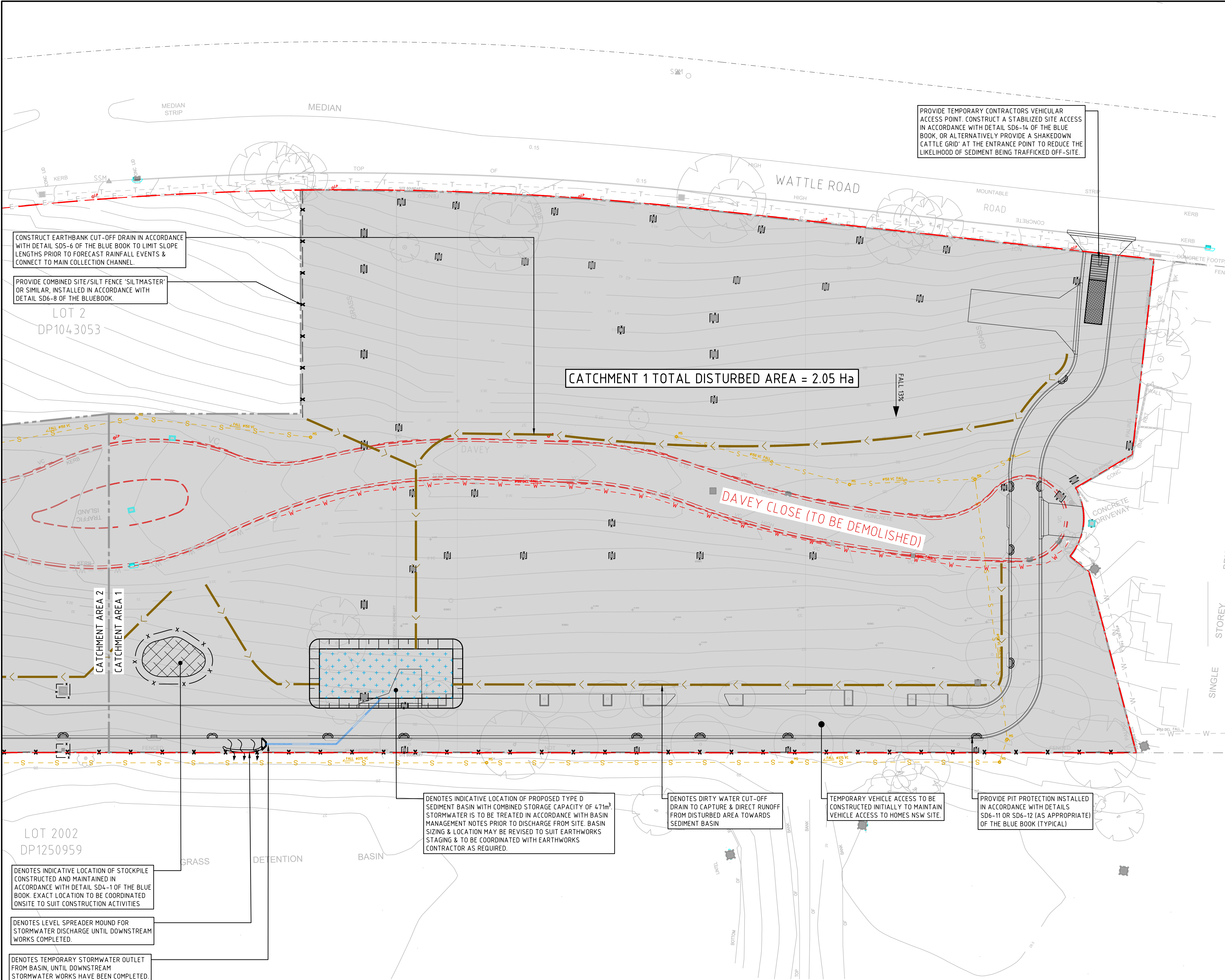




LEGEND

DENOTES SITE BOUNDARY LINE

DENOTES APPROXIMATE EXTENTS OF DISTURBED AREA

DENOTES COMBINED SITE/SILT FENCE 'SILTMASTER' OR SIMILAR, INSTALLED IN ACCORDANCE WITH DETAIL SD6-8 OF THE BLUEBOOK.

DENOTES TEMPORARY CONTRACTORS VEHICULAR ACCESS POINT. CONSTRUCT A STABILIZED SITE ACCESS IN ACCORDANCE WITH DETAIL SD6-14 OF THE BLUE BOOK OR PROVIDE A SHAKEDOWN CATTLE GRID AT ENTRANCE POINT TO REDUCE LIKELIHOOD OF SEDIMENT BEING TRAFFICKED OFF-SITE

DENOTES GEOTEXTILE INLET FILTER INSTALLED IN ACCORDANCE WITH DETAIL SD6-12 OF THE BLUE BOOK

INDICATES MESH & GRAVEL INLET FILTER INSTALLED IN ACCORDANCE WITH DETAILS SD6-11 OF THE BLUE BOOK

DENOTES SANDBAG or GEOTEXTILE SOCK FILLED WITH NO FINES GRAVEL PLACED IN INVERT OF GUTTER OR ALONG EDGE OF BITUMEN

DENOTES INDICATIVE LOCATION OF STOCKPILE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH DETAIL SD4-1 OF THE BLUE BOOK

DENOTES DIRTY WATER CHANNEL TO COLLECT RUN OFF GENERATED ON SITE AND DIRECTED TO SEDIMENT BASIN

DENOTES SEDIMENT BASIN. REFER TO DRAWING DA2.02 FOR SEDIMENT BASIN CALCULATIONS AND SIZE TABLE.

SEDIMENT & EROSION CONTROL NOTES

1. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH RELEVANT ORDINANCES AND REGULATIONS. NOTE IN PARTICULAR THE REQUIREMENTS OF LANDCOMS MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION (THE 'BLUE BOOK').

2. INST ALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.

3. ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.

4. INSTALL SEDIMENT FENCING AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.

5. ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.

6. THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.

7. ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.

8. STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.

9. CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).

10. ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.

11. PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.

12. ONCE CUT/FILL OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ ALL MAINTENANCE, CLEANING & BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.

14. WATER CAPTURED WITHIN THE SEDIMENT BASIN DURING CONSTRUCTION SHALL BE FLOCCULATED AND SETTLED BEFORE DISCHARGING TO THE OUTLET AS SHOWN ON PLAN. THE DISCHARGE OF WATER SHALL OCCUR ONLY WHEN THE SUSPENDED SOLIDS (SS) CONCENTRATION DROPS BELOW 50mg/L. TESTING OF SS CONCENTRATION SHALL BE UNDERTAKEN PRIOR TO DISCHARGE WITH DISCHARGE AND TESTING BEING CONDUCTED IN ACCORDANCE WITH APPENDIX E OF THE 'BLUE BOOK'. PROVIDE PUMPING EQUIPMENT TO DISCHARGE WATER AS NECESSARY.

THE CONTRACTOR SHALL ENSURE COUNCIL ASSETS AND THE UTILITIES ARE PROTECTED AT ALL TIMES. ANY AND ALL DAMAGES TO COUNCIL ASSETS AND/OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SPECIFICATION OF COUNCIL AND THE UTILITIES AUTHORITY AND AT NO COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS.

REFER TO DRAWING DA2.02 FOR SEDIMENT BASIN CALCULATIONS AND BASIN MANAGEMENT PLAN NOTES.

NOTE: THIS SEDIMENT & EROSION CONTROL PLAN IS DESIGNED FOR THE MANAGEMENT OF THE EFFECTS OF STORMWATER RUNOFF DURING CONSTRUCTION. IT IS NOT DESIGNED FOR THE MANAGEMENT OF GROUNDWATER. SHOULD GROUNDWATER MANAGEMENT BE REQUIRED, A SEPARATE MANAGEMENT PLAN WILL NEED TO BE DESIGNED BY A SUITABLY QUALIFIED GEOTECHNICAL/ENVIRONMENTAL CONSULTANT.

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		04.09.24
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.		25.10.24
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.		07.11.24

