

$$SSD \ 9522 \ MOD \ 3$$

DRAWING LIST:

DRAWING NO.	DRAWING TITLE
C013362.02-C-3-100	DRAWING LIST & GENERAL NOTES
C013362.02-C-3-200	EARLY WORKS ENGINEERING NOTES
C013362.02-C-3-201	EROSION & SEDIMENT CONTROL PLAN - STAGE 1
C013362.02-C-3-202	EROSION & SEDIMENT CONTROL PLAN - STAGE 2
C013362.02-C-3-203	EROSION & SEDIMENT CONTROL PLAN - STAGE 3
C013362.02-C-3-204	EROSION & SEDIMENT CONTROL DETAILS - SHEET 1
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C013362.02-C-3-206	EROSION & SED CONTROL RUSLE CALCULATIONS
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C013362.02-C-3-300	BULK EARTHWORKS CUT/FILL PLAN
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C013362.02-C-3-400	CIVIL WORKS KEY PLAN
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C013362.02-C-3-405	STORMWATER DRAINAGE DETAILS - SHEET 1
C013362.02-C-3-406	STORMWATER DRAINAGE DETAILS - SHEET 2
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C013362.02-C-3-420	OVERALL STORMWATER MANAGEMENT PLAN
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C013362.02-SK3-01	FUNCTIONAL LAYOUT PLAN - MOD 3 STAGE 1
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C013362.02-SK3-03	FUNCTIONAL LAYOUT PLAN - MOD 3 STAGE 3
C013362.02-SK3-04	TURNING PATHS PLAN - MOD 3 -SHEET 1
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C013362.02-SK3-07	TURNING PATHS PLAN - MOD 3 -SHEET 4
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C013362.02-SK3-09	TURNING PATHS PLAN - MOD 3 -SHEET 6
C013362.02-SK3-10	TURNING PATHS PLAN - MOD 3 -SHEET 7

GENERAL NOTES:

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

ELECTRONIC INFORMATION NOTES:

1. THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
2. THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL MAY BE SUBJECT TO SUBSEQUENT USE TO UNDERWRITE 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.

CROSS REFERENCE NOTES :

PLANS TO BE READ IN CONJUNCTION WITH CEMP & ASSOCIATED SUB PLANS
INCLUDING THE CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN (CSWMP),
CONTAMINATION MANAGEMENT PLAN & CONSTRUCTION ACCESS MANAGEMENT PLAN.

SURVEY NOTE:

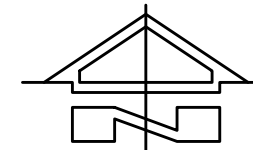
COORDINATES AND DESIGN DRAWINGS ARE BASED ON GROUND SURVEY COORDINATE SYSTEM MGA2020 (ZONE 56). TO CONVERT TO GRID (ALLOWING FOR THE GEODESIC CURVATURE OF THE EARTH) PLEASE NOTE THE ORIGIN PM33568 (E:294645.403 N:6253924.312) AND SCALE FACTOR 1.000109. REFER TO BOXALL SURVEY 10129-005-TOPO REV B FOR DETAILS.

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 AIR STORM EVENT AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR AIR STORM EVENT.
3. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON CIVIL WORKS PLANS PLANS 4.01-DA-09.
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 275 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 CLASSES NOMINATED ARE FOR IN-SERVICE LOAD 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 Fc' 32 MPa. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
10. IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 300mm 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 EDGE RAMPERS 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 LINES 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 300M 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 100 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' UNO.
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 UNO. 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.

FINISHED LEVELS PLAN NOTES:

1. LEVELS DATUM IS A.H.D.
2. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
3. THE MAJOR CONTOUR INTERVAL IS 0.5m
4. THE MINOR CONTOUR INTERVAL IS 0.1m.
5. MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
6. MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) IN CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
7. MAXIMUM RAMP GRADES ARE TO BE 1:12 (8.3%) U.N.O. ON PLAN
8. PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGES GRADE EXCEED 1:20 (5%).
9. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H.
10. ALL SLOPES WITH GRADES AT OR EXCEEDING 1V:6H ARE TO BE TYPED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE ENGINEER.
11. ALL ACCESS ROADS TO HAVE A CROSSLFALL OF 3% AS INDICATED ON PLAN.
12. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BOUNDARY AT 25% MINIMAL GRADE.
13. ALL PAVEMENTS ARE TO BE SET AT 50mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS.



LOCALITY PLAN
NOT TO SCALE

FOR DEVELOPMENT APPLICATION

[illegible]

TABLE 1 – STABILISATION REQUIREMENTS AND TREATMENT METHODS				
DURING CONSTRUCTION – TEMPORARY STABILISATION (REFER SECTIONS 5.6, 5.7 & 5.8 OF THE CSWMP FOR STABILISATION REQUIREMENTS)				
LANDS	STABILISATION REQUIREMENT	TIMEFRAMES	TREATMENT METHODS – PRODUCTS	REMARKS
ALL LANDS	C-FACTOR = 0.15 (50% EQUIVALENT GROUND COVER ^[1])	APPLIES AFTER 20 WORKING DAYS OF INACTIVITY (EVEN THOUGH WORKS MIGHT CONTINUE LATER)	SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT ^[1]) GEOTEXTILE, JUTE MATTING, BLACK PLASTIC OR EQUIVALENT ^[1]	- SPRAY ALL SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT ^[1] - VITAL DILUTION RATE = 1:10(VITAL:WATER). - RE-APPLY/MAINTAIN AS NECESSARY (APPROX. EVERY 3-6 MONTHS WITHOUT SUITABLE VEGETATION COVER) TO ENSURE THE REQUIRED COVER IS PROVIDED. - COVER ALL EXPOSED SOILS. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
WATERWAYS, DRAINAGE LINES AND CONCENTRATED FLOW AREAS	C-FACTOR = 0.05 (70% GRASS COVER OR EQUIVALENT GROUND COVER ^[1])	APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION AND BEFORE THEY ARE ALLOWED TO CARRY CONCENTRATED FLOWS.	REFER TO THE DRAIN SPECIFICATIONS DETAILED ON THE PLAN FOR SPECIFIC LINING/STABILISATION REQUIREMENTS. EXAMPLE TREATMENT METHODS ARE SHOWN BELOW.	
			TEMPORARY LINING - GEOTEXTILE (I.E. BIDIM A24 OR EQUIVALENT ^[1])	- COMPLETE ANY SUBSOIL TREATMENT BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
			JUTE MESH, SEEDING AND SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT ^[1]) - LOW FLOWS TO MODERATE	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/Ha). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - SPRAY ALL SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT ^[1] - VITAL DILUTION RATE = 1L / m ² OF DILUTED VITAL MIXTURE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			JUTE MATTING (-350gsm) AND SEEDING OR EQUIVALENT ^[1] - LOW FLOWS TO MODERATE	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/Ha). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			TURF REINFORCEMENT MATTING (TRM) (E.G. TERRAMAT OR EQUIVALENT ^[1]) - MODERATE FLOWS	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/Ha). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
STOCKPILES	C-FACTOR = 0.10 (60% GRASS COVER OR EQUIVALENT GROUND COVER ^[1])	APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION	ROCK LINING - HIGH FLOWS	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/Ha). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			SEEDING AND SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT ^[1]) GEOTEXTILE, JUTE MATTING, BLACK PLASTIC OR EQUIVALENT ^[1]	- APPLY SEED TO ALL STOCKPILE SURFACES (NOTE: SEEDING MAY NOT BE REQUIRED IF EXISTING SEEDBED IS PRESENT). - SPRAY ALL STOCKPILE SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT ^[1] - VITAL DILUTION RATE = 1:10 (VITAL:WATER). - APPLICATION RATE = 1L / m ² OF DILUTED VITAL MIXTURE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED. - COVER ALL EXPOSED SOILS. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
GENERAL SURFACES	C-FACTOR = 0.10 / 0.05 (60% / 70% GRASS COVER OR EQUIVALENT GROUND COVER ^[1])	C-FACTOR = 0.1 APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION AND C-FACTOR = 0.05 APPLIES WITHIN A FURTHER 60 DAYS	TOPSOIL, SEEDING AND SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT ^[1])	- REFER TO SD 7-1 - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/Ha). - PLACE GYPSUM TREATED TOPSOIL TO A DEPTH OF AT LEAST 75mm. - APPLY ANY FERTILISERS REQUIRED. - APPLY SEED TO ALL SURFACES. - SPRAY ALL SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT ^[1] . - VITAL DILUTION RATE = 1:10 (VITAL:WATER). - APPLICATION RATE = 1L / m ² OF DILUTED VITAL MIXTURE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			HYDROMULCH OR EQUIVALENT ^[1]	- REFER TO SD 7-1 - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/Ha). - PLACE GYPSUM TREATED TOPSOIL TO A DEPTH OF AT LEAST 75mm. - APPLY HYDROMULCH WITH APPROVED SEED MIX TO SOIL SURFACE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
[1] - EQUIVALENT COVER/PRODUCT MUST ACHIEVE THE EQUIVALENT C-FACTOR WITH PROVEN RESEARCH/DOCUMENTATION TO VERIFY THIS. STANDARD DRAWINGS REFERENCED CAN BE LOCATED IN THE 'SOILS & CONSTRUCTION, MANAGING URBAN STORMWATER - VOLUME 1' BOOK BY LANDCOM. ALTERNATIVE DETAILS MAY BE SOUGHT IN CONSULTATION WITH THE ENGINEER				

DUST CONTROL NOTES:
1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE DUST CONTROL MEASURES ARE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES REQUIREMENTS.
2. THE APPLICATION OF LIQUID BASED DUST SUPPRESSION MEASURES MUST BE SUCH THAT SEDIMENT LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD. (EG UTILISING SEDIMENT CONTROLS)
3. DUST GENERATION ASSOCIATED WITH WIND EROSION TO BE CONTROLLED USING WATER TRUCKS, DUST SUPPRESSING FOG, MIST GENERATORS, SEALANT PLACED OVER THE SOIL, SURFACE ROUGHENING OR RE-VEGETATION.
4. THE FOLLOWING ACTIVITIES SHALL BE ADOPTED, IF NECESSARY, TO MANAGE DUST CONTROL ON SITE: <ul style="list-style-type: none">· LIMITING THE AREA OF SOIL DISTURBANCE AT ANY GIVEN TIME· REPLACING TOPSOIL AFTER COMPLETION OF EARTHWORKS.· PROGRAMMING WORK TO MINIMISE THE LIFE OF STOCKPILES.· TEMPORARILY STABILISING LONG-TERM STOCKPILES.· GRAVELLING UNSEALED ACCESS AND HAUL ROADS.· MINIMISING TRAFFIC MOVEMENT ON EXPOSED SURFACES.· LIMITING VEHICULAR TRAFFIC TO 15km/h.· RETAINING EXISTING VEGETATION AS WIND BREAKS.· UTILISING A WATER CART WITH POTABLE WATER OR SEDIMENT CONTROL BASIN WATER
5. OIL, LANDFILL GAS CONDENSATE OR ANY CONTAMINATED LEACHATE IS NOT TO BE USED FOR DUST SUPPRESSION.

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

1. <u>ALL EROSION & SEDIMENT CONTROLS SHALL BE COMPLETED IN ACCORDANCE WITH THE 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER – THE BLUE BOOK' BY LANDCOM.</u>
2. SEDIMENT FENCES AND SEDIMENT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
3. STRAW BALE BARRIERS & GEOFABRIC FENCES OR SEDIMENT FENCES ARE TO BE CONSTRUCTED TO TOE OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL.
4. ALL TEMPORARY EARTH BERMS, DIVERSION AND SEDIMENT BASIN EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED. REFER TO TABLE 1 FOR APPROVED STABILISATION METHODS.
5. CLEAN OR NON-SITE WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM OVER STABLE SURFACES.
6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
7. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS OF 5mm OR GREATER WITHIN A 24 HOUR PERIOD FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.
8. THE SITE IS TO BE INSPECTED FOLLOWING A RAINFALL EVENT OF 5mm OR GREATER WITHIN A 24 HOUR PERIOD FOR EVIDENCE OF EROSION AND RESPOND WITH INCREASED CONTROL IF REQUIRED.
9. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
10. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
11. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S EARTHWORKS TO DIRECT WATER TO A STABLE OUTLET OVER THE BATTER OR INTERNALLY TOWARDS SEDIMENT CONTROL. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm.
12. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
13. AFTER PERMANENT STABILISATION OF THE SITE IS COMPLETE (I.E. BY TOPSOILING, PAVING ETC.) AND THE SITE IS DEEMED TO BE STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SEDIMENT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
14. ALL STOCKPILES ARE TO BE SUITABLY COVERED AND STABILIZED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
15. ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR DISTURBANCE BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND SIGN POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY SUCH DISTURBANCE.
16. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS INDICATED ON THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN OR APPROVED FOR SUCH USE BY THE SITE MANAGER. A BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH IN ACCORDANCE WITH THE CSWMP. ALL STOCKPILES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING AREA BY USE OF THE MEASURES IN THE APPROVED ESCP.
17. ACCESS AND EXIT AREAS SHALL INCLUDE TRUCK SHAKER GRID OR OTHER METHODS APPROVED BY THE SITE MANAGER FOR THE REMOVAL OF SOIL MATERIALS FROM MOTOR VEHICLES.
18. THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SURFACE IS DISTURBED BY CONSTRUCTION, INCLUDING ACCESS ROADS, DEPOT AND STOCKPILE SITES, SHALL BE FREE OF SEDIMENTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES.
19. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SLOPES, CROWNS AND DRAINS ON ALL EXCAVATIONS AND EMBANKMENTS TO ENSURE SATISFACTORY DRAINAGE AT ALL TIMES WATER SHALL NOT BE ALLOWED TO POND ON THE WORKS UNLESS SUCH PONDING IS PART OF AN APPROVED ESCP / SWMP.

