL SCALE 1:100

VERTICAL GEOMETRY GRADE (%) 3.08% -2.5% -5% -1% 8% DATUM RL = 47.000 FINISHED SURFACE LEVEL EXISTING SURFACE LEVEL CUT / FILL CONTROL LINE CHAINAGE

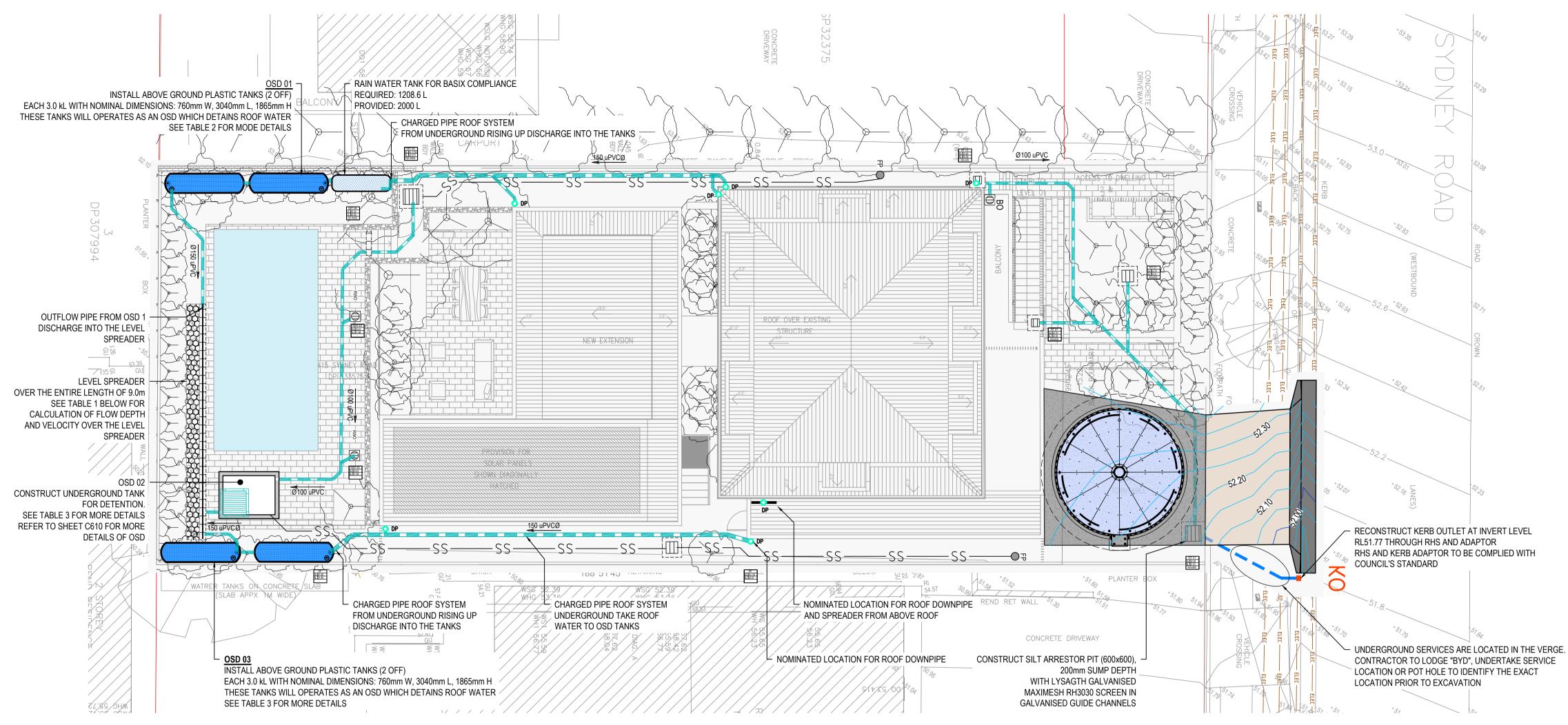
LONGITUDINAL SECTION - WEST

HORIZONTAL SCALE 1:100 VERTICAL SCALE 1:100

			ARCHITECT	DEVELOPER	CONSULTANT	APPROVED BY	MKN	PROJECT TITLE	SHEE	ET TITLE
						CHECKED BY	MV	415 SYDNEY ROAD, BALGOWLAH	VERTICAL CLEARANCE	E CHECKING - DRIVEWAY
			Raw Process	CHANGE		DESIGNED BY	MKN			
			RUVV FIOCESS	<b>E CHANGE</b>	CIVIL CONSULTING ABOVE AND BEYOND	DRAWN BY	MKN		DRG No.	SHEET No.
IS	SUED FOR DA  AMENDMENTS DESCRIPTION  D	MKN MKN 23/06/2025	rawprocessaesign.com	DEVELOPMENTS	61 GREENFIELD ROAD, GREENFIELD PARK POSTCODE: 2176 ADMIN@MKNCIVIL.COM.AU	COORDINATES: AS	PER SURVEY PLAN	PROJECT NO. 202429	202429-C221	C221

8 9 10 11





#### LEGEND SYMBOL/LINES DESCRIPTION DESIGNED MAJOR CONTOUR (1.0m INTERVAL) DESIGNED MINOR CONTOUR (50mm INTERVAL) PROPOSED STORMWATER PIPE PROPOSED GRATED SURFACE INLET PIT Ø90 uPVĆ PIPE DIAMETER/PIPE FLOW DIRECTION KERB ADAPTOR, UPVC SEWER GRADE 150mm CORDINA TYPE OR SIMILAR, 355mm LONG, SUITS 150mm PVC SW CONNECTION PIPE WHICH EXTENDED 1.0m BEYOND THE LOT BOUNDARY FOR ROOF CONNECTION SUBSOIL DRAIN (SLOTTED PIPE) FLUSH POINT FOR SUBSOIL DRAIN ABOVE GROUND PLASTIC TANK FOR ROOF WATER DETENTION RAINWATER TANK FOR BASIX REQUIREMENT RWO 🔘 RAINWATER OUTLET во 🛈 BALCONY RAINWATER OUTLET

#### TABLE 2: PERFORMANCE SUMMARY OF OSD 01

OSD 01 TANK PERFORMANCE									
STORM EVENT	WATER SURFACE LEVEL (WSL)	DETENTION VOL. REQUIRED	ORIFICE SIZE (DIA)	INTERNAL WEIR	NOTES				
(AEP)	RL(m)	(m <sup>3</sup> )	(mm)	INTERNAL WEIK	NOTES				
98.17%	52.460	0.740							
63.21%	52.630	1.510		NONE					
20%	52.870	2.600			ORIFICE CONTROL ONLY				
5%	53.130	3.800	CENTRE AT RL52.616						
1%	53.440	5.270							
BASIN'S FLOOR - DATUM (RL)	52.3								

#### TABLE 3: PERFORMANCE SUMMARY OF OSD 02

		OSD 02 TANK PERFORMANCE			
STORM EVENT (AEP)	WATER SURFACE LEVEL (WSL) RL(m)	DETENTION VOL. REQUIRED (m³)	ORIFICE SIZE (DIA) (mm)	INTERNAL WEIR	NOTES
98.17%	51.570	, ,	0		
63.21%	51.630	0.390			ORIFICE CONTROL ONLY
20%	51.750	0.740	50 CENTRE AT RL51.525	NONE	
5%	51.890	1.170	CENTRE AT REST.323		
1%	52.080	1.740			
BASIN'S FLOOR - DATUM (RL)	51.500				

