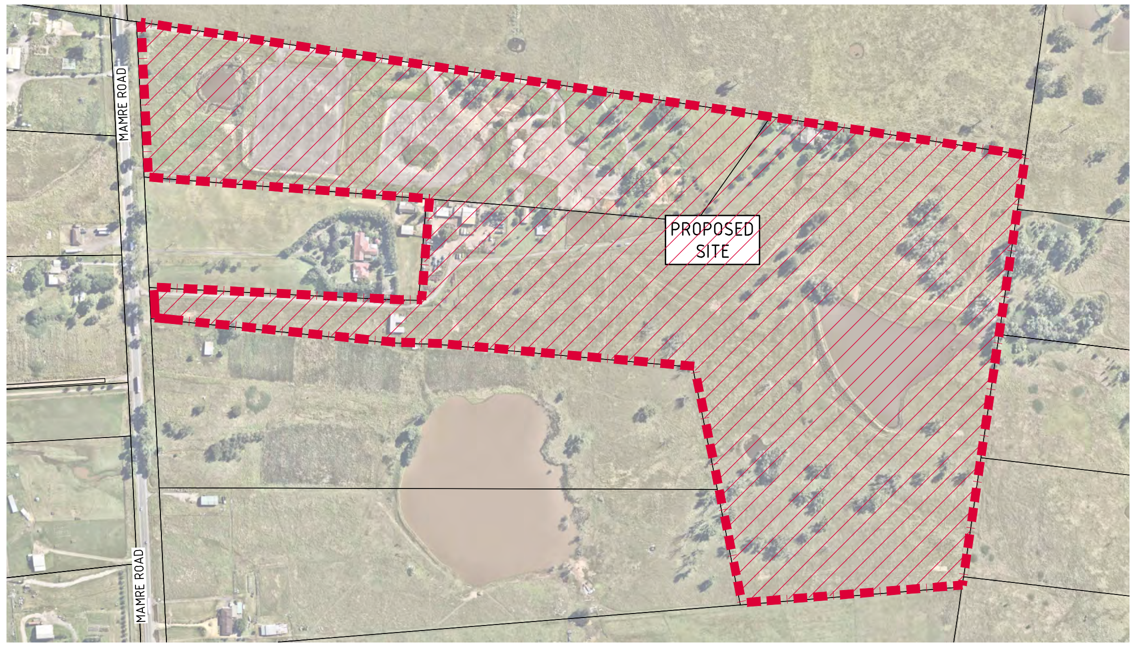
Appendix A

DRAWINGS BY COSTIN ROE CONSULTING

STATE SIGNIFICANT DEVELOPMENT APPLICATION
YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD, KEMPS CREEK, NSW, 2178

DRAWING LIST

DRAWING NO.	DRAWING TITLE
C013874.06- SSDA100	DRAWING LIST AND LOCALITY PLAN
C013874.06- SSDA110	GENERAL NOTES
C013874.06- SSDA200	EROSION AND SEDIMENT CONTROL PLAN - STAGE 1
C013874.06- SSDA201	EROSION AND SEDIMENT CONTROL PLAN - STAGE 2
C013874.06- SSDA250	EROSION AND SEDIMENT CONTROL DETAILS
C013874.06- SSDA300	BULK EARTHWORKS PLAN
C013874.06- SSDA310	CUT/FILL PLAN
C013874.06- SSDA350	BULK EARTHWORKS SECTIONS - SHEET 1
C013874.06- SSDA351	BULK EARTHWORKS SECTIONS - SHEET 2
C013874.06- SSDA400	STORMWATER DRAINAGE MASTER PLAN
C013874.06- SSDA401	PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN
C013874.06- SSDA402	POST-DEVELOPMENT STORMWATER CATCHMENT PLAN
C013874.06- SSDA411	WAREHOUSE 1 - STORMWATER DRAINAGE PLAN
C013874.06- SSDA413	WAREHOUSE 3 - STORMWATER DRAINAGE PLAN
C013874.06- SSDA420	E2 CORRIDOR GENERAL ARRANGEMENT PLAN
C013874.06- SSDA421	E2 CORRIDOR CENTRELINE LONGSECTION
C013874.06- SSDA431	OSD BASIN 1 PLAN
C013874.06- SSDA432	OSD BASIN 2 PLAN
C013874.06- SSDA451	STORMWATER DRAINAGE DETAILS - SHEET 1
C013874.06- SSDA452	STORMWATER DRAINAGE DETAILS - SHEET 2
C013874.06- SSDA453	STORMWATER DRAINAGE DETAILS - SHEET 3
C013874.06- SSDA454	STORMWATER DRAINAGE DETAILS - SHEET 4
C013874.06- SSDA460	TYPICAL SECTIONS - SHEET 1
C013874.06- SSDA461	TYPICAL SECTIONS - SHEET 2
C013874.06- SSDA500	ROADWORKS MASTER PLAN
C013874.06- SSDA510	ROADWORKS TYPICAL SECTIONS & DETAILS
C013874.06- SSDA521	ROADWORKS LONG SECTIONS - SHEET 1
C013874.06- SSDA600	RETAINING WALL SETOUT PLAN
C013874.06- SSDA651	RETAINING WALL DETAILS



LOCALITY PLAN
NTS

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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CLIENT: The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA100

CONSULT AUSTRALIA

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Costin Roe Consulting
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: DRAWING LIST AND LOCALITY PLAN
DRAWING No: C013874.06-SSDA100
ISSUE: B

GENERAL NOTES:

1. 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.
2. 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.
3. 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 SETOUT. REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.
4. 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.
5. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
6. 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 JOB.

SURVEY NOTE:

1. EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY '11019-001' BY 'BOXALL SURVEYORS PTY. LTD.' DATED 23.07.2020.

SITE PREPARATION NOTES:

1. ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL REPORT 'PSM3959-004L' PROVIDED BY PSM DATED 17.10.2019.
2. EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY BOXALL SURVEYORS TITLED 11019-001 DATED 23.07.2020.
3. STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
4. 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.
5. PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
6. 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.
7. 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.
8. 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.
9. 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)
11. 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.
13. 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.
15. 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.

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.

EROSION CONTROL NOTES:

ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED DIRECTLY FOLLOWING THE COMPLETION OF THE EARTHWORKS.

1. SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
2. HAY BALE BARRIERS AND GEOFABRIC 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.
3. ALL TEMPORARY EARTH BERMS, DIVERSION AND SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
4. CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
6. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.
7. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
8. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
9. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm.
10. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
11. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SILT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
12. ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
13. 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.
14. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS APPROVED FOR SUCH USE BY THE SITE MANAGER. A 6m BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH. ALL STOCKPILES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING AREA BY USE OF THE MEASURES APPROVED IN THE EROSION AND SEDIMENTATION CONTROL PLAN.
15. ACCESS AND EXIT AREAS SHALL INCLUDE SHAKE-DOWN OR OTHER METHODS APPROVED BY THE SITE MANAGER FOR THE REMOVAL OF SOIL MATERIALS FORM MOTOR VEHICLES.
16. 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 POLLUTANTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES.
17. 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 PART OF AN APPROVED ESCP / SWMP.

EXISTING SERVICES NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. CARE TO BE TAKEN WHEN EXCAVATING NEAR UTILITY SERVICES. NO MECHANICAL EXCAVATION TO BE UNDERTAKEN OVER SERVICES. LIAISE WITH RELEVANT AUTHORITY.
7. 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.
8. 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.
9. 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.
12. THE CONTRACTOR SHALL UNDERTAKE A DIAL BEFORE YOU DIG (DBYD 1100) SERVICES SEARCH BEFORE THE COMMENCEMENT OF ANY WORKS.

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

PCC NOTES:

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

STORMWATER DRAINAGE NOTES:

1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3:2003 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
2. 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.
3. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
4. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
5. ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
6. ALL PIPES UP TO AND INCLUDING Ø300 TO BE uPVC GRADE SN8 UNO.
7. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
8. 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 OR OTHER SUITABLE TAMPING DETAILS.
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 SUPPORT.
12. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Ø100 uPVC TO EACH SIDE OF PIPE.
13. 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.
14. ALL PIPE GRADES 1 IN 200 MINIMUM UNO.
15. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
16. 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.
18. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
19. 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:

1. LEVELS DATUM IS AUSTRALIAN HEIGHT DATUM (A.H.D.).
2. GRADING REQUIREMENTS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS2890.1, AS2890.2 AND AS2890.6.
3. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
4. CONTOUR INTERVALS
   - THE MINOR CONTOUR INTERVAL IS 0.1m.
   - THE MAJOR CONTOUR INTERVAL IS 0.5m.
5. 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%.
6. 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.
7. 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.
8. 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.
9. 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.
11. 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.
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.

REINFORCED EARTH RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM HEIGHT (H) TO GEOGRID REINFORCEMENT LENGTH (L) TO BE 1.0.
3. 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 kPa
   BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
4. 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.
5. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O. ON PLAN:
   a. LIVE LOAD = 20 kPa
   b. DEAD LOAD = 5 kPa
   c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
6. 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.
7. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm.
8. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
9. 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, Ø = 34°
   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.
11. 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 BLOCK.
13. 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.
16. 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 INTERACTION WITH RETAINED ELEMENTS AND GENERAL FILL MATERIAL.

RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. 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.
3. 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 :
   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.
8. 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 THESE NOTES.

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	06.01.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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PROJECT: YIRIBANA LOGISTICS ESTATE
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KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA110

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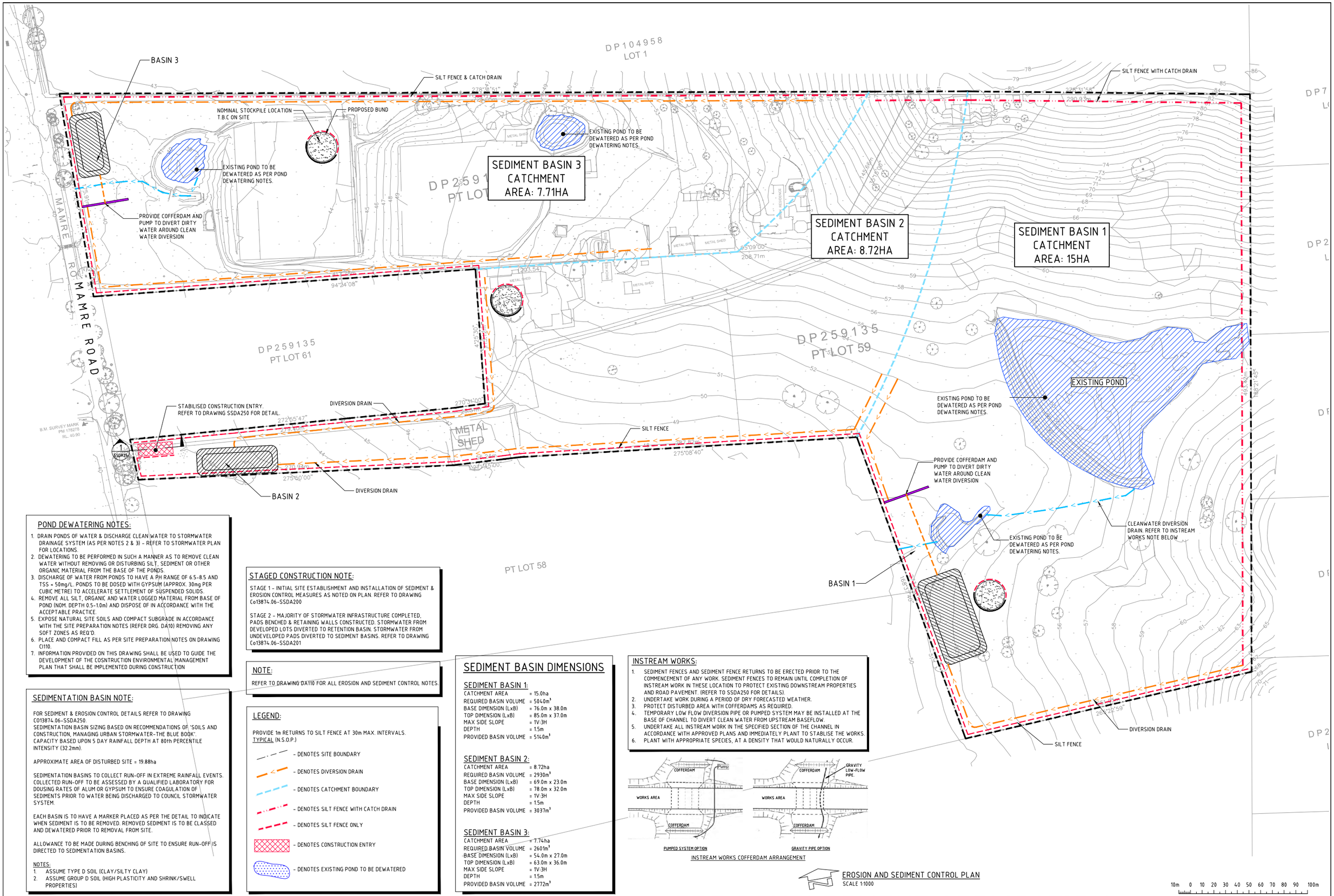
DRAWING TITLE: GENERAL NOTES
DRAWING No: C013874.06-SSDA110
ISSUE: C



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.
3. 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.
4. REMOVE ALL SILT, ORGANIC AND WATER LOGGED MATERIAL FROM BASE OF 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.
6. PLACE AND COMPACT FILL AS PER SITE PREPARATION NOTES ON DRAWING C1110.
7. INFORMATION PROVIDED ON THIS DRAWING SHALL BE USED TO GUIDE THE DEVELOPMENT OF THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN THAT SHALL BE IMPLEMENTED DURING CONSTRUCTION

SEDIMENTATION BASIN NOTE:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C013874.06-SSDA250.
SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'. CAPACITY BASED UPON 5 DAY RAINFALL DEPTH AT 80th PERCENTILE INTENSITY (32.2mm).

APPROXIMATE AREA OF DISTURBED SITE = 19.88ha

SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASINS.

NOTES:
1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)

STAGED CONSTRUCTION NOTE:

STAGE 1 - INITIAL SITE ESTABLISHMENT AND INSTALLATION OF SEDIMENT & EROSION CONTROL MEASURES AS NOTED ON PLAN. REFER TO DRAWING C013874.06-SSDA200

STAGE 2 - MAJORITY OF STORMWATER INFRASTRUCTURE COMPLETED, PADS BENCHED & RETAINING WALLS CONSTRUCTED. STORMWATER FROM DEVELOPED LOTS DIVERTED TO RETENTION BASIN. STORMWATER FROM UNDEVELOPED PADS DIVERTED TO SEDIMENT BASINS. REFER TO DRAWING C013874.06-SSDA201

NOTE:

REFER TO DRAWING DA110 FOR ALL EROSION AND SEDIMENT CONTROL NOTES.

LEGEND:

PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS.
TYPICAL (N.S.O.P.)

- DENOTES SITE BOUNDARY
- DENOTES DIVERSION DRAIN
- DENOTES CATCHMENT BOUNDARY
- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- DENOTES CONSTRUCTION ENTRY
- DENOTES EXISTING POND TO BE DEWATERED

SEDIMENT BASIN DIMENSIONS

SEDIMENT BASIN 1:

CATCHMENT AREA	= 15.0ha
REQUIRED BASIN VOLUME	= 5040m³
BASE DIMENSION (LxB)	= 76.0m x 38.0m
TOP DIMENSION (LxB)	= 85.0m x 37.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 5140m³

SEDIMENT BASIN 2:

CATCHMENT AREA	= 8.72ha
REQUIRED BASIN VOLUME	= 2930m³
BASE DIMENSION (LxB)	= 69.0m x 23.0m
TOP DIMENSION (LxB)	= 78.0m x 32.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 3037m³

SEDIMENT BASIN 3:

CATCHMENT AREA	= 7.74ha
REQUIRED BASIN VOLUME	= 2601m³
BASE DIMENSION (LxB)	= 54.0m x 27.0m
TOP DIMENSION (LxB)	= 63.0m x 36.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 2772m³

INSTREAM WORKS:

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 SSDA250 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 CLEAN 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.

INSTREAM WORKS COFFERDAM ARRANGEMENT

EROSION AND SEDIMENT CONTROL PLAN
SCALE 1:1000

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

ARCHITECT: SBA ARCHITECTS
CLIENT: GPT The GPT Group
PROJECT: YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA200

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DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN STAGE 1
DRAWING No: C013874.06-SSDA200
ISSUE: C

SILT FENCE
SILT FENCE
SILT FENCE WITH CATCH DRAIN
NOMINAL STOCKPILE LOCATION T.B.C ON SITE
WAREHOUSE 5 30,830sqm
WAREHOUSE 5
BASIN 4
BASIN 5
WAREHOUSE 4
DIVERSION DRAIN
NOMINAL STOCKPILE LOCATION T.B.C ON SITE
WAREHOUSE 3 36,420sqm
SILT FENCE WITH CATCH DRAIN
BASIN 3
SILT FENCE
MAMAMRE ROAD
SILT FENCE
NOMINAL STOCKPILE LOCATION T.B.C ON SITE
CLEAN-WATER DIVERSION FROM UPSTREAM CATCHMENT. REFER TO INSTREAM WORKS NOTES ON DRAWING SSDA200
SILT FENCE
NOMINAL STOCKPILE LOCATION T.B.C ON SITE
WAREHOUSE 2 22,870sqm
BASIN 6
BASIN 7
BASIN 2
SILT FENCE WITH CATCH DRAIN
BASIN 1
SILT FENCE
NOMINAL STOCKPILE LOCATION T.B.C ON SITE
WAREHOUSE 1
SILT FENCE

SEDIMENT BASIN DIMENSIONS

SEDIMENT BASIN 1:
CATCHMENT AREA	= 4.00ha
REQUIRED BASIN VOLUME	= 859m³
BASE DIMENSION (LxB)	= 20.0m x 11.0m
TOP DIMENSION (LxB)	= 32.0m x 23.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 906m³

SEDIMENT BASIN 2:
CATCHMENT AREA	= 4.45ha
REQUIRED BASIN VOLUME	= 956m³
BASE DIMENSION (LxB)	= 20.0m x 12.5m
TOP DIMENSION (LxB)	= 32.0m x 24.5m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 985m³

SEDIMENT BASIN 3:
CATCHMENT AREA	= 7.19ha
REQUIRED BASIN VOLUME	= 1545m³
BASE DIMENSION (LxB)	= 30.0m x 16.0m
TOP DIMENSION (LxB)	= 42.0m x 28.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 1605m³

SEDIMENT BASIN 4:
CATCHMENT AREA	= 7.60ha
REQUIRED BASIN VOLUME	= 1635m³
BASE DIMENSION (LxB)	= 32.5m x 15.0m
TOP DIMENSION (LxB)	= 44.5m x 27.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 1635m³

SEDIMENT BASIN 5:
CATCHMENT AREA	= 6.04ha
REQUIRED BASIN VOLUME	= 1297m³
BASE DIMENSION (LxB)	= 25.0m x 15.0m
TOP DIMENSION (LxB)	= 37.0m x 27.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 1325m³

SEDIMENT BASIN 6:
CATCHMENT AREA	= 1.55ha
REQUIRED BASIN VOLUME	= 375m³
BASE DIMENSION (LxB)	= 10.0m x 5.0m
TOP DIMENSION (LxB)	= 22.0m x 17.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 375m³

SEDIMENT BASIN 7:
CATCHMENT AREA	= 2.57ha
REQUIRED BASIN VOLUME	= 550m³
BASE DIMENSION (LxB)	= 15.0m x 7.0m
TOP DIMENSION (LxB)	= 27.0m x 19.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 565m³

SEDIMENTATION BASIN NOTE:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C013874.06-SSDA250.
SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'.
CAPACITY BASED UPON 5 DAY RAINFALL DEPTH AT 80th PERCENTILE INTENSITY (32.2mm).

APPROXIMATE AREA OF DISTURBED SITE = 19.88ha

SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASINS.

NOTES:
1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)

NOTE:

REFER TO DRAWING DA110 FOR ALL EROSION AND SEDIMENT CONTROL NOTES.

LEGEND:

PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS.
TYPICAL (N.S.O.P.)

- DENOTES SITE BOUNDARY
- DENOTES DIVERSION DRAIN
- DENOTES CATCHMENT BOUNDARY
- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- DENOTES CONSTRUCTION ENTRY

STAGED CONSTRUCTION NOTE:

STAGE 1 - INITIAL SITE ESTABLISHMENT AND INSTALLATION OF SEDIMENT & EROSION CONTROL MEASURES AS NOTED ON PLAN. REFER TO DRAWING C013874.06-SSDA200

STAGE 2 - MAJORITY OF STORMWATER INFRASTRUCTURE COMPLETED, PADS BENCHED & RETAINING WALLS CONSTRUCTED. STORMWATER FROM DEVELOPED LOTS DIVERTED TO RETENTION BASIN. STORMWATER FROM UNDEVELOPED PADS DIVERTED TO SEDIMENT BASINS. REFER TO DRAWING C013874.06-SSDA201

EROSION AND SEDIMENT CONTROL PLAN - STAGE 2
SCALE 1:1000

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	24.05.21	A

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CLIENT: GPT The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
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KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA201

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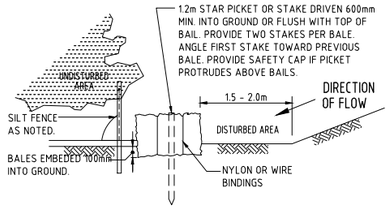
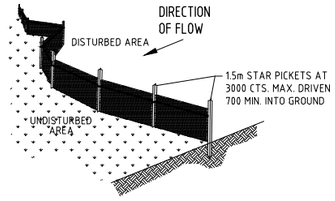
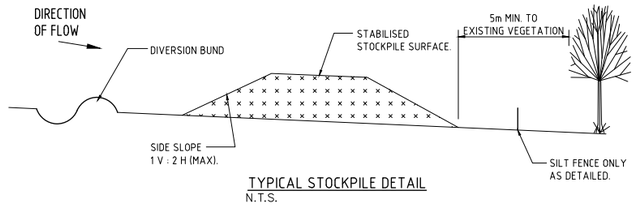
DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN STAGE 2
DRAWING No: C013874.06-SSDA201
ISSUE: B



SILT FENCE WITH STRAW BALE DETAIL
N.T.S.

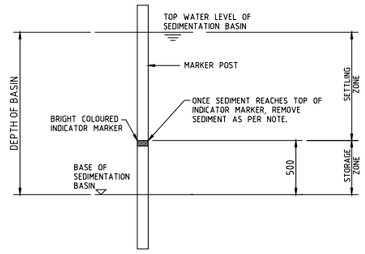


TYPICAL SILT FENCE DETAIL
N.T.S.
PROVIDE 1m RETURNS AT 30m INTERVALS.
TYPICAL



TYPICAL STOCKPILE DETAIL
N.T.S.

STOCKPILE NOTES
1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 TONNE/Ha.
5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.



SEDIMENT STORAGE MARKER
SCALE 1:20

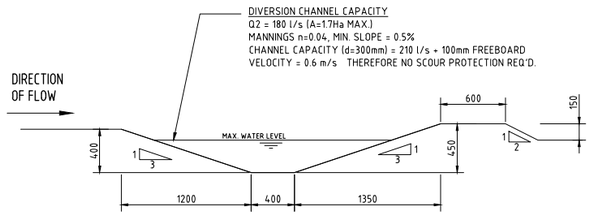
NOTES:
ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.

MINIMISE DISTURBED AREAS.

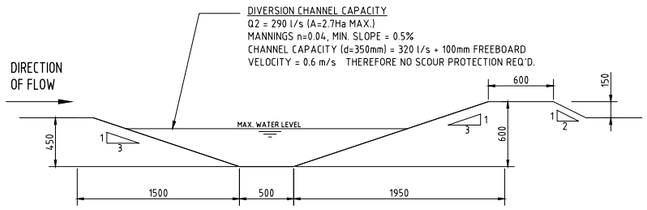
ROADS & FOOTPATHS TO BE SWEPT DAILY.

1.2m TURF TO BE PLACED BEHIND KERBS.

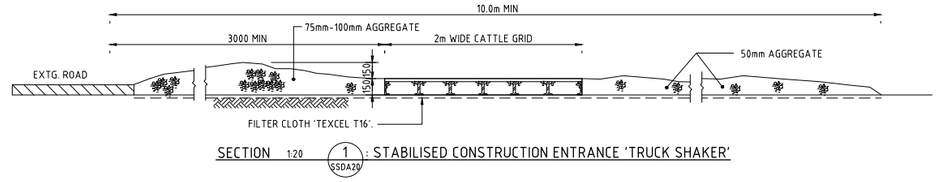
DUST MINIMISATION CONTROL BY WATERING TO BE IMPLEMENTED BY SITE MANAGER AS REQUIRED OR AS DIRECTED BY THE EPA.



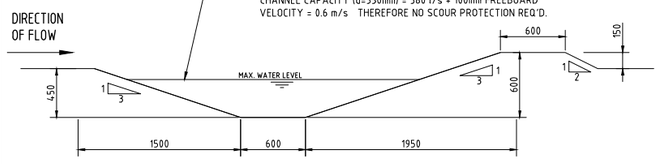
TYPE 1 DIVERSION DRAIN SECTION
SCALE 1:20



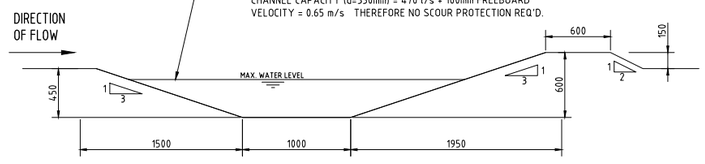
TYPE 2 DIVERSION DRAIN SECTION
SCALE 1:20



SECTION 1:20 (1 / SSDA20) : STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'



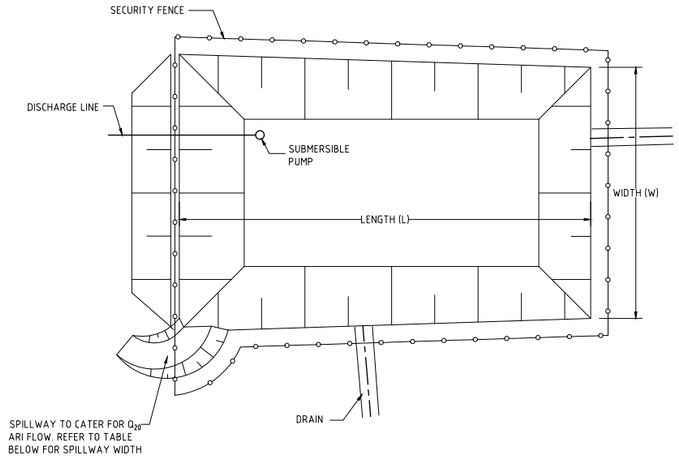
TYPE 3 DIVERSION DRAIN SECTION
SCALE 1:20



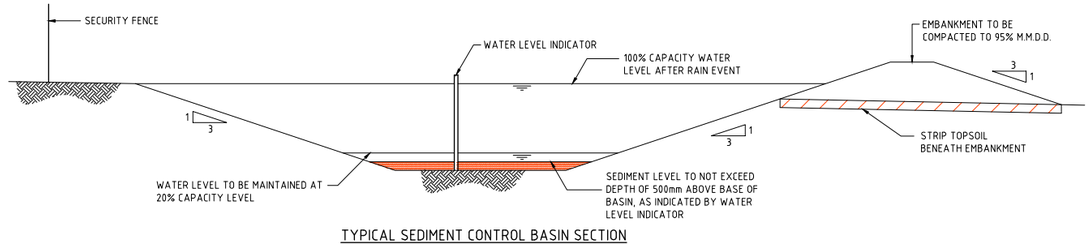
TYPE 4 DIVERSION DRAIN SECTION
SCALE 1:20

SPILLWAY DETAIL & SCHEDULE

CATCHMENT (Ha)	FLOW (m^3/s)	WIDTH (mm)	FLOW DEPTH (mm)	ROCK SIZE (mm)	BUND HEIGHT ABOVE SPILLWAY (mm)
0.20	0.14	1000	200	-	600
0.5	0.2	2000	200	-	600
1	0.3	2000	200	-	700
2	0.6	4000	200	-	700
5	1.4	5000	300	200	800
10	2.8	8000	350	200	850
20	5.5	14000	400	250	900
40	11.0	20000	500	250	1000



TYPICAL SEDIMENT CONTROL POND PLAN
SCALE 1:250



TYPICAL SEDIMENT CONTROL BASIN SECTION
SCALE 1:50

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

PRELIMINARY ONLY

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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CLIENT: GPT The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA250

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Costin Roe Consulting
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL DETAILS
DRAWING No: C013874.06-SSDA250
ISSUE: C

WAREHOUSE 5
PAD RL 45.00

WAREHOUSE 4
PAD RL 55.00

WAREHOUSE 3
PAD RL 65.00

WAREHOUSE 2
PAD RL 56.00

WAREHOUSE 1
PAD RL 56.00

MAMRE ROAD

ROAD 1

ROAD 2

E2 CHANNEL

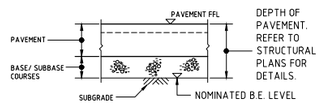
ALTIS SITE
ANTICIPATED PAD LEVEL RL45.70
SITE CURRENTLY UNDER ASSESSMENT FOR DEVELOPMENT BY PENRITH CITY COUNCIL

MIRVAC SITE
ANTICIPATED PAD LEVELS AS SHOWN
SITE LAYOUT PER MIRVAC SSDA_10448 EIS

LEGEND

NOTE:
LEVELS DATUM IS AHD.
ALL LEVELS ARE ±1000 mm

- EXISTING CONTOUR
- B.E.L. CONTOUR (MAJOR 1.0m)
- B.E.L. CONTOUR (MINOR 0.25m)



DEPTH OF PAVEMENT. REFER TO STRUCTURAL PLANS FOR DETAILS.

