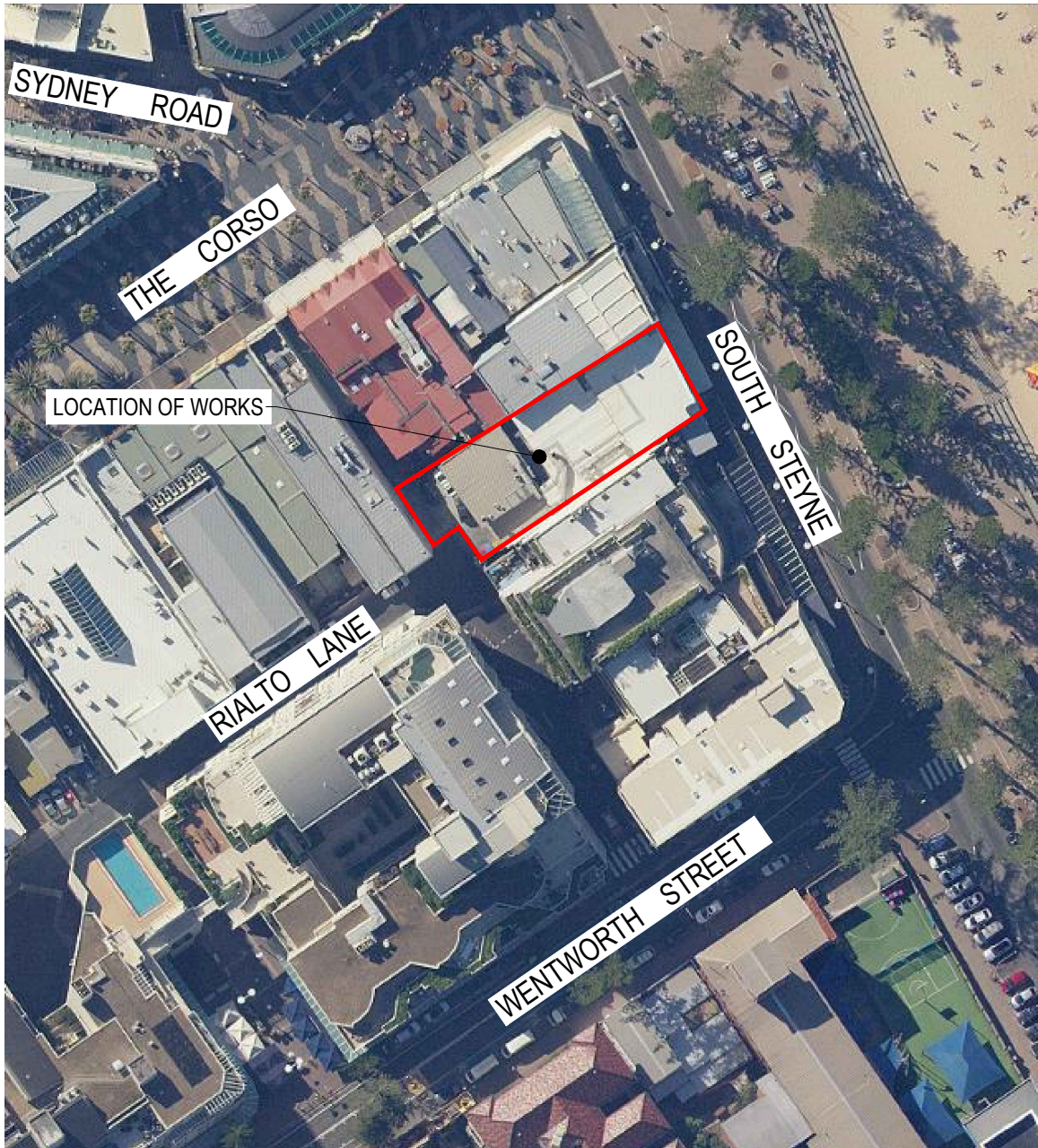


PROPOSED COMMERCIAL DEVELOPMENT

34-35 SOUTH STEYNE, MANLY NSW 2095



LOCALITY PLAN
NTS

DRAWING REGISTER

DRAWING No.	DRAWING TITLE
220553-C-000	COVER SHEET & LOCALITY PLAN
220553-C-001	CONSTRUCTION NOTES
220553-C-101	EROSION & SEDIMENT CONTROL PLAN
220553-C-301	STORMWATER DRAINAGE PLAN
220553-C-302	BASEMENT STORMWATER DRAINAGE PLAN
220553-C-391	PRE & POST CATCHMENT PLAN

WARNING

THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING SERVICES ON AND EXTERIOR TO THE SITE INCLUDING WATER MAINS, SEWER MAINS, GAS MAINS, TELECOMMUNICATIONS CABLES, ELECTRICAL CABLES, AND STORMWATER PIPES. ANY DAMAGE TO EXISTING SERVICES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

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P2	30.06.22	ISSUED FOR DA	KE	CV						
P1	06.06.22	ISSUED FOR CLIENT REVIEW	KE	CV						
Rev	Date	Description	By	Chk						

