YIRIBANA WEST LOGISTICS ESTATE 771-797 MAMRE ROAD, KEMPS CREEK, NSW, 2178 CIVIL DRAWING SET FOR DEVELOPMENT APPLICAITON

DRAWING LIST:

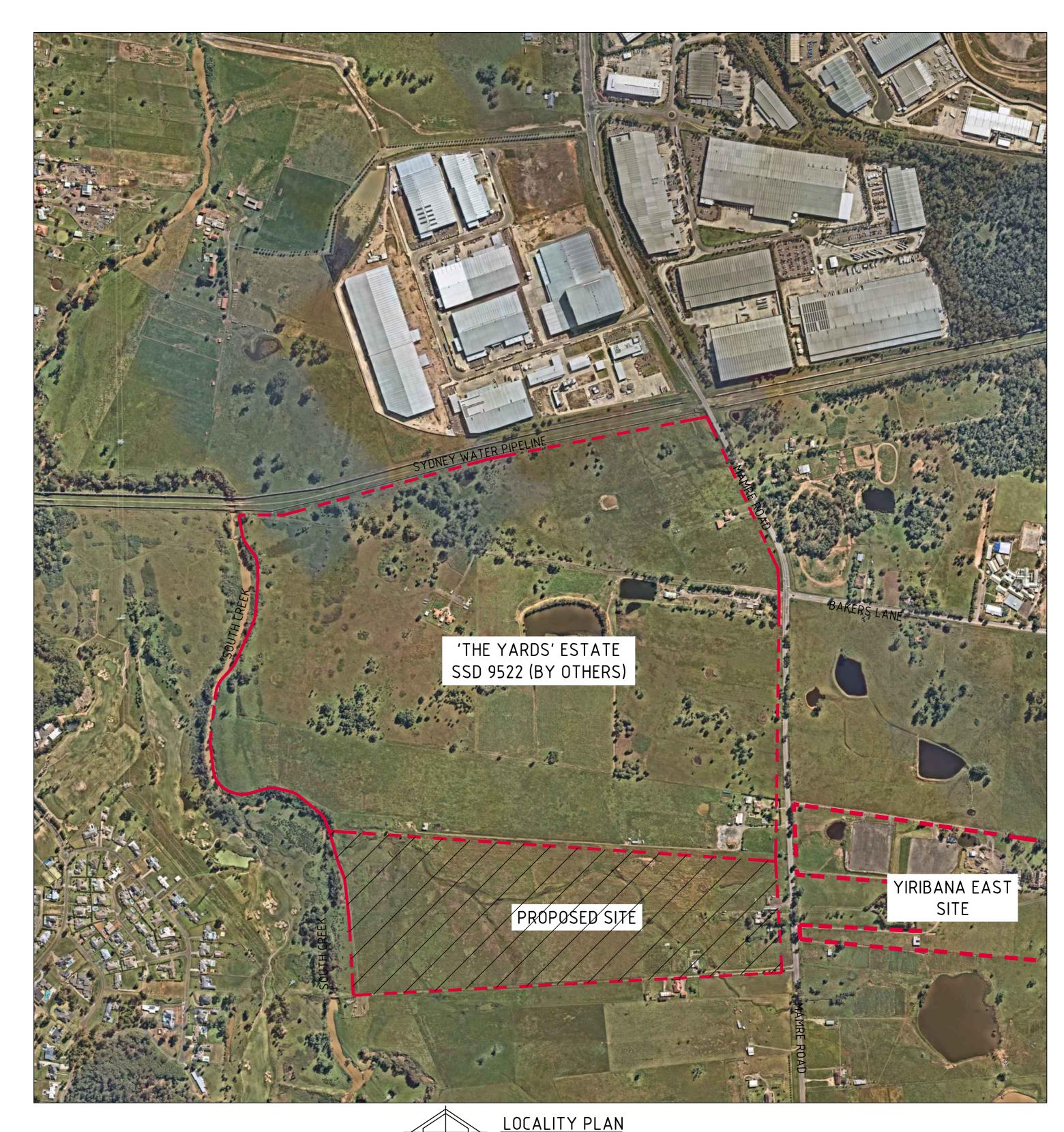
DRAWING NO.	DRAWING TITLE
CO14429.00-DA10	DRAWING LIST & GENERAL NOTES
CO14429.00-DA11	GENERAL NOTES - SHEET 2
CO14429.00-DA21	EROSION & SEDIMENT CONTROL PLAN – STAGE 1
CO14429.00-DA21	EROSION & SEDIMENT CONTROL PLAN - STAGE 2
CO14429.00-DA25	
	EROSION & SEDIMENT CONTROL DETAILS - SHEET 1
CO14429.00-DA26	EROSION & SEDIMENT CONTROL DETAILS - SHEET 2
CO14429.00-DA30	CUT/FILL PLAN
CO14429.00-DA40	DRAWING KEY PLAN
CO14429.00-DA41	CONCEPT STORMWATER DRAINAGE PLAN-SHEET 1
CO14429.00-DA42	CONCEPT STORMWATER DRAINAGE PLAN-SHEET 2
CO14429.00-DA43	CONCEPT STORMWATER DRAINAGE PLAN-SHEET 3
CO14429.00-DA44	CONCEPT STORMWATER DRAINAGE PLAN-SHEET 4
CO14429.00-DA45	CONCEPT STORMWATER DRAINAGE DETAILS-SHEET 1
CO14429.00-DA46	CONCEPT STORMWATER DRAINAGE DETAILS-SHEET 2
CO14429.00-DA47	WATER SENSITIVE URBAN DESIGN MANAGEMENT PLAN
CO14429.00-DA48	STORMWATER BASIN PLAN
CO14429.00-DA49	WATER QUALITY CATCHMENT PLAN
CO14429.00-DA50	ROADWORKS LONG SECTION & TYPICAL SECTIONS & DETAILS
CO14429.00-DA51	ROADWORKS MASTERPLAN
CO14429.00-DA52	RE1 CHANNEL RE-ALIGNMENT LONGSECTION & TYPICAL CROSS SECTION
CO14429.00-DA55	TYPICAL SECTIONS-SHEET 1
CO14429.00-DA56	TYPICAL SECTIONS-SHEET 2
CO14429.00-DA71	PRE DEVELOPMENT STORMWATER CATCHMENT PLAN
CO14429.00-DA71	
CU14427.UU-DA12	POST-DEVELOPMENT STORMWATER CATCHMENT PLAN
CO14429.00-MP01	CONCEPT STORMWATER DRAINAGE AND WATER QUALITY MASTERPLAN-OPTION 1
CO14429.00-MP02	CONCEPT STORMWATER DRAINAGE AND WATER QUALITY MASTERPLAN-OPTION 2

GENERAL NOTES:

- G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- G2 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
- G3 ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.
- G4 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- G5 UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- G6 ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE
- G7 ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH PENRITH CITY COUNCIL'S ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS

ELECTRONIC INFORMATION NOTES:

- 1. THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
- 2. THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL AND ITS SUBSEQUENT USE TO UNDERTAKE THE WORKS WILL BE SOLELY AT THE DISCRETION OF AND THE RISK OF THE CONTRACTOR.
- 3. THE CONTRACTOR IS REQUIRED TO HIGHLIGHT ANY DISCREPANCIES BETWEEN THE DIGITAL TERRAIN MODEL AND INFORMATION PROVIDED IN THE CONTRACT AND/OR DRAWINGS AND IS REQUIRED TO SEEK CLARIFICATION FROM THE SUPERINTENDENT.
- 4. THE ENGINEER WILL NOT BE LIABLE OR RESPONSIBLE FOR THE POSSIBLE ON-GOING NEED TO UPDATE THE DIGITAL TERRAIN MODEL, SHOULD THERE BE ANY AMENDMENTS OR CHANGES TO THE DRAWINGS OR CONTRACT INITIATED BY THE CONTRACTOR.



NOT TO SCALE

FOR DEVELOPMENT APPLICATION











DRAWING LIST AND GENERAL NOTES

C014429.00-DA10

KEMPS CREEK, 2178, NSW DESIGNED DRAWN DATE CHECKED SIZE SCALE CAD REF:
MC MC OCT 22 MW DA10 A0 AS SHOWN C014429.00CIVIL &

ENGINEERS

EXISTING SERVICES NOTES:

- DURING THE EXECUTION OF WORKS, THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING SERVICES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED TO THE EXISTING SERVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT SERVICE AUTHORITY, AT NO COST TO THE PRINCIPAL
- WHERE IT IS NECESSARY TO REMOVE, DIVERT OR CUT INTO ANY EXISTING SERVICE, THE CONTRACTOR SHALL GIVE AT LEAST THREE (3) DAYS NOTICE OF ITS REQUIREMENTS TO THE SUPERINTENDENT, WHO WILL ADVISE WHAT ARRANGEMENTS SHOULD BE MADE FOR THE ALTERATION OF SUCH EXISTING WORKS.
- EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA. THE ACCURACY IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCING WORK. ALL CLEARANCES AND APPROVALS SHALL ALSO BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY PRIOR TO THE COMMENCEMENT OF WORK.
- ALL NEW AND EXHUMED SERVICES THAT CROSS EXISTING AND FUTURE ROADS/PAVEMENTS WITHIN THE SITE SHALL BE BACKFILLED WITH DGB20 MATERIAL TO SUBGRADE LEVEL AND COMPACTED TO 98% STANDARD DENSITY RATIO. SUBJECT TO PRIOR APPROVAL FROM RELEVANT AUTHORITY
- ON COMPLETION OF SERVICES INSTALLATION. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AREAS, GRASSED AREAS AND ROAD PAVEMENTS.
- CARE TO BE TAKEN WHEN EXCAVATING NEAR UTILITY SERVICES. NO MECHANICAL
- EXCAVATION TO BE UNDERTAKEN OVER SERVICES. LIAISE WITH RELEVANT AUTHORITY THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS WITHIN THE CONTRACT AREA AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE
- SUPERINTENDENT. ALL TO REGULATORY AUTHORITY STANDARDS AND APPROVAL THE CONTRACTOR IS TO MAINTAIN EXISTING STORMWATER DRAINAGE FLOWS THROUGH THE ROADS AT ALL TIMES. MAKE DUE ALLOWANCE FOR ALL SUCH FLOWS AT ALL TIMES.
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN THE SUPERINTENDENT'S APPROVAL OF THE PROGRAM FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
- 10. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES AS REQUIRED TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT
- 11. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE OR DAMAGE TO THE ADJACENT RESIDENCES. CONTRACTOR TO GAIN APPROVAL OF THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
- THE CONTRACTOR SHALL UNDERTAKE A DIAL BEFORE YOU DIG (DBYD 1100) SERVICES SEARCH BEFORE THE COMMENCEMENT OF ANY WORKS

SITE PREPARATION NOTES:

- ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL REPORT 'PSM4443-002L' PROVIDED BY PSM **DATED** 25.05.21.
- EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY BOXALL SURVEYORS TITLED 11220-004 DATED 28.10.2022.
- STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE
- AS DIRECTED. COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED
- ON THE DRAWINGS WITHIN A TOLERANCE OF +0mm/-10mm THROUGH BUILDING PADS/PAVEMENTS AND +0mm/-20mm ELSEWHERE. PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE
- FILL PLACEMENT AND COMPACTION. AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHED BATTERS) AND AREAS IN CUT SHALL BE PROOF ROLLED TO IDENTIFY ANY SOFT HEAVING MATERIAL. SOFT MATERIAL SHALL BE BOXED OUT AND REMOVED PRIOR TO FILL PLACEMENT. PROOF ROLLING TO BE
- INSPECTED BY A GEOTECHNICAL ENGINEER OR THE EARTHWORKS DESIGNER. SITE WON FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HILF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HILF MOISTURE VARIATION SHALL BE CONTROLLED
- TO BE BETWEEN 2% DRY AND 2% WET. IMPORTED FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HILF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HILF MOISTURE VARIATION SHALL BE CONTROLLED
- TO BE BETWEEN 2% DRY AND 2% WET. ALL ENGINEERED FILL PARTICLES SHALL BE ABLE TO BE INCORPORATED WITHIN A SINGLE LAYER. FURTHER, LESS THAN 30% OF PARTICLES SHALL BE RETAINED ON THE 37.5 mm SIEVE. ENGINEERED FILL SHALL BE ABLE TO BE TESTED IN ACCORDANCE WITH THE STANDARD COMPACTION METHOD (AS1289.5.4.1) OR HILF TEST METHOD (AS1289.5.7.1). THESE METHODS REQUIRE LESS THAN 20% RETAINED ON THE 37.5 mm SIEVE. WHERE BETWEEN 20% AND 30% OF PARTICLES ARE RETAINED ON THE 37.5 mm SIEVE THE ABOVE TEST METHODS SHALL STILL BE ADOPTED AND TEST REPORTS ANNOTATED APPROPRIATELY. THESE REQUIREMENTS SHOULD BE MET BY THE MATERIAL AFTER
- PLACEMENT AND COMPACTION 10. ALL THE EARTHWORKS UNDERTAKEN AND THE SUBGRADE CONDITION IN THE CUT AREAS [IN THE STATED PERIOD] ARE DOCUMENTED IN THE REPORTS AND HAVE BEEN UNDERTAKEN IN ACCORDANCE WITH THE SPECIFICATION (EG. COSTIN ROE SITE
- PREPARATION NOTES IN DWG C014021.00-DA100) PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND
- SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED. 12. EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
- MATCH EXISTING LEVELS AT BATTER INTERFACE.
- 14. CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE PRESENT. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DIRECTION OR ADJUSTMENTS TO DESIGN LEVELS.
- DURING EARTHWORKS THE CONTRACTOR IS TO ENSURE ALL AREAS ARE FREE DRAINING & WILL NOT RETAIN WATER DURING RAINFALL. PROVIDE TEMPORARY MEASURES AS REQUIRED TO ENSURE FREE FLOWING RUNOFF THROUGH MANAGED DRAINAGE PATHS, DIVERSION DRAINS OR OTHER SUITABLE DISPOSAL METHOD AS AGREED DURING THE WORKS. REFER ANY CONCERNS TO THE ENGINEER. REFER TO EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES.

SURVEY NOTE:

EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY '11220-004' BY 'BOXALL SURVEYORS PTY, LTD.' DATED 28.10.2022

TRAFFIC CONTROL NOTES:

- 1. TRAFFIC CONTROLS TO COMPLY WITH AS 1742.3-2002
- 2. TRAFFIC CONTROL PLANS TO BE SUBMITTED AND CERTIFIED BY AN ACCREDITED WORK SITE OPERATIVE.
- 3. AS PART OF THE TRAFFIC CONTROL PLAN ENSURE THAT PEDESTRIANS ARE CATERED FOR.

20.12.22

DATE ISSUE AMENDMENTS

30.11.22

4. AFTER-HOURS TRAFFIC CONTROL THROUGH THE WORKSITE HAVE TO BE CATERED

PCC NOTES:

FOR.

ISSUED FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION

ISSUED FOR INFORMATION ONLY

AMENDMENTS

ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH PENRITH CITY COUNCIL STANDARDS AND SPECIFICATIONS:

STORMWATER DRAINAGE NOTES:

- ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3:2003 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE. THE MINOR (PIPED) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 20 YEAR ARI STORM EVENT
- AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR ARI STORM EVENT. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE
- PROVIDED ON PLAN. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
- ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT)
- REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE. ALL PIPES UP TO AND INCLUDING $\phi 300$ TO BE uPVC GRADE SN8 UNO.

PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS

- TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12-200 EACH WAY CENTERED IN WALL AND BASE. LAP MINIMUM 300mm WHERE REQUIRED. ALL CONCRETE FOR PITS SHALL BE F'c=25 MPa. PRECAST PITS MAY BE USED WITH THE
- APPROVAL OF THE ENGINEER 9. IN ADDITION TO ITEM 9 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL
- HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm 10. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS
- 11. CONCRETE PIPES UNDER, OR WITHIN THE ZONE OF INFLUENCE OF PAVED AREAS SHALL BE LAID USING HS2 TYPE SUPPORT. AS A MINIMUM. IN ACCORDANCE WITH AS 3725 AGGREGATE BACKFILL SHALL NOT BE USED FOR PIPE BEDDING AND OR HAUNCH/SIDE
- 12. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED φ100 uPVC TO EACH SIDE OF PIPE.
- 13. ALL SUBSOIL DRAINAGE LINES SHALL BE \$\phi\$100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAID IN 300mm WIDE GRANULAR FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR 1 IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYE (RODDING POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSOIL LINES TO ALL PAVEMENT/ LANDSCAPED INTERFACES, TO REAR OF RETAINING
- WALLS (AS NOMINATED BY STRUCTURAL ENGINEER) AND AS SHOWN ON PLAN. ALL PIPE GRADES 1 IN 200 MINIMUM UNO.
- PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
- MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
- 17. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' U.N.O. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS
- WHERE NO PITS ARE PRESENT. DOWN PIPES (DP) TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO
- MATCH DP SIZE U.N.O. ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL 20. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.

FINISHED LEVELS PLAN NOTES:

- LEVELS DATUM IS AUSTRALIAN HEIGHT DATUM (A.H.D.).
- GRADING REQUIREMENTS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD

OR OTHER SUITABLE TAMPING DETAILS.

- AS2890.1 AS2890.2 AND AS2890.6. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
 - CONTOUR INTERVALS
 - THE MINOR CONTOUR INTERVAL IS 0.1m. THE MAJOR CONTOUR INTERVAL IS 0.5m.
 - HARDSTAND GRADING
 - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%). GRADING OF ON-GRADE DOCKS TO BE 1:100 (1%) FALL AWAY FROM THE DOCK FACE FOR
 - A LENGTH OF 15m U.N.O.
 - GRADING OF TRUCK CIRCULATION ZONES TO BE MINIMUM AS NOTED ABOVE, 3-4% NOMINAL AND MAX. 5%.
- CAR PARKING AREA GRADES
 - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%), DESIRABLE MINIMUM GRADE 1:50 (2%). MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) N CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
 - DISABLED ACCESS PARKING ZONES AND SHARED SPACE TO BE MAXIMUM OF 1:33 (3%) IN ASPHALT PAVEMENT AND MAXIMUM OF 1:40 (2.5%) IN CONCRETE PAVEMENT.
- CARPARK RAMP GRADES TO BE MAX 1:5 WITH 2.5m SMOOTH TRANSITION AT TOP AND BOTTOM U.N.O.
- TRUCK RAMP GRADES MAXIMUM B-DOUBLE OR 19.0m AV RAMP GRADES ARE TO BE 1:8.3 (12%) U.N.O. ON PLAN
- PROVIDE MINIMUM 4.0m LONG TRANSITION WHERE CHANGES OF GRADE EXCEED 1:20 (5%) AT A CREST U.N.O.
- PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGE OF GRADE EXCEED 1:20 (5%) AT A SAG U.N.O. TRANSITIONS ARE TO PROVIDE A SMOOTH CONTINOUS CIRCULAR AND TANGENTIAL
- CHANGE IN GRADE TO ENSURE NO SHARP OR ACUTE CHANGES IN GRADE ARE PRESENT. WHERE FIRE BRIGADE ACCESS IS REQUIRED, MAXIMUM RAMP GRADIENTS ARE TO BE 1:6 (16.6%), DESIRABLE RAMP GRADIENTS ARE TO BE 1:8 (12.5%) WITH 7m TRANSITION TOP AND BOTTOM
- U.N.O. ON PLAN. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H U.N.O. BASED ON GEOTECHNICAL ASSESSMENT. PROVIDE MINIMUM 0.5m BERM BETWEEN THE BACK OF KERB OR
- PAVEMENT EDGES AND THE TOP OR TOE OF A BATTER. ALL BATTER SLOPE WITH GRADES AT OR EXCEEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE
- ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL. GRADE.
- 12. ALL PAVEMENTS ARE TO BE SET AT 30mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS. PROVIDE LOCAL FEATHERING AT DOORWAYS OR ROLLER SHUTTERS TO PROVIDE FLUSH FINISH AS REQUIRED.

DATE ISSUE AMENDMENTS

WHERE NEW AND EXISTING INTERFACING IS REQUIRED. MATCH EXISTING LEVELS AND PROVIDE SMOOTH INTERFACE BETWEEN NEW AND EXISTING GRADIENTS. REFER ANY CONCERNS TO THE ENGINEER.

REINFORCED EARTH RETAINING WALL NOTES:

- 1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE
- STANDARDS REFERRED TO THEREIN. MINIMUM HEIGHT (H) TO GEOGRID REINFORCEMENT LENGTH (L) TO BE 1.0.
- MINIMUM BEARING CAPACITY OF FOUNDATION (BASED ON MINIMUM H/L RATIO OF 1.0) TO BE AS FOLLOWS:
 - a. H MAX. 2.0m = 100 kPa
- b. H MAX. 3.5m = 150 kPa
- c. H MAX. 5.0m = 200 kPaBEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
- WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMDD AND PLACED WITHIN 2% OF OMC.
- MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O. ON PLAN:
- a. LIVE LOAD = 20 kPab. $DEAD\ LOAD = 5\ kPa$
- c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa THE GEOGRIDS SHALL BE OF THE TYPE AND INDEX STRENGTH NOMINATED ON THE DRAWINGS. THE MINIMUM GEOGRIDS SHALL BE A SINGLE LENGTH IN THE DIRECTION OF DESIGN TENSION, NOT LAPPED, MAKING PROVISION FOR CONNECTION TO THE FACING ACROSS THE WHOLE WIDTH OF THE FACING AND PROVIDING FOR THE SPECIFIED ANCHORAGE WITHIN THE DESIGNATED ANCHORAGE ZONE. GEOGRIDS SHALL COVER THE WHOLE OF THE PLAN AREA BEHIND THE WALL FOR THE SPECIFIED ANCHORAGE LENGTH

AND SHALL BE LAPPED WITH ADJACENT SECTIONS IN ACCORDANCE WITH THE

- MANUFACTURER'S INSTRUCTIONS MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm.
- DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
- SELECT BACKFILL MATERIAL WITHIN THE REINFORCED SOIL BLOCK SHALL BE SOUND GRANULAR MATERIAL OF NATURAL OR INDUSTRIAL ORIGIN, NON-EXPANSIVE, FREE FROM ORGANIC OR OTHER DELETERIOUS MATERIAL CONFORMING TO THE PHYSICAL, CHEMICAL AND ELECTROCHEMICAL LIMITS AS SPECIFIED AND SHALL NOT BE SUBJECT TO BREAKDOWN UNDER COMPACTION. THE SELECT BACKFILL MATERIAL IS TO HAVE THE
- FOLLOWING PARAMETERS: a. MINIMUM INTERNAL FRICTION, $\emptyset = 34^{\circ}$
- b. EFFECTIVE COHESION, C'= 0 kPa
- c. UNIT WEIGHT = 21 kN/m^3 d. PH BETWEEN 4 AND 9.
- 10. SELECT BACKFILL IS TO BE PLACED AND COMPACTED IN LAYERS NOT MORE THAN 300mm (LOOSE). COMPACTION TO NOT LESS THAN 100% SMDD WILL BE ACHIEVED AND MATERIAL PLACED WITHIN 2% OF OMC. DENSITY TESTING SHALL BE PERFORMED IN EACH COMPACTED LIFT IN ACCORDANCE WITH AS3798.
- PROVIDE A DRAINAGE LAYER DIRECTLY BEHIND THE FACING UNITS IN A MINIMUM 300mm WIDE 12-20mm AGGREGATE LAYER. FACING UNIT VOIDS TO BE FILLED WITH AGGREGATE. PROVIDE 100mm MINIMUM AG. DRAIN IN GEOTEXTILE SOCK AT TOE OF WALL FACING AND CONNECT TO DRAINAGE SYSTEM AT 30m MAX. SPACING.
- 12. THE NEED FOR A CHIMNEY DRAIN OR DRAINAGE AT THE REAR OF THE MASS SOIL BLOCK IS TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER AND DESIGNER FOLLOWING PREPARATION OF THE FOUNDATION AND PRIOR TO CONSTRUCTION OF THE MASS SOIL
- CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500kG STATIC WEIGHT IS TO BE KEPT BACK 1.5m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 1.5m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
- 14. ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES. 15. TOP OF WALL HEIGHTS ARE NOTED TO ALIGN WITH FINISHED PAVEMENT HEIGHTS. THE CONTRACTOR AND THEIR DESIGN AND CONSTRUCT WALLING CONTRACTORS ARE TO
- ENSURE THAT ALL WALL STRAPS ARE INSTALLED BELOW THE DESIGN EARTHWORKS SUBGRADE. CONTRACTOR TO ALLOW FOR WALL STRAPS TO BE GRADED AWAY FROM THE FACE OF THE WALL OR OTHERWISE INSTALLED TO SUIT EARTHWORKS DESIGN LEVELS AND GRADES.
- DIFFERENTIAL SETTLEMENT NOTE FUTURE BUILDING AND SERVICE DESIGNERS TO CONSIDER DIFFERENTIAL SETTLEMENT OF REINFORCED EARTH WALL BLOCK AND GENERAL FILL AREAS. PARTICULAR ATTENTION TO BE DRAWN TO HEAVILY LOADED AREAS, OR DIFFERING LOADED AREAS (INCLUDING SPRINKLER TANK AND TRUCK PAVEMENT AREAS) AND WHERE SIGNIFICANT CHANGES IN OVERALL WALL HEIGHT OR FILL AMOUNTS ARE EXPERIENCED. IT IS THE RESPONSIBILITY OF THE FUTURE DESIGNERS TO ENSURE APPROPRIATE DESIGN CONSIDERATION TO DIFFERENTIAL SETTLEMENT ARE MADE DEPENDING ON THE DESIGN ELEMENT AND

RETAINING WALL NOTES:

- 1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS
- REFERRED TO THEREIN.

