PROPOSED INDUSTRIAL DEVELOPMENT
100 SOUTH CREEK ROAD, CROMER, NSW
CIVIL ENGINEERING DRAWINGS FOR DEVELOPMENT APPLICATION

DRAWING LIST

DRAWING NO.	DRAWING TITLE
C013674.01-DA10	DRAWING LIST & GENERAL NOTES
C013674.01-DA20	EROSION & SEDIMENT CONTROL PLAN
C013674.01-DA25	EROSION & SEDIMENT CONTROL DETAILS - SHEET 1
C013674.01-DA26	EROSION & SEDIMENT CONTROL DETAILS - SHEET 2
C013674.01-DA41	STORMWATER DRAINAGE PLAN - GROUND LEVEL
C013674.01-DA42	STORMWATER DRAINAGE PLAN - BASEMENT
C013674.01-DA45	STORMWATER DETAILS - SHEET 1
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C013674.01-DA51	FINISHED LEVELS PLAN - GROUND LEVEL
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C013674.01-DA70	OVERLAND FLOW CATCHMENT PLAN
C013674.01-DA71	PRE-DEVELOPMENT OVERLAND FLOW DEPTH & EXTENT
C013674.01-DA72	POST-DEVELOPMENT OVERLAND FLOW DEPTH & EXTENT

LOCALITY PLAN
NOT TO SCALE

GENERAL NOTES:

G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

G2 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.

G3 ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE.
ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL 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.

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.

SITE PREPARATION NOTES:

1. ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED IN THE GEOTECHNICAL REPORT.
2. EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY LTS LOCKLEY TITLED 50384001DT DATED 21/06/16.
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 C013003.01-EWC10)
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.

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 EXCEDE 1:20 (5%).
9. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H.
10. ALL BATTER SLOPE WITH GRADES AT OR EXCEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE ENGINEER.
11. THE ACCESS ROAD TO THE HARDSTAND AREA IS TO HAVE A CROSSFALL OF 2% AS INDICATED ON PLAN.
12. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL. GRADE.
13. ALL PAVEMENTS ARE TO BE SET AT 50mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS.

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.

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 DA51 & DA52.
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 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' 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.

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	D
REVISED AS CLOUDED	28.02.20	C
ISSUED FOR DEVELOPMENT APPLICATION	26.11.19	B
ISSUED FOR INFORMATION ONLY	01.11.19	A

ARCHITECT

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SYDNEY, NSW 2000

PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA10

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DRAWING TITLE
DRAWING LIST & GENERAL NOTES

DRAWING No C013674.01-DA10
ISSUE D

LEGEND:

- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE
- DENOTES DIVERSION DRAIN
- DENOTES DIRECTION OF OVERLAND FLOW

SEDIMENTATION BASIN NOTE:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C013674.01-C25 & C26.

SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'.
CAPACITY BASED UPON 5 DAY RAINFALL DEPTH AT 85th PERCENTILE INTENSITY (44.0mm).

APPROXIMATE AREA OF DISTURBED SITE = 4.45Ha

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.

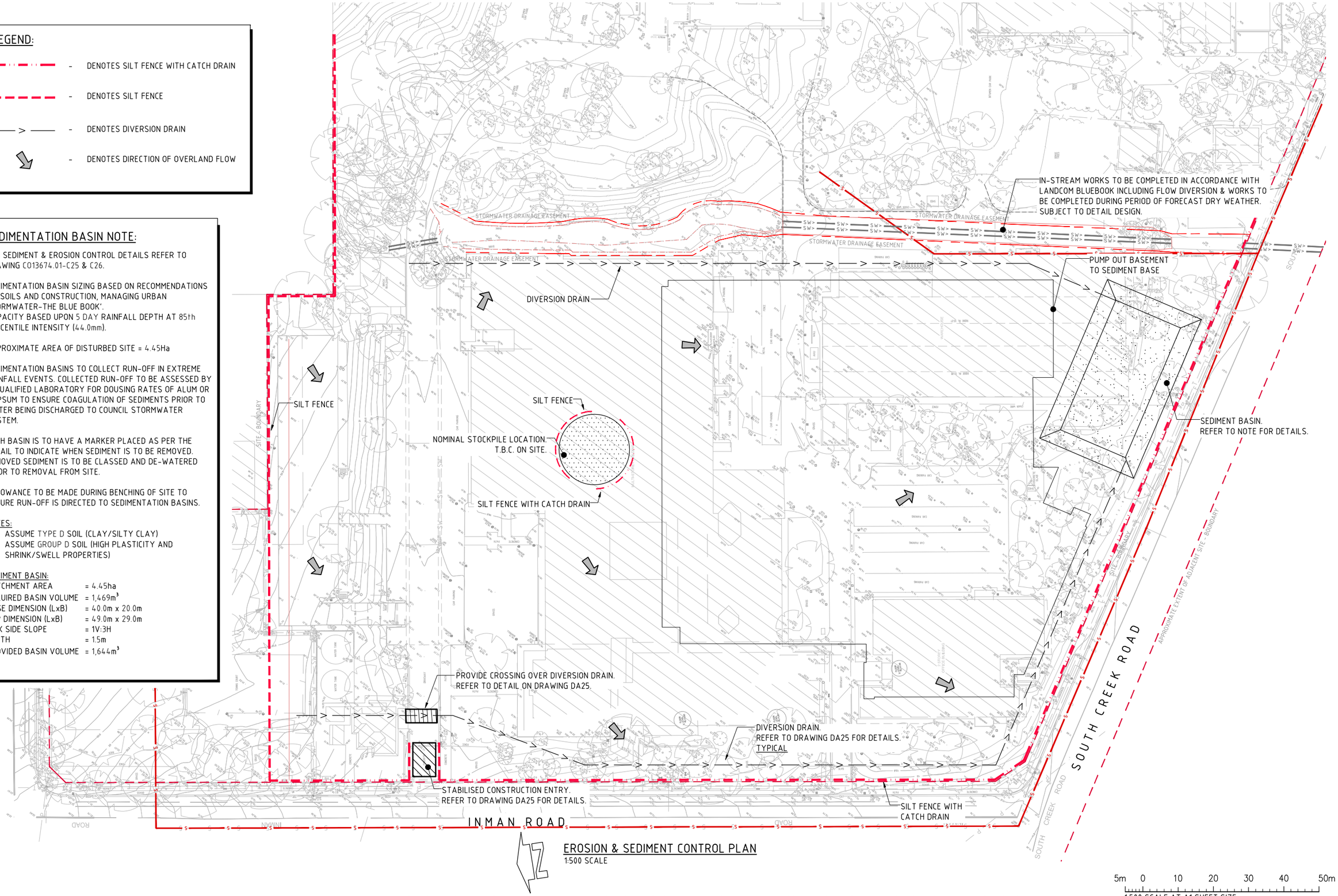
EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DE-WATERED PRIOR TO REMOVAL FROM SITE.

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)

SEDIMENT BASIN:

CATCHMENT AREA	= 4.45ha
REQUIRED BASIN VOLUME	= 1,469m³
BASE DIMENSION (LxB)	= 40.0m x 20.0m
TOP DIMENSION (LxB)	= 49.0m x 29.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 1,644m³



EROSION & SEDIMENT CONTROL PLAN
1:500 SCALE

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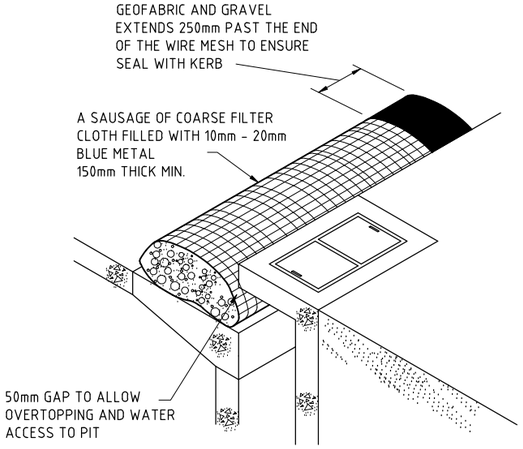
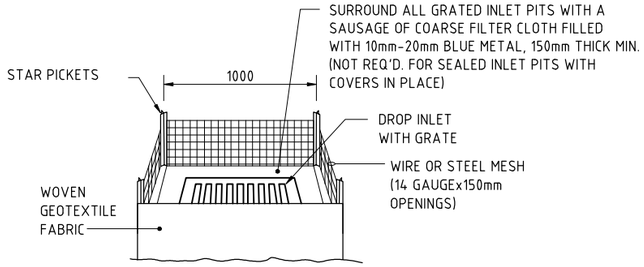
DRAWING TITLE
EROSION & SEDIMENT CONTROL PLAN

DRAWING No C013674.01-DA20

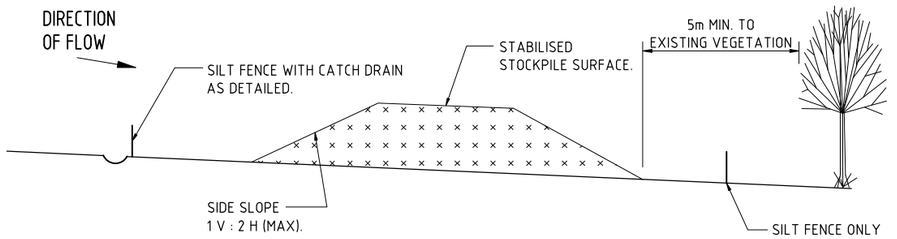
ISSUE C



KERB INLET PIT CONTROL
N.T.S



GRATED INLET PIT FILTER DETAIL
N.T.S



TYPICAL STOCKPILE DETAIL
N.T.S.

NOTE : ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.

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.

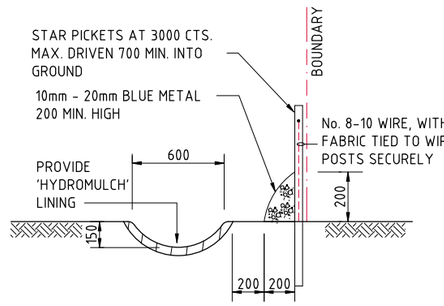
NOTES:
ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.

MINIMISE DISTURBED AREAS.

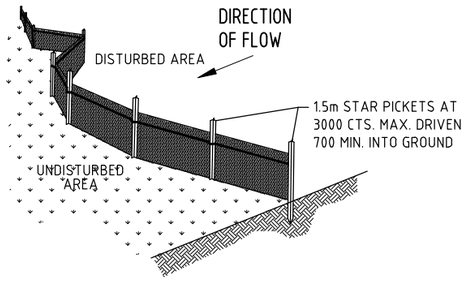
ROADS & FOOTPATHS TO BE SWEPT DAILY.

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.

