Cardno
Shaping the Future

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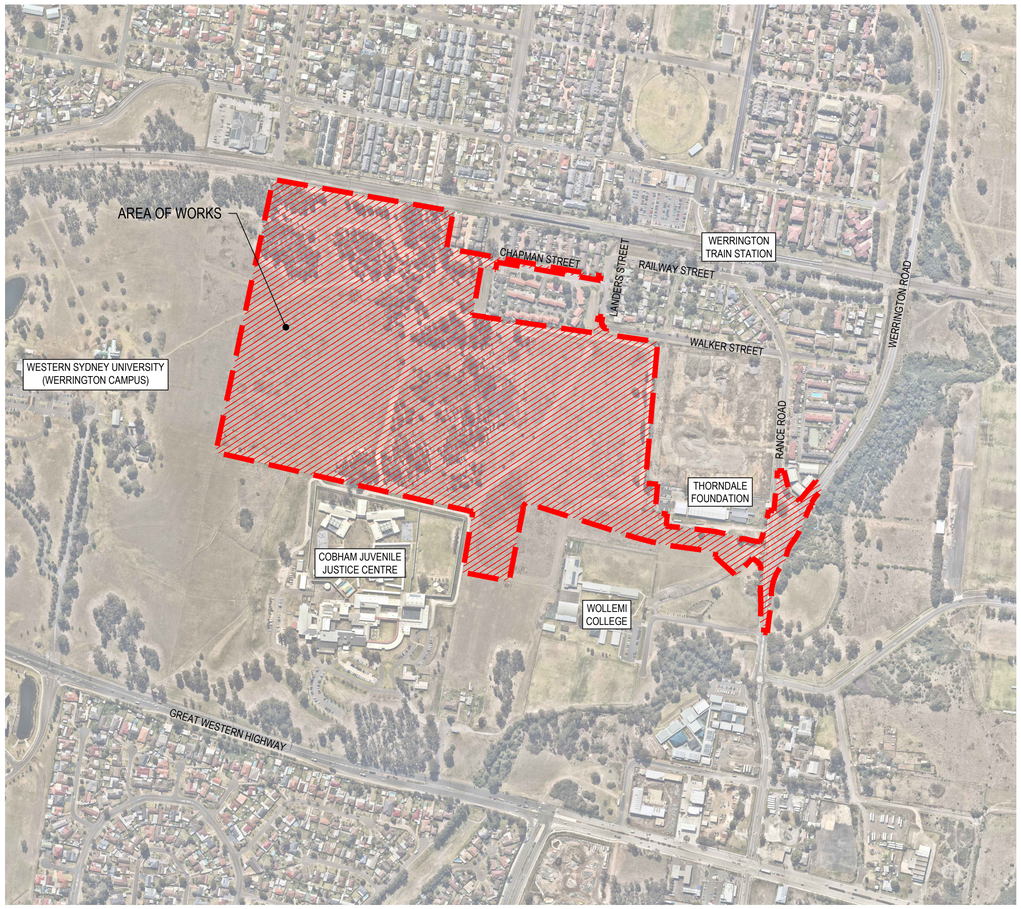
lendlease

LENDLEASE COMMUNITIES

CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION



LOCALITY PLAN
1:5000

NORTH

SCHEDULE OF DRAWINGS

DRAWING No.	DESCRIPTION
80219053-DA001-CI-1001	COVERSHEET AND DRAWING SCHEDULE
80219053-DA001-CI-1011	GENERAL NOTES AND LEGENDS
80219053-DA001-CI-1031	GENERAL ARRANGEMENT PLAN
80219053-DA001-CI-1041	ROAD HIERARCHY PLAN
80219053-DA001-CI-1051	EXISTING SERVICES AND SURVEY PLAN
80219053-DA001-CI-1101	EROSION AND SEDIMENT CONTROL PLAN SHEET 1 OF 3
80219053-DA001-CI-1102	EROSION AND SEDIMENT CONTROL PLAN SHEET 2 OF 3
80219053-DA001-CI-1103	EROSION AND SEDIMENT CONTROL PLAN SHEET 3 OF 3
80219053-DA001-CI-1131	EROSION AND SEDIMENT CONTROL DETAILS
80219053-DA001-CI-1141	CUT AND FILL PLAN
80219053-DA001-CI-1151	SITE SECTIONS SHEET 1 OF 5
80219053-DA001-CI-1152	SITE SECTIONS SHEET 2 OF 5
80219053-DA001-CI-1153	SITE SECTIONS SHEET 3 OF 5
80219053-DA001-CI-1154	SITE SECTIONS SHEET 4 OF 5
80219053-DA001-CI-1155	SITE SECTIONS SHEET 5 OF 5
80219053-DA001-CI-1251	ROAD TYPICAL CROSS SECTION
80219053-DA001-CI-1301	SITEWORKS AND STORMWATER PLAN SHEET 1 OF 7
80219053-DA001-CI-1302	SITEWORKS AND STORMWATER PLAN SHEET 2 OF 7
80219053-DA001-CI-1303	SITEWORKS AND STORMWATER PLAN SHEET 3 OF 7
80219053-DA001-CI-1304	SITEWORKS AND STORMWATER PLAN SHEET 4 OF 7
80219053-DA001-CI-1305	SITEWORKS AND STORMWATER PLAN SHEET 5 OF 7
80219053-DA001-CI-1306	SITEWORKS AND STORMWATER PLAN SHEET 6 OF 7
80219053-DA001-CI-1307	SITEWORKS AND STORMWATER PLAN SHEET 7 OF 7
80219053-DA001-CI-1311	ROUNDABOUT CONCEPT PLAN
80219053-DA001-CI-1351	ROAD LONGITUDINAL SECTIONS SHEET 1 OF 11
80219053-DA001-CI-1352	ROAD LONGITUDINAL SECTIONS SHEET 2 OF 11
80219053-DA001-CI-1353	ROAD LONGITUDINAL SECTIONS SHEET 3 OF 11
80219053-DA001-CI-1354	ROAD LONGITUDINAL SECTIONS SHEET 4 OF 11
80219053-DA001-CI-1355	ROAD LONGITUDINAL SECTIONS SHEET 5 OF 11
80219053-DA001-CI-1356	ROAD LONGITUDINAL SECTIONS SHEET 6 OF 11
80219053-DA001-CI-1357	ROAD LONGITUDINAL SECTIONS SHEET 7 OF 11
80219053-DA001-CI-1358	ROAD LONGITUDINAL SECTIONS SHEET 8 OF 11
80219053-DA001-CI-1359	ROAD LONGITUDINAL SECTIONS SHEET 9 OF 11
80219053-DA001-CI-1360	ROAD LONGITUDINAL SECTIONS SHEET 10 OF 11
80219053-DA001-CI-1361	ROAD LONGITUDINAL SECTIONS SHEET 11 OF 11
80219053-DA001-CI-1601	ROAD TYPICAL DETAILS SHEET 1 OF 2
80219053-DA001-CI-1602	ROAD TYPICAL DETAILS SHEET 2 OF 2
80219053-DA001-CI-2001	BIORETENTION / OSD BASIN PLAN AND SECTIONS SHEET 1 OF 3
80219053-DA001-CI-2002	BIORETENTION / OSD BASIN PLAN AND SECTIONS SHEET 2 OF 3
80219053-DA001-CI-2003	BIORETENTION BASIN PLAN AND SECTIONS SHEET 3 OF 3
80219053-DA001-CI-2201	STORMWATER DRAINAGE DETAILS SHEET 1 OF 2
80219053-DA001-CI-2202	STORMWATER DRAINAGE DETAILS SHEET 2 OF 2
80219053-DA001-CI-2301	STORMWATER CATCHMENT PLAN
80219053-DA001-CI-3001	TURN PATH PLANS SHEET 1 OF 4
80219053-DA001-CI-3002	TURN PATH PLANS SHEET 2 OF 4
80219053-DA001-CI-3003	TURN PATH PLANS SHEET 3 OF 4
80219053-DA001-CI-3004	TURN PATH PLANS SHEET 4 OF 4

0 100 200 300 400 500m
SCALE 1:5000 @A1

Rev.	Date	Description	Des.	Verif.	Appd.
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		

Drawn	YNL	Date 1/10/2019
Checked	PL	Date 1/10/2019
Designed	HLD	Date 1/10/2019
Verified	PL	Date 1/10/2019
Approved	AJG	1/10/2019

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:5000	A1

Drawing Number: 80219053-DA001-CI-1001
Revision: 4

XREF's: XR-80219053-CI-AERIAL; XR-80219053-CI-BOUNDARY
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1001 COVER SHEET AND DRAWING SCHEDULE.dwg

DATE PLOTTED: 17 July 2020 11:46 AM BY : HAYDEN DAVENPORT

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

1. 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

1. 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.
2. 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.
3. SERVICES MARKED AS DYBD ARE BASED ON DIAL BEFORE YOU DIG DATA COLLECTED ON 08/07/2019.

LEGEND

- POWER POLE WITH LIGHT
- LIGHT POLE
- WATER METER
- SEWER MANHOLE
- SEWER LAMPHOLE
- 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
- DRAINAGE LINE
- SEWER
- POTABLE WATER (DYBD)
- ELECTIRCAL OVERHEAD LINE
- UNDERGROUND ELECTRICAL CONDUIT (DYBD)
- EXISTING OPTUS LINE (DYBD)
- EXISTING TELSTRA LINE (DYBD)
- EXISTING NBN LINE (DYBD)

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

1. 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.

2. 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.

3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.

5. 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

6. 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.
   b. CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
   c. INSTALL SEDIMENT BASIN AS SHOWN ON PLAN (D) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
   d. 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

7. 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.

11. 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.

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BEFORE YOU DIG

STORMWATER DRAINAGE NOTES

1. 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
2. PIPES 375 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.

3. PIPES 300 DIA AND LESS SHALL BE DWV GRADE (CLASS SN8) uPVC WITH SOLVENT WELDED JOINTS.

4. EQUIVALENT STRENGTH FRC PIPES MAY BE USED.

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.

7. 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).

9. 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.

11. 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.

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.

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

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 WHATSOEVER.

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

1. 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.

3. MAKE SMOOTH CONNECTION WITH EXISTING WORKS AND SURFACES.

4. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.

5. 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)

6. PROVIDE 10mm WIDE EXPANSION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVEMENTS.

7. ASPHALTIC CONCRETE SHALL CONFORM TO R.M.S. SPECIFICATION R116.

8. 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.

9. 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.

10. 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.

11. 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.)
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 DOWN
- STRAW BALE SEDIMENT FILTER
- SITE FENCE
- SEDIMENT FENCE
- DIVERSION BANK AND CHANNEL
- GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP
- SANDBAG SEDIMENT TRAP FOR KERB INLET ON GRADE
- MESH AND GRAVEL INLET FILTER
- INDICATIVE STOCKPILE LOCATIONS
- SITE ENTRANCE
- TEMPORARY SEDIMENT BASIN

ROOF WATER KERB OUTLETS

1. KERB OUTLETS TO BE PROVIDED IN ACCORDANCE WITH PENRITH CITY COUNCILS CIVIL WORKS SPECIFICATION AT EACH LOT WHERE INTERALLOTMENT DRAINAGE IS NOT PROVIDED

2. KERB OUTLETS ARE TO BE CONSTRUCTED AT THE SAME TIME KERBS ARE POURED.

3. ALIGNMENT OF KERB OUTLET PIPE TO BE ADJUSTED ON SITE TO AVOID SERVICE CLASHES.

TELSTRA - DUTY OF CARE NOTE

TELSTRA'S PLANS SHOW ONLY THE PRESENCE OF CABLES AND PLANT. THEY 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 DUE 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 CABLES 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.

PROPOSED WORKS 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.
- JUNCTION PIT
- GRATED INLET PIT
- SCOUR PROTECTION
- TREES TO BE RETAINED
- TREES TO BE REMOVED.
- APZ BOUNDARY
- SURVEY BOUNDARY

Rev.	Date	Description	Des.	Verif.	Appd.
4	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG
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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

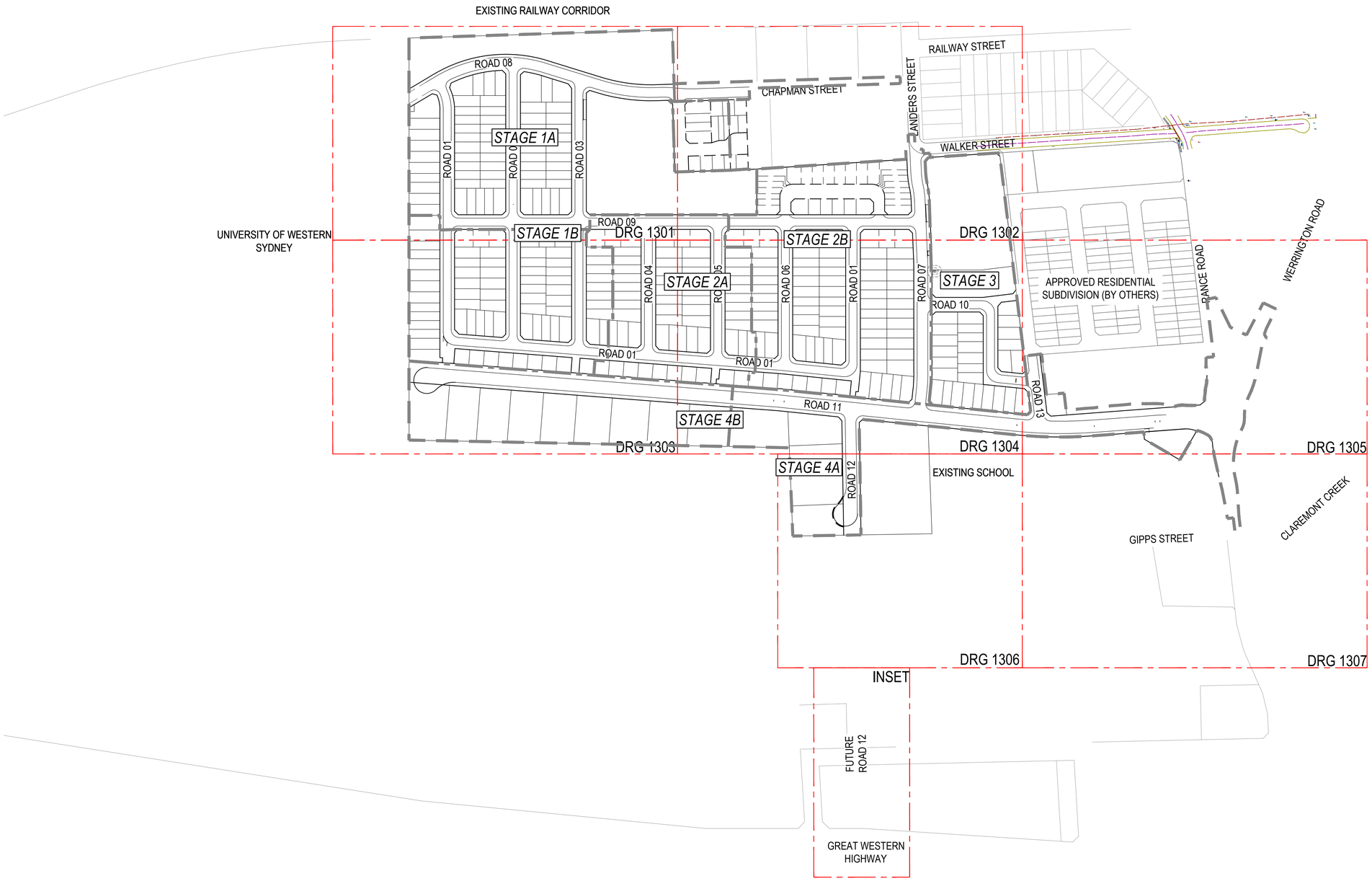
Title: GENERAL NOTES AND LEGENDS

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	N.T.S	A1

Drawing Number: 80219053-DA001-CI-1011
Revision: 4

XREFS:
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1011 GENERAL NOTES AND LEGENDS.dwg



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6	23/04/2020	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		

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SCALE 1:2000 @A1

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Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: GENERAL ARRANGEMENT PLAN

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:2500	A1

Drawing Number: 80219053-DA001-CI-1031
Revision: 7

DATE PLOTTED: 22 July 2020 1:30 PM BY : THOMAS BLEASDALE

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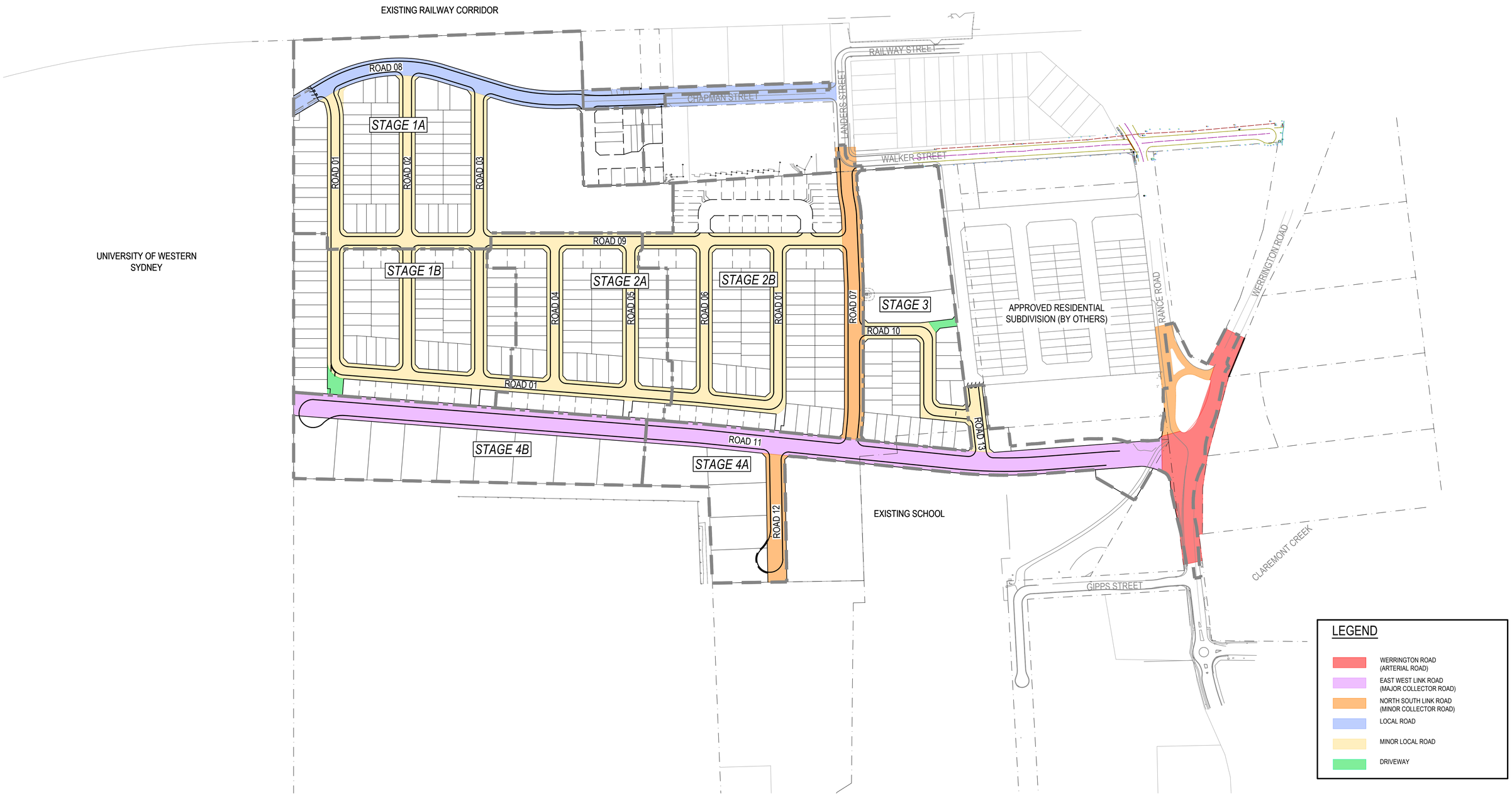

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7	17/07/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
6	23/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
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3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		

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SCALE 1:2000 @A1

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Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD HIERARCHY PLAN

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:2000	A1

Drawing Number: 80219053-DA001-CI-1041
Revision: 7

DATE PLOTTED: 22 July 2020 2:20 PM BY : THOMAS BLEASDALE

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DATE PLOTTED: 17 July 2020 11:47 AM BY : HAYDEN DAVENPORT

XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-SURVEY; XR-80219053-CI-EXISTNG SERVICES; XR-80219053-CI-CONTROL; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-ADJOINING SUBDIVISION
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NOTE

REFER DRG. 1011 FOR NOTES AND LEGEND.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

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SCALE 1:2000 @A1

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Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: EXISTING SERVICES AND SURVEY PLAN

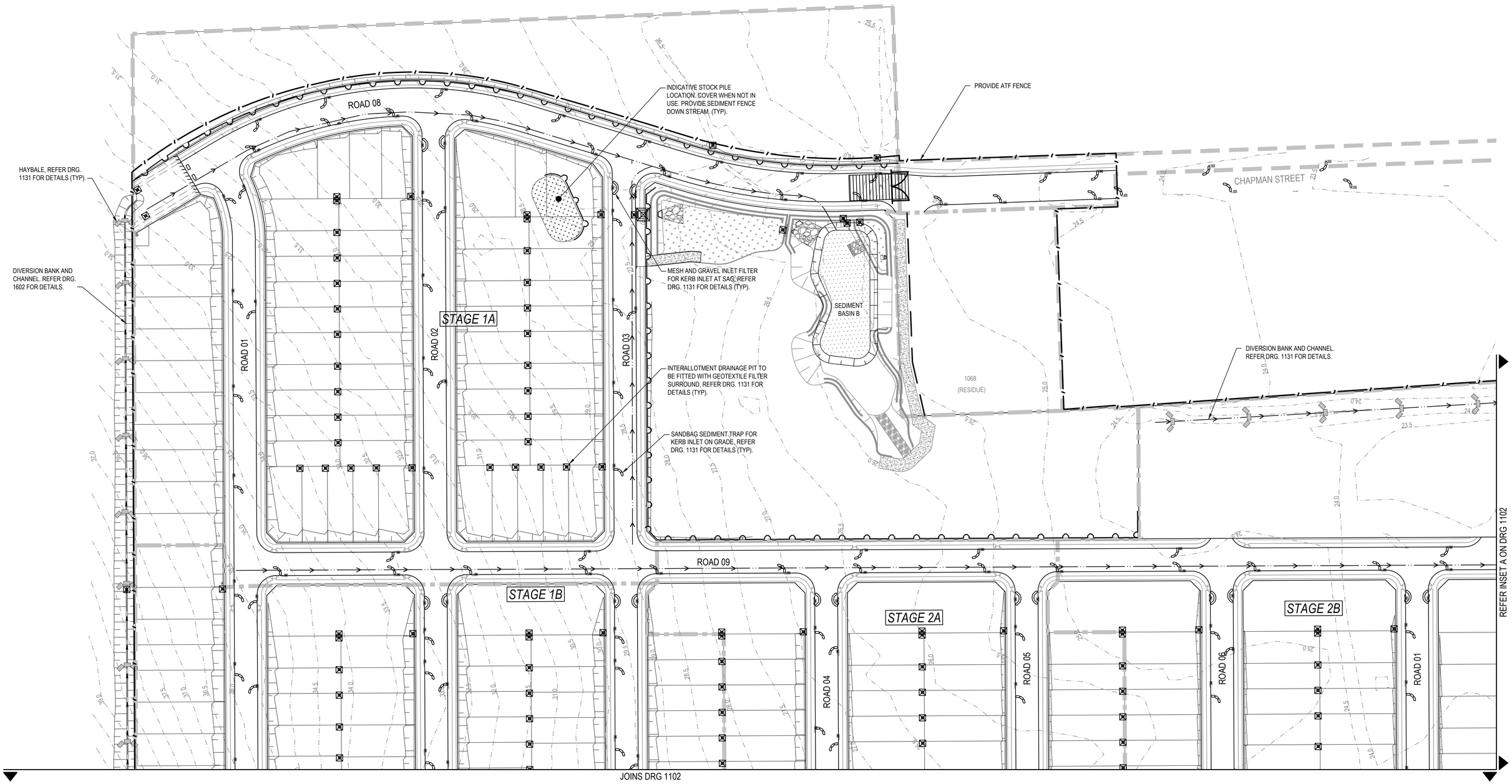
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:2000	A1

Drawing Number: 80219053-DA001-CI-1051
Revision: 4

NOTE

REFER DRG. 1011 FOR NOTES AND LEGEND.



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Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: EROSION AND SEDIMENT CONTROL PLAN
SHEET 1 OF 3

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:750	A1

Drawing Number: 80219053-DA001-CI-1101
Revision: 7

XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-STORMWATER; XR-80219053-CI-ROAD; XR-80219053-CI-SITEWORKS; XR-80219053-CI-CONTROL; XR-80219053-CI-OSD-PLAN; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-SEDI-EROS; XR-80219053-CI-ROUNDABOUT; XR-80219053-CI-SURVEY
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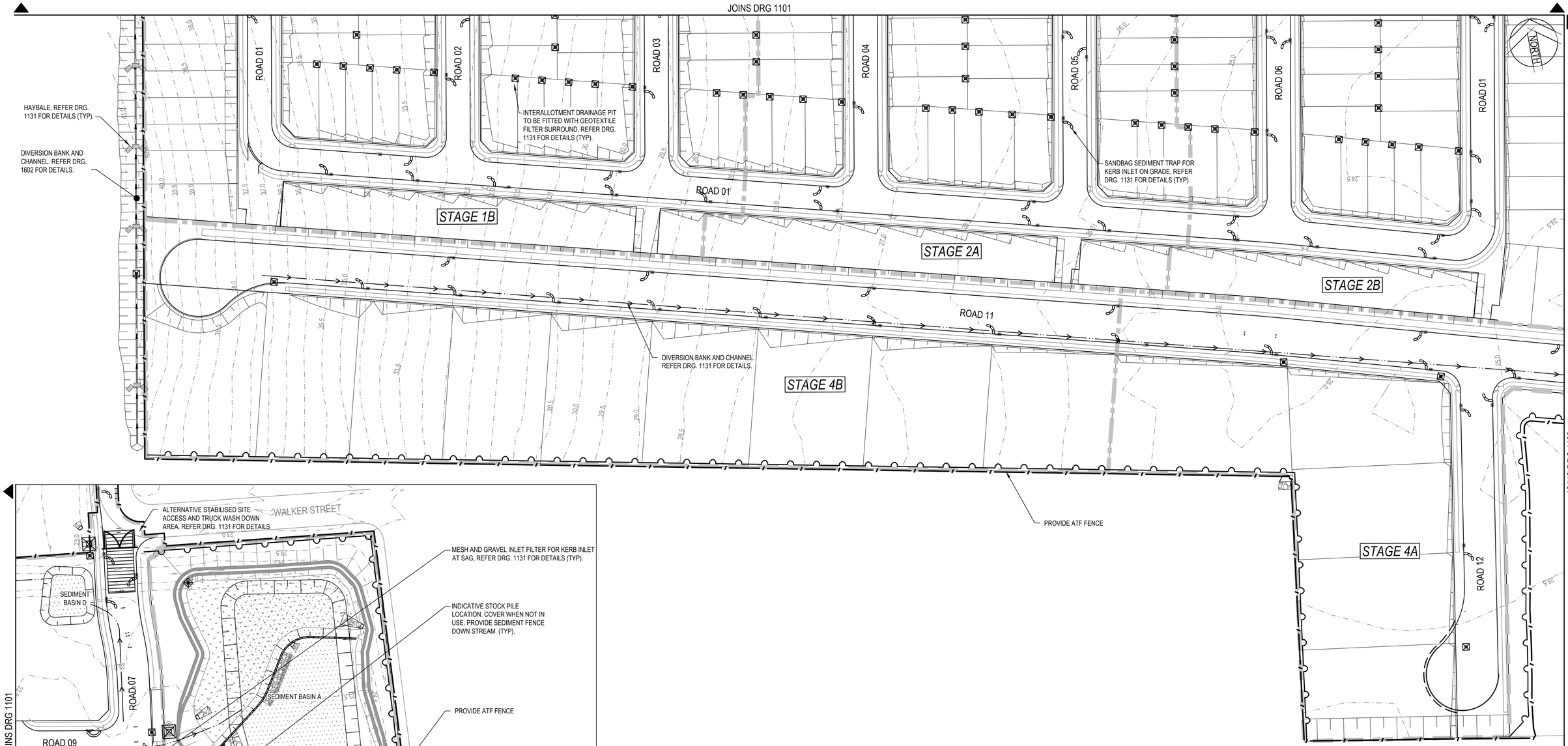
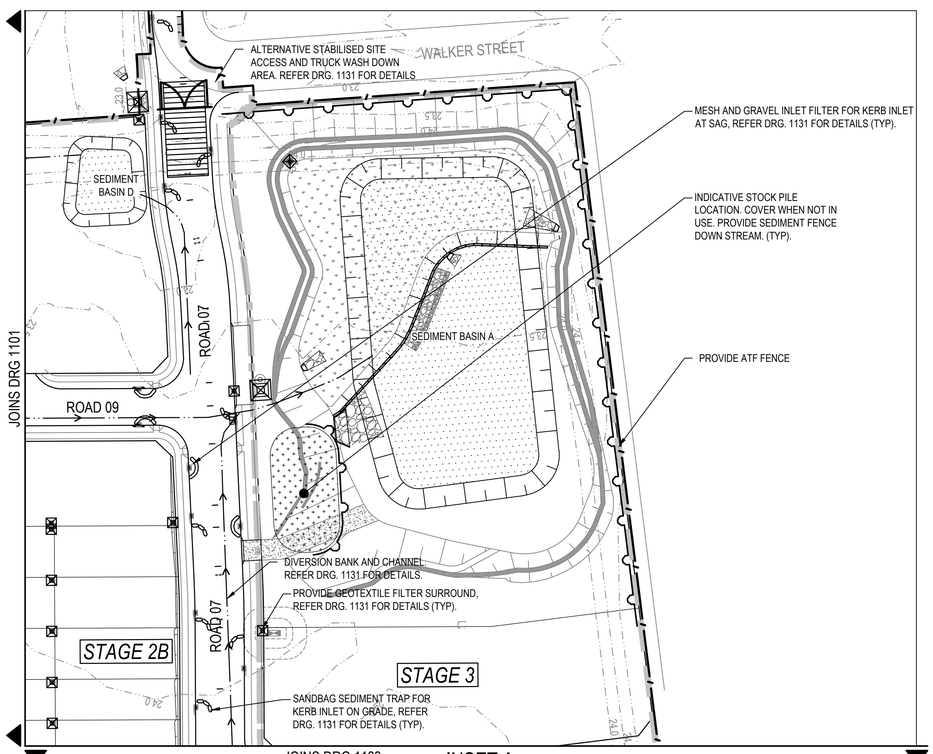
DATE PLOTTED: 22 July 2020 2:09 PM BY : THOMAS BLEASDALE





INSET A
SCALE 1:750

NOTE
REFER DRG. 1011 FOR NOTES AND LEGEND.

