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PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

CIVIL WORKS
DEVELOPMENT APPLICATION

(SOURCE: NEARMAP 2020)

LOCALITY PLAN
NOT TO SCALE

DRAWING No.	DRAWING TITLE	REV.
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DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

APPROVED COMPANY AS/NZS 9001 Quality Management System Bureau Veritas Certification Services
APPROVED COMPANY ISO 14001 Environmental Management System Bureau Veritas Certification Services
APPROVED COMPANY ISO 45001 Occupational Health & Safety Management System Bureau Veritas Certification Services
DIAL 1100 BEFORE YOU DIG

Authorised for issue by:
Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

CRAIG & RHODES TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard,
Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
www.craigandrhodes.com.au
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GENERAL NOTES

1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL ENGINEERING DESIGN SPECIFICATION AND ENGINEERING CONSTRUCTION SPECIFICATION.
2. SERVICES SHOWN ON THESE PLAN ARE NOT GUARANTEED COMPLETE OR CORRECT AND HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT SERVICE PROVIDERS AND FIELD INVESTIGATIONS. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE RELEVANT SERVICE PROVIDERS TO RELOCATE OR ADJUST AS FOUND NECESSARY.
3. UTILITY ADJUSTMENTS ARE TO BE AT THE DEVELOPER'S EXPENSE.
4. CONDUITS SHALL BE PLACED WHERE REQUIRED BY THE RELEVANT AUTHORITIES.
5. THE CONTRACTOR SHALL NOT ENTER UPON OR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT PRIOR WRITTEN PERMISSION OF THE LAND OWNER.
6. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO THE PUBLIC FOOTWAYS, ROADWAYS AND PROPERTIES ADJACENT TO THE SITE IN A SAFE CONDITION TO THE SATISFACTION OF COUNCIL'S ENGINEER.
7. THE CONTRACTOR SHALL OBTAIN ALL LEVELS FROM ESTABLISHED BENCH MARKS. SURVEY MARKS SHOWN THUS ▲ △ ◙ SHALL BE MAINTAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT SHALL BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
8. BENCHMARK, SSM'S PERMANENT MARKS TO BE AHD.
9. CONSTRUCTION/CIVIL WORK MAY ONLY BE CARRIED OUT ON THE SITE BETWEEN THE HOURS OF 7.00am TO 5.00pm MONDAY TO FRIDAY AND 8.00am to 1.00pm ON SATURDAY. NO WORK PERMITTED TO BE CARRIED OUT ON SUNDAYS OR PUBLIC HOLIDAYS UNLESS OTHERWISE APPROVED BY NORTHERN BEACHES COUNCIL .
10. PLANT, GOODS & MATERIALS SHALL NOT BE DELIVERED ON THE SITE OUTSIDE THE APPROVED HOURS OF OPERATION.
11. THE CONTRACTOR SHALL CLEAR AND DISPOSE OF ONLY THOSE TREES THAT HAVE BEEN APPROVED TO BE REMOVED. TREES THAT ARE NOT TO BE REMOVED SHALL BE PRESERVED. NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT PRIOR APPROVAL FROM NORTHERN BEACHES COUNCIL .
12. FELLED TREES SHALL BE SALVAGED FOR REUSE AS WOODCHIP MULCH OR LOG FORM FOR SITE REHABILITATION, NON-SALVAGEABLE MATERIAL SUCH AS STUMPS AND ROOTS SHALL BE DISPOSED OFF SITE AS NOMINATED BY THE SUPERINTENDENT.
13. SITE SHEDS, STOCKPILES, MATERIALS AND VEHICLE PARKING SHALL BE LOCATED AWAY FROM TREES ON THE SITE TO PREVENT SOIL COMPACTION. STOCKPILING OF MATERIALS SHALL NOT BE PERMITTED WITHIN TREE PROTECTION AREAS. ALL AREAS FOR STOCKPILING SHALL BE APPROVED BY THE SUPERINTENDENT.
14. ALL SOIL AND WATER MANAGEMENT DEVICES SHALL BE INSTALLED AND APPROVED PRIOR TO WORKS PROCEEDING.
15. ALL EROSION AND POLLUTION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER AND REPAIR THROUGHOUT THE COURSE OF BUILDING CONSTRUCTION OR DEVELOPMENT WORK ON THE SITE AND UNTIL THE WORKS HAVE BEEN COMPLETED TO THE SATISFACTION OF COUNCIL.
16. TEMPORARY REHABILITATION MUST BE APPLIED AND ESTABLISHED TO DISTURBED AREAS AS SOON AS PRACTICAL AFTER COMPLETION OF EARTHWORKS.
17. TOPSOIL IS TO BE STRIPPED AND STOCKPILED ON THE SITE WITH EROSION CONTROL MEASURES PROVIDED AS DETAILED. UPON COMPLETION OF WORKS, MINIMUM 150mm THICK TOPSOIL SHALL BE SPREAD ON ALL FOOTPATHS, BERMS, BATTERS AND SITE REGRADED AREAS. EXCESS TOPSOIL SHALL BE DISPOSED OF AS DIRECTED BY THE SUPERINTENDENT.
18. ALL EARTHWORKS TO BE IN ACCORDANCE WITH A.S.3798 & TO BE CARRIED OUT TO THE SATISFACTION OF SUPERINTENDENT. UNSOUND MATERIALS ARE TO BE REMOVED FROM ROADS AND LOTS PRIOR TO FILLING.
19. SURPLUS EXCAVATED MATERIAL SHALL BE DISPOSED OF IN CONSULTATION WITH SUPERINTENDENT. DOCUMENTATION OF THE DISPOSAL SITE SHALL BE PROVIDED TO COUNCIL PRIOR TO COMMENCEMENT OF WORKS.
20. ALL SITE FILLING SHALL BE PLACED IN LAYERS NOT EXCEEDING 300mm AND COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY AN APPROVED N.A.T.A. SOILS LABORATORY.
21. WHERE LOT FILLING IN EXCESS OF 300mm IS PROPOSED, LEVELS ARE TO BE TAKEN ON THE STRIPPED SURFACE PRIOR TO THE COMMENCEMENT OF FILLING AND ON THE FINISHED SURFACE. SUCH LEVELS ARE TO BE SHOWN ON THE WORK-AS-EXECUTED PLAN.
22. ALL LAND DISTURBED BY EARTHWORKS SHALL BE SPRAY-GRASSED, OR SIMILARLY TREATED TO ESTABLISH GRASS COVER. SEED MIXTURES ARE TO BE APPROVED BY COUNCIL PRIOR TO SPRAYING. ALL GRASSED AREAS SHALL BE REGULARLY WATERED AND MAINTAINED UNTIL EXPIRATION OF THE MAINTENANCE PERIOD.
23. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
24. CATCH DRAINS TO BE CONSTRUCTED AS REQUIRED BY THE SITE SUPERINTENDENT AND/OR COUNCIL'S ENGINEER.
25. CONDUIT TRENCHES, SUB-SOIL DRAINS AND STORMWATER DRAINAGE LINES TO BE BACKFILLED WITH APPROVED WASHED RIVER SAND, FLOODED AND VIBRATED. CONDUIT TRENCHES TO BE GRADED AT A MINIMUM ONE PERCENT (1%). GRADE TO EITHER SUB-SOIL OR STORMWATER DRAINAGE LINES.
26. SUB-GRADE IN ROCK IS TO BE RIPPED, SCARIFIED, SPREAD AND COMPACTED TO A MINIMUM DEPTH OF 300mm BELOW THE FINISHED SUB-GRADE LEVEL
27. DETAILS OF ALL SOIL TESTS AND THE PAVEMENT DESIGN ARE TO BE SUBMITTED TO PRINCIPAL CERTIFYING AUTHORITY (PCA) PRIOR TO INSPECTION OF SUBGRADE.
28. NO BUILDING MATERIALS, MACHINERY OR THE LIKE ARE TO BE STORED ON THE ROAD OR FOOTPATH. THE PATHWAY IS TO BE KEPT IN A CLEAN, TIDY & SAFE CONDITION DURING THE CONSTRUCTION PERIOD.
29. ALL NEW WORKS SHALL MAKE SMOOTH JUNCTION WITH EXISTING CONDITIONS.
30. THE SITE IS TO BE SURROUNDED BY A SECURITY FENCE & THE GATE MUST BE LOCKED OUTSIDE THE OPERATING HOURS. NOTICES COMPLYING WITH AS 1319-1994 AND DISPLAYING THE WORDS "DANGER - DEMOLITION IN PROGRESS", OR SIMILAR MESSAGE SHALL BE FIXED TO THE FENCING AT APPROPRIATE PLACES TO WARN THE PUBLIC.
31. THE CONTRACTOR SHALL PROVIDE A MINIMUM 24 HOURS NOTICE TO SUPERINTENDENT OR COUNCIL'S ENGINEER FOR ALL INSPECTIONS.
32. THE CONTRACTOR SHALL UNDERTAKE TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH COUNCIL'S TRAFFIC MANAGEMENT POLICY AND SHALL DISPLAY ALL APPROPRIATE WARNING SIGNS THROUGHOUT THE DURATION OF CONSTRUCTION.
33. ALL TRAFFIC CONTROL DEVICES SHALL REMAIN ERECTED OUTSIDE WORKING HOURS WITH FLASHING YELLOW LIGHTS ON BARRIER BOARDS TO BE IN OPERATION AFTER DARK.
34. ROADS ADJOINING THE SITE MUST BE KEPT CLEAN AND FREE OF ALL EXCAVATED/TRANSPORTED SPOIL MATERIAL.
35. SITE FILLING AND COMPACTION IS TO BE CARRIED OUT UNDER THE SUPERVISION OF A CHARTERED GEOTECHNICAL ENGINEER AND SHALL BE IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL . "WORKS SPECIFICATION - CIVIL (CURRENT REVISION)". MINIMUM STANDARD COMPACTION OF 95% MUST BE ACHIEVED AND CERTIFIED BY "NATA" REGISTERED LAB AND DETAILS SUBMITTED TO COUNCIL.
36. RESIDENTIAL LOTS TO BE INDIVIDUALLY CLASSIFIED.
37. AGRICULTURAL LINES TO BE PLACED AS DIRECTED
38. STRUCTURAL CERTIFICATION IS REQUIRED FOR CONSTRUCTION OF MAJOR AND NON-STANDARD STRUCTURES
39. DRIVEWAYS/LAYBACKS TO HAVE MINIMUM 1.0m CLEARANCE FROM ANY PROPOSED & EXISTING UTILITIES, INCLUDING: ELECTRICAL TURRETS, LIGHT POLES, TELECOMMUNICATION PITS, STORMWATER GULLY PITS & STREET TREES. DRIVEWAYS/LAYBACKS TO HAVE A 6.0m CLEARANCE FROM KERB-RETURN TANGENT POINTS
40. VEHICULAR CROSSINGS ARE TO BE 4.0 METERS WIDE AT KERB AND GUTTER.
41. SUBSOIL DRAINAGE SHALL BE PROVIDED ALONG THE CUT SIDE OF ALL NEW ROADS WHERE NO DRAINAGE IS PROVIDED, ALONG THE CENTRE LINE OF HALF ROAD CONSTRUCTION WORKS, AT LOW SPOTS, WHERE REQUIRED BY THE PAVEMENT DESIGN REPORT, AND WHERE DIRECTED BY COUNCIL'S ENGINEER.
42. LIGHT POLES STREET NAMES POLES AND BUS SHELTERS IN THIS SUBDIVISION WILL BE BLACK POWDER COATED TO THE SATISFACTION OF NORTHERN BEACHES COUNCIL . FURTHER THAT THESE LIGHT POLES WILL COMPLY WITH COUNCIL SPECIFICATIONS.

STORMWATER DRAINAGE

1. ALL STORMWATER WORKS ARE TO BE UNDERTAKEN GENERALLY IN ACCORDANCE WITH AS 3500 (LATEST EDITION) STORMWATER DRAINAGE.
2. 100 YEAR FLOW PATHS TO BE FORMED AT TIME OF CONSTRUCTION.
3. UNLESS NOTED OTHERWISE, ALL STEEL REINFORCED CONCRETE PIPES ARE TO BE CLASS 2 AND RUBBER RING JOINTED. RUBBER RINGS SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH AS1646 (LATEST EDITION). THE EXCAVATED TRENCH WIDTH FOR PIPE LAYING MUST BE AT LEAST 400mm WIDER THAN THE OUTER DIAMETER OF THE PIPE. PIPES ARE TO BE LAID CENTRALLY WITHIN THE EXCAVATED TRENCH.
4. ALL PIPEWORK SHALL BE BEDDED IN ACCORDANCE WITH THE HILLS SHIRE COUNCILS "WORKS SPECIFICATION SUBDIVISION/DEVELOPMENTS".
5. IN WET OR UNSTABLE GROUND CONDITIONS WHERE THE TRENCH BOTTOM REQUIRES FURTHER STABILIZING, ADDITIONAL BEDDING OF 20mm AND/OR 30mm NOMINAL SIZE AGGREGATE (AS DIRECTED BY THE SUPERINTENDENT), SHALL BE PLACED BELOW THE STANDARD BEDDING TO A DEPTH DETERMINED BY THE SUPERINTENDENT. WHERE ORDERED BY THE SUPERINTENDENT AN APPROVED FILTER FABRIC SHALL BE USED IN CONJUNCTION WITH THE ADDITIONAL BEDDING.
6. THE BED AND HAUNCH MATERIAL SHALL BE COMPACTED FOR THE FULL WIDTH OF THE TRENCH BY A MINIMUM OF TWO PASSES OF A VIBRATING PLATE OR HAND TAMPING METHOD TO THE SATISFACTION OF THE SUPERINTENDENT.
7. CHASES SHALL BE FORMED WHERE NECESSARY TO PREVENT SOCKETS, FLANGES OR THE LIKE FROM BEARING ON THE TRENCH BOTTOM OR THE UNDERLAY.
8. THE CONTRACTOR SHALL ENSURE THAT ANY EXISTING STRUCTURES LOCATED ADJACENT TO EXCAVATED TRENCHES ARE SUPPORTED OR PROTECTED TO PREVENT DAMAGE TO OR MOVEMENT OF THESE STRUCTURES
9. THE CONTRACTOR MUST LEAVE ALL STORMWATER DRAINAGE WORKS UNCOVERED UNTIL ANY TESTING DEEMED NECESSARY BY THE SUPERINTENDENT HAS BEEN PERFORMED.
10. PIPE LAYING SHALL BEGIN AT THE DOWNSTREAM END OF THE LINE WITH THE SOCKET ENDS OF THE PIPE FACING UPSTREAM. THE BARREL OF EACH PIPE SHALL BE IN CONTACT WITH THE BEDDING MATERIAL THROUGHOUT ITS FULL LENGTH.
11. FOR RUBBER RING JOINTS THE PIPE ENDS SHALL BE THOROUGHLY CLEANED BEFORE THE JOINT IS MADE. THE TWO PIPE SECTIONS SHALL THEN BE TIGHTLY JOINED WITH THEIR INNER SURFACES AT THE MANUFACTURER'S NOMINATED LAYING GAP.
12. LIFTING HOLES IN PIPES AND CULVERTS SHALL BE PLUGGED WITH MORTAR, PRECAST TAPERED PLUGS, OR TAPE SURROUNDS OR OTHER APPROVED MEANS PRIOR TO BACKFILL MATERIAL BEING PLACED.
13. CUTTING OPERATIONS FOR CONCRETE PIPE AND BOX CULVERTS SHALL PROVIDE NEAT END SURFACES. THE CUT SURFACES SHALL BE GIVEN TWO COATS OF A SUPERINTENDENT APPROVED EPOXY PAINT.
14. JOINTS SHALL NOT BE MADE UNDERWATER. THE TRENCH SHALL BE DEWATERED TO FACILITATE JOINT MAKING AND INSPECTION. PRECAUTIONS SHALL BE TAKEN TO PREVENT EROSION OF JOINT MATERIAL BY MOVING CURRENTS OF WATER.
15. COMPLETED CEMENT MORTAR JOINTS SHALL BE KEPT DAMP AND PROTECTED FROM THE DIRECT RAYS OF SUN UNTIL BACKFILLING TAKES PLACE.
16. DRAINAGE LINES SHALL BE CONSTRUCTED TO THE TOLERANCES AS FOLLOWS:

    FINISHED LEVEL AT ANY INVERT ±15mm PROVIDED THAT NO POINT IS LEVEL OR AT A HIGHER LEVEL THAN CORRESPONDING POINT OF STREAM. GRADING ±0.2% AT ANY POINT.