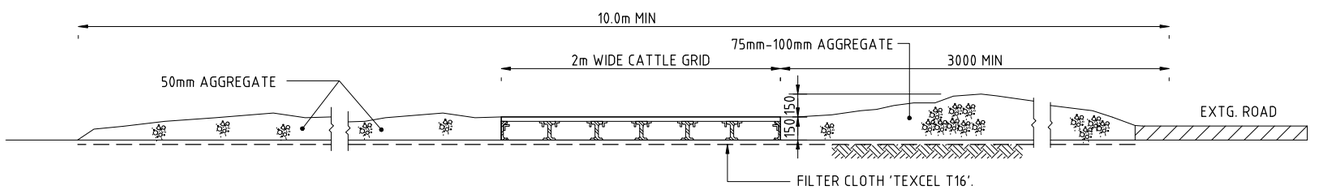


TYPICAL OPEN DRAIN & SILT FENCE
SCALE 1:20

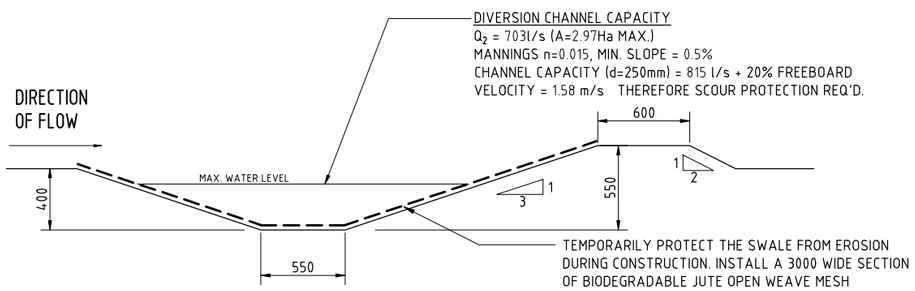


TYPICAL SILT FENCE DETAIL
N.T.S.

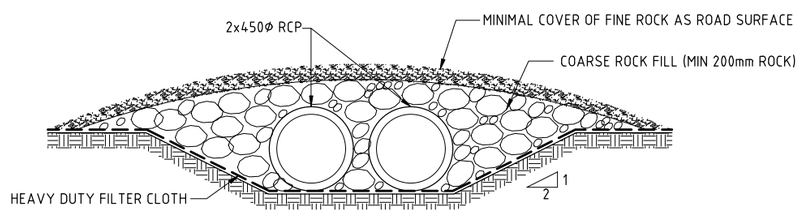
PROVIDE 1m RETURNS AT 30m INTERVALS.
TYPICAL



SECTION 1:20 (1 / DA20) : STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'



DIVERSION DRAIN SECTION
SCALE 1:20



TYPICAL CROSSING OVER DIVERSION CHANNEL
SCALE 1:20

200mm 0 500 1000 1500 2000mm

SCALE 1:20 AT A1 SHEET SIZE

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AMENDMENTS	DATE	ISSUE
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ISSUED FOR DEVELOPMENT APPLICATION	26.11.19	A

ARCHITECT

CLIENT
EG FUNDS MANAGEMENT
GOVERNOR PHILLIP TOWER
21/1 FARRER PLACE
SYDNEY, NSW 2000

PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA25

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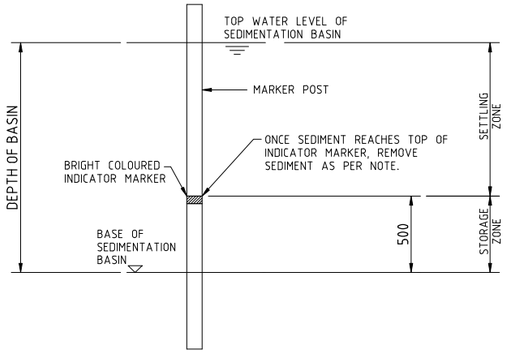
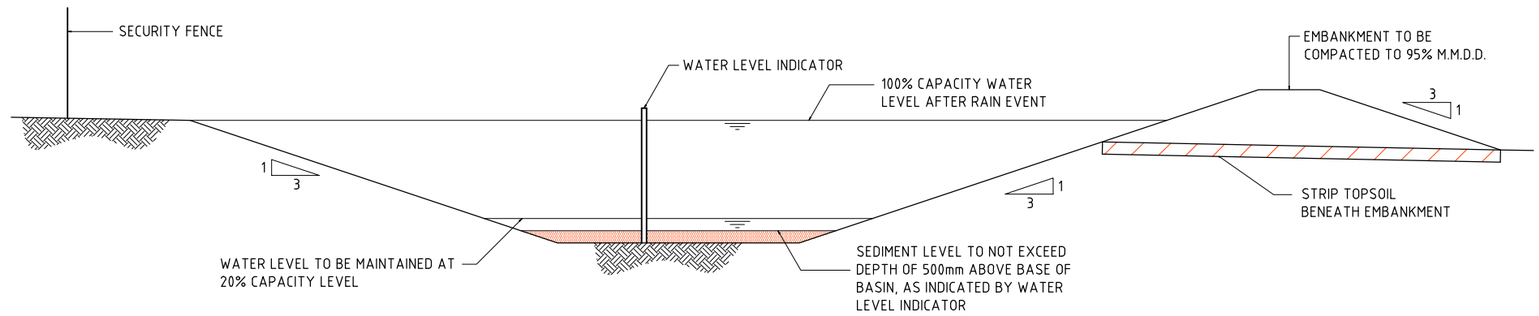
DRAWING TITLE
EROSION & SEDIMENT CONTROL
DETAILS - SHEET 1

DRAWING No C013674.01-DA25 ISSUE B



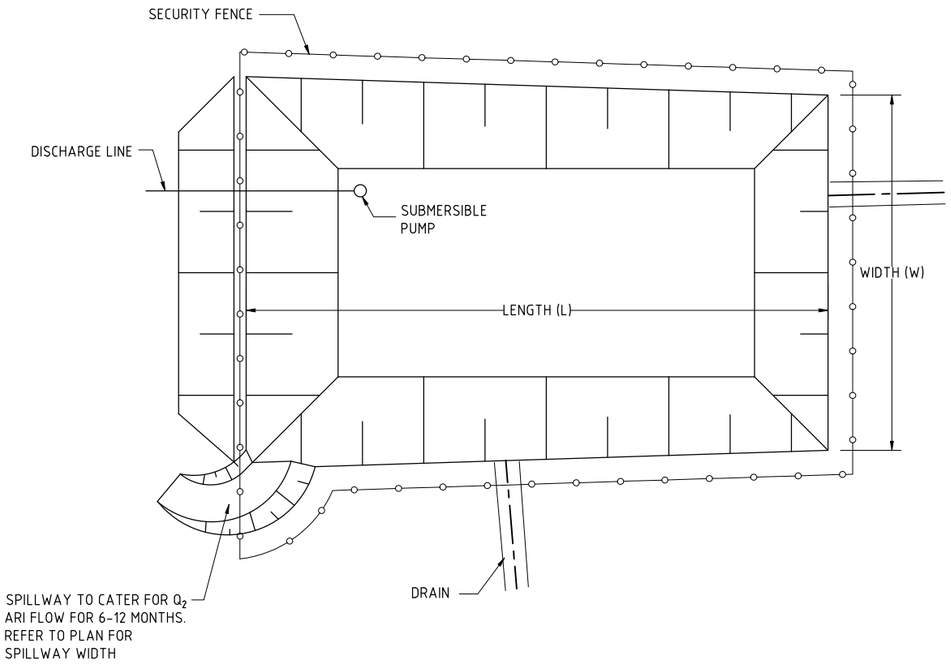
SEDIMENT STORAGE MARKER

SCALE 1:20



TYPICAL SEDIMENT CONTROL BASIN SECTION

SCALE 1:50



TYPICAL SEDIMENT CONTROL POND PLAN

SCALE 1:250

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A1 SHEET SIZE

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A1 SHEET SIZE

2m 0 5 10 15 20 25m
SCALE 1:250 AT A1 SHEET SIZE

FOR DEVELOPMENT APPLICATION

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PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

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DRAWING TITLE
EROSION & SEDIMENT CONTROL DETAILS - SHEET 2

DRAWING No C013674.01-DA26

ISSUE B

LEGEND:

LEVELS DATUM IS AHD.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GRATED DRAIN (300W × 200D U.N.O.)
- SW> DRAINAGE LINE
- RW> ROOFWATER LINE
- S EXISTING SEWER MAIN
- 50.00 FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

APPROXIMATE EXTENT OF EXISTING WATERWAY TO BE MAINTAINED

APPROXIMATE EXTENT OF EXISTING WATERWAY

LOCATION OF EXISTING CULVERT DISCHARGE INTO CHANNEL VIA 2×Ø600 PIPES AT I.L.16.27 & I.L.16.26 TO BE MAINTAINED

STORMWATER LINE EXPECTED TO PASS ABOVE EXISTING Ø225 SEWER. SEWER TO BE POT-HOLE SURVEYED TO CONFIRM CLEARANCE TO PROPOSED STORMWATER.

APPROXIMATE EXTENT OF WATERWAY TO BE REINSTATED. REMOVE EXISTING CULVERTS & PAVEMENT AND CONSTRUCT WATERWAY.

APPROXIMATE EXTENT OF EXISTING WATERWAY TO BE MAINTAINED

EXISTING HEADWALL AND 2×Ø825 PIPES AT I.L.13.58 & I.L.13.39 UNDER EXISTING DRIVEWAY TO BE DEMOLISHED

EXISTING HEADWALL AND 2×Ø825 PIPES AT I.L.11.57 & I.L.11.52 TO BE DEMOLISHED

RETAINING WALL 2

DISCHARGE TO REINSTATED CHANNEL AT I.L.10.85 APPROX. PROVIDE RIP-RAP AS PER DETAIL ON DRAWING DA48.

EXISTING HEADWALL AND 2×Ø900 PIPES AT I.L.10.67 TO BE PRESERVED

RETAINING WALL 3

PROPOSED BUILDING FFL 15.78

BASEMENT BELOW

STORMWATER PIPE TO CONTINUE IN BASEMENT IN-GROUND DRAINAGE SYSTEM.

PIPES SLUNG TO UNDERSIDE OF SLAB. FINAL CONFIGURATION TO BE COORDINATED WITH STRUCTURAL AND ARCHITECTURAL DURING DETAIL DESIGN.

PROVIDE DROPPER

PROVIDE DROPPER

PROPOSED BUILDING FFL 17.55

PROVIDE HAVESTOCK FLOOR DRAINS ALONG SUSPENDED SLAB. PIPES TO BE SLUNG UNDER SLAB AND CONTINUE INTO BASEMENT IN-GROUND DRAINAGE SYSTEM. REFER TO DRAWINGS DA42 & DA45 FOR DETAILS.