NOMINATED B.E.L. DETAIL
N.T.S.

ADJACENT PROPERTY LEVELS NOTE:

FUTURE DEVELOPMENT LEVELS FOR NEIGHBOURING PROPERTIES TO NORTH AND EAST NOT CURRENTLY KNOWN. INTERFACING CURRENTLY SHOWN ON PLAN IS TO EXISTING LEVELS. FINAL INTERFACING ARRANGEMENT SUBJECT TO FURTHER DISCUSSION & COORDINATION WITH ADJOINING LANDOWNERS/DEVELOPERS.

LEVELS NOTE:

LEVELS SHOWN TO BE +/-1000mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

DEPTH RANGE

No.	FROM DEPTH	TO DEPTH	COLOUR	DEPTH RANGE VOLUME
1	-18.000	-16.000		44m
2	-16.000	-14.000		2222m
3	-14.000	-12.000		7802m
4	-12.000	-10.000		15344m
5	-10.000	-8.000		25120m
6	-8.000	-6.000		38872m
7	-6.000	-4.000		60199m
8	-4.000	-2.000		101518m
9	-2.000	0.000		176985m
10	0.000	2.000		342971m
11	2.000	4.000		167543m
12	4.000	6.000		53626m
13	6.000	8.000		15454m
14	8.000	10.000		1426m

EARTHWORKS VOLUMES

SITE AREA = 33.1 Ha

TOPSOIL STRIP (200 mm)	= (- 66,200 m^3)
CUT MATERIAL	= - 428,100 m^3
FILL MATERIAL	= + 580,000 m^3
DETAILED EXCAVATION ($2,000m^3$/Ha OVER 33.1 Ha)	= - 66,200 m^3
BALANCE	= + 86,700 m^3

NOTE:
EARTHWORKS VALUES ARE APPROXIMATE ONLY.
NO ALLOWANCE HAS BEEN MADE IN THE ABOVE VOLUMES FOR EROSION & SEDIMENT CONTROL BACKFILLING, BULKING OR COMPACTION OF FILLED SOILS, THE REMOVAL OF UNCONTROLLED OR CONTAMINATED MATERIAL, TEMPORARY DRAINAGE SWALES WITHIN BUILDING PADS, OR ANY OTHER UNSPECIFIED EXCAVATION RELATED TO WAREHOUSE CONSTRUCTION.

BULK EARTHWORKS PLAN
SCALE 1:1000

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	D
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	C
ISSUED FOR PRELIMINARY ONLY	15.04.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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CLIENT
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The GPT Group

PROJECT
YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA300

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email: mail@costinroe.com.au ©

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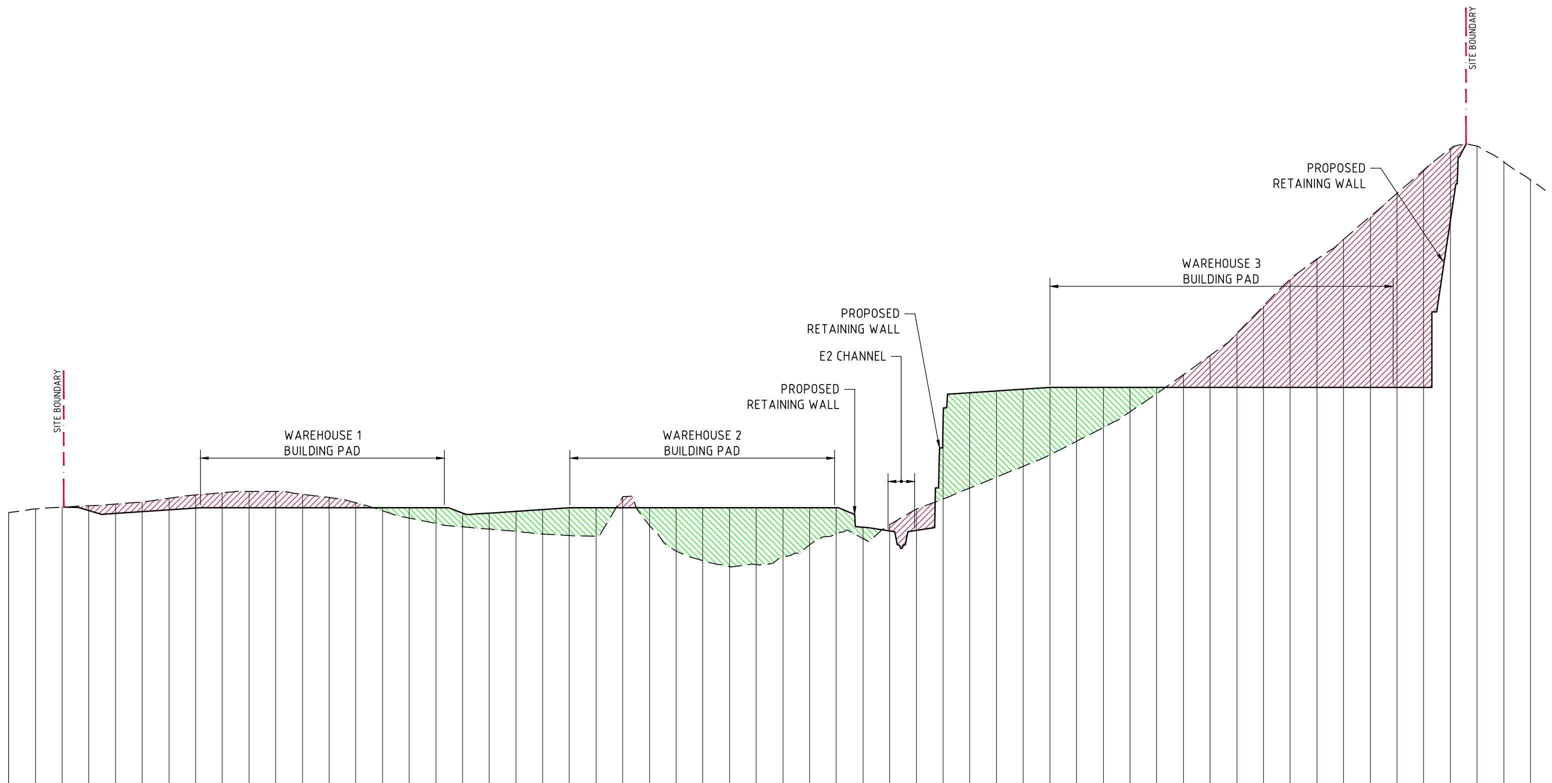
DRAWING TITLE
BULK EARTHWORKS PLAN

DRAWING No C013874.06-SSDA300 ISSUE D

LEGEND:

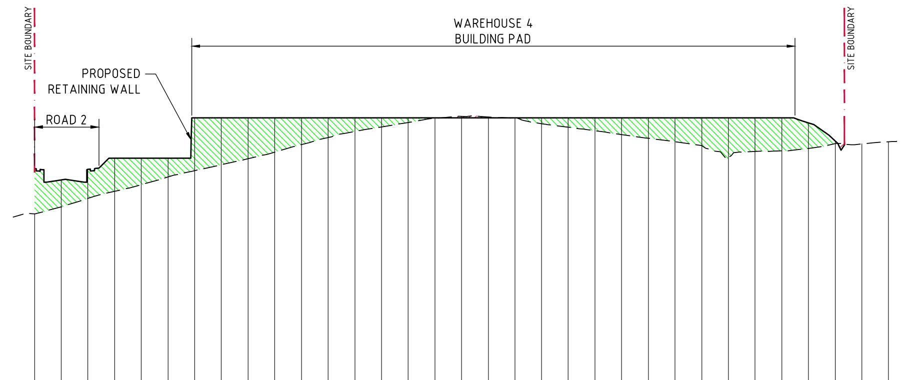
- DENOTES BULK EARTHWORKS PROFILE
- DENOTES EXISTING PROFILE
- DENOTES AREA IN CUT
- DENOTES AREA IN FILL



DATUM 35.00

CHAINAGE	EXISTING SURFACE LEVEL	BULK EARTHWORKS LEVEL	CUT/FILL DEPTH
0.000	55.63		
10.000	55.909		
20.000	56.040		
30.000	56.140	55.780	-0.360
40.000	56.268	55.570	-0.698
50.000	56.428	55.705	-0.723
60.000	56.705	55.840	-0.865
70.000	56.954	55.975	-0.978
80.000	57.124	56.000	-1.124
90.000	57.216	56.000	-1.216
100.000	57.211	56.000	-1.211
110.000	57.005	56.000	-1.005
120.000	56.758	56.000	-0.758
130.000	56.370	56.000	-0.370
140.000	55.779	56.000	0.221
150.000	55.227	56.000	0.773
160.000	54.816	56.000	1.184
170.000	54.564	55.594	1.031
180.000	54.396	55.592	1.195
190.000	54.220	55.727	1.507
200.000	54.023	55.862	1.839
210.000	53.907	55.997	2.089
220.000	53.857	56.000	2.143
230.000	56.803	56.000	-0.803
240.000	54.682	56.000	1.318
250.000	52.755	56.000	3.245
260.000	52.022	56.000	3.978
270.000	51.574	56.000	4.426
280.000	51.738	56.000	4.262
290.000	52.299	56.000	3.701
300.000	53.213	56.000	2.787
310.000	54.034	56.000	1.966
320.000	53.678	54.539	0.860
330.000	54.739	54.266	-0.473
340.000	55.891	54.306	-1.585
350.000	56.655	62.078	5.423
360.000	57.478	64.607	7.129
370.000	58.292	64.739	6.447
380.000	59.101	64.870	5.769
390.000	59.951	65.000	5.049
400.000	60.979	65.000	4.021
410.000	62.009	65.000	2.991
420.000	63.184	65.000	1.816
430.000	64.548	65.000	0.452
440.000	65.963	65.000	-0.963
450.000	67.394	65.000	-2.394
460.000	69.038	65.000	-4.038
470.000	71.117	65.000	-6.117
480.000	73.106	65.000	-8.106
490.000	74.630	65.000	-9.630
500.000	76.097	65.000	-11.097
510.000	77.813	65.000	-12.813
520.000	79.559	65.000	-14.559
530.000	81.278	65.000	-16.278
540.000	82.907	77.516	-5.391
550.000	83.085		
560.000	81.922		
570.000	80.563		
580.000			

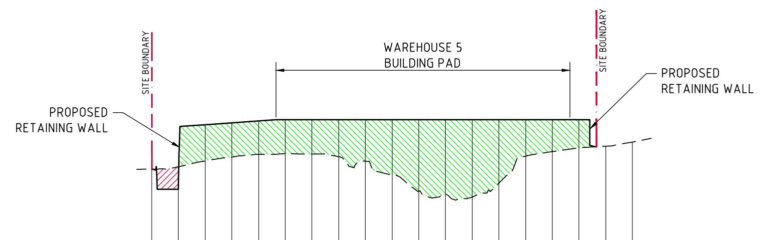
SECTION 1
HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:200



DATUM 35.00

CHAINAGE	EXISTING SURFACE LEVEL	BULK EARTHWORKS LEVEL	CUT/FILL DEPTH
0.000			
10.000			
20.000	47.810		
30.000	48.334	50.355	2.020
40.000	48.967	51.147	2.180
50.000	49.500	52.000	2.500
60.000	49.995	52.000	2.005
70.000	50.577	52.000	1.423
80.000	51.058	55.000	3.942
90.000	51.504	55.000	3.496
100.000	51.948	55.000	3.052
110.000	52.450	55.000	2.550
120.000	53.008	55.000	1.992
130.000	53.539	55.000	1.461
140.000	53.995	55.000	1.005
150.000	54.332	55.000	0.668
160.000	54.669	55.000	0.331
170.000	54.975	55.000	0.025
180.000	55.122	55.000	-0.122
190.000	55.078	55.000	-0.078
200.000	54.977	55.000	0.023
210.000	54.572	55.000	0.428
220.000	54.300	55.000	0.700
230.000	54.044	55.000	0.956
240.000	53.750	55.000	1.250
250.000	53.480	55.000	1.520
260.000	53.225	55.000	1.775
270.000	52.932	55.000	2.068
280.000	52.001	55.000	2.999
290.000	52.492	55.000	2.508
300.000	52.532	55.000	2.468
310.000	52.722	54.633	1.910
320.000	53.070	53.270	0.200
330.000	53.064		
340.000	53.219		
350.000			
360.000			

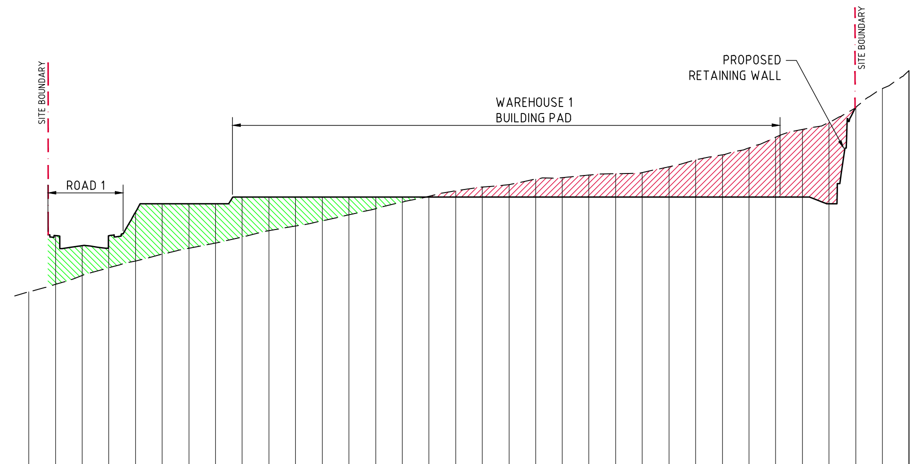
SECTION 2
HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:200



DATUM 35.00

CHAINAGE	EXISTING SURFACE LEVEL	BULK EARTHWORKS LEVEL	CUT/FILL DEPTH
0.000			
10.000			
20.000	41.301		
30.000	41.481	40.291	-1.190
40.000	41.919	44.631	2.712
50.000	42.210	44.770	2.560
60.000	42.405	44.909	2.504
70.000	42.447	45.000	2.553
80.000	42.435	45.000	2.565
90.000	42.236	45.000	2.764
100.000	41.899	45.000	3.101
110.000	40.902	45.000	4.098
120.000	39.650	45.000	5.350
130.000	39.438	45.000	5.562
140.000	39.210	45.000	5.790
150.000	40.237	45.000	4.763
160.000	42.272	45.000	2.728
170.000	42.611	45.000	2.389
180.000	42.881	45.000	2.119
190.000	43.011		
200.000	43.328		
210.000			
220.000			

SECTION 3
HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:200



DATUM 35.00

CHAINAGE	EXISTING SURFACE LEVEL	BULK EARTHWORKS LEVEL	CUT/FILL DEPTH
0.000			
10.000	48.900		
20.000	49.453	53.118	3.664
30.000	50.133	52.368	2.236
40.000	50.711	53.117	2.406
50.000	51.221	54.879	3.658
60.000	51.720	55.500	3.780
70.000	52.171	55.500	3.329
80.000	52.568	55.500	2.932
90.000	53.018	56.000	2.982
100.000	53.485	56.000	2.515
110.000	53.837	56.000	2.163
120.000	54.226	56.000	1.774
130.000	54.669	56.000	1.331
140.000	55.132	56.000	0.868
150.000	55.634	56.000	0.366
160.000	56.065	56.000	-0.065
170.000	56.468	56.000	-0.468
180.000	56.762	56.000	-0.762
190.000	56.931	56.000	-0.931
200.000	57.344	56.000	-1.344
210.000	57.454	56.000	-1.454
220.000	57.654	56.000	-1.654
230.000	57.757	56.000	-1.757
240.000	57.852	56.000	-1.852
250.000	58.281	56.000	-2.281
260.000	58.788	56.000	-2.788
270.000	59.168	56.000	-3.168
280.000	59.689	56.000	-3.689
290.000	60.487	56.000	-4.487
300.000	61.068	56.000	-5.068
310.000	61.592	55.500	-6.092
320.000	62.715		
330.000	64.140		
340.000	65.48		

SECTION 4
HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:200

2m 0 5 10 15 20m
SCALE 1:200 AT A0 SIZE SHEET

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
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CLIENT: The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA350

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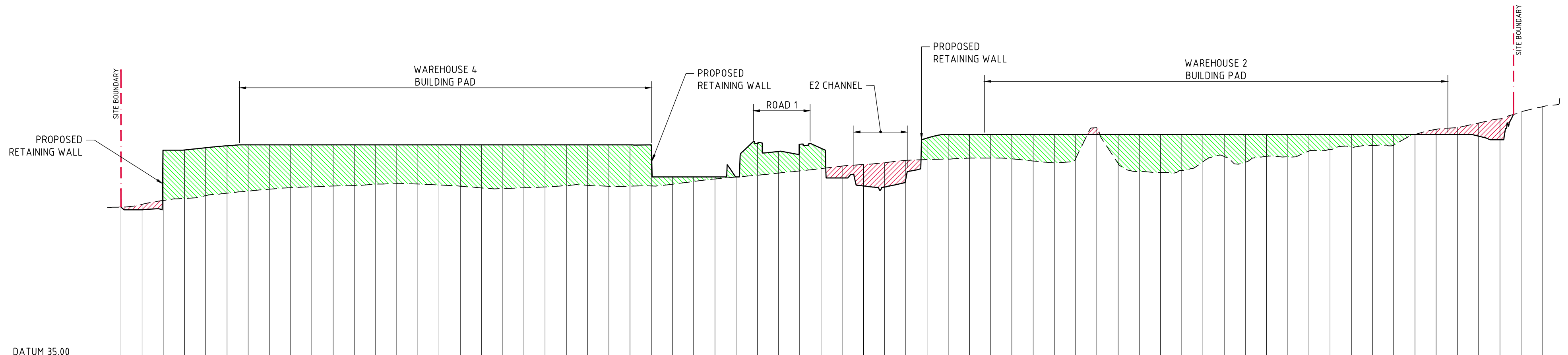
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: BULK EARTHWORKS SECTIONS SHEET 1

DRAWING No: C013874.06-SSDA350 ISSUE: B

LEGEND:

- DENOTES BULK EARTHWORKS PROFILE (solid line)
- DENOTES EXISTING PROFILE (dashed line)
- DENOTES AREA IN CUT
- DENOTES AREA IN FILL



DATUM 35.00

CUT/FILL DEPTH				-0.505	4.711	4.556	4.505	4.468	4.340	4.162	4.020	3.936	3.879	3.830	3.699	3.643	3.683	3.773
BULK EARTHWORKS LEVEL				48.902	54.500	54.518	54.733	54.919	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000
EXISTING SURFACE LEVEL			49.173	49.408	49.789	49.962	50.228	50.451	50.660	50.838	50.980	51.064	51.121	51.170	51.301	51.357	51.317	51.227
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000

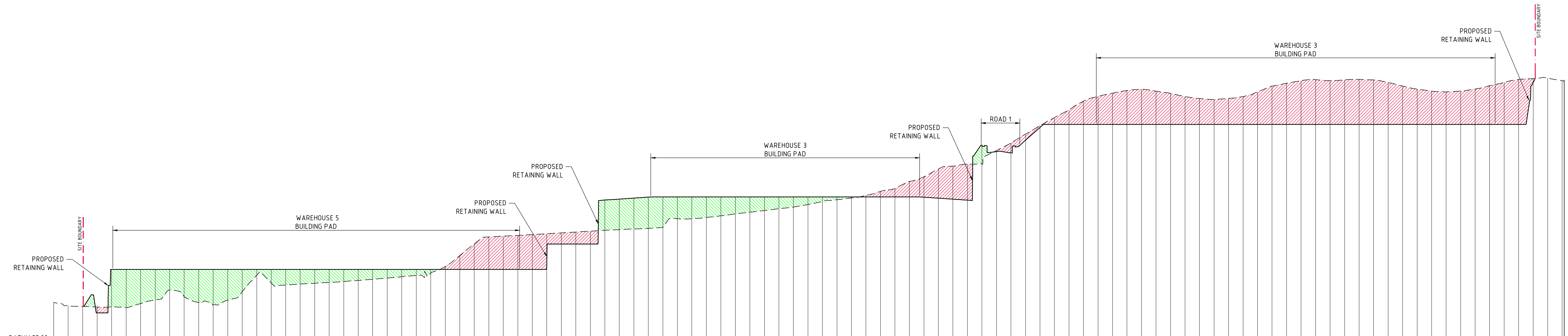
CUT/FILL DEPTH	3.888	4.044	4.100	4.030	3.954	3.825	3.801	3.885	3.882	3.868	0.685	0.436	0.202	0.027	2.962	2.039	2.506	1.923
BULK EARTHWORKS LEVEL	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	54.999	52.000	52.000	52.000	52.000	55.108	54.391	55.063	54.693
EXISTING SURFACE LEVEL	51.112	50.956	50.900	50.970	51.046	51.175	51.199	51.115	51.118	51.131	51.315	51.564	51.798	51.973	52.147	52.352	52.557	52.771
CHAINAGE	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	350.000

CUT/FILL DEPTH	-1.113	-2.015	-2.297	-1.734	2.029	2.326	2.235	2.226	2.309	2.509	2.681	2.286	-0.615	2.727	3.512	3.577	3.396	2.585
BULK EARTHWORKS LEVEL	51.901	51.139	51.045	51.820	55.651	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000
EXISTING SURFACE LEVEL	53.014	53.154	53.342	53.554	53.622	53.674	53.765	53.774	53.691	53.491	53.319	53.714	56.615	53.273	52.488	52.423	52.604	53.415
CHAINAGE	360.000	370.000	380.000	390.000	400.000	410.000	420.000	430.000	440.000	450.000	460.000	470.000	480.000	490.000	500.000	510.000	520.000	530.000

CUT/FILL DEPTH	2.089	2.625	2.052	2.111	1.587	1.422	1.204	1.037	1.013	0.018	-0.470	-0.641	-1.227	-1.955			
BULK EARTHWORKS LEVEL	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	56.000	55.834	55.501			
EXISTING SURFACE LEVEL	53.911	53.375	53.948	53.889	54.413	54.578	54.796	54.963	54.987	55.982	56.470	56.641	57.060	57.456	58.099	58.602	
CHAINAGE	540.000	550.000	560.000	570.000	580.000	590.000	600.000	610.000	620.000	630.000	640.000	650.000	660.000	670.000	680.000	690.000	700.000

SECTION 5

HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:200



DATUM 35.00

CUT/FILL DEPTH				-0.813	5.169	5.286	4.717	4.221	2.856	3.754	4.559	4.898	4.246	3.107	0.819	1.880	2.150	2.030
BULK EARTHWORKS LEVEL				39.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000
EXISTING SURFACE LEVEL	40.43	39.995	39.901	39.813	39.831	39.714	40.283	40.779	42.144	41.246	40.441	40.102	40.754	41.893	44.181	43.120	42.850	42.970
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000

CUT/FILL DEPTH	1.916	1.796	1.670	1.512	1.357	1.199	1.020	0.842	0.537	-0.406	-1.909	-3.526	-4.478	-4.587	-4.695	-4.807	-3.529	-1.540
BULK EARTHWORKS LEVEL	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	45.000	46.392	48.500
EXISTING SURFACE LEVEL	43.084	43.204	43.330	43.488	43.643	43.801	43.980	44.158	44.463	45.406	46.909	48.526	49.478	49.587	49.695	49.807	49.921	50.040
CHAINAGE	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	350.000

CUT/FILL DEPTH	-1.656	-1.772	4.173	4.209	4.265	4.329	4.211	2.995	3.018	2.832	2.603	2.344	2.113	1.880	1.626	1.402	1.045	0.620
BULK EARTHWORKS LEVEL	48.500	48.500	54.560	54.699	54.838	54.976	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000	55.000
EXISTING SURFACE LEVEL	50.156	50.272	50.387	50.490	50.572	50.648	50.789	52.005	51.982	52.168	52.397	52.656	52.887	53.120	53.374	53.598	53.955	54.380
CHAINAGE	360.000	370.000	380.000	390.000	400.000	410.000	420.000	430.000	440.000	450.000	460.000	470.000	480.000	490.000	500.000	510.000	520.000	530.000

CUT/FILL DEPTH	0.395	0.163	-0.205	-0.761	-1.132	-2.125	-2.812	-4.017	-4.566	-4.992	2.607	-0.137	-1.387	-0.823	-0.252	-0.942	-1.997	-5.853	-3.207
BULK EARTHWORKS LEVEL	55.000	55.000	55.000	55.000	55.000	55.000	54.960	54.825	54.690	54.552	62.148	61.254	61.061	62.826	64.589	65.000	65.000	65.000	65.000
EXISTING SURFACE LEVEL	54.605	54.837	55.205	55.761	56.132	57.125	57.772	58.842	59.256	59.544	59.541	61.391	62.448	63.648	64.842	65.942	66.997	70.853	68.207
CHAINAGE	540.000	550.000	560.000	570.000	580.000	590.000	600.000	610.000	620.000	630.000	640.000	650.000	660.000	670.000	680.000	690.000	700.000	1001.228	710.000

CUT/FILL DEPTH	-3.854	-4.315	-4.682	-4.837	-4.589	-4.277	-3.830	-3.566	-3.439	-3.586	-3.843	-4.486	-5.289	-5.680	-6.039	-6.178	-6.038	-6.146
BULK EARTHWORKS LEVEL	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000
EXISTING SURFACE LEVEL	68.854	69.315	69.682	69.837	69.589	69.277	68.830	68.566	68.439	68.586	68.843	69.486	70.289	70.680	71.039	71.178	71.038	71.146
CHAINAGE	720.000	730.000	740.000	750.000	760.000	770.000	780.000	790.000	800.000	810.000	820.000	830.000	840.000	850.000	860.000	870.000	880.000	890.000

CUT/FILL DEPTH	-6.202	-6.131	-5.779	-5.293	-4.871	-4.599	-4.494	-4.597	-4.880	-5.328	-5.789	-6.203	-0.553			
BULK EARTHWORKS LEVEL	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	65.000	70.765			
EXISTING SURFACE LEVEL	71.202	71.131	70.779	70.293	69.871	69.599	69.494	69.597	69.880	70.328	70.789	71.203	71.318	71.379	71.031	71.172
CHAINAGE	900.000	910.000	920.000	930.000	940.000	950.000	960.000	970.000	980.000	990.000	1000.000	1010.000	1020.000	1030.000	1040.000	1041.394

SECTION 6

HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:200

2m 0 5 10 15 20m
SCALE 1:200 AT A0 SIZE SHEET

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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CLIENT: The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA351

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PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: BULK EARTHWORKS SECTIONS SHEET 2
DRAWING No: C013874.06-SSDA351
ISSUE: C

INTERALLOTMENT DRAIN DISCHARGES TO EXISTING MAMRE ROAD FRONTAGE. PROVIDE NEW 2m WIDE, 1.5m DEEP SWALE TO EXISTING RCBC

BIO-RETENTION CELL B:
BIO-RETENTION AREA = 540m²
FSL RL40.60
400mm EXTENDED DETENTION DEPTH
500mm MIN FILTER MEDIA

PROVIDE Φ1500 INTERALLOTMENT PIPE @ 1.0% WITH 25% BLOCKAGE TO DIVERT UPSTREAM CATCHMENT. RETAINING WALL TO BE FOUNDED BELOW ZOI OF DRAINAGE PIPE

UPSTREAM CATCHMENT ENTRY POINT
Q20 FLOW = 3.60m³/s
Q100 FLOW = 5.40m³/s

PROVIDE 2.5m WIDE, 0.5m DEEP VEGETATED DIVERSION SWALE TO CAPTURE UPSTREAM CATCHMENT. SWALE DISCHARGES TO FIELD INLET PIT & Φ1500 RCP LINE

DISCHARGE POINT 1:
SITE DISCHARGES TO EXISTING 2x1.2x.0.6 RCBC.

