

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035 Level 9, The Forum, 203 Pacific Highway St. Leonards, NSW 2065 Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au

LENDLEASE COMMUNITIES

CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION



| -8021 hapm | | | | | | |
|----------------------|-------|------------|---------------------------------|------|--------|-------|
| S XR | | | | | | |
| IAL; \\05; | | | | | | |
| V19 V19 | | | | | | |
| CI- <i>P</i> 02\F | 6 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
|)53- ts\8(| 5 | 18/08/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 2190 oject | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| -802 :\Pre | 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| a: N | 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | |
| EF's: Filo | 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | |
| Documents | , Rev | Date | Description | Des. | Verif. | Appd. |

Version: 1, Version Date: 16/11/2020



DRAWING No. 80219053-DA001-CI-1001 80219053-DA001-CI-1011 80219053-DA001-CI-1031 80219053-DA001-CI-1041 80219053-DA001-CI-1051 80219053-DA001-CI-110 80219053-DA001-CI-110 80219053-DA001-CI-110 80219053-DA001-CI-113 80219053-DA001-CI-1141 80219053-DA001-CI-115 80219053-DA001-CI-115 80219053-DA001-CI-1153 80219053-DA001-CI-1154 80219053-DA001-CI-11 80219053-DA001-CI-125 80219053-DA001-CI-130 80219053-DA001-CI-130 80219053-DA001-CI-1303 80219053-DA001-CI-1304 80219053-DA001-CI-1305 80219053-DA001-CI-1306 80219053-DA001-CI-1307 80219053-DA001-CI-1311 80219053-DA001-CI-1351 80219053-DA001-CI-1352 80219053-DA001-CI-1353 80219053-DA001-CI-1354 80219053-DA001-CI-1355 80219053-DA001-CI-1356 80219053-DA001-CI-1357 80219053-DA001-CI-1358 80219053-DA001-CI-1359 80219053-DA001-CI-1360 80219053-DA001-CI-1361 80219053-DA001-CI-1601 80219053-DA001-CI-1602 80219053-DA001-CI-2001 80219053-DA001-CI-2002 80219053-DA001-CI-2003 80219053-DA001-CI-2201 80219053-DA001-CI-2202 80219053-DA001-CI-2301 80219053-DA001-CI-3001 80219053-DA001-CI-3002 80219053-DA001-CI-3003

LOCALITY PLAN 1:5000

> © Cardno Limited All Rights This document is produced by Cardn for the benefit of and use by the clien with the terms of the retainer. Cardno and shall not assume any responsit whatsoever to any third party arising of reliance by third party on the content of

80219053-DA001-CI-3004



| DRAVINGS |
|---|
| DESCRIPTION |
| COVERSHEET AND DRAWING SCHEDULE |
| GENERAL NOTES AND LEGENDS |
| GENERAL ARRANGEMENT PLAN |
| ROAD HIERARCHY PLAN |
| EXISTING SERVICES AND SURVEY PLAN |
| EROSION AND SEDIMENT CONTROL PLAN SHEET 1 OF 3 |
| EROSION AND SEDIMENT CONTROL PLAN SHEET 2 OF 3 |
| EROSION AND SEDIMENT CONTROL PLAN SHEET 3 OF 3 |
| EROSION AND SEDIMENT CONTROL DETAILS |
| |
| |
| SITE SECTIONS SHEET 2 OF 5 |
| SITE SECTIONS SHEET 4 OF 5 |
| SITE SECTIONS SHEET 5 OF 5 |
| ROAD TYPICAL CROSS SECTION |
| SITEWORKS AND STORMWATER PLAN SHEET 1 OF 7 |
| SITEWORKS AND STORMWATER PLAN SHEET 2 OF 7 |
| SITEWORKS AND STORMWATER PLAN SHEET 3 OF 7 |
| SITEWORKS AND STORMWATER PLAN SHEET 4 OF 7 |
| SITEWORKS AND STORMWATER PLAN SHEET 5 OF 7 |
| SITEWORKS AND STORMWATER PLAN SHEET 6 OF 7 |
| SITEWORKS AND STORMWATER PLAN SHEET 7 OF 7 |
| |
| ROAD LONGITUDINAL SECTIONS SHEET 1 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 2 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 3 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 5 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 6 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 7 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 8 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 9 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 10 OF 11 |
| ROAD LONGITUDINAL SECTIONS SHEET 11 OF 11 |
| ROAD TYPICAL DETAILS SHEET 1 OF 2 |
| ROAD TYPICAL DETAILS SHEET 2 OF 2 |
| BIORETENTION / OSD BASIN PLAN AND SECTIONS SHEET 1 OF 3 |
| BIORETENTION / OSD BASIN PLAN AND SECTIONS SHEET 2 OF 3 |
| BIORETENTION BASIN PLAN AND SECTIONS SHEET 3 OF 3 |
| STORMWATER DRAINAGE DETAILS SHEET 1 OF 2 |
| STORMWATER DRAINAGE DETAILS SHEET 2 OF 2 |
| STORMWATER CATCHMENT PLAN |
| IUKN PATH PLANS SHEET 1 OF 4 |
| TURN PATH PLANS SHEET 2 OF 4 |
| TURN PATH PLANS SHEET 4 OF 4 |
| |
| |
| |
| |
| |
| |

| | | 0 | 100 | 200 30 | 0 400 | 50011 |
|---|--|---|----------------------------------|-------------------|----------------------|------------------------|
| | | SCALE | 1:5000 | | | @A1 |
| ts Reserved. no Limited solely nt in accordance | Drawn YNL Checked PL Designed HLD | Date 1/10/2019 Date 1/10/2019 Date 1/10/2019 | Status | FOR AF | PROVAL ONSTRUCTIC | N PURPOSES |
| bility or liability out of any use or of this document. | Verified PL Approved | Date 1/10/2019 | Datum A.H.D Drawing Number | Date Oct' 2019 | Scale 1:5000 | Size A1 Revision |
| | AJG | 1/10/2019 | 80219 | 053-DA00 | 1-CI-1001 | 6 |

ACCESS AND SAFETY

1. THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC AND PEDESTRIAN CONTROL.

2. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO ALL BUILDINGS ADJACENT THE WORKS IS NOT DISRUPTED.

3. WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.

GENERAL

I. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH PENRITH CITY COUNCIL GUIDELINES.

2. PENRITH CITY COUNCIL STANDARD DETAILS TO BE USED WHERE REQUIRED.

- 3. UTILITY ADJUSTMENTS AT DEVELOPERS EXPENSE.
- 4. CONDUITS TO BE PLACED WHERE REQUIRED BY THE RELEVANT AUTHORITIES.

SURVEY NOTES

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY CARDNO, BEING REGISTERED SURVEYORS AND SURVEY PREVIOUSLY PROVIDED BY LENDLEASE THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT CARDNO.

NOTES

- THIS PLAN IS PREPARED FOR LENDLEASE FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS ON THE LAND AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.
- VISIBLE SERVICES SHOWN HEREON HAVE BEEN LOCATED WHERE POSSIBLE BY FIELD SURVEY OR DIAL BEFORE YOU DIG INFORMATION. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
- SERVICES MARKED AS DYBD ARE BASED ON DIAL BEFORE YOU DIG DATA COLLECTED ON 08/07/2019.

| EGEND | |
|--|--|
| | POWER POLE WITH LIGHT |
| * | LIGHT POLE |
| WIM | WATER METER |
| | SEWER MANHOLE |
| \bigotimes | SEWER LAMPHOLE |
| U | UNCLASSIFIED PIT |
| | DRAINAGE PIT |
| | COMMUNICATIONS PIT |
| | CONTOUR MAJOR |
| · · · · | BOUNDARY SUBJECT |
| | BUILDING EDGE |
| | CROWN OF ROAD |
| | EDGE OF BITUMEN/FORMATION |
| /// | FENCE |
| | NATURAL SURFACE STRING |
| | TOE OF BANK |
| | TOP OF BANK |
| D D D | DRAINAGE LINE |
| ss | SEWER |
| w w | POTABLE WATER (DYBD) |
| v | ELECTIRCAL OVERHEAD LINE |
| —————————————————————————————————————— | UNDERGROUND ELECTRICAL CONDUIT (DYBD) |
| OP OP | EXISTING OPTUS LINE (DYBD) |
| T T | EXISTING TELSTRA LINE (DYBD) |
| OF OF | EXISTING NBN LINE (DYBD) |

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, NSW OFFICE OF WATER AND OFFICE OF ENVIRONMENT AND HERITAGE, THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE DRAWINGS SHALL ONLY BE USED AS A GUIDE BY THE CONTRACTOR, AND SHALL REPRESENT THE MINIMUM REQUIREMENT ONLY.
- THE CONTRACTOR SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED OR AS OTHERWISE DIRECTED BY THE SUPERINTENDENT.
- ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH a. LOCAL AUTHORITY REQUIREMENTS b. EPA REQUIREMENTS
- c. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004.
- MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE
- SUPERINTENDENT AND THE LOCAL AUTHORITY. . WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
- CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

- WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
- a. INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
- CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS
- DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL. INSTALL SEDIMENT BASIN AS SHOWN ON PLAN (D) INSTALL SEDIMENT
- TRAPS AS SHOWN ON PLAN. 1. UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE
- ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

- DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
- 8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

- 9. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
- 10. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
- 1. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
- 12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.
- 13. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
- 14. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:

OTHER MATTERS

- a. PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE b. ENSURING THAT NOTHING IS NAILED TO THEM c. PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS. (I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE
- TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER (II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE
- THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH (III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.



STORMWATER DRAINAGE NOTES

- STORMWATER DESIGN CRITERIA: A. PUBLIC STORMWATER DESIGNED TO PENRITH COUNCIL'S STORMWATER MANAGEMENT POLICY, DESIGN GUIDELINES FOR ENGINEERING WORKS FOR SUBDIVISIONS AND DEVELOPMENTS, AND AUSTRALIAN RAINFALL AND RUNOFF 2016.
- B. ANNUAL EXCEEDANCE PROBABILITY: 20% AEP PIPED DRAINAGE 1% AEP OVERLAND FLOW
- PIPES 375 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.
- PIPES 300 DIA AND LESS SHALL BE DWV GRADE (CLASS SN8) uPVC WITH SOLVENT WELDED JOINTS.
- 5. ALL PIPES ARE TO BE UNIFORMLY SUPPORTED ALONG THE LENGTH OF THE BARREL BY SUITABLE FILL MATERIAL. REFER TO BEDDING SUPPORT TYPE.
- 6. PIPES WITH SOCKETS SHALL BE LAID IN BEDDING WHERE SUITABLE RECESSES HAVE BEEN PROVIDED TO ENSURE PIPES DO NOT BEAR ON THEIR SOCKETS.
- ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE 6. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT
- 8. PIPES TO BE INSTALLED TO TYPE HS1 SUPPORT IN ACCORDANCE WITH AS 3725 (2007) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75).
- REFER TO AS/NZS 3725:2007 TABLE B1 FOR REQUIRED FILL DEPTHS ABOVE PIPE BARREL PRIOR TO USE OF COMPACTION MACHINERY OR TRAVERSING OF PIPES BY GENERAL SITE EQUIPMENT.
- 10. WHERE WORKING METHODS REQUIRE HIGHER CLASS PIPE, THE CONTRACTOR SHALL REFER TO AS 3725 (2007) TO DETERMINE THE APPROPRIATE PIPE CLASS. PROPOSED PIPE CLASS SHALL BE REVIEWED BY CARDNO PRIOR TO INSTALLATION.
- 1. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS/NZS 3500.3:2018.
- 12. PRECAST PITS MAY BE USED EXTERNAL TO THE BUILDING SUBJECT TO APPROVAL BY PENRITH CITY COUNCIL.

- 16. GRATES AND COVERS SHALL CONFORM TO AS 3996 AND PENRITH CITY COUNCIL GUIDELINES.
- 17. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
- 18. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

EXISTING UNDERGROUND SERVICES NOTES

WHATSOEVER.

| 5 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
|------|------------|---------------------------------|------|--------|-------|
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | |
| Rev. | Date | Description | Des. | Verif. | Appd. |

4. EQUIVALENT STRENGTH FRC PIPES MAY BE USED.

- 13. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
- 14. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPE IS TO BE USED.
- 15. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.

- THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.CARDNO CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE
- CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY. CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR
- TO COMMENCEMENT OF EXCAVATION WORKS. CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

SITEWORKS NOTES

- ORIGIN OF LEVELS:- REFER SURVEY NOTES.
- 2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO CARDNO.
- MAKE SMOOTH CONNECTION WITH EXISTING WORKS AND SURFACES.
- I. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
- PROVIDE 10mm WIDE EXPANSION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVEMENTS.
- ASPHALTIC CONCRETE SHALL CONFORM TO R.M.S. SPECIFICATION R116.
- ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S. FORM 3051, COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m³ OF BASECOURSE MATERIAL PLACED.
- ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S. FORM 3051, AND COMPACTED TO MINIMUM 95% MODIFIED DENSITY IN ACCORDANCE WITH A.S 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m³ OF SUB-BASE COURSE MATERIAL PLACED.
- 0. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL IN (9) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH R.M.S. FORM 3051 WILL BE CONSIDERED. SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF CARDNO.
- . SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
- 12. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (eg. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.

BULK EARTHWORKS NOTES

1. ORIGIN OF LEVELS: REFER SURVEY NOTES

2. REFER TO GEOTECHNICAL REPORT PREPARED BY DOUGLAS PARTNERS PROVIDED BY LENDLEASE FOR SITE PREPARATION REQUIREMENTS

3. STRIP ALL TOPSOIL/ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCK PILE AS DIRECTED BY SUPERINTENDENT. 4. EXCAVATED MATERIAL TO BE USED AS STRUCTURAL FILL PROVIDED THE PLACEMENT MOISTURE CONTENT OF THE MATERIAL IS +/- 2% OF THE OPTIMUM MOISTURE CONTENT.

5. COMPACT FILL AREAS AND SUBGRADE TO NOT LESS THAN:

LOCATION STANDARD DRY DENSITY (AS 1289 E 5.1.1.)

| (/ 10 1200 2 0) | |
|--------------------------|------|
| | 000/ |
| UNDER ROADS AND CARPARKS | 98% |
| UNDER BUILDING SLABS | 100% |
| LANDSCAPED AREAS | 98% |
| | |

6. FOR NON COHESIVE MATERIAL, COMPACT TO NOT LESS THAN 75% DENSITY INDEX

7. BEFORE PLACING FILL, PROOF ROLL EXPOSED SUBGRADE WITH AN 8 TO 10 TONNE (MIN) DEADWEIGHT THREE POINT STEEL WHEELED ROLLER TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER).

8. EARTHWORKS ARE TO BE INSPECTED AND TESTED BY AN INDEPENDENT GEOTECHNICAL TESTING AUTHORITY TO LEVEL 1 RESPONSIBILITY AS DEFINED IN AS 3798.

9. FILLING TO BE PLACED IN MAXIMUM 250mm - LOOSE LAYERS AND COMPACTED AS SPECIFIED.

10. NO FILLING SHALL TAKE PLACE TO EXPOSED SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF GEOTECHNICAL ENGINEER AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED.

SEDIMENT AND EROSION CONTROL LEGEND

| | TEMPORARY STABILISED SITE ACCESS AND TRUCK WASH DOW |
|--------------------------|--|
| | STRAW BALE SEDIMENT FILTER |
| / | SITE FENCE |
| | SEDIMENT FENCE |
| ~~~ ·· ~ ~ | DIVERSION BANK AND CHANNEL |
| X | GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP |
| \sim | SANDBAG SEDIMENT TRAP FOR KERB INLET ON GRADE |
| \bigcirc | MESH AND GRAVEL INLET FILTER |
| | INDICATIVE STOCKPILE LOCATIO |
| \bigtriangledown | SITE ENTRANCE |
| | TEMPORARY SEDIMENT BASIN |

ROOF WATER KERB OUTLETS

- KERB OUTLETS TO BE PROVIDED IN ACCORDANCE WITH PENRITH CITY COUNCILS CIVIL WORKS SPECIFICATION AT EACH LOT WHERE INTERALLOTMENT DRAINAGE IS NOT PROVIDED
- KERB OUTLETS ARE TO BE CONSTRUCTED AT THE SAME TIME KERBS ARE POURED.
- ALIGNMENT OF KERB OUTLET PIPE TO BE ADJUSTED ON SITE TO 3. AVOID SERVICE CLASHES.

TELSTRA - DUTY OF CARE NOTE

TELSTRA'S PLANS SHOW ONLY THE PRESENCE OF CABLES AND PLANT. TH ONLY SHOW THEIR POSITION RELATIVE TO ROAD BOUNDARIES, PROPERTY FENCES ETC. AT THE TIME OF INSTALLATION AND TELSTRA DOES NOT WARRANT OR HOLD OUT THAT SUCH PLANS ARE ACCURATE THEREAFTER TO CHANGES THAT MAY OCCUR OVER TIME. DO NOT ASSUME DEPTH OR ALIGNMENT OF CABLES OR PLANT AS THESE VARY SIGNIFICANTLY. THE CONTRACTOR HAS A DUTY OF CARE WHEN EXCAVATING NEAR TELSTRA CA AND PLANT.

BEFORE USING MACHINE EXCAVATORS TELSTRA PLANT MUST FIRST BE PHYSICALLY EXPOSED BY SOFT DIG POTHOLING TO IDENTIFY IT'S LOCATION TELSTRA WILL SEEK COMPENSATION FOR DAMAGES CAUSED TO IT'S PROPERTY AND LOSSES CAUSED TO TELSTRA AND IT'S CUSTOMERS.

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



| Drawn | Date | | | | | |
|----------|-----------|---------------------------------|----------------|-----------|-----------|------------|
| YNL | 1/10/2019 | LENDLEASE COMMUNITIES | | | | |
| Checked | Date | | Status | | | |
| PL | 1/10/2019 | CHAPMAN STREET WERRINGTON | Claido | FOR AP | PROVAL | |
| Designed | Date | CIVIL WORKS | | | | |
| HLD | 1/10/2019 | | NOT TO BE | | | I FURFUSES |
| Verified | Date | DEVELOPMENT APPLICATION | Datum | Date | Scale | Size |
| PL | 1/10/2019 | Title GENERAL NOTES AND LEGENDS | A.H.D | Oct' 2019 | N.T.S | A1 |
| Approved | | | Drawing Number | | | Revision |
| AIG | 1/10/2019 | | 80219 | 053-DA00 | 1-CI-1011 | 5 |
| | 1/10/2015 | | | | | |

| | PROPOSED | NORKS LEGEND |
|-----|--------------------------|--|
| | | EXTENT OF WORK |
| | | STAGE BOUNDARY |
| | 158.00 | PROPOSED CONTOUR |
| | | BATTER |
| | RW | STRUCTURAL RETAINING WALL |
| | | KERB & GUTTER REFER PENRITH CITY COUNCIL STANDARD DETAIL. |
| | | VEHICULAR CROSSING REFER PENRITH CITY COUNCIL STANDARD DETAIL. |
| | | KERB RAMP AS PER COUNCIL STANDARDS |
| | ······ / ······ / ······ | SITE FENCE |
| | Ø375 | FLOW DIRECTION STORMWATER PIPE PIPE DIAMETER |
| |] | DRAINAGE CAP |
| | | CONCRETE HEADWALL |
| | * * | KERB INLET WITH LINTEL. |
| | \boxtimes | JUNCTION PIT |
| | | GRATED INLET PIT |
| | | SCOUR PROTECTION |
| | (| TREES TO BE RETAINED |
| | \bigotimes | TREES TO BE REMOVED. |
| | | APZ BOUNDARY |
| | · · | SURVEY BOUNDARY |
| JE | | |
| .ES | | |
| | | |



| | | Drawn YNL | Date 1/10/2019 | Client | LENDLEASE (|
|--|--|----------------|-------------------|---------|----------------|
| © Cardno Limited All Rights Reserved. | | PL | Date 1/10/2019 | Project | CHAPMAN STREET |
| benefit of and use by the client in accordance with the | Shaping the Future | Designed | Date | | CIVIL WORKS |
| terms of the retainer. Cardno Limited does not and shall not | Cardno (NSW/ACT) Pty Ltd LAPN 05 001 145 035 | Verified | Date | | DEVELOPMENT AP |
| party arising out of any use or reliance by third party on the | Level 9, The Forum, 203 Pacific Highway | PL Approved | 1/10/2019 | Title | GENERAL ARRANG |
| content of this document. | St. Leonards, NSW 2065 | Approved | | | |
| | Web: www.cardno.com.au | AJG | 1/10/2019 | | |
| | | | | | |



| COMMUNITIES | | | | | |
|---------------|----------------|-------------|------------|------|----------|
| ET WERRINGTON | Status | FOR AP | PROVAL | | |
| | NOT TO BE L | JSED FOR CO | DNSTRUCTIO | N PU | RPOSES |
| APPLICATION | Datum | Date | Scale | Size | |
| NGEMENT PLAN | A.H.D | Oct' 2019 | 1:2500 | | A1 |
| | Drawing Number | | | | Revision |
| | 80219 | 053-DA00 | 1-CI-1031 | | 9 |



Web: www.cardno.com.au

AJG

1/10/2019

| UNIVERSITY OF WESTERN |
|-----------------------|
| SYDNEY |

| 2 | | | | | | | | |
|--------|------|------------|---------------------------------|------|--------|-------|----------------|------|
| 5 | 9 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | |
| 5 | 8 | 18/08/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 3 | |
| 2 | 7 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 3 | |
| į | 6 | 23/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | |
| 2 2 | 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | <u> </u> | 200 |
| 2010 | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | |
| - | 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | SCALE 1:2000 @ | ற்A1 |
| 5 | 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | |
| - | 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | |
| 5 | Rev. | Date | Description | Des. | Verif. | Appd. | J. | |

9

802

ROAD; -CI-104

053-CI

Ц Ц

Ř

LAYOUT

802



| ET WERRINGTON | Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES | | | | | | | | |
|---------------|--|----------|-----------------|------|----|--|--|--|--|
| APPLICATION | Datum | Date | Scale 1·2000 | Size | Δ1 | | | | |
| IY PLAN | Drawing Number | | Revision | | | | | | |
| | 80219 | 053-DA00 | 1-CI-1041 | | 9 | | | | |



ı ق







XR-802 TATION OAD; MENT 19053-CI AND SE 802 NO ЖX RMWATER;) 101-1103 FR 19053-CI-ST(53-DA001-CI--802 ХŖ TS; DA/ VPOR 19053-CI-Y CIVIL WC 802 Ř

| YNL | 1/10/2019 | |
|-----------------|-------------------|-------------------------------------|
| Checked PL | Date 1/10/2019 | Project CHAPMAN STRE |
| Designed HLD | Date 1/10/2019 | CIVIL WORKS |
| Verified | Date | DEVELOPMENT |
| PL Approved | 1/10/2019 | Title EROSION AND S SHEET 2 OF 3 |
| | 1/10/2010 | |

<u>NOTE</u>

REFER DRG. 1011 FOR NOTES AND LEGEND.

| ECOMMUNITIES | | | | | | | | |
|----------------------|--|-----------|-------|------|--|--|--|--|
| ET WERRINGTON | Status FOR APPROVAL | | | | | | | |
| | NOT TO BE USED FOR CONSTRUCTION PURPOSES | | | | | | | |
| APPLICATION | Datum | Date | Scale | Size | | | | |
| EDIMENT CONTROL PLAN | A.H.D | Oct' 2019 | 1:750 | A1 | | | | |
| | Drawing Number | Revisi | ion | | | | | |
| | 80219 | Q Q |) | | | | | |

Note: These "Standard Calculation" spreadsheets relate only to low erosion hazard lands as identified in figure 4.6 where the designer chooses to not use the RUSLE to size sediment basins. The more "Detailed Calculation" spreadsheets should be used on high erosion hazard lands as identified by figure 4.6 or where the designer chooses to run the RUSLE in calculations.

