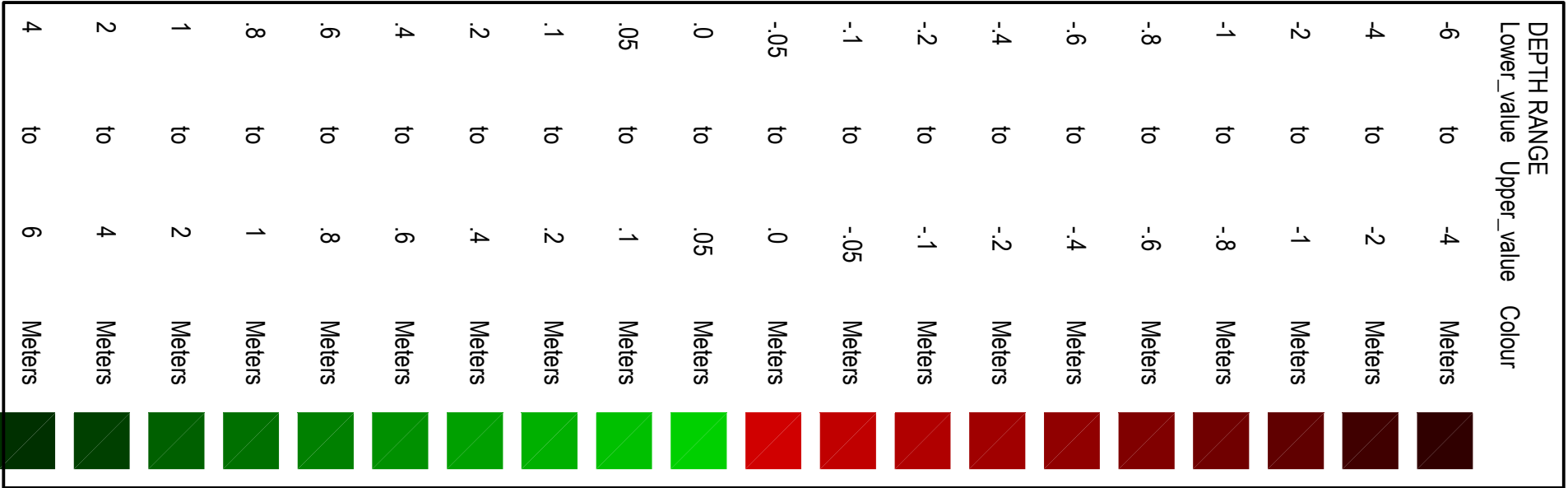


EARTHWORKS QUANTITIES

(APPROXIMATE ONLY)  
NOT TO BE USED FOR CONTRACTUAL PURPOSES. TENDERS TO  
DETERMINE VOLUMES USING THEIR OWN METHOD OF CALCULATION.

- EARTHWORKS QUANTITIES -

CUT	63649 m³
FILL	968390 m³
SHORT FILL	904741 m³



KEY ASSUMPTIONS:

TOP SOIL REMOVAL OF 100mm NOT INCLUDED IN QUANTITIES 33645m³  
EXCAVATION FOR SERVICES INCHES  
1500mm Hx = 5000mm NOT INCLUDED IN QUANTITIES



FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_BE02

BULK EARTHWORKS CONCEPT CUT AND FILL PLAN

SCALE 1:1250



		Client		Level 5, 70 Victoria Avenue, Cherrybrook NSW 2067		Project		Drawn		Date	
		WESTERN SYDNEY PARKLANDS TRUST		Level 5, 70 Victoria Avenue, Cherrybrook NSW 2067		LIGHT HORSE INTERCHANGE BUSINESS HUB		M. SIMPVA		FEB 2019	
		NETTLETONTRIBE		Tel: 02 9417 9400		EASTERN CREEK, NSW (SSD9667)		Checked		Scale A4	
03		SUSPECT FOR APPROVAL		461 2 9417 9357		BULK EARTHWORKS CONCEPT CUT AND		N. WITZLER		1:1250	
02		PRELIMINARY		Email: em@hcntr.com.au		FILL PLAN - SHEET 1 OF 2		Approved		Revision	
01		PRELIMINARY		www.henryandhymas.com.au				A. FRANKS		03	
		DRAWN		HENRY & HYMAS							
		CHECKED									
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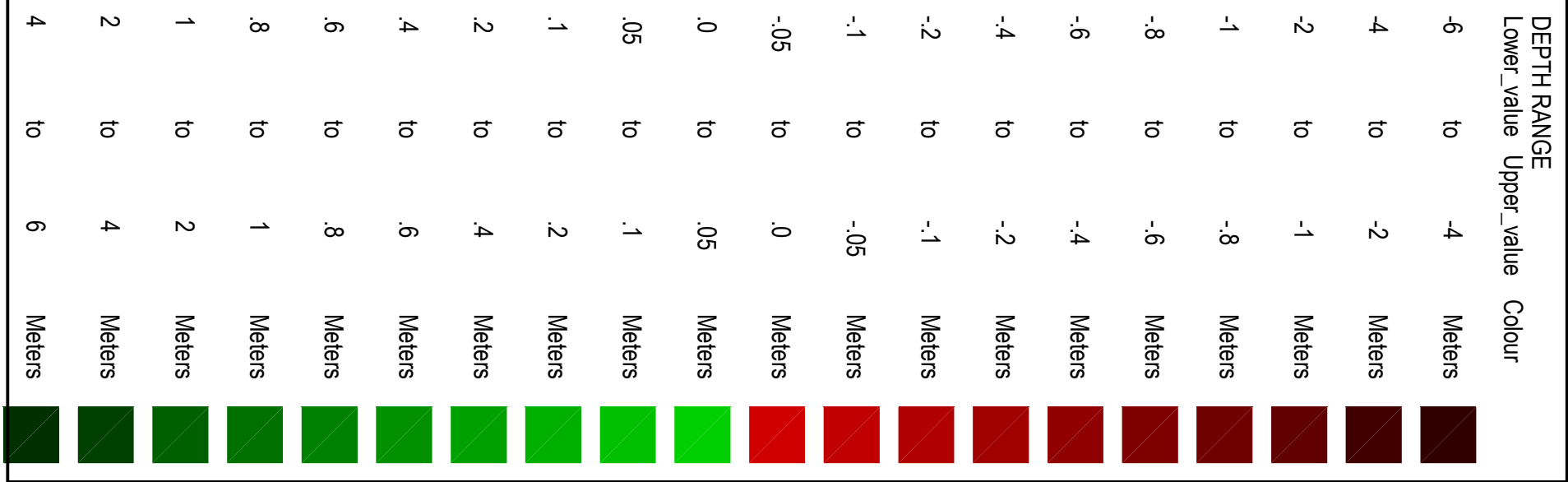




(M1) (NON-ADJUSTABLE ONE-T) NOT TO BE USED FOR CONTRACTUAL PURPOSES. TENDERERS TO DETERMINE VOLUMES USING THEIR OWN METHOD OF CALCULATION.

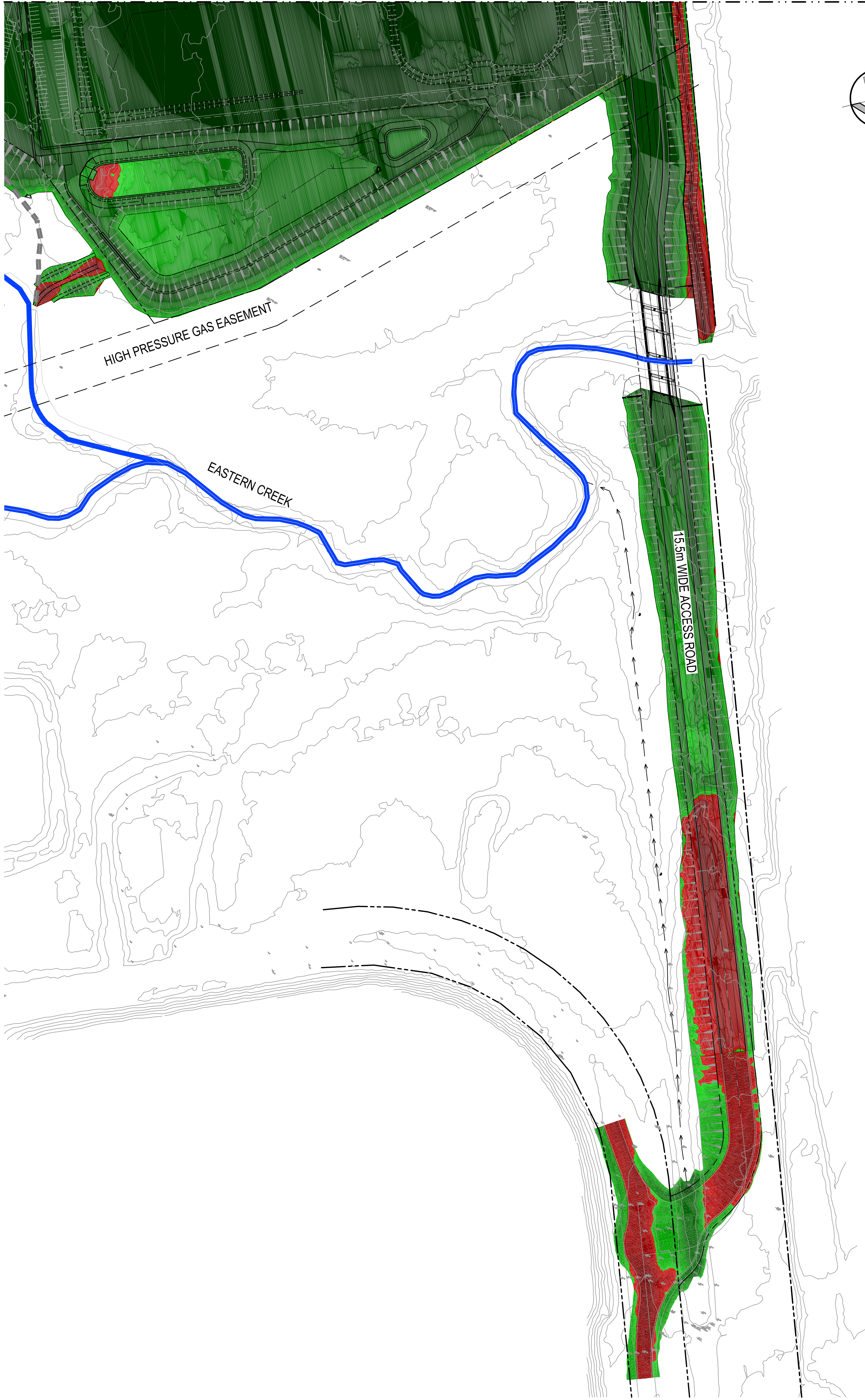
- EARTHWORKS QUANTITIES -

CUT	636.49 m³
FILL	968.390 m³
SHORT FALL	904.741 m³



**KEY ASSUMPTIONS:**

TOP SOIL REMOVAL OF 100mm NOT INCLUDED IN QUANTITIES: 383450m<sup>3</sup>  
EXCAVATION FOR SERVICE TRENCHES  
1500m<sup>2</sup> HA = 58000m<sup>3</sup> NOT INCLUDED IN QUANTITIES



FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_BE01

# BULK EARTHWORKS CONCEPT CUT AND FILL PLAN

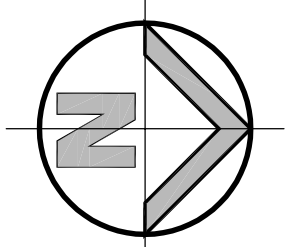
[illegible]



# LIGHT HORSE INTERCHANGE BUSINESS HUB

## EASTERN CREEK, NSW (SSD9667)

### CIVIL ENGINEERING WORKS



LOCALITY SKETCH

SCALE MTS

DRAWING SCHEDULE	
18662_SSDA_C000	COVER SHEET - DRAWING SCHEDULE AND LOCALITY SKETCH
18662_SSDA_C010	STANDARD NOTES
18662_SSDA_C100	GENERAL ARRANGEMENT PLAN
18662_SSDA_C101	DETAIL PLAN - SHEET 1 OF 9
18662_SSDA_C102	DETAIL PLAN - SHEET 2 OF 9
18662_SSDA_C103	DETAIL PLAN - SHEET 3 OF 9
18662_SSDA_C104	DETAIL PLAN - SHEET 4 OF 9
18662_SSDA_C105	DETAIL PLAN - SHEET 5 OF 9
18662_SSDA_C106	DETAIL PLAN - SHEET 6 OF 9
18662_SSDA_C107	DETAIL PLAN - SHEET 7 OF 9
18662_SSDA_C108	DETAIL PLAN - SHEET 8 OF 9
18662_SSDA_C109	DETAIL PLAN - SHEET 9 OF 9
18662_SSDA_C150	ROAD 1 LONGITUDINAL SECTION - SHEET 1 OF 2
18662_SSDA_C151	ROAD 1 LONGITUDINAL SECTION - SHEET 2 OF 2
18662_SSDA_C160	SITE SECTIONS - SHEET 1 OF 2
18662_SSDA_C161	SITE SECTIONS - SHEET 2 OF 2
18662_SSDA_C200	STORMWATER MISCELLANEOUS DETAILS AND PIT LID SCHEDULE
18662_SSDA_C201	STORMWATER MISCELLANEOUS DETAILS
18662_SSDA_C240	BASIN DETAILS - SHEET 1 OF 2
18662_SSDA_C241	BASIN DETAILS - SHEET 2 OF 2
18662_SSDA_C250	CATCHMENT PLAN
18662_SSDA_C330	BRIDGE CONCEPT PLAN
18662_SSDA_C331	BRIDGE CONCEPT SECTION
18662_SSDA_C080	B.DOUBLE VEHICLE TURNING PATHS - SHEET 1 OF 8
18662_SSDA_C081	B.DOUBLE VEHICLE TURNING PATHS - SHEET 2 OF 8
18662_SSDA_C082	B.DOUBLE VEHICLE TURNING PATHS - SHEET 3 OF 8
18662_SSDA_C083	B.DOUBLE VEHICLE TURNING PATHS - SHEET 4 OF 8
18662_SSDA_C084	B.DOUBLE VEHICLE TURNING PATHS - SHEET 5 OF 8
18662_SSDA_C085	B.DOUBLE VEHICLE TURNING PATHS - SHEET 6 OF 8
18662_SSDA_C086	B.DOUBLE VEHICLE TURNING PATHS - SHEET 7 OF 8
18662_SSDA_C087	B.DOUBLE VEHICLE TURNING PATHS - SHEET 8 OF 8
18662_SSDA_SE01	SEDIMENT AND EROSION CONTROL PLAN - SHEET 1 OF 2
18662_SSDA_SE02	SEDIMENT AND EROSION CONTROL PLAN - SHEET 2 OF 2
18662_SSDA_SE03	SEDIMENT AND EROSION CONTROL TYPICAL SECTIONS AND DETAILS
18662_SSDA_BE01	BULK EARTHWORKS CONCEPT CUT AND FILL PLAN - SHEET 1 OF 2
18662_SSDA_BE02	BULK EARTHWORKS CONCEPT CUT AND FILL PLAN - SHEET 2 OF 2
18662_SSDA_EX01	EXTERNAL WORKS PLAN - WALLGROVE ROAD