INTERACTION WITH RETAINED ELEMENTS AND GENERAL FILL MATERIAL.

- MINIMUM BEARING CAPACITY OF FOUNDATION TO BE AS FOLLOWS:
- a. H MAX. 2.0m = 100 kPa b. H MAX. 3.5m = 150 kPa
- c. H MAX. 5.0m = 200 kPa BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND
- VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER. WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT. THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF
- 100% SMDD AND PLACED WITHIN 2% OF OMC. 4. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O.
- 5. ON PLAN:

THESE NOTES.

DATE ISSUE

- a. LIVE LOAD = 20 kPa b. $DEAD\ LOAD = 5\ kPa$
- c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa 6. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm MINIMUM UNLESS
- NOTED OTHERWISE.
- 7. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
- TIED WALLS ARE TO BE TEMPORARILY PROPPED AT TOP UNTIL SUCH TIME THE TOP OF WALL IS TIED TO THE SLAB AND 28-DAY CONCRETE STRENGTH HAS BEEN ACHIEVED.
- 9. CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500KG STATIC WEIGHT IS TO BE KEPT BACK 1.5m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 1.5m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.

10. ALL DESIGN AND CONSTRUCT WALL SYSTEMS TO BE COMPLETED IN ACCORDANCE WITH

- DUST CONTROL NOTES:
- 1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE DUST CONTROL MEASURES. ARE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES REQUIREMENTS.
- 2. THE APPLICATION OF LIQUID BASED DUST SUPPRESSION MEASURES MUST BE SUCH THAT SEDIMENT LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD. (EG UTILISING SEDIMENT CONTROLS)
- 3. DUST GENERATION ASSOCIATED WITH WIND EROSION TO BE CONTROLLED USING WATER TRUCKS, DUST SUPPRESSING FOG, MIST GENERATORS, SEALANT PLACED OVER THE SOIL SURFACE ROUGHENING OR RE-VEGETATION.
- 4. THE FOLLOWING ACTIVITIES SHALL BE ADOPTED, IF NECESSARY, TO MANAGE DUST CONTROL ON SITE:
- LIMITING THE AREA OF SOIL DISTURBANCE AT ANY GIVEN TIME
- REPLACING TOPSOIL AFTER COMPLETION OF EARTHWORKS.
- PROGRAMMING WORK TO MINIMISE THE LIFE OF STOCKPILES. • TEMPORARILY STABILISING LONG-TERM STOCKPILES.
- GRAVELLING UNSEALED ACCESS AND HAUL ROADS. MINIMISING TRAFFIC MOVEMENT ON EXPOSED SURFACES.
- LIMITING VEHICULAR TRAFFIC TO 15km/h. RETAINING EXISTING VEGETATION AS WIND BREAKS.
- UTILISING A WATER CART WITH POTABLE WATER OR SEDIMENT CONTROL BASIN WATER 5. OIL, LANDFILL GAS CONDENSATE OR ANY CONTAMINATED LEACHATE IS NOT TO BE USED FOR DUST SUPPRESSION.

EROSION CONTROL NOTES

SHALL BE A MINIMUM OF 200mm.

PART OF AN APPROVED ESCP / SWMP.

ALL SEDIMENT CONTROL WORK INCLUDING DIVERSION BANKS, CATCH DRAINS, DIVERSION DRAINS AND SEDIMENT FENCES SHALL BE COMPLETED IN ACCORDANCE WITH THE STAGED PLANS PRESENTED AND SHALL FACILITATE A STAGED CONSTRUCTION METHODOLOGY.

- ALL EROSION & SEDIMENT CONTROLS SHALL BE COMPLETED IN ACCORDANCE WITH THE 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER - THE BLUE BOOK' BY LANDCOM
- SEDIMENT FENCES AND SEDIMENT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
- STRAW BALE BARRIERS & GEOFABRIC FENCES OR SEDIMENT FENCES ARE TO BE CONSTRUCTED TO TOE OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS,
- IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL. 4. ALL TEMPORARY EARTH BERMS, DIVERSION AND SEDIMENT BASIN EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED. REFER TO TABLE 1 FOR APPROVED STABILISATION
- METHODS. CLEAN OR NON-SITE WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM OVER STABLE SURFACES.
- 6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER
- STORMS OF 5mm OR GREATER WITHIN A 24 HOUR PERIOD FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION. 8. THE SITE IS TO BE INSPECTED FOLLOWING A RAINFALL EVENT OF 5mm OR GREATER WITHIN A 24 HOUR PERIOD FOR EVIDENCE OF EROSION AND RESPOND WITH INCREASED
- CONTROL IF REQUIRED. 9. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF
- GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD. 10. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS
- 11. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S EARTHWORKS TO DIRECT WATER TO A STABLE OUTLET OVER THE BATTER OR INTERNALLY TOWARDS SEDIMENT CONTROL. THE HEIGHT OF THE BUND
- 12. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION. 13. AFTER PERMANENT STABILISATION OF THE SITE IS COMPLETE (I.E. BY TOPSOILING,
- PAVING ETC.) AND THE SITE IS DEEMED TO BE STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SEDIMENT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
- 14. ALL STOCKPILES ARE TO BE SUITABLY COVERED AND STABILIZED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION. 15. ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR DISTURBANCE BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND

SIGN POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY

- SUCH DISTURBANCE. 16. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS INDICATED ON THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN OR APPROVED FOR SUCH USE BY THE SITE MANAGER. A BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH IN ACCORDANCE WITH THE CSWMP. ALL STOCKPILES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING
- AREA BY USE OF THE MEASURES IN THE APPROVED ESCP. 17. ACCESS AND EXIT AREAS SHALL INCLUDE TRUCK SHAKER GRID OR OTHER METHODS. APPROVED BY THE SITE MANAGER FOR THE REMOVAL OF SOIL MATERIALS FORM MOTOR

19. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SLOPES, CROWNS AND DRAINS ON ALL

EXCAVATIONS AND EMBANKMENTS TO ENSURE SATISFACTORY DRAINAGE AT ALL TIMES

WATER SHALL NOT BE ALLOWED TO POND ON THE WORKS UNLESS SUCH PONDING IS

18. THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SURFACE IS DISTURBED BY CONSTRUCTION, INCLUDING ACCESS ROADS, DEPOT AND STOCKPILE SITES, SHALL BE FREE OF SEDIMENTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES

- POND DEWATERING NOTES:
- 1. DRAIN PONDS OF WATER & DISCHARGE CLEAN WATER TO STORMWATER DRAINAGE SYSTEM (AS PER NOTES 2 & 3) - REFER TO STORMWATER PLAN FOR LOCATIONS.
- 2. DEWATERING TO BE PERFORMED IN SUCH A MANNER AS TO REMOVE CLEAN WATER WITHOUT REMOVING OR DISTURBING SILT, SEDIMENT OR OTHER
- ORGANIC MATERIAL FROM THE BASE OF THE PONDS. B. DISCHARGE OF WATER FROM PONDS TO HAVE A PH RANGE OF 6.5-8.5 AND TSS < 50mg/L. PONDS TO BE DOSED WITH GYPSUM (APPROX. 30mg PER CUBIC METRE) TO ACCELERATE SETTLEMENT OF SUSPENDED SOLIDS.
- POND (NOM. DEPTH 0.5-1.0m) AND DISPOSE OF IN ACCORDANCE WITH THE ACCEPTABLE PRACTICE. 5. EXPOSE NATURAL SITE SOILS AND COMPACT SUBGRADE IN ACCORDANCE
- WITH THE SITE PREPARATION NOTES (REFER DRG. DA10) REMOVING ANY SOFT ZONES AS REQ'D.

4. REMOVE ALL SILT, ORGANIC AND WATER LOGGED MATERIAL FROM BASE OF

- 6. PLACE AND COMPACT FILL AS PER SITE PREPARATION NOTES ON DRAWING '. INFORMATION PROVIDED ON THIS DRAWING SHALL BE USED TO GUIDE THE
- DEVELOPMENT OF THE COSNTRUCTION ENVIRONMENTAL MANAGEMENT PLAN THAT SHALL BE IMPLEMENTED DURING CONSTRUCTION

INSPECTION & MAINTENANCE NOTES:

PUMPED SYSTEM OPTION

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ADEQUATE INSPECTIONS AND MAINTENANCE ARE CARRIED OUT DURING SITE WORKS. DAILY AND WEEKLY INSPECTION CHECKLISTS HAVE BEEN PROVIDED IN THE COSTIN ROE SOIL AND WATER MANAGEMENT PLAN (SWMP) Co14429.00-03b.rpt.

AS NOTED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ADEQUATE MAINTENANCE OF EROSION & SEDIMENT CONTROL MEASURES ARE UNDERTAKEN DURING THE WORKS PERIOD. DAMAGED. DISLODGED OR FAULTY ESC MEASURES ARE TO BE IMMEDIATELY RECTIFIED AND THE SURROUNDING AREA IS TO BE REMEDIATED AS PER NOTES ON THIS DRAWING, THE SWMP AND THE LANDCOM 'BLUE BOOK'

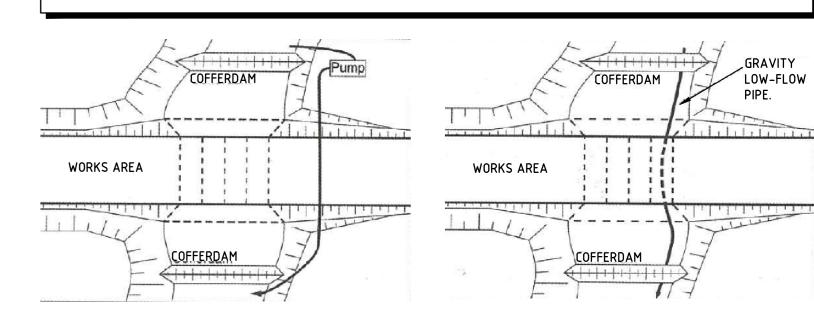
INSTREAM WORKS

- SEDIMENT FENCES AND SEDIMENT FENCE RETURNS TO BE ERECTED PRIOR TO THE COMMENCEMENT OF ANY WORK. SEDIMENT FENCES TO REMAIN UNTIL COMPLETION OF INSTREAM WORK IN THESE LOCATION TO PROTECT EXISTING DOWNSTREAM PROPERTIES
- AND ROAD PAVEMENT. (REFER TO DA25 FOR DETAILS). UNDERTAKE WORK DURING A PERIOD OF DRY FORECASTED WEATHER.
- PROTECT DISTURBED AREA WITH COFFERDAMS AS REQUIRED. TEMPORARY LOW FLOW DIVERSION PIPE OR PUMPED SYSTEM MAY BE INSTALLED AT THE

BASE OF CHANNEL TO DIVERT CLEAN WATER FROM UPSTREAM BASEFLOW.

UNDERTAKE ALL INSTREAM WORK IN THE SPECIFIED SECTION OF THE CHANNEL IN ACCORDANCE WITH APPROVED PLANS AND IMMEDIATELY PLANT TO STABLISE THE WORKS.

PLANT WITH APPROPRIATE SPECIES. AT A DENSITY THAT WOULD NATURALLY OCCUR.



GRAVITY PIPE OPTION INSTREAM WORKS COFFERDAM ARRANGEMENT

FOR DEVELOPMENT APPLICATION

SB/\ Suite 702, 83 Mount Street, North Sydney NSW 2060 T 02 9929 9988 F 02 9929 8899 E info@sbaarch.com.au W www.sbaarch.com.au



YIRIBANA WEST INDUSTRIAL ESTATE 771-797 MAMRE ROAD KEMPS CREEK, 2178, NSW DESIGNED DRAWN DATE CHECKED SIZE SCALE CAD REF:
MC MC OCT 22 MW A0 AS SHOWN C014429.00-DA1



ABN 50 003 696 446 PO Box N419 Sydney NSW 1220 evel 4, 8 Windmill Street, Millers Point NSW 2000 p: +61 2 9251 7699 f: +61 2 9241 3731

Costin Roe Consulting Pty Ltd.

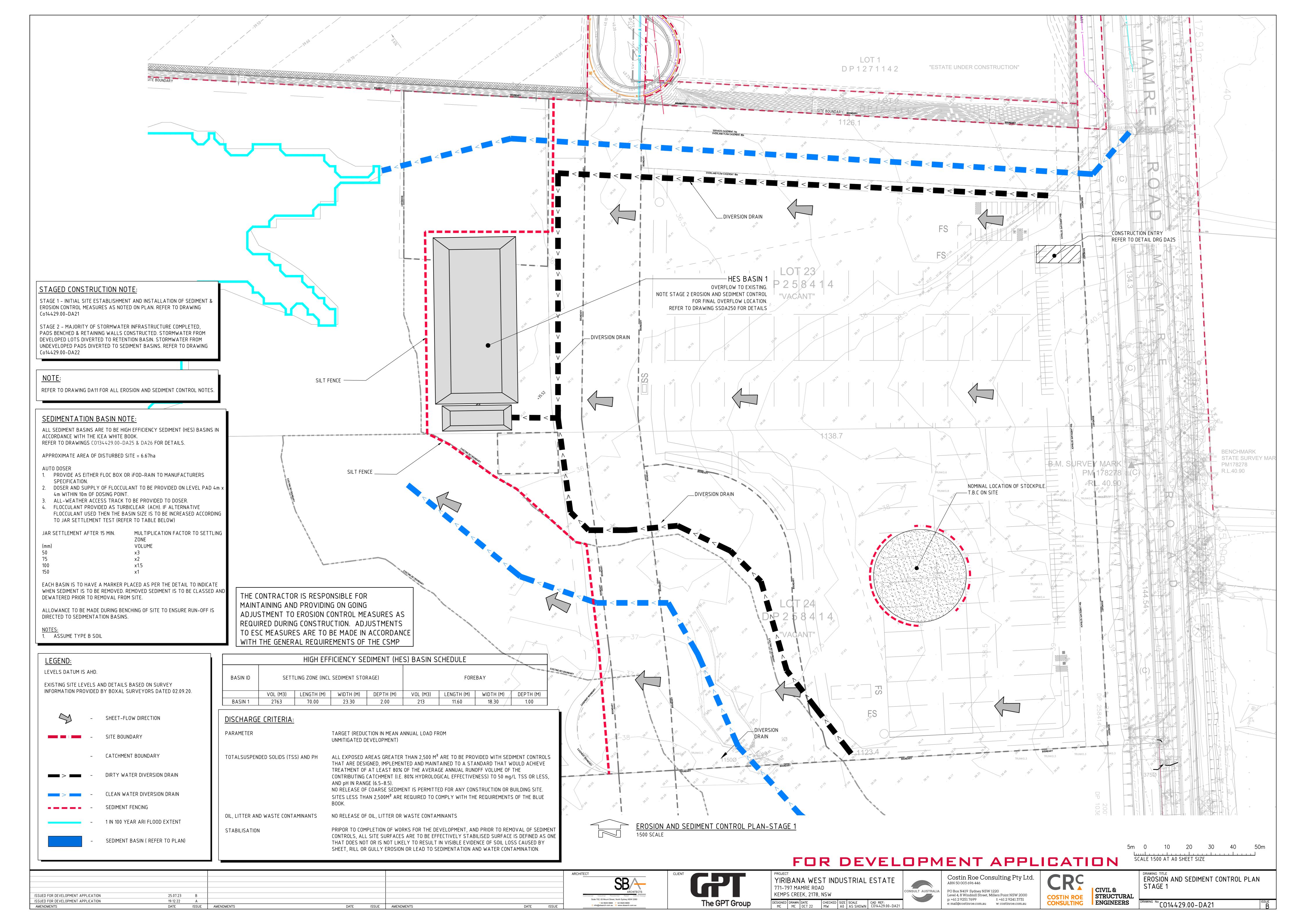
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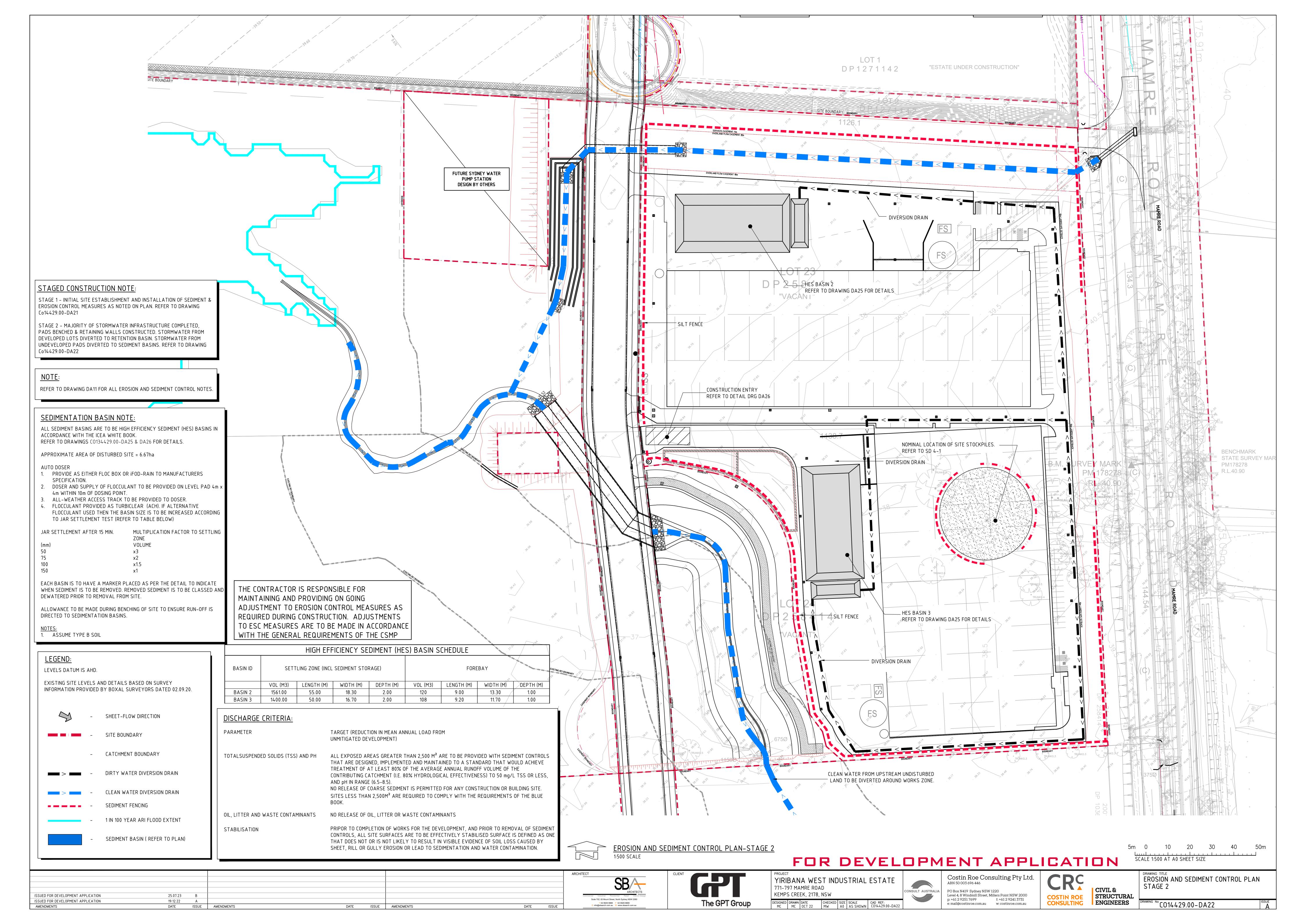
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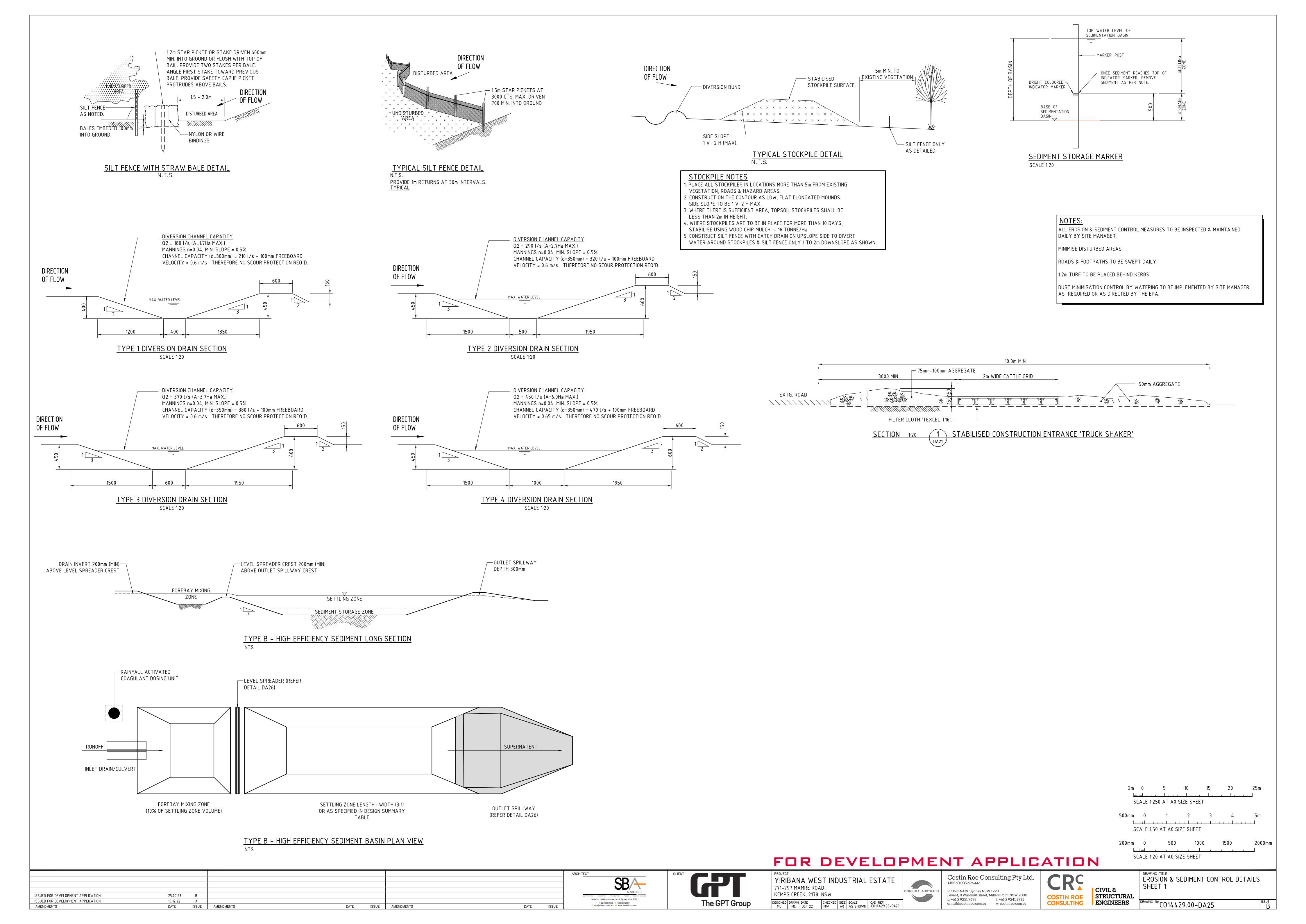
STRUCTURAL ENGINEERS