    NOT WITHSTANDING THE TOLERANCES ABOVE EACH PIPE SHALL HAVE A MINIMUM FALL (APPROVED BY THE SUPERINTENDENT) IN THE DIRECTION OF FLOW.
17. BACKFILL MATERIAL SHALL BE INSPECTED AND APPROVED BY THE SUPERINTENDENT PRIOR TO PLACING AND COMPACTION.
18. ALL BACKFILL FOR STORMWATER DRAINAGE WORKS IS TO BE COMPACTED IN LAYERS NOT EXCEEDING 300mm LOOSE THICKNESS AND COMPACTED WITHOUT DAMAGING OR DISPLACING THE PIPEWORK.
19. BACKFILL FOR STORMWATER PITS AND PIPES SHALL BE COMPACTED TO AT LEAST 95% (98% UNDER ROADS) OF THE MAXIMUM DRY DENSITY AT -2% TO +2% OF OPTIMAL MOISTURE CONTENT AND GRADED IN ACCORDANCE WITH AS 3500.3 (LATEST EDITION).
20. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL CEMENT RENDERED WITH AN EPOXY GROUT TO ENSURE A SMOOTH FINISH.
21. STEP IRONS ARE TO BE PROVIDED IN DRAINAGE PITS MORE THAN 1.2m DEEP.
22. PROVIDE A MINIMUM OF 3.0m LENGTH OF 100 DIA. SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK AT UPSTREAM END OF EACH COUNCIL PIT.
23. UNLESS SPECIFIED OTHERWISE ALL DRAINAGE PITS TO BE CAST INSITU, THE GRADE OF CONCRETE TO BE USED SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 32MPA. STEEL REINFORCING BARS SHALL COMPLY WITH THE REQUIREMENTS OF AS1302 (LATEST EDITION). WELDED WIRE REINFORCING SHALL COMPLY WITH AS1304 (LATEST EDITION).
24. UNLESS SPECIFIED ALL DRAINAGE GRATES TO BE CLASS 'D' GALVANISED MILD STEEL TO AS 3996 (LATEST EDITION).
25. uPVC PIPES SHALL BE SUPPLIED WITH SUFFICIENT QUANTITIES OF SOLVENT FOR MAKING OF THE PIPE JOINTS.
26. uPVC PIPES SHALL BE TRANSPORTED, HANDLED AND STACKED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
27. uPVC PIPE LAYING SHALL BEGIN AT THE DOWNSTREAM END OF THE LINE WITH THE SOCKET END OF THE PIPE FACING UPSTREAM. WHEN THE PIPES ARE LAID, THE BARREL OF EACH PIPE SHALL BE IN CONTACT WITH THE BEDDING MATERIAL THROUGHOUT ITS FULL LENGTH.
28. THE uPVC PIPE ENDS SHALL BE THOROUGHLY CLEANED BEFORE THE JOINT IS MADE. JOINTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS DIRECTIONS USING JOINTING SOLVENT AND PRIMER.
29. PROVISION OF A ROOF-WATER OUTLET TO KERB FOR EACH PROPOSED LOT THAT DRAINS TO PUBLIC ROAD IS TO BE IN ACCORDANCE WITH COUNCIL CURRENT ENGINEERING GUIDE FOR DEVELOPMENT.
30. THE PIPE CLASS DOES NOT TAKE ACCOUNT OF ANY CONSTRUCTION LOADING

SALINITY MANAGEMENT

1. CONTRACTOR TO AVOID EXPOSURE AND DISTURBANCE OF SODIC SOIL BY MINIMISING CUT AND FILL. IN GENERAL EXCAVATION SHOULD BE KEPT UNDER 1.0m IF POSSIBLE. DEEPER EXCAVATIONS IN EXCESS OF 1.0m SHALL BE COVERED AND RETAINED BY RETAINING WALLS.
2. EXCAVATION DEEPER THAN 1.0m SHALL BE AVOIDED AND IF CARRIED OUT, SHOULD BE BACKFILLED IN THE SAME ORDER. ALTERNATIVELY THE MODERATELY TO HIGH SALINE MATERIAL SHALL BE TREATED BY USING LIME AND/OR USED IN FILL AT DEPTHS MORE THAN 1.0m FROM FINISHED LEVEL.
3. BUILDING PLATFORM IN CUT AREAS GREATER THAN 1.0m SHALL BE MONITORED FOR SALINITY BY SOIL SAMPLING AND LABORATORY TESTING BY THE CONTRACTOR.
4. APPROPRIATE BATTER SLOPES FOR EXCAVATIONS SHALL BE ADOPTED BY THE CONTRACTOR TO PREVENT EROSION AND SCOURING. UNDER GOOD DRAINAGE CONDITIONS, THE FOLLOWING BATTER SLOPES OR LESS SHALL BE ADOPTED;

MATERIAL RECOMMENDED	MINIMUM BATTER SLOPES
-COMPACTED FILL	2.5 HORIZONTAL : 1 VERTICAL
-VERY STIFF RESIDUAL CLAY	2 HORIZONTAL : 1 VERTICAL
-WEATHERED SHALE/SILTSTONE	0.5 HORIZONTAL : 1 VERTICAL

5. SITE ROADWORKS BY THE CONTRACTOR SHALL BE PLANNED TO REDUCE CUTTING AND FILLING TO THE ABSOLUTE MINIMUM AND THE EARTHWORKS UNDERTAKEN IN STAGES TO ALLEVIATE EROSION AND LOCALISED INSTABILITY PROBLEM. TO MINIMISE THE EFFECTS OF EROSION, ALL ROAD BATTERS, WHETHER IN CUT OR FILL TO BE STABILISED BY PLANTING (OR THE APPLICATION OF SPRAYED-ON MULCH) WITH APPROPRIATE SPECIES OF VEGETATION AS SOON AS PRACTICAL AFTER CONSTRUCTION.
6. THE CONTRACTOR SHALL CONSIDER THE DESIGN, BEDDING OF PIPEWORK FOR STORMWATER AND OTHER SERVICES, AS THE SOILS WITHIN THESE AREAS ARE GENERALLY 'ERODIBLE' OR 'DISPERSIVE'. RUBBER-RING JOINTED PIPES SHALL BE USED. SPECIAL TYPES OF 'PIPE-BEDDING' (E.G. CLEAN COARSE SAND) SHALL ALSO BE REQUIRED. AS THE SOIL IS POTENTIALLY UNSTABLE IN THE PRESENCE OF WATER RESULTING IN TUNNELING, CONSTRUCTION OF INFRASTRUCTURES SHALL INCLUDE ADEQUATE COMPACTION OF SERVICE TRENCHES AND CONSTRUCTION OF CUT-OFF WALLS TO PREVENT MIGRATION OF FINES.
7. PREVENTION OF SOIL EROSION, TUNNELING AND SALT SCALDS SHALL BE TREATED BY THE CONTRACTOR USING GYPSUM OR LIME.

SEDIMENT AND EROSION CONTROL

1. THESE NOTES ARE TO BE READ IN CONJUNCTION WITH LANDCOM'S SOILS AND CONSTRUCTION 'MANAGING URBAN STORMWATER'.
2. SEDIMENT AND EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND MAINTAINED DURING AND AFTER THE CONSTRUCTION WORKS.
3. SOIL AND SEDIMENT CONTROL DEVICES SHALL BE AS SHOWN IN THE DRAWINGS. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL SEDIMENT AND EROSION CONTROL DEVICES AND REMOVE ACCUMULATED SEDIMENT FROM SUCH DEVICES BEFORE 50% CAPACITY IS USED. ALL THE ACCUMULATED SEDIMENT SHALL BE RE-SPREAD OR REMOVED IN ACCORDANCE WITH THE SUPERINTENDENTS INSTRUCTIONS. THE DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL SUCH TIME AS THE DISTURBED AREAS HAVE BEEN REHABILITATED TO A CONDITION SATISFACTORY TO THE SUPERINTENDENT.
4. NO DISTURBANCE OF SITE PERMITTED OTHER THAN THE IMMEDIATE AREA OF THE WORKS.
5. COUNCIL TO RE-INSPECT TREES PRIOR TO THE CONSTRUCTION WORKS COMMENCING.
6. NO TREES ARE TO BE REMOVED WITHOUT PRIOR COUNCIL CONSENT.
7. VEHICULAR ACCESS TO THE SITE SHALL BE CONTROLLED THROUGH THE ACCESS POINTS IDENTIFIED ON THE DRAWINGS. VEHICLES NOT REQUIRED IN THE PERFORMANCE OF THE WORKS SHALL BE PARKED OFF SITE AWAY FROM DISTURBED AREAS.
8. A VEHICLE WASHDOWN BAY INCLUDING A 25mmØ HOSE SHALL BE PROVIDED.
9. THESE PLANS ARE SUPPLEMENTARY TO THE CONTRACTORS EMP FOR CONSTRUCTION AND SHALL BE READ IN CONJUNCTION WITH THE BUILDING CONTRACTORS E&SC PLANS
10. THE CONTRACTOR SHALL ENSURE TEMPORARY CONTROLS DO NOT DAMAGE EXISTING STRUCTURES.
11. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO SITE DISTURBANCE.
12. ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED FOLLOWING EACH RAINFALL EVENT FOR STRUCTURAL DAMAGE AND ALL TRAPPED SEDIMENT TO BE REMOVED TO A NOMINATED SITE.
13. THE CONTRACTOR SHALL INFORM ALL SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN
14. ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF THE DAYS ACTIVITIES.
15. THE CONTRACTOR MUST ENSURE THE SUITABILITY AND INTEGRITY OF ALL WORKS AT THE END OF EACH DAYS WORK.
16. NOMINATED UNDISTURBED AREAS SHALL BE BARRICADED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
17. PUBLIC ROADS ARE TO BE SWEPT FREE OF DEBRIS RESULTING FROM CONSTRUCTION ACTIVITIES. SWEEPING SHALL BE UNDERTAKEN AT A MINIMUM TWICE WEEKLY.
18. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE LOCATED ON EXISTING ACCESS TRACKS OR ROADWAYS SO AS NOT TO ENCROACH ON TRAFFIC. ALL EROSION CONTROL MEASURES PLACED SHALL BE CLEARLY IDENTIFIABLE DURING BOTH DAY AND NIGHT. EROSION CONTROL MEASURES SHALL BE COORDINATED WITH THE CONTRACTORS TRAFFIC MANAGEMENT PLANS IN ORDER TO LIMIT 'CLUTTERING' OF THE EXISTING TRAFFICABLE AREAS.
19. PROVIDE TOPSOIL WITH TURF OR GRASS SEEDING ON ALL BATTERS & DISTURBED AREAS.
20. TURFED AREAS ADJACENT TO CONSTRUCTION AREA ARE TO BE MAINTAINED TO PROVIDE A VEGETATED BUFFER STRIP.
21. THE CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL PRIOR TO EXCAVATION OR FILLING. TOPSOIL SHALL BE RESPREAD ON THE COMPLETION OF EARTHWORKS.
22. THE CONTRACTOR SHALL STABILISE ALL DISTURBED AREAS AND STOCKPILES WITHIN 14 DAYS.
23. THE CONTRACTOR SHALL INSTALL A STRIP OF TURF BEHIND THE KERB.
24. THE CONTRACTOR SHALL PROVIDE TURFING AROUND ALL SURFACE INLET PITS.
25. THE CONTRACTOR IS TO IMPLEMENT SEDIMENT AND EROSION CONTROL MEASURES APPROPRIATE TO THE STAGING OF THE WORKS.

TOPSOIL

1. PRIOR TO SPREADING, STOCKPILED SITE SUBGRADE MATERIAL AND/OR IMPORTED TOPSOIL SHALL BE INSPECTED AND APPROVED BY THE SUPERINTENDENT.
2. UNLESS NOTED OTHERWISE, ALLOW FOR CLEARING AND REMOVING STONES EXCEEDING 25 mm AND ANY RUBBISH BROUGHT TO THE SURFACE DURING THE CULTIVATION OF THE SUBGRADE.
3. AFTER PREPARATION OF THE SUBGRADE SURFACE, PLACE TOPSOIL AS APPROPRIATE FOR THE SPECIFIED LANDSCAPE TREATMENTS AND AS INDICATED BY THE DRAWINGS.
4. THE FINISHED SURFACE OF THE TOPSOIL SHALL BE SMOOTH, FREE OF LUMPS OF SOIL AND LEFT READY FOR CULTIVATING AND PLANTING.
5. WHERE TOPSOILING IS CARRIED OUT ADJACENT TO KERBS, FOOTPATHS, MOWING STRIPS OR OTHER HARD PAVED SURFACES, THE TOPSOIL SHALL BE FINISHED FLUSH WITH THOSE SURFACES UNLESS OTHERWISE SPECIFIED.

TURF AND PLANTING

1. ALL TURF AND OTHER MATERIALS SPECIFIED SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE SUPERINTENDENT.
2. SUBSTITUTION OF SPECIES SHALL ONLY OCCUR WITH THE PRIOR APPROVAL OF THE SUPERINTENDENT.
3. PROTECT THE NEWLY PLANTED AREAS AGAINST TRESPASS AND TRAFFIC UNTIL THE GRASS IS WELL ESTABLISHED. FENCING, WHERE USED, SHALL BE 1.2m HIGH STAR PICKET TYPE, WITH MAXIMUM POST SPACING OF 5m.
4. ALLOW FOR MAKING OVER AND RE-TURFING ALL AREAS WHERE THE GRASS FAILS TO GROW WITHIN ONE MONTH FROM THE DATE OF ORIGINAL PLANTING.

SURVEY DETAIL

SURVEY DETAIL BY: **CRAIG&RHODES**

DRAWING REFERENCE: **251-20G T01 [00] RO.dwg**

DATE: **24.08.2020**

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

APPROVED COMPANY AS/NZS 4801 Occupational Health & Safety Management Systems — QMS Certification Services
APPROVED COMPANY ISO 14001 Environmental Management Systems — QMS Certification Services
APPROVED COMPANY ISO 9001 Quality Management Systems — QMS Certification Services
DIAL 1100 BEFORE YOU DIG

Authorised for issue by:

.... Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

CRAIG& RHODES TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
www.craigandrhodes.com.au
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Drawing Title: GENERAL NOTES
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0002
Revision A

CAD REF.: Z:\251-20\ENGINEERING\DRAWINGS\CIV_DA\251-20C-DA-0002.DWG - A - # - # - DATE PRINTED: 19/01/2021 1:31:27 PM

A1

LEGEND

- EXISTING O/H ELECTRICAL LINE
- EXISTING ELECTRICAL LINE
- EXISTING WATER LINE
- EXISTING RECYCLE WATER
- EXISTING COMMUNICATION LINE
- EXISTING GAS LINE
- EXISTING SEWER LINE
- EXISTING DRAINAGE LINE
- EXISTING TELECOMS LINE
- PROPOSED O/H ELECTRICAL LINE
- PROPOSED ELECTRICAL LINE
- PROPOSED WATER LINE
- PROPOSED RECYCLE WATER
- PROPOSED COMMUNICATION LINE
- PROPOSED GAS LINE
- PROPOSED SEWER LINE
- PROPOSED TELECOMS LINE
- PROPOSED SUBSOIL DRAINAGE LINE
- PROPOSED STORMWATER DRAINAGE LINE
- STUB, CAP AND BURY FOR FUTURE CONNECTION
- TEMPORARILY BLOCK PIPE
- TEMPORARY STORMWATER DRAINAGE LINE
- FUTURE STORMWATER DRAINAGE LINE
- EXISTING DRAINAGE LINE
- PROPOSED STORMWATER PITS
- FUTURE STORMWATER PITS
- EXISTING STORMWATER PITS
- CONCRETE HEADWALL OUTLET
- STACKED ROCK HEADWAL OUTLET
- OVERLAND FLOW PATH
- LOW FLOW PATH
- CATCH DRAIN
- SWALE
- DESIGN CONTOUR
- EXISTING CONTOUR
- CIVIL WORKS BOUNDARY
- RETAINING WALL
- FENCE
- SITE FENCE
- GUARD RAIL
- FLOW DIRECTION
- PIT LABEL (DRAINAGE LINE No. - DRAINAGE PIT No.)
- ROOF WATER OUTLET TO KERB
- ROOF WATER CONNECTION TO DRAINAGE PIT
- EXISTING TREES TO BE REMAIN
- EXISTING TREES TO BE REMOVED AT DIRECTION OF SUPERINTENDENT
- SURFACE LEVEL

ABBREVIATIONS

RKG	ROLL KERB AND GUTTER
K&G	KERB AND GUTTER
PR	PRAM RAMP
VC	VEHICULAR CROSSING
RW	RETAINING WALL
SGGP	STANDARD GRATED GULLY PIT
GSIP	GRATED SURFACE INLET PIT
JP	JUNCTION PIT
HW	HEADWALL
GPT	GROSS POLLUTANT TRAP
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
TFSL	TOP FINISHED SURFACE
BFSL	BOTTOM FINISHED SURFACE
RCP	STEEL REINFORCED CONCRETE PIPE
RRJ	RUBBER RING JOINT
C1 or C2	PIPE CLASS

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
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Authorised for issue by:

Signature:

Principal: MOREHUMAN WARRIEWOOD

L.G.A. NORTHERN BEACHES COUNCIL

Scale: AS SHOWN

Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

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ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard,
Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
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Drawing Title: LEGEND