Rev.	Date	Description	Des.	Verif.	Appd.
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2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
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SCALE 1:750 @A1

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Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: EROSION AND SEDIMENT CONTROL PLAN
SHEET 2 OF 3

Status: FOR APPROVAL
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Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:750	A1

Drawing Number: 80219053-DA001-CI-1102
Revision: 7

XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-STORMWATER; XR-80219053-CI-ROAD; XR-80219053-CI-SITEWORKS; XR-80219053-CI-CONTROL; XR-80219053-CI-OSD-PLAN; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-SED-EROS; XR-80219053-CI-ROUNDABOUT; XR-80219053-CI-SURVEY
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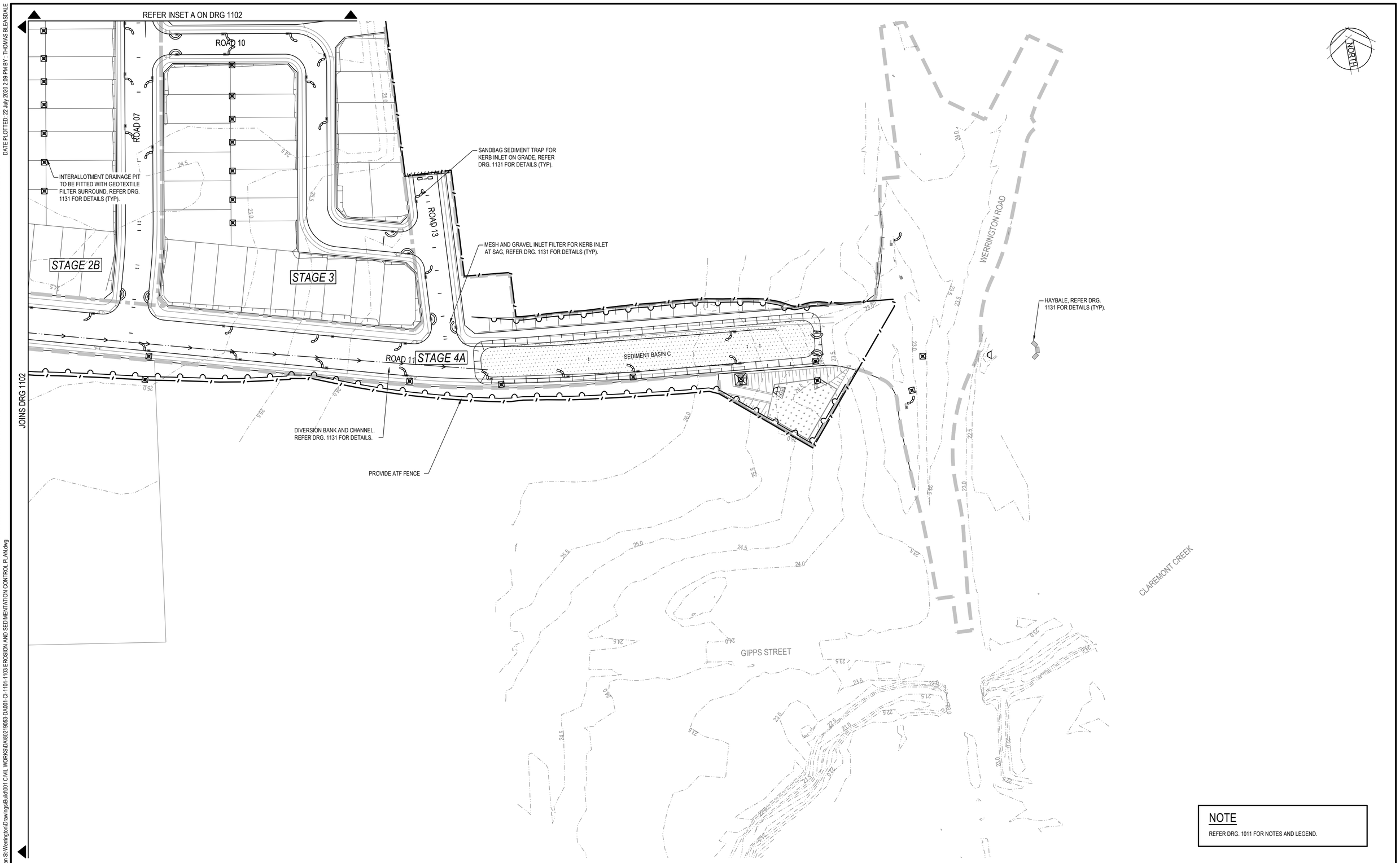

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REFER DRG. 1011 FOR NOTES AND LEGEND.

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7	17/07/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
6	23/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
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4	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG
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1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		

SCALE 1:750 @A1 (0, 15, 30, 45, 60, 75m)

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Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: EROSION AND SEDIMENT CONTROL PLAN
SHEET 3 OF 3

Status: FOR APPROVAL
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Datum	Date	Scale	Size
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Revision: 7

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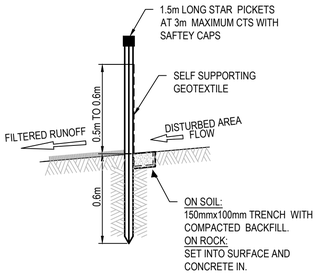

SEDIMENT FENCE SECTION

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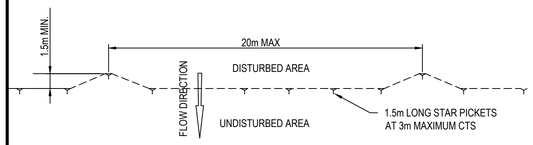

SEDIMENT FENCE PLAN

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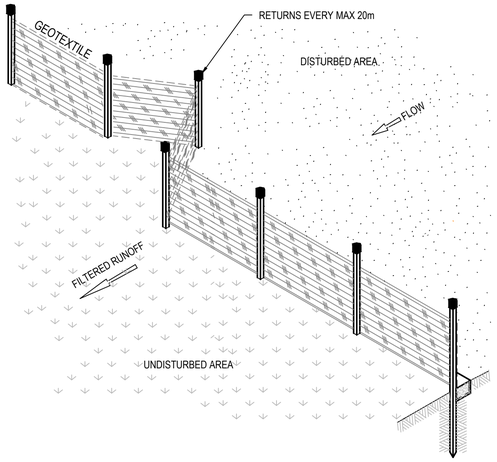

SEDIMENT FENCE ISOMETRIC

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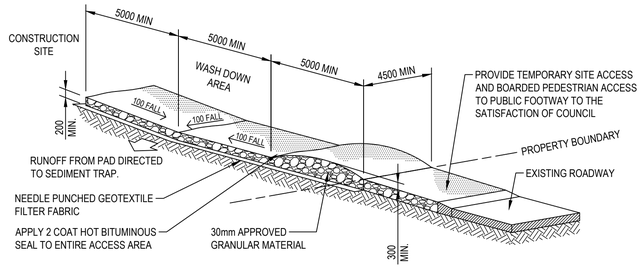

STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA

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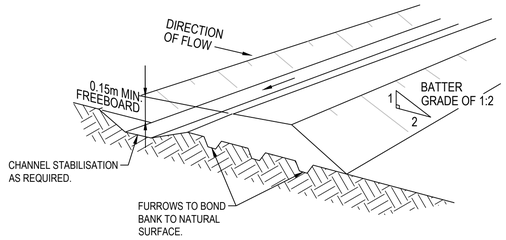

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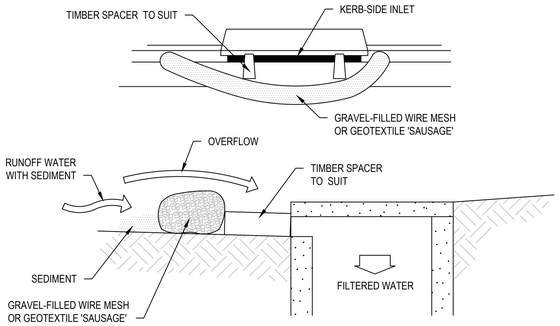

MESH AND GRAVEL INLET FILTER

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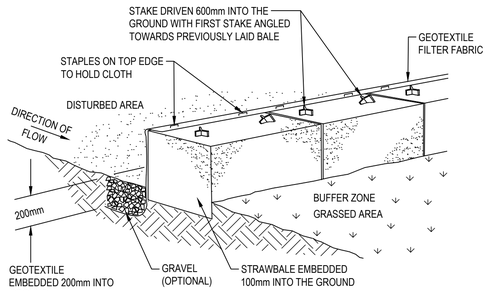

STRAWBALE AND GEOTEXTILE SEDIMENT FILTER

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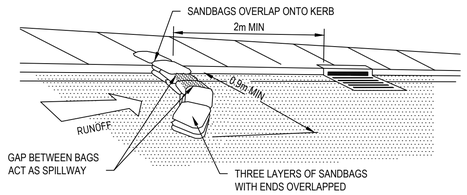
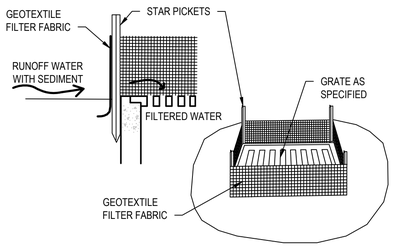


SANDBAG SEDIMENT TRAP FOR KERB INLET ON GRADE

NTS



GEOTEXTILE FILTER PIT SURROUND

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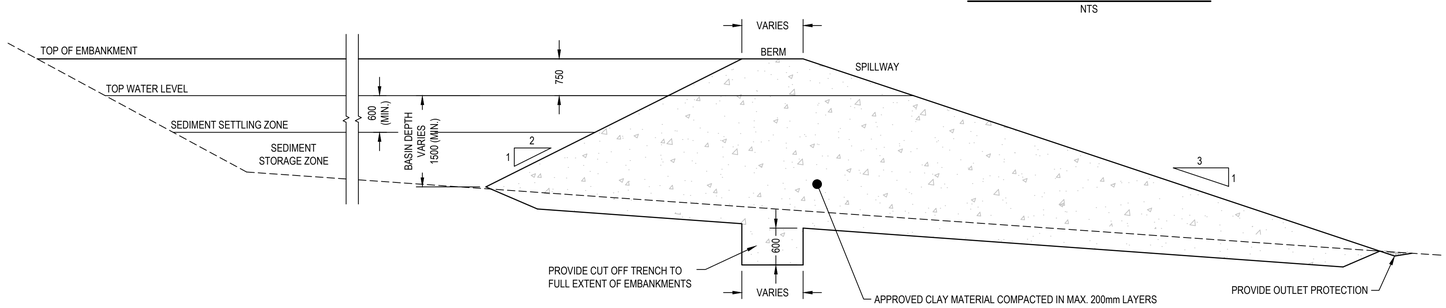

TYPICAL SEDIMENT BASIN CROSS SECTION

1 : 50

TYPICAL FOR ALL SEDIMENT BASINS

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 area	Site						Remarks
	B	A	C	D			
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 x Cv x A x Ry-%ile, x-day (m3)

where:

10 = a unit conversion 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)	Sediment storage volume (m3)	Total basin volume (m3)	Total basin volume provided (m3)
B	0.50	21.8	5.35	583	292	875	875
A	0.50	21.8	15.87	1730	865	2595	2595
C	0.50	21.8	13.60	1482	741	2224	2224
D	0.50	21.8	1.13	123	62	185	185

Rev.	Date	Description	Des.	Verif.	Appd.
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SCALE 1:50 @A1

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Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: EROSION AND SEDIMENT CONTROL DETAILS

Status: FOR APPROVAL
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Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1131
Revision: 4

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 = - 49,756m^3
FILL = +288,506m^3
BALANCE = +238,750m^3

Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

0 20m 40m 60m 80m 100m 150m 170m
SCALE 1:1750 @A1

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St. Leonards, NSW 2065
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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: CUT AND FILL PLAN

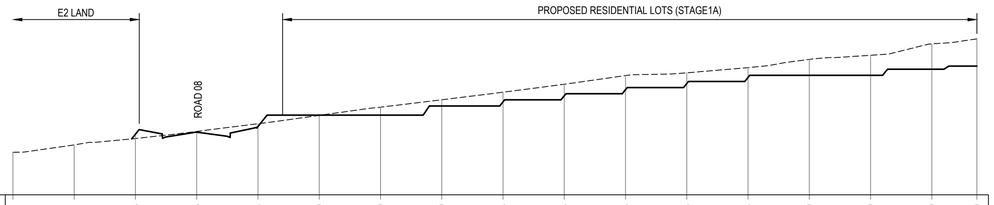
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:1750	A1

Drawing Number: 80219053-DA001-CI-1141
Revision: 7

DATE PLOTTED: 22 July 2020 2:21 PM BY : THOMAS BLEASDALE

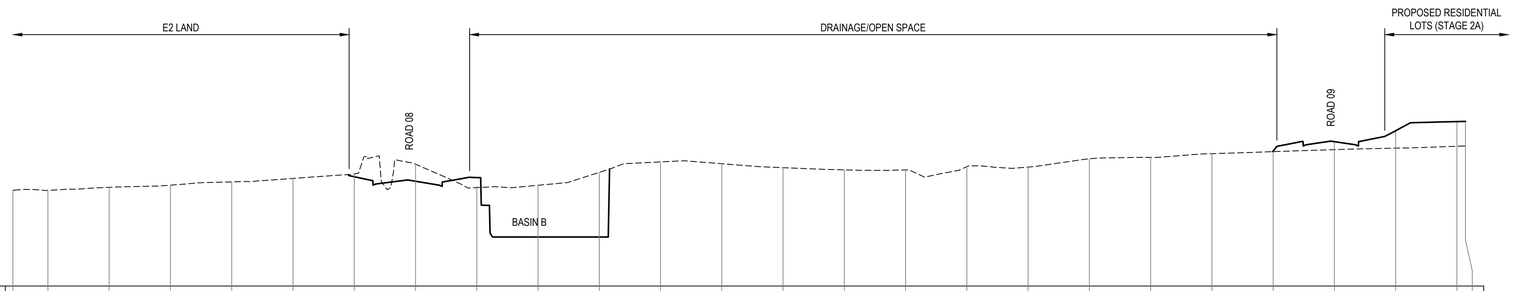
XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-CUT FILL HATCH; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-CONTROL; XR-80219053-CI-ROUNDABOUT; XR-80219053-CI-ROAD; XR-80219053-CI-DESN CONTOURS-500
CAD File: N:\Projects\82\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1141 CUT FILL PLAN.dwg



Datum 27.00

DESIGN LEVEL			28.98	29.05	29.23	29.60	29.60	29.90	30.03	30.23	30.43	30.63	30.83	30.90	30.90	31.10	31.20
EXISTING LEVEL	28.39	28.63	28.84	29.07	29.32	29.59	29.86	30.10	30.35	30.61	30.89	30.98	31.15	31.42	31.55	31.93	32.09
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	157.360

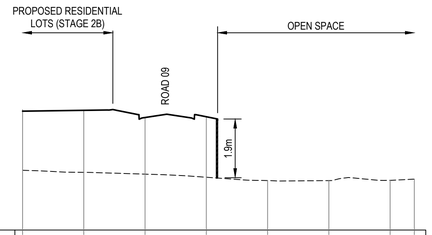
SECTION 1 / 1141
SCALE 1:100V 1:500H



Datum 23.00

DESIGN LEVEL							26.57	26.42	26.54	24.60	24.60												27.41	27.71	28.07	28.37	28.37		
EXISTING LEVEL	26.13	26.12	26.22	26.29	26.40	26.51	26.66	26.98	26.21	26.29	26.71	27.05	26.99	26.86	26.79	26.79	26.90	26.88	27.15	27.20	27.32	27.39	27.45	27.50	27.56	27.57			
CHAINAGE	64.285	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	301.389			

SECTION 2 / 1141
SCALE 1:100V 1:500H



Datum 23.00

DESIGN LEVEL	26.88	26.91	26.67	26.70				
EXISTING LEVEL	24.95	24.88	24.82	24.72	24.61	24.61	24.62	24.66
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	63.951

SECTION 3 / 1141
SCALE 1:100V 1:500H

Rev.	Date	Description	Des.	Verif.	Appd.
6	23/04/2020	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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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Level 9, The Forum, 203 Pacific Highway
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Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

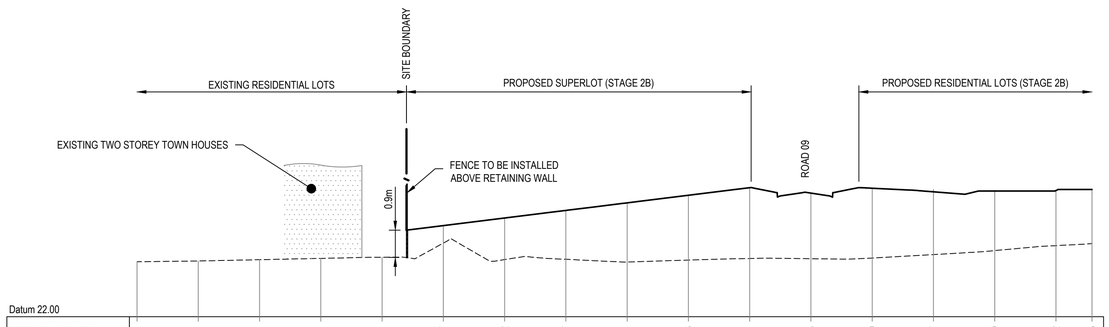
Title: SITE SECTIONS
SHEET 1 OF 5

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1151
Revision: 6

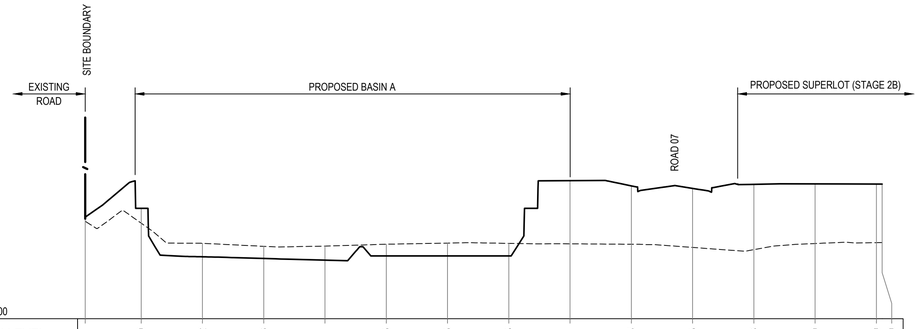
XREF's:
CAD File: N:\Projects\80219\53_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1151-1155 SITE SECTIONS.dwg



Datum 22.00

DESIGN LEVEL						24.97	25.22	25.47	25.71	25.96	26.21	26.03	26.19	26.07	26.10	26.12	26.15
EXISTING LEVEL	23.79	23.82	23.86	23.90	23.94	24.40	23.86	23.87	23.78	23.85	23.90	23.89	23.91	24.03	24.16	24.32	24.39
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	155.887

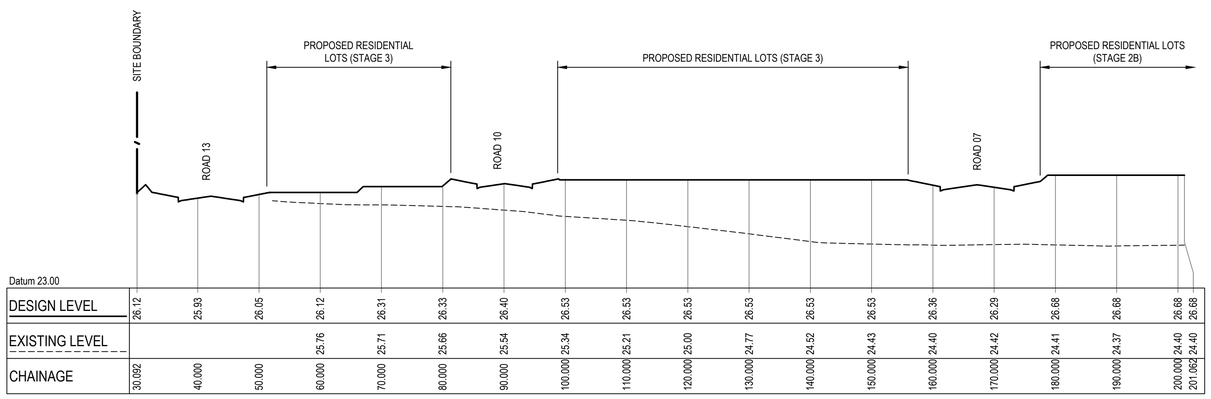
SECTION 4 / 1141
SCALE 1:100V 1:500H



Datum 21.00

DESIGN LEVEL	24.31	24.60	23.02	22.96	22.91	23.05	23.05	23.05	25.51	25.33	25.25	25.38	25.40	25.39	25.39
EXISTING LEVEL	24.18	24.12	23.46	23.36	23.37	23.43	23.47	23.46	23.44	23.43	23.33	23.25	23.45	23.48	23.48
CHAINAGE	20.854	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	159.946

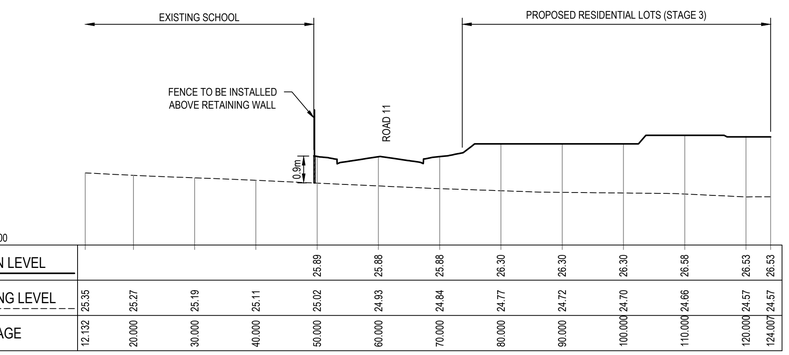
SECTION 5 / 1141
SCALE 1:100V 1:500H



Datum 23.00

DESIGN LEVEL	26.12	25.93	26.05	26.12	26.31	26.33	26.40	26.53	26.53	26.53	26.53	26.53	26.53	26.36	26.29	26.68	26.68	26.68	26.68
EXISTING LEVEL				25.76	25.71	25.66	25.54	25.34	25.21	25.00	24.77	24.52	24.43	24.40	24.42	24.41	24.37	24.40	24.40
CHAINAGE	30.092	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	201.062

SECTION 6 / 1141
SCALE 1:100V 1:500H



Datum 23.00

DESIGN LEVEL					25.89	25.88	25.88	26.30	26.30	26.30	26.58	26.53	26.53
EXISTING LEVEL	25.35	25.27	25.19	25.11	25.02	24.93	24.84	24.77	24.72	24.70	24.66	24.57	24.57
CHAINAGE	12.132	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	124.007

SECTION 7 / 1141
SCALE 1:100V 1:500H

Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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Level 9, The Forum, 203 Pacific Highway
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Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

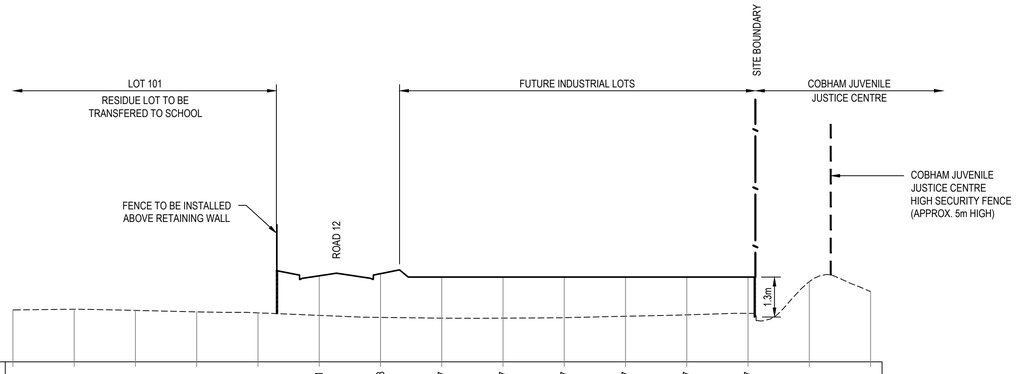
Title: SITE SECTIONS
SHEET 2 OF 5

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1152
Revision: 7

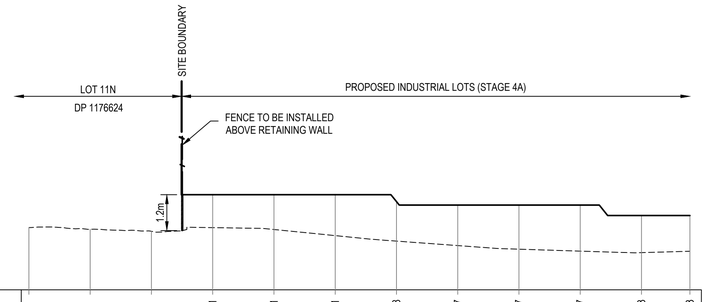
XREFs:
CAD File: N:\Projects\8020\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1151-1155 SITE SECTIONS.dwg



Datum 24.00

DESIGN LEVEL						26.81	26.88	26.77	26.77	26.77	26.77	26.77	26.77		
EXISTING LEVEL	25.69	25.72	25.68	25.63	25.60	25.51	25.45	25.42	25.43	25.44	25.49	25.53	25.58	26.62	26.29
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000

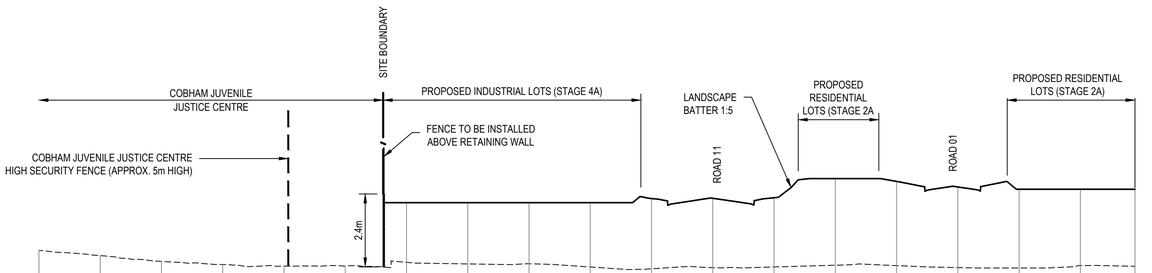
SECTION 8 / 1141
SCALE 1:100V 1:500H



Datum 24.00

DESIGN LEVEL				27.11	27.11	27.11	26.88	26.77	26.77	26.77	26.43	26.43
EXISTING LEVEL	26.03	25.98	25.91	26.03	25.97	25.77	25.59	25.44	25.33	25.26	25.21	25.26
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	107.904

SECTION 9 / 1141
SCALE 1:100V 1:500H



Datum 24.00

DESIGN LEVEL							27.21	27.21	27.21	27.21	27.35	27.35	27.37	28.00	27.91	27.72	27.65	27.65	27.65
EXISTING LEVEL	25.65	25.48	25.29	25.19	25.14	25.14	25.26	25.21	25.22	25.11	25.05	25.09	25.11	25.17	25.16	25.09	25.08	25.16	25.13
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	178.914

SECTION 10 / 1141
SCALE 1:100V 1:500H

Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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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
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITE SECTIONS
SHEET 3 OF 5

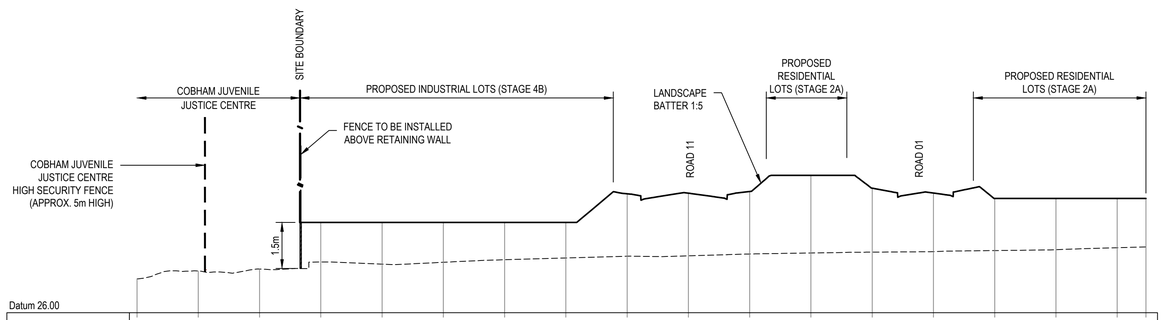
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1153
Revision: 7

DATE PLOTTED: 17 July 2020 11:52 AM BY : HAYDEN DAVENPORT

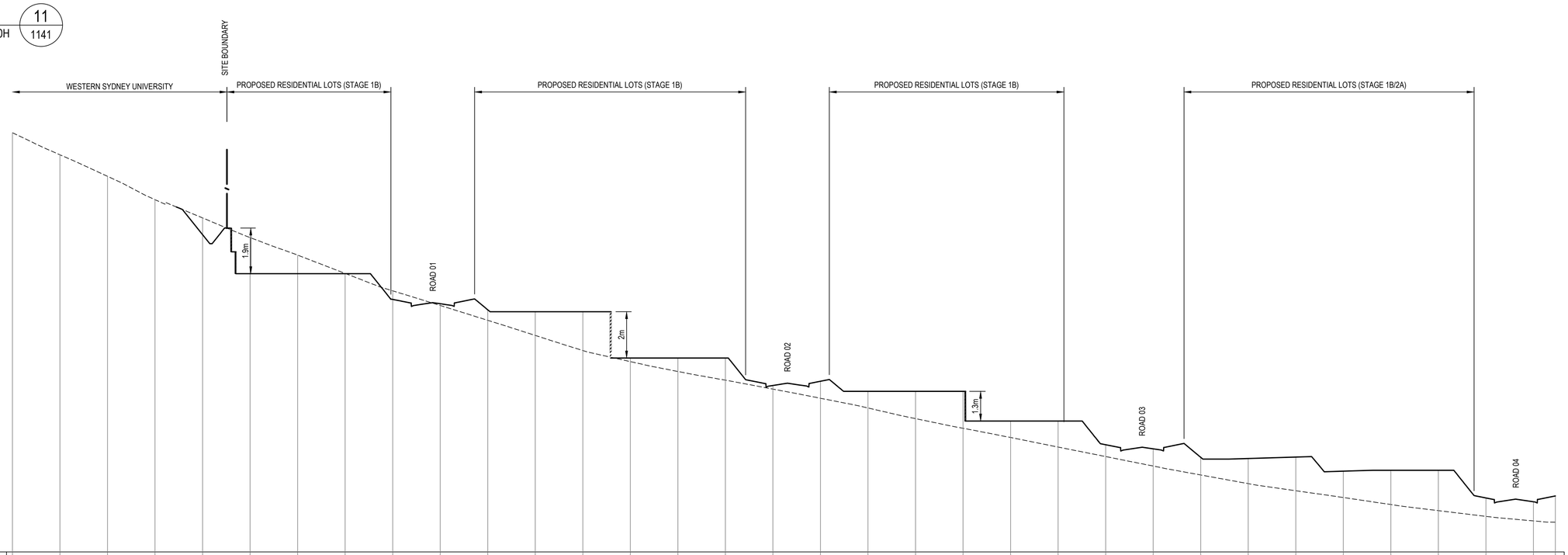
XREF's:
CAD File: N:\Projects\8020\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1151-1155 SITE SECTIONS.dwg



Datum 26.00

CHAINAGE	EXISTING LEVEL	DESIGN LEVEL
0.000	27.11	
10.000	27.36	
20.000	27.42	
30.000	27.65	28.94
40.000	27.58	28.94
50.000	27.64	28.94
60.000	27.73	28.94
70.000	27.79	28.94
80.000	27.84	29.88
90.000	27.86	29.90
100.000	27.92	29.95
110.000	27.95	30.48
120.000	27.98	30.06
130.000	27.99	29.90
140.000	28.03	29.73
150.000	28.06	29.73
160.000	28.12	29.73
164.691	28.15	29.73

SECTION 11 / 1141
SCALE 1:100V 1:500H



Datum 26.00

CHAINAGE	EXISTING LEVEL	DESIGN LEVEL
0.000	43.63	
10.000	42.70	
20.000	41.79	
30.000	40.81	
40.000	40.04	39.34
50.000	39.22	37.70
60.000	38.48	37.70
70.000	37.71	37.70
80.000	36.98	36.62
90.000	36.36	36.43
100.000	35.74	36.18
110.000	35.10	36.10
120.000	34.47	36.10
130.000	34.00	34.15
140.000	33.59	34.15
150.000	33.22	34.15
160.000	32.85	33.00
170.000	32.46	33.17
180.000	32.05	32.75
190.000	31.60	32.75
200.000	31.20	32.75
210.000	30.81	31.50
220.000	30.41	31.50
230.000	30.01	30.51
240.000	29.61	30.33
250.000	29.23	29.98
260.000	28.87	29.93
270.000	28.57	29.99
280.000	28.29	29.39
290.000	27.99	29.43
300.000	27.73	29.43
310.000	27.49	28.27
320.000	27.30	28.11
324.608	27.25	28.35

