

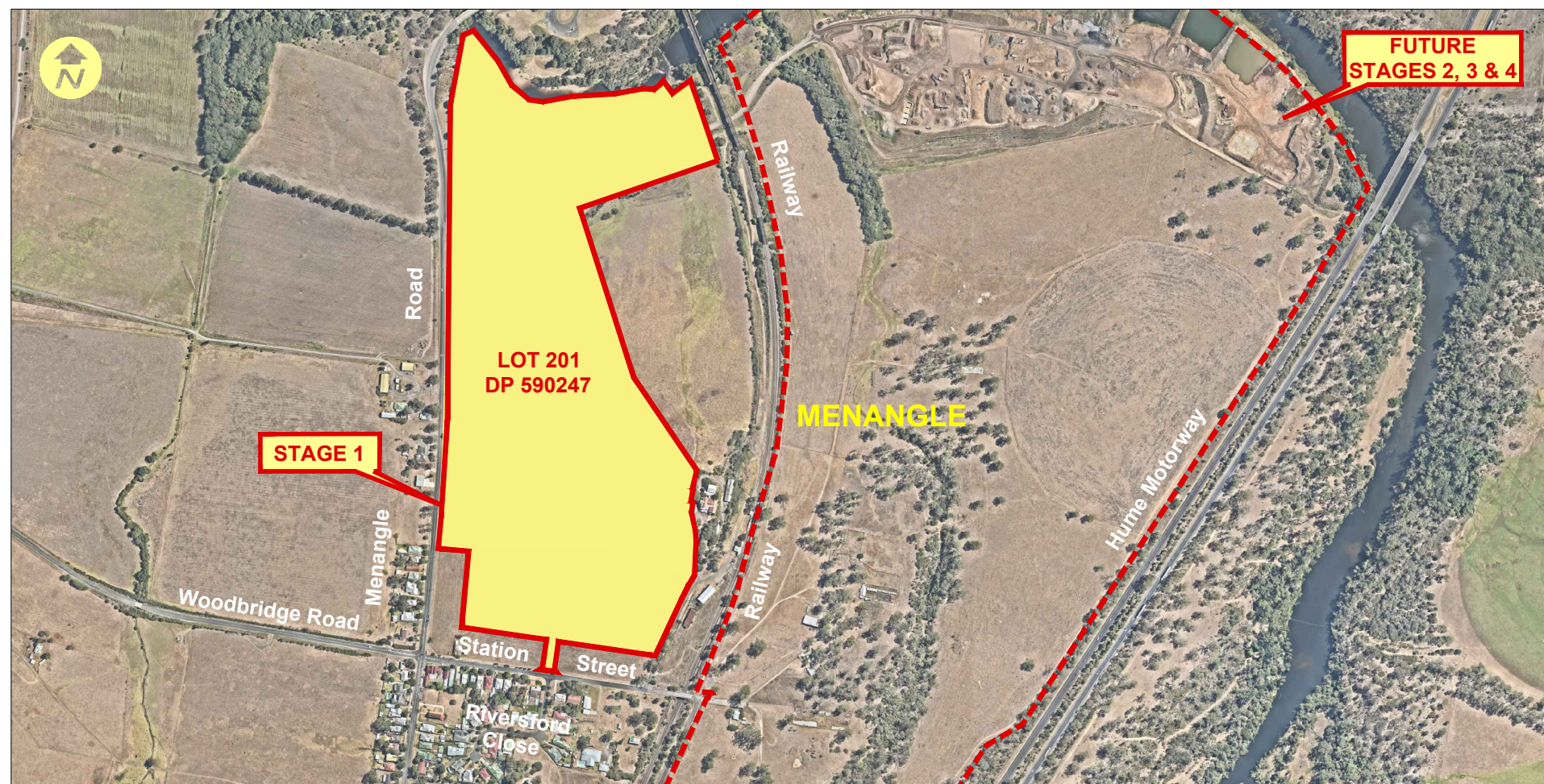
STATION ST, MENANGLE - STAGE 1

ROAD & DRAINAGE

ISSUED FOR DEVELOPMENT APPLICATION

DRAWING LIST

NO.	
GENERAL	
000	COVER SHEET
001	GENERAL ARRANGEMENT PLAN
002	SHEET LAYOUT PLAN
003	GENERAL NOTES & LEGEND
SEDIMENT & EROSION CONTROL	
101	CONCEPT SEDIMENT & EROSION CONTROL PLAN
102	CONCEPT SEDIMENT & EROSION CONTROL NOTES & DETAILS
103	SEDIMENT CATCHMENT PLAN
SITE REGRADING	
201	SITE REGRADING PLAN 01 OF 02
202	SITE REGRADING PLAN 02 OF 02
211	SITE SECTIONS SHEET 01 OF 04
212	SITE SECTIONS SHEET 02 OF 04
213	SITE SECTIONS SHEET 03 OF 04
214	SITE SECTIONS SHEET 04 OF 04
ENGINEERING PLANS	
301	ENGINEERING PLANS 01 OF 02
302	ENGINEERING PLANS 02 OF 02
ROAD LONGITUDINAL SECTIONS	
401	ROAD No.01 LONGITUDINAL & TYPICAL CROSS SECTIONS
402	ROAD No.02 LONGITUDINAL & TYPICAL CROSS SECTIONS
403	ROAD No.03 & MENANGLE RD LONGITUDINAL & TYPICAL CROSS SECTIONS
404	ROAD STEVENS ROAD LONGITUDINAL & TYPICAL CROSS SECTIONS



LOCALITY PLAN
N.T.S.

LGA WOLLONDILLY COUNCIL
LOT 201 D.P.590247
PRE-LODGEMENT No.568-690

CLIENT:



STATION ST, MENANGLE - STAGE 1
ROAD & DRAINAGE



IMAGE SOURCED FROM NEARMAP DATE: 02/03/2018

AMENDMENT	AMENDMENT DETAILS				
	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED
1	LF	VS	MC	JM	20/08/2018
2	LF	JS	EF	JM	23/01/2019
3	LF	BM	EF	JM	21/02/2019

STATUS

ISSUED FOR DEVELOPMENT APPLICATION

AUTHORISED FOR ISSUE:

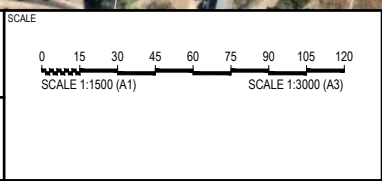
BY: JOSEPH MEKARY

BE (Civil) MIEAust. MBA MPM JP

SIGN:

DATE:

21/02/19



CLIENT

© 2019 www.calibregroup.com

PROJECT

STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE

DISCLAIMER

ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE			
GENERAL ARRANGEMENT PLAN			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
17-003293-01	001	DA	2




AMENDMENT	AMENDMENT DETAILS					
	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPRO.	DATE
1	LF	VS	MC	JM	20/08/2018	ISSUE FOR DEVELOPMENT APPLICATION
2	LF	JS	EF	JM	23/01/2019	ISSUE TO SUIT CLIENT COMMENTS
3	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS
4						
5						
6						
7						
8						
9						
10						

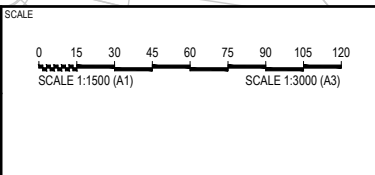
STATUS

ISSUED FOR DEVELOPMENT APPLICATION

AUTHORISED FOR ISSUE:

BY: JOSEPH MEKARY
BE (Civil) MIEAust. MBA MP M JP

SIGN: 
DATE: 21/02/19



PROJECT

STATION ST, MENANGLE - STAGE 1
ROAD & DRAINAGE

DISCLAIMER

ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE			
SHEET LAYOUT PLAN			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
17-003293-01	002	DA	2

GENERAL NOTES

GENERAL

- G1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH WOLLONDILLY COUNCIL ENGINEERING DESIGN AND ENGINEERING CONSTRUCTION SPECIFICATIONS AND TO THE REQUIREMENTS OF THE CERTIFYING AUTHORITY.
- G2. INSPECTIONS BY CERTIFYING AUTHORITY ARE REQUIRED AT THE FOLLOWING STAGES AND THE WORKS APPROVED PRIOR TO CONTINUANCE OF ANY FUTURE WORK:
- (A) FOLLOWING INSTALLATION OF EROSION AND SEDIMENT CONTROL STRUCTURES/MEASURES.
- (B) PRIOR TO BACKFILLING PIPELINES, SUBSOIL DRAINS AND DAMS.
- (C) PRIOR TO CASTING OF PITS AND OTHER CONCRETE STRUCTURES, INCLUDING KERB AND GUTTER BUT FOLLOWING PLACEMENT OF FOOTINGS, FORMWORK, AND REINFORCEMENT.
- (D) PRIOR TO PLACEMENT OF SUB BASE AND ALL SUBSEQUENT PAVEMENT LAYERS, A PROOF ROLLER TEST OF EACH PAVEMENT LAYER IS REQUIRED.
- (E) FORMWORKS PRIOR TO POURING CONCRETE IN PARKING AREA FOR FOOTPATH CROSSING AND OTHER ASSOCIATED WORK.
- (F) PRIOR TO BACKFILLING PUBLIC UTILITY CROSSINGS IN ROAD RESERVES.
- (G) FINAL INSPECTIONS AFTER ALL WORKS ARE COMPLETED AND 'WORKS AS EXECUTED' PLANS HAVE BEEN SUBMITTED TO COUNCIL.
- G3. NO TREES ARE TO BE REMOVED UNLESS APPROVAL IS GRANTED BY COUNCIL'S LANDSCAPE COMPLIANCE OFFICER OR AS AUTHORISED BY DEVELOPMENT CONSENT.
- G4. MAKE SMOOTH JUNCTIONS WITH EXISTING WORKS.
- G5. NO WORK IS TO BE CARRIED OUT ON COUNCIL PROPERTY OR ADJOINING PROPERTIES WITHOUT THE WRITTEN PERMISSION FROM THE OWNERS.
- G6. VEHICULAR ACCESS AND ALL UTILITIES/SERVICES ARE TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION.
- G7. ALL RUBBISH, BUILDINGS, SHEDS AND FENCES TO BE REMOVED TO SATISFACTION OF COUNCIL'S ENGINEER.
- G8. COUNCIL ENGINEERS HAVE DISCRETION TO VARY, AS CONSIDERED NECESSARY, THE ENGINEERING REQUIREMENTS IN RESPECT OF A PARTICULAR SUBDIVISION OR DEVELOPMENT HAVING REGARD TO THE SITE CONTEXT.

EARTHWORKS

- E1. EARTHWORKS ARE TO BE CARRIED OUT TO THE SATISFACTION OF THE COUNCIL. UNSUITABLE MATERIALS ARE TO BE REMOVED FROM ROADS AND LOTS PRIOR TO FILLING. THE CONTRACTOR IS TO ARRANGE AND MAKE AVAILABLE COMPACTION TESTING RESULTS FOR ALL AREAS THAT CONTAIN FILL IN EXCESS OF 200mm.
- E2. COMPACTION OF EARTHWORKS SHALL CONTINUE UNTIL A DRY DENSITY RATIO OF 95% FOR SITE FILLING AND 100% FOR ROAD PAVEMENT SUBGRADES HAS BEEN ACHIEVED IN ACCORDANCE WITH TEST METHOD AS1289.5.3.1 OR AS.1289.5.1.1. THE CONTROL TESTING OF EARTHWORKS SHALL BE IN ACCORDANCE WITH THE GUIDELINES IN AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS'. WHERE IT IS PROPOSED TO USE TEST METHOD AS1289.5.8.1 TO DETERMINE THE FIELD DENSITY, A SAND REPLACEMENT METHOD SHALL BE USED TO CONFIRM THE RESULTS.
- E3. THE SUITABLE QUALIFIED GEOTECHNICAL ENGINEER, SHALL HAVE A LEVEL 1 RESPONSIBILITY FOR ALL FILLING AS DEFINED IN APPENDIX B AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS', AND AT THE END OF THE WORKS SHALL CONFIRM THE EARTHWORKS COMPLY WITH THE REQUIREMENTS OF THE SPECIFICATION AND DRAWINGS BY WRITTEN NOTIFICATION.
- E4. IN AREAS TO BE FILLED WHERE THE SLOPE OF THE NATURAL SURFACE EXCEEDS 1(V):4(H), BENCHES ARE TO BE CUT TO PREVENT SLIPPING OF THE PLACED FILL MATERIAL AS REQUIRED BY THE COUNCIL.
- E5. ALL BATTERS ARE TO BE SCARIFIED TO A DEPTH OF 50mm TO ASSIST WITH ADHESION OF TOP SOIL TO BATTER FACE.
- E6. PROVIDE MINIMUM 150mm AND MAXIMUM 300mm TOPSOIL ON FOOTPATHS, FILLED AREAS AND ALL OTHER AREAS DISTURBED DURING CONSTRUCTION. TOPSOILED AREAS TO BE STABILISED WITH APPROVED VEGETATION A MAXIMUM OF 14 DAYS AFTER TOPSOILING AND ARE TO BE WATERED TO ENSURE GERMINATION.
- E7. THE CONTRACTOR SHALL CONTROL SEDIMENTATION, EROSION AND POLLUTION DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF 'MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION' PRODUCED BY LANDCOM.
- E8. A MINIMUM 1m WIDE, CONTINUOUS STRIP OF COUCH GRASS SHALL BE PLACED BEHIND THE BACK OF ALL KERBS & OTHER CONCRETE STRUCTURES IMMEDIATELY AFTER THE COMPLETION OF THE FOOTPATH GRADING OR OTHER ELEMENTS AS APPLICABLE, AND SHALL BE MAINTAINED AND REPLACED AS REQUIRED DURING THE CONSTRUCTION MAINTENANCE PERIOD.

CALIBRE CONSULTING GENERAL

- CG1. SURVEY SOURCED FROM:
-SURVEYOR: ADW JOHNSON
-D.T.M.& BOUNDARY: 300058-DET-001-C.dwg SURVEY DATED 28/05/2018
- CG2. CONTRACTOR IS TO ENSURE THAT ALL WORKS ASSOCIATED WITH PROPERTY BOUNDARIES ARE TO BE SET OUT OR VERIFIED BY A REGISTERED SURVEYOR

ROADWORKS

- R1. SUBGRADES AND SUB BASES ARE TO BE COMPACTED IN ACCORDANCE WITH COUNCIL'S CONSTRUCTION SPECIFICATION.
- R2. SUBSOIL DRAINS TO BE PROVIDED ON BOTH SIDES OF ROADS (EXCEPT WHERE THERE IS STORMWATER DRAINAGE).
- R3. 150 x 50 H.D. GALVANISED STEEL KERB OUTLETS TO BE PLACED IN ALL KERB TYPES ON LOW SIDE OF LOTS. PROVIDE SUITABLE ADAPTOR TO ALLOW CONNECTION OF 90mm DIAMETER STORMWATER PIPE.
- R4. LIPLESS PERAMBULATOR CROSSINGS ARE TO BE PROVIDED IN ALL KERB RETURNS AND WHERE REQUIRED BY COUNCIL.
- R5. SERVICE CONDUITS TO BE PLACED AS DIRECTED BY ALL PUBLIC UTILITY AUTHORITIES INCLUDING INTEGRAL ENERGY, TELSTRA AND SYDNEY WATER
- R6. PROPOSED UTILITIES AND SERVICES CROSSING EXISTING ROADS SHALL BE PROVIDED FOR USING A TRENCHLESS TECHNIQUE SO AS NOT TO DAMAGE THE EXISTING SURFACE. ALL SERVICE CONDUITS UNDER ROADS MUST BE LAID TO A MINIMUM DEPTH OF 750mm.
- R7. CONCRETE FOOTPATH CONSTRUCTION IS TO BE BONDED WITH COUNCIL PENDING COMPLETION OF UTILITY/SERVICES AND SURROUNDING DWELLINGS.
- R8. ALL TEMPORARY ROADS MUST BE TEMPORARILY SEALED WITH A SINGLE COAT FLUSH SEAL.
- R9. ALL PERMANENT ROADS MUST BE SEALED WITH A SINGLE COAT FLUSH SEAL AND 50mm OF AC TO BE APPLIED IN TWO 25mm THICK LAYERS. THE FINAL AC LAYER IS TO BE AC 10 AND IS TO BE BONDED WITH COUNCIL AND PLACED FOLLOWING APPROVAL FROM COUNCIL.
- R10. SIGNPOSTING AND LINE MARKING SHALL CONFORM TO AS1742.2 'TRAFFIC CONTROL DEVICES FOR GENERAL USE'. RAISED RETRO-REFLECTIVE PAVEMENT MARKERS TO CONFORM TO AS1906 'RETRO-REFLECTIVE MATERIALS AND DEVICES FOR ROAD TRAFFIC CONTROL PURPOSES'. ALL APRONS AND KERB FACE ON CENTRAL ISLANDS OF ROUNDABOUTS AND ALL OTHER ISLANDS TO BE DELINEATED BY REFLECTIVE WHITE MARKING. INSTALLATION SHALL OCCUR IN ACCORDANCE WITH THE PLAN APPROVED BY THE LOCAL TRAFFIC COMMITTEE.
- R11. ALL LOT AND HOUSE NUMBERS MUST BE STENCILLED ON KERB FACE.
- R12. STREET SIGNS TO COUNCIL STANDARD MUST BE INSTALLED BY THE CONTRACTOR.