AWING No C 014429.00-DA11

GENERAL NOTES-SHEET 2



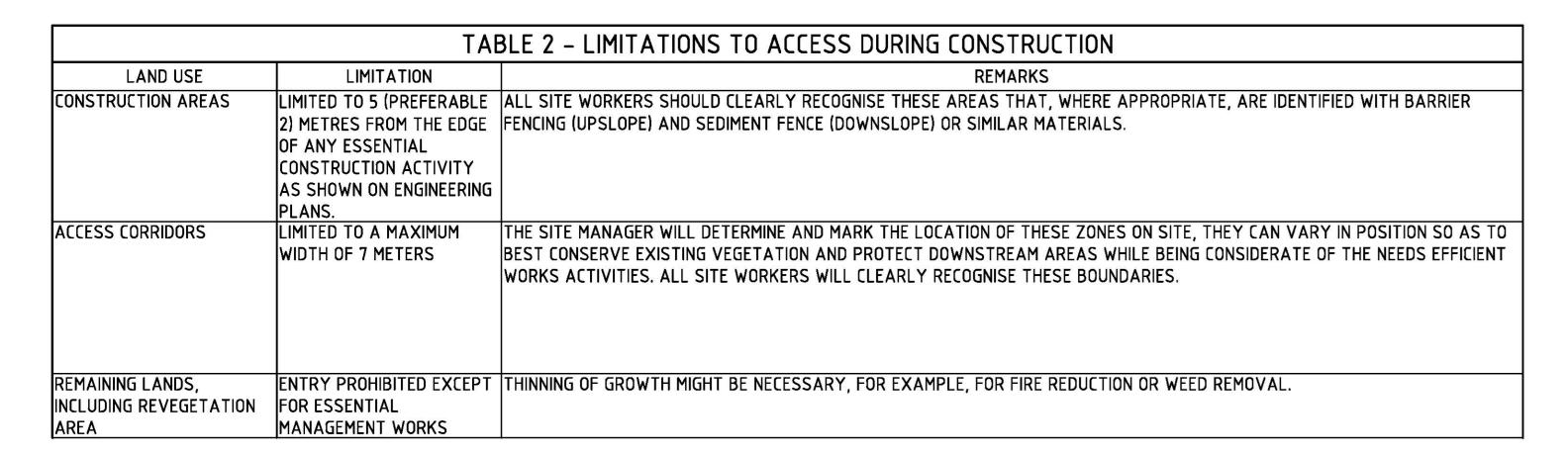


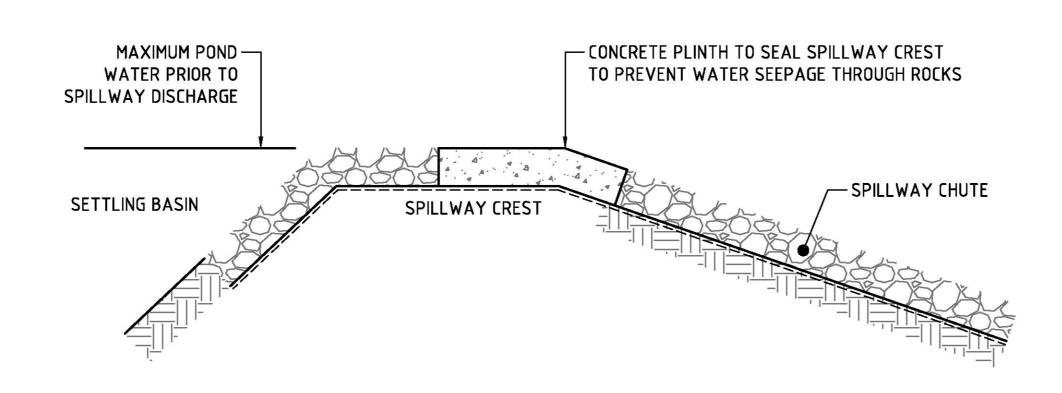




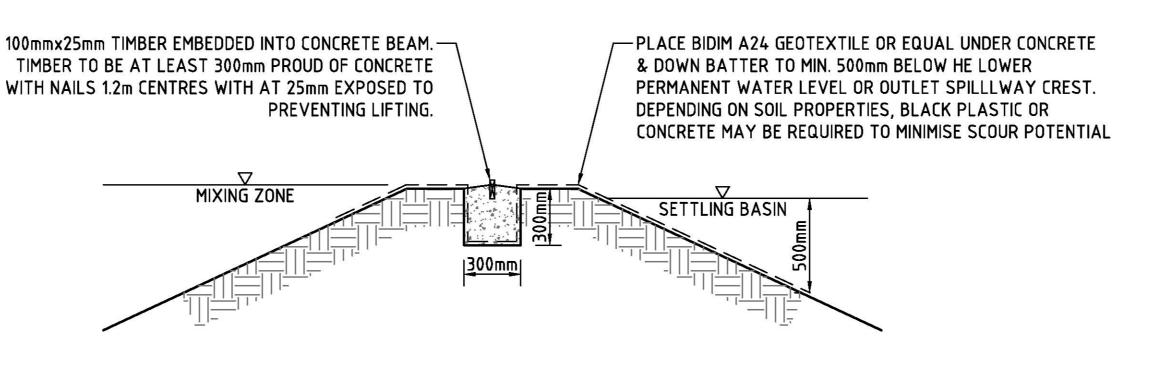
[1] - EQUIVALENT COVER/PRODUCT MUST ACHIEVE THE EQUIVALENT C-FACTOR WITH PROVEN RESEARCH/DOCUMENTATION TO VERIFY THIS.

STANDARD DRAWINGS REFERENCED CAN BE LOCATED IN THE 'SOILS & CONSTRUCTION, MANAGING URBAN STORMWATER - VOLUME 1' BOOK BY LANDCOM. ALTERNATIVE DETAILS MAY BE SOUGHT IN CONSULTATION WITH THE ENGINEER

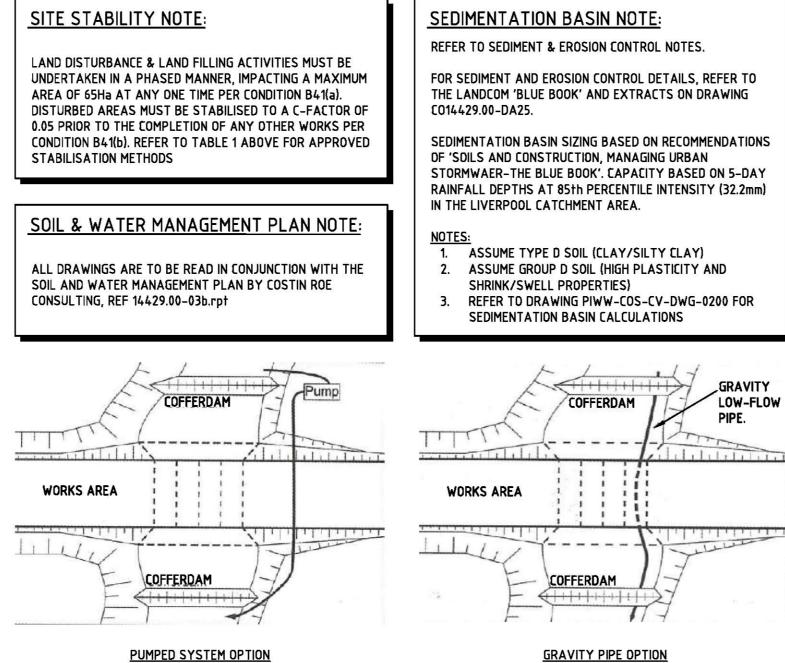




OUTLET SPILLWAY DETAILS - TYPICAL CROSS SECTION



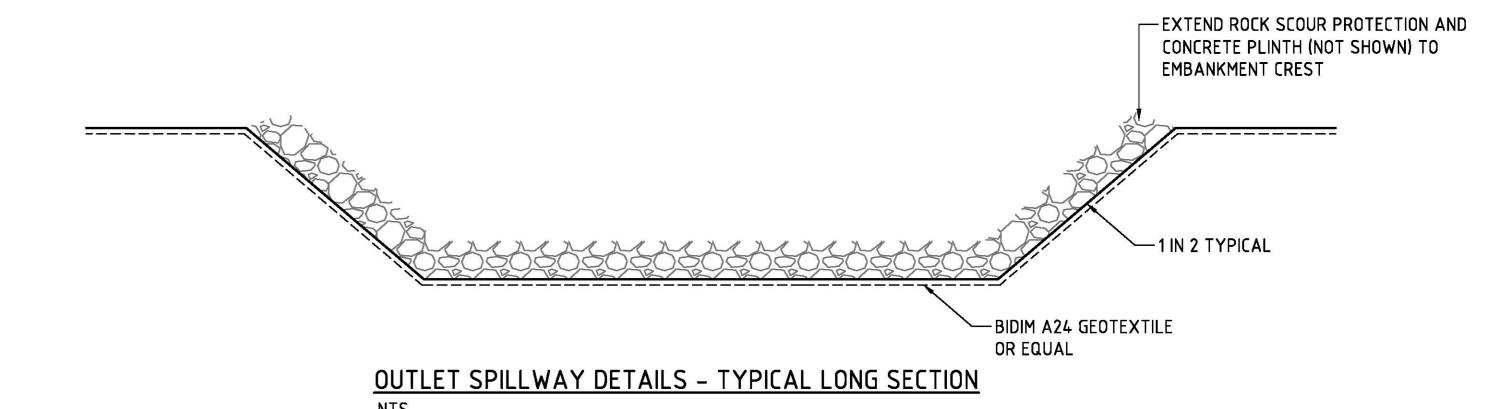
LEVEL SPREADER DETAILS - TYPICAL CROSS SECTION

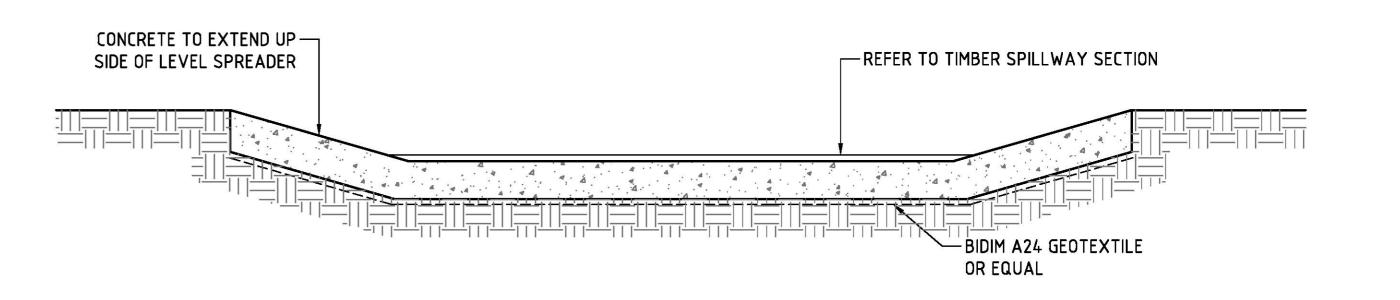


INSTREAM WORKS COFFERDAM ARRANGEMENT

1.	SEDIMENT FENCES AND SEDIMENT FENCE RETURNS TO BE ERECTED PRIOR TO THE COMMENCEMENT OF ANY WORK. SEDIMENT
	FENCES TO REMAIN UNTIL COMPLETION OF INSTREAM WORK IN THESE LOCATION TO PROTECT EXISTING DOWNSTREAM
	PROPERTIES AND ROAD PAVEMENT. (REFER TO DRG-0250 FOR DETAILS).
2.	UNDERTAKE WORK DURING A PERIOD OF DRY FORECASTED WEATHER.
3.	PROTECT DISTURBED AREA WITH COFFERDAMS AS REQUIRED.
4.	TEMPORARY LOW FLOW DIVERSION PIPE OR PUMPED SYSTEM MAY BE INSTALLED AT THE BASE OF CHANNEL TO DIVERT CLEA
	WATER FROM UPSTREAM BASEFLOW.
5.	UNDERTAKE ALL INSTREAM WORK IN THE SPECIFIED SECTION OF THE CHANNEL IN ACCORDANCE WITH APPROVED PLANS AND
	IMMEDIATELY PLANT TO STABLISE THE WORKS.
6.	PLANT WITH APPROPRIATE SPECIES, AT A DENSITY THAT WOULD NATURALLY OCCUR. REFER TO DURS-COS-CV-DWG-0040 F
	THE LIST OF APPROPRIATE WETLAND SPECIES.

INSTREAM WORKS:





LEVEL SPREADER DETAILS - TYPICAL LONG SECTION

DISCHARGE CRITERIA: PARAMETER TARGET (REDUCTION IN MEAN ANNUAL LOAD FROM UNMITIGATED DEVELOPMENT) TOTALSUSPENDED SOLIDS (TSS) AND PH ALL EXPOSED AREAS GREATER THAN 2,500 M² ARE TO BE PROVIDED WITH SEDIMENT CONTROLS THAT ARE DESIGNED, IMPLEMENTED AND MAINTAINED TO A STANDARD THAT WOULD ACHIEVE TREATMENT OF AT LEAST 80% OF THE AVERAGE ANNUAL RUNOFF VOLUME OF THE CONTRIBUTING CATCHMENT (I.E. 80% HYDROLOGICAL EFFECTIVENESS) TO 50 mg/L TSS OR LESS, AND pH IN RANGE (6.5-8.5). NO RELEASE OF COARSE SEDIMENT IS PERMITTED FOR ANY CONSTRUCTION OR BUILDING SITE. SITES LESS THAN 2,500M² ARE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE BLUE OIL, LITTER AND WASTE CONTAMINANTS NO RELEASE OF OIL, LITTER OR WASTE CONTAMINANTS PRIPOR TO COMPLETION OF WORKS FOR THE DEVELOPMENT, AND PRIOR TO REMOVAL OF SEDIMENT STABILISATION CONTROLS, ALL SITE SURFACES ARE TO BE EFFECTIVELY STABILISED SURFACE IS DEFINED AS ONE THAT DOES NOT OR IS NOT LIKELY TO RESULT IN VISIBLE EVIDENCE OF SOIL LOSS CAUSED BY SHEET, RILL OR GULLY EROSION OR LEAD TO SEDIMENTATION AND WATER CONTAMINATION.

FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION 25.07.23 B
ISSUED FOR DEVELOPMENT APPLICATION 19.12.22 A
AMENDMENTS DATE ISSUE AMENDMENTS DATE ISSUE AMENDMENTS DATE ISSUE AMENDMENTS