SECTION 12 / 1141
SCALE 1:100V 1:500H

Rev.	Date	Description	Des.	Verif.	Appd.
6	17/07/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
5	23/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
4	1/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
3	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
1	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

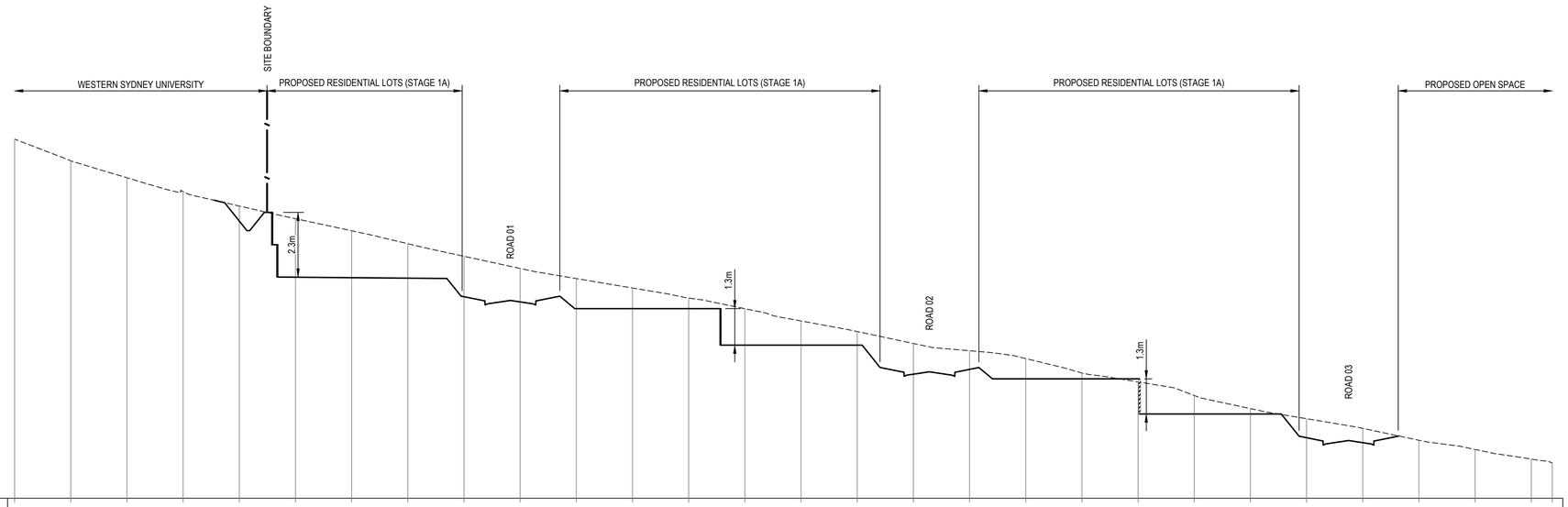
Title: SITE SECTIONS
SHEET 4 OF 5

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1154
Revision: 6

XREF's:
CAD File: N:\Projects\80\CPY\19053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1151-1155 SITE SECTIONS.dwg



Datum 26.00

DESIGN LEVEL					35.87	33.87	33.85	33.84	33.17	32.99	32.75	32.75	32.75	31.45	31.45	31.45	30.42	30.59	30.25	30.25	30.25	29.00	29.00	28.15	27.98						
EXISTING LEVEL	38.79	38.01	37.41	36.92	36.40	35.95	35.52	35.06	34.61	34.18	33.82	33.48	33.13	32.75	32.31	31.93	31.51	31.25	30.97	30.46	30.14	29.66	29.19	28.83	28.49	28.06	27.74	27.39	27.26		
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	273.738		

SECTION 13 / 1141

SCALE 1:100V 1:500H

Rev.	Date	Description	Des.	Verif.	Appd.
6	17/07/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
5	23/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
4	1/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
3	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
1	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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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
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITE SECTIONS
SHEET 5 OF 5

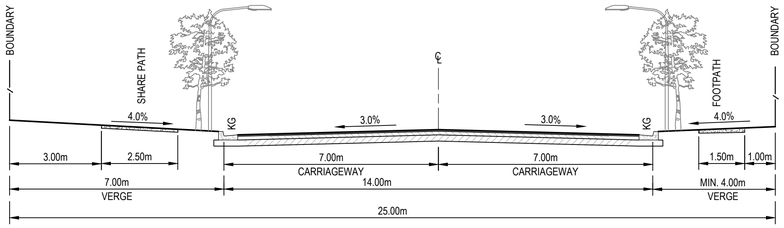
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1155
Revision: 6

XREF's:
CAD File: N:\Projects\80\CFY19\53_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1151-1155 SITE SECTIONS.dwg

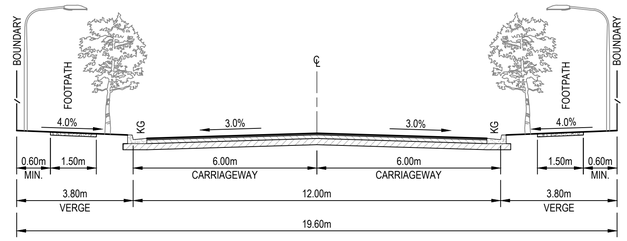
DATE PLOTTED: 17 July 2020 11:52 AM BY : HAYDEN DAVENPORT



TYPICAL SECTION - EAST-WEST LINK ROAD
(MAJOR COLLECTOR ROAD)

ROAD 11: CH0.000 - CH540.000

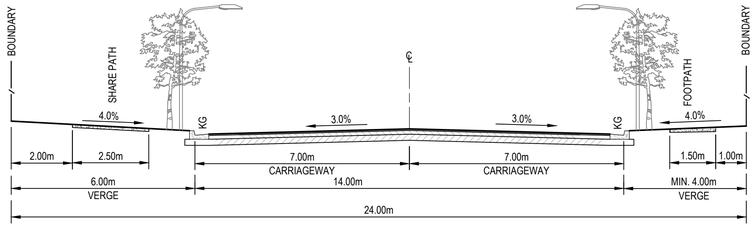
SCALE 1:100



TYPICAL SECTION - NORTH SOUTH ROAD
(MINOR COLLECTOR ROAD)

ROAD 12

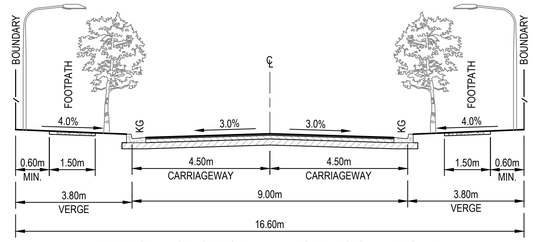
SCALE 1:100



TYPICAL SECTION - EAST-WEST LINK ROAD
(MAJOR COLLECTOR ROAD)

ROAD 11: CH540.000 - CH970.803

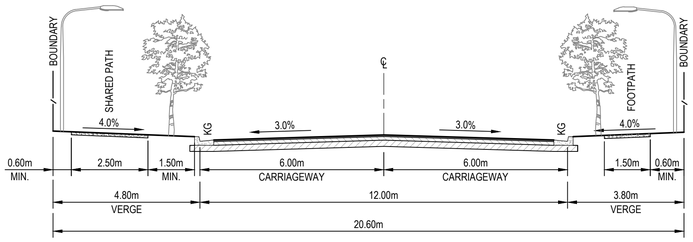
SCALE 1:100



TYPICAL SECTION - MINOR LOCAL ROAD

ROAD 01, 02, 03, 04, 05, 06, 10

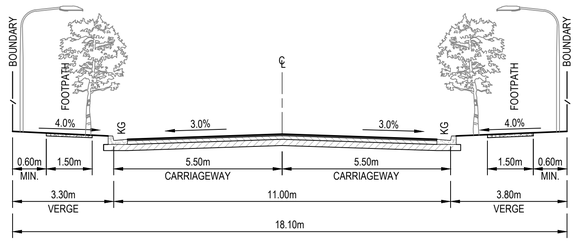
SCALE 1:100



TYPICAL SECTION - NORTH SOUTH ROAD
(MINOR COLLECTOR ROAD)

ROAD 07

SCALE 1:100



TYPICAL SECTION - LOCAL ROAD

ROAD 08, 13

SCALE 1:100

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 1 2 4 6 8 10m

SCALE 1:100 @A1

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Tel: 02 9496 7700 Fax: 02 9439 5170
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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD TYPICAL CROSS SECTION

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:100	A1

Drawing Number: 80219053-DA001-CI-1251

Revision: 5

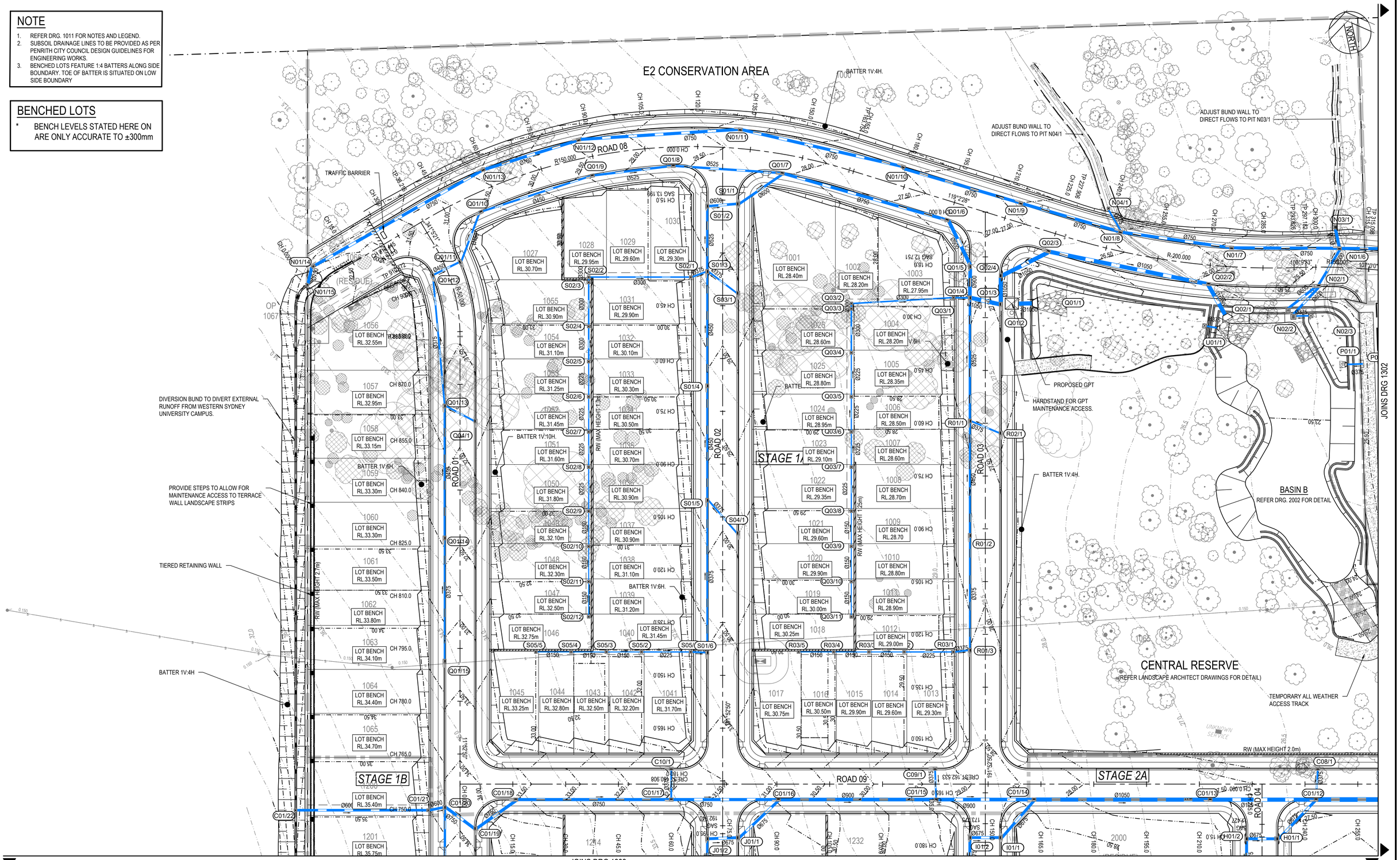
XREF's:
CAD File: N:\Projects\80\2FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1251 ROAD TYPICAL CROSS SECTIONS.dwg

NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.
3. BENCHED LOTS FEATURE 1:4 BATTERS ALONG SIDE BOUNDARY. TOE OF BATTER IS SITUATED ON LOW SIDE BOUNDARY

BENCHED LOTS

* BENCH LEVELS STATED HERE ON ARE ONLY ACCURATE TO ±300mm



Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

SCALE 1:500 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITEWORKS AND STORMWATER PLAN
SHEET 1 OF 7

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1

Drawing Number: 80219053-DA001-CI-1301
Revision: 7

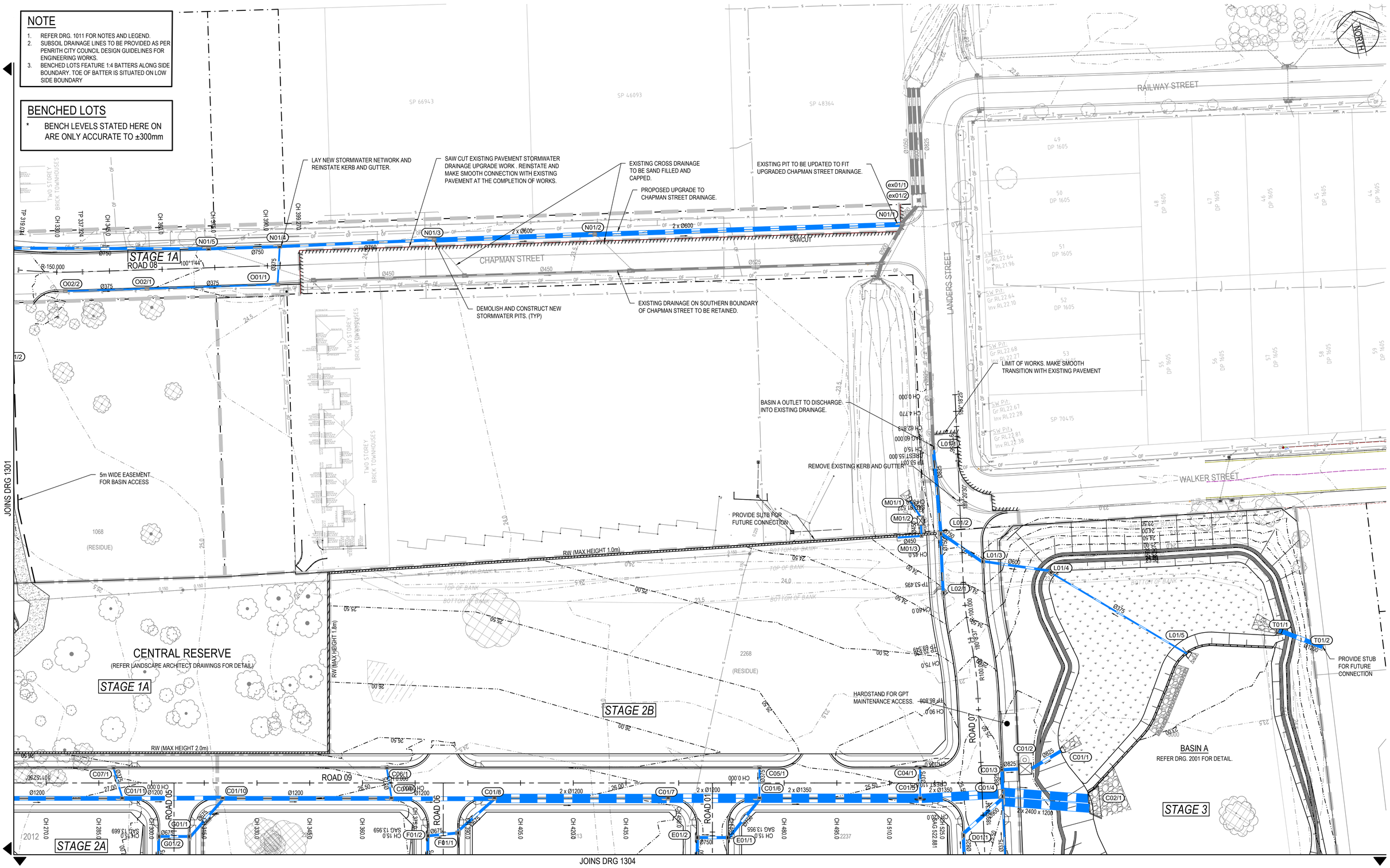
XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-SURVEY; XR-80219053-CI-SITEWORKS; XR-80219053-CI-RETAINING WALL PLAN; XR-80219053-CI-TREES; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-DESN CONTOURS-500; XR-80219053-CI-STORMWATER; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-OSD-PLAN; XR-80219053-CI-SITEWORKS
CAD File: N:\Projects\802\EY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1301-1307 SITEWORKS AND STORMWATER PLAN.dwg
DATE PLOTTED: 22 July 2020 4:54 PM BY : HAYDEN DAVENPORT

NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.
3. BENCHED LOTS FEATURE 1:4 BATTERS ALONG SIDE BOUNDARY. TOE OF BATTER IS SITUATED ON LOW SIDE BOUNDARY

BENCHED LOTS

* BENCH LEVELS STATED HERE ON ARE ONLY ACCURATE TO ±300mm



Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

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

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Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

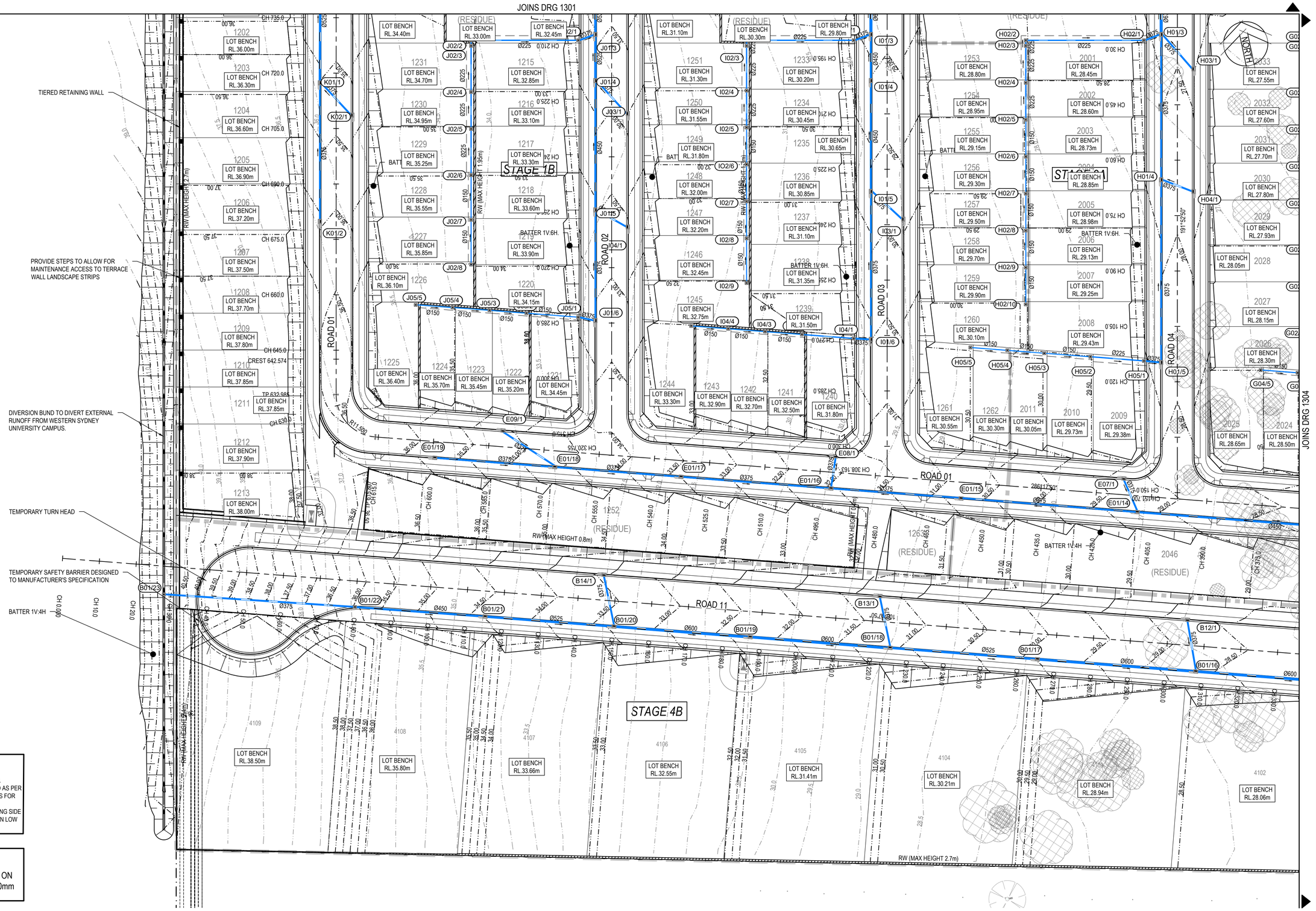
Title: SITEWORKS AND STORMWATER PLAN
SHEET 2 OF 7

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1

Drawing Number: 80219053-DA001-CI-1302
Revision: 7

XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-STORMWATER; XR-80219053-CI-VPORTS; XR-80219053-CI-SURVEY; XR-80219053-CI-TREES; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-DESN CONTOURS-500; XR-80219053-CI-STORMWATER; XR-80219053-CI-RETAINING WALL PLAN; XR-80219053-CI-SITEWORKS; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-DESN CONTOURS-500; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-BOUNDARY
CAD File: N:\Projects\80\ZPY19053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1301-1307 SITEWORKS AND STORMWATER PLAN.dwg
DATE PLOTTED: 22 July 2020 4:54 PM BY : HAYDEN DAVENPORT



NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.
3. BENCHED LOTS FEATURE 1:4 BATTERS ALONG SIDE BOUNDARY. TOE OF BATTER IS SITUATED ON LOW SIDE BOUNDARY

BENCHED LOTS

* BENCH LEVELS STATED HERE ON ARE ONLY ACCURATE TO ±300mm

Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

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

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Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

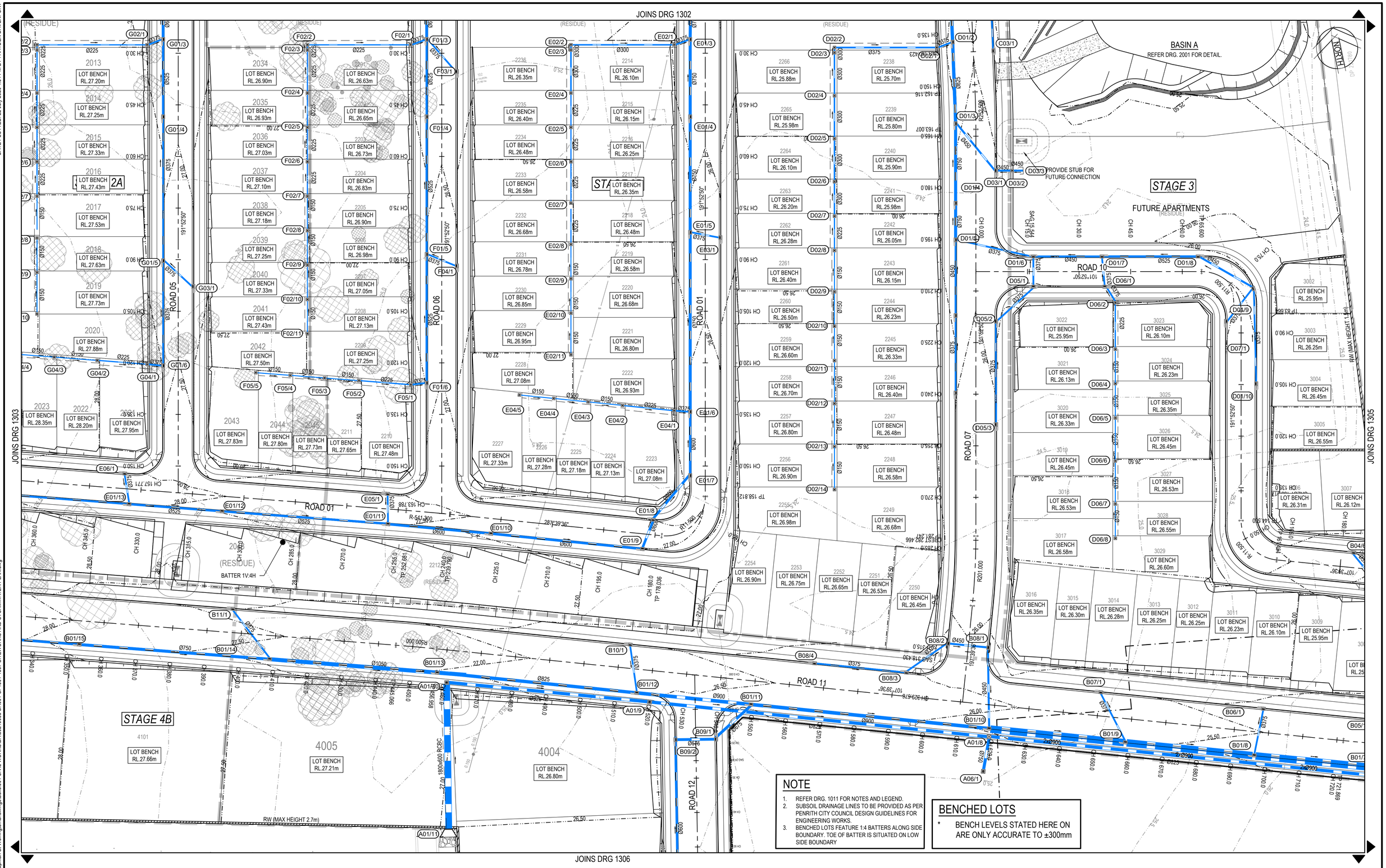
Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITEWORKS AND STORMWATER PLAN
SHEET 3 OF 7

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1

Drawing Number: 80219053-DA001-CI-1303
Revision: 7



NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.
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BENCHED LOTS

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Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

SCALE 1:500 @A1

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St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITEWORKS AND STORMWATER PLAN
SHEET 4 OF 7

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1

Drawing Number: 80219053-DA001-CI-1304
Revision: 7

XREFs: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-SURVEY; XR-80219053-CI-TREES; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-DESN CONTOURS-500; XR-80219053-CI-STORMWATER; XR-80219053-CI-RETAINING WALL PLAN; XR-80219053-CI-SITEWORKS; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-OSD-PLAN; XR-80219053-CI-SEWER-PLAN
CAD File: N:\Projects\802\EY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1301-1307 SITEWORKS AND STORMWATER PLAN.dwg
DATE PLOTTED: 22 July 2020 4:54 PM BY : HAYDEN DAVENPORT

NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.
3. BENCHED LOTS FEATURE 1:4 BATTERS ALONG SIDE BOUNDARY. TOE OF BATTER IS SITUATED ON LOW SIDE BOUNDARY

BENCHED LOTS

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Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

SCALE 1:500 @A1 (0 10 20 30 40 50m)

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Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITEWORKS AND STORMWATER PLAN
SHEET 5 OF 7

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

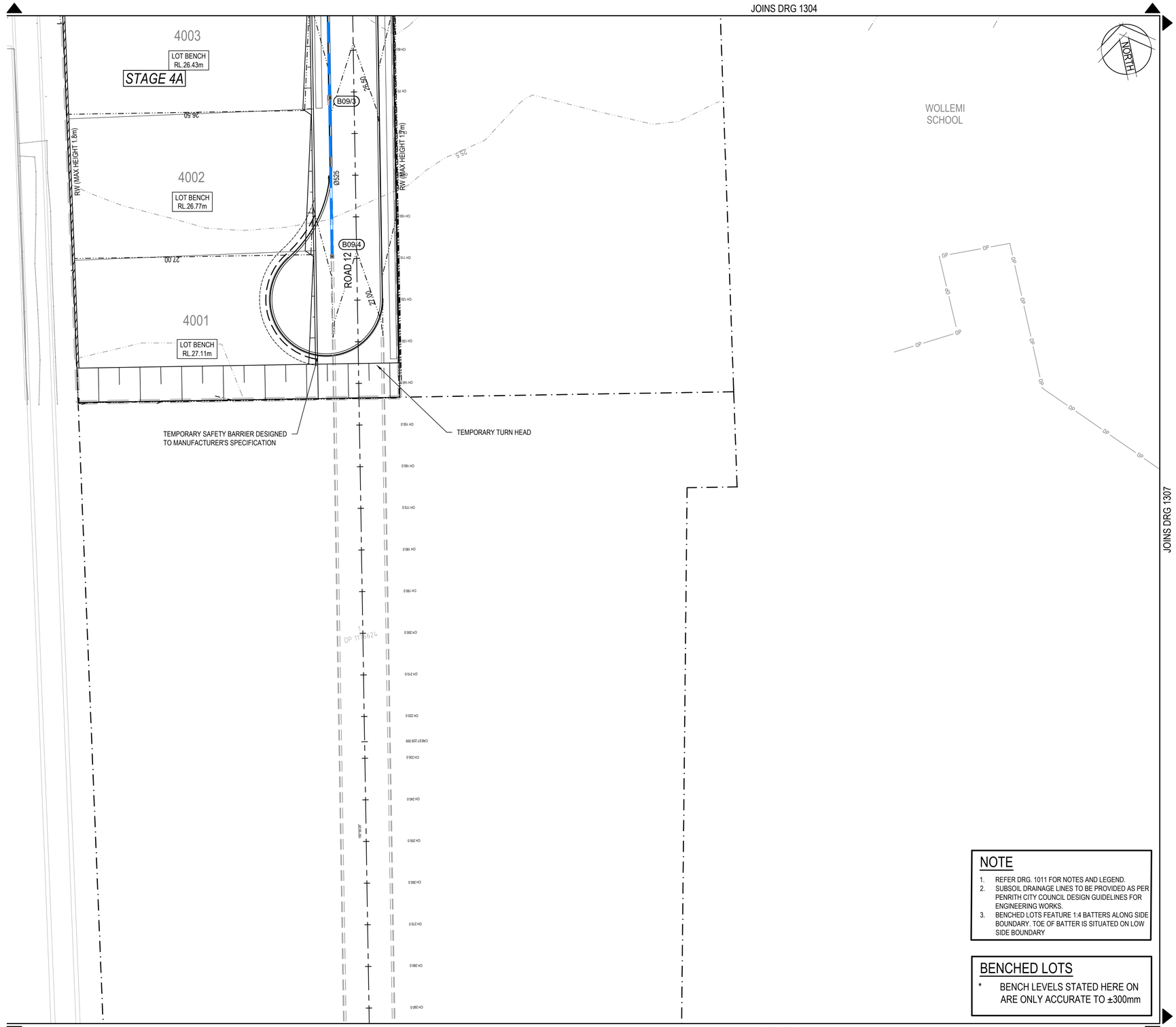
Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1

Drawing Number: 80219053-DA001-CI-1305
Revision: 7

JOINS DRG 1306

INSET
SCALE 1:500

JOINS DRG 1304



JOINS DRG 1307

JOINS INSET

NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.
3. BENCHED LOTS FEATURE 1:4 BATTERS ALONG SIDE BOUNDARY. TOE OF BATTER IS SITUATED ON LOW SIDE BOUNDARY

BENCHED LOTS

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Rev.	Date	Description	Des.	Verif.	Appd.
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6	23/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
5	1/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
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3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
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0 10 20 30 40 50m
SCALE 1:500 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