GENERAL NOTES

- ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM
- ALL SERVICE AUTHORITIES SHALL BE NOTIFIED IN WRITING SEVEN DAYS PRIOR TO COMMENCEMENT OF WORKS.
- TBM'S TO BE RE-ESTABLISHED BY THE LICENSED SURVEYOR IF FOUND TO BE MISSING AT THE COMMENCEMENT OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE FOR CARE AND MAINTENANCE OF TBM'S THEREAFTER.
- ALL EXISTING SURFACE LEVELS SHOWN ON THE ENGINEERING DRAWINGS HAVE BEEN RECREATED FROM 2D SURVEY AND LIDAR TERRAIN MODEL. THESE LEVELS HAVE BEEN USED AS THE BASIS FOR ALL ENGINEERING DESIGN AND DETERMINATION OF QUANTITIES. CONTRACTOR TO ENSURE WORKS FOLLOW DESIGN INTENT. CONTRACTOR TO ADVISE SUPERINTENDENT OF MAJOR DISCREPANCIES.
- THE CONTRACTOR IS RESPONSIBLE FOR GAINING APPROVAL OF THE TRAFFIC MANAGEMENT PLAN FROM COUNCIL AT LEAST 7 DAYS PRIOR TO WORKS COMMENCING OR EARLIER IF REQUIRED. THE TRAFFIC MANAGEMENT PLAN AND TRAFFIC CONTROL PLAN INCLUDING ANY ACCESS REQUIREMENTS SHALL BE APPROVED BY THE COORDINATING ROAD AUTHORITY APPROPRIATE TO THE PROJECT.
- THE CONTRACTOR IS REQUIRED TO CONFINE CONSTRUCTION VEHICLES TO THE INTERNAL ROAD RESERVE AND CARPARK. ANY DAMAGE CAUSED TO EXISTING KERB & CHANNEL OR FOOTPATHS MUST BE MADE GOOD.
- INSTALL ALL VEGETATION PROTECTION, EROSION AND SEDIMENT CONTROL, AND SITE SPECIFIC MEASURE PRIOR TO COMMENCEMENT OF ANY WORK.
- ANY BUILDINGS, TROUGHS, FENCES AND OTHER STRUCTURES ON SITE ARE TO BE REMOVED AS DIRECTED BY THE ENGINEER. THE COST OF REMOVAL IS TO BE INCLUDED IN THE OVERALL EARTHWORKS FIGURE UNLESS A SPECIFIC ITEM FOR REMOVAL IS DENOTED IN THE SCHEDULE
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK. ALL EXISTING SERVICES AND STRUCTURES ARE TO BE MAINTAINED IN GOOD ORDER FOR THE DURATION OF THE CONTRACT. ANY COSTS ASSOCIATED WITH REPAIRING DAMAGE TO EXISTING SERVICES SHALL BE BORNE BY THE CONTRACTOR
- THE SITE OF THE PROPOSED WORKS SHALL BE CLEARED OF ALL UNDESIRABLE MATTER. THIS SHALL INCLUDE DEAD TIMBER, BOULDERS, GRASS, OLD FOUNDATIONS, CONCRETE, REDUNDANT BUILDING MATERIALS, GARBAGE, DEBRIS AND OTHER OBSTRUCTIONS. HOLES LEFT BY THE REMOVAL OF MATERIAL SHALL BE FILLED WITH APPROVED COMPACTED MATERIAL
- CLEARED MATERIAL AND EARTHWORKS SPOIL SHALL BE REMOVED FROM SITE. NO FILL OR STOCKPILING OF MATERIAL IS TO BE PLACED ON ANY RESERVE OR COMMON PROPERTY UNLESS OTHERWISE DIRECTED BY THE SITE ENGINEER OR SUPERINTENDENT.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OPERATION. TOPSOIL IS TO BE RESPIRED TO LANDSCAPE AREAS AFTER CIVIL WORKS ARE COMPLETE. SURPLUS TOPSOIL TO BE REMOVED FROM SITE
- ALL BATTERS SHALL BE 1 IN 4, UNLESS OTHERWISE SHOWN.
- THE LOCATION OF EXISTING SERVICES SHOWN ON THESE PLANS SHALL BE PROVEN ON SITE. THE APPROPRIATE AUTHORITY SHALL BE CONTACTED AND THE SERVICES LOCATED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- BULK EARTHWORKS LEVELS AT BUILDING PLATFORMS ARE BASED ON PRELIMINARY FOUNDATION DESIGNS. LEVELS TO SUIT FINAL DESIGN SHOULD BE CONFIRMED PRIOR TO FINAL TRIM OF BUILDING PLATFORMS

EARTHWORKS NOTES

- GENERAL EARTHWORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL REGIONAL COUNCIL.
- THE CONTRACTOR SHALL PREPARE THE SUBGRADE FOR PROOF ROLLING TO BE WITNESSED BY THE SUPERINTENDENT AND SITE ENGINEER. PROOF ROLLING SHALL BE CARRIED OUT BY FULLY LADEN WATER TRUCK OR SIMILAR CONSTRUCTION MACHINERY APPROVED BY THE SUPERINTENDENT.
- FILLING SHALL BE COMPACTED IN LAYERS TO A DENSITY NOT LESS THAN 95% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.1.1 (STANDARD COMPACTION). ROADWAY EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH QUEENSLAND DEPARTMENT OF MAIN ROADS SPECIFICATION MRS04 GENERAL EARTHWORKS.
- THE VOID BENEATH THE STIFFENED SLAB IS TO BE FILLED WITH NON-REACTIVE FILL MATERIAL WITH A MAXIMUM SHRINK-SWELL INDEX NO GREATER THAN 1% PER ΔpF.

TREE PROTECTION NOTES

- TREE PROTECTION MEASURES (TPZ FENCE & GROUND PROTECTION) ARE TO BE INSTALLED IN ACCORDANCE WITH AS 4970-2009 PROTECTION OF TREES ON DEVELOPMENT SITES.
- WHERE TREES TO BE RETAINED HAVE A >10% ENCROACHMENT INTO THE TPZ, THE FOLLOWING CONDITION APPLY:
 - 100mm DEPTH OF FOREST MULCH TO BE APPLIED TO TPZ

EROSION AND SEDIMENT CONTROL NOTES

- ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH.
 - a. LOCAL AUTHORITY REQUIREMENTS.
 - b. EPA - POLLUTION CONTROL MANUAL FOR URBAN STORMWATER.
 - c. ICEA - BEST PRACTICE EROSION & SEDIMENT CONTROL.
- EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES ARE PROVIDED FOR THE WHOLE OF THE WORKS. SHOULD THE CONTRACTOR STAGES THESE WORKS THEN THE DESIGN MAY BE REQUIRED TO BE MODIFIED. VARIATION TO THESE DETAILS MAY REQUIRE APPROVAL BY THE RELEVANT AUTHORITIES. THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE IMPLEMENTED AND ADOPTED TO MEET THE VARYING SITUATIONS AS WORK ON SITE PROGRESSES.
- MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
- WHEN STORMWATER PITS ARE CONSTRUCTED PREVENT SITE RUNOFF ENTERING THE PITS UNLESS SILT FENCES ARE ERECTED AROUND PITS.
- MINIMISE THE AREA OF SITE BEING DISTURBED AT ANY ONE TIME.
- PROTECT ALL STOCKPILES OF MATERIALS FROM SCOUR AND EROSION. DO NOT STOCKPILE LOOSE MATERIAL IN ROADWAYS, NEAR DRAINAGE PITS OR IN WATERCOURSES.
- ALL SOIL AND WATER CONTROL MEASURES ARE TO BE PUT BACK IN PLACE AT THE END OF EACH WORKING DAY, AND MODIFIED TO BEST SUIT SITE CONDITIONS.
- CONTROL WATER FROM UPSTREAM OF THE SITE SUCH THAT IT DOES NOT ENTER THE DISTURBED SITE.
- ALL CONSTRUCTION VEHICLES SHALL ENTER AND EXIT THE SITE VIA THE TEMPORARY CONSTRUCTION ENTRY /EXIT.
- ALL VEHICLES LEAVING THE SITE SHALL BE CLEANED AND INSPECTED BEFORE LEAVING.
- CLEAN OUT ALL EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH STORM EVENT.
- AFTER EACH RUNOFF EVENT, INSPECT THE EROSION DAMAGE AT EARTH BUNDS AND SEDIMENT