CLIENT

Uniting

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PROJECT

UNITING SHELLHARBOUR

171 WATTLE ROAD

SHELLHARBOUR

STAGE 1

DRAWING TITLE

CONCEPT SOIL AND WATER

MANAGEMENT PLAN - SHEET 1

JOB NUMBER

SY230307

DRAWING NUMBER

DA2.01

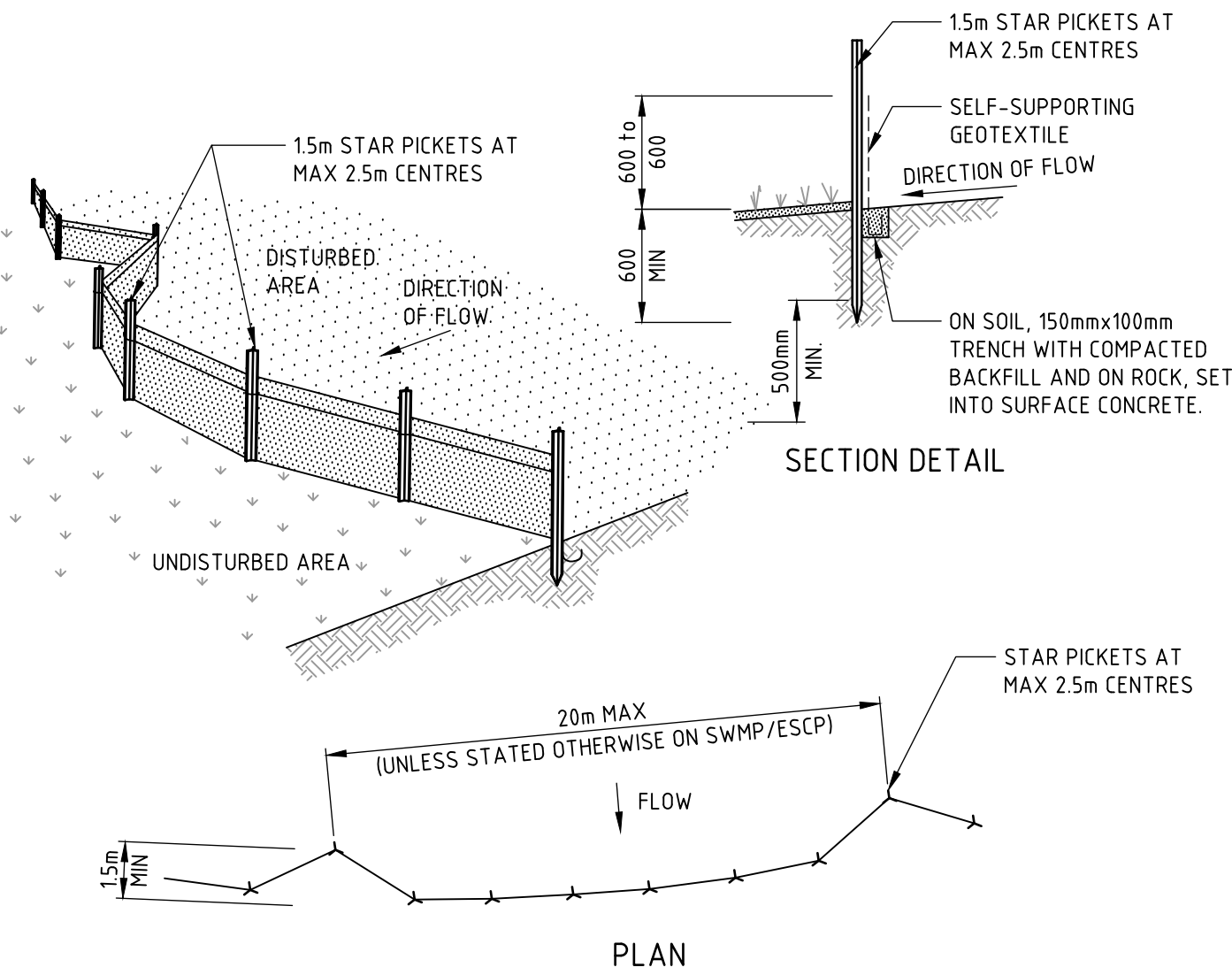
REVISION

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DRAWING SHEET SIZE

A1

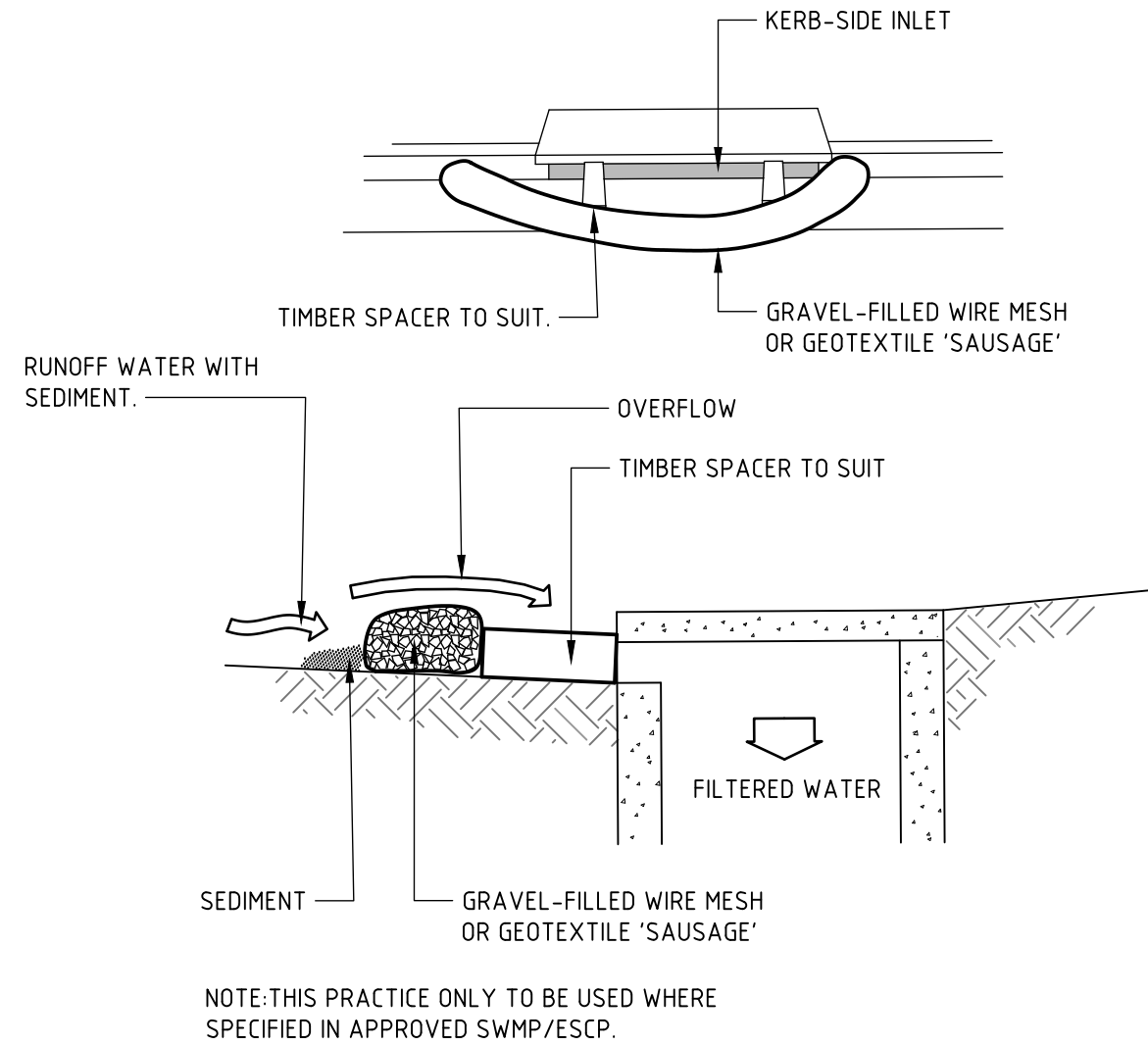
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Version: 1, Version Date: 17/06/2025



CONSTRUCTION NOTES

1. 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.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 15 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

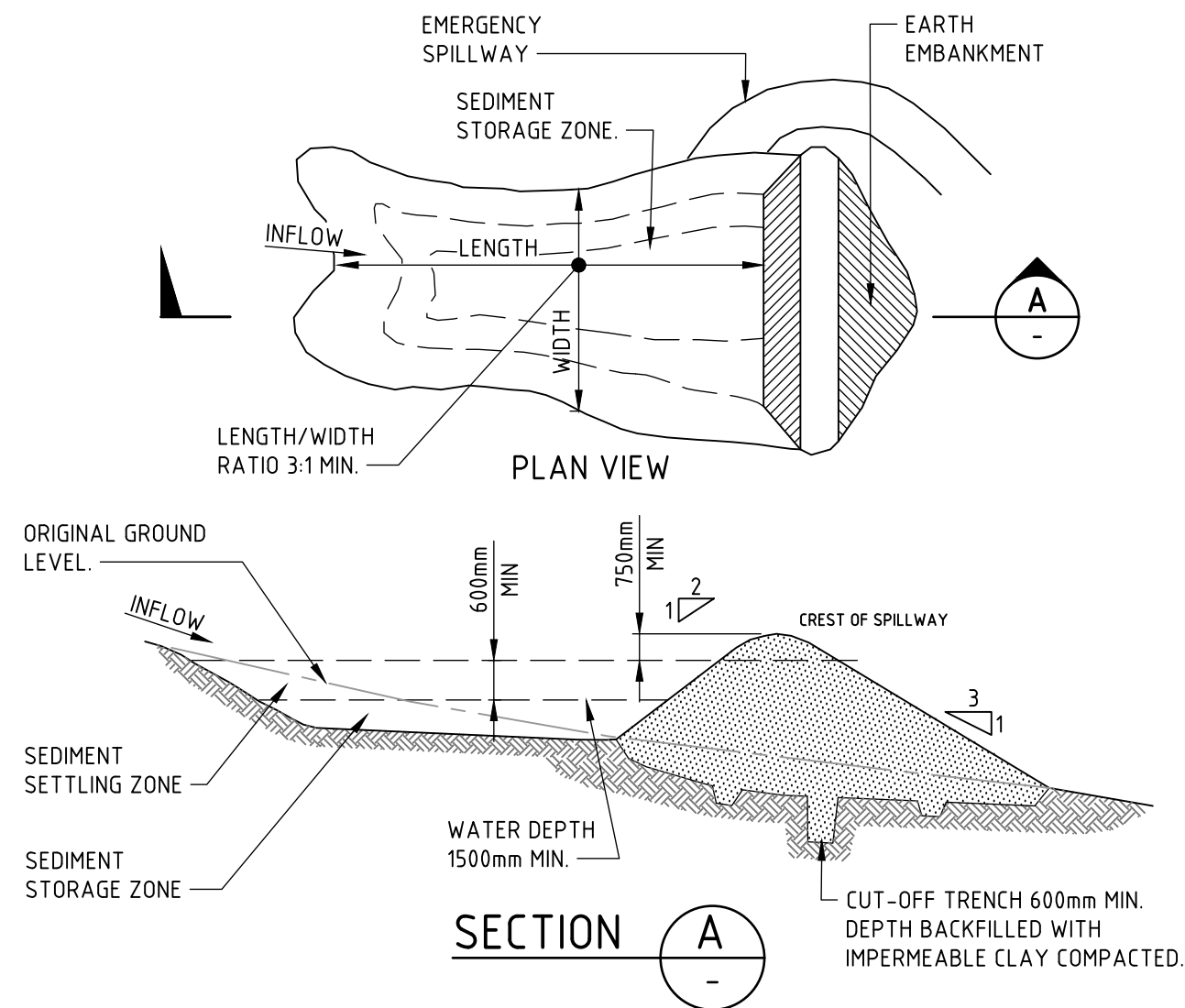
SEDIMENT FENCE (SD 6-8)



CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

MESH AND GRAVEL INLET FILTER (SD 6-11)

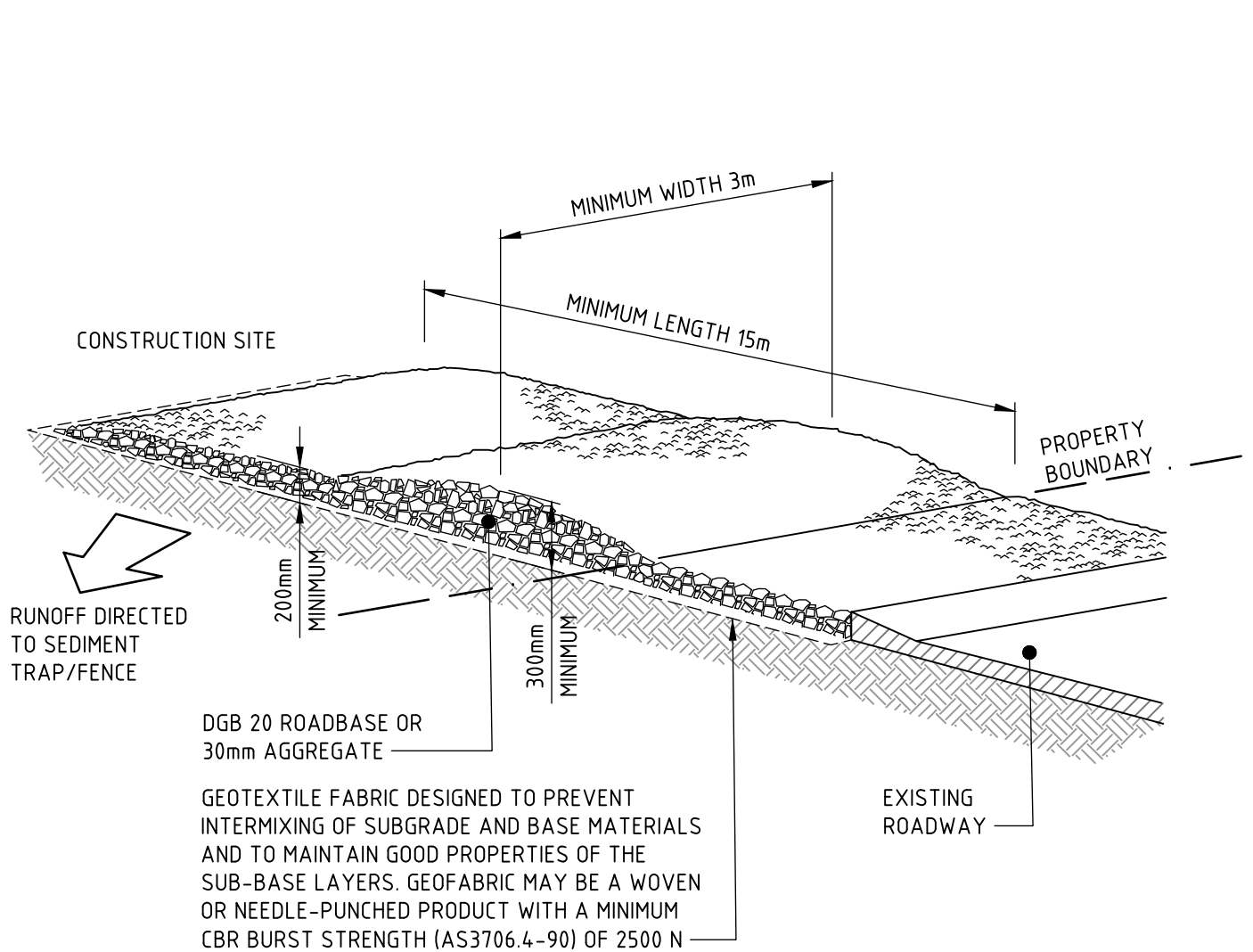


CONSTRUCTION NOTES

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1200mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
4. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
7. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

(APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY)