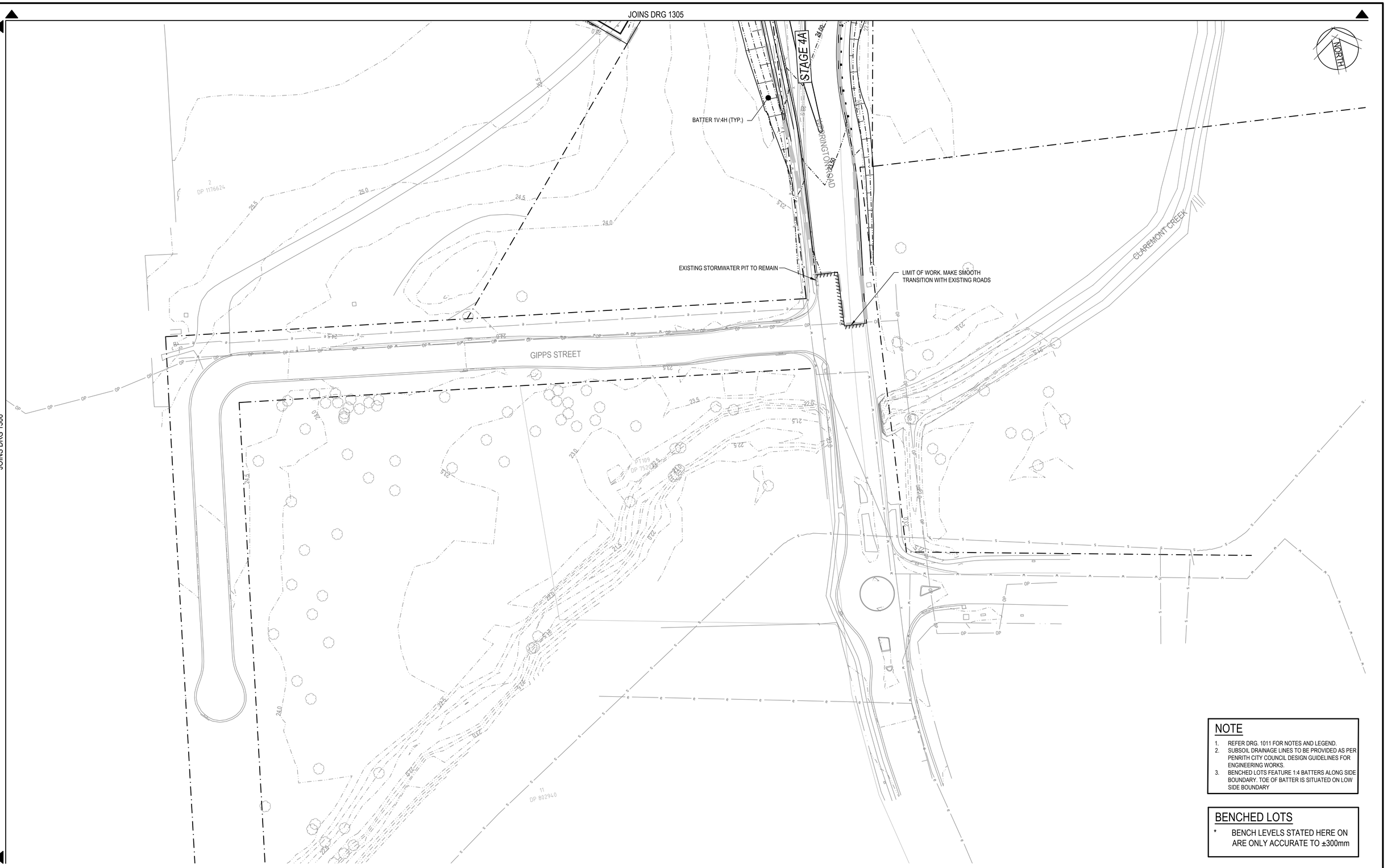
Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITEWORKS AND STORMWATER PLAN
SHEET 6 OF 7

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1

Drawing Number: 80219053-DA001-CI-1306
Revision: 7



NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.
3. BENCHED LOTS FEATURE 1:4 BATTERS ALONG SIDE BOUNDARY. TOE OF BATTER IS SITUATED ON LOW SIDE BOUNDARY

BENCHED LOTS

* BENCH LEVELS STATED HERE ON ARE ONLY ACCURATE TO ±300mm

Rev.	Date	Description	Des.	Verif.	Appd.
7	17/07/2020	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
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		

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

Cardno Shaping the Future
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
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: SITEWORKS AND STORMWATER PLAN
SHEET 7 OF 7

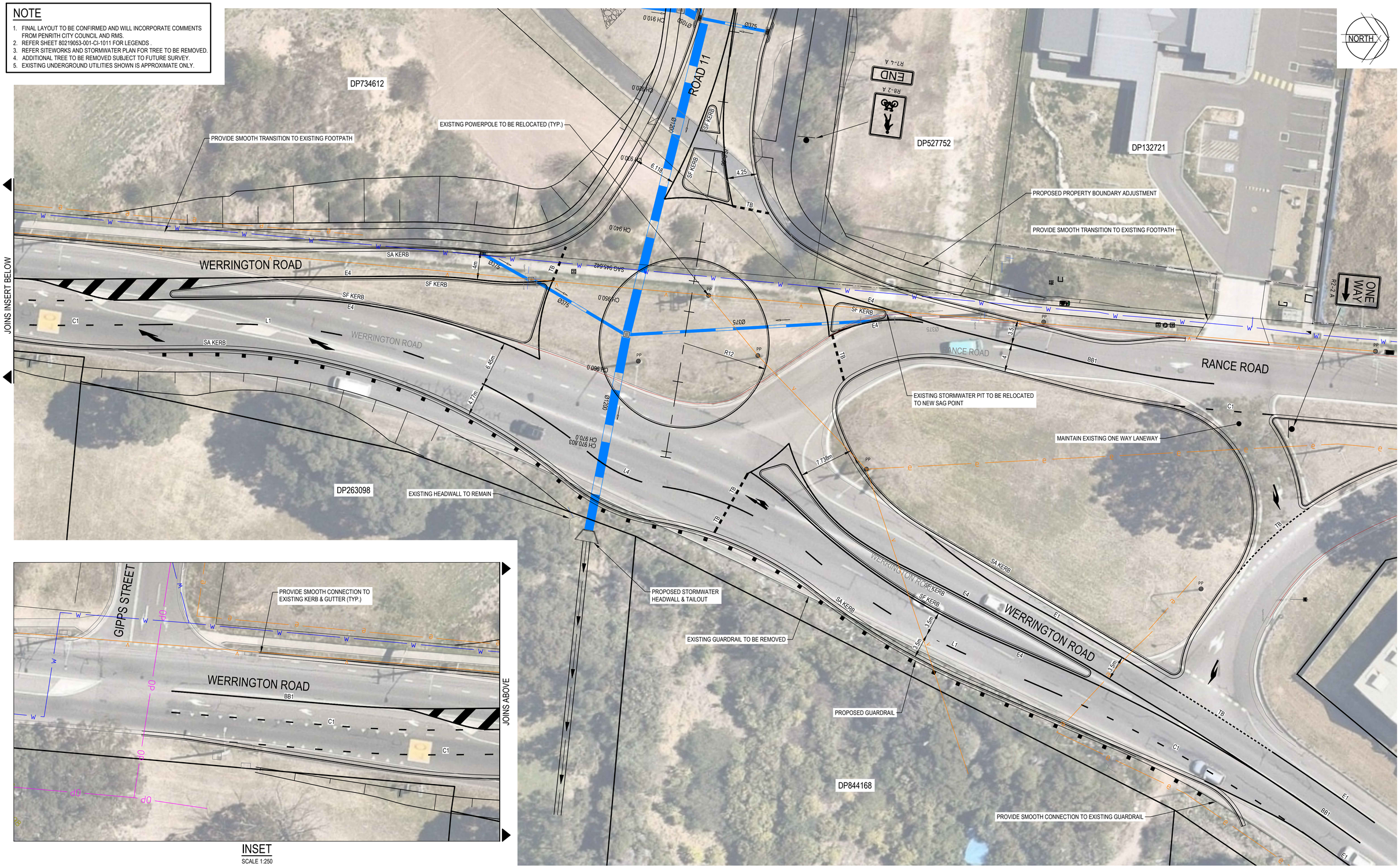
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1

Drawing Number: 80219053-DA001-CI-1307
Revision: 7

NOTE

1. FINAL LAYOUT TO BE CONFIRMED AND WILL INCORPORATE COMMENTS FROM PENRITH CITY COUNCIL AND RMS.
2. REFER SHEET 80219053-001-CI-1011 FOR LEGENDS .
3. REFER SITEWORKS AND STORMWATER PLAN FOR TREE TO BE REMOVED.
4. ADDITIONAL TREE TO BE REMOVED SUBJECT TO FUTURE SURVEY.
5. EXISTING UNDERGROUND UTILITIES SHOWN IS APPROXIMATE ONLY.



Rev.	Date	Description	Des.	Verif.	Appd.
2	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG
1	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG

0 5 10 15 20 25m
SCALE 1:250 @A1

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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
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROUNDABOUT CONCEPT PLAN

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

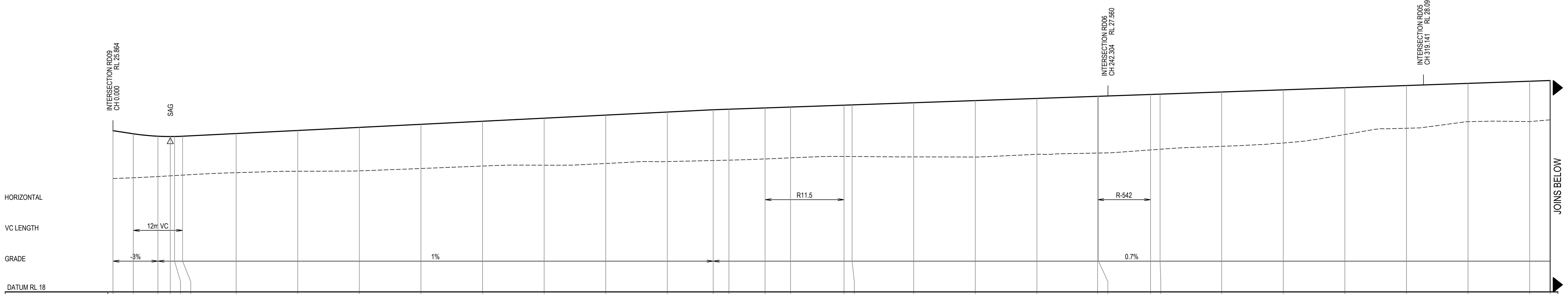
Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:250	A1

Drawing Number: 80219053-DA001-CI-1311
Revision: 2

DATE PLOTTED: 17 July 2020 11:57 AM BY : HAYDEN DAVENPORT

XREF's: XR-80219053-CI-AERIAL; XR-80219053-CI-ROUNDABOUT; XR-80219053-CI-SURVEY; XR-80219053-CI-STORMWATER; XR-80219053-CI-CONTROL; XR-80219053-CI-EXISTING SERVICES; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-ROAD; XR-80219053-CI-SITEWORKS
CAD File: N:\Projects\8002\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1311 ROUNDABOUT CONCEPT PLAN.dwg

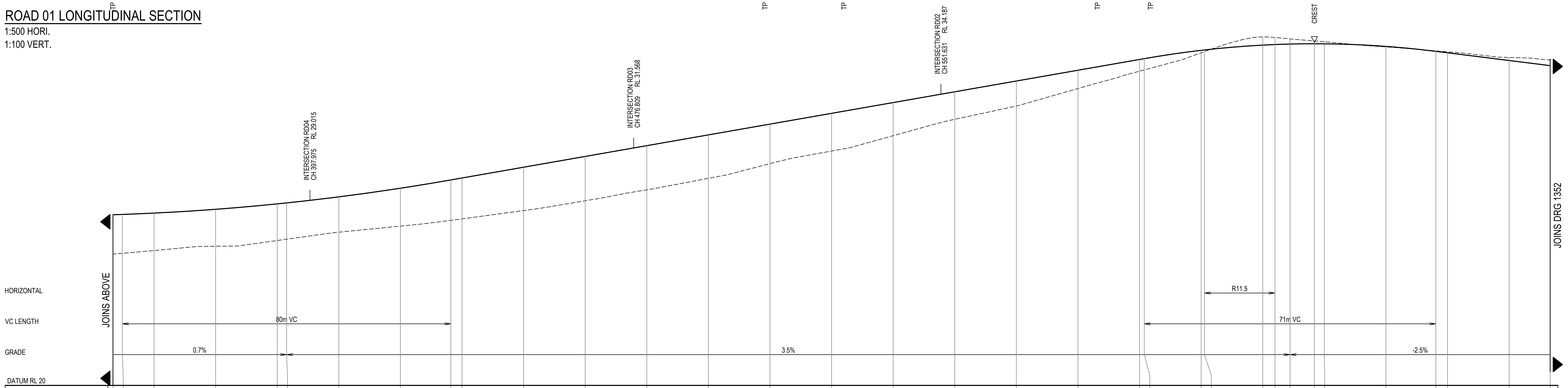
DATE PLOTTED: 17 July 2020 11:57 AM BY : HAYDEN DAVENPORT



CHAINAGE	WAE LEVEL	DESIGN LEVEL	EXISTING SURFACE
TP 0.000		25.864	23.531
4.955		25.715	23.569
10.955		25.595	23.629
13.955		25.580	23.663
15.000		25.582	23.675
16.955		25.595	23.697
30.000		25.726	23.817
45.000		25.876	23.885
60.000		26.026	23.905
75.000		26.176	24.021
90.000		26.326	24.140
105.000		26.476	24.182
120.000		26.626	24.265
135.000		26.776	24.359
146.175		26.887	24.409
150.000		26.914	24.429
TP 158.812		26.976	24.487
165.000		27.019	24.540
TP 178.036		27.110	24.609
180.000		27.124	24.606
195.000		27.229	24.587
210.000		27.334	24.580
225.000		27.439	24.711
TP 239.790		27.543	24.774
240.000		27.544	24.775
TP 252.681		27.633	24.926
255.000		27.649	24.959
270.000		27.754	25.103
285.000		27.859	25.264
300.000		27.964	25.679
315.000		28.069	25.984
330.000		28.174	26.305
345.000		28.279	26.309
350.000		28.314	26.396

ROAD 01 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



CHAINAGE	WAE LEVEL	DESIGN LEVEL	EXISTING SURFACE
350.000		28.314	26.396
352.289		28.330	26.435
360.000		28.395	26.570
375.000		28.579	26.779
390.000		28.843	27.059
392.289		28.890	27.123
405.000		29.185	27.464
420.000		29.607	27.761
432.289		30.010	28.041
435.000		30.105	28.113
450.000		30.630	28.518
465.000		31.155	28.996
480.000		31.680	29.530
495.000		32.205	30.088
510.000		32.730	30.804
525.000		33.255	31.418
540.000		33.780	32.166
555.000		34.305	32.963
570.000		34.830	33.611
585.000		35.355	34.464
600.000		35.880	35.308
601.157		35.921	35.370
TP 615.000		36.324	36.205
615.807		36.343	36.263
630.000		36.579	36.980
TP 632.985		36.607	36.950
636.657		36.631	36.882
642.574		36.645	36.782
645.000		36.643	36.744
660.000		36.517	36.491
672.157		36.276	36.297
675.000		36.205	36.251
690.000		35.830	35.978
700.000		35.580	35.847

ROAD 01 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

XREF's:
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100
@A1

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

Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved AJG	1/10/2019

Client LENDLEASE COMMUNITIES

Project CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

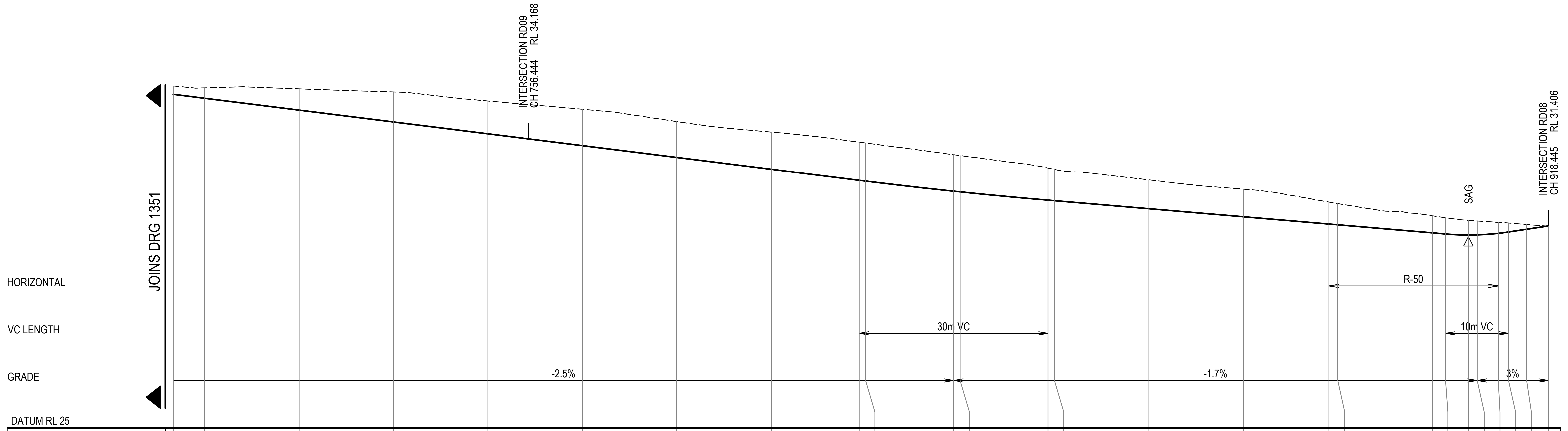
Title ROAD LONGITUDINAL SECTIONS
SHEET 1 OF 11

Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number	Revision
80219053-DA001-CI-1351	6

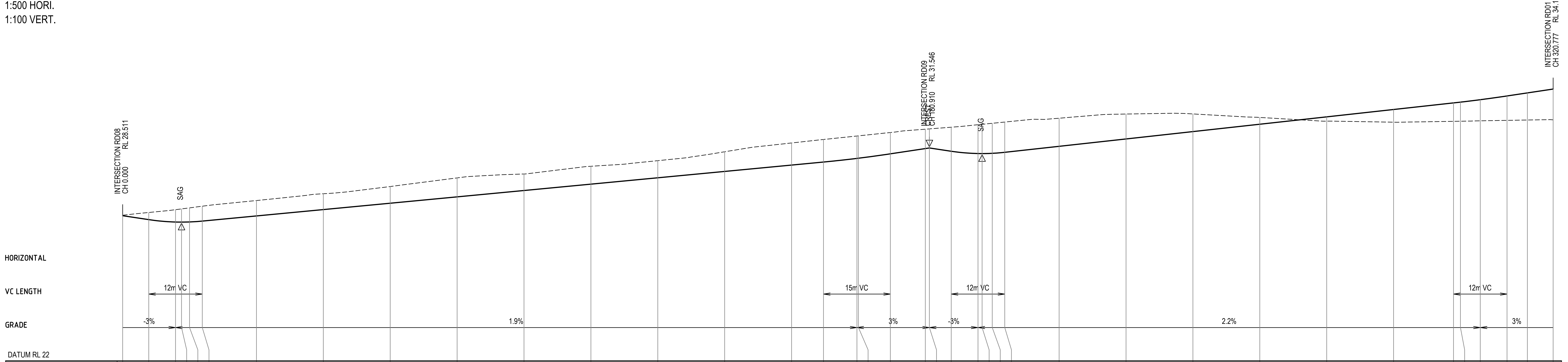
DATE PLOTTED: 17 July 2020 11:57 AM BY : HAYDEN DAVENPORT



WAE LEVEL																									
DESIGN LEVEL	35.580	35.455	35.080	34.705	34.330	33.955	33.580	33.205	32.855	32.830	32.510	32.489	32.225	32.208	31.953	31.698	31.466	31.443	31.188	31.151	31.121	31.125	31.173	31.216	31.302	31.406
EXISTING SURFACE	35.847	35.784	35.753	35.655	35.369	35.108	34.717	34.383	34.065	34.038	33.666	33.640	33.244	33.201	32.868	32.574	32.164	32.115	31.729	31.666	31.583	31.563	31.521	31.499	31.454	31.398
CHAINAGE	700.000	705.000	720.000	735.000	750.000	765.000	780.000	795.000	808.982	810.000	823.982	825.000	838.982	840.000	855.000	870.000	883.602	885.000	900.000	902.137	905.754	907.137	910.472	912.137	915.000	918.445
																	TP						TP			

ROAD 01 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



WAE LEVEL																			
DESIGN LEVEL	28.511	28.335	28.229	28.225	28.232	28.269	28.500	28.785	29.070	29.355	29.640	29.925	30.210	30.495	30.780	30.916	31.079	31.087	31.283
EXISTING SURFACE	28.532	28.655	28.782	28.816	28.863	28.936	29.191	29.495	29.818	30.205	30.381	30.727	30.977	31.376	31.771	31.927	32.083	32.090	32.239
CHAINAGE	0.000	5.854	11.854	13.201	15.000	17.854	30.000	45.000	60.000	75.000	90.000	105.000	120.000	135.000	150.000	157.158	164.658	165.000	172.158
	TP																		

WAE LEVEL																			
DESIGN LEVEL	31.519	31.546	31.399	31.297	31.295	31.306	31.351	31.619	31.949	32.279	32.609	32.939	33.269	33.565	33.600	33.709	33.877	34.014	34.187
EXISTING SURFACE	32.387	32.401	32.477	32.589	32.608	32.653	32.708	32.880	33.067	33.071	32.914	32.748	32.702	32.740	32.745	32.763	32.783	32.799	32.807
CHAINAGE	180.000	180.910	185.806	191.806	192.729	195.000	197.806	210.000	225.000	240.000	255.000	270.000	285.000	298.438	300.000	304.438	310.438	315.000	320.777

ROAD 02 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

XREF's:
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
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Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date 1/10/2019
Checked	PL	Date 1/10/2019
Designed	HLD	Date 1/10/2019
Verified	PL	Date 1/10/2019
Approved	AJG	1/10/2019

Client
LENDLEASE COMMUNITIES

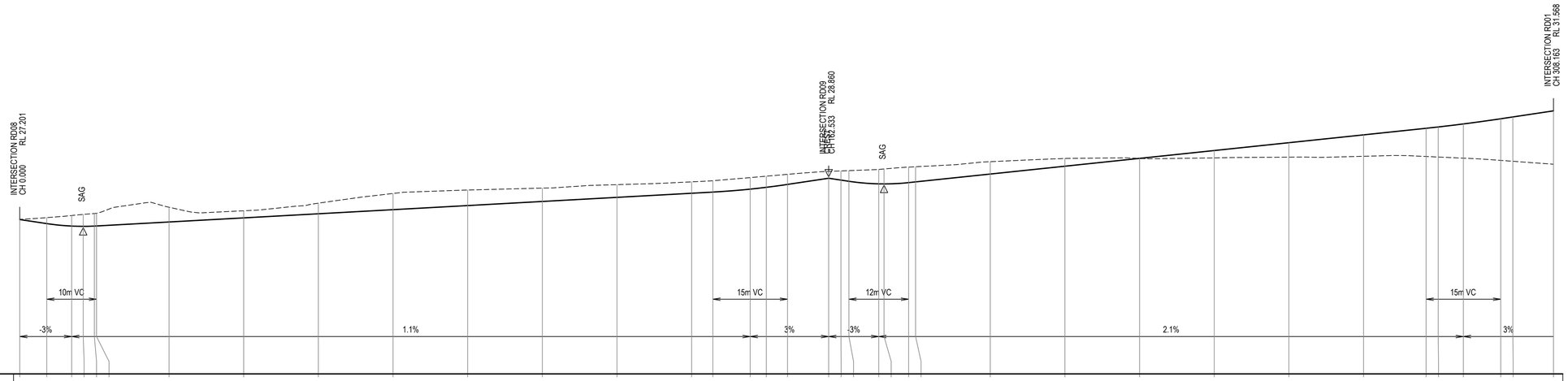
Project
CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title
ROAD LONGITUDINAL SECTIONS
SHEET 2 OF 11

Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

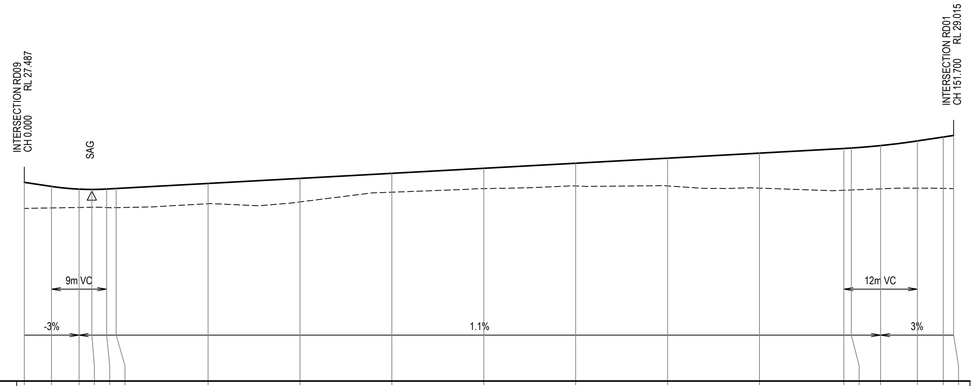
Drawing Number	Revision
80219053-DA001-CI-1352	6



CHAINAGE	WAE LEVEL	DESIGN LEVEL	EXISTING SURFACE
TP 0.000		27.201	27.209
5.434		27.038	27.278
10.434		27.939	27.363
12.751		26.928	27.407
15.000		26.938	27.444
15.434		26.943	27.451
30.000		27.103	27.695
45.000		27.268	27.553
60.000		27.433	27.860
75.000		27.598	28.248
90.000		27.763	28.386
105.000		27.928	28.463
120.000		28.093	28.603
135.000		28.258	28.716
139.263		28.305	28.761
146.763		28.423	28.886
150.000		28.496	28.943
154.263		28.612	29.017
162.533		28.860	29.136
165.000		28.786	29.155
166.594		28.739	29.166
172.594		28.635	29.216
173.653		28.633	29.234
178.594		28.685	29.308
180.000		28.714	29.322
195.000		29.029	29.527
210.000		29.344	29.656
225.000		29.659	29.658
240.000		29.974	29.677
255.000		30.289	29.708
270.000		30.604	29.743
282.560		30.868	29.735
285.000		30.921	29.713
290.060		31.042	29.667
297.560		31.250	29.577
300.000		31.324	29.542
308.163		31.568	29.424

ROAD 03 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



CHAINAGE	WAE LEVEL	DESIGN LEVEL	EXISTING SURFACE
TP 0.000		27.487	26.634
4.439		27.353	26.651
8.939		27.264	26.665
11.024		27.255	26.672
13.439		27.268	26.662
15.000		27.285	26.659
30.000		27.450	26.788
45.000		27.615	26.847
60.000		27.780	27.165
75.000		27.945	27.280
90.000		28.110	27.367
105.000		28.275	27.369
120.000		28.440	27.298
133.776		28.592	27.227
135.000		28.606	27.236
139.776		28.686	27.273
145.776		28.838	27.296
150.000		28.964	27.289
151.700		29.015	27.282

ROAD 04 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD LONGITUDINAL SECTIONS
SHEET 3 OF 11

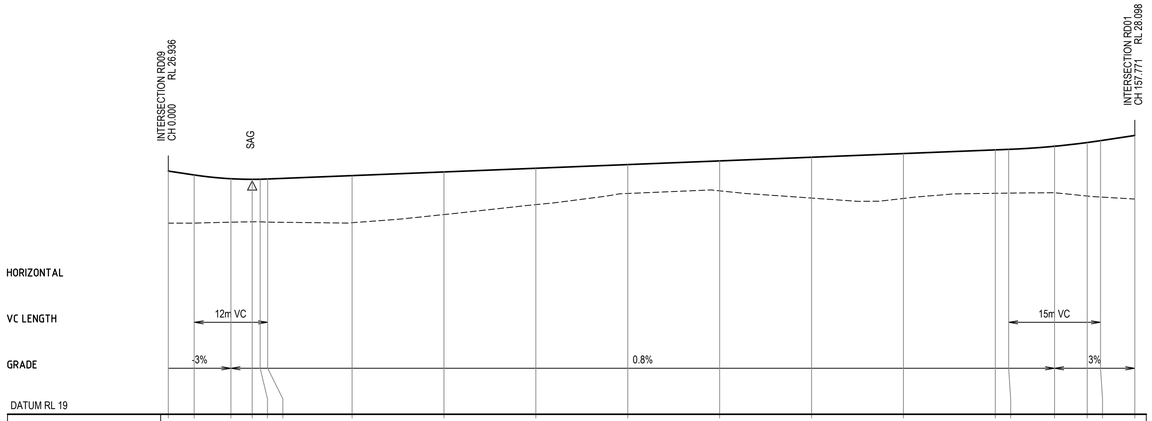
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1353
Revision: 6

DATE PLOTTED: 17 July 2020 11:57 AM BY : HAYDEN DAVENPORT

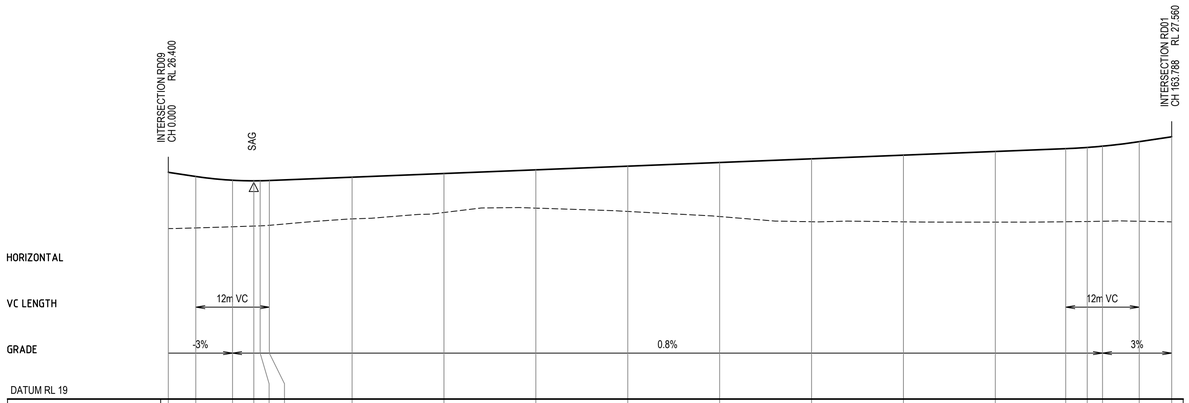
XREF's:
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg



WAE LEVEL																					
DESIGN LEVEL	26.936	26.810	26.687	26.668	26.670	26.678	26.788	26.908	27.028	27.148	27.268	27.388	27.508	27.628	27.645	27.746	27.869	27.930	28.098		
EXISTING SURFACE	25.236	25.239	25.268	25.281	25.281	25.271	25.251	25.517	25.841	26.205	26.291	26.056	26.044	26.211	26.217	26.229	26.122	26.089	26.024		
CHAINAGE	TP 0.000	4.222	10.222	13.696	15.000	16.222	30.000	45.000	60.000	75.000	90.000	105.000	120.000	135.000	137.173	144.673	150.000	152.173	157.771		

ROAD 05 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



WAE LEVEL																					
DESIGN LEVEL	26.400	26.265	26.142	26.123	26.125	26.133	26.242	26.362	26.482	26.602	26.722	26.842	26.962	27.082	27.173	27.213	27.254	27.401	27.560		
EXISTING SURFACE	24.565	24.586	24.624	24.646	24.653	24.672	24.880	25.089	25.232	25.124	24.957	24.787	24.785	24.774	24.787	24.795	24.804	24.804	24.784		
CHAINAGE	TP 0.000	4.488	10.488	13.962	15.000	16.488	30.000	45.000	60.000	75.000	90.000	105.000	120.000	135.000	146.492	150.000	152.492	158.492	163.788		

ROAD 06 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
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Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD LONGITUDINAL SECTIONS
SHEET 4 OF 11