#### TABLE 3: PERFORMANCE SUMMARY OF OSD 03

	OSD 03 TANK PERFORMANCE									
STORM EVENT	WATER SURFACE LEVEL (WSL)	DETENTION VOL. REQUIRED	ORIFICE SIZE (DIA)	INTERNAL WEIR	NOTES					
(AEP)	RL(m)	(m <sup>3</sup> )	(mm)	INTERNAL WEIK	NOTES					
98.17%	52.060	0.720	<u>า</u>							
63.21%	52.220	1.470		NONE	ORIFICE CONTROL ONLY					
20%	52.460	2.580	25 CENTRE AT RL52.216							
5%	52.730	3.800	CENTRE AT RE32.210							
1%	53.050	5.300								
BASIN'S FLOOR - DATUM (RL)	51.900									

#### TABLE 1: FLOW DEPTH & VELOCITY OVER THE LEVEL SPREADER

(m)	9.00
	1.70
I (FLOW DEPTH) - m	0.0065
(C x L x H ^1.5) - I/s	8
'ELOCITY (m/s)	0.137

#### NOTES

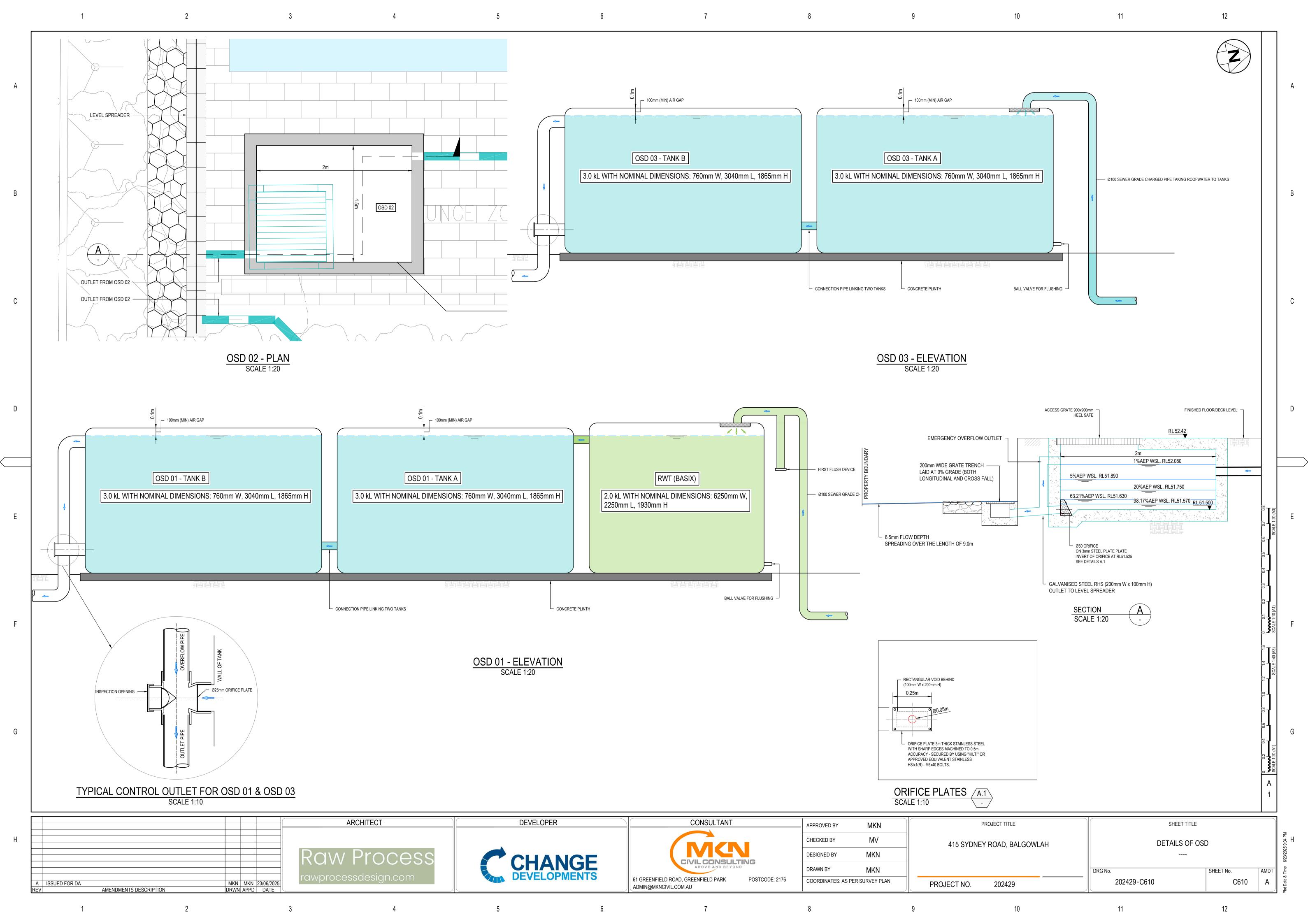
- CONTRACTOR IS TO IDENTIFY THE EXACT LOCATION OF THE EXISTING SERVICES ALONG THE VERGE PRIOR TO EXCAVATION.