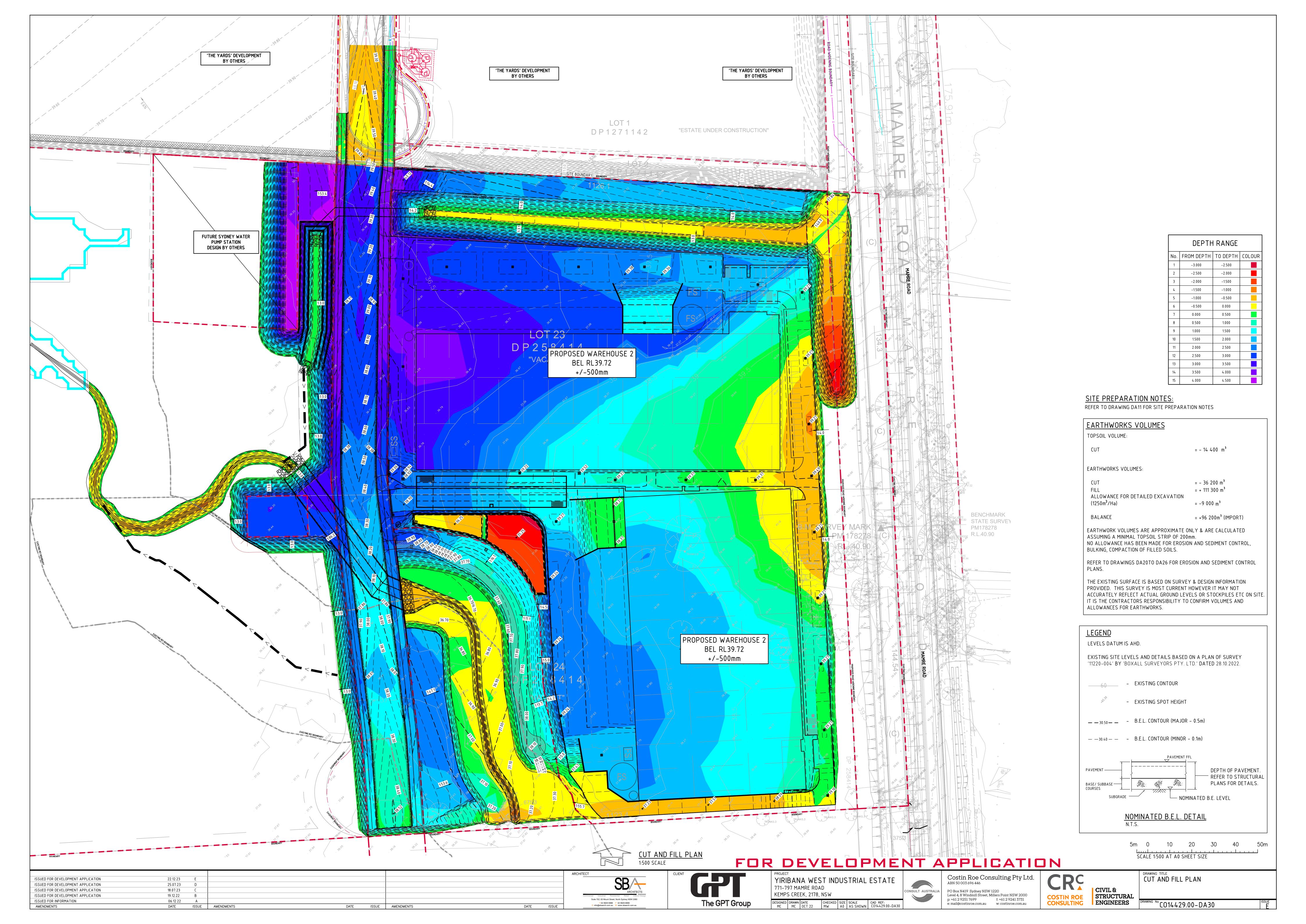


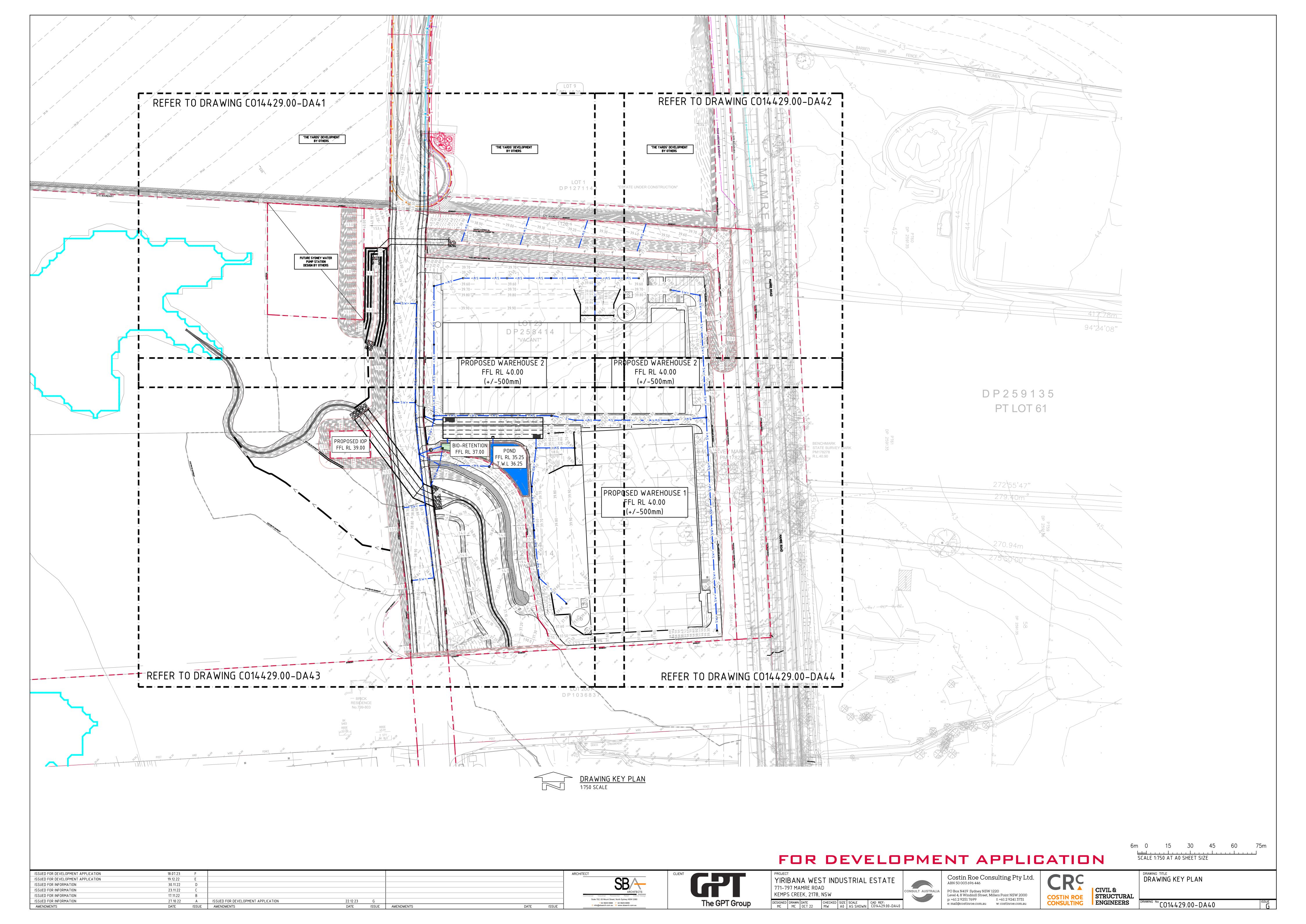


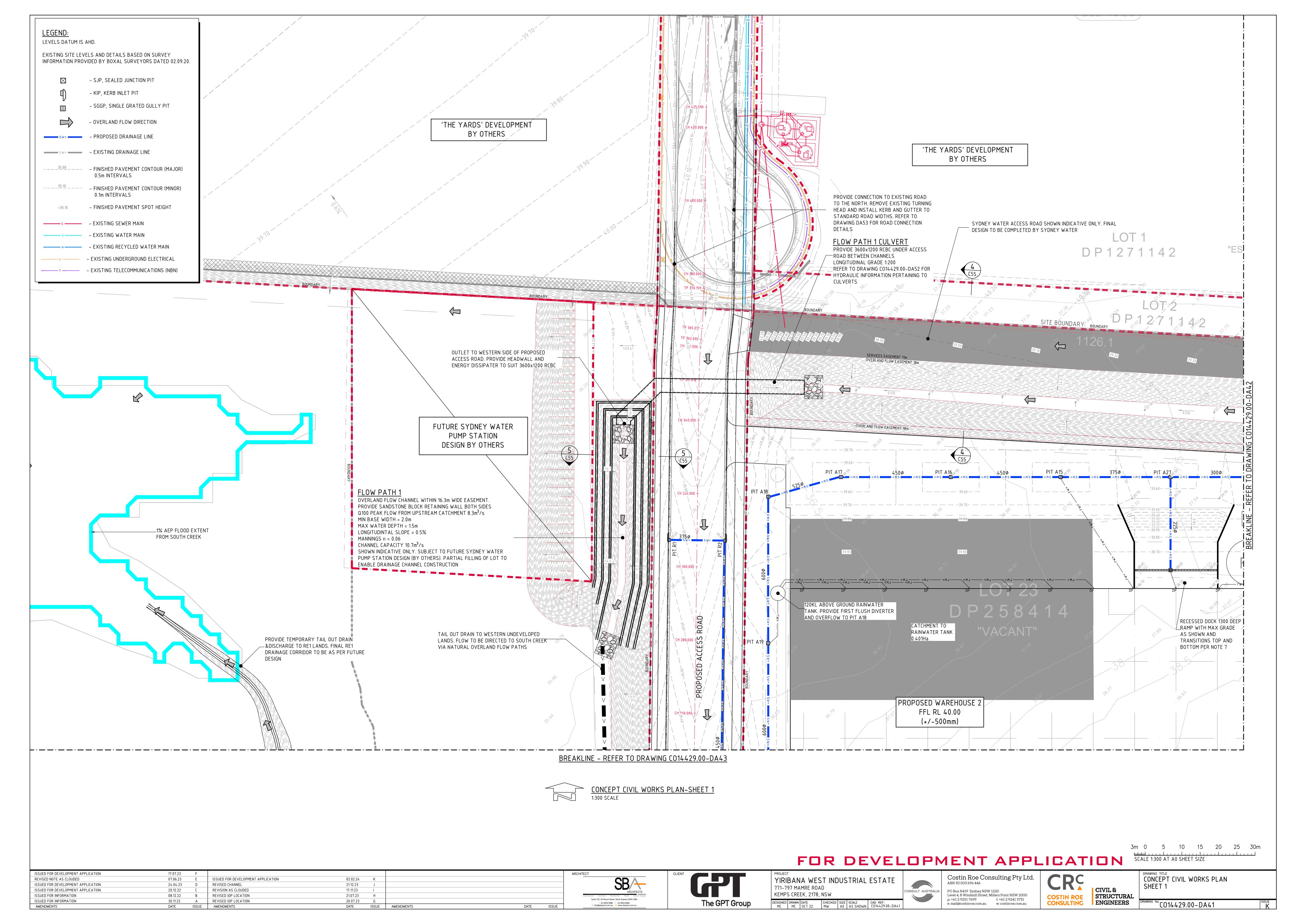


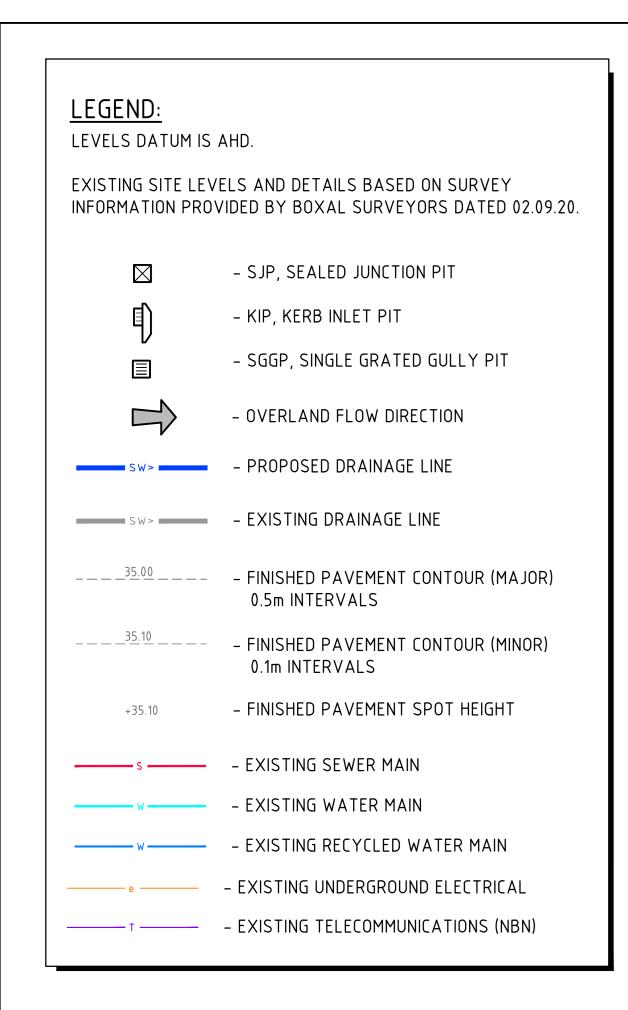
ENGINEERS

EROSION & SEDIMENT CONTROL DETAILS
SHEET 2









PIT SCHEDULE-SYSTEM A

PIT No.	GRATE RL	TYPE	SIZE	COMMENT
PIT A1	39.55	SGGP	900×900	\oplus
PIT A2	39.55	SGGP	900x900	\oplus
PIT A3	39.55	SGGP	900x900	\oplus
PIT A4	39.55	SGGP	900x900	\oplus
PIT A5	39.55	SGGP	900x900	\oplus
PIT A6	39.75	SGGP	900x900	\oplus
PIT A7	39.65	SGGP	1200×1200	900sq RISER 🕀
PIT A8	39.65	SGGP	1200×1200	900sq RISER 🕀
PIT A9	39.65	SGGP	1200×1200	900sq RISER 🕀
PIT A10	39.80	SJP	1200×1200	900sq RISER
PIT A11	39.50	SGGP	1200×1200	900sq RISER 🕀
PIT A12	39.15	SJP	1200×1200	900sq RISER
PIT A13	39.13	SJP	1200×1200	900sq RISER
PIT A14	39.50	SGGP	900x900	\oplus
PIT A15	39.50	SGGP	900x900	\oplus
PIT A16	39.50	SGGP	900x900	\oplus
PIT A17	39.50	SGGP	900x900	\oplus
PIT A18	39.90	SGGP	900×900	\oplus
PIT A19	39.90	SGGP	900x900	\oplus
PIT A20	39.55	SGGP	900x900	\oplus
PIT A21	39.55	SGGP	900x900	\oplus
PIT A22	39.55	SGGP	900×900	\oplus
PIT A23	39.55	SGGP	900x900	\oplus
PIT A24	39.55	SGGP	900x900	\oplus
PIT A25	39.30	SGGP	900×900	\oplus
PIT A26	37.30	BIP	900x900	\oplus
PIT A27	38.30	SJP	1500x1500	900sq RISER
PIT A28	38.25	SJP	1500x1500	900sq RISER
PIT A29	39.20	SGGP	900x900	$\overline{\oplus}$

-DENOTES PIT TO BE FITTED WITH ATLAN

STORMWATER STORMSACK

ISSUED FOR DEVELOPMENT APPLICATION

PIT SCHEDULE-SYSTEM B

PIT No.	GRATE RL	TYPE	SIZE	COMMENT		
PIT B1	NOT USED			\oplus		
PIT B2	NOT USED			\oplus		
PIT B3	NOT USED			\oplus		
PIT B4	39.15	SGGP	900x900	\oplus		
PIT B5	39.50	SGGP	900x900	\oplus		
PIT B6	39.50	SGGP	900x900	\oplus		
PIT B7	39.50	SGGP	900x900	\oplus		
PIT B8	39.55	SGGP	900x900	\oplus		
PIT B9	38.65	SGGP	900x900	\bigoplus		
-DENOTES PIT TO BE FITTED WITH ATLAN STORMWATER STORMSACK						

PIT SCHEDULE-SYSTEM R

PIT No.	GRATE RL	TYPE	SIZE	COMMENT
PIT R1	39.67	KIP	900x900	
PIT R2	39.66	KIP	900x900	
PIT R3	39.13	KIP	900x900	
PIT R4	38.84	KIP	900x900	
PIT R5	38.84	KIP	900x900	
PIT R6	38.84	KIP	900x900	
PIT R7	38.60	KIP	900x900	
PIT R8	38.60	KIP	900x900	
PIT R9	39.14	KIP	900x900	

FINISHED LEVELS PLAN NOTES:

- LEVELS DATUM IS AUSTRALIAN HEIGHT DATUM (A.H.D.).
- GRADING REQUIREMENTS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS2890.1, AS2890.2 AND AS2890.6.
- ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN. CONTOUR INTERVALS
- THE MINOR CONTOUR INTERVAL IS 0.1m.
- THE MAJOR CONTOUR INTERVAL IS 0.5m. HARDSTAND GRADING
- MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
- GRADING OF ON-GRADE DOCKS TO BE 1:100 (1%) FALL AWAY FROM THE DOCK FACE FOR A LENGTH OF 15m U.N.O.
- GRADING OF TRUCK CIRCULATION ZONES TO BE MINIMUM AS NOTED ABOVE, 3-4% NOMINAL AND MAX. 5%.
- CAR PARKING AREA GRADES MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%), DESIRABLE MINIMUM GRADE 1:50 (2%).
- MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) N CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
- DISABLED ACCESS PARKING ZONES AND SHARED SPACE TO BE MAXIMUM OF 1:33 (3%) IN ASPHALT PAVEMENT AND MAXIMUM OF 1:40 (2.5%) IN CONCRETE PAVEMENT. CARPARK RAMP GRADES TO BE MAX 1:5 WITH 2.5m SMOOTH TRANSITION AT TOP AND
- BOTTOM U.N.O. TRUCK RAMP GRADES
 - MAXIMUM B-DOUBLE OR 19.0m AV RAMP GRADES ARE TO BE 1:8.3 (12%) U.N.O. ON PLAN PROVIDE MINIMUM 4.0m LONG TRANSITION WHERE CHANGES OF GRADE EXCEED 1:20 (5%)
 - AT A CREST U.N.O. PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGE OF GRADE EXCEED 1:20 (5%)
 - AT A SAG U.N.O. TRANSITIONS ARE TO PROVIDE A SMOOTH CONTINOUS CIRCULAR AND TANGENTIAL
- CHANGE IN GRADE TO ENSURE NO SHARP OR ACUTE CHANGES IN GRADE ARE PRESENT WHERE FIRE BRIGADE ACCESS IS REQUIRED, MAXIMUM RAMP GRADIENTS ARE TO BE 1:6 (16.6%), DESIRABLE RAMP GRADIENTS ARE TO BE 1:8 (12.5%) WITH 7m TRANSITION TOP AND BOTTOM
- U.N.O. ON PLAN. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H U.N.O. BASED ON GEOTECHNICAL ASSESSMENT. PROVIDE MINIMUM 0.5m BERM BETWEEN THE BACK OF KERB OR
- PAVEMENT EDGES AND THE TOP OR TOE OF A BATTER. 10. ALL BATTER SLOPE WITH GRADES AT OR EXCEEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE
- ENGINEER. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL. GRADE. 12. ALL PAVEMENTS ARE TO BE SET AT 30mm BELOW THE FINISHED FLOOR LEVEL OF THE
- SHUTTERS TO PROVIDE FLUSH FINISH AS REQUIRED. 13. WHERE NEW AND EXISTING INTERFACING IS REQUIRED, MATCH EXISTING LEVELS AND PROVIDE SMOOTH INTERFACE BETWEEN NEW AND EXISTING GRADIENTS. REFER ANY CONCERNS TO THE ENGINEER.

WAREHOUSE AND OFFICE AREAS. PROVIDE LOCAL FEATHERING AT DOORWAYS OR ROLLER

STORMWATER DRAINAGE NOTES:

- ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN
- STANDARD AS3500.3 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE THE MINOR (PIPED) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 20 YEAR ARI STORM EVENT AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR ARI
- ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS
- 4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
- EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY
- SURVEY PRIOR TO COMMENCING WORKS ON SITE
- ALL STORMWATER PIPES WITHIN PRIVATE PROPERTY \$\phi 375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE
- ALL STORMWATER PIPES WITHIN THE PUBIC DOMAIN ϕ 375 OR GREATER SHALL BE CLASS 3 UNDER KERB LINE AND CLASS 4 UNDER ROAD CROSSING (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
- ALL PIPES UP TO AND INCLUDING $\phi 300$ TO BE uPVC GRADE SN8 UNO. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
- 10. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12-200 EACH WAY CENTERED IN WALL AND BASE. LAP MINIMUM 300mm WHERE REQUIRED. ALL CONCRETE FOR PITS SHALL BE F'c=25 MPa. PRECAST PITS MAY BE USED WITH THE
- APPROVAL OF THE ENGINEER. 11. IN ADDITION TO ITEM 9 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL
- HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm. 12. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS
- 13. CONCRETE PIPES UNDER, OR WITHIN THE ZONE OF INFLUENCE OF PAVED AREAS SHALL BE LAID USING HS2 TYPE SUPPORT, AS A MINIMUM, IN ACCORDANCE WITH AS 3725. AGGREGATE BACKFILL SHALL NOT BE USED FOR PIPE BEDDING AND OR HAUNCH/SIDE SUPPORT.
- 14. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED \$\phi\$100 uPVC TO EACH SIDE OF PIPE.
- 15. ALL SUBSOIL DRAINAGE LINES SHALL BE Ø100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAID IN 300mm WIDE GRANULAR FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR 1 IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYE (RODDING POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSOIL LINES TO ALL PAVEMENT/ LANDSCAPED INTERFACES, TO REAR OF RETAINING WALLS (AS NOMINATED BY STRUCTURAL ENGINEER) AND AS SHOWN ON PLAN.
- WHERE SUBSOIL DRAINAGE PASSES UNDER A PAVEMENT OR A SLAB, UNSLOTTED UPVC ARE TO BE PROVIDED UNLESS NOTED OTHERWISE.
- 17. ALL PIPE GRADES 1 IN 200 MINIMUM UNO.

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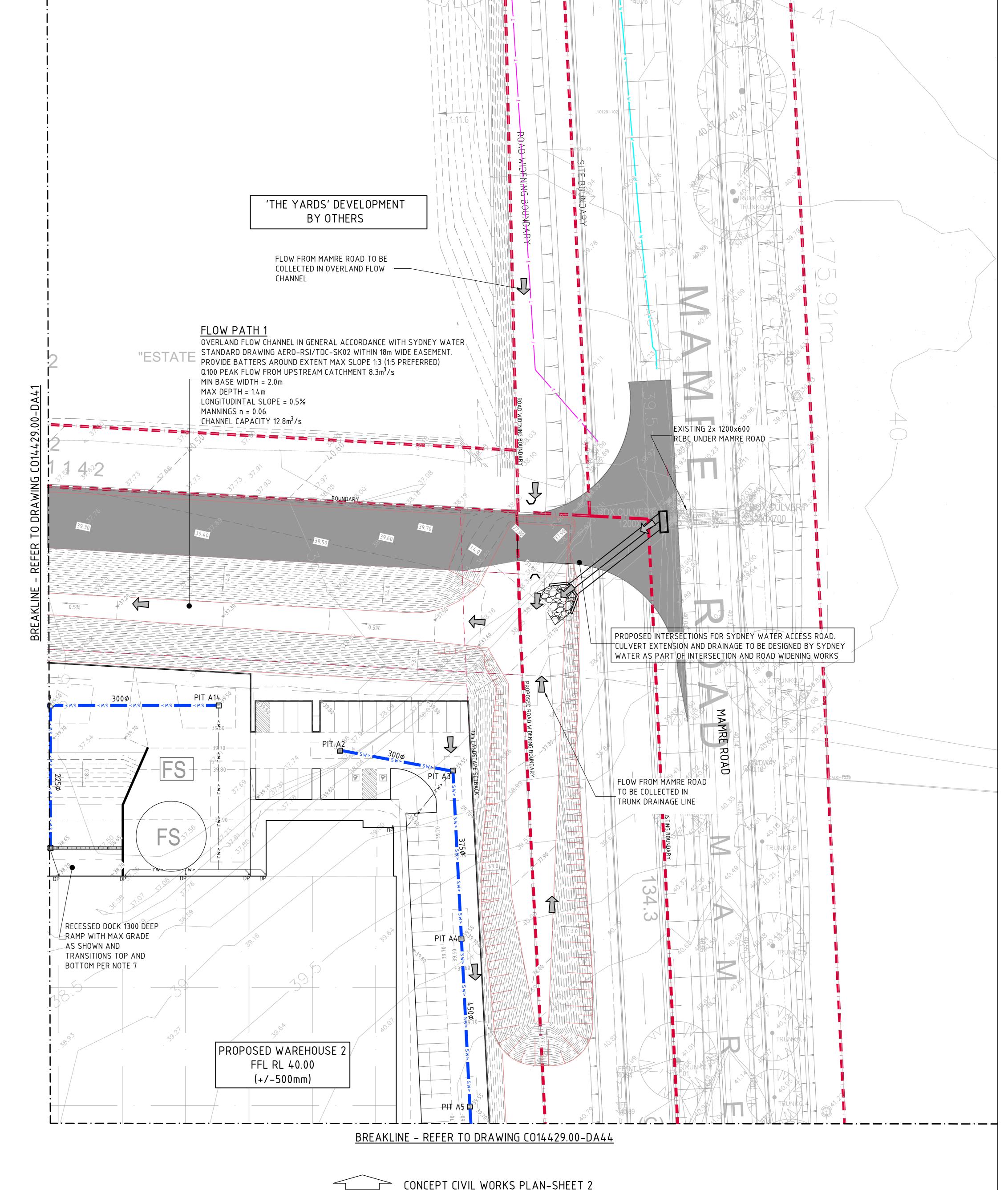
21.12.23

17.11.23

DATE ISSUE AMENDMENTS

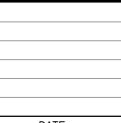
OR OTHER SUITABLE TAMPING DETAILS.

- PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
- 19. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
- 20. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' U.N.O.
- 21. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
- 22. DOWN PIPES (DP) TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO MATCH DP SIZE U.N.O. ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL.
- 23. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.
- 24. WHERE CONNECTION TO EXISTING INGROUND DRAINAGE SYSTEMS, OPEN SWALES, CHANNELS OR ANY OTHER EXISTING SYSTEM, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND INVERT ON SITE AT THE BEGINNING OF THE CONSTRUCTION PERIOD. REFER ANY VARIANCE FROM DOCUMENTATION OR SURVEYS TO THE ENGINEER FOR CLARIFICATION.



3m 0 5 10 15 20 25 30m SCALE 1:300 AT A0 SHEET SIZE

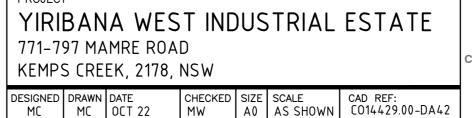
07.06.23 REVISED NOTE AS CLOUDED ISSUED FOR DEVELOPMENT APPLICATION 24.04.23 ISSUED FOR DEVELOPMENT APPLICATION 20.12.22 ISSUED FOR DEVELOPMENT APPLICATION ISSUED FOR INFORMATION REVISED CHANNEL ISSUED FOR INFORMATION 30.11.22 REVISED AS CLOUDED DATE ISSUE AMENDMENTS AMENDMENTS



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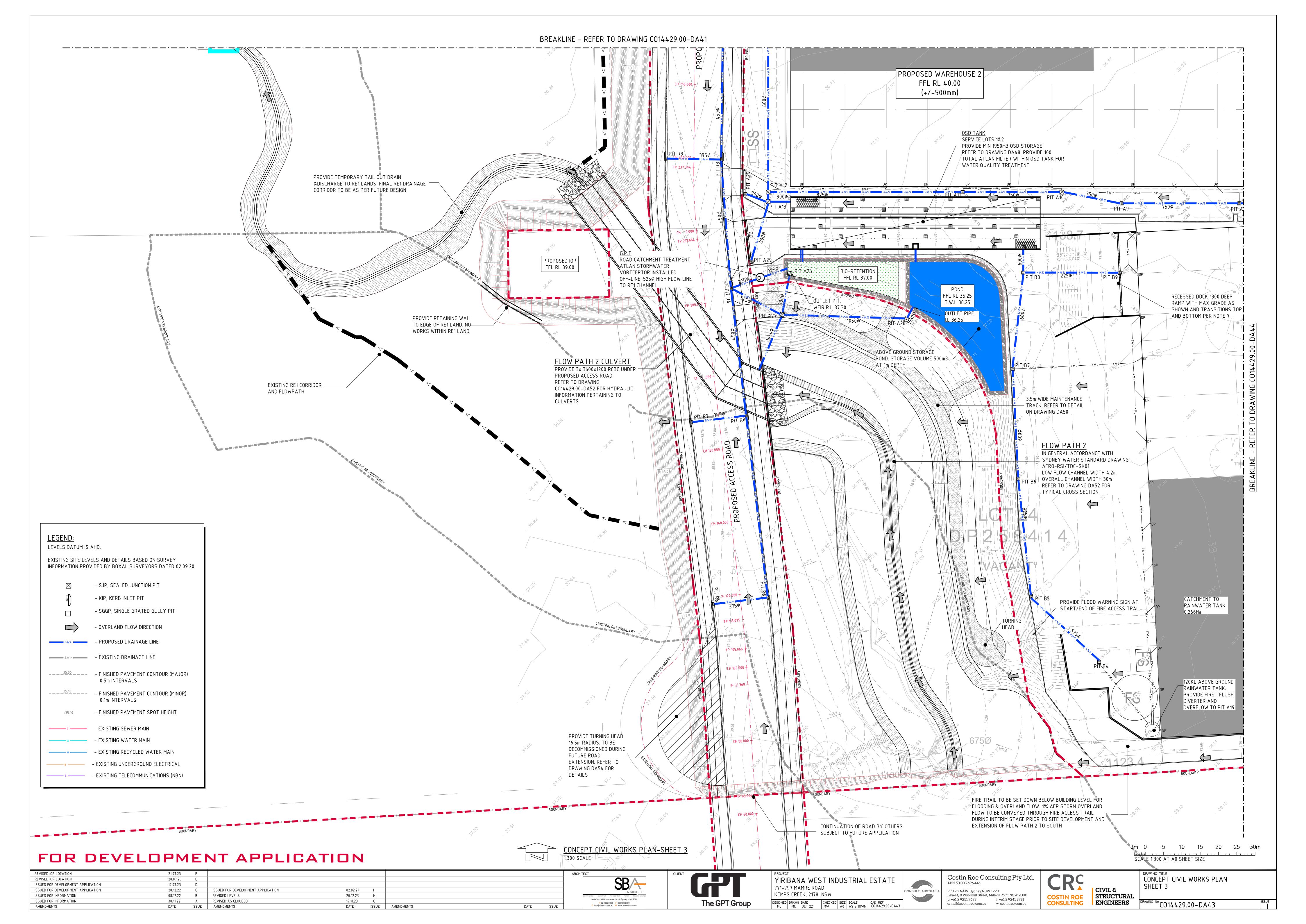