EXISTING BUILDING FFL 18.24

RETAINING WALL 1. REFER TO DRAWING DA51 FOR DETAILS. TYPICAL

STORMWATER MANAGEMENT BASIN
F.S.L. = 12.00m
OSD STORAGE = 1,325m³
FILTER MEDIA AREA = 663m²
MEDIA DEPTH = 500mm
EXTENDED DETENTION DEPTH = 300mm
BIO-RETENTION FILTRATION AREA EXCLUSIVE OF SCOUR PROTECTION, INLET STRUCTURES & OUTLET STRUCTURES.

STORMWATER PIPE FROM BASEMENT DRAINAGE TO CONTINUE INTO IN-GROUND DRAINAGE SYSTEM.

ORLANDO ROAD

SOUTH CREEK ROAD

INMAN ROAD

SITE BOUNDARY

APPROXIMATE EXTENT OF 100 YEAR ARI FLOOD

PIT C01 Ø450 US IL 15.65 DS IL 15.62 3.0m @ 1.0%
PIT C02 Ø450 US IL 15.59 DS IL 15.15 44.0m @ 1.0%
PIT C03 Ø450 US IL 15.12 DS IL 14.68 44.0m @ 1.0%
PIT C04 Ø450 US IL 13.10 DS IL 12.68 21.0m @ 2.0%
PIT C05
PIT D01 Ø525 US IL 12.65 DS IL 12.60 10.0m @ 0.5%
FD 01 Ø300 US IL 16.40 DS IL 16.30 19.0m @ 0.5%
FD 02 Ø300 US IL 16.40 DS IL 16.34 11.5m @ 0.5%
FD 03 Ø300 US IL 16.40 DS IL 16.25 28.5m @ 0.5%
PIT A01 Ø375 US IL 16.05 DS IL 15.93 22.5m @ 0.5%
PIT A02 Ø375 US IL 16.05 DS IL 16.00 10.0m @ 0.5%
PIT A03 Ø450 US IL 15.90 DS IL 15.78 22.5m @ 0.5%
PIT A04
PIT A05 Ø525 US IL 15.58 DS IL 15.53 10.0m @ 0.5%
PIT A06 Ø600 US IL 15.50 DS IL 15.30 40.0m @ 0.5%
PIT A07 Ø675 US IL 12.82 DS IL 12.65 33.0m @ 0.5%
Ø525 US IL 15.75 DS IL 15.61 34.0m @ 0.5%

STORMWATER DRAINAGE NOTES:

REFER TO DRAWING DA10 FOR STORMWATER DRAINAGE NOTES

STORMWATER PIT SCHEDULE:

REFER TO DRAWING DA42 FOR STORMWATER PIT SCHEDULE

STORMWATER DRAINAGE PLAN - GROUND FLOOR

1:500 SCALE

5m 0 10 20 30 40 50m
1:500 SCALE AT A1 SHEET SIZE

FOR DEVELOPMENT APPLICATION

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PROPOSED DEVELOPMENT
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CROMER, 2099, NEW SOUTH WALES

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DRAWING TITLE
STORMWATER DRAINAGE PLAN
GROUND FLOOR

DRAWING No C013674.01-DA41

ISSUE D

LEGEND:

LEVELS DATUM IS AHD.

- ⊟ – SGGP, SINGLE GRATED GULLY PIT
- ⊠ – SJP, SEALED JUNCTION PIT
- ▭▭▭ – GRATED DRAIN (300W × 200D U.N.O.)
- sw> – DRAINAGE LINE
- rw> – ROOFWATER LINE
- s – EXISTING SEWER MAIN

PIT SCHEDULE
NETWORK A

PIT No.	GRATE RL	TYPE	SIZE	COMMENT
PIT A 01	17.05	SGGP	900×900	⊕
PIT A 02	17.05	SGGP	900×900	⊕
PIT A 03	17.05	SGGP	900×900	⊕
PIT A 04	17.05	SGGP	900×900	⊕
PIT A 05	17.12	SJP	900×900	
PIT A 06	17.00	SGGP	900×900	⊕
PIT A 07	17.00	SGGP	900×900	⊕

NETWORK B

PIT No.	GRATE RL	TYPE	SIZE	COMMENT
PIT B 01	14.05	SGGP	900×900	⊕
PIT B 02	14.05	SGGP	900×900	⊕
PIT B 03	14.05	SGGP	900×900	⊕
PIT B 04	14.05	SGGP	900×900	⊕
PIT B 05	14.05	SGGP	900×900	⊕
PIT B 06	14.05	SGGP	900×900	⊕
PIT B 07	14.20	SJP	900×900	⊕
PIT B 08	13.85	SJP	900×900	⊕

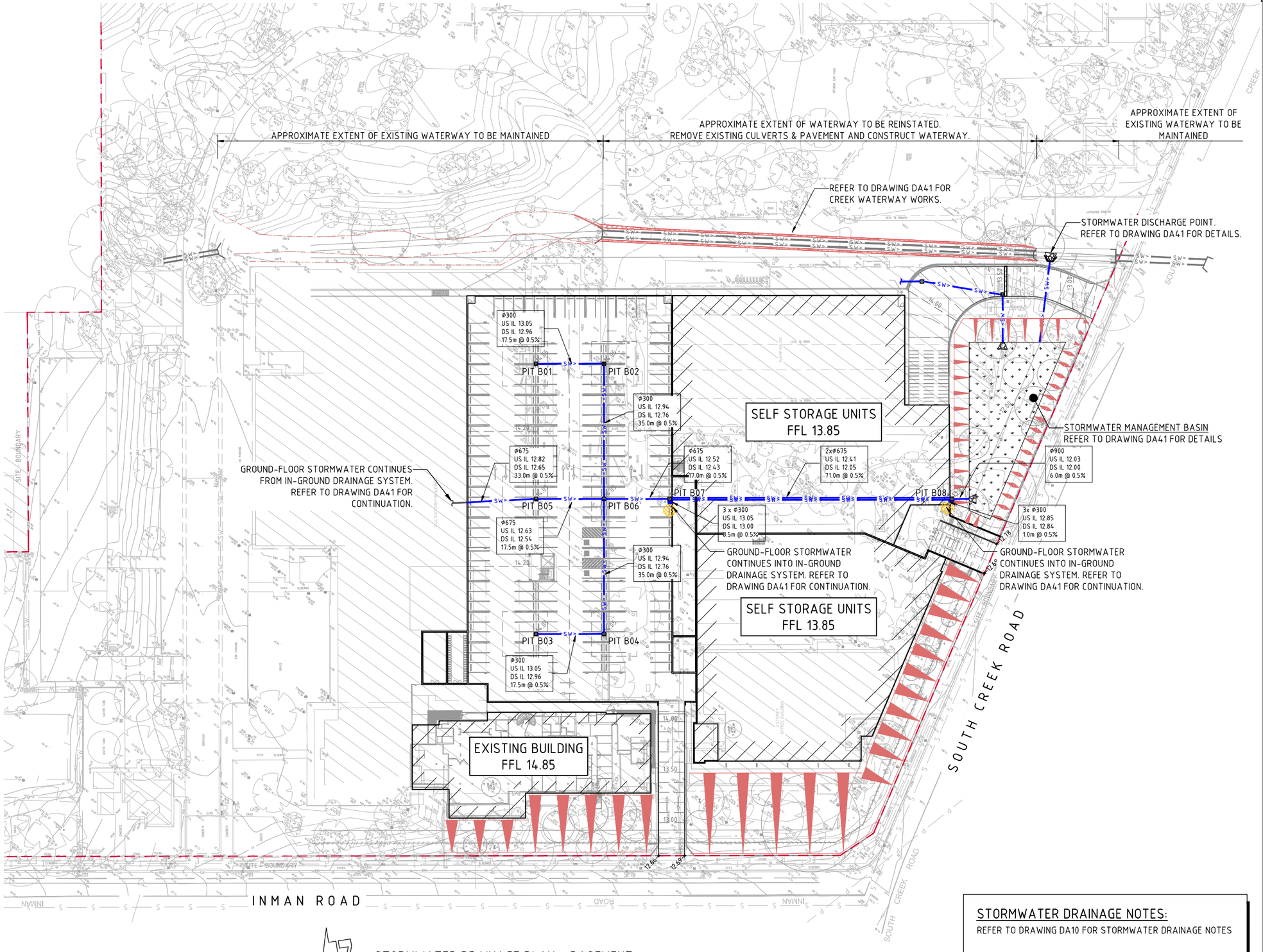
NETWORK C

PIT No.	GRATE RL	TYPE	SIZE	COMMENT
PIT C 01	17.25	SJP	900×900	
PIT C 02	17.00	SJP	900×900	
PIT C 03	15.00	SJP	900×900	
PIT C 04	13.92	SJP	900×900	
PIT C 05	13.50	SGGP	900×900	⊕

NETWORK D

PIT No.	GRATE RL	TYPE	SIZE	COMMENT
PIT D 01	12.45	BIP	1200×1200	

⊕ DENOTES PIT TO BE FITTED WITH OCEANGUARD OCEANPROTECT PIT INSERT



STORMWATER DRAINAGE PLAN - BASEMENT
1:500 SCALE

STORMWATER DRAINAGE NOTES:
REFER TO DRAWING DA10 FOR STORMWATER DRAINAGE NOTES

5m 0 10 20 30 40 50m
1:500 SCALE AT A1 SHEET SIZE

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CROMER, 2099, NEW SOUTH WALES

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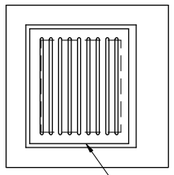
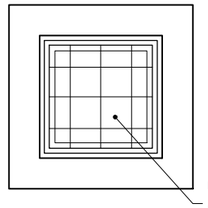
DRAWING TITLE
STORMWATER DRAINAGE PLAN BASEMENT