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ISSUED FOR APPROVAL



GENERAL NOTES:

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL SPECIFICATION. CONTRACTOR TO OBTAIN AND RETAIN A COPY ON SITE DURING THE COURSE OF THE WORKS.
2. ALL NEW WORKS ARE TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS AND MARRY IN A WORKMANLIKE MANNER.
3. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL SERVICES WITH EACH RELEVANT AUTHORITY. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE TO BE EXCAVATED AT THE TIME THE SERVICE IS TO BE DETERMINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION TO GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESSSES TO THE EXISTING PROPERTIES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES DURING CONSTRUCTION.
5. ADJUST EXISTING SERVICE COVERS TO SUIT NEW FINISHED LEVELS TO RELEVANT AUTHORITY REQUIREMENTS WHERE NECESSARY.
6. REINSTATE AND STABILISE ALL DISTURBED LANDSCAPED AREAS.
7. MINIMUM GRADE OF SUBSOIL SHALL BE 0.5% (1/200) FALL TO OUTLETS.
8. ALL TEMPORARY SEGMENT AND EROSION CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, REQUIREMENTS AND SEGMENTATION CONTROL PLAN AND BLACKTOWN CITY COUNCIL REQUIREMENTS WHERE APPLICABLE.
9. CONTRACTOR TO CHECK AND CONFIRM SITE DRAINAGE CONNECTIONS ACROSS THE VERGE PRIOR TO COMMENCEMENT OF SITE DRAINAGE WORKS.
10. PROPERTIES AFFECTED BY THE WORKS ARE TO BE NOTIFIED IN ADVANCE WHERE DISRUPTION TO EXISTING ACCESS IS LIKELY.

SURVEY NOTES

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY THE SURVEYOR SPECIFIED IN THE TITLE BLOCK.  
THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. HENRY AND HYMAS PTY. LTD. DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.  
SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT HENRY AND HYMAS PTY. LTD. THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM ORIGINAL SURVEY DOCUMENTS

SUBGRADE PREPARATION - SITEWORKS.

1. THE EXISTING SURFACE IS TO BE STRIPPED OF ANY PAVEMENT'S, TOPSOIL OR OBVIOUS UNSUITABLE MATERIAL.
2. EXCAVATE TO ACHIEVE SUBGRADE LEVELS WHERE NECESSARY.
3. THE EXPOSED SUBGRADE AFTER STRIPPING AND/OR EXCAVATION IS TO BE PROOF-ROLLED USING NOT FEWER THAN 5 PASSES OF A MINIMUM 8 TONNE DEAD WEIGHT STEEL SMOOTH-DRUM ROLLER UNDER THE SUPERINTENDENT OF AN EXPERIENCED GEOTECHNICAL ENGINEER OR AN EXPERIENCED CIVIL ENGINEER. ANY AREAS ON THE SUBGRADE EXHIBITING EXCESSIVE DEFLECTION / MOVEMENT UNDER ROLLER TO BE EXCAVATED TO A MIN. DEPTH OF 0.5m AND REPLACED WITH APPROVED GRANULAR MATERIAL. COMPACTED IN 250mm LOOSE LAYERS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
4. ENGINEERED FILL FOR REPLACEMENT OF SOFT OR HEAVING AREAS OR FOR BACK FILLING TO COMPRESS ESSENTIALLY OF GRANULAR MATERIALS REQUIRED TO BE SUBGRADE SHALL BE PLACED IN 250mm LAYERS NOT EXCEEDING 250mm LOOSE THICKNESS AND COMPACTED TO BETWEEN 98% AND 100% OF STANDARD MAXIMUM DRY DENSITY (SMD) WITHIN ± 2% OF OPTIMUM MOISTURE CONTENT (OMC).
5. IMPORTED FILLING (IF REQUIRED) IS TO BE TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. THE CONTRACTOR IS TO NOMINATE THE SOURCE AND PROVIDE A SAMPLE FOR APPROVAL PRIOR TO IMPORTATION AND PLACEMENT ON SITE.
6. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING:  
FREE FROM ORGANIC AND PERISHABLE MATTER  
MAXIMUM PARTICLE SIZE = 75mm  
MAXIMUM PLASTICITY INDEX = 15%

SUBSOIL DRAINAGE NOTES

1. GENERALLY PROVIDE SUBSOIL DRAINS TO INTERCEPT GROUNDWATER SEEPAGE AND PREVENT WATER BUILD-UP BEHIND WALLS AND UNDER FLOORS AND PAVEMENTS. CONNECT SUBSOIL TO SURFACE DRAINS OR TO THE STORMWATER DRAINAGE SYSTEM AS APPLICABLE.
2. PIPE DEPTH:  
PROVIDE THE FOLLOWING MINIMUM CLEAR DEPTH, MEASURED TO THE CROWN OF THE PIPE, WHERE THE PIPE PASSES BELOW THE FOLLOWING ELEMENTS:
  - 100mm BELOW FORMATION LEVEL OF THE PAVEMENT, KERB OR CHANNEL COMPACTED BED OF BEDDING MATERIAL, AT LEAST 75mm BELOW THE AVERAGE GRADELINE OF THE BOTTOM OF FOOTINGS.
3. JOINTING:  
AT JUNCTIONS OF SUBSOIL PIPES PROVIDE TEES, COUPLINGS OR ADAPTORS TO AS2439.1.
4. TRENCH WIDTH MINIMUM 300mm.
5. PIPE UNDERLAY  
GENERAL: GRADE THE TRENCH FLOOR EVENLY TO THE GRADIENT OF THE PIPELINE. IF THE TRENCH FLOOR IS ROCK, CORRECT ANY IRREGULARITIES WITH COMPACTED BEDDING MATERIAL, BED PILING ON A CONTINUOUS UNDERLAY OF BEDDING MATERIAL, AT LEAST 75mm THICK AFTER COMPACTION, LAY THE PIPE WITH ONE LINE OF PENETRATIONS AT THE BOTTOM.  
CHASES: IF NECESSARY TO PREVENT PROJECTIONS SUCH AS SOCKETS AND FLANGES FROM BEARING ON THE TRENCH BOTTOM OR UNDERLAY.
6. PIPE SURREOUNDS:  
GENERAL: PLACE THE MATERIAL IN THE PIPE SURREOUND IN LAYERS SMALLER THAN OR EQUAL TO 200mm LOOSE THICKNESS, AND COMPACT WITHOUT DAMAGING OR DISPLACING PIPING.  
DEPTH OF OVERLAY: TO THE UNDERSIDE OF THE BASE OF OVERLAYING STRUCTURES SUCH AS PAVEMENT'S, SLABS AND CHANNELS TO WITHIN 150mm OF THE FINISHED SURFACE OF UNPAVED OR LANDSCAPED AREAS.
7. FILTER SOCKS:  
PROVIDE FILTER SOCKS PERMABLE SOCKS CAPABLE OF RETAINING PARTICLES OF 0.2mm SIZES, SECURELY FITT OR JOIN THE SOCK AT EACH JOINT.

SITEWORKS NOTES

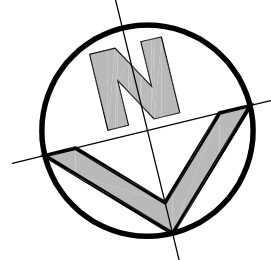
- DATUM: A.H.D.
- ORIGIN OF LEVELS: REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT.
- EXISTING SERVICES UNLESS SHOWN ON THE SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. TOLERANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- WHERE NEW WORKS ADJUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS ACHIEVED.
- THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
- CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATION IS TO BE UNDERTAKEN OVER TESTIRA OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
- CONTRACTOR TO OBTAIN AUTHORITY APPROVALS WHERE APPLICABLE.
- MAKE SMOOTH TRANSITION TO EXISTING SURFACES AND MAKE GOOD.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS.
- OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT AT THE SITE.
- TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 600 UPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.
- GRADES TO PAVEMENTS TO BE AS MARKED BY R/S ON PLAN. GRADE EVENLY BETWEEN NOMINATED R/S AREAS EXHIBITING PONDING GREATER THAN 5mm DEPTH WILL NOT BE ACCEPTED UNLESS IN A DESIGNATED SAG POINT.
- ALL COVERS AND GRATES ETC TO EXISTING SERVICE UTILITIES ARE TO BE ADJUSTED TO SUIT NEW FINISHED SURFACE LEVELS WHERE APPLICABLE.

DRAINAGE NOTES:

1. ALL STORMWATER WORK TO COMPLY WITH AS 3600 PART 3.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM COVER OF 600mm ON ALL PIPES.
3. PROTECTION OF PIPES DUE TO LOADS EXCEEDING W7 WHEEL LOAD SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
4. BEDDING TYPE SHALL BE TYPE H2 FOR RCP WHERE NECESSARY THE OVERLAY ZONE SHALL BE REDUCED TO ACCOMMODATE PAVEMENT REQUIREMENTS. REFER TO THIS DRAWING FOR DETAILS.
5. MINIMUM COVER OVER EXISTING PIPES FOR PROTECTION DURING CONSTRUCTION SHALL BE 600mm.
6. NO CONSTRUCTION LOADS SHALL BE APPLIED TO PLASTIC PIPES.
7. FINISHED SURFACE LEVELS SHOWN ON LAYOUT PLANDRGS TAKE PRECEDENCE OVER DESIGN DRAINAGE SURFACE LEVELS.
8. ALL PIPES UP TO AND INCLUDING 300 DIA. SHALL BE SOLVENT OR RUBBER RING JOINTED PVC CLASS SH PIPE TO AS1280. ALL OTHER PIPES TO BE RCP USING CLASS 2 RUBBER RING JOINTED PIPE. HARDIES RCP PIPE MAY BE USED IN LIEU OF RCP IF DESIRED IN GROUND. ALL AERIAL PIPES TO BE PVC CLASS SH.
9. ALL PITS IN NON TRAFFICABLE AREAS TO BE PREFABRICATED POLYESTER CONCRETE POLYESTER WITH LIGHT DUTY CLASS B GALLY MILD STEEL GRATING AND FRAME.
- ALL PITS IN TRAFFICABLE AREAS (CLASS 0+1 LOADING MAX) TO HAVE 150mm THICK CONCRETE WALLS AND BASE CAST IN SITU (c=32 MPa, REINFORCED WITH N12/200 BOTH LOADING WAYS CENTRALLY PLACED, U.N.O. ON SEPARATE DESIGN DRAWINGS IN THIS SET). GALV/MILD STEEL GRATING AND FRAME TO SUIT DESIGN LOADING. PRECAST PITS, RECTANGULAR OR CIRCULAR IN SHAPE, MAY BE USED IN LIEU AND SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARDS.
10. ALL PITS, GRATINGS AND FRAMES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND TO BE IN ACCORDANCE WITH ASS300.3 AND ASS396.
11. PIT CHAMBER DIMENSIONS ARE TO BE SELECTED TO SATISFY THE FOLLOWING:
  - MINIMUM COVER OVER EXISTING SERVICES
  - DEPTH TO INVERT
  - SKEW ANGLEREFER TYPICAL PIT CHAMBER DETAILS BELOW.
- IF PIT LID SIZE IS SMALLER THAN THE PIT CHAMBER SIZE THEN THE PIT LID IS TO BE CONSTRUCTED ON THE CORNER OF THE PIT CHAMBER WITH THE STEP IRONS DIRECTLY BELOW. ALTERNATIVELY THE PIT LID TO BE USED IS TO BE THE SAME SIZE AS THE PIT CHAMBER.
12. FOR PIPE SIZES GREATER THAN 600mm, PIT FLOOR IS TO BE BENCHED TO FACILITATE FLOW.
13. GALVANISED STEP IRONS SHALL BE PROVIDED AT 300 CTS FOR PITS HAVING A DEPTH EXCEEDING 1200mm. SUBSOIL DRAINAGE PIPE SHALL BE PROVIDED IN PIPE TRENCHES ADJACENT TO INLET PIPES (MINIMUM LENGTH 3m).
14. ALL SUBSOIL PIPES SHALL BE 100mm SLOTTED PVC IN A FILTER SOCK, UNO, WITH 5m INSTALLED UPSTREAM OF ALL PITS.
15. ALL PIPEWORK SHALL HAVE MINIMUM DIAMETER 100.
16. MINIMUM GRADE FOR ROOFWATER DRAINAGE LINES SHALL BE 1%.
17. ALL PIPE JUNCTIONS AND TAPER UP TO AND INCLUDING 300 DIA. SHALL BE VIA PURPOSE MADE FITTINGS.
18. ALL ROOF DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH ASS300, PART 3. TESTING TO BE UNDERTAKEN AND REPORTS PROVIDED TO THE SUPERINTENDENT.
19. LOCATION OF THE DIRECT DOWN PIPE CONNECTIONS MAY VARY ON SITE TO SUIT SITE CONDITIONS, WHERE CONNECTION SHOWN ON LONG SECTIONS CHANGES ARE INDICATIVE ONLY.
20. PITS IN EXCESS OF 1.5 m DEEP TO HAVE WALL AND FLOOR THICKNESS INCREASED TO 200mm, REINFORCED WITH N12@200 CTS CENTRALLY PLACED BOTH WAYS THROUGHOUT U.N.O. ON SEPARATE DESIGN DRAWINGS IN THIS SET. IF DEPTH EXCEEDS 5m CONTACT ENGINEER.
21. SUBSOIL DRAINAGE LINES FOR LANDSCAPE AREA NOT SHOWN ON THESE DRAWINGS, REFER TO LANDSCAPING PLANS FOR DETAILS.
22. ALL STORMWATER PITS TO HAVE 600 UPVC SLOTTED SUBSOIL PIPES CONNECTED TO THEM. THESE SUBSOILS TO EXTEND 5m UPSTREAM OF THE PIT AT A MINIMUM GRADE.