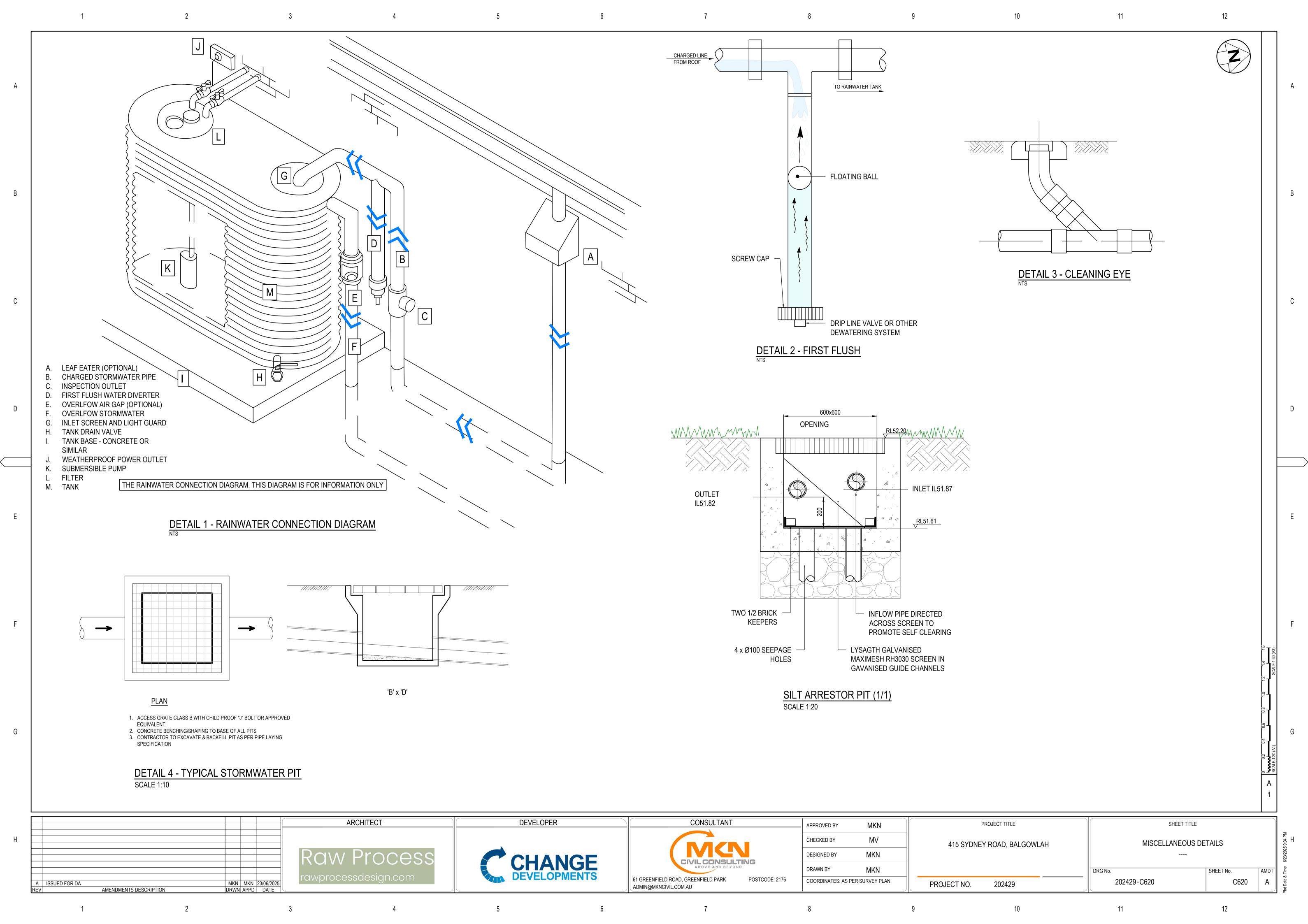
  REFER TO SHEET COOR FOR SPECIFICATION NOTES.
- 2. REFER TO SHEET C003 FOR SPECIFICATION NOTES.
- 3. REFER TO SHEET C200 FOR CIVIL WORKS.
- 4. REFER TO C610 FOR MORE DETAILS OF OSD TANKS.
- 5. REFER TO SHEET C765 FOR PRE\_DEVELOPMENT CATCHMENT PLAN.
- 6. REFER TO SHEET C775 FOR POST\_DEVELOPMENT CATCHMENT PLAN.
- 7. STORMWATER DRAINAGE MUST BE CONNECTED TO THE COUNCIL'S APPROVED SYSTEM.