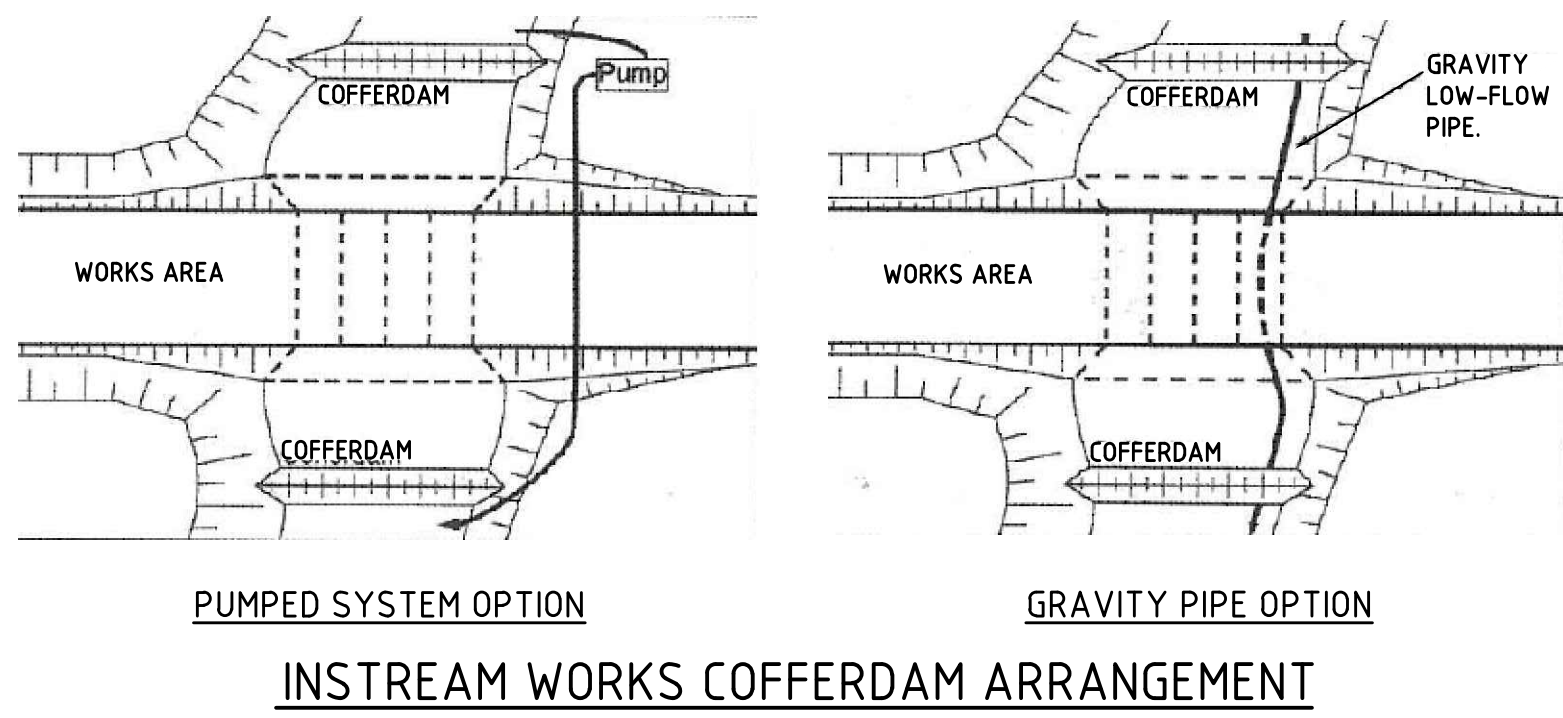
SOIL & WATER MANAGEMENT PLAN NOTE:
ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN (CSWMP) BY COSTIN ROE CONSULTING, REF 13362.02-02.rpt

SEDIMENT CONTROL BASIN NOTES
1. TYPE D BASIN IS REQUIRED.
2. VOLUME OF THE BASINS SHALL BE AS NOMINATED ON DRAWING. NOMINAL POND LOCATIONS AND NOMINAL DIMENSIONS.
3. SEDIMENT BUILD UP TO NOT EXCEED 33% TOTAL CAPACITY OF BASIN.
4. DEWATERING OF BASIN TO BE PERFORMED TO THE BOTTOM OF THE SEDIMENT SETTLING ZONE FOLLOWING ACHIEVEMENT OF WDO's. MANAGEMENT OF DOSAGE AND DISCHARGE TO BE ACHIEVED WITHIN 5 DAYS OF THE INITIAL RAINFALL EVENT.
5. FOLLOWING DEWATERING PER NOTE 4, WATER LEVEL TO BE MAINTAINED AT 20% CAPACITY AFTER A FOUR DAY SETTLING PERIOD FOLLOWING A STORM EVENT SUCH THAT THE BASIN HAS SUFFICIENT CAPACITY TO CONTAIN RUNOFF AND SEDIMENT FROM SUBSEQUENT RAINFALL EVENTS.
6. WATER TO BE DOSED WITH GYPSUM TO ACCELERATE SETTLEMENT OF SUSPENDED SOLIDS AS REQUIRED.
7. GYPSUM DOSAGE RATE TO BE APPLIED AT APPROX. 32-50kg PER 100 CUBIC METRE OF COLLECTED RUNOFF.
8. THE USE OF ALUM (OR ANY OTHER ALTERNATIVE) AS A FLOCCULANT IS NOT RECOMMENDED. ALUM OR ANY OTHER FLOCCULANT IS TO BE USED ONLY FOLLOWING CONSULTATION WITH AND ACCEPTANCE FROM COUNCIL ESC OFFICERS.
9. DISCHARGE FROM POND IS PERMISSIBLE WHEN THE WATER PH IS 6.5-8.5 AND IS CLARIFIED TO AT OR BELOW A TSS OF 50mg/L. CLARIFICATION WOULD GENERALLY BE ACHIEVED IN 36-72 HOURS WITH THE USE OF GYPSUM PLUS NO VISIBLE OIL OR GREASE. CORRELATION TESTS MUST BE UNDERTAKEN ON SITE TO ENSURE THIS IS ACHIEVED.
10. DEWATERING SHALL BE DONE IN SUCH A MANNER AS TO REMOVE THE CLEAN WATER (BEING WATER WITHIN THE ADOPTED CRITERIA) WITHOUT REMOVING OR DISTURBING THE SEDIMENT THAT HAS SETTLED. THE PUMP INTAKE PIPE IS NOT TO REST ON THE SETTLED SEDIMENT LAYER.
11. IF WATER EXCEEDS TSS OF 50mg/L DURING DEWATERING, PUMPING IS TO CEASE. RECORDS ARE TO BE KEPT (ON-SITE AT ALL TIMES) OF ALL MEASUREMENT PRIOR TO, DURING AND AFTER DISCHARGE. RECORDS TO BE MADE AVAILABLE TO COUNCIL OFFICERS UPON REQUEST.
12. PROVIDE SECURITY FENCE TO BASIN FOR SAFETY.

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 DRG-EN204 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.

INSPECTION & MAINTENANCE NOTES:
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ADEQUATE INSPECTIONS AND MAINTENANCE ARE CARRIED OUT DURING SITE WORKS. DAILY AND WEEKLY INSPECTION CHECKLISTS HAVE BEEN PROVIDED IN THE COSTIN ROE SOIL AND WATER MANAGEMENT PLAN (SWMP) C013362.02-02.rpt.
AS NOTED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ADEQUATE MAINTENANCE OF EROSION & SEDIMENT CONTROL MEASURES ARE UNDERTAKEN DURING THE WORKS PERIOD. DAMAGED, DISLOGGED OR FAULTY ESC MEASURES ARE TO BE IMMEDIATELY RECTIFIED AND THE SURROUNDING AREA IS TO BE REMEDIATED AS PER NOTES ON THIS DRAWING, THE SWMP AND THE LANDCOM 'BLUE BOOK'.

SEDIMENTATION BASIN NOTE:
REFER TO SEDIMENT & EROSION CONTROL NOTES.
FOR SEDIMENT AND EROSION CONTROL DETAILS, REFER TO THE LANDCOM 'BLUE BOOK' AND EXTRACTS ON DRAWING C013362.02-C204.
SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER- THE BLUE BOOK'. CAPACITY BASED ON 5-DAY RAINFALL DEPTHS AT 85th PERCENTILE INTENSITY (35mm) IN THE PENRITH CATCHMENT AREA.
NOTES: 1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY) 2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES) 3. REFER TO DRAWING C013362.02-C206 FOR SEDIMENTATION BASIN CALCULATIONS

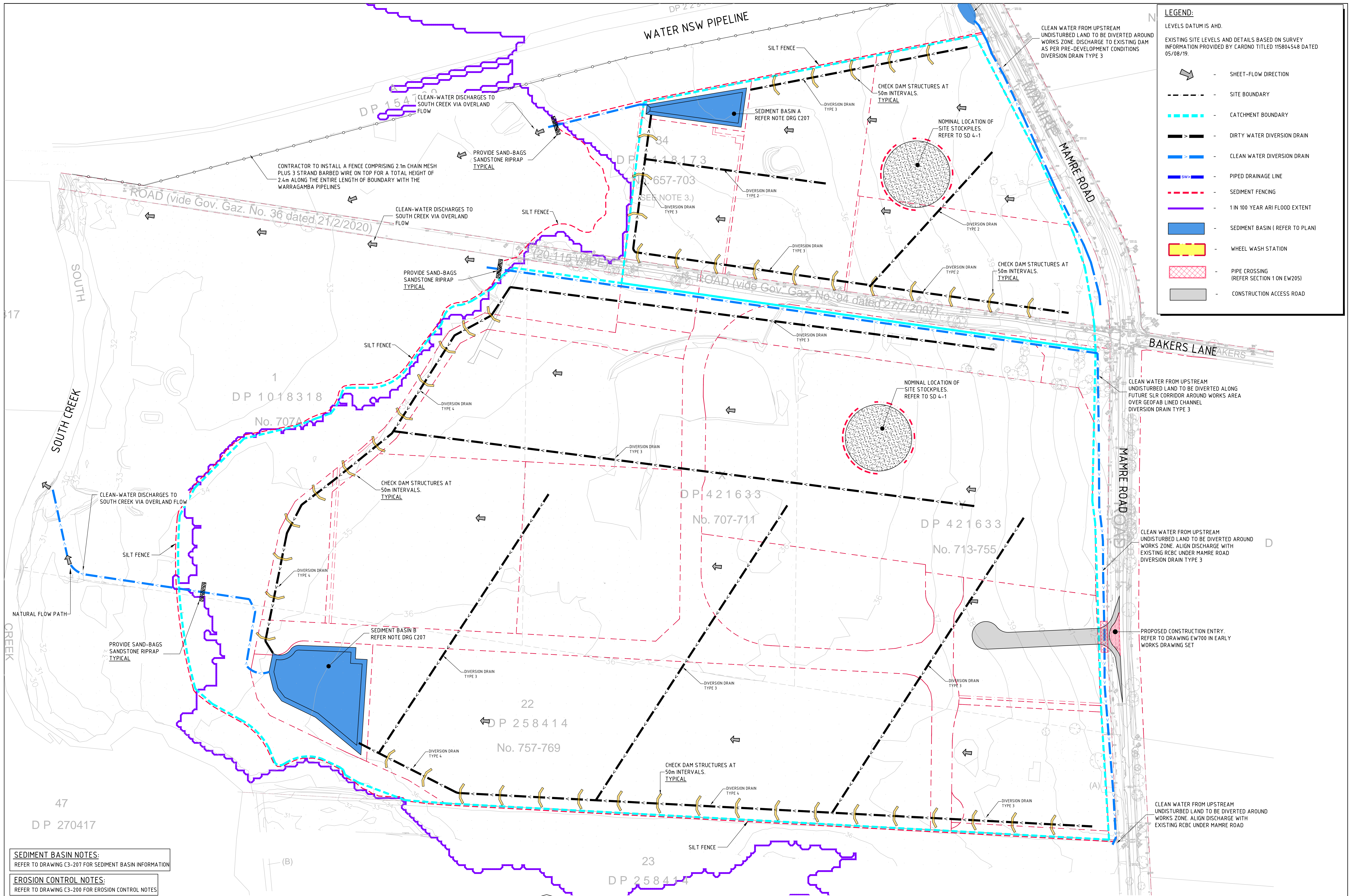


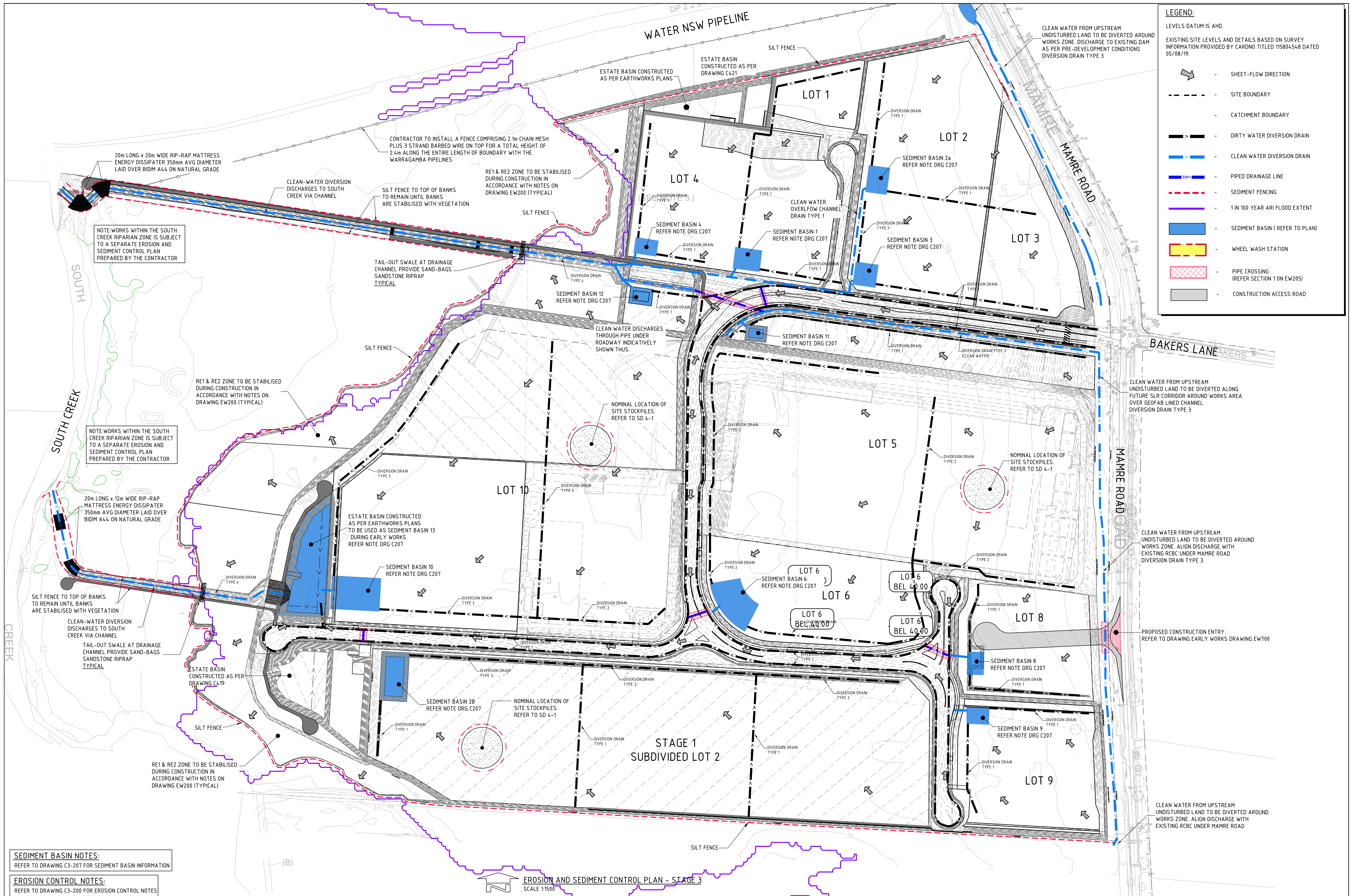
INSTREAM WORKS COFFERDAM ARRANGEMENT

SITE PREPARATION NOTES :
1. ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL REPORT PSM3276-1025 PROVIDED BY PELL'S SULLIVAN MEYNIK DATED 01.06.20
2. EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY BOXALL TITLED 10129-005-TOPO REV B DATED 12.06.20.
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 HLF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HLF 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 HLF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HLF 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 HLF 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.
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.