																														</									





### LEGEND

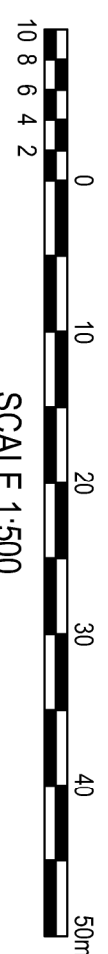
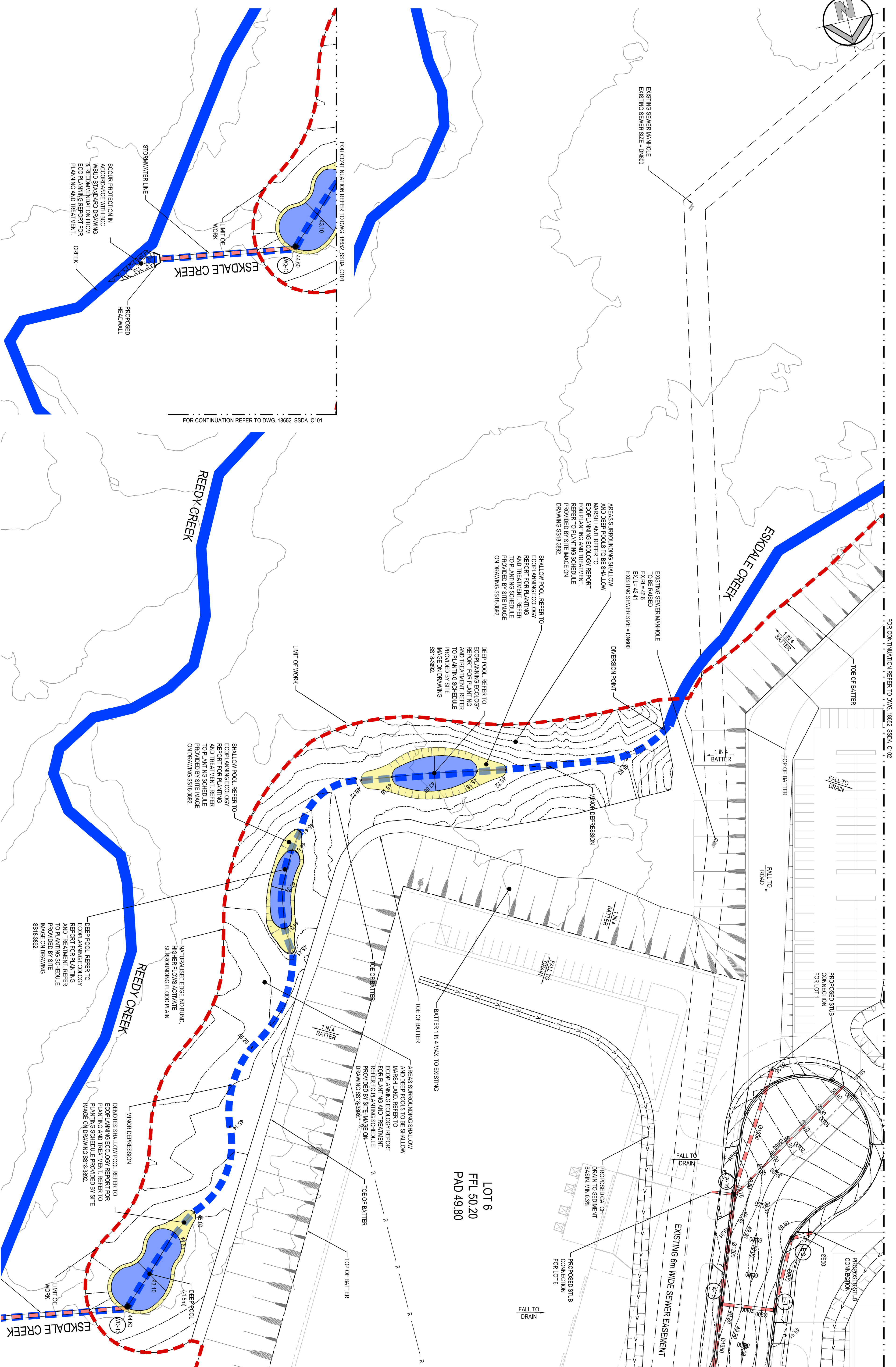
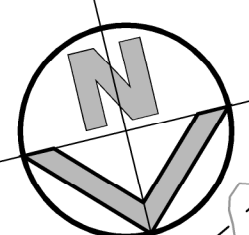
- PROPOSED LIMIT OF WORK
- SITE/LOT BOUNDARY
- PROPOSED RIDGE LINE
- PROPOSED VALLEY LINE
- PROPOSED SUBSOIL LINE
- PROPOSED JUNCTION PITS
- PROPOSED SURFACE INLET PITS
- PROPOSED SURFACE ONGRADE & SAG PITS
- PROPOSED LINTEL ONGRADE & SAG PITS
- PROPOSED PITT TAG
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- PROPOSED BATTER LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED COLLECTION LINE
- PROPOSED RETAINING WALL
- PROPOSED DESIGN SPOT LEVEL
- PROPOSED CATCH DRAIN
- PROPOSED FLUSHING POINT (FP)
- PROPOSED INTERMEDIATE RISER (IR)

### GENERAL ARRANGEMENT PLAN

SCALE 1:3000

Client				Project			
WESTERN SYDNEY PARKLANDS TRUST				LIGHT HORSE INTERCHANGE BUSINESS HUB			
NETTLETONTRIBE				EASTERN CREEK, NSW (SSD9667)			
This drawing and design remains the property of Henry & Hyman and may not be copied in whole or in part without the prior written approval of Henry & Hyman.				GENERAL ARRANGEMENT PLAN			
Level 5, 70 Western Avenue, Crows Nest NSW 1587				Drawn: M. SIMOVA			
Tel: 02 9417 8400 Fax: 02 9417 8337 Email: <a href="mailto:enr@hhy.com.au">enr@hhy.com.au</a> www.henryandhyman.com.au				Checked: L. COLE			
henryhyman				Approved: A. FRANKS			
18652_SSDA_C100				Date: FEB 2019			
03				Scale: A4			
1:3000				Revision:			



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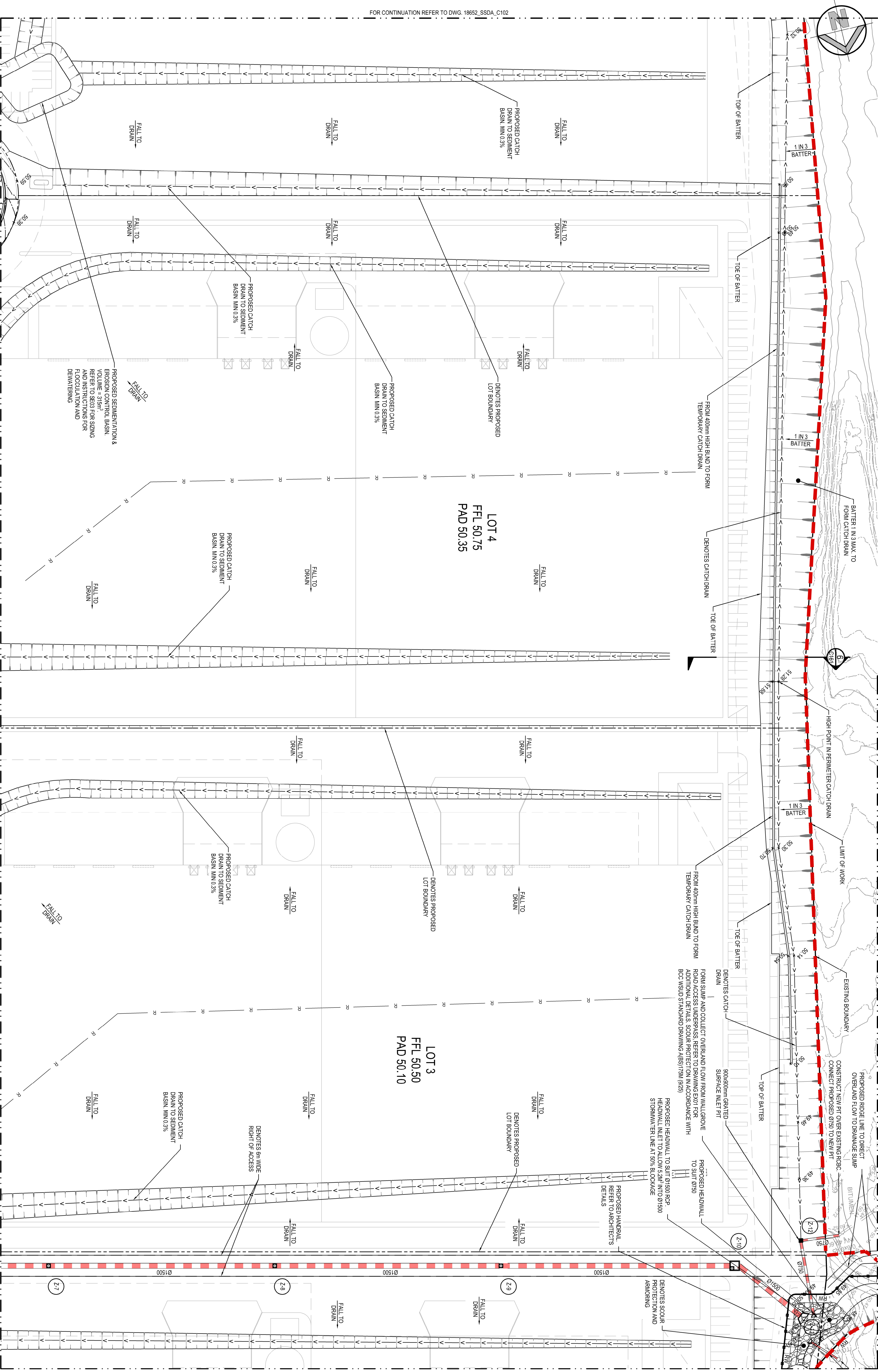
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FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_C101



FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_C102

FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_C104



DETAIL PLAN

SCALE: 1:500

Client				Project			
WESTERN SYDNEY PARKLANDS TRUST				LIGHT HORSE INTERCHANGE BUSINESS HUB			
NETTLETONTRIBE				EASTERN CREEK, NSW (SSD9667)			
Level 5, 70 Macquarie Avenue Oatlands NSW 2557				Drawn			
Telephone +61 2 9417 9400 Email enquiries@ntn.com.au www.henrydhymas.com.au				Designed			
henrydhymas				Date			
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03 ISSUED FOR APPROVAL				Approved			
02 ISSUED FOR COORDINATION				Scale			
01 PRELIMINARY				1:500			
REVISION				Revision			
DRAWN DESIGNED DATE REVISION				DRAWN DESIGNED DATE			
AMENDMENT				AMENDMENT			