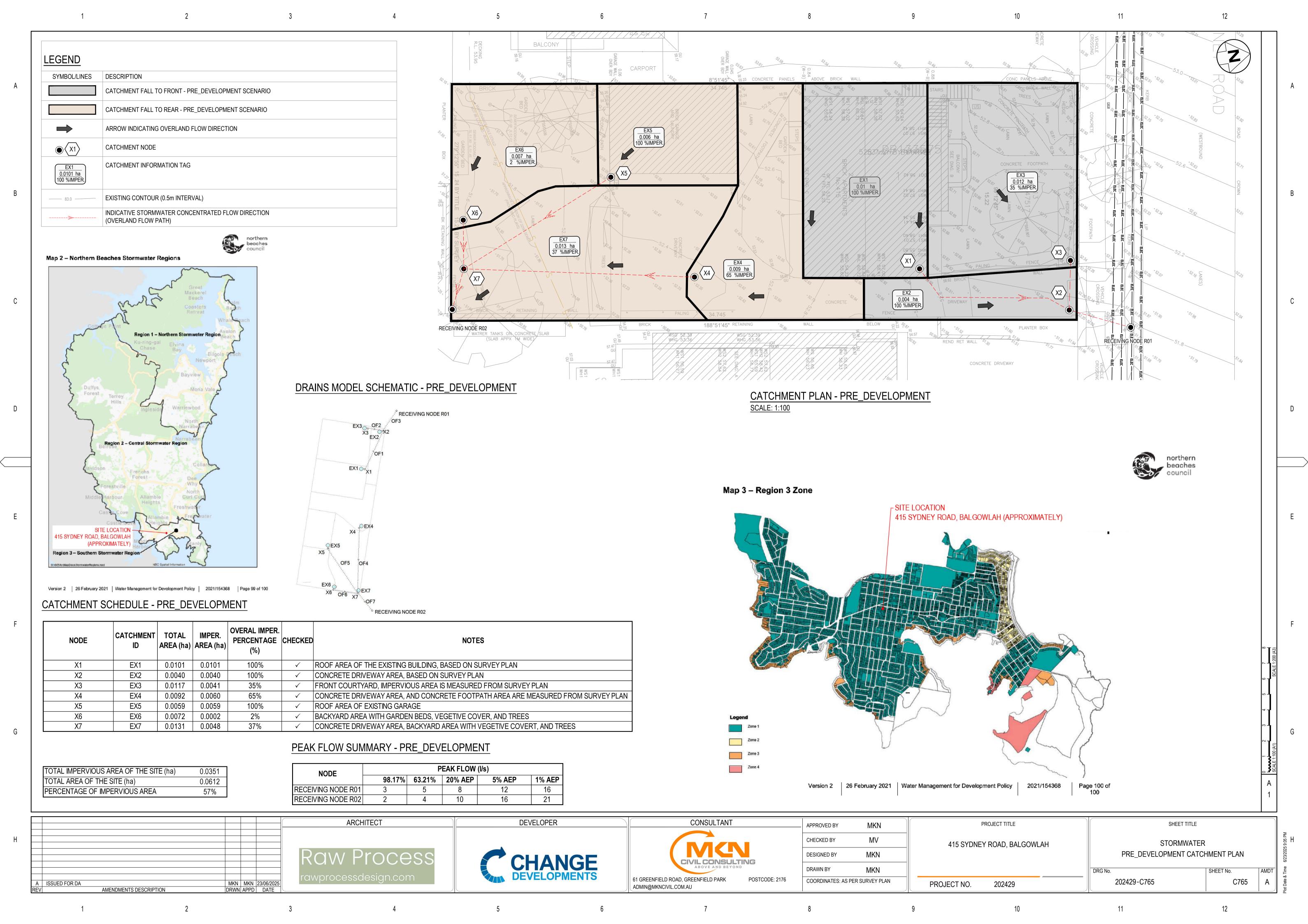


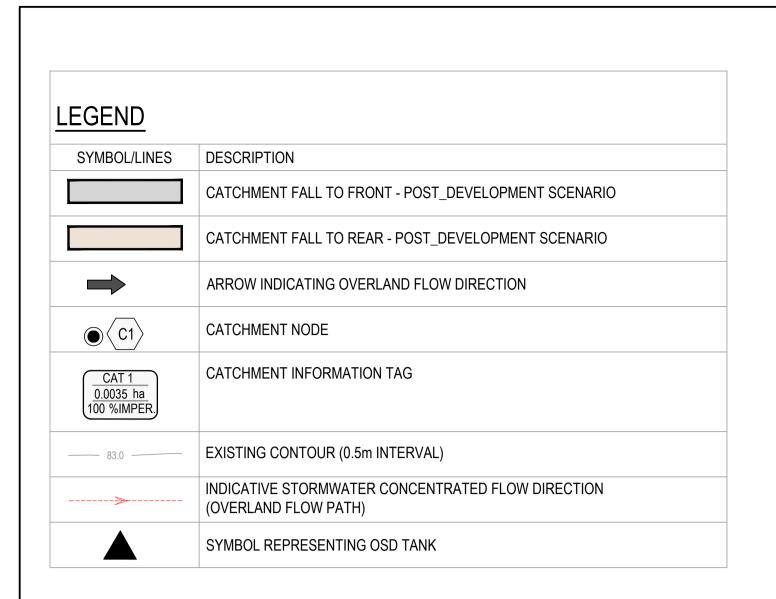
DEVELOPER ARCHITECT CONSULTANT PROJECT TITLE SHEET TITLE APPROVED BY MKN MV CHECKED BY STORMWATER DRAINAGE LAYOUT PLAN 415 SYDNEY ROAD, BALGOWLAH DESIGNED BY MKN **CIVIL CONSULTING** DRAWN BY DRG No. SHEET No. awprocessdesign.com 61 GREENFIELD ROAD, GREENFIELD PARK C600 COORDINATES: AS PER SURVEY PLAN 202429-C600 MKN MKN 23/06/2025 DRWN APPD DATE PROJECT NO. 202429 ADMIN@MKNCIVIL.COM.AU AMENDMENTS DESCRIPTION

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#### PERMISSIBLE DISCHARGE (PSD)

NODE	PSD - I/s
RECEIVING NODE R01	7
RECEIVING NODE R02	9

### FLOWS LEAVING THE SITE WITH OSDs

CATCHMENT SUMMARY TABLE

**NODE** 

C1A

C1B

C2A

C5

C6

C8

C8A

C8B

C9

TOTAL IMPERVIOUS AREA OF THE SITE (ha)

TOTAL AREA OF THE SITE (ha)

PERCENTAGE OF IMPERVIOUS AREA

CATCHMENT ID

CAT 1A

CAT 1B

CAT 2A

CAT 4

CAT 5

CAT 6

CAT\_7

CAT 8

CAT 8A

CAT 8B

CAT 9

CAT\_2

NODE	PEAK FLOW (I/s)						
NODE	98.17%	63.21%	20% AEP	5% AEP	1% AEP		
RECEIVING NODE R01	1	2	4	5	7		
RECEIVING NODE R02	2	3	5	6	8		

SUB CATCHMENT AREA (ha)

IMPERV. AREA

0.0035

0.0002

0.0026

0.0045

0.0003

0.0013

0.0038

0.0034

0.0035

0.0005

0.0049

0.0007

0.0054

0.0104

0.0001

PERV. AREA

0.0000

0.0005

0.0000

0.0000

0.0008

0.0000

0.0000

0.0005

0.0000

0.0000

0.0000

0.0024

0.0000

0.0014

0.0052

0.0452

0.0612

74%

**TOTAL** 

AREA (ha)

0.0035

0.0007

0.0026

0.0045

0.0012

0.0013

0.0071

0.0039

0.0035

0.0024

0.0049

0.0031

0.0054

0.0118

0.0053

IMPER. CATCHMENT PERCENTAGE CHECKED

100%

30%

100%

100%

100%

53%

87%

20%

100%

100%

23%

100%

88%

2%

30%

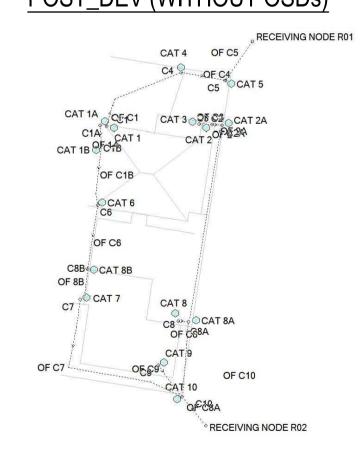
(2 X 3kL ABOVE GROUND

CAT 9 0.0118 ha 88 %IMPER

(2 X 3kL ABOVE GROUND

PLASTIC TANKS)

(UNDERGROUND GROUND TANK 2.0m x 1.5m Lx W, 1.0m DEPTH)



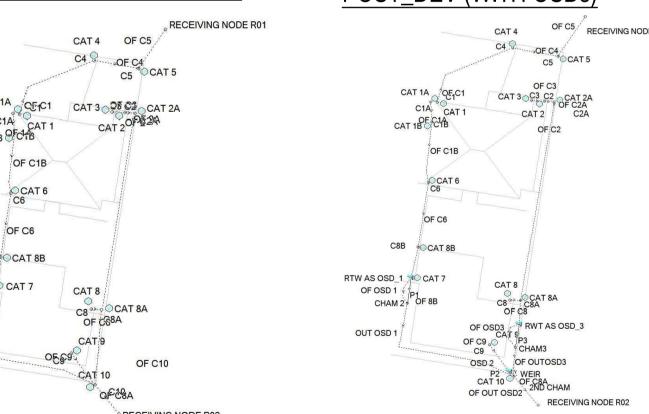
## POST\_DEV (WITH OSDs) OF C5 RECEIVING NODE R01 CAT 4 C4 OF C4 CAT 5 CAT 3 C3 C2 CAT 2A OF C2A C8B CAT 8B RTW AS OSD\_1 CAT 7 OF OSD 1 V OF OSD3 CA1 OF C9 P3 CHAM3

DRAINS MODEL SCHEMATIC -

## DRAINS MODEL SCHEMATIC -POST DEV (WITHOUT OSDs)

SCALE: 1:100

CAT 8 0.0049 ha 100 %IMPER.



CATCHMENT PLAN - PRE\_DEVELOPMENT

CAT 8B 0.0054 ha 100 %IMPER

#### COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY - COMPLIANCE DEMONSTRATION

#### 1) SITE INFORMATION

CAT 2A 0.0012 ha 30 %IMPER

0.0007 ha

CAT 1B 0.0026 ha 100 %IMPER.

CAT 1 0.0035 ha 100 %IMPER.

CAT 2 0.0045 ha 100 %IMPER.

CAT 6 0.0035 ha 100 %IMPER.

STREET ADDRESS: 415 SYDNEY ROAD, BALGOWLAH, NSW 2029

LEGAL PROPERTY DESCRIPTION LOT 1, DP 133575

 $\langle$ C2A $\rangle$ 

#### 2) DESIGN STANDARDS AND REFERENCES

a) NORTHERN BEACHES COUNCIL, WATER MANAGEMENT FOR DEVELOPMENT POLICY (HEREAFTER CALLED "THE POLICY") b) CHECKLIST 16, ON-SITE DETENTION CHECKLIST, THE POLICY

#### 3) DETERMINE THE ON-SITE STORMWATER DISPOSAL REQUIREMENT

CONCRETE DRIVEWAY

REFER TO MAP 2 OF THE POLICY, THE SITE IS LOCATED IN REGION 3 - SOUTHERN STORMWATER REGION REFER TO SECTION 9.3.3 ONSITE STORMWATER DISPOSAL FOR REGION 3 - SOUTHERN CATCHMENTS

METHOD OF STORMWATER CONTROL DEPENDS ON THE LOCATION OF THE SITE

WITH REFERENCE TO MAP 3 OF THE POLICY, THE SITE IS LOCATED IN ZONE 1 OF REGION 3

PART 4.3.2 WAS CHECKED TO DETERMINE IF THE OSD IS REQUIRED.