TABLE 2 – LIMITATIONS TO ACCESS DURING CONSTRUCTION			
LAND USE	LIMITATION	REMARKS	
CONSTRUCTION AREAS	LIMITED TO 5 (PREFERABLE 2) METRES FROM THE EDGE OF ANY ESSENTIAL CONSTRUCTION ACTIVITY AS SHOWN ON ENGINEERING PLANS.	ALL SITE WORKERS SHOULD CLEARLY RECOGNISE THESE AREAS THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCE (DOWNSLOPE) OR SIMILAR MATERIALS.	
ACCESS CORRIDORS	LIMITED TO A MAXIMUM WIDTH OF 7 METERS	THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON SITE, THEY CAN VARY IN POSITION SO AS TO BEST CONSERVE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES.	
REMAINING LANDS, INCLUDING REVEGETATION AREA	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL MANAGEMENT WORKS	THINNING OF GROWTH MIGHT BE NECESSARY, FOR EXAMPLE, FOR FIRE REDUCTION OR WEED REMOVAL.	

										CLIENT		 																DRAWING TITLE EROSION AND SEDIMENT CONTROL ENGINEERING NOTES-MOD 3					
PROJECT MAMRE SOUTH PRECINCT 657 - 708 MAMRE ROAD KEMPS CREEK, 2178, NSW										Costin Roe Consulting Pty Ltd. ABN 50 003 696 446 PO Box N410 Sydney NSW 1520 Level 4, 8 Windmill Street, Millers Point NSW 2000 p: +61 2 9525 7609 e: mail@costinroe.com.au w: costinroe.com.au				DRAWING NO C013362.02 - C3-200				ISSUE B															
ISSUED FOR DEVELOPMENT APPLICATION 05.08.22 B										ISSUED FOR DEVELOPMENT APPLICATION 12.11.21 A				DESIGNED HW MC NOV 21				CHECKED HW MC NOV 21				SIZE A0				SCALE AS SHOWN				CAD REF: C013362.02 - C3-200			
AMENDMENTS										DATE				ISSUE				AMENDMENTS				DATE				ISSUE							



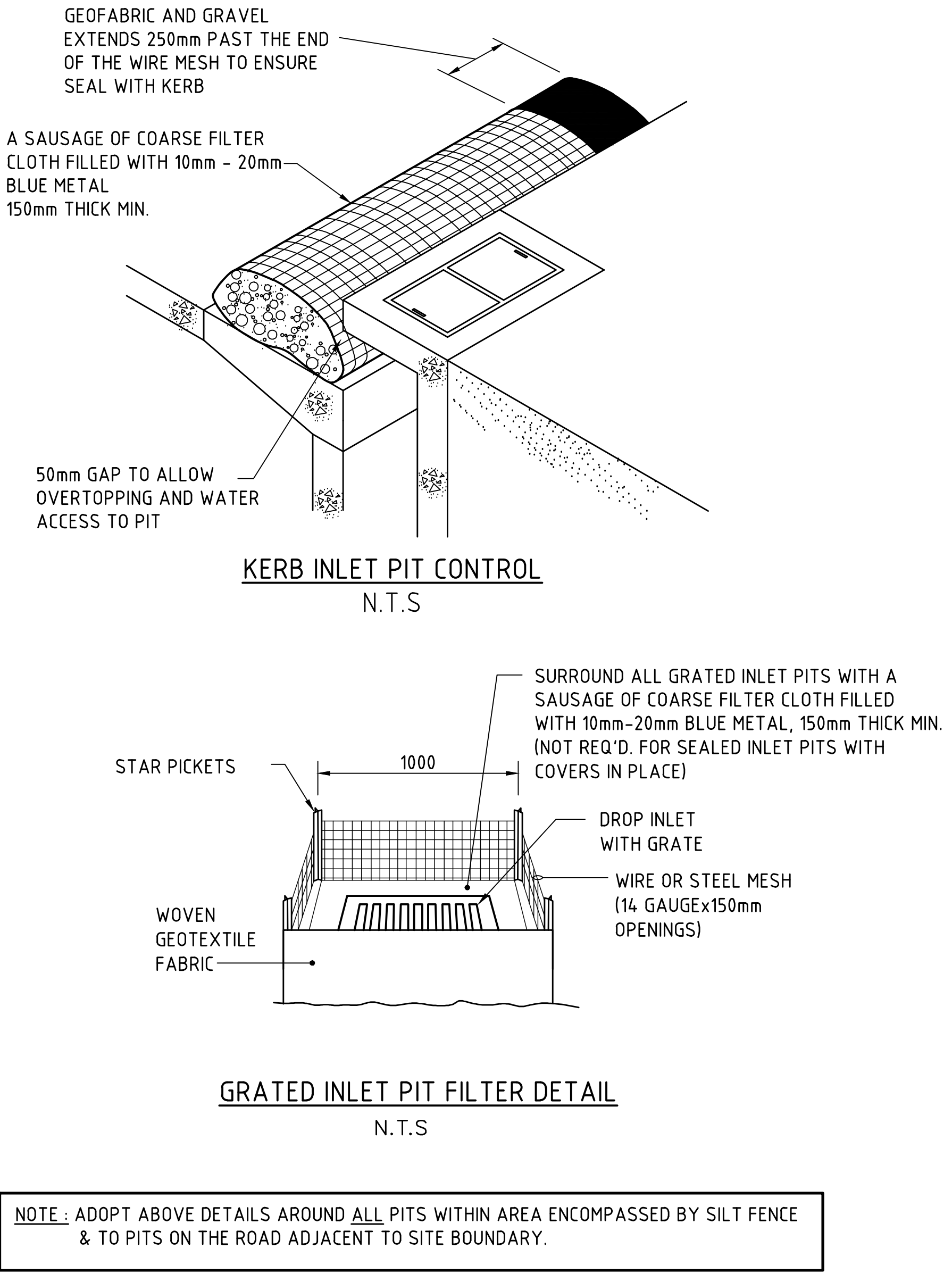
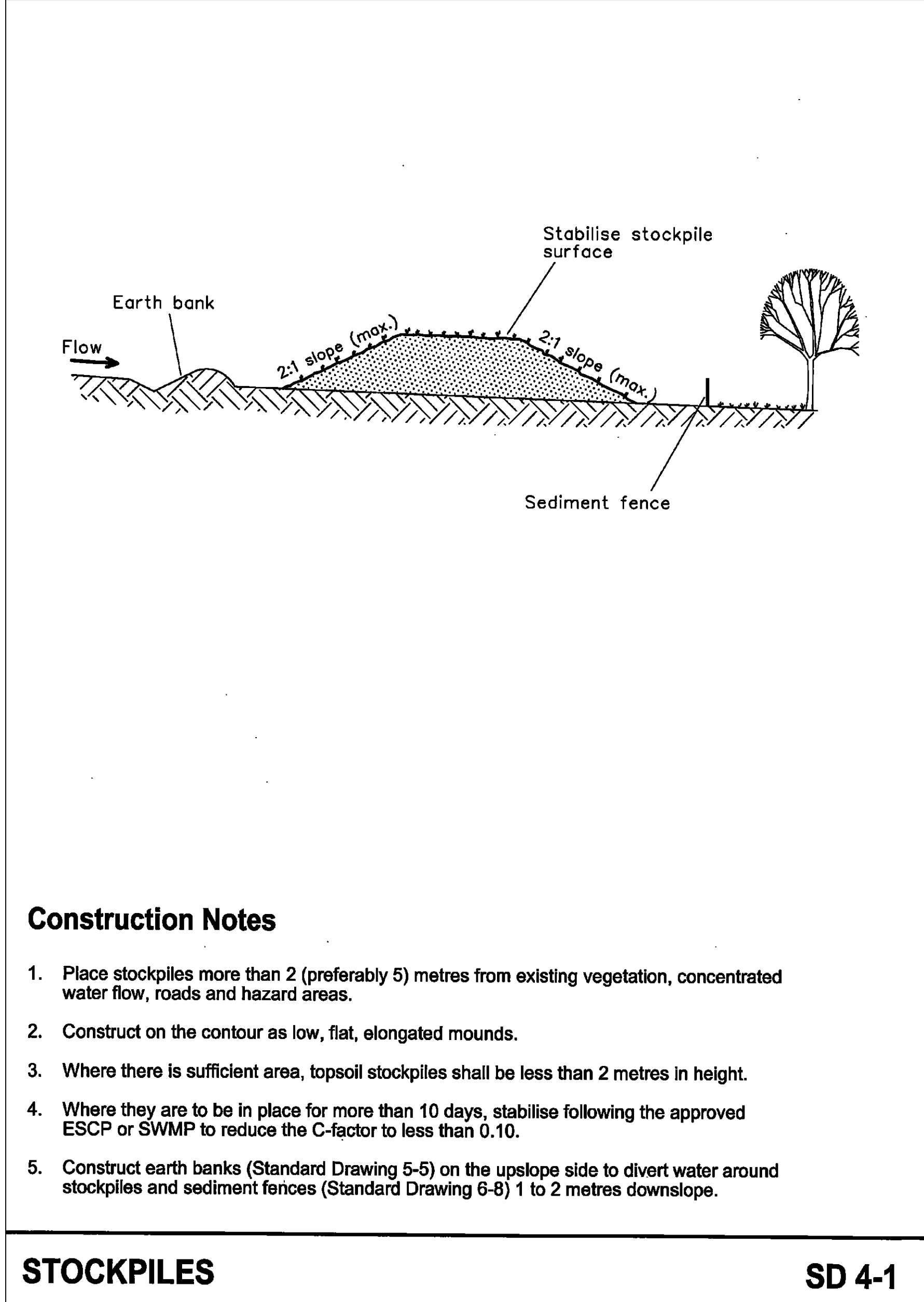
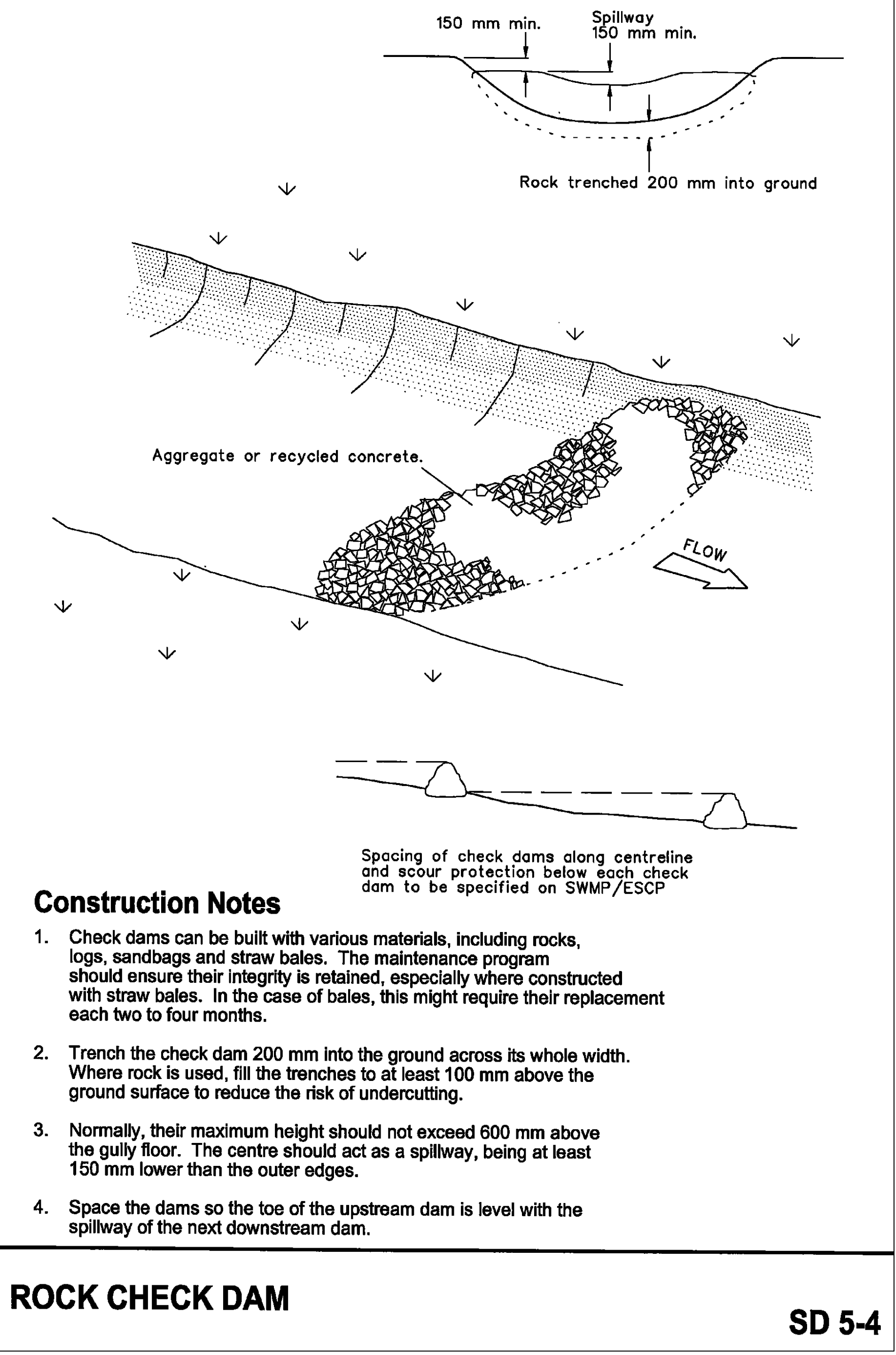
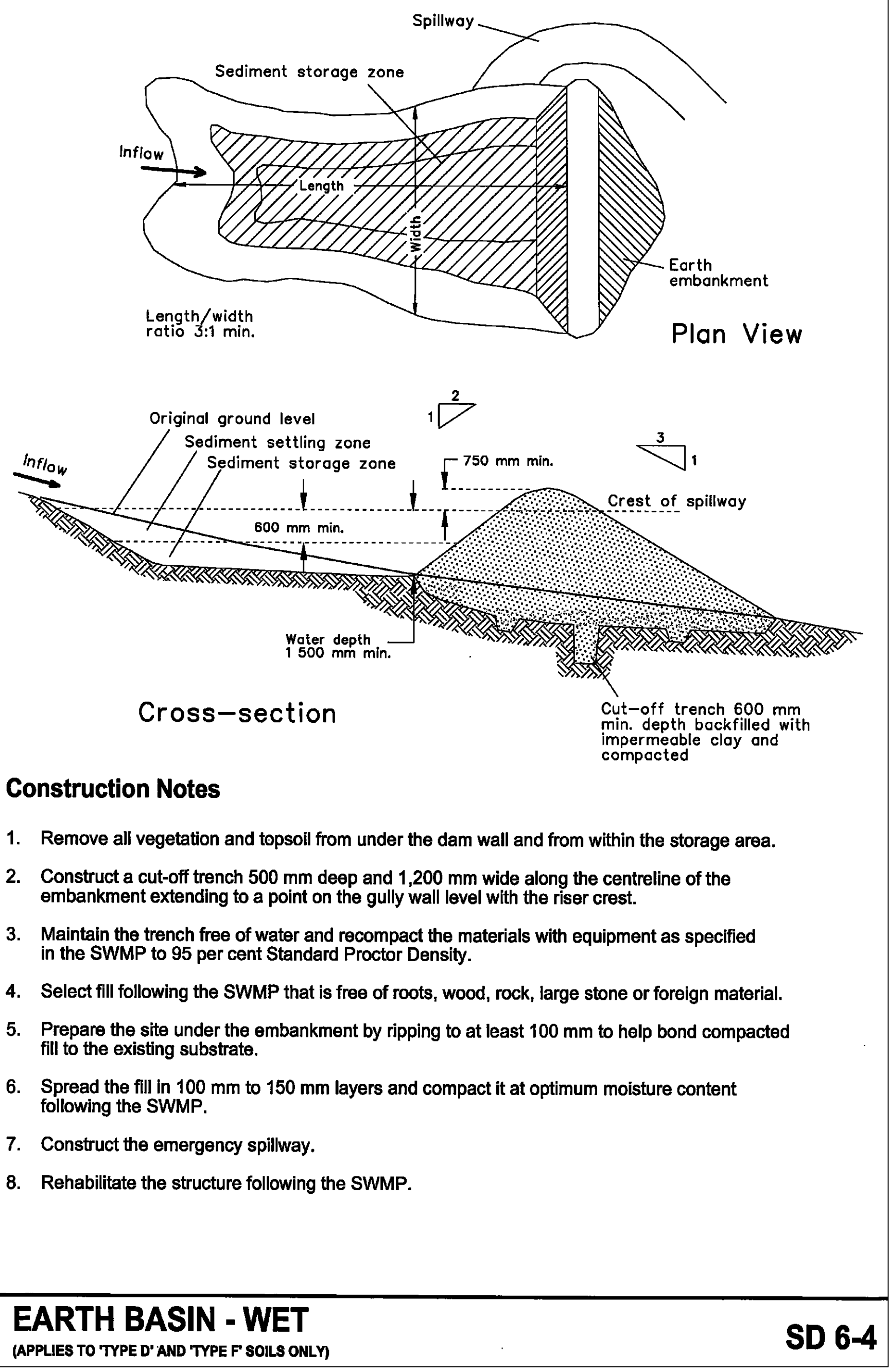
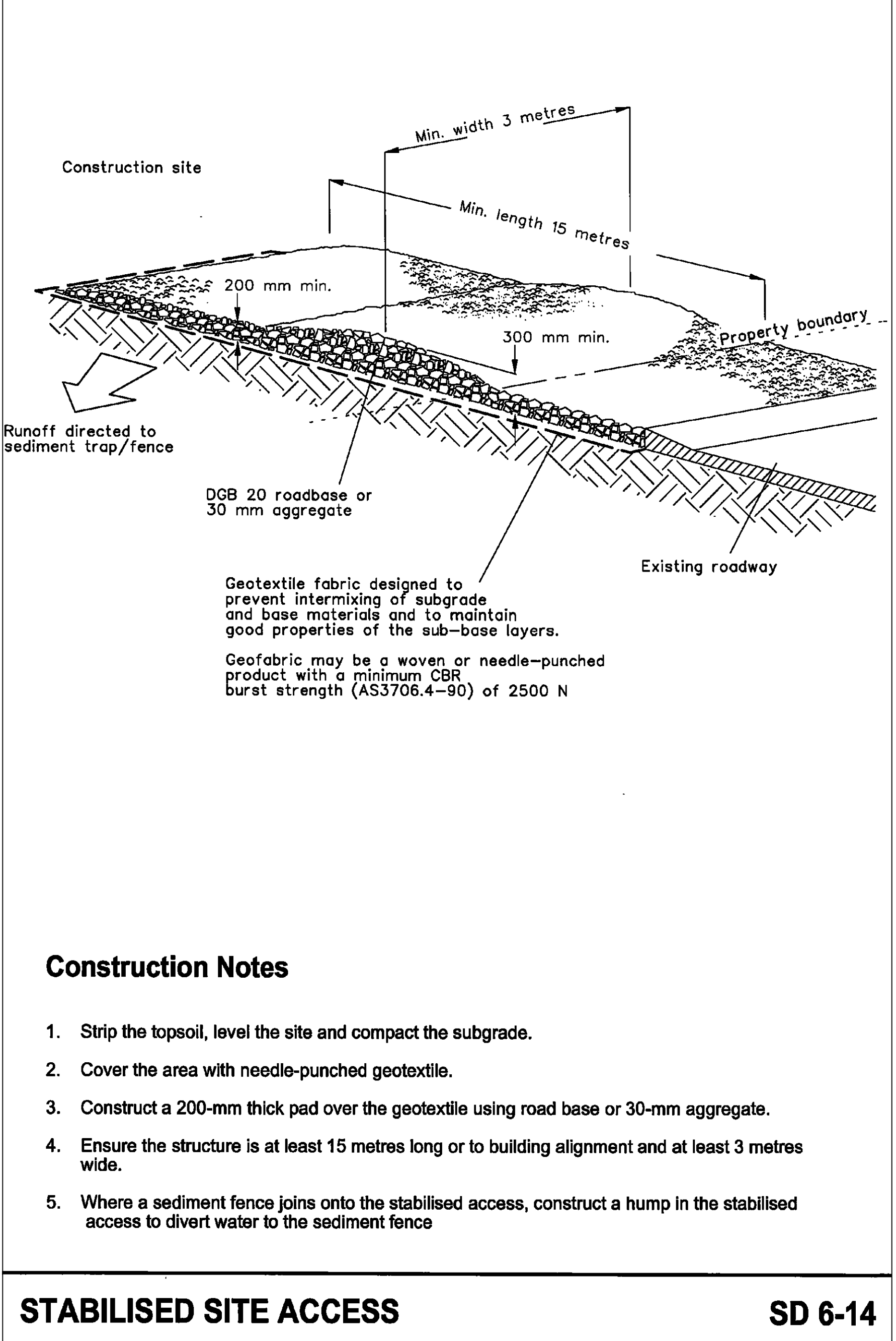