C&R Ref. 251-20

Drawing Ref. 251-20C-DA-0003

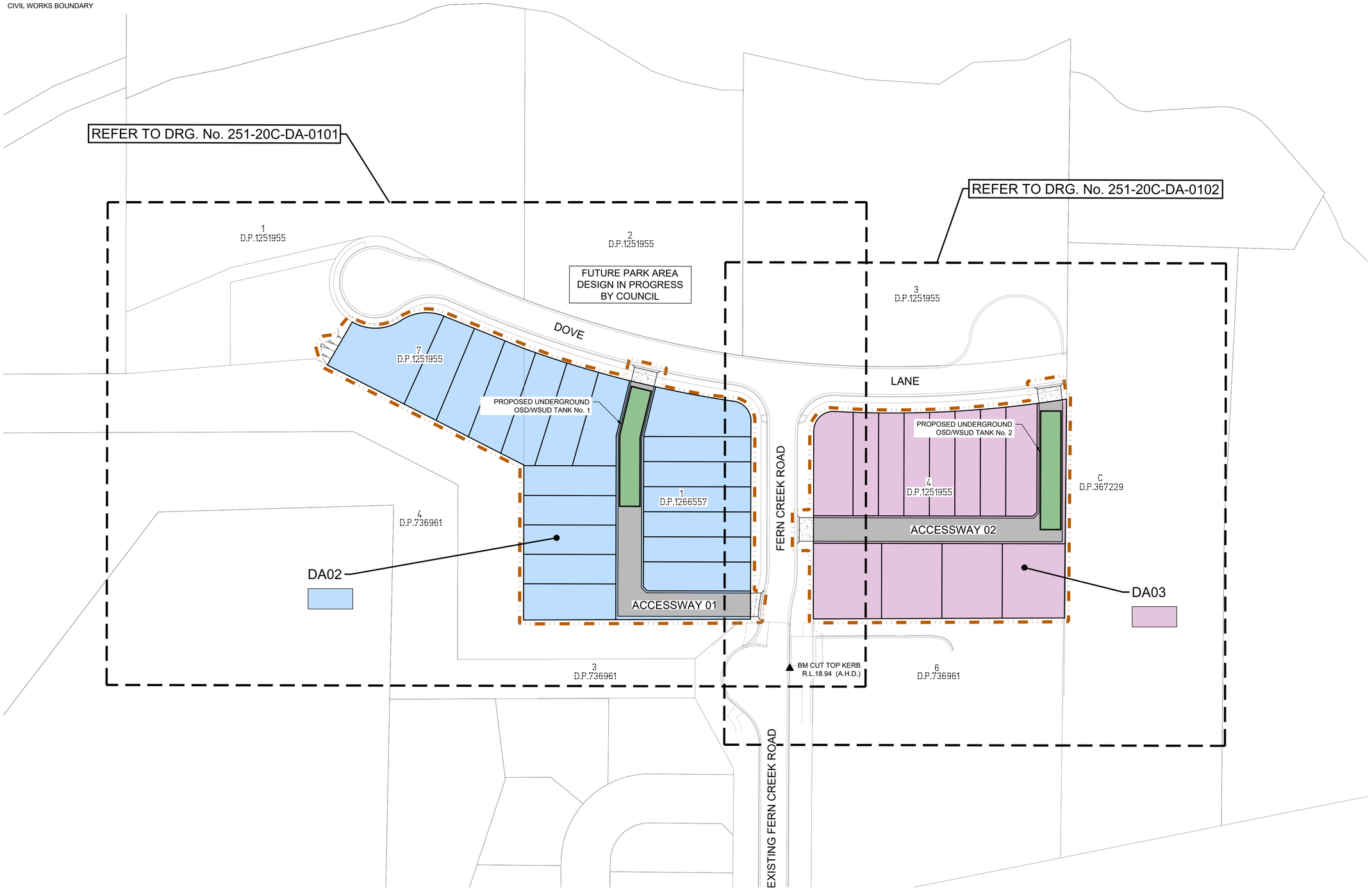
Revision A

CAD REF: F:\251-20\RHODES\DRAWINGS\251_DA\251-20C-DA-0003.DWG - A - # - # - # DATE PRINTED: 19/07/2021 1:31:32 PM

A1

LEGEND

CIVIL WORKS BOUNDARY



PLAN

SCALE 1:500

0 5 10 15 20 30 40 50m
1:500

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:

Signature:

Principal: MOREHUMAN WARRIEWOOD

L.G.A. NORTHERN BEACHES COUNCIL

Scale: AS SHOWN

Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

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TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard,
Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
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Drawing Title: KEY PLAN

C&R Ref. 251-20 | Drawing Ref. 251-20C-DA-0004 | Revision A

CAD REF: Z:\251-20\DRAWINGS\CIV_DA\251-20C-DA-0004.DWG - A1 # # # - DATE PRINTED: 19/01/2021 1:31:39 PM

A1

CUT FILL VOLUMES (APPROX.):

CUT = -1,020m^3

FILL = 1,815m^3

BALANCE = 795m^3 (IMPORT FILL)

ALLOWANCES USED IN CALCULATIONS:

1. DOES NOT ALLOW FOR BOXING.
2. DOES NOT ALLOW FOR STRIPPING & REPLACEMENT OF TOPSOIL.
3. DOES NOT ALLOW FOR EXCAVATION OF DRAINAGE TRENCHES AND OSD TANKS.
4. DOES NOT ALLOW FOR ANY UNSUITABLE MATERIAL FOUND ANYWHERE ON SITE.
5. DESIGN CONTOURS AND CUT FILL HATCH SHOWN IN THIS PLAN ARE THE FINAL SURFACE.

PLAN

SCALE 1:250

DEVELOPMENT APPLICATION

CUT FILL DEPTH LEGEND

LOWER VALUE (m)	UPPER VALUE (m)	COLOUR
-4.5	-5	
-4	-4.5	
-3.5	-4	
-3	-3.5	
-2.5	-3	
-2	-2.5	
-1.5	-2	
-1	-1.5	
-0.5	-1	
0	-0.5	
0	0.5	
0.5	1	
1	1.5	
1.5	2	
2	2.5	
2.5	3	
3	3.5	

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:

Signature:

Principal: MOREHUMAN WARRIEWOOD

L.G.A. NORTHERN BEACHES COUNCIL

Scale: AS SHOWN

Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

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ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard,
Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
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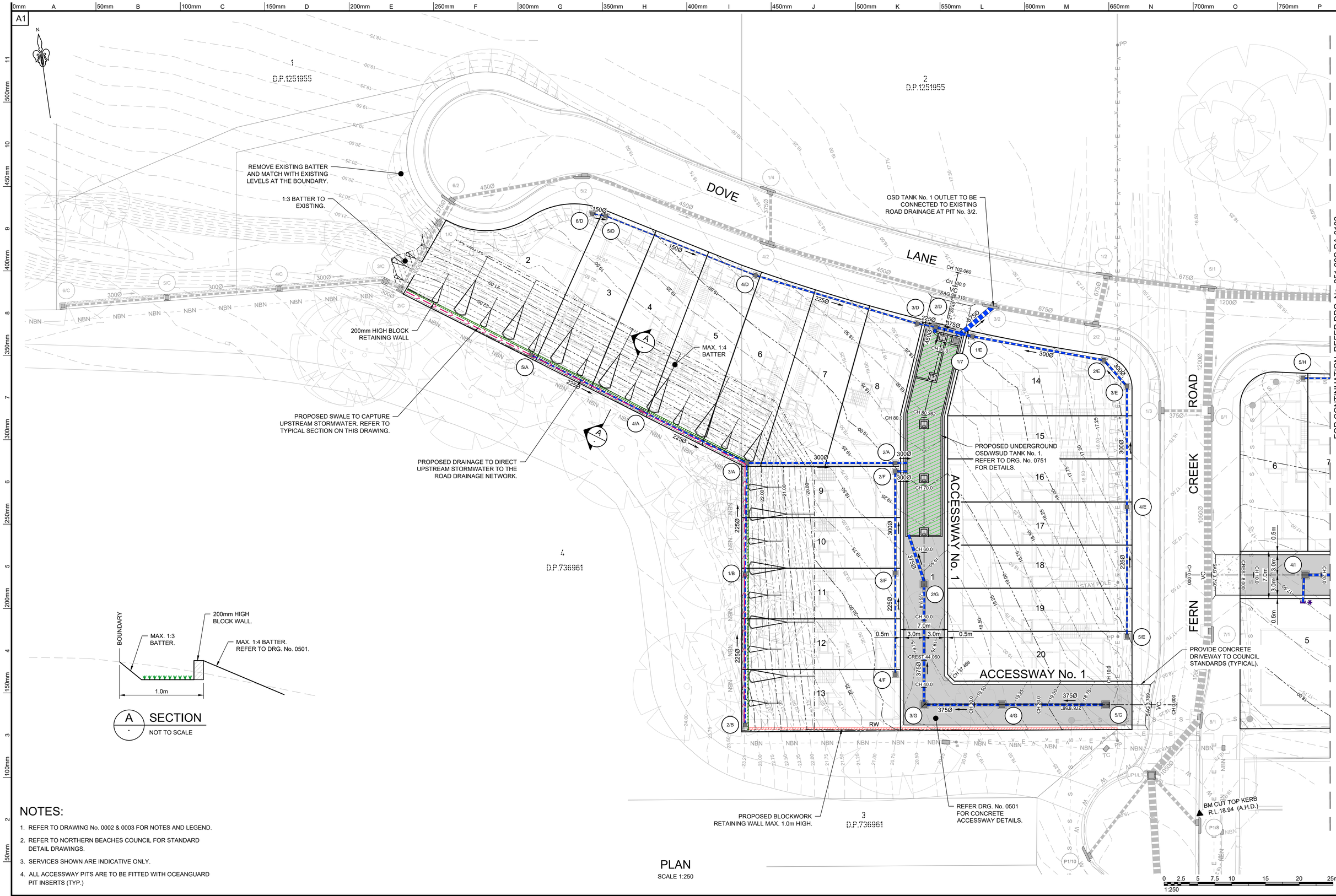
Drawing Title: BULK EARTHWORKS PLAN

C&R Ref. 251-20

Drawing Ref. 251-20C-DA-0051

Revision A

CAD REF: Z:\251-20\DRAWING\ENGINEERING\MASTER_DWG\251-20C-DA-0051.DWG A.1 # # # DATE PRINTED: 19/01/2021 1:31:47 PM



A SECTION
NOT TO SCALE

NOTES:

1. REFER TO DRAWING No. 0002 & 0003 FOR NOTES AND LEGEND.
2. REFER TO NORTHERN BEACHES COUNCIL FOR STANDARD DETAIL DRAWINGS.
3. SERVICES SHOWN ARE INDICATIVE ONLY.
4. ALL ACCESSWAY PITS ARE TO BE FITTED WITH OCEANGUARD PIT INSERTS (TYP.)

PLAN
SCALE 1:250

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:
Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

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Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
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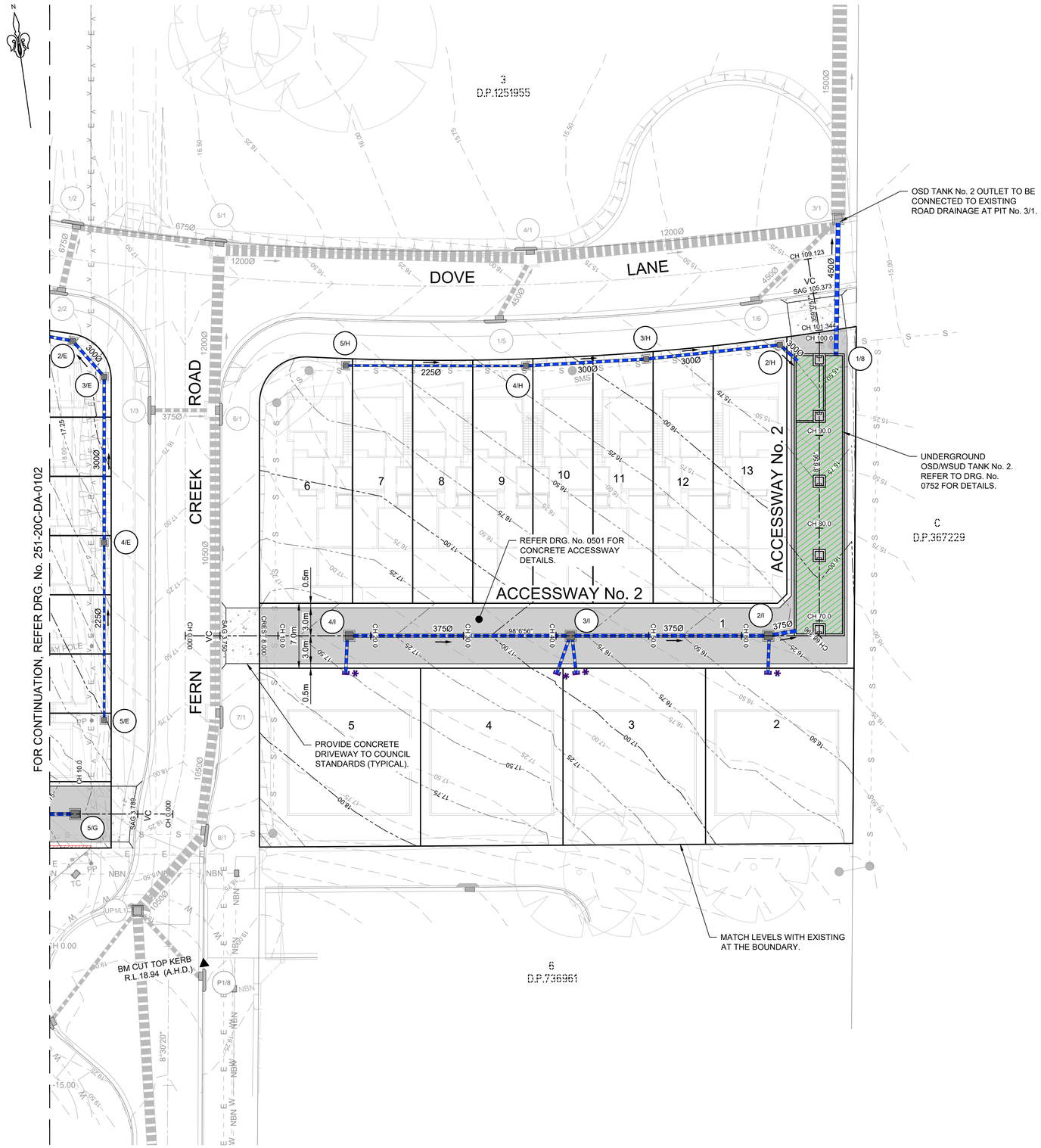
Drawing Title: GENERAL ARRANGEMENT PLAN SHEET 1 OF 2

C&R Ref. 251-20 | Drawing Ref. 251-20C-DA-0101 | Revision A

CAD REF: F:\251-20\ENGINEERING\DRAWINGS\251_DA\251-20C-DA-0101.DWG - A1 # # # DATE PRINTED: 19/01/2021 1:31:36 PM



PLAN

SCALE 1:250

NOTES:

1. REFER TO DRAWING No. 0002 & 0003 FOR NOTES AND LEGEND.
2. REFER TO NORTHERN BEACHES COUNCIL FOR STANDARD DETAIL DRAWINGS.
3. SERVICES SHOWN ARE INDICATIVE ONLY.
4. ALL ACCESSWAY PITS ARE TO BE FITTED WITH OCEANGUARD PIT INSERTS (TYP.)

0 2.5 5 7.5 10 15 20 25m
1:250

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:

Signature:

Principal: MOREHUMAN WARRIEWOOD

L.G.A. NORTHERN BEACHES COUNCIL

Scale: AS SHOWN

Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

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ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
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Drawing Title: GENERAL ARRANGEMENT PLAN SHEET 2 OF 2

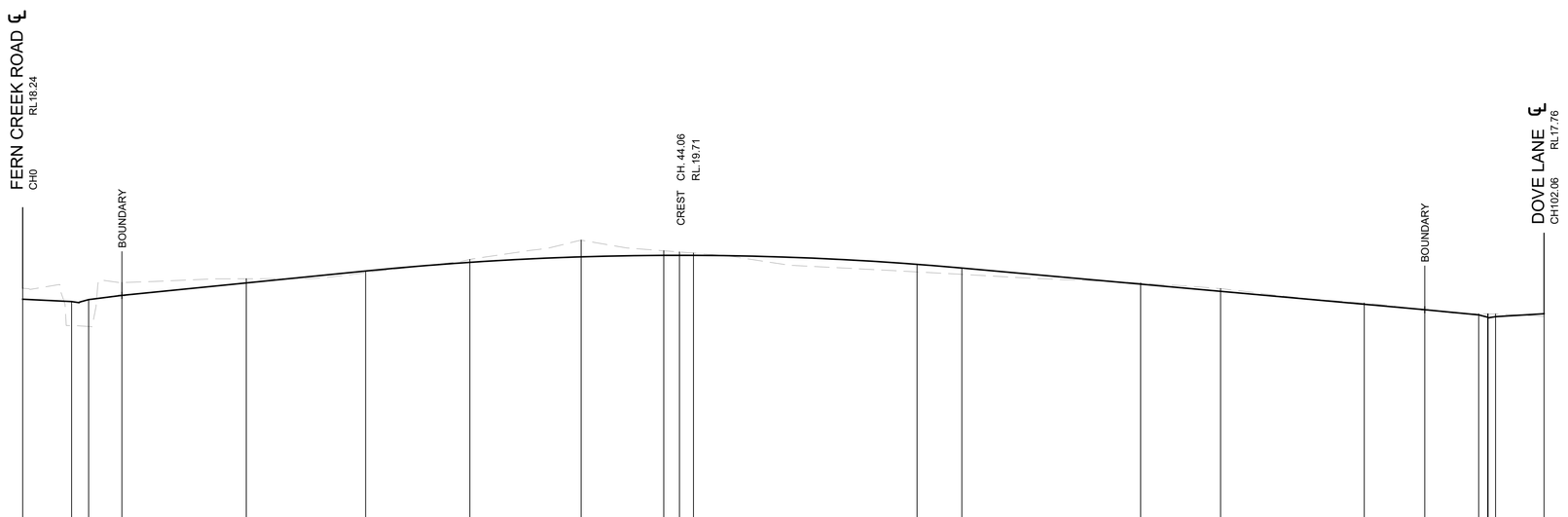
C&R Ref. 251-20 | Drawing Ref. 251-20C-DA-0102 | Revision A