THIS PROJECT IS ALTERATIONS AND ADDITIONS. FROM CHECKLIST 16, PART 4.3.2.2, IT IS REQUIRED TO HAVE OSD

SECTION 9.3.3.2 OF THE POLICTY IS TO BE FOLLOWED FOR THE DESIGN

#### 4) DESIGN OBJECTIVE

PEAK FLOW IMMEDIATELY DOWNSTREAM OF THE SITE IN DEVELOPMENT IS NOT INCREASED DUE TO DEVELOPMENT.

THIS OBJECTIVE IS ACHIEVED BY

\* PROVIDING ADEQUATE STORAGE VOLUME

\* ALL STORM EVENTS UP TO AND INCLUDING THE 20% AEP POST\_DEVELOPMENT SHALL BE LIMITED TO THE PSD

CRITICAL STOMR EVENTS TO BE CONSIDERED ARE 20% AEP AND 1% AEP

#### 5) PERMISSIBLE SITE DISCHARGE

THE PEAK FLOW IN 20% AEP STORM EVENT FOR PRE-DEVELOPMENT SITE BASED ON THE FOLLOWING IMPERVIOUS PERCENTAGE

\* 35% (THIS VALUE HAS BEEN ADOPTED BECAUSE 35% x 612m<sup>2</sup> = 214.2 m<sup>2</sup> LESS THAN 250 m<sup>2</sup>)

(TOTAL EXISTING SITE IMPERVIOUS AREA IS 350 m<sup>2</sup> EXCEEDING THE VALUE ABOVE)

VELOCITY OF DISCHARGE IS RESTRICTED TO 2.0m/s

PSD HAS BEEN CALCULATED USING THE FOLLOWING METHOD WHICH IS SPECIFIED IN THE POLICY \* Drains Program Version 16Jan2025

6) SITE STORAGE REQUIREMENT

VOLUMES OF DETENTION HAS BEEN CALCULATED USING DRAINS PROGRAM THAT ADEQUATE TO REDUCE THE RUNOFF FROM THE PEAK 1% AEP STORM EVENT FOR THE DEVELOPED SITE BACK TO THE PSD CALCULATED IN STEP 5

# A ISSUED FOR DA MKN | MKN |23/06/2025 DRWN APPD DATE AMENDMENTS DESCRIPTION

Raw Process awprocessdesign.com

ARCHITECT

CAT 10 0.0053 ha 2 %IMPER

RECEIVING NODE R02

**NOTES** 

STONE STEPPER PATHWAY

STONE STEPPER PATHWAY

STONE STEPPER PATHWAY

STONE STEPPER PATHWAY

LOUNGE AND POOL AREA

ROOF AREA

ROOF AREA

ROOF AREA

FRONT YARD

**ROOF AREA** 

ROOF AREA

ROOF AREA

BALCONY AREA

DRIVEWAY AREA

& LANDSCAPE AREA

& LANDSCAPE AREA

LANDSCAPE AREA



DEVELOPER



_	APPROVED BY	MKN
	CHECKED BY	MV
	DESIGNED BY	MKN
	DRAWN BY	MKN
	COORDINATES: AS	PER SURVEY PLAN

	PROJECT TITLE	_
415 SYDNE	Y ROAD, BALGOWLAH	
PROJECT NO.	202429	

SHEET TITLE **STORMWATER** POST\_DEVELOPMENT CATCHMENT PLAN SHEET No.

DRG No. 202429-C775 C775

MKNC HAS BEEN ENGAGED TO CARRY OUT CIVIL ENGINEERING DESIGN AND PREPARE DOCUMENTATION FOR A DEVELOPMENT APPLICATION (DA). THE SUBJECT SITE IS LOCATED AT 415 SYDNEY ROAD, BALGOWLAH, NSW 2093 WITH THE LEGAL DESCRIPTION BEING LOT 1, DP133575.

THE PROPONENT PLANS TO HAVE EXTENSION AND ADDITION, INCORPORATING ESSENTIAL INFRASTRUCTURE SUCH AS ROAD ACCESS, STORMWATER DRAINAGE. MKNC'S SAFE DESIGN PROCESS HAS IDENTIFIED VARIOUS HAZARDS ASSOCIATED WITH THE PROJECT THROUGHOUT ITS LIFECYCLE THESE HAZARDS HAVE VARYING PROBABILITIES OF CAUSING INCIDENTS OR ACCIDENTS, WHICH MAY RESULT IN CONSEQUENCES OF

DIFFERING SEVERITY LEVELS. THIS SAFETY IN DESIGN REPORT HAS BEEN PREPARED IN COMPLIANCE WITH THE WORK HEALTH AND SAFETY ACT 2011. DEVELOPED ALONGSIDE THE DESIGN PROCESS, IT AIMS TO DOCUMENT IDENTIFIED HAZARDS AND OUTLINE CONTROL MEASURES TO ELIMINATE OR

MINIMIZE RISKS. THE KEY ITEMS ADDRESSED IN THIS REPORT INCLUDE:

 HAZARDS IDENTIFIED AT VARIOUS STAGES OF THE PROJECT; RISK ASSESSMENT CONDUCTED BEFORE AND AFTER IMPLEMENTING CONTROL MEASURES:

 ACTIONS IMPLEMENTED OR PLANNED AS RISK CONTROL MEASURES; INDIVIDUALS RESPONSIBLE FOR EXECUTING THE CONTROL MEASURES; AND

 THE RISK STATUS, INDICATING WHETHER IT IS RESOLVED OR REMAINS ACTIVE. THIS REPORT SHOULD BE CONSIDERED TOGETHER WITH THE RISK REGISTER ON THIS SHEET.

#### WHAT IS SAFETY IN DESIGN (SiD)

SID IS A RISK MANAGEMENT PROCESS WHERE HAZARDS ARE IDENTIFIED AND CONTROL MEASURES ARE INCORPORATED EARLY IN THE DESIGN PHASE. THE GOAL IS TO ELIMINATE OR, WHEN NOT REASONABLY PRACTICABLE, MINIMIZE HEALTH AND SAFETY RISKS

THROUGHOUT EVERY STAGE OF THE PROJECT LIFECYCLE. THESE STAGES INCLUDE: CONCEPT/SCHEMATIC

DETAILED DESIGN

CONSTRUCTION OPERATION

MAINTENANCE, REPAIR, RENOVATION AND OR MODIFICATION

DEMOLITION, DEMOBILISATION OR DECOMMISSION

#### PROPOSED WORKS

THE MAIN ACTIVITIES IN THIS PROJECT INCLUDE:

CARRYING OUT THE CONCEPT DESIGN OF DRIVEWAY, EXTENSION AND ADDITION OF NEW BUILDING AND STORMWATER DRAINAGE; THE CONSTRUCTION OF THE DESIGNED COMPONENTS (TO BE CARRIED OUT BY THE CONTRACTOR TO BE APPOINTED);

CONDUCTING SITE INSPECTIONS DURING CONSTRUCTION, OPERATION, MAINTENANCE, AND DECOMMISSIONING (BY ASSET OWNERS AND/OR DESIGNERS);

THE PERSON(S) WHO WILL BEAR THE RISKS IF ANY REMAIN ACTIVE.

OPERATION AND MAINTENANCE (BY ASSET OWNERS); AND • DECOMMISSIONING AT THE END OF THE LIFECYCLE (BY ASSET OWNERS AND CONTRACTORS).