DRAWING No C013674.01-DA42

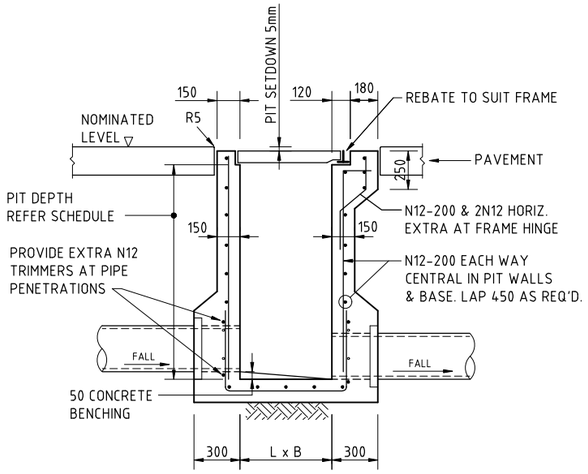
ISSUE C



PLAN
SCALE 1:20



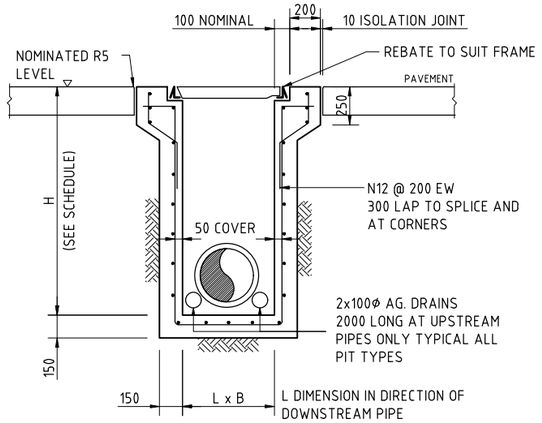
PLAN
1:20



SEE SCHEDULE
L DIMENSION IN DIRECTION OF DOWNSTREAM PIPE

SECTION
SCALE 1:20

SINGLE GRATED GULLY PIT - SGGP



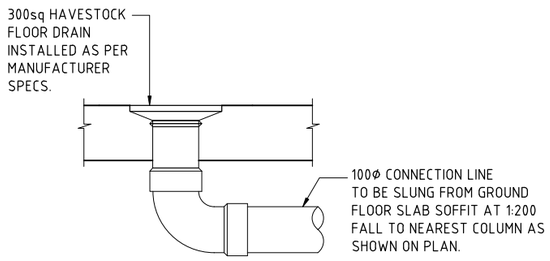
SECTION
SCALE 1:20

SEALED JUNCTION PIT - SJP

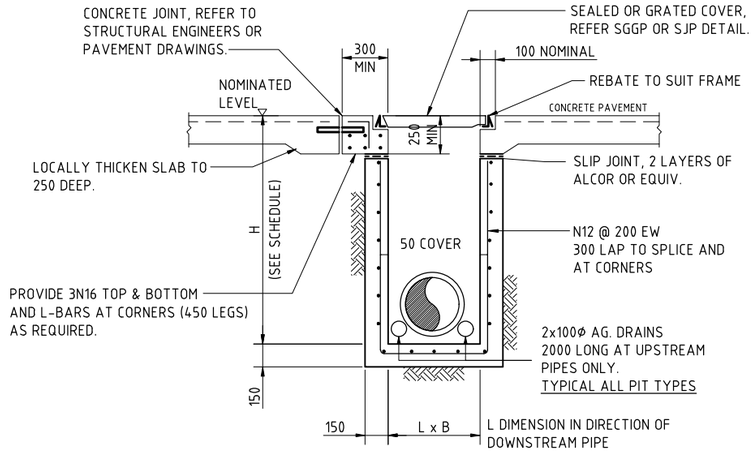
NOTES:

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 CLIMB RAILS SHALL BE PROVIDED.

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



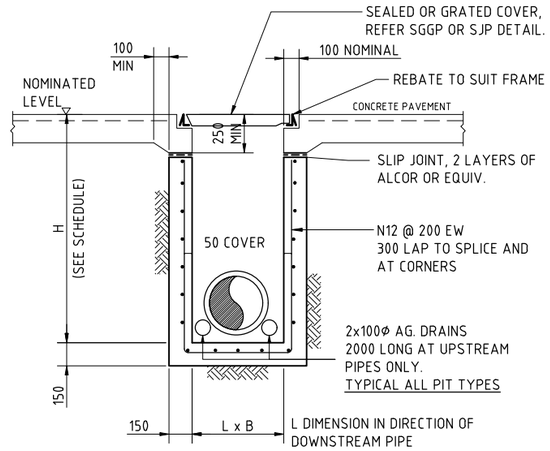
FLOOR DRAIN - FD
SCALE 1:10
(FOR USE IN SUSPENDED SLABS)



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)



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)

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A1 SIZE SHEET

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT A1 SIZE SHEET

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100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

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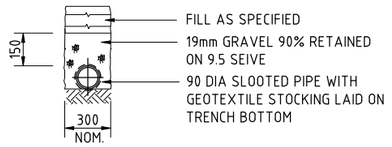
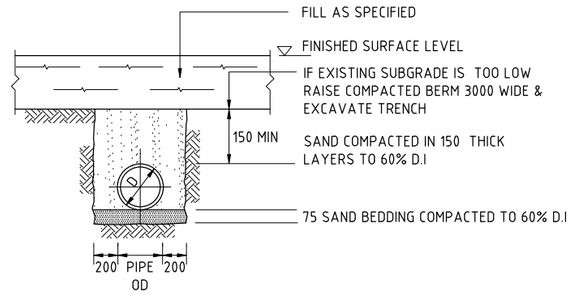
DRAWING TITLE
STORMWATER DRAINAGE DETAILS
SHEET 1

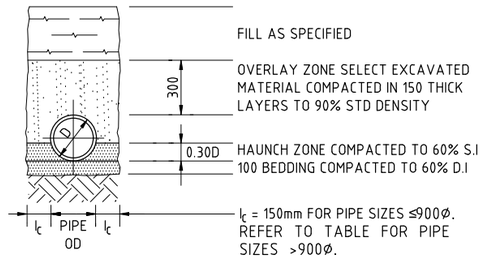
DRAWING No C013674.01-DA45
ISSUE C



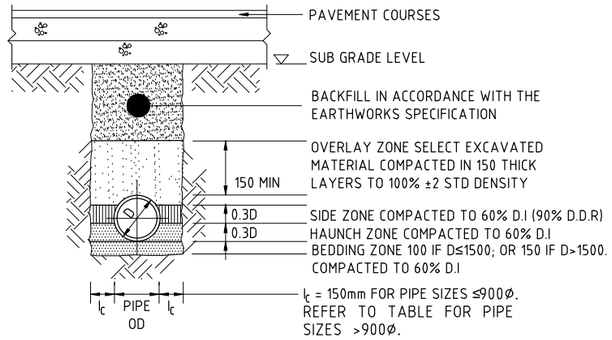
SUPPORT TO AG. DRAIN



SUPPORT TO uPVC PIPES



TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS



TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

D≤ 1350, MAX FILL = 4.0m
D> 1350, MAX FILL = 3.0m

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
19	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
75	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

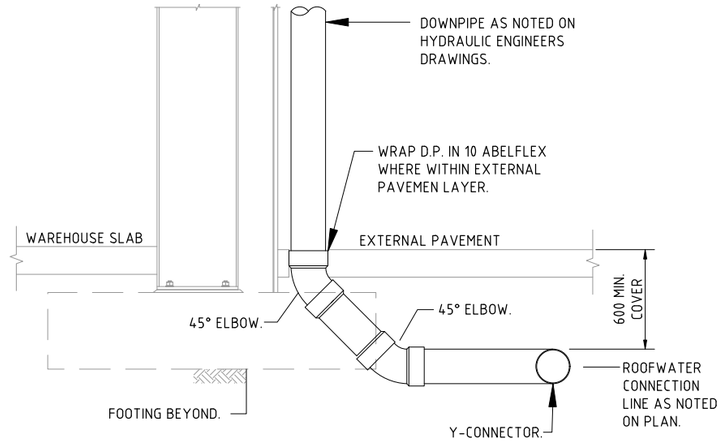
SELECT FILL MATERIAL IN ACCORDANCE WITH TABLE 1 AS 3725

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

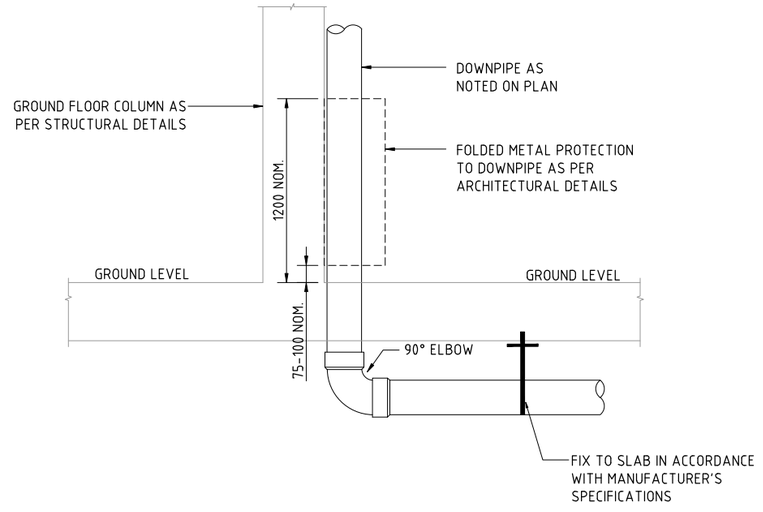
REFER TO ENGINEER FOR TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800ø

PIPE LAYING DETAILS

SCALE 1:20



DOWNPIPE TURN-UP DETAIL
(CLEAR OF FOOTING)
SCALE 1:20



DOWNPIPE TURN-UP DETAIL
(AT COLUMN LOCATION)
SCALE 1:20

200mm 0 500 1000 1500 2000mm

SCALE 1:20 AT A1 SIZE SHEET

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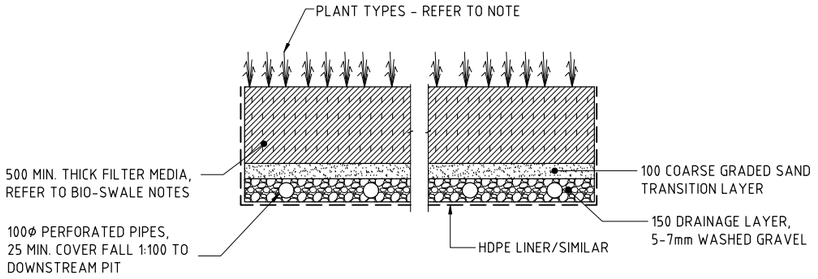
DRAWING TITLE
STORMWATER DRAINAGE DETAILS SHEET 2

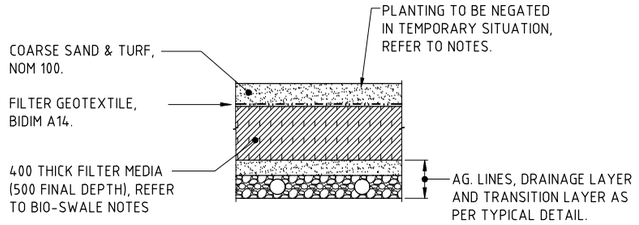
DRAWING No C013674.01-DA46

ISSUE C



TYPICAL BIO-RETENTION DETAIL

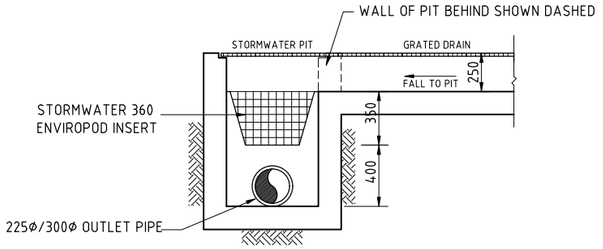
SCALE 1:20



TEMPORARY BIO-RETENTION PROTECTION DETAIL

SCALE 1:20

TEMPORARY CONSTRUCTION REQUIREMENT DETAIL - REFER TO NOTES FOR IMPLEMENTATION PERIODS.