STORMWATER

- S1. ALL PIPES TO BE SPIGOT AND SOCKET, RUBBER RING JOINTED.
- S2. ALL LONGITUDINAL PIPELINES IN ROADS MUST BE LOCATED UNDER KERB AND GUTTER AND BE BACKFILLED WITH APPROVED GRANULAR MATERIAL UNLESS OTHERWISE APPROVED BY THE COUNCIL ENGINEER.
- S3. DRAINAGE LINES MUST BE BACKFILLED WITH APPROVED GRANULAR MATERIAL IN TRAFFICABLE AREAS. THREE (3) METRES OF SUBSOIL DRAINAGE WRAPPED IN GEOTEXTILE STOCKING MUST BE PROVIDED TO ALL DOWNSTREAM PITS.
- S4. ALL GULLY PITS TO COUNCIL'S STANDARD AND LINTELS CENTRALLY PLACED AT SAG PITS.
- S5. ALL PITS MUST BE BENCHED AND STREAMLINED. PROVIDE SL72 REINFORCEMENT AND GALVANISED STEP IRONS IN ALL PITS OVER 1.2-METRES DEEP AS MEASURED FROM THE TOP OF GRATE TO THE INVERT OF THE PIT.
- S6. CONCRETE IS TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 32MPa AT 28-DAYS UNLESS OTHERWISE APPROVED BY THE COUNCIL ENGINEER.
- S7. ALL INTER-ALLOTMENT DRAINAGE MUST HAVE A MINIMUM PIPE DIAMETER OF 150mm AND A MINIMUM GRADE OF 1% UNLESS OTHERWISE APPROVED BY THE COUNCIL ENGINEER.
- S8. ALL INTER-ALLOTMENT DRAINAGE LINES MUST BE LAID CENTRALLY WITHIN DRAINAGE EASEMENTS. INSPECTION PITS MUST BE PROVIDED AT ALL CHANGES OF GRADE AND DIRECTION.
- S9. INTER-ALLOTMENT DRAINAGE LINES MUST BE INSTALLED AFTER SYDNEY WATER SEWERAGE LINES HAVE BEEN INSTALLED WHERE SEWER IS PROPOSED ADJACENT TO INTER-ALLOTMENT DRAINAGE LINES.
- S10. 1% AEP OVERLAND FLOW PATHS MUST BE FORMED AND SHOWN ON 'WORKS AS EXECUTED' DRAWINGS.
- S11. ALL PLANS (BOTH DESIGN AND WAE) ARE TO CLEARLY DELINEATE THE EXTENT/LOCATION OF FLOOD LINES INCLUDING THE 5% AEP, 1% AEP AND PMF.
- S12. ADEQUATE PROVISION IS TO BE MADE TO PREVENT SCOURING AND SEDIMENTATION FOR ALL DRAINAGE WORKS IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
- S13. PIT LINTELS ARE TO BE STENCILLED WITH APPLICABLE DISTINCTION STENCIL AVAILABLE FROM COUNCIL.
- S14. CATCH DRAINS MUST BE CONSTRUCTED AS REQUIRED BY THE APPROVED PLANS OR THE PRINCIPAL CERTIFYING AUTHORITY.
- S15. SOIL AND WATER MANAGEMENT PLANS ARE TO BE PREPARED FOR ALL DISTURBED SITES AND ADHERED TO AT ALL TIMES DURING THE CONSTRUCTION AND MAINTENANCE PERIODS.

DIGITAL MODELS CREATED BY CALIBRE UNDER THIS COMMISSION ARE CREATED FOR THE PURPOSE OF THE PREPARATION OF DRAWINGS AND ESTIMATES OF QUANTITIES. INFORMATION CONTAINED IN THE DRAWINGS TAKES PRECEDENCE OVER THE DIGITAL MODEL UPON WHICH IT WAS BASED. USE OF DIGITAL MODELS, CREATED BY CALIBRE, BY OTHER PARTIES TO SET OUT WORKS OR FOR OTHER REASONS IS DONE ENTIRELY AT THE RISK OF THE PARTY SO USING THE DIGITAL MODEL

LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
STORMWATER PIPELINE			
STORMWATER DRAINAGE PITS			
DRAINAGE LINE No. 3 DRAINAGE PIT No. 10			
CONCRETE HEADWALL			
SUBSOIL DRAIN			
150mm KERB AND GUTTER			
ROLL KERB AND GUTTER			
KERB ONLY			
EDGE STRIP			
MOUNTABLE KERB			
DISH CROSSING			
VEHICULAR CROSSING			
PEDESTRIAN RAMP			
EDGE OF BITUMEN			
ROAD PAVEMENT			
BENCHMARK			
BATTERS			
CONCRETE PATHWAY			
CONTOURS			
SITE REGRADING AREA			
SERVICE LINES SEWER, GAS, WATER, ELECTRICITY, RECYCLED WATER			
COMMUNICATION LINES TELSTRA, FIBRE OPTIC, NBN			
OVER HEAD LINES AND POLES			
SERVICE PITS TELECOM PIT, ACCESS CHAMBER, HYDRANT, STOP VALVE, AIR VALVE			
LIMIT OF ROAD CONSTRUCTION			
LIMIT OF STAGE			
FENCE POST AND RAIL FENCE SECURITY FENCE			
LOT NUMBERS			
TREES TO RETAIN WITHIN SITE TREES TO REMOVED WITHIN SITE			
RETAINING WALL			
ROCK WALL			
ROOF WATER OUTLET TO KERB			
ROOF WATER OUTLET TO BACK OF PIT			

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
1	LF	VS	MC	JM	20/08/2018	
2	LF	JS	EF	JM	23/01/2019	ISSUE FOR DEVELOPMENT APPLICATION
3	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS

STATUS	SCALE	CLIENT
ISSUED FOR DEVELOPMENT APPLICATION		
AUTHORISED FOR ISSUE: BY: JOSEPH MEKARY BE (Civil) MIEAust. MBA MPM JP	SIGN: DATE: 21/02/19	



PROJECT
STATION ST, MENANGLE - STAGE 1
ROAD & DRAINAGE

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE
GENERAL NOTES & LEGEND

PROJECT No. 17-003293-01
DRAWING No. 003
MILESTONE DA
REVISION 2



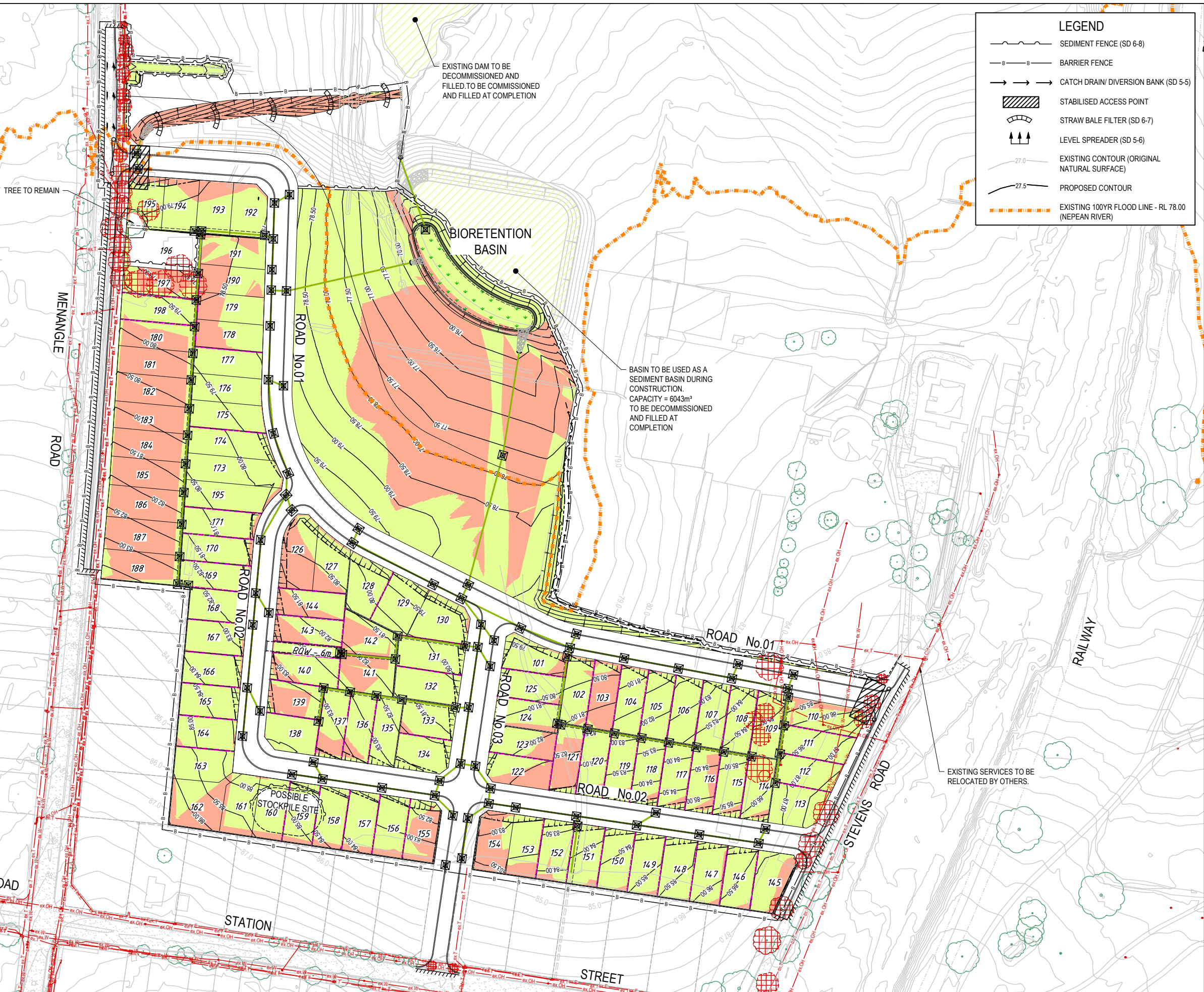
1. Erosion Hazard and Sediment Basins

Site Name: STATION ST
Site Location: MENANGLE
Precinct/Stage: BEW DA
Other Details: Basin 1

Site area	Sub-catchment or Name of Structure				Notes
Total catchment area (ha)	1	2	3	4	
Disturbed catchment area (ha)	10.3				
Soil analysis (enter sediment type if known, or laboratory particle size data)					
Sediment Type (C, F or D) if known:	D				From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)	10				Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)	70				
% clay (fraction finer than 0.002 mm)	20				
Dispersion percentage	10.0				E.g. enter 10 for dispersion of 10%
% of whole soil dispersible	5.5				See Section 6.3.3(e). Auto-calculated
Soil Texture Group	D				Automatic calculation from above
Rainfall data					
Design rainfall depth (no. of days)	5				See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	75				
x-day, y-percentile rainfall event (mm)	20.2				
Rainfall R-factor (if known)					Only need to enter one or the other here
IFD 2-year, 6-hour storm (if known)	9.6				
RUSLE Factors					
Rainfall erosivity (R-factor)	2060				Auto-filled from above
Soil erodibility (K-factor)	0.038				
Slope length (m)	260				
Slope gradient (%)	3				RUSLE LS factor calculated for a high winter rainfall rate.
Length/gradient (LS-factor)	1.14				
Erosion control practice (P-factor)	1.3	1.3	1.3	1.3	
Ground cover (C-factor)	1	1	1	1	
Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)					
Storage (soil) zone design (no. of months)	2				Minimum is generally 2 months
Cv (Volumetric runoff coefficient)	0.5				See Table F2, page F-4 in Appendix F
Calculations and Type D/F Sediment Basin Volumes					
Soil loss (t/ha/yr)	116				
Soil Loss Class	1				See Table 4.2, page 4-13
Soil loss (m ³ /ha/yr)	89				Conversion to cubic metres
Sediment basin storage (soil) volume (m ³)	153				See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m ³)	1990				See Sections 6.3.4(i) for calculations
Sediment basin total volume (m ³)	2133				

NB for sizing of Type C (coarse) sediment basins, see Worksheet 3 (if required).