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

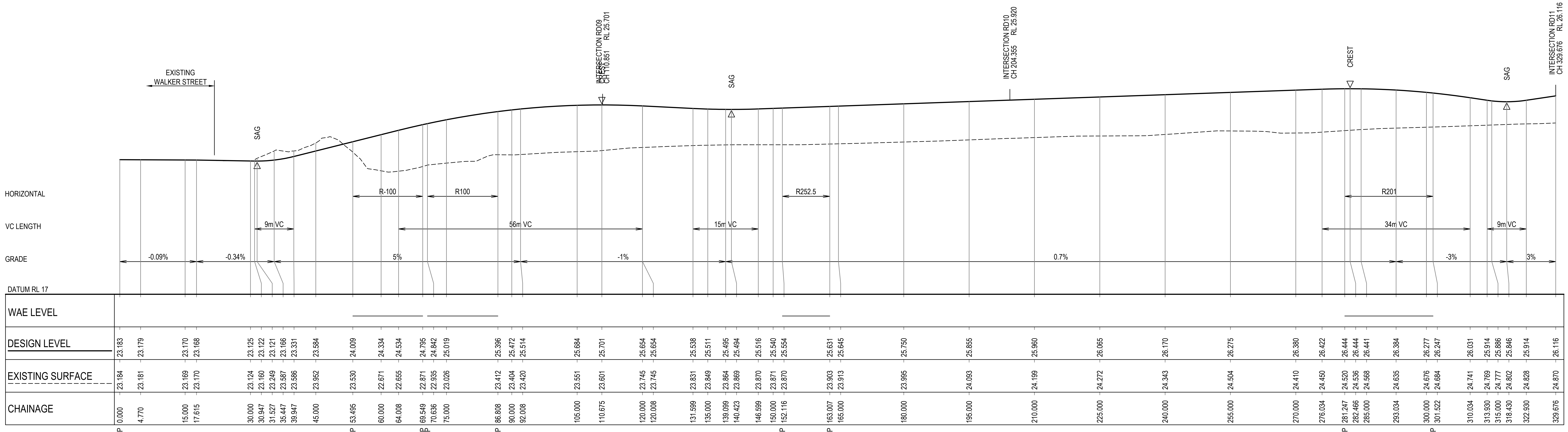
Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1354
Revision: 6

DATE PLOTTED: 17 July 2020 11:57 AM BY : HAYDEN DAVENPORT

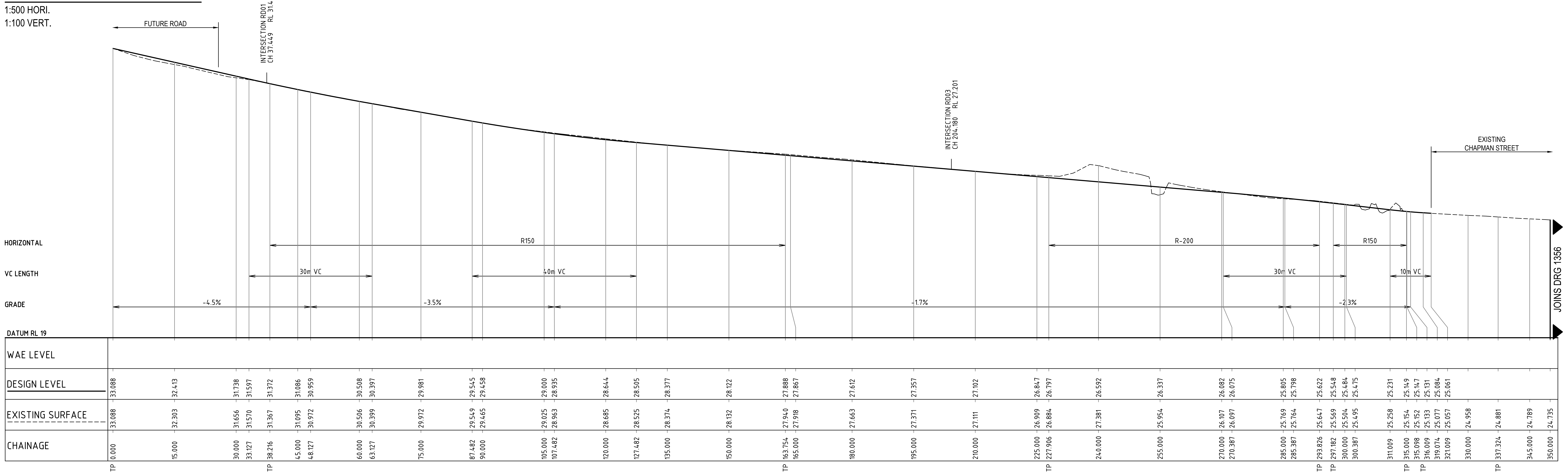
XREF's:
CAD File: N:\Projects\80\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg

DATE PLOTTED: 17 July 2020 11:57 AM BY : HAYDEN DAVENPORT



ROAD 07 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



ROAD 08 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

XREFs:
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved AJG	1/10/2019

Client LENDLEASE COMMUNITIES

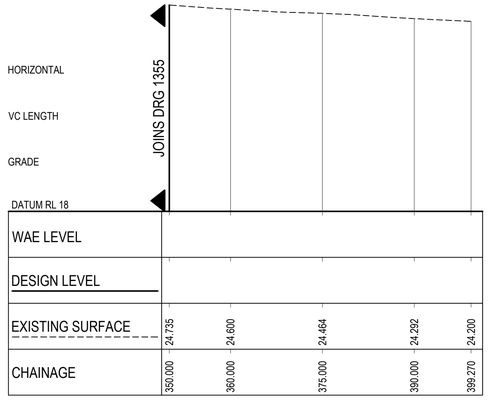
Project CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title ROAD LONGITUDINAL SECTIONS
SHEET 5 OF 11

Status FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number	Revision
80219053-DA001-CI-1355	6



ROAD 08 LONGITUDINAL SECTION

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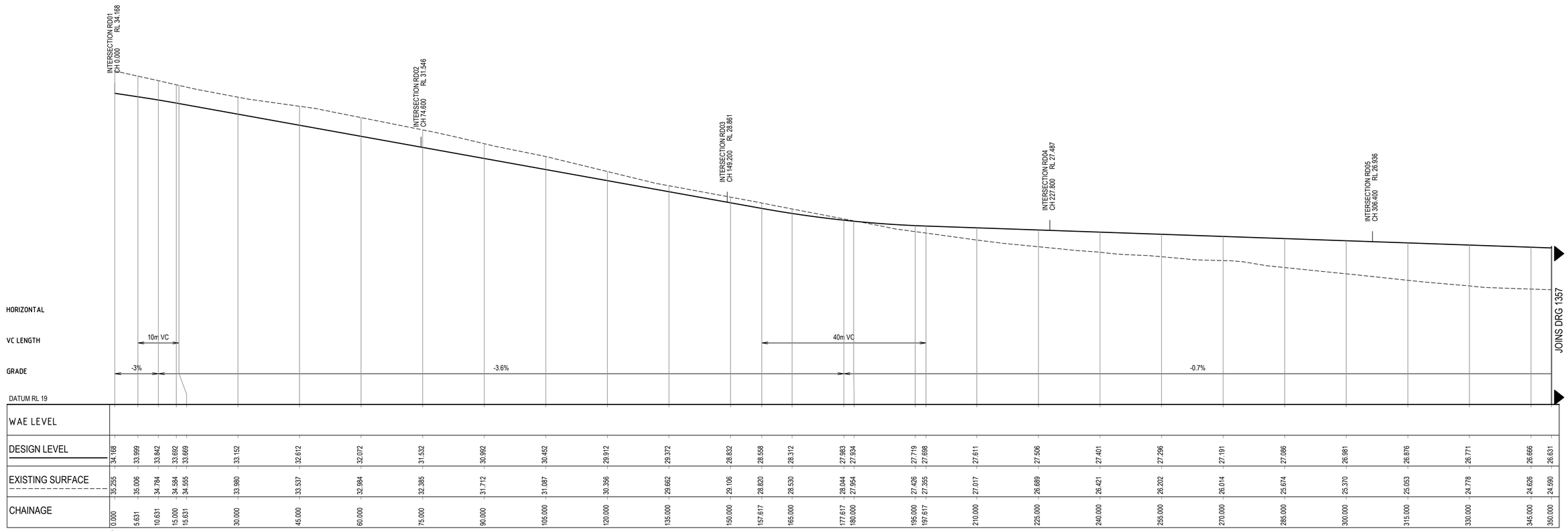
1:100 VERT.



ROAD 09 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

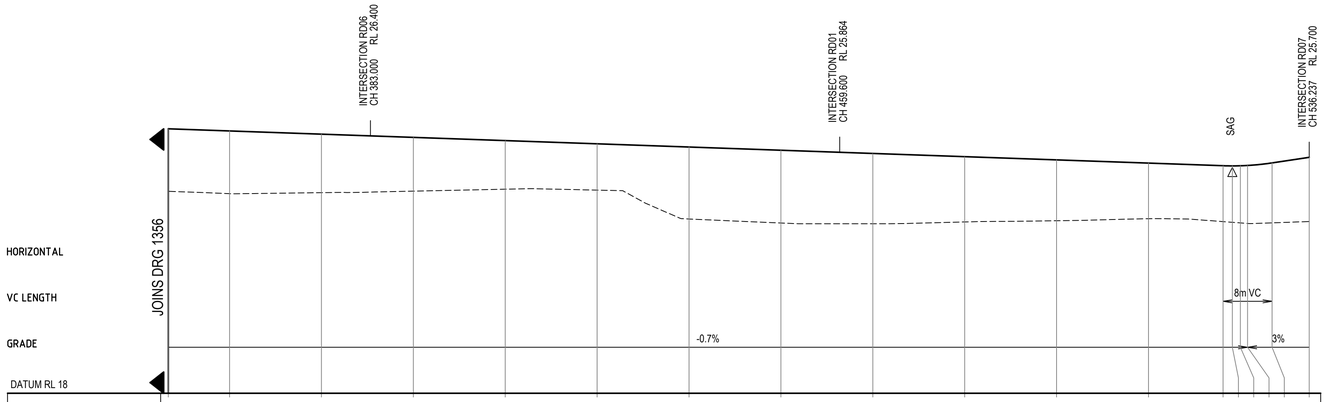
Title: ROAD LONGITUDINAL SECTIONS
SHEET 6 OF 11

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1356
Revision: 6

XREF's:
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg

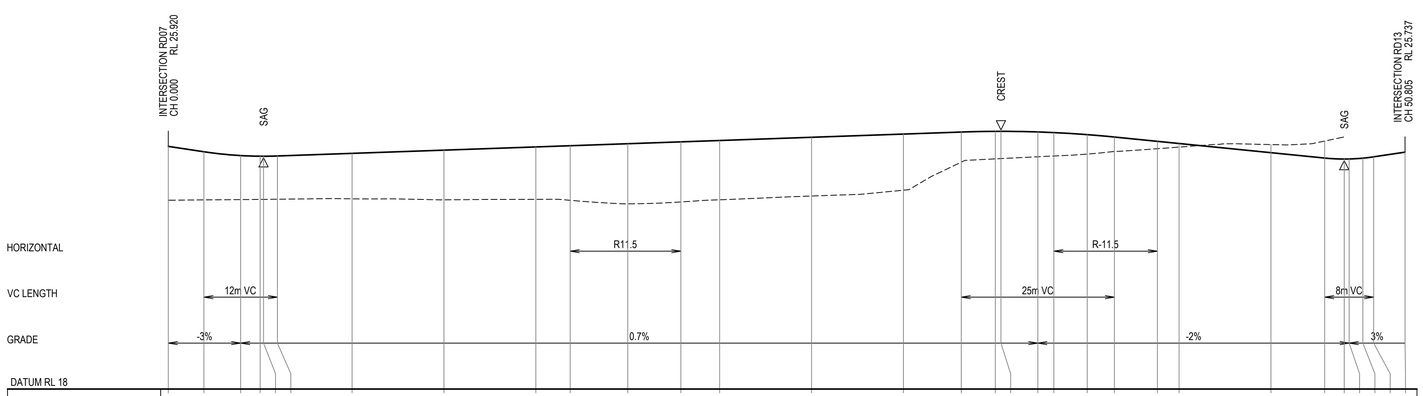


CHAINAGE	EXISTING SURFACE	DESIGN LEVEL
350.000	24.590	26.631
360.000	24.514	26.561
375.000	24.547	26.456
390.000	24.596	26.351
405.000	24.660	26.246
420.000	24.630	26.141
435.000	23.687	26.036
450.000	23.555	25.931
465.000	23.531	25.826
480.000	23.591	25.721
495.000	23.630	25.616
510.000	23.696	25.511
522.179	23.602	25.426
523.692	23.579	25.421
525.000	23.559	25.425
526.179	23.541	25.435
530.179	23.561	25.518
536.237	23.605	25.700

WAE LEVEL

ROAD 09 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



CHAINAGE	EXISTING SURFACE	DESIGN LEVEL
TP 0.000	24.163	25.920
5.815	24.174	25.746
11.815	24.184	25.621
15.000	24.190	25.600
15.544	24.190	25.600
17.815	24.196	25.608
30.000	24.209	25.693
45.000	24.176	25.798
60.000	24.192	25.903
TP 65.600	24.161	25.942
75.000	24.045	26.008
TP 83.664	24.107	26.069
90.000	24.177	26.113
105.000	24.301	26.218
120.000	24.490	26.323
129.436	25.406	26.389
135.000	25.513	26.411
135.917	25.522	26.412
141.938	25.583	26.392
TP 144.550	25.609	26.371
150.000	25.668	26.305
154.438	25.753	26.226
TP 161.454	25.845	26.086
165.000	25.897	26.015
180.000	25.980	25.715
188.757	26.096	25.540
191.957		25.508
192.757		25.510
195.000		25.537
196.757		25.580
201.877		25.734

WAE LEVEL

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD LONGITUDINAL SECTIONS
SHEET 7 OF 11

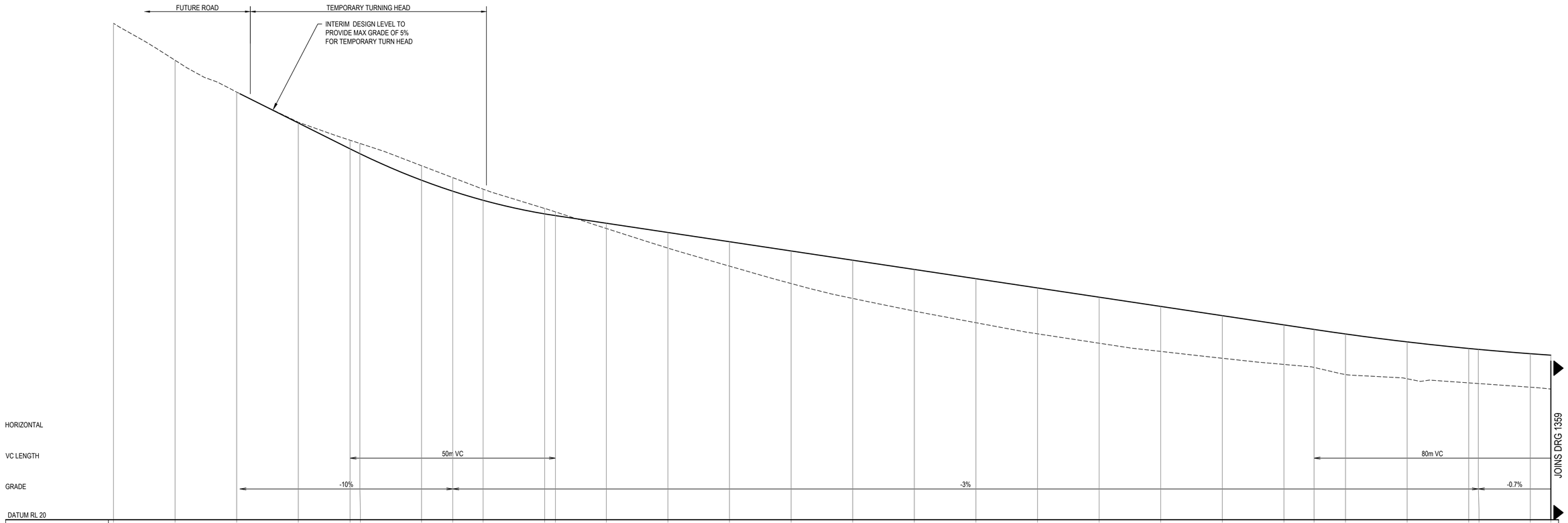
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1357
Revision: 6

DATE PLOTTED: 17 July 2020 11:57 AM BY : HAYDEN DAVENPORT

XREF's:
CAD File: N:\Projects\8020\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg



WAE LEVEL																																		
DESIGN LEVEL				39.317	38.056	37.821	36.529	35.994	35.552	34.889	34.806	34.434	33.984	33.534	33.084	32.634	32.184	31.734	31.284	30.834	30.384	29.934	29.484	29.264	29.043	28.658	28.338	28.294	28.083	28.012
EXISTING SURFACE	44.167	42.367	40.820	39.355	38.476	38.319	37.236	36.654	36.094	35.155	34.987	34.180	33.224	32.346	31.499	30.774	30.159	29.592	29.051	28.594	28.195	27.861	27.561	27.415	27.068	26.863	26.664	26.631	26.453	26.363
CHAINAGE	TP 0.000	15.000	30.000	45.000	57.610	60.000	75.000	82.610	90.000	105.000	107.610	120.000	135.000	150.000	165.000	180.000	195.000	210.000	225.000	240.000	255.000	270.000	285.000	292.337	300.000	315.000	330.000	332.337	345.000	350.000

ROAD 11 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

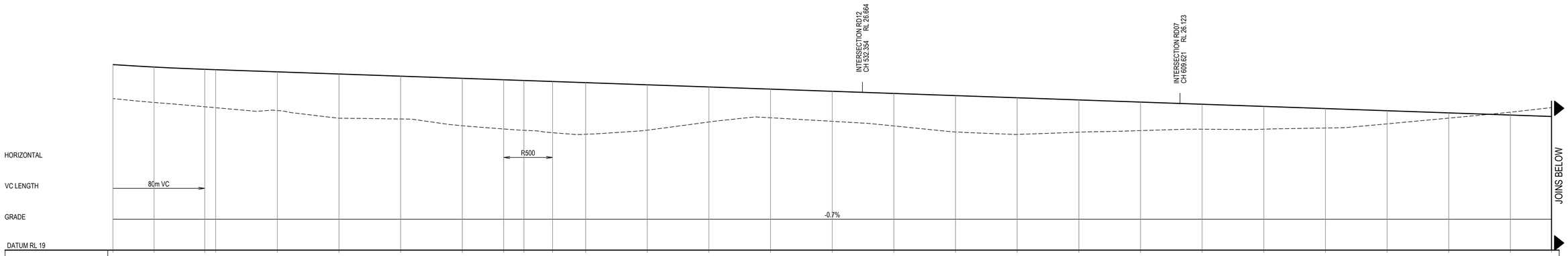
Title: ROAD LONGITUDINAL SECTIONS
SHEET 8 OF 11

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1358
Revision: 6

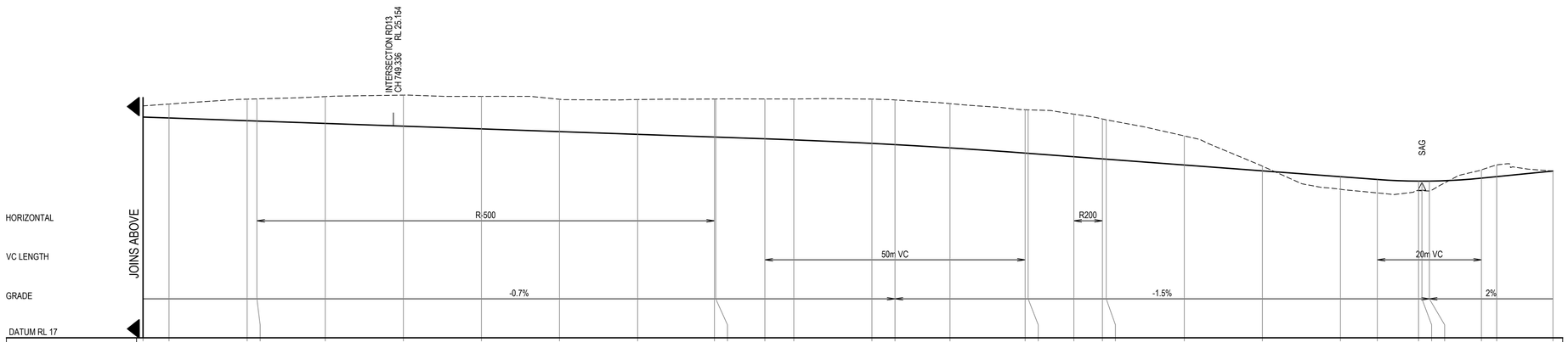
XREF's:
CAD File: N:\Projects\80\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg



WAE LEVEL																																		
DESIGN LEVEL	28.012	27.893	27.784	27.766	27.661	27.556	27.451	27.346	27.275	27.241	27.192	27.136	27.031	26.926	26.821	26.716	26.611	26.506	26.401	26.296	26.191	26.086	25.981	25.876	25.771	25.666	25.561	25.491						
EXISTING SURFACE	26.363	26.172	25.964	25.917	25.781	25.407	25.369	25.041	24.884	24.820	24.703	24.626	24.827	25.224	25.429	25.257	25.032	24.740	24.620	24.728	24.806	24.874	24.874	24.931	25.133	25.412	25.700	25.920						
CHAINAGE	350.000	360.000	372.337	375.000	390.000	405.000	420.000	435.000	TP 445.066	450.000	TP 456.958	465.000	480.000	495.000	510.000	525.000	540.000	555.000	570.000	585.000	600.000	615.000	630.000	645.000	660.000	675.000	690.000	700.000						

ROAD 11 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



WAE LEVEL																																		
DESIGN LEVEL	25.491	25.456	25.351	25.338	25.246	25.141	25.036	24.931	24.826	24.722	24.721	24.655	24.613	24.477	24.430	24.305	24.105	24.096	23.964	23.882	23.871	23.646	23.421	23.196	23.090	23.026	23.026	23.028	23.140	23.199	23.415			
EXISTING SURFACE	25.920	25.991	26.179	26.189	26.278	26.334	26.286	26.173	26.164	26.185	26.166	26.187	26.185	26.180	26.149	26.038	25.772	25.769	25.602	25.417	25.384	24.765	23.603	22.712	22.973	22.658	22.655	22.849	23.459	23.652	23.415			
CHAINAGE	700.000	705.000	720.000	TP 721.869	735.000	750.000	765.000	780.000	795.000	TP 809.756	810.000	819.437	825.000	840.000	844.437	855.000	869.437	870.000	TP 878.783	TP 884.268	885.000	900.000	915.000	930.000	937.070	945.000	945.642	947.070	957.070	960.000	970.803			

ROAD 11 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
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Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

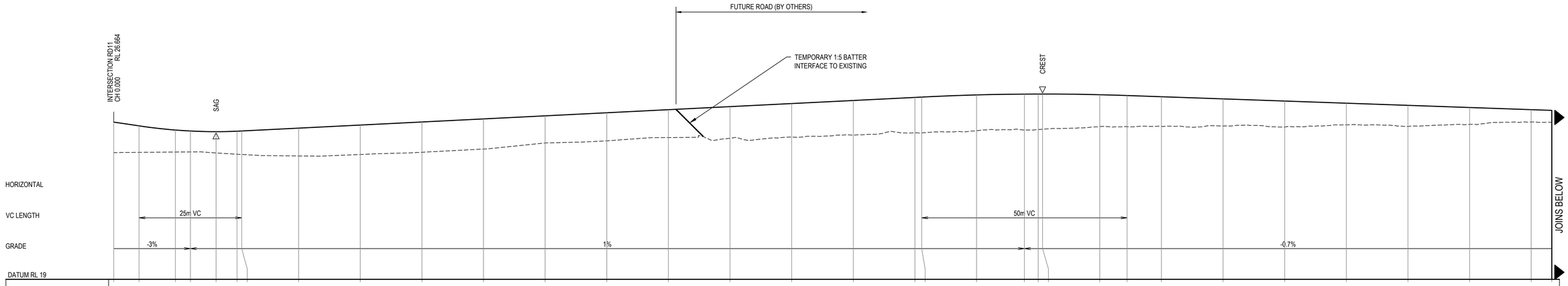
Title: ROAD LONGITUDINAL SECTIONS
SHEET 9 OF 11

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1359
Revision: 6

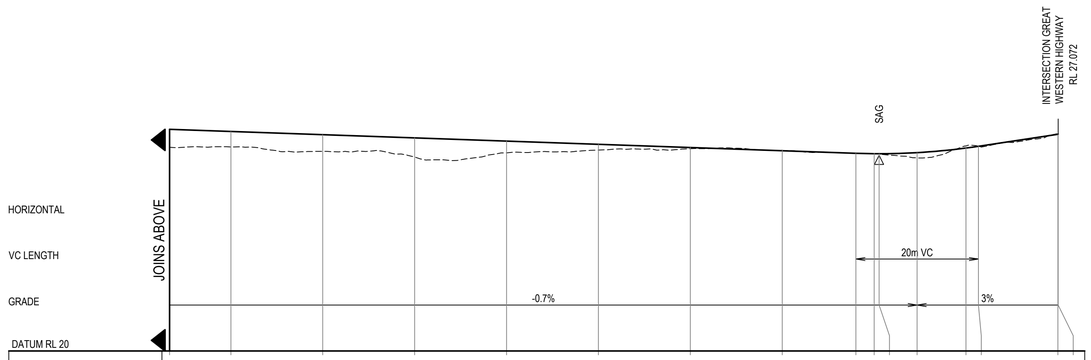
XREF's:
CAD File: N:\Projects\80\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg



WAE LEVEL																																			
DESIGN LEVEL	26.664	26.480	26.277	26.230	26.198	26.219	26.230	26.368	26.518	26.668	26.818	26.968	27.118	27.268	27.418	27.568	27.718	27.868	27.884	27.988	28.028	28.031	28.031	27.998	27.959	27.901	27.796	27.691	27.586	27.481	27.376	27.271	27.236
EXISTING SURFACE	25.172	25.191	25.204	25.210	25.160	25.100	25.087	25.013	25.085	25.194	25.350	25.647	25.750	25.910	25.874	25.937	26.025	26.141	26.136	26.243	26.275	26.302	26.315	26.444	26.440	26.458	26.472	26.426	26.529	26.455	26.553	26.669	26.650
CHAINAGE	TP 0.000	6.156	15.000	18.656	24.906	30.000	31.156	45.000	60.000	75.000	90.000	105.000	120.000	135.000	150.000	165.000	180.000	195.000	196.647	210.000	221.647	225.000	226.659	240.000	246.647	255.000	270.000	285.000	300.000	315.000	330.000	345.000	350.000

ROAD 12 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



WAE LEVEL																			
DESIGN LEVEL	27.236	27.166	27.061	26.956	26.851	26.746	26.641	26.536	26.452	26.439	26.439	26.474	26.625	26.682	27.071	27.072
EXISTING SURFACE	26.650	26.660	26.515	26.330	26.468	26.560	26.603	26.548	26.452	26.450	26.431	26.303	26.698	26.681	27.074	27.072
CHAINAGE	350.000	360.000	375.000	390.000	405.000	420.000	435.000	450.000	462.026	465.000	465.810	472.026	480.000	482.026	495.000	495.043

ROAD 12 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
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		

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD LONGITUDINAL SECTIONS
SHEET 10 OF 11

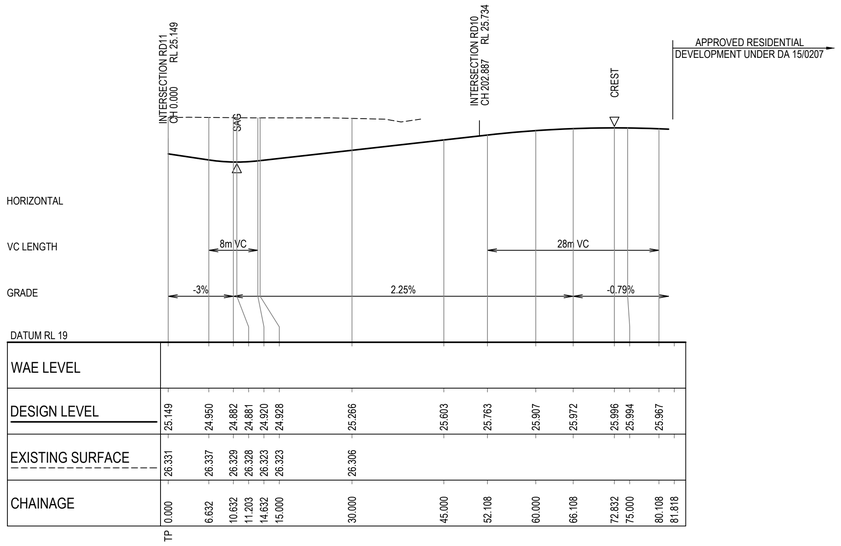
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1360
Revision: 6

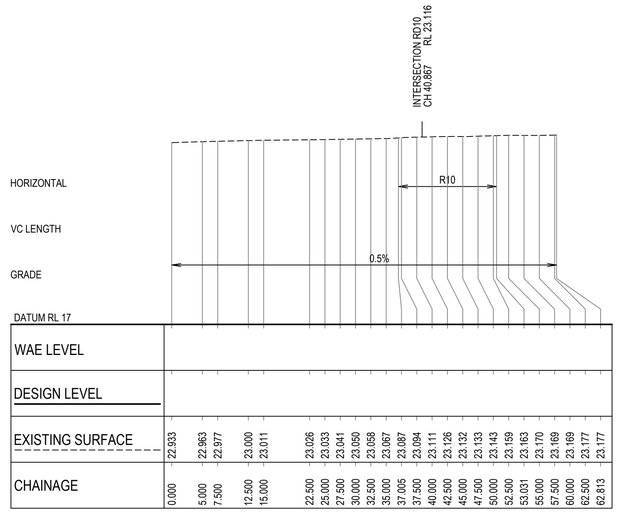
DATE PLOTTED: 22 July 2020 5:05 PM BY : HAYDEN DAVENPORT

XREFS:
CAD File: N:\Projects\8020\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg



ROAD 13 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



EXISTING WALKER STREET (FOR INFORMATION ONLY)

1:500 HORI.
1:100 VERT.