1. Site Data Sheet

Site name: Chapman St, Werrington

Site location: Penrith City Council

Precinct: Entire development

Description of site: Residential Subdivision

| Site erec | | | Si | te | Bomarke | |
|-------------------------------|------|-------|------|------|---------|--------------------------------|
| Site area | В | А | С | D | | Remarks |
| Total catchment area (ha) | 5.35 | 15.87 | 13.6 | 1.13 | | |
| Disturbed catchment area (ha) | | | | | | |
| | | | | | | |
| Soil analysis | | | | | | |
| Soil landscape | | | | | | DIPNR mapping (if relevant) |
| Soil Texture Group | D | D | D | D | | Sections 6.3.3(c), (d) and (e) |
| | | | | | | |

| Rainfall data | | | | | | |
|---|------|------|------|------|--|---------------------------------------|
| Design rainfall depth (days) | 5 | 5 | 5 | 5 | | See Sections 6.3.4 (d) and (e) |
| Design rainfall depth (percentile) | 75 | 75 | 75 | 75 | | See Sections 6.3.4 (f) and (g) |
| x-day, y-percentile rainfall event | 21.8 | 21.8 | 21.8 | 21.8 | | See Section 6.3.4 (h) |
| Rainfall intensity: 2-year, 6-hour storm | 8.79 | 8.79 | 8.79 | 8.79 | | See IFD chart for the site |
| Rainfall erosivity (R-factor) | 1780 | 1780 | 1780 | 1780 | | Automatic calculation from above data |

Comments

Design rainfall depth - 75% for disturbances < 6 months (6.3.4) ARR16 IFD chart used

3. Volume of Sediment Basins, Type D and Type F Soils

Basin volume = settling zone volume + sediment storage zone volume

Settling Zone Volume

The settling zone volume for Type F and Type D soils is calculated to provide capacity to contain all runoff expected from up to the y-percentile rainfall event. The volume of the basin's settling zone (V) can be determined as a function of the basin's surface area and depth to allow for particles to settle and can be determined by the following equation:

 $V = 10 \times Cv \times A \times Ry$ -%ile, x-day (m3)

where

- a unit conversi 10 = on factor
- Cv = the volumetric runoff coefficient defined as that portion of rainfall that runs off as stormwater over the x-day period
- R = is the x-day total rainfall depth (mm) that is not exceeded in y percent of rainfall events. (See Sections 6.3.4(d), (e), (f), (g) and (h)).

A = total catchment area (ha)

Sediment Storage Zone Volume

In the standard calculation, the sediment storage zone is 50 percent of the setting zone. However, designers can work to capture the 2-month soil loss as calculated by the RUSLE (Section 6.3.4(i)(ii)), in which case the "Detailed Calculation" spreadsheets should be used.

Total Basin Volume

| Site | Cv | R x-day y-%ile | Total catchment area (ha) | Settling zone volume (m3) | y Sediment Total storage basin volume volume (m3) (m3) | | Total basin volume provided (m3) |
|------|------|----------------------|------------------------------------|------------------------------------|---|------|--|
| В | 0.50 | 21.8 | 5.35 | 583 | 292 | 875 | 875 |
| А | 0.50 | 21.8 | 15.87 | 1730 | 865 | 2595 | 2595 |
| С | 0.50 | 21.8 | 13.60 | 1482 | 82 741 2224 | | 2224 |
| D | 0.50 | 21.8 | 1.13 | 123 | 62 | 185 | 185 |

| ECOMMUNITIES | | | | | | | | | |
|-------------------------|--|-----------|-----------|------|----|--|--|--|--|
| ET WERRINGTON | Status | FOR AP | PROVAL | | | | | | |
| | NOT TO BE USED FOR CONSTRUCTION PURPOSES | | | | | | | | |
| APPLICATION | Datum | Date | Scale | Size | | | | | |
| EDIMENT CONTROL DETAILS | A.H.D | Oct' 2019 | AS SHOWN | | A1 | | | | |
| | Drawing Number | | Revision | | | | | | |
| | 80219 | 053-DA00 | 1-CI-1131 | | 6 | | | | |

13 1155 12 <u>Ö</u> 9053-CI-EXST -CI-1141 CUT | Ř ΗA 9 13/11/2020 RE-ISSUED FOR DA APPROVAL 18/08/2020 RE-ISSUED FOR DA APPROVAL 17/07/2020 RE-ISSUED FOR DA APPROVAL 23/04/2020 RE-ISSUED FOR DA APPROVAL 1/04/2020 RE-ISSUED FOR DA APPROVAL 4/03/2020 RE-ISSUED FOR DA APPROVAL 1/10/2019 ISSUED FOR DA APPROVAL 27/09/2019 ISSUED FOR INFORMATION (90% DA)

Web: www.cardno.com.au

1/10/2019

AJG

| 0 | 20m | 40m | 60m | 80m | 100m | 150m |
|---|-----|-----|-----|-----|------|------|
| | | | | | | |
| | | | | | | |

9/08/2019

Description

Date

$1 \leq 1$

| LEGEND | |
|--------|-----------------------------|
| | CUT GREATER THAN 3m |
| | CUT BETWEEN 2.75m AND 3m |
| | CUT BETWEEN 2.5m AND 2.75m |
| | CUT BETWEEN 2.25m AND 2.5m |
| | CUT BETWEEN 2.0m AND 2.25m |
| | CUT BETWEEN 1.75m AND 2.0m |
| | CUT BETWEEN 1.5m AND 1.75m |
| | CUT BETWEEN 1.25m AND 1.5m |
| | CUT BETWEEN 1.0m AND 1.25m |
| | CUT BETWEEN 0.75m AND 1.0m |
| | CUT BETWEEN 0.5m AND 0.75m |
| | CUT BETWEEN 0.25m AND 0.5m |
| | CUT LESS THAN 0.25m |
| | FILL LESS THAN 0.25m |
| | FILL BETWEEN 0.25m AND 0.5m |
| | FILL BETWEEN 0.5m AND 0.75m |
| | FILL BETWEEN 0.75m AND 1.0m |
| | FILL BETWEEN 1.0m AND 1.25m |
| | FILL BETWEEN 1.25m AND 1.5m |
| | FILL BETWEEN 1.5m AND 1.75m |
| | FILL BETWEEN 1.75m AND 2.0m |
| | FILL BETWEEN 2.0m AND 2.25m |
| | FILL BETWEEN 2.25m AND 2.5m |
| | FILL BETWEEN 2.5m AND 2.75m |
| | FILL BETWEEN 2.75m AND 3.0m |
| | FILL GREATER THAN 3.0m |
| | |

APPROXIMATE BULK EARTHWORK VOLUMES

CUT = - 46,908m³ FILL = +304,041m³ BALANCE = +257,133m³

NOTE

- 1. THIS SHEET SHOWS THE LEVEL DIFFERENCES OF THE LOTS AS THOUGH THEY WERE REGRADED RATHER THAN BENCHED PADS.
- 2. LEVELS OF THE BENCHED PADS AS SHOWN ON SHEETS 1301-1304 REPRESENT THE AVERAGE LEVELS OF THE LOTS AS REGRADED.
- AS SUCH, THE LEVELS DIFFERENCES SHOWN ON THIS PLAN ARE ACCURATE TO APPROXIMATELY +/- 0.3m.

| Status | FOR AP | PROVAL | | | | | |
|--|--|--|---|--|--|--|--|
| NOT TO BE USED FOR CONSTRUCTION PURPOSES | | | | | | | |
| Datum | Date | Scale | Size | | | | |
| A.H.D | Oct' 2019 | 1:1750 | A1 | | | | |
| Drawing Number | Revision | | | | | | |
| 80219 | 9 | | | | | | |
| | Status NOT TO BE U Datum A.H.D Drawing Number 80219 | Status FOR AP NOT TO BE USED FOR CC Datum A.H.D Drawing Number 80219053-DA00 | Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION Datum Date Scale A.H.D Oct' 2019 1:1750 Drawing Number 80219053-DA001-CI-1141 | | | | |

| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
|------|------------|---------------------------------|------|--------|-------|----|-----------|-------------------------|----|----|----|-------------|
| 6 | 23/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | H: | 0 | 10 | 20 | 30 | 40 | <u>50</u> n |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | | | 4 | | 0 | |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | V: | U SCAI | 2 F: H:1:500 V:1:100 | 4 | 6 | 8 | 10n @A1 |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | 00/1 | | | | | (C) |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | | | | |
| Rev. | Date | Description | Des. | Verif. | Appd. | | | | | | | |

Datum 23.0 DESIGN EXISTI

CHAINA

SECT

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno[®] Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035 Level 9, The Forum, 203 Pacific Highway St. Leonards, NSW 2065

Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au

Date Client LENDLEASE Drawn YNL Checked Date
1/10/2019Project
CHAPMAN STREEDate
1/10/2019CIVIL WORKS
DEVELOPMENT AFDate
1/10/2019TitleTitleSITE SECTIONS Designed HLD Verified ΡL Approved SHEET 1 OF 5 AJG 1/10/2019

| ECOMMUNITIES | | | | | | | | |
|---------------|--|-----------|----------|------|----|--|--|--|
| ET WERRINGTON | Status | FOR AP | PROVAL | | | | | |
| | NOT TO BE USED FOR CONSTRUCTION PURPOSES | | | | | | | |
| APPLICATION | Datum | Date | Scale | Size | | | | |
| | A.H.D | Oct' 2019 | AS SHOWN | | A1 | | | |
| | Drawing Number | | | | | | | |
| | 80219053-DA001-CI-1151 | | | | | | | |
| | | | | | | | | |

| | PROPOSE | ED RESIDENTIA (STAGE 2B) | ROAD 09 | - | 0 | PEN SPACE | F |
|-----------------------------|------------|-----------------------------|---------|---------|--------|-----------|----------------|
| | | | | | | | |
| .00 | _ | | | | | | |
| N LEVEL | 26.88 - | 26.91 - | 26.67 - | 26.70 - | I | I | |
| NGLEVEL | 1 24.95 | 24.88 | 24.82 | 24.72 | 24.61 | 24.61 | 24.62 24.66 |
| AGE | 0.000 | 10.000 | 20.000 | 30.000 | 40.000 | 50.000 | 60.000 |
| FION 1:100V 1:500 | он (1 | 3 | | | | | |

SCALE 1:100V 1:500H \ 1141

HLD PL AJG

HLD PL AJG

Des. Verif. Appd.

HLD HLD V: 0

SCALE: H:1:500 V:1:100

Document Set ID: 9377466 Version: 1, Version Date: 16/11/2020

Rev.

9/08/2019

Date

4/03/2020 RE-ISSUED FOR DA APPROVAL

27/09/2019 ISSUED FOR INFORMATION (90% DA)

ISSUED FOR INFORMATION (50% DA)

Description

1/10/2019 ISSUED FOR DA APPROVAL

| © Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the erms of the retainer. Cardno Limited does not and shall not ssume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document. | Cardno (NSW/ACT) Pty Ltd ABN 95 001 145 035 Level 9, The Forum, 203 Pacific Highway St. Leonards, NSW 2065 Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au | Drawn YNL 1/ Checked PL 1/ Designed HLD 1/ Verified PL 1/ Approved | Date 10/2019 Date 10/2019 Date 10/2019 Date 10/2019 Title SHI 10/2019 | ENDLEASE COMMUNITIES APMAN STREET WERRINGTON /IL WORKS EVELOPMENT APPLICATION TE SECTIONS IEET 2 OF 5 | Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PUF Datum Date Scale Size A.H.D Oct' 2019 AS SHOWN Size Drawing Number 80219053-DA001-CI-1152 | RPOSES A1 Revision 8 |
|---|---|--|---|--|---|-------------------------------|
| | Web: www.cardno.com.au | AJG 1/ | 10/2019 | | | |

|)AD 07 | - | LOTS | S (STAGE 2B) | |
|--------|---------|---------|--------------|--------------------|
| | | | | |
| | 26.15 - | 26.45 – | 26.45 | 26.45 - 26.45 - |
| | 24.23 | 24.30 | 24.42 | 24.46 24.46 |
| | 120.000 | 130.000 | 140.000 | 150.000 152.387 |

PROPOSED RESIDENTIAL

| CON | 8 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
|-----------|-----|------------|---------------------------------|-----|-------|------|----|------------------|------------------|----|----|----|-------------|
| Y 19 | 7 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
| 1/2 | 6 | 23/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
| IS/8(| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | H: | 0 | 10 | 20 | 30 | 40 | <u>50</u> m |
| olec | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | 14 | <u> </u> | | | | | |
| <u>лч</u> | 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | V: | U SCALE: H·1: | ∠ 500 V:1:100 | 4 | 0 | ð | @A1 |
| е: S | 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | 00,122.11.11 | | | | | e |
| Ĕ L | 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | | | | |
| Ł | Rev | Date | Description | Des | Verif | Appd | | | | | | | |

 Date
 Client

 1/10/2019
 LENDLEASE COMMUNITIES

 Drawn YNL Checked Cardno[®]
 Date
 Project
 CHAPMAN STREET

 1/10/2019
 CIVIL WORKS

 1/10/2019
 Date

 1/10/2019
 DEVELOPMENT AF

 1/10/2019
 Title
 Designed HLD Verified Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035 Ы Level 9, The Forum, 203 Pacific Highway Approved St. Leonards, NSW 2065 SHEET 3 OF 5 Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au 1/10/2019 AJG