CAD REF: Z:\251-20\ENGINEERING\DRAWINGS\CV_DA\251-20C-DA-0102.DWG A 0 0 0 DATE PRINTED: 18/01/2021 1:32:08 PM

A1

LEGEND

DESIGN SURFACE
EXISTING SURFACE



HORIZ GEOMETRY

GRADE (%)

V.C. LENGTH (m)

DATUM R.L.7

DESIGN LEVEL	18.24	18.16	18.23	18.37	18.79	19.19	19.48	19.66	19.71	19.71	19.71	19.41	19.29	18.75	18.51	18.07	17.89	17.72	17.64	17.62	17.66	17.76
EXISTING LEVEL	18.61	17.36	17.33	18.80	18.93	19.13	19.57	20.22	19.87	19.83	19.79	19.16	19.08	18.78	18.60	18.11	17.89	17.75	17.75	17.75	17.75	17.67
CHAINAGE	0	3.28	4.43	6.66	15	23.01	30	37.47	43.01	44.06	45	60	63.01	75	80.36	90	94.06	97.68	98.28	98.31	98.81	102.06

ACCESSWAY 01 - LONGITUDINAL SECTION

HORIZONTAL SCALE - 1:200
VERTICAL SCALE - 1:100

1:100 0 1 2 3 4 6 8 10m
1:200 0 2 4 6 8 12 16 20m

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

APPROVED COMPANY AS/NZS 4801 Certification Services
APPROVED COMPANY ISO 14001 Certification Services
APPROVED COMPANY ISO 9001 Certification Services
DIAL 1100 BEFORE YOU DIG

Authorised for issue by:
Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

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ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
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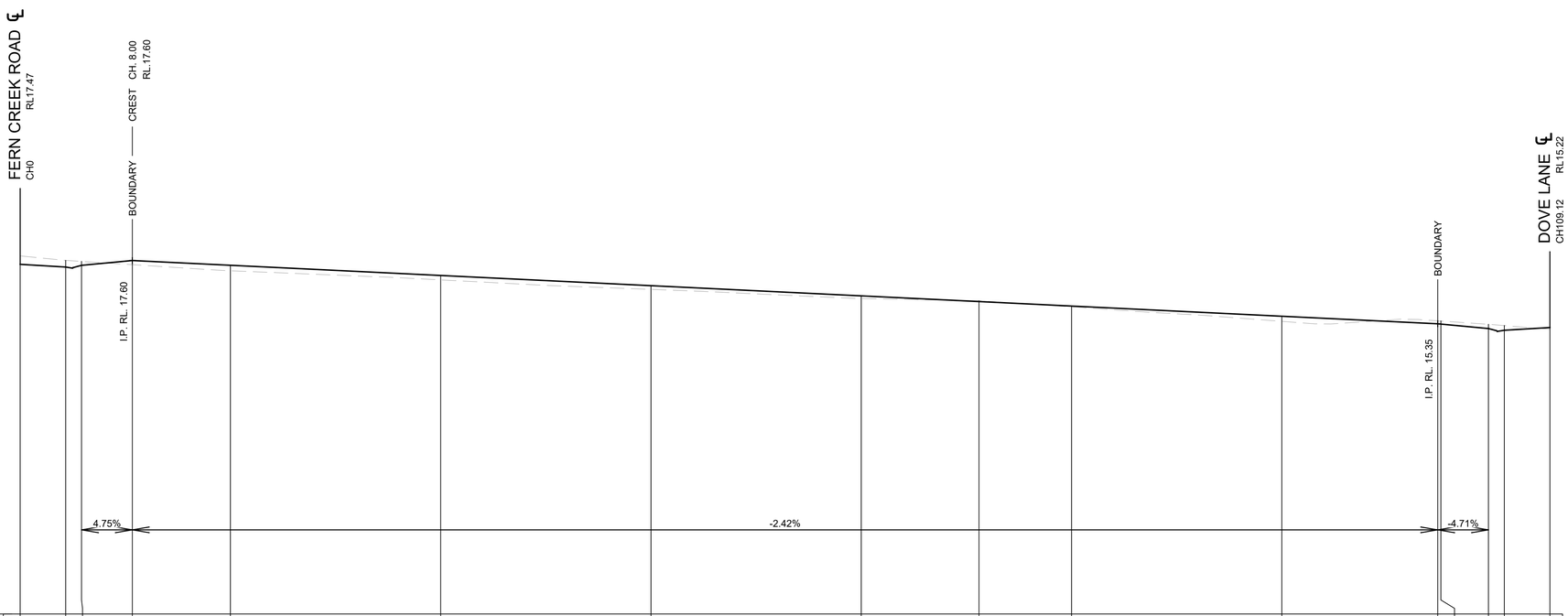
Drawing Title: ACCESSWAY 01 LONGITUDINAL SECTION
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0201
Revision A

CAD REF: Z:\251-20\ENGINEERING\DRAWINGS\CIV_DA\251-20C-DA-0201.DWG - A - # # # - DATE PRINTED: 18/01/2021 1:32:19 PM

A1

LEGEND

DESIGN SURFACE
EXISTING SURFACE



HORIZ GEOMETRY

GRADE (%)

V.C. LENGTH (m)

DATUM R.L.5

DESIGN LEVEL	17.47	17.37	17.43	17.60	17.44	17.07	16.71	16.34	16.14	15.98	15.62	15.35	15.34	15.18	15.12	15.22
EXISTING LEVEL	17.77	17.61	17.57	17.46	17.24	16.91	16.57	16.25	16.17	15.95	15.44	15.46	15.45	15.33	15.28	15.16
CHAINAGE	0	3.25	4.38	8	15	30	45	60	68.4	75	90	101.12	101.34	104.74	105.87	109.12

ACCESSWAY 02 - LONGITUDINAL SECTION

HORIZONTAL SCALE - 1:200
VERTICAL SCALE - 1:100

1:100 0 1 2 3 4 6 8 10m
1:200 0 2 4 6 8 12 16 20m

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:
Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

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Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
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Drawing Title: ACCESSWAY 02 LONGITUDINAL SECTION

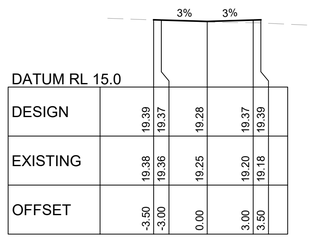
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0202
Revision A

CAD REF: Z:\251-20\BUNDE\BWK\DRAWINGS\DY_DA\251-20C-DA-0202.DWG A. # # # # DATE PRINTED: 19/01/2021 1:32:21 PM

A1

LEGEND

DESIGN SURFACE
EXISTING SURFACE



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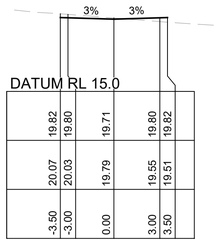

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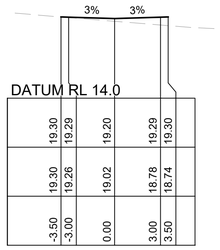

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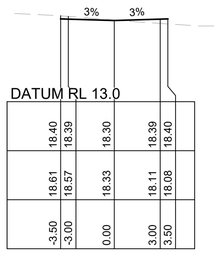

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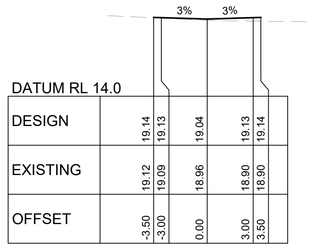

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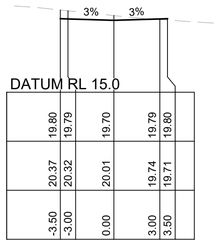

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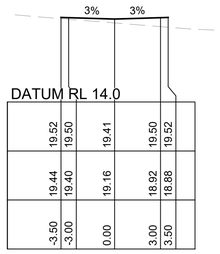

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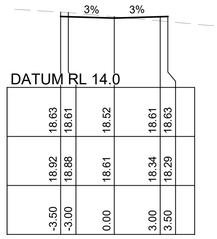

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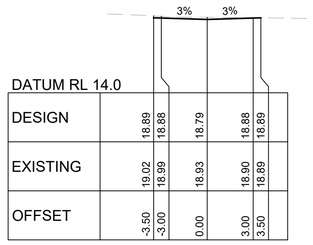

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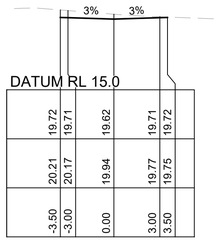

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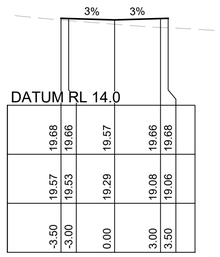

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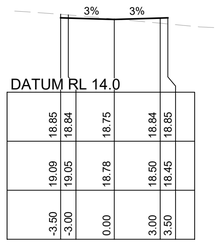

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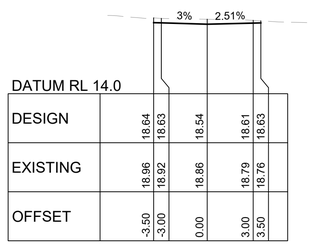

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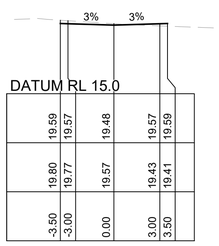

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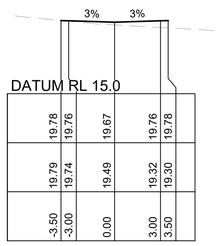

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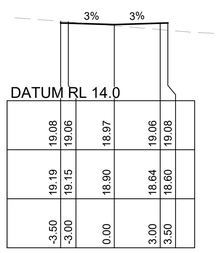

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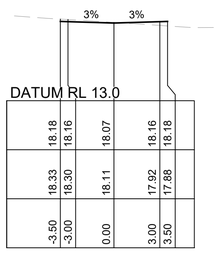

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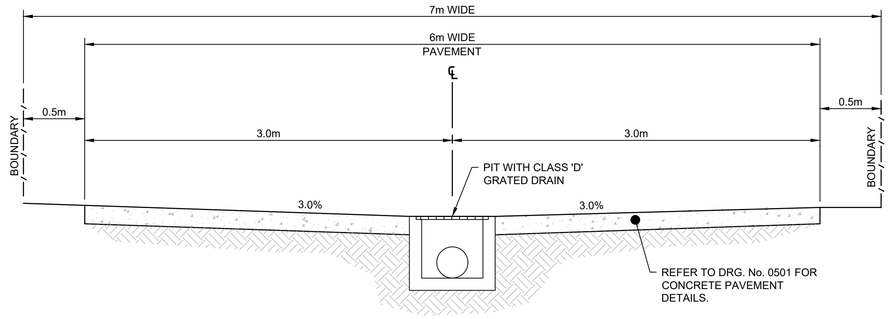

ACCESSWAY 01 - TYPICAL CROSS SECTION

NOT TO SCALE

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1:200

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:
Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

CRAIG & RHODES TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard,
Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
www.craigandrhodes.com.au
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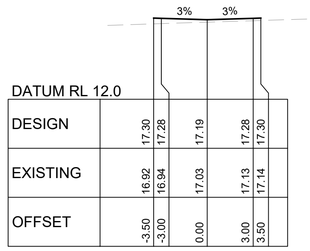
Drawing Title: ACCESSWAY 01 CROSS SECTIONS
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0301
Revision A

CAD REF: Z:\251-20\DWG\BENGGUANWWGSCP_DA\251-20C-DA-0301.DWG - A.1 # # # - DATE PRINTED: 19/01/2021 1:32:27 PM

A1

LEGEND

DESIGN SURFACE
EXISTING SURFACE



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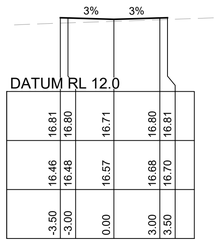

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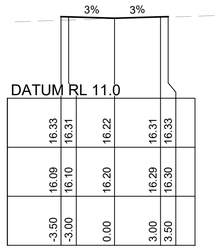

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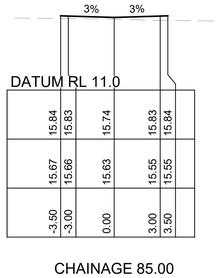

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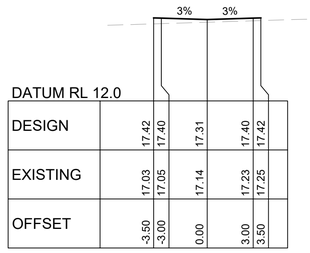

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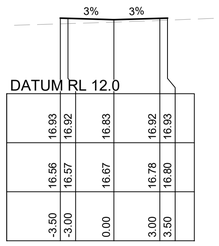

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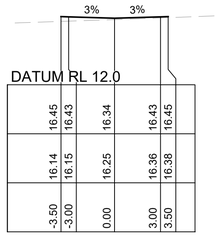

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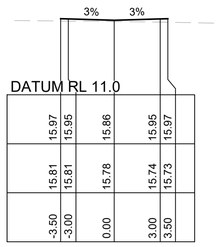

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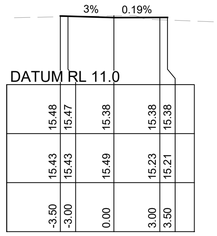

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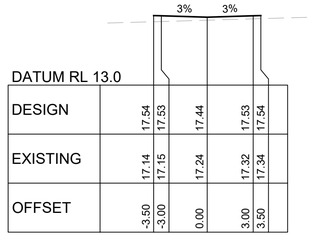

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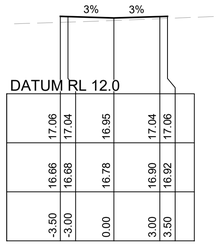

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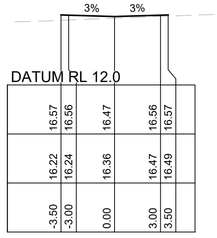

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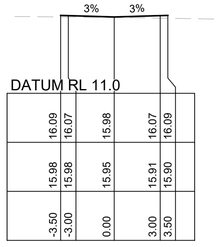

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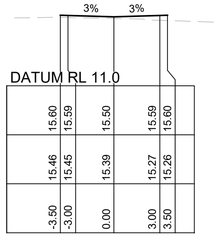

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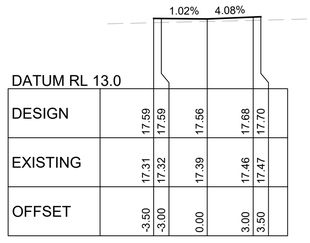

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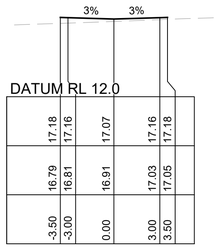

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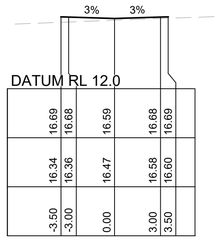

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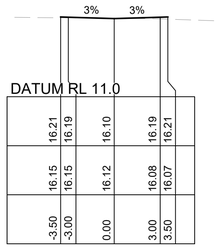

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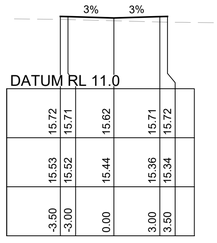

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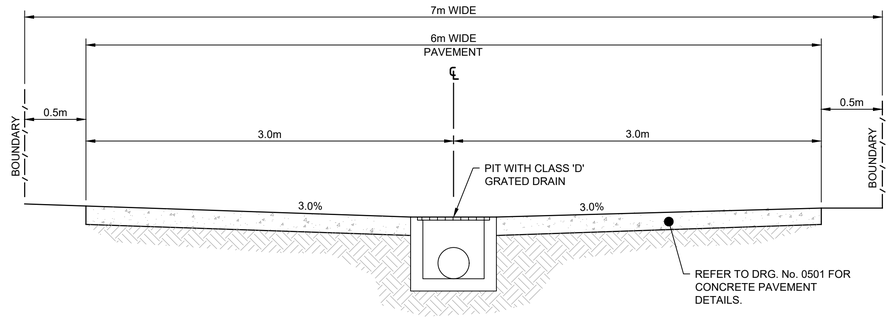

ACCESSWAY 02 - TYPICAL CROSS SECTION

NOT TO SCALE

0 2 4 6 8 12 16 20m
1:200

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:
Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

CRAIG & RHODES TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard,
Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
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Drawing Title: ACCESSWAY 02 CROSS SECTIONS
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0302
Revision A