LEGEND	
	SEDIMENT FENCE (SD 6-8)
	BARRIER FENCE
	CATCH DRAIN/DIVERSION BANK (SD 5-5)
	STABILISED ACCESS POINT
	STRAW BALE FILTER (SD 6-7)
	LEVEL SPREADER (SD 5-6)
	EXISTING CONTOUR (ORIGINAL NATURAL SURFACE)
	PROPOSED CONTOUR
	EXISTING 100YR FLOOD LINE - RL 78.00 (NEPEAN RIVER)



FIRST	DESIGN	DRAWN	CHECK	APPRO.	DATE	AMENDMENT DETAILS
1	LF	VS	MC	JM	20/08/2018	
2	LF	JS	EF	JM	23/01/2019	ISSUE FOR DEVELOPMENT APPLICATION
3	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS

STATUS		SCALE		CLIENT	
ISSUED FOR DEVELOPMENT APPLICATION		0 10 20 30 40 50 60 70 80 SCALE 1:1000 (A1) SCALE 1:2000 (A3)		mirvac	
AUTHORISED FOR ISSUE: BY: JOSEPH MEKARY BE (Civil) MIEAust. MBA MPM JP		SIGN: DATE: 21/02/19		calibre	

PROJECT		DRAWING TITLE	
STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE		CONCEPT SEDIMENT & EROSION CONTROL PLAN	
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY		PROJECT No. 17-003293-01 DRAWING No. 101 MILESTONE DA REVISION 2	

© 2019	www.calibregroup.com
--------	----------------------

STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE

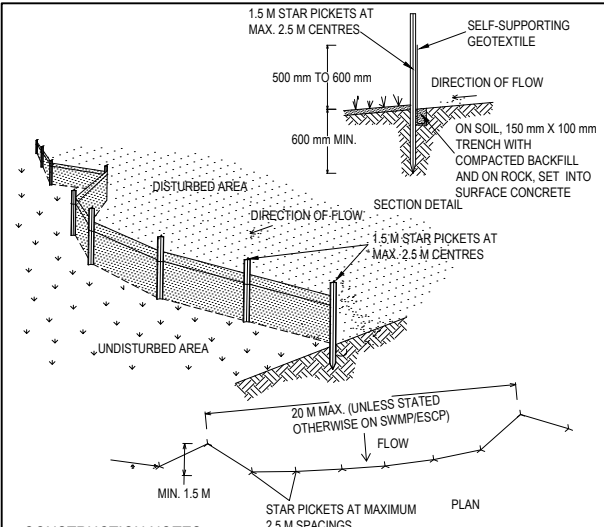
CONCEPT SEDIMENT & EROSION CONTROL PLAN
--

PROJECT No. 17-003293-01	DRAWING No. 101	MILESTONE DA	REVISION 2
--------------------------	-----------------	--------------	------------

SEDIMENT & EROSION CONTROL NOTES

- THE CONTRACTOR SHALL IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE COMMENCEMENT OF ANY WORKS BEING CARRIED OUT. ALL SOIL AND EROSION MEASURES SHALL BE MAINTAINED AND KEPT IN PLACE FOR THE FULL DURATION OF THE WORKS AND SHALL ONLY BE REMOVED AT FINAL STABILISATION OF THE WORKS. WHERE IT IS NECESSARY TO UNDERTAKE STRIPPING IN ORDER TO CONSTRUCT A SEDIMENT CONTROL DEVICE ONLY SUFFICIENT GROUND SHALL BE STRIPPED TO ALLOW CONSTRUCTION.
- ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED & MAINTAINED AS INDICATED ON THESE DRAWINGS AT A MINIMUM LOCATION AND EXTENT OF SOIL & WATER MANAGEMENT DEVICES IS DIAGRAMMATIC ONLY AND THE ACTUAL REQUIREMENTS SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT.
- CONFORMITY WITH THIS PLAN SHALL IN NO WAY REDUCE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AGAINST WATER DAMAGE DURING THE COURSE OF THE CONTRACT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT ANY NECESSARY CONTROL IS IN PLACE EVEN THOUGH SUCH CONTROL MAY NOT BE SHOWN ON THE PLAN.
- THE CONTRACTOR SHALL INFORM ALL SUBCONTRACTORS & ALL EMPLOYEES OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION & POLLUTION TO DOWNSTREAM AREAS
- APART FROM SEDIMENT BASINS, THE CONTRACTOR SHALL REGULARLY MAINTAIN SEDIMENT AND EROSION CONTROL STRUCTURES & DESILT SUCH STRUCTURES PRIOR TO THE REDUCTION IN CAPACITY OF 30% DUE TO ACCUMULATED SEDIMENT. THE SEDIMENT SHALL BE DISPOSED OF ON SITE IN A MANNER APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL TEMPORARILY REHABILITATE WITHIN TEN (10) DAYS ANY DISTURBED AREAS PROVIDING A MINIMUM 60% COVER. FINAL REHABILITATION IS TO BE PROVIDED WITHIN A FURTHER 60 DAYS WITH A MINIMUM 70% COVER.
- THE CONTRACTOR SHALL PROVIDE WATERING OF THE VEGETATED BATTERS FOR MAINTENANCE PERIOD. PLANT, MACHINERY AND VEHICLES SHALL NOT BE DRIVEN OVER GRASSED AREAS UNLESS ON AN APPROVED HAULAGE ROUTE.
- ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS QUICKLY AS POSSIBLE TO MINIMISE RISK OF EROSION.
- SITE ACCESS SHALL BE RESTRICTED TO THE NOMINATED POINTS. THE CONTRACTOR SHALL PROVIDE STABILISED SITE ACCESS.
- DUST AND SITE DISTURBANCE MUST BE KEPT TO A MINIMUM. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS MUST BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO REDUCE WIND EROSION. ERECT BARRIER FENCING TO MINIMISE LAND DISTURBANCE BY PREVENTING VEHICULAR AND PEDESTRIAN ACCESS TO AREAS BEING REHABILITATED AND LANDS THAT DO NOT NEED TO BE DISTURBED BY THIS PROJECT.
- STOCKPILE TOPSOILS, SUBSOILS AND OTHER MATERIALS SEPARATELY.
- TOPSOIL SHALL BE STORED IN LOW MOUNDS NO MORE THAN 2 METRES HIGH AND RE-USED WITHIN TWO MONTHS TO MAINTAIN ACTIVE POPULATIONS OF BENEFICIAL SOIL MICROBES & SEED.
- PLACE ALL STOCKPILES AT LEAST FIVE METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS, ESPECIALLY EARTH BANKS AND ROADS. IF NECESSARY, EARTH BANKS OR DRAINS WILL BE CONSTRUCTED TO DIVERT LOCALISED RUN-ON.
- TURN TOPSOIL STOCKPILES OVER TO AERATE THEM AT MONTHLY INTERVALS. ENSURE VEGETATION IS NOT INCORPORATED INTO THE SOIL.

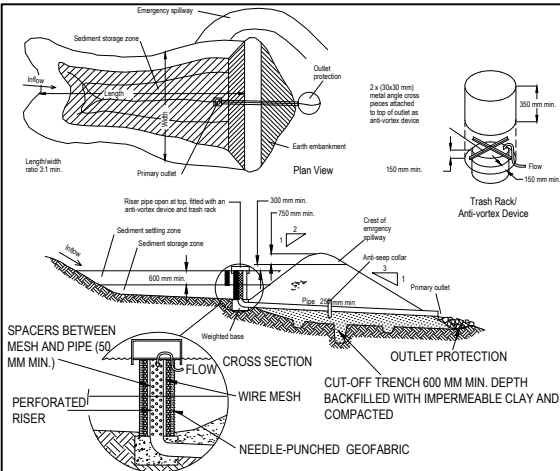
- AVOID REVERSING THE SOIL PROFILE MATERIALS DURING FILL OPERATIONS - REPLACE DISTURBED SOILS IN THEIR ORIGINAL ORDER.
- ON COMPLETION OF MAJOR EARTHWORKS AND BEFORE ADDING TOPSOIL, LEAVE DISTURBED LANDS WITH A LOOSE SURFACE. ALTERNATELY, DISTURBED AREAS PREVIOUSLY COMPACTED BY CONSTRUCTION WORKS WILL BE RIPPED TO MORE THAN 200mm ALONG THE CONTOUR BEFORE APPLYING TOPSOIL.
- PROVIDING MATERIALS ARE AVAILABLE, SPREAD TOPSOIL TO A MINIMUM DEPTH OF 75mm IN REVEGETATION AREAS ON SLOPES OF 4(H):1(V) OR LESS AND TO A DEPTH OF 40 TO 60mm IN REVEGETATION AREAS STEEPER THAN 4:1.
- LEAVE TOPSOIL IN A SCARIFIED OR ROUGH CONDITION ONCE REPLACED TO HELP MOISTURE INFILTRATION AND REDUCE SOIL EROSION.
- ENSURE SOIL IS THOROUGHLY SOAKED TO A DEPTH OF 75mm (RAIN OR IRRIGATION) IMMEDIATELY BEFORE PLANTING.
- HANDLE TOPSOIL ONLY WHEN IT IS MOIST (NOT WET OR DRY) TO AVOID DECLINE OF SOIL STRUCTURE
- THE CONTRACTOR SHALL MAINTAIN A LOG BOOK DETAILING:
 - RECORDS OF ALL RAINFALL
 - CONDITION OF SOIL AND WATER MANAGEMENT STRUCTURES
 - ANY APPLICATION OF FLOCCULATING AGENTS TO SEDIMENT BASIN
 - VOLUMES OF ALL WATER DISCHARGED FROM SEDIMENT BASINS
 - ANY ADDITIONAL REMEDIAL WORKS REQUIRED.
- THE LOG BOOK SHALL BE MAINTAINED ON A WEEKLY BASIS AND BE MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. THE ORIGINAL LOG BOOK SHALL BE ISSUED TO THE PROJECT MANAGER AT THE COMPLETION OF WORKS
- ALL ROAD EMBANKMENTS TO BE STABILISED AS PER LANDSCAPE ARCHITECTS DETAILS.
- A SELF AUDITING PROGRAM SHOULD BE ESTABLISHED BASED ON A CHECK SHEET DEVELOPED FOR THE SITE. A SITE INSPECTION USING THE CHECK SHEET SHOULD BE MADE BY THE SITE MANAGER AT LEAST WEEKLY, IMMEDIATELY BEFORE SITE CLOSURE AND IMMEDIATELY FOLLOWING RAINFALL EVENTS THAT CAUSE RUNOFF.
- UNDERTAKE THE SELF AUDIT BY:
 - WALKING AROUND THE SITE SYSTEMATICALLY (E.G. CLOCKWISE)
 - RECORDING THE CONDITION OF EVERY BMP EMPLOYED
 - RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH BMP
 - RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
 - FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER/SITE OPERATOR FOR THEIR INFORMATION
- IN PARTICULAR, INSPECT:
 - LOCATIONS WHERE VEHICLES ENTER AND LEAVE THE SITE
 - ALL INSTALLED EROSION AND SEDIMENT CONTROL MEASURES, ENSURING THEY ARE OPERATING CORRECTLY
 - AREAS THAT MIGHT SHOW WHETHER SEDIMENT OR OTHER POLLUTANTS ARE LEAVING THE SITE OR HAVE POTENTIAL TO DO SO
 - ALL DISCHARGE POINTS, TO ASSESS WHETHER THE EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING IMPACTS TO THE RECEIVING WATERS
- A SITE INSPECTION USING THE CHECK SHEET WILL BE MADE BY THE SITE MANAGER AT LEAST WEEKLY, IMMEDIATELY BEFORE SITE CLOSURE, AND IMMEDIATELY FOLLOWING RAINFALL EVENTS GREATER THAN 5mm IN 24 HOURS.



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

SEDIMENT FENCE

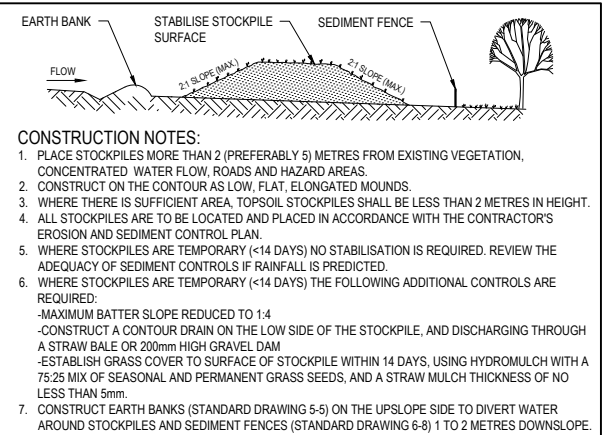
SD 6-8



- CONSTRUCTION NOTES:
- REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
 - FORM A CUT OFF TRENCH UNDER THE CENTRELINE OF THE EMBANKMENT 600mm DEEP AND 1,200mm WIDE, EXTENDING TO A POINT ON THE WATERCOURSE WALL ABOVE THE RISER SILL LEVEL.
 - MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
 - SELECT FILL ACCORDING TO THE SWMP THAT IS FREE FROM ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
 - PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100 MM TO HELP BOND THE COMPACTED FILL TO THE EXISTING SUBSTRATE.
 - SPREAD THE FILL IN 100 MM TO 150 MM LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
 - INSTALL THE PIPE OUTLET WITH SEEPAGE COLLARS AS SPECIFIED IN THE SWMP AND STANDARD DRAWING 6-3B.
 - FORM BATTER GRADES AT 2(H):1(V) UPSTREAM AND 3(H):1(V) DOWNSTREAM OR AS SPECIFIED IN THE SWMP

EARTH BASIN - DRY
(APPLIES TO 'TYPE C' SOILS ONLY)

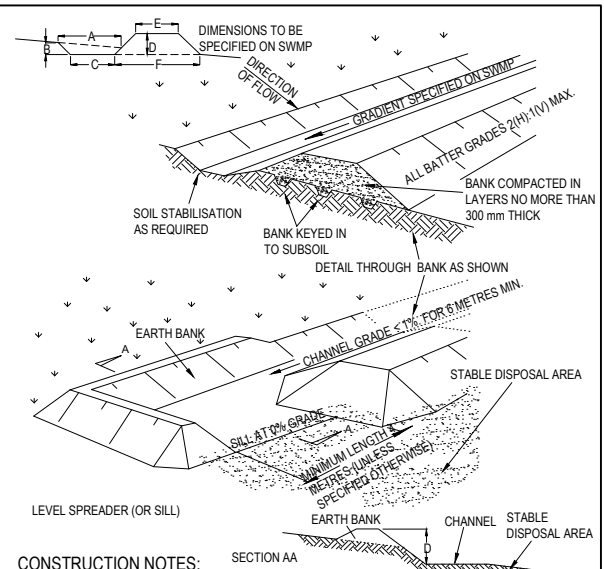
SD 6-3



- CONSTRUCTION NOTES:
- PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
 - CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
 - WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
 - ALL STOCKPILES ARE TO BE LOCATED AND PLACED IN ACCORDANCE WITH THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN.
 - WHERE STOCKPILES ARE TEMPORARY (<14 DAYS) NO STABILISATION IS REQUIRED. REVIEW THE ADEQUACY OF SEDIMENT CONTROLS IF RAINFALL IS PREDICTED.
 - WHERE STOCKPILES ARE TEMPORARY (<14 DAYS) THE FOLLOWING ADDITIONAL CONTROLS ARE REQUIRED:
 - MAXIMUM BATTER SLOPE REDUCED TO 1:4
 - CONSTRUCT A CONTOUR DRAIN ON THE LOW SIDE OF THE STOCKPILE, AND DISCHARGING THROUGH A STRAW BALE OR 200mm HIGH GRAVEL DAM
 - ESTABLISH GRASS COVER TO SURFACE OF STOCKPILE WITHIN 14 DAYS, USING HYDROMULCH WITH A 75:25 MIX OF SEASONAL AND PERMANENT GRASS SEEDS, AND A STRAW MULCH THICKNESS OF NO LESS THAN 5mm.
 - CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE.

STOCKPILES

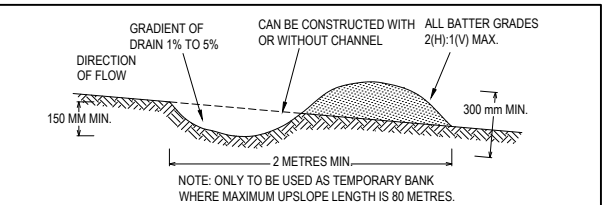
SD 4-1



- CONSTRUCTION NOTES:
- CONSTRUCT AT THE GRADIENT SPECIFIED ON THE ESCP OR SWMP NORMALLY BETWEEN 1% AND 5%.
 - AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
 - ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
 - BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V-SHAPED, AT THE DIMENSIONS SHOWN ON THE SWMP.
 - ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
 - COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION FOLLOWING TABLE 5.2 IN LANDCOM (2004).
 - WHERE DISCHARGING TO ERODIBLE LANDS, ENSURE THEY OUTLET THROUGH A PROPERLY CONSTRUCTED LEVEL SPREADER.
 - CONSTRUCT THE LEVEL SPREADER AT THE GRADIENT SPECIFIED ON THE ESCP OR SWMP NORMALLY LESS THAN 1% OR LEVEL.
 - WHERE POSSIBLE, ENSURE THEY DISCHARGE WATERS ONTO EITHER STABILISED OR UNDISTURBED DISPOSAL SITES WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED. APPROVAL MIGHT BE REQUIRED TO DISCHARGE INTO OTHER SUBCATCHMENTS.