SEDIMENT BASIN NOTES:
REFER TO DRAWING C3-207 FOR SEDIMENT BASIN INFORMATION

EROSION CONTROL NOTES:
REFER TO DRAWING C3-200 FOR EROSION CONTROL NOTES

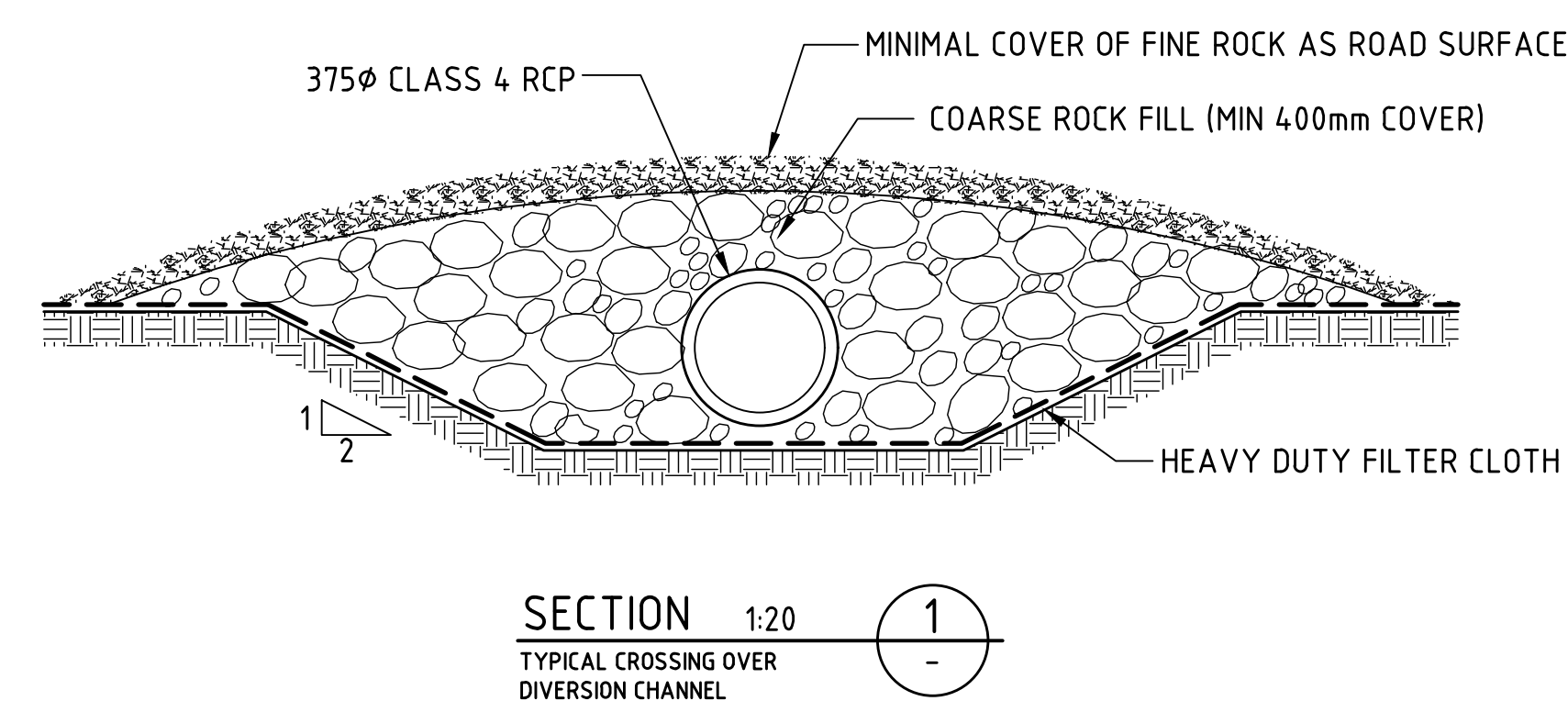
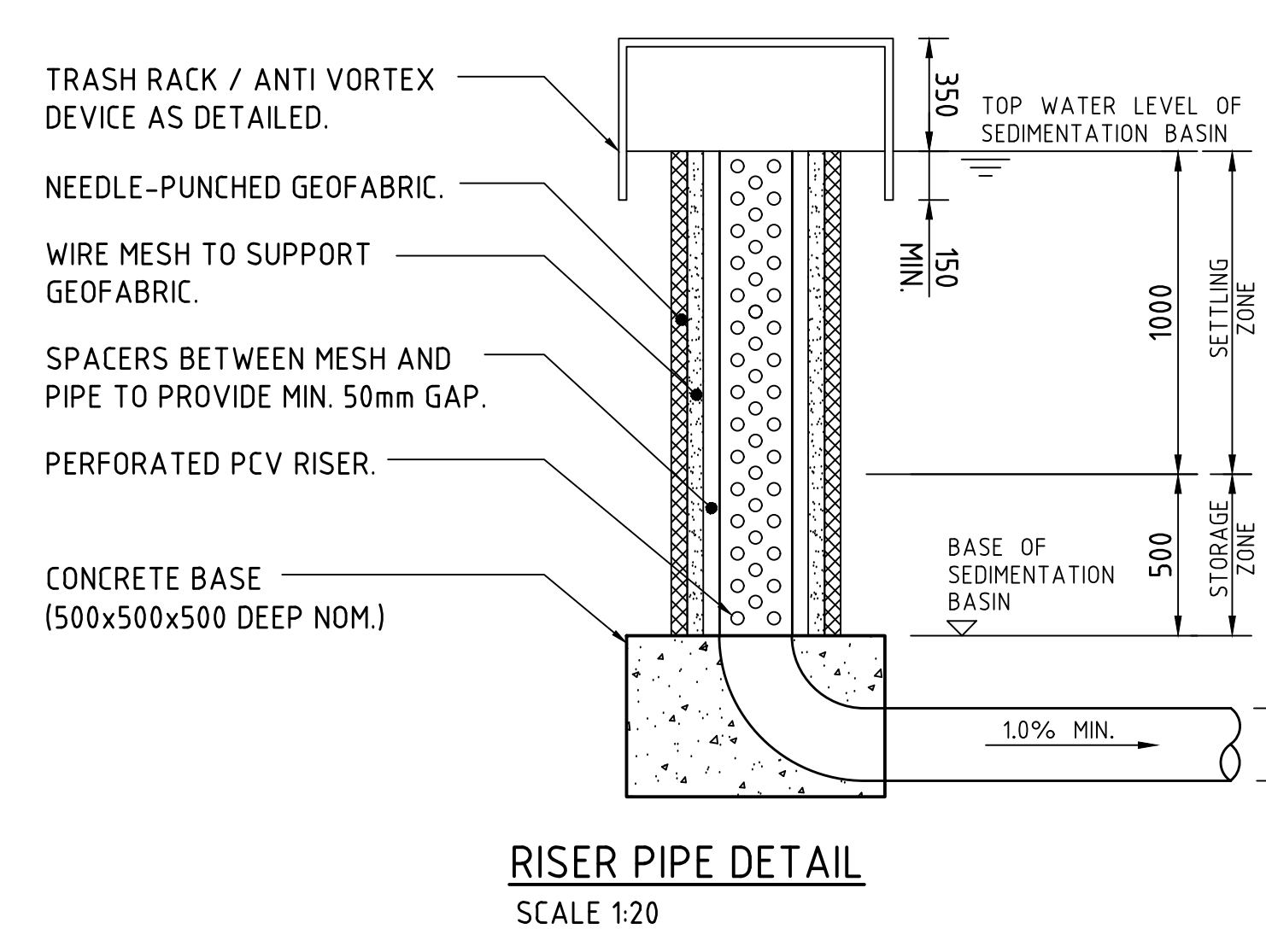
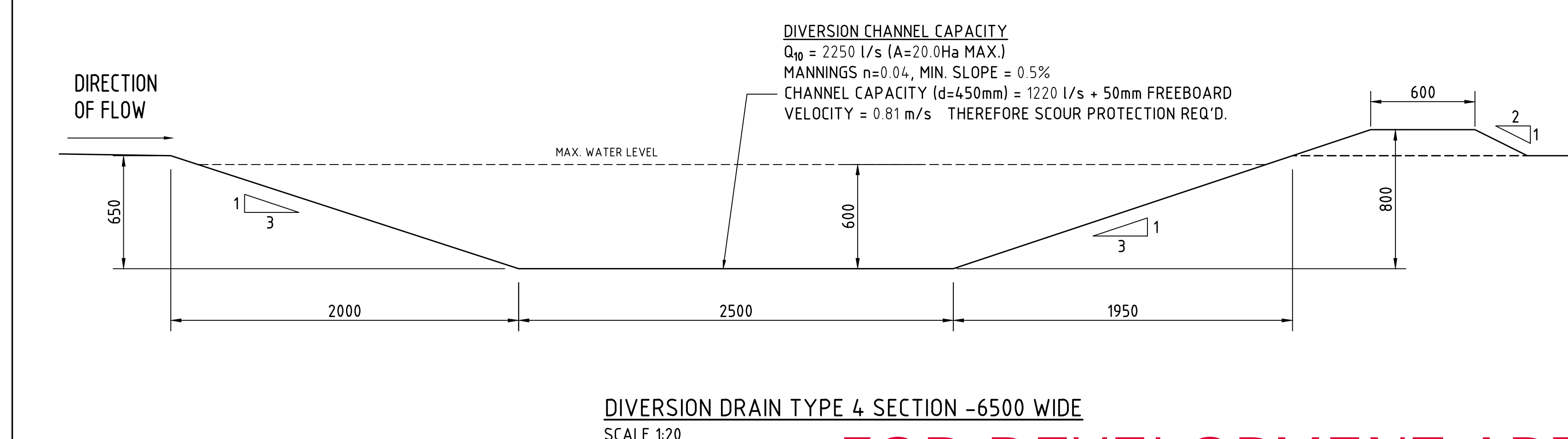
FOR DEVELOPMENT APPLICATION