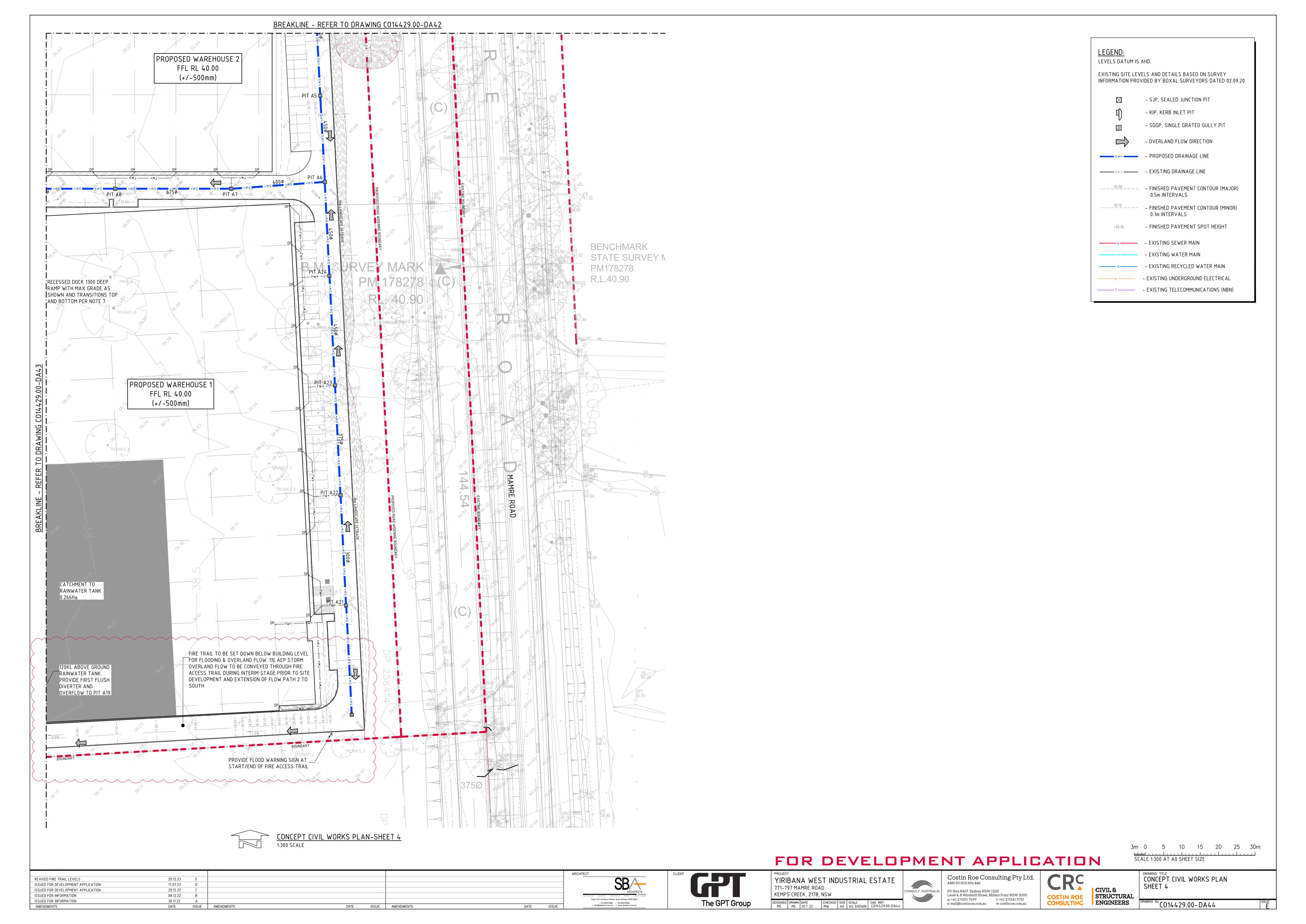
FOR DEVELOPMENT APPLICATION

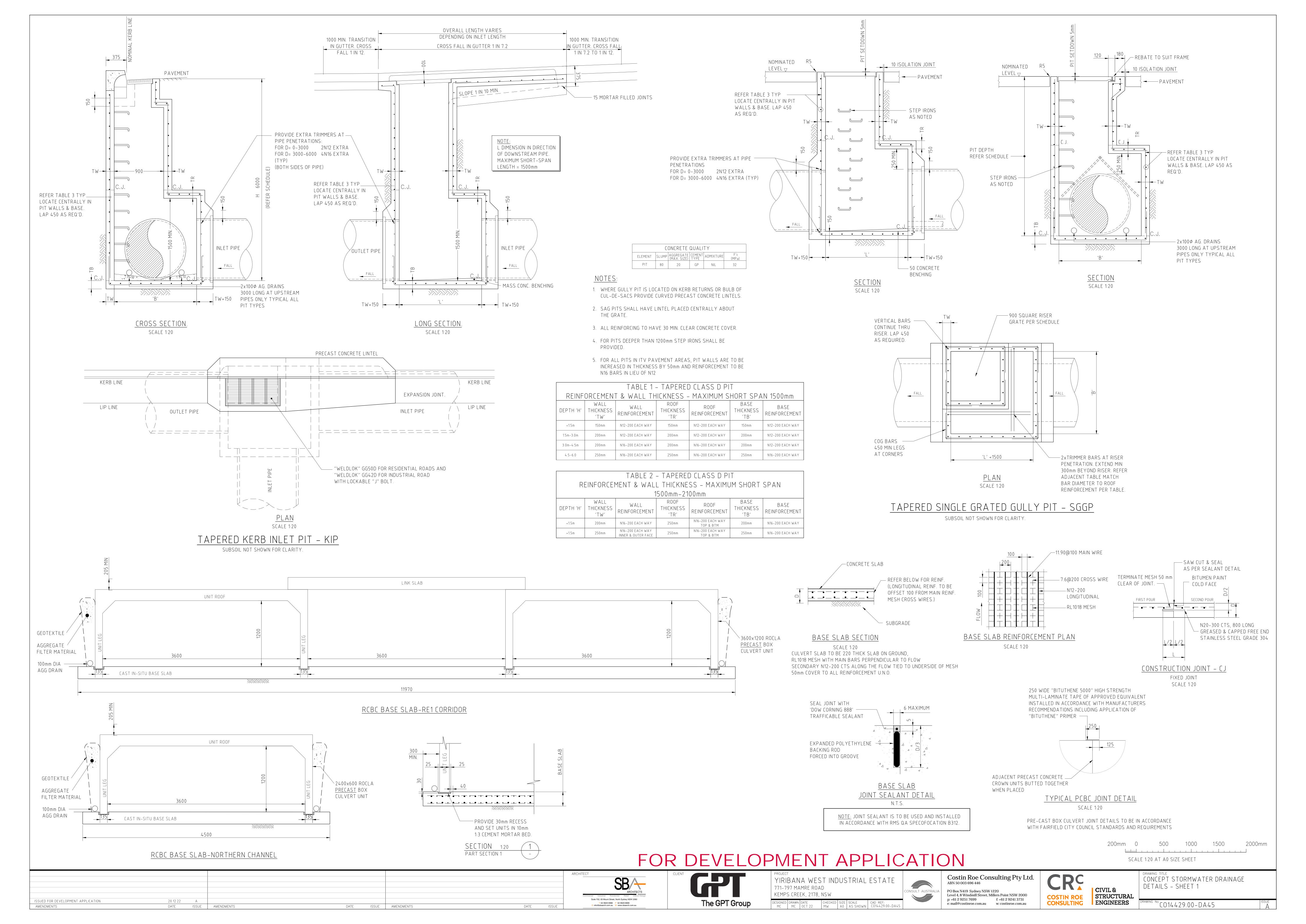
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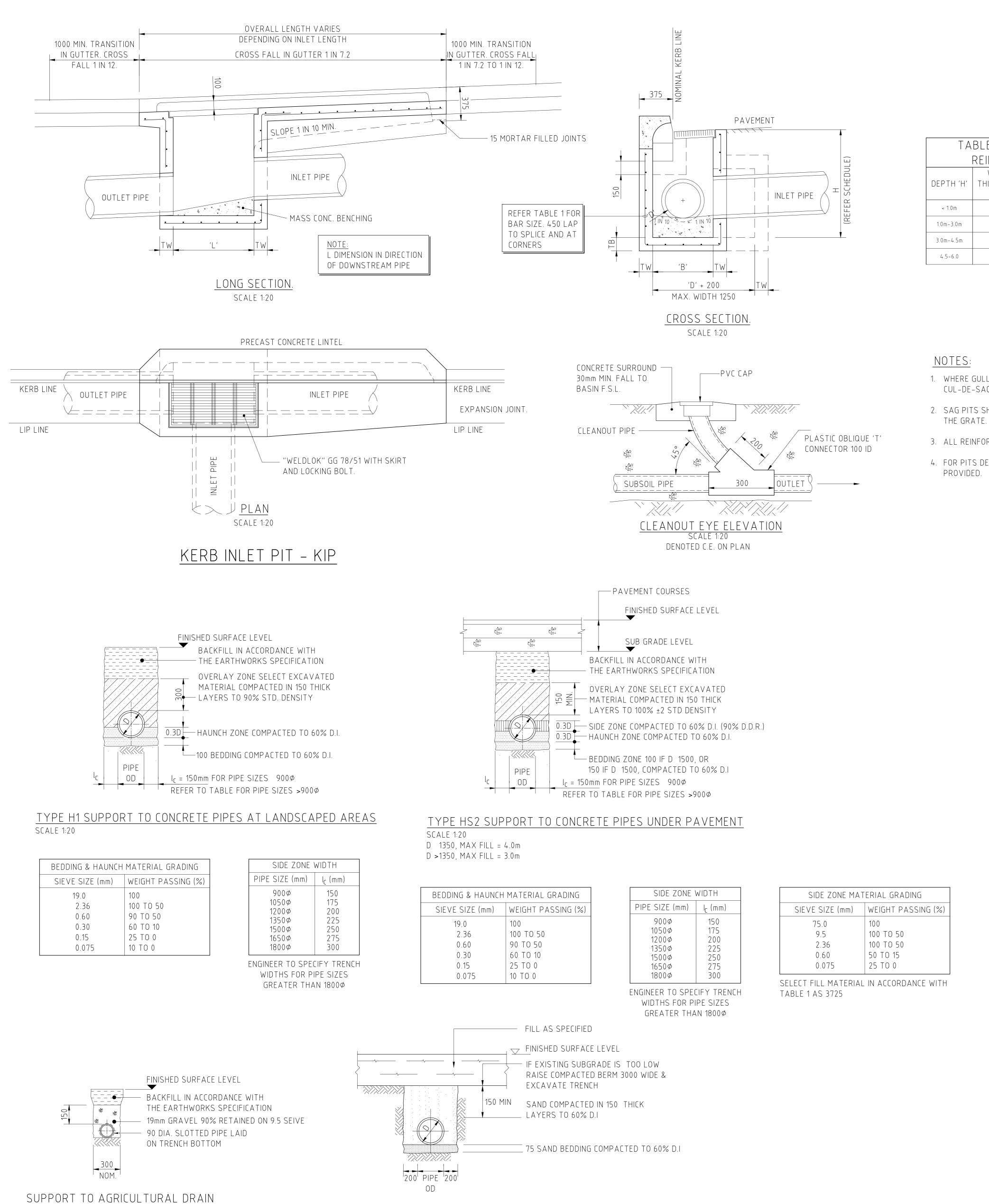


CONCEPT CIVIL WORKS PLAN SHEET 2









SUPPORT TO uPVC PIPES

DATE ISSUE AMENDMENTS

FOR USE UNDER CAR PARK PAVEMENTS/LANDSCAPED AREAS

DATE ISSUE AMENDMENTS

SCALE 1:20

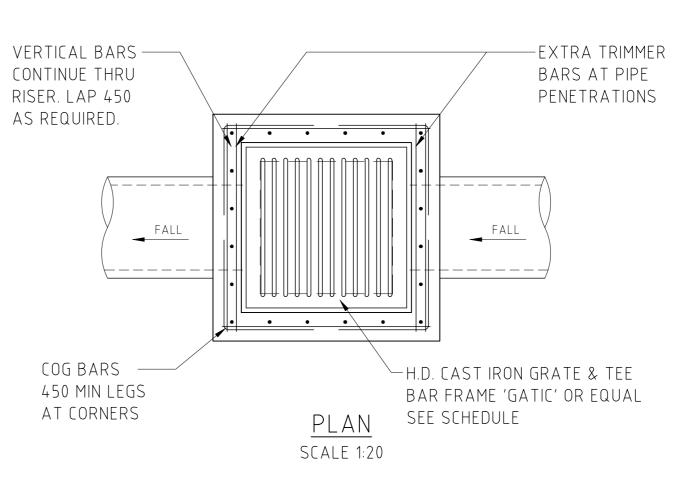
ISSUED FOR DEVELOPMENT APPLICATION

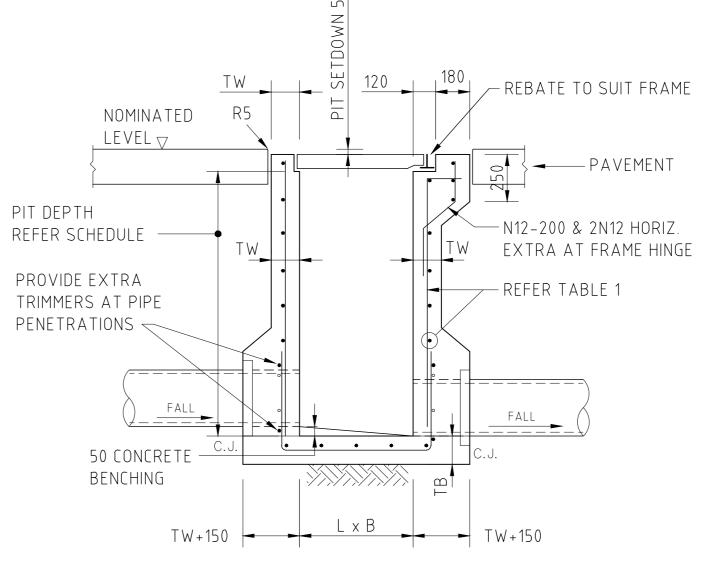
AMENDMENTS



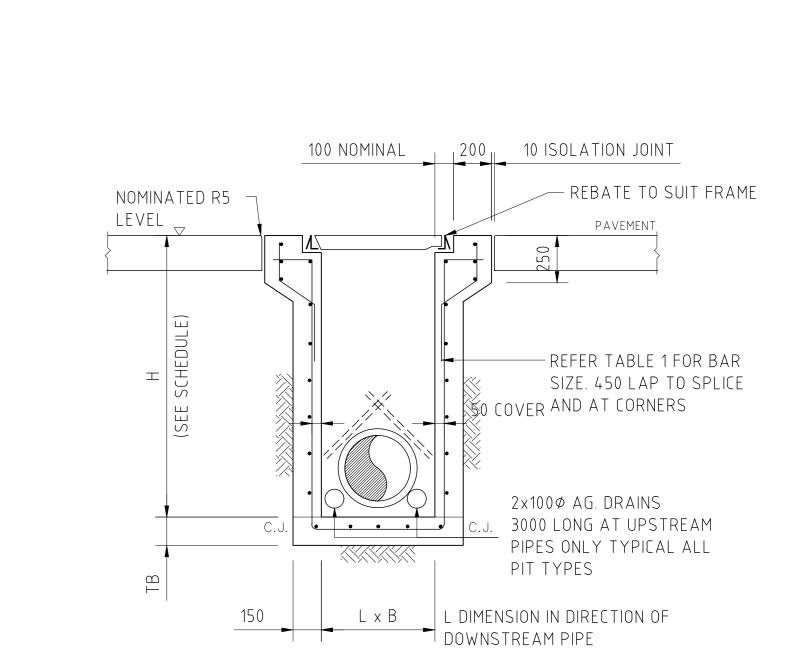
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	F'c (MPa)
PIT	80	20	GP	NIL	32

- 1. WHERE GULLY PIT IS LOCATED ON KERB RETURNS OR BULB OF CUL-DE-SACS PROVIDE CURVED PRECAST CONCRETE LINTELS.
- 2. SAG PITS SHALL HAVE LINTEL PLACED CENTRALLY ABOUT
- 3. ALL REINFORCING TO HAVE 30 MIN. CLAER CONCRETE COVER.
- 4. FOR PITS DEEPER THAN 1200mm CLIMB RAILS SHALL BE





SEE SCHEDULE L DIMENSION IN DIRECTION OF DOWNSTREAM PIPE SCALE 1:20



SCALE 1:20

-EXTRA TRIMMER

BARS AT PIPE

PENETRATIONS

- CONCRETE FILLED CAST IRON

COVER & FRAME (GATIC OR

EQUAL) SEE SCHEDULE

<u>SECTION</u> SCALE 1:20

L DIMENSION IN DIRECTION OF DOWNSTREAM PIPE

SEALED PIT - SP

SEE SCHEDULE

VERTICAL BARS ——

FALL

CONTINUE THRU

RISER. LAP 450

COG BARS

450 MIN LEGS

AT CORNERS

AS REQUIRED.

SINGLE GRATED GULLY PIT - SGGP

ALIGN STRUCTURE EVENLY WITH BANK.

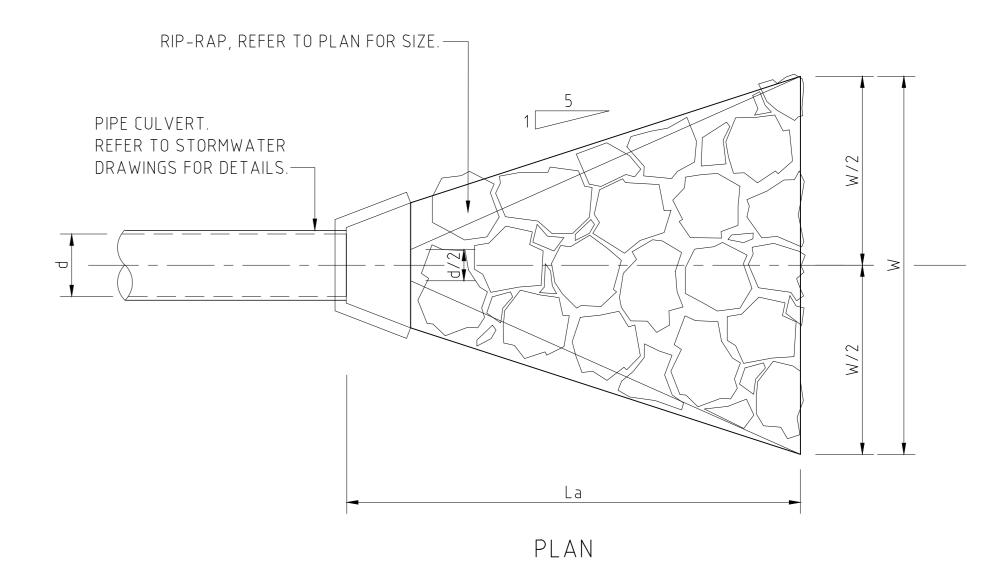
DISSIPATER NOTES

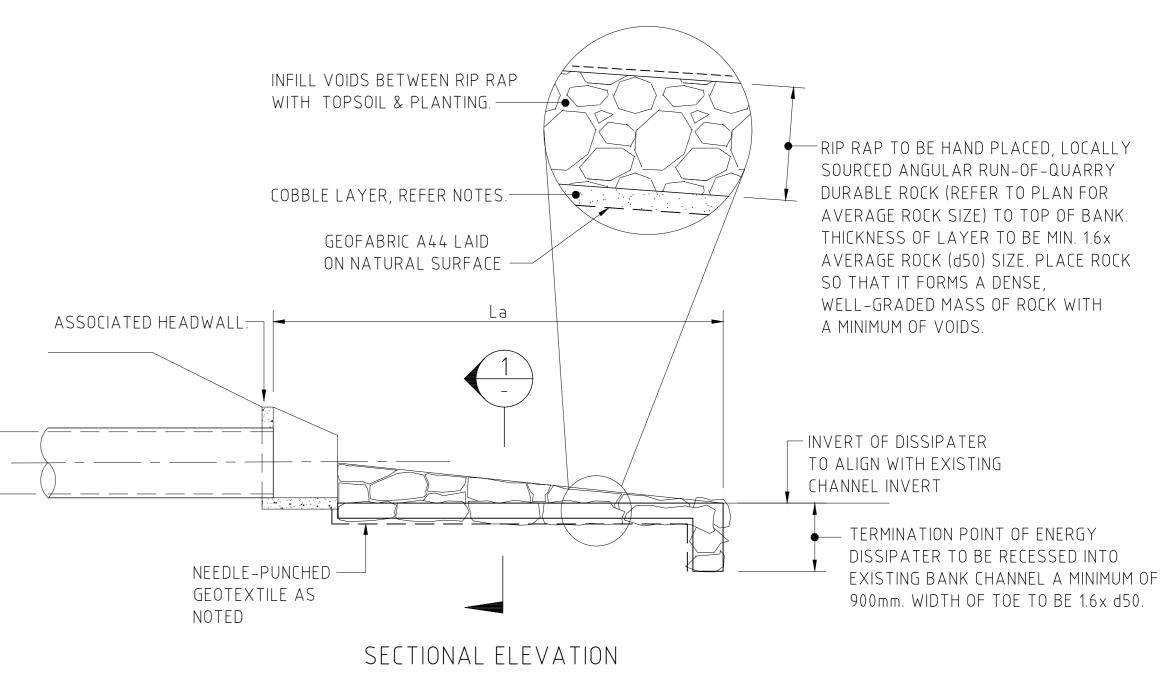
- 2. LOCATE STRUCTURE AT INVERT LEVEL OF STREAM AND POINT IN A DOWNSTREAM DIRECTION.
- 3. PIPE TO REST ON, AND BE PACKED IN, BY RIP-RAP (SIZE AS
- DISCHARGE INTO STREAM WHERE BEDROCK IS PRESENT, OTHERWISE SCOUR PROTECT AS REQUIRED.
- SCOUR PROTECT THE OPPOSITE BANK AS REQUIRED. SCOUR PROTECTION TO BE PROVIDED WHERE OPPOSITE BANK IS WITHIN
- 12-14 TIMES THE PIPE DIAMETER. RIP-RAP TO CONSIST OF ANGULAR RUN-OF-QUARRY ROCK (d50= 150mm MINIMUM) AS NOTED ON THE PLAN. RIP-RAP TO BE MINIMUM THICKNESS OF RIP-RAP LAYER TO BE 1.6x AVERAGE ROCK SIZE
- RIP-RAP IS TO BE PLACED OVER A 200mm LAYER OF 140mm COBBLES OVER NEEDLE-PUNCHED GEOFAB A44.
- 8. PLACE ROCK SO THAT IT FORMS A DENSE, WELL-GRADED MASS OF ROCK WITH A MINIMUM OF VOIDS. THE FINISHED RIP-RAP SURFACE SHOULD BE FREE OF POCKETS OF SMALL ROCK OR CLUSTERS OF LARGE ROCKS.
- 9. GAPS IN RIP-RAP TO BE HAND PACKED WITH TOPSOIL & PLANTED WITH NATIVE SEDGES & RUSHES TO PROVIDE. THE INTENT IS FOR THERE TO BE NO VOIDS BETWEEN RIP-RAP BOULDERS.
- 10. ENSURE THE FINISHED ROCK SURFACE BLENDS WITH THE SURROUNDING GROUND LEVELS. NO OVERFALL OR PROTRUSION OF
- ROCK SHOULD BE APPARENT. 11. ENSURE THAT STORMWATER FROM SURROUNDING GROUND IS FREE TO ENTER THE STRUCTURE WITHOUT CAUSING UNDESIRABLE

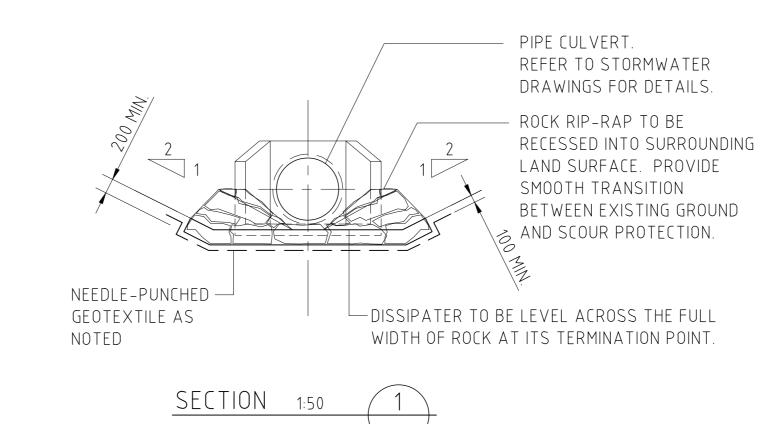
	PONDING OR SCO	JUR.				
DISSIPATER SCHEDULE						
DISCHARGE POINT d La W RIP-RAP (
	OUTLET TYPE 1	1200	5000	5000	300	

 OUTLET TYPE 2
 3.6x1.2 RCBC
 6000
 10000

 OUTLET TYPE 3
 2x225\$\phi\$
 3000
 1500







STORMWATER OUTLET DISSIPATER WITH HEADWALL SCALE 1:50

FOR DEVELOPMENT APPLICATION

SCALE 1:50 AT AO SIZE SHEET

CONCEPT STORMWATER DRAINAGE DETAILS - SHEET 2

SCALE 1:20 AT AO SIZE SHEET

SB/\

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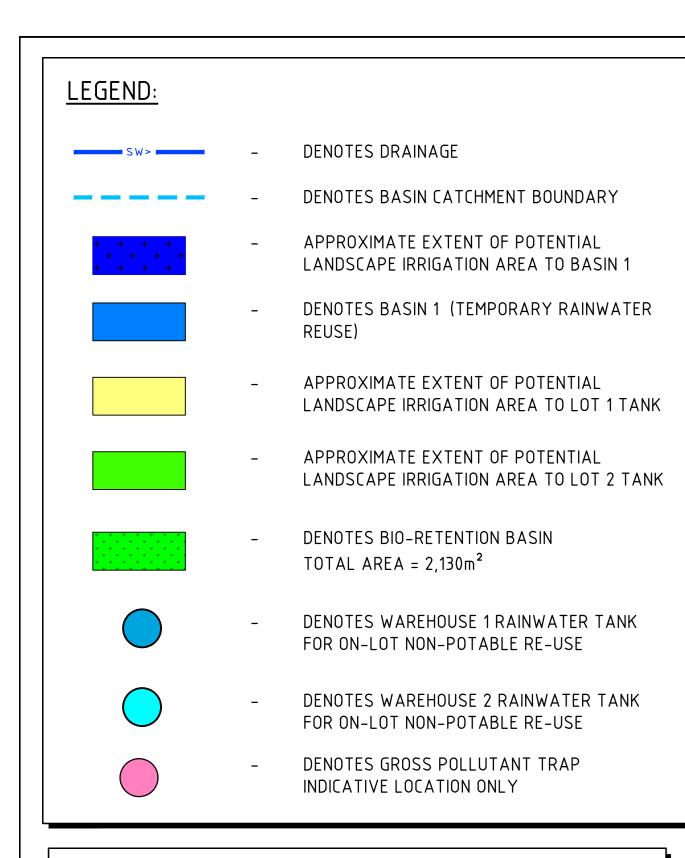




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CRC STRUCTURAL ENGINEERS CONSULTING

No CO14429.00-DA46



THIS PLAN DEPICTS THE STORMWATER MANAGEMENT MEASURES REQUIRED TO SATISFY THE MAMRE ROAD DCP STORMWATER FLOW AND QUALITY REQUIREMENTS FOR THE STAGE 1 SUBMISSION ONLY.