EARTH BANK (HIGH FLOWS)

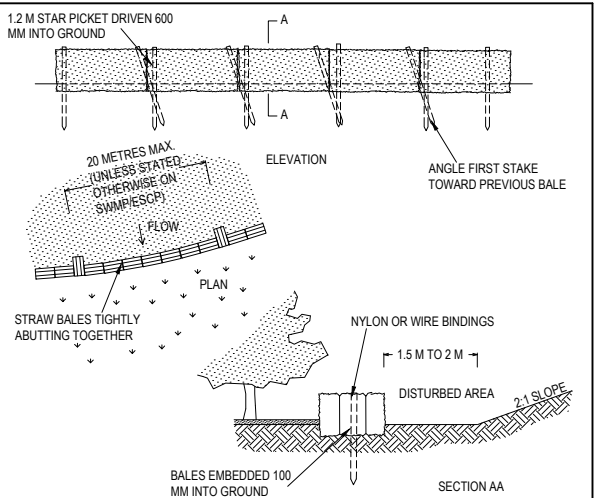
SD 5-6



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

EARTH BANK (LOW FLOW)

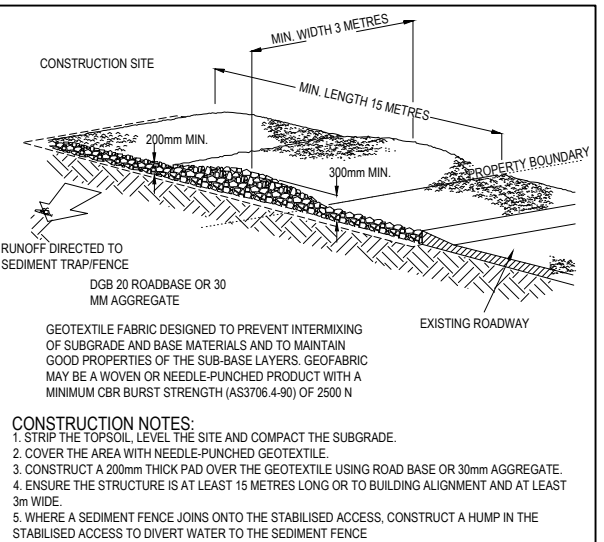
SD 5-5



- CONSTRUCTION NOTES:
- CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.
 - PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAWS ARE TO BE PLACED PARALLEL TO GROUND.
 - ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
 - EMBED EACH BALE IN THE GROUND 75 mm TO 100 mm AND ANCHOR WITH TWO 1.2 METRE STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE DRIVE THEM 600 mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
 - WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METRES DOWNSLOPE FROM THE TOE.
 - ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STRAW BALE FILTER

SD 6-7



STABILISED SITE ACCESS

SD 6-14

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
1	LF	VS	MC	JM	20/08/2018	
2	LF	JS	EF	JM	23/01/2019	ISSUE FOR DEVELOPMENT APPLICATION
3	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS
4						
5						
6						
7						
8						
9						
10						

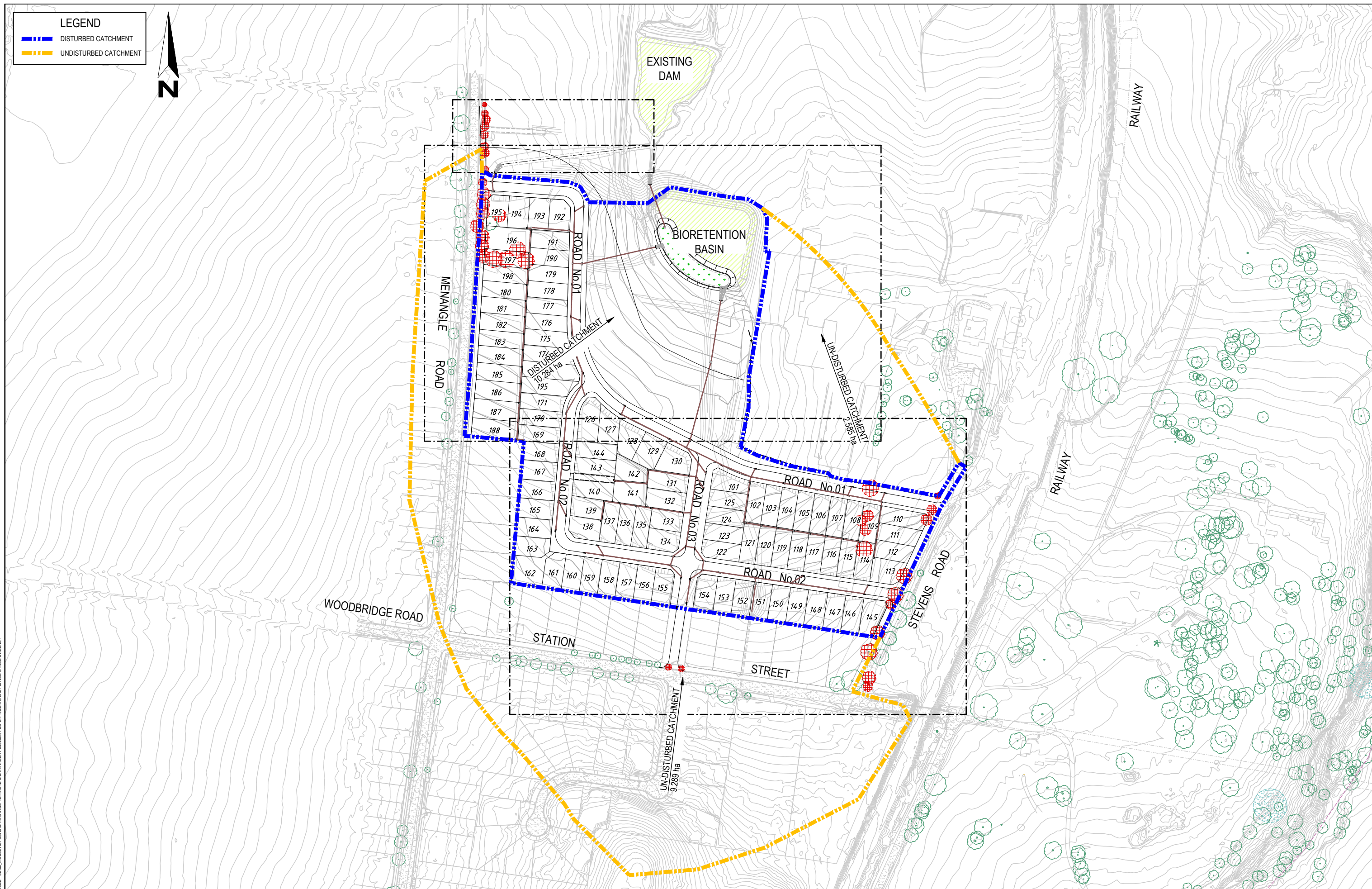
STATUS	ISSUED FOR DEVELOPMENT APPLICATION
AUTHORISED FOR ISSUE:	BY: JOSEPH MEKARY BE (Civil) MIE/ASCE MBA MPM JP
SIGN:	21/02/19
DATE:	




SCALE	CUSTOMER

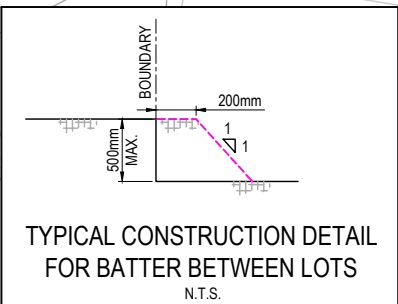
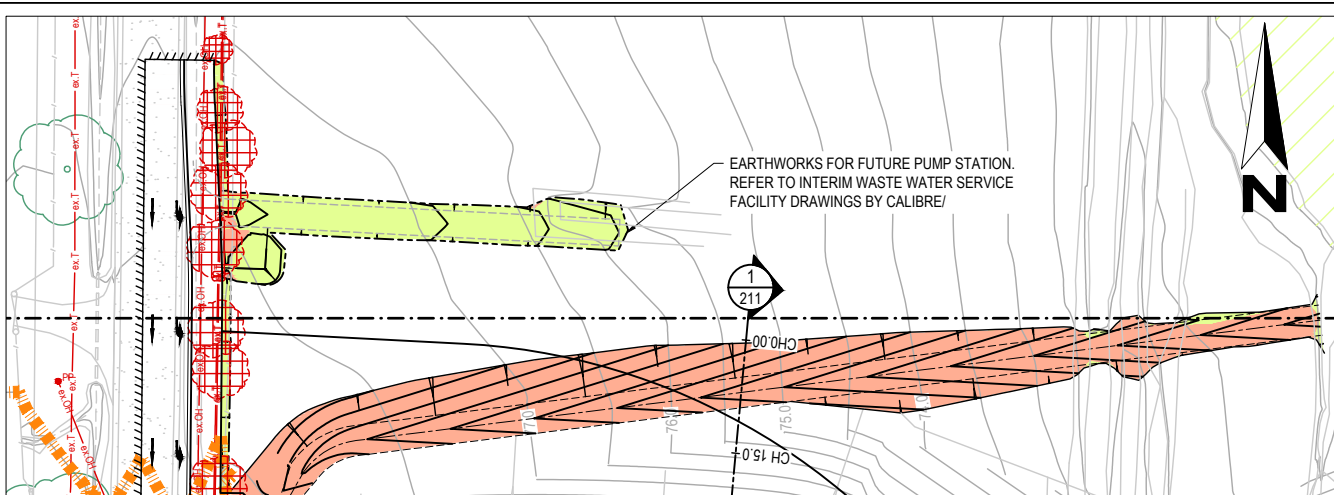
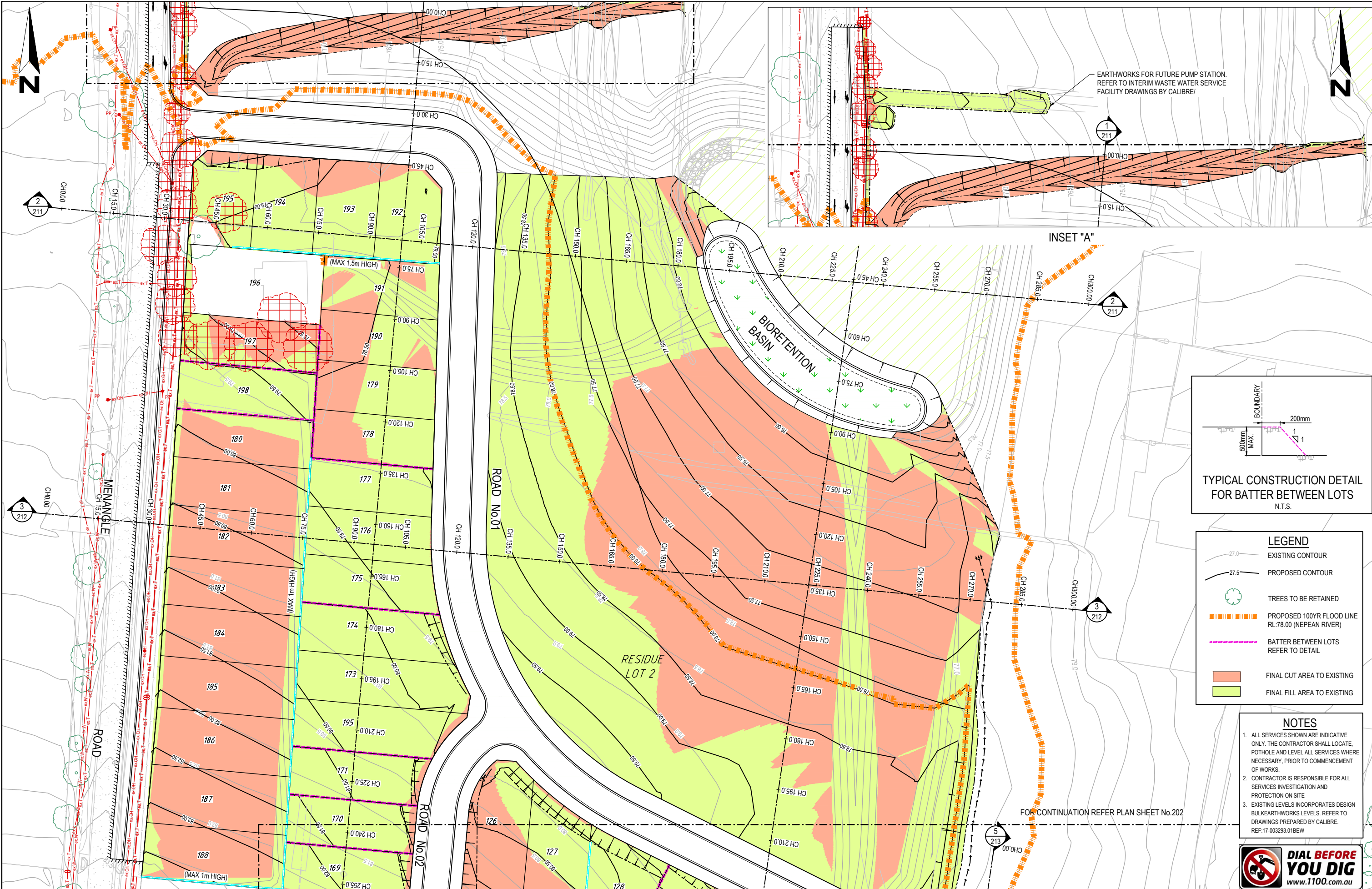
CLIENT	
--------	--

PROJECT	STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE
DISCLAIMER	ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE	CONCEPT SEDIMENT & EROSION CONTROL NOTES & DETAILS
PROJECT No.	17-003293-01
DRAWING No.	102
MILESTONE	DA
REVISION	2



	DESIGN	DRAWN	CHECK	APPRO.	DATE		STATUS	SCALE	CLIENT	PROJECT	DRAWING TITLE
	LF	VS	MC	JM	20/08/2018		ISSUED FOR DEVELOPMENT APPLICATION	0 15 30 45 60 75 90 105 120 SCALE 1:1500 (A1) SCALE 1:3000 (A3)		STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE	SEDIMENT CATCHMENT PLAN
	1	LF	JS	EF	JM	23/01/2019	ISSUE FOR DEVELOPMENT APPLICATION				
	2	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS				
AMENDMENTS							AUTHORISED FOR ISSUE: BY: JOSEPH MEKARY BE (Civil) MIE Aust MBA MP M JP SIGN:  DATE: 21/02/19		 © 2019 www.calibregrgroup.com	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	PROJECT No. DRAWING No. MILESTONE REVISION 17-003293-01 103 DA 2