ISSUED FOR APPROVAL

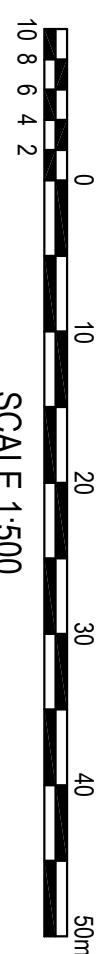
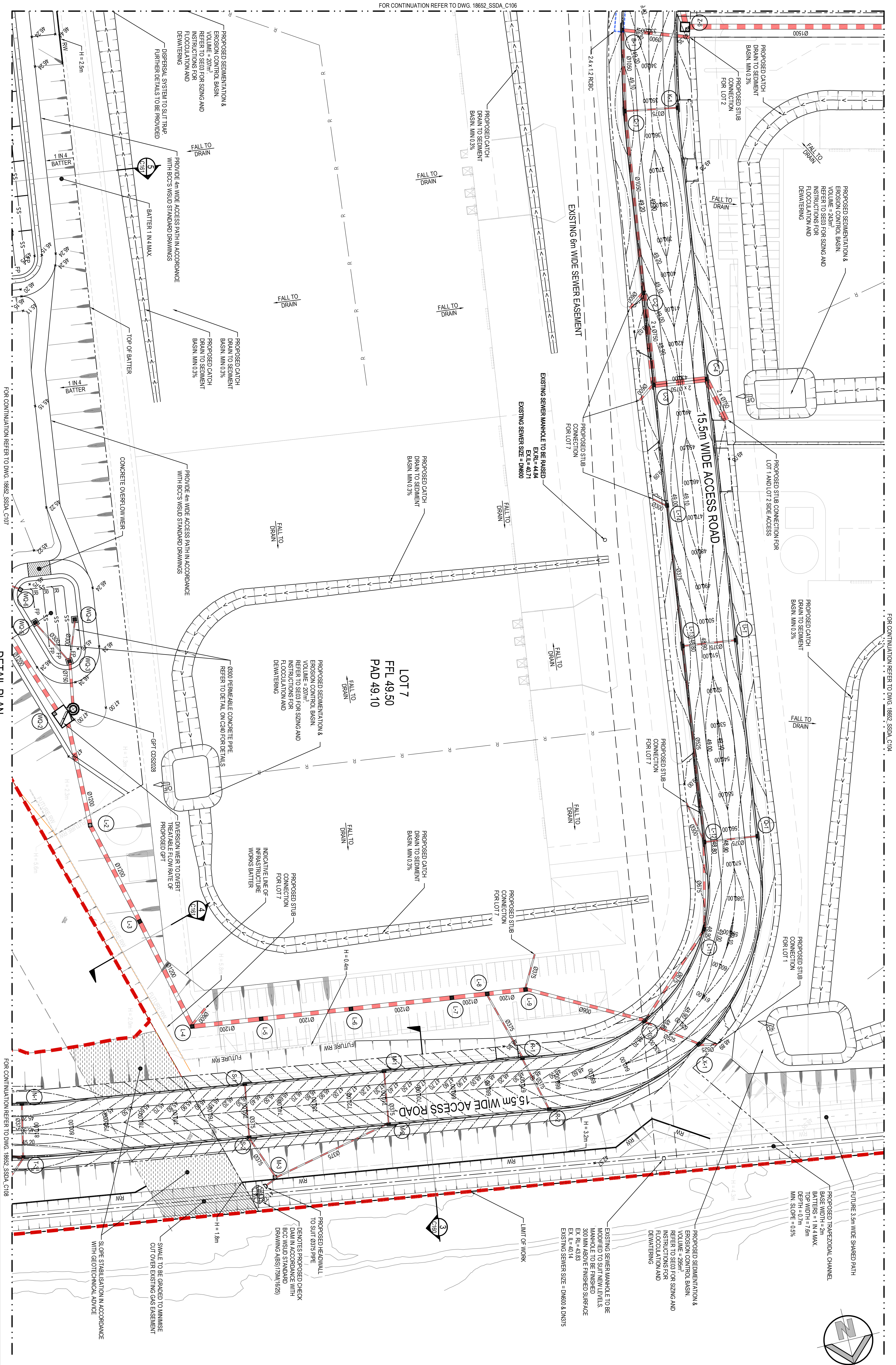




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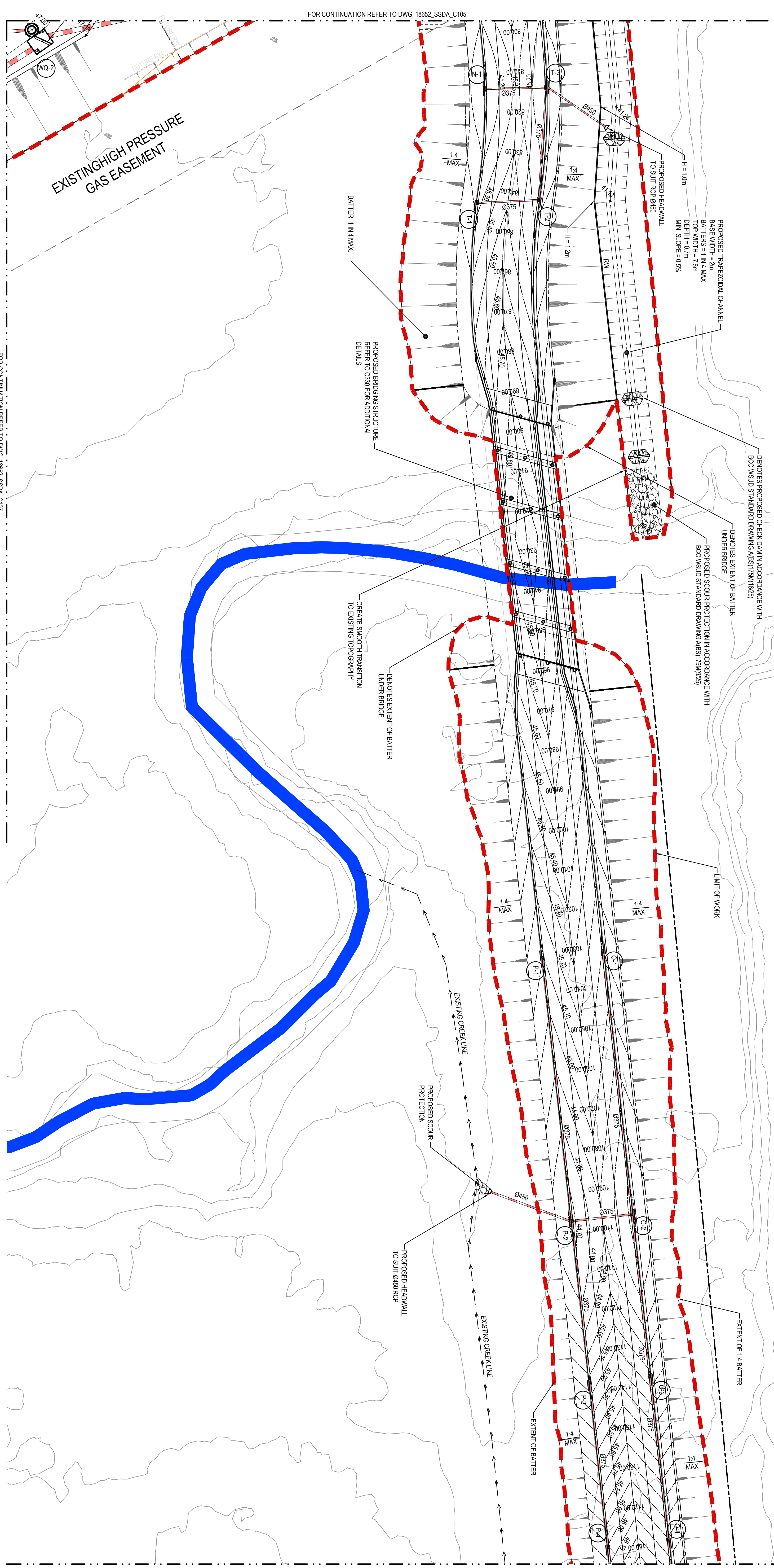
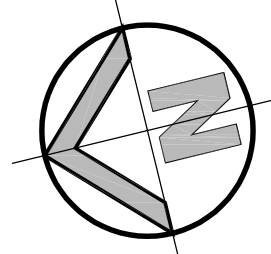
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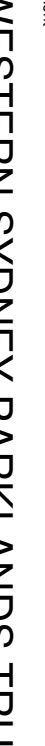




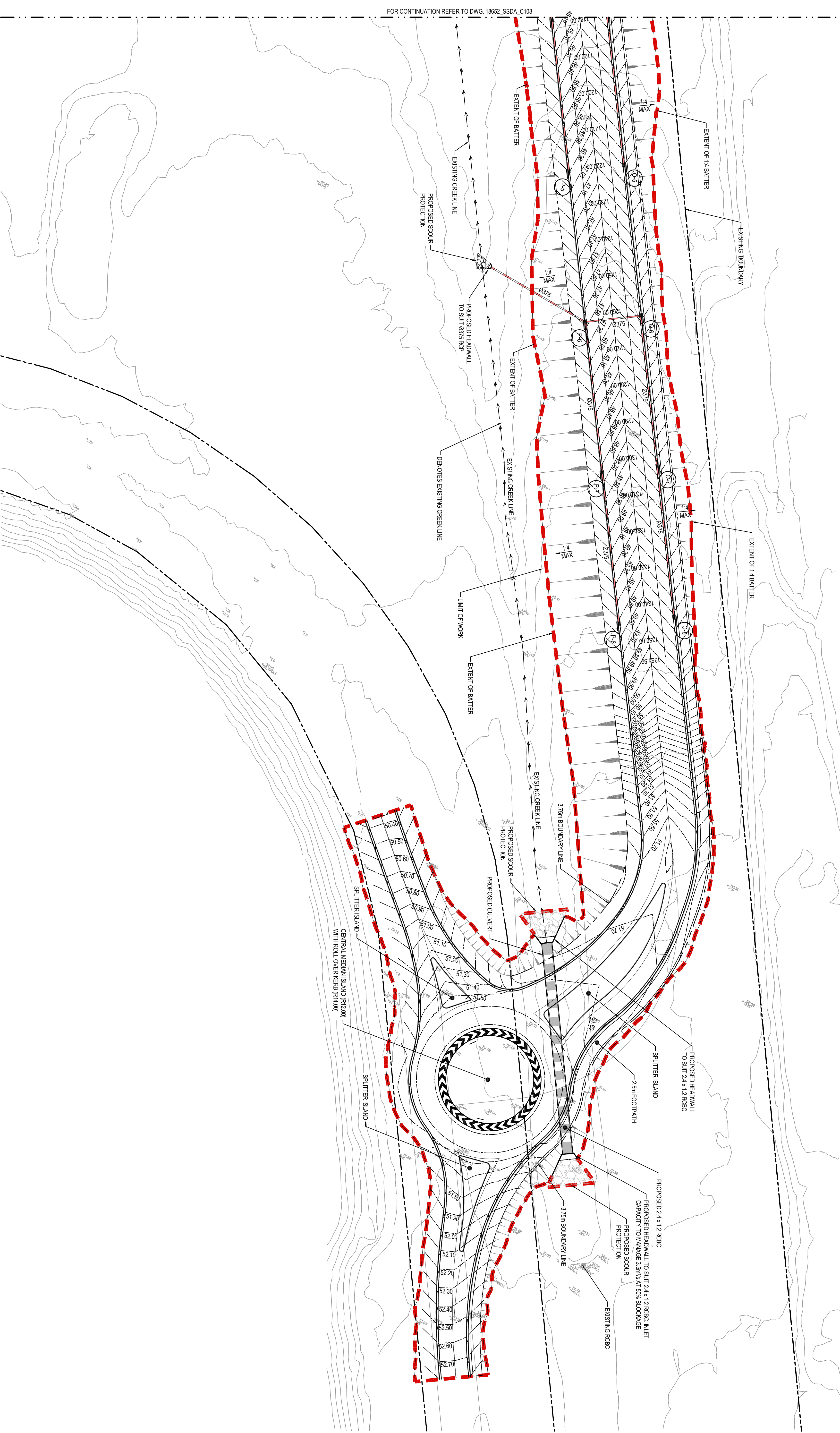
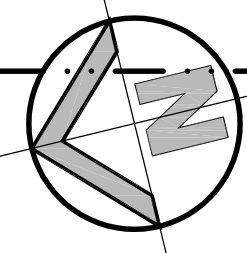
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SCALE 1:500

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				WESTERN SYDNEY PARKLANDS TRUST												LIGHT HORSE INTERCHANGE BUSINESS HUB				EASTERN CREEK, NSW (SSD9667)				Drawn M. Simmra Checked N. Wenzler				Designed L. Chah Approved A. Francis				Date FEB 2019 Scale B/A1 1:500				Revision 03			
				NETTLETONTRIBE																DETAIL PLAN				18652_SSDA_C108															