TENDER NOTES

- THESE DRAWINGS ARE PRELIMINARY DRAWINGS ISSUED FOR TENDER AS AN INDICATION OF THE EXTENT OF WORKS ONLY. THEY ARE NOT A COMPLETE CONSTRUCTION SET OF DRAWINGS.
- TO DETERMINE THE FULL EXTENT OF WORK, THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND OTHER CONTRACT DOCUMENTS. ALLOW FOR ALL ITEMS SHOWN ON ARCHITECTURAL AND OTHER DRAWINGS AS NOT ALL ITEMS ARE SHOWN ON THE STRUCTURAL/CIVIL WORKS DRAWINGS.
- SHOULD ANY AMBIGUITY, ERROR, OMISSIONS, DISCREPANCY, INCONSISTENCY OR OTHER FAULT EXIST OR SEEM TO EXIST IN THE DOCUMENTS, IMMEDIATELY NOTIFY IN WRITING TO THE SUPERINTENDENT.
- RATES SHOWN ON THE DRAWINGS ARE FOR THE FINAL STRUCTURE/CIVIL WORKS IN PLACE AND DO NOT ALLOW FOR ANY WASTAGE, ROLLING MARGINS, OVER SUPPLY OR FABRICATION REQUIREMENTS.

- FCENES. IF DAMAGE HAS OCCURRED MAKE THE NECESSARY REPAIRS.
- CHECK ALL EMBANKMENTS FOR EXCESSIVE SETTLEMENT, SLUMPING OF THE SLOPES; MAKE ALL NECESSARY REPAIRS.
 - SEDIMENT FLOCCULATION IS REQUIRED PRIOR TO DISCHARGE OF ACCUMULATED RUNOFF ON SEDIMENT BASINS.

APPLICATION

- GENERALLY GYPSUM IS MIXED INTO SLURRY WITH WATER AND THEN SPRAYED OVER THE PONDED WATER. ALTERNATE FLOCCULENTS SHOULD BE APPLIED PER MANUFACTURER GUIDELINES. IT IS ESSENTIAL THAT THE FLOCCULATING AGENT IS SPREAD EVENLY OVER THE ENTIRE SURFACE FOR PROPER TREATMENT OF WATER UNLESS LOCAL EXPERIENCE OR OTHER CRITERIA SUGGEST DIFFERENTLY.
- STANDARD BASIN FLOCCULATION RATES FOR GYPSUM GENERALLY VARY BETWEEN 32 KILOGRAMS PER 100 CUBIC METRES TO 70 KILOGRAMS PER 100 CUBIC METRES IN AREAS WHERE REPEATED HIGH INTENSITY STORMS ARE LIKELY. THE APPLICATION RATE MUST BE CALIBRATED.
- SETTLEMENT TIME - NORMALLY, SUFFICIENT SEDIMENT WILL HAVE FLOCCULATED AND SETTLES WITHIN ABOUT 24 TO 48 HOURS IN THE CASE OF GYPSUM. HOWEVER, RESULTS MAY BE EVIDENT SOONER DEPENDING ON THE FLOCCULENT AGENT.

WATER QUALITY & TESTING

- A SUSPENDED SOLID CONTENT OF LESS THAN 50 MILLIGRAMS PER LITRE IS REQUIRED.
 - TURBIDITY (NTU) VALUE LESS THAN OR EQUAL TO 8 NTU PER THE ACID SULFATE SOILS MANAGEMENT PLAN.
 - PH VALUE MUST BE IN THE RANGE 7.0 TO 8.4 PER THE ACID SULFATE SOILS MANAGEMENT PLAN.
 - UPON THE FIRST DISCHARGES, OBTAIN SAMPLES AND TEST SAMPLES IN A LABORATORY TO ENSURE THAT THE SUSPENDED SOLID CONTENT, TURBIDITY, AND PH ARE WITHIN ACCEPTABLE LEVELS. REGULAR SAMPLING OF THE DISCHARGED WATER SHOULD BE COMPLETED TO VERIFY COMPLIANCE WITH TSS, TURBIDITY AND PH DISCHARGE REQUIREMENTS.
 - WATER QUALITY RESULTS ARE TO BE RECORDED WITHIN A WATER QUALITY TESTING REGISTER.
- WATER DISCHARGE
- DISCHARGE SHOULD BE ACHIEVED WITH A SYSTEM THAT:
 - PERMITS DRAINAGE OF THE BASIN IN LESS THAN 24 HOURS.
 - THE OUTFLOW MUST NOT CAUSE EROSION OR ADVERSELY AFFECT DOWNSTREAM ENVIRONMENTS.
 - A MARKER PEG SHOULD BE INSTALLED IN THE BASIN TO CLEARLY IDENTIFY THE MAXIMUM SEDIMENT STORAGE LEVEL.
 - SEDIMENT EXTRACTED FROM THE BASIN SHALL BE SUITABLY DISPOSED OF IN SEDIMENT DUMPS, OR MIXED WITH ON-SITE SOILS IN A MANNER THAT WILL NOT RESULT IN UNNECESSARY SOIL EROSION OR SEDIMENT RUNOFF FROM THE SITE. OTHERWISE, THE SEDIMENT SHALL BE DRIED AND REMOVED FROM THE SITE.