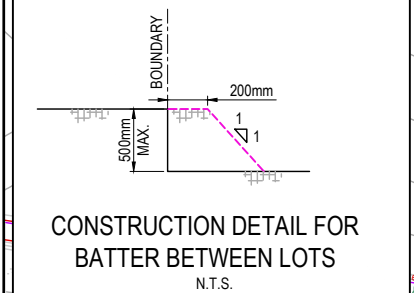
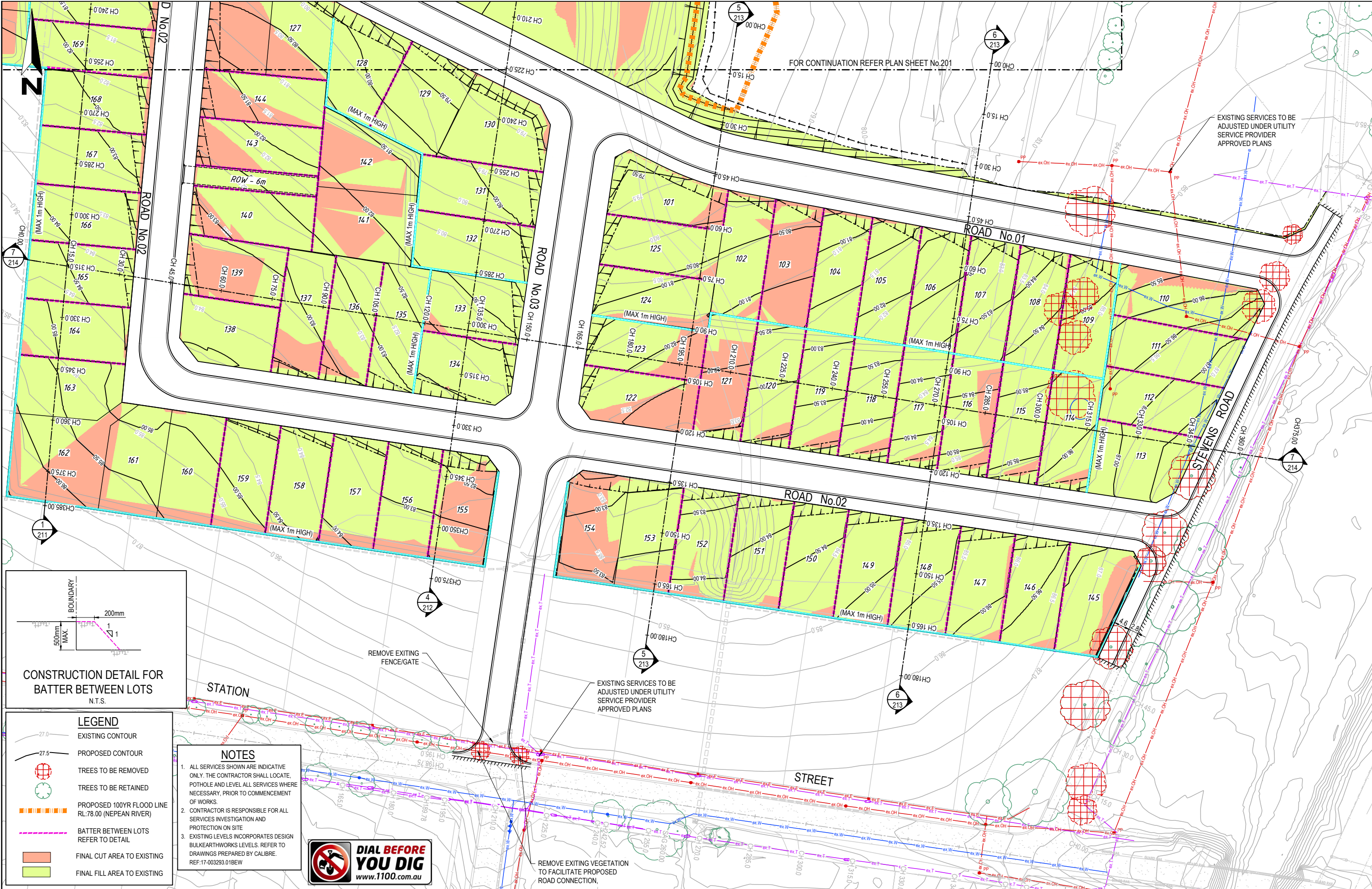
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- TREES TO BE RETAINED
- PROPOSED 100YR FLOOD LINE RL:78.00 (NEPEAN RIVER)
- BATTER BETWEEN LOTS REFER TO DETAIL
- FINAL CUT AREA TO EXISTING
- FINAL FILL AREA TO EXISTING

- NOTES**
- ALL SERVICES SHOWN ARE INDICATIVE ONLY. THE CONTRACTOR SHALL LOCATE, POT-HOLE AND LEVEL ALL SERVICES WHERE NECESSARY, PRIOR TO COMMENCEMENT OF WORKS.
 - CONTRACTOR IS RESPONSIBLE FOR ALL SERVICES INVESTIGATION AND PROTECTION ON SITE.
 - EXISTING LEVELS INCORPORATES DESIGN BULK EARTHWORKS LEVELS. REFER TO DRAWINGS PREPARED BY CALIBRE. REF:17-003293.01BEW



AMENDMENT DETAILS				STATUS		SCALE		CLIENT		PROJECT		DRAWING TITLE	
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROD.	DATE	ISSUED FOR DEVELOPMENT APPLICATION		mirvac		STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE		SITE REGRADING PLAN 01 OF 02	
1	LF	VS	MC	JM	20/08/2018	BY: JOSEPH MEKARY		mirvac		DISCLAIMER		PROJECT No.	
2	LF	BM	EF	JM	21/02/2019	BE (Civil) MIEAust. MBA MPM JP		calibre		ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.		DRAWING No.	
						SIGN: <i>JPM</i>		© 2019				MILESTONE	
						DATE: 21/02/19		www.calibregroup.com				REVISION	
												17-003293-01	
												201	
												DA	
												2	



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- TREES TO BE REMOVED
- TREES TO BE RETAINED
- PROPOSED 100YR FLOOD LINE RL:78.00 (NEPEAN RIVER)
- BATTER BETWEEN LOTS REFER TO DETAIL
- FINAL CUT AREA TO EXISTING
- FINAL FILL AREA TO EXISTING

- NOTES**
- ALL SERVICES SHOWN ARE INDICATIVE ONLY. THE CONTRACTOR SHALL LOCATE, POTHOLE AND LEVEL ALL SERVICES WHERE NECESSARY, PRIOR TO COMMENCEMENT OF WORKS.
 - CONTRACTOR IS RESPONSIBLE FOR ALL SERVICES INVESTIGATION AND PROTECTION ON SITE
 - EXISTING LEVELS INCORPORATES DESIGN BULK EARTHWORKS LEVELS. REFER TO DRAWINGS PREPARED BY CALIBRE. REF:17-003293.01BEW

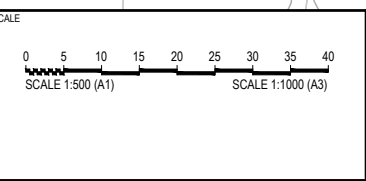


DESIGN	DRAWN	CHECK	APPROD.	DATE	AMENDMENT DETAILS
1	LF	VS	MC	JM	20/08/2018
2	LF	JS	EF	JM	23/01/2019
3	LF	BM	EF	JM	21/02/2019

ISSUED FOR DEVELOPMENT APPLICATION

AUTHORISED FOR ISSUE:
BY: JOSEPH MEKARY
BE (Civil) MIEAust. MBA MPM JP

SIGN: *JPM*
DATE: 21/02/19



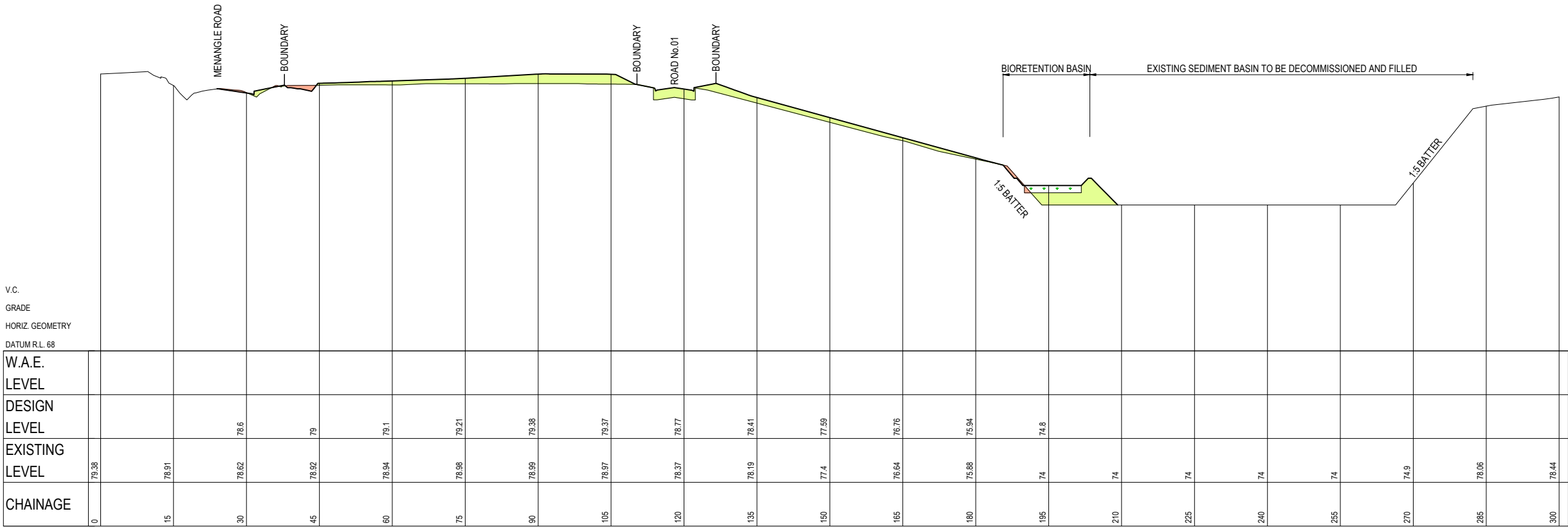
PROJECT
STATION ST, MENANGLE - STAGE 1
ROAD & DRAINAGE

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

PROJECT No.	DRAWING No.	MILESTONE	REVISION
17-003293-01	202	DA	2

FILE: H1717203293 - STATION ST MENANGLE - L008 - MODEL AUTOCAD/CIVIL/STAGE 1/ROAD & DRAINAGE/17-003293-01.DWG LAST SAVED BY PETER SPURDINO

FILE: H:\17-003293 - STATION ST MENANGLE - L100B - MODEL\AUTOCAD\CIVIL\STAGE 1\ROAD & DRAINAGE\17-003293-1\UD-D4-21.DWG LAST SAVED BY: PUSHA MUZZA



LEGEND

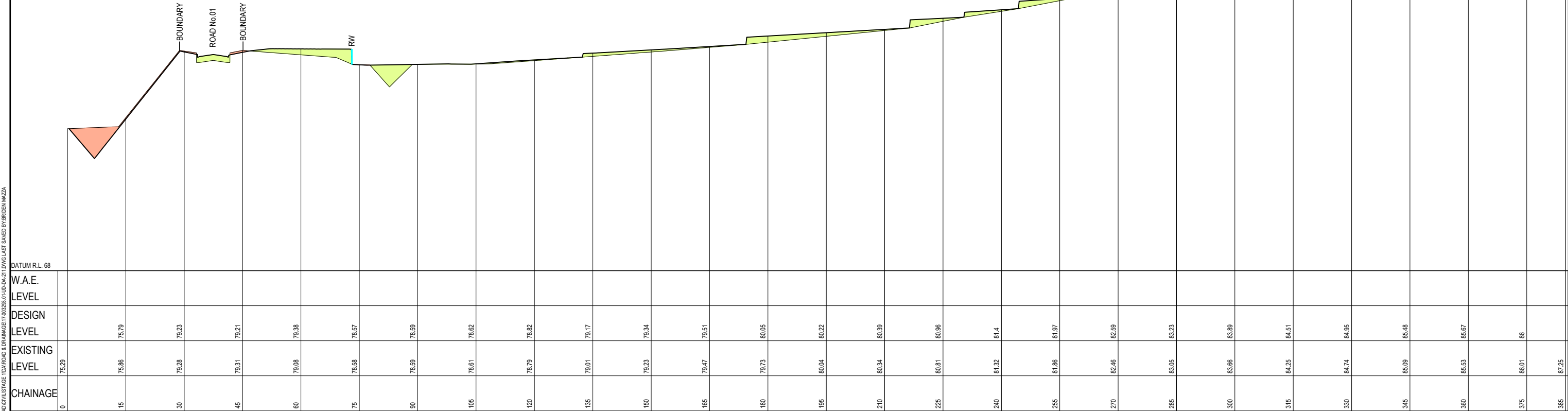
CUT AREA

FILL AREA

NOTE:

EXISTING LEVEL INCLUDES BULK EARTHWORKS LEVELS. REFER TO DRAWINGS BY CALIBRE 17-003293.01 BEW

SECTION 2
SCALE: 1:500 (H)
SCALE: 1:100 (V)



SECTION 1
SCALE: 1:500 (H)
SCALE: 1:100 (V)

AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	
	1	LF	VS	MC	JM		20/08/2018
	1	LF	JS	EF	JM		23/01/2019
	2	LF	BM	EF	JM		21/02/2019
STATUS							
ISSUED FOR DEVELOPMENT APPLICATION							
AUTHORISED FOR ISSUE: BY: JOSEPH MEKARY BE (Civil) MIEAust. MBA MPM JP							
SIGN: <i>JPM</i> DATE: 21/02/19							
SCALE							
<div>0 1 2 3 4 5 6 7 8 SCALE 1:100 (A1)</div> <div>0 5 10 15 20 25 30 35 40 SCALE 1:500 (A1)</div> <div>0 1 2 3 4 5 6 7 8 SCALE 1:200 (A3)</div> <div>0 5 10 15 20 25 30 35 40 SCALE 1:1000 (A3)</div>							
CLIENT							
<div></div>							
<div></div>							
PROJECT							
STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE							
DRAWING TITLE							
SITE SECTIONS SHEET 01 OF 04							
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY							
PROJECT No. DRAWING No. MILESTONE REVISION							
17-003293-01 211 DA 2							



 FILL AREA

EXISTING LEVEL INCLUDES
BULK EARTHWORKS LEVELS.
REFER TO DRAWINGS BY
CALIBRE 17-003293.01 BEW



SCALE: 1:500 (H)
SCALE: 1:100 (V)

SECTION 3
SCALE: 1:500 (H)
SCALE: 1:100 (V)

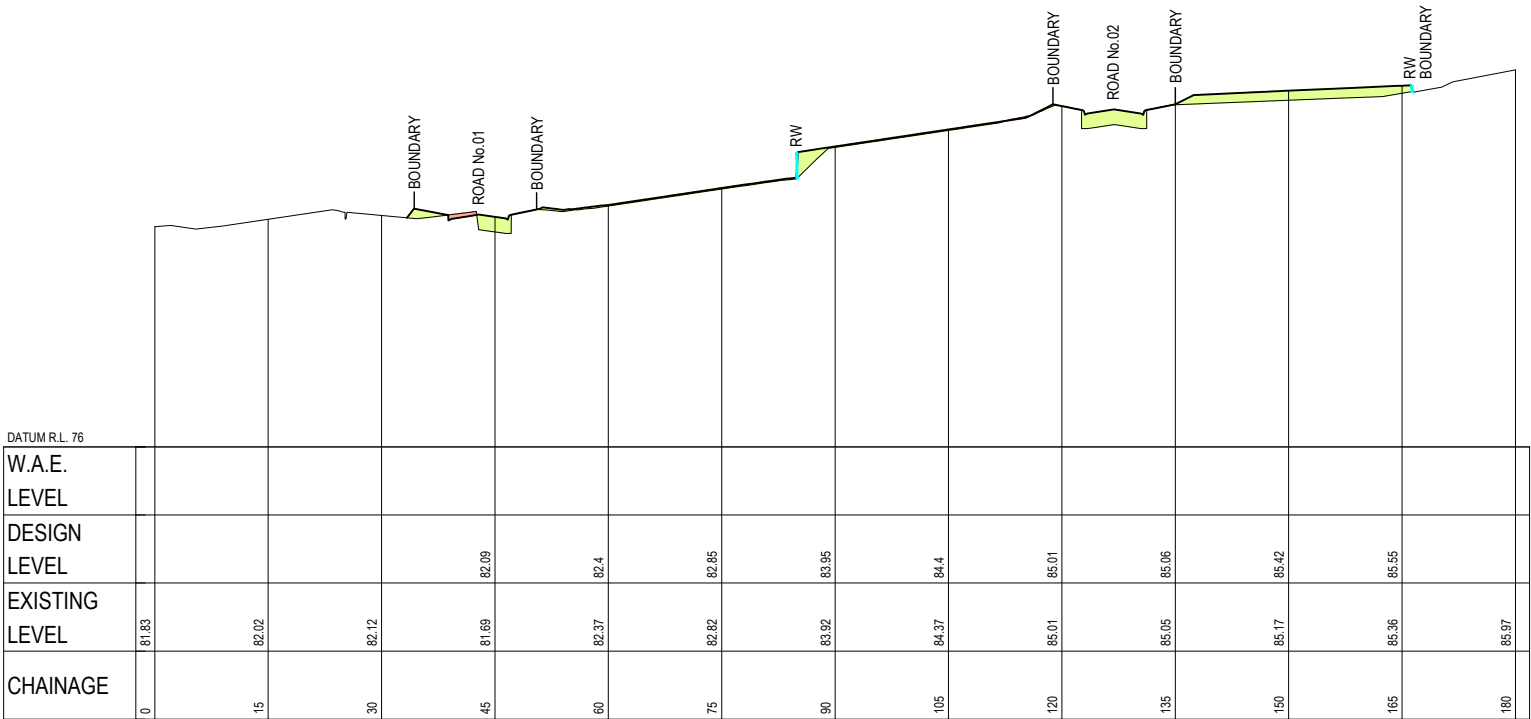
FIRST ISSUE AMENDMENTS 1 2 	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS ISSUED FOR DEVELOPMENT APPLICATION ISSUED TO SUIT CLIENT COMMENTS 	STATUS ISSUED FOR DEVELOPMENT APPLICATION APPROVAL BY: JOSEPH MEKARY BE (Civl) MIEAust. MBA MPM JP SIGN: <i>JPM</i> DATE: <i>21/02/19</i>	SCALE 0 1 2 3 4 5 6 7 8 SCALE 1:100 (A1) 0 5 10 15 20 25 30 35 40 SCALE 1:500 (A1)	CLIENT  © 2019 www.calibregroup.com		PROJECT STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	DRAWING TITLE SITE SECTIONS SHEET 02 OF 04 PROJECT No. 17-003293-01 DRAWING No. 212 MILESTONE DA REVISION 2	
	LF	VS	MC	JM	20/08/2018								
	1	LF	JS	EF	JM								23/01/2019
	2	LF	BM	EF	JM								21/02/2019