THE STORMWATER HARVESTING, MANAGEMENT AND RE-USE MEASURES SHOWN ON THIS PLAN ARE THOSE REQUIRED TO SATISFY THE STORMWATER FLOW AND OPERATIONAL STORMWATER QUALITY REQUIREMENTS OF THE MAMRE ROAD DCP.

FURTHER INFORMATION IS PRESENTED IN THE COSTIN ROE SOIL AND WATER MANAGEMENT REPORT.

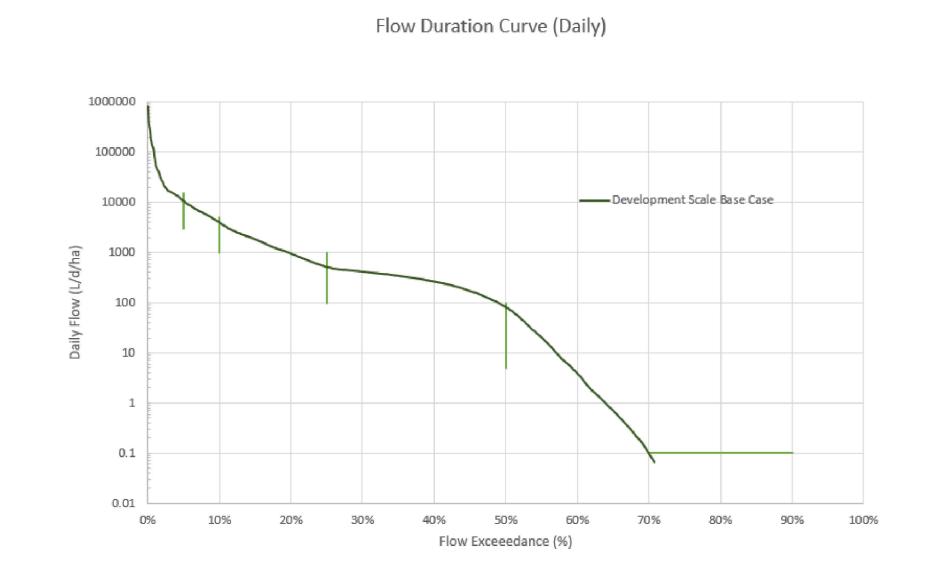
Catchment	Area (Ha)	Source Node	% Impervious	Stormwater Treatment
1-ROOF	0.887	Roof	100	AtlanFilter
2-ROOF	0.802	Roof	100	AtlanFilter
1-ROOF-RWT	0.365	Roof	100	Rainwater Tank + AtlanFilter
2-ROOF-RWT	0.408	Roof	100	Rainwater Tank + AtlanFilter
1 HARDSTAND	0.404	Sealed Road	100	StormSack + AtlanFilter
2-HARDSTAND	1.014	Sealed Road	100	StormSack + AtlanFilter
1A-LANDSCAPING	0.312	Industrial	10	StormSack + AtlanFilter
1B-LANDSCAPING	0.115	Industrial	10	StormSack + AtlanFilter
ROAD	0.913	Sealed Road	70	Vortceptor + BioRetention
UNDEVELOPED AREA	31.088	Industrial	0	Bypass
BIORETENTION	0.020	Bioretention	0	BioRetention
POND	0.050	Pond	0	Pond
RE1 DRAINAGE CORRIDOR	0.814	Industrial	10	Bypass
LANDSCAPE BYPASS	0.123	Industrial	10	Bypass
SYDNEY WATER DRAINAGE CORRIDOR	0.577	Industrial	10	Bypass
Total	37.892			

TYPICAL RAINWATER TANK RE-USE DEMAND

ESTATE SOLUTION RAINWATER REUSE DEMAND:

BASIN 1 - 9,000kL/YR = 15,000m² of IRRIGATED AREA - 870kL/YR = 1,450m² of IRRIGATED AREA - 700kL/YR = 1,150m² of IRRIGATED AREA LOT 1 TANK LOT 2 TANK

REUSE RATES ABOVE BASED ON THE FOLLOWING: 50% OF AVAILABLE LANDSCAPED AREA IRRIGATED AT 0.6kL/ha/yr (AREA NOTED ABOVE 15L/PERSON/DAY TOILET FLUSHING



FLOW DURATION CURVE - ACCESS LP STAGE 1

	FLOW DURATION CURVE TARGETS							
	INDICE	LOWER BOUND L/ha/day	UPPER BOUND L/ha/day	OPTION 1 - MARV RESULTS (L/HA/DAY)	COMPLIES WITH DCP?	OPTION 2 - FDC RESULTS (L/HA/DAY)	COMPLIES WITH DCP?	
Ī	95	3000	15000	10768	YES	N/A	-	
	90	1000	5000	4022	YES	4022	YES	
	75	100	1000	512	YES	512	YES	
	50	5	100	83	YES	83	YES	
	10	0	0	N/A	-	0	YES	
	CEASE TO FLOW	10%	30%	29	YES	N/A	-	
	MARV	≤2.0 ML	/ha/yr	N/A	-	1.37	YES	

FLOW DURATION CURVE TARGETS



REVISED FLOW DURATION CURVE 02.02.24 25.07.23 A ISSUED FOR DEVELOPMENT APPLICATION DATE ISSUE AMENDMENTS

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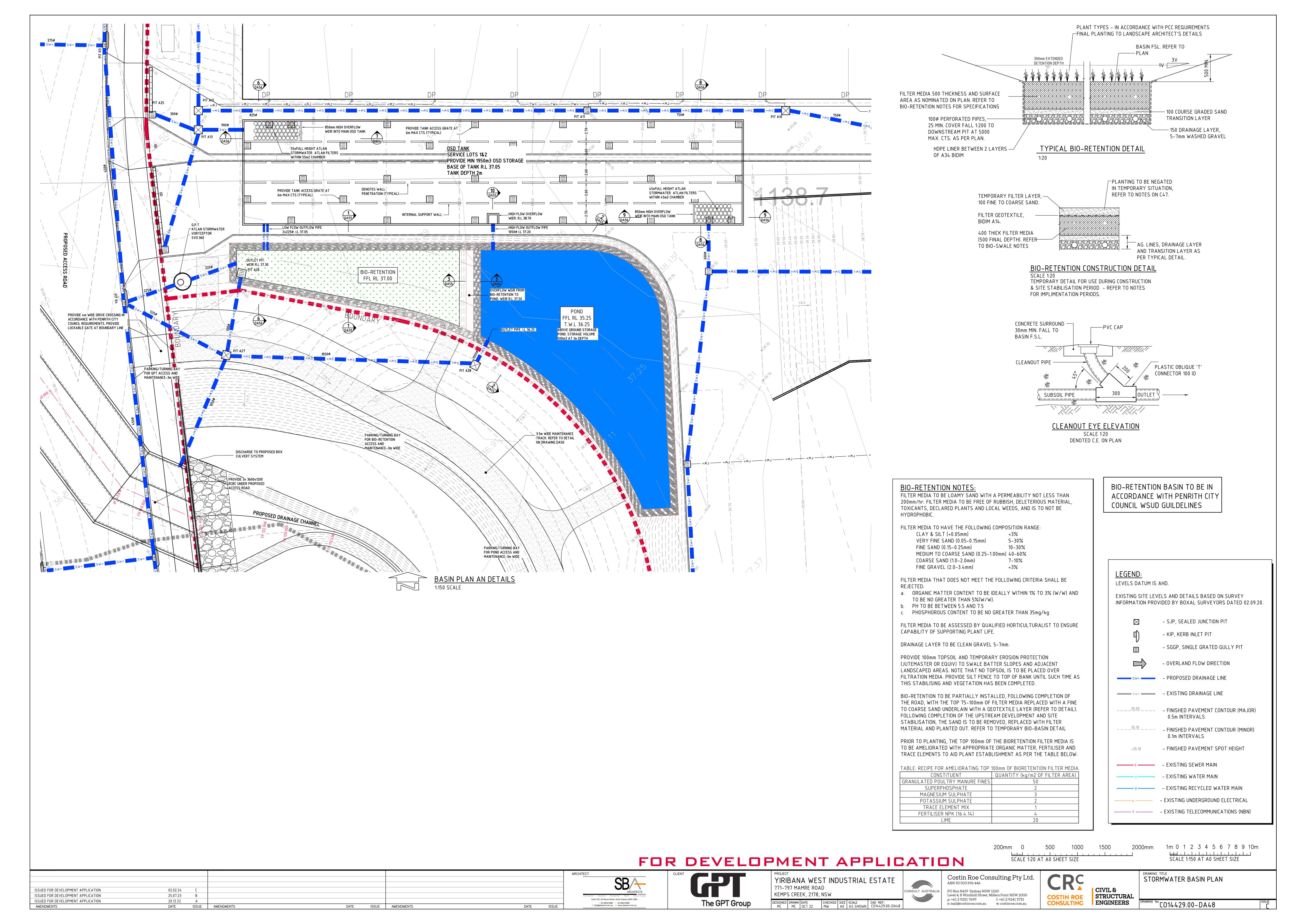
YIRIBANA WEST INDUSTRIAL ESTATE 771-797 MAMRE ROAD KEMPS CREEK, 2178, NSW

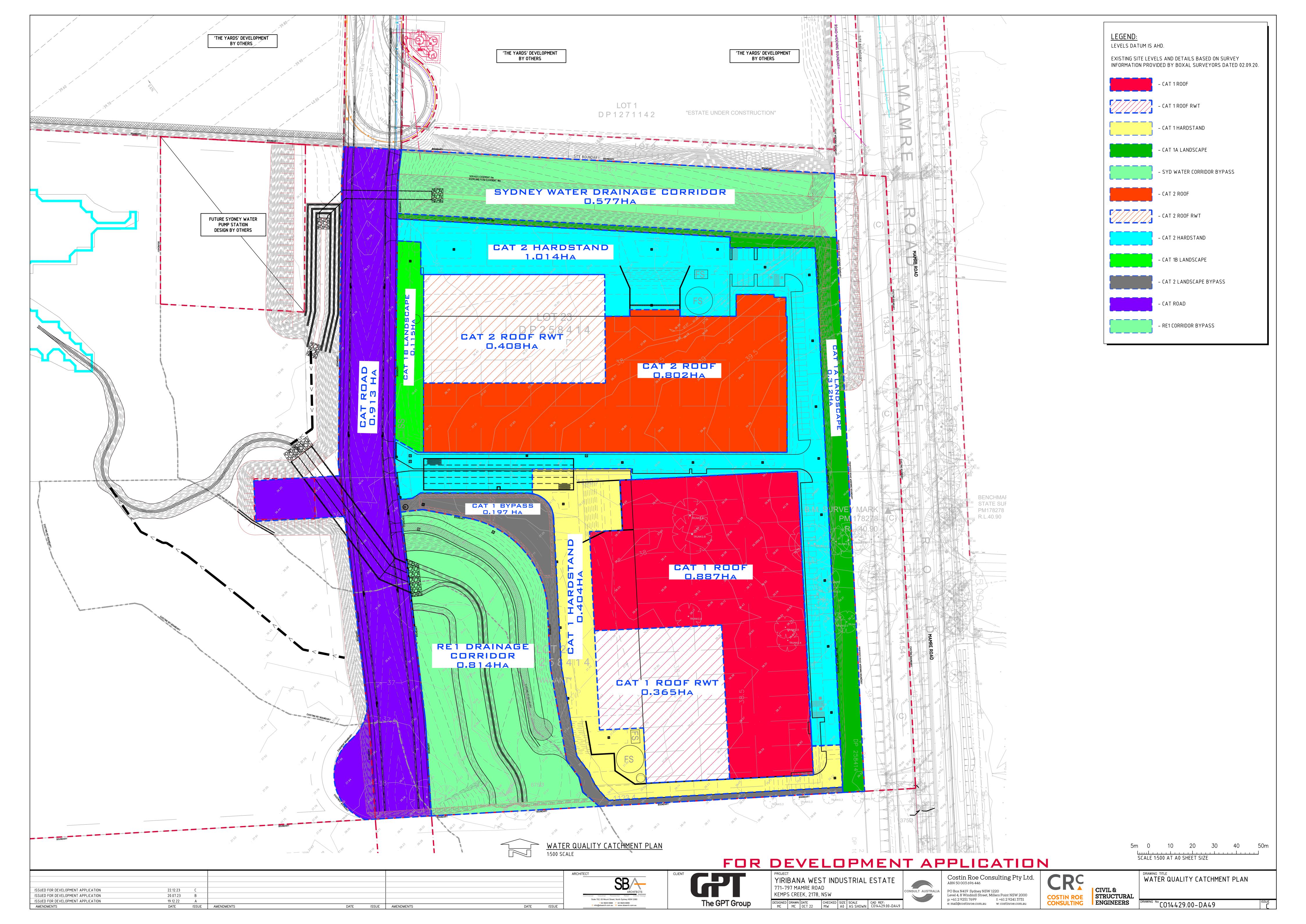


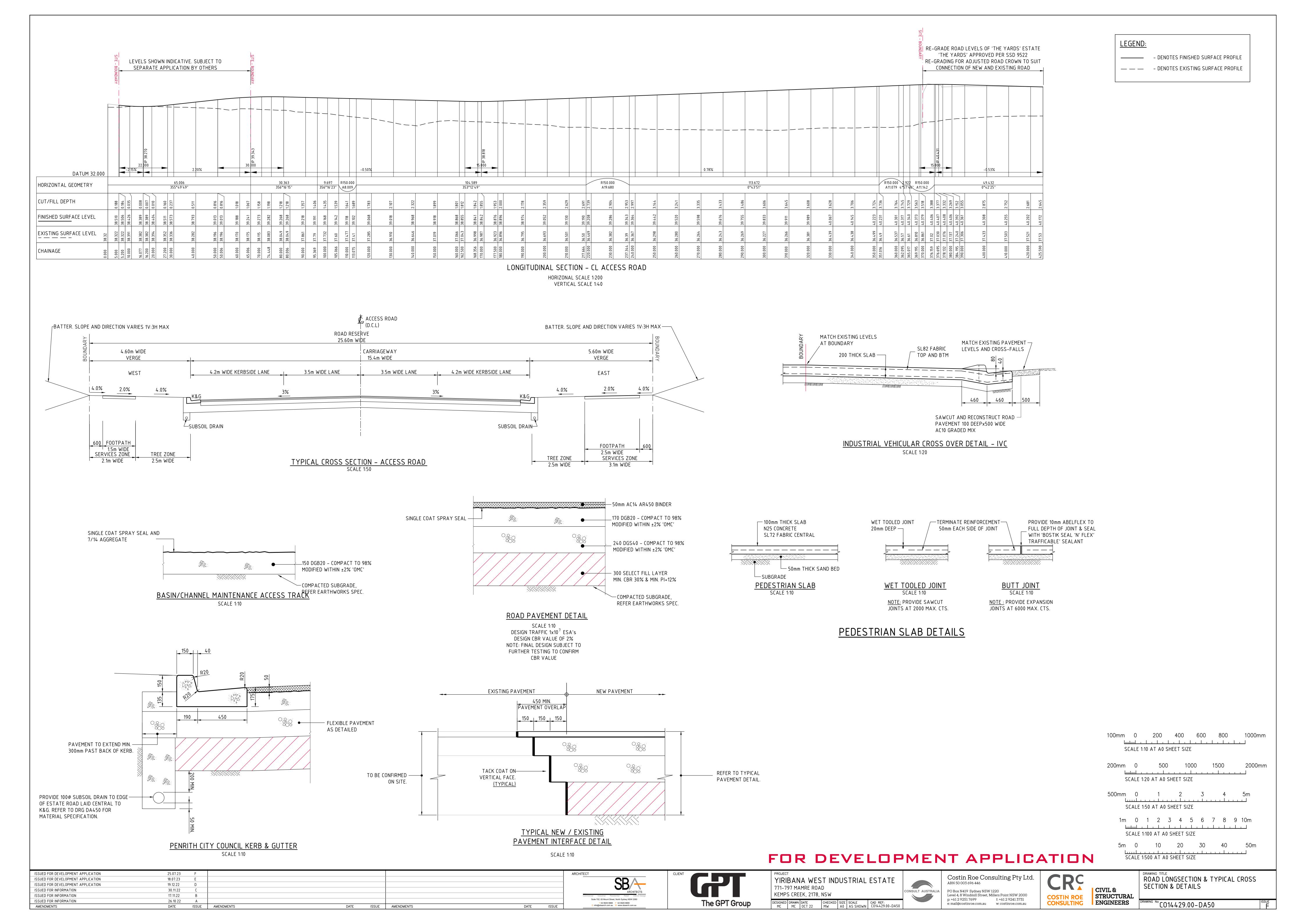
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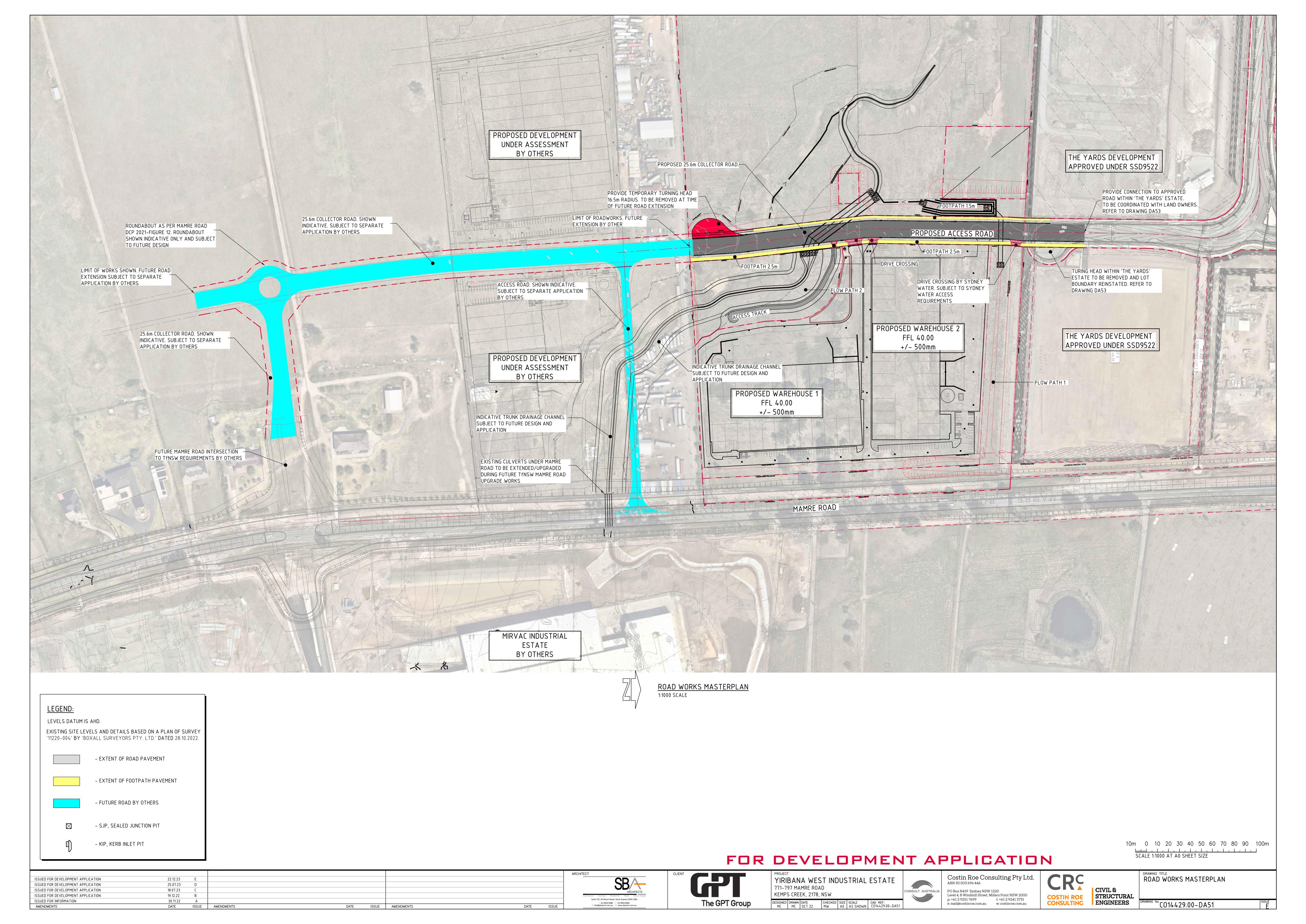
CIVIL & STRUCTURAL **ENGINEERS**