GRATED DRAIN/STORMWATER PIT WITH ENVIROPOD CONFIGURATION

SCALE 1:20

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

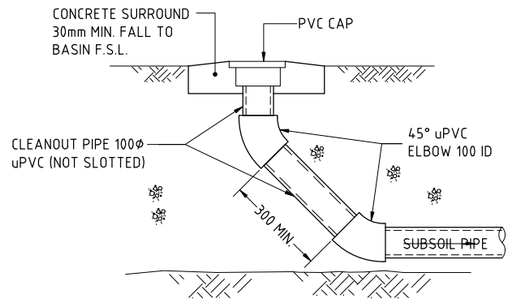
FILTER MEDIA TO BE ASSESSED BY QUALIFIED HORTICULTURALIST TO ENSURE CAPABILITY OF SUPPORTING PLANT LIFE.

DRAINAGE LAYER TO BE CLEAN GRAVEL 5-7mm.

PLANTS TO BE IN ACCORDANCE WITH NORTHERN BEACHES 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.

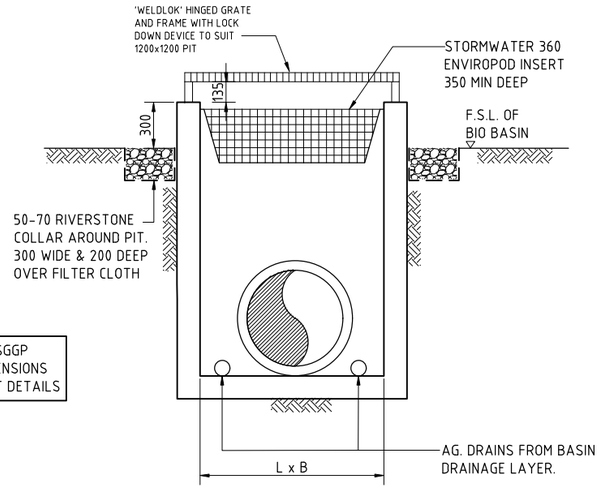
BIO-RETENTION TO BE PARTIALLY INSTALLED, FOLLOWING COMPLETION OF THE ROAD, WITH THE TOP 75-100mm OF FILTER MEDIA REPLACED WITH A FINE TO COARSE SAND UNDERLAIN WITH A GEOTEXTILE LAYER (REFER TO DETAIL). FOLLOWING COMPLETION OF THE UPSTREAM DEVELOPMENT AND SITE STABILISATION, THE SAND IS TO BE REMOVED,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



BIORETENTION CLEANOUT EYE ELEVATION

SCALE 1:20

DENOTED C.E. ON PLAN



REFER TO TYPICAL SGGP DETAIL FOR PIT DIMENSIONS AND REINFORCEMENT DETAILS

SECTION

SCALE 1:20

BASIN INLET PIT - BIP

BIO-RETENTION BASIN DETAILS

SCALE 1:20

FOR DEVELOPMENT APPLICATION

200mm 0 500 1000 1500 2000mm

SCALE 1:20 AT A1 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	C
ISSUED FOR DEVELOPMENT APPLICATION	26.11.19	B
ISSUED FOR INFORMATION ONLY	01.11.19	A

ARCHITECT

CLIENT
EG FUNDS MANAGEMENT
GOVERNOR PHILLIP TOWER
21/1 FARRER PLACE
SYDNEY, NSW 2000

PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA47

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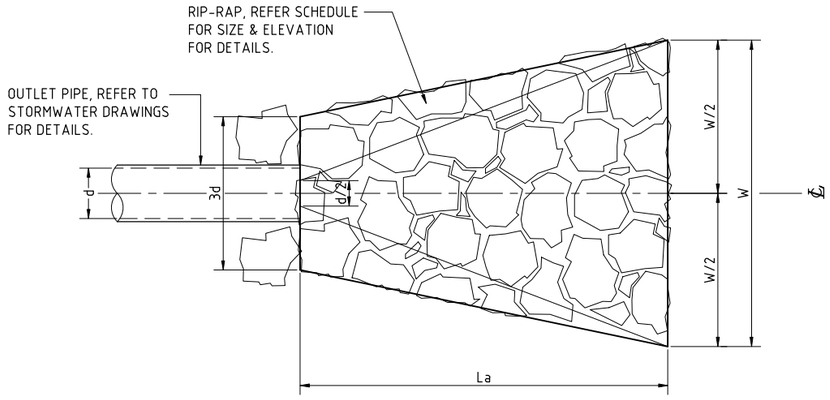
DRAWING TITLE
STORMWATER DRAINAGE DETAILS SHEET 3

DRAWING No C013674.01-DA47

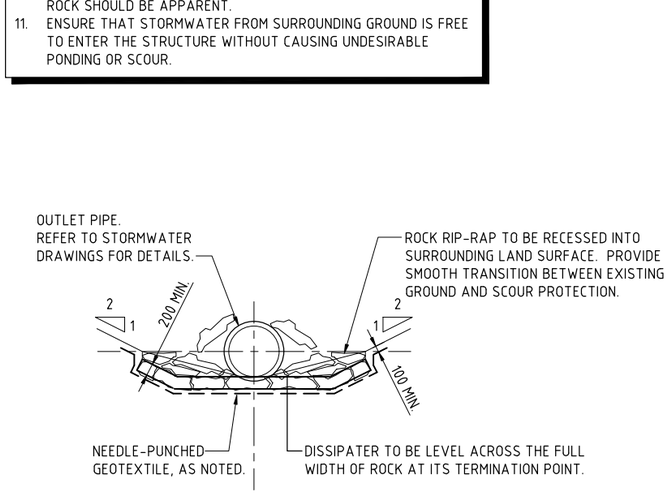
ISSUE C

DISSIPATER NOTES :

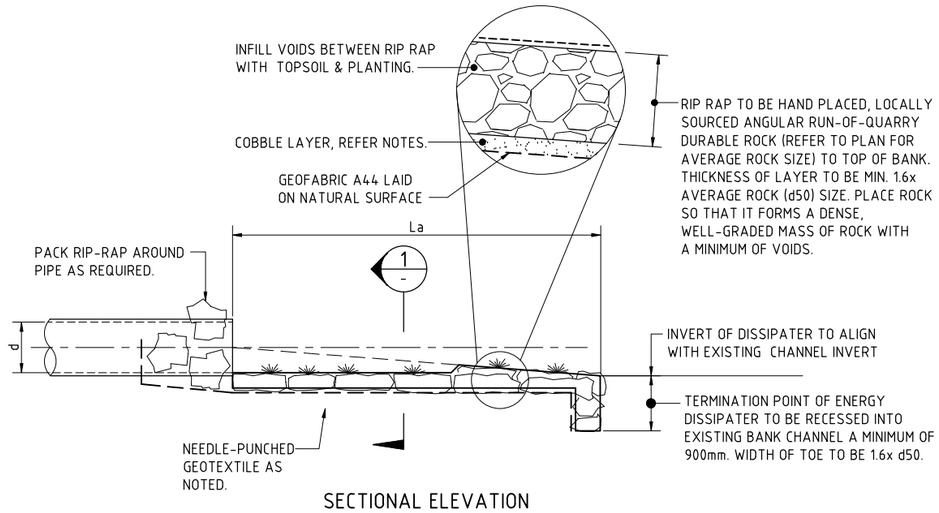
1. ALIGN STRUCTURE EVENLY WITH BANK.
2. LOCATE STRUCTURE AT INVERT LEVEL OF STREAM AND POINT IN A DOWNSTREAM DIRECTION.
3. PIPE TO REST ON, AND BE PACKED IN, BY RIP-RAP (SIZE AS NOTED).
4. DISCHARGE INTO STREAM WHERE BEDROCK IS PRESENT, OTHERWISE SCOUR PROTECT AS REQUIRED.
5. SCOUR PROTECT THE OPPOSITE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



PLAN



SECTION 1:50 (1/-)



SECTIONAL ELEVATION

STORMWATER OUTLET DISSIPATER

SCALE 1:50

500mm 0 1 2 3 4 5m

SCALE 1:50 AT A1 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	B
ISSUED FOR DEVELOPMENT APPLICATION	26.11.19	A

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PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA48

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DRAWING TITLE
STORMWATER DRAINAGE DETAILS SHEET 4

DRAWING No C013674.01-DA48

ISSUE B

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LTS LOCKLEY SURVEYORS TITLED 05384 001DT DATED 21/06/2018.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GRATED DRAIN (300W × 200D U.N.O.)
- EXISTING SEWER MAIN
- 50.00 FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

APPROXIMATE EXTENT OF EXISTING WATERWAY TO BE MAINTAINED

APPROXIMATE EXTENT OF WATERWAY TO BE REINSTATED. REMOVE EXISTING CULVERTS & PAVEMENT AND CONSTRUCT WATERWAY.

APPROXIMATE EXTENT OF EXISTING WATERWAY TO BE MAINTAINED

APPROXIMATE EXTENT OF EXISTING WATERWAY

PROVIDE BATTERS TO TOP EXISTING WATERWAY

RETAINING WALL 2
HEIGHT = 4.2m MAX.
LENGTH = 76m APPROX.

STORMWATER DRAINAGE EASEMENT

END OF WALL 1

START OF WALL 2

START OF WALL 3

END OF WALL 2

END OF WALL 3

PROPOSED BUILDING
FFL 15.78

BASEMENT BELOW

PROVIDE MAX. 1V:3H BATTER TO TOP OF WALL WITH BERMS AT TOP & BOTTOM

RETAINING WALL 3
HEIGHT = 1.5 MAX.
LENGTH = 74m APPROX.

STORMWATER MANAGEMENT BASIN
REFER TO DRAWING DA41 FOR DETAILS

RETAINING WALL 1
HEIGHT = 6.0m MAX.
LENGTH = 170m APPROX.
REINFORCED EARTH WALL.