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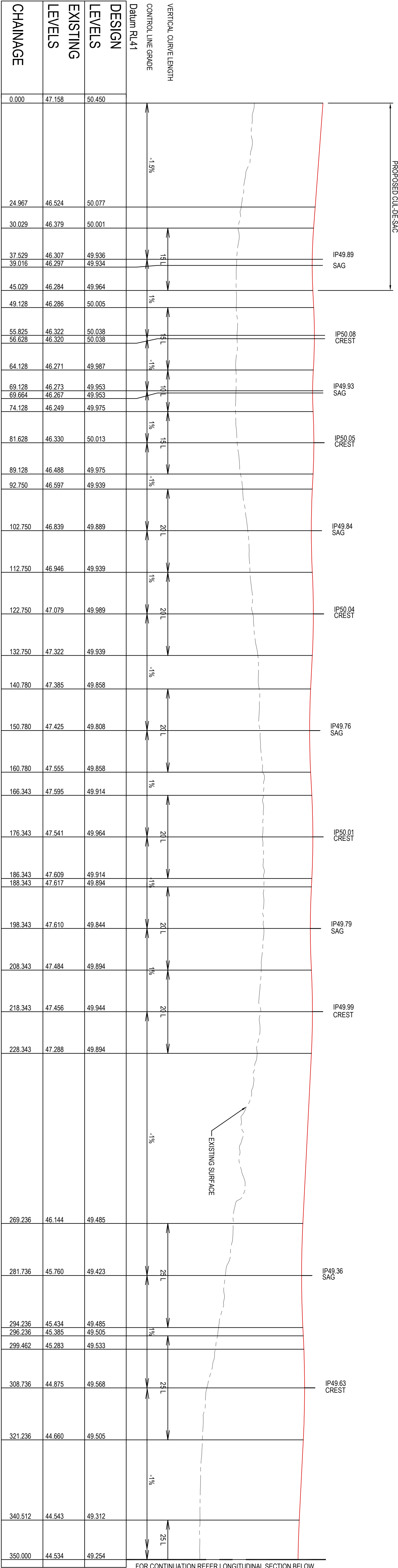


DETAIL PLAN

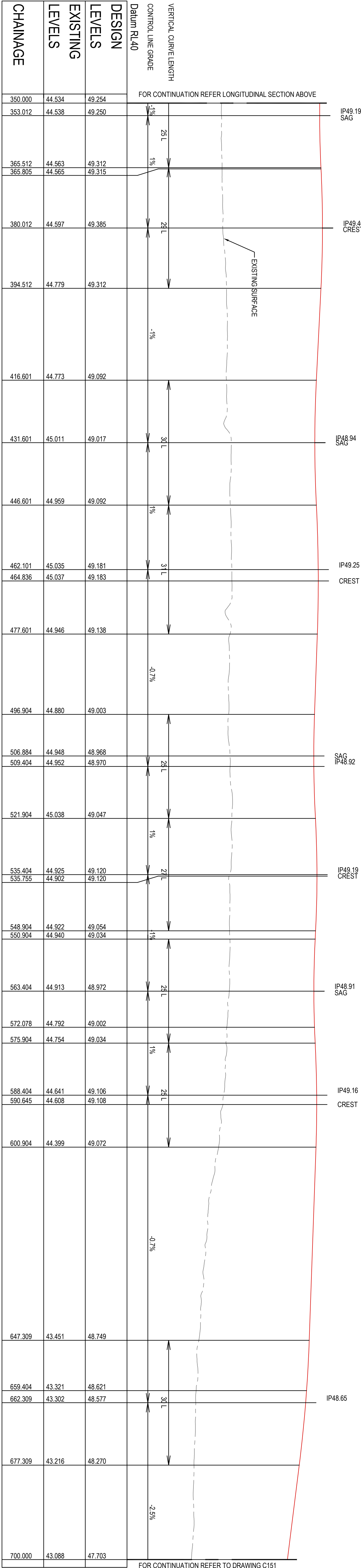
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Client				WESTERN SYDNEY PARKLANDS TRUST			
NETTLETONTRIBE							
Level 5, 70 Victoria Avenue, Crowswood NSW 2067				Tel: 02 9417 9400 Fax: 02 9417 8337 Email: <a href="mailto:enr@hcnr.com.au">enr@hcnr.com.au</a> www.henryandhymas.com.au			
henry&hymas				Project			
				LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)			
				Detail Plan SHEET 9 OF 9			
				Drawn		Designed	
				M. SIMOVA		L. COLLA	
				Checked		Approved	
				N. WIGGILL		A. FRANKS	
				Drawing number		Date	
				18652_SSDA_C109		FEB 2019	
				Revision		Scale	
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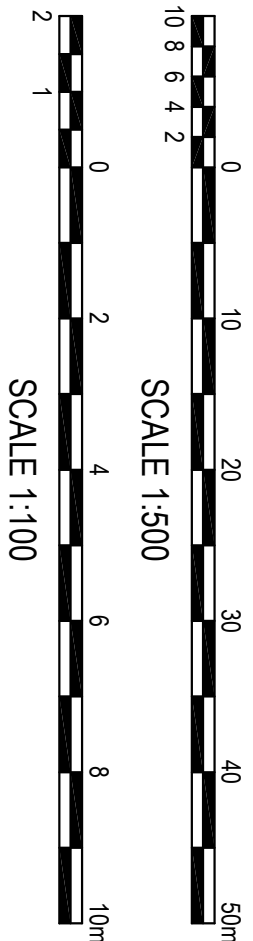




LONGITUDINAL SECTION ROAD 1  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:100



LONGITUDINAL SECTION ROAD 1 - CONTINUATION  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:100



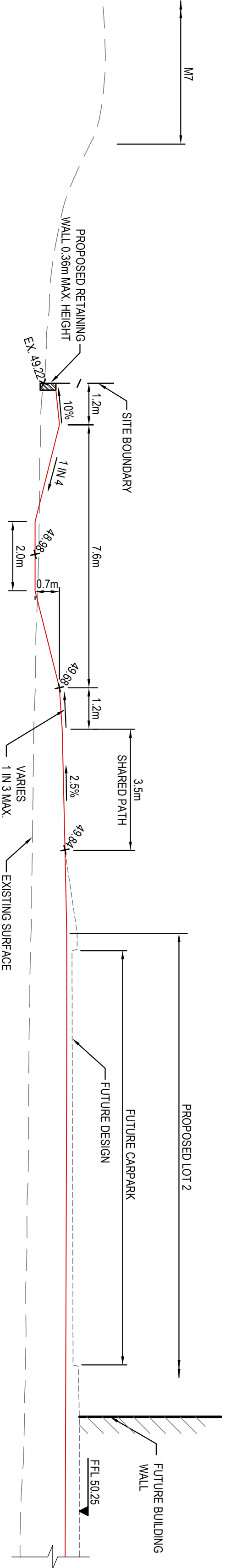
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WESTERN SYDNEY PARKLAND TRUST		LIGHT HORSE INTERCHANGE BUSINESS HUB	
NETTLETONTRIBE		EASTERN CREEK, NSW (SSD9667)	
Level 5, 79 Victoria Avenue, Chesham NSW 2867		Drawn: M. Simova	
Tel: 02 9417 8400		Checked: L. Colby	
Email: ems@nettletontribe.com.au		Approved: A. Francis	
www.henrythymas.com.au		Date: FEB 2019	
henrythymas		Scale: AS SHOWN @ A1	
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Revision		Revision	
01	PRELIMINARY	01	REVISION
02	ISSUED FOR CO-ORDINATION	02	REVISION
03	ISSUED FOR APPROVAL	03	REVISION
DESIGNED		DESIGNED	
DATE	DATE	DATE	DATE
23.02.2019	23.02.2019	23.02.2019	23.02.2019
DRAWN		DRAWN	
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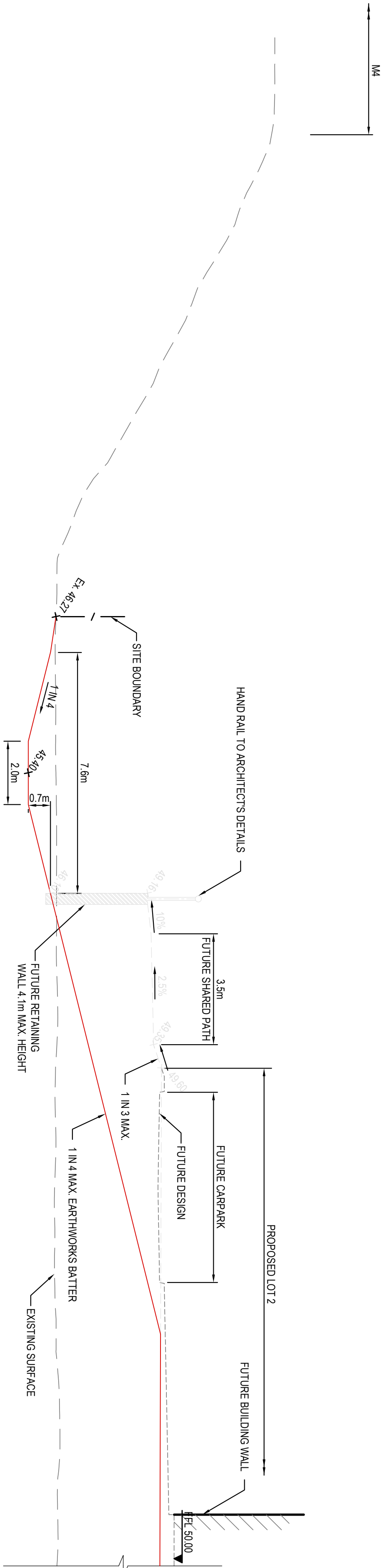




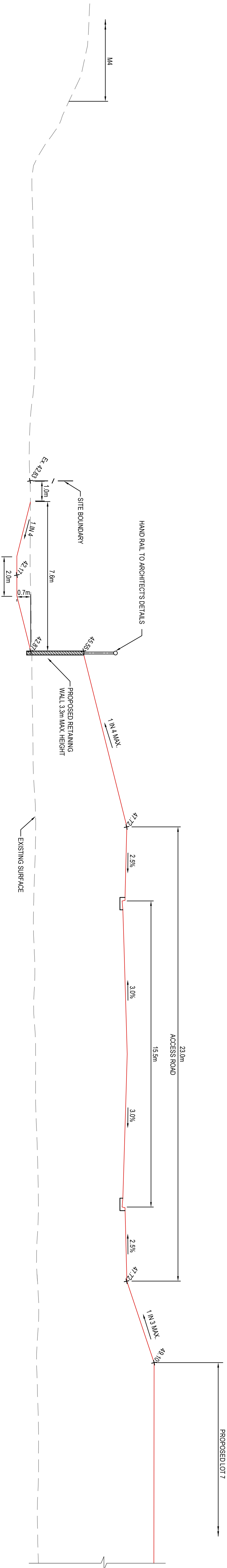




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C104



SECTION 2  
SCALE: 1:100 @ A1  
C104



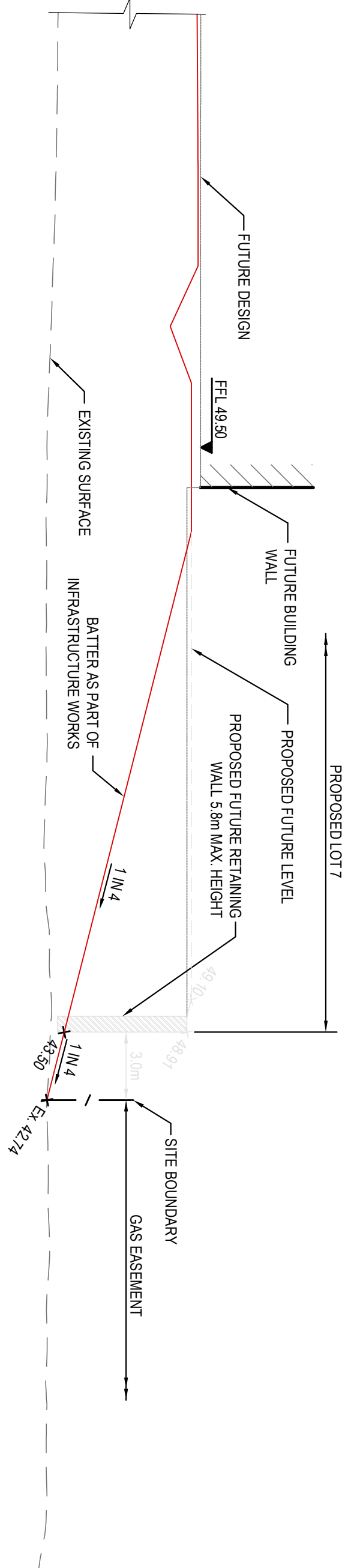
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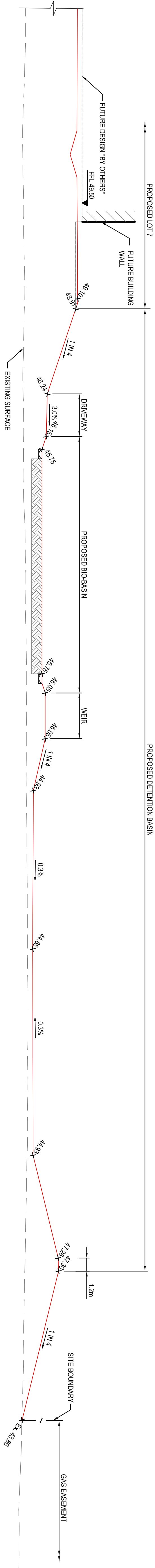
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Client				Western Sydney Parklands Trust			
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				Project: LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)			
Drawn: M. Simova Checked: N. Widdler				Designed: L. Collier Approved: A. Francis			
Drawing number: 18652_SSDA_C160				Date: FEB 2019 Scale: A1 Revision: 03			