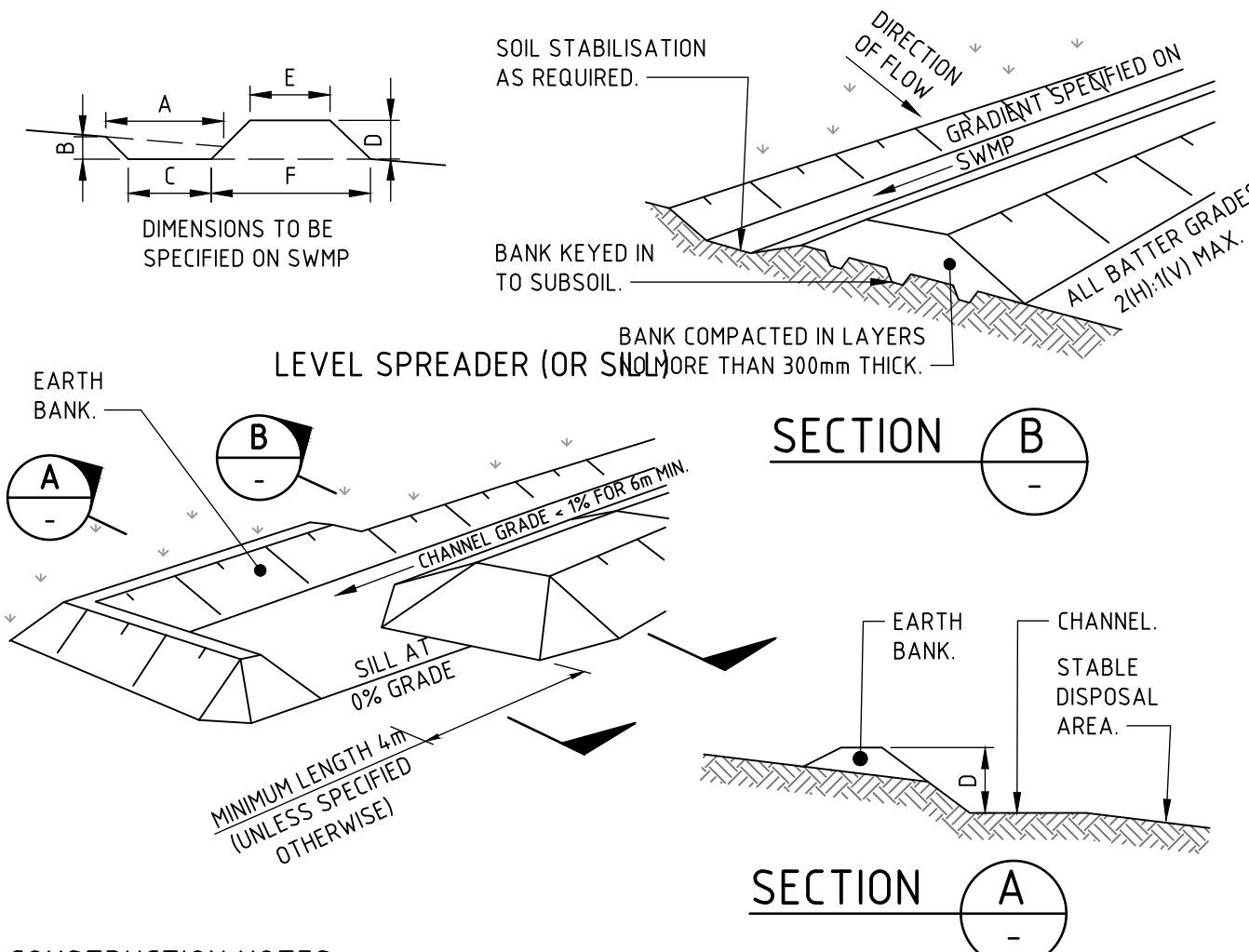
EARTH BASIN - WET (SD 6-4)



CONSTRUCTION NOTES

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

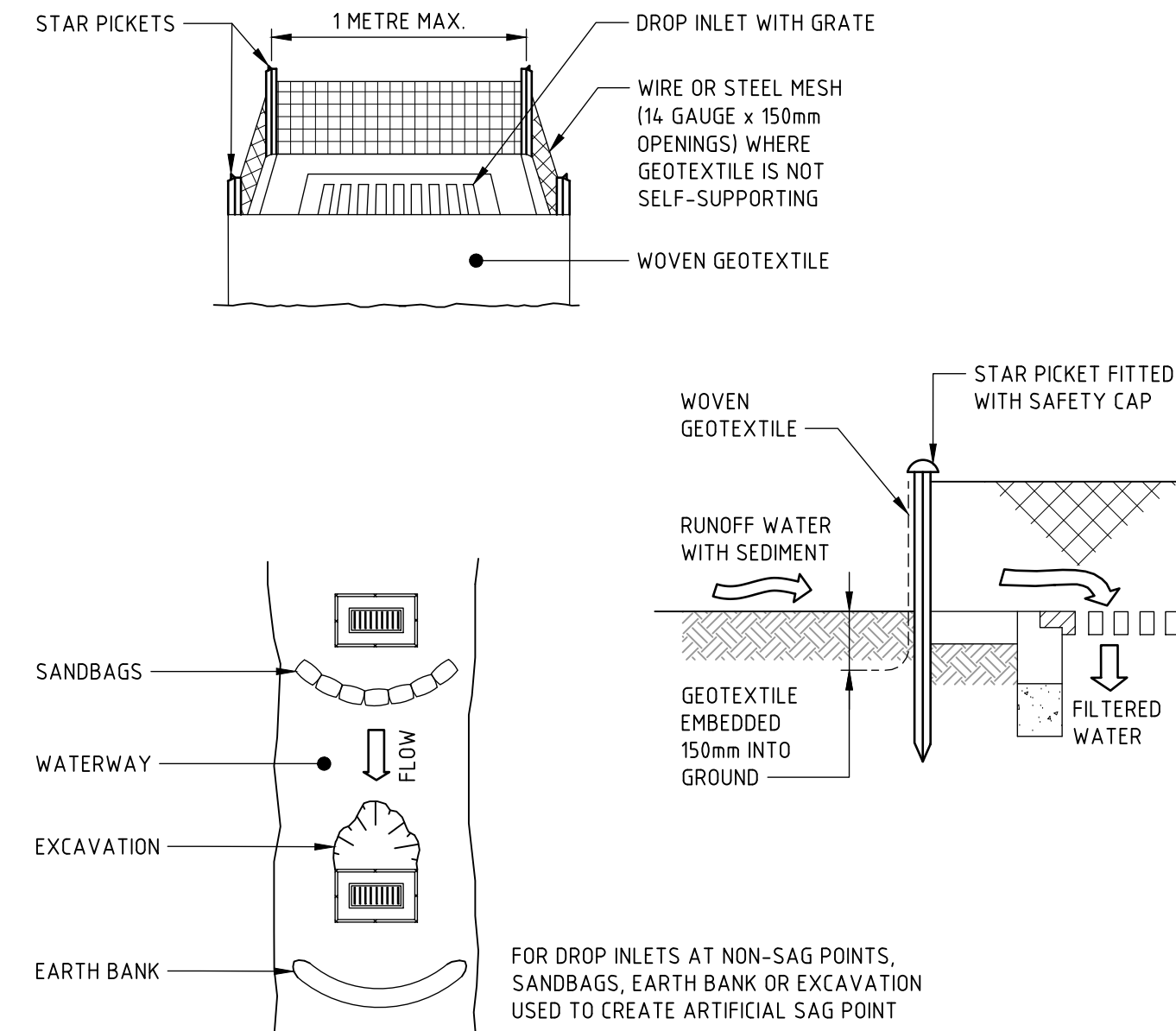
STABILISED SITE ACCESS (SD 6-14)



CONSTRUCTION NOTES

1. CONSTRUCT AT THE GRADIENT SPECIFIED ON THE ESCP OR SWMP, NORMALLY BETWEEN 1 AND 5 PERCENT.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V-SHAPED, AT THE DIMENSIONS SHOWN ON THE SWMP.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION FOLLOWING TABLE 5.2 IN LANDCOM (2004).
7. WHERE DISCHARGING TO ERODIBLE LANDS, ENSURE THEY OUTLET THROUGH A PROPERLY CONSTRUCTED LEVEL SPREADER.
8. CONSTRUCT THE LEVEL SPREADER AT THE GRADIENT SPECIFIED ON THE ESCP OR SWMP, NORMALLY LESS THAN 1 PERCENT OR LEVEL.
9. 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

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER (SD 6-12)

SEDIMENT BASIN/TANKS MANAGEMENT NOTES

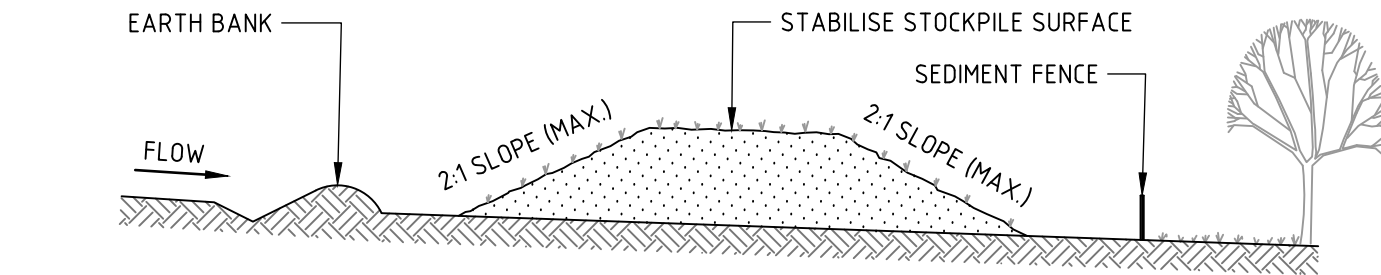
1. PRIOR TO ANY FORECAST WEATHER EVENT, LIKELY TO RESULT IN SEDIMENT LADEN RUNOFF ON THE SITE, ANY EXISTING DETENTION BASINS/TANKS/TRAPS SHALL BE DEWATERED TO PROVIDE SUFFICIENT CAPACITY TO CAPTURE SEDIMENT LADEN WATER FROM THE SITE.
2. ANY SEDIMENT LADEN WATER CAPTURED ON-SITE MUST BE TREATED TO ENSURE IT WILL ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES PRIOR TO ITS RELEASE FROM SITE. A SAMPLE OF THE RELEASED TREATED WATER MUST BE KEPT ON-SITE IN A CLEAR CONTAINER WITH THE SAMPLE DATE RECORDED.
3. NO ALUMINUM BASED PRODUCTS MAY BE USED TO TREAT TURBID WATER (FLOCCULATING/COAGULANTS) ON-SITE WITHOUT THE PRIOR WRITTEN PERMISSION FROM AN APPROPRIATE COUNCIL OFFICER. THE APPLICANT MUST HAVE DEMONSTRATED ABILITY TO USE SUCH PRODUCTS CORRECTLY AND WITHOUT ENVIRONMENTAL HARM PRIOR TO ANY APPROVAL.
4. THE CHEMICAL/AGENT (FLOCCULATING/COAGULANTS) USED IN TYPE D AND TYPE F BASINS/TANKS TO TREAT TURBID WATER CAPTURED IN THE BASIN/TANKS MUST BE APPLIED IN CONCENTRATIONS SUFFICIENT TO ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES (TSS < 50mg/L, TURBIDITY < 60 NTU, 6.5 < pH < 8.5) WITHIN THE 5-DAY RAINFALL DEPTH USED TO CALCULATE THE CAPACITY OF THE BASIN/TANKS, AFTER A RAINFALL EVENT.
5. ALL MANUFACTURERS INSTRUCTIONS MUST BE FOLLOWED FOR THE USE OF ANY CHEMICALS/AGENTS USED ON-SITE, EXCEPT WHERE APPROVED BY THE RESPONSIBLE PERSON OR AN APPROPRIATE COUNCIL OFFICER.
6. SUFFICIENT QUANTITIES OF CHEMICALS/AGENTS TO TREAT TURBID WATER (FLOCCULATING/COAGULANTS) MUST BE PLACED SUCH THAT WATER ENTERING THE BASINS/TANKS/SEDIMENT TRAP MIXES WITH THE CHEMICALS/AGENTS AND IS CARRIED INTO THE BASIN/TANKS/TRAP.
7. ANY BASIN/TANKS MUST BE DEWATERED AS SOON AS PRACTICAL, ONCE WATER CAPTURED IN THE BASIN/TANKS ACHIEVES COUNCIL'S WATER QUALITY OBJECTIVES.
8. INSPECT THE SEDIMENT BASINS/TANKS AFTER EACH RAINFALL EVENT AND/OR WEEKLY. ENSURE THAT ALL SEDIMENT IS REMOVED ONCE THE SEDIMENT STORAGE ZONE IS FULL. ENSURE THAT OUTLET AND EMERGENCY SPILLWAY WORKS ARE MAINTAINED IN A FULLY OPERATIONAL CONDITION AT ALL TIMES.

SEDIMENT BASIN SIZING CALCULATION

THE SITE IS LOCATED WITHIN THE SHELLHARBOUR SOIL LANDSCAPE AND PRIMARILY CONSISTS OF CLAYS, WHICH HAS THE FOLLOWING PROPERTIES (IN ACCORDANCE WITH TABLE C22 OF THE 'BLUE BOOK'.