#### KEY ELEMENTS BEING CONSIDERED

MKNC, AS THE CIVIL AND STORMWATER DESIGNER, HAS ACHIEVED SAFETY IN DESIGN BY USING A SYSTEMATIC APPROACH TO IDENTIFY HAZARDS. PERFORM ANALYSIS. AND DETERMINE HOW HAZARDS WILL BE ELIMINATED OR MINIMIZED THROUGH A RISK MANAGEMENT PROCESS. DESIGNS ARE REVIEWED TO CONFIRM WHETHER RISKS CAN BE ELIMINATED OR REDUCED. ULTIMATELY, THE DESIGN WILL BE FINALIZED WITH CLEAR IDENTIFICATION OF HAZARDS AND RECOMMENDED CONTROL MEASURES. THROUGHOUT THE

PROCESS, MKNC HAS CONSIDERED THE KEY ELEMENTS OUTLINED BELOW: LIFE CYCLE - HOW THE DESIGN WILL IMPACT THE HEALTH AND SAFETY OF INDIVIDUALS WHO WILL INTERACT WITH THE DESIGN

APPLIED KNOWLEDGE OF WORK HEALTH AND SAFETY LEGISLATION. CODES OF PRACTICE. AND OTHER REGULATORY

COMPONENTS OR STRUCTURES AT EACH STAGE OF THE LIFECYCLE MENTIONED ABOVE. KNOWLEDGE AND CAPABILITY - IN ADDITION TO THE EXPERTISE REQUIRED TO PERFORM THE DESIGNER'S ROLE. MKNC HAS

REQUIREMENTS, ALONG WITH AN UNDERSTANDING OF RISK MANAGEMENT, THE INTENDED PURPOSE OF THE DESIGN, TECHNICAL DESIGN STANDARDS, AND CONSTRUCTION METHODS.

CONSULTATION, COOPERATION AND COORDINATION - MKNC HAS ENGAGED IN CONSULTATION WITH OTHER INDIVIDUALS WHO HAVE A WORK HEALTH AND SAFETY DUTY, AS FAR AS REASONABLY PRACTICABLE AND WHERE POSSIBLE.

INFORMATION TRANSFER - MKNC HAS DOCUMENTED ALL KEY INFORMATION REGARDING IDENTIFIED HAZARDS AND THE ACTIONS TAKEN OR REQUIRED TO CONTROL RISKS. MKNC IS COMMITTED TO TRANSFERRING THIS INFORMATION FROM THE DESIGN PHASE TO THOSE INVOLVED IN THE LATER STAGES OF THE PROJECT LIFECYCLE. A RISK REGISTER INCLUDED IN THIS SHEET SUMMARIZES THE HAZARDS, CONTROL MEASURES, RESIDUAL RISKS, THE STATUS OF THE RISKS (WHETHER RESOLVED OR STILL ACTIVE), AND

THIS REPORT IDENTIFIES HAZARDS AND WORK HEALTH AND SAFETY RISKS ASSOCIATED WITH THE DESIGN ELEMENTS DOCUMENTED IN THIS SET OF DRAWINGS WITHIN THE SCOPE OF WORKS. IT PERTAINS TO INDIVIDUALS INVOLVED IN THE CONSTRUCTION, OPERATION, USE, MAINTENANCE, REPAIR, MODIFICATION, AND DECOMMISSIONING OF THE DESIGN ELEMENTS. THE ACTIONS PROPOSED IN THE REPORT TO ADDRESS IDENTIFIED RISKS ARE RECOMMENDATIONS ONLY. ANY UNRESOLVED SAFETY ISSUES OR RESIDUAL RISKS THAT CANNOT BE ELIMINATED ARE NOTED FOR APPROPRIATE MANAGEMENT IN LATER STAGES.

THE REPORT HAS BEEN PREPARED PRIOR TO THE COMMENCEMENT OF WORK ON-SITE, AND AS SUCH, IT DOES NOT ACCOUNT FOR ANY UNEXPECTED ISSUES OR INFORMATION THAT MAY ARISE AFTER WORK BEGINS.

THE REPORT IS BASED ON THE ASSUMPTION THAT QUALIFIED AND COMPETENT PERSONNEL WILL BE ENGAGED FOR THE RELEVANT WORKS AT EACH STAGE OF THE LIFECYCLE.

#### PRE-EXISTING HAZARDS AND DESIGN CHANGES

DEVELOPERS/CLIENTS ARE REQUIRED TO INFORM MKNC ANY EXISTING HAZARDS AND ASSOCIATED RISKS IN THE AREA WHERE CONSTRUCTION WILL BE UNDERTAKEN.

IT IS NOT UNCOMMON, FOLLOWING THE COMPLETION OF THE DESIGN, IN THE LATER STAGES, FOR PERSONS INVOLVED IN THE CONSTRUCTION, MATERIAL SUPPLYING, MAINTENANCE AND DEMOLITION, WHO ARE NOT THE ORIGINAL DESIGNERS, TO IDENTIFY NEW HAZARDS AND RISKS WHICH ARE NOT PREVIOUSLY KNOWN TO THE DESIGNERS. SUCH NEW INFORMATION, INCLUDING ANY DESIGN MODIFICATION SHOULD BE DOCUMENTED AND THE RISK REGISTER SHOULD BE UPDATED IN ACCORDANCE.

	CONSEQUENCE RATING					
SEVERITY LEVEL	QUANLITATIVE DESCRIPTION					
-INSIGNIFICANT	NO HUMAN INJURIES OR HEALTH EFFECTS, NO NEGATIVE ENVIRONMENTAL IMPACT, MINIMAL FINANCIAL LOSS, AND NO NEED FOR REGULATORY NOTIFICATION.					
2-MINOR	MINOR INJURY OR HEALTH EFFECTS, TYPICALLY A REVERSIBLE INJURY OR HEALTH DAMAGE REQUIRING ONLY FIRST AID TREATMENT, MODERATE FINANCIAL LOSS. MINOR ENVIRONMENTAL IMPACT THAT CAN BE CLEANED UP. REGULATORY NOTIFICATION IS UNLIKELY TO BE REQUIRE.					
-MODERATE	INJURY REQUIRING HOSPITALIZATION AND POTENTIALLY ONGOING MEDICAL TREATMENT, SIGNIFICANT FINANCIAL LOSS, SUBSTANTIAL ENVIRONMENTAL IMPACT REQUIRING 1-2 MONTHS FOR RESTORATION. REGULATORY NOTIFICATION IS MANDATORY.					
-MAJOR	SEVERE OR LIFE-THREATENING INJURIES REQUIRING HOSPITALIZATION WITH PROLONGED TREATMENT AND REHABILITATION, LEADING TO PERMANENT HEALTH DAMAGE OR DISABILITY. MAJOR FINANCIAL LOSS. SIGNIFICANT ENVIRONMENTAL IMPACT THAT MAY TAKE UP TO A YEAR TO RESTORE. REGULATORY NOTIFICATION IS MANDATORY.					
i-CATASTROPHIC	FATALITIES, INJURIES, OR HEALTH DAMAGE RESULTING IN DEATH OR SEVERE PERMANENT DISABILITY TO ONE OR MORE INDIVIDUALS. SIGNIFICANT FINANCIAL LOSS, CATASTROPHIC ENVIRONMENTAL IMPACT THAT MAY TAKE OVER A YEAR TO RESTORE OR COULD BE IRREVERSIBLE. REGULATORY NOTIFICATION IS MANDATORY.					