DRAWING TITLE EROSION AND SEDIMENT CONTROL PLAN STAGE 3-MOD 3				PROJECT MAMRE SOUTH PRECINCT 657 - 708 MAIRE ROAD KEMPS CREEK, 2178, NSW				CLIENT ALTIS PROPERTY PARTNERS FRASERS PROPERTY				DESIGNED: MW DRAWN: MC DATE: NOV 21 CHECKED: MW SCALE: AS SHOWN CAD REF: C013362.02-C3-203				Costin Roe Consulting Pty Ltd. ABN 50 003 696 446 PO Box N410 Sydney NSW 1220 Level 4 & 5 Windmill Street, Millers Point NSW 2000 p: +61 2 9251 7699 e: mail@costinroe.com.au w: costinroe.com.au				COSTIN ROE CONSULTING CIVIL & STRUCTURAL ENGINEERS				DRAWING No: C013362.02-C3-203			
ISSUED FOR DEVELOPMENT APPLICATION 17.11.21 12.11.21 12.11.21				05.08.22 17.11.21 12.11.21				C B A				DATE DATE DATE				ISSUE AMENDMENTS AMENDMENTS				DATE DATE DATE				ISSUE AMENDMENTS AMENDMENTS			

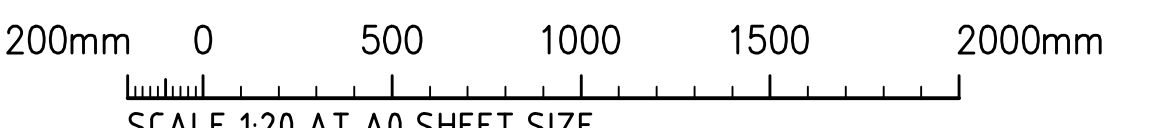


FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION				CLIENT				PROJECT				COSTIN ROE CONSULTING PTY LTD.				DRAWING TITLE			
ISSUED FOR DEVELOPMENT APPLICATION				ALTIS PROPERTY PARTNERS				MAMRE SOUTH PRECINCT				PO Box N410 Sydney NSW 1220				EROSION & SEDIMENT CONTROL			
AMENDMENTS				FRASERS PROPERTY				657 - 708 MAMRE ROAD				Level 4 & Windmill Street, Millers Point NSW 2000				DETAILS - SHEET 1			
								KEMPS CREEK, 2178, NSW				p: +61 2 9251 7899				MOD 3			
												e: mail@costinroe.com.au				DRAWING No.			
																C013362.02 - C3-204			
																B			



EROSION & SEDIMENT CONTROL NOTES:
REFER TO DRAWING C200 FOR EROSION & SEDIMENT CONTROL NOTES



<u>SEDIMENT BASIN A:</u>		<u>SEDIMENT BASIN B:</u>	
CATCHMENT AREA	= 16.69 ha	CATCHMENT AREA	= 68.36 ha
DISTURBED AREA	= 16.69 ha	DISTURBED AREA	= 68.36 ha
REQUIRED BASIN VOLUME	= 3797m ³	REQUIRED BASIN VOLUME	= 15551m ³
BASE DIMENSIONS (L X B)	= 39m x 112m	BASE DIMENSIONS (L X B)	= 109m x 80m
TOP DIMENSIONS (L X B)	= 48m x 121m	TOP DIMENSIONS (L X B)	= 121m x 92m
MAX SIDE SLOPE	= 1V:3H	MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m	DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 3886m ³	PROVIDED BASIN VOLUME	= 15850m ³
Q10 WEIR PEAK FLOW	= 4.24m ³ /s	Q10 WEIR PEAK FLOW	= 17.37m ³ /s
SPILLWAY WIDTH	= 7.2m	SPILLWAY WIDTH	= 30m
SPILLWAY DEPTH	= 0.5m	SPILLWAY DEPTH	= 0.5m

STAGE 1 BASIN INFORMATION – REFER DRAWING C013362.02–C3–201

<u>SEDIMENT BASIN A:</u>		<u>SEDIMENT BASIN B:</u>	
CATCHMENT AREA	= 16.69 ha	CATCHMENT AREA	= 68.36 ha
DISTURBED AREA	= 16.69 ha	DISTURBED AREA	= 68.36 ha
REQUIRED BASIN VOLUME	= 3797m ³	REQUIRED BASIN VOLUME	= 15551m ³
BASE DIMENSIONS (L X B)	= 39m x 112m	BASE DIMENSIONS (L X B)	= 109m x 80m
TOP DIMENSIONS (L X B)	= 48m x 121m	TOP DIMENSIONS (L X B)	= 121m x 92m
MAX SIDE SLOPE	= 1V:3H	MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m	DEPTH	= 2.0m
PROVIDED BASIN VOLUME	= 3886m ³	PROVIDED BASIN VOLUME	= 15850m ³
Q10 WEIR PEAK FLOW	= 4.24m ³ /s	Q10 WEIR PEAK FLOW	= 17.37m ³ /s
SPILLWAY WIDTH	= 7.2m	SPILLWAY WIDTH	= 30m
SPILLWAY DEPTH	= 0.5m	SPILLWAY DEPTH	= 0.5m

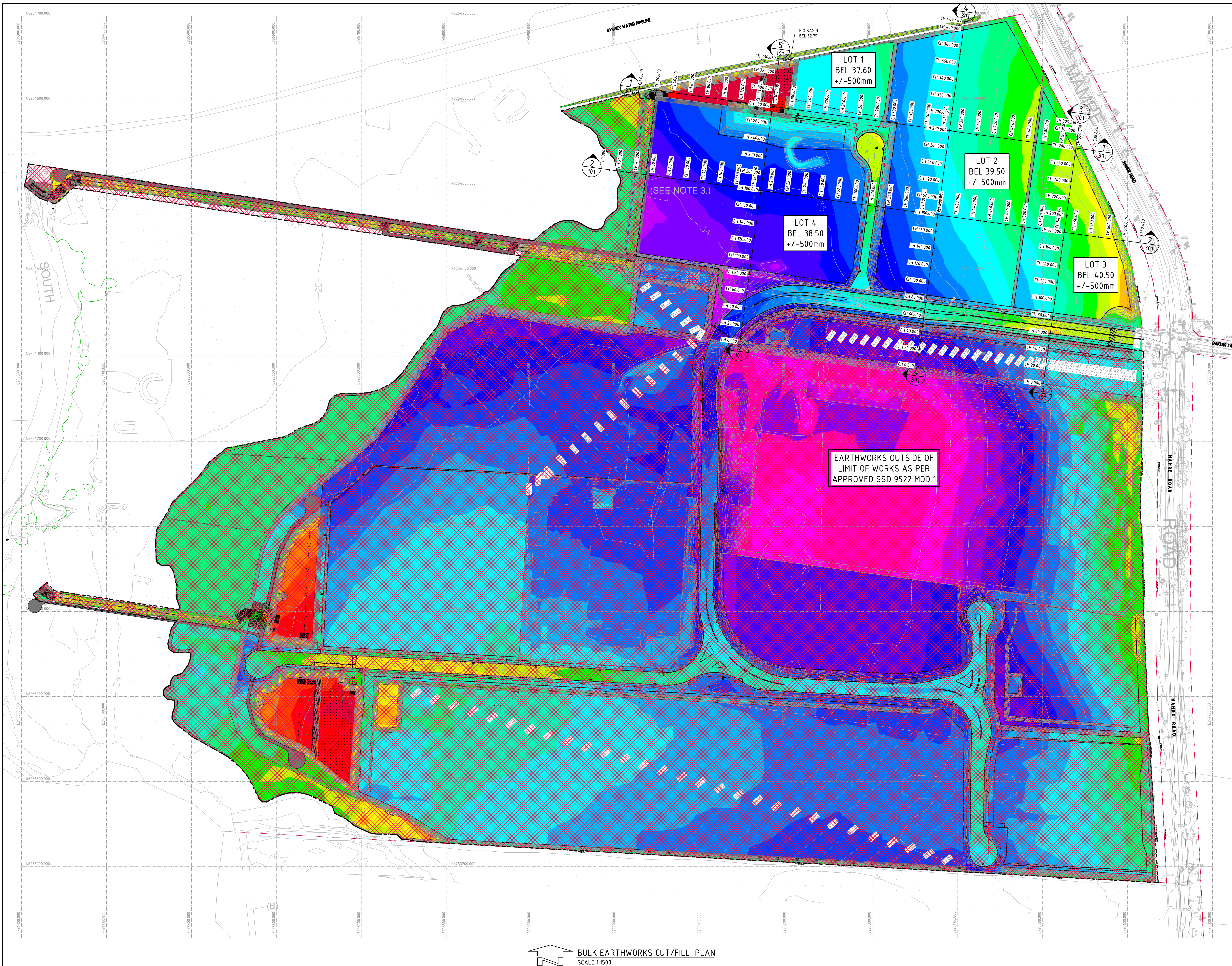
STAGE 2 BASIN INFORMATION – REFER DRAWING C013362.02–C3–202

<u>SEDIMENT BASIN 1:</u> CATCHMENT AREA = 0.94 ha DISTURBED AREA = 0.94 ha REQUIRED BASIN VOLUME = 220m ³ BASE DIMENSIONS (L X B) = 11m x 5m TOP DIMENSIONS (L X B) = 20m x 14m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 230m ³ Q10 WEIR PEAK FLOW = 0.24m ³ /s SPILLWAY WIDTH = 1.0m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 3:</u> CATCHMENT AREA = 2.53 ha DISTURBED AREA = 2.53 ha REQUIRED BASIN VOLUME = 567m ³ BASE DIMENSIONS (L X B) = 20m x 12m TOP DIMENSIONS (L X B) = 29m x 21m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 616m ³ Q10 WEIR PEAK FLOW = 0.696m ³ /s SPILLWAY WIDTH = 2.6m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 6:</u> CATCHMENT AREA = 3.39 ha DISTURBED AREA = 3.39 ha REQUIRED BASIN VOLUME = 787m ³ BASE DIMENSIONS (L X B) = 28m x 12m TOP DIMENSIONS (L X B) = 37m x 21m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 812m ³ Q10 WEIR PEAK FLOW = 1.13m ³ /s SPILLWAY WIDTH = 4.5m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 10:</u> CATCHMENT AREA = 6.00Ha DISTURBED AREA = 6.00Ha REQUIRED BASIN VOLUME = 1397m ³ BASE DIMENSIONS (L X B) = 35m x 20m TOP DIMENSIONS (L X B) = 44m x 29m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 1461m ³ Q10 WEIR PEAK FLOW = 1.63m ³ /s SPILLWAY WIDTH = 6.0m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 13:</u> CATCHMENT AREA = 5.14 ha DISTURBED AREA = 5.014 ha REQUIRED BASIN VOLUME = 1197m ³ BASE DIMENSIONS (L X B) = 60m x 8m TOP DIMENSIONS (L X B) = 69m x 17m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 1202m ³ Q10 WEIR PEAK FLOW = 1.73m ³ /s SPILLWAY WIDTH = 6.4m SPILLWAY DEPTH = 0.3m
<u>SEDIMENT BASIN 2a:</u> CATCHMENT AREA = 5.50 Ha DISTURBED AREA = 5.50 Ha REQUIRED BASIN VOLUME = 1250m ³ BASE DIMENSIONS (L X B) = 20m x 30m TOP DIMENSIONS (L X B) = 29m x 39m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 1277m ³ Q10 WEIR PEAK FLOW = 1.398m ³ /s SPILLWAY WIDTH = 5.0m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 4:</u> CATCHMENT AREA = 4.67 Ha DISTURBED AREA = 4.67 Ha REQUIRED BASIN VOLUME = 1087m ³ BASE DIMENSIONS (L X B) = 33m x 15m TOP DIMENSIONS (L X B) = 42m x 24m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 1105m ³ Q10 WEIR PEAK FLOW = 1.343m ³ /s SPILLWAY WIDTH = 5.0m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 8:</u> CATCHMENT AREA = 2.57 ha DISTURBED AREA = 2.57 ha REQUIRED BASIN VOLUME = 584m ³ BASE DIMENSIONS (L X B) = 20m x 12m TOP DIMENSIONS (L X B) = 29m x 21m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 616m ³ Q10 WEIR PEAK FLOW = 0.862m ³ /s SPILLWAY WIDTH = 3.2m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 11:</u> CATCHMENT AREA = 11.67 Ha DISTURBED AREA = 11.67 Ha REQUIRED BASIN VOLUME = 2717m ³ BASE DIMENSIONS (L X B) = 70m x 20m TOP DIMENSIONS (L X B) = 84m x 29m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 2741m ³ Q10 WEIR PEAK FLOW = 3.913m ³ /s SPILLWAY WIDTH = 7.0m SPILLWAY DEPTH = 0.5m	
<u>SEDIMENT BASIN 2b:</u> CATCHMENT AREA = 13.68 Ha DISTURBED AREA = 13.68 Ha REQUIRED BASIN VOLUME = 3112m ³ BASE DIMENSIONS (L X B) = 50m x 23m TOP DIMENSIONS (L X B) = 62m x 35m MAX SIDE SLOPE = 1V:3H DEPTH = 2.0m PROVIDED BASIN VOLUME = 3226m ³ Q10 WEIR PEAK FLOW = 3.24m ³ /s SPILLWAY WIDTH = 6.6m SPILLWAY DEPTH = 0.5m	<u>SEDIMENT BASIN 5:</u> CATCHMENT AREA = 3.24 Ha DISTURBED AREA = 3.24 Ha REQUIRED BASIN VOLUME = 754m ³ BASE DIMENSIONS (L X B) = 30m x 10m TOP DIMENSIONS (L X B) = 39m x 19m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 756m ³ Q10 WEIR PEAK FLOW = 1.03m ³ /S SPILLWAY WIDTH = 4.0m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 9:</u> CATCHMENT AREA = 2.96Ha DISTURBED AREA = 2.96Ha REQUIRED BASIN VOLUME = 673m ³ BASE DIMENSIONS (L X B) = 20m x 14m TOP DIMENSIONS (L X B) = 29m x 23m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 690m ³ Q10 WEIR PEAK FLOW = 1.059m ³ /s SPILLWAY WIDTH = 3.9m SPILLWAY DEPTH = 0.3m	<u>SEDIMENT BASIN 12:</u> CATCHMENT AREA = 4.40 Ha DISTURBED AREA = 4.40 Ha REQUIRED BASIN VOLUME = 1024m ³ BASE DIMENSIONS (L X B) = 20m x 12m TOP DIMENSIONS (L X B) = 29m x 21m MAX SIDE SLOPE = 1V:3H DEPTH = 1.5m PROVIDED BASIN VOLUME = 616m ³ Q10 WEIR PEAK FLOW = 0.868m ³ /s SPILLWAY WIDTH = 3.2m SPILLWAY DEPTH = 0.3m	