SEQUENCE OF WORKS

- PRIOR TO COMMENCEMENT OF EXCAVATION THE FOLLOWING SOIL MANAGEMENT DEVICES MUST BE INSTALLED.
 - CONSTRUCT SILT FENCES BELOW THE SITE AND ACROSS ALL POTENTIAL RUNOFF SITES
 - CONSTRUCT TEMPORARY CONSTRUCTION ENTRY EXIT AND DIVERT RUNOFF TO SUITABLE CONTROL SYSTEMS
 - CONSTRUCT MEASURES TO DIVERT UPSTREAM FLOWS INTO EXISTING STORMWATER SYSTEM
 - CONSTRUCT SEDIMENTATION TRAPS BASIN INCLUDING OUTLET CONTROL AND OVERFLOW

PROVIDE SANDBAG SEDIMENT TRAPS UPSTREAM OF EXISTING PITS.

ROADWORKS:

- ALL DIMENSIONS AND SETOUT ARE TO LIP OF KERB U.N.O.
- LEVELS ARE TO FACE OF KERB/LIP OF KERB/KERB AND CHANNEL U.N.O.
- PAVEMENT DEPTHS SHOWN ON THE DRAWINGS ARE NOMINAL ONLY AND SHALL BE DETERMINED AFTER INSPECTION AND TESTING OF SUBGRADE. THE CONTRACTOR SHALL IN ALL CASES OBTAIN PARTICULARS OF THE PAVEMENT THICKNESS BEFORE PROCEEDING WITH THE FORMATION OF THE ROAD BOX. CBR TESTING SHALL BE UNDERTAKEN AT 25m INTERVALS ALONG THE PAVEMENT AND ANY ADDITIONAL LOCATIONS DETERMINED BY THE GEOTECHNICAL ENGINEER/OR SUPERINTENDENT SUPERVISING THE WORKS AND SHALL BE AT LEAST THE MINIMUM SPECIFIED IN THE PROJECT SPECIFICATION.
- PAVEMENTS MATERIALS SHALL BE AS FOLLOWS:
 - ASPHALTIC CONCRETE TO AS 2150;
 - BASE COURSE - DTMR TYPE 2.1, SOAKED CBR 80;
 - SUBBASE COURSE - DTMR TYPE 2.3, SOAKED CBR 45;
 - SUBGRADE REPLACEMENT - DTMR TYPE 2.5, SOAKED CBR 15;
- MINIMUM PAVEMENT COMPACTION TO BE AS FOLLOWS;
 - SUBBASE AND BASE - 95% MODIFIED MAXIMUM DRY DENSITY TO AS1289.5.4.1
- SUB-SOIL DRAINAGE SHALL BE INSTALLED UNDER ALL NEW KERB AND CHANNEL AND ROAD EDGES AND GRADED TO CONNECT WITH DRAINAGE INLET PITS AT A MINIMUM OF 0.5%.
- EARTHWORKS SUBGRADE SHALL BE COMPACTED TO 98% R.D.D STANDARD COMPACTION
- GRAVEL PAVEMENT SHALL BE CRUSHED ROCK OR SOIL AGGREGATE HAVING A FOUR DAY CBR SOAKED VALUE OF 80 AND COMPACTED TO 95% R.D.D. MODIFIED COMPACTION.
- ASPHALT SURFACING SHALL BE MIN. 30mm COMPACTED THICKNESS AND IN ACCORDANCE WITH DEPARTMENT OF TRANSPORT AND MAIN ROAD SPECIFICATIONS.
- SUBSOIL DRAIN SHALL BE IN ACCORDANCE WITH IPWEAQ STD DRG RS-140 AND 142.
- CONSTRUCTION OVER PIPES TO USE SUITABLE CONSTRUCTION/COMPACTION PLANT TO ENSURE MAXIMUM STRUCTURAL CAPACITY OF PIPEWORK IS NOT EXCEEDED.
- ALL WORKS TO CONFORM TO LOCAL AUTHORITY STANDARDS U.N.O.
- ALL IMPORTED AND EXPORTED MATERIALS ARE TO BE TRANSPORTED ONLY ON ROUTES APPROVED BY THE LOCAL AUTHORITY.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE SAFETY OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION.
- COMPACTION TEST RESULTS AND TEST LOCATIONS FOR SUBGRADE SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEERS PRIOR TO PLACING PAVEMENT MATERIALS.
- PROOF ROLL TESTS OF THE SUBGRADE ARE TO BE UNDERTAKEN TO IDENTIFY LOCALISED POOR GROUND TO BE REMOVED, OR REWORKED PRIOR TO THE PLACING OF PAVEMENT MATERIAL.
- ALL LAYERS OF PAVEMENT WORKS AND EARTHWORKS ARE TO BE PROOF ROLLED AND TESTED AS PER THE SPECIFICATION, AND TO THE APPROVAL OF THE SUPERINTENDENT.
- ALL CONSTRUCTION SHALL JOIN SMOOTHLY AND NEATLY TO EXISTING SURFACES AND STRUCTURES. TACTILE INDICATORS TO BE PROVIDED AT PRAM RAMPS WHERE THEY CONNECT WITH CONCRETE FOOTPATH

SIGNAGE AND LINEMARKING

- ALL WORKS TO BE IN ACCORDANCE WITH AS1742, AS2890 AND DTMR MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL LINEMARKING AND SIGNAGE TO BE IN ACCORDANCE WITH LOCAL COUNCIL'S LINEMARKING AND TRAFFIC MANUALS.

CONCRETE

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 UNLESS SHOWN OTHERWISE.

- CONCRETE SHALL HAVE A STRENGTH GRADE OF N32 UNLESS NOTED OTHERWISE.
- NOMINAL MAXIMUM AGGREGATE SIZE SHALL BE 20mm UNLESS NOTED OTHERWISE.
- CONCRETE SLUMP SHALL BE NOMINAL 80mm UNLESS NOTED OTHERWISE.
- ADMIXTURES SHALL NOT BE USED WITHOUT WRITTEN APPROVAL.
- ALL CONCRETE SURFACES SHALL BE CURED BY APPROVED MEANS FOR A MINIMUM CONTINUOUS DURATION OF 7 DAYS COMMENCING IMMEDIATELY AFTER THE INITIAL SET OF THE CONCRETE.
- CONCRETE COVER TO REINFORCEMENT INCLUDING FITMENTS SHALL BE 50mm UNLESS NOTED OTHERWISE.
- CONCRETE FACES AT CONSTRUCTION JOINTS SHALL BE THOROUGHLY SCABBLED, FREE OF LAITANCE, CLEANED AND WETTED THOROUGHLY PRIOR TO THE PLACEMENT OF ABUTTING CONCRETE.
- CONSTRUCTION JOINTS WHERE NOT SHOWN ON THE DRAWINGS SHALL BE LOCATED TO THE APPROVAL OF THE SUPERINTENDENT.