ESTATE BASIN 1:
COMBINED OSD AND BIO-RETENTION BASIN
ON-SITE DETENTION VOLUME = 3,500m³
BIO-RETENTION AREA = 1,340m²

WAREHOUSE 5
FFL 45.30
±1000mm

MAMRE ROAD

BIO-RETENTION CELL A:
BIO-RETENTION AREA = 800m³
FSL R 40.60
400mm EXTENDED DETENTION DEPTH
500mm MIN FILTER MEDIA

ALTIS SITE
UNDER ASSESSMENT WITH
PENRITH CITY COUNCIL

WAREHOUSE 4
FFL 55.30
±1000mm

BIO-RETENTION CELL A:
BIO-RETENTION AREA = 650m³
FSL RL 51.90
400mm EXTENDED DETENTION DEPTH
500mm MIN FILTER MEDIA

ROAD 2

ROAD 1

REFER TO DRAWING SSDA413 FOR WAREHOUSE 3 DRAINAGE LAYOUT

WAREHOUSE 3
FFL 65.50
±1000mm

E2 CHANNEL

RE-ALIGNED E2 CORRIDOR
REFER TO DRAWING SSDA420 FOR DETAILS

WAREHOUSE 2
FFL 56.50
±1000mm

UPSTREAM CATCHMENT ENTRY POINT
Q20 FLOW = 4.10m³/s
Q100 FLOW = 6.00m³/s

TEMPORARY ACCESS ROAD.
TO BE MADE REDUNDANT ON COMPLETION OF ESTATE ROAD CONNECTIONS

DISCHARGE POINT 2:
SITE DISCHARGES THROUGH PROPOSED BOX CULVERT TO PROPOSED RIPARIAN CORRIDOR ON MIRVAC LAND.

ESTATE BASIN 2:
UTILISE PROPOSED E2 CORRIDOR FOR STORMWATER TREATMENT AND RETENTION
ON-SITE DETENTION VOLUME = 5,400m³
BIO-RETENTION AREA = 1,250m²

BIO-RETENTION CELL B:
BIO-RETENTION AREA = 600m²
FSL RL 51.90
400mm EXTENDED DETENTION DEPTH
500mm MIN FILTER MEDIA

WAREHOUSE1
FFL 56.50
±1000mm

REFER TO DRAWING SSDA411 FOR WAREHOUSE 1 DRAINAGE LAYOUT

UPSTREAM CATCHMENT ENTRY POINT
Q20 FLOW = 0.40m³/s
Q100 FLOW = 0.60m³/s

MIRVAC
"ASPECT INDUSTRIAL ESTATE"
PER SSD-10448

INTERFACE WITH MIRVAC ESTATE TO BE CONFIRMED

LEVELS NOTE:

LEVELS SHOWN TO BE +/-1000mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY 20119 DE-01 BY STATIKER 26/09/20.

- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING ESTATE CONTOUR
- INFRASTRUCTURE DRAINAGE
- FUTURE SITE DRAINAGE
- POST-DEVELOPMENT CATCHMENT
- KIP, KERB INLET PIT
- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT

STORMWATER DRAINAGE MASTER PLAN
SCALE 1:1000

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	E
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	26.05.21	D
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	24.05.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA400

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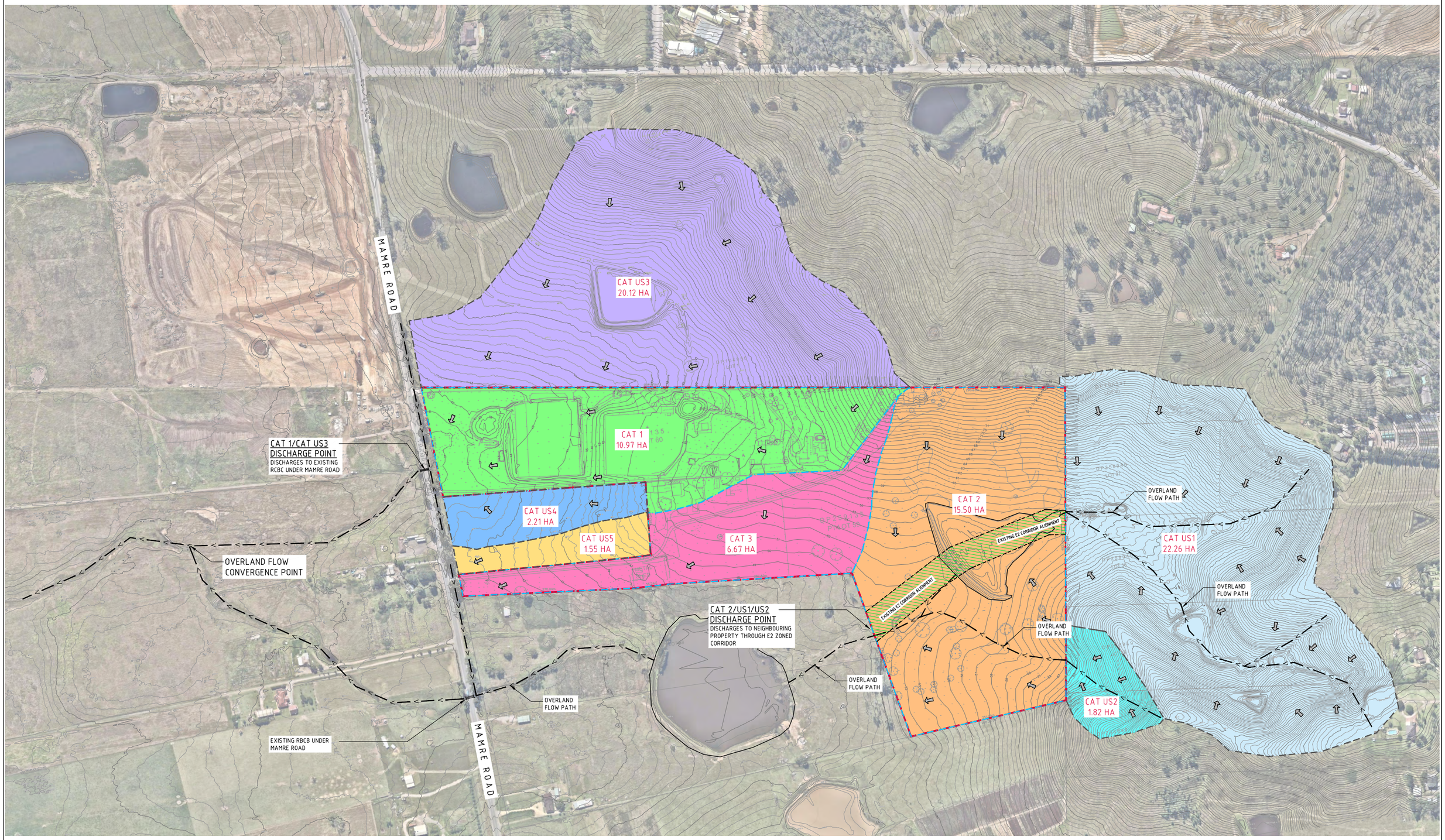
DRAWING TITLE
STORMWATER DRAINAGE MASTERPLAN

DRAWING No: C013874.06-SSDA400 ISSUE: E



PRE-DEVELOPMENT CATCHMENT PLAN
SCALE 1:2000

20m 0 50 100 150 200m
SCALE 1:2000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

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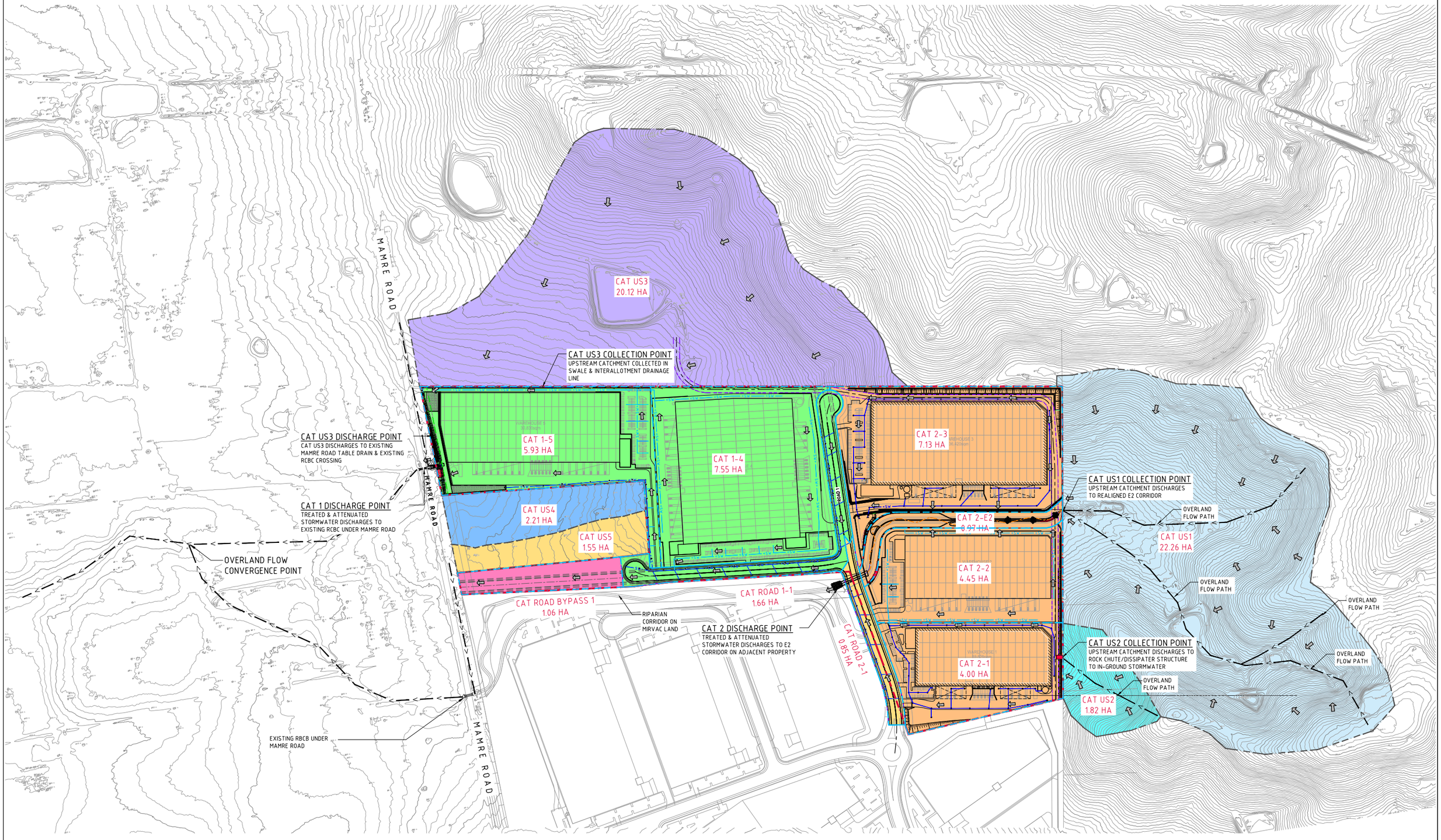
DRAWING TITLE
PRE-DEVELOPMENT
STORMWATER CATCHMENT PLAN

DRAWING No C013874.06-SSDA401 ISSUE A



POST DEVELOPMENT
STORMWATER CATCHMENT PLAN
SCALE 1:2000

20m 0 50 100 150 200m
SCALE 1:2000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA402

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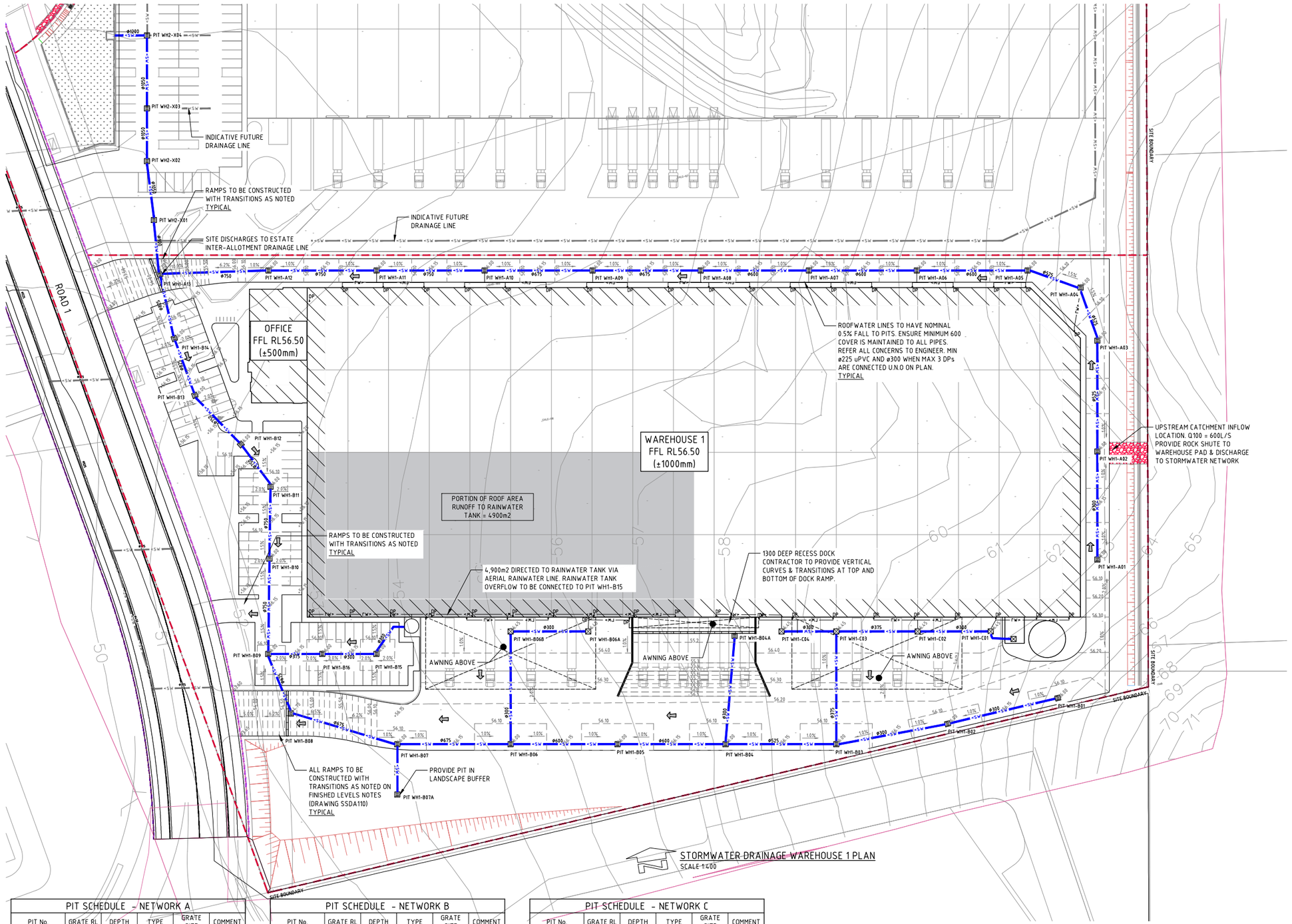
DRAWING TITLE
POST-DEVELOPMENT
STORMWATER CATCHMENT PLAN

DRAWING No: C013874.06-SSDA402 ISSUE: A



STORMWATER DRAINAGE WAREHOUSE 1 PLAN
SCALE 1:400

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY 20119 DE-01 BY STATIKER 26/09/20.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- PROPOSED DRAINAGE LINE
- EXISTING ESTATE DRAINAGE LINE
- ROOFWATER DOWNPIPE (INDICATIVE)
- OVERLAND FLOW DIRECTION
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING ESTATE CONTOUR

STORMWATER DRAINAGE NOTES :

1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3:2003 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
2. 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.
3. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS SSDA511.
4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
5. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
6. ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
7. ALL PIPES UP TO AND INCLUDING Ø300 TO BE uPVC GRADE SN8 UNO.
8. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
9. 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.
10. IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
11. 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 OR OTHER SUITABLE TAMPING DETAILS.
12. 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.
13. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Φ100 uPVC TO EACH SIDE OF PIPE.
14. ALL SUBSOIL DRAINAGE LINES SHALL BE Φ100 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.
15. ALL PIPE GRADES 1 IN 200 MINIMUM UNO.
16. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
17. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
18. 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.
19. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
20. 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.
21. 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.

LEVELS NOTE:

LEVELS SHOWN TO BE +/-1000mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

PIT SCHEDULE - NETWORK A

PIT No.	GRATE RL	DEPTH	TYPE	GRATE SIZE	COMMENT
PIT WH1-A01	56.00		SGGP	900x900	◇
PIT WH1-A02	56.00		SGGP	900x900	◇
PIT WH1-A03	56.00		SGGP	900x900	◇
PIT WH1-A04	56.00		SGGP	900x900	◇
PIT WH1-A05	56.00		SGGP	900x900	◇
PIT WH1-A06	56.00		SGGP	900x900	◇
PIT WH1-A07	56.00		SGGP	900x900	◇
PIT WH1-A08	56.00		SGGP	900x900	◇
PIT WH1-A09	56.00		SGGP	900x900	◇
PIT WH1-A010	56.00		SGGP	900x900	◇
PIT WH1-A11	56.00		SGGP	900x900	◇
PIT WH1-A12	56.00		SGGP	900x900	◇
PIT WH1-A13	54.20		SGGP	900x900	◇

NOTE:

PITS TO BE FITTED WITH OCEAN PROTECT OCEAN GUARD OG200 PIT INSERTS SHOWN THUS ◇
TOTAL NO OF PIT INSERTS = 36
REFER TO PIT SCHEDULE ABOVE

PIT SCHEDULE - NETWORK B

PIT No.	GRATE RL	DEPTH	TYPE	GRATE SIZE	COMMENT
PIT WH1-B01	56.00		SGGP	900x900	◇
PIT WH1-B02	56.00		SGGP	900x900	◇
PIT WH1-B03	56.00		SGGP	900x900	◇
PIT WH1-B04	56.00		SGGP	900x900	◇
PIT WH1-B04A	56.00		SGGP	900x900	◇
PIT WH1-B05	56.00		SGGP	900x900	◇
PIT WH1-B06	56.00		SGGP	900x900	◇
PIT WH1-B06A	56.45		SJP	900x900	
PIT WH1-B06B	56.45		SJP	900x900	
PIT WH1-B07	56.00		SGGP	900x900	◇
PIT WH1-B08	56.00		SGGP	900x900	◇
PIT WH1-B09	56.00		SGGP	900x900	◇
PIT WH1-B10	56.00		SGGP	900x900	◇
PIT WH1-B11	56.00		SGGP	900x900	◇
PIT WH1-B12	56.00		SGGP	900x900	◇
PIT WH1-B13	56.00		SGGP	900x900	◇
PIT WH1-B14	56.00		SGGP	900x900	◇
PIT WH1-B15	56.00		SGGP	900x900	◇
PIT WH1-B16	56.00		SGGP	900x900	◇

PIT SCHEDULE - NETWORK C

PIT No.	GRATE RL	DEPTH	TYPE	GRATE SIZE	COMMENT
PIT WH1-C01	56.45		SJP	900x900	
PIT WH1-C02	56.45		SJP	900x900	
PIT WH1-C03	56.45		SJP	900x900	
PIT WH1-C04	56.45		SJP	900x900	

PIT SCHEDULE - NETWORK X

PIT No.	GRATE RL	DEPTH	TYPE	GRATE SIZE	COMMENT
PIT WH1-X01	54.45		SGGP	900x900	
PIT WH1-X02	56.45		SGGP	900x900	
PIT WH1-X03	56.45		SGGP	900x900	
PIT WH1-X04	56.45		SGGP	900x900	

4m 0 10 20 30 40m
SCALE 1:400 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

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PROJECT
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KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA411

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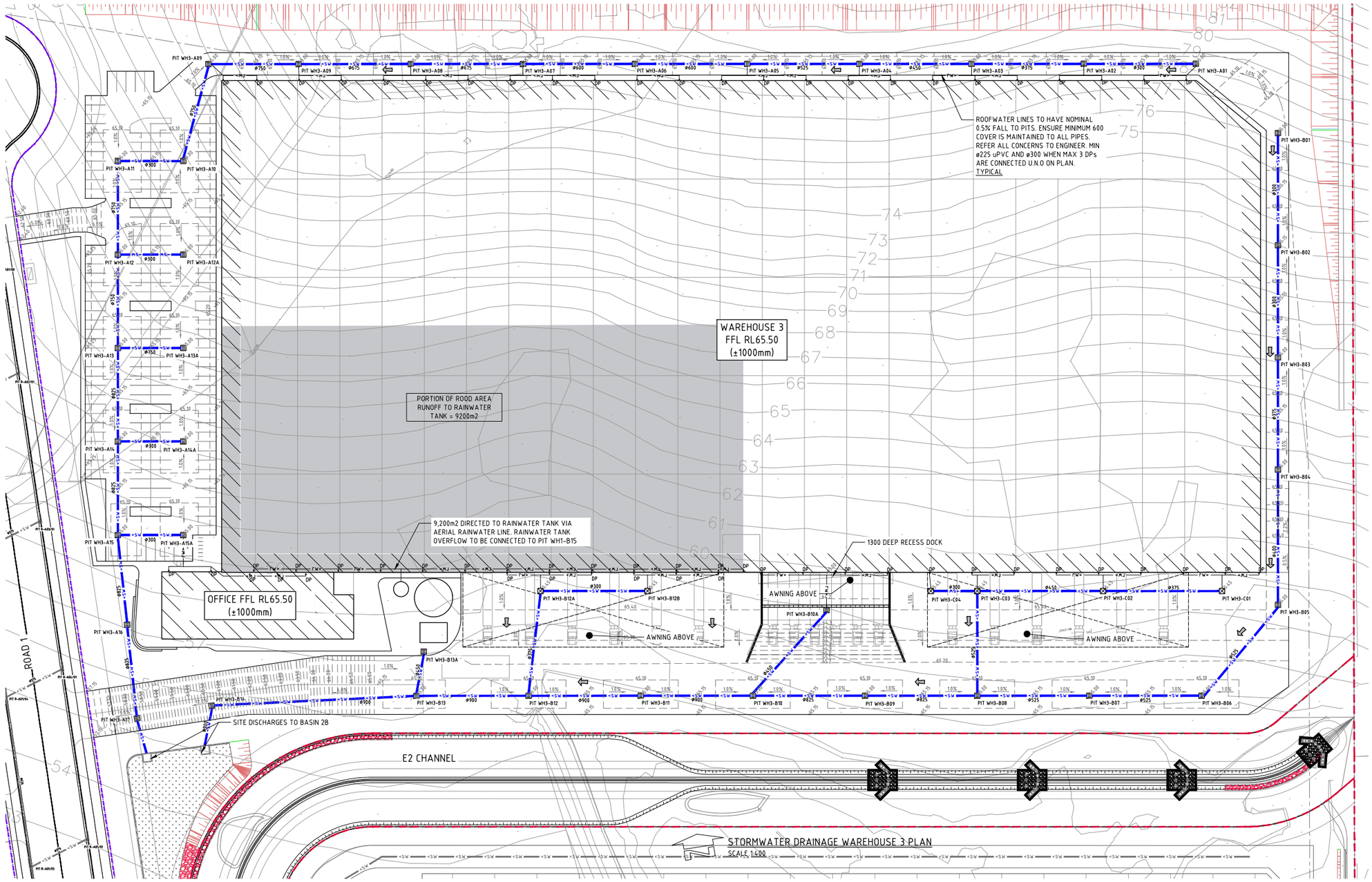
DRAWING TITLE
STORMWATER DRAINAGE WAREHOUSE 1 PLAN

DRAWING No C013874.06-SSDA411 ISSUE B



STORMWATER DRAINAGE WAREHOUSE 3 PLAN
SCALE 1:400

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY 20119 DE-01 BY STATIKER 26/09/20.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- PROPOSED DRAINAGE LINE
- EXISTING ESTATE DRAINAGE LINE
- ROOFWATER DOWNPIPE (INDICATIVE)
- OVERLAND FLOW DIRECTION
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING ESTATE CONTOUR

STORMWATER DRAINAGE NOTES :

1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3:2003 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
2. 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.
3. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS SSDA511.
4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
5. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
6. ALL STORMWATER PIPES ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
7. ALL PIPES UP TO AND INCLUDING ø300 TO BE uPVC GRADE SN8 UNO.
8. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
9. 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.
10. IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
11. 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 OR OTHER SUITABLE TAMPING DETAILS.
12. 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.
13. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED ø100 uPVC TO EACH SIDE OF PIPE.
14. 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.
15. ALL PIPE GRADES 1 IN 200 MINIMUM UNO.
16. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
17. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
18. 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.
19. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
20. 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.
21. 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.