STAGE 3 BASIN INFORMATION – REFER DRAWING C013362.02–C3–203

FOR DEVELOPMENT APPLICATION

										CLIENT										PROJECT										CONSULT AUSTRALIA										Costin Roe Consulting Pty Ltd. ABN 90 003 696 446										CIVIL & STRUCTURAL ENGINEERS										DRAWING TITLE EROSION AND SEDIMENT CONTROL SEDIMENTATION BASIN INFORMATION-MOD 3																																																																					
ISSUED FOR DEVELOPMENT APPLICATION										05.08.22										B										PO Box N410 Sydney NSW 1220										Level 4, 8 Windmill Street, Millers Point NSW 2000										p: +61 2 9521 7699										f: +61 2 9541 3731																																																																					
ISSUED FOR DEVELOPMENT APPLICATION										12.11.21										A										e: mail@costinroe.com.au										w: costinroe.com.au																																																																																									
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EARTHWORKS VOLUMES	
TOPSOIL VOLUME:	
CUT	= - 175 000 m ³
EARTHWORKS VOLUMES:	
CUT	= - 67 900m ³
FILL	= + 2 141 650 m ³
ALLOWANCE FOR DETAILED EXCAVATION (1250m ³ /Ha)	= - 109 600 m ³
BALANCE	= + 1 964 150 m ³ (IMPORT)

EARTHWORK VOLUMES ARE APPROXIMATE ONLY & ARE CALCULATED ASSUMING A MINIMAL TOPSOIL STRIP OF 200mm. NO ALLOWANCE HAS BEEN MADE FOR EROSION AND SEDIMENT CONTROL, BULKING, COMPACTION OF FILLED SOILS.

REFER TO DRAWINGS C01362.02-C3-200 TO C3-207 FOR EROSION AND SEDIMENT CONTROL PLANS & DETAILS.

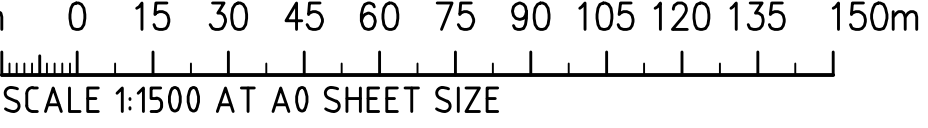
THE EXISTING SURFACE IS BASED ON SURVEY & DESIGN INFORMATION PROVIDED. THIS SURVEY IS MOST CURRENT HOWEVER IT MAY NOT ACCURATELY REFLECT ACTUAL GROUND LEVELS OR STOCKPILES ETC ON SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM VOLUMES AND ALLOWANCES FOR EARTHWORKS.

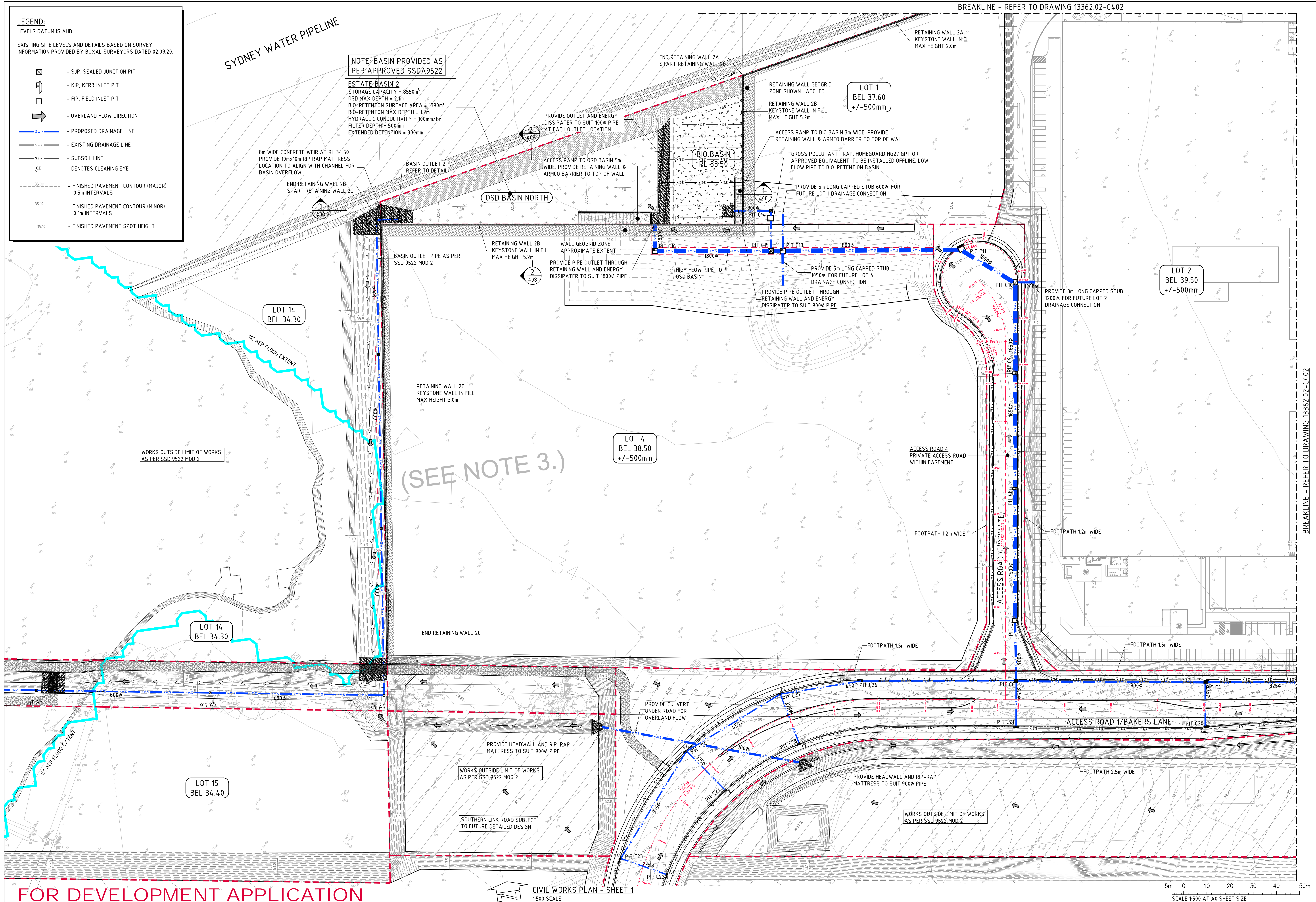
- SITE PREPARATION NOTES :**
- ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL REPORT PSM3276-100L PROVIDED BY PELL'S SULLIVAN MEYNINK DATED 09.04.17
 - EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY BOXALL TITLED 10129-005-TOPO REV B DATED 12.06.20.
 - STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
 - COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED ON THE DRAWINGS WITHIN A TOLERANCE OF -0mm/-10mm THROUGH BUILDING PADS/PAVEMENTS AND +0mm/+20mm ELSEWHERE. PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
 - AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHED BATTERS) AND AREAS IN CUT SHALL BE PROOF ROLLED TO IDENTIFY ANY SOFT HEAVING MATERIAL. SOFT MATERIAL SHALL BE BOXED OUT AND REMOVED PRIOR TO FILL PLACEMENT. PROOF ROLLING TO BE INSPECTED BY A GEOTECHNICAL ENGINEER OR THE EARTHWORKS DESIGNER.
 - SITE WON FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HLF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HLF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET. IMPORTED FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HLF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HLF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
 - ALL ENGINEERED FILL PARTICLES SHALL BE ABLE TO BE INCORPORATED WITHIN A SINGLE LAYER. FURTHER, LESS THAN 30% OF PARTICLES SHALL BE RETAINED ON THE 37.5 MM SIEVE. ENGINEERED FILL SHALL BE ABLE TO BE TESTED IN ACCORDANCE WITH THE STANDARD COMPACTION METHOD (AS1289.5.4.1) OR HLF 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.
 - 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.
 - PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
 - EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
 - MATCH EXISTING LEVELS AT BATTER INTERFACE
 - CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE PRESENT. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DIRECTION OR ADJUSTMENTS TO DESIGN LEVELS.
 - DURING EARTHWORKS THE CONTRACTOR IS TO ENSURE ALL AREAS ARE FREE DRAINING & WILL NOT RETAIN WATER DURING RAINFALL. PROVIDE TEMPORARY MEASURES AS REQUIRED TO ENSURE FREE FLOWING RUNOFF THROUGH MANAGED DRAINAGE PATHS, DIVERSION DRAINS OR OTHER SUITABLE DISPOSAL METHOD AS AGREED DURING THE WORKS. REFER ANY CONCERNS TO THE ENGINEER. REFER TO EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES.

DEPTH RANGE		
No.	FROM DEPTH	TO DEPTH
1	-4.000	-3.500
2	-3.500	-3.000
3	-3.000	-2.500
4	-2.500	-2.000
5	-2.000	-1.500
6	-1.500	-1.000
7	-1.000	-0.500
8	-0.500	0.000
9	0.000	0.500
10	0.500	1.000
11	1.000	1.500
12	1.500	2.000
13	2.000	2.500
14	2.500	3.000
15	3.000	3.500
16	3.500	4.000
17	4.000	4.500
18	4.500	5.000
19	5.000	5.500
20	5.500	6.000
21	6.000	6.500
22	6.500	7.000
23	7.000	7.500