STORMWATER

- ALL PIPES LESS THAN OR EQUAL TO Ø225mm ARE TO BE SOLVENT WELD-JOINTED SEWER GRADE uPVC CLASS SH, OR (min) CLASS 2 RUBBER-RING JOINTED RCP (UNO).
- WHERE uPVC STORMWATER LINES PASS UNDER FLOOR SLABS SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
- PIPES GREATER THAN OR EQUAL TO Ø300mm ARE TO BE (min) CLASS 2 RUBBER-RING JOINTED RCP (UNO).
- FRC PIPES EQUIVALENT TO THE STEEL REINFORCED CONCRETE PIPE CLASS SPECIFIED ON THE DRAWINGS MAY BE USED - OBTAIN SUPERINTENDENTS APPROVAL.
- ALL PIPES ARE TO BE LAID AT (min) 1.0% GRADE (UNO)
- THE USE OF PRE-CAST STORMWATER DRAINAGE PITS IS NOT ACCEPTED WITHOUT CONFIRMATION BETWEEN EDGE AND THE CONTRACTOR REGARDING QUALITY CONTROL, AND CERTIFICATION OF FINISHES.
- COVERS
 - USE HOT DIPPED GALVANISED COVERS AND GRATES COMPLYING WITH RELEVANT AUSTRALIAN AND COUNCIL STANDARDS.
 - ALL COVERS AND GRATES TO BE POSITIONED IN A FRAME AND MANUFACTURE AS A UNIT
 - ALL COVERS AND GRATES TO BE FITTED WITH POSITIVE COVER LIFTING KEYS.
 - OBTAIN SUPERINTENDENT'S APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPERMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.
 - UNLESS DETAILED OR SPECIFIED OTHERWISE COVERS AND GRATES TO BE CLASS "C" IN VEHICULAR PAVEMENTS AND CLASS "B" ELSEWHERE.
- ALL PIPE BENDS, JUNCTIONS, ETC. ARE TO BE PROVIDED USING PURPOSE MADE FITTINGS OR STORMWATER PITS.
- ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT PIPE PENETRATIONS SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
- THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTERS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
- U.N.O. MATERIAL USED FOR BEDDING OF PIPES SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED AND FREE OF ORGANIC AND CLAY MATERIAL.
- 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.
- BEDDING SHALL BE (UNO) TYPE HS2 UNDER ROADS; H2 GENERAL AREAS, IN ACCORDANCE WITH CURRENT RELEVANT INDUSTRY STANDARDS AND GUIDELINES.
- THE WEATHER PROOFING OF THE BUILDING IS THE ARCHITECT'S /BUILDER'S RESPONSIBILITY. THIS INCLUDES THE SPECIFICATION AND FIXING DETAILS OF CLADDINGS, SHEETING, FLASHING AND MEMBRANES.
- THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT, AND AT NO EXTRA COST.
- NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH ARE 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER.
- Ø100mm SUB-SOIL DRAINAGE LINES WITH NON-WOVEN GEOTEXTILE SOCK SURROUND SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT (AT min. 1% LONGITUDINAL GRADE) AND PROVIDED IN THE FOLLOWING LOCATIONS:
 - THE HIGH SIDE OF PROPOSED TRAFFICKED AND CARPARK PAVEMENT AREAS.
 - ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS.
 - BEHIND RETAINING WALLS (IN ACCORDANCE WITH DRAWINGS).
 - ALL OTHER AREAS SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL INSPECTION OPENINGS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS, AT MAXIMUM 60m CENTERS AND AT ALL UPSTREAM ENDPOINTS.
- WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS SEALED uPVC SEWER GRADE PIPE SHALL BE USED.
- PROVIDE 3.0m LENGTH OF Ø100 SUBSOIL DRAINAGE PIPE WRAPPED IN A NON-WOVEN GEOTEXTILE FABRIC, TO THE UPSTREAM SIDE OF STORMWATER PITS, LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO THE DRAINAGE PIT.
- ALL RECTANGULAR HOLLOW SECTIONS (RHS) SPECIFIED AS STORMWATER CONDUITS TO BE HOT DIPPED GALVANISED AND HAVE (MINIMUM) 5mm WALL THICKNESS.