Rev.	Date	Description	Des.	Verif.	Appd.
6	17/07/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
2	1/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
1	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG

H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

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Web: www.cardno.com.au

		Date
Drawn	HLD	3/03/2020
Checked	PL	3/03/2020
Designed	HLD	3/03/2020
Verified	PL	3/03/2020
Approved	AJG	3/03/2020

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD LONGITUDINAL SECTIONS
SHEET 11 OF 11

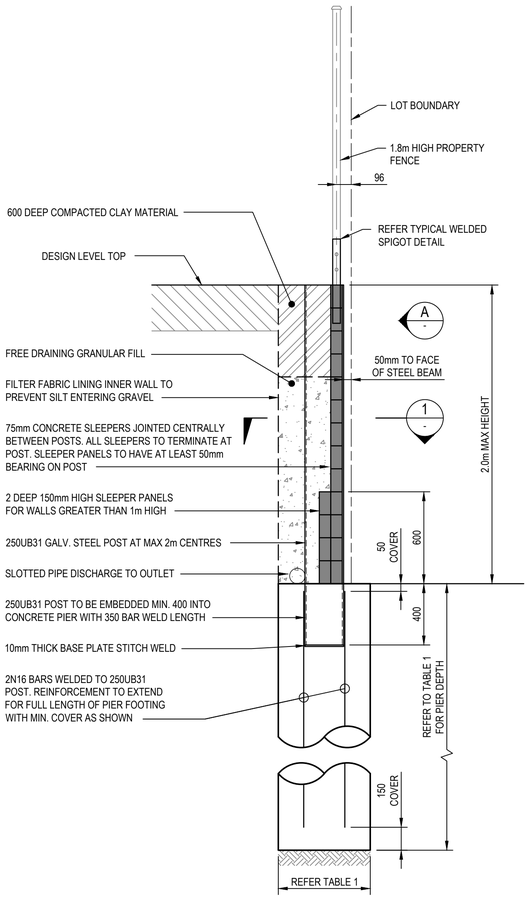
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Mar'20	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1361
Revision: 6

XREF's:
CAD File: N:\Projects\8020\FY19\053_Chapman St-Werrington\DrawingsBuild\001 CIVIL WORKS\DA\80219053-DA001-CI-1351-1361 ROAD LONGITUDINAL SECTIONS.dwg

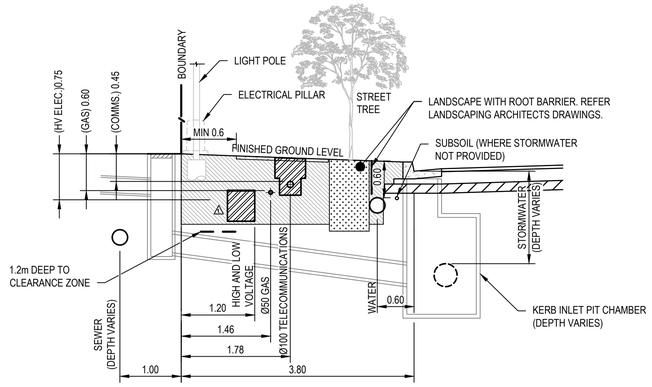
DATE PLOTTED: 17 July 2020 11:58 AM BY : HAYDEN DAVENPORT



TYPICAL CONCRETE SLEEPER RETAINING WALL SECTION - MAX 2.0m HIGH

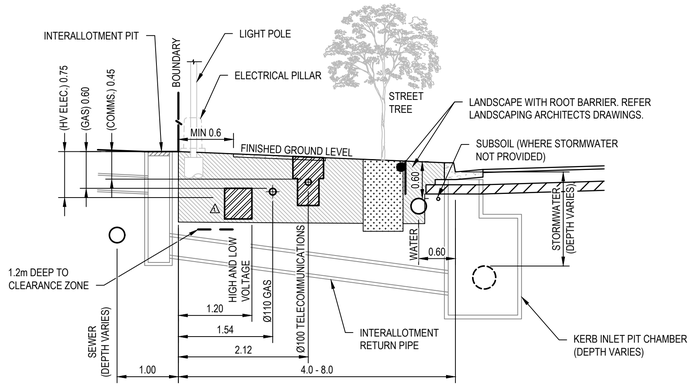
ALL OTHER WALLS EXCEPT ON COBHAM JUVENILE JUSTICE CENTRE BOUNDARY

SCALE 1:20



TYPICAL LOCAL ROAD SERVICES TRENCH EXCAVATION

1:50m

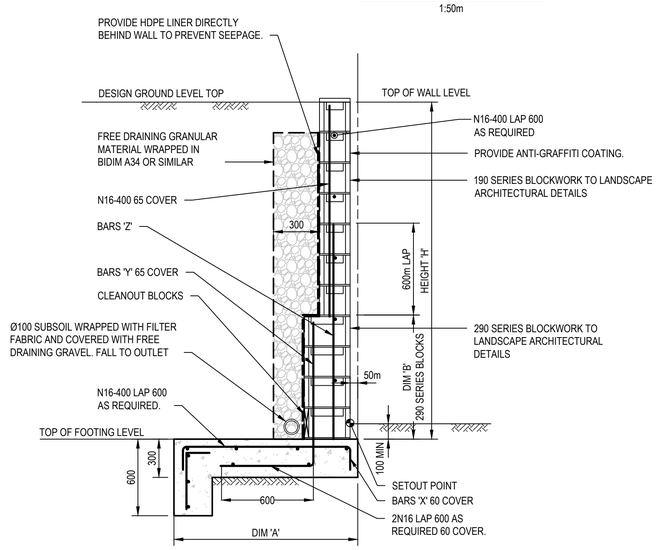


TYPICAL COLLECTOR ROAD SERVICES TRENCH EXCAVATION

1:50m

NOTE

1. FINAL SERVICES ALLOCATION TO BE COORDINATED WITH SERVICES AUTHORITIES.



BLOCKWORK RETAINING WALL 2.0m TO 3.5m

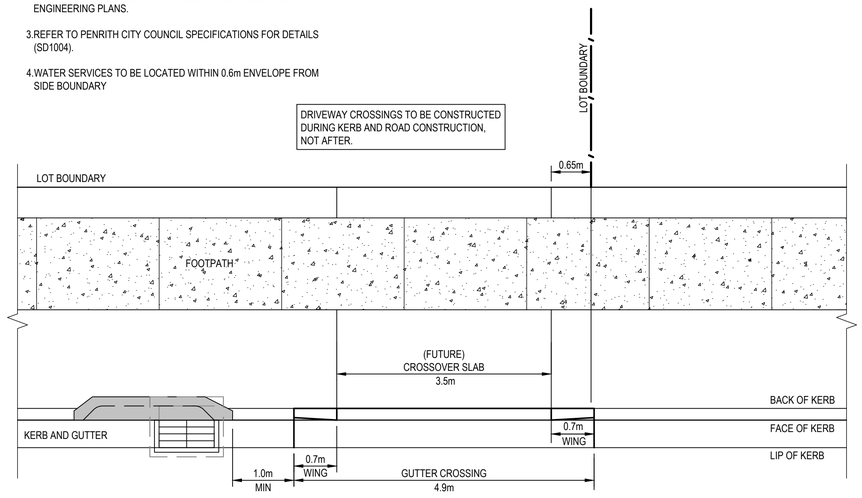
WALL TYPE ALONG BOUNDARY WITH COBHAM JUVENILE JUSTICE CENTRE

SCALE 1:20

NOTE:

1. DRAINAGE PITS TO BE LOCATED MINIMUM 1.0m FROM EDGE OF DRIVEWAY.
2. LAYBACKS TO BE CONSTRUCTED ON PRIMARY DRIVEWAY FRONTAGE FOR CORNER LOTS UNLESS OTHERWISE NOTED ON ENGINEERING PLANS.
3. REFER TO PENRITH CITY COUNCIL SPECIFICATIONS FOR DETAILS (SD1004).
4. WATER SERVICES TO BE LOCATED WITHIN 0.6m ENVELOPE FROM SIDE BOUNDARY

DRIVEWAY CROSSINGS TO BE CONSTRUCTED DURING KERB AND ROAD CONSTRUCTION, NOT AFTER.



TYPICAL DRIVEWAY LOCATION DETAIL

1:50m

TABLE 1

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

* MIN. 600Ø FOR PIERS AT CORNERS, JUNCTIONS AND SERVICE CROSSINGS

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

Rev.	Date	Description	Des.	Verif.	Appd.
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		

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

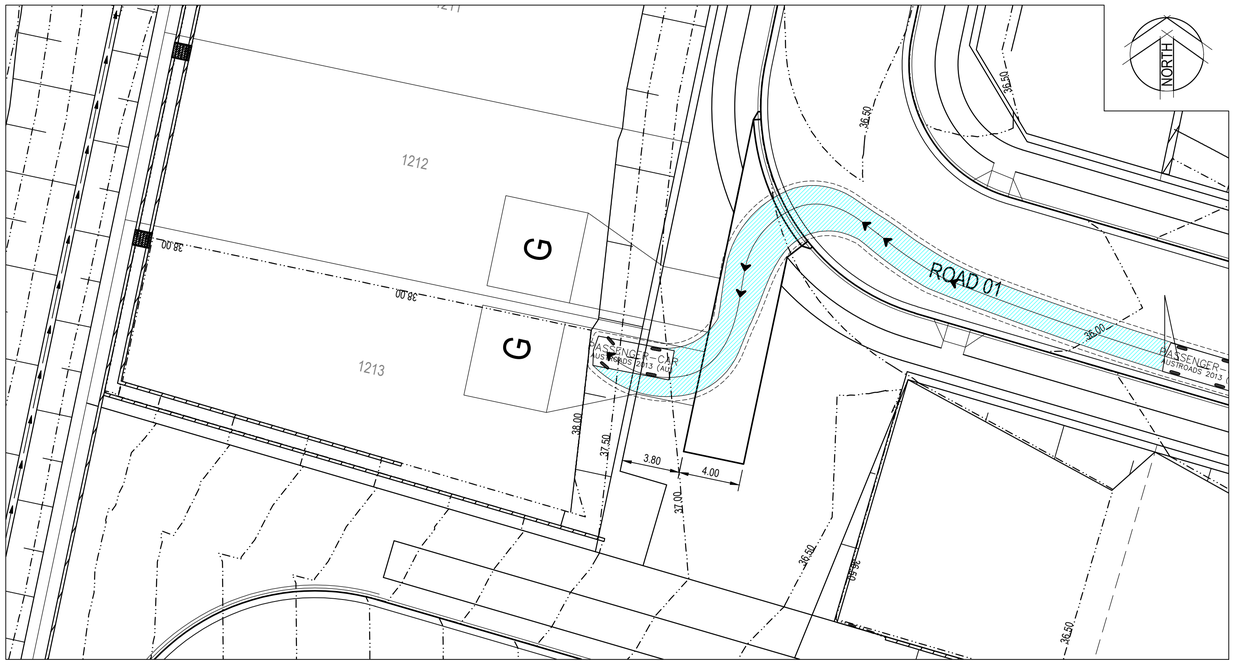
Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: ROAD TYPICAL DETAILS
SHEET 1 OF 2

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-1601
Revision: 4

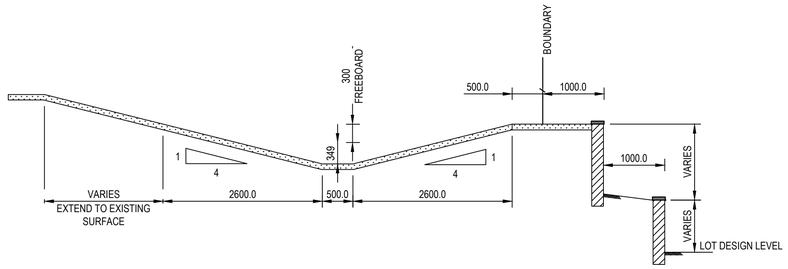


TYPICAL DRIVEWAY PLAN - ENTRY

SCALE 1:200

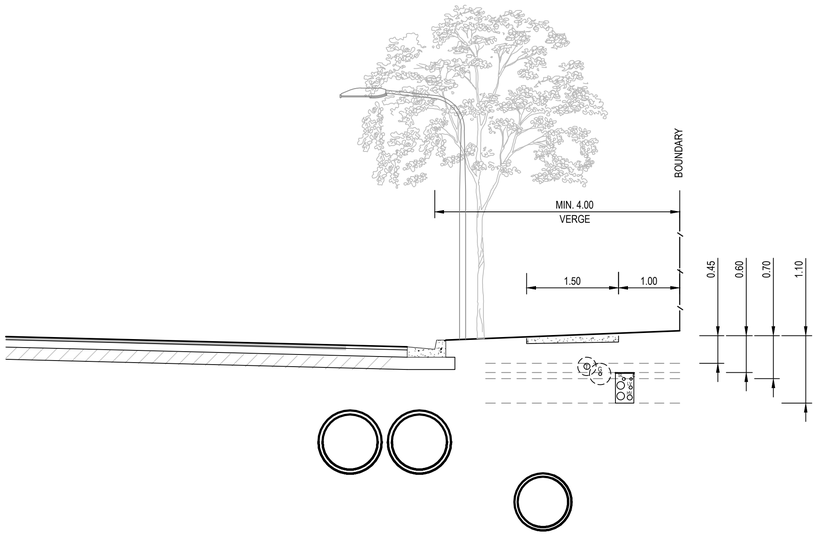
NOTE

1. LANDSCAPE TREATMENT IN ACCORDANCE WITH PLANS BY PLACE DESIGN GROUP.



TERRACE RETAINING WALL AND SWALE DETAIL

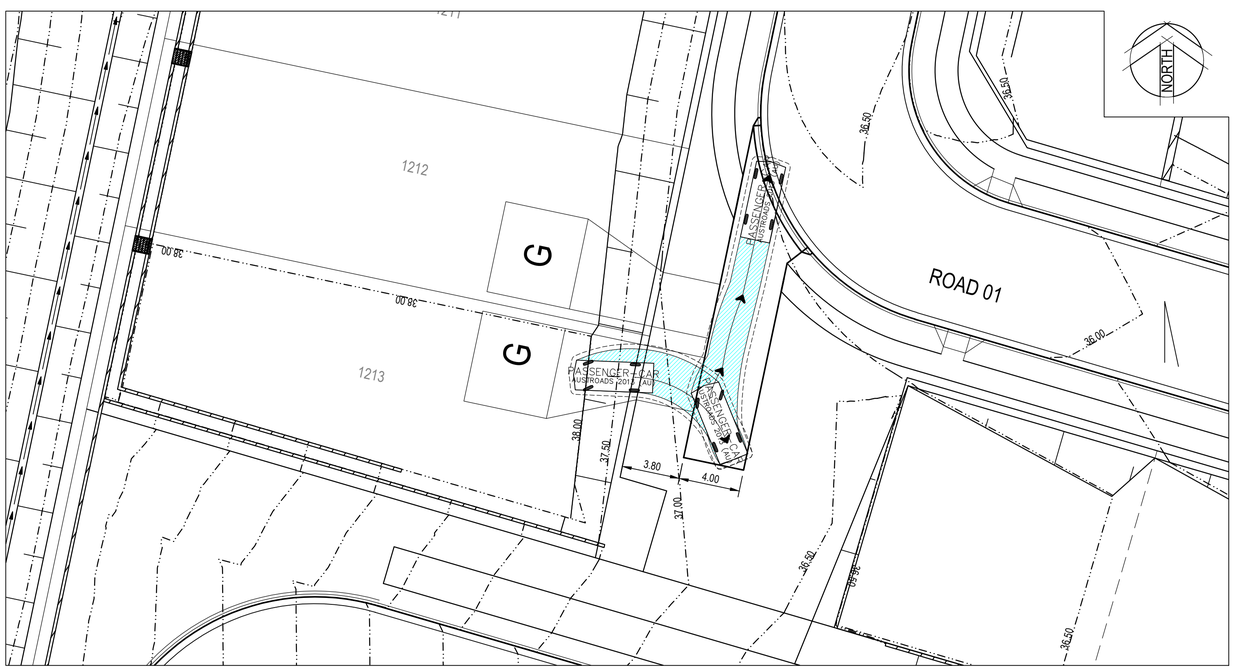
SCALE 1:50



TYPICAL SERVICE ALLOCATION (MAJOR COLLECTOR ROAD)

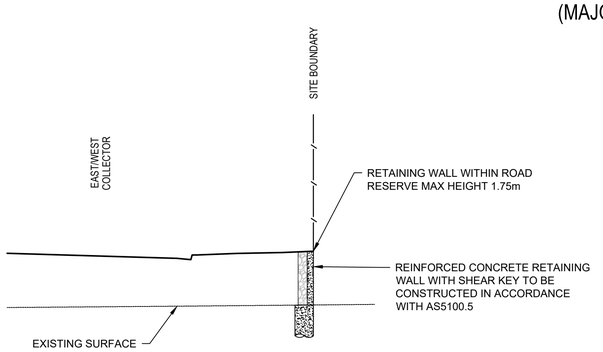
ROAD 11

SCALE 1:50



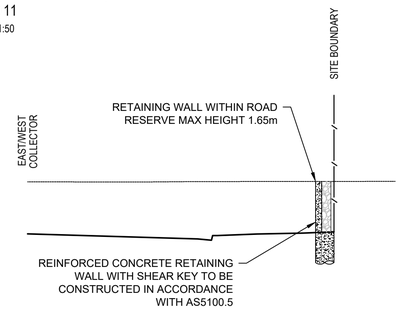
TYPICAL DRIVEWAY PLAN - EXIT

SCALE 1:200



WOLLEMI COLLEGE BOUNDARY RE-INFORCED CONCRETE FILL WALL

1:100m



WOLLEMI COLLEGE BOUNDARY RE-INFORCED CONCRETE CUT WALL

1:100m

Rev.	Date	Description	Des.	Verif.	Appd.
3	17/07/2020	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	23/04/2020	RE-ISSUED FOR DA APPROVAL	HLD	AG	AJG
1	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG

0 1 2 4 6 8 10m — SCALE 1:100 @A1

0 1000 2000 3000 4000 5000mm — SCALE 1:50 @A1

0 5 10 15 20m — SCALE 1:200 @A1

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		Date
Drawn	TPB	28/02/2020
Checked		
Designed	HLD	28/02/2020
Verified	PL	28/02/2020
Approved	AJG	28/02/2020

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

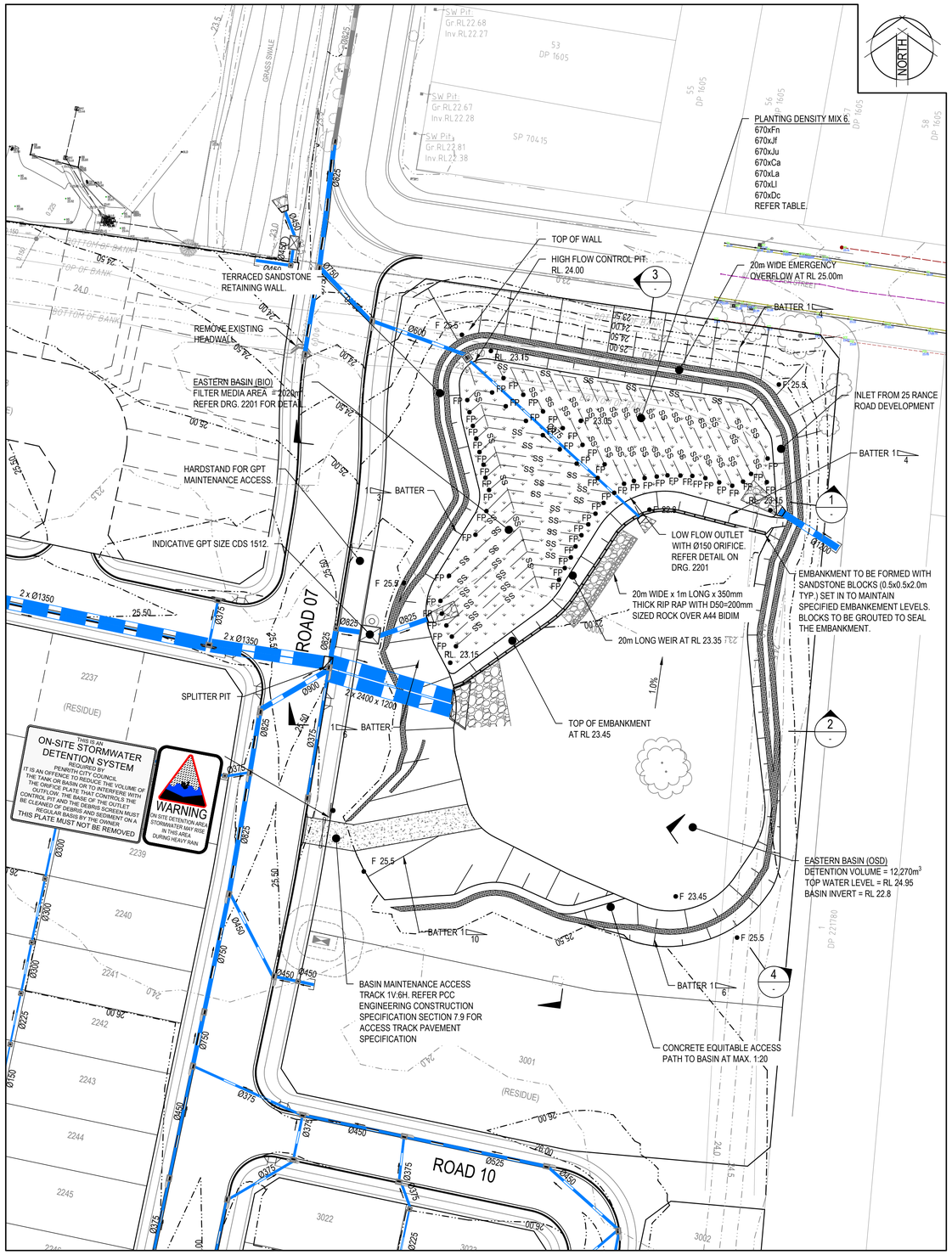
Title: ROAD TYPICAL DETAILS
SHEET 2 OF 2

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Feb' 2020	AS SHOWN	A1

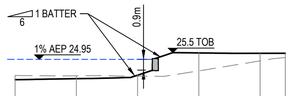
Drawing Number: 80219053-DA001-CI-1602

Revision: 3



DETENTION BASIN A PLAN

SCALE 1:500

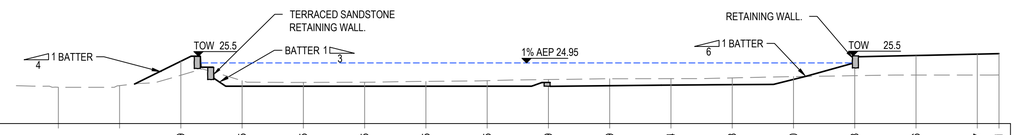


Datum 20.00

DESIGN LEVEL	23.29	23.37	23.66	25.48	25.45	25.45
EXISTING LEVEL	23.64	23.61	23.58	24.01	24.83	25.10
CHAINAGE	0.000	10.000	20.000	30.000	40.000	44.111

SECTION 4
SCALE 1:250V 1:500H

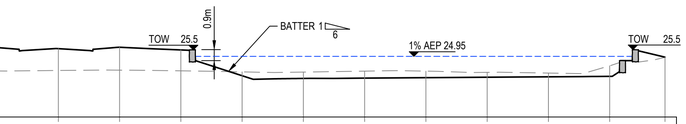
Mix 6						
Ca	*Carex appressa*	Sedge	1.3m	75mm	6	808
Dc	*Dianella caerulea*	Blue flax lily	0.5m	75mm	6	808
Fn	*Ficinia nodosa*	Knobby Club Rush	0.8m	75mm	6	808
Jf	*Juncus flavidus*	Mat Rush	1.0m	75mm	6	808
Ju	*Juncus usitatus*	Common Rush	1.0m	75mm	6	808
La	*Lepironia articulata*	Grey rush	0.9m	75mm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



Datum 20.00

DESIGN LEVEL				25.09	23.05	23.05	23.05	23.05	23.05	23.29	23.09	23.14	23.18	23.60	25.48	25.56	25.67	25.71
EXISTING LEVEL		22.97	23.10	23.95	23.50	23.36	23.38	23.44	23.50	23.59	23.66	23.67	23.73	23.83	23.91	23.96	23.96	23.97
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	163.550

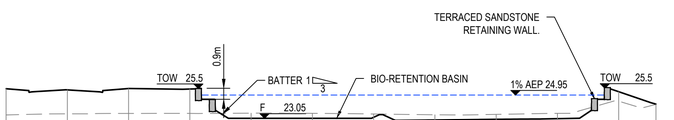
SECTION 3
SCALE 1:250V 1:500H



Datum 20.00

DESIGN LEVEL	25.67	25.58	25.70	25.48	23.37	23.15	23.18	23.21	23.25	23.28	23.32	24.89
EXISTING LEVEL	23.76	23.80	23.83	23.77	23.68	23.67	23.75	23.74	23.64	23.59	24.18	24.87
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	109.027

SECTION 2
SCALE 1:250V 1:500H



Datum 20.00

DESIGN LEVEL	25.46	25.37	25.48	25.44	23.05	23.05	23.13	22.91	22.97	23.02	25.22	24.21
EXISTING LEVEL	23.32	23.41	23.45	23.45	23.47	23.45	23.40	23.34	23.37	23.45	24.45	24.18
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	106.082

SECTION 1
SCALE 1:250V 1:500H

NOTE:
1. REFER DRG. 2201 FOR OUTLET DETAILS
2. REFER LANDSCAPE ARCHITECT DRAWINGS FOR OPEN SPACE ESTABLISHMENT DETAILS

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 2 4 6 8 10m
SCALE: 1:100 @A1

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

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: BIORETENTION / OSD BASIN PLAN AND SECTIONS
SHEET 1 OF 3

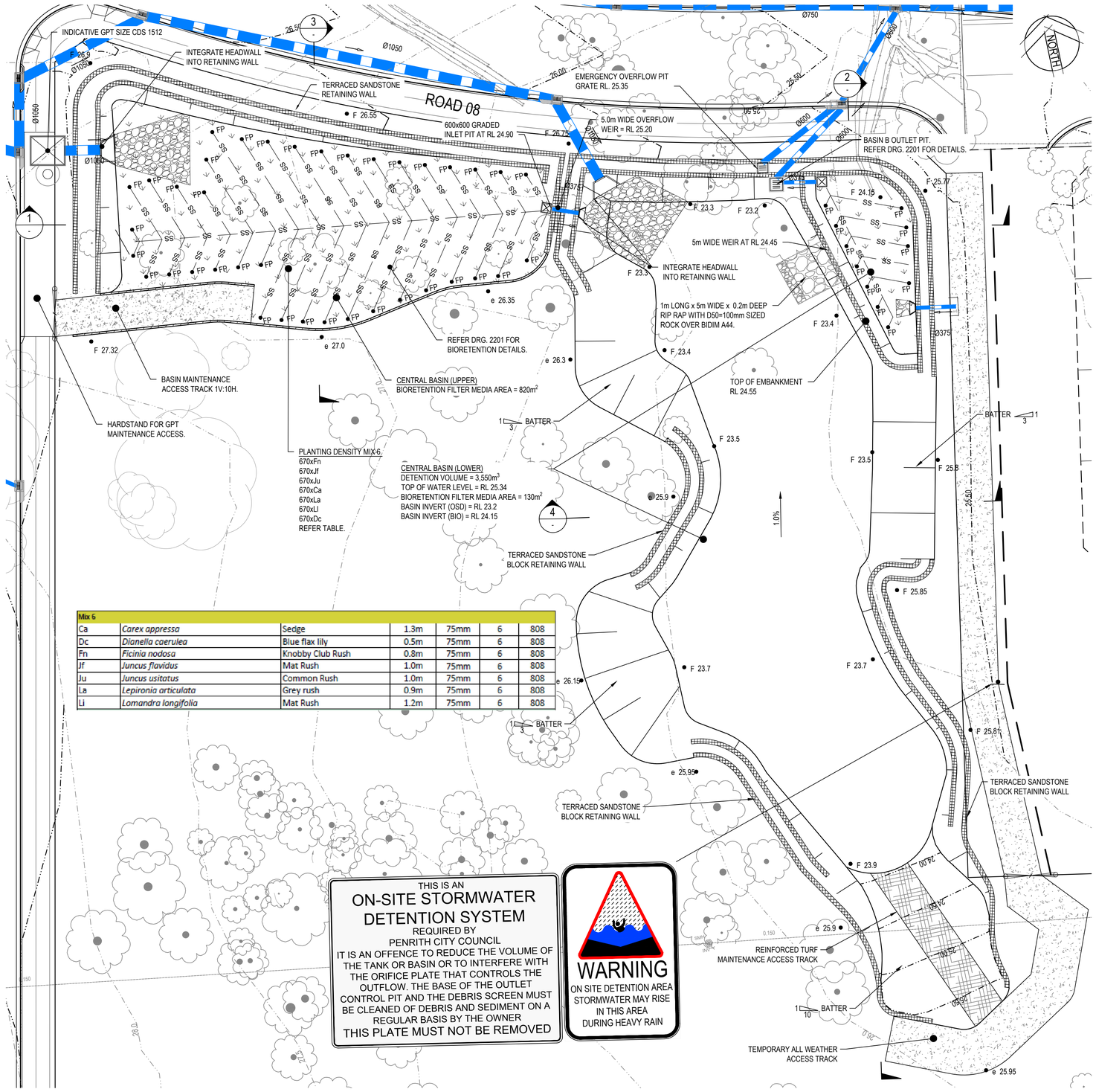
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-2001
Revision: 5

DATE PLOTTED: 17 July 2020 12:02 PM BY : HAYDEN DAVENPORT

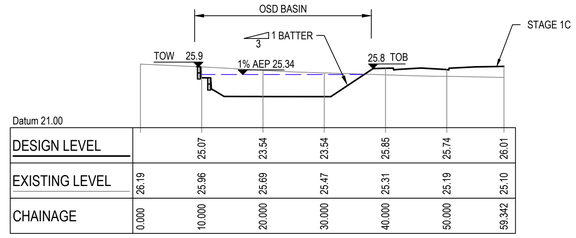
XREF's: XR-80219053-CI-OSD-PLAN; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-SURVEY; XR-80219053-CI-ROAD; XR-80219053-CI-STORMWATER; XR-80219053-CI-DESIN CONTOURS-500; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-ROUNDABOUT
CAD File: N:\Projects\902\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-2001-2003 DETENTION BASIN PLAN AND SECTIONS.dwg



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

DETENTION BASIN B PLAN

SCALE 1:250



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EXISTING LEVEL	26.19	25.96	25.69	25.47	25.31	25.19	25.10
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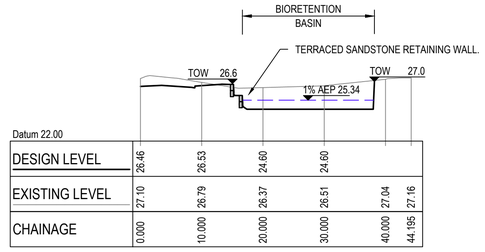
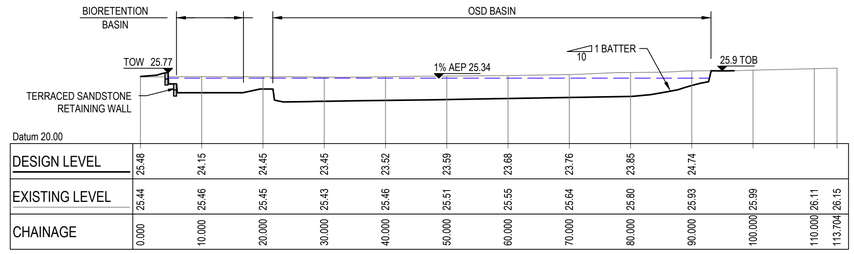
SECTION 4 -
SCALE 1:250V 1:500H



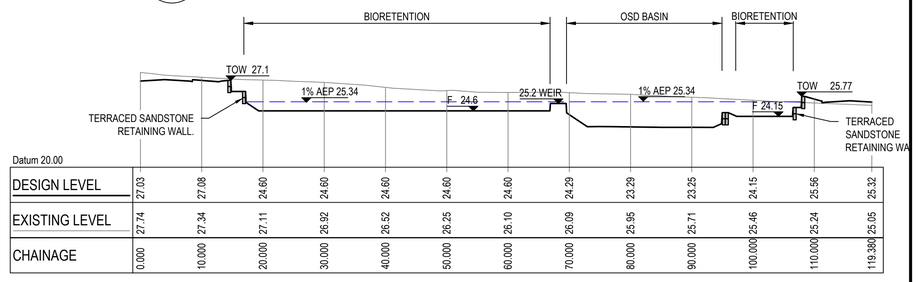
DESIGN LEVEL	26.46	26.53	24.60	24.60		
EXISTING LEVEL	27.10	26.79	26.37	26.51	27.04	27.16
CHAINAGE	0.000	10.000	20.000	30.000	40.000	44.195

SECTION 3 -
SCALE 1:250V 1:500H



DESIGN LEVEL	25.48	24.15	24.45	23.45	23.52	23.59	23.68	23.76	23.85	24.74			
EXISTING LEVEL	25.44	25.46	25.45	25.43	25.46	25.51	25.55	25.64	25.80	25.93	25.99	26.11	26.15
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	113.704

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



DESIGN LEVEL	27.03	27.08	24.60	24.60	24.60	24.60	24.60	24.29	23.29	23.25	24.15	25.56	25.32
EXISTING LEVEL	27.74	27.34	27.11	26.92	26.52	26.25	26.10	26.09	25.95	25.71	25.46	25.24	25.05
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	119.380