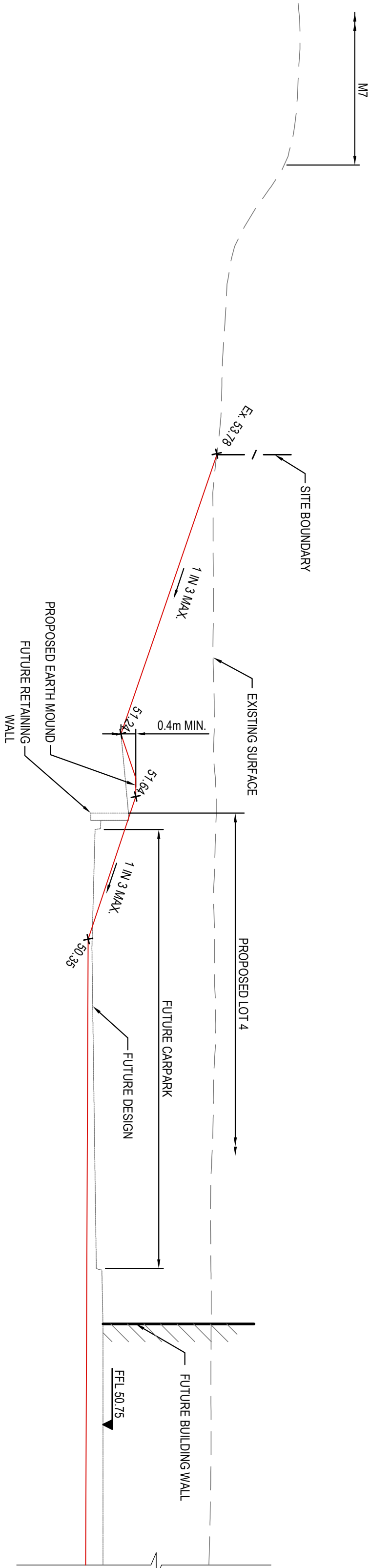




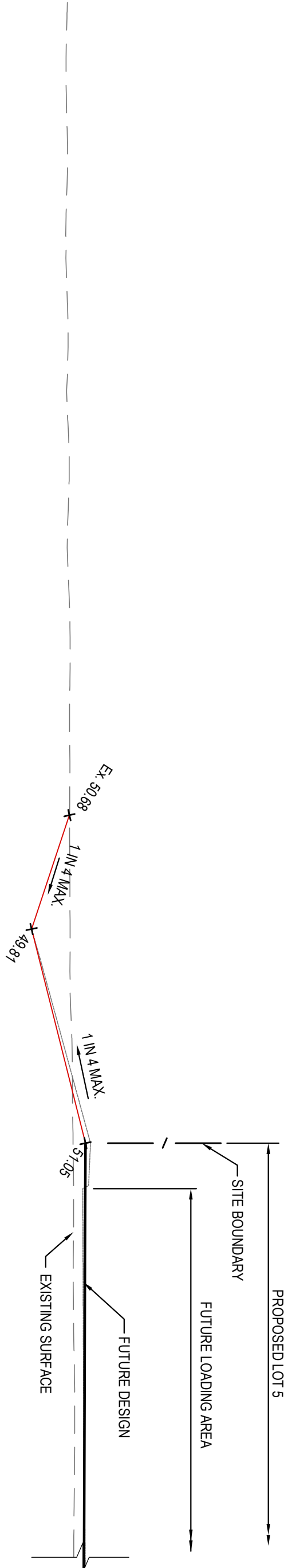
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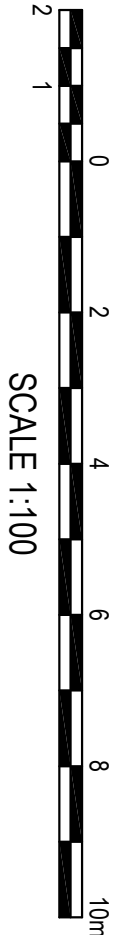
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C107



SECTION 6  
SCALE: 1:100 @ A1  
C103



SECTION 7  
SCALE: 1:100 @ A1  
C102



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Client				WESTERN SYDNEY PARKLANDS TRUST			
NETTLETONTRIBE				NETTLETONTRIBE			
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Level 5, 79 Victoria Avenue Oakhurst NSW 2627				Telephone +61 2 9417 8400 +61 2 9417 8337 Email enquiries@hcnz.com.au www.henryandhymas.com.au			
Project				LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)			
Drawn				Designed			
M. Simova				L. Colla			
Checked				Approved			
N. Widdler				A. Francis			
Title				Date			
SITE SECTIONS				FEB 2019			
SHEET 2 OF 2				Scale @A1 1:100			
Drawing number				Revision			
18652_SSDA_C161				03			



IT IS THE CONTRACTORS RESPONSIBILITY TO SELECT PIT CHAMBER SIZE WITH REGARDS TO PIPE SIZE, DEPTH TO INVERT AND SKEW ANGLE. REFER SKETCHES BELOW.

- ① SELECT PIT CHAMBER USING THE STEPS BELOW.  
② SELECT PIT CHAMBER SIZE DEPENDING ON THE PIPE DIAMETERS.  
③ CHECK PIT CHAMBER SIZE TO SATISFY DEPTH TO INVERT REQUIREMENTS.  
④ CHECK PIT CHAMBER DIMENSIONS TO SATISFY THE SKEW ANGLE IN THE TABLE.

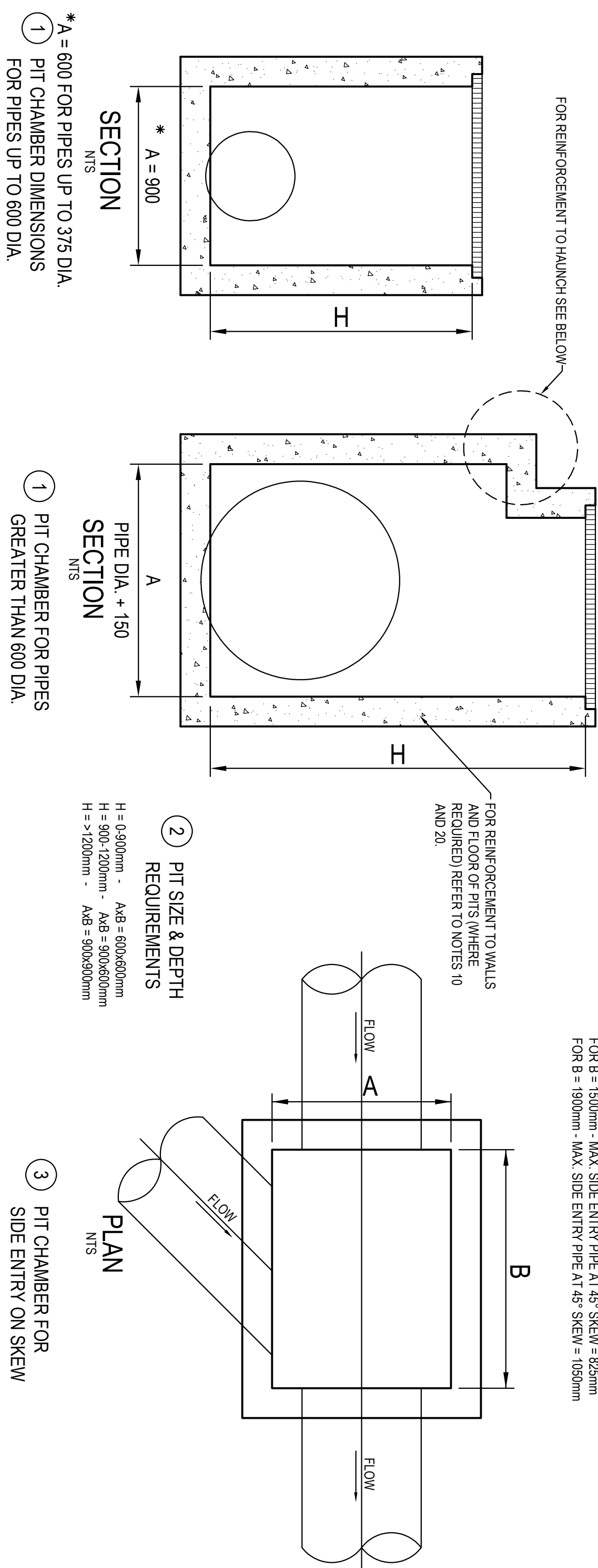


TABLE 1	
SIEVE SIZE (MM)	WEIGHT PASSING (%)
75.0	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

TABLE 2	
SIEVE SIZE (MM)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

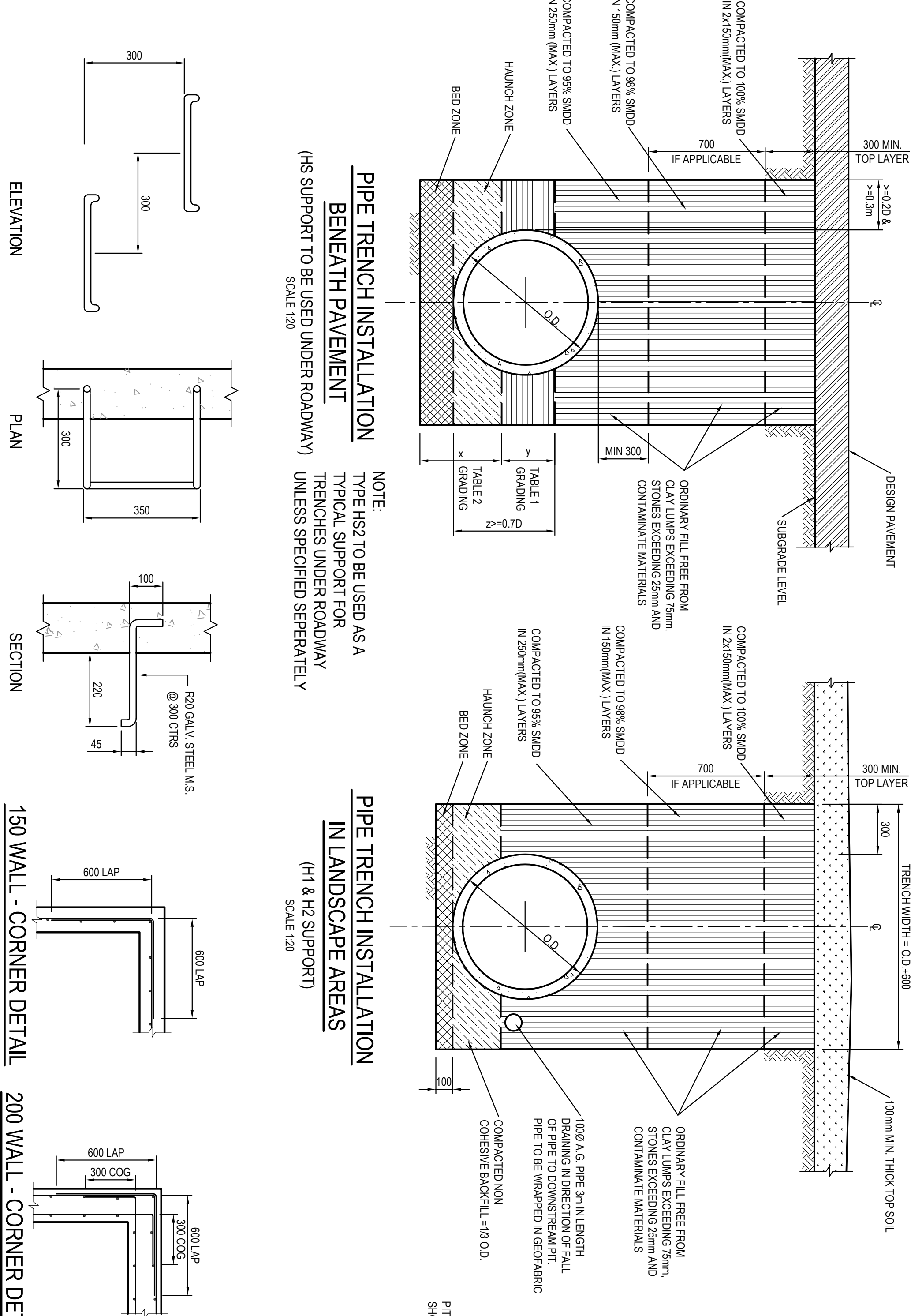
TABLE 3			
SUPPORT TYPE	BED ZONE X	HAUNCH ZONE Y	BED AND HAUNCH ZONES COMPLETION
HS1	100 IF D<=1500, OR 150 IF D>=1500	0.1D	50
HS2		0.3D	60
HS3		0.3D	70