PROPOSED BUILDING
FFL 17.55

RETAINING WALL 4
REFER TO DRAWING DA52 FOR DETAILS

EXISTING BUILDING
FFL 18.24

START OF WALL 1

PROVIDE MAX. 1V:3H BATTERS WITH BERMS AT TOP & BOTTOM. TYPICAL

ORLANDO ROAD

INMAN ROAD

SOUTH CREEK ROAD

SITE BOUNDARY

ADJACENT SITE BOUNDARY

APPROXIMATE

3 DA55 · 2 DA55 · 1 DA55 · 7 DA57 · 3 DA56 · 4 DA56

FINISHED LEVELS PLAN - GROUND FLOOR
1:500 SCALE

5m 0 10 20 30 40 50m
1:500 SCALE AT A1 SCALE

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	D
ISSUED FOR DEVELOPMENT APPLICATION	28.02.20	C
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PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA51

CONSULT AUSTRALIA

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DRAWING TITLE
FINISHED LEVELS PLAN
GROUND FLOOR

DRAWING No C013674.01-DA51

ISSUE D

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LTS LOCKLEY SURVEYORS TITLED 05384 001DT DATED 21/06/2018.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GRATED DRAIN (300W × 200D U.N.O.)
- EXISTING SEWER MAIN
- 50.00 – FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 – FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

SELF STORAGE UNITS
FFL 13.85

STORMWATER MANAGEMENT BASIN
REFER TO DRAWING DA41 FOR DETAILS

RETAINING WALL 5
HEIGHT = 1.0m MAX.
LENGTH = 21m APPROX.

END OF WALL 4

RETAINING WALL 4
HEIGHT = 1.0m MAX.
LENGTH = 21m APPROX.

START OF WALL 4

5
DA56

SELF STORAGE UNITS
FFL 13.85

EXISTING BUILDING
FFL 14.85

PROVIDE MAX. 1V:3H BATTERS WITH BERMS AT TOP & BOTTOM.
TYPICAL

ORLANDO ROAD

INMAN ROAD

SOUTH CREEK ROAD

SITE BOUNDARY

CREEK

SOUTH

FINISHED LEVELS PLAN - BASEMENT

1:500 SCALE

6
DA57

5m 0 10 20 30 40 50m
1:500 SCALE AT A1 SCALE

FOR DEVELOPMENT APPLICATION

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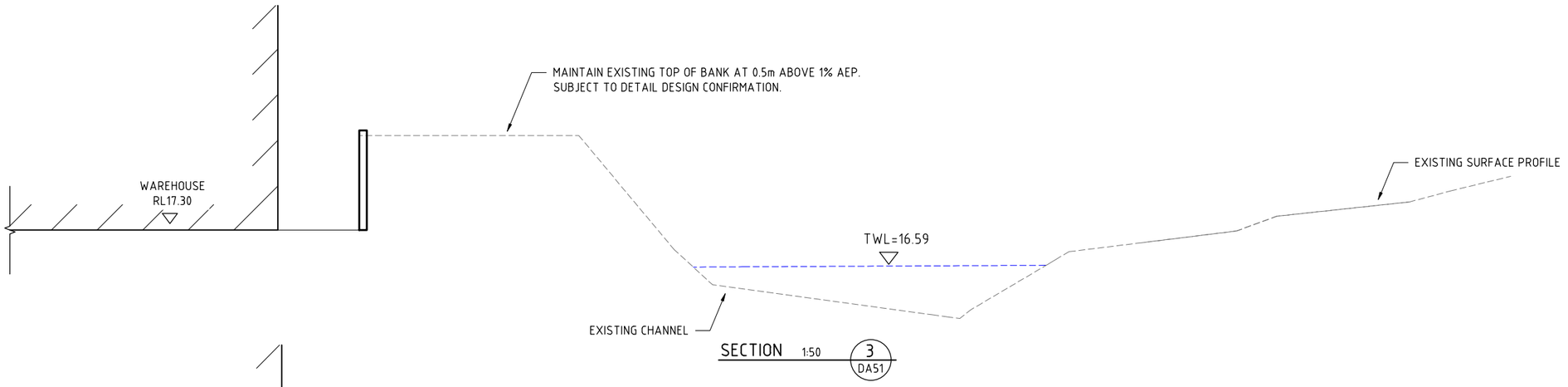
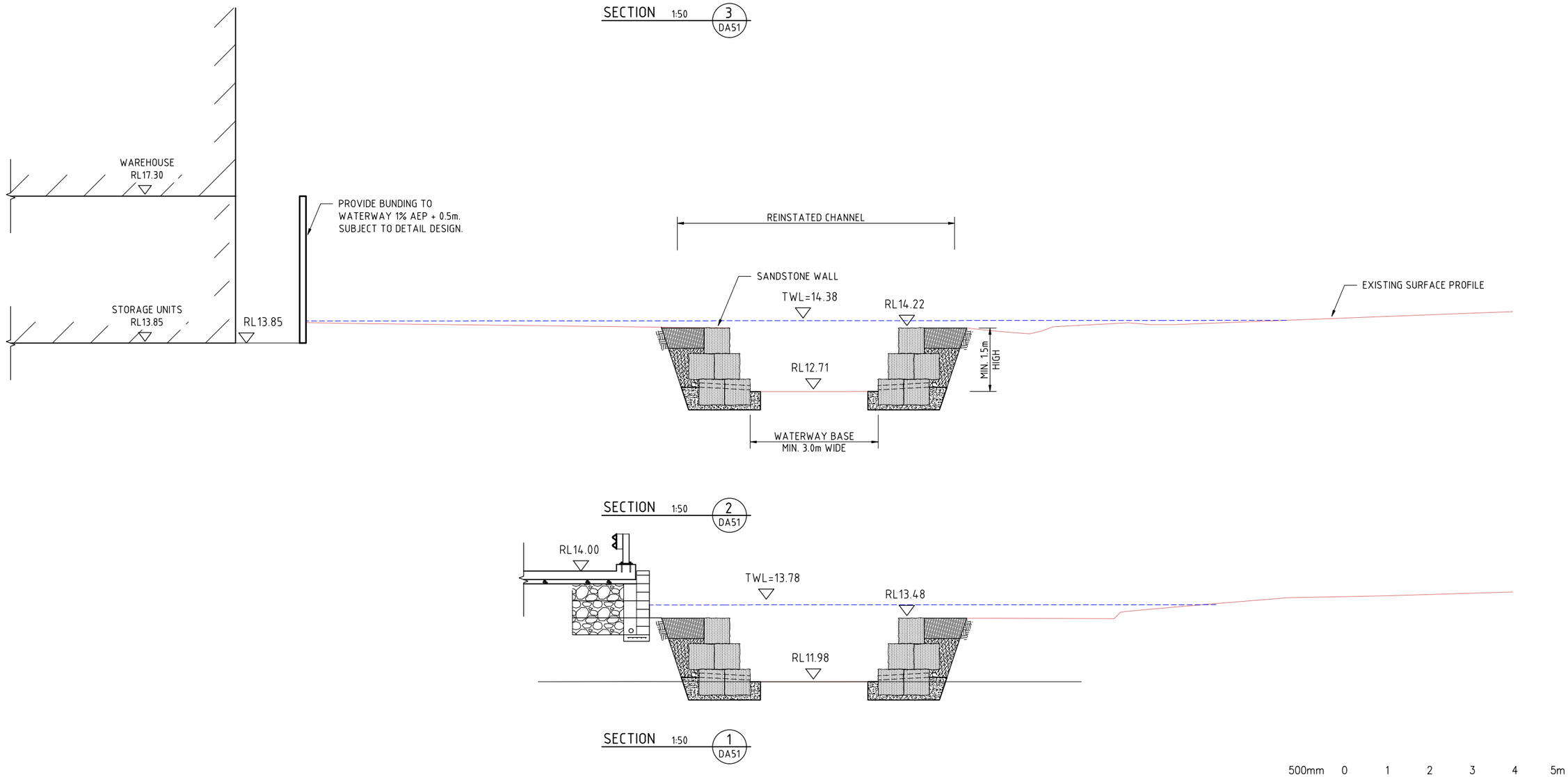
DRAWING TITLE
FINISHED LEVELS PLAN
BASEMENT

DRAWING No C013674.01-DA52

ISSUE C





500mm 0 1 2 3 4 5m
1:50 SCALE AT A1 SCALE

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
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PROPOSED DEVELOPMENT
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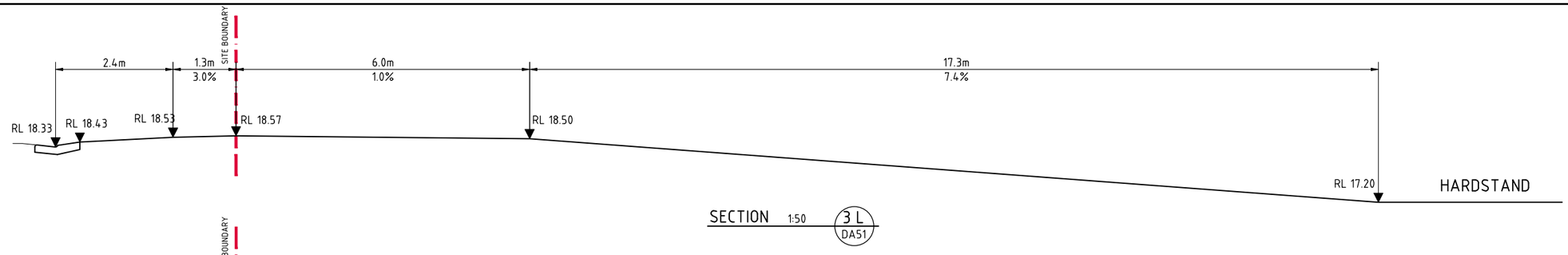
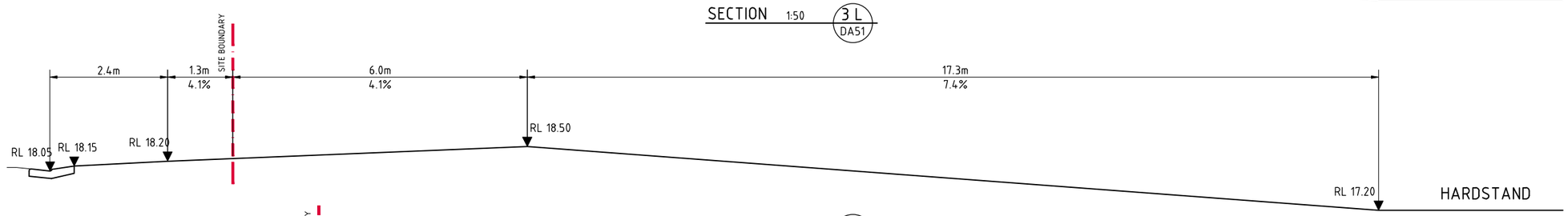
DRAWING TITLE
TYPICAL SECTIONS
SHEET 1