CAD FILE: Z:\251-20\NORTHERN\DRAWING\251_DA\251-20C-DA-0302.DWG - A1 - # # # - DATE PRINTED: 18/01/2021 18:33 PM

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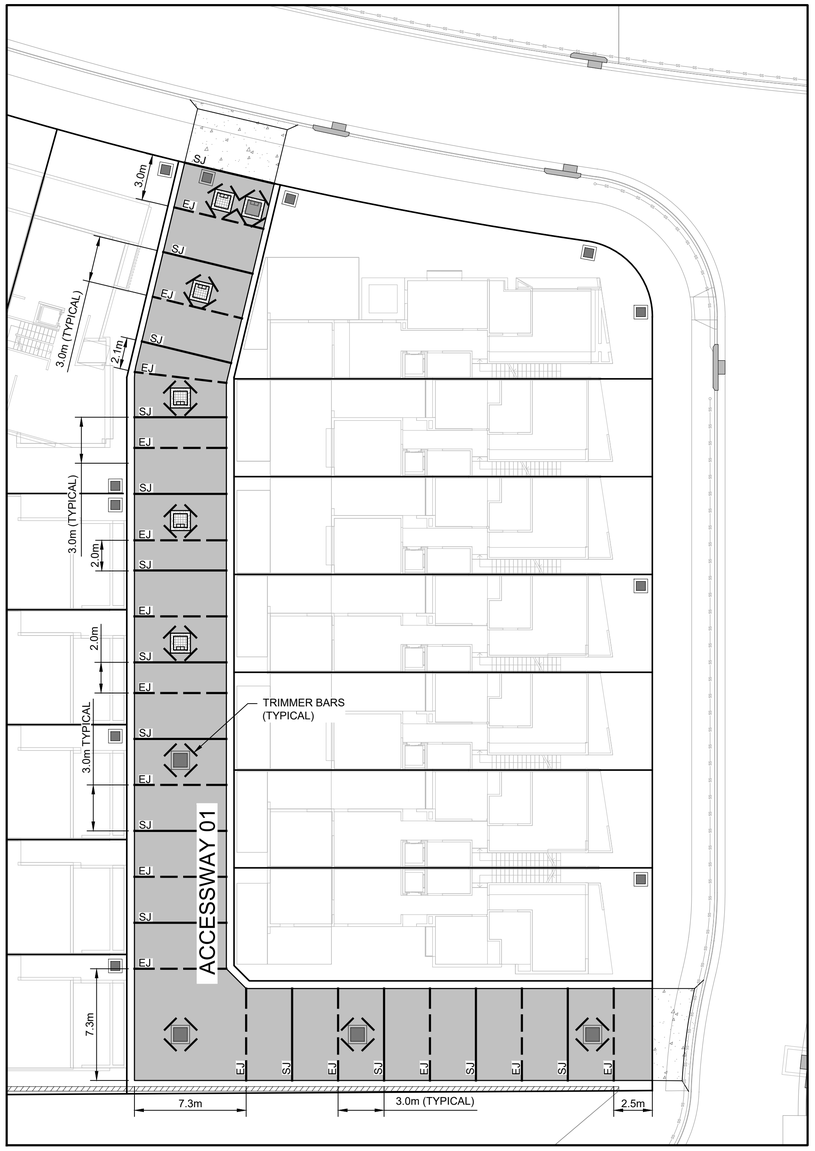
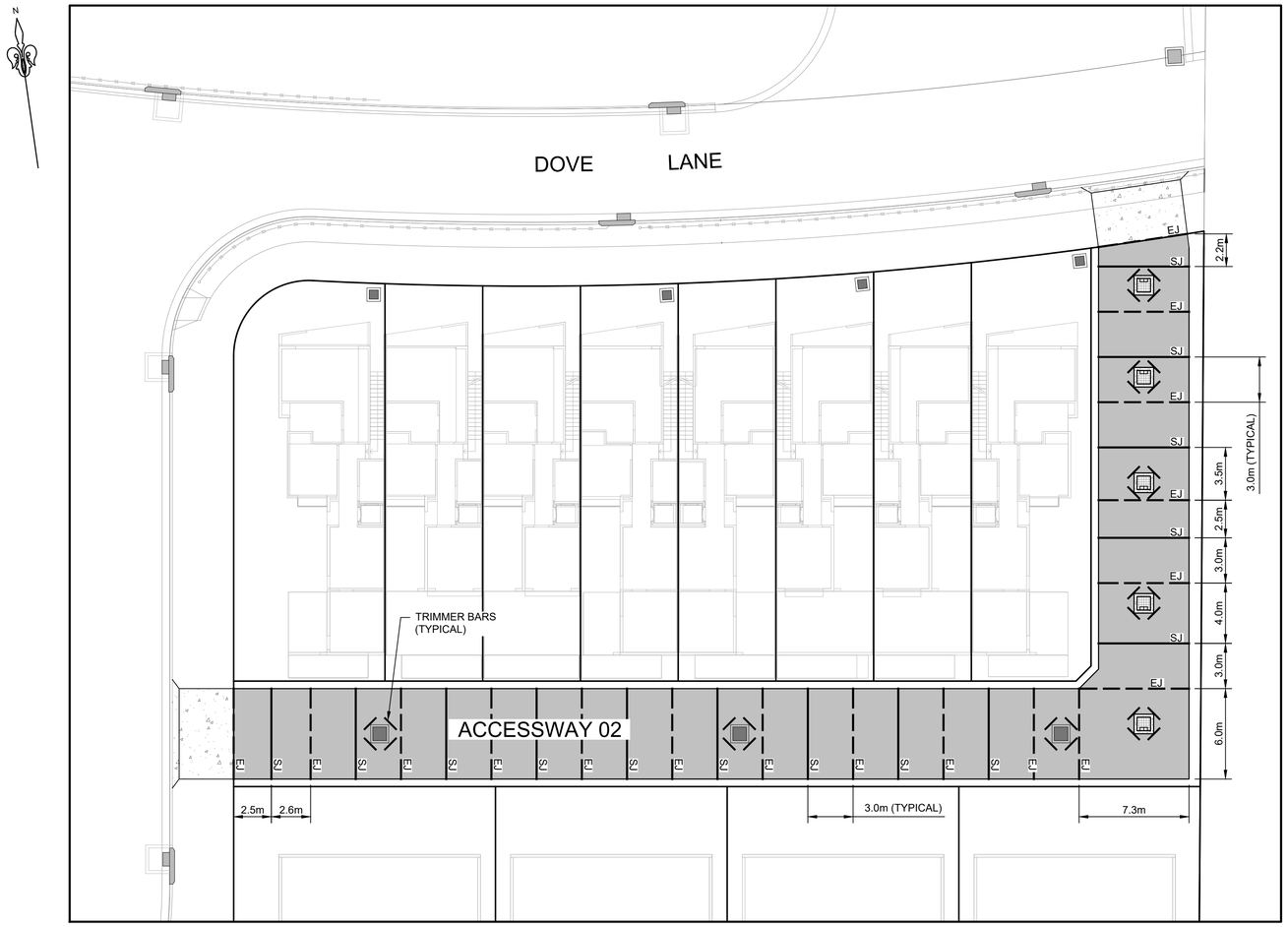


PLAN

SCALE 1:200

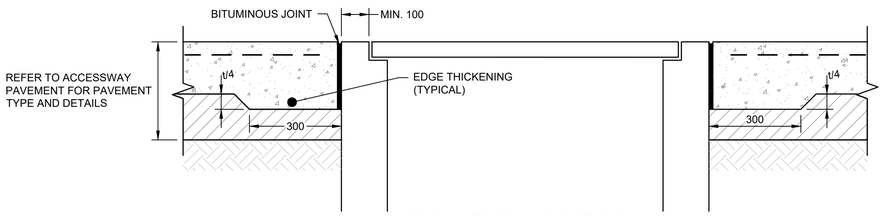


PLAN

SCALE 1:200

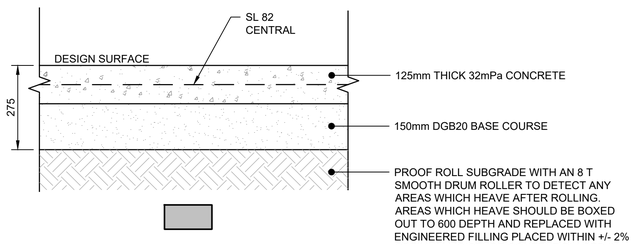
NOTE

JOINT TO BE SAWN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING (24 HRS. MAX.)



ISOLATION JOINT (IJ)

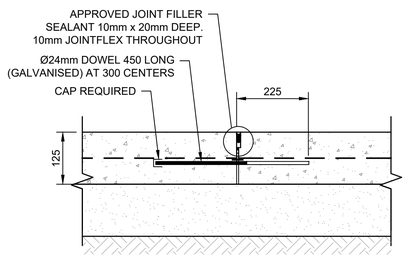
SCALE NTS



CONCRETE DRIVEWAY PAVEMENT DETAIL

NOT TO SCALE

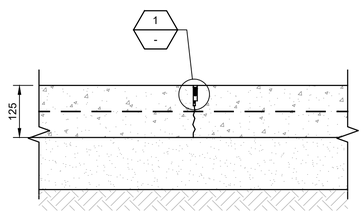
MIN. CBR 5% (CONTRACTOR TO CONFIRM CBR PRIOR TO CONSTRUCTION)



EXPANSION JOINT (EJ)

NOTE: EJ TO BE MAXIMUM 8m SPACING

NOT TO SCALE



SAW JOINT (SJ)

NOTE: SJ TO BE MAXIMUM 4m SPACING

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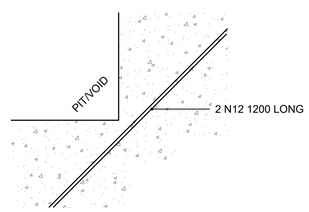
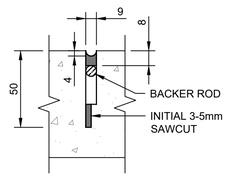


TRIMMER BARS DETAIL

(TYPICAL)

NOT TO SCALE



DETAIL 1 / -

NTS

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DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by: ..... Signature:

Principal: MOREHUMAN WARRIEWOOD

L.G.A. NORTHERN BEACHES COUNCIL

Scale: AS SHOWN | Datum: AHD

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reception@crhodes.com.au
www.craigandrhodes.com.au
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Drawing Title: CONCRETE ACCESSWAY 01 AND 02 PLAN AND DETAILS

C&R Ref. 251-20 | Drawing Ref. 251-20C-DA-0501 | Revision A

CAD REF: Z:\251-20\ENGINEERING\DRAWINGS\DV_DA\251-20C-DA-0501.DWG A B B F F DATE PRINTED: 19/01/2021 1:32:42 PM

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INSET A
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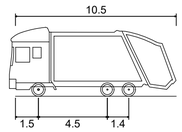
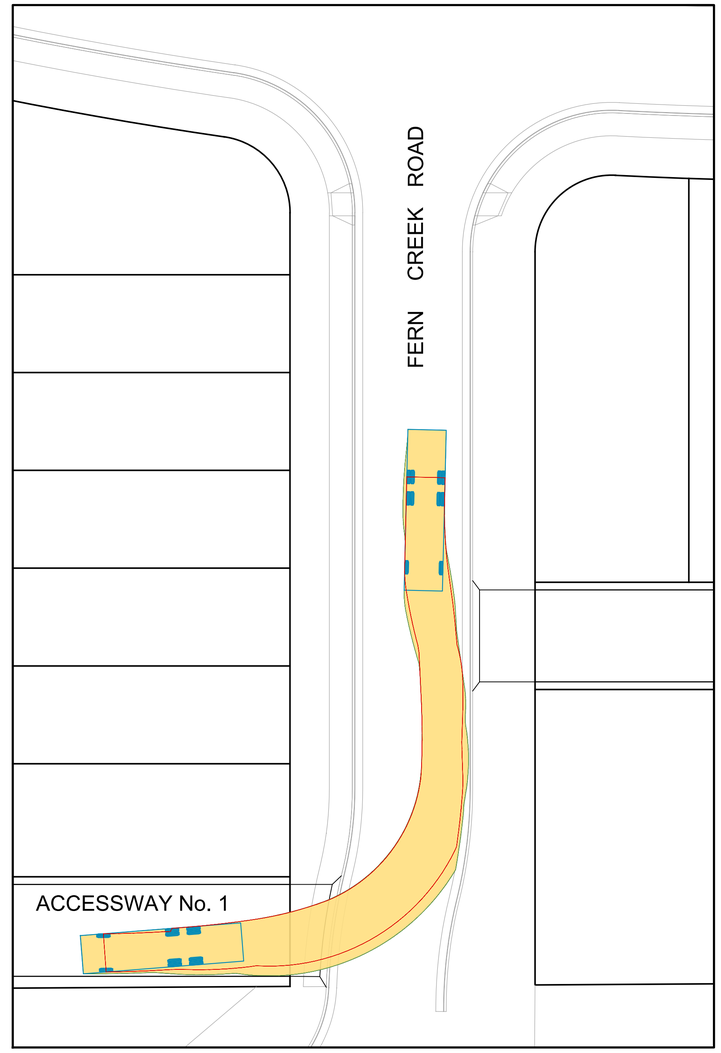


Copy of NB Garbage Truck 10.5m

Overall Length	10.500m
Overall Width	2.500m
Overall Body Height	4.500m
Min Body Ground Clearance	0.435m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



INSET B
SCALE 1:200

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1:200

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

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Signature:

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Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

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Drawing Title: VEHICLE TURNING PATHS SHEET 1 OF 2

C&R Ref. 251-20

Drawing Ref. 251-20C-DA-0551

Revision A

CAD REF: Z:\251-20\EngWork\Engineering\DWG_DWG\251-20C-DA-0551.DWG - A1 - # # # - DATE PRINTED: 19/01/2021 12:48 PM

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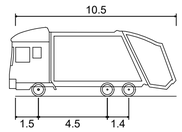
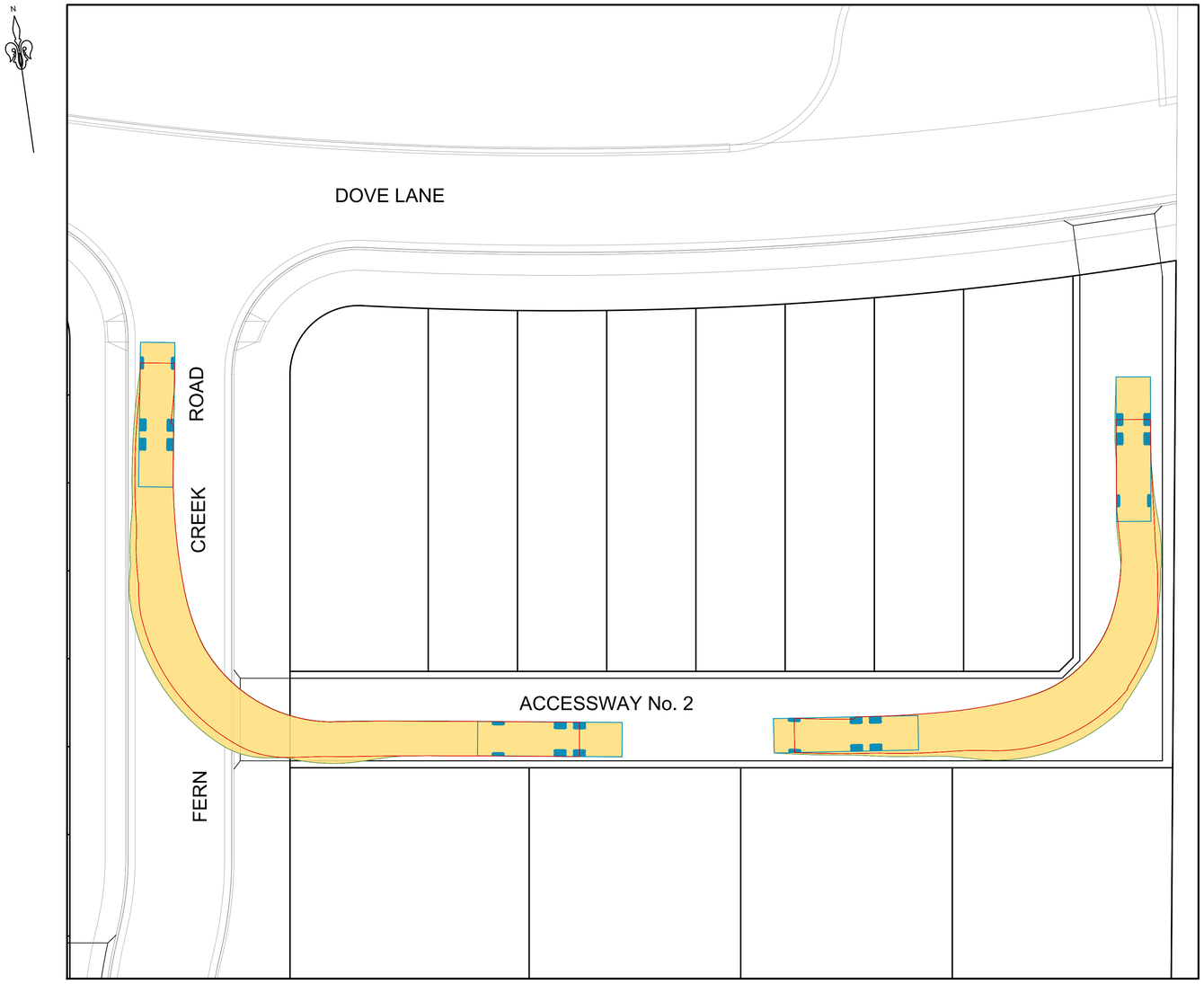
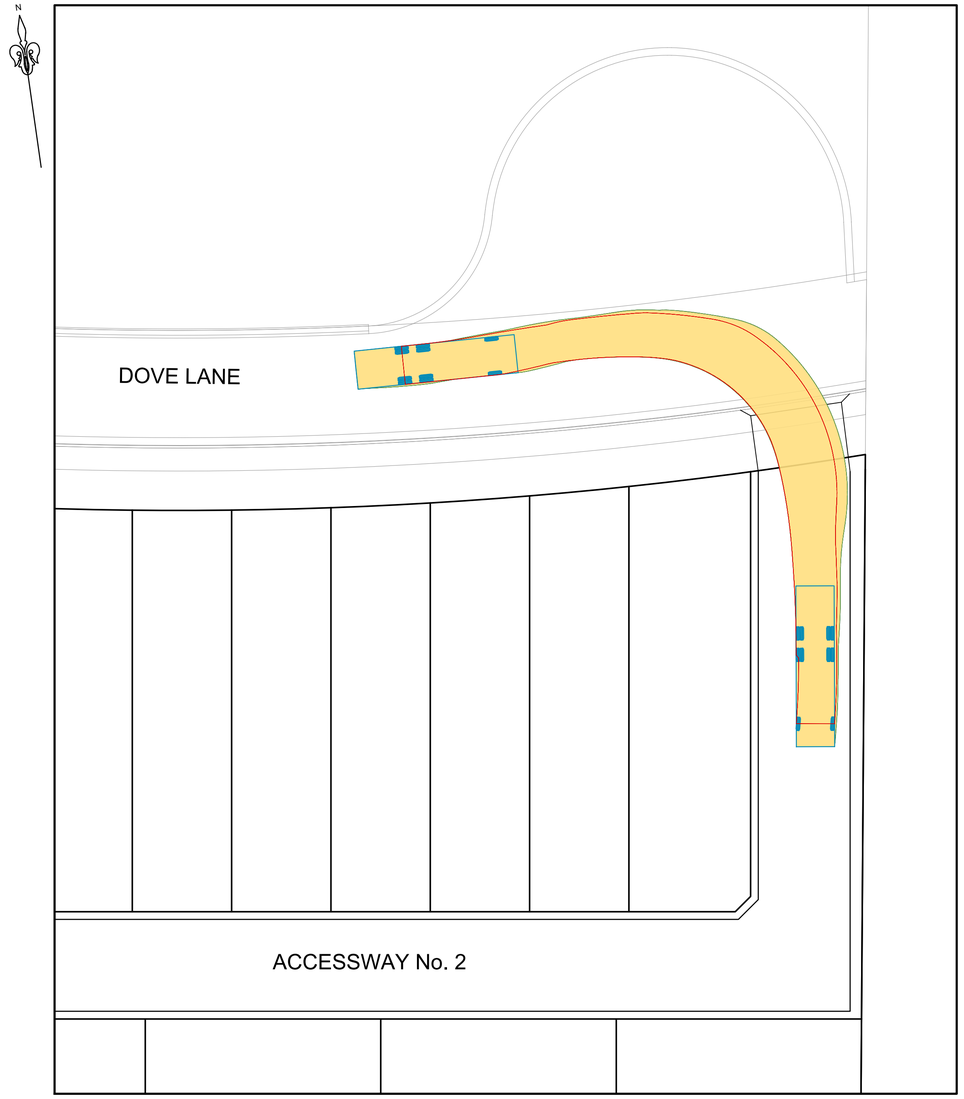