SITE PARAMETERS	
CONSTRAINT	VALUE
SEDIMENT TYPE	D
SOIL HYDROLOGY GROUP	C
K = SOIL ERODIBILITY (K-FACTOR)	0.035
R = RAINFALL EROSIVITY (R-FACTOR)	2290
S = 2 YEAR, 6 HOUR STORM INTENSITY	8.59mm/hr
LS = SLOPE LENGTH/GRADIENT	5.19 (106m SLOPE @ 13% GRADE)
P = EROSION CONTROL PRACTICE (P-FACTOR)	1.3 (TYPICAL)
C = GROUND COVER (C-FACTOR)	1.0 (0% GRASS COVER)
A = DISTURBED AREA	2.05 Ha
SOIL LOSS (m ³ /yr)	853m ³ /Yr
SOIL LOSS (RUSLE METHOD) (tonnes/ha/yr)	541 tonnes/ha/Yr
EROSION HAZARD (TABLE 4.2 BLUE BOOK)	HIGH
TOTAL SITE RUN-OFF IS GREATER THAN 150m ³ /Yr. BASIN/TANKS REQUIRED.	

SEDIMENT BASIN SIZING	
CONSTRAINT	VALUE
CV = VOLUMETRIC RUNOFF COEFFICIENT	0.50
R = 5 DAY, 80 TH PERCENTILE RAINFALL	318mm
A = CATCHMENT AREA	2.05ha
SETTLING ZONE VOLUME (10xCVxRxA)	326m ³
SOIL LOSS (CALC ABOVE)	416m ³ /ha/yr
SEDIMENT STORAGE VOLUME (0.17xSOIL LOSSxA)	145m ³
TOTAL BASIN VOLUME REQUIRED	471m ³



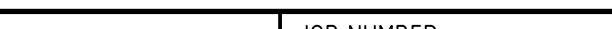
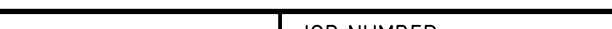
CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. 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 2m DOWNSLOPE.

STOCKPILES (SD 4-1)

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

NOT FOR CONSTRUCTION

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT		ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.		PROJECT	DRAWING TITLE	JOB NUMBER
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		04.09.24		TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0088 turnerstudio.com.au				UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	SOIL AND WATER MANAGEMENT DETAILS	SY230307
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24	DRAWING NUMBER								REVISION
						DA2.02								B
						DRAWING SHEET SIZE = A1								
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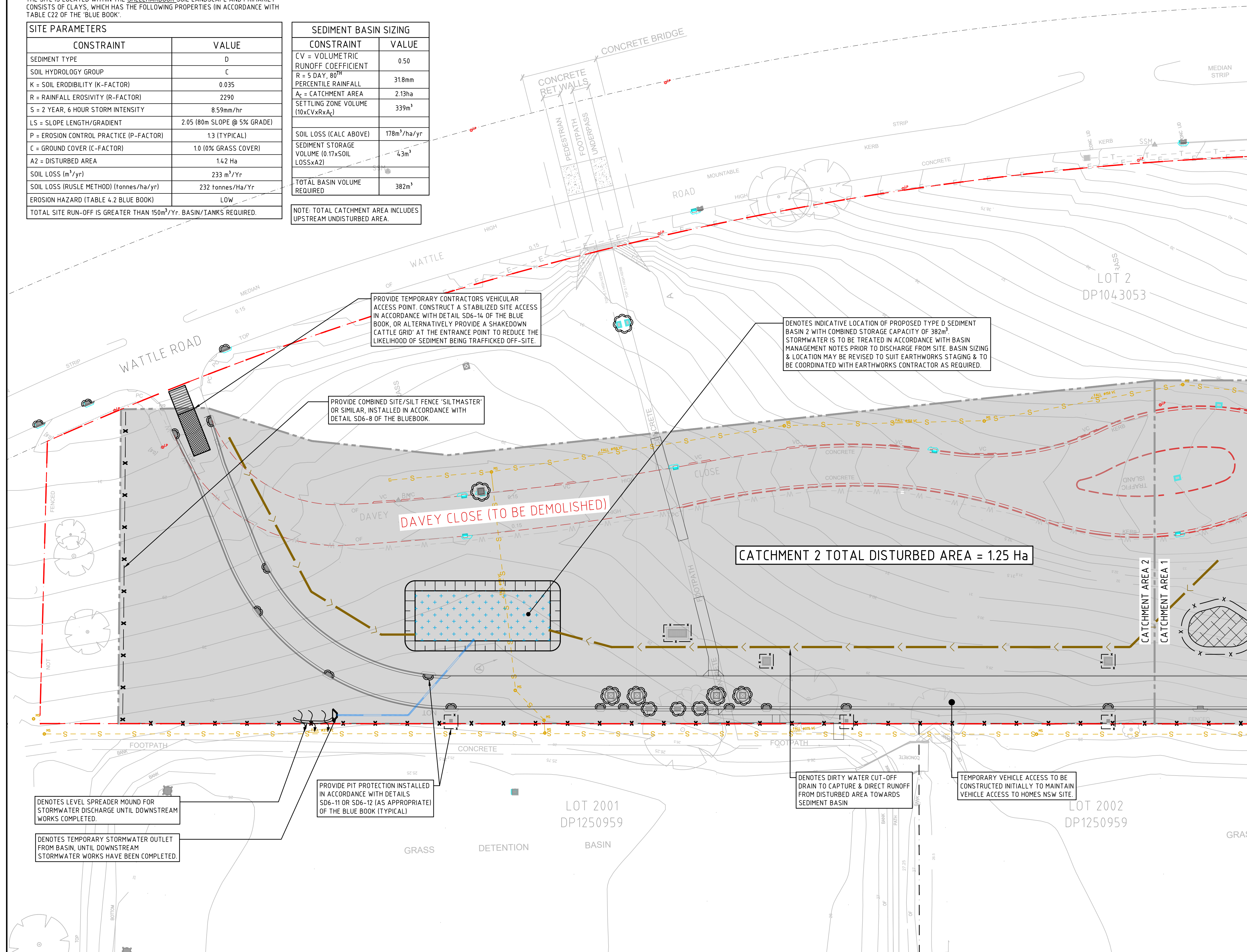
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LS = SLOPE LENGTH/GRADIENT	2.05 (80m SLOPE @ 5% GRADE)
P = EROSION CONTROL PRACTICE (P-FACTOR)	13 (1 TYPE(CAL))
C = GROUND COVER (C-FACTOR)	1.0 (0% GRASS COVER)
A2 = DISTURBED AREA	1.42 HA
SOIL LOSS (m ³ /yr)	233 m ³ /Yr
SOIL LOSS (RUSLE METHOD) (tonnes/ha/yr)	232 tonnes/Ha/Yr
EROSION HAZARD (TABLE 4.2 BLUE BOOK)	LOW
TOTAL SITE RUN-OFF IS GREATER THAN 150m ³ /Yr. BASIN/TANKS REQUIRED.	

SEDIMENT BASIN SIZING	
CONSTRAINT	VALUE
CV = VOLUMETRIC RUNOFF COEFFICIENT	0.50
R = 5 DAY, 80 th PERCENTILE RAINFALL	31.8mm
A _c = CATCHMENT AREA	2.13ha
SETTLING ZONE VOLUME (10XCVXR _A)	339m ³
SOIL LOSS (CALC ABOVE)	178m ³ /ha/yr
SEDIMENT STORAGE VOLUME (0.17XSOIL LOSSXA2)	4.3m ³
TOTAL BASIN VOLUME REQUIRED	382m ³

NOTE: TOTAL CATCHMENT AREA INCLUDES UPSTREAM UNDISTURBED AREA.

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UPSTREAM UNDISTURBED AREA.



	DENOTES APPROXIMATE EXTENTS OF DISTURBED AREA
	DENOTES COMBINED SITE/SILT FENCE 'SILTMASTER' OR SIMILAR, INSTALLED IN ACCORDANCE WITH DETAIL SD6-8 OF THE BLUEBOOK.
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	DENOTES GEOTEXTILE INLET FILTER INSTALLED IN ACCORDANCE WITH DETAIL SD6-12 OF THE BLUE BOOK
	INDICATES MESH & GRAVEL INLET FILTER INSTALLED IN ACCORDANCE WITH DETAILS SD6-11 OF THE BLUE BOOK
	DENOTES SANDBAG OR GEOTEXTILE SOCK FILLED WITH NO FINES GRAVEL PLACED IN INVERT OF GUTTER OR ALONG EDGE OF BITUMEN
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3. ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
4. INSTALL SEDIMENT FENCING AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.
5. ALL TREES TO BE REMOVED FOR SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.
6. THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.
7. ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
8. STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
9. CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
10. ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
11. PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
12. ONCE CUT-PILE OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ ALL MAINTENANCE, CLEANING & BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.
14. WATER CAPTURED WITHIN THE SEDIMENT BASIN DURING CONSTRUCTION SHALL BE FLOCCULATED AND SETTLED BEFORE DISCHARGING TO THOULETT AS SHOWN ON PLAN. THE DISCHARGE OF WATER SHALL BE ONLY WHEN THE SUSPENDED SOLIDS (SS) CONCENTRATION IS AT OR BELOW 50mg/L. TESTING OF DISCHARGE SHALL BE UNDERTAKEN PRIOR TO DISCHARGE WITH DISCHARGE AND TESTING BEING CONDUCTED IN ACCORDANCE WITH APPENDIX E OF THE 'BLUE BOOK'. PROVIDE PUMPING EQUIPMENT TO DISCHARGE WATER AS NECESSARY.

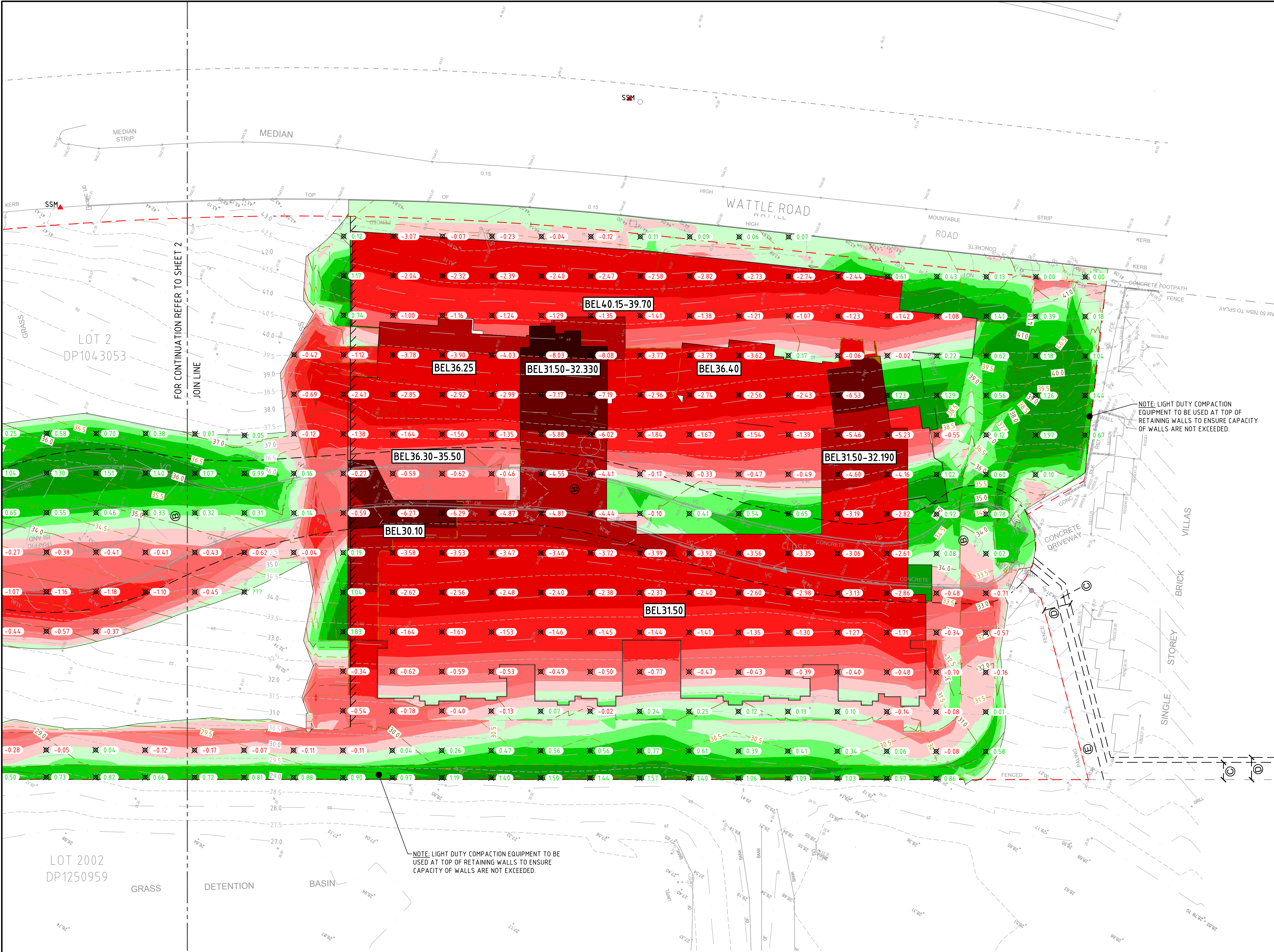
THE CONTRACTOR SHALL ENSURE COUNCIL ASSETS AND THE UTILITIES ARE PROTECTED AT ALL TIMES. ANY AND ALL DAMAGES TO COUNCIL ASSETS AND/OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SPECIFICATION OF COUNCIL AND THE UTILITIES AUTHORITY AND AT NO COST TO THE PRINCIPAL OR NORTHPRO CONSULTING ENGINEERS.