PIT LID SCHEDULE

PIT/STRUCTURE NUMBER	LID DESCRIPTION
S-2 P-1 P-3 P-4 P-5 P-6 P-7 P-8 Q-1 Q-3 S-1 Q-4 Q-5 Q-6 Q-7 Q-8 T-1 T-2 M-1 M-2	ON GRADE KERB INLET PIT WITH 1.8m LINTEL AND HEAVY DUTY GRADED LID CLASS 'D' IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS. PIT TO BE FITTED WITH PIT BASKET™ 200 MICRON - ENVIROPOD™
P-2 Q-2 T-3 M-1	SAG KERB INLET PIT WITH 1.8m LINTEL AND HEAVY DUTY GRADED LID CLASS 'D' IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS. PIT TO BE FITTED WITH PIT BASKET™ 200 MICRON - ENVIROPOD™
L-10 L-11 L-14 C-2 B-1 A-10 A-11 I-1 R-1 X-1 L-14 R-2	ON GRADE KERB INLET PIT WITH 1.8m LINTEL AND HEAVY DUTY GRADED LID CLASS 'D' IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
L-12 U-1 L-13 Q-1 C-3 C-4 C-1 K-1 J-1 A-9A E-2 A-12 H-1 A-13 G-1 A-14 F-1 A-19 E-1 A-16	SAG KERB INLET PIT WITH 1.8m LINTEL AND HEAVY DUTY GRADED LID CLASS 'D' IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
Z-2 Z-4 Z-5 Z-6 Z-10 A-39 A-48 A-108 A-119 A-1 A-128 A-59 A-69 A-79 A-89 A-99	SEALED JUNCTION PIT WITH 900 X 900 HINGED HEAVY DUTY CLASS 'D' CONCRETE LID IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
M-9 M-10 M-3 M-12 M-3 M-3	SEALED JUNCTION PIT WITH 900 X 900 HINGED LIGHT DUTY CLASS 'B' CONCRETE LID IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
A-34 A-44 A-54 A-64 A-74 A-84 L-7 L-8 L-9	SURFACE INLET PIT WITH 900 X 900 HINGED HEAVY DUTY CLASS 'D' GRADED ACCESS LID IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
M-3 M-3 M-3 M-3 M-2	WATER QUALITY PITS REFER TO C240 FOR ADDITIONAL DETAILS
M-1	STORMWATER QUALITY IMPROVEMENT DEVICE: GPIT UNIT - ROCKA COS 3030
M-2	STORMWATER QUALITY IMPROVEMENT DEVICE: GPIT UNIT - ROCKA COS 2028
Z-12	SURFACE INLET PIT WITH 900/900 LIGHT DUTY SURCHARGE STYLE GRATES IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
Z-3 Z-7 Z-9 Z-9	SEALED SADDLE PIT WITH 900 X 900 HINGED HEAVY DUTY CLASS 'D' CONCRETE LID. PIT RISERS TO BE CONNECTED TO 07500 STORMWATER LINE. PIT TO BE FINISHED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
M-13	SURFACE INLET PIT WITH 900 X 900 HINGED LIGHT DUTY CLASS 'B' SURCHARGE STYLE LID IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.
L-5 L-6 L-3 L-4	SURFACE INLET PIT TO BE FINISHED AT BALIK EARTHWORKS LEVEL. PITS TO BE RAISED AND FINISHED UNDER LOT TWORKS. PIT TO BE FINISHED WITH 900 X 900 HEAVY DUTY CLASS 'D' LID
V-1 V-2 V-3 V-4 V-5	SURFACE INLET PIT WITH 450 X450 HEAVY DUTY CLASS 'D' GRADED LID IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS.

IMPORTANT NOTES:

1. FOR SPECIFICATION OF PIT LIDS WITHIN OSD AND BIO-RETENTION BASINS, REFER TO DRAINAGE C101, C119 & C240-C241
2. ALL PIT LIDS TO BE CONSTRUCTED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL REQUIREMENTS AND MSD STANDARD DRAWINGS.



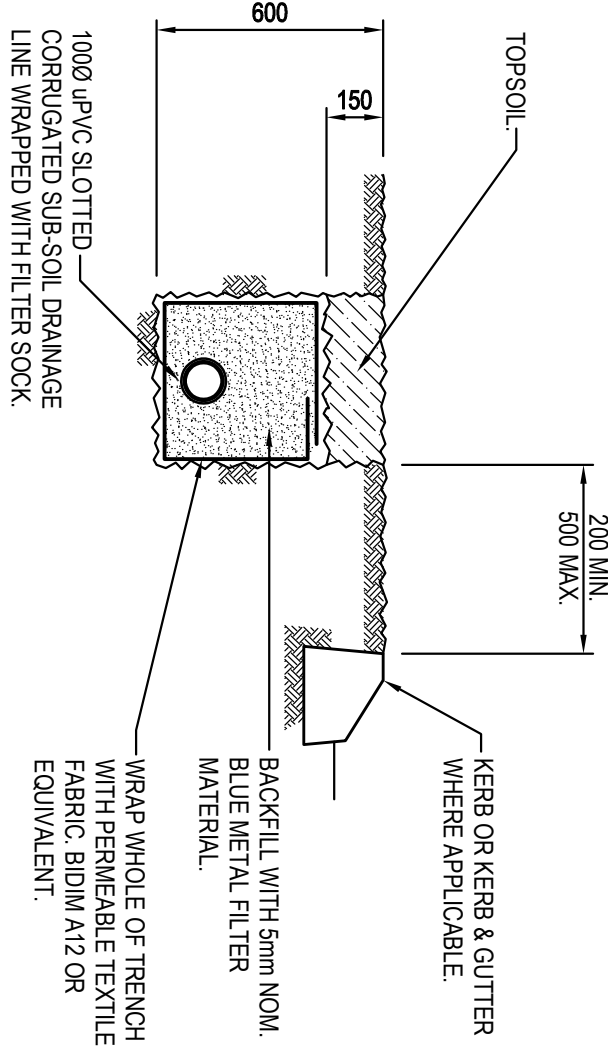
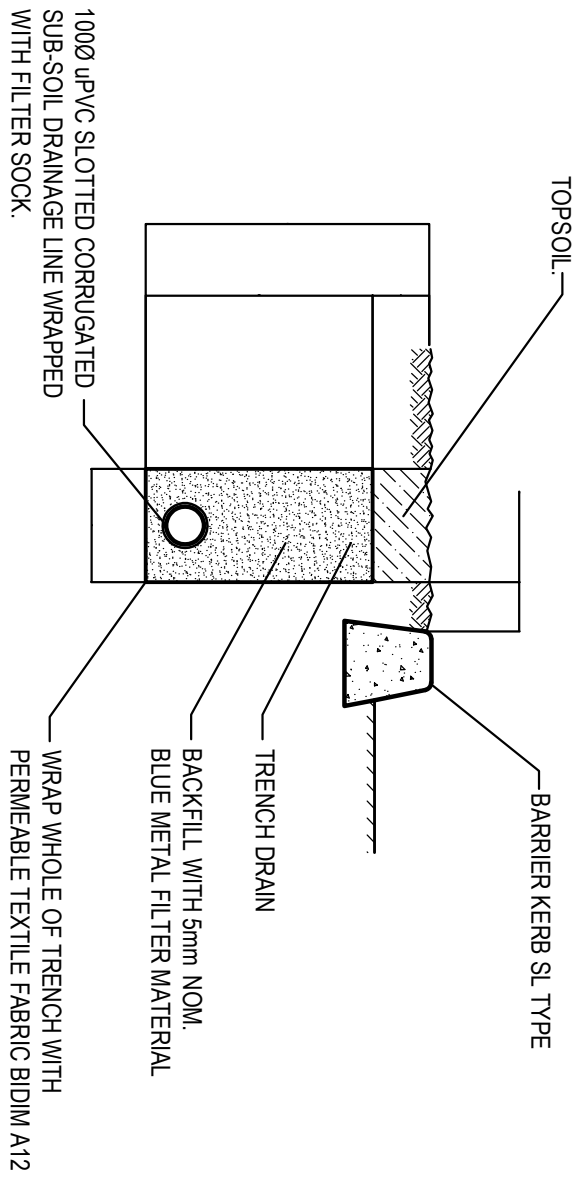
150 WALL - CORNER DETAIL

200 WALL - CORNER DETAIL

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SUB-SOIL DRAIN DETAIL

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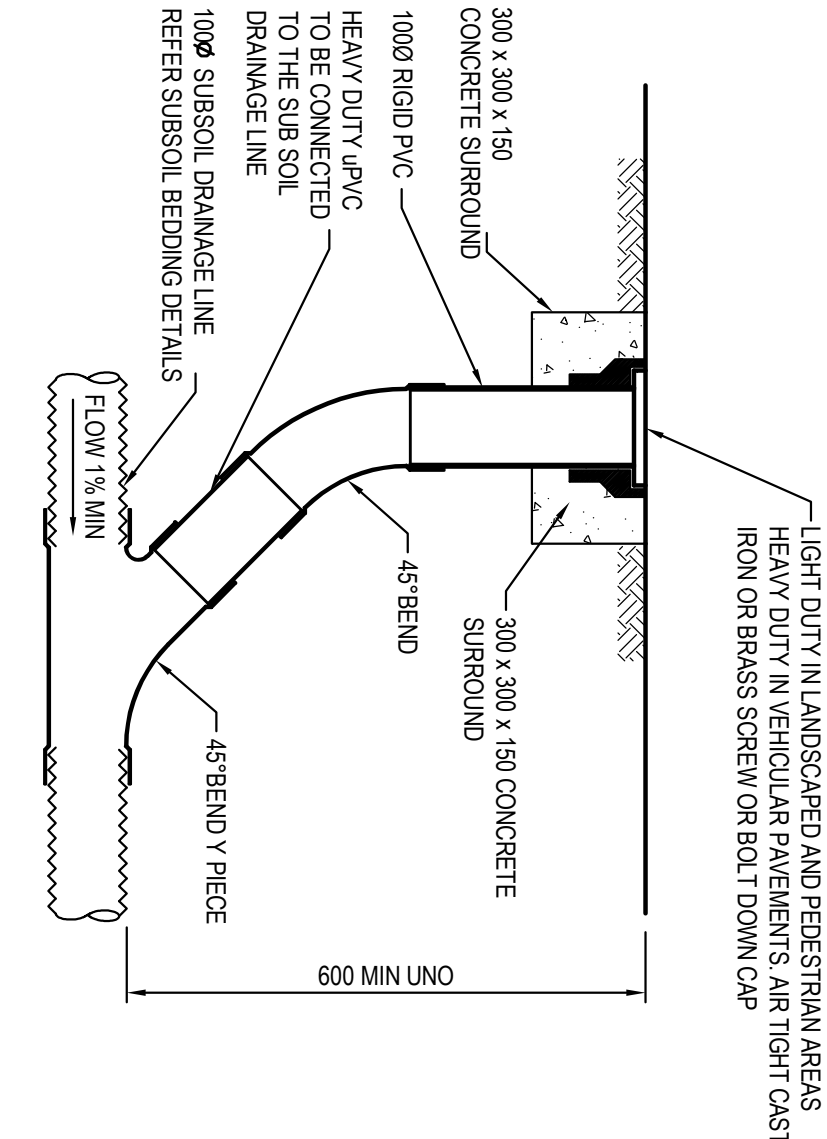
UNLESS SPECIFICALLY NOTED SUBSOIL DRAIN TO BE PROVIDED AROUND ALL KERB WITH SURFACE GRADING TOWARDS THE ROAD

SUB-SOIL DRAIN DETAIL

SCALE 1:20

NOTE

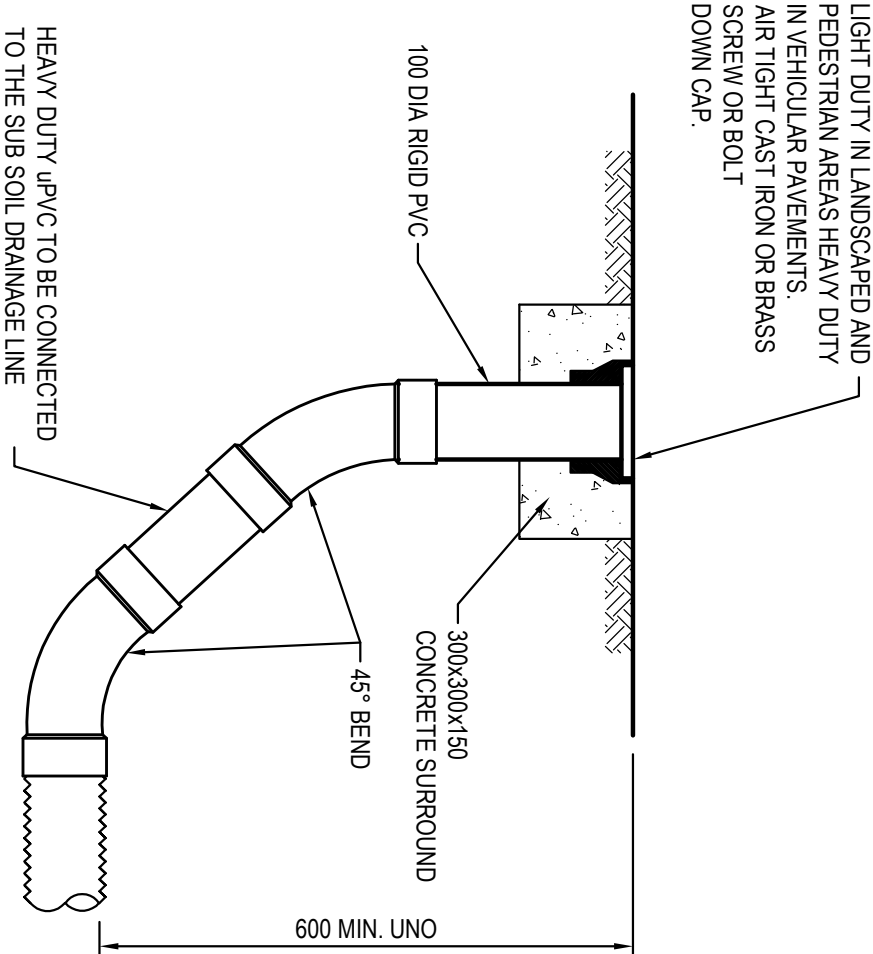
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INTERMEDIATE RISER (IR)

SCALE 1:10


NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



FLUSHING POINT (FP)