Copy of NB Garbage Truck 10.5m

Overall Length	10.500m
Overall Width	2.500m
Overall Body Height	4.500m
Min Body Ground Clearance	0.435m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



INSET A
SCALE 1:200



INSET B
SCALE 1:200

DEVELOPMENT APPLICATION

0 2 4 6 8 12 16 20m
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REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:

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L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project:
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LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557
FERN CREEK ROAD, WARRIEWOOD

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Drawing Title
VEHICLE TURNING PATHS
SHEET 2 OF 2

C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0552
Revision A

CAD REF: Z:\251-20\NORTHERN\DRAWINGS\251-20C-DA-0552.DWG - A - F - # - # DATE PRINTED: 19/01/2021 1:32:35 PM

A1

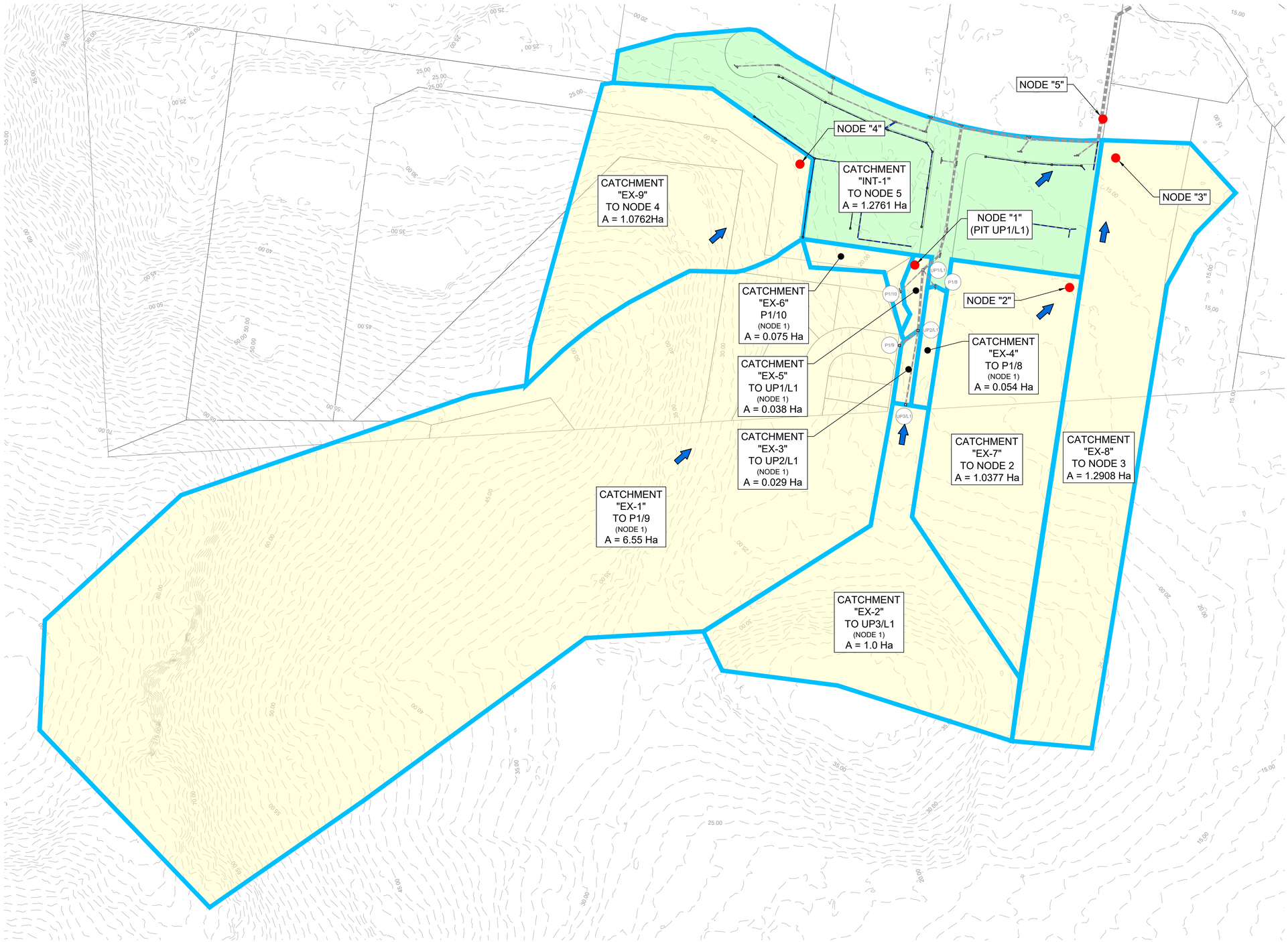
LEGEND

- STORMWATER DRAINAGE CATCHMENT BOUNDARY
- OVERLAND FLOW PATH
- EXTERNAL CATCHMENT
- INTERNAL CATCHMENT

N

SUB-CATCHMENT SUMMARY

CATCHMENT ID	AREA (m^2)	RECEIVING NODE
EX-1	6.550	PIT "1/9" (NODE 1)
EX-2	1.000	PIT "UP3/L1" (NODE 1)
EX-3	0.029	PIT "UP2/L1" (NODE 1)
EX-4	0.054	PIT "P1/8" (NODE 1)
EX-5	0.038	PIT "UP1/L1" (NODE 1)
EX-6	0.075	PIT "P1/10" (NODE 1)
EX-7	1.0377	NODE 2
EX-8	1.2908	NODE 3
EX-9	1.0762	NODE 4
INT-1	1.2761	NODE 5



PLAN

SCALE 1:1000

0 10 20 30 40 60 80 100m
1:1000

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:

Signature:

Principal: MOREHUMAN WARRIEWOOD

L.G.A. NORTHERN BEACHES COUNCIL

Scale: AS SHOWN

Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

CRAIG & RHODES TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard,
Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
www.craigandrhodes.com.au

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Drawing Title: PRE-DEVELOPMENT CATCHMENT PLAN

C&R Ref. 251-20

Drawing Ref. 251-20C-DA-0701

Revision A

CAD REF: Z:\251-20\DWG\BENGGUANWWGSCP_DA\251-20C-DA-0701.DWG - A.DL - DATE PRINTED: 19/01/2021 1:33:08 PM

A1

LEGEND

- STORMWATER DRAINAGE INTERNAL CATCHMENT BOUNDARY
- x-x 0.0000ha — STORMWATER DRAINAGE INTERNAL CATCHMENT AREA
- STORMWATER DRAINAGE EXISTING CATCHMENT BOUNDARY
- x-x 0.0000ha — STORMWATER DRAINAGE EXISTING CATCHMENT AREA

N

STORMWATER FLOW TABLE

STORM EVENT	PEAK FLOW AT SITE OUTLET (NODE 5) m^3/s	
	PRE-DEVELOPED	POST-DEVELOPED
2 yr ARI	1.35	1.27
5 yr ARI	2.27	2.011
20 yr ARI	3.54	3.101
20 yr ARI + 30% CLIMATE CHANGE	5.12	4.442
100 yr ARI	4.96	4.352
100 yr ARI + 30% CLIMATE CHANGE	7.25	6.079

PLAN

SCALE 1:500

0 5 10 15 20 30 40 50m
1:500

DEVELOPMENT APPLICATION

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reception@crhodes.com.au
www.craigandrhodes.com.au
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Drawing Title: POST DEVELOPMENT CATCHMENT PLAN

C&R Ref. 251-20

Drawing Ref. 251-20C-DA-0702

Revision A

CAD REF: Z:\251-20\251-20C\BRISBANE\WINGSCITY_DA\251-20C-DA-0702.DWG A. # # # DATE PRINTED: 18/01/2021 1:32:21 PM

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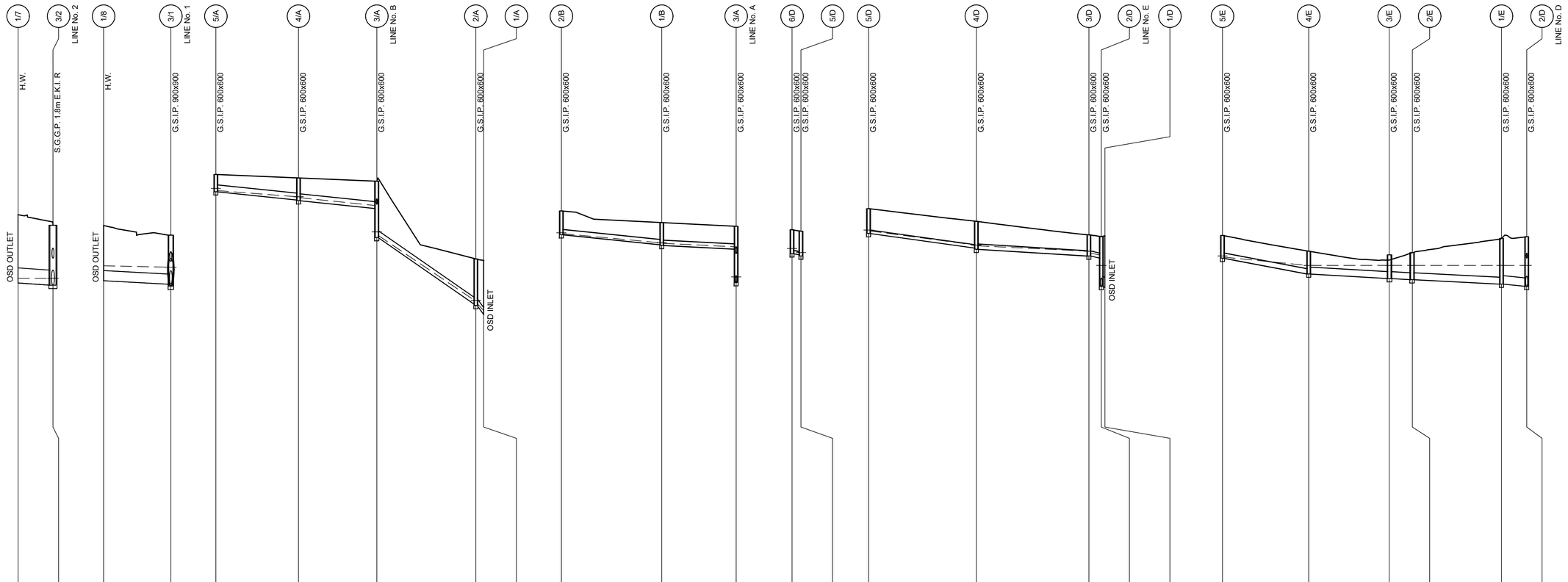
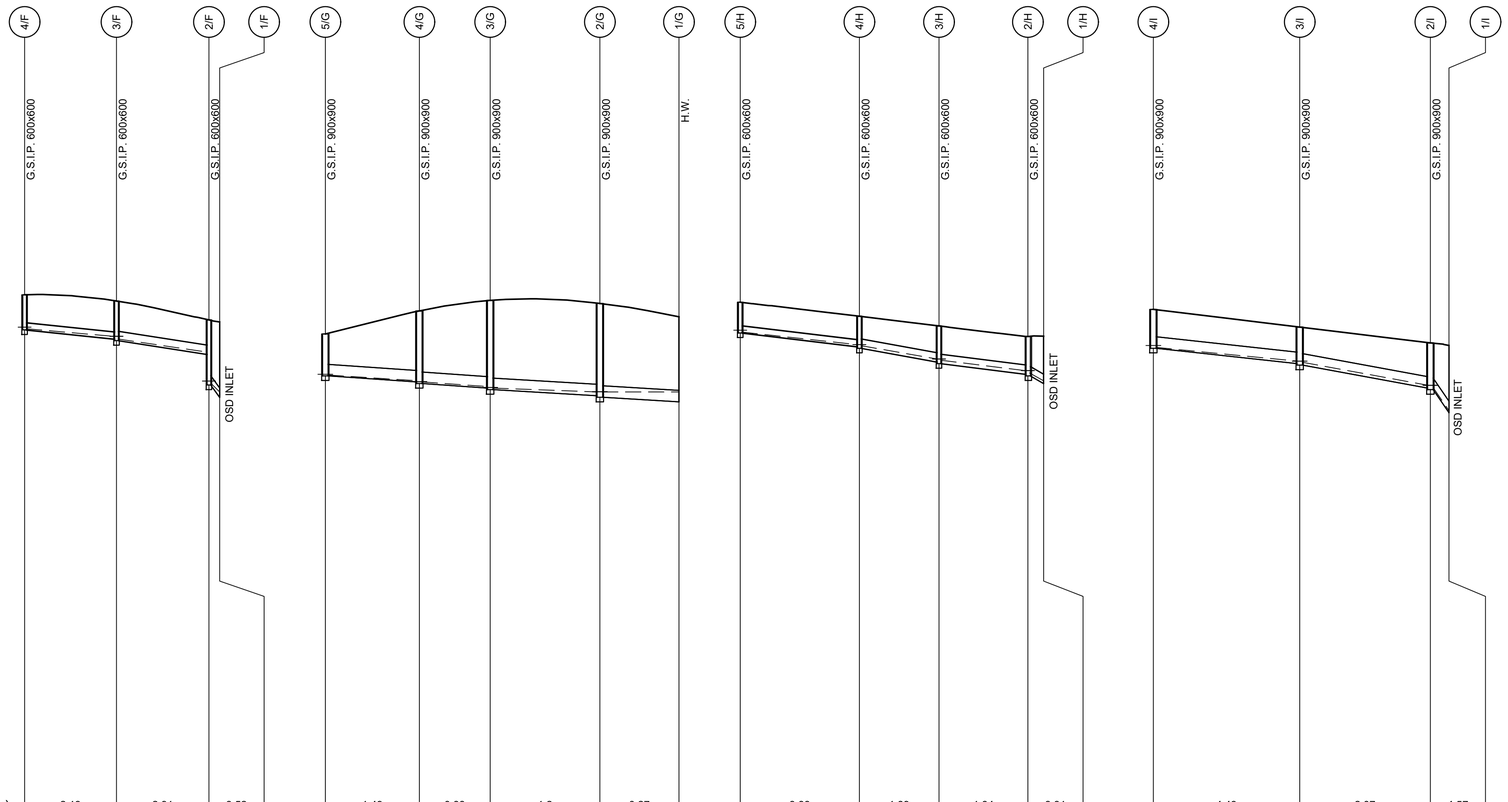
- **ALL RCP PIPES TO BE STEEL REINFORCED CONCRETE PIPE (RCP) AND RUBBER RING JOINT (RRJ)**



| | | |

A1

- **ALL RCP PIPES TO BE STEEL REINFORCED CONCRETE PIPE (RCP) AND RUBBER RING JOINT (RRJ)**



	LINE No. F				LINE No. G			
PIPE VELOCITY (m/s)	2.13	2.91	3.52		1.49	0.88	1.2	0.27
DISCHARGE (cu.m/s)	0.009	0.023	0.035		0.005	0.008	0.01	0.013
PIPE SIZE	225	300	300		375	375	375	375
PIPE TYPE & CLASS	uPVC	uPVC	uPVC		RCP C4	RCP C4	RCP C4	RCP C4
DESIGN GRADE	2%	2.98%	22.86%		1.3%	1.3%	1.12%	1.16%
DATUM R.L	-2.0				-2.0			
DEPTH TO INVERT	1.15	1.29	1.13	2.13	1.37	2.37	2.91	3.01
	1.24			2.46	2.32	2.86		3.06
H.G.L. LEVEL 5 YEAR ARI	18.74	18.4	17.98	16.96	17.23	17	16.8	16.68
	18.49			16.68	17.04	16.85		16.68
INVERT LEVEL	18.7	18.35	17.9	16.9	17.2	16.95	16.75	16.5
	18.4			16.5	17	16.8		16.55
SURFACE LEVEL	19.85	19.64	19.03	18.96	18.57	19.32	19.66	19.56
ROAD CHAINAGE								
PIPE CHAINAGE	0	15	30.09	31.84	0	15.35	26.91	44.81
								57.73