NOTE: THIS SEDIMENT & EROSION CONTROL PLAN IS DESIGNED FOR THE MANAGEMENT OF THE EFFECTS OF STORMWATER RUNOFF DURING CONSTRUCTION. IT IS NOT DESIGNED FOR THE MANAGEMENT OF GROUNDWATER. SHOULD GROUNDWATER MANAGEMENT BE REQUIRED, A SEPARATE MANAGEMENT PLAN WILL NEED TO BE DESIGNED BY A SUITABLY QUALIFIED GEOTECHNICAL/ENVIRONMENTAL CONSULTANT.

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

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REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT		PROJECT	DRAWING TITLE	JOB NUMBER	
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		25.10.24		TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA. T +61 2 9668 0000 F +61 2 9668 0060 turnerstudio.com.au	 Wollongong Level 1, 57 Kembla Street, Wollongong NSW 2500 Ph (02) 4226 3333 Fax (02) 4226 3666 P.O. Box 963, Wollongong, NSW 2500 Email southcoast@northrop.com.au ASN 81 094 033 100	UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	CONCEPT SOIL AND WATER MANAGEMENT PLAN - SHEET 2	SY230307	
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24	DRAWING NUMBER							REVISION
						DA2.03							B
						DRAWING SHEET SIZE = A1							
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LEGEND

- DENOTES SITE BOUNDARY LINE
- DENOTES EXISTING CONTOUR LINES
- DENOTES BULK EARTHWORKS SURFACE CONTOUR LINES
- ✕ 0.78 DENOTES DEPTH OF PROPOSED CUT (-VE) OR FILL (+VE)
- BEL34.60 DENOTES BULK EARTHWORKS LEVEL

Surface Analysis: Elevation Ranges				
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)	Volume (m3)
1		-10.000	-8.000	4.1
2		-8.000	-6.000	380.2
3		-6.000	-4.000	1680.1
4		-4.000	-2.000	5663.9
5		-2.000	-1.000	6131.5
6		-1.000	-0.500	4068.2
7		-0.500	-0.250	2378.0
8		-0.250	0.000	2654.7
9		0.000	0.250	1343.3
10		0.250	0.500	971.9
11		0.500	1.000	1163.0
12		1.000	3.000	710.2

BULK EARTHWORKS NOTES

- BULK EARTHWORKS LEVELS SHOWN ARE BASED ON THE FOLLOWING PAVEMENT THICKNESSES AND ALLOWANCES:
 - TRAFFICABLE PAVEMENT 500mm
 - NON-TRAFFICABLE PAVEMENT 150mm
 - STRUCTURAL BUILDING SLAB 200mm
 - LANDSCAPE TOPSOIL & TURF 150mm
- THE EXISTING GROUND SURFACE WAS LOWERED BY 200mm UNIFORMLY TO ACCOUNT FOR THE REMOVAL OF VEGETATION AND TOP SOIL AS WELL AS DEMOLITION OF EXISTING CONCRETE SLABS AND PAVEMENTS.
 - THIS VOLUME IS ESTIMATED (BASED ON THE TOTAL SITE AREA OF 28,921m²) TO BE APPROXIMATELY 5,784m³ (TOPSOIL/PAVEMENT STRIP - CUT).
 - THIS INCLUDES 200mm STRIPPING ALLOWANCE FOR THE DAVEY CLOSE'S EXISTING PAVEMENT WHICH HAS AN APPROXIMATE PAVEMENT AREA OF 4,170m².
- BULKING FACTORS OF 1.0 WAS USED FOR BOTH CUT AND FILL MATERIAL.
- THE APPROXIMATE SITE EARTHWORKS VOLUMES BASED ON THE NOTED PAVEMENT THICKNESSES ARE OUTLINED BELOW:
 - CUT: 27,270m³
 - FILL: 9,511m³
 - NET: 17,759 (CUT) + 5,784m³ (TOPSOIL/PAVEMENT STRIP - CUT).
- THE ABOVE VOLUMES ARE TO BE ASSESS NOTING THE FOLLOWING:
 - NO ALLOWANCE HAS BEEN MADE FOR DETAILED EXCAVATIONS SUCH AS FOOTINGS, SET DOWNS, SERVICES TRENCHING, SEDIMENT BASIN, BELOW GROUND TANKS ETC.
 - NO ALLOWANCE HAS BEEN MADE FOR TEMPORARY CONSTRUCTION PLATFORMS OR RETAINING WALL BACK FILL
 - NO ALLOWANCE HAS BEEN MADE FOR THE REMOVAL OF CONTAMINATED OR UNSUITABLE MATERIAL.
- THIS PLAN HAS BEEN PREPARED FOR INFORMATION PURPOSES ONLY AND IS INDICATIVE IN NATURE. THE EARTHWORKS CONTRACTOR IS TO VERIFY ALL LEVELS AND QUANTITIES AND PERFORM THEIR OWN BULK EARTHWORKS ASSESSMENT.
- EXISTING PAVEMENT LAYERS/MATERIAL FROM DAVEY CLOSE MAY BE REUSED FOR PROPOSED PAVEMENT SUBJECT TO GEOTECHNICAL ENGINEERS ADVICE. EARTHWORKS CONTRACTOR TO MAKE SUITABLE ALLOWANCES TO EARTHWORKS VOLUMES AS NECESSARY.



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REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		04.09.24
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	M.G.	R.S.		25.10.24
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.		07.11.24
D	REVISED FOR DEVELOPMENT APPLICATION	R.S.	K.T.	R.S.		21.05.25

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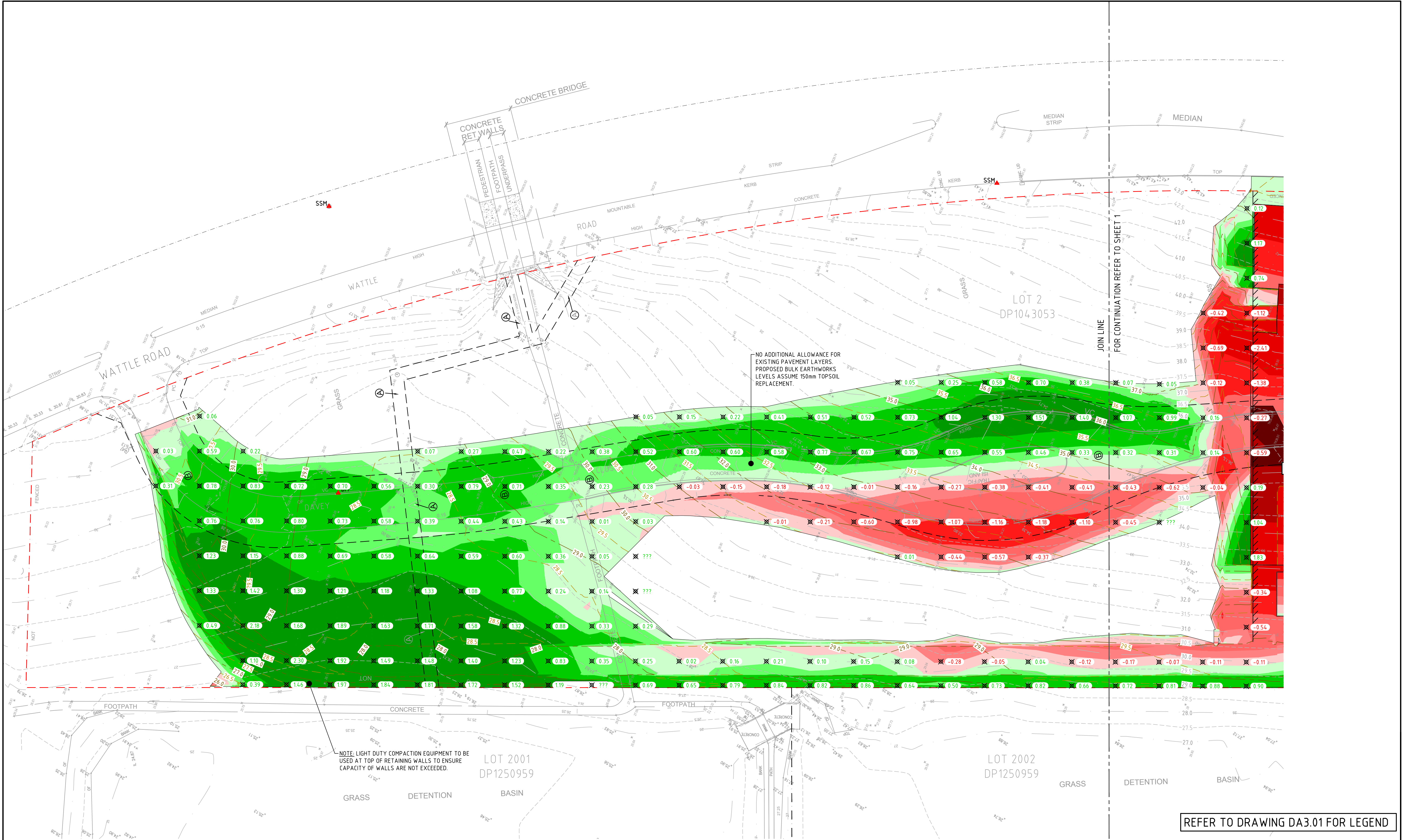
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PROJECT
UNITING SHELLHARBOUR
171 WATTLE ROAD
SHELLHARBOUR
STAGE 1

DRAWING TITLE
CONCEPT BULK EARTHWORKS PLAN
- SHEET 1

JOB NUMBER
SY230307
DRAWING NUMBER
DA3.01
REVISION
D
DRAWING SHEET SIZE = A1



REFER TO DRAWING DA3.01 FOR LEGEND

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A	ISSUED FOR DEVELOPMENT APPLICATION	B.M.S.	M.G.	R.S.		25.10.24
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.		07.11.24
C	REVISED FOR DEVELOPMENT APPLICATION	R.S.	K.T.	R.S.		21.05.25

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0 4 8 12 16 20m

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Email southcoast@northrop.com.au ABN 81 094 433 100