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

NOTE:
1. REFER DRG. 2201 FOR OUTLET DETAILS
2. REFER LANDSCAPE ARCHITECT DRAWINGS FOR OPEN SPACE ESTABLISHMENT DETAILS

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 2 4 6 8 10m SCALE: 1:100 @A1
0 5 10 15 20 25m SCALE: 1:250 @A1
0 10 20 30 40 50m SCALE: 1:500 @A1

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Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

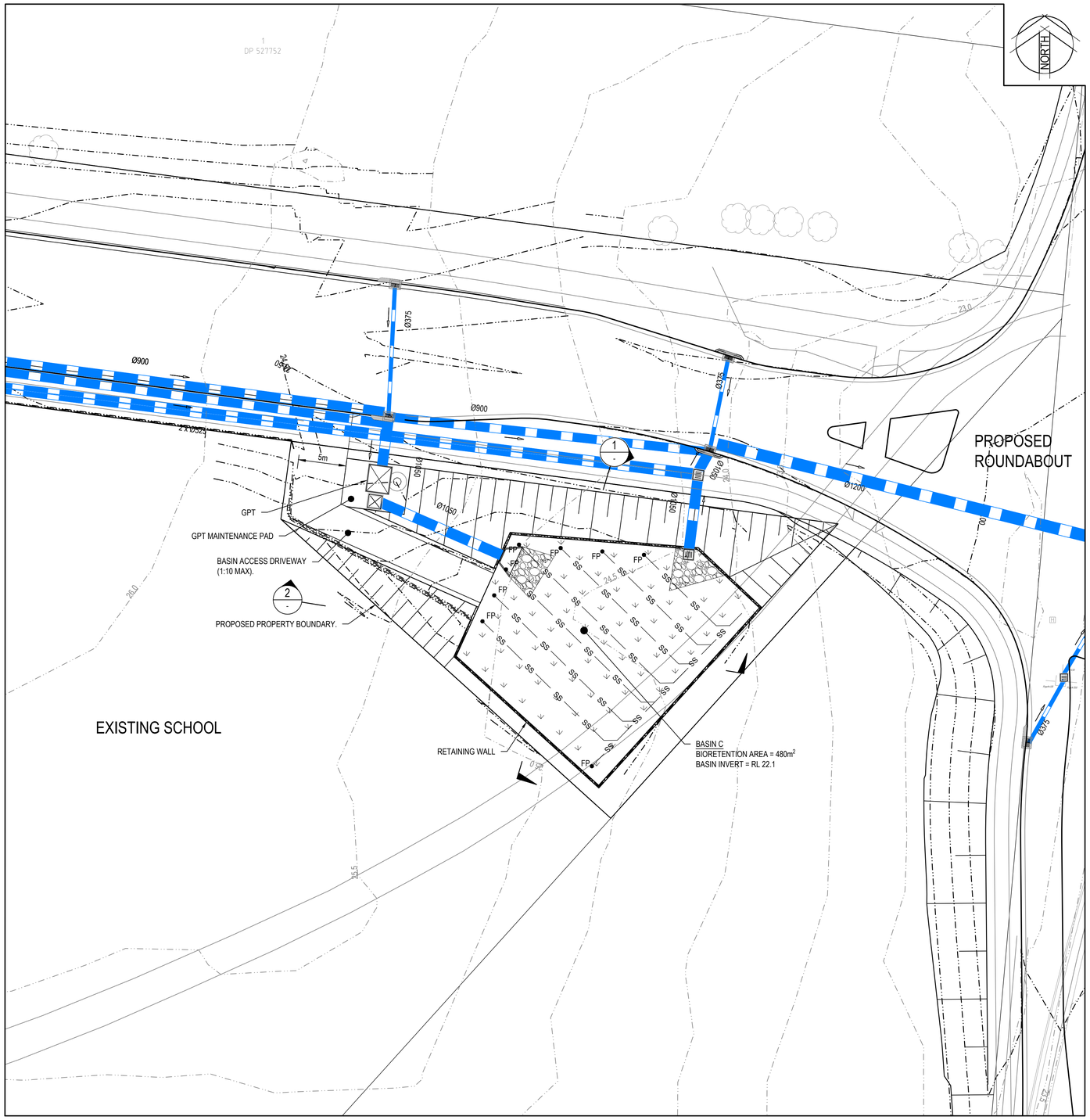
Title: BIORETENTION / OSD BASIN PLAN AND SECTIONS
SHEET 2 OF 3

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

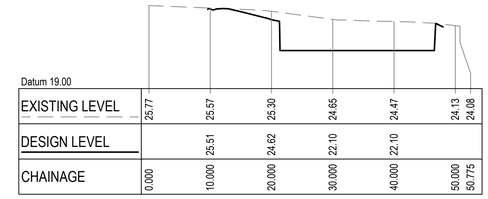
Drawing Number: 80219053-DA001-CI-2002
Revision: 5

XREF's: XR-80219053-CI-OSD-PLAN; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-SURVEY; XR-80219053-CI-ROAD; XR-80219053-CI-STORMWATER; XR-80219053-CI-DESN CONTOURS-500; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-ROUNDABOUT
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-2001-2003 DETENTION BASIN PLAN AND SECTIONS.dwg
DATE PLOTTED: 17 July 2020 12:03 PM BY : HAYDEN DAVENPORT



DETENTION BASIN C PLAN

SCALE 1:250

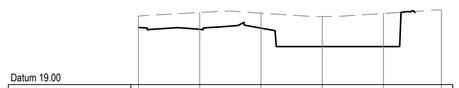


Datum 19.00

EXISTING LEVEL	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	58.775

SECTION 2

SCALE 1:250V 1:500H



Datum 19.00

EXISTING LEVEL	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	0.000	10.000	20.000	30.000	40.000	49.448

SECTION 1

SCALE 1:250V 1:500H

NOTE:

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

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 2 4 6 8 10m
SCALE: 1:100 @A1

0 5 10 15 20 25m
SCALE: 1:250 @A1

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

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Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

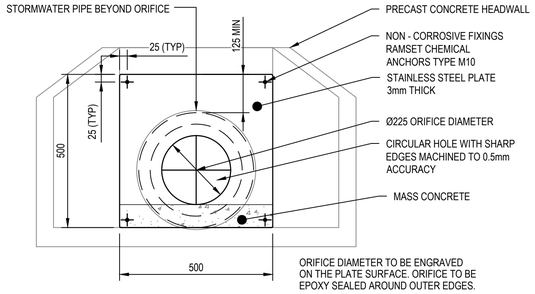
Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: BIORETENTION BASIN PLAN AND SECTIONS
SHEET 3 OF 3

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

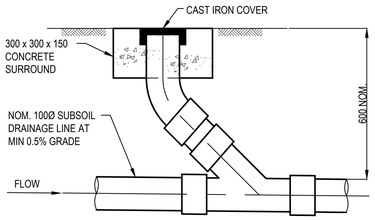
Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-2003
Revision: 5



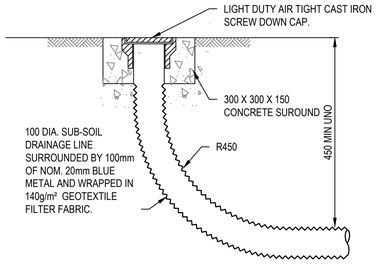
ORIFICE PLATE DETAIL FOR BASIN A OUTLET

SCALE 1:10



INTERMEDIATE RISER

SCALE 1:10



FLUSHING POINT

SCALE 1:10

BIO-FILTRATION FILTER MEDIA SPECIFICATION

MATERIALS:

BIO-FILTRATION FILTER MEDIA, TRANSITION LAYER AND DRAINAGE LAYERS TO BE IN ACCORDANCE WITH CURRENT VERSION OF FAWB DOCUMENT "STORMWATER BIO-FILTRATION SYSTEMS ADOPTION GUIDELINES" AND THE FOLLOWING:

A) BIO-FILTRATION FILTER MEDIA

1. BIO-FILTRATION MEDIA IS TO BE FREE OF RUBBISH AND DELETERIOUS MATERIAL.
2. BIO-FILTRATION FILTER MEDIA SATURATED HYDRAULIC CONDUCTIVITY TO BE A MAXIMUM OF 125mm/hr USING TEST METHOD ASTM F1815-06.
3. IT IS DESIRABLE THAT THE BIO-FILTRATION FILTER MEDIA PARTICLE SIZE DISTRIBUTION IS AS FOLLOWS:

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

THE COMBINED PERCENTAGE OF CLAY AND SILT MUST NOT EXCEED 3% (W/W) UNDER ANY CIRCUMSTANCES.

4. BIO-FILTRATION FILTER MEDIA IS TO BE TESTED AND COMPLY WITH THE FOLLOWING REQUIREMENTS:
   a) ORGANIC MATTER CONTENT IN ACCORDANCE WITH AS4419 AT LEAST 3% (W/W)
   b) TOTAL NITROGEN (TN) CONTENT <800mg/kg
   c) ORTHOPHOSPHATE (PO_4^{3-}) CONTENT = 40mg/kg WHERE PLANTS WITH MODERATE PHOSPHOROUS SENSITIVITY ARE TO BE USED, TOTAL PHOSPHOROUS CONCENTRATION SHOULD BE <20mg/kg.
   d) AS SPECIFIED FOR "NATURAL SOILS AND SOIL BLENDS" AS4419 - pH 5.5-7.5 (pH 1.5 IN WATER)
   e) ELECTRICAL CONDUCTIVITY (EC) AS SPECIFIED FOR "NATURAL SOILS AND SOILS BLENDS" AS4419 <1.2ds/m
   f) DISPENSABILITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' AS4419 CATEGORY 1 OR 2
   g) TEXTURE - LOAMY SAND AS PER AS4419

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.

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. D_{15} (TRANSITION LAYER) LESS THAN OR EQUAL TO 5 x D_{85} (FILTER MEDIA)

WHERE: D_{15} (TRANSITION LAYER) IS THE 15TH PERCENTILE PARTICLE SIZE IN THE TRANSITION LAYER MATERIAL (i.e, 15% OF THE SAND IS SMALLER THAN D_{15} mm), AND D_{85} (FILTER MEDIA) IS THE 85th PERCENTILE PARTICLE SIZE IN THE FILTER MEDIA.

C) DRAINAGE LAYER

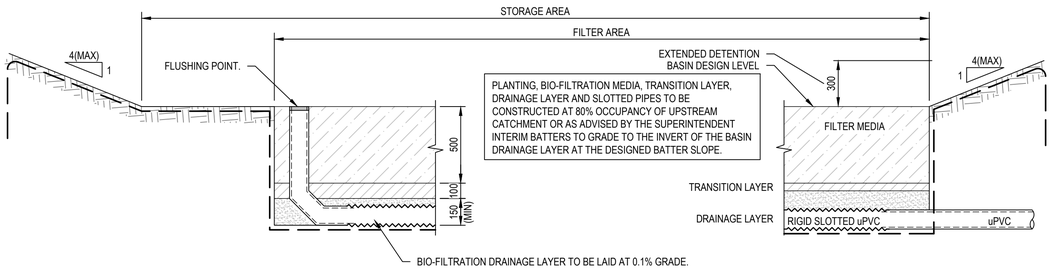
DRAINAGE LAYER MATERIAL IS TO BE CLEAN, FINE GRAVEL, SUCH AS A 5mm WASHED SCREENINGS. THE PARTICLE SIZE DISTRIBUTION TO BE:
D_{15} (DRAINAGE LAYER) < 5 x D_{85} (TRANSITION LAYER)
WHERE: D_{15} (DRAINAGE LAYER) IS THE 15TH PERCENTILE PARTICLE SIZE IN THE TRANSITION LAYER MATERIAL (i.e, 15% OF THE SAND IS SMALLER THAN D_{15} mm), AND D_{85} (TRANSITION LAYER) IS THE 85th PERCENTILE PARTICLE SIZE IN THE FILTER MEDIA.

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

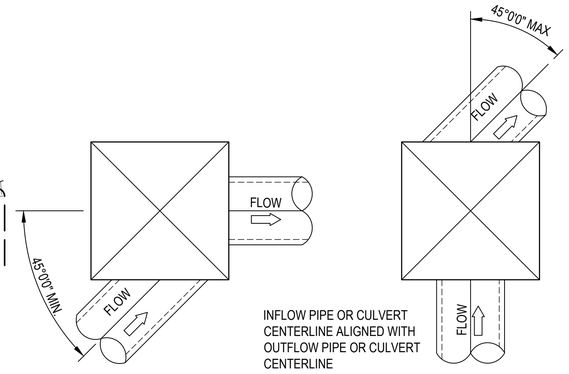
INSTALLATION:

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.



BIO-FILTRATION BASIN TYPICAL SECTION

SCALE 1:20



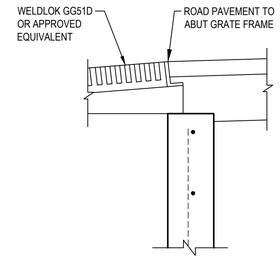
DIRECTION ANGLE GREATER THAN 45° (SIDE OF PIT) PIT ALIGNMANT REQUIREMENTS

SCALE 1:25

TYPICAL DETAILS OF STORMWATER PIPE OR CULVERT ALIGNMENTS THROUGH STORMWATER PITS. STORMWATER PIPE OR CULVERT ALIGNMENTS NOT SHOWN SHOULD BE CONSTRUCTED SIMILARLY IN ORDER TO STREAMLINE FLOWS FROM UPSTREAM TO DOWNSTREAM AND MINIMISE HEADLOSS.

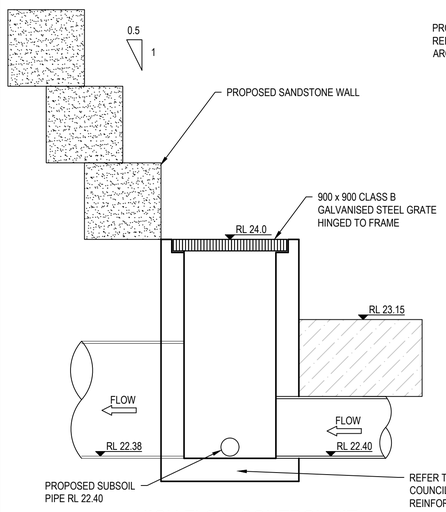
NOTES

1. ALL PITS EXCEEDING 1.0m DEPTH TO BE FITTED WITH STEP IRONS TO COUNCIL SPECIFICATION. REFER PCC STANDARD DRAWING SD3001 FOR DETAILS.
2. CONSTRUCT 1m APRON AROUND PIT IN ACCORDANCE WITH PCC STANDARD DRAWING SD2002.
3. ALL GRATES TO BE WELDLOK OR EQUIVALENT HEAVILY GALVANISED STEEL GRATE WITH HINGED ENTRY AND LOCK DOWN "J" BOLT TO MANUFACTURERS DETAIL. ALL GRATES TO BE CLASS "N".
4. ALL GRATES TO BE CONSTRUCTED IN ACCORDANCE WITH PCC STANDARD DRAWING SD2002.



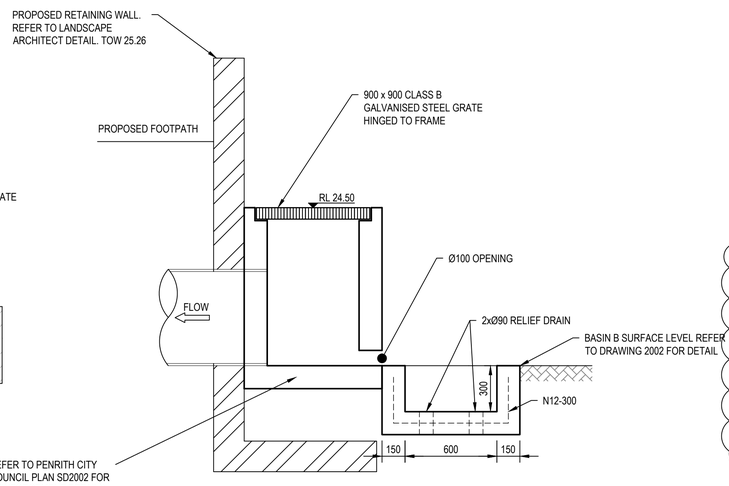
DETAIL A

SCALE 1:10



HIGH FLOW CONTROL PIT (BASIN A)

SCALE 1:20



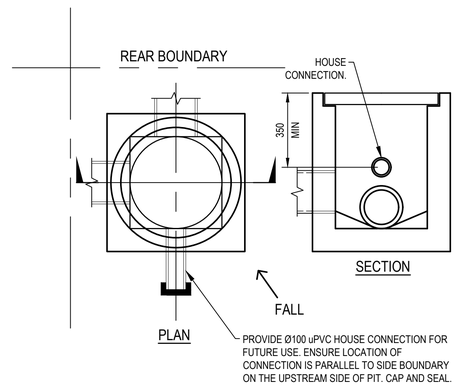
BASIN B OUTLET PIT

SCALE 1:20

OSD MODELLING RESULT DATA

AEP %	PSD	Q	STAGE		VOLUME (m^3)	
			BASIN A	BASIN B	BASIN A	BASIN B
50	0.66	0.66	24.05	24.32	5600	1300
20	1.84	1.23	24.2	24.56	6600	1800
5	3.2	2.00	24.33	24.60	7500	1900
1	4.8	3.64	24.95	25.34	11900	3660

NOTE
OSD CALCULATED AT THE INTERSECTION OF LANDERS STREET AND CHAPMAN STREET.



PENRITH CITY COUNCIL STANDARD INTERALLOTMENT DRAINAGE PIT

SCALE 1:20

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 200 400 600 800 1000mm — SCALE 1:10 @A1
0 500 1000 1500 2000mm — SCALE 1:20 @A1
0 0.5 1 1.5 2 2.5m — SCALE 1:25 @A1

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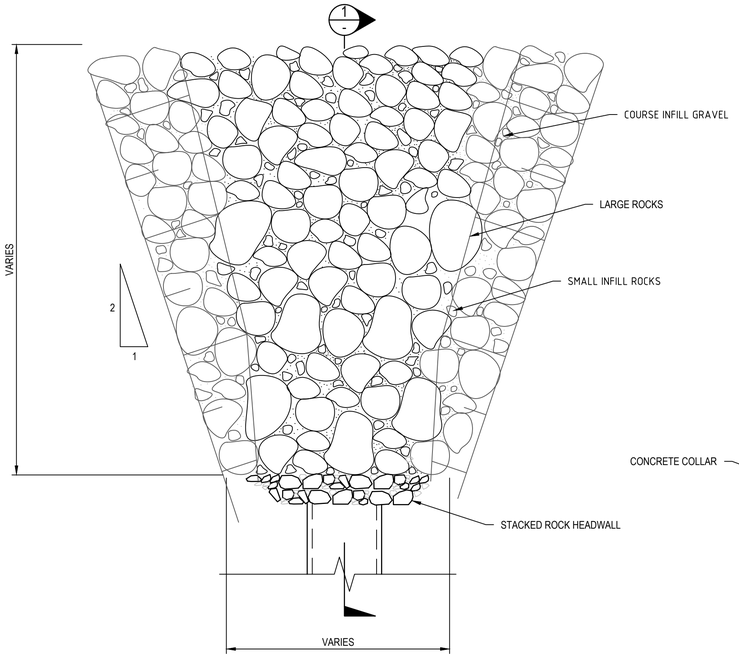
Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES
Project: CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title: STORMWATER DRAINAGE DETAILS SHEET 1 OF 2
Status: FOR APPROVAL — NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum: A.H.D | Date: Oct' 2019 | Scale: AS SHOWN | Size: A1
Drawing Number: 80219053-DA001-CI-2201 | Revision: 4

XREF's:
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-2201 STORMWATER DRAINAGE DETAILS.dwg



TYPICAL OUTLET HEADWALL SCOUR PROTECTION PLAN

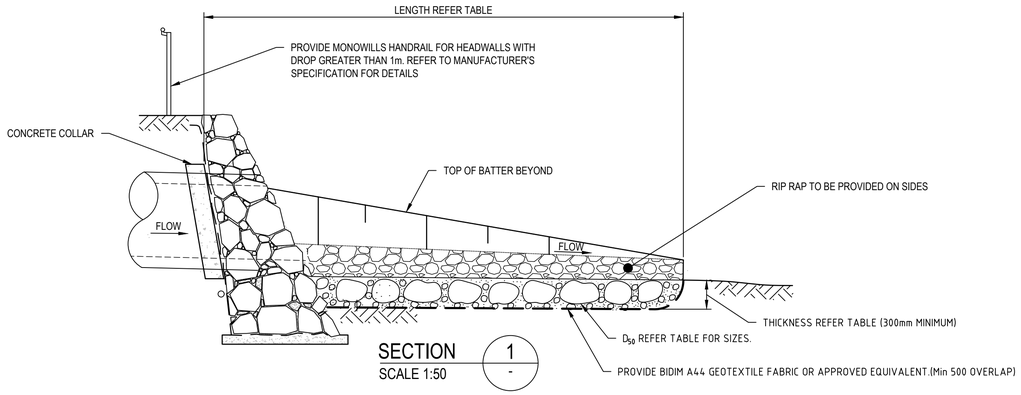
SCALE 1:50

HEADWALL RIP-RAP SCOUR PROTECTION (MINIMUM DIMENSIONS)

OUTLET NUMBER	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)	D50 (mm)
A01 /1	9600	3600	500	300
B01 /1	7200	3600	400	200
C01 /1	5000	2500	400	200
C02 /1	10800	4100	500	300
P01 /1	1500	1200	400	200
Q01 /1	8500	3200	500	300
T01 /1	7200	3600	400	200

NOTE:

1. LAY SCOUR PROTECTION AT CHANNEL BED AND 0.5m UP FROM THE TOE OF BATTER TO PREVENT BANK EROSION.



SECTION 1 / -
SCALE 1:50

TYPICAL OUTLET HEADWALL SCOUR PROTECTION DETAIL

SCALE 1:50

Rev.	Date	Description	Des.	Verif.	Appd.
2	4/03/2020	RE-ISSUED FOR DA APPROVAL	HLD	PL	AJG
1	16/12/2019	ISSUED FOR INFORMATION (50% DA)	HLD		

0 1 2 3 4 5m
SCALE 1:50 @A1

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Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
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		Date
Drawn	TPB	16/12/2019
Checked	PL	16/12/2019
Designed	HLD	16/12/2019
Verified	PL	16/12/2019
Approved	AJG	16/12/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

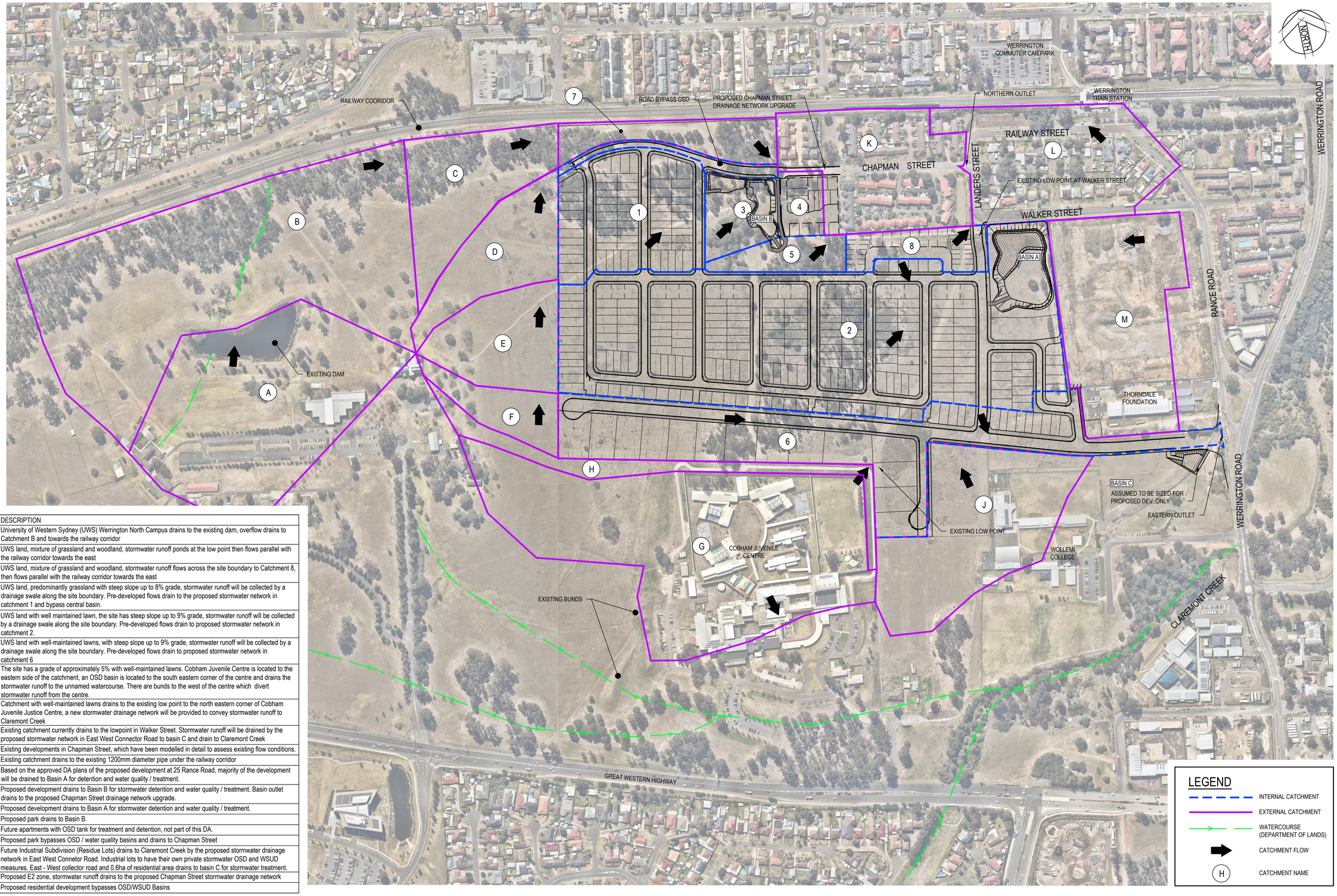
Title: STORMWATER DRAINAGE DETAILS
SHEET 2 OF 2

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Dec' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-2202
Revision: 2

XREF's:
CAD File: N:\Projects\8020\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-2201 STORMWATER DRAINAGE DETAILS.dwg



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
B	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
C	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. Pre-developed flows drain to the proposed stormwater network in catchment 1 and bypass central basin.
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. Pre-developed flows drain to proposed stormwater network in catchment 2.
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. Pre-developed flows drain to proposed stormwater network in 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.
H	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
K	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
M	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	13.8	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	6.1	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

LEGEND

- INTERNAL CATCHMENT
- EXTERNAL CATCHMENT
- WATERCOURSE (DEPARTMENT OF LANDS)
- CATCHMENT FLOW
- (H) CATCHMENT NAME

Rev.	Date	Description	Des.	Verif.	Appd.
5	23/04/2020	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		

0 50 100 150 200 250m
SCALE 1:2500 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: STORMWATER CATCHMENT PLAN

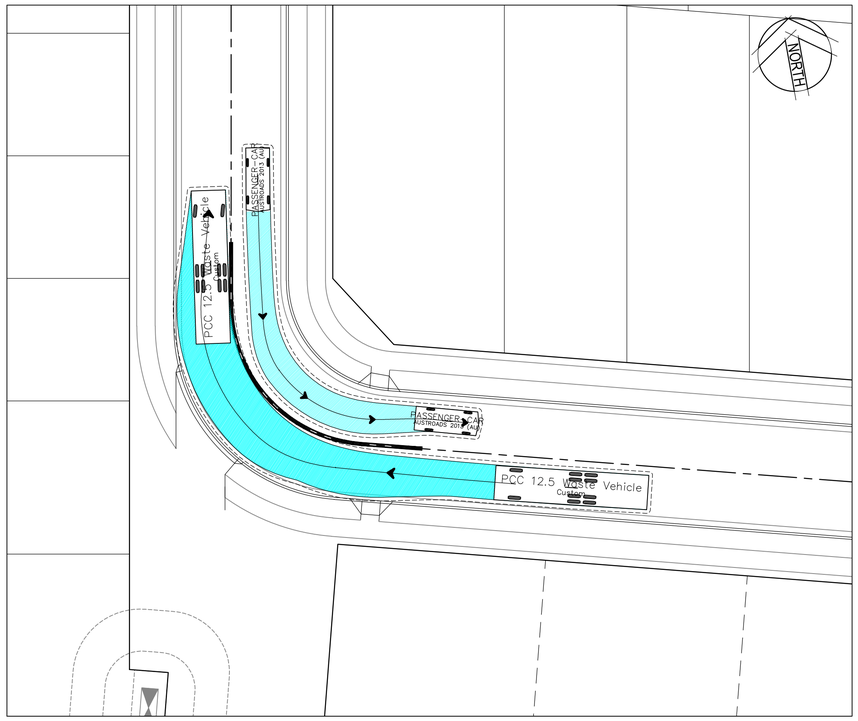
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

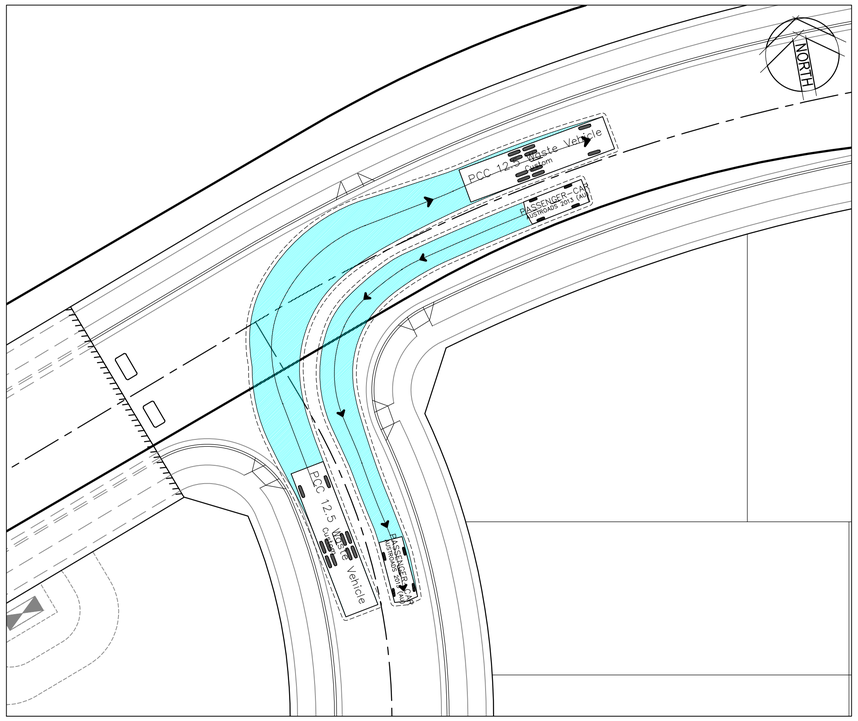
Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:2500	A1