	LINE No. H				LINE No. I		
PIPE VELOCITY (m/s)	3.88	1.89	1.84	3.31	4.43	2.07	4.57
DISCHARGE (cu.m/s)	0.011	0.03	0.044	0.059	0.017	0.043	0.061
PIPE SIZE	225	300	300	300	375	375	375
PIPE TYPE & CLASS	uPVC	uPVC	uPVC	uPVC	RCP C4	RCP C4	RCP C4
DESIGN GRADE	2.31%	3.46%	2.41%	9.74%	2.09%	3.52%	24.68%
DATUM R.L	-5.0				-4.0		
DEPTH TO INVERT	1	1.05	1.18	1.23	1.27	1.24	1.47
	1			1.23	1.19		1.52
H.G.L. LEVEL 5 YEAR ARI	15.63	15.18	14.75	14.71	16.13	15.64	14.89
	15.22			14.37	15.68		14.82
INVERT LEVEL	15.6	15.1	14.65	14.6	16.1	15.55	14.8
	15.15			14.25	15.6		14.75
SURFACE LEVEL	16.6	16.15	15.83	15.48	17.37	16.79	16.27
ROAD CHAINAGE							
PIPE CHAINAGE	0	19.45	32.45	46.96	0	23.89	45.22
				49.53			48.26

DEVELOPMENT APPLICATION

0 1 2 3 4 6 8 10m
1:100
0 5 10 15 20 30 40 50m
1:500

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by:

Signature:

Principal: MOREHUMAN WARRIEWOOD

L.G.A. NORTHERN BEACHES COUNCIL

Scale: AS SHOWN

Datum: AHD

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ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
www.craigandrhodes.com.au
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Drawing Title: STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 2 OF 4

C&R Ref. 251-20 | Drawing Ref. 251-20C-DA-0712 | Revision A

CAD REF: F:\251-20\ENGINEERING\DRAWINGS\CIV_DRAG\251-20C-DA-0712.DWG A # # # # DATE PRINTED: 19/01/2021 1:33:33 PM

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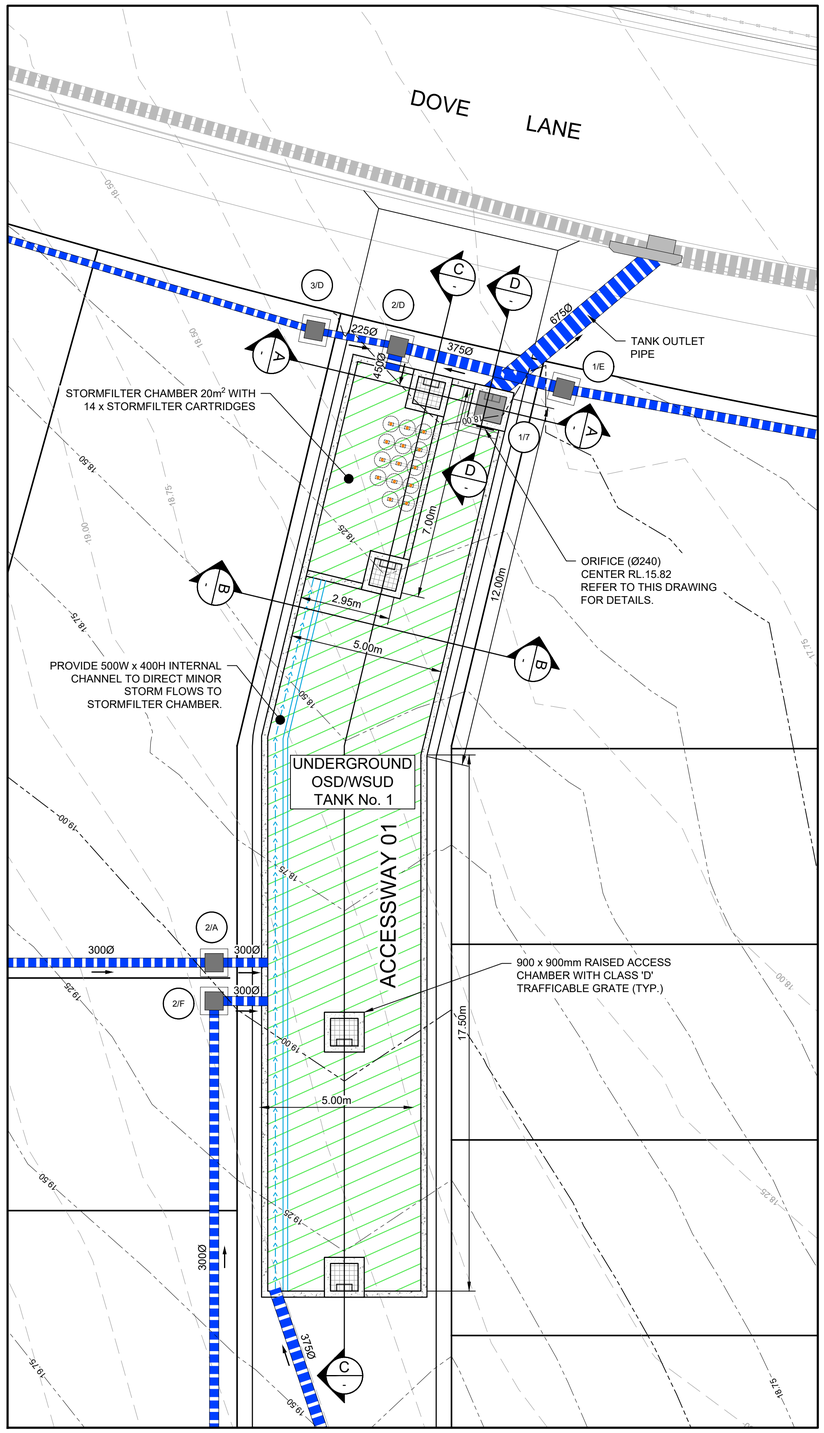

PLAN
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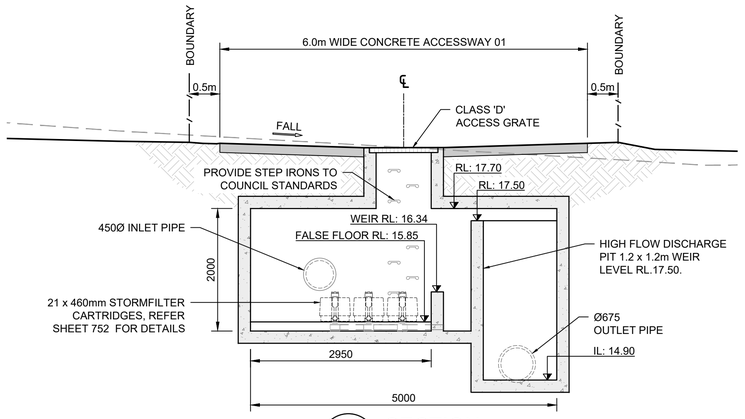
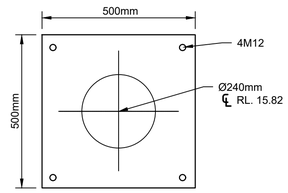


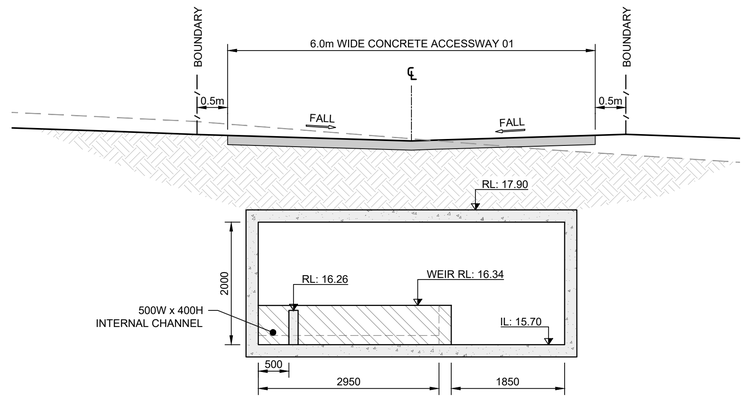
A SECTION
SCALE 1:50

UNDERGROUND OSD/WSUD TANK 1 CHARACTERISTICS	
INTERNAL AREA	150m²
INTERNAL HEIGHT	2.0m
TOTAL VOLUME PROVIDED	300m³
BOTTOM OF TANK RL	RL 15.70
BOTTOM OF TANK RL	RL 1770
FALSE FLOOR HEIGHT	150mm
STORMFILTER CARTRIDGE AREA	20m²
NO. OF CARTRIDGES	14
ORIFICE SIZE	Ø240mm
ORIFICE CL LEVEL	RL 15.82
HIGH FLOW DISHARGE WEIR LEVEL	RL 17.50
HIGHFLOW DISCHARGE PIT SIZE	1200 x 1200mm
OUTLET PIPE SIZE	Ø675mm

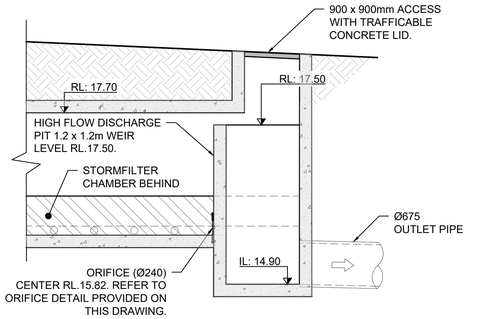
TOP WATER LEVEL TABLE	
STORM EVENT	T.W.L. OSD No. 1
2 yr	16.26
5 yr	16.67
20 yr	17.19
20 yr + 30% CLIMATE CHANGE	17.52
100 yr	17.51
100 yr +30% CLIMATE CHANGE	17.63



ORIFICE DETAILS
SCALE NTS



B SECTION
SCALE 1:50



D SECTION
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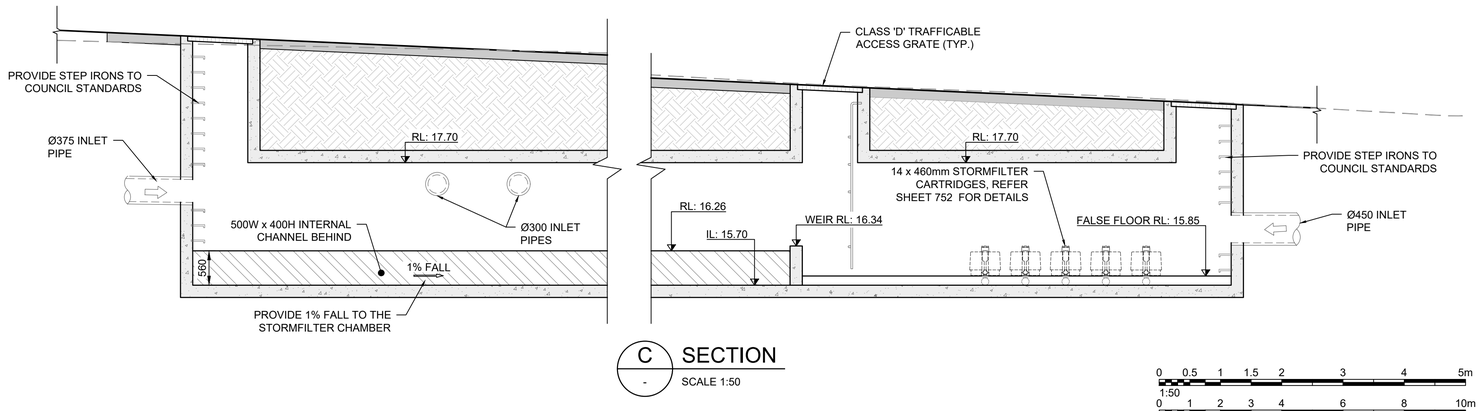

C SECTION
SCALE 1:50

0 0.5 1 1.5 2 3 4 5m
1:50
0 1 2 3 4 6 8 10m
1:100

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by: Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
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PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
www.craigandrhodes.com.au
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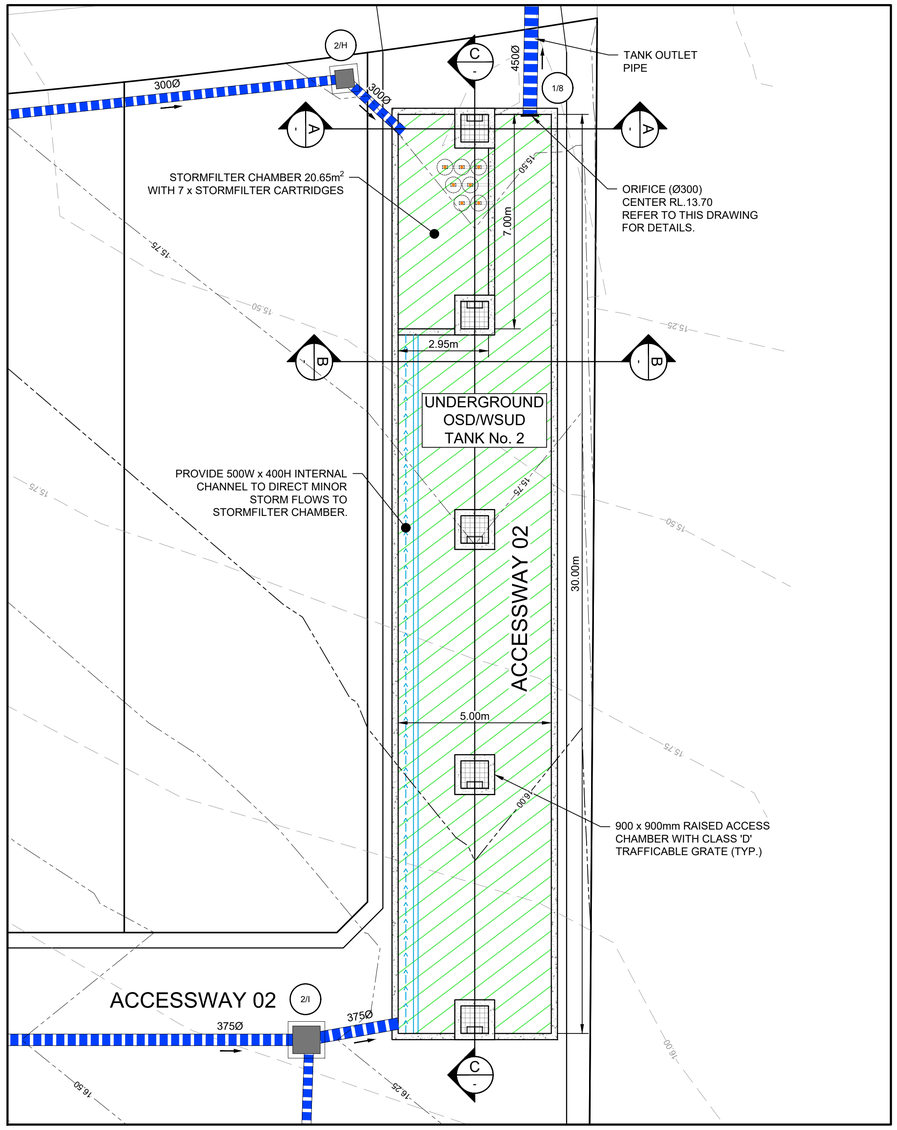
Drawing Title: UNDERGROUND OSD/WSUD TANK No. 1 PLAN AND SECTION
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0751
Revision A

CAD FILE: Z:\251-20\ENGINEERING\DRAWINGS\251_DA\251-20C-DA-0751.DWG A. # # # # DATE PRINTED: 19/01/2021 1:33:44 PM



PLAN
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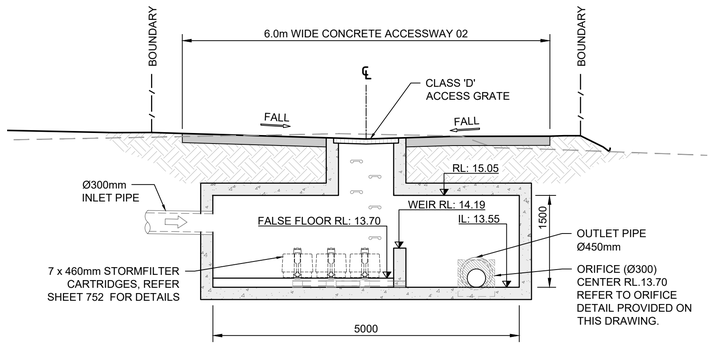