PROJECT

**UNITING SHELLHARBOUR
171 WATTLE ROAD
SHELLHARBOUR
STAGE 1**

DRAWING TITLE

**CONCEPT BULK EARTHWORKS PLAN
- SHEET 2**

JOB NUMBER

SY230307

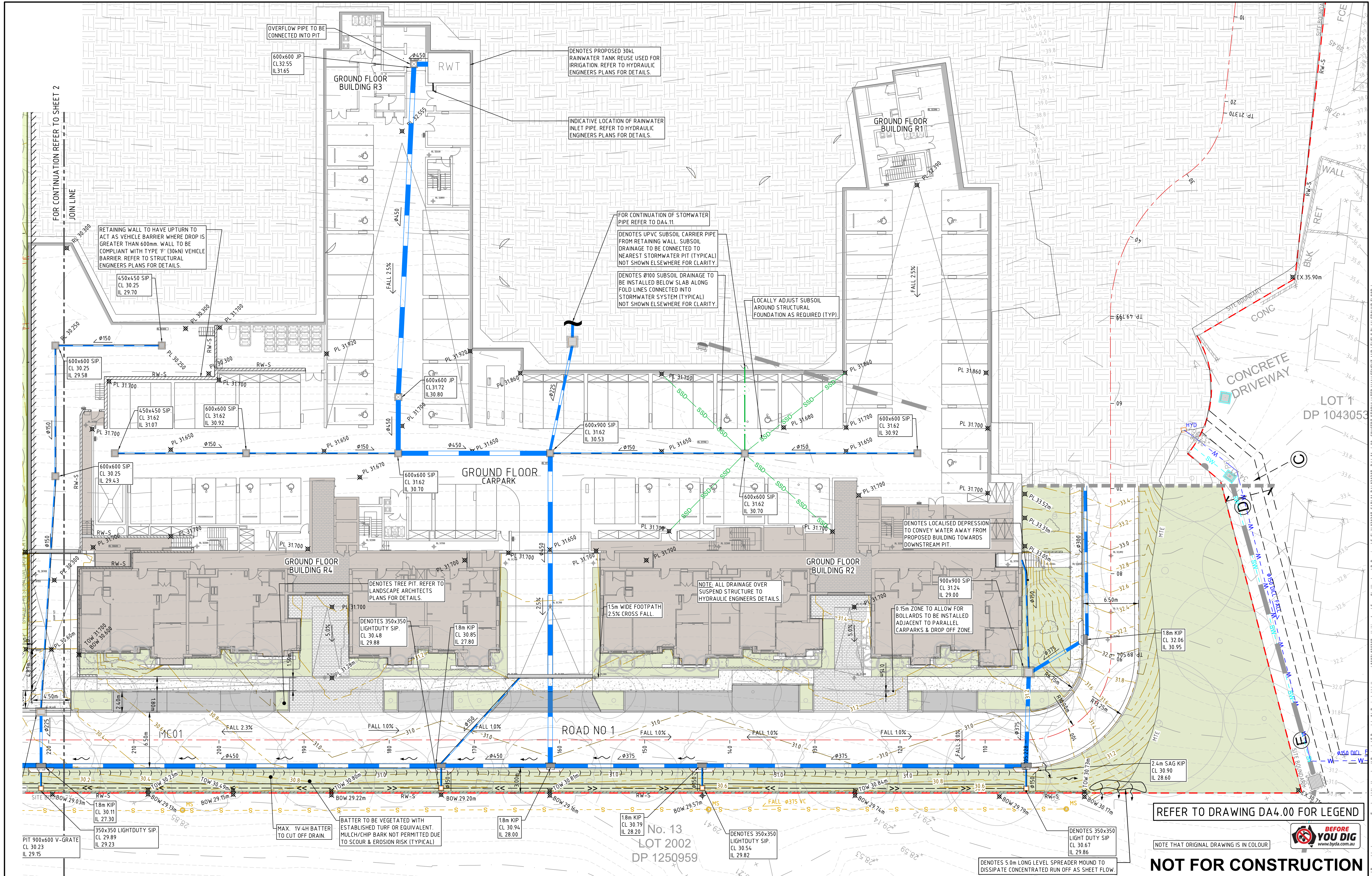
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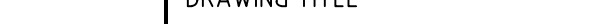
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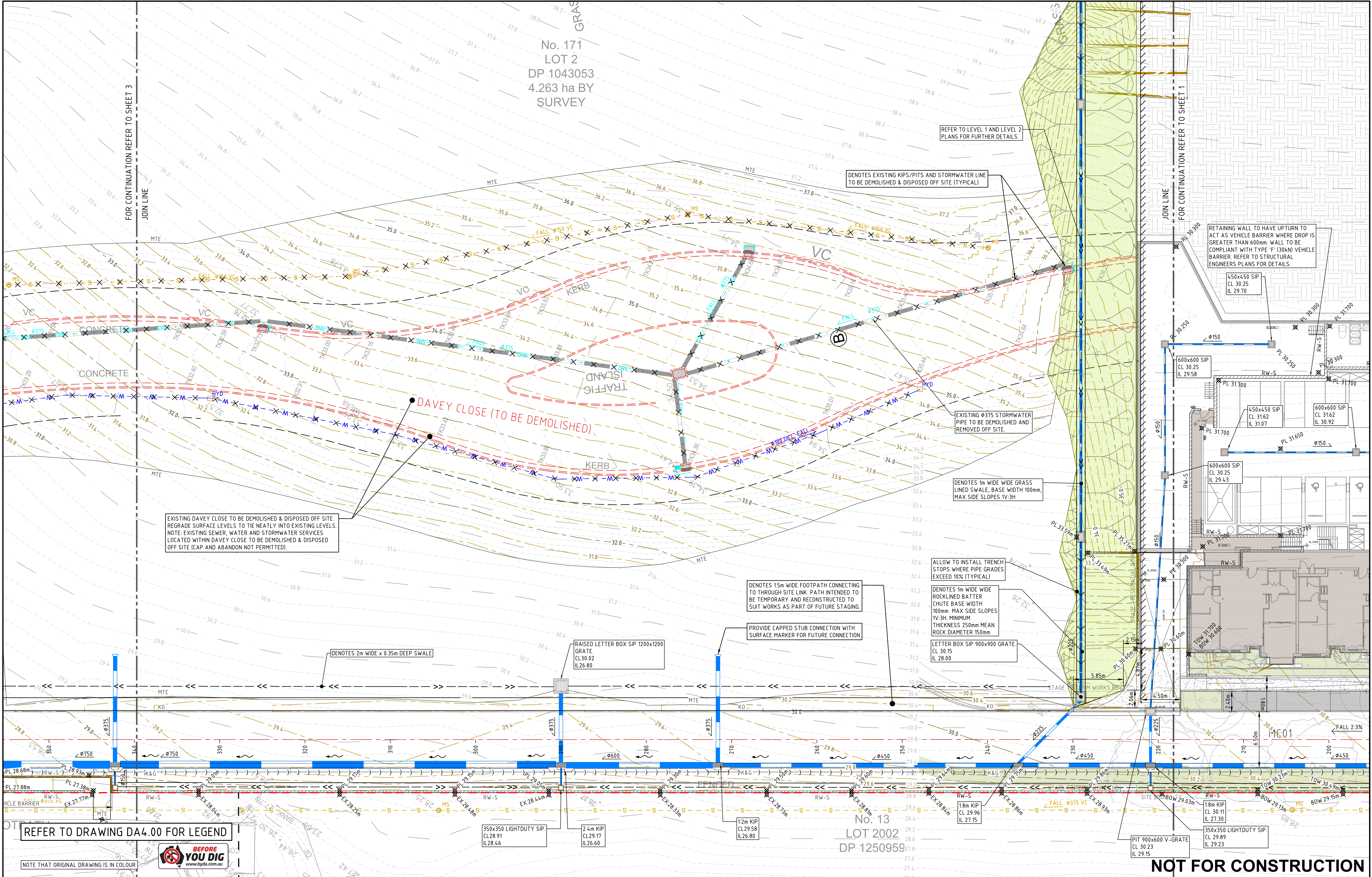
REVISION

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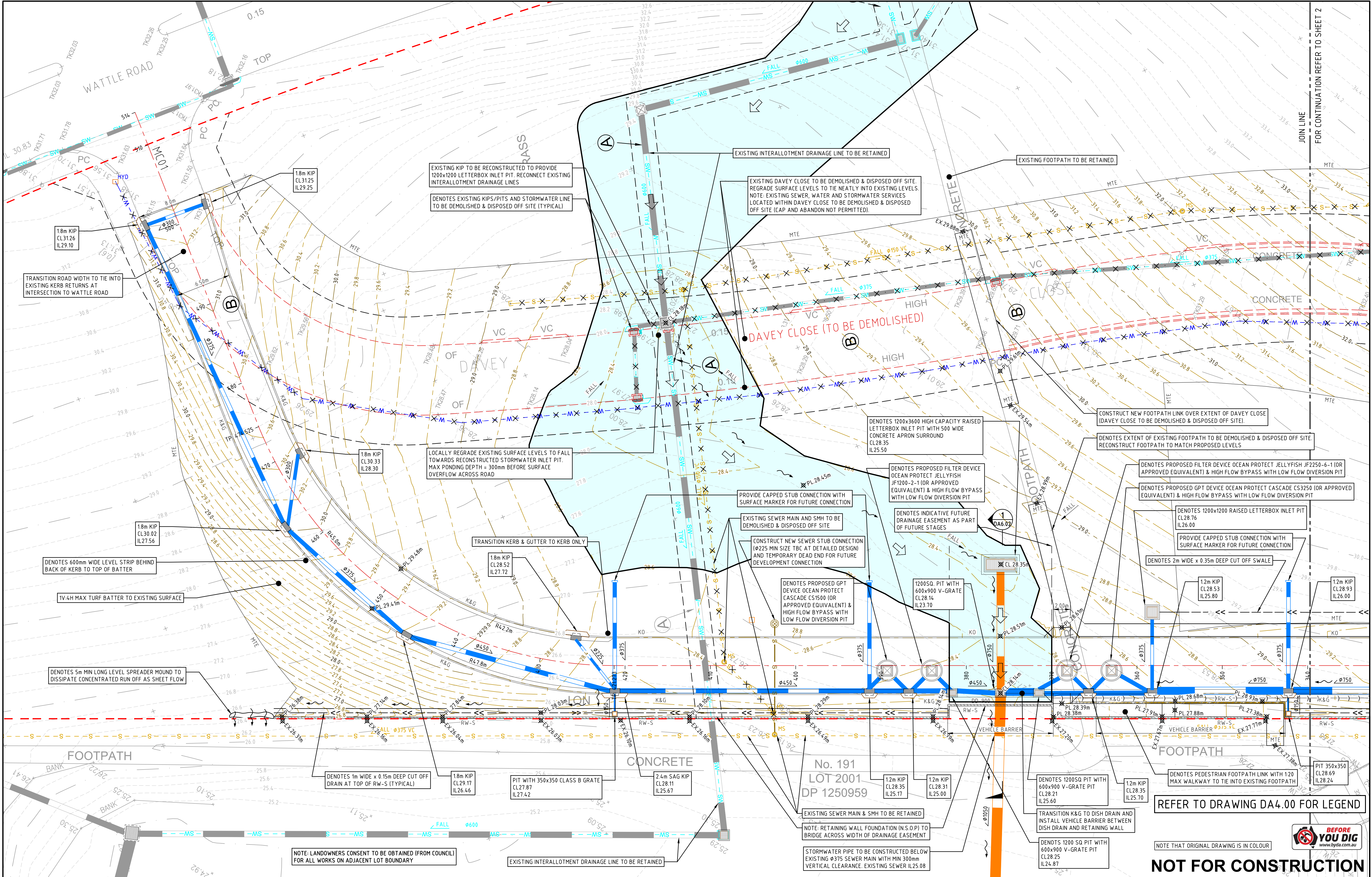
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01	ISSUED FOR INFORMATION	B.M.S.	L.M.	R.S.		15.12.23		TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0006 turnerstudio.com.au		Wollongong Level 1, 57 Kembla Street, Wollongong NSW 2500 Ph (02) 4226 3333 Fax (02) 4226 3666 P.O. Box 863, Wollongong, NSW 2500 Email southcoast@northrop.com.au AEN 81 094 433 100	UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN GROUND FLOOR - SHEET 1	SY230307	
02	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24								
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		04.09.24								
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	K.T.	R.S.		25.10.24								
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.		07.11.24								
D	REVISED FOR DEVELOPMENT APPLICATION	R.S.	K.T.	R.S.		21.05.25								
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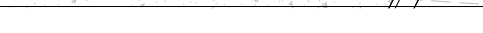
REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT		PROJECT	DRAWING TITLE	JOB NUMBER	
01	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24	 Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0008 turnerstudio.com.au	TURNER	 Wollongong Level 1, 57 Kembra Street, Wollongong NSW 2500 Ph: (02) 4226 3333 Fax: (02) 4226 3665 P.O. Box 863, Wollongong, NSW 2500 Email: southcoast@northrop.com.au ABN 81 094 433 100	UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN GROUND FLOOR - SHEET 2	SY230307	
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.	04.09.24	DRAWING NUMBER							REVISION
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	K.T.	R.S.	25.10.24	DA4.02							D
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24								
D	REVISED FOR DEVELOPMENT APPLICATION	R.S.	K.T.	R.S.	21.05.25								
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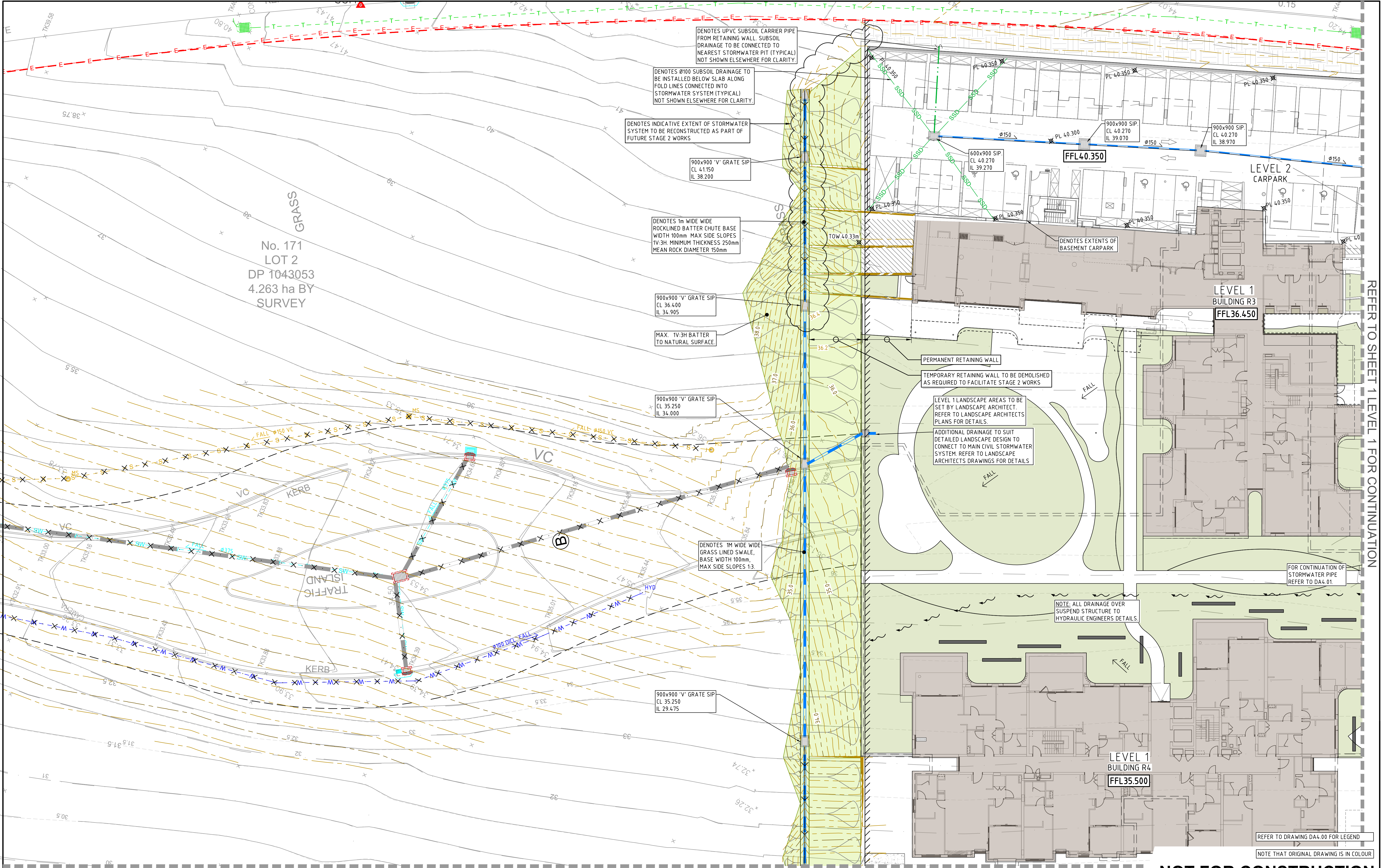