PIT SCHEDULE - NETWORK A

PIT No.	GRATE RL	DEPTH	TYPE	GRATE SIZE	COMMENT
PIT WH3-A01	65.00		SGGP	900x900	◇
PIT WH3-A02	65.00		SGGP	900x900	◇
PIT WH3-A03	65.00		SGGP	900x900	◇
PIT WH3-A04	65.00		SGGP	900x900	◇
PIT WH3-A05	65.00		SGGP	900x900	◇
PIT WH3-A06	65.00		SGGP	900x900	◇
PIT WH3-A07	65.00		SGGP	900x900	◇
PIT WH3-A08	65.00		SGGP	900x900	◇
PIT WH3-A09	65.00		SGGP	900x900	◇
PIT WH3-A10	65.00		SGGP	900x900	◇
PIT WH3-A10A	65.00		SGGP	900x900	◇
PIT WH3-A11	65.00		SGGP	900x900	◇
PIT WH3-A11A	65.00		SGGP	900x900	◇
PIT WH3-A12	65.00		SGGP	900x900	◇
PIT WH3-A13	65.00		SGGP	900x900	◇
PIT WH3-A14A	65.00		SGGP	900x900	◇
PIT WH3-A15	65.00		SGGP	900x900	◇
PIT WH3-A15A	65.00		SGGP	900x900	◇
PIT WH3-A16	65.00		SGGP	900x900	◇
PIT WH3-A17	65.00		SGGP	900x900	◇

PIT SCHEDULE - NETWORK B

PIT No.	GRATE RL	DEPTH	TYPE	GRATE SIZE	COMMENT
PIT WH3-B01	65.00		SGGP	900x900	◇
PIT WH3-B02	65.00		SGGP	900x900	◇
PIT WH3-B03	65.00		SGGP	900x900	◇
PIT WH3-B04	65.00		SGGP	900x900	◇
PIT WH3-B05	65.00		SGGP	900x900	◇
PIT WH3-B06	65.00		SGGP	900x900	◇
PIT WH3-B07	65.00		SGGP	900x900	◇
PIT WH3-B08	65.00		SGGP	900x900	◇
PIT WH3-B09	65.00		SGGP	900x900	◇
PIT WH3-B10	65.00		SGGP	900x900	◇
PIT WH3-B10A	65.00		SGGP	900x900	◇
PIT WH3-B11	65.00		SGGP	900x900	◇
PIT WH3-B12	65.00		SGGP	900x900	◇
PIT WH3-B12A	65.45		SJP	900x900	◇
PIT WH3-B12B	65.45		SJP	900x900	
PIT WH3-B13	65.00		SGGP	900x900	◇
PIT WH3-B13A	65.00		SGGP	900x900	◇
PIT WH3-B14	65.00		SGGP	900x900	◇

PIT SCHEDULE NETWORK C

PIT No.	GRATE RL	DEPTH	TYPE	GRATE SIZE	COMMENT
PIT WH3-C01	65.45		SJP	900x900	
PIT WH3-C02	65.45		SJP	900x900	
PIT WH3-C03	65.45		SJP	900x900	
PIT WH3-C04	65.45		SJP	900x900	

NOTE:

PITS TO BE FITTED WITH OCEAN PROTECT OCEAN GUARD OG200 PIT INSERTS SHOWN THUS ◇
TOTAL NO OF PIT INSERTS = 42
REFER TO PIT SCHEDULE ABOVE

LEVELS NOTE:

LEVELS SHOWN TO BE +/-1000mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

4m 0 10 20 30 40m
SCALE 1:400 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA413

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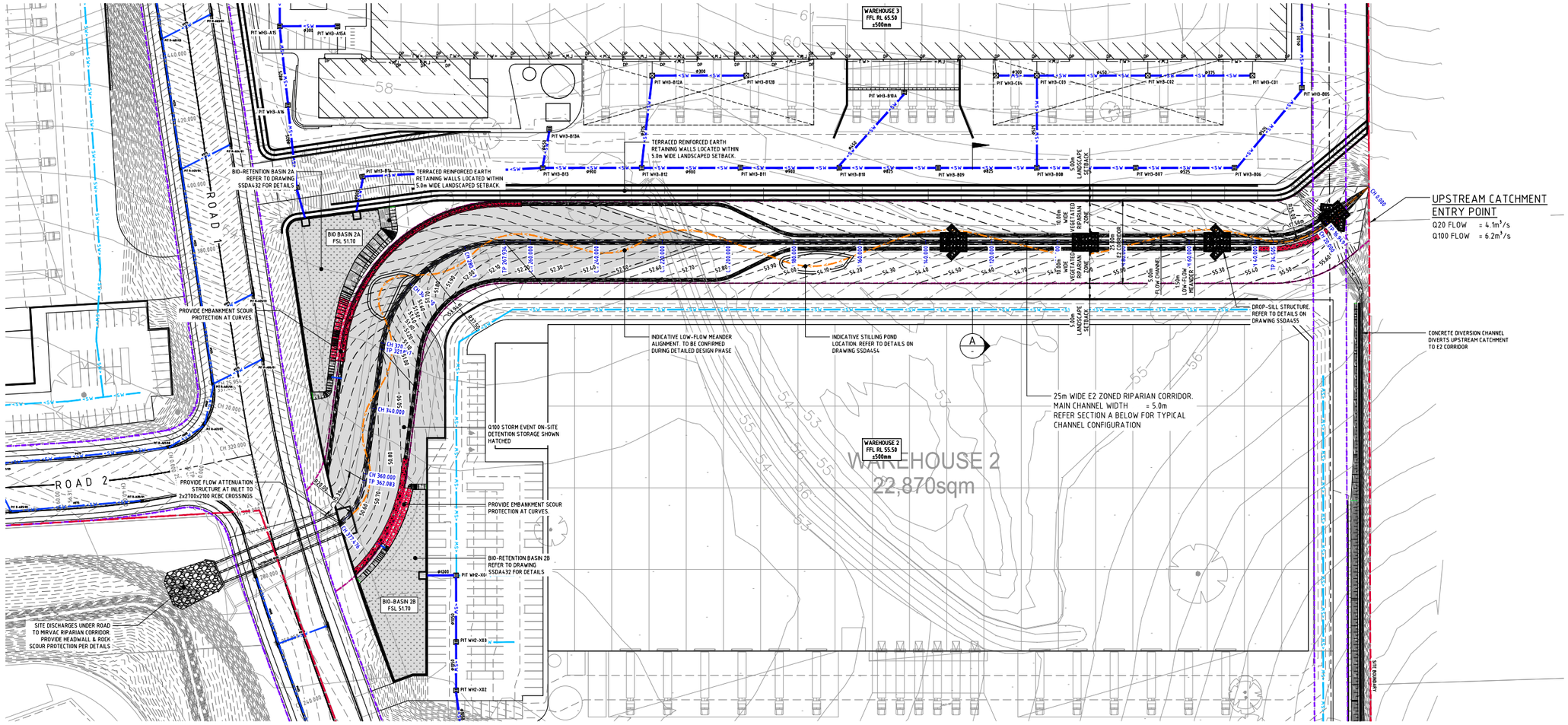
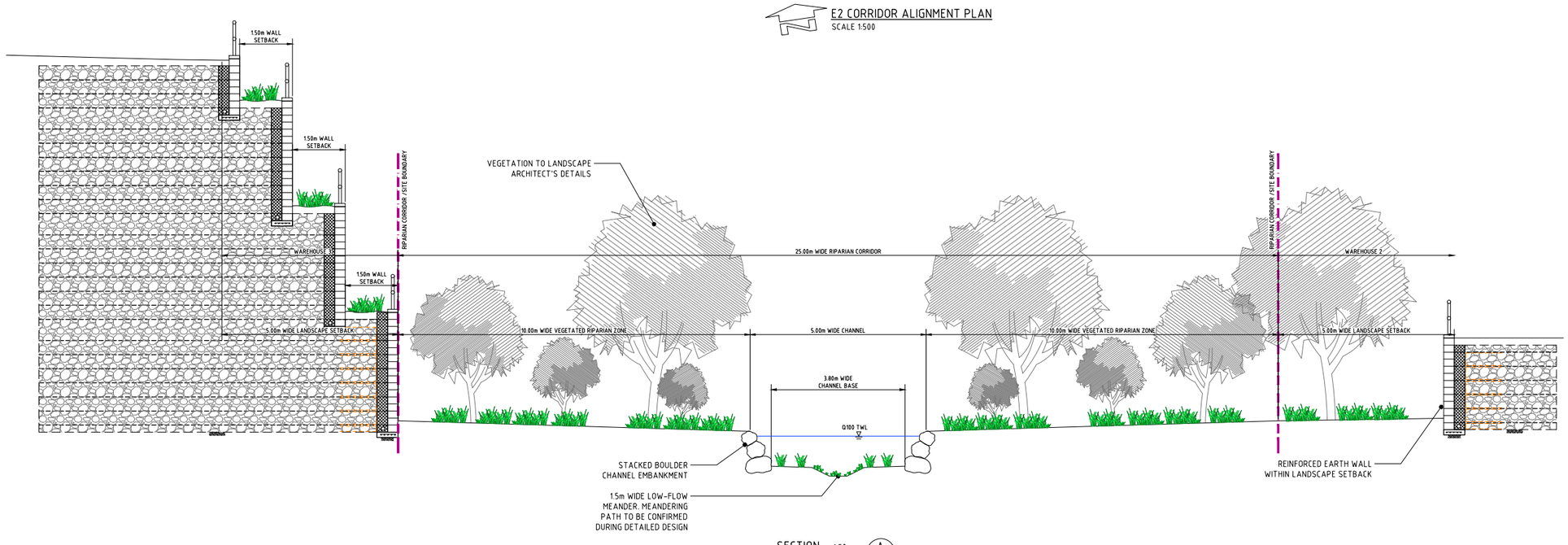
DRAWING TITLE: STORMWATER DRAINAGE WAREHOUSE 3 PLAN
DRAWING No: C013874.06-SSDA413 ISSUE: A



E2 CORRIDOR ALIGNMENT PLAN
SCALE 1:500



SECTION 1:50 A
TYPICAL THRU CHANNEL

LEGEND:
LEVELS DATUM IS AHD.

- SW — DENOTES PROPOSED INFRASTRUCTURE STORMWATER
- SW — DENOTES FUTURE WAREHOUSE STORMWATER
- E2 CORRIDOR/WAREHOUSE BOUNDARY
- INDICATIVE LOW-FLOW MEANDER
- APPROXIMATE 100 YEAR OSD STORAGE AREA

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA420

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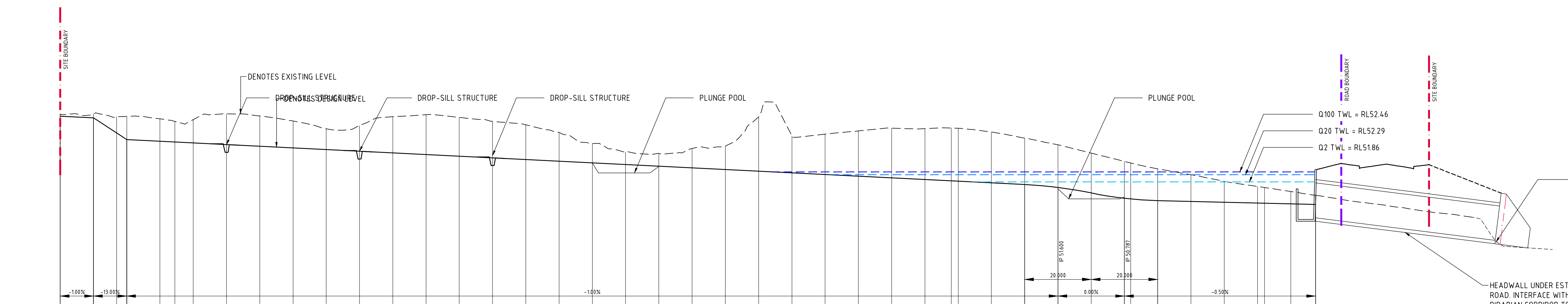
DRAWING TITLE: E2 CORRIDOR ALIGNMENT PLAN
DRAWING No: C013874.06-SSDA420 ISSUE: A



HORIZONTAL GEOMETRY: 16.949 / 238°18'18" — R25.000 / A17.555 — 233.429 / 278°32'20" — R37.500 / A53.943 — 40.206 / 196°07'13" — R20.000 / A15.394

CHAINAGE	CUT/FILL DEPTH	FINISHED SURFACE LEVEL	EXISTING SURFACE LEVEL
0.000	-0.139	55.800	55.939
10.000	-0.246	55.700	55.946
16.949	-0.972	54.797	55.77
20.000	-1.390	54.400	55.790
30.000	-1.346	54.300	55.646
34.505	-1.236	54.255	55.49
40.000	-1.402	54.200	55.602
50.000	-1.846	54.100	55.946
60.000	-1.821	54.000	55.821
70.000	-1.621	53.900	55.521
80.000	-1.250	53.800	55.050
90.000	-1.540	53.700	55.240
100.000	-2.169	53.600	55.769
110.000	-2.393	53.500	55.893
120.000	-2.335	53.400	55.735
130.000	-2.196	53.300	55.496
140.000	-2.091	53.200	55.291
150.000	-1.727	53.100	54.827
160.000	-1.163	53.000	54.163
170.000	-0.755	52.900	53.655
180.000	-0.762	52.800	53.562
190.000	-1.166	52.700	53.866
200.000	-1.398	52.600	53.998
210.000	-3.266	52.500	55.766
220.000	-2.216	52.400	54.616
230.000	-2.427	52.300	54.727
240.000	-2.716	52.200	54.916
250.000	-2.984	52.100	55.084
260.000	-3.063	52.000	55.063
267.934	-3.171	51.921	55.09
280.000	-3.054	51.800	54.854
270.000	-3.176	51.900	55.076
290.000	-2.787	51.700	54.487
300.000	-2.563	51.523	54.087
310.000	INFINITY	51.194	53.589
320.000	-2.213	50.876	53.090
340.000	-1.601	50.687	52.289
321.877	-2.162	50.837	53.00
330.000	-1.910	50.737	52.647
360.000	-0.997	50.587	51.584
350.000	-1.252	50.637	51.889
362.083	-0.947	50.577	51.52
370.000	-0.743	50.537	51.280
377.476	-0.547	50.500	51.047

LONGITUDINAL SECTION - GPT E2 CHANNEL

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SIZE SHEET

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	06.01.21	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA421

CONSULT AUSTRALIA

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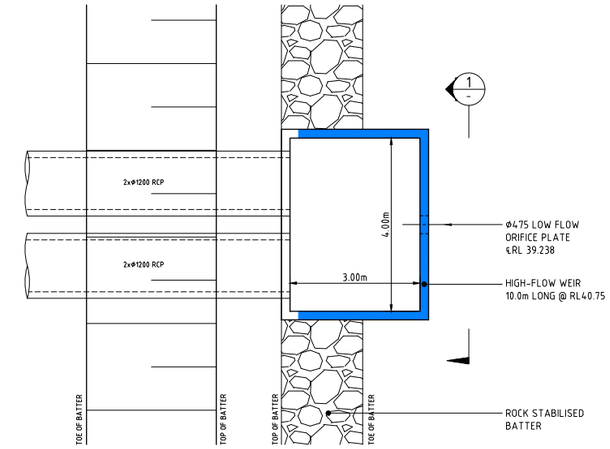
DRAWING TITLE: RIPARIAN CORRIDOR CENTRELINE LONG SECTION

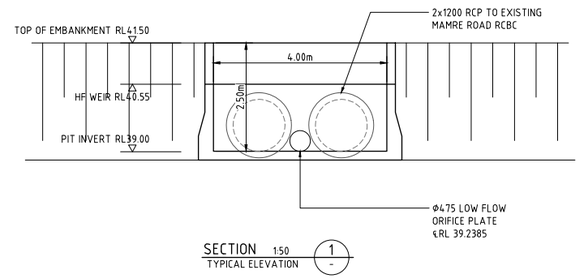
DRAWING No: C013874.06-SSDA421 ISSUE: B

PIT X01/06
PIT X01/05
PIT X01/04
PIT X01/03
Φ1500
Φ1350
CONSTRUCTION OF INFRASTRUCTURE DRAINAGE TO BE COORDINATED WITH RETAINING WALL CONSTRUCTION
PROVIDE SEDIMENT FOREBAY AT INLET TO BASIN. DETAILS TO BE CONFIRMED DURING DETAILED DESIGN PHASE.
Φ1500 RCP INTERALLOTMENT DRAIN TO DIVERT UPSTREAM CATCHMENT. BYPASSES BASIN 1
FUTURE WAREHOUSE DRAINAGE LINE
BIO-CELL 1B
BIO-RETENTION AREA = 540m²
FSL RL 40.60
400mm EXTENDED DETENTION DEPTH
500mm MIN THICK FILTER MEDIA
BASIN 1B FSL RL 40.60
INTERALLOTMENT DRAIN DISCHARGES INTO MAMRE ROAD TABLE DRAIN. PROVIDE RIP RAP ENERGY DISSIPATER AND NEW 2m WIDE, 1.5m DEEP SWALE TO EXISTING RCBC UNDER MAMRE ROAD
BUND TO BE SET AT RL41.50
Q2 OSD TWL RL40.56
Q20 OSD TWL RL40.96
Q100 OSD TWL RL41.08
TIERED REINFORCED EARTH RETAINING WALL
STACKED BOULDER EMBANKMENT. DETAILS TO BE CONFIRMED DURING DETAILED DESIGN.
WAREHOUSE 5
FFL RL 45.50
±1000mm
WAREH
30,83
MAMRE ROAD
ESTATE BASIN 1
COMBINED ON SITE DETENTION & BIO-RETENTION BASIN
OSD VOLUME = 3,500m³
BIO-RETENTION AREA = 1,340m²
Q100 TWL = RL40.940
BASIN 1 DISCHARGE CONTROL PIT
1 x Φ475 ORIFICE @ ℄RL 39.238
1 x 10m LONG WEIR @ RL 40.75
REFER ADJACENT DETAIL A
EXISTING 2x1.2x0.6 RCBC TO BE PRESERVED DURING WORKS
PROVIDE 12.5m WIDE, 300mm DEEP EMERGENCY OVERFLOW WEIR SET TO RL41.20
ESTATE BASIN 1 DISCHARGES TO EXISTING BOX CULVERTS UNDER MAMRE ROAD AS SHOWN. PROVIDE ROCK ENERGY DISSIPATER PER DETAILS.
BIO-CELL 1A
BIO-RETENTION AREA = 800m²
FSL RL 40.60
400mm EXTENDED DETENTION DEPTH
500mm MIN THICK FILTER MEDIA
PROVIDE Φ300 HALF-ROUND FLOW SPREADER AT BASE OF WALL/BIO-RETENTION FILTER MEDIA.
PROVIDE SEDIMENT FOREBAY AT INLET TO BASIN. DETAILS TO BE CONFIRMED DURING DETAILED DESIGN PHASE.
BASIN 1A FSL RL 40.60
CONSTRUCTION OF INFRASTRUCTURE DRAINAGE TO BE COORDINATED WITH RETAINING WALL CONSTRUCTION

ESTATE BASIN 1 PLAN
SCALE 1:250



DETAIL 1:50 A -
BASIN 1 DCP PLAN



SECTION 1:50 1 -
TYPICAL ELEVATION

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY BOXALL SURVEYORS (REF: 11017-001, DATED 23.07.2020)

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- SW – PROPOSED DRAINAGE LINE
- SW – FUTURE WAREHOUSE DRAINAGE LINE
- 2 YEAR ARI TOP WATER LEVEL
- 20 YEAR ARI TOP WATER LEVEL
- 100 YEAR ARI TOP WATER LEVEL
- OVERLAND FLOW DIRECTION
- 50.00 – FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 – FINISHED PAVEMENT CONTOUR (MINOR) 0.10m INTERVALS

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	26.05.21	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	24.05.21	A

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA431

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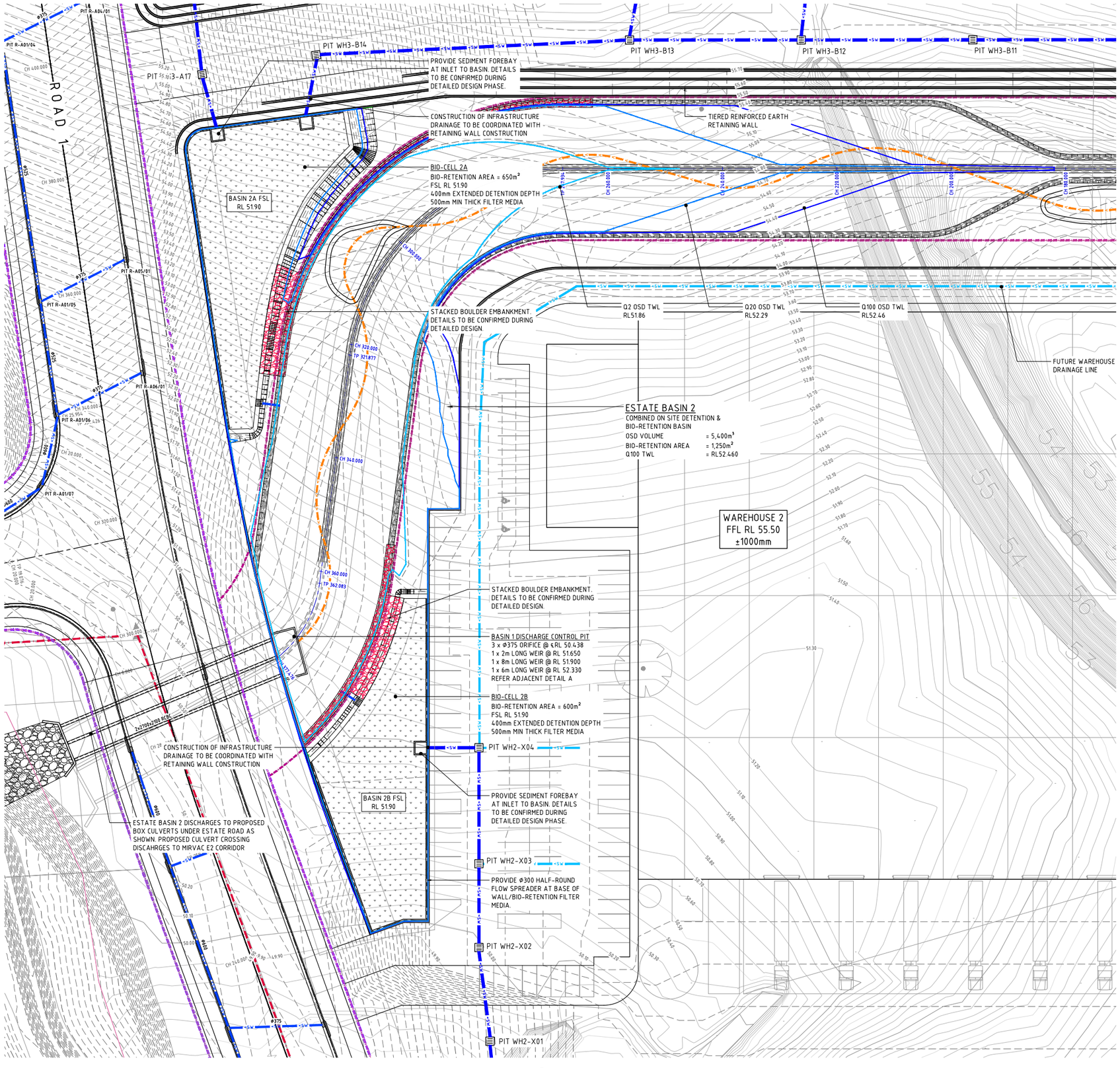
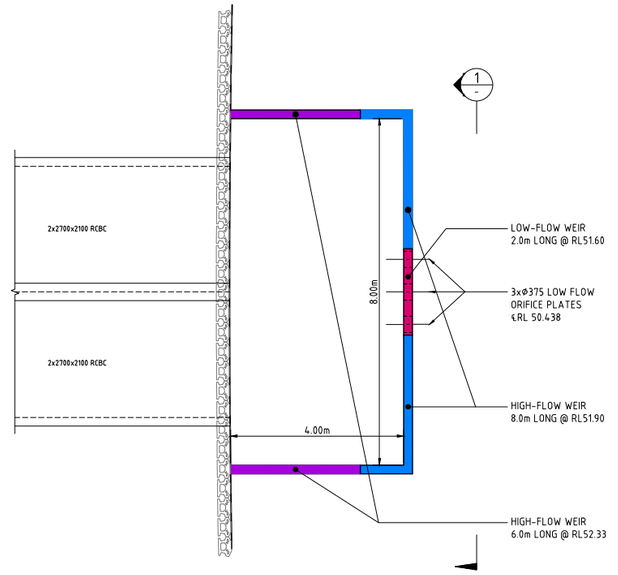
Costin Roe Consulting
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE
ESTATE BASIN 1 PLAN

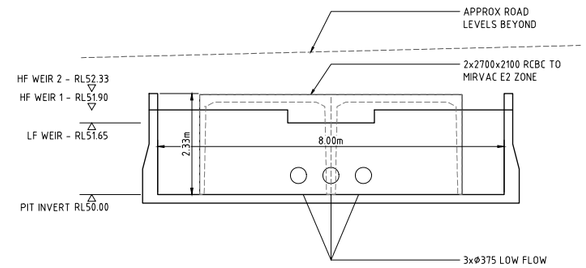
DRAWING No C013874.06-SSDA431 ISSUE C



ESTATE BASIN 2 PLAN
SCALE 1:250



DETAIL 1:50
BASIN 2 DCP PLAN



SECTION 1:50
TYPICAL ELEVATION
1

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY BOXALL SURVEYORS (REF: 11017-001, DATED 23.07.2020)

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- PROPOSED DRAINAGE LINE
- FUTURE WAREHOUSE DRAINAGE LINE
- 2 YEAR ARI TOP WATER LEVEL
- 20 YEAR ARI TOP WATER LEVEL
- 100 YEAR ARI TOP WATER LEVEL
- OVERLAND FLOW DIRECTION
- 50.00 - FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 - FINISHED PAVEMENT CONTOUR (MINOR) 0.10m INTERVALS

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	24.05.21	A

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CLIENT: GPT The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA432

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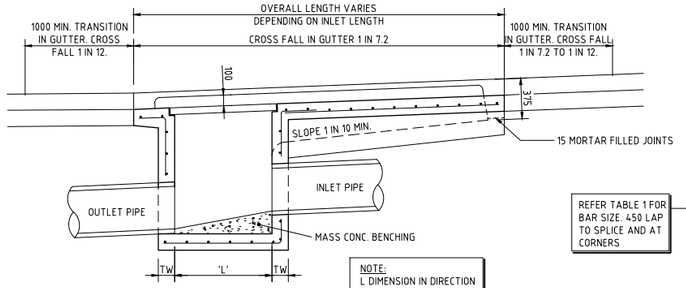
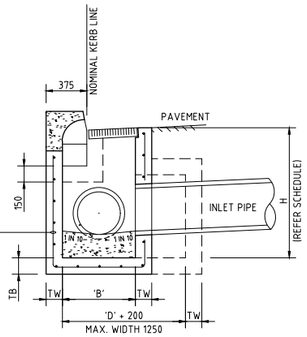
DRAWING TITLE: ESTATE BASIN 2 PLAN
DRAWING No: C013874.06-SSDA432 ISSUE: A



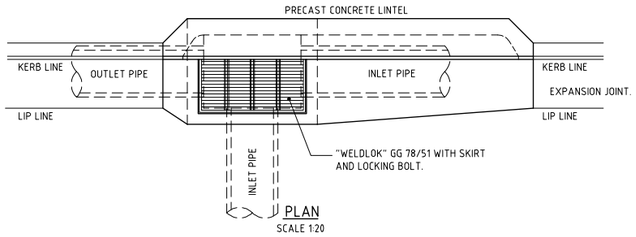
NOTE:
L DIMENSION IN DIRECTION OF DOWNSTREAM PIPE

LONG SECTION.
SCALE 1:20



REFER TABLE 1 FOR BAR SIZE. 450 LAP TO SPLICE AND AT CORNERS

CROSS SECTION.
SCALE 1:20



PLAN
SCALE 1:20

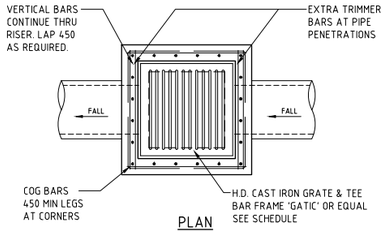
KERB INLET PIT - KIP

TABLE 1 - CLASS D <1200mm SQUARE PIT REINFORCEMENT & WALL THICKNESS				
DEPTH 'H'	WALL THICKNESS 'TW'	WALL REINFORCEMENT	BASE THICKNESS 'TB'	BASE REINFORCEMENT
< 1.0m	150mm	-	150mm	-
1.0m-3.0m	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY
3.0m-4.5m	200mm	N12-200 EACH WAY	200mm	N12-200 EACH WAY
4.5-6.0	200mm	N16-200 EACH WAY	200mm	N16-200 EACH WAY

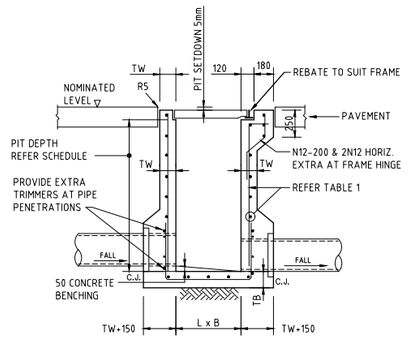
CONCRETE QUALITY					
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	F'c (MPa)
PIT	80	20	GP	NIL	32

NOTES:

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 THE GRATE.
3. ALL REINFORCING TO HAVE 30 MIN. CLAER CONCRETE COVER.
4. FOR PITS DEEPER THAN 1200mm CLIMB RAILS SHALL BE PROVIDED.