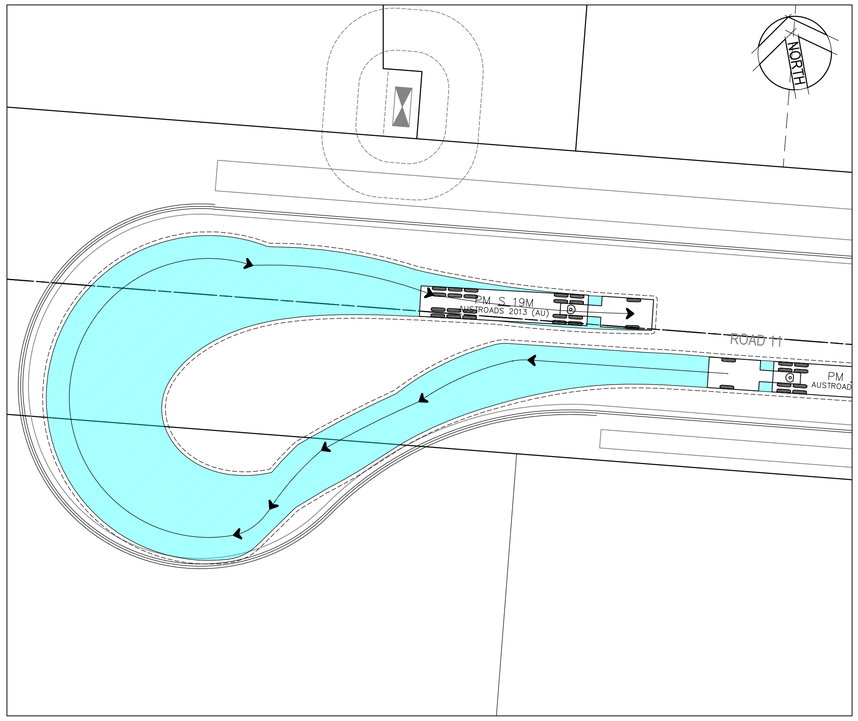
Drawing Number: 80219053-DA001-CI-2301
Revision: 5

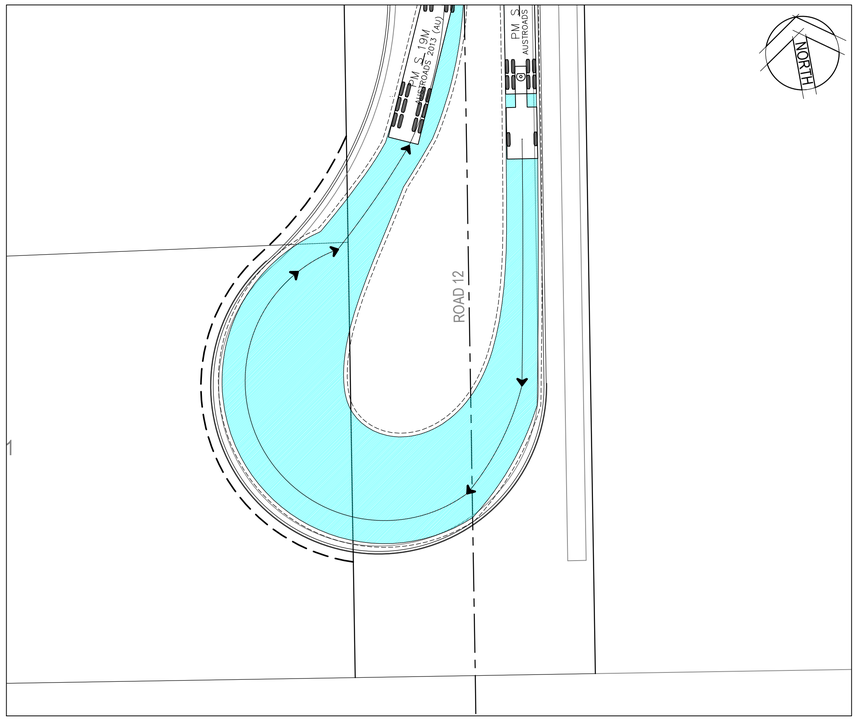
DATE PLOTTED: 17 July 2020 12:03 PM BY - HAYDEN DAVENPORT

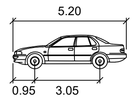
XREF's: XR-80219053-CI-SURVEY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-ROAD; XR-80219053-CI-CATCHMENT-PLAN; XR-80219053-CI-EXST CONTOURS-500; XR-80219053-CI-DESN CONTOURS; XR-80219053-CI-AERIAL; XR-80219053-CI-EXISTING WATERCOURSES; XR-80219053-CI-OSD-PLAN
CAD File: N:\Projects\802\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-2301 STORMWATER CATCHMENT PLAN.dwg





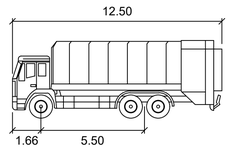






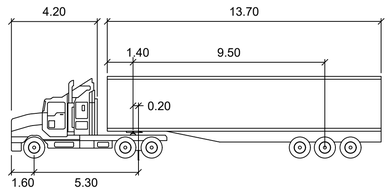
PASSENGER-CAR

		meters
Width	:	1.94
Track	:	1.84
Lock to Lock Time	:	6.0
Steering Angle	:	33.6



PCC 12.5 Waste Vehicle

		meters
Width	:	2.80
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	26.1



PM S 19M

		meters			
Tractor Width	:	2.50	Lock to Lock Time	:	6.0
Trailer Width	:	2.50	Steering Angle	:	27.8
Tractor Track	:	2.50	Articulating Angle	:	70.0
Trailer Track	:	2.50			

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 5 10 15 20m
SCALE 1:200 @A1

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Web: www.cardno.com.au

		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

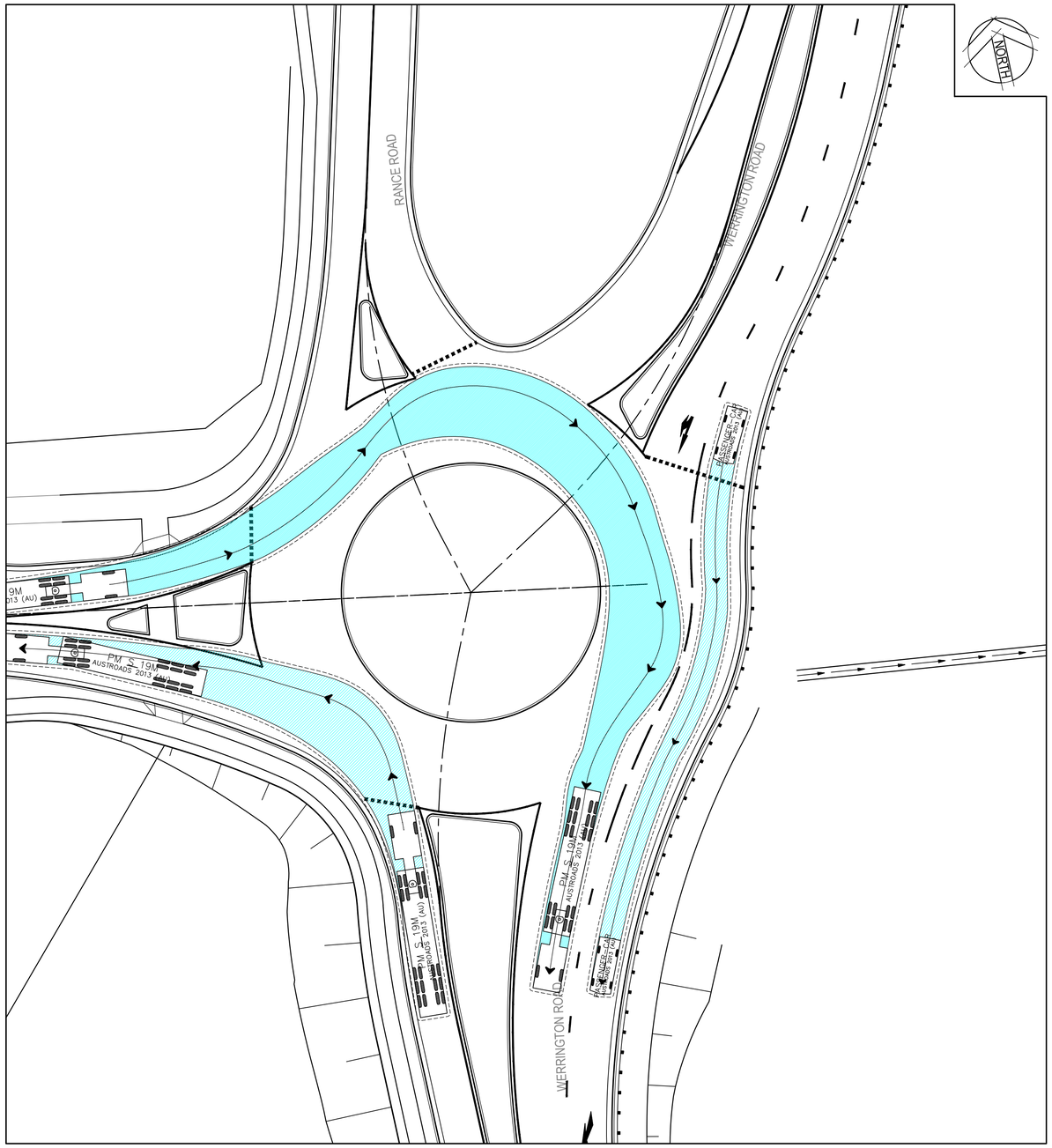
Title: TURN PATH PLANS
SHEET 1 OF 4

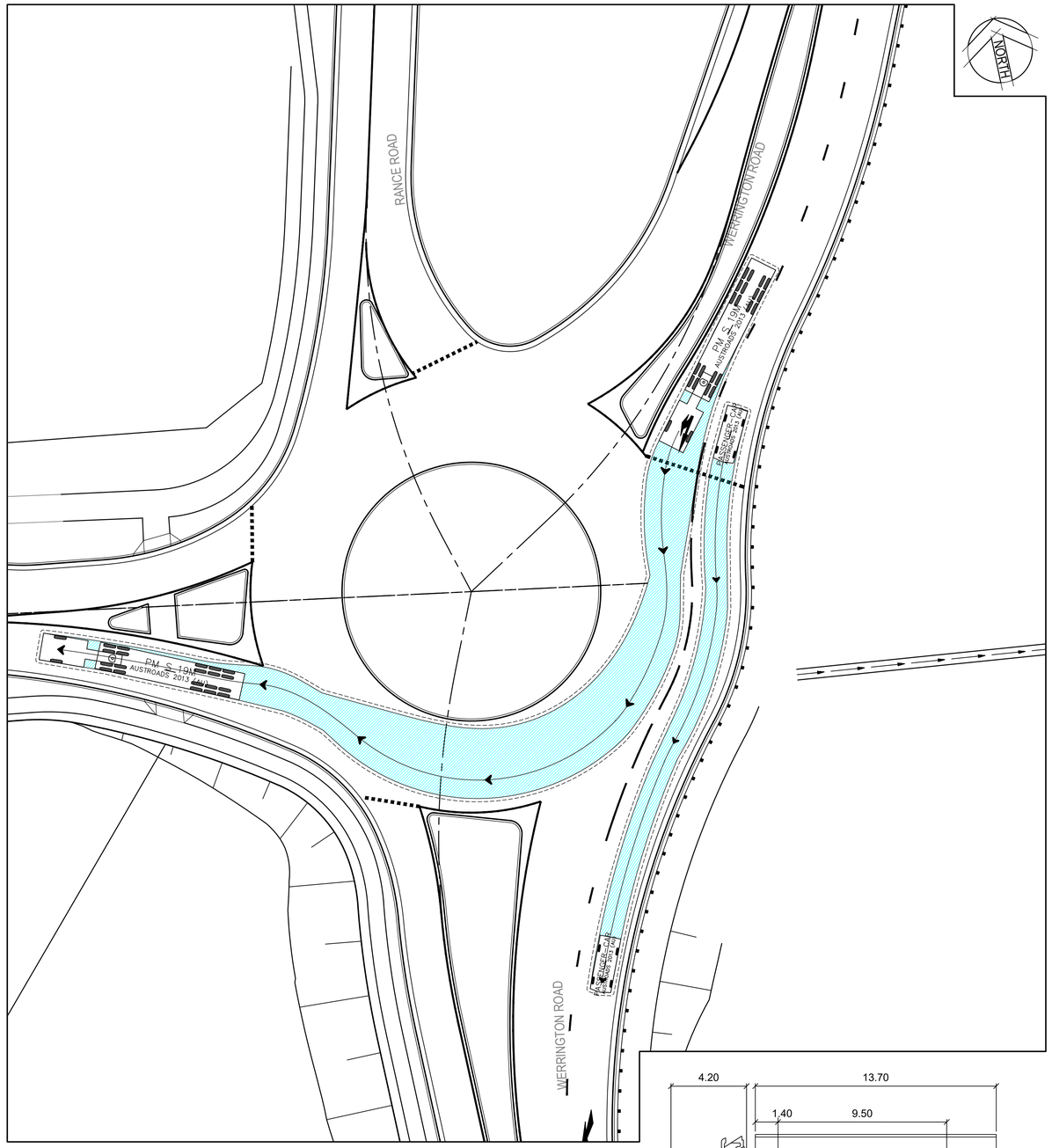
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

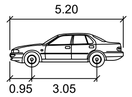
Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-3001
Revision: 5

DATE PLOTTED: 22 July 2020 5:19 PM BY : HAYDEN DAVENPORT
XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-SIGNAGE AND LINEMARKING; XR-80219053-CI-ROUNDABOUT; SW Base Optiix RECONFIGURE 190808
CAD File: N:\Projects\80\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-3001-3005 TURN PATH PLANS.dwg

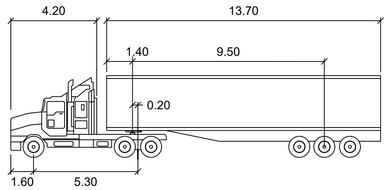






PASSENGER-CAR

		meters
Width	:	1.94
Track	:	1.84
Lock to Lock Time	:	6.0
Steering Angle	:	33.6



PM S 19M

		meters			
Tractor Width	:	2.50	Lock to Lock Time	:	6.0
Trailer Width	:	2.50	Steering Angle	:	27.8
Tractor Track	:	2.50	Articulating Angle	:	70.0
Trailer Track	:	2.50			

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 5 10 15 20 25m
SCALE 1:250 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

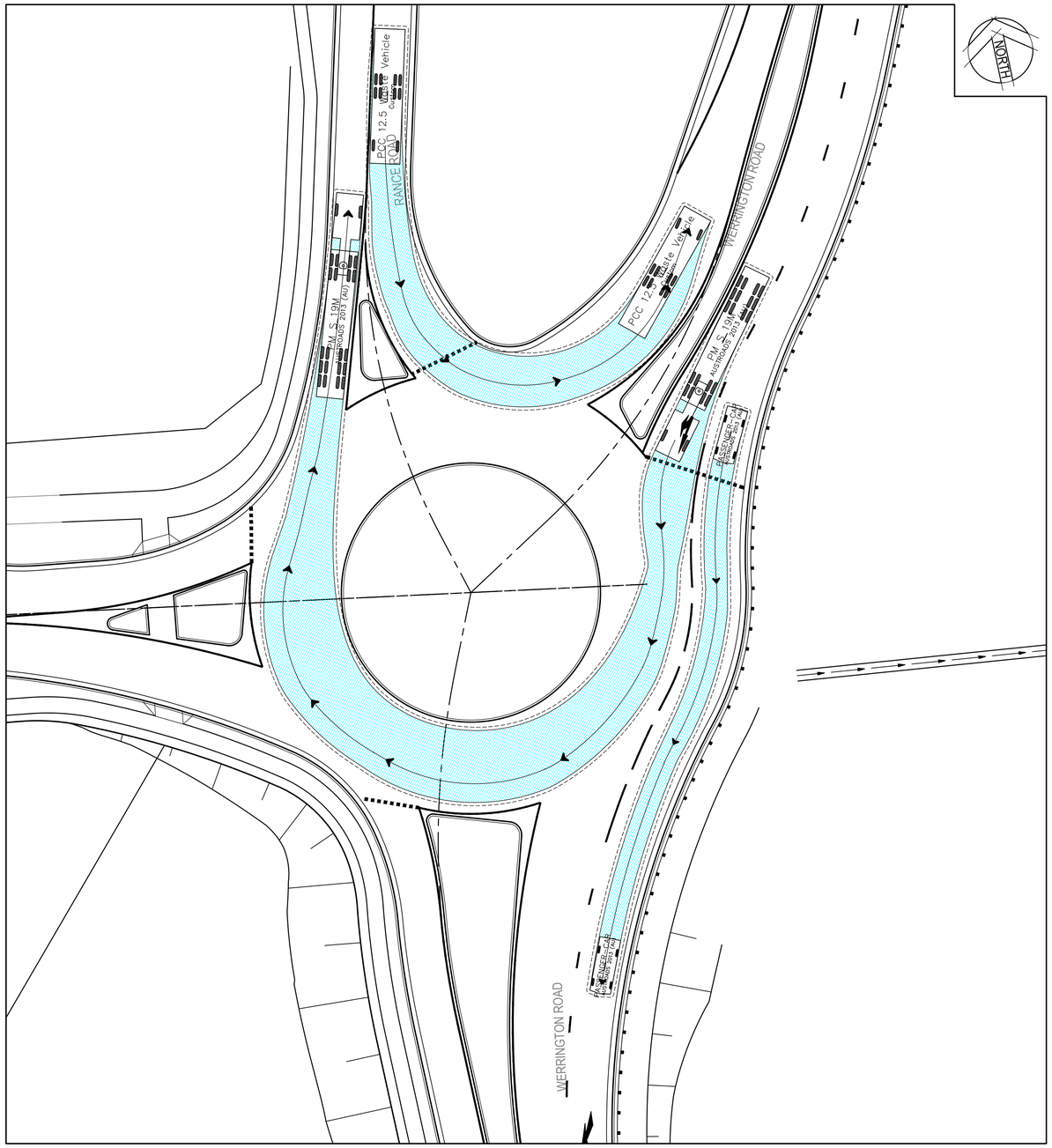
Title: TURN PATH PLANS
SHEET 2 OF 4

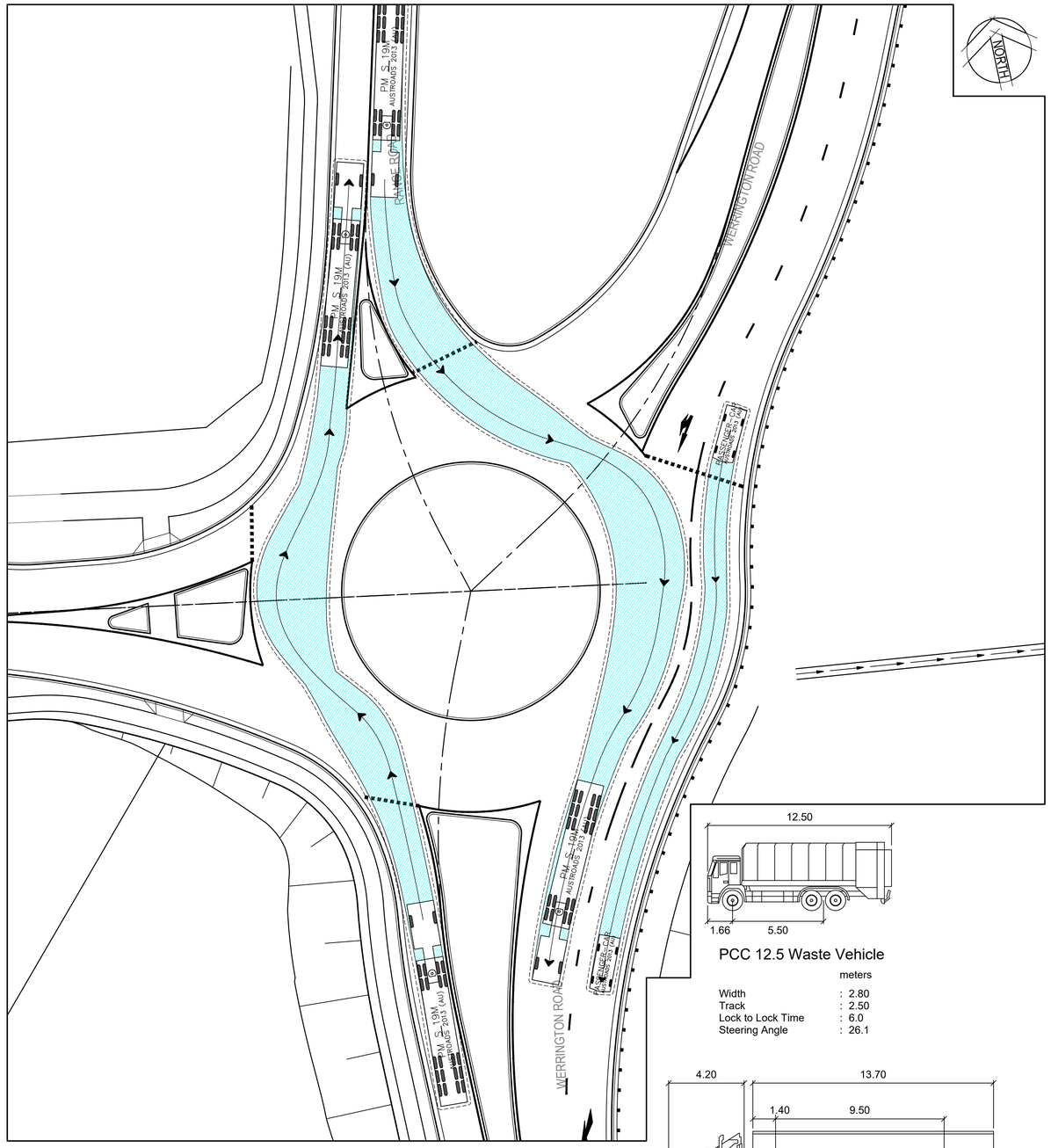
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1

Drawing Number: 80219053-DA001-CI-3002
Revision: 5

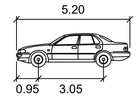
XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-SIGNAGE AND LINEMARKING; XR-80219053-CI-ROUNDABOUT; SW Base Opt9e RECONFIGURE 190808
CAD File: N:\Projects\80\2\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-3001-3005 TURN PATH PLANS.dwg
DATE PLOTTED: 17 July 2020 12:04 PM BY : HAYDEN DAVENPORT





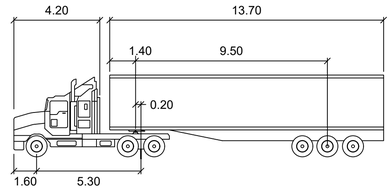
PCC 12.5 Waste Vehicle

	meters
Width	: 2.80
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 26.1



PASSENGER-CAR

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.6



PM S 19M

	meters				
				Lock to Lock Time	: 6.0
				Steering Angle	: 27.8
				Articulating Angle	: 70.0
Tractor Width	: 2.50				
Trailer Width	: 2.50				
Tractor Track	: 2.50				
Trailer Track	: 2.50				

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 5 10 15 20 25m
SCALE 1:250 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: TURN PATH PLANS
SHEET 3 OF 4

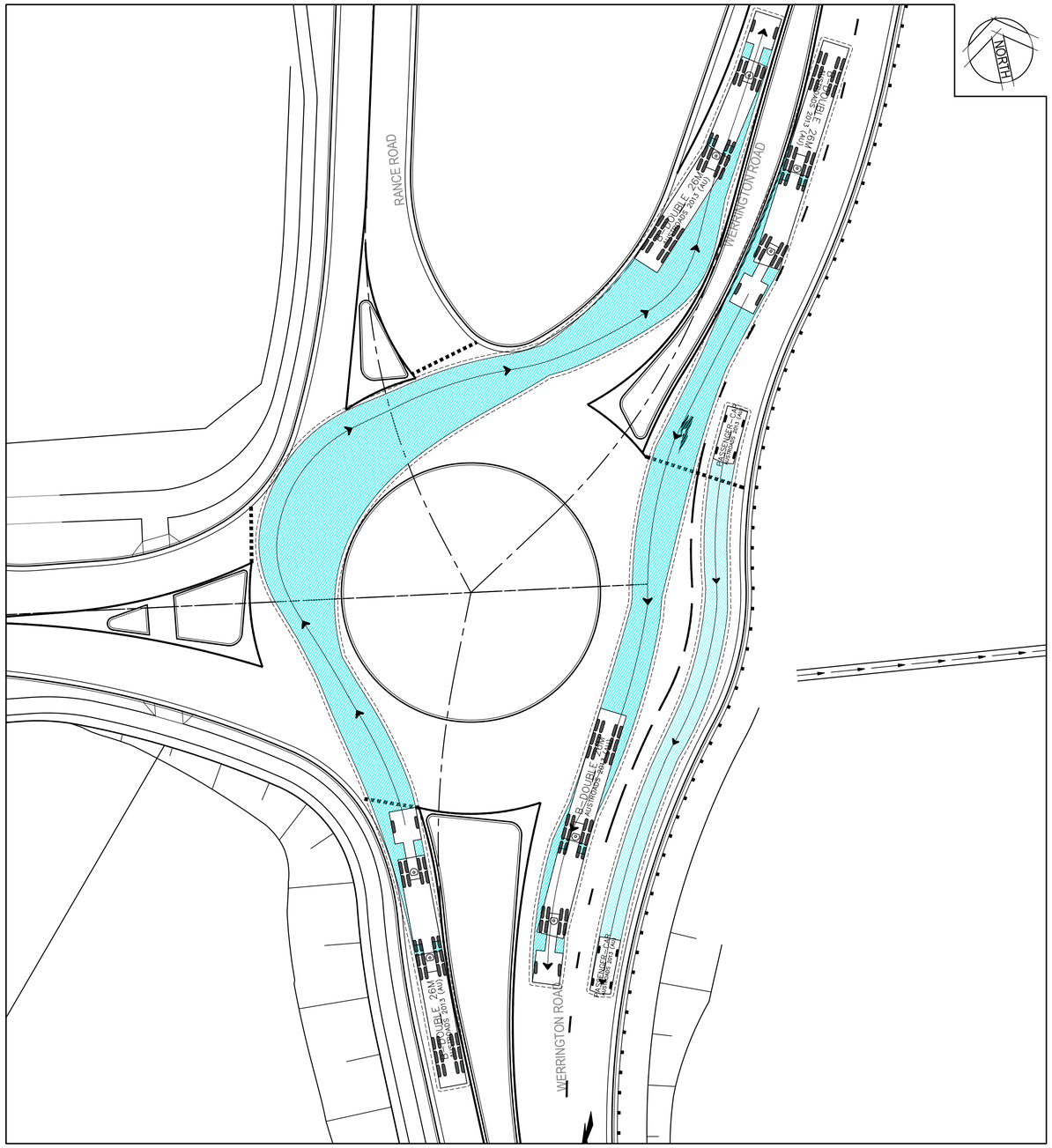
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

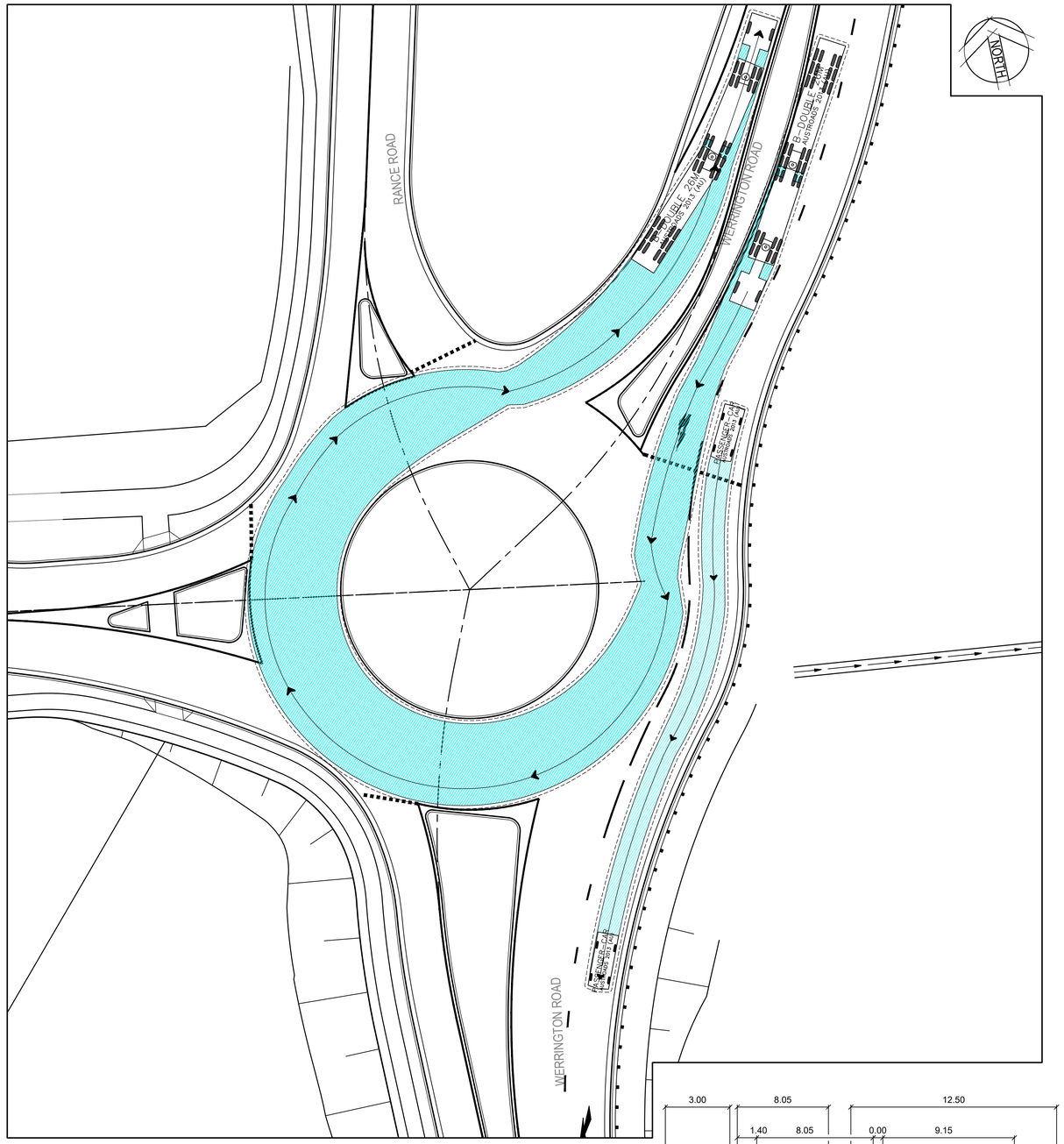
Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:250	A1

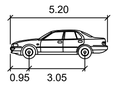
Drawing Number: 80219053-DA001-CI-3003
Revision: 5

XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-SIGNAGE AND LINEMARKING; XR-80219053-CI-SIGNAGE AND LINEMARKING;
CAD File: N:\Projects\80\2\FY19\053_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-3001-3005 TURN PATH PLANS.dwg

DATE PLOTTED: 17 July 2020 12:04 PM BY : HAYDEN DAVENPORT

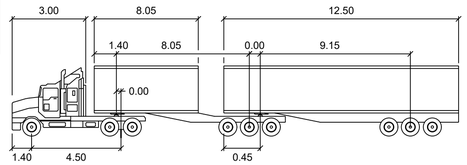






PASSENGER-CAR

		meters
Width	:	1.94
Track	:	1.84
Lock to Lock Time	:	6.0
Steering Angle	:	33.6



B-DOUBLE 26M

		meters					
Tractor Width	:	2.50	Lock to Lock Time	:	6.0
Trailer Width	:	2.50	Steering Angle	:	23.4
Tractor Track	:	2.50	Articulating Angle	:	70.0
Trailer Track	:	2.50			

Rev.	Date	Description	Des.	Verif.	Appd.
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		

0 5 10 15 20 25m

SCALE 1:250 @A1

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		Date
Drawn	YNL	1/10/2019
Checked	PL	1/10/2019
Designed	HLD	1/10/2019
Verified	PL	1/10/2019
Approved	AJG	1/10/2019

Client: LENDLEASE COMMUNITIES

Project: CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title: TURN PATH PLANS
SHEET 4 OF 4

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:250	A1

Drawing Number: 80219053-DA001-CI-3004

Revision: 5

XREF's: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-VPORTS; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-SIGNAGE AND LINEMARKING; XR-80219053-CI-ROUNDABOUT; SW Base Optie RECONFIGURE 190808

CAD File: N:\Projects\802\FY19\53_Chapman St-Werrington\Drawings\Build\001 CIVIL WORKS\DA\80219053-DA001-CI-3001-3005 TURN PATH PLANS.dwg

DATE PLOTTED: 17 July 2020 12:04 PM BY : HAYDEN DAVENPORT