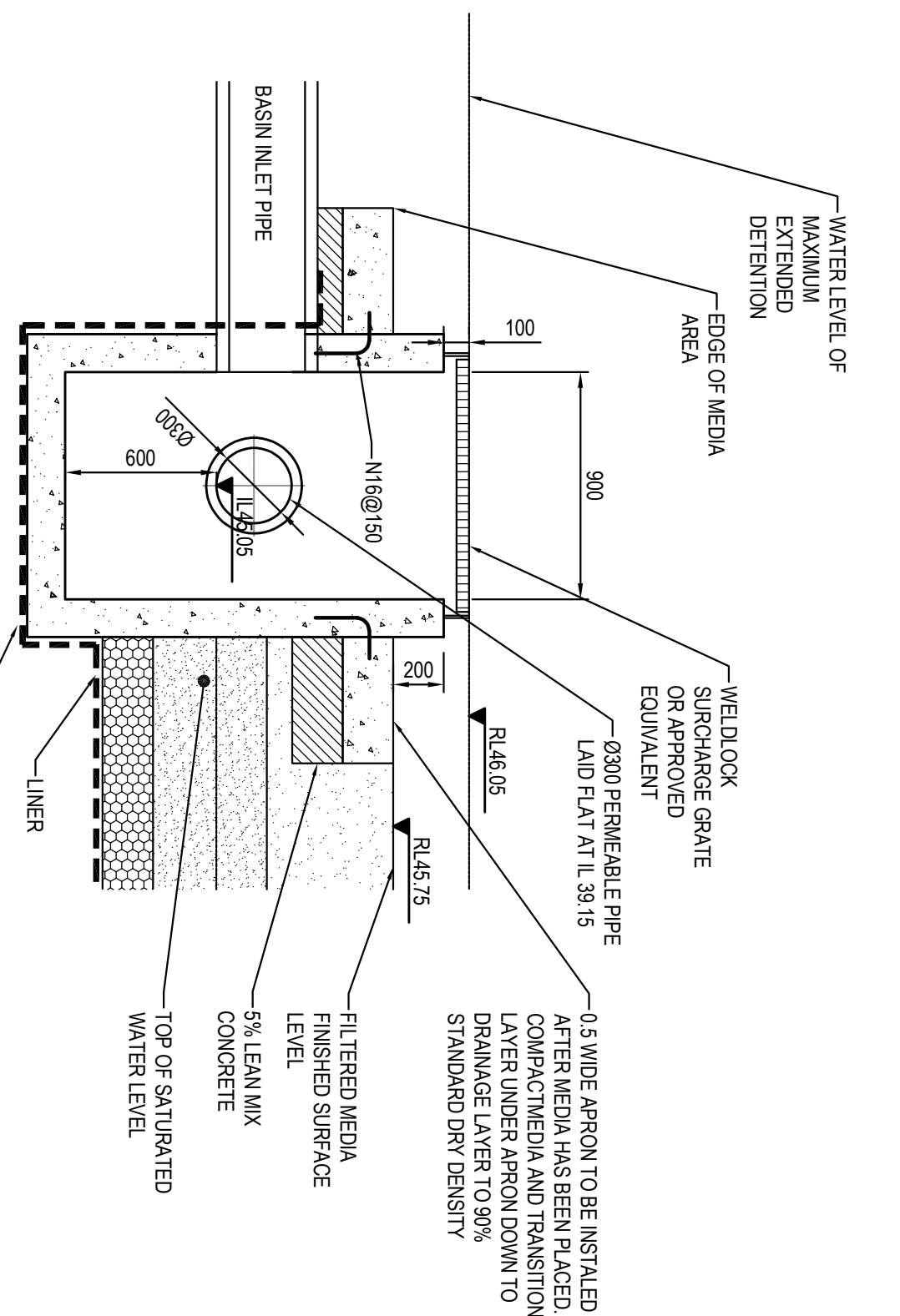
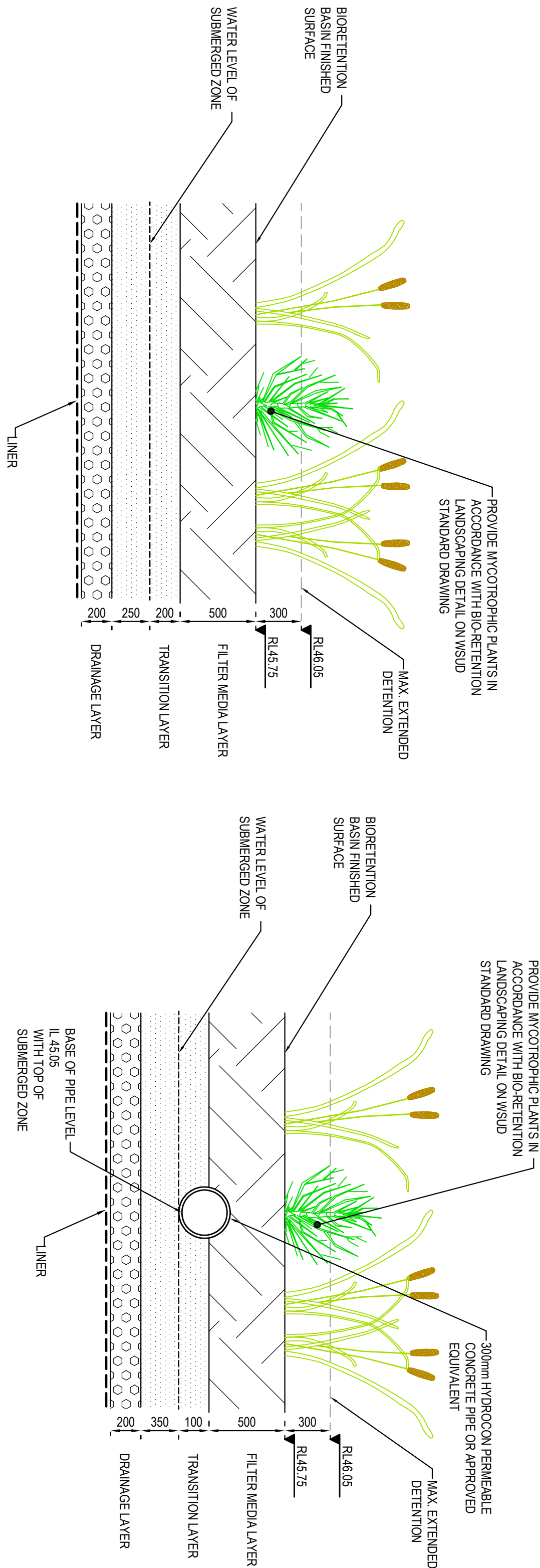
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NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED

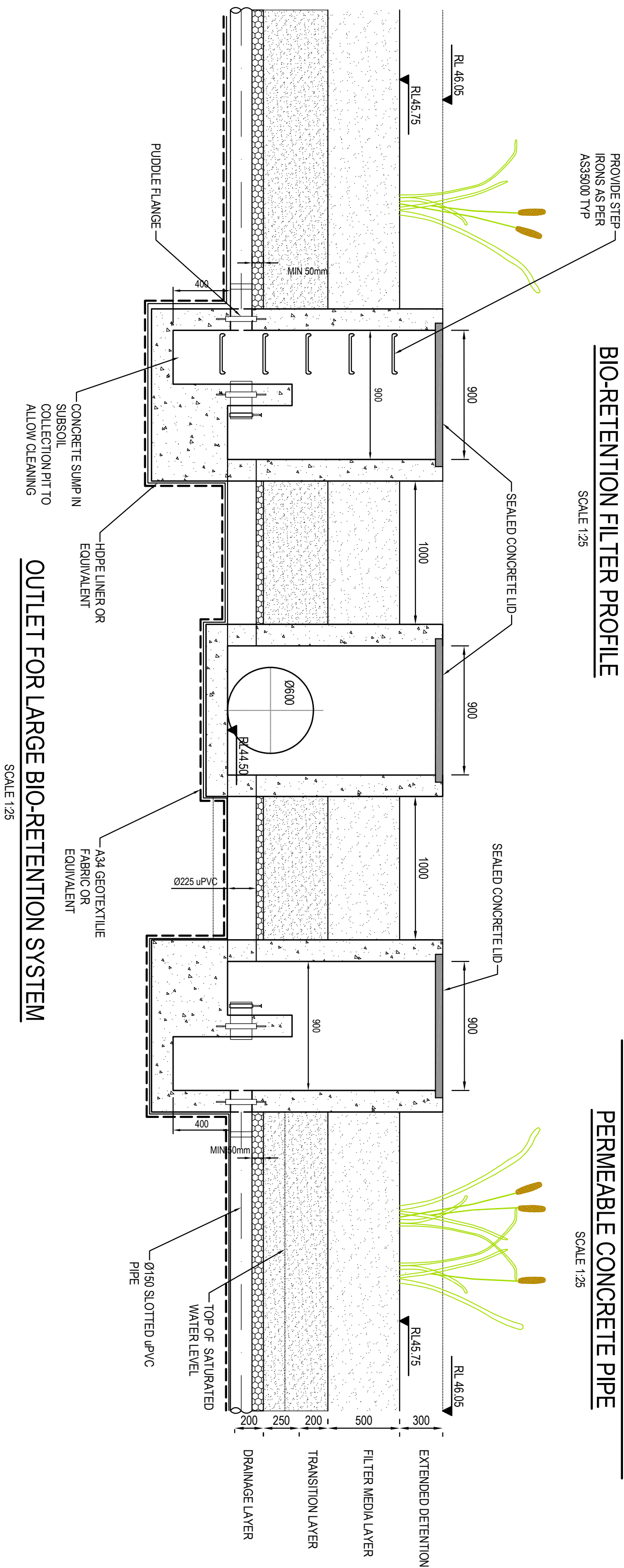
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		 henry&hymas	
		Project LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)	
		Title STORMWATER MISCELLANEOUS DETAILS	
		Drawing number 18652_SSDA_C201	
		Revision 03	
		Drawn M. SIMOVA	
		Designed L. COLE	
		Checked N. WIGGILL	
		Approved A. FRANKS	
		Scale @ A1 NTS	
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ISSUED FOR APPROVAL

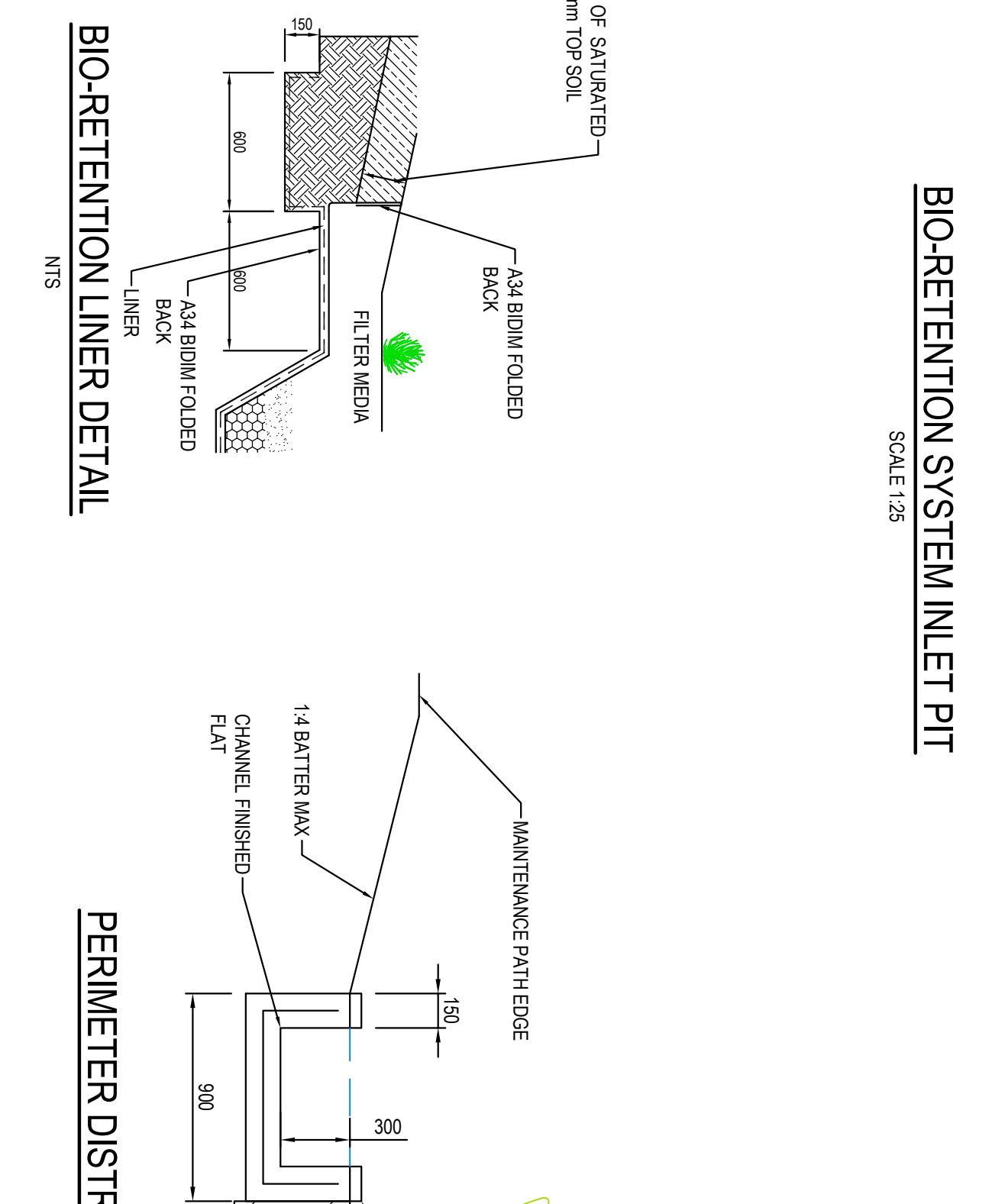