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| D INDUSTRIAL LOTS (STAGE 4A) | |
|------------------------------|--|
| | |

| | | | | + | |
|------|-----|------|------|------|------|
| | | | | | |
| | | | | | |
| | | | | | |
| 96. | 96. | 96. | 96. | .73 | .73 |
| 26 | 26 | 26 | 26 | 26 | 26 |
| • | -+ | ~ | (0 | _ | (0 |
| 5.50 | .44 | 5.33 | 5.26 | 5.21 | 5.26 |
| 25 | 25 | 26 | 25 | 26 | 25 |
| 8 | 8 | 8 | 8 | 000 | 904 |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 17.9 |
| 90 | 7 | 8 | 6 | 10 | 10 |

| E COMMUNITIES | | | | | | | |
|--|--------------------------|-----------|----------|------|----|--|--|
| ET WERRINGTON | Status | FOR AP | PROVAL | | | | |
| NOT TO BE USED FOR CONSTRUCTION PURPOS | | | | | | | |
| APPLICATION | Datum | Date | Scale | Size | | | |
| | A.H.D | Oct' 2019 | AS SHOWN | | A1 | | |
| | Drawing Number | | Revision | | | | |
| | 80219053-DA001-CI-1153 8 | | | | | | |

DATE PLOTTED: 13 November 2020 4:37 PM BY : YIN NWE LW

| 5 | | | | | | | | | | | | |
|------|------------|---------------------------------|------|--------|-------|----|---------------|----------------------|----|-----|----|-------------|
| | | | | | | | | | | | | |
| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
| 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
| 5 50 | 23/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | H: | 0 | 10 | 20 | 30 | 40 | <u>50</u> n |
| 8 4 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | 4 | C C | | 10 |
| 3 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | V: | U SCALE: F | Z 1:1:500 V:1:100 | 4 | 0 | ð | @A1 |
| 2 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | | 00,122.1 | | | | | e |
| 1 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | | | | | | |
| ξRev | . Date | Description | Des. | Verif. | Appd. | | | | | | | |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | | |
|----------|-----------|---------------------------|--|
| YNL | 1/10/2019 | LENDLEASE COMMUNITIES | |
| Checked | Date | | Status |
| PL | 1/10/2019 | CHAPMAN STREET WERRINGTON | FOR APPROVAL |
| Designed | Date | CIVIL WORKS | |
| HLD | 1/10/2019 | | NOT TO BE USED FOR CONSTRUCTION PORPOSES |
| Verified | Date | DEVELOPMENT APPLICATION | Datum Date Scale Size |
| PL | 1/10/2019 | Title SITE SECTIONS | A.H.D Oct' 2019 AS SHOWN A1 |
| Approved | | | Drawing Number Revision |
| | | SHEET 4 OF 5 | |
| AJG | 1/10/2019 | | 00219003-DA001-CI-1104 / |

SCALE 1:100V 1:500H 1141

Document Set ID: 9377466 Version: 1, Version Date: 16/11/2020 © Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | | | | | |
|-----------------|-------------------|-----------------------------------|----------------|-------------|------------|------------|
| YNL | 1/10/2019 | LENDLEASE COMMUNITIES | | | | |
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREET WERRINGTON | Status | | | |
| Designed HLD | Date 1/10/2019 | CIVIL WORKS | NOT TO BE U | ISED FOR CC | NSTRUCTION | I PURPOSES |
| Verified | Date | DEVELOPMENT APPLICATION | Datum | Date | Scale | Size |
| PL | 1/10/2019 | | A.H.D | Oct' 2019 | AS SHOWN | A1 |
| Approved | | | Drawing Number | | | Revision |
| AJG | 1/10/2019 | SHEET DUF D | 802190 |)53-DA00 | 1-CI-1155 | 7 |

0 1 2

SCALE 1:100

HLD PL AJG

HLD PL AJG

Des. Verif. Appd.

HLD

HLD

4/03/2020

27/09/2019

9/08/2019 Date

RE-ISSUED FOR DA APPROVAL

ISSUED FOR INFORMATION (90% DA) ISSUED FOR INFORMATION (50% DA)

Description

1/10/2019 ISSUED FOR DA APPROVAL

ROAD 12 SCALE 1:100

TYPICAL SECTION - MINOR LOCAL ROAD ROAD 01, 02, 03, 04, 05, 06, 10 SCALE 1:100

TYPICAL SECTION - LOCAL ROAD ROAD 08, 13 SCALE 1:100

| © Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document. | Cardno (NSW/ACT) Pty Ltd ABN 95 001 145 035 Level 9, The Forum, 203 Pacific Highway St. Leonards, NSW 2065 | Drawn YNL Checked PL Designed HLD Verified PL Approved | Date 0 1/10/2019 Date 1/10/2019 Date 1/10/2019 Date 1/10/2019 | Client LENDLEASE COMMUNITIES Project CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION Title ROAD TYPICAL CROSS SECTION | Status NOT TO B Datum A.H.D Drawing Numbe | FOR AP E USED FOR CO Date Oct' 2019 | PROVAL ONSTRUCTION Scale 1:100 | N PURPOSES Size A1 Revision |
|---|--|--|--|---|---|--|---|--------------------------------------|
| | Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au | AJG | 1/10/2019 | | 8021 | 9053-DA00 |)1-CI-1251 | |

REFER DRG. 1011 FOR NOTES AND LEGEND.

| CAD File: N:\Pr | 3 2 1 Rev. | 1/10/2019 27/09/2019 9/08/2019 Date | ISSUED FOR DA APPROVAL ISSUED FOR INFORMATION (90% DA) ISSUED FOR INFORMATION (50% DA) Description | HLD HLD HLD Des. | PL Verif. | AJG Appd. | SCALE 1: | 500 | | | |
|-----------------|---------------------|--|---|---------------------------|--------------|--------------|----------|-----|----|----|---|
| rojec | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | 500 | | | |
| ts/8(| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 0 | 10 | 20 | 30 | 4 |
|)2/F | 6 | 23/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |
| Υ19 | 7 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |
| \053 | 8 | 18/08/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |
| σ, | 9 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |

| Ū 0 | 9 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |
|---------|------|------------|---------------------------------|------|--------|-------|----------|-----|----|----|---|
| \053 | 8 | 18/08/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |
| Υ19 | 7 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |
|)2\F | 6 | 23/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | |
| ts\8(| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 0 | 10 | 20 | 30 | 4 |
| ject | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | | | | |
| :\Pro | 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | SCALE 1: | 500 | | | |
| :0 S | 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | | | | |
| Eile | 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | | |
| CAL | Rev. | Date | Description | Des. | Verif. | Appd. | | | | | |
| | | | | | | | | | | | |

| Drawn | Date | Client IENDIEASE |
|----------|-----------|-----------------------|
| YNL | 1/10/2019 | LENULEASE |
| Checked | Date | Project CLIADMAN CTDE |
| PL | 1/10/2019 | CHAPMAN STREE |
| Designed | Date | CIVIL WORKS |
| HLD | 1/10/2019 | |
| Verified | Date | DEVELOPMENT A |
| PL | 1/10/2019 | |
| Approved | | |
| | | SHEET 3 OF 7 |
| AJG | 1/10/2019 | |

Web: www.cardno.com.au

Ř

ίU

CONT

ਨ

Ж

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Web: www.cardno.com.au

|)rawn | Date | |
|----------|-----------|-----------------------|
| YNL | 1/10/2019 | |
| Checked | Date | Project CHADMAN STDEE |
| PL | 1/10/2019 | CHAPIVIAN STREE |
| Designed | Date | CIVIL WORKS |
| HLD | 1/10/2019 | |
| /erified | Date | |
| PL | 1/10/2019 | |
| pproved | | STEWORKS AND |
| | | SHEET 6 OF 7 |
| | | |
| AJG | 1/10/2019 | |
| | | |

@A1

50r

10

20

- 30

Rev.

Date

Description

Des. Verif. Appd.

| Drawn YNL | Date 1/10/2019 | Client LENDLEASE |
|-----------------|-------------------|-----------------------|
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREE |
| Designed HLD | Date 1/10/2019 | CIVIL WORKS |
| Verified PL | Date 1/10/2019 | |
| Approved | | SHEET 7 OF 7 |
| AJG | 1/10/2019 | |

Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au

| | Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES | | | | | | | | | | | |
|-------------------|--|-----------|-------|------|----------|--|--|--|--|--|--|--|
| APPLICATION | Datum | Date | Scale | Size | | | | | | | | |
|) STORMWATER PLAN | A.H.D | Oct' 2019 | 1:500 | | A1 | | | | | | | |
| | Drawing Number | | | | Revision | | | | | | | |
| | 80219 | | 9 | | | | | | | | | |

XR SOL; K i RVEY

| Drawn YNL | Date 1/10/2019 | Client LENDLEASE COMMUNITIES | | |
|-----------------|-------------------|-----------------------------------|-------------------------------------|----------|
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREET WERRINGTON | Status FOR APPROVAL | |
| Designed HLD | Date 1/10/2019 | CIVIL WORKS | NOT TO BE USED FOR CONSTRUCTION PUR | POSES |
| /erified | Date | DEVELOPMENT APPLICATION | Datum Date Scale Size | |
| PL | 1/10/2019 | Title ROUNDABOUT CONCEPT PLAN | A.H.D Oct' 2019 1:250 A | A1 |
| Approved | | | Drawing Number R | Revision |
| AJG | 1/10/2019 | | 80219053-DA001-CI-1311 | 4 |

| | ECTION RD09 0 RL 25.864 | | | | | | | | | | | | | | | | INTERSECTION RD06 CH 225.472 RL 27.682 | | | |
|------------------------------|--------------------------------|--|----------|----------|----------|----------|----------|----------|----------|----------|------------------------|----------|------------------------|-------------------|---------|----------|---|-----------|----------|----------|
| | INTERS CH 0.00 | SAG | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | _+ | | | | | | | |
| HORIZONTAL | | | | | | | | | | | < | R11.5 | ~ | | | | | | | |
| VC LENGTH | | < 12m VC | | | | | | | | | | | | | | | | | | |
| GRADE | | 3% | | | | 1.2% | | | | | | | | | | | | | 0.7% | |
| DATUM RL 18 | | | | | | | | | | | | | | | | | | | | |
| WAE LEVEL | | | | | | | | | | | | | | | | | | | | |
| DESIGN LEVEL | 25.864 – 25.704 | 25.572 - 25.572 - 25.572 - 25.573 - 25.573 - 25.593 - 255.593 - 255.555.503 - 255.555.503 - 255.555.503 - 255.5555.503 - 255.5555.503 - 255.5555.503 - 255.555555555555555555555555555555555 | 25.743 - | 25.923 - | 26.103 - | 26.283 | 26.463 | 26.643 - | 26.823 | 27.003 – | 27.087 - 27.113 - | 27.154 - | 27.232 - 27.259 - | 27.364 | 27.469 | 27.574 | 27.679 | 27.784 | 27.889 | 27.994 - |
| EXISTING SURFACE | 23.531 - | 23.634 - 23.634 - 23.654 - 23.675 - 23.675 - 23.703 - 23. | 23.817 - | 23.885 - | 23.905 - | 24.021 - | 24.140 - | 24.182 - | 24.265 - | 24.359 - | 24.390 - 24.401 - | 24.434 | 24.493 - | 24.526 - | 24.524 | 24.649 - | 24.784 | 24.964 | 25.114 - | 25.391 |
| CHAINAGE | 0.000 | | 30.000 | 45.000 | 60.000 | 75.000 - | - 000.06 | 105.000 | 120.000 | 135.000 | 142.015 - 144.112 - | 150.000 | 161.174 - 165.000 - | - 180.000 | 195.000 | 210.000 | 225.000 - | 240.000 - | 255.000 | 270.000 |
| ROAD 01 LONGI 1:500 HORI. | TUDIN | AL SECTION | _ | | | | | | | | | | | 2 130 | | | | | | ł |
| 1:100 VERT. | | | | | | | | | | | | | | ON RD0: RL 34. | | | | | | |

| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 6 | | | | | | |
|------|------------|---------------------------------|------|--------|-------|------|-------------|------------------|----|----|----|--|
| 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 6 | | | | | | |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | G H: | 0 | 10 | 20 | 30 | 40 | |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | 6 | | | 4 | | 0 | |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | S V: | U SCALE: | H·1·500 V·1·10 | 4 | 6 | ð | |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | 00/ (LL. | 11.1.000 11.1.00 | • | | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | | | | |
| Rev. | Date | Description | Des. | Verif. | Appd. | J. | | | | | | |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035

St. Leonards, NSW 2065

Tel: 02 9496 7700 Fax: 02 9439 5170

Web: www.cardno.com.au

Level 9, The Forum, 203 Pacific Highway

| Drawn | Date | |
|---------------|-------------------|-----------------------|
| YNL | 1/10/2019 | LENDLEASE |
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREE |
| Designed | Date | CIVIL WORKS |
| Verified | Date | DEVELOPMENT A |
| PL | 1/10/2019 | |
| Approved | | SHEET 1 OF 11 |
| AJG | 1/10/2019 | |