THE PROCESS, TASK OR ACTIVITY MUST NOT PROCEED. IT MUST BE CEASED UNTIL APPROPRIATE ACTIONS ARE TAKEN WITH CONTROL MEASURES HIERARCHY TO ELIMINATE. MINISE THE RISK BY OTHER ALTERNATIVES. CHIEF EXECUTIVE/BOARD UNDERTAKE MANAGER OVERSEE

ACTION PLANS AND RECEIVES REPORTS ON PROGRESS. REQUIRE SPECIFIC CONTROL SP

OR REDUCE THE LEVEL OF HARM. NEW OR ADDITIONAL CONTROL OPTIONS MUST BE CONSIDERED

PERIODICALLY REVIEW THE EFFECTIVENESS OF CONTROL MEASURES. NEW OR ADDITIONAL CONTROL OPTIONS TO BE CONSIDERED.

ACTIONS TO BE TAKEN WITH CONTROL MEASURES HIERARCHY TO ELIMINATE. IF NOT REASONABLY PRACTICABLE, MINIMISE THE RISK BY

OTHER ALTERNATIVES OR ELIMINATE THE RISK. EXECUTIVE MANAGER OVERSEES ACTION PLANS AND RECEIVES REPORTS ON PROGRESS. REQUIRE SPECIFIC CONTROL MEASURES OR SPECIAL CONSIDERATION. MORE EMPHASIS MUST BE GIVEN TO THOSE CONTROLS TO ELIMINA.

LOW RISK (1-4) ACTIVITY CONTINUES WITH EXISTING CONTROL. REQUIRES ONGOING MONITORING OF THE EXISTING CONTROL

CONTROL MEASURES, CONSIDER NEW OR ADDITIONAL CONTROL MEASURES.

EFFECTIVENESS. CONTINUE TO REDUCE THE RISK OR TRY TO ELIMINATE BY ADOPTING ANY IMPROVEMENT WHER

OVERSEES ACTION PLANS AND RECEIVES REPORTS ON PROGRESS, PERIODIC REVIEW THE EFFECTIVENESS

LIKELIHOOD RATING QUANLITATIVE DESCRIPTION CATEGORY THE INCIDENT IS UNLIKELY TO OCCUR, AND WOULD ONLY HAPPEN UNDER 1-VERY UNLIKELY EXCEPTIONAL CIRCUMSTANCES. IT IS HIGHLY PROBABLE IT WILL NEVER HAF THE INCIDENT MAY OCCUR UNDER CERTAIN CIRCUMSTANCES DURING THE 2-UNLIKELY PROJECT LIFECYCLE, THOUGH IT WOULD BE UNEXPECTED. THE INCIDENT COULD OCCUR UNDER CERTAIN CONDITIONS DURING THE 3-POSSIBLE PROJECT LIFECYCLE. THE INCIDENT IS LIKELY TO OCCUR IN MOST SITUATIONS DURING THE PROJ 4-LIKELY 5-ALMOST CERTAIN | THE INCIDENT IS ALMOST INEVITABLE THROUGHOUT THE PROJECT LIFECY

	RISK ASSESMENT MATRIX										
				CONSEQUENC	=						
.PPEN.	LIKELIHOOD	1-INSIGNIFICANT	2-MINOR	3-MODERATE	4-MAJOR	5-CATASTROPHIC					
	5-ALMOST CERTAIN	5	10	15	20	25					
	4-LIKELY	4	8	12	16	20					
	3-POSSIBLE	3	6	9	12	15					
IECT	2-UNLIKELY	2	4	6	8	10					
	1-VERY UNLIKELY	1	2	3	4	5					
CLE.											

AR TO RESTORE OR SOCIED BE INKEVERSIBLE. RESSERTION					
					HIERARCHY OF CONTROLS
ACTIONS TO BE TAKEN WITH CONTROL MEASURES HIERARCHY TO ELIMINATE. IF NOT REASO	DNABLY PRACTICABLE, MINIMISE THE RISK BY	LEVEL	CONTROL		DESCRIP*
OTHER ALTERNATIVES OR ELIMINATE THE RISK. GENERAL MANAGER OVERSEES ACTION PLA	INS AND RECEIVES REPORTS ON PROGRESS.		FLIMINIATION	THE MOST SESSOTIVE CONTR	OUT INIVOLVES DEMOVING THE HAZADD AND ASSOC

PROTECTIVE EYEWEAR.

EQUIPMENT

1	LEVEL	CONTROL	DESCRIPTION
	1	ELIMINATION	THE MOST EFFECTIVE CONTROL INVOLVES REMOVING THE HAZARD AND ASSOCIATED RISK BY PREVENTING ITS INTRODUCTION INTO THE WORK ENVIRONMENT.
1	2.1	SUBSTITUTION	REPLACE WITH LESS HAZARDOUS MATERIALS, FIXTURES, FITTINGS, EQUIPMENT, OR CONSTRUCTION METHODS.
	2.2	ISOLATION	SE DISTANCE, GUARDS, BARRIERS, OR FENCES TO PHYSICALLY ISOLATE THE SOURCE OF HARM FROM INDIVIDUALS OR RESTRICT THEIR ACCESS.
	2.3	ENGINEERING	UTILISING MECHANICAL DEVICES OR PROCESSES, OR INSTALLING EQUIPMENT THAT ENSURES EFFECTIVE CONTROL.
	3	ADMINISTRATION	IMPLEMENTING ADMINISTRATIVE CONTROLS, SUCH AS WORK METHODS OR PROCEDURES, TRAINING PROGRAMS, AND POLICIES.
	1	PERSONAL PROTECTIVE	USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE), INCLUDING EAR MUFFS, RESPIRATORS, FACE MASKS, HARD HATS, GLOVES, APRONS, AND