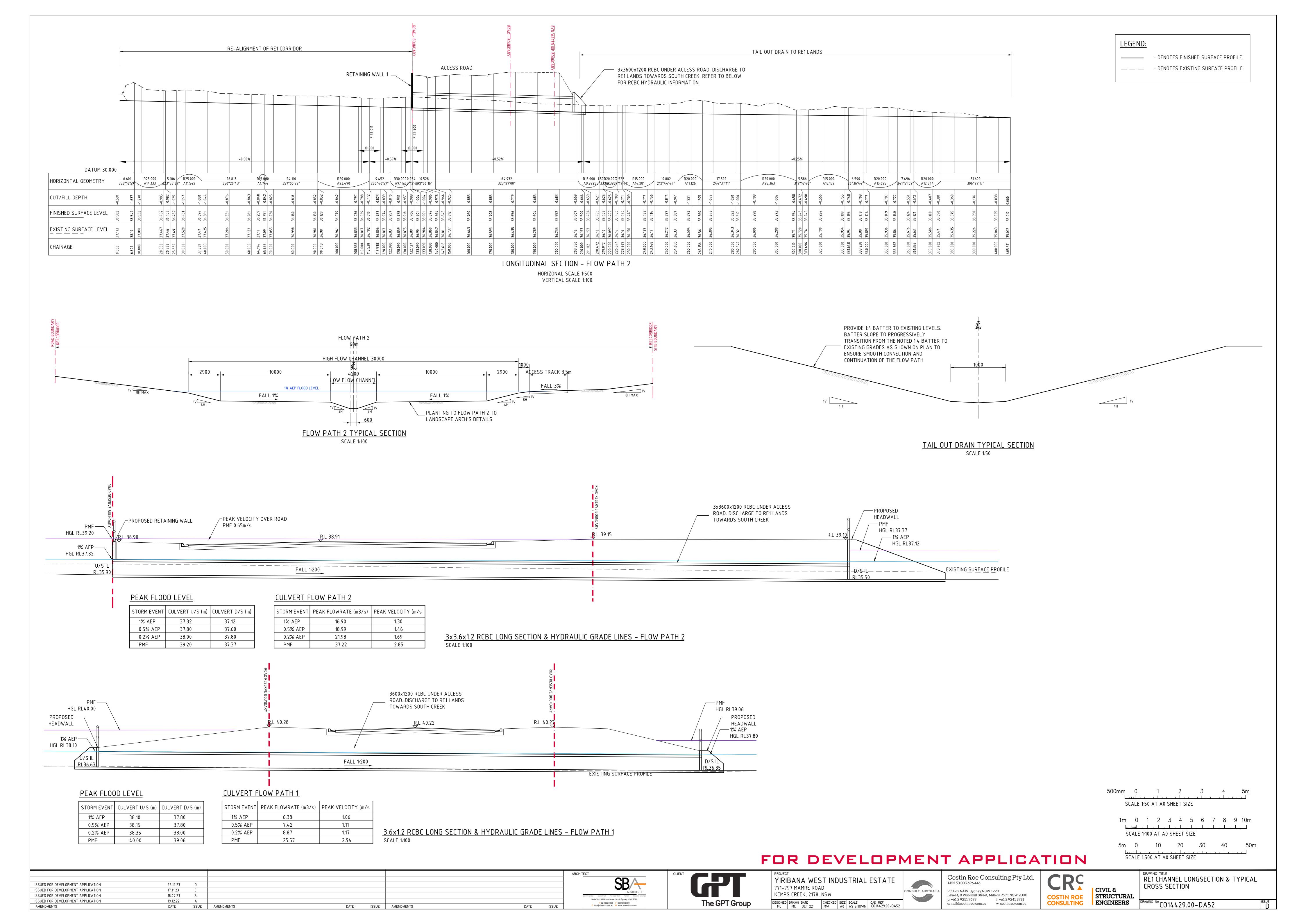
WATER SENSITIVE URBAN DESIGN MANAGEMENT PLAN

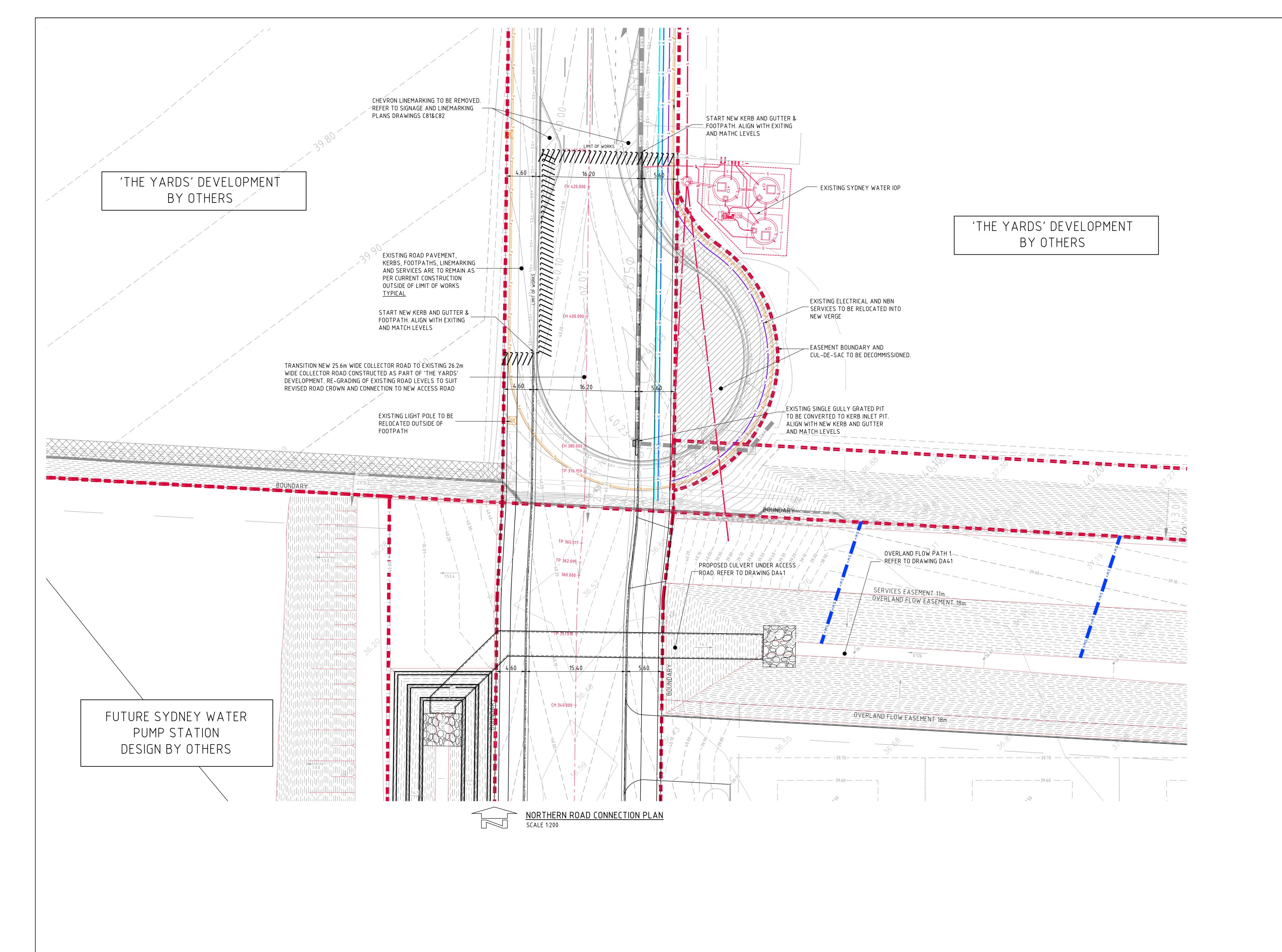












FOR DEVELOPMENT APPLICATION

SCALE 1:200 AT A0 SHEET SIZE

ISSUED FOR DEVELOPMENT APPLICATION 18.07.23 ISSUED FOR DEVELOPMENT APPLICATION T 02 9929 9988 F 02 9929 8899 E info@sbaarch.com.au W www.sbaarch.com.au DATE ISSUE AMENDMENTS DATE ISSUE AMENDMENTS









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NORTHERN ROAD CONNECTION PLAN

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY

- PROPOSED DRAINAGE LINE

- EXISTING DRAINAGE LINE

- EXISTING SEWER MAIN

- EXISTING WATER MAIN

- EXISTING RECYCLED WATER MAIN

- EXISTING UNDERGROUND ELECTRICAL

- EXISTING TELECOMMUNICATIONS (NBN)

INFORMATION PROVIDED BY BOXAL SURVEYORS DATED 02.09.20.

- KIP, KERB INLET PIT

----^{35.00}---- - FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS

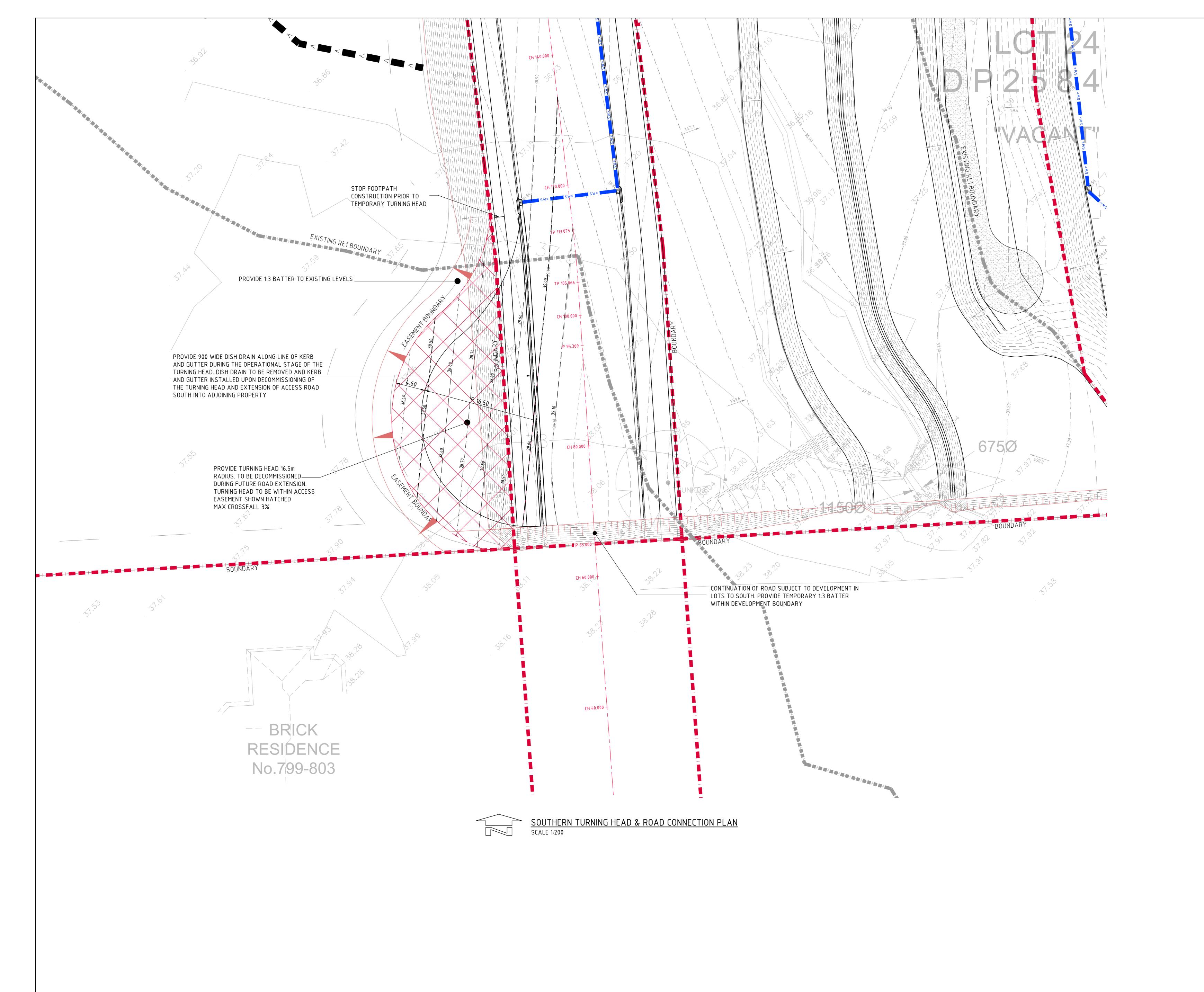
---- - FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

- FINISHED PAVEMENT SPOT HEIGHT

- SJP, SEALED JUNCTION PIT

- SGGP, SINGLE GRATED GULLY PIT

- OVERLAND FLOW DIRECTION



LEVELS DATUM IS AHD. EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY BOXAL SURVEYORS DATED 02.09.20. - SJP, SEALED JUNCTION PIT - KIP, KERB INLET PIT - SGGP, SINGLE GRATED GULLY PIT - OVERLAND FLOW DIRECTION - PROPOSED DRAINAGE LINE - EXISTING DRAINAGE LINE ---^{35.00}---- - FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS ---^{35.10} ---- - FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS - FINISHED PAVEMENT SPOT HEIGHT - EXISTING SEWER MAIN - EXISTING WATER MAIN - EXISTING UNDERGROUND ELECTRICAL

FOR DEVELOPMENT APPLICATION

SCALE 1:200 AT A0 SHEET SIZE

ISSUED FOR DEVELOPMENT APPLICATION 18.07.23 A ISSUED FOR DEVELOPMENT APPLICATION DATE ISSUE AMENDMENTS DATE ISSUE AMENDMENTS





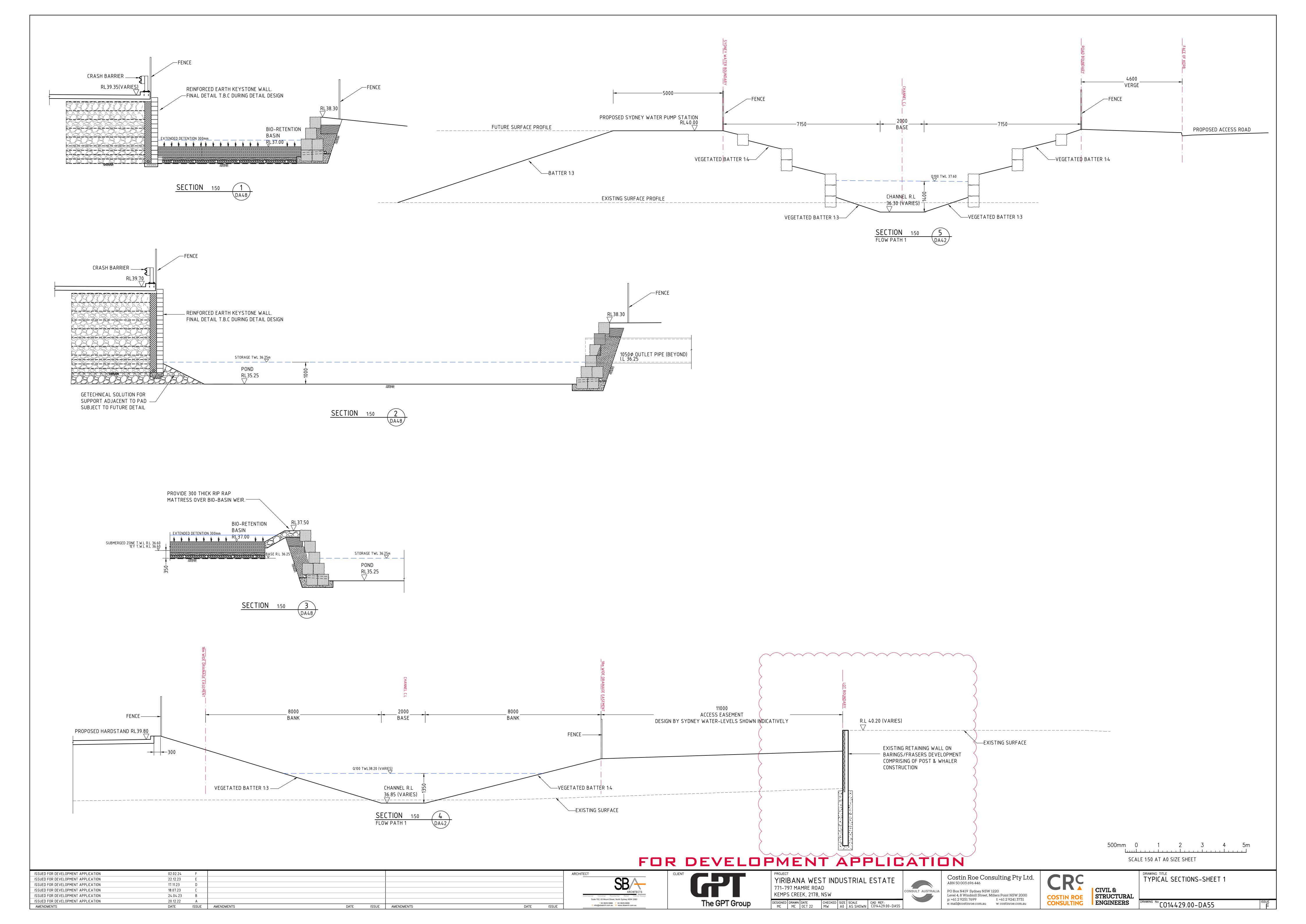


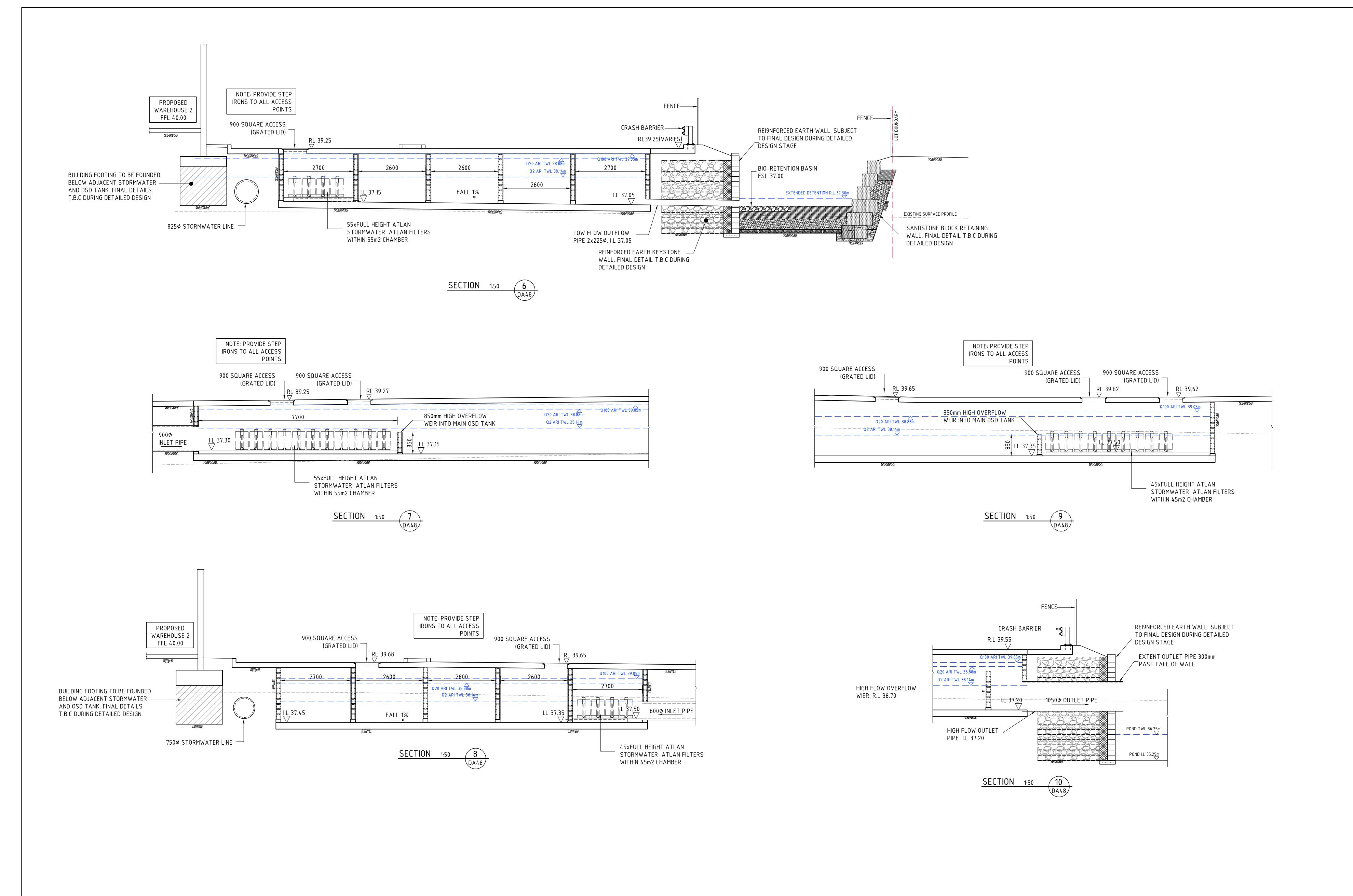


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SOUTHERN TURNING HEAD
AND ROAD CONNECTION PLAN





FOR DEVELOPMENT APPLICATION

SCALE 1:50 AT A0 SIZE SHEET TYPICAL SECTIONS-SHEET 2 Costin Roe Consulting Pty Ltd. ABN 50 003 696 446 PO Box N419 Sydney NSW 1220 Level 4, 8 Windmill Street, Millers Point NSW 2000 p: +61 2 9251 7699 f: +61 2 9241 3731 **ENGINEERS** CO14429.00-DA56 e: mail@costinroe.com.au w: costinroe.com.au