ROAD 01 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

ROAD 02 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

| 7 | 40/44/0000 | | | | A 10 |
|--------|------------|---------------------------------|------|--------|-------|
| / 6 | 13/11/2020 | | | AG | AJG |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | |
| Rev. | Date | Description | Des. | Verif. | Appd. |

XREF's: CAD File

| | | | | | | CREST INTERSECTION RD09 CREST CH 180.910 RL 31.546 | | L AG L | | | | | | | |
|---------|-----------|-----------|-----------|------------------------|-----------|---|-----------|----------------------|-----------|---------|---------|---------|-----------|-----------|-----------|
| | | | | | | | | | | | | | | | |
| | | | | _ | | | | | | | | | | | |
| | | | 1 | 5m VC | -> | ~~~ | 1 3% | 2m VC | | | | | | 2.5% | |
| | | | | | | | | | | | | | | | |
| 1 | | 1 | 1 | 1 | 1 | | 1 | | | 1 | | 1 | 1 | | |
| 30.210 | 30.495 | 30.780 | 30.916 | 31.079 - 31.087 - | 31.283 | 31.519 - 31.546 | 31.421 | 31.323 - | 31.349 | 31.391 | 31.714 | 32.089 | 32.464 | 32.839 | 33.214 |
| 30.977 | 31.376 - | 31.771 - | 31.927 | 32.083 - 32.090 - | 32.239 | 32.387 - | 32.466 | 32.575 - 32.586 | 32.653 | 32.694 | 32.880 | 33.067 | 33.071 - | 32.914 | 32.748 - |
| 120.000 | 135.000 - | 150.000 - | 157.158 - | 164.658 - 165.000 - | 172.158 - | 180.000 - 180.910 - | - 185.079 | 191.079 - 191.624 | 195.000 - | 197.079 | 210.000 | 225.000 | 240.000 - | 255 000 - | 270.000 - |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | Client | | | | | | | | |
|----------|-----------|--------|----------------------------|----------------|-----------|----------|------|----------|--|--|
| YNL | 1/10/2019 | | LENDLEASE COMMUNITIES | | | | | | | |
| Checked | Date | Projec | | Status | | | | | | |
| PL | 1/10/2019 | , | | | FOR AP | PROVAL | | | | |
| Designed | Date | | CIVIL WORKS | | | | | | | |
| HLD | 1/10/2019 | | | NOT TO DE | | | | | | |
| Verified | Date | | DEVELOPMENT APPLICATION | Datum | Date | Scale | Size | | | |
| PL | 1/10/2019 | Title | ROAD LONGITUDINAL SECTIONS | A.H.D | Oct' 2019 | AS SHOWN | | A1 | | |
| Approved | | | | Drawing Number | • | | | Revision | | |
| | | | SHEET 2 OF TT | 8021 | | 7 | | | | |
| AJG | 1/10/2019 | | | | | | | - | | |

| | INTERSECTION RD08 CH 0.000 RL 27.201 | | | SAG | | | | | | 7 | | | | |
|------------------|---|--------|--------|----------------------|--------|-----------------|----------|--------|----------|--------------------|------|----------|--------------|---|
| | | | | [| | | | | | | | | | |
| HORIZONTAL | | | | | | | | | | | | | | |
| VC LENGTH | | ~ | 10m V | /C _ | | | | | | | | | | |
| GRADE | < | -3% | ->< | - | | | | | | | 1.1% | | | |
| DATUM RL 21 | | | | | | | | | | | | | | |
| WAE LEVEL | | | | | | | | | | | | | | |
| DESIGN LEVEL | 1 27.201 - | 27.038 | 26.939 | 26.928 - 26.938 - | 26.943 | 27 1 0 3 | - 001.17 | 27.268 | 27.433 | 27 5 98 | | 27.763 - | 7 97 P | 0 |
| EXISTING SURFACE | 27.209 | 27.278 | 27.363 | 27.444 | 27.451 | 27 605 | - 000.12 | 27.553 | 27.860 | 28 248 | | 28.386 | 28 463 28 | |
| CHAINAGE | 0.000 | 5.434 | 10.434 | 12.751 15.000 | 15.434 | | - 000.00 | 45.000 | - 000.09 | 75 000 | | - 000.06 | 105 000 | |

ROAD 03 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

ROAD 04 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
|------|------------|---------------------------------|------|--------|-------|
| 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | |
| lev. | Date | Description | Des. | Verif. | Appd. |

XREF's: CAD File:

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn YNL | Date 1/10/2019 | Client LENDLEA | ASE COMMUNITIES | | | | | | |
|-----------------|-------------------|--------------------|------------------------|--|----------------|-------------|------------|-------|----------|
| Checked PL | Date 1/10/2019 | Project CHAPMAN ST | TREET WERRINGTON | | Status | FOR AP | PROVAL | | |
| Designed HLD | Date 1/10/2019 | | | | NOT TO BE L | JSED FOR CC | NSTRUCTION | N PUF | RPOSES |
| Verified | Date | DEVELOPME | INT APPLICATION | | Datum | Date | Scale | Size | |
| PL | 1/10/2019 | itle ROAD I ONGI | ITUDINAL SECTIONS | | A.H.D | Oct' 2019 | AS SHOWN | | A1 |
| Approved | | | 11 | | Drawing Number | | | | Revision |
| AlG | 1/10/2019 | SHEET 3 OF | 80219053-DA001-CI-1353 | | | | | | |

| | - CH 0.000 RL 26.936 SAG | |
|------------------|---|---|
| | | |
| HORIZONTAL | | |
| VC LENGTH | < 12m VC > | |
| GRADE | -3% | 1.1% |
| DATUM RL 19 | | |
| WAE LEVEL | | |
| DESIGN LEVEL | 26.936 - 26.793 - 26.661 - 26.665 - 26.824 - 26.824 - | 27.154 - 27.319 - 27.484 - 27.649 - 27.6 |
| EXISTING SURFACE | 25.236 - 25.242 - 25.242 - 25.281 - 25.281 - 25.269 - 25.269 - 25.251 - 25.2551 - 25.25551 - 25.25551 - 25.25551 - 25.25551 - 25.25551 - 25.25551 | 25.841 |
| CHAINAGE | 0.000 4.786 10.786 15.000 16.786 30.000 16.7866 16.786 16.786 16.786 16.786 16.786 16.786 16.786 16.786 | 60.000 60.000 90.000 105.000 |

ROAD 05 LONGITUDINAL SECTION

1:500 HORI.

1:100 VERT.

ROAD 06 LONGITUDINAL SECTION

1:500 HORI.

1:100 VERT.

| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | |
|------|------------|---------------------------------|------|--------|-------|------------------------------------|-------------|----|--|
| 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | H: <u>0 10 20</u> |) <u>30</u> | 40 | |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | | | |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | V: U 2 4 SCALE: H:1:500 V:1:100 | 0 | 8 | |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | |
| Rev. | Date | Description | Des. | Verif. | Appd. | | | | |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| YNL | 1/10/2019 | | |
|-----------------|-------------------|-----------------------------------|--|
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREET WERRINGTON | Status FOR APPROVAL |
| Designed HLD | Date 1/10/2019 | CIVIL WORKS | NOT TO BE USED FOR CONSTRUCTION PURPOSES |
| Verified | Date | DEVELOPMENT APPLICATION | Datum Date Scale Size |
| PL | 1/10/2019 | Title ROAD LONGITUDINAL SECTIONS | A.H.D Oct' 2019 AS SHOWN A1 |
| Approved | | | Drawing Number Revision |
| AJG | 1/10/2019 | SHEET 4 OF TT | 80219053-DA001-CI-1354 7 |

| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
|-----|------------|---------------------------------|------|--------|-------|
| 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | |
| ev. | Date | Description | Des. | Verif. | Appd. |

XREF's: CAD File:

| SAG | | INTERSECTION RD10 CH 204.355 RL 25.920 | | CREST |
|--|--|---|---|--|
| | | | | |
| 15m VC | R252.5 | | | |
| -1% | | 0.7% | | |
| | | | | |
| | | | | |
| 25.654 - 25.654 - 25.538 - 25.511 - 25.511 - 25.495 - | 25.516 - 25.540 - 25.554 - 25.631 - 25.645 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.6555 - 25.6555 - 25.6555 - 25.6555 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.655 - 25.6555 - 25.65555555 - 25.6555 - 25.6555 - 25.6555 - 25.655555555 - 25.6555 - 25.6555 - 25.6555555555 - 25.65555 - 25.65555555555 - 25.655555555555555555555555555555555555 | 25.750 - 25.855 - 25.060 | 26.065 | 26.275 - 26.313 - 26.335 - 26.330 - |
| 23.745 - 23.745 - 23.831 - 23.849 - 23.864 - 23.664 - | 23.870 - 23.870 - 23.870 - 23.903 - 23.903 - 23.912 - 23.912 - 23. | 23.995 - 24.093 - 24.000 - 24.000 - 24.0003 - 24.0000 - 24.0000 - 24.0000 - 24.0000 - 24.0000 - 24.0000 - 24.000 - 24.000 - 24.000 - 24.000 | 24.272 - 24.3437 - 24.3433 - 24.3433 - 24.3432 - 24.3432 - 24.3432 - 24.343 - 24.3432 - 24.343 - 24.343 - 24.343 - 24.343 - 24.343 - 24.343 - 24.343 - 24.3434 - 24.3432 - 24.3432 - 24.3432 - 24.3432 - 24.3432 - 24.3422 - 24.2422 - 24.3422 - 24.3422 - 24.3422 - 24.3422 - 24.3422 - 24.2422 - 24.2422 - 24.2422 - 24.2422 - 24.2422 - 24.2422 - 24.2422 - 24.2422 - 24.24222 - 24.2422 - 24.2422 - 24.24222 - 24.242222 - 24.24222 - 24.2422 - 24.242222222}{24.2422}{2 | 24.504 24.495 24.404 24.410 |
| 120.000 - 120.008 - 131.599 - 135.000 - 139.099 - | 146.599 152.116 152.116 163.007 165.000 | 195.000 | 225.000 - 226.000 - 240.000 - 240.000 | 255.000 - 260.433 - 266.865 - 270.000 - |
| | | | | |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno[®]

Date Client LENDLEASE Drawn YNL Checked Date Project CHAPMAN STREE 1/10/2019 Date
1/10/2019CIVIL WORKS
DEVELOPMENT ADateTitleTitleROAD LONGITUDI Designed HLD Verified ΡI Approved SHEET 5 OF 11 AJG 1/10/2019

| COMMUNITIES | | | | | | | | | |
|----------------|---------------------------------|-----------|----------|------|----|--|--|--|--|
| ET WERRINGTON | Status | FOR AP | PROVAL | | | | | | |
| | NOT TO BE USED FOR CONSTRUCTION | | | | | | | | |
| APPLICATION | Datum | Date | Scale | Size | | | | | |
| DINAL SECTIONS | A.H.D | Oct' 2019 | AS SHOWN | | A1 | | | | |
| | Drawing Number | | | | | | | | |
| | 80219 | | 7 | | | | | | |

ROAD 08 LONGITUDINAL SECTION

1:500 HORI.