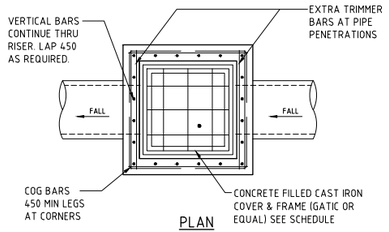
PLAN
SCALE 1:20



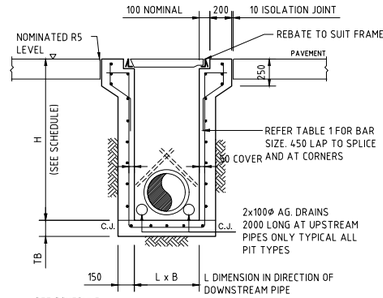
SEE SCHEDULE
L DIMENSION IN DIRECTION OF DOWNSTREAM PIPE

SECTION
SCALE 1:20

SINGLE GRATED GULLY PIT - SGGP



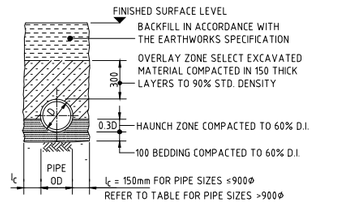
PLAN
SCALE 1:20



SEE SCHEDULE
L DIMENSION IN DIRECTION OF DOWNSTREAM PIPE

SECTION
SCALE 1:20

SEALED PIT - SJP

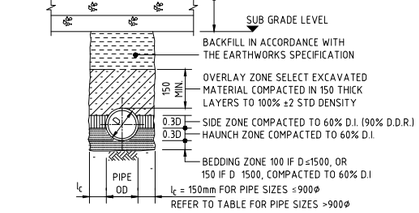


TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS
SCALE 1:20

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE WIDTH	
PIPE SIZE (mm)	l_c (mm)
≤ 900Ø	150
1050Ø	175
1200Ø	200
1350Ø	225
1500Ø	250
1650Ø	275
1800Ø	300

ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800Ø

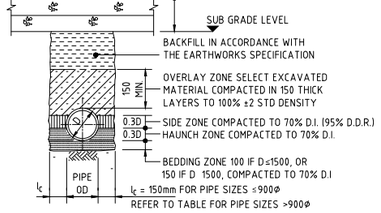


TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT
SCALE 1:20
D ≤1350, MAX FILL = 4.0m
D >1350, MAX FILL = 3.0m

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE WIDTH	
PIPE SIZE (mm)	l_c (mm)
≤ 900Ø	150
1050Ø	175
1200Ø	200
1350Ø	225
1500Ø	250
1650Ø	275
1800Ø	300

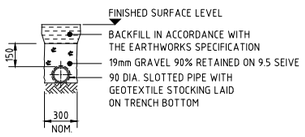
ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800Ø



TYPE HS3 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT
SCALE 1:20
D ≤1050, MAX FILL = 6.0m
D >1050, MAX FILL = 4.8m

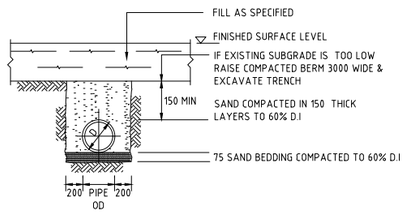
SIDE ZONE MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
75.0	100
9.5	100 TO 50
2.36	100 TO 50
0.60	50 TO 15
0.075	25 TO 0

SELECT FILL MATERIAL IN ACCORDANCE WITH TABLE 1 AS 3725

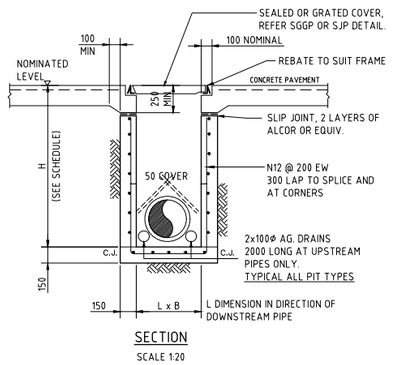


SUPPORT TO AGRICULTURAL DRAIN
FOR USE UNDER CAR PARK PAVEMENTS/LANDSCAPED AREAS
SCALE 1:20

SIDE ZONE MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
9.5	100 TO 50
2.6	100 TO 30
0.60	50 TO 15
0.075	25 TO 0



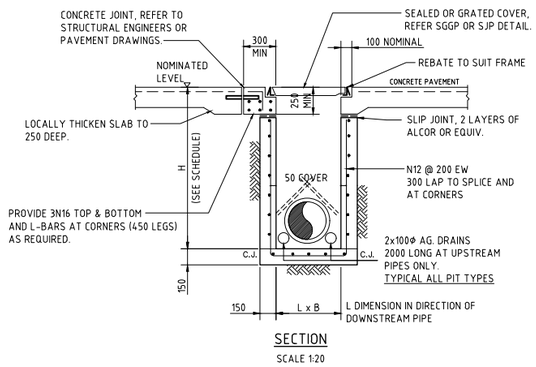
SUPPORT TO uPVC PIPES



SECTION
SCALE 1:20

SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL GRATE/COVER SUPPORT CAST-INTO PAVEMENT SLAB

(ADOPT IN CONCRETE PAVEMENTS FOR SGGP's & SJP's, WHERE JOINTS ARE NOT LOCATED WITHIN PROXIMITY OF THE GRATE)



SECTION
SCALE 1:20

SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL GRATE/COVER SUPPORT CAST-INTO PAVEMENT SLAB

(ADOPT IN CONCRETE PAVEMENT FOR SGGP's & SJP's, WHERE PITS ARE LOCATED IN THE CORNER OF SLAB PANELS OR ADJACENT TO SLAB PANEL JOINTS)

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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CLIENT: GPT The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
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KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA451

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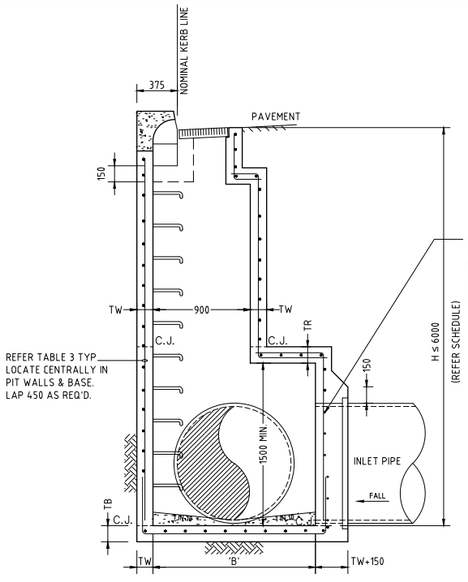
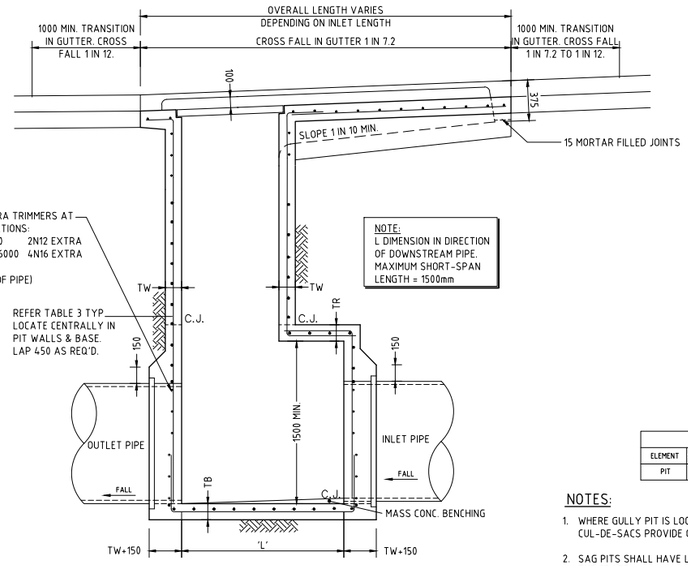
DRAWING TITLE: STORMWATER DRAINAGE DETAILS SHEET 1

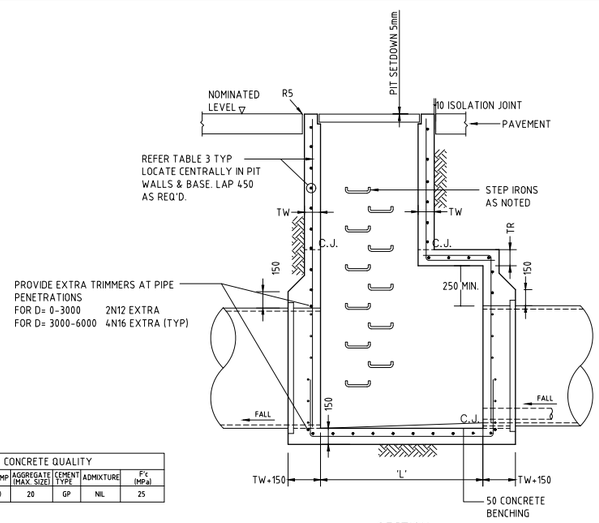
DRAWING No: C013874.06-SSDA451 ISSUE: B



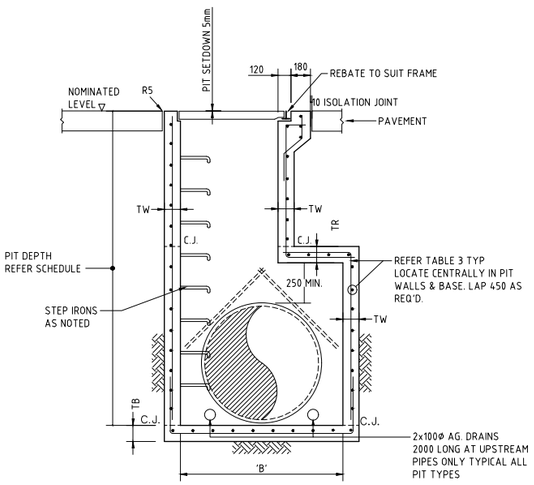
CROSS SECTION.
SCALE 1:20



LONG SECTION.
SCALE 1:20



SECTION
SCALE 1:20

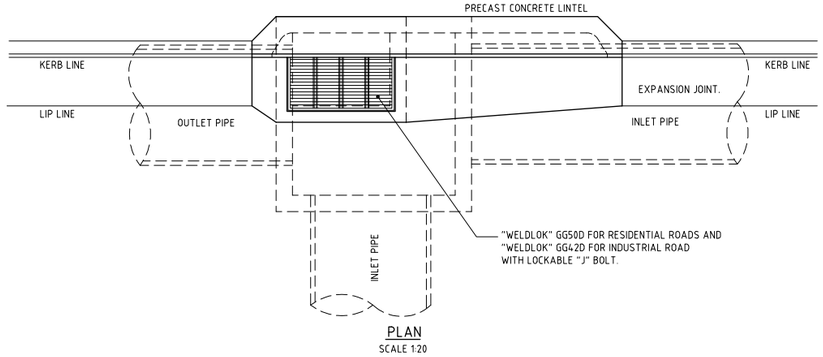


SECTION
SCALE 1:20

CONCRETE QUALITY					
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	f'c (MPa)
PIT	80	20	GP	NIL	25

NOTES:

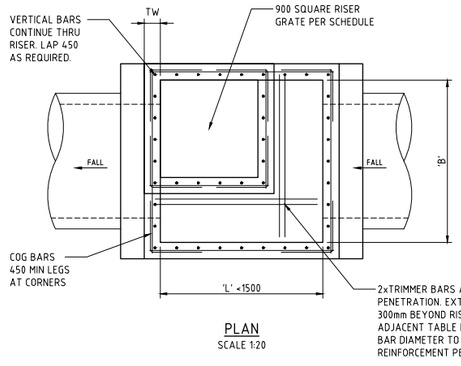
1. WHERE GULLY PIT IS LOCATED ON KERB RETURNS OR BULB OF CUL-DE-SACS PROVIDE CURVED PRECAST CONCRETE LINTELS.
2. SAG PITS SHALL HAVE LINTEL PLACED CENTRALLY ABOUT THE GRATE.
3. ALL REINFORCING TO HAVE 30 MIN. CLEAR CONCRETE COVER.
4. FOR PITS DEEPER THAN 1200mm STEP IRONS SHALL BE PROVIDED.
5. FOR ALL PITS IN ITV PAVEMENT AREAS, PIT WALLS ARE TO BE INCREASED IN THICKNESS BY 50mm AND REINFORCEMENT TO BE N16 BARS IN LIEU OF N12



PLAN
SCALE 1:20

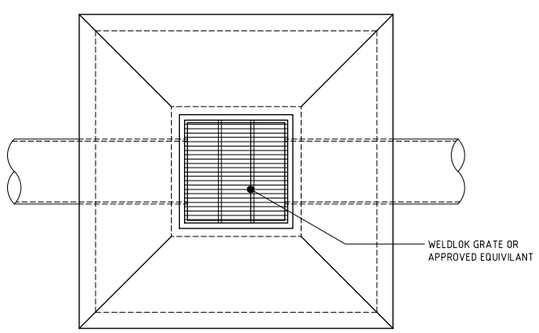
TAPERED KERB INLET PIT - KIP
SUBSOIL NOT SHOWN
FOR CLARITY.

TABLE 3 - TAPERED CLASS D PIT REINFORCEMENT & WALL THICKNESS						
DEPTH 'H'	WALL THICKNESS 'TW'	WALL REINFORCEMENT	ROOF THICKNESS 'TR'	ROOF REINFORCEMENT	BASE THICKNESS 'TB'	BASE REINFORCEMENT
<1.5m	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY
1.5m-3.0m	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY
3.0m-4.5m	200mm	N16-200 EACH WAY	200mm	N16-200 EACH WAY	200mm	N12-200 EACH WAY
4.5-6.0	250mm	N16-200 EACH WAY	250mm	N16-200 EACH WAY	250mm	N16-200 EACH WAY

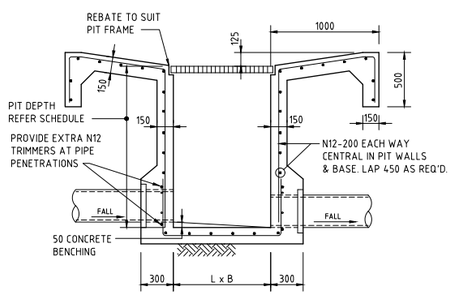


PLAN
SCALE 1:20

TAPERED SINGLE GRATED GULLY PIT - SGGP
SUBSOIL NOT SHOWN
FOR CLARITY.



PLAN
SCALE 1:20



SECTION
SCALE 1:20

FIELD INLET PIT - SIP

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
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ISSUED FOR PRELIMINARY ONLY	09.04.21	A

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CLIENT
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PROJECT
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KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA452

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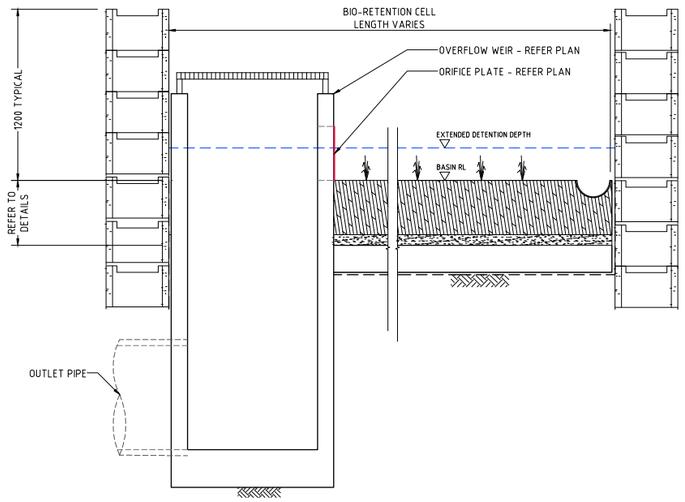
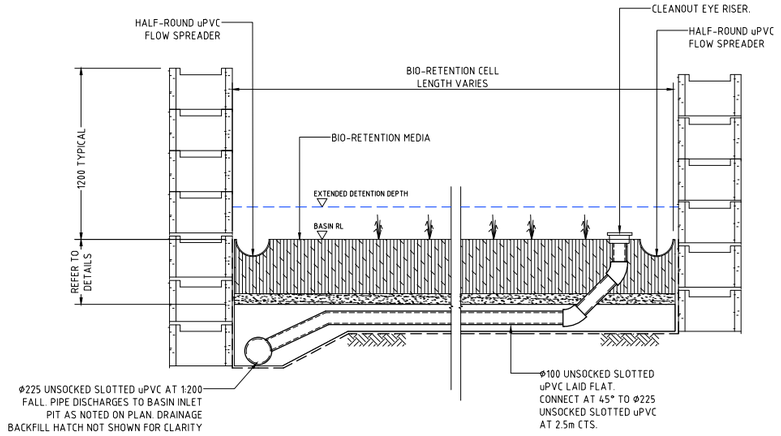
DRAWING TITLE
STORMWATER DRAINAGE DETAILS SHEET 2

DRAWING No: C013874.06-SSDA452 ISSUE: B



DETAIL 1:20 (A)
TYPICAL THRU OSD



DETAIL 1:20 (B)
TYPICAL THRU BIO CELL

BIO-RETENTION NOTES :

FILTER MEDIA TO BE LOAMY SAND WITH A PERMEABILITY NOT LESS THAN 200mm/hr. FILTER MEDIA TO BE FREE OF RUBBISH, DELETERIOUS MATERIAL, TOXICANTS, DECLARED PLANTS AND LOCAL WEEDS, AND IS TO NOT BE HYDROPHOBIC.

FILTER MEDIA TO HAVE THE FOLLOWING COMPOSITION RANGE:

CLAY & SILT (<0.05mm)	<3%
VERY FINE SAND (0.05-0.15mm)	5-30%
FINE SAND (0.15-0.25mm)	10-30%
MEDIUM TO COARSE SAND (0.25-1.00mm)	40-60%
COARSE SAND (1.0-2.0mm)	7-10%
FINE GRAVEL (2.0-3.4mm)	<3%

FILTER MEDIA THAT DOES NOT MEET THE FOLLOWING CRITERIA SHALL BE REJECTED:

a. ORGANIC MATTER CONTENT TO BE IDEALLY WITHIN 1% TO 3% (W/W) AND TO BE NO GREATER THAN 5%(W/W).
b. PH TO BE BETWEEN 5.5 AND 7.5
c. PHOSPHOROUS CONTENT TO BE NO GREATER THAN 35mg/kg

FILTER MEDIA TO BE ASSESSED BY QUALIFIED HORTICULTURALIST TO ENSURE CAPABILITY OF SUPPORTING PLANT LIFE.

DRAINAGE LAYER TO BE CLEAN GRAVEL 5-7mm.

PLANTS TO BE IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENTS.

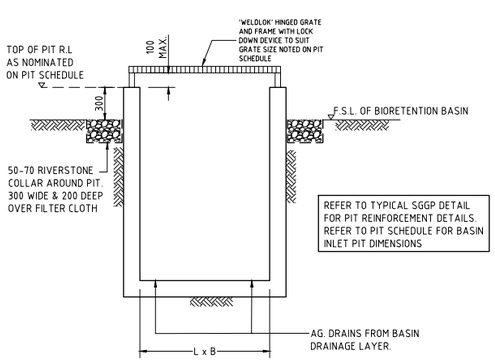
PROVIDE 100mm TOPSOIL AND TEMPORARY EROSION PROTECTION (JUTEMASTER OR EQUIV) TO SWALE BATTER SLOPES AND ADJACENT LANDSCAPED AREAS. NOTE THAT NO TOPSOIL IS TO BE PLACED OVER FILTRATION MEDIA. PROVIDE SILT FENCE TO TOP OF BANK UNTIL SUCH TIME AS THIS STABILISING AND VEGETATION HAS BEEN COMPLETED.

BIO-RETENTION TO BE PARTIALLY INSTALLED, FOLLOWING COMPLETION OF ROADWORKS, WITH THE TOP 75-100mm OF FILTER MEDIA REPLACED WITH A FINE TO COARSE SAND UNDERLAIN WITH A GEOTEXTILE LAYER (REFER TO DETAIL). FOLLOWING COMPLETION OF THE UPSTREAM DEVELOPMENT AND SITE STABILISATION, THE SAND IS TO BE REMOVED, REPLACED WITH FILTER MATERIAL AND PLANTED OUT. REFER TO TEMPORARY BIO-BASIN DETAIL

PRIOR TO PLANTING, THE TOP 100mm OF THE BIORETENTION FILTER MEDIA IS TO BE AMELIORATED WITH APPROPRIATE ORGANIC MATTER, FERTILISER AND TRACE ELEMENTS TO AID PLANT ESTABLISHMENT AS PER THE TABLE BELOW:

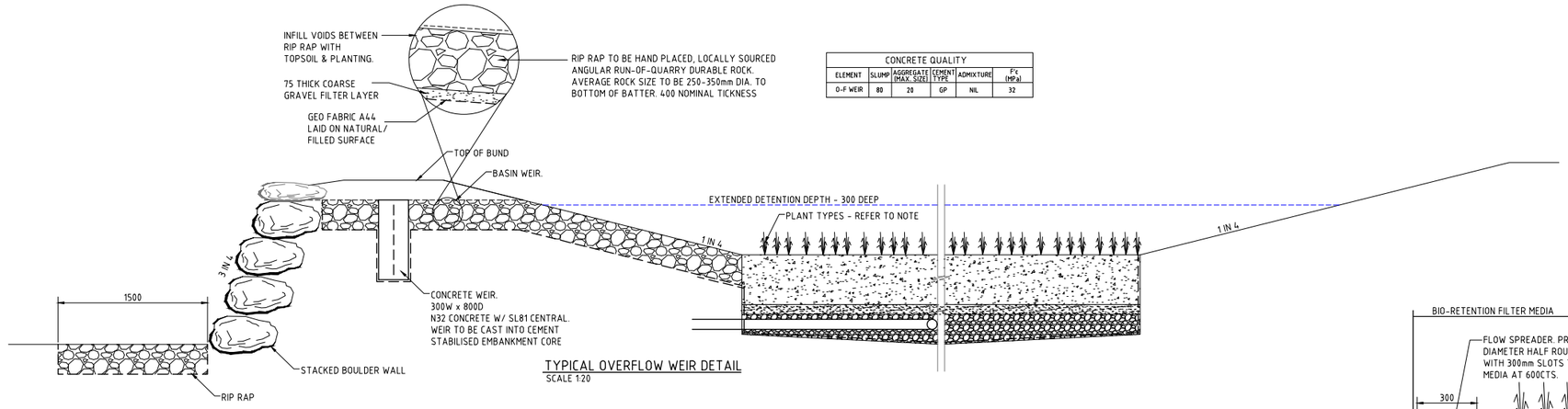
TABLE: RECIPE FOR AMELIORATING TOP 100mm OF BIORETENTION FILTER MEDIA

CONSTITUENT	QUANTITY (kg/m2 OF FILTER AREA)
GRANULATED POULTRY MANURE FINES	50
SUPERPHOSPHATE	2
MAGNESIUM SULPHATE	3
POTASSIUM SULPHATE	2
TRACE ELEMENT MIX	1
FERTILISER NPK (16.4.14)	4
LIME	20



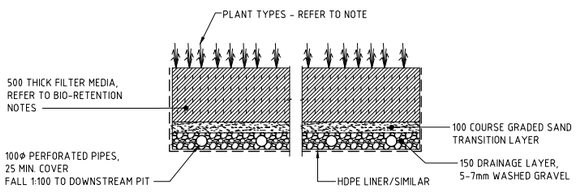
SECTION
SCALE 1:20

BASIN INLET PIT - BIP

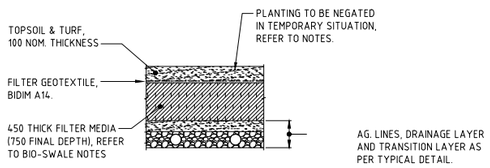


CONCRETE QUALITY					
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	F'c (MPa)
O-F WEIR	80	20	GP	NIL	32

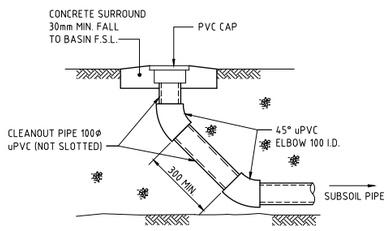
TYPICAL OVERFLOW WEIR DETAIL
SCALE 1:20



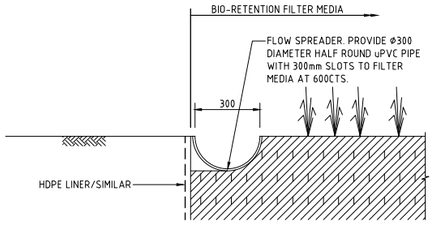
TYPICAL BIO-RETENTION DETAIL
SCALE 1:20



TEMPORARY BIO-RETENTION PROTECTION DETAIL
SCALE 1:20
TEMPORARY CONSTRUCTION REQUIREMENT DETAIL - REFER TO NOTES FOR IMPLEMENTATION PERIODS.