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A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		04.09.24	Uniting	TURNER	1:200 @ A1	UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN GROUND FLOOR - SHEET 3	SY230307
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	K.T.	R.S.		25.10.24						DRAWING NUMBER
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.		07.11.24						REVISION
D	REVISED FOR DEVELOPMENT APPLICATION	R.S.	K.T.	R.S.		21.05.25						DA4.03
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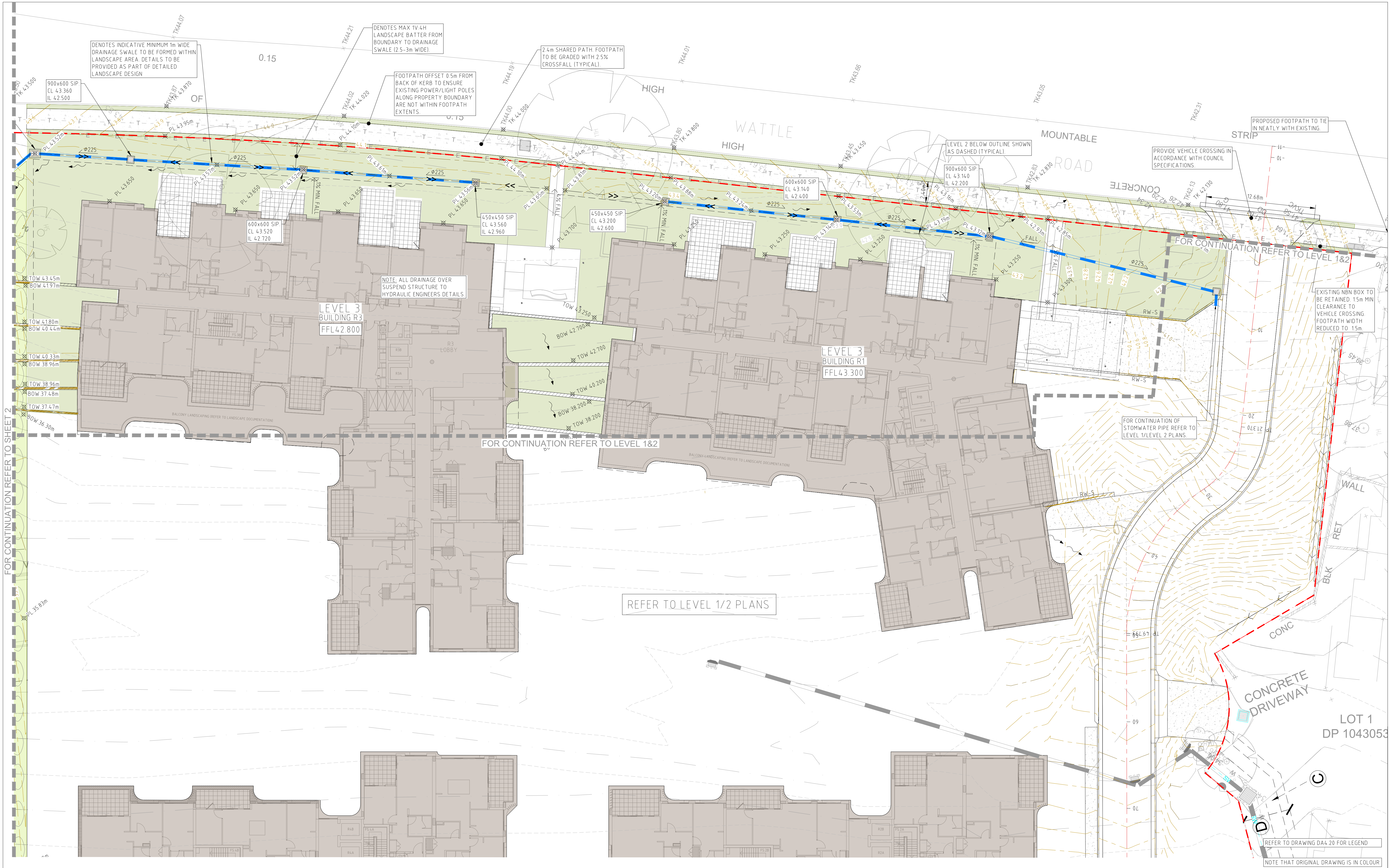
REFER TO SHEET 2 FOR CONTINUATION



DESCRIPTION		DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT			PROJECT	DRAWING TITLE	JOB NUMBER	
01	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24	 TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0000 turnerstudio.com.au	 NORTHROP Wollongong Level 1, 57 Kembla Street, Wollongong NSW 2500 Ph (02) 4226 3333 Fax (02) 4226 3666 P.O. Box 863, Wollongong, NSW 2500 Email southcoast@northrop.com.au AEN 81 094 433 100		UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN LEVEL 01 AND 02 - SHEET 1	SY230307		
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.	04.09.24									
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	K.T.	R.S.	25.10.24									
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24									
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REFER TO C4.02 GROUND FLOOR FOR CONTINUATION										NOT FOR CONSTRUCTION									
REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT			PROJECT	DRAWING TITLE	JOB NUMBER						
01	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24		TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0088 turnerstudio.com.au		ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.		UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	SY230307						
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.	04.09.24	DRAWING NUMBER							REVISION						
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	K.T.	R.S.	25.10.24	DA4.12							D						
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24														
D	REVISED FOR DEVELOPMENT APPLICATION	R.S.	K.T.	R.S.	21.05.25														
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01	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		04.09.24
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	K.T.	R.S.		25.10.24
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.		07.11.24

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PROJECT

**UNITING SHELLHARBOUR
171 WATTLE ROAD
SHELLHARBOUR
STAGE 1**

DRAWING TITLE

**CONCEPT STORMWATER
MANAGEMENT AND LEVELS PLAN
LEVEL 03 - SHEET 1**

JOB NUMBER

SY230307

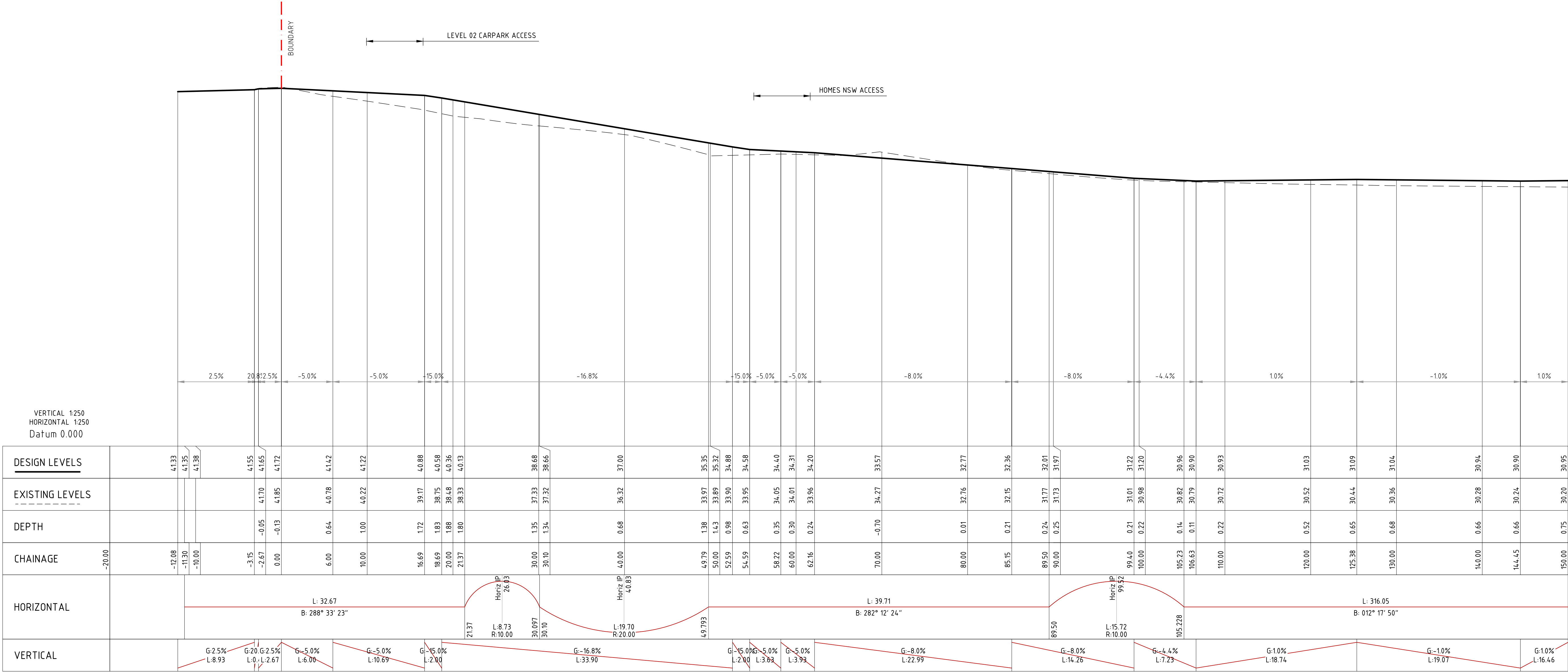
DRAWING NUMBER

DA4.21

REVISION

C

DRAWING SHEET SIZE = A1



MC01 LONG SECTION

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01	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24		TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0088 turnerstudio.com.au		ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.		UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	LONG SECTIONS - SHEET 1	SY230307	
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.	04.09.24	DRAWING NUMBER									REVISION
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	M.G.	R.S.	25.10.24	DA5.01									C
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24	DRAWING SHEET SIZE = A1									
							DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD.	SCALE 1:250@A1						