ROAD 09 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

XREF's: CAD File

| | | | | INTERSECTION RD04 CH 227.800 RL 27.487 | | | | | | | | | | | | |
|--------|--------------|---------|--------------------|---|--------|--------|--------|--------|--------|-----|----------|--|------------|----------|--------|--------|
| | | | | | | | | | | | | | | | | - |
| | | | | | | | | | | | | | | | | _ |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | < | 40m | vc | | > | | | | | | | | |
| | | | | | | | | | | | | | | -0.7 | '% | |
| | | | | | > | < | | | | | | | | | | - |
| | | | | | | | | | | | | | | | | - |
| | | | | | | | | | | | | | | | | |
| 29.912 | - 225 | 2 CS 80 | 20.032 - 08 668 | 28.312 | 27.983 | 27.934 | 27.719 | 27.698 | 7 611 | | 7.506 | | 27.401 | | 7.191 | ., |
| | | i c | | | | | | - 2 | 2 | - | <u>م</u> | | | <u>,</u> | 4 | |
| 30.35 | 29.66 | | - 29.IL | - 20.02 28.53 | 28.04 | 27.95 | 27.42 | 27.35 | 27.01 | 2 | - 26.68 | | - 26.42 | 72.02 | 26.01 | 1 |
| 20.000 | 35 000 35 | | 000.000 7 6.1 7 | 35.000 | 77.617 | 30.000 | 35.000 | 97.617 | 10.000 | 200 | 25,000 | | 40.000 | | 000 02 | ,,,,,, |
| 1 | <u>(;</u> | | - + | | | ~ ₽ | 5 | ¥ | ć | J | 5 | | Ň Č | Ĵ | 2. | 1 |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document. **Cardno**[®]

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035

St. Leonards, NSW 2065

Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au

Level 9, The Forum, 203 Pacific Highway

Drawn
YNLDate
1/10/2019ClientLENDLEASEChecked
PLDate
1/10/2019ProjectCHAPMAN STREEDesigned
HLDDate
1/10/2019CIVIL WORKS
DEVELOPMENT AF
TitleDEVELOPMENT AF
SHEET 6 OF 11Approved1/10/2019TitleROAD LONGITUDIN
SHEET 6 OF 11

| COMMUNITIES | | | | | |
|---------------|----------------|-------------|------------|------|----------|
| ET WERRINGTON | Status | FOR AP | PROVAL | | |
| | NOT TO BE U | JSED FOR CO | DNSTRUCTIO | N PU | RPOSES |
| APPLICATION | Datum | Date | Scale | Size | |
| NAL SECTIONS | A.H.D | Oct' 2019 | AS SHOWN | | A1 |
| | Drawing Number | | | | Revision |
| | 80219 | 053-DA00 | 1-CI-1356 | | 7 |

| | | | | CH 383.000 RL 26.400 | | | | INTERSECTION RD01 CH 459.600 RL 25.864 |
|------------------|-----------|----------|-----------|----------------------|-----------|---------|-----------|---|
| | | | | | | | | |
| | | | | | | 、 | | |
| | | | | | | | `` | |
| HORIZONTAL | | | | | | | | |
| VC LENGTH | | | | | | | | |
| GRADE | | | | | | | -0.7% | |
| DATUM RL 18 | | | | | | | | |
| WAE LEVEL | | · | · | · | · | | · | |
| DESIGN LEVEL | 26.631 | 26.561 | 26.456 | 26.351 | 26.246 | 26.141 | 26.036 | 25.931 |
| EXISTING SURFACE | 24.590 | 24.514 - | 24.547 - | 24.596 | 24.660 - | 24.630 | 23.687 - | 23.555 - |
| CHAINAGE | 350.000 - | 360.000 | 375.000 - | 390.000 | 405.000 - | 420.000 | 435.000 - | 450.000 |
| ROAD 09 LONG | TUD | NAL SEC | TION | | | | | |

1:500 HORI.

1:100 VERT.

ROAD 10 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

| ĩ | | | | | | | |
|--------------|------|------------|---------------------------------|------|--------|-------|------------------------------|
| 53_CI | | | | | | | |
| Y 19\05 | 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 3 |
|)2\F | 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 3 |
| ts\8(| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | G H: <u>0 10 20 30 40 50</u> |
| oject | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | |
| :\Pro | 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | SCALE: H:1:500 V:1:100 @A1 |
| e: | 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | |
| EF's: Fil | 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | |
| XRE CAE | Rev. | Date | Description | Des. | Verif. | Appd. | d. |
| | | | | | | | |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | | | | | |
|----------|-----------|---------------------------------------|----------------|-------------|------------|------------|
| YNL | 1/10/2019 | LENDLEASE COMMUNITIES | | | | |
| Checked | Date | Project OLIA PARANA OTREET MERRINGTON | Status | | | |
| PL | 1/10/2019 | CHAPMAN STREET WERRINGTON | Claids | FOR AP | PROVAL | |
| Designed | Date | CIVIL WORKS | | | | |
| HLĎ | 1/10/2019 | | NOT TO BE U | USED FOR CO | NSTRUCTION | I PURPUSES |
| Verified | Date | DEVELOPMENT APPLICATION | Datum | Date | Scale | Size |
| PL | 1/10/2019 | | A.H.D | Oct' 2019 | AS SHOWN | A1 |
| Approved | | | Drawing Number | | | Revision |
| | | SHEET / OF IT | 80219 | 053-DA00 | 1-CI-1357 | 7 |
| AJG | 1/10/2019 | | 00210 | | | |

ROAD 11 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

| ت ت | | | | | | | | |
|---------------|------|------------|---------------------------------|------|--------|-------|--|-----------|
| \053 | | | | | | | | |
| Υ19 | 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | |
| 02\F | 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | |
| ts\8(| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | H: <u>0 10 20 30 40</u> | 50m |
| ojeci | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | 10m |
| :\Pro | 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | V: U 2 4 6 8 SCALE: H:1:500 V:1:100 @ | DM DA1 |
| S | 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | <i>y</i> |
| EF's D Fil | 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | |
| XRE CAE | Rev. | Date | Description | Des. | Verif. | Appd. | l. | |

| | | | | | | R500 | | | | | |
|---------|---------|----------|--------------------|---------|---------|---------|-----------|-----------|---------|-----------|---------|
| | | | | | | | -3% | | | | |
| | | | | | | | | | | | |
| 1 | l | | 1 | 1 | I | I | 1 | 1 1 | 1 | 1 | i |
| 34.438 | 33 988 | 22 E 200 | 33 088 | 32.638 | 32.410 | 32.236 | 32.188 - | 31.288 | 30.838 | 30.388 | 29.938 |
| 34.189 | 33.321 | 2000 | 3.2.401 3.1.605 | 30.881 | 30.537 | 30.293 | 30.225 | 23.000 | 28.614 | 28.223 | 27.924 |
| 120.000 | 135 000 | | | 180,000 | 187.593 | 193.395 | 195.000 - | 210.000 - | 240.000 | 255.000 - | 270.000 |
| | | | | | Ц | : ₽ | | | | | |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | | | | | | | | |
|----------|-----------|-------------|--------------------------|---|----------------|-------------|------------|------|----------|
| YNL | 1/10/2019 | | NDLEASE COMMUNITIES | | | | | | |
| Checked | Date | Project CH/ | ADMAN STREET WERRINGTON | | Status | | | | |
| PL | 1/10/2019 | | | | | FOR AP | PROVAL | | |
| Designed | Date | CIV | IL WORKS | | NOT TO BE L | ISED FOR CC | NSTRUCTION | | POSES |
| HLD | 1/10/2019 | | | | | | | | |
| Verified | Date | | | | Datum | Date | Scale | Size | |
| PL | 1/10/2019 | Title ROA | AD LONGITUDINAL SECTIONS | | A.H.D | Oct' 2019 | AS SHOWN | | A1 |
| Approved | | | | ſ | Drawing Number | | | F | Revision |
| AlG | 1/10/2019 | 586 | | | 802190 |)53-DA00 | 1-CI-1358 | | 7 |
| | ., | | | | | | | | |

ROAD 11 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

ROAD 11 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
|------|------------|---------------------------------|------|--------|-------|------|----------------|--------------------|----|----------|----|------|
| 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | H: C |) | 10 | 20 | 30 | 40 | 50 |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | | | 4 | <u> </u> | 0 | 40 |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | |) SCALE: H: | 2 1:500 V:1:100 | 4 | 0 | ð | 00A1 |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | | | | | | en |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | | | | |
| Rev. | Date | Description | Des. | Verif. | Appd. | | | | | | | |

XREF's: CAD File:

| | | | | | · |] | | | | | | | | |
|--------|------------------|--------|------------|---------------------------|-----------------|------------------------|------------------|--------|--------|-------------|------------------|------------------|--------|--------|
| | | | | | | | | | | | SAG | | | |
| | | | | | | | | | | | | <u>\</u> | | |
| | | | | | R200 | | | | | | | | | |
| | | | | | < | | | | | | | | | |
| × | | 50m | VC | -> | | | | | | < | 20 | 0m VC | > | |
| | | | | | | | -1.5% | | | | | | : | 2% |
| | | | | | | $\left \right\rangle$ | | | | | | $\left[\right]$ | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 4.639 | 4.489 | 1 414 | 1.323 | 4.121 4.089 3.964 | 2 207 | 3.882 | - 229.0 2 672 | 3.447 | 3.222 | 3.090 | 3.031 2.026 | 3.028 | 3.140 | 3.165 |
| -5 | 5 7 | 5 | 5 6 | 5 5 5 | ά i | й й Т Т | | Š i | Ň T | , , , | ά č | Ď ř | 5 | 5 |
| 26.187 | 26.185 26.184 | 06 136 | 26.038 | 25.782 25.766 25.66 | 25.05 25.461 | 25.417 | 24.841 | 23.747 | 22.752 | 22.573 | 22.582 22.666 | 22.649 | 23.459 | 23.541 |

900.000

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

840.000 847.156 855.000

822.156 825.000

Cardno[®]

870.000 872.156 880.477 885.000 885.961

<u></u>д д

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035 Level 9, The Forum, 203 Pacific Highway St. Leonards, NSW 2065 Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au

| Drawn YNL | Date 1/10/2019 | ^{Client} LE | NDLEASE COMMUNITIES | | | | | |
|-----------------|-------------------|----------------------|--------------------------|----------------|-------------|-------------|-------|------------|
| Checked PL | Date 1/10/2019 | Project CHA | APMAN STREET WERRINGTON | Status | FOR AP | PROVAL | | |
| Designed HLD | Date 1/10/2019 | CIVI | | NOT TO BE L | ISED FOR CO | ONSTRUCTION | N PUR | POSES |
| Verified | Date | DEV | ELOPMENT APPLICATION | Datum | Date | | Size | ۸1 |
| FL Approved | 1/10/2019 | | AD LONGITUDINAL SECTIONS | А.п.D | 001 2019 | AS SHOWN | | ~ 1 |
| Approved | | SHE | | Drawing Number | | | | Revision |
| AJG | 1/10/2019 | OHL | | 802190 | 053-DA00 | 1-CI-1359 | | 7 |

958.764 960.000

930.000 938.764 945.000 947.335 948.764

| | - INTERSECTION RD12 - CH 0.000 RL 26.678 | | | SAG | | | | | | |
|------------------|---|----------|--------|---|--------|----------|----------|------------|------------|----------|
| | | | | A | | | | | | |
| HORIZONTAL | | | | | | | | | | |
| VC LENGTH | | ~ | 10m V(| > | | | | | | |
| GRADE | | -3% | >< | | | | | | | |
| WAE LEVEL | | | | | | | | | | |
| DESIGN LEVEL | 26.678 - | 26.457 | 26.353 | 26.335 - 26.335 - 26.3422 - 26.3422 | 26.430 | - 26.535 | - 26.640 | - 26.745 - | - 26.850 - | - 26.955 |
| EXISTING SURFACE | 25.135 | 25.153 - | 25.129 | 25.165 - 25.175 - 25.175 - | 25.201 | - 25.121 | - 25.017 | 25.069 - | - 25.174 | - 25.331 |
| CHAINAGE | 0.000 | 7.375 | 12.375 | 15.483 - 17.375 - | 30.000 | 45.000 | 60.000 | 75.000 | 000.06 | 105.000 |

ROAD 12 LONGITUDINAL SECTION

1:500 HORI.

1:100 VERT.

ROAD 12 LONGITUDINAL SECTION

1:500 HORI.

1:100 VERT.

| 7 | 13/11/2020 17/07/2020 | RE-ISSUED FOR DA APPROVAL RE-ISSUED FOR DA APPROVAL | HLD | AG AG | AJG AJG |
|--------|--------------------------|--|------|----------|------------|
| / 6 | 17/07/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | |
| lev. | Date | Description | Des. | Verif. | Appd. |

XREF CAD F

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | |
|-----------------|-------------------|-----------------------|
| YNL | 1/10/2019 | LENULEASE |
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREE |
| Designed HLD | Date 1/10/2019 | CIVIL WORKS |
| Verified | Date | DEVELOPMENT A |
| PL | 1/10/2019 | |
| Approved | | SHEET 10 OF 11 |
| AJG | 1/10/2019 | |

| | | | | | | | LOW |
|-----------|----------------|-----|-------|---------|---------|---------|---------|
| | | | | | | | SBE |
| > | | | | | | | NIOL |
| | | | -0.7% | | | _ | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 137 | 60 | | - | - 669 | - 194 | 689 | 54 |
| 27 8 | - 27.8 27.8 | 2 | 1 | 27.5 | 27.4 | 27.3 | - 27.3 |
| 807 | 482 | | | .527 | .467 | .546 | .583 |
| Эб | | | 2 | - 26 | - 26 | 26 | - 20 |
| 81 026 | 85,000 | | | 315.000 | 330.000 | 345.000 | 220.000 |
| · · · · · | ч (| 4 6 | , | | | ., . | |

| COMMUNITIES | | | | | | | |
|----------------|------------------------|-----------|----------|------|----|--|--|
| ET WERRINGTON | Status FOR APPROVAL | | | | | | |
| | | | | | | | |
| NINAL SECTIONS | A.H.D | Oct' 2019 | AS SHOWN | Size | A1 | | |
| | Drawing Number | | Revision | | | | |
| | 80219053-DA001-CI-1360 | | | | | | |

ROAD 13 LONGITUDINAL SECTION

1:500 HORI. 1:100 VERT.