LEGEND

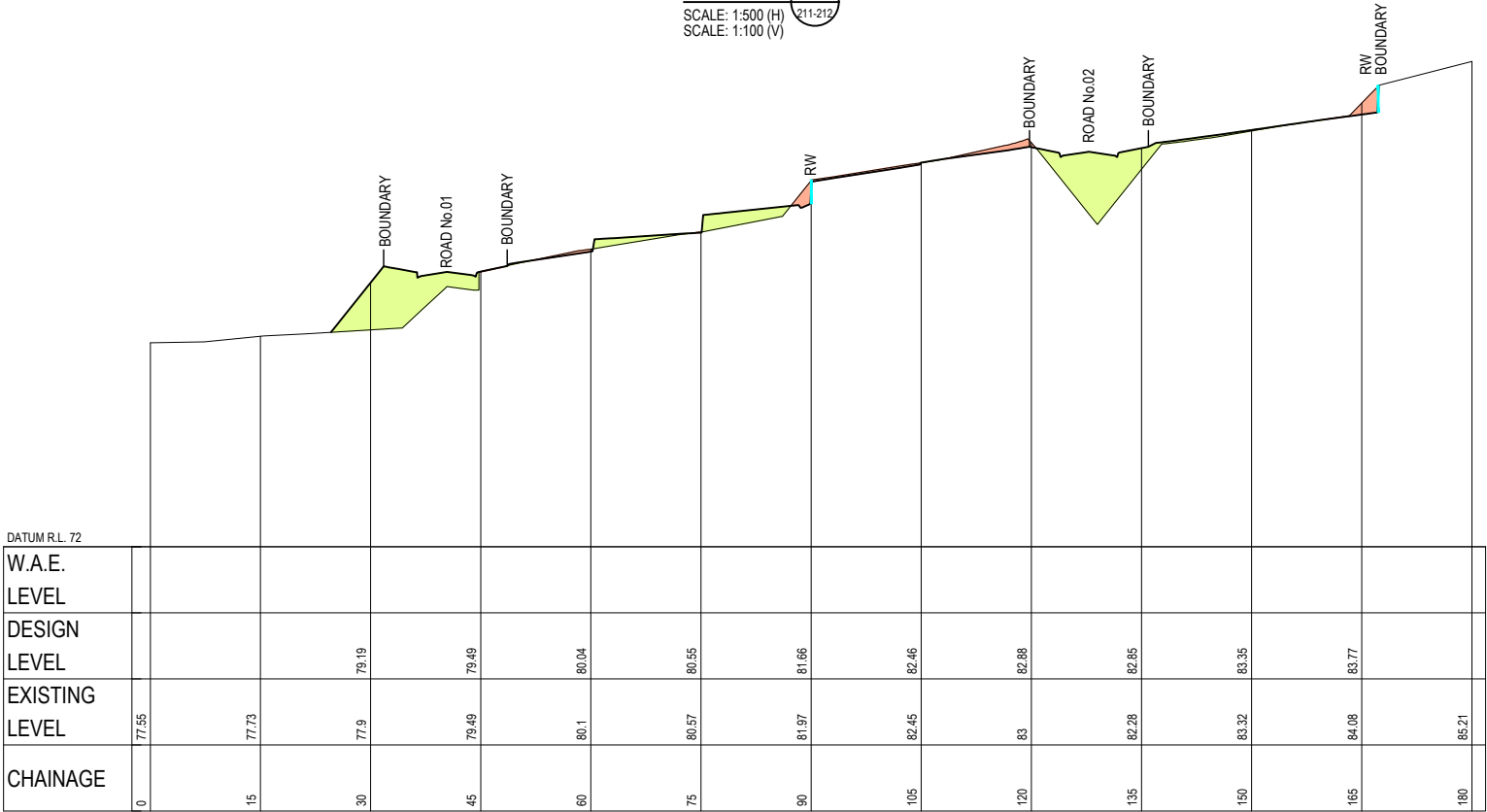
CUT AREA

FILL AREA

NOTE:
EXISTING LEVEL INCLUDES
BULK EARTHWORKS LEVELS.
REFER TO DRAWINGS BY
CALIBRE 17-003293.01 BEW



SECTION 6
SCALE: 1:500 (H)
SCALE: 1:100 (V)



SECTION 5
SCALE: 1:500 (H)
SCALE: 1:100 (V)

FILE: H:\17-003293 - STATION ST MENANGLE - L100B - MODEL\AUTOCAD\CIVIL\STAGE 1\ROAD & DRAINAGE\17-003293.DWG (A-D-21) DWG LAST SAVED BY JED SWEENEY

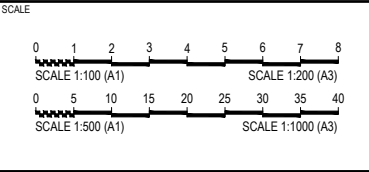
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
	LF	VS	MC	JM	20/08/2018	
	LF	JS	EF	JM	23/01/2019	
2	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS

STATUS

ISSUED FOR DEVELOPMENT APPLICATION

AUTHORISED FOR ISSUE:
BY: JOSEPH MEKARY
BE (Civil) MIEAust. MBA MPM JP

SIGN: *JPM*
DATE: 21/02/19





PROJECT

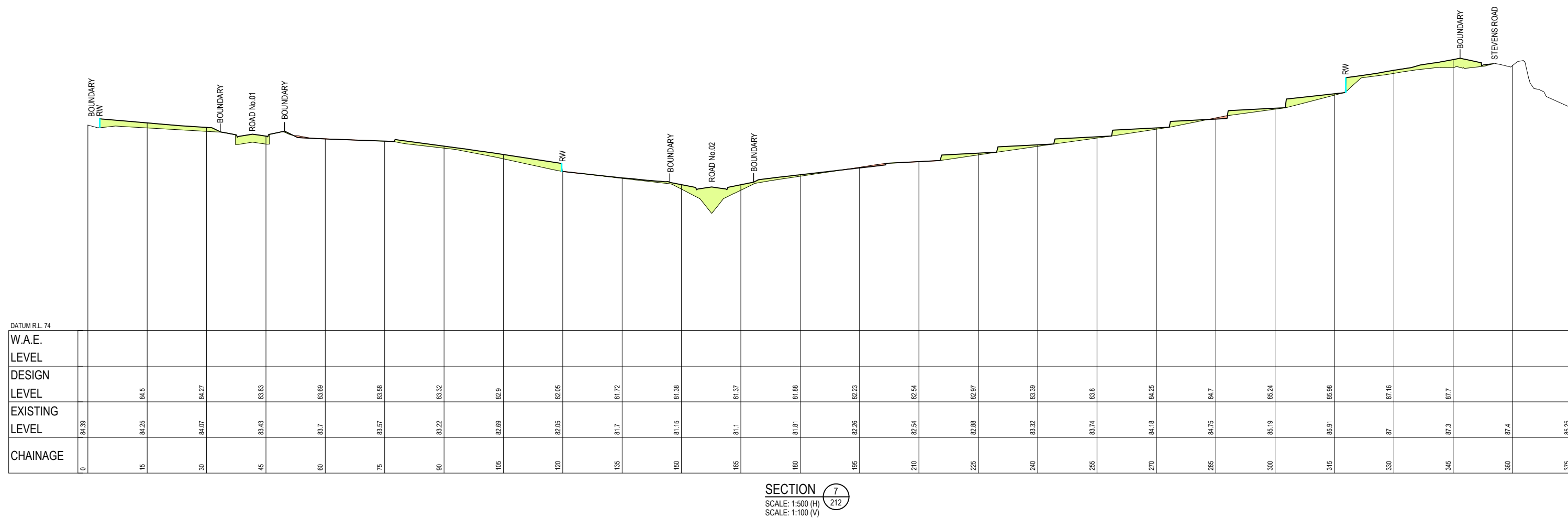
STATION ST, MENANGLE - STAGE 1
ROAD & DRAINAGE

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO
CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT
FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

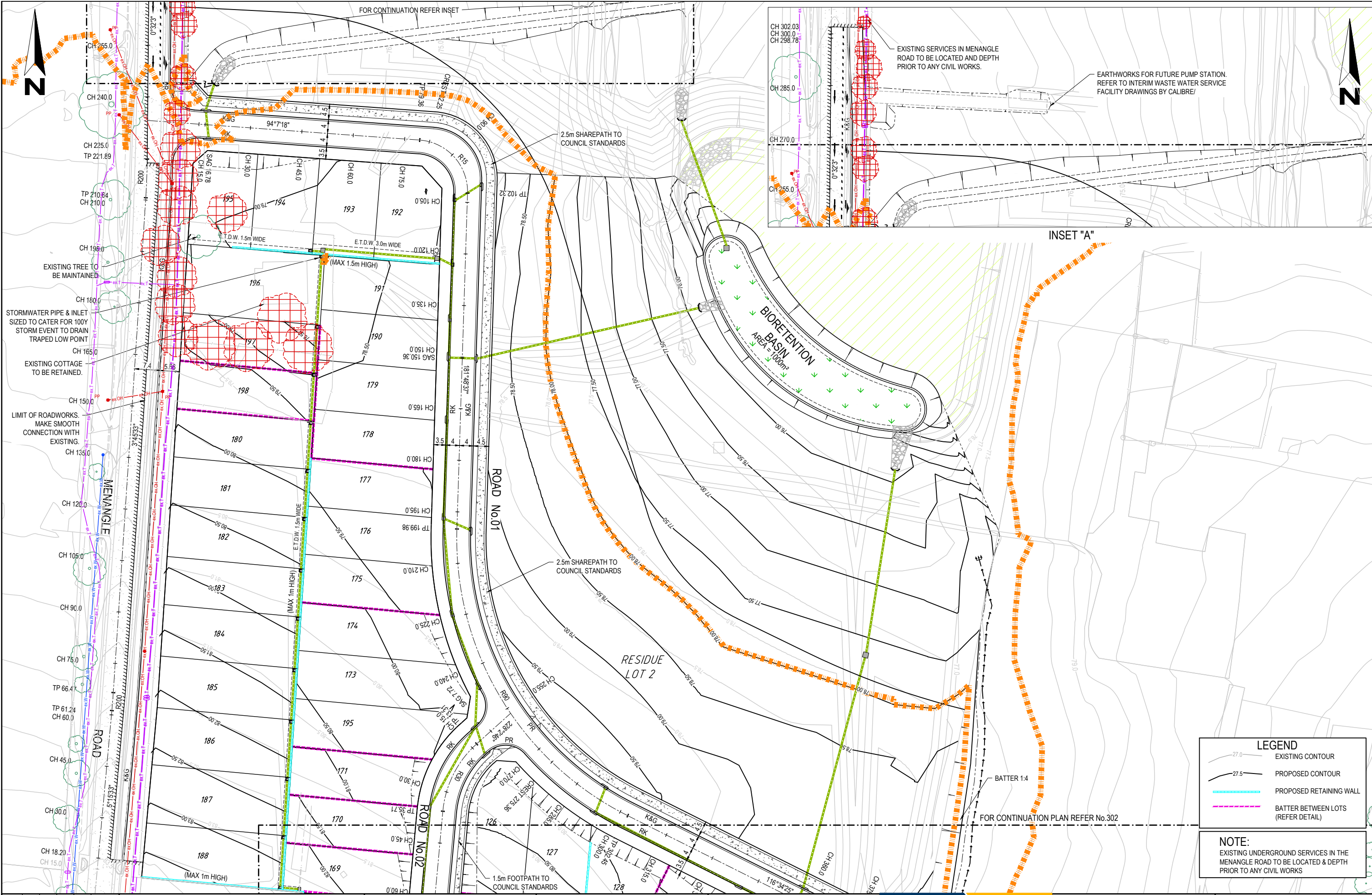
DRAWING TITLE			
SITE SECTIONS SHEET 03 OF 04			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
17-003293-01	213	DA	2

 CUT AREA
 FILL AREA

NOTE:
EXISTING LEVEL INCLUDES
BULK EARTHWORKS LEVELS.
REFER TO DRAWINGS BY
CALIBRE 17-003293.01 BEW



AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	
	FIRST ISSUE	LF	VS	MC	JM	20/08/2018	
	1	LF	JS	EF	JM	23/01/2019	ISSUE FOR DEVELOPMENT APPLICATION
	2	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS
							STATUS
							ISSUED FOR DEVELOPMENT APPLICATION
							AUTHORISED FOR ISSUE:
							BY: JOSEPH MEKARY BE (Civil) MIEAust. MBA MPM JP
							SIGN: [Signature] DATE: 21/02/19
							SCALE
							0 1 2 3 4 5 6 7 8 SCALE 1:100 (A1)
							0 5 10 15 20 25 30 35 40 SCALE 1:500 (A1)
							CLIENT
							[mirvac logo]
							[calibre logo]
							PROJECT
							STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE
							DRAWING TITLE
							SITE SECTIONS SHEET 04 OF 04
							DISCLAIMER
							ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION IN FSS STAMPED BY CERTIFYING AUTHORITY
							PROJECT No. DRAWING No. MILESTONE REVIS
							17-003293-01 214 DA 2



LEGEND

- 27.0 — EXISTING CONTOUR
- 27.5 — PROPOSED CONTOUR
- PROPOSED RETAINING WALL
- BATTER BETWEEN LOTS (REFER DETAIL)

NOTE:
EXISTING UNDERGROUND SERVICES IN THE MENANGLE ROAD TO BE LOCATED & DEPTH PRIOR TO ANY CIVIL WORKS

AMENDMENT DETAILS				
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPRO
1	LF	VS	MC	JM
2	LF	BM	EF	JM

ISSUED FOR DEVELOPMENT APPLICATION

AUTHORISED FOR ISSUE:
BY: JOSEPH MEKARY
BE (Civil) MIEAust. MBA MP M JP

SIGN: *JPM*
DATE: 21/02/19

SCALE

0 5 10 15 20 25 30 35 40

SCALE 1:500 (A1) SCALE 1:1000 (A3)