WARNING

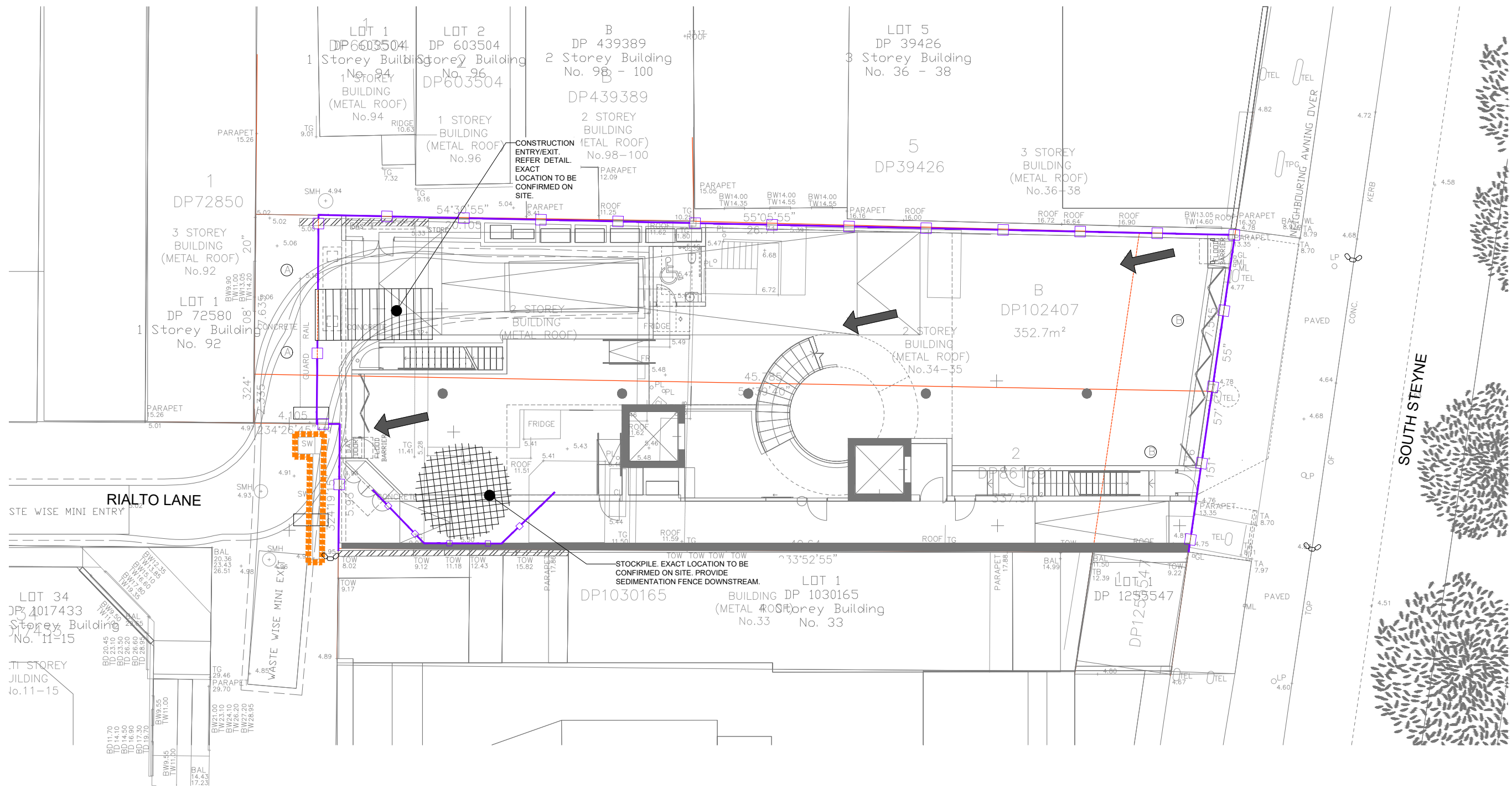
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REVISION

DATE

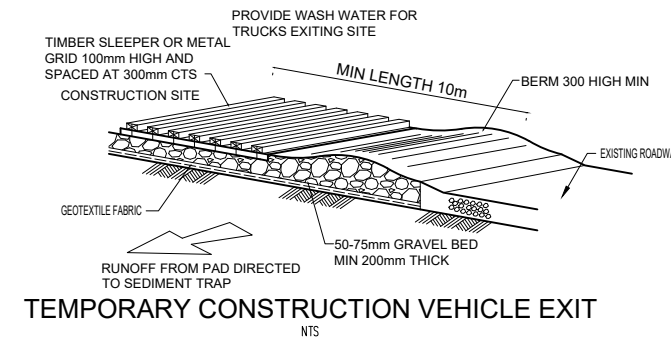
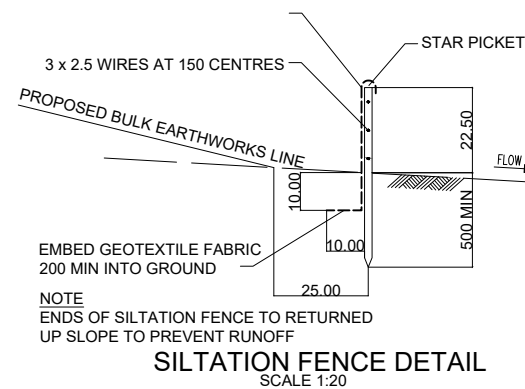
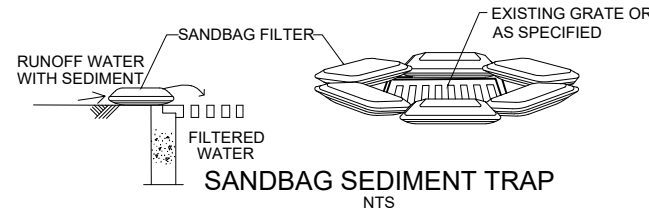
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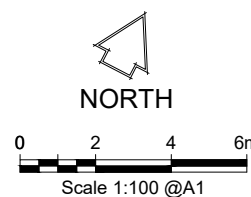
LEGEND

- PROPERTY BOUNDARY
- PROPOSED SEDIMENT FENCE
- PROPOSED SEDIMENTATION TRAP
- PROPOSED STORMWATER PIT
- FLOW DIRECTION
- SANDBAG SEDIMENT TRAP