BIORETENTION CLEANOUT EYE ELEVATION
SCALE 1:20
DENOTED C.E. ON PLAN



TYPICAL HALF-ROUND FLOW SPREADER DETAIL
SCALE 1:10

BIO-RETENTION BASIN DETAILS

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

ARCHITECT: SBA ARCHITECTS
CLIENT: GPT The GPT Group

PROJECT: YIRIBANA LOGISTICS ESTATE
754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA453

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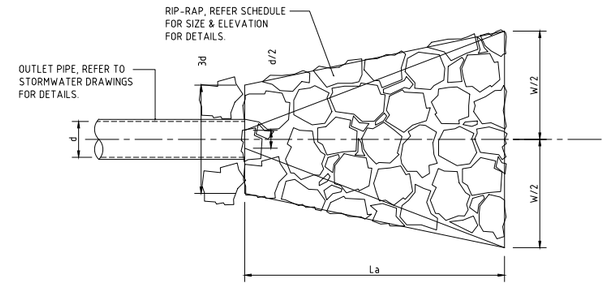
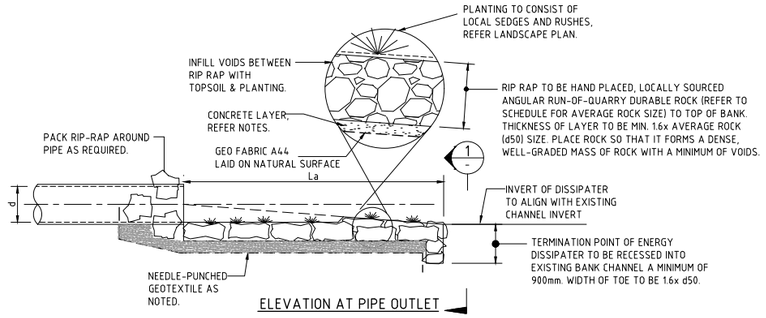
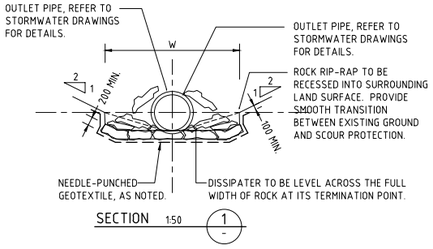
DRAWING TITLE: STORMWATER DRAINAGE DETAILS SHEET 3
DRAWING No: C013874.06-SSDA453 ISSUE: C



PLAN VIEW AT PIPE OUTLET



ELEVATION AT PIPE OUTLET



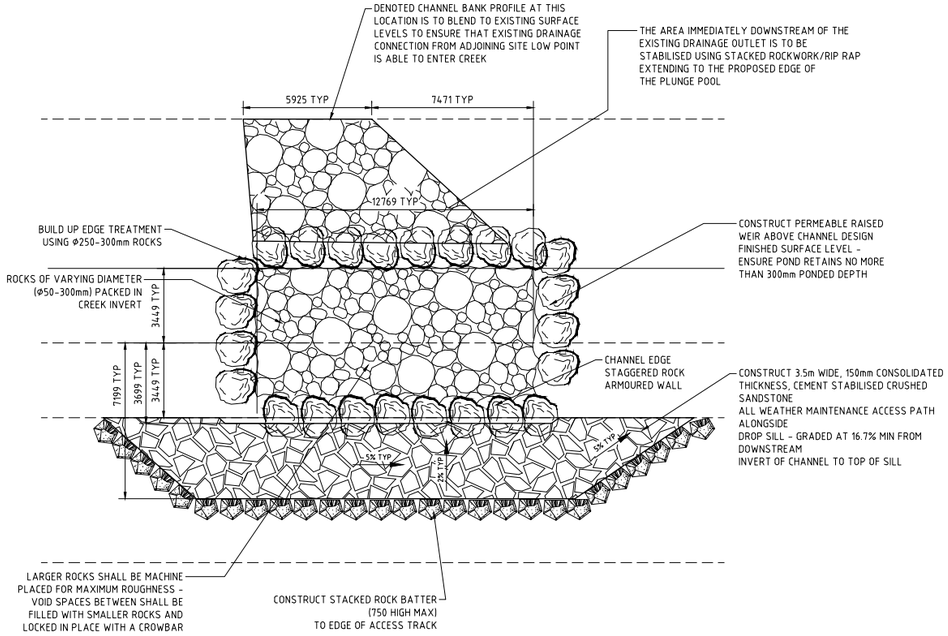
SECTION 1:50 (1/-)

DISSIPATER NOTES:

1. PIPE TO REST ON, AND BE PACKED IN, BY RIP-RAP (SIZE AS NOTED).
2. DISCHARGE INTO STREAM WHERE BEDROCK IS PRESENT, OTHERWISE SCOUR PROTECT AS REQUIRED.
3. SCOUR PROTECT THE OPPOSITE BANK AS REQUIRED. SCOUR PROTECTION TO BE PROVIDED WHERE OPPOSITE BANK IS WITHIN 12-14 TIMES THE PIPE DIAMETER.
4. RIP-RAP TO CONSIST OF ANGULAR RUN-OF-QUARRY ROCK (d50= 150mm MINIMUM) AS NOTED IN THE SCHEDULE. RIP-RAP TO BE MINIMUM THICKNESS OF RIP-RAP LAYER TO BE 1.6x AVERAGE ROCK SIZE (d50).
5. RIP-RAP IS TO BE PLACED OVER A 200mm LAYER OF MASS CONCRETE OVER NEEDLE-PUNCHED GEOFAB A44.
6. 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.
7. 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.
8. ENSURE THE FINISHED ROCK SURFACE BLENDS WITH THE SURROUNDING GROUND LEVELS. NO OVERFALL OR PROTRUSION OF ROCK SHOULD BE APPARENT.
9. ENSURE THAT STORMWATER FROM SURROUNDING GROUND IS FREE TO ENTER THE STRUCTURE WITHOUT CAUSING UNDESIRABLE PONDING OR SCOUR.

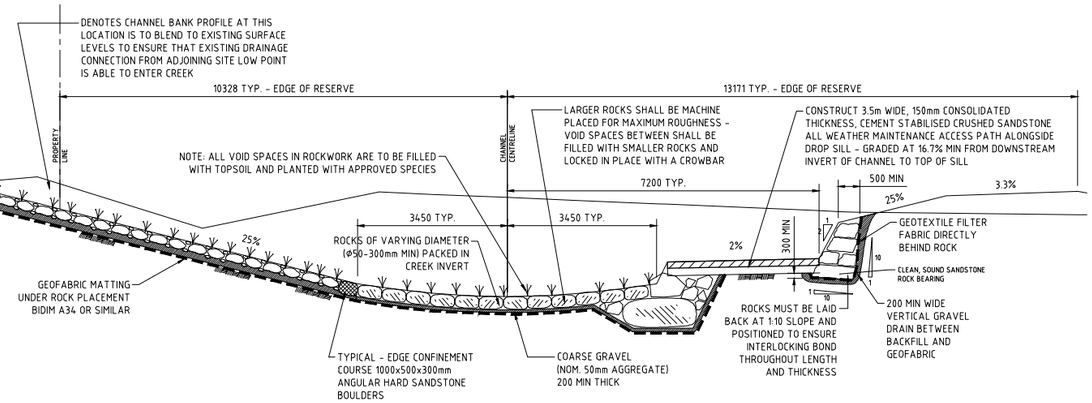
BASIN OUTLET STRUCTURES

SCALE 1:50



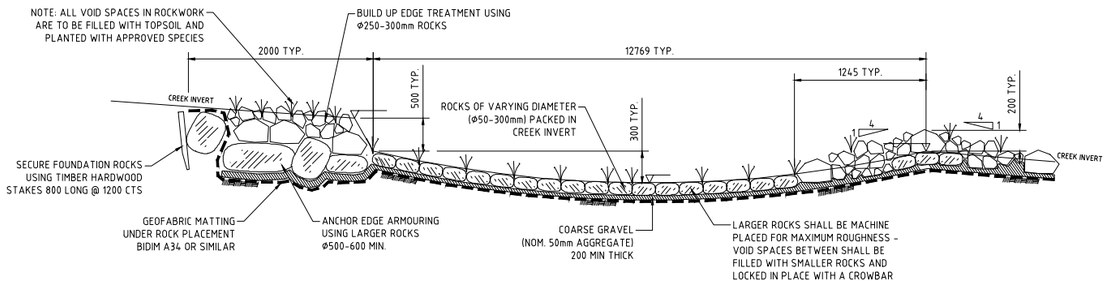
TYPICAL PLAN - PLUNGE POOL

SCALE 1:100



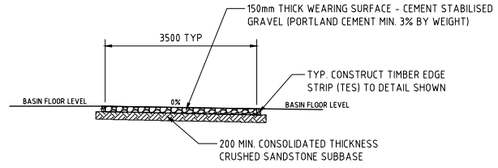
TYPICAL SECTION - PLUNGE POOL

SCALE 1:50



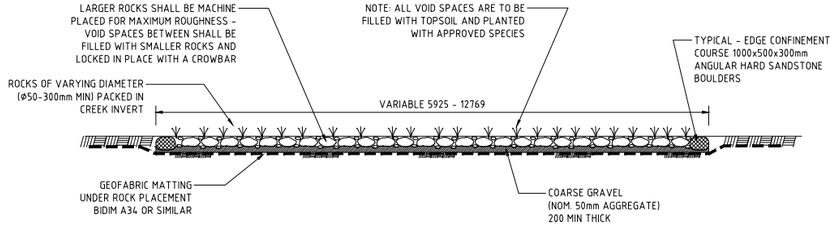
TYPICAL DETAIL - PLUNGE POOL AND WEIR

SCALE 1:50



TYPICAL DETAIL - MAINTENANCE ACCESS DRIVE PAVEMENT CONSTRUCTION

SCALE 1:50



TYPICAL DETAIL - BATTER STABILISATION SCOUR PROTECTION

SCALE 1:50

1m 0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:100 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m

SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

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ISSUED FOR PRELIMINARY ONLY	09.04.21	A

AMENDMENTS / DATE / ISSUE

AMENDMENTS / DATE / ISSUE

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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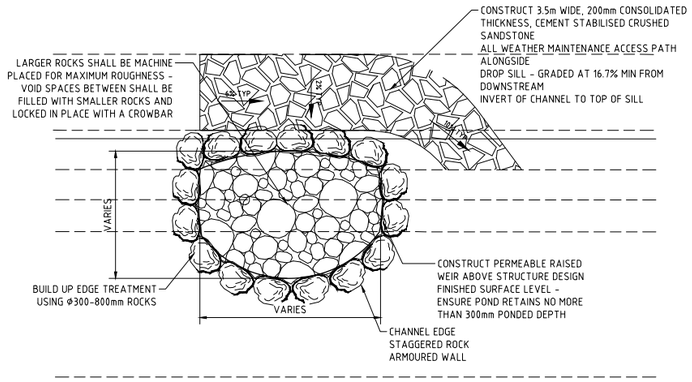
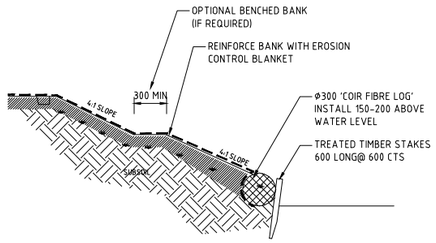
DRAWING TITLE: STORMWATER DRAINAGE DETAILS SHEET 4

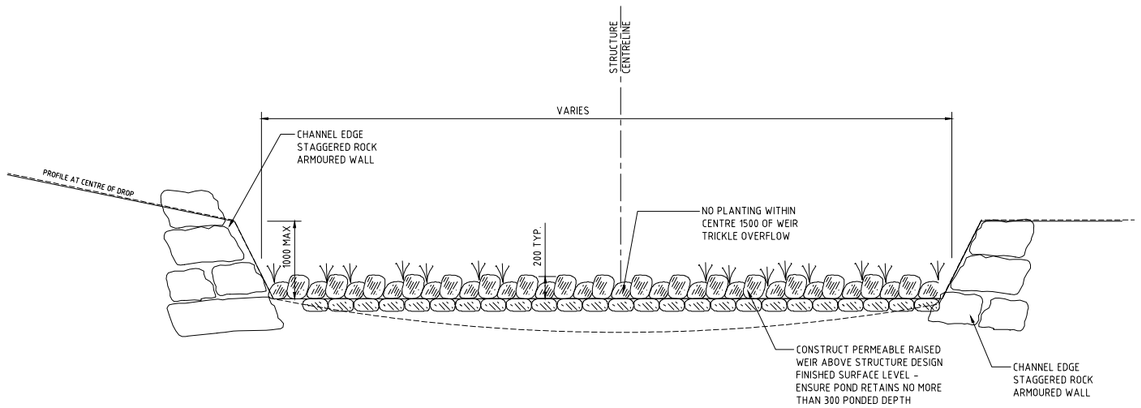
DRAWING No: C013874.06-SSDA454 ISSUE: B



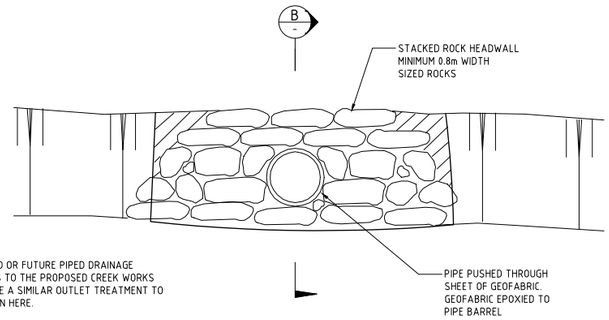
TYPICAL PLAN - BASIN 5 DISCHARGE ROCK DROP SILL
SCALE 1:100



TYPICAL DETAIL - COIR FIBRE LOG PLACEMENT ANY LOCATION
SCALE 1:20



TYPICAL DETAIL - ROCK DROP SILL AND WEIR
SCALE 1:20

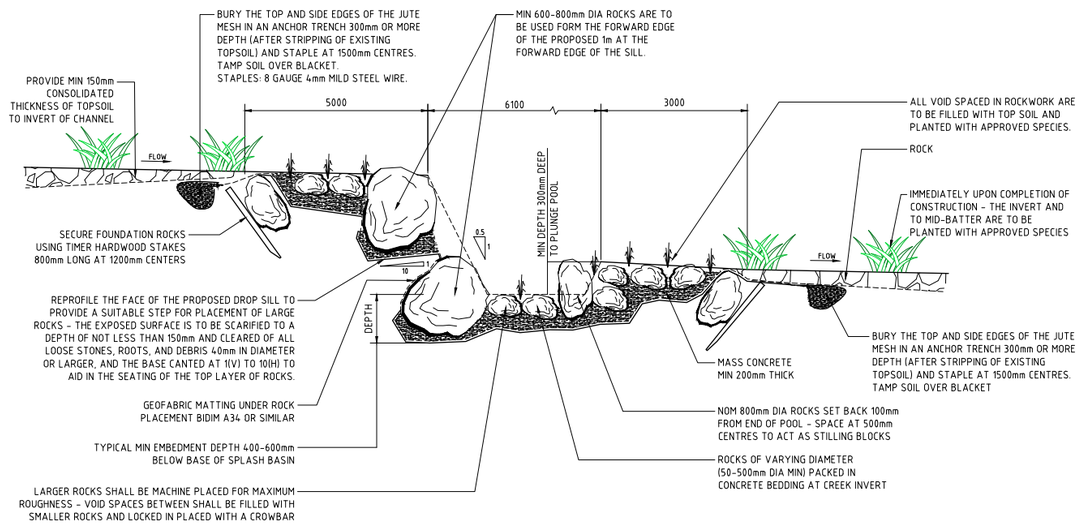


APPLICABILITY:

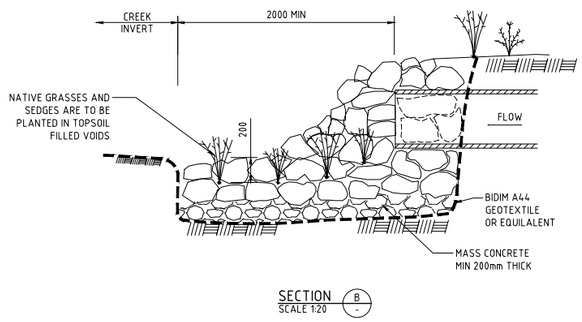
1) ALL PROPOSED OR FUTURE PIPED DRAINAGE CONNECTIONS TO THE PROPOSED CREEK WORKS SHOULD HAVE A SIMILAR OUTLET TREATMENT TO THOSE SHOWN HERE.

2) MIN. ROCK SIZE IN OUTLET DEPRESSED APRON SHOULD BE Ø500-600mm.

TYPICAL STACKED ROCK HEADWALL TREATMENT
SCALE 1:20



TYPICAL DETAIL - ROCK DROP SILL AND WEIR
SCALE 1:20



SECTION B
SCALE 1:20

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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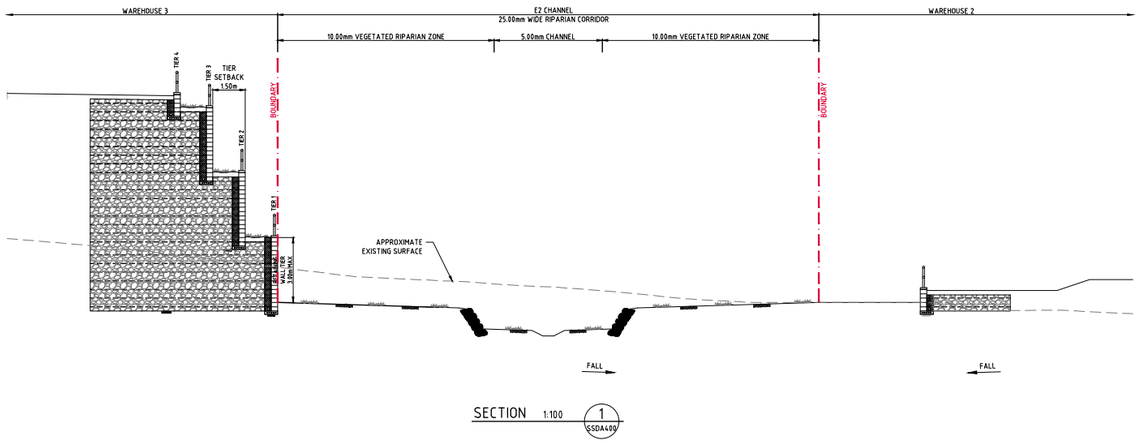
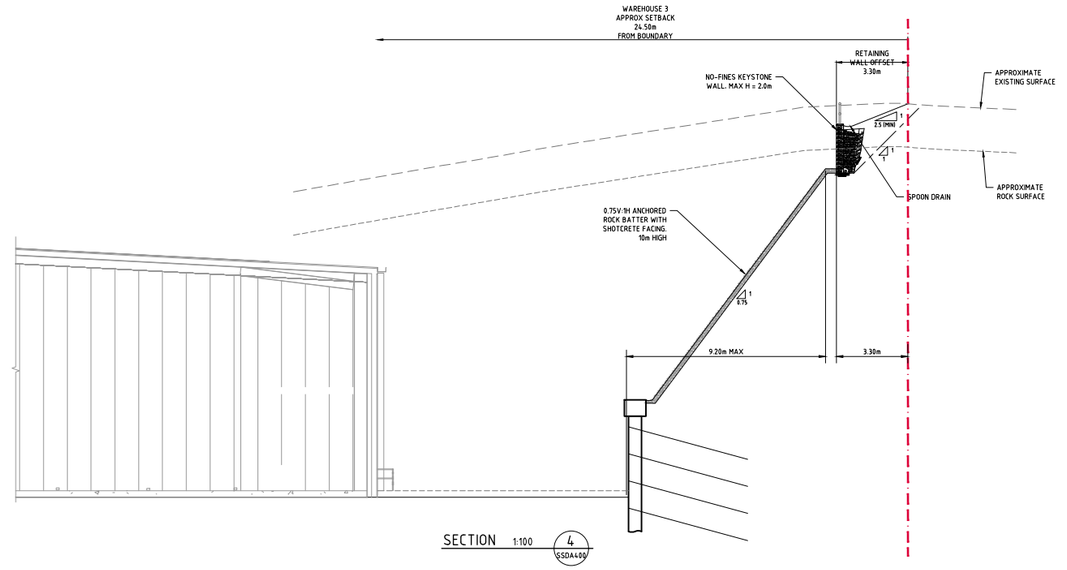
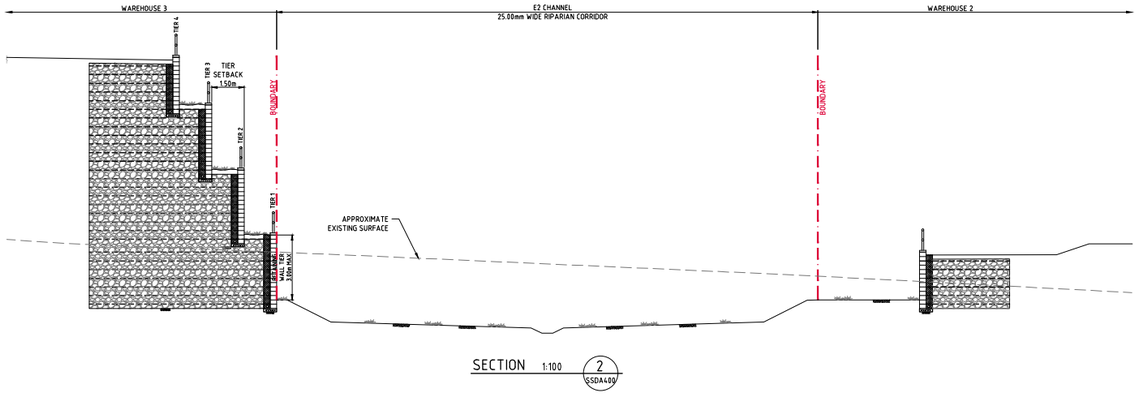
DRAWING TITLE: STORMWATER DRAINAGE DETAILS SHEET 5
DRAWING No: C013874.06-SSDA455 ISSUE: A



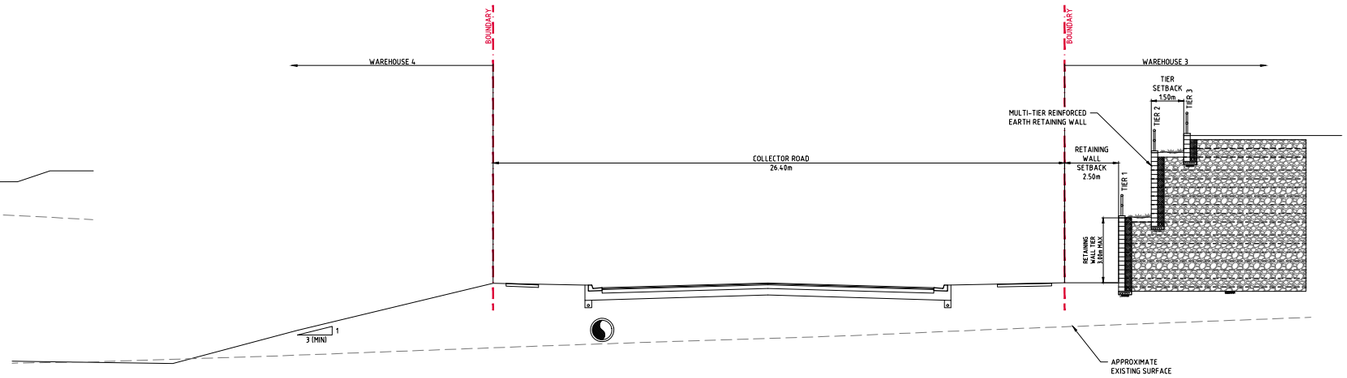
SECTION 1:100 (1 SSDA400)



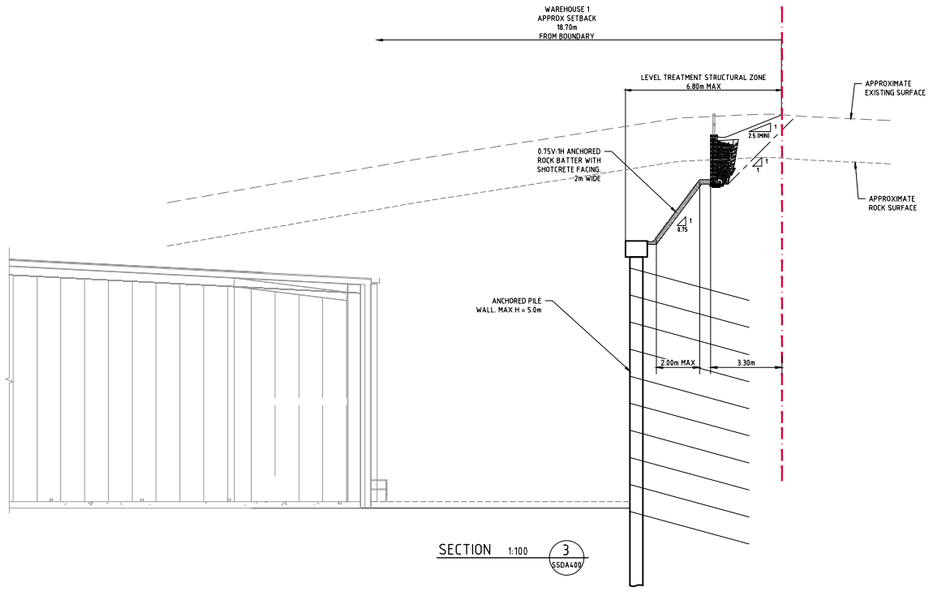
SECTION 1:100 (4 SSDA400)



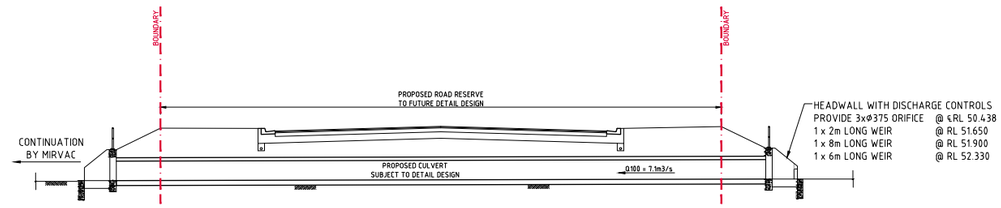
SECTION 1:100 (2 SSDA400)



SECTION 1:100 (5 SSDA400)



SECTION 1:100 (3 SSDA400)



SECTION 1:100 (6 SSDA400)

500mm 0 1 2 3 4 5m

SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

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ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	09.04.21	A

AMENDMENTS DATE ISSUE | AMENDMENTS DATE ISSUE

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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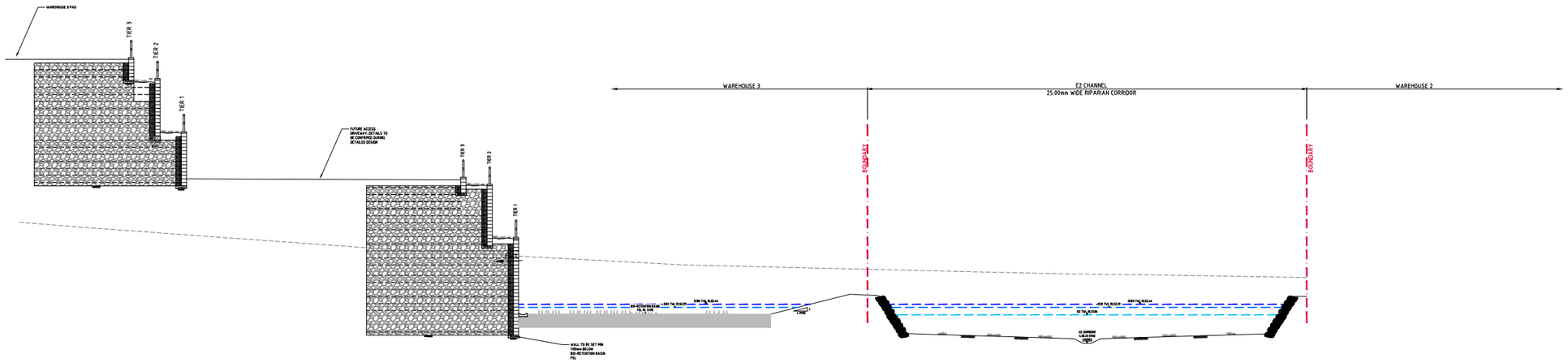
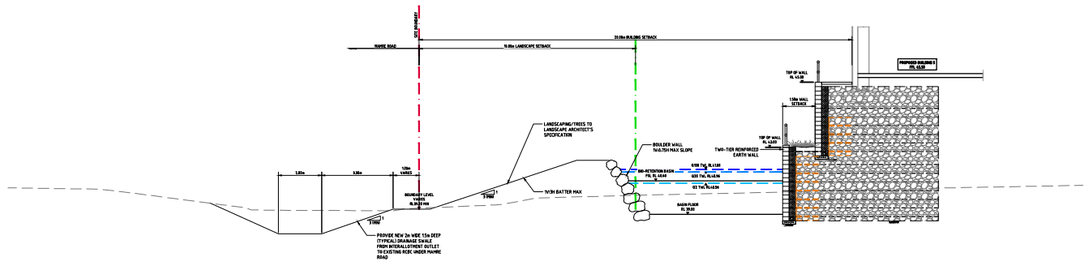
DRAWING TITLE
TYPICAL SECTIONS
SHEET 1

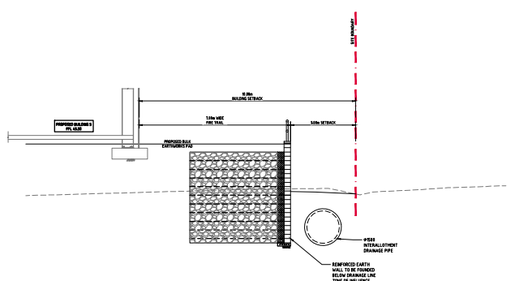
DRAWING No C013874.06-SSDA460 ISSUE C



SECTION 1:100 (1 / SSDA400)



SECTION 1:100 (2 / SSDA400)



SECTION 1:100 (3 / SSDA400)

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	01.06.21	C
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	26.05.21	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

AMENDMENTS DATE ISSUE | AMENDMENTS DATE ISSUE

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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DRAWING TITLE
TYPICAL SECTIONS
SHEET 2

DRAWING No C013874.06-SSDA461 ISSUE C

WAREHOUSE 5
30,830sqm

WAREHOUSE 4
41,480sqm

WAREHOUSE 3
36,420sqm

WAREHOUSE 2
22,870sqm

WAREHOUSE 1
19,525sqm

MAMRE ROAD

ROAD 2

ROAD 1

TEMPORARY
ACCESS ROAD

MIRVAC
"ASPECT INDUSTRIAL ESTATE"
PER SSD-10448

LIMIT OF ROADWORKS
INTERFACE WITH MIRVAC ROAD
ALIGNMENT TO BE CONFIRMED
DURING DETAILED DESIGN

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY '11019-001' BY 'BOXALL SURVEYORS PTY. LTD.' DATED 23.07.2020.