GROUND FLOOR
CARPARK ACCESS

WASTE VEHICLE ACCESS

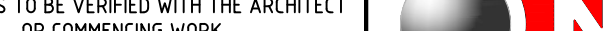
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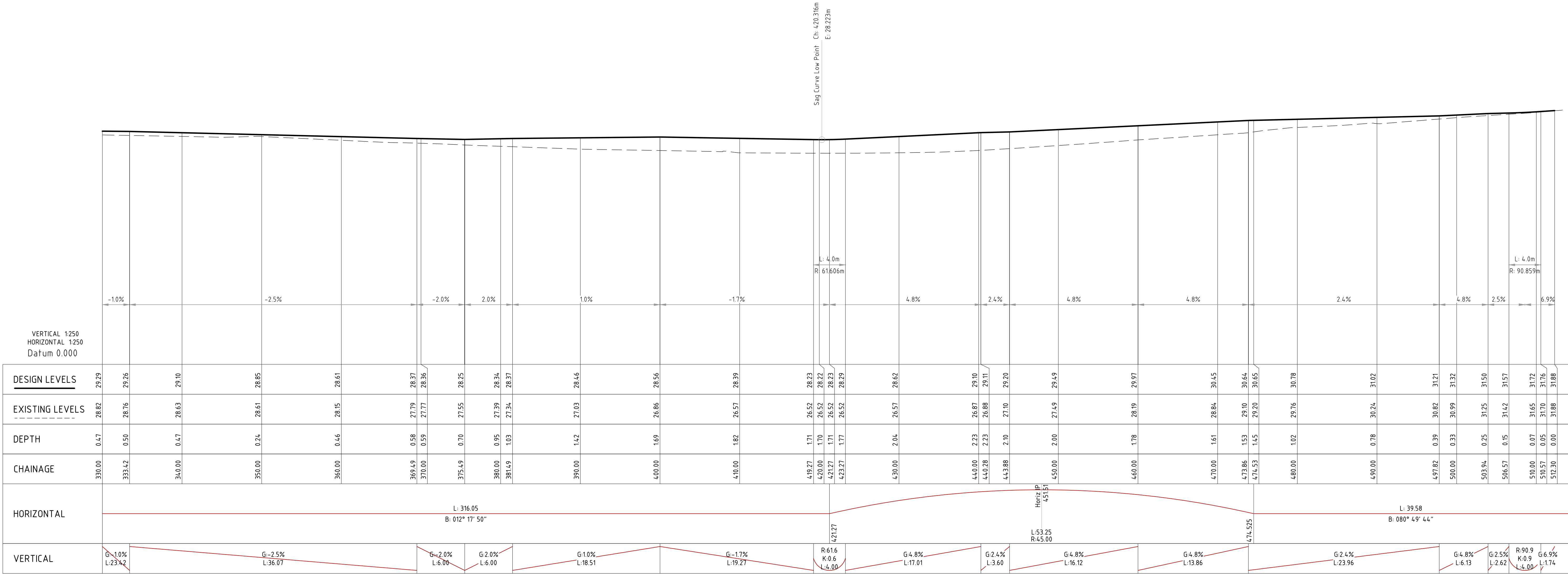
DESIGN LEVELS	30.95		31.05	31.06		30.97		30.93		30.99		31.06		30.98		30.73		30.48		30.23	30.21	30.12	30.11		30.02		29.94	29.92		29.82	29.82		29.72	29.70		29.51		29.29	29.39	29.49		29.39	29.29							
EXISTING LEVELS	30.20		29.99	29.99		30.07		30.12		30.19		30.22		30.20		30.14		30.12		30.06	30.05	29.97	29.96		29.81		29.79	29.79		29.71	29.82		29.45	29.72		29.17	29.51		29.29		29.15	29.39	29.01	29.49		29.00	29.39		28.82	29.29
DEPTH	0.75		1.06	1.07		0.90		0.81		0.80		0.85		0.78		0.59		0.36		0.17	0.15	0.14	0.15		0.21		0.15	0.13		0.11	0.11		0.26	0.29		0.35		0.00		0.24		0.48		0.39	0.47					
CHAINAGE	150.00		160.00	160.91		170.00		173.81		180.00		186.72		190.00		200.00		210.00		220.00	220.90	230.00	231.00		240.00		247.98	250.00		259.81	260.00		270.00	271.64		280.00		290.00		300.00		310.00		320.00		330.00				
HORIZONTAL	L: 316.05 B: 012° 17' 50"																																																	
VERTICAL	G:-1.0% L:16.46 G:-1.0% L:12.90 G:-1.0% L:12.91 G:-2.5% L:34.18 G:-1.0% L:10.10 G:-1.0% L:16.98 G:-1.0% L:11.83 G:-1.0% L:11.83 G:-2.2% L:18.36 G:-1.0% L:20.00 G:-1.0% L:23.42																																																	

MC01 LONG SECTION

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

NOT FOR CONSTRUCTION

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT			PROJECT	DRAWING TITLE	JOB NUMBER
01	ISSUED FOR CO-ORDINATION	B.M.S.	L.M.	R.S.		12.03.24		TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0088 turnerstudio.com.au	 Wollongong Level 1, 57 Kembla Street, Wollongong NSW 2500 Ph (02) 4226 3333 Fax (02) 4226 3666 P.O. Box 863, Wollongong, NSW 2500 Email southcoast@northrop.com.au ABN 81 094 433 100		UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	LONG SECTIONS - SHEET 2	SY230307
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.	04.09.24	DRAWING NUMBER							REVISION
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	M.G	R.S.	25.10.24	DA5.02							C
C	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24	DRAWING SHEET SIZE = A1							
							DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD.					

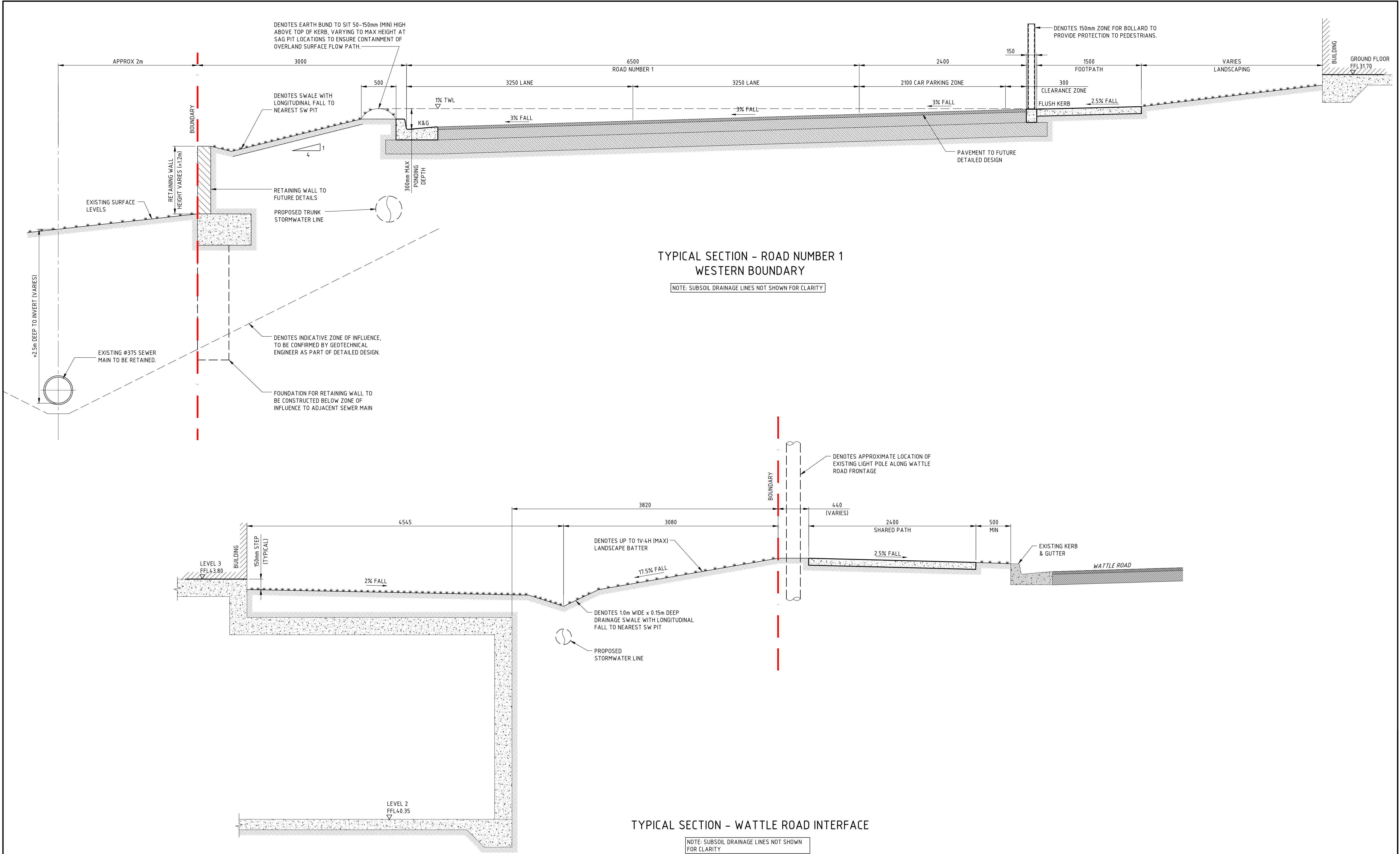


MC01 LONG SECTION

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

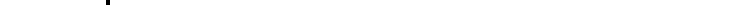
NOT FOR CONSTRUCTION

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT	SCALE	PROJECT	DRAWING TITLE	JOB NUMBER	
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	M.G.	R.S.		25.10.24	 Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8968 0000 F +61 2 8968 0088 turnerstudio.com.au	TURNER	SCALE 1:250@A1 	 Wollongong Level 1, 57 Kembra Street, Wollongong NSW 2500 Ph (02) 4226 3333 Fax (02) 4226 3666 P.O. Box 863, Wollongong, NSW 2500 Email southcoast@northrop.com.au ABN 81 094 433 100	UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	LONG SECTIONS - SHEET 3	SY230307
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24	DRAWING NUMBER							REVISION
						DA5.03							B
						DRAWING SHEET SIZE = A1							
							DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD.					



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REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE	CLIENT	ARCHITECT			PROJECT	DRAWING TITLE	JOB NUMBER
A	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	B.M.S.	J.W.S.	R.S.		04.09.24	Uniting	TURNER Level 7 ONE Oxford Street Darlinghurst NSW 2010 AUSTRALIA T +61 2 8668 0000 F +61 2 8668 0080 turnerstudio.com.au	ALL SETOUT TO ARCHITECT'S DRAWINGS, DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT OR COMMENCING WORK NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.	 Wollongong Level 1, 57 Kembla Street, Wollongong NSW 2500 Ph (02) 4226 3333 Fax (02) 4226 3666 P.O. Box 863, Wollongong, NSW 2500 Email southcoast@northrop.com.au ABN 81 094 433 100	UNITING SHELLHARBOUR 171 WATTLE ROAD SHELLHARBOUR STAGE 1	CIVIL DETAILS - SHEET 1	SY230307
B	REVISED FOR DEVELOPMENT APPLICATION	B.M.S.	J.W.S.	R.S.	07.11.24	DRAWING NUMBER							REVISION
C	REVISED FOR DEVELOPMENT APPLICATION	R.S.	K.T.	R.S.	21.05.25	DA6.01							C
						DRAWING SHEET SIZE = A1							
							DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD.	SCALE 1:25 @ A1				



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