Document Set ID: 9377466 Version: 1, Version Date: 16/11/2020

EXISTING WALKER STREET (FOR INFORMATION ONLY) 1:500 HORI.

1:100 VERT.

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | | | | | | |
|----------|-----------|--------------------------------------|----------------|----------|-----------|------------|--|
| HLD | 3/03/2020 | LENDLEASE COMMUNITIES | | | | | |
| Checked | Date | Project OLIA DMANL OTDEET MEDDINGTON | Status | | | | |
| PL | 3/03/2020 | CHAPMAN STREET WERRINGTON | Claude | FOR AP | PROVAL | | |
| Designed | Date | CIVIL WORKS | | | | | |
| HLD | 3/03/2020 | | NOT TO BE U | | | N FURFUSES | |
| Verified | Date | DEVELOPMENT APPLICATION | Datum | Date | Scale | Size | |
| PL | 3/03/2020 | | A.H.D | Mar'20 | AS SHOWN | A1 | |
| Approved | | | Drawing Number | | · · · · · | Revision | |
| | | SHEET TI OF TI | 00210 | | | | |
| AJG | 3/03/2020 | | 00219 | 000-DA00 | 1-01-1301 | 1 | |

| H DIM | A DIM(1) | B DIM | BARS X | BARS Y | BARS Z |
|-----------------|----------|-------|---------|---------|---------|
| 1800 < H ≤ 2200 | 1500 | 800 | N16-400 | N16-400 | N16-400 |
| 2200 < H ≤ 2600 | 1900 | 1000 | N16-200 | N16-200 | N16-200 |
| 2600 < H ≤ 3000 | 2300 | 1000 | N16-200 | N16-200 | N16-200 |
| 3000 < H ≤ 3500 | 2400 | 1600 | N20-200 | N16-200 | N20-200 |

| TABLE 1 | | | | | | |
|-------------|---------------|------------|--|--|--|--|
| WALL HEIGHT | PIER DIAMETER | PIER DEPTH | | | | |
| 0m - 1.0m | 450Ø* | 1200 | | | | |
| 1.0m - 2.0m | 600Ø | 2400 | | | | |

| | | | | | _ |
|------|------------|---------------------------------|------|--------|------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 5 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | |
| Rev. | Date | Description | Des. | Verif. | Appd |

ਠੋ

9053-CI-

LO

053

| Tel: 02 9496 7700 Fax: 02 9439 5170 Web: www.cardno.com.au AJG |
|---|
|---|

9053-CI

XR-802

DAD;

9053-CI-

053-C

XR-8021

LAYOUT;

| Mix 6 | | | | | | |
|-------|----------------------|------------------|------|------|---|-----|
| Ca | Carex appressa | Sedge | 1.3m | 75mm | 6 | 808 |
| Dc | Dianella caerulea | Blue flax lily | 0.5m | 75mm | 6 | 808 |
| Fn | Ficinia nodosa | Knobby Club Rush | 0.8m | 75mm | 6 | 808 |
| Jf | Juncus flavidus | Mat Rush | 1.0m | 75mm | 6 | 808 |
| Ju | Juncus usitatus | Common Rush | 1.0m | 75mm | 6 | 808 |
| La | Lepironia articulata | Grey rush | 0.9m | 75mm | 6 | 808 |
| Li | Lomandra longifolia | Mat Rush | 1.2m | 75mm | 6 | 808 |

| | | TERRACED SANDSTONE RETAINING WALL. 4 1 BATTER | | | | | | | |
|--------------|-------|---|--------|---------|---------|---------|---------|---------|---------|
| Datum 20.00 | | | | | | | | | |
| DESIGN LEVEL | | I | I | 25.09 - | 23.05 - | 23.05 - | 23.05 - | 23.05 - | 23.05 - |
| | | 22.97 | 23.10 | 23.95 | 23.50 | 23.36 | 23.38 | 23.44 | 23.50 |
| CHAINAGE | 0.000 | 10.000 | 20.000 | 30.000 | 40.000 | 50.000 | 60.000 | 70.000 | 80.000 |
| | | | | | | | | | |

| TERRACED SANDSTONE |
|--------------------|
| RETAINING WALL. |

| | | | | 0.9m | | | | | |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------------|---------|
| | | | | | BA F | TTER 1 | | TENTION BASIN | 1 |
| Datum 20.00 | | | | | | | | | |
| DESIGN LEVEL | 25.46 - | 25.37 - | 25.48 - | 25.44 - | 23.05 - | 23.05 - | 23.13 - | 22.91 - | 22.97 - |
| | 23.32 | 23.41 | 23.45 | 23.45 | 23.47 | 23.45 | 23.40 | 23.34 | 23.37 |
| CHAINAGE | 0.000 | 10.000 | 20.000 | 30.000 | 40.000 | 50.000 | 60.000 | 70.000 | 80.000 |
| | | | | | | | | | |

SECTION SCALE 1:250V 1:500H -

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035

Level 9, The Forum, 203 Pacific Highway

St. Leonards, NSW 2065

Tel: 02 9496 7700 Fax: 02 9439 5170

Web: www.cardno.com.au

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Client LENDLEASE COMMUNITIES Date 0 Drawn YNL 1/10/2019 **Cardno**[®] Checked Date ^{roject} CHAPMAN STREE 1/10/2019 Date 1/10/2019 Designed HLD **CIVIL WORKS** DEVELOPMENT / Date Verified 1/10/2019 Title **BIORETENTION /** Approved SHEET 1 OF 3 1/10/2019 AJG

| | IE. |
|----|--------------------------------------|
| 1. | REFER DRG. 2201 FOR OUTLET DETAILS |
| 2. | REFER LANDSCAPE ARCHITECT DRAWINGS |
| | FOR OPEN SPACE ESTABLISHMENT DETAILS |

| COMMUNITIES | | | | |
|-----------------------------|-------------------------|----------|-----------|-----------------|
| ET WERRINGTON | Status NOT TO BE I | FOR AP | PROVAL | N PURPOSES |
| APPLICATION | Datum | Date | Scale | Size |
| OSD BASIN PLAN AND SECTIONS | A.H.D Drawing Number | UCT 2019 | AS SHOWN | A I Revision |
| | 80219 | 053-DA00 | 1-CI-2001 | 6 |

| | | | BIO | RETENTION BASIN |
|----------------|---------------------|---------|---------|--------------------|
| | | | | TERRACE |
| | | TOW 26 | | 1% AEP : |
| Datum 22.00 | _ | | | |
| DESIGN LEVEL | - 26.46 - | 26.53 - | 24.60 - | 24.60 - |
| EXISTING LEVEL | 27.10 | 26.79 | 26.37 | 26.51 |
| CHAINAGE | 0.000 | 10.000 | 20.000 | 30.000 |
| | | 2 | | |

SECTION 3 SCALE 1:250V 1:500H

| BIORETENT BASIN | ION | | ► | |
|--------------------------------------|----------|------------|---------|---------|
| <u>T(</u> | DW 25.77 | · <u> </u> | | |
| TERRACED SANDSTONE RETAINING WALL | | | | |
| Datum 20.00 | | | | |
| DESIGN LEVEL | 25.48 - | 24.15 - | 24.45 - | 23.45 - |
| EXISTING LEVEL | 25.44 | 25.46 | 25.45 | 25.43 |
| CHAINAGE | 0.000 | 10.000 | 20.000 | 30.000 |
| | | | | |

Date 1/10/2019 LENDLEAS YNL Cardno Checked Date ^{oject} CHAPMAN STRE 1/10/2019 Date CIVIL WORKS Designed 1/10/2019 HLĎ DEVELOPMENT Date Verified Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035 1/10/2019 BIORETENTION Approved SHEET 2 OF 3 Web: www.cardno.com.au 1/10/2019 A.IG

.000 .195

| BIOR | ETENTION | | > | | OSD BASIN | | | | |
|--------------|------------------|---------|-------------|---------|-----------|---------|---------|-------------------------------|-----------|
| | | | | | | | | | |
| <u>5.</u> 34 | | F 24.6 | | | 1% AEP 25 | 5.34 | F 24.15 | <u>)W 25.77</u> TER SAN | RACED |
| | | | | | | | | RET | AINING WA |
| - 09 FC | 7 | 24.60 - | 24.60 | 24.29 - | 23.29 - | 23.25 - | 24.15 - | 25.56 - | 25.32 - |
| <u> </u> | 70.07 | 26.25 | 26.10 | 26.09 | 25.95 | 25.71 | 25.46 | 25.24 | 25.05 |
| | 4 2 2 2 | 50.000 | 60.000 | 70.000 | 80.000 | 90.000 | 100.000 | 110.000 | 119.380 |

| E COMMUNITIES | | | | | | |
|-------------------------------|----------|-------------|------------|------|--------|--|
| ET WERRINGTON | Status | FOR AP | PROVAL | | | |
| | NOTIOBEL | JSED FOR CO | DNSTRUCTIO | | RPOSES | |
| APPLICATION | Datum | Date | | Size | ۸1 | |
| / OSD BASIN PLAN AND SECTIONS | | 001 2019 | AS SHOWN | | AI | |
| | | | | | | |
| | 80219 | 053-DA00 | 1-CI-2002 | | 6 | |

NOTE:

1. REFER DRG. 2201 FOR OUTLET DETAILS

2. REFER LANDSCAPE ARCHITECT DRAWINGS FOR OPEN SPACE ESTABLISHMENT DETAILS

Rev

Date

Description

Des. Verif. Appd.

13-CI

9053-CI-STO

053-

Ĥ

LAYOL

-LOT

| Datum 19.00 | _ | | | | | |
|--------------|---------|---------|---------|---------|---------|--------------------|
| | - 25.77 | 25.57 - | 25.30 - | 24.65 - | 24.47 - | 24.13 - 24.08 - |
| DESIGN LEVEL | | 25.51 | 24.62 | 22.10 | 22.10 | |
| CHAINAGE | 0.000 | 10.000 | 20.000 | 30.000 | 40.000 | 50.000 50.775 |
| - | • | | | | | |

SECTION 2 SCALE 1:250V 1:500H -

| Datum 19.00 | | | | | | |
|--------------|---------|---------|---------|---------|---------|---------|
| | 24.60 - | 24.88 – | 24.83 – | 24.55 - | 24.80 - | 25.10 - |
| DESIGN LEVEL | 23.66 | 23.51 | 23.61 | 22.10 | 22.10 | |
| CHAINAGE | 0.00 | 10.000 | 20.000 | 30.000 | 40.000 | 49.448 |

SECTION SCALE 1:250V 1:500H -

Web: www.cardno.com.au

| Drawn | Date C | | | | | |
|----------|-------------|--|----------------|-----------|-------------|------------|
| YNL | 1/10/2019 | LENDLEASE COMMUNITIES | | | | |
| Checked | Date P | | Status | | | |
| PL | 1/10/2019 | CHAPMAN STREET WERRINGTON | olado | FOR AP | PROVAL | |
| Designed | Date | CIVIL WORKS | | | | |
| HLD | 1/10/2019 | | NOT TO BE U | | JNSTRUCTION | N PURPUSES |
| Verified | Date | DEVELOPMENT APPLICATION | Datum | Date | Scale | Size |
| PL | 1/10/2019 T | THE BIORETENTION BASIN PLAN AND SECTIONS | A.H.D | Oct' 2019 | AS SHOWN | A1 |
| Approved | | | Drawing Number | | | Revision |
| | | SHEET 3 OF 3 | | | | _ |
| | | | I 80219 | 053-DA00 | 1-CI-2003 | |
| AJG | 1/10/2019 | | | | | |

NOTE:

REFER DRG. 2201 FOR OUTLET DETAILS
 REFER LANDSCAPE ARCHITECT DRAWINGS FOR OPEN SPACE ESTABLISHMENT DETAILS

| Drawn YNL | Date 1/10/2019 | Client LENDLEASE COMMUNITIES | | | | | |
|-----------------|-------------------|-----------------------------------|----------------|-------------------|-------------|------------|------|
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREET WERRINGTON | Status | FOR AP | PROVAL | | |
| Designed HLD | Date 1/10/2019 | CIVIL WORKS | NOT TO BE | USED FOR CO | ONSTRUCTION | I PURPO |)SE |
| /erified Pl | Date 1/10/2019 | | | Date Oct' 2019 | | Size A1 | |
| Approved | | STORMWATER DRAINAGE DETAILS | Drawing Number | 001 2013 | | Revis | sion |
| AJG | 1/10/2019 | SHEET I OF Z | 80219 | 053-DA00 | 1-CI-2201 | ļ | 5 |