A SECTION
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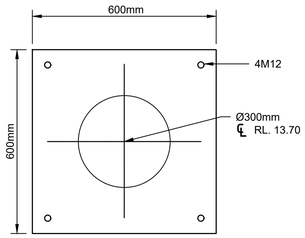
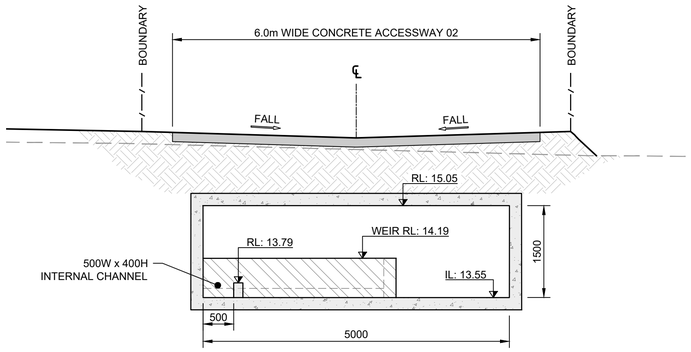


ORIFICE DETAILS
SCALE NTS

UNDERGROUND OSD/WSUD TANK 2 CHARACTERISTICS	
INTERNAL AREA	150m²
INTERNAL HEIGHT	1.5m
TOTAL VOLUME PROVIDED	225m³
BOTTOM OF TANK RL	RL 13.55
BOTTOM OF TANK RL	RL 15.05
FALSE FLOOR HEIGHT	150mm
STORMFILTER CARTRIDGE AREA	20m²
NO. OF CARTRIDGES	7
ORIFICE SIZE	Ø300mm
ORIFICE CL LEVEL	RL 13.70
OUTLET PIPE SIZE	Ø450mm

TOP WATER LEVEL TABLE	
STORM EVENT	T.W.L.
	OSD No. 1
2 yr	13.79
5 yr	13.86
20 yr	14.02
20 yr + 30% CLIMATE CHANGE	14.38
100 yr	14.35
100 yr +30% CLIMATE CHANGE	14.95



B SECTION
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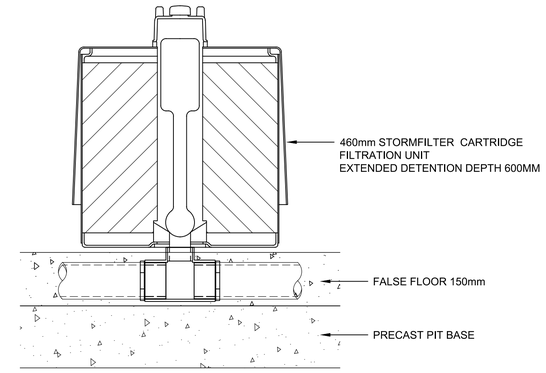
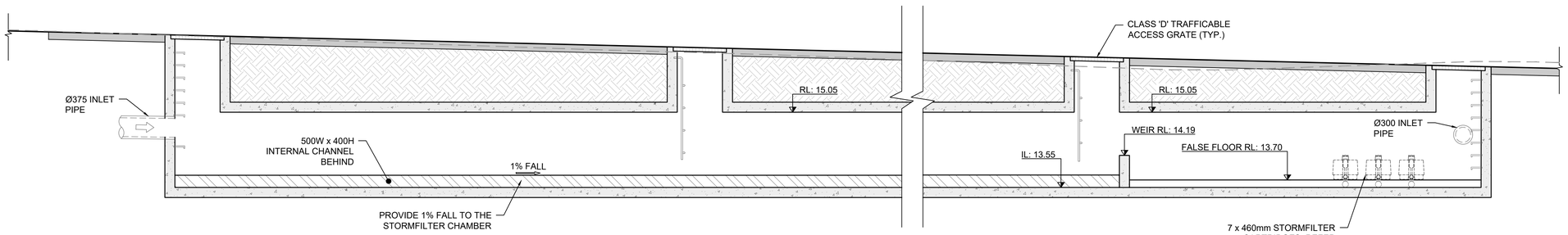


STORMFILTER CARTRIDGE DETAIL
NTS



C SECTION
SCALE 1:50

0 0.5 1 1.5 2 3 4 5m
1:50
0 1 2 3 4 6 8 10m
1:100

DEVELOPMENT APPLICATION

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A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

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Principal: MOREHUMAN WARRIEWOOD
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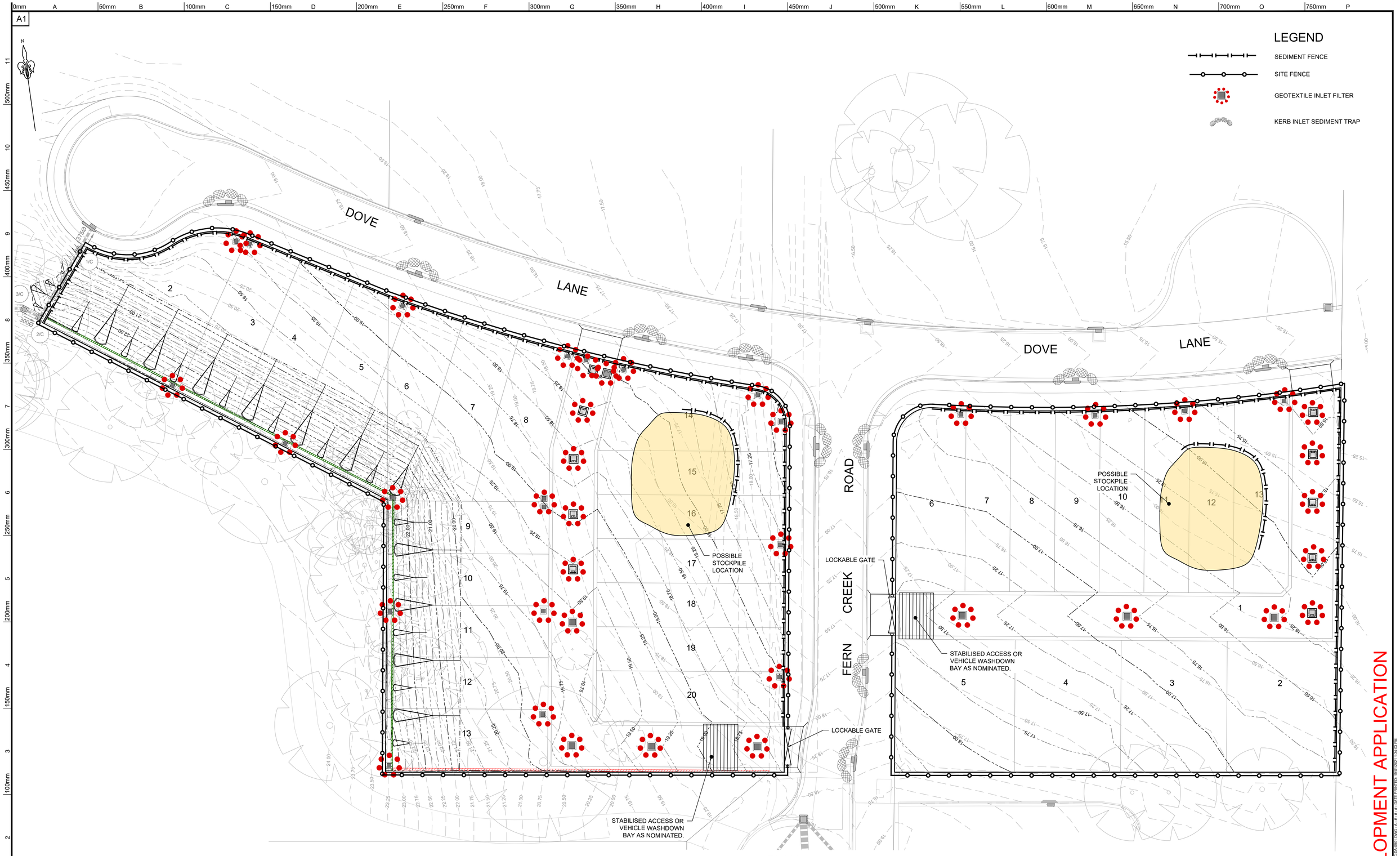
Drawing Title: UNDERGROUND OSD/WSUD TANK No. 2 PLAN AND SECTION
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0752
Revision A

CAD REF: Z:\251-20\DRAWING\MARWOOD\CIV_DA\251-20C-DA-0752.DWG - A1 - # # # - DATE PRINTED: 19/01/2021 1:33:34 PM

A1

LEGEND

- SEDIMENT FENCE
- SITE FENCE
- GEOTEXTILE INLET FILTER
- KERB INLET SEDIMENT TRAP



PLAN

SCALE 1:250

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1:250

DEVELOPMENT APPLICATION

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reception@crhodes.com.au
www.craigandrhodes.com.au

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Drawing Title: SEDIMENT AND EROSION CONTROL PLAN

C&R Ref. 251-20

Drawing Ref. 251-20C-DA-0901

Revision A

CAD REF: Z:\251-20\251-20C\DRAWINGS\251_DA\251-20C-DA-0901.DWG - A.DL # # # # - DATE PRINTED: 19/01/2021 1:34:03 PM

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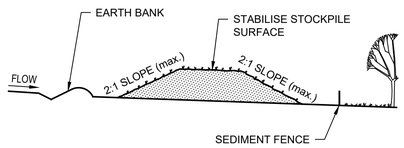
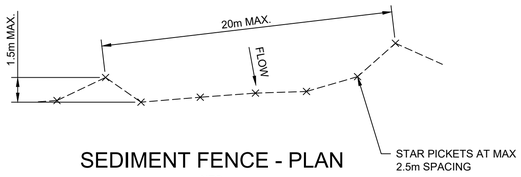


STOCKPILE

SCALE NTS

STOCKPILE

1. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95% STANDARD PROCTOR DENSITY.
2. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK LARGE STONE OR FOREIGN MATERIAL.
3. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.

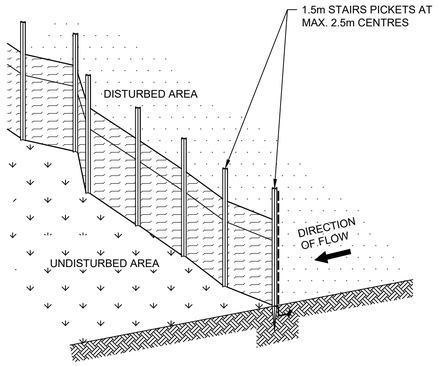


SEDIMENT FENCE - PLAN

NTS

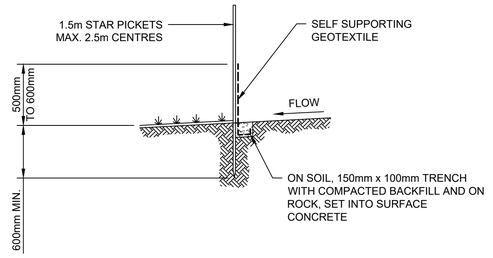
SEDIMENT FENCE

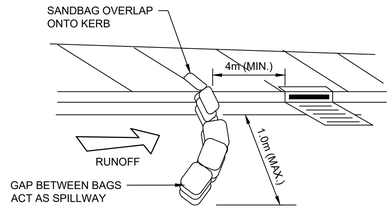
1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BE PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING, TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 litres/sec IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METER LONG STAR PICKETS INTO GROUND AT 2.5 METER INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS, ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES, OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



SEDIMENT FENCE - DETAIL

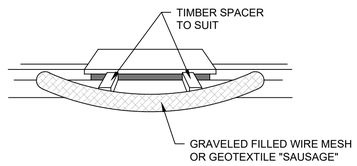
NTS





KERB INLET SEDIMENT FILTER (ON GRADE)

SCALE NTS

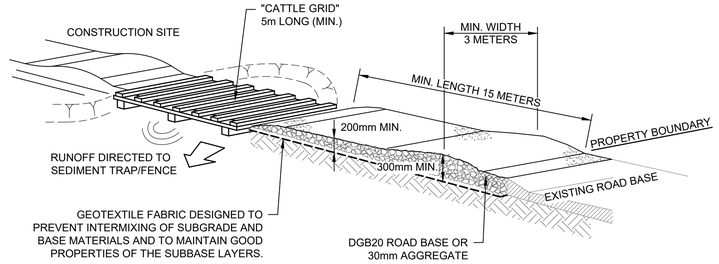


KERB INLET SEDIMENT FILTER (SAG)

SCALE NTS

KERB INLET SEDIMENT FILTER

1. REFER TO APPROVED PLANS FOR LOCATIONAND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION,DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.
3. INSTALL SEDIMENT TRAP IN ACCORDANCE WITH STANDARD DRAWING SUPPLIED WITH THE APPROVED PLAN, OR AS DIRECTED BY THESITE SUPERVISOR.
4. ENSURE THE SEDIMENT TRAP IS CONSTRUCTED UP-SLOPE OF AN ON-GRADE KERB INLET. THE SEDIMENT TRAP MUST NOT SURROUND THE KERB INLET UNLESS SPECIFICALLY DIRECTED BY THE SITE SUPERVISOR.
5. ENSURE THE SEDIMENT TRAP FULLY ENCLOSES THE KERB INLET. USE APPROPRIATE SPACERS TO ENSURE THE SEDIMENT TRAP DOES NOT BLOCK THE SIDE-ENTRY INLET.
6. TAKE ALL NECESSARY MEASURE TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE

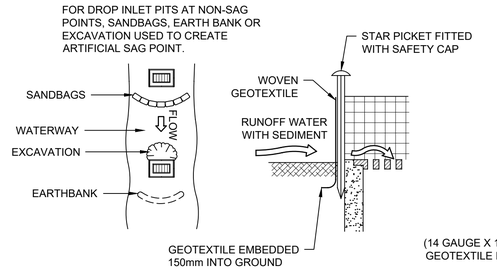


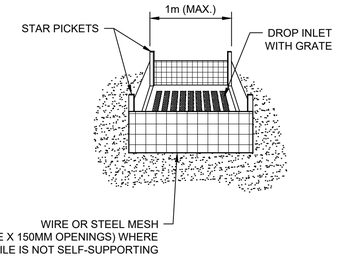
STABILISED SITE ACCESS DETAIL

NTS

STABILISED SITE ACCESS

1. COVER THE EXISTING SANDSTONE SUBGRADE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
2. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
3. ENSURE THE STRUCTURE IS AT LEAST 15 METERS LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METERS WIDE.
4. 4. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT



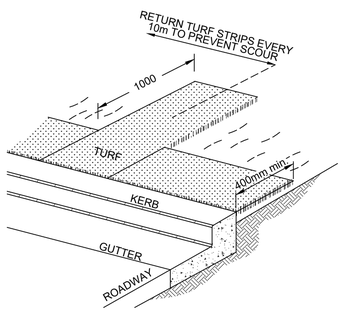


DROP INLET FILTER

NTS

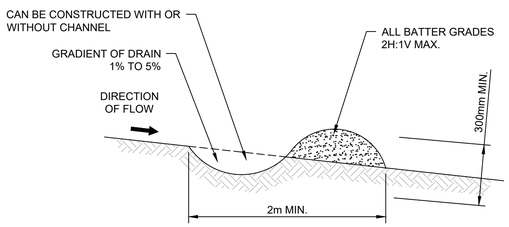
DROP INLET FILTERS

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OF STRAW BALES.
2. FOLLOW STANDARD DRAWINGS OF STRAW BALE FILTERS AND SEDIMENT FENCES FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1m CENTERS.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.



KERBSIDE TURF STRIP

1. INSTALL A 400mm MINIMUM WIDE ROLL OF TURF ON THE FOOTPATH NEXT TO THE KERB AND AT THE SAME LEVEL AS THE TOP OF THE KERB.
2. LAY 1.4m LONG TURF STRIPS NORMAL TO THE KERB EVERY 10m.
3. REHABILITATE DISTURBED SOIL BEHIND THE TURF STRIP FOLLOWING THE ESCP/SWMP.



NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES

EARTHBANK (LOW FLOW)

1. BUILD WITH GRADIENTS BETWEEN 1% AND 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

DEVELOPMENT APPLICATION

REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
A	18.01.21	ISSUED FOR DEVELOPMENT APPLICATION	F.K.	A.DL.

Authorised for issue by: ..... Signature:

Principal: MOREHUMAN WARRIEWOOD
L.G.A. NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOTS 4 & 7 D.P.1251955 AND LOT 1 D.P.1266557 FERN CREEK ROAD, WARRIEWOOD

CRAIG & RHODES TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel. 9869-1855
reception@crhodes.com.au
www.craigandrhodes.com.au
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Drawing Title: SEDIMENT AND EROSION CONTROL DETAILS
C&R Ref. 251-20
Drawing Ref. 251-20C-DA-0902
Revision A

CAD REF: Z:\251-20\ENGINEERING\DRAWINGS\CIV_DA\251-20C-DA-0902.DWG A. # # # # DATE PRINTED: 18/01/2021 1:31:21 PM