CLIENT

mirvac

calibre

© 2019 www.calibregroup.com

PROJECT

STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE

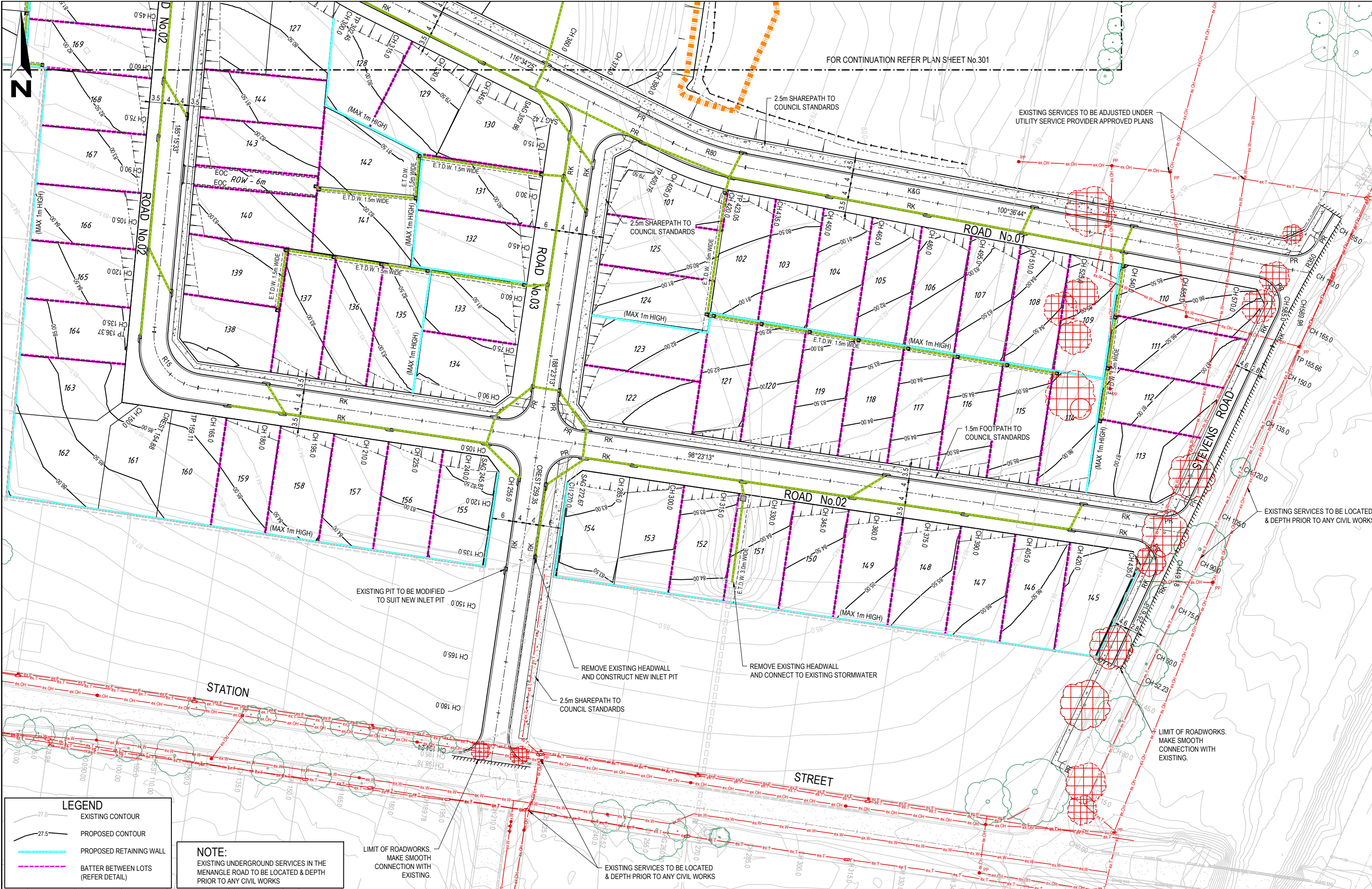
DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE

ENGINEERING PLANS 01 OF 02

PROJECT No.	DRAWING No.	MILESTONE	REVISION
17-003293-01	301	DA	2

FILE: H:\17-003293 - STATION ST MENANGLE - LIDAR MODEL\AUTOCAD\CIVIL\STAGE 1\ROAD & DRAINAGE\17-003293-01-01.DWG LAST SAVED BY: VISHVAKARN



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED RETAINING WALL
- BATTER BETWEEN LOTS (REFER DETAIL)

NOTE:
EXISTING UNDERGROUND SERVICES IN THE MENANGLE ROAD TO BE LOCATED & DEPTH PRIOR TO ANY CIVIL WORKS

AMENDMENT DETAILS				
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROD.
1	LF	VS	MC	JM
2	LF	BM	EF	JM

ISSUED FOR DEVELOPMENT APPLICATION

AUTHORISED FOR ISSUE:
BY: JOSEPH MEKARY
BE (Civil) MIEAust. MBA MPM JP

SIGN: *JPM*
DATE: 21/02/19

SCALE

0 5 10 15 20 25 30 35 40

SCALE 1:500 (A1) SCALE 1:1000 (A3)

CLIENT

mirvac

calibre

© 2019 www.calibregroup.com

PROJECT

STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

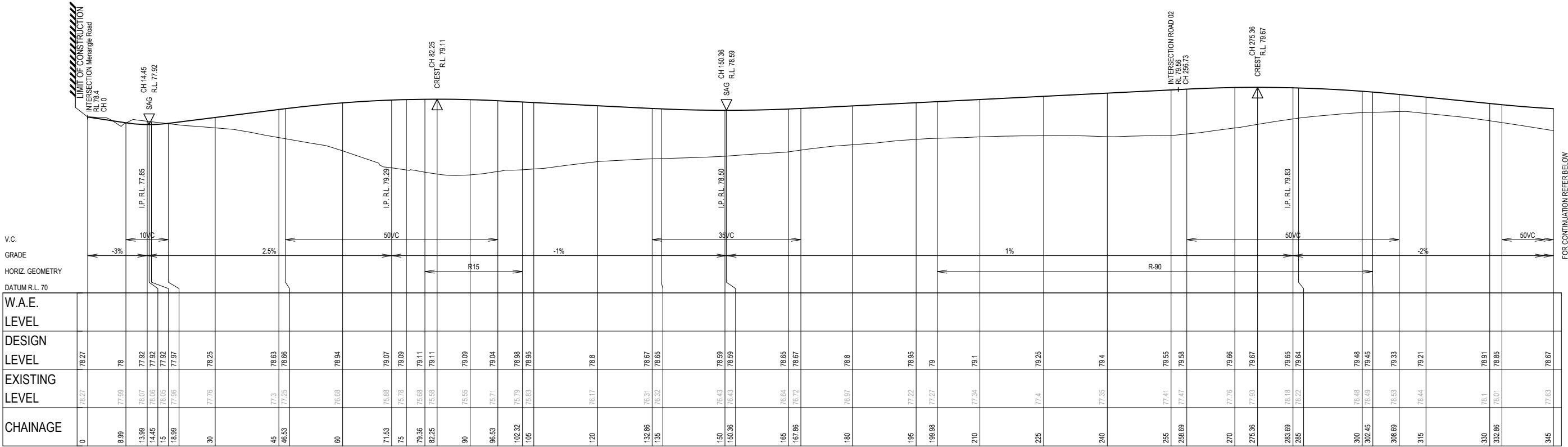
DRAWING TITLE

ENGINEERING PLANS 02 OF 02

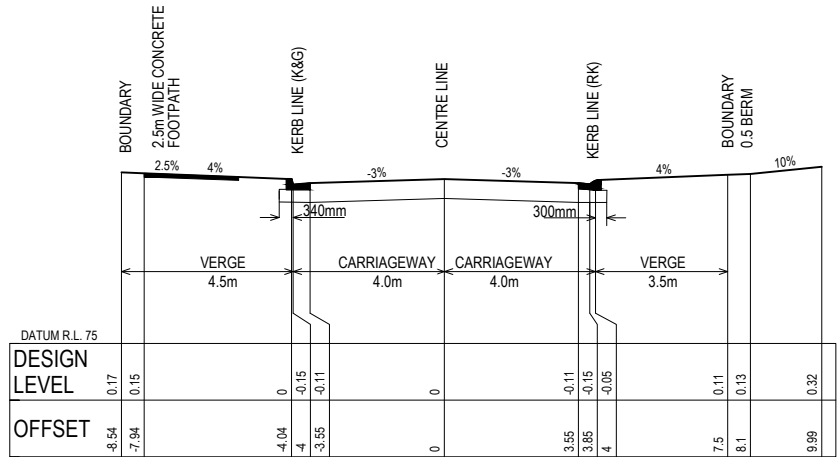
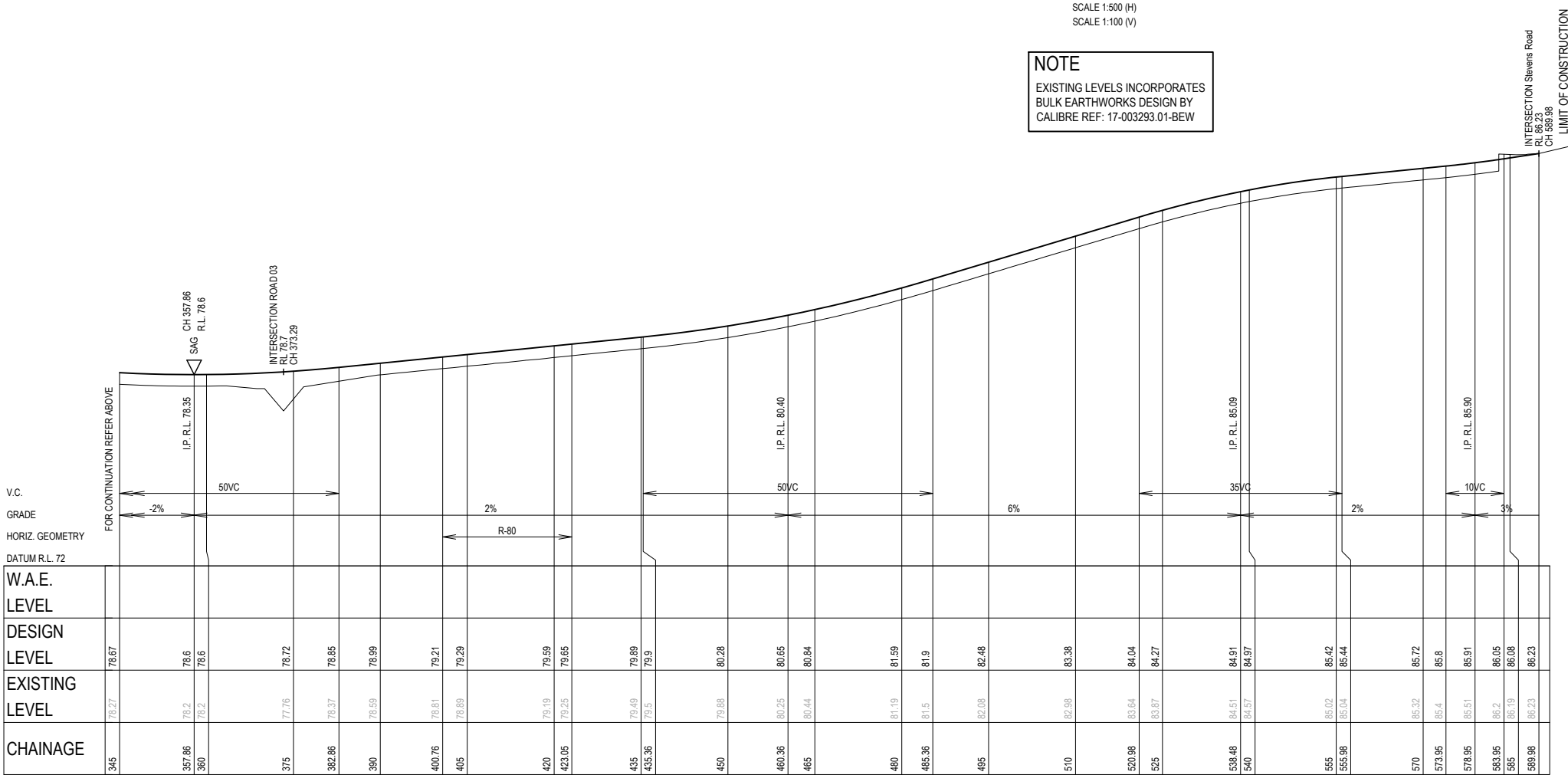
PROJECT No.	DRAWING No.	MILESTONE	REVISION
17-003293-01	302	DA	2

FILE: H:\17-003293-01 STATION ST MENANGLE - LDRS - MODEL\AUTOCAD\CIVIL\STAGE 1\ROAD & DRAINAGE\17-003293-01-DA-302.DWG LAST SAVED BY: VISHVAKARAN

FILE: H:\17-003293 - STATION ST MENANGLE - L100 - MODEL\AUTOCAD\CIVIL\STAGE 1\ROAD 01\ROAD 01.DWG LAST SAVED BY: VISHU K KARN



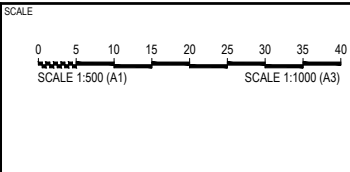
NOTE
EXISTING LEVELS INCORPORATES
BULK EARTHWORKS DESIGN BY
CALIBRE REF: 17-003293.01-BEW