- EXTENT OF ROAD PAVEMENT
- EXTENT OF FOOTPATH PAVEMENT
- K&G, KERB & GUTTER
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- FINISHED PAVEMENT CONTOUR (MAJOR) 1.0m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.25m INTERVALS

NOTES:

1. REFER TO DRAWING SSDA510 FOR ROADWORKS DETAILS
2. REFER TO DRAWING SSDA510 FOR TYPICAL CROSS SECTIONS.
3. REFER TO DRAWING SSDA521 FOR CENTRELINE LONG SECTIONS.

ROADWORKS MASTER PLAN
SCALE 1:1000

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA500

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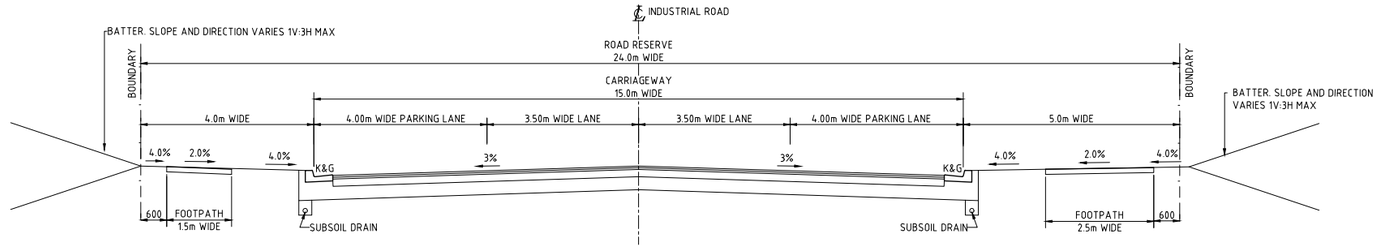
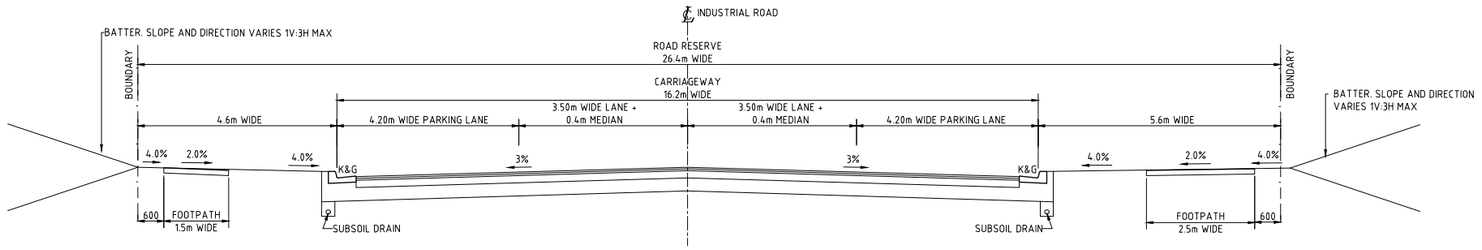
DRAWING TITLE
ROADWORKS MASTER PLAN

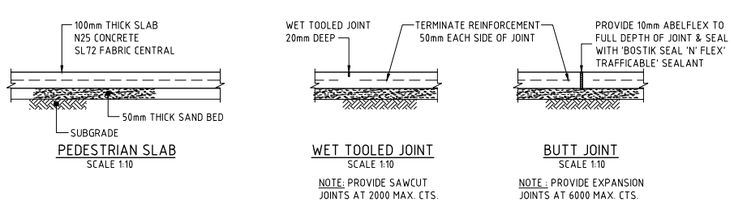
DRAWING No C013874.06-SSDA500 ISSUE B



24.0m WIDE LOCAL INDUSTRIAL ROAD
SCALE 1:50



26.40m WIDE DISTRIBUTOR/COLLECTOR ROAD
SCALE 1:50



PEDESTRIAN SLAB
SCALE 1:10

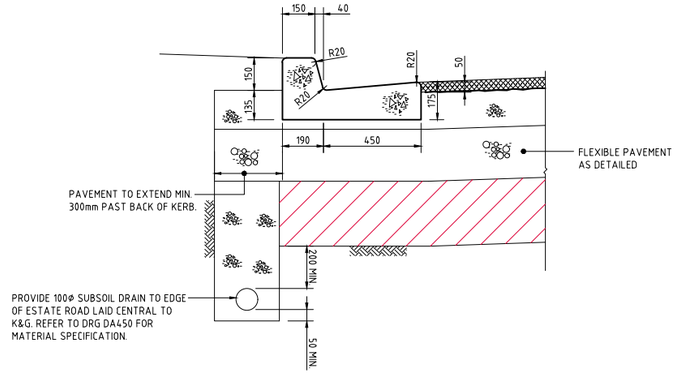
WET TOOLED JOINT
SCALE 1:10

NOTE: PROVIDE SAWCUT JOINTS AT 2000 MAX. CTS.

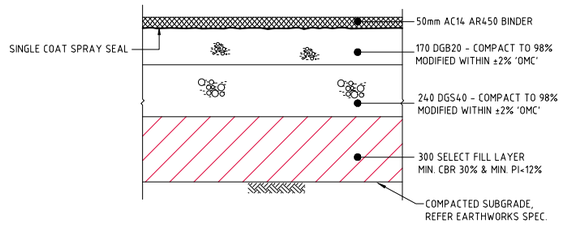
BUTT JOINT
SCALE 1:10

NOTE : PROVIDE EXPANSION JOINTS AT 6000 MAX. CTS.

PEDESTRIAN SLAB DETAILS

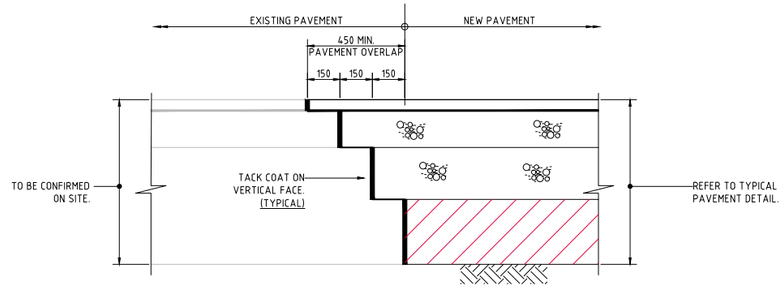


PENRITH CITY COUNCIL KERB & GUTTER
SCALE 1:10



ROAD PAVEMENT DETAIL

SCALE 1:10
DESIGN TRAFFIC $1x10^7$ ESA's
DESIGN CBR VALUE OF 2%
NOTE: FINAL DESIGN SUBJECT TO
FURTHER TESTING TO CONFIRM
CBR VALUE



TYPICAL NEW / EXISTING
PAVEMENT INTERFACE DETAIL

SCALE 1:10

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	A

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754-770 & 784-786 MAMRE ROAD
KEMPS CREEK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06-SSDA510

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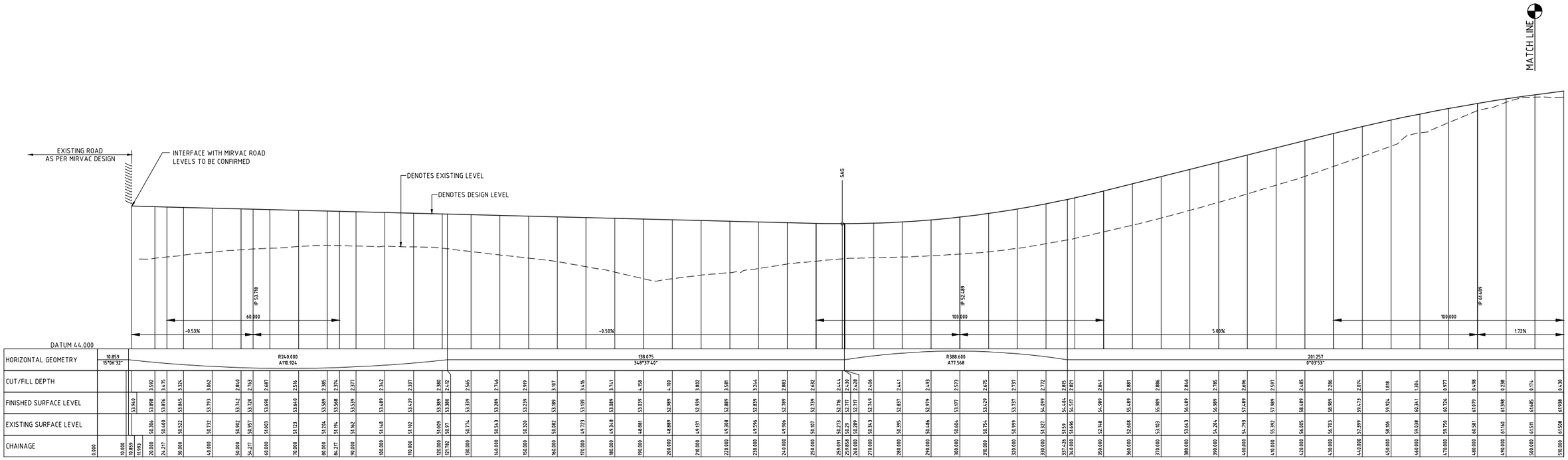
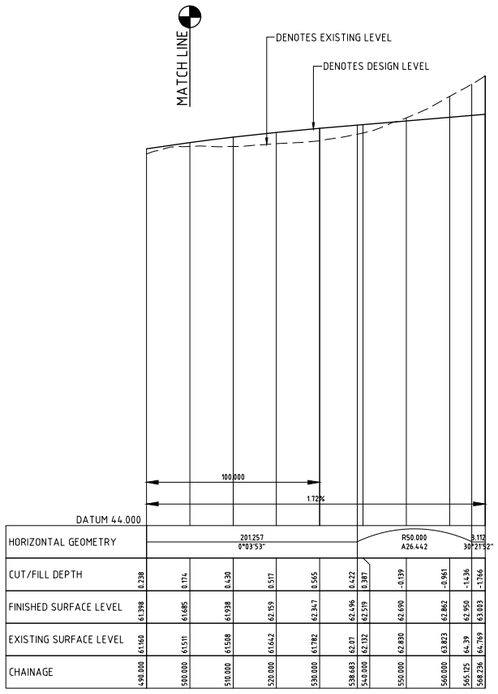
DRAWING TITLE
ROADWORKS TYPICAL SECTIONS AND DETAILS

DRAWING No C013874.06-SSDA510 ISSUE A



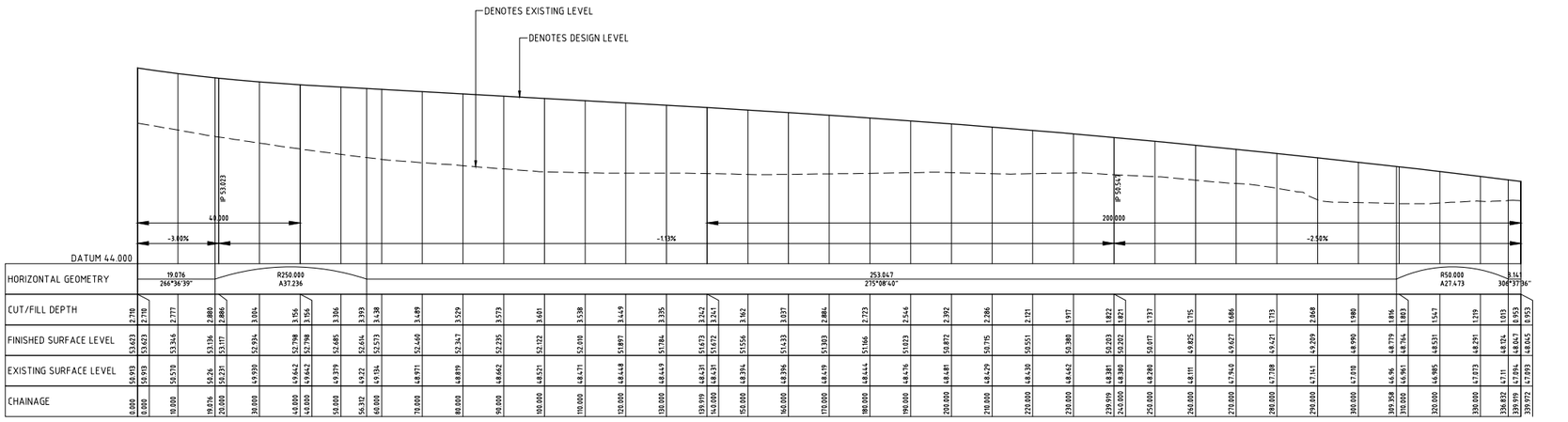
LONGITUDINAL SECTION - CL GPT PRECINCT ROAD

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION - CL GPT PRECINCT ROAD

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION - CL GPT ACCESS ROAD

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SIZE SHEET

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	21.05.21	B
ISSUED FOR PRELIMINARY ONLY	13.04.21	A

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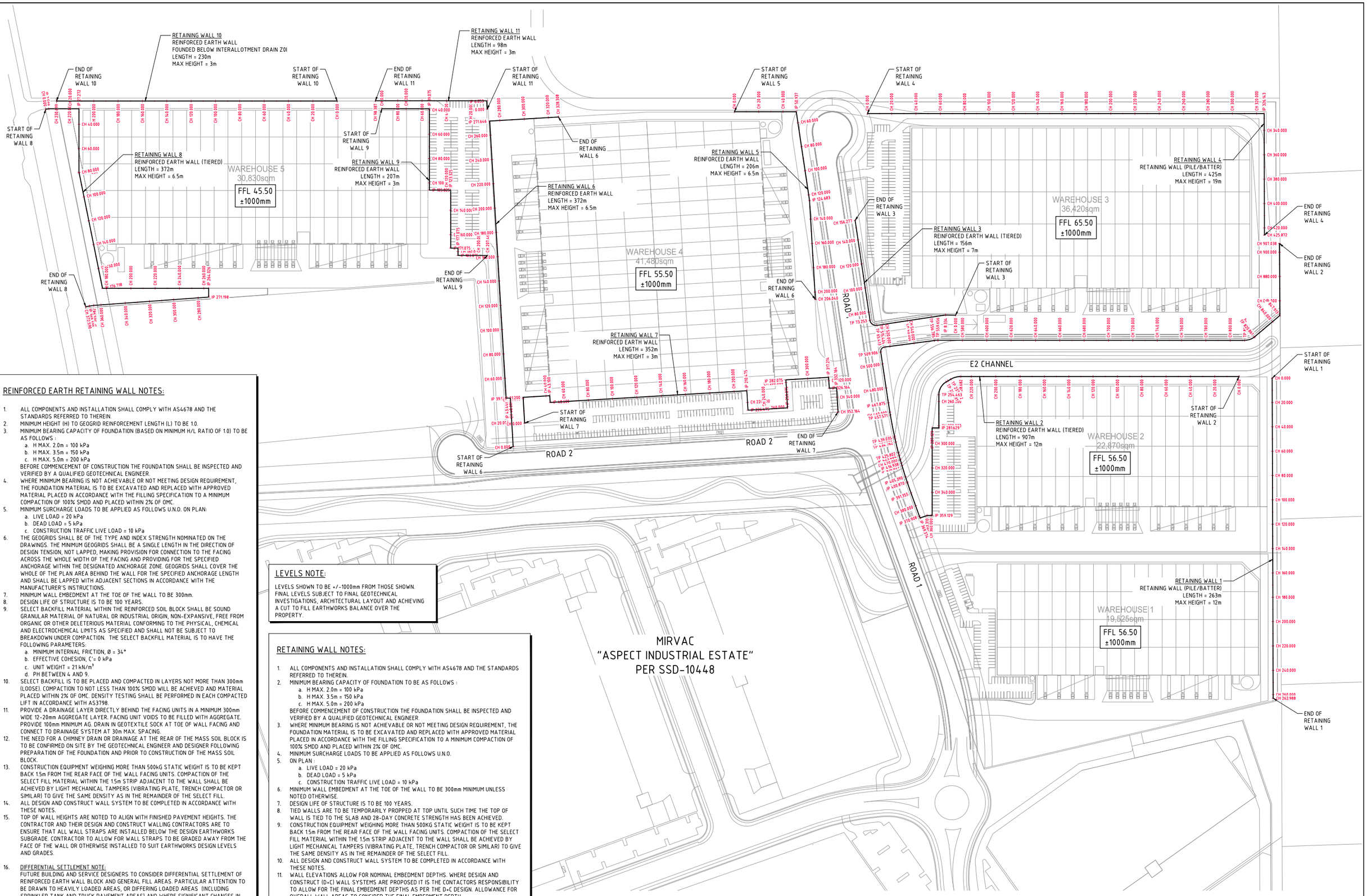
DRAWING TITLE
ROADWORKS LONG SECTIONS
PRECINCT ROAD & ACCESS ROAD

DRAWING No C013874.06-SSDA521 ISSUE B



REINFORCED EARTH RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM HEIGHT (H) TO GEOGRID REINFORCEMENT LENGTH (L) TO BE 1.0.
3. 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 kPa

   BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
4. 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.
5. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O. ON PLAN:
   a. LIVE LOAD = 20 kPa
   b. DEAD LOAD = 5 kPa
   c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
6. 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.
7. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm.
8. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
9. 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, Ø = 34°
   b. EFFECTIVE COHESION, C'= 0 kPa
   c. UNIT WEIGHT = 21 kN/m³
   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.
11. 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 BLOCK.
13. 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.
16. 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 INTERACTION WITH RETAINED ELEMENTS AND GENERAL FILL MATERIAL.

LEVELS NOTE:

LEVELS SHOWN TO BE +/-1000mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. 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.
3. 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 :
   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.
8. 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 SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES.
11. WALL ELEVATIONS ALLOW FOR NOMINAL EMBEDMENT DEPTHS. WHERE DESIGN AND CONSTRUCT (D+C) WALL SYSTEMS ARE PROPOSED IT IS THE CONTACTORS RESPONSIBILITY TO ALLOW FOR THE FINAL EMBEDMENT DEPTHS AS PER THE D+C DESIGN. ALLOWANCE FOR OVERALL WALL AREAS TO CONSIDER THE FINAL EMBEDMENT DEPTH.
12. WALL ELEVATIONS AND AREAS ARE BASED ON THE VERTICAL PLAN AREA. CONTRACTOR TO ALLOW ADDITIONAL SURFACE AREA WHERE WALLS ARE NOT VERTICAL OR HAVE BACKSLOPES.

RETAINING WALL MASTER PLAN
SCALE 1:1000

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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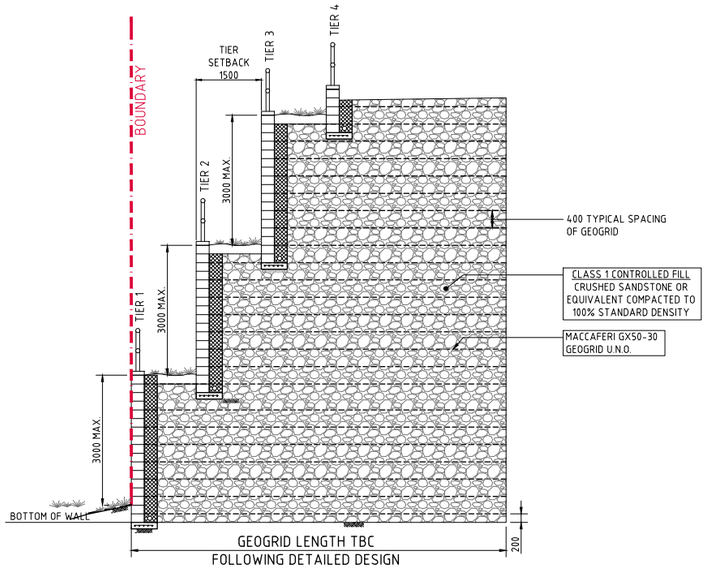
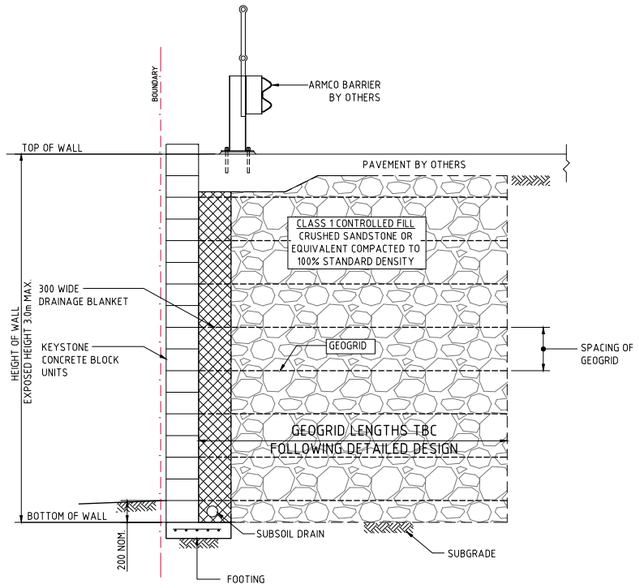
DRAWING TITLE: RETAINING WALL MASTER PLAN
DRAWING No: C013874.06-SSDA600 ISSUE: A



TIERED REINFORCED EARTH WALL DETAILS

SCALE 1:50

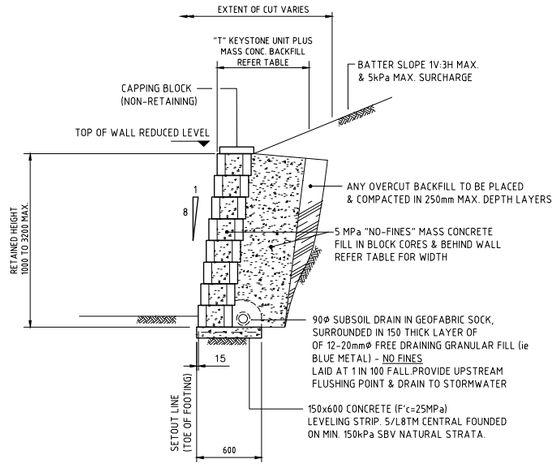


REINFORCED EARTH WALL DETAILS

SCALE 1:20

NOTE :
INDICATIVE REINFORCEMENT LENGTHS SHOWN.

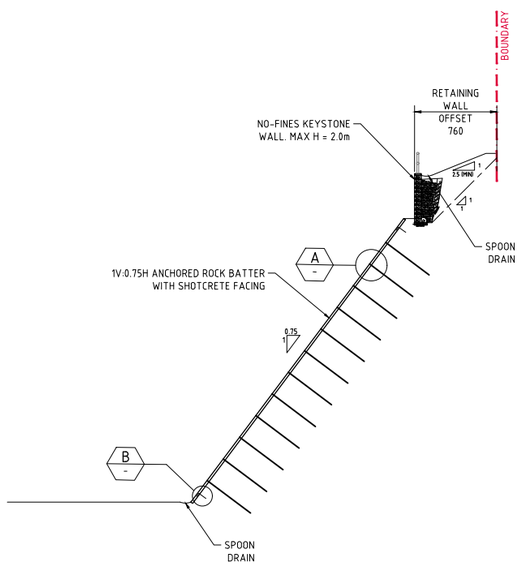
DESIGN TO BE CONFIRMED / PROVIDED BY D+C CONTRACTOR.



TYPICAL THRU' KEYSTONE RETAINING WALL
(1000 TO 3000 MAXIMUM RETAINED HEIGHT)

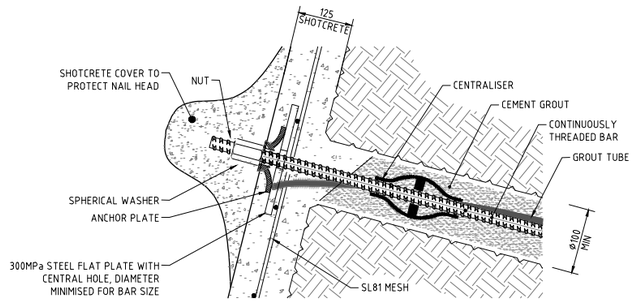
NOTE :
INDICATIVE REINFORCEMENT LENGTHS SHOWN.

DESIGN TO BE CONFIRMED / PROVIDED BY D+C CONTRACTOR.

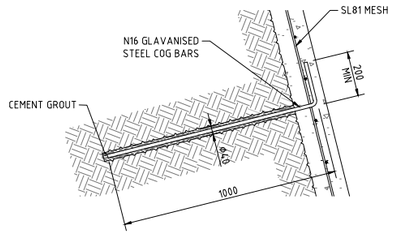


TYPICAL ROCK BATTER WITH SHOTCRETE

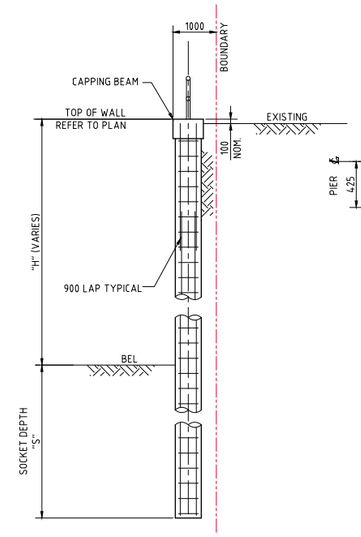
SCALE 1:100



DETAIL 1:5 A



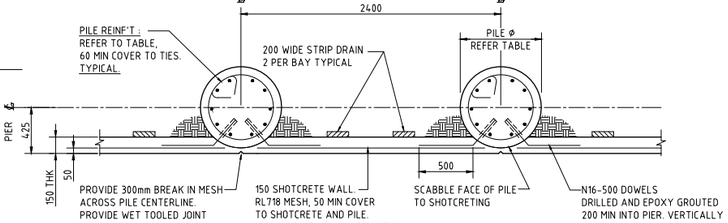
DETAIL 1:10 B



CONTIGUOUS PILE WALL TYPICAL SECTION

SCALE 1:50

NOTE:
SOCKET DEPTH NOTED IS MINIMUM INTO CLASS IV ROCK OR HIGHER. THIS IS TO BE CONFIRMED BY GEOTECHNICAL ENGINEER DURING INSTALLATION. IF SOFTER ROCK IS ENCOUNTERED, ENGINEER TO BE NOTIFIED IMMEDIATELY AND WILL ADVICE OF ADJUSTED SOCKET DEPTH.



NOTE: 150 SHOTCRETE WALL TO BE CONSTRUCTED IN 1500 MAX. DROPS.