BULK EARTHWORKS CUT/FILL PLAN
SCALE 1:1500

FOR DEVELOPMENT APPLICATION



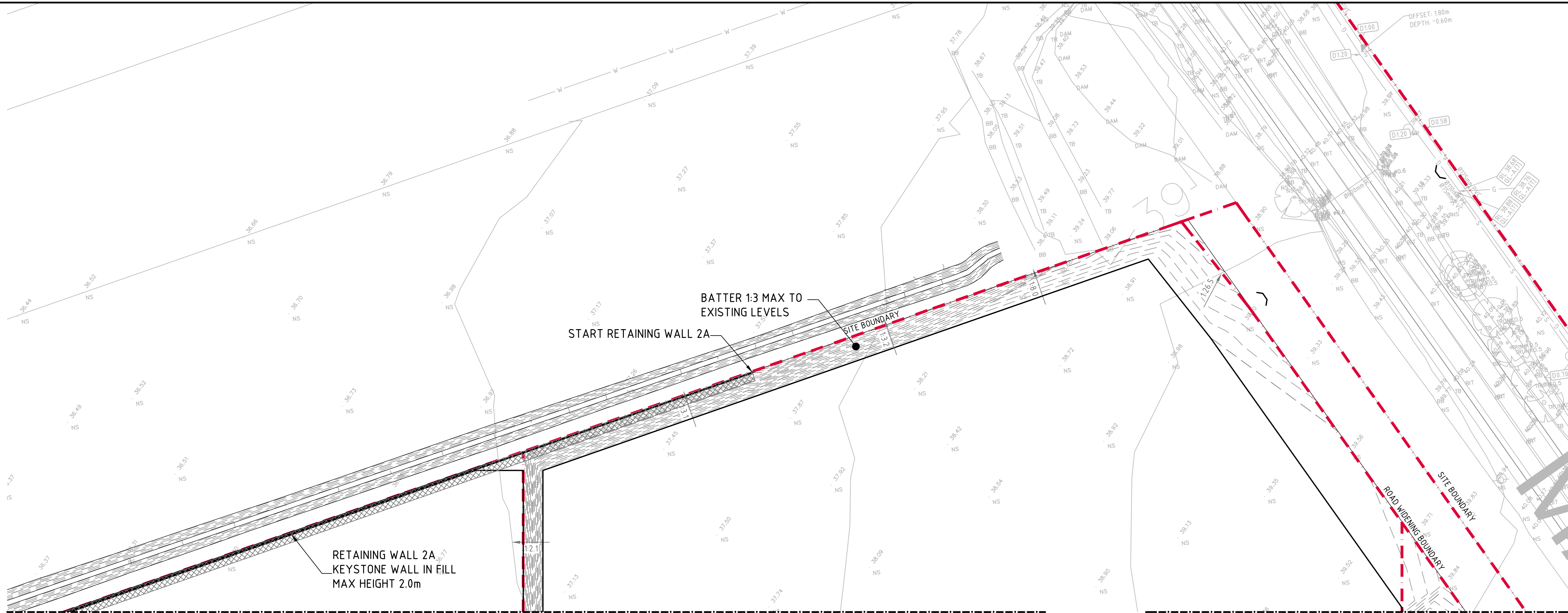
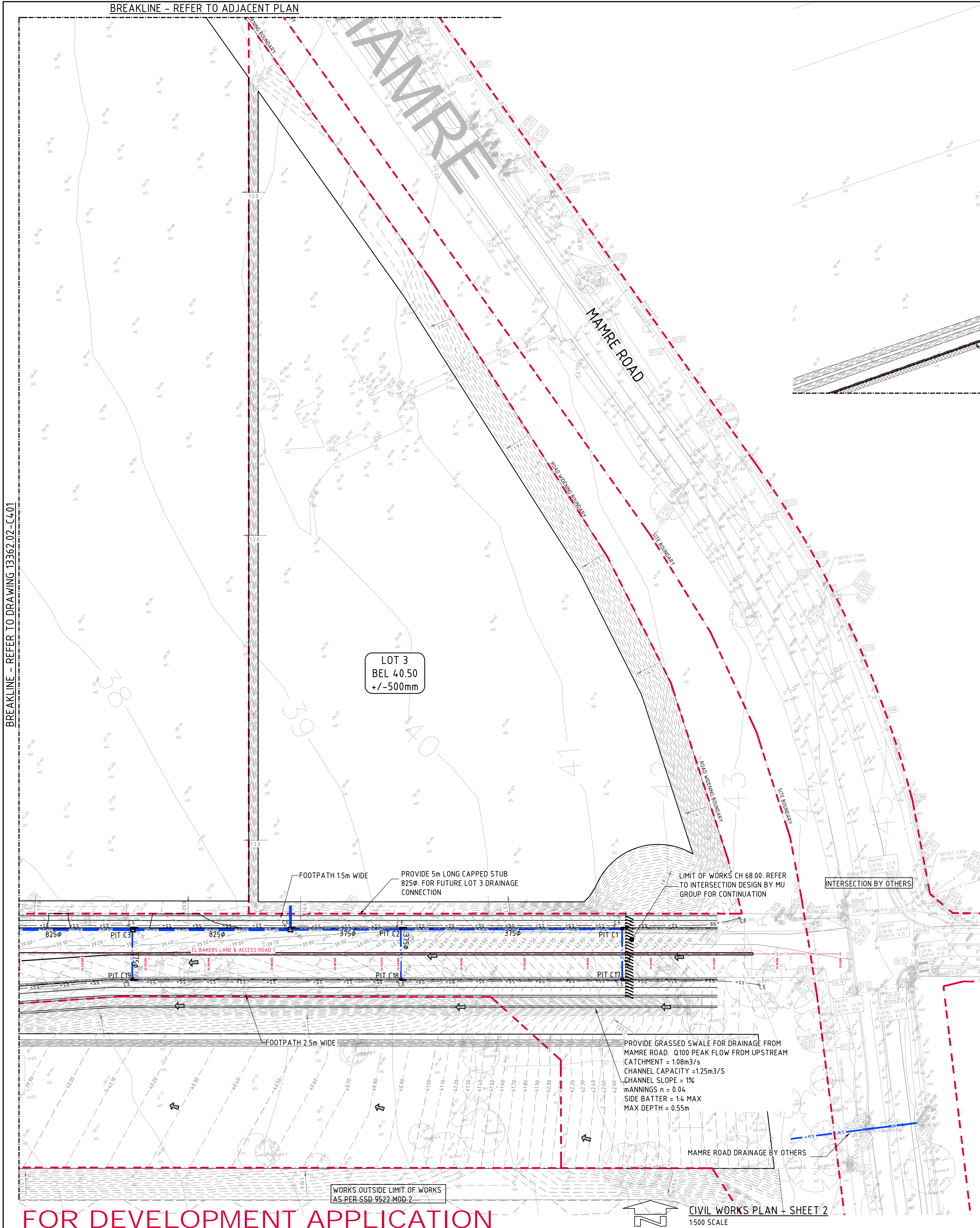


LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY BOXAL SURVEYORS DATED 02.09.20.

- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- FIP, FIELD INLET PIT
- OVERLAND FLOW DIRECTION
- PROPOSED DRAINAGE LINE
- EXISTING DRAINAGE LINE
- SUBSOIL LINE
- DENOTES CLEANING EYE
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- FINISHED PAVEMENT SPOT HEIGHT

FOR DEVELOPMENT APPLICATION



BREAKLINE - REFER TO DRAWING 13362.02-C401

BREAKLINE - REFER TO ADJACENT PLAN

PIT SCHEDULE - LINE C

PIT No.	TYPE	SIZE	COMMENT
PIT C1	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C2	K.I.P.	1200x1200	2400 LINTEL ON GRADE
PIT C3	K.I.P.	1200x1200	2400 LINTEL ON GRADE
PIT C4	K.I.P.	1200x1200	2400 LINTEL ON GRADE
PIT C5	K.I.P.	1200x1200	2400 LINTEL ON GRADE
PIT C6	S.G.G.P.	1200x1200	2400 LINTEL ON GRADE
PIT C7	K.I.P.	1500x1500	2400 LINTEL ON GRADE
PIT C8	K.I.P.	1500x900	2400 LINTEL ON GRADE
PIT C9	K.I.P.	1500x900	2400 LINTEL ON GRADE
PIT C10	S.J.P.	2100x2100	900x900 RISER
PIT C11	S.G.G.P.	2400x900	900x900 RISER
PIT C12	S.J.P.	2100x2100	900x900 RISER
PIT C13	S.J.P.	2100x2100	900x900 RISER
PIT C14	S.J.P.	2100x2100	900x900 RISER
PIT C15	S.J.P.	2100x2100	900x900 RISER
PIT C16	S.J.P.	2100x2100	900x900 RISER
PIT C17	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C18	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C19	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C20	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C21	K.I.P.	900x900	2400 LINTEL SAG
PIT C22	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C23	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C24	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C25	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C26	K.I.P.	900x900	2400 LINTEL ON GRADE
PIT C27	K.I.P.	1500x1500	2400 LINTEL ON GRADE

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY
INFORMATION PROVIDED BY BOXAL SURVEYORS DATED 02.09.20.

- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- FIP, FIELD INLET PIT
- OVERLAND FLOW DIRECTION
- PROPOSED DRAINAGE LINE
- EXISTING DRAINAGE LINE
- SUBSOIL LINE
- DENOTES CLEANING EYE
- FINISHED PAVEMENT CONTOUR (MAJOR)
0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR)
0.1m INTERVALS
- FINISHED PAVEMENT SPOT HEIGHT

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

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	03.08.22	C			
ISSUED FOR INFORMATION	17.11.21	B			
ISSUED FOR DEVELOPMENT APPLICATION	12.11.21	A			

CLIENT

ALTIS
PROPERTY PARTNERS

FRASERS
PROPERTY

PROJECT
MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

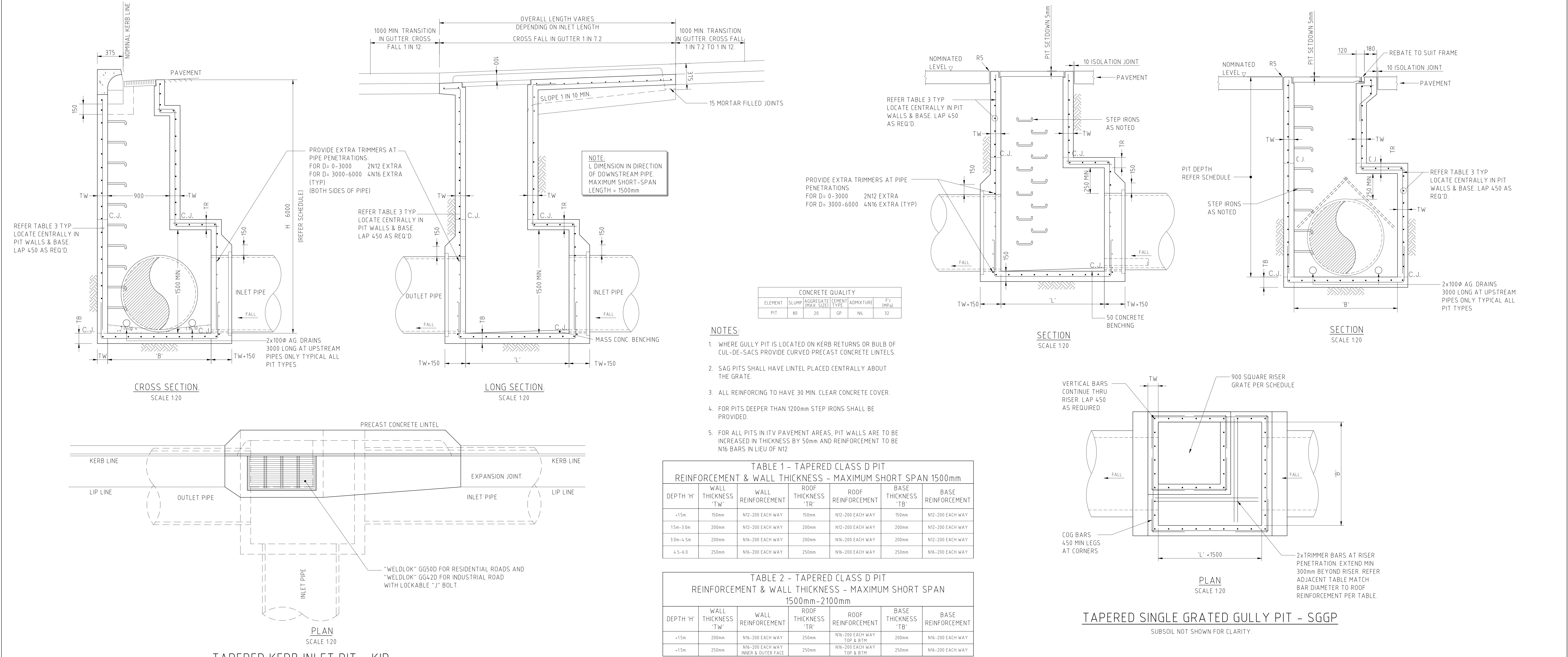
DESIGNED: MW DRAWN: MC DATE: NOV 21 CHECKED: MW SITE: A0 SCALE: AS SHOWN CAD REF: C013362.02-C3-402