DRAWING No C013674.01-DA55

ISSUE C



SECTION 1:50 3 L DA51



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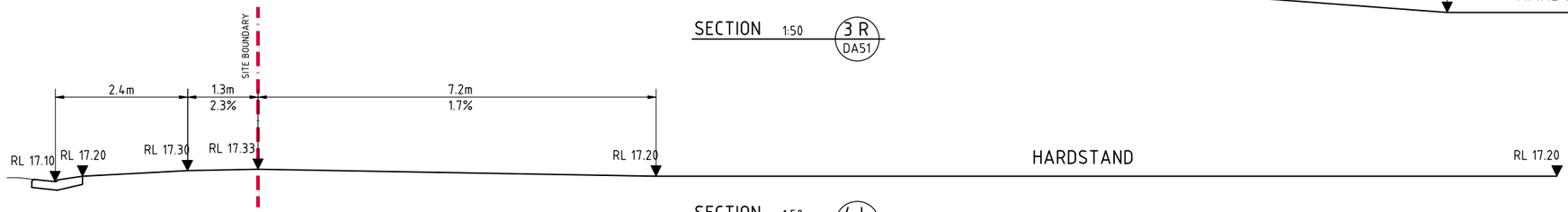

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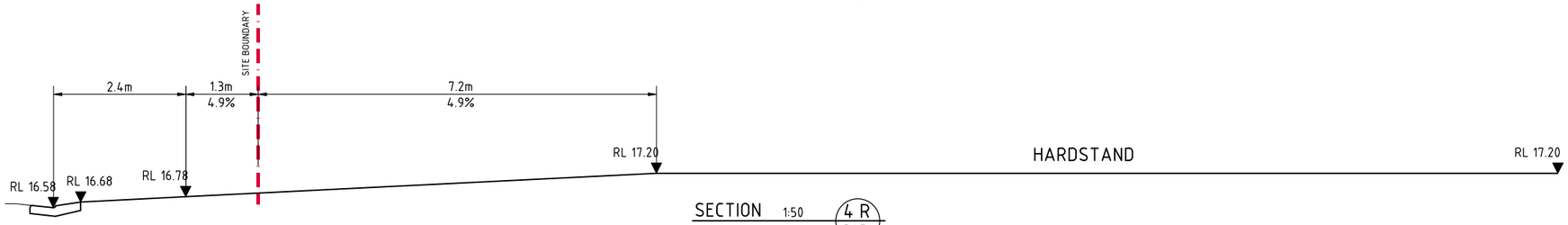

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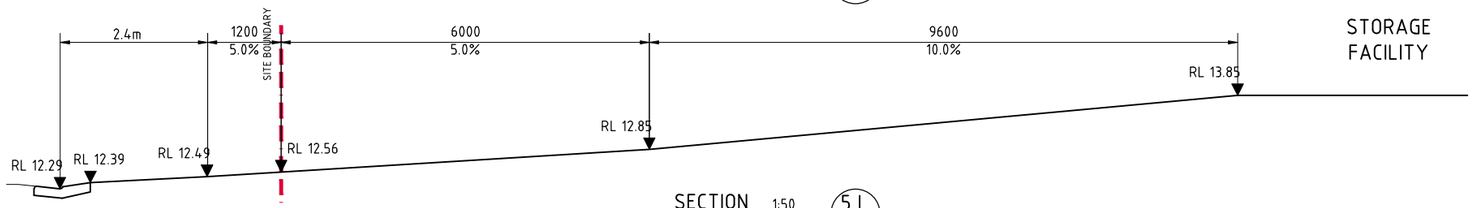

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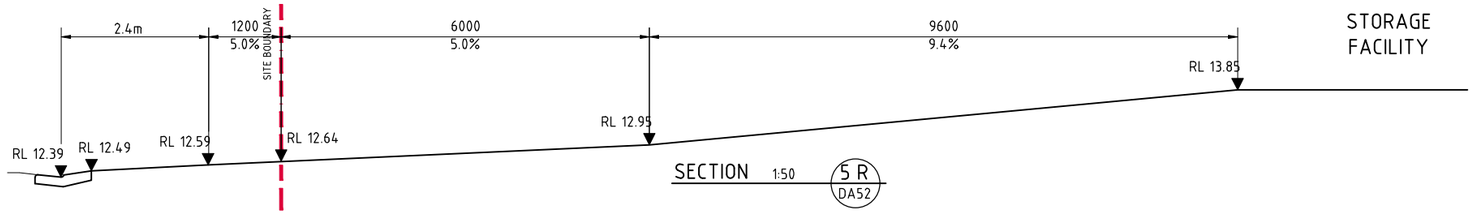

SECTION 1:50 5 R DA52

ACCESS NOTE:

VEHICULAR CROSSING TO BE IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL NORMAL STANDARD VEHICLE CROSSING PROFILE.

500mm 0 1 2 3 4 5m
1:50 SCALE AT A1 SCALE

FOR DEVELOPMENT APPLICATION

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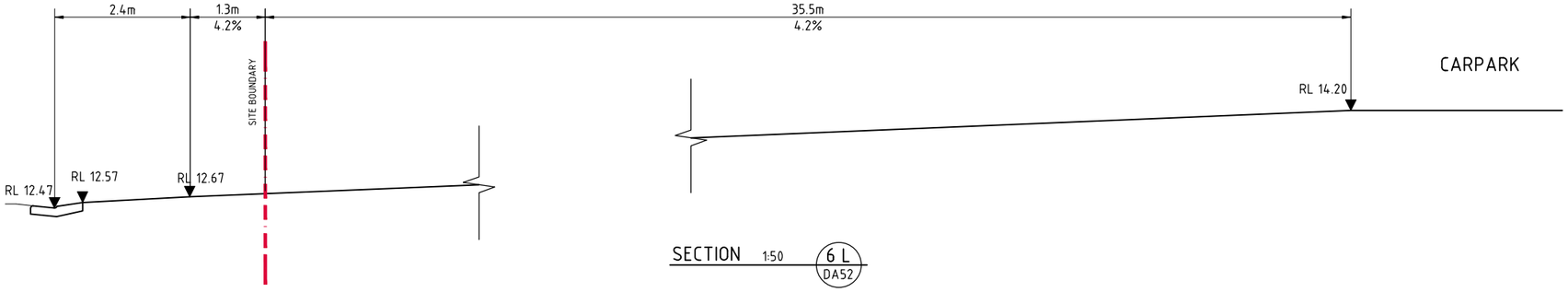
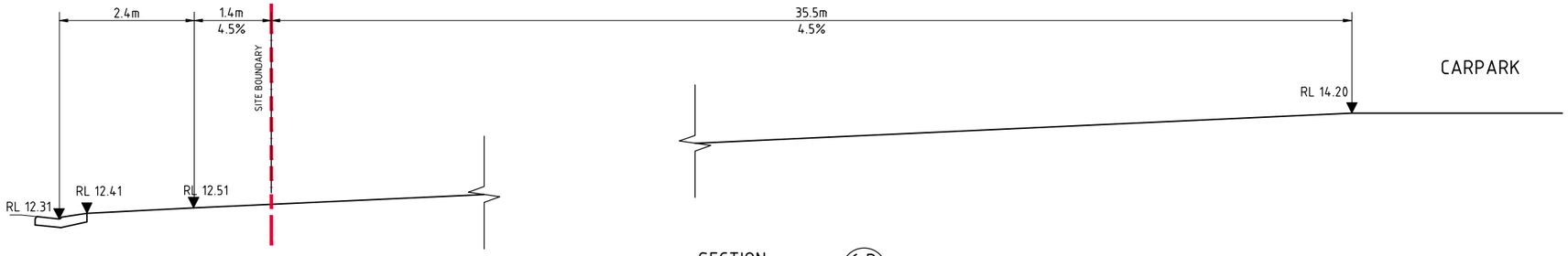
DRAWING TITLE
TYPICAL SECTIONS
SHEET 2

DRAWING No C013674.01-DA56

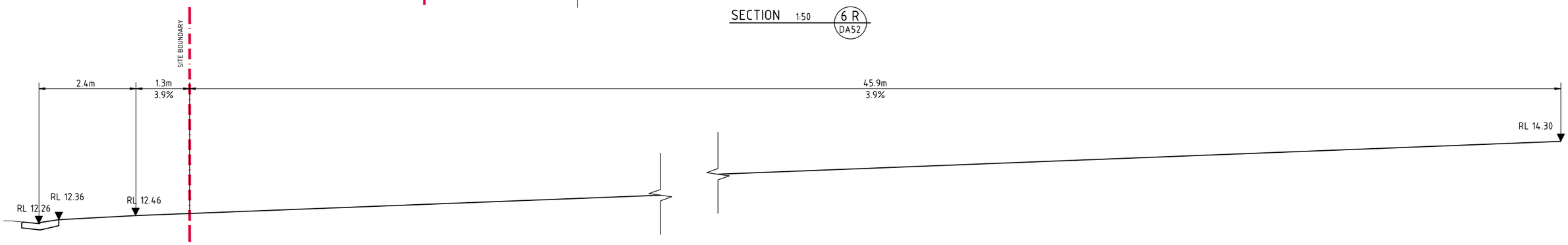
ISSUE B



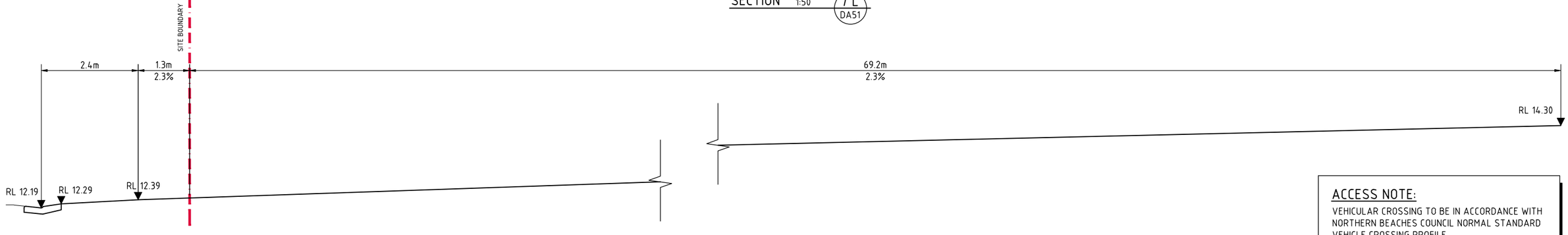
SECTION 1:50 — 6 L / DA52



SECTION 1:50 — 6 R / DA52



SECTION 1:50 — 7 L / DA51



SECTION 1:50 — 7 R / DA51

ACCESS NOTE:

VEHICULAR CROSSING TO BE IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL NORMAL STANDARD VEHICLE CROSSING PROFILE.