BIO-FILTRATION FILTER MEDIA SPECIFICATION

| R AND DRAINAGE LAYERS TO BE WB DOCUMENT ION GUIDELINES" AND THE | 5.PRIOR TO PLACEMENT OF THE FILTER MEDIA A STATEMENT IS TO BE SUBMITTED FROM A QUALIFIED HORTICULTURIST CONFIRMING THAT THE SOIL IS CAPABLE OF SUPPORTING A HEALTHY COMMUNITY OF VEGETATION. 6. TESTS CONFIRMING THE REQUIREMENTS OF ITEMS 1 TO 4 ARE TO BE SUBMITTED FOR APPROVAL PRIOR TO PLACEMENT OF FILTER MEDIA. |
|--|---|
| BISH AND DELETERIOUS DRAULIC CONDUCTIVITY TO BE A M F1815-06. TER MEDIA PARTICLE SIZE | B) TRANSITION LAYER 1) TRANSITION LAYER MATERIAL SHALL BE A CLEAN, WELL GRADED SAND MATERIAL CONTAINING <2% FINES. 2) THE PARTICLE SIZE DISTRIBUTION OF THE SAND TO BE ASSESSED TO ENSURE. D15 (TRANSITION LAYER) LESS THAN OR EQUAL TO 5 x D85 (FILTER MEDIA) |
| (<0.05mm) (0.05-0.15mm) (0.15-0.25mm) (0.25-1.0mm) (1.0-2.0mm) | WHERE: D15 (TRANSITION LAYER) IS THE 15TH PERCENTILE PARTICLE SIZE IN THE TRANSITION LAYER MATERIAL (i.e, 15% OF THE SAND IS SMALLER THAN D15 mm), AND D85 (FILTER MEDIA) IS THE 85th PERCENTILE PARTICLE SIZE IN THE FILTER MEDIA. |
| (2.0-3.4mm) MUST NOT EXCEED 3% (W/W) | C) DRAINAGE LAYER DRAINAGE LAYER MATERIAL IS TO BE CLEAN, FINE GRAVEL, SUCH AS A 5mm WASHED SCREENINGS. THE PARTICLE SIZE DISTRIBUTION TO BE: |
| D AND COMPLY WITH THE RDANCE WITH AS4419 AT LEAST | WHERE: D15 (DRAINAGE LAYER) IS THE 15TH PERCENTILE PARTICLE SIZE IN THE TRANSITION LAYER MATERIAL (i.e, 15% OF THE SAND IS SMALLER THAN D15 mm), AND D85 (TRANSITION LAYER) IS THE 85th PERCENTILE PARTICLE SIZE IN THE FILTER MEDIA. |
| mg/kg 40mg/kg WHERE PLANTS WITH ⁄ ARE TO BE USED, TOTAL SHOULD BE <20mg/kg. ND SOIL BLENDS'' AS4419 - pH | D) VEGETATION VEGETATION TO BE PLANTED AT MINIMUM DENSITY 8 PLANTS PER SQUARE METRE. PLANT SPECIES TO BE SELECTED FROM LIST IN SECTION 6.1 OF PENRITH CITY COUNCIL WSUD TECHNICAL GUIDELINES VERSION 3 - JUNE 2015 |
| PECIFIED FOR "NATURAL SOILS | INSTALLATION: |
| NATURAL SOILS AND SOIL BLENDS' 19 | FILTER MATERIAL IS TO BE LIGHTLY COMPACTED (E.G. A SINGLE PASS WITH A DRUM LAWN ROLLER) UNDER NO CIRCUMSTANCES SHOULD HEAVY EQUIPMENT OR MULTIPLE PASSES BE MADE. FILTER MEDIA SHOULD BE INSTALLED IN TWO LIFTS UNLESS THE DEPTH IS LESS THAN 500mm. |
| | |

ALL PITS EXCEEDING 1.0m DEPTH TO BE FITTED WITH STEP IRONS TO COUNCIL SPECIFICATION. REFER PCC STANDARD DRAWING SD3001 FOR DETAILS. ALL GRATES TO BE WELDLOK OR EQUIVALENT HEAVILY GALVANISED STEEL GRATE WITH HINGED ENTRY AND LOCK DOWN "J" BOLT TO MANUFACTURERS DETAIL.

| | | | | | | 0 | 1 | 2 | 3 | 4 | 5m |
|-----|------------|---------------------------------|-----|-------|------|------------|---|---|---|---|-----|
| | | | | | | | | | | | |
| | | | | | | SCALE 1:50 |) | | | | @A1 |
| 3 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | e |
| 2 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | | | | | |
| 1 | 16/12/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | | | |
| Rev | Date | Description | Des | Vorif | Annd | | | | | | |

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

| Drawn | Date | Client | | | | | | | |
|----------|------------|--------|-----------------------------|----------------|------------------------|----------|----------|--|--|
| ТРВ | 16/12/2019 | | | | | | | | |
| Checked | Date | Projec | | Status | | | | | |
| PL | 16/12/2019 | | | | FOR AF | PROVAL | | | |
| Designed | Date | | CIVIL WORKS | | | | | | |
| HLD | 16/12/2019 | | | | | | | | |
| Verified | Date | | DEVELOPMENT APPLICATION | Datum | Date | Scale | Size | | |
| PL | 16/12/2019 | Title | STORMWATER DRAINAGE DETAILS | A.H.D | Dec' 2019 | AS SHOWN | A1 | | |
| Approved | | | | Drawing Number | er | | Revision | | |
| | | | SHEET 2 OF 2 | 8021 | 80219053-DA001-CI-2202 | | | | |
| AJG | 16/12/2019 | | | | | | _ | | |

| CATCHMENT | AREA (ha) | DESCRIPTION |
|-----------|-----------|---|
| A | 6.98 | University of Western Sydney (UWS) Werrington North Campus drains to the existing dam, overflow drains to Catchment B and towards the railway corridor |
| В | 11.4 | UWS land, mixture of grassland and woodland, stormwater runoff ponds at the low point then flows parallel with the railway corridor towards the east |
| С | 2.66 | UWS land, mixture of grassland and woodland, stormwater runoff flows across the site boundary to Catchment 8, then flows parallel with the railway corridor towards the east |
| D | 2.05 | UWS land, predominantly grassland with steep slope up to 8% grade, stormwater runoff will be collected by a drainage swale along the site boundary and conveyed to the proposed Chapman Street stormwater drainage network upgrade |
| E | 2.1 | UWS land with well maintained lawn, the site has steep slope up to 9% grade, stormwater runoff will be collected by a drainage swale along the site boundary and conveyed north to the proposed Chapman Street stormwater drainage network |
| F | 1.05 | UWS land with well-maintained lawns, with steep slope up to 9% grade, stormwater runoff will be collected by a drainage swale along the site boundary and conveyed north to Catchment 6 |
| G | 9.55 | The site has a grade of approximately 5% with well-maintained lawns. Cobham Juvenile Centre is located to the eastern side of the catchment, an OSD basin is located to the south eastern corner of the centre and drains the stormwater runoff to the unnamed watercourse. There are bunds to the west of the centre which divert stormwater runoff from the centre. |
| Н | 1.32 | Catchment with well-maintained lawns drains to the existing low point to the north eastern corner of Cobham Juvenile Justice Centre, a new stormwater drainage network will be provided to convey stormwater runoff to Claremont Creek |
| J | 4.5 | Existing catchment currently drains to the lowpoint in Walker Street. Stormwater runoff will be drained by the proposed stormwater network in East West Connector Road to basin C and drain to Claremont Creek |
| К | 3.67 | Existing developments in Chapman Street, which have been modelled in detail to assess existing flow conditions. |
| L | 4.14 | Existing catchment drains to the existing 1200mm diameter pipe under the railway corridor |
| Μ | 4.61 | Based on the approved DA plans of the proposed development at 25 Rance Road, majority of the development will be drained to Basin A for detention and water quality / treatment. |
| 1 | 3.2 | Proposed development drains to Basin B for stormwater detention and water quality / treatment. Basin outlet drains to the proposed Chapman Street drainage network upgrade. |
| 2 | 12.03 | Proposed development drains to Basin A for stormwater detention and water quality / treatment. |
| 3 | 1.1 | Proposed park drains to Basin B. |
| 4 | 0.54 | Future apartments with OSD tank for treatment and detention, not part of this DA. |
| 5 | 0.73 | Proposed park bypasses OSD / water quality basins and drains to Chapman Street |
| 6 | 7.6 | Future Industrial Subdivision (Residue Lots) drains to Claremont Creek by the proposed stormwater drainage network in East West Connetor Road. Industrial lots to have their own private stormwater OSD and WSUD measures. East - West collector road and 0.6ha of residential area drains to basin C for stormwater treatment. |
| 7 | 1.3 | Proposed E2 zone, stormwater runoff drains to the proposed Chapman Street stormwater drainage network |
| 8 | 0.95 | Proposed residential development bypasses OSD/WSUD Basins |

| 6 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | |
|------|------------|---------------------------------|------|--------|-------|------------------|------|
| 5 | 23/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 0 50 100 150 200 | 250m |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | , SCALE 1:2500 | @A1 |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | |
| Rev. | Date | Description | Des. | Verif. | Appd. | ι. | |

|)rawn YNL | Date 1/10/2019 | Client LENDLEASE |
|-----------------|-------------------|-----------------------|
| Checked PL | Date 1/10/2019 | Project CHAPMAN STREE |
|)esigned HLD | Date 1/10/2019 | CIVIL WORKS |
| /erified | Date | DEVELOPMENT A |
| PL | 1/10/2019 | Title STORMWATER CA |
| Approved | | |
| AIG | 1/10/2010 | |

HLD PL AJG

Des. Verif. Appd.

HLD

HLD

9/08/2019

Date

1/10/2019 ISSUED FOR DA APPROVAL

27/09/2019 ISSUED FOR INFORMATION (90% DA)

ISSUED FOR INFORMATION (50% DA)

Description

© Cardno Limited All Rights Reserved. This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

25m

@A1

SCALE 1:250

12.50

| WERRINGTON | FOR APPROVAL | | | | | | | | |
|------------|--|-----------|----------|------|--|--|--|--|--|
| | NOT TO BE USED FOR CONSTRUCTION PURPOS | | | | | | | | |
| PLICATION | Datum | Date | Scale | Size | | | | | |
| | A.H.D | Oct' 2019 | AS SHOWN | A1 | | | | | |
| | Drawing Number | | | | | | | | |
| | 80219053-DA001-CI-3001 | | | | | | | | |

| XR-802 lapman (| | | | | | | |
|--------------------|------|------------|---------------------------------|------|--------|-------|--------------------|
| 53_Ch | | | | | | | |
| V19\0 | 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 3 |
| CI-B | 6 | 18/08/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 3 |
| 153- is/8(| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | 3 0 5 10 15 20 25n |
| 2190 ject | 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | |
| -802 \Pro | 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | G SCALE 1:250 @A1 |
| Ϋ́Χ Ξ | 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | |
| File | 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | |
| AD AC | Rev. | Date | Description | Des. | Verif. | Appd. | d. |

LAYOUT; Drawings/F

9053-

Web: www.cardno.com.au

| Drawn | Date | Client I FNDI FASE |
|------------|-----------|----------------------|
| | 1/10/2019 | |
| Checked | Date | Project CHADMAN STDE |
| PL | 1/10/2019 | |
| Designed | Date | CIVIL WORKS |
| HLD | 1/10/2019 | |
| Verified | Date | |
| PL | 1/10/2019 | |
| Approved | | |
| , ippiovou | | SHEET 3 OF 4 |
| | | ONEET 0 OF 4 |
| AJG | 1/10/2019 | |

| 7 | 13/11/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | | | | | |
|------|------------|---------------------------------|------|--------|-------|--|----|---|----|----|-----|-----|
| 6 | 18/08/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | | _ | | | | |
| 5 | 1/04/2020 | RE-ISSUED FOR DA APPROVAL | HLD | AG | AJG | | 0 | 5 | 10 | 15 | 20 | 25r |
| 4 | 4/03/2020 | RE-ISSUED FOR DA APPROVAL | HLD | PL | AJG | | | | | | | |
| 3 | 1/10/2019 | ISSUED FOR DA APPROVAL | HLD | PL | AJG | | 50 | | | | @A1 | |
| 2 | 27/09/2019 | ISSUED FOR INFORMATION (90% DA) | HLD | | | | | | | | | |
| 1 | 9/08/2019 | ISSUED FOR INFORMATION (50% DA) | HLD | | | | | | | | | |
| Rev. | Date | Description | Des. | Verif. | Appd. | | | | | | | |