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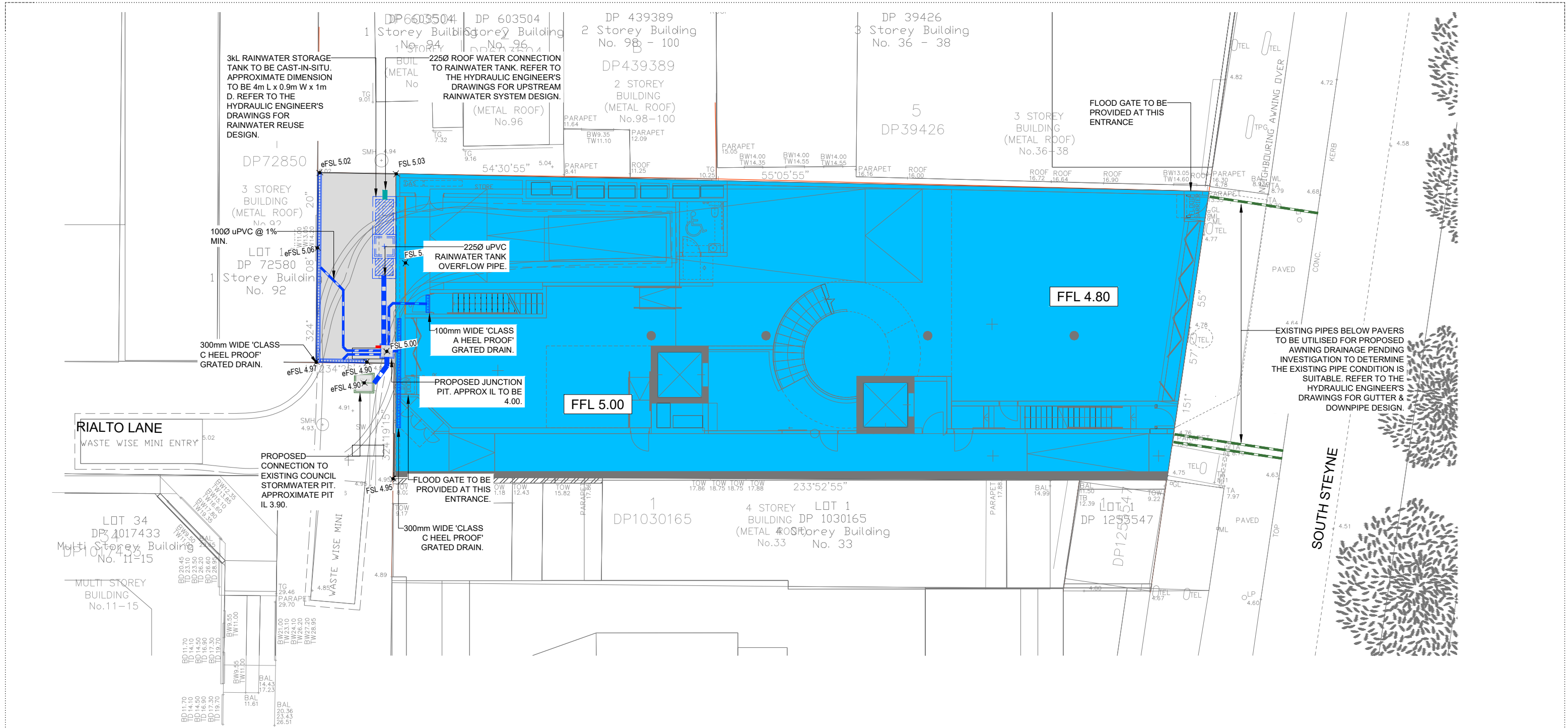
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LEGEND

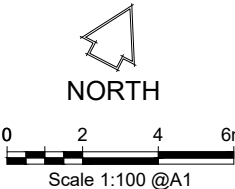
- PROPERTY BOUNDARY
- PROPOSED STORMWATER PIPE
- PROPOSED RAINWATER PIPE
- PROPOSED STORMWATER RISING MAIN
- EXISTING STORMWATER PIPE
- PROPOSED GRATED DRAIN
- PROPOSED FINISHED SURFACE LEVEL
- PROPOSED STORMWATER PIT
- PROPOSED STORMWATER DROPPER
- PROPOSED BUILDING
REFER STRUCTURAL DWGS
- EXISTING CONCRETE SLAB
REFER STRUCTURAL DWGS

NOTES:

- CONTRACTOR TO READ DRAWING IN CONJUNCTION WITH ARCHITECT'S, STRUCTURAL AND HYDRAULIC ENGINEER'S PLANS.
- CONTRACTOR TO CONFIRM LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS AND NOTIFY ENGINEER IF ANY DISCREPANCY OR POTENTIAL CLASH IS NOTED. ALL EXISTING SERVICES TO BE RETAINED UNO. ALL LIDS WITHIN EXTENT OF WORKS TO BE MODIFIED.
- REFER HYDRAULIC ENGINEER FOR ALL ROOF WATER/BALCONY OUTLET/ SUSPENDED DRAINAGE CONNECTIONS. CONTRACTOR TO ALLOW FOR ALL PROPRIETARY FITTINGS/CONNECTIONS TO PROPOSED INGROUND STORMWATER SYSTEM.
- ALL LEVELS ARE TBC PENDING REVISED ARCHITECTURAL DRAWINGS DETAILING THE REVISED FFL.

WARNING

THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING SERVICES ON AND EXTERIOR TO THE SITE INCLUDING WATER MAINS, SEWER MAINS, GAS MAINS, TELECOMMUNICATIONS CABLES, ELECTRICAL CABLES, AND STORMWATER PIPES. ANY DAMAGE TO EXISTING SERVICES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.



P3 30.06.22 ISSUED FOR DA		KE	CV
P2 06.06.22 ISSUED FOR CLIENT REVIEW		KE	CV
P1 06.05.22 PRELIMINARY ISSUE		KE	CV
Rev	Date	Description	By



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DO NOT SCALE DRAWINGS. IF IN DOUBT, ASK!