500mm 0 1 2 3 4 5m
1:50 SCALE AT A1 SCALE

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
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PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA57

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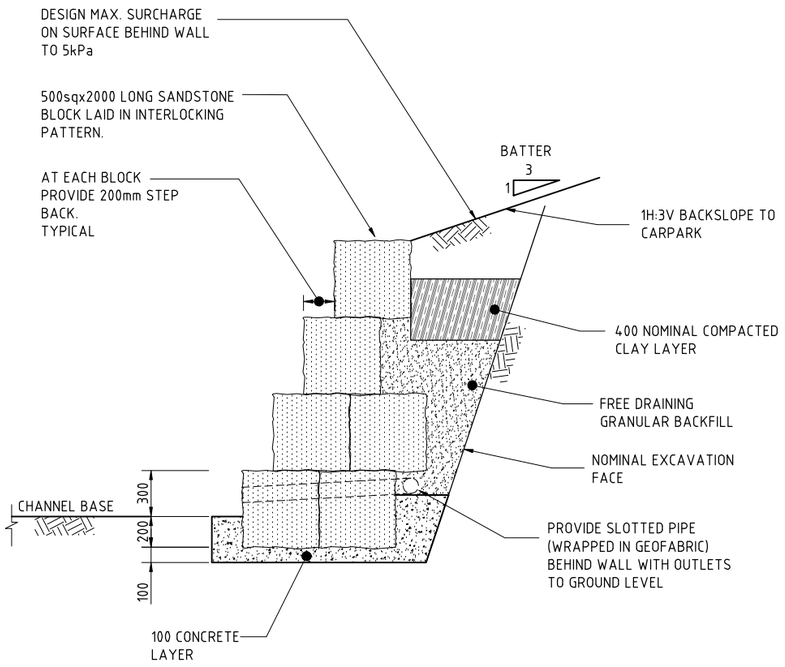
DRAWING TITLE
TYPICAL SECTIONS
SHEET 3

DRAWING No C013674.01-DA57 ISSUE B



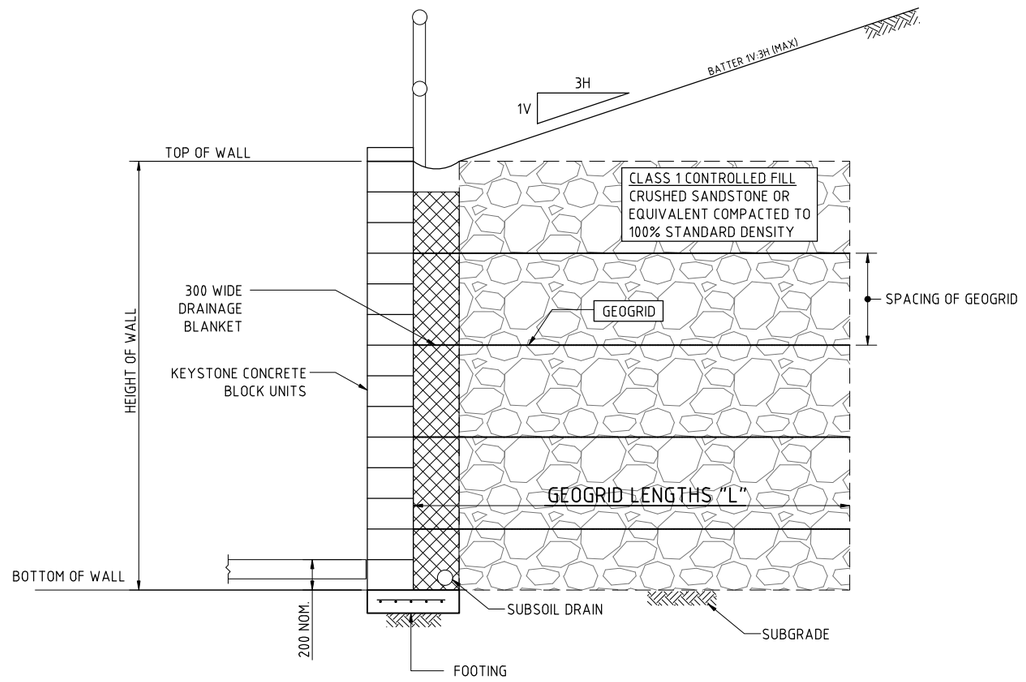
SANDSTONE WALL DETAIL

SCALE 1:20

NOTE:

BASED ON 500x500x2000 LONG STANDARD CUT SANDSTONE BLOCKS LAID IN INTERLOCKING BRICK PATTERN:

- FIRST TWO COURSES TO BE 2xSANDSTONE BLOCKS IN 100 MASS CONCRETE BEDDING.
- THIRD & FOURTH COURSE TO BE 1 SANDSTONE BLOCK.
- STEP EACH SUCCESSIVE COURSES 200mm BACK



REINFORCED EARTH RETAINING WALL

SCALE 1:20

WALL HEIGHT "H"	GEOGRID LENGTH "L"	GEOGRID TYPE
2300	2600	GX50/30
3300	3500	GX50/30
4300	4700	GX50/30
5300	5800	GX50/30
6400	6900	GX50/30
7400	7600	GX50/30

NOTE :
INDICATIVE DETAIL ONLY. DESIGN TO BE CONFIRMED / PROVIDED BY D+C CONTRACTOR.

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.

200mm 0 500 1000 1500 2000mm

SCALE 1:20 AT A1 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	B
ISSUED FOR DEVELOPMENT APPLICATION	26.11.19	A

ARCHITECT

CLIENT
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SYDNEY, NSW 2000

PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA65

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DRAWING TITLE
RETAINING WALL DETAILS

DRAWING No C013674.01-DA65

ISSUE B

OVERLAND FLOW CATCHMENT PLAN
1:2500 SCALE

NOTE:
DRAWINGS TO BE READ IN CONJUNCTION WITH OVERLAND FLOW REPORT C013674.01-02.rpt & CIVIL ENGINEERING REPORT FOR DEVELOPMENT APPLICATION C013674.01-01.rpt.

20m 0 50 100 150 200 250m
1:2500 SCALE AT A1 SHEET SIZE

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	B
ISSUED FOR DEVELOPMENT APPLICATION	28.02.20	A

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PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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DRAWING TITLE
OVERLAND FLOW CATCHMENT PLAN

DRAWING No C013674.01-DA70 ISSUE B

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LTS LOCKLEY SURVEYORS TITLED 05384 001DT DATED 21/06/2018.

- 15.00 – OVERLAND FLOW LEVEL CONTOUR (MAJOR) 0.5m INTERVALS
- 15.10 – OVERLAND FLOW LEVEL CONTOUR (MINOR) 0.1m INTERVALS
- 15.50 – EXISTING LEVEL CONTOUR 0.5m INTERVALS
- 15.00 – EXISTING LEVEL SPOT HEIGHT
- 1% AEP FLOOD EXTENT & LEVELS

MODELED FLOW ENTRY POINT Q=8.52m³/s

EXISTING BUILDING FFL 21.23

EXISTING BUILDING FFL 19.16

EXISTING BUILDING FFL 14.60

EXISTING HEADWALL AND 2×Ø825 PIPES AT I.L.13.58 & I.L.13.39 UNDER EXISTING DRIVEWAY TO BE DEMOLISHED

EXISTING BUILDING FFL 14.45

EXISTING HEADWALL AND 2×Ø825 PIPES AT I.L.11.57 & I.L.11.52 TO BE DEMOLISHED

EXISTING SANDSTONE WALL

MODELED FLOW ENTRY POINT Q=2.21m³/s

EXISTING HEADWALL AND 2×Ø900 PIPES AT I.L.10.67 TO BE PRESERVED

SITE - BOUNDARY

ORLANDO ROAD

INMAN ROAD

SOUTH CREEK ROAD

APPROXIMATE EXTENT OF ADJACENT SITE - BOUNDARY

PRE-DEVELOPMENT OVERLAND FLOW DEPTH & EXTENT

1:500 SCALE

NOTES:

- DRAWINGS TO BE READ IN CONJUNCTION WITH OVERLAND FLOW REPORT C013674.01-02.rpt & CIVIL ENGINEERING REPORT FOR DEVELOPMENT APPLICATION C013674.01-01.rpt.
- FLOOD EXTENT REFLECTS 1% AEP DESIGN EVENT AT PEAK FLOW RATE.

5m 0 10 20 30 40 50m

1:500 SCALE AT A1 SHEET SIZE

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	B
ISSUED FOR DEVELOPMENT APPLICATION	28.02.20	A

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PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
TW	TW	OCT 2019	MW	A1	AS SHOWN	C013674.01-DA71

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PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE
PRE-DEVELOPMENT OVERLAND FLOW DEPTH & EXTENT

DRAWING No C013674.01-DA71

ISSUE A

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LTS LOCKLEY SURVEYORS TITLED 05384 001DT DATED 21/06/2018.

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- 15.10 – OVERLAND FLOW LEVEL CONTOUR (MINOR) 0.1m INTERVALS
- 15.50 – EXISTING LEVEL CONTOUR 0.5m INTERVALS
- 15.00 – EXISTING LEVEL SPOT HEIGHT
- 1% AEP FLOOD EXTENT & LEVELS

APPROXIMATE EXTENT OF EXISTING WATERWAY TO BE MAINTAINED

APPROXIMATE EXTENT OF WATERWAY TO BE REINSTATED. REMOVE EXISTING CULVERTS & PAVEMENT AND CONSTRUCT WATERWAY.

APPROXIMATE EXTENT OF EXISTING WATERWAY TO BE MAINTAINED

MODELED FLOW ENTRY POINT Q=8.52m³/s

EXISTING HEADWALL AND 2×Ø825 PIPES AT I.L.11.57 & I.L.11.52 TO BE DEMOLISHED

SITE DISCHARGE POINT Q=1.11m³/s

EXISTING HEADWALL AND 2×Ø900 PIPES AT I.L.10.67 TO BE PRESERVED

PROPOSED STORMWATER MANAGEMENT BASIN. REFER TO DRAWING DA41 FOR DETAILS.

PROPOSED BUILDING FFL 15.78

PROPOSED BUILDING FFL 17.55

EXISTING BUILDING FFL 18.24

STORMWATER DRAINAGE EASEMENT

ORLANDO ROAD

SITE - BOUNDARY

INMAN ROAD

SOUTH CREEK ROAD

APPROXIMATE EXTENT OF ADJACENT SITE - BOUNDARY

POST-DEVELOPMENT OVERLAND FLOW DEPTH & EXTENT

1:500 SCALE

NOTES:

- DRAWINGS TO BE READ IN CONJUNCTION WITH OVERLAND FLOW REPORT C013674.01-02.rpt & CIVIL ENGINEERING REPORT FOR DEVELOPMENT APPLICATION C013674.01-01.rpt.
- FLOOD EXTENT REFLECTS 1% AEP DESIGN EVENT AT PEAK FLOW RATE.

5m 0 10 20 30 40 50m

1:500 SCALE AT A1 SHEET SIZE

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	21.10.20	B
ISSUED FOR DEVELOPMENT APPLICATION	28.02.20	A

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PROJECT
PROPOSED DEVELOPMENT
100 SOUTH CREEK ROAD
CROMER, 2099, NEW SOUTH WALES

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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DRAWING TITLE
POST-DEVELOPMENT OVERLAND FLOW DEPTH & EXTENT

DRAWING No C013674.01-DA 72

ISSUE B