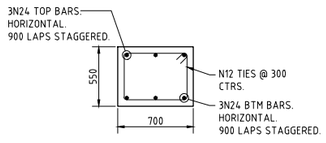
CONTIGUOUS PILE WALL

SCALE 1:20

CONTIGUOUS PILE WALL SCHEDULE

PILE TYPE	MAX. HEIGHT "H" (m)	PILE DIA. (mm)	PILE SPACING (mm)	SOCKET DEPTH "S" (mm)	PILE REINFORCEMENT	CLOSED TIES	CAPPING BEAM
-	-	-	-	-	-	-	-

CONCRETE QUALITY					
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	f'c (MPa)
PILES	80	20	SL	NIL	32
SHOT CRETE	230	10	SL	NIL	32
CAPPING	80	20	GP	NIL	32



DETAIL OF 700x550 CAPPING BEAM

SCALE 1:20

50mm 0 100 200 300 400 500mm
SCALE 1:5 AT A0 SIZE SHEET

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

ISSUE	DATE	AMENDMENTS
B	21.05.21	ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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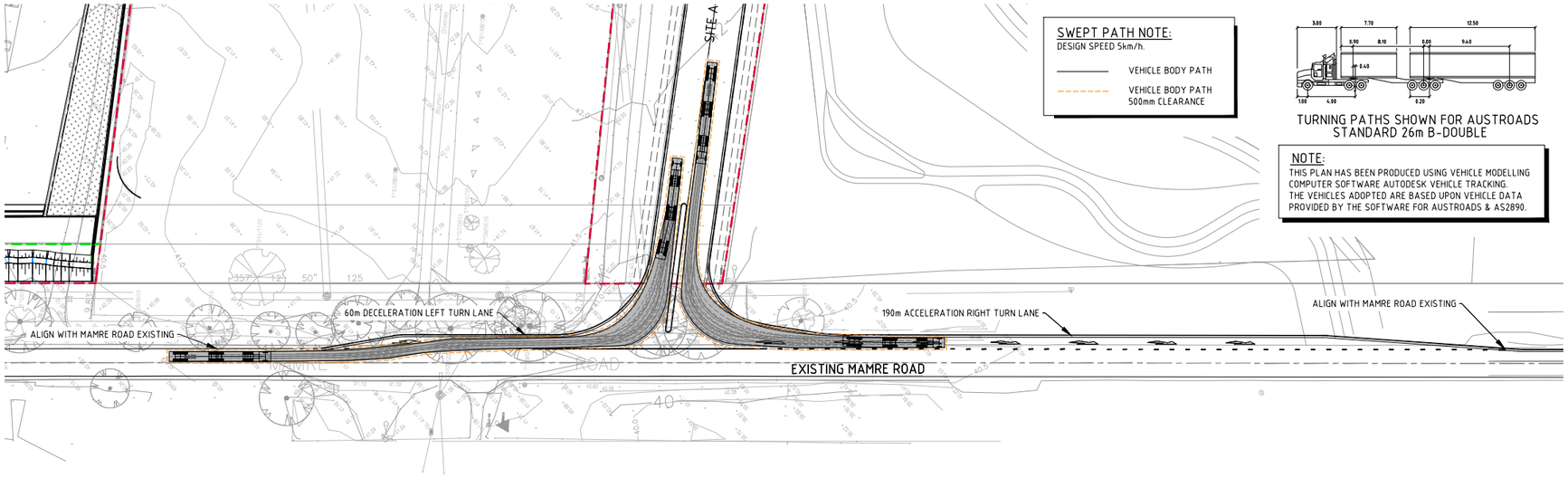
DRAWING TITLE
RETAINING WALL DETAILS

DRAWING No C013874.06-SSDA650 ISSUE A



SWEPT PATH NOTE:
DESIGN SPEED 5km/h.

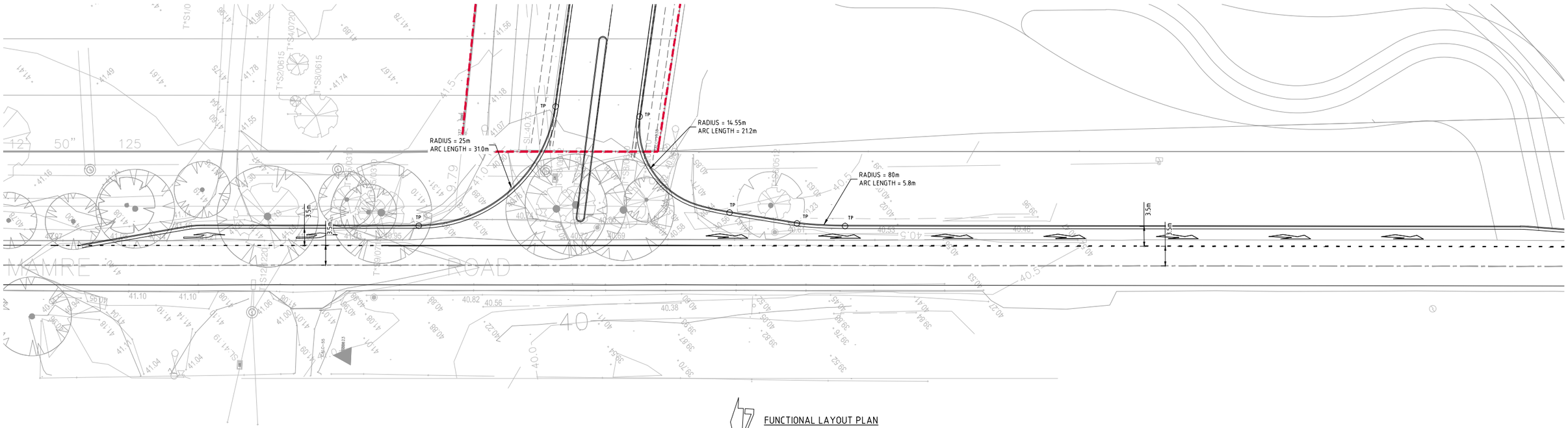
VEHICLE BODY PATH

VEHICLE BODY PATH
500mm CLEARANCE

TURNING PATHS SHOWN FOR AUSTROADS
STANDARD 26m B-DOUBLE

NOTE:
THIS PLAN HAS BEEN PRODUCED USING VEHICLE MODELLING COMPUTER SOFTWARE AUTODESK VEHICLE TRACKING. THE VEHICLES ADOPTED ARE BASED UPON VEHICLE DATA PROVIDED BY THE SOFTWARE FOR AUSTROADS & AS2890.

SWEPT PATH PLAN
SCALE 1:500



FUNCTIONAL LAYOUT PLAN
SCALE 1:250

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR INFORMATION

ISSUED FOR INFORMATION ONLY	21.05.21	A
AMENDMENTS	DATE	ISSUE

AMENDMENTS DATE ISSUE

AMENDMENTS DATE ISSUE

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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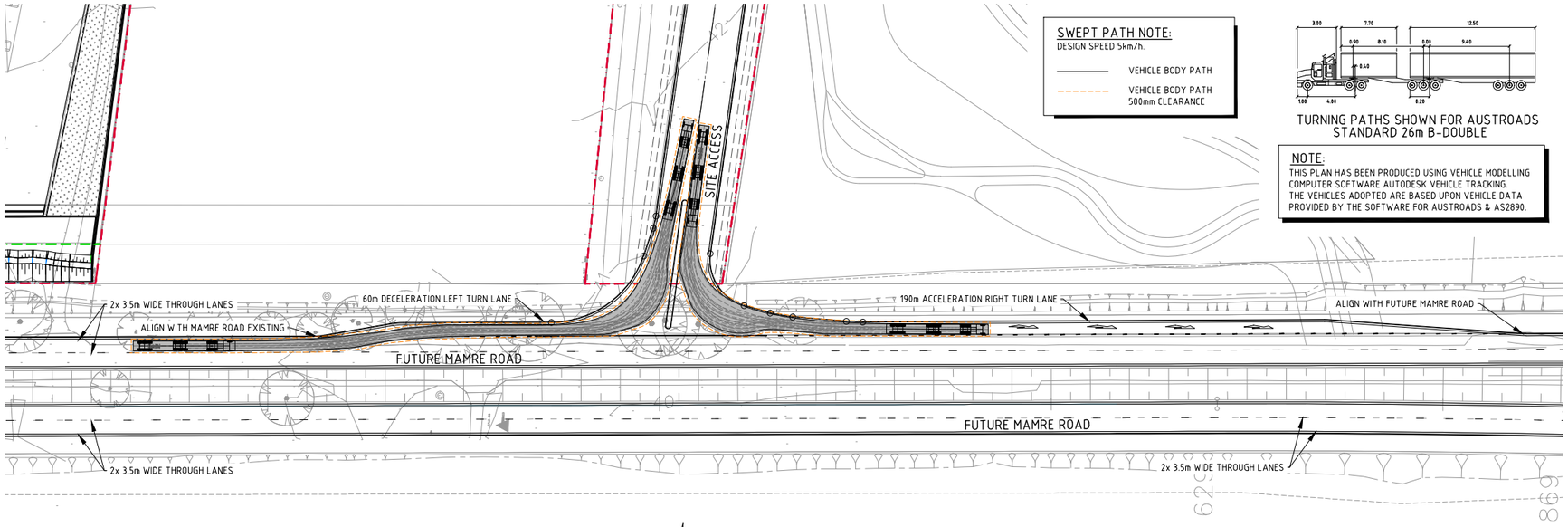
DRAWING TITLE
FUNCTIONAL LAYOUT PLAN
TEMP ACCESS ROAD
STAGE 1 - INTERIM

DRAWING No C013874.06-SK01 ISSUE A



SWEPT PATH NOTE:
DESIGN SPEED 5km/h.

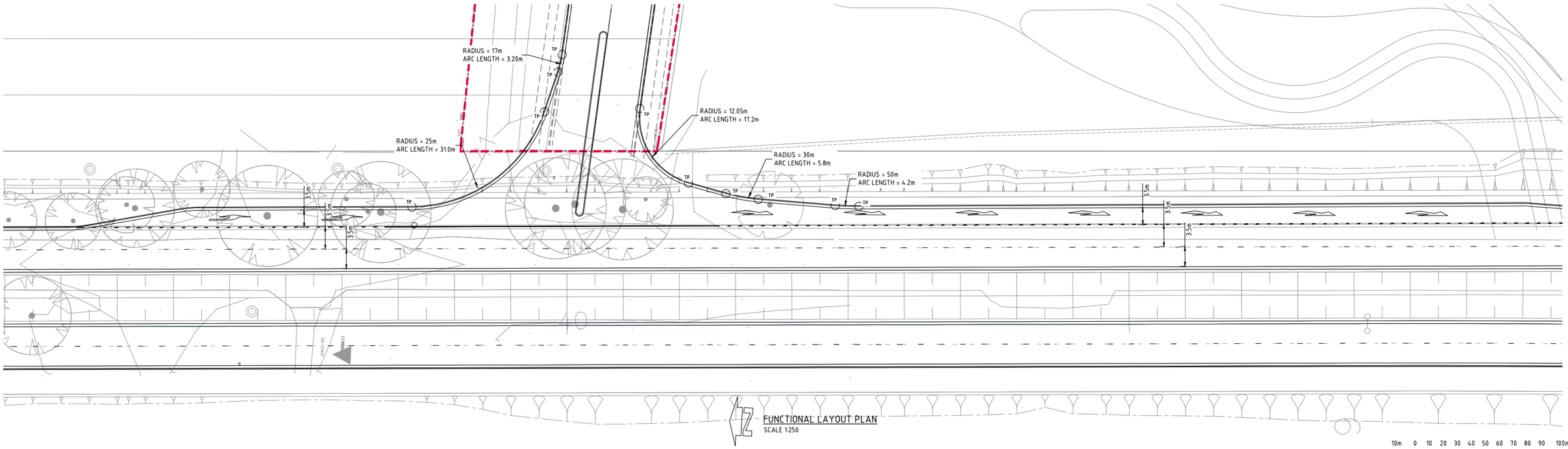
VEHICLE BODY PATH

VEHICLE BODY PATH
500mm CLEARANCE

TURNING PATHS SHOWN FOR AUSTROADS
STANDARD 26m B-DOUBLE

NOTE:
THIS PLAN HAS BEEN PRODUCED USING VEHICLE MODELLING COMPUTER SOFTWARE AUTODESK VEHICLE TRACKING. THE VEHICLES ADOPTED ARE BASED UPON VEHICLE DATA PROVIDED BY THE SOFTWARE FOR AUSTROADS & AS2890.

SWEPT PATH PLAN
SCALE 1:500



FUNCTIONAL LAYOUT PLAN
SCALE 1:250

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR INFORMATION

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DS	JB	APRIL '21	DS	A0	AS SHOWN	C013874.06- SK02

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DRAWING TITLE
FUNCTIONAL LAYOUT PLAN
TEMP ACCESS ROAD
STAGE 2 - ULTIMATE

DRAWING No C013874.06-SK02 ISSUE A

Appendix B

MUSIC MODEL CONFIGURATION & PARAMETERS

B.1 Introduction

The MUSIC model was chosen to model water quality. This model, released by the Cooperative Research Centre for Catchment Hydrology (CRCCH), is a standard industry model for this purpose. MUSIC (the Model for Urban Stormwater Improvement Conceptualisation) is suitable for simulating catchment areas of up to 100 km^2 and utilises a continuous simulation approach to model water quality.

By simulating the performance of stormwater management systems, MUSIC can be used to predict if the proposed systems and changes to land use are appropriate for their catchments and capable of meeting specified water quality objectives (CRC 2002). The water quality constituents modelled in MUSIC, of relevance to this report, include Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN).

The pollutant retention criteria set out in Section C3 of Council *DCP 2014* and nominated in **Section 7.1** of this report were used as a basis for assessing the effectiveness of the selected treatment trains.

The MUSIC model "*13874.06-Rev1.sqz*" was set up to examine the effectiveness of the water quality treatment train and to predict if Council's requirements have been achieved.

Modelling parameters used are based on those nominated in the Sydney Catchment Management Authority (SCA) document *Using Music in Sydney's Drinking Water Catchment – A Sydney Catchment Authority Standard (2012)* and *Draft NSW MUSIC Modelling Guidelines (2011).*

B.2 Rainfall Data

As per the recommendation of Table 3-1 of *Draft NSW MUSIC Modelling Guidelines (2011), s*ix-minute pluviographic data for the Sydney Meteorological Office Station was sourced from the Bureau of Meteorology (BOM) as nominated below. Evapo-transpiration data for the period was sourced from the Sydney Monthly Areal PET data set supplied with the MUSIC software.

Input	**Data Used**
Rainfall Station	67113 Penrith Lakes AWS
Rainfall Period	1999 – 2008 (10 years)
Mean Annual Rainfall (mm)	712
Evapo- transpiration	Sydney Monthly Areal PET
Model Time step	6 minutes

B.3 Rainfall Runoff Parameters

Parameter	**Value**
Rainfall Threshold	1.40
Soil Storage Capacity (mm)	105
Initial Storage (% capacity)	30
Field Capacity (mm)	70
Infiltration Capacity Coefficient a	150

Infiltration Capacity exponent b	3.5
Initial Depth (mm)	10
Daily Recharge Rate (%)	25
Daily Baseflow Rate (%)	10
Daily Seepage Rate (%)	0

B.4 Pollutant Concentrations & Source Nodes

Pollutant concentrations for source nodes are based on parameters adopted by the SCA as per **Table B.1**.

Flow Type	Surface Type	TSS (log_{10} values)		TP (log_{10} values)		TN (log_{10} values)	
		Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
Baseflow	Roof	NA	NA	NA	NA	NA	NA
	Roads	1.20	0.17	-0.85	0.19	0.11	0.12
Stormflow	Roof	1.30	0.32	-0.89	0.25	0.30	0.19
	Roads	2.43	0.32	-0.30	0.25	0.34	0.19

Table B.1. Pollutant Concentrations

The MUSIC model has been setup with a treatment train approach based on the pollutant concentrations in **Table B.1** above.

The relevant stormwater catchment sizes are listed below in **Table B.2** and their configuration within the MUSIC model.

Catchment	Area (Ha)	Source Node	% Impervious	Stormwater Treatment
Roof	15.53	Roof	100	Bio-Retention
Carpark	2.57	Sealedroad	90	GPT & Bio-Retention
Hardstand	5.57	Sealedroad	100	GPT & Bio-Retention
Firetrail	2.53	Sealedroad	100	GPT & Bio-Retention
On-Site Detention Basin	2.06	Revegetatedland	0	-
Landscaping	1.73	Revegetatedland	0	GPT & Bio-Retention
Road Network	2.51	Sealedroad	90	Bio-Retention
Bypass (Lanscaping)	1.06	Revegetatedland	0	-
Total	33.56			

Table B.2. Music Model Source Nodes

B.5 Treatment Nodes

Bio-Retention system and Ocean Protect OceanGuard (GPT) nodes have been used in the modelling of the development.

It is noted that the bio-retention node, within the flood storage basin, has been modelled in MUSIC to simulate treatment during low flow and non-flood scenario. The bio-retention node allows for a high flow bypass which would operate when flows from the site are greater than 100 l/s. This flow is based on the 1 in 3-month flow from the site and would simulate a conservative model for the site during the period when the flood basin operates and would not provide treatment to the site. It is noted that the model is conservative in that the flood basin is not expected to operate until flood events which are greater than 1 in 5-year ARI which would mean that possible higher treatment of stormwater from the site. This is considered a suitable and conservative modelling approach for the treatment of stormwater from this site.

B.6 Results

Table B.3 shows the results of the MUSIC analysis. The reduction rate is expressed as a percentage and compares the post-development pollutant loads without treatment versus post-development loads with treatment.

	Source	Residual Load	% Reduction
Total Suspended Solids (kg/yr)	22900	3270	85.7
Total Phosphorus (kg/yr)	48.3	17.7	63.5
Total Nitrogen (kg/yr)	374	178	52.3
Gross Pollutants (kg/yr)	4550	96.1	97.9

Table B.3. MUSIC analysis results

The model results indicate that, through the use of the STM in the treatment train, pollutant load reductions for Total Suspended Solids, Total Phosphorous, Total Nitrogen and Gross Pollutants will meet the requirements of Section C3 of Council's *DCP 2014* on an overall catchment basis.

B.7 Modelling Discussion

MUSIC modelling has been performed to assess the effectiveness of the selected treatment trains and to ensure that the pollutant retention requirements of C3 of PCC's DCP2014 have been met.

The MUSIC modelling has shown that the proposed treatment train of STM will provide stormwater treatment which will meet PCC requirements in an effective and economical manner.

Hydrocarbon and oil & grease removal cannot be modelled with MUSIC software. As an industrial estate with users for individual development sites not known, the exact levels of hydrocarbons would not be known however given the expected use of the site as a warehouse distribution centre these pollutants would not be expected to be large. Potential sources of hydrocarbons and/or oil & grease which drain to the stormwater system would be limited to leaking engine sumps or for accidental fuel spills/leaks and leaching of bituminous pavements (car parking only). The potential for these pollutants is low and published data from the CSIRO indicates that average concentrations from industrial sites are in the order of 10mg/L and we would expect source loading from this site to be near to or below this concentration.

Given the expected low source loadings of hydrocarbons and oil/grease and removal efficiencies of the treatment devices and bio-retention systems we consider that the requirements of the Penrith City Council have been met.

Appendix C

DRAFT

CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN

C.1 Introduction

An erosion and sediment control plan (ESCP) is shown on drawing **Co13874.06-DA200** with details on **DA250**. These are conceptual plans only providing sufficient detail to clearly show that the works can proceed without undue pollution to receiving waters. A detailed plan will be prepared once consent is given and before works start.

C.2 General Conditions

1. The ESCP will be read in conjunction with the engineering plans, and any other plans or written instructions that may be issued in relation to development at the subject site.
2. Contractors will ensure that all soil and water management works are undertaken as instructed in this specification and constructed following the guidelines stated in *Managing Urban Stormwater, Soils and Construction (1998) "The Blue Book"* and Penrith City Council specifications.
3. All subcontractors will be informed of their responsibilities in minimising the potential for soil erosion and pollution to down slope areas.

C.3 Land Disturbance

1. Where practicable, the soil erosion hazard on the site will be kept as low as possible and as recommended in Table C.1.

Land Use	Limitation	Comments
Construction areas	Limited to 5 (preferably 2) metres from the edge of any essential construction activity as shown on the engineering plans.	All site workers will clearly recognise these areas that, where appropriate, are identified with barrier fencing (upslope) and sediment fencing (downslope), or similar materials.
Access areas	Limited to a maximum width of 5 metres	The site manager will determine and mark the location of these zones onsite. They can vary in position so as to best conserve existing vegetation and protect downstream areas while being considerate of the needs of efficient works activities. All site workers will clearly recognise these boundaries.
Remaining lands	Entry prohibited except for essential management works	

Table C.1 Limitations to access

C.4 Erosion Control Conditions

1. Clearly visible barrier fencing shall be installed as shown on the plan and elsewhere at the discretion of the site superintendent to ensure traffic control and prohibit unnecessary site disturbance. Vehicular access to the site shall be limited to only those essential for construction work and they shall enter the site only through the stabilised access points.
2. Soil materials will be replaced in the same order they are removed from the ground. It is particularly important that all subsoils are buried and topsoils remain on the surface at the completion of works.
3. Where practicable, schedule the construction program so that the time from starting land disturbance to stabilisation has a duration of less than six months.
4. Notwithstanding this, schedule works so that the duration from the conclusion of land shaping to completion of final stabilisation is less than 20 working days.
5. Land recently established with grass species will be watered regularly until an effective cover has properly established and plants are growing vigorously. Further application of seed might be necessary later in areas of inadequate vegetation establishment.
6. Where practical, foot and vehicular traffic will be kept away from all recently established areas
7. Earth batters shall be constructed in accordance with the Geotechnical Engineers Report or with as law a gradient as practical but not steeper than:
    - 2H:1V where slope length is less than 7 metres
    - 2.5H:1V where slope length is between 7 and 10 metres
    - 3H:1V where slope length is between 10 and 12 metres
    - 4H:1V where slope length is between 12 and 18 metres
    - 5H:1V where slope length is between 18 and 27 metres
    - 6H:1V where slope length is greater than 27 metres
8. All earthworks, including waterways/drains/spillways and their outlets, will be constructed to be stable in at least the design storm event.
9. During windy weather, large, unprotected areas will be kept moist (not wet) by sprinkling with water to keep dust under control. In the event water is not available in sufficient quantities, soil binders and/or dust retardants will be used or the surface will be left in a cloddy state that resists removal by wind.

C.5 Pollution Control Conditions

1. Stockpiles will not be located within 5 metres of hazard areas, including likely areas of high velocity flows such as waterways, paved areas and driveways. Silt/ sediment fences and appropriate stabilisation of stockpiles are to be provided as detailed on the drawings.
2. Sediment fences will:
   a) Be installed where shown on the drawings, and elsewhere at the discretion of the site superintendent to contain the coarser sediment fraction (including aggregated fines) as near as possible to their source.
   b) Have a catchment area not exceeding 720 square meters, a storage depth (including both settling and settled zones) of at least 0.6 meters, and internal dimensions that provide maximum surface area for settling, and
   c) Provide a return of 1 metre upslope at intervals along the fence where catchment area exceeds 720 square meters, to limit discharge reaching each section to 10 litres/second in a maximum 20-year t_c discharge.
3. Sediment removed from any trapping device will be disposed in locations where further erosion and consequent pollution to down slope lands and waterways will not occur.
4. Water will be prevented from directly entering the permanent drainage system unless it is relatively sediment free (i.e. the catchment area has been permanently landscaped and/or likely sediment has been treated in an approved device). Nevertheless, stormwater inlets will be protected.
5. Temporary soil and water management structures will be removed only after the lands they are protecting are stabilised.

C.6 Waste Management Conditions

Acceptable bind will be provided for any concrete and mortar slurries, paints, acid washings, lightweight waste materials and litter. Clearance service will be provided at least weekly.

C.7 Site Inspection and Maintenance

1. A self-auditing program will be established based on a Check Sheet. A site inspection using the Check Sheet will be made by the site manager:
   - At least weekly.
   - Immediately before site closure.
   - Immediately following rainfall events in excess of 5mm in any 24-hour period.

The self-audit will include:

- Recording the condition of every sediment control device
- Recording maintenance requirements (if any) for each sediment control device

- Recording the volumes of sediment removed from sediment retention systems, where applicable
- Recording the site where sediment is disposed
- Forwarding a signed duplicate of the completed Check Sheet to the project manager/developer for their information

2. In addition, a suitably qualified person will be required to oversee the installation and maintenance of all soil and water management works on the site. The person shall be required to provide a short monthly written report. The responsible person will ensure that:
   - The plan is being implemented correctly
   - Repairs are undertaken as required
   - Essential modifications are made to the plan if and when necessary

The report shall carry a certificate that works have been carried out in accordance with the plan.

3. Waste bins will be emptied as necessary. Disposal of waste will be in a manner approved by the Site Superintendent.
4. Proper drainage will be maintained. To this end drains (including inlet and outlet works) will be checked to ensure that they are operating as intended, especially that,
   - No low points exist that can overtop in a large storm event
   - Areas of erosion are repaired (e.g. lined with a suitable material) and/or velocity of flow is reduced appropriately through construction of small check dams of installing additional diversion upslope.
   - Blockages are cleared (these might occur because of sediment pollution, sand/soil/spoil being deposited in or too close to them, breached by vehicle wheels, etc.).
5. Sand/soil/spoil materials placed closer than 2 meters from hazard areas will be removed. Such hazard areas include and areas of high velocity water flows (e.g. waterways and gutters), paved areas and driveways.
6. Recently stabilised lands will be checked to ensure that erosion hazard has been effectively reduced. Any repairs will be initiated as appropriate.
7. Excessive vegetation growth will be controlled through mowing or slashing.
8. All sediment detention systems will be kept in good, working condition. In particular, attention will be given to:
   a) Recent works to ensure they have not resulted in diversion of sediment laden water away from them
   b) Degradable products to ensure they are replaced as required, and
   c) Sediment removal, to ensure the design capacity or less remains in the settling zone.
9. Any pollutants removed from sediment basins or litter traps will be disposed of in areas where further pollution to down slope lands and waterways should not occur.

10. Additional erosion and/or sediment control works will be constructed as necessary to ensure the desired protection is given to down slope lands and waterways, i.e. make ongoing changes to the plan where it proves inadequate in practice or is subjected to changes in conditions at the work site or elsewhere in the catchment.
11. Erosion and sediment control measures will be maintained in a functioning condition until all earthwork activities are completed and the site stabilised
12. Litter, debris and sediment will be removed from the gross pollutant traps and trash racks as required.

EROSION AND SEDIMENT CONTROL
WEEKLY SITE INSPECTION SHEET

LOCATION .....
INSPECTION OFFICER ..... **DATE** .....
SIGNATURE .....

Legend: □ OK □ Not OK N/A Not applicable

Item	Consideration	Assessment
1	Public roadways clear of sediment.	.....
2	Entry/exit pads clear of excessive sediment deposition.	.....
3	Entry/exit pads have adequate void spacing to trap sediment.	.....
4	The construction site is clear of litter and unconfined rubbish.	.....
5	Adequate stockpiles of emergency ESC materials exist on site.	.....
6	Site dust is being adequately controlled.	.....
7	Appropriate drainage and sediment controls have been installed prior to new areas being cleared or disturbed.	.....
8	Up-slope "clean" water is being appropriately diverted around/through the site.	.....
9	Drainage lines are free of soil scour and sediment deposition.	.....
10	No areas of exposed soil are in need of erosion control.	.....
11	Earth batters are free of "rill" erosion.	.....
12	Erosion control mulch is not being displaced by wind or water.	.....
13	Long-term soil stockpiles are protected from wind, rain and stormwater flow with appropriate drainage and erosion controls.	.....
14	Sediment fences are free from damage.	.....
15	Sediment-laden stormwater is not simply flowing "around" the sediment fences or other sediment traps.	.....
16	Sediment controls placed up-slope/around stormwater inlets are appropriate for the type of inlet structure.	.....
17	All sediment traps are free of excessive sediment deposition.	.....
18	The settled sediment layer within a sediment basin is clearly visible through the supernatant prior to discharge such water.	.....
19	All reasonable and practicable measures are being taken to control sediment runoff from the site.	.....
20	All soil surfaces are being appropriately prepared (i.e. pH, nutrients, roughness and density) prior to revegetation.	.....
21	Stabilised surfaces have a minimum 70% soil coverage.	.....
22	The site is adequately prepared for imminent storms.	.....
23	All ESC measures are in proper working order.	.....