Project Name
COMMERCIAL DEVELOPMENT
34-35 SOUTH STEYNE
MANLY 2095

Client
FORTIS DEVELOPMENT GROUP

Designed
KE

Drawn
KE

Checked
CV

Scale @ A1
1:100

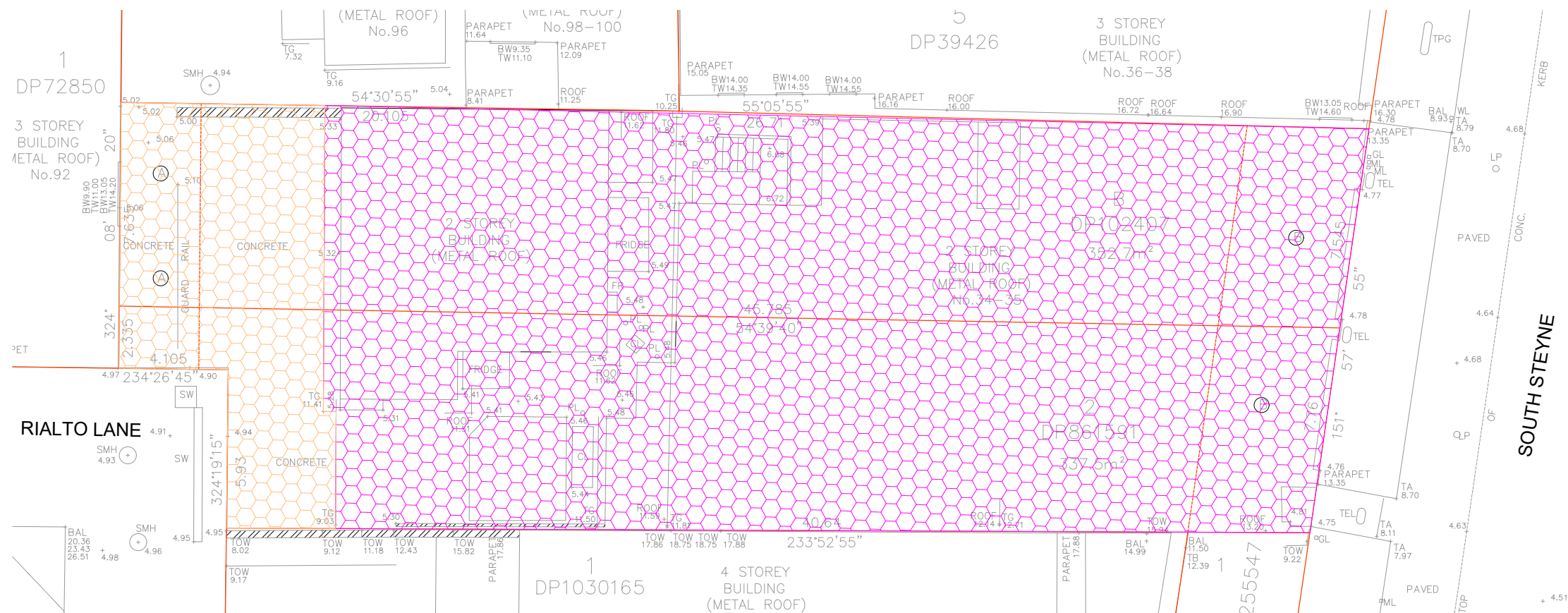
Drawing Title
GROUND STORMWATER
LAYOUT

Project No.
220553

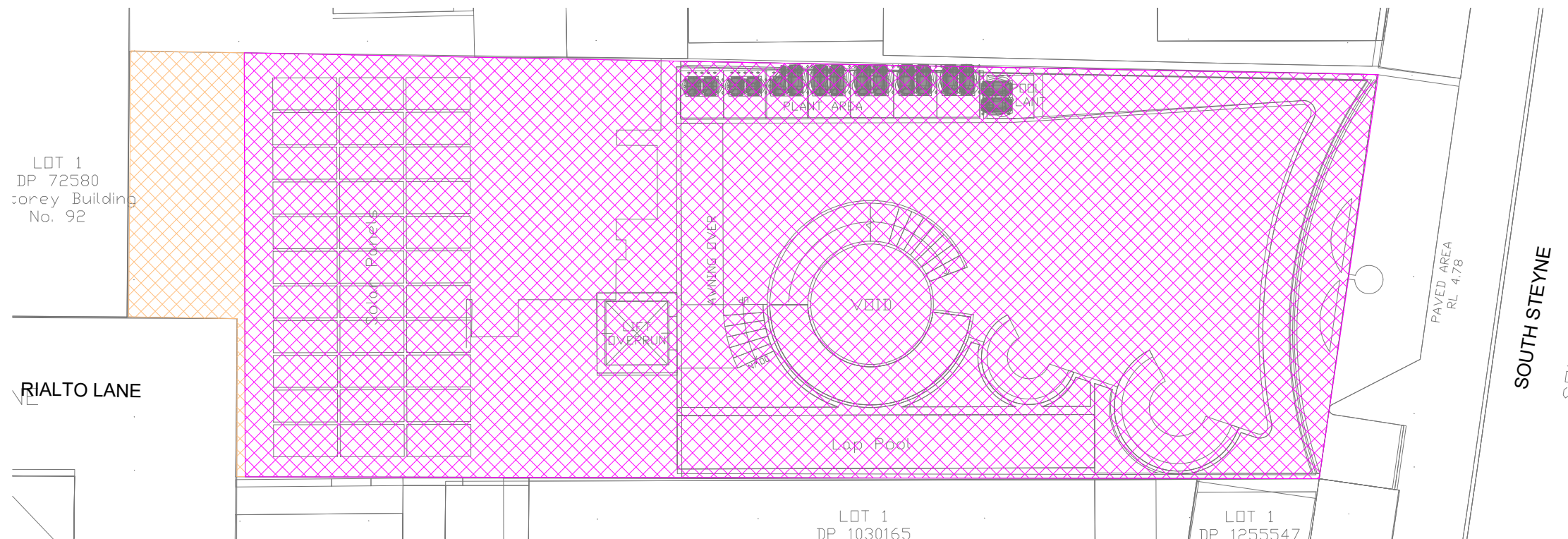
Drawing No.
C-301

PRELIMINARY

Revision
P3



PRE DEVELOPMENT



POST DEVELOPMENT

CATCHMENT CALCULATIONS

CATCHMENT AREAS (m²)		
	PRE DEVELOPMENT	POST DEVELOPMENT
ROOF	590	645
IMPERVIOUS	100	45
TOTAL AREA	690	690

SITE DISCHARGE CALCULATIONS

	5% AEP (Annual Exceedance Probability)	1% AEP (Annual Exceedance Probability)
PRE-DEVELOPMENT	36.6 L/S	54.7 L/S
POST-DEVELOPMENT	36.6 L/S	54.7 L/S

THE ABOVE CALCULATIONS ARE BASED ON A RATIONAL METHOD CALCULATION

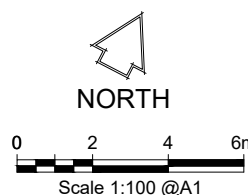
Q = C.I.A
WHERE Q = FLOW
C = COEFFICIENT OF RUNOFF
5% AEP = 0.945 PRE / 0.945 POST
1% AEP = 1.080 PRE / 1.080 POST
I = RAINFALL DURATION (5 MIN)
5% AEP = 202 mm/hr
1% AEP = 264 mm/hr
A = AREA
REFER TO CATCHMENT AREAS ABOVE

LEGEND

- PRE DEVELOPMENT IMPERVIOUS GROUND AREA
- PRE DEVELOPMENT ROOF AREA
- POST DEVELOPMENT IMPERVIOUS GROUND AREA
- POST DEVELOPMENT ROOF AREA

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Project Name COMMERCIAL DEVELOPMENT 34-35 SOUTH STEYNE MANLY 2095	
Client FORTIS DEVELOPMENT GROUP	
Designed KE	Drawn CV
Checked CV	Scale @ A1 1:100

Drawing Title PRE & POST CATCHMENT PLAN	
Project No. 220553	PRELIMINARY
Drawing No. C-391	
Revision P2	