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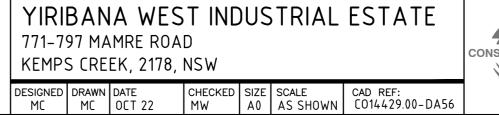
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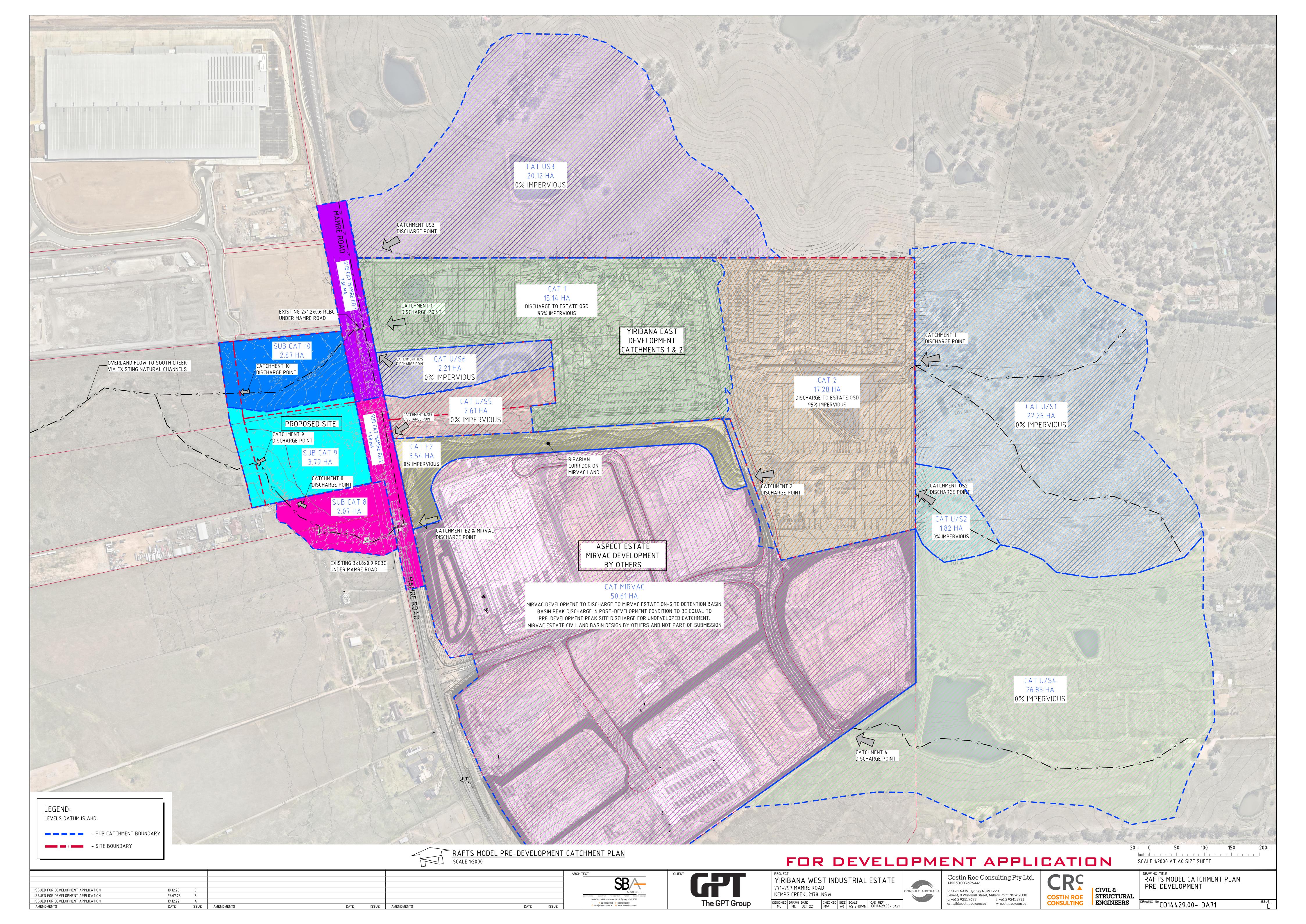
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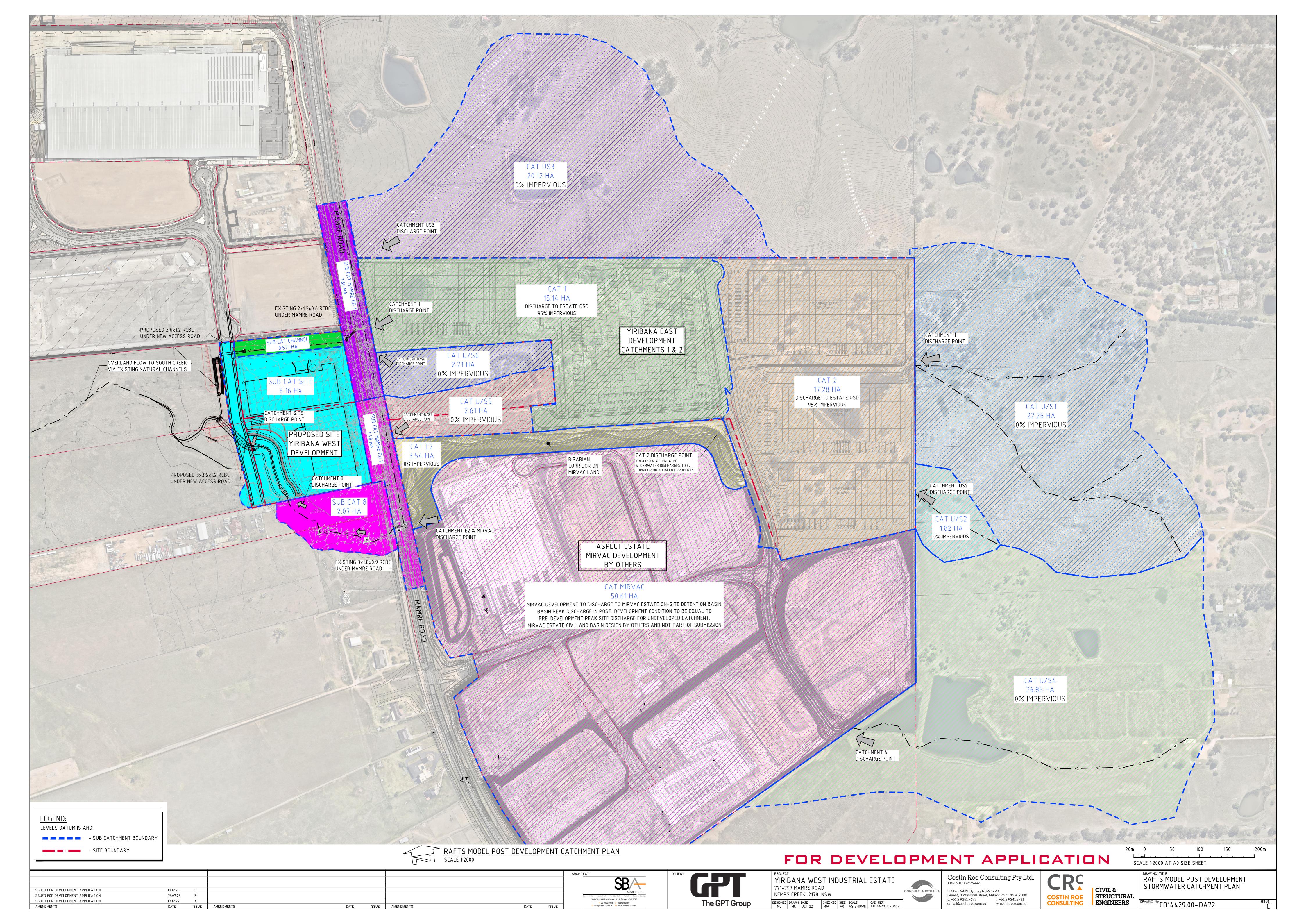
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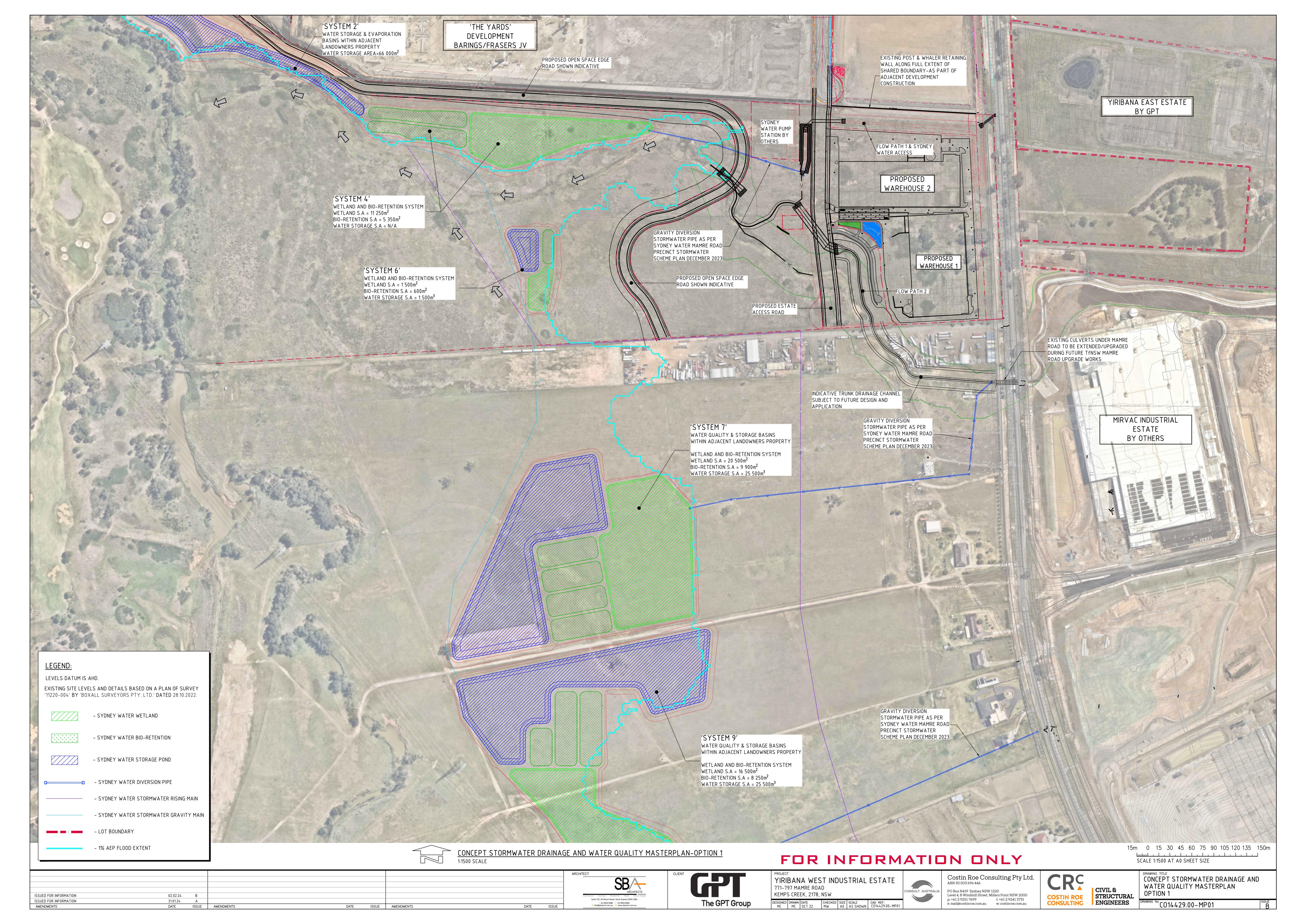


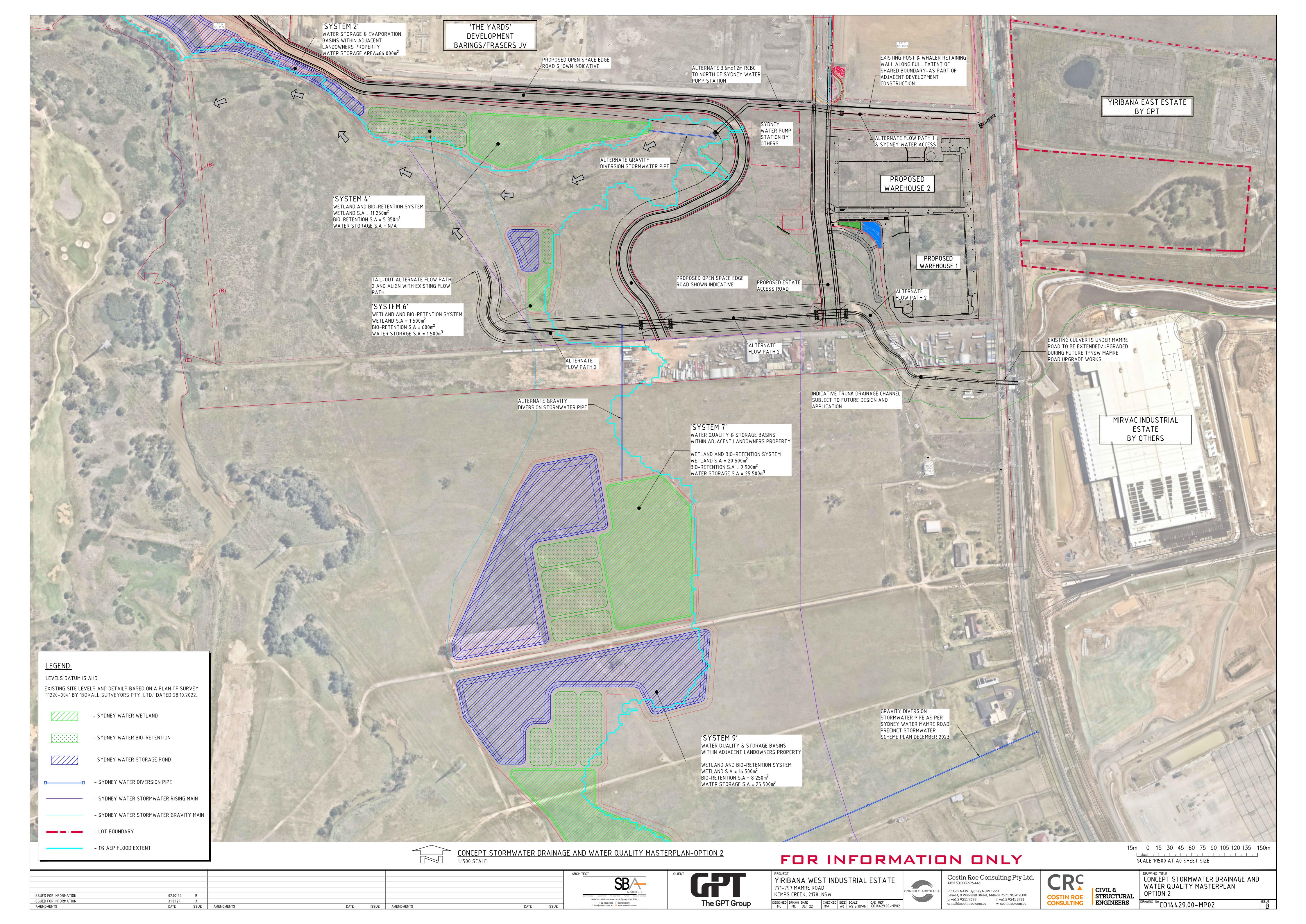


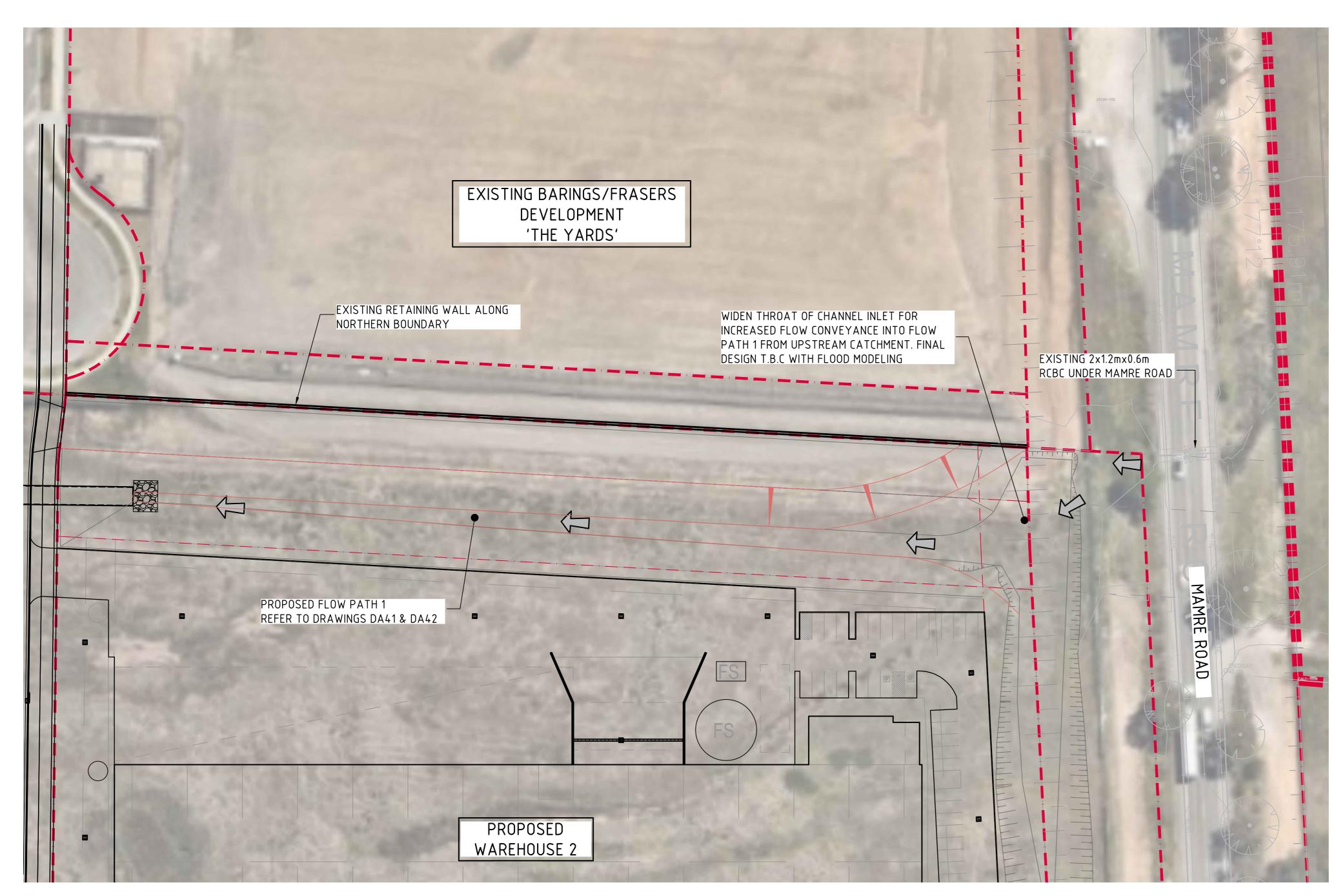


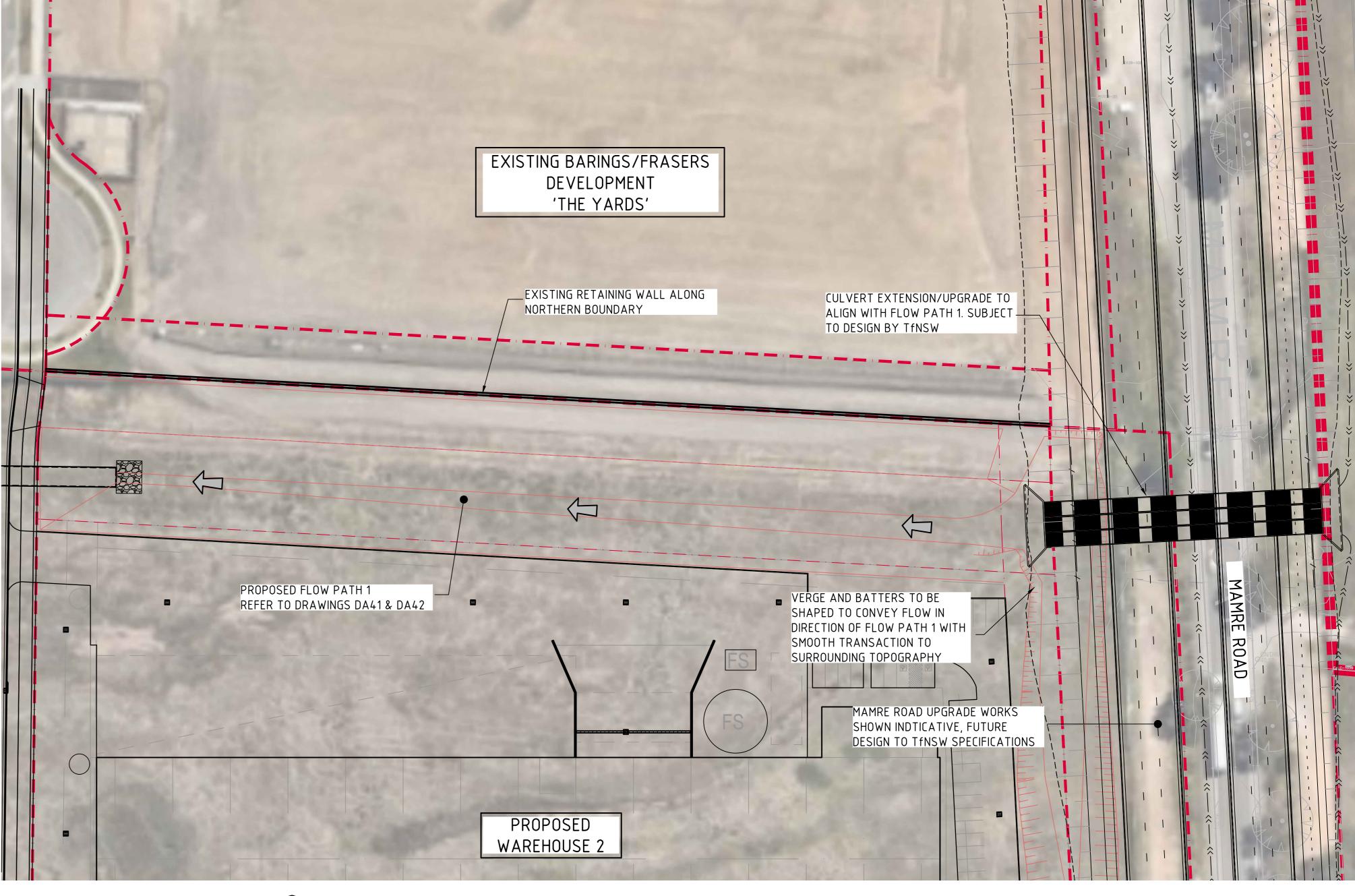










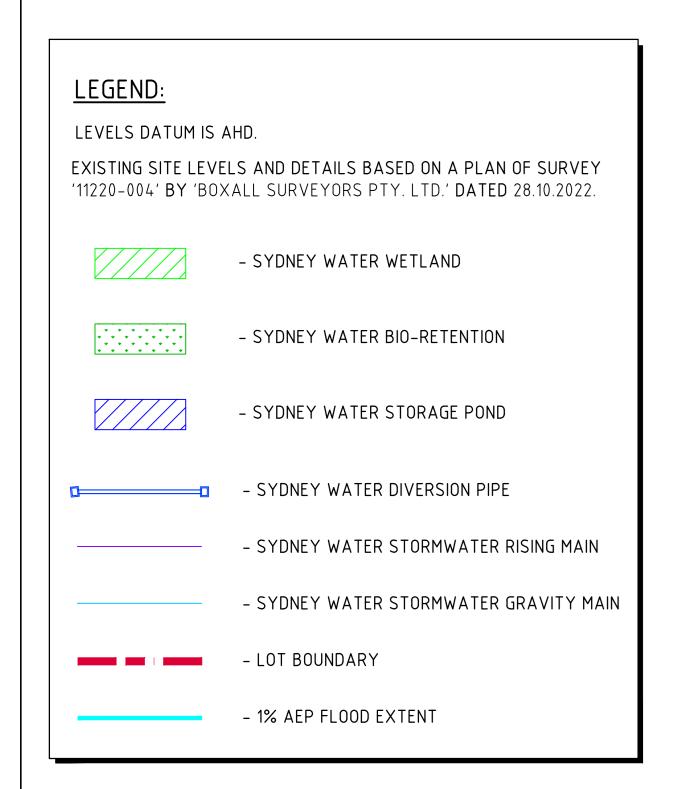


CONCEPT FLOOD MANAGEMENT SKETCH - FLOW PATH 1 - INTERIM CONDITIONS

1:500 SCALE

CONCEPT FLOOD MANAGEMENT SKETCH - FLOW PATH 1 - FUTURE MAMRE ROAD UPGRADE

1:500 SCALE



FOR INFORMATION ONLY

CRC CIVIL& STRUCTURAL ENGINEFPS Costin Roe Consulting Pty Ltd. CONCEPT FLOOD MANAGEMENT SKETCH YIRIBANA WEST INDUSTRIAL ESTATE ABN 50 003 696 446 FLOW PATH 1 771-797 MAMRE ROAD CONSULT AUSTRALIA PO Box N419 Sydney NSW 1220 KEMPS CREEK, 2178, NSW Level 4, 8 Windmill Street, Millers Point NSW 2000 Suite 702, 83 Mount Street, North Sydney NSW 2060 p: +61 2 9251 7699 f: +61 2 9241 3731 02.02.24 A ISSUED FOR INFORMATION C014429.00-SK02 T 02 9929 9988 F 02 9929 8899 E info@sbaarch.com.au W www.sbaarch.com.au e: mail@costinroe.com.au w: costinroe.com.au DATE ISSUE AMENDMENTS DATE ISSUE AMENDMENTS