CONSULT AUSTRALIA

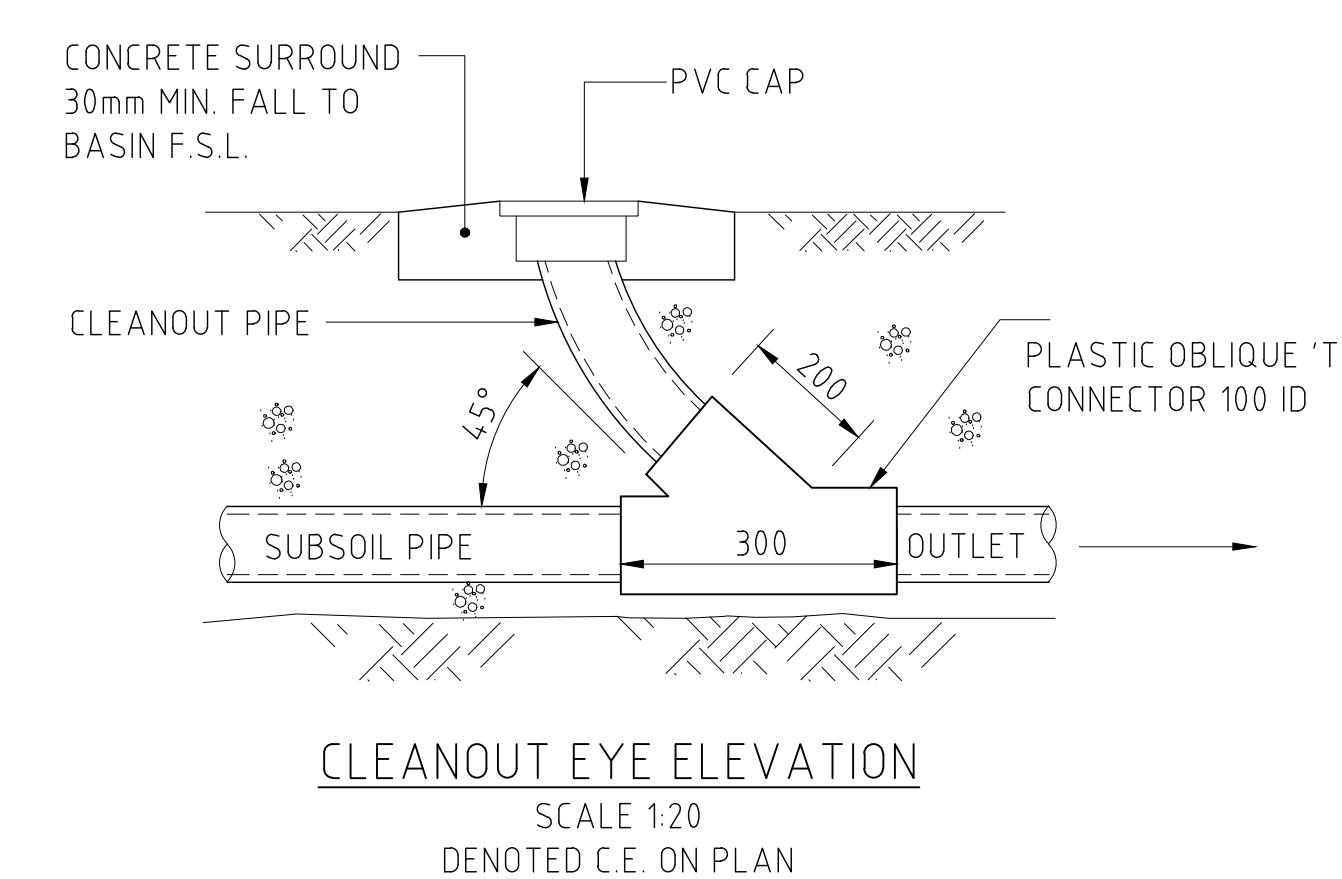
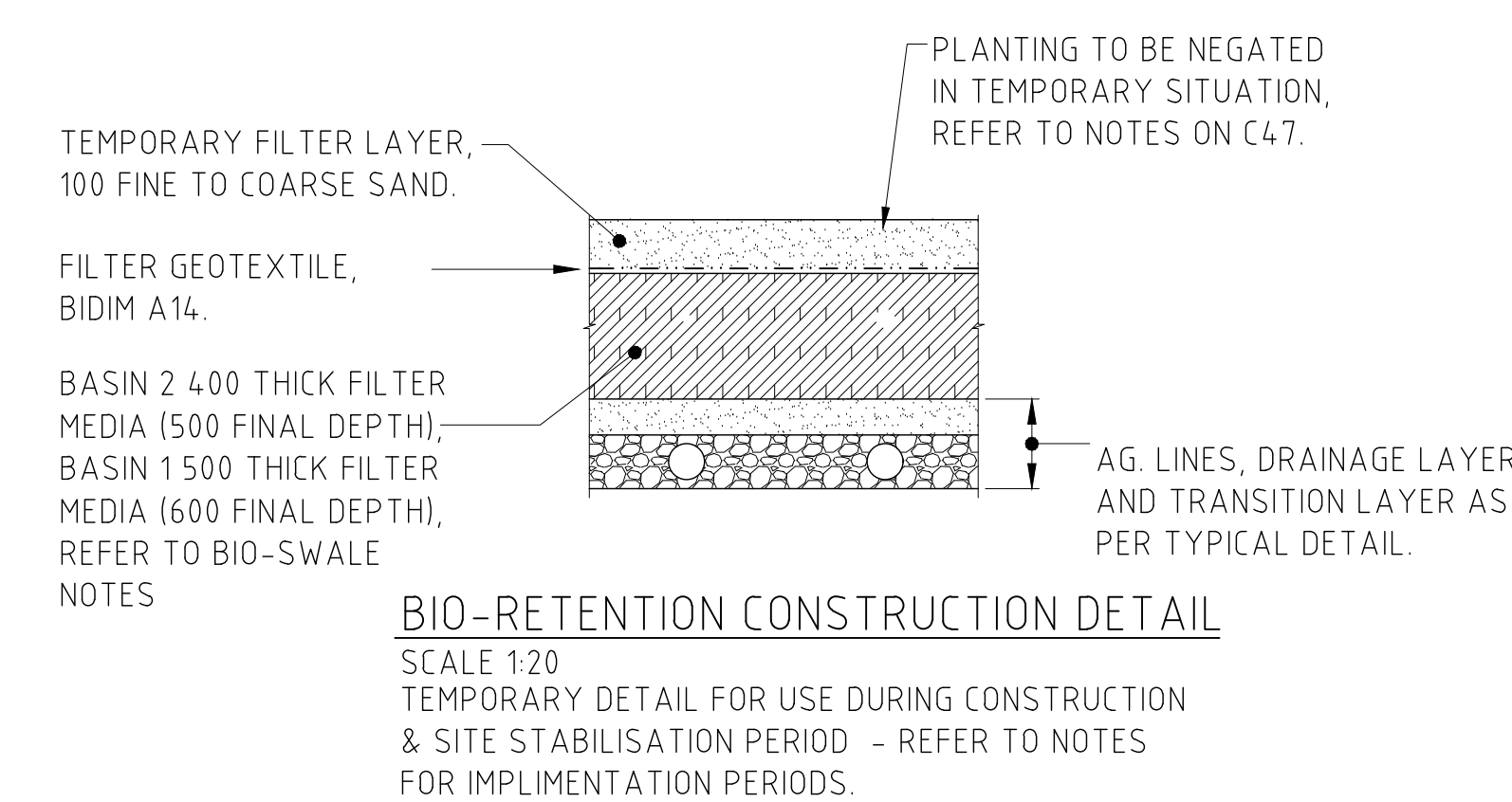
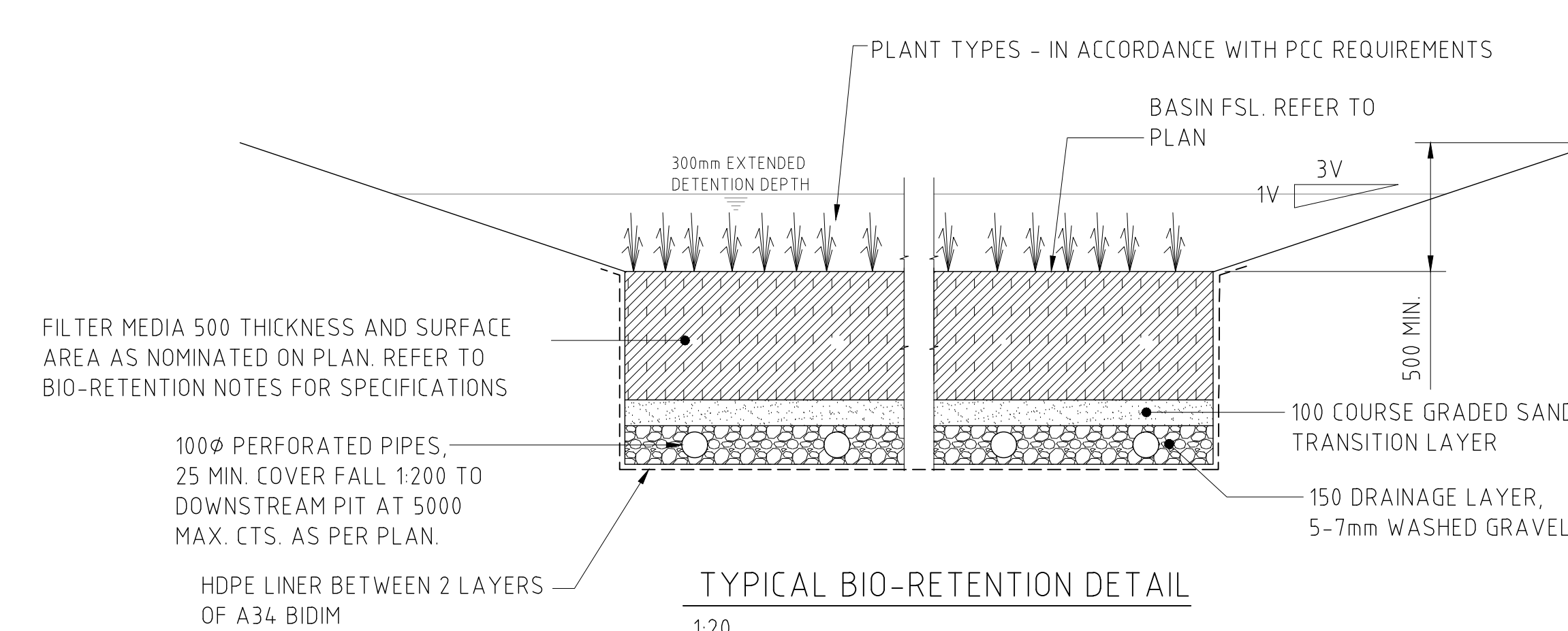
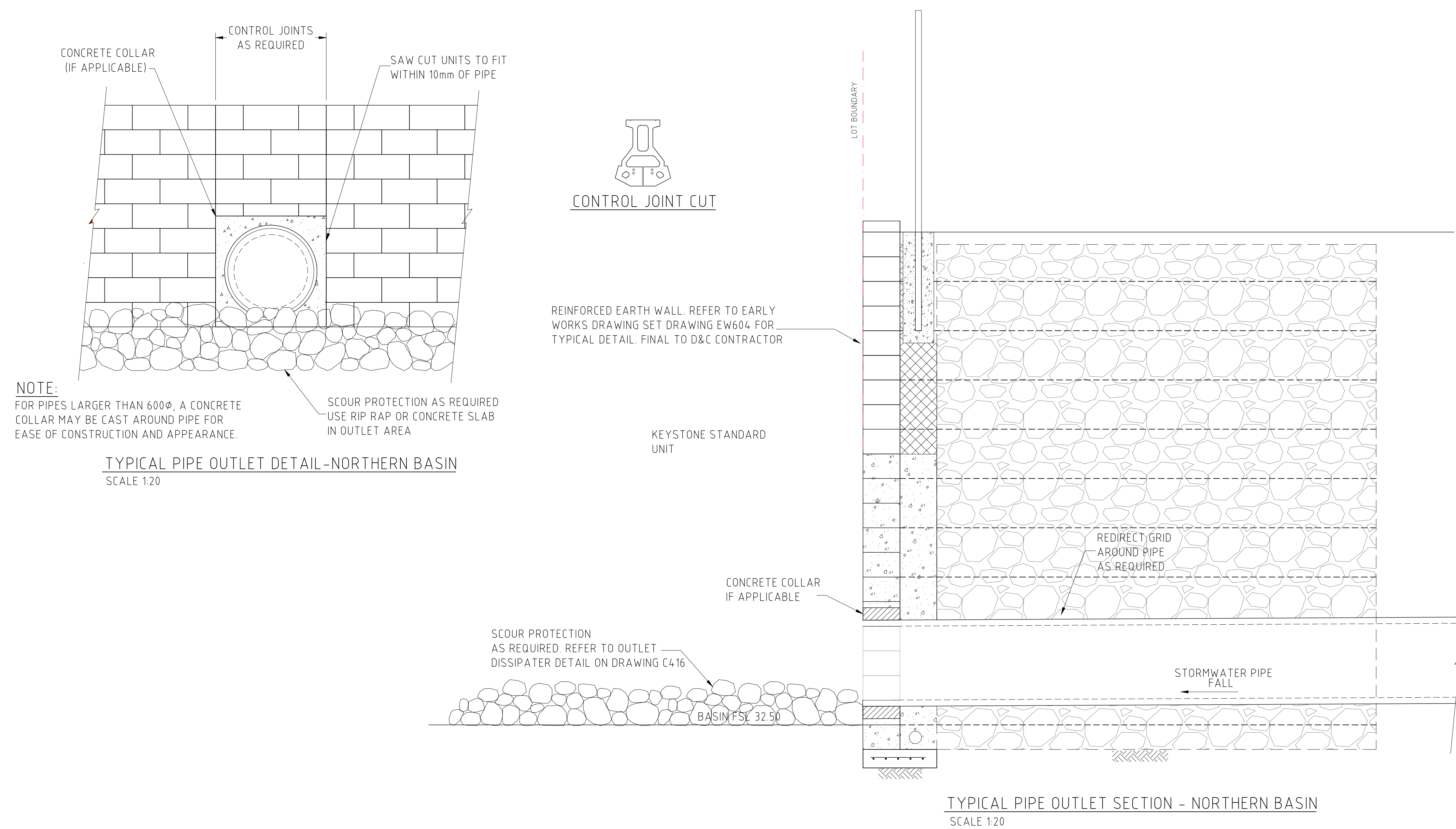
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CRC
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CIVIL &
STRUCTURAL
ENGINEERS

DRAWING TITLE
CIVIL WORKS PLAN
SHEET 2
MOD 3
DRAWING NO. C013362.02-C3-402



FOR DEVELOPMENT APPLICATION



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:

- ORGANIC MATTER CONTENT TO BE IDEALLY WITHIN 1% TO 3% (W/W) AND TO BE NO GREATER THAN 5%(W/W).
- PH TO BE BETWEEN 5.5 AND 7.5
- 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.

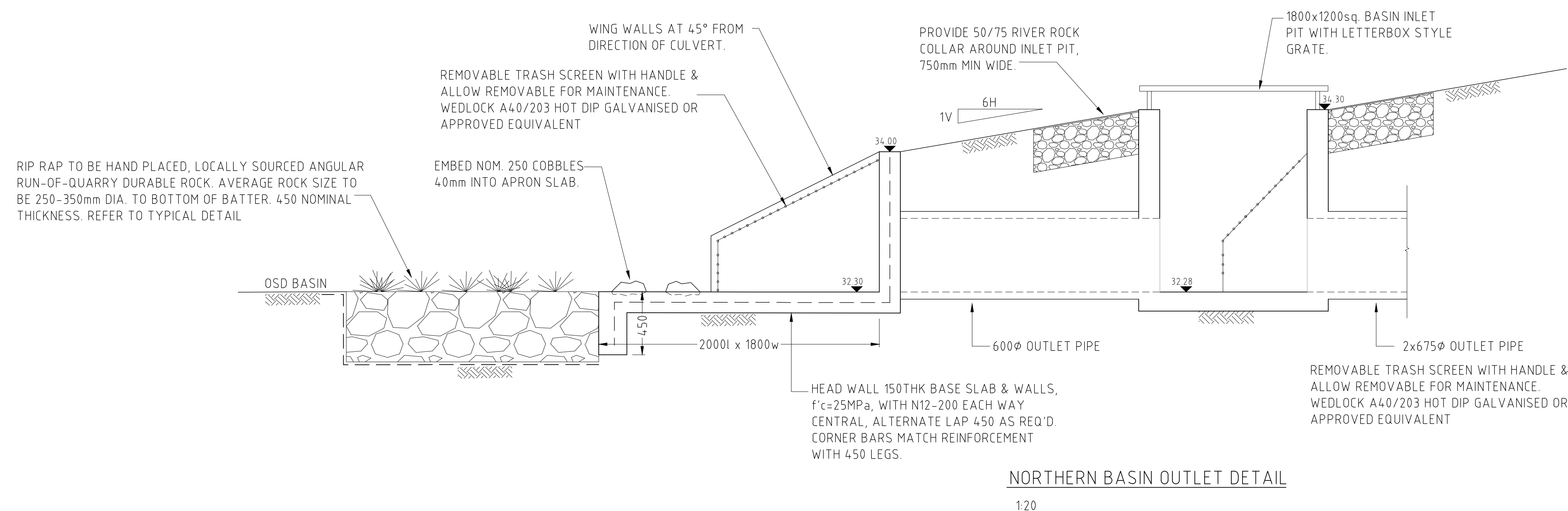
PROVIDE 100mm TOPSOIL AND TEMPORARY EROSION PROTECTION (JUTEMASTER OR EQUIV) TO SWALE BATTER SLOPES AND ADJACENT LANDSCAPED AREAS. NOTE THAT NO TOPSOIL IS TO BE PLACED OVER FILTRATION MEDIA. PROVIDE SILT FENCE TO TOP OF BANK UNTIL SUCH TIME AS THIS STABILISING AND VEGETATION HAS BEEN COMPLETED.

BIO-RETENTION TO BE PARTIALLY INSTALLED, FOLLOWING COMPLETION OF THE ROAD, 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:

CONSTITUENT	QUANTITY (kg/m ² 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
IMF	20

BIO-RETENTION BASIN TO BE IN ACCORDANCE WITH PENRITH CITY COUNCIL WSUD GUIDELINES



FOR DEVELOPMENT APPLICATION

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