							ISK I	BEFORE CONTROL	CONTROL MEASURES			RISK AF	TER CONTROLS	; <u> </u>
HAZ	ARD ID	STAGE	ΙΔζΤΙΝΙΤΥ	HAZARD DESCRIPTION	PERSON(S) EXPOSED	FORESEEABLE RISK ASSOCIATED WITH THE HAZARD	LIKELIHOOD	CONSEQUENCE RISK LEVEL	CONTROL MEASURES/ACTIONS TAKEN	ACTION BY	CONTROL HIERARCHY	LIKELIHOOD	RISK LEVEL	STATUS WHO'S RESPONSIBLE FOR CONTROLS
1. S	TE ESTAB													
1.1	:		the existing buildings structures and other fixutres that need to be	Falling objects including part or all of a structures or debris.  Contact live electricity above or underground including other utility services.  Exposed to hazardous materials; Excessive noise levels.	Demo. crew	Causing health damage to workers and o general public. Causing injuries or deaths to workers. Causing building collapse to nearby structures leading to injuries or death.	4	4 VERY HIGH	Engage competent and licenced demolition contractor. Contractor is use appropriate methods of demolition.  Contractor is to prepare their own safe work method statement.  Isolating the hazard by fencing off the site, using concrete barriers to separate pedestrians.  Using warning signs.	Demo.Contractor	Substitution/Isolation/ Engineering	2 2	LOW	A Contractor
1.2		Site Est.		Falling branches. Power lines. Working with plant; Working at heights Wildlife	Arborist/Worke	Pose danger to the workers and anyone ir the vicinity. Electrocution; Falling causing injuries. Being bitten or stung by insects.	4	4 VERY HIGH	Engage qualified tree removal contractor. Using proper techniques and proper equipment.  Contractor is to prepare their own safe work method statement.  Install warning sign, fences, barriers	Arborist/Workers	Isolation/Engineering/ Admin.	2 2	LOW	A Contractor
									Designer undertook site inspection, had reference to survey plan, undertook "BYD" and prepared existing services plan for information	Designer	Engineering	2 3	MODERATE	R Designer (Civil)
) ( = =				Underground/above ground services	Const. crew	Plant hitting services	3	4 HIGH	Contractor is to take the necessary actions including familirising themselves with the design drawings site condition, undertake their own "BYD". Undertake non-destructive excavation where required to identify the exact location of services. Implement safe work procedure.  Employ proper methods of excavation		Isolation/Engineering/ Admin.	2 2	LOW	A Contractor
2.1						Ground collapse due to unstable			Designer is to consider to keep depth of excavation is minimum where reasonably practical in the design	Designer (Civil)	Substitution/Engineering	2 3	MODERATE	R Designer (Civil)
S /		Const.	Excavation	Unstable ground conditions		soil conditions, excessive excavation depth, or inadequate shoring support.	2		Contractor is to take the necessary actions including familirising themselves with the design drawings site condition from geotechnical point of view. Plan the works, implement safe work procudure, consider proper excavation methods. Provide adequate shoring		Substitution/Isolation/ Engineering/Admin.	2 2	LOW	A Contractor
				Falls and slips, Falling loads	Const. crew	Uneven ground pose risk of falling causing	i 3	4 HIGH	Contractor is to plan the works on site proper site management plan. Place objects clear off the trench. Position pipe stocks with wedges. Implement PPE controls. Designate exclusion zone.	Contractor	Substitution/Isolation/ Engineering/Admin.	2 2	LOW	A Contractor
S				Moving Plant	Const. crew	Plant hitting people and or plant roller	3	4 HIGH	Contractor is to plan the works on site proper site management plan. Designate exclusion zone. Employ spotters. Employ qualified operators	Contractor	Substitution/Isolation/ Engineering/Admin.	2 2	LOW	A Contractor
				Unexpected hazardous materials	I Public I	Unexpected materials (e.g. abestos might be encountered posing a risk to publuc health and workers	2		Contractor is to take the necessary actions including familirising themselves with the site condition. Plan the works, implement safe work procudure. Prepare an emergency plan. Study site investigation report prior to commencement		Engineering/Admin.	2 2	LOW	A Contractor
				Structural collapse	Const. crew	Inadequate design could lead to structural failure/collapse which poses risk	3	4 HIGH	Qualified and experienced Structural Designer to be enaged for the design. Obtain necessary geotechnical information	(Structural)	Engineering	2 3	MODERATE	(Structural)
2.2 S R		Const.	Construction of retaining walls	Retaining Wall's height	Const crew/	to workers  Falling off from the top of wall	3	4 HIGH	Qualified and experienced contractor is to be enaged. Implement proper construction methods. Study Contractor is to prepare a Safe Work Method Statement, Site Management Plan, induction for workers/subcontractors before entering the site.  After construction, the Contractor should leave an orange safety flagging/bunting on heavy duty rope along the top of the walls to provide warnings.	Contractor	Engineering/Admin.  Engineering/Admin.	1 4	MODERATE	A Contractor  A Contractor
2.3		Const.	Traffic near the site or at the site	Construction vehicles		Construction vehicles entering/ existing site posing the risk of traffic incidents.	3	4 HIGH	Designer is to prepare a traffic guidance scheme	Designer (Civil)	Engineering	2 2	LOW	R Designer (Civil)
				Traffic condition changes		Lane closure leads to change in traffic condition posing risk to road users			Contractor is to implement the traffic guidance scheme. Engage qualifed designer for any modification to suit their construction sequence or methods	Contractor	Engineering	2 2	LOW	A Contractor
2.5	(	Const.	Connecting into the exsiting services.	Pressured gas mains	Const crew	Working near the gas main including excavation, connecting new gas mair could damage the asset causing leak explosion resulting in injuries or fatalities		3 HIGH	Contractor to be fully aware of the presence of gas mains by reading drawings, undertaking DBYD, and undertaking pot holing if needed.  Connection work to be done by qualified technicians approved by the asset owner.	Contractor	Engineering	2 2	LOW	A Contractor
3. M	AINTENAI	NCE, OPER	RATION & DECOMMISSION											
3.2		Maint.	Undertake maintenance to SW pits and	Confined spaces	IMaint crew I	Unconsciousness, injury or death	3	3 HIGH	Design requires consideration to optimise and reduce the stormwater pit depths	Designer (Civil)	Engineering	2 2	LOW	R Designer (Civil)
3.2			pipes			due to toxic gases and/or lack of oxygen.			Maintenance crew are required to be trained for working in confined spaces.  Supervision, monitoring plan and site management plan shall be required to reduce the risk	Maint.Crew	Engineering/Admin.	2 2	LOW	A Maint.Crew

	DEFINITION							
FIELD	DESCRIPTION	FIELD	DESCRIPTION	FIELD	DESCRIPTION			
HAZARD ID	IDENTIFICATION NUMBER FOR EACH INDIVIDUAL HAZARD HAVE BEEN IDENTIFIED. THE ID SHOULD BE KEPT THE SAME THROUGH THE PROJECT LIFECYCLE.	HAZARD DESCRIPTION	SPECIFIC DETAILS TO PROVIDE MORE INFORMATION ABOUT THE HAZARD.	ACTION BY	THE PERSON(S) WHO TAKE(S) RESPONSIBILITY TO IMPLEMENT THE CONTROL MEASURES OR TO TAKE ACTIONS FOR RISK MITTIGATION. "R" FOR RESOLVED. "A" FOR ACTIVE.			
STAGE	WHEN WAS THE HAZARD IDENTIFIED IN THE PROJECT LIFECYCLE.	PERSON(S) EXPOSED	PERSON(S) THAT EXPOSED TO THE RISKS.	STATUS	HAS THE RISK BEEN ELIMINATED OR IT STILL REMAIN ACTIVE.			
ACTIVITY	WHEN WAS THE HAZARD IDENTIFIED IN THE PROJECT LIFECYCLE.	CONTROL MEASURE	ACTIONS TO BE TAKEN TO ELIMINATE OR REDUCE THE RISK ASSOCIATED WITH THE HAZARD.	ADDITIONAL CONTRO	ANY ADDITIONAL MEASURES OR SPECIFIC REVIEW TO BE REQUIRED FOR MORE EFFECTIVE RISK CONTROL.			

Α	ISSUED FOR DA	MKN	MKN	23/06/2
REV	AMENDMENTS DESCRIPTION	DRWN	APPD	DAT

awprocessdesign.com

ARCHITECT



DEVELOPER

CIVIL CONSULTII ABOVE AND BEYOND	NG
61 GREENFIELD ROAD, GREENFIELD PARK ADMIN@MKNCIVIL.COM.AU	POSTCODE: 2176

CONSULTANT

CHECKED BY	MV
DESIGNED BY	MKN
DRAWN BY	MKN
COORDINATES: AS	PER SURVEY PLAN

MKN

APPROVED BY

PROJECT TITLE	
415 SYDNEY ROAD, BALGOWLAH	
	DF
PROJECT NO. 202429	

SHEET TITLE	<u> </u>	
SAFETY IN DESIGN	N REPORT	
No. 202429-C999	SHEET No.	AMDT