FIRST	DESIGN	DRAWN	CHECK	APPD.	DATE
1	LF	VS	MC	JM	20/08/2018
2	LF	JS	EF	JM	23/01/2019
3	LF	BM	EF	JM	21/02/2019

AMENDMENT DETAILS
ISSUED FOR DEVELOPMENT APPLICATION
ISSUE TO SUIT CLIENT COMMENTS

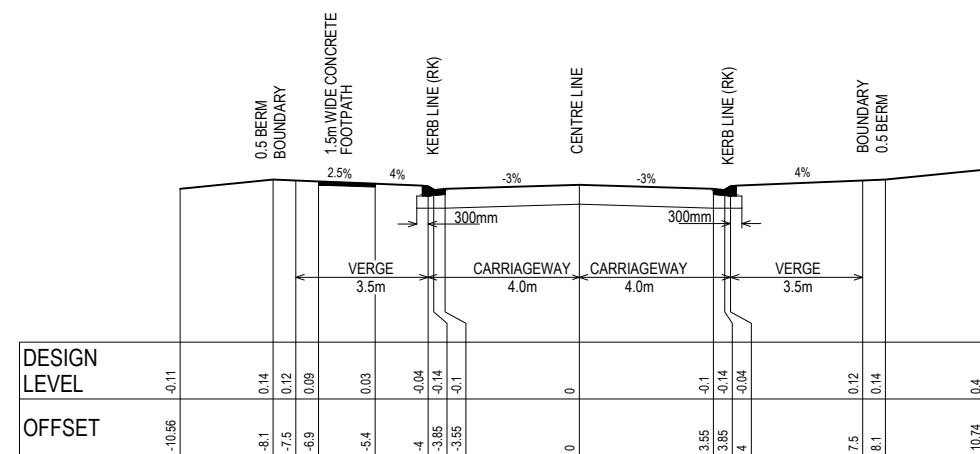
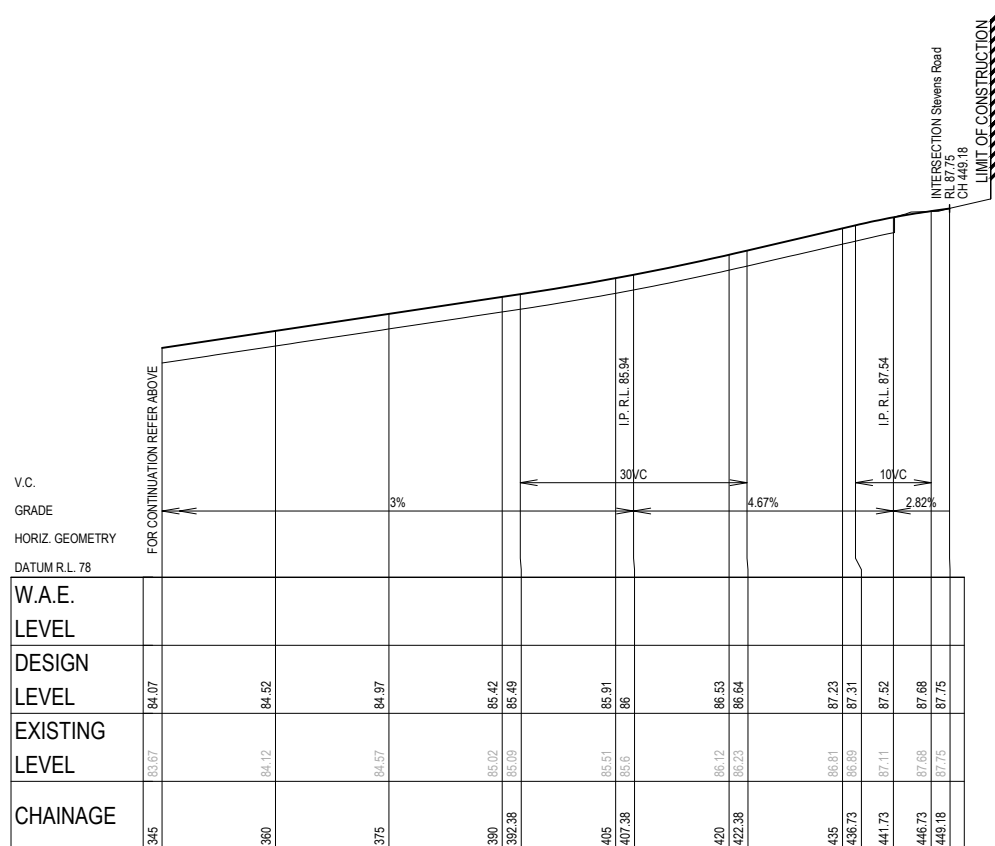
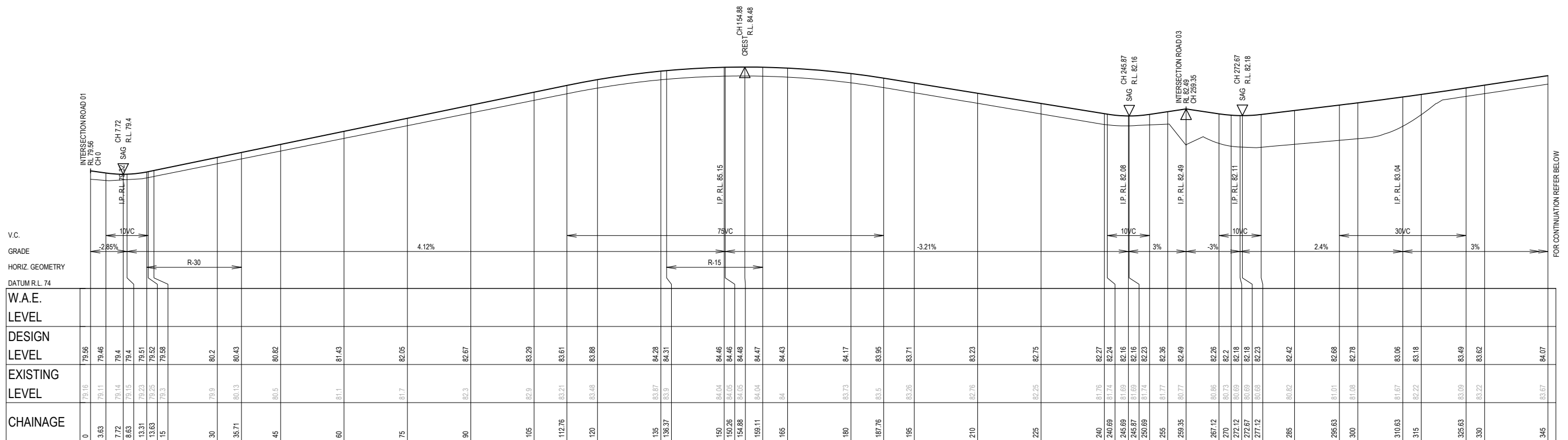
STATUS
ISSUED FOR DEVELOPMENT APPLICATION
AUTHORISED FOR ISSUE: BY: JOSEPH MEKARY BE (Civl) MIEAust. MBA MPM JP
SIGN: <i>JPM</i> DATE: 21/02/19



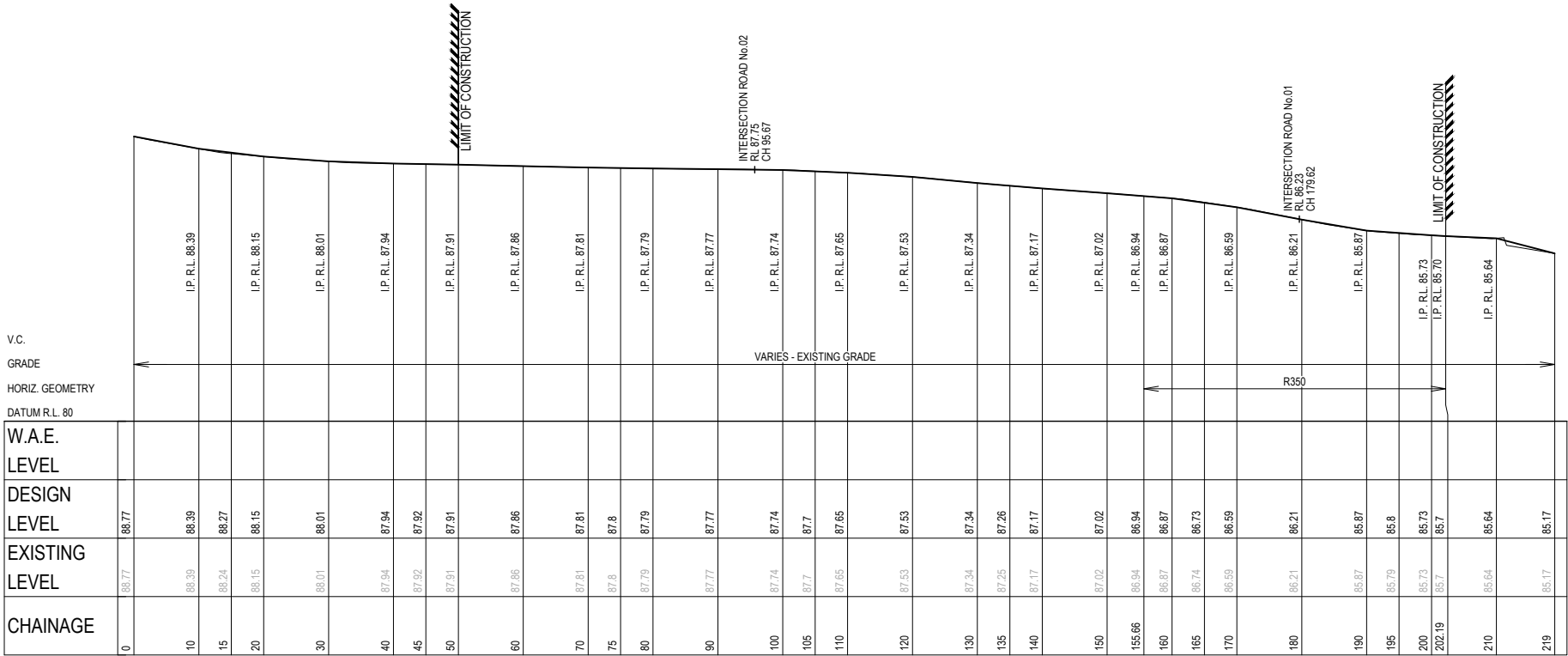
PROJECT
STATION ST, MENANGLE - STAGE 1
ROAD & DRAINAGE

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE
ROAD NO.01 LONGITUDINAL & TYPICAL CROSS SECTION
PROJECT No. 17-003293-01
DRAWING No. 401
MILESTONE DA
REVISION 2

[illegible]

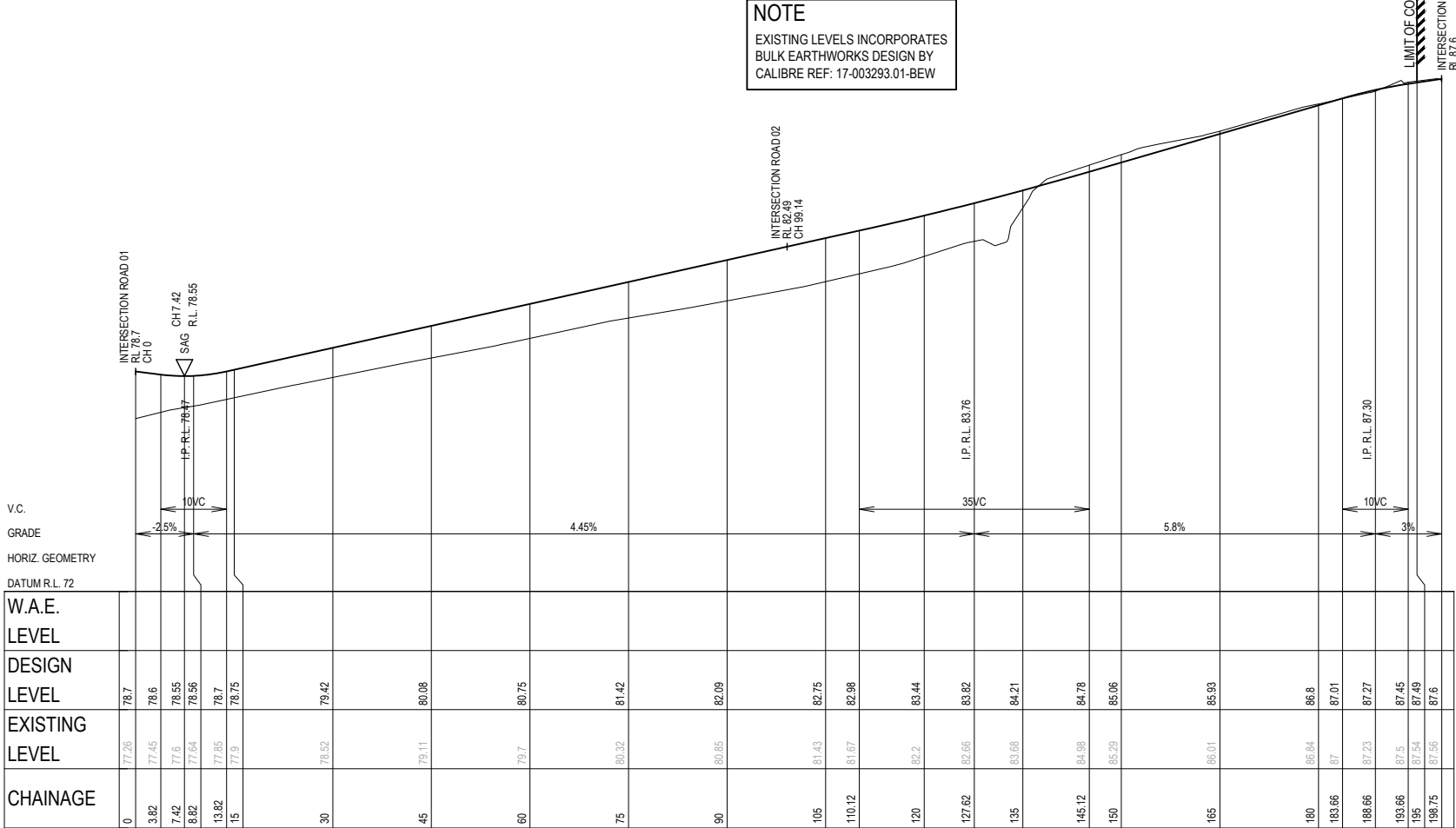
FILE: H:\17-003293 - STATION ST MENANGLE - L006 - MODEL\AUTOCAD\CIVIL\STAGE 1\ROAD DRAINAGE\17-003293_01-L06-DA-403.DWG LAST SAVED BY:VISHULKARNI



LONGITUDINAL SECTION - STEVENS ROAD

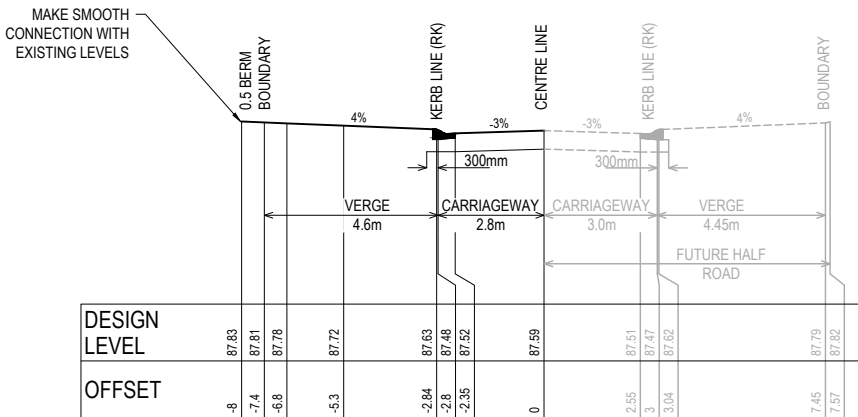
SCALE 1:500 (H)
SCALE 1:100 (V)

NOTE
EXISTING LEVELS INCORPORATES
BULK EARTHWORKS DESIGN BY
CALIBRE REF: 17-003293.01-BEW



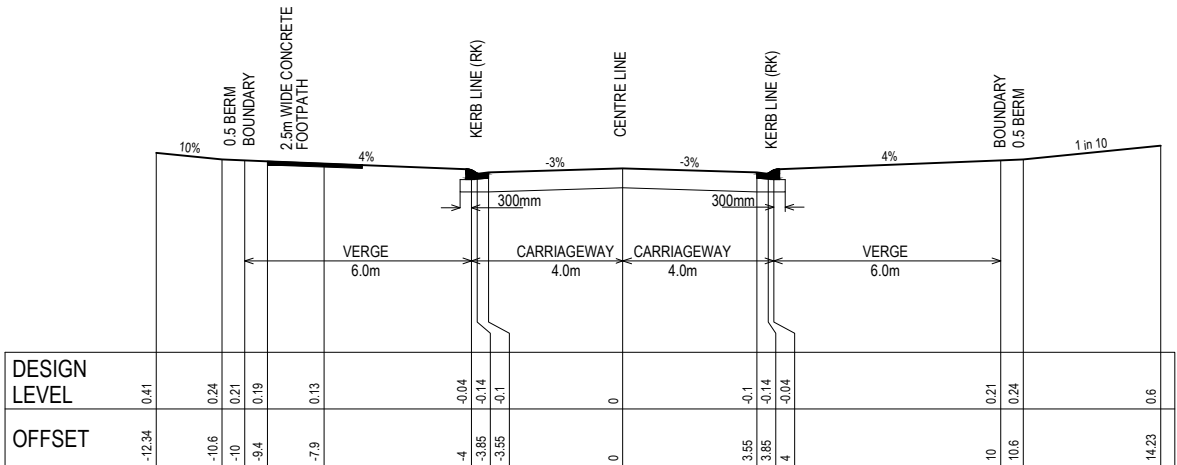
LONGITUDINAL SECTION - ROAD 03

SCALE 1:500 (H)
SCALE 1:100 (V)



TYPICAL CROSS SECTION - STEVENS ROAD

SCALE 1:100 (H) 1:100 (V)



TYPICAL CROSS SECTION - ROAD No.03

CH 20 - CH 140
SCALE 1:100 (H) 1:100 (V)

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
	LF	VS	MC	JM	20/08/2018	
1	LF	JS	EF	JM	23/01/2019	ISSUE FOR DEVELOPMENT APPLICATION
2	LF	BM	EF	JM	21/02/2019	ISSUE TO SUIT CLIENT COMMENTS

STATUS	
ISSUED FOR DEVELOPMENT APPLICATION	
AUTHORISED FOR ISSUE: BY: JOSEPH MEKARY BE (Civl) MIEAust. MBA MPM JP	
SIGN: <i>JPM</i>	DATE: 21/02/19



PROJECT			
STATION ST, MENANGLE - STAGE 1 ROAD & DRAINAGE			
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY			

DRAWING TITLE			
ROAD NO.03 & STEVENS RD LONGITUDINAL & TYPICAL CROSS SECTIONS			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
17-003293-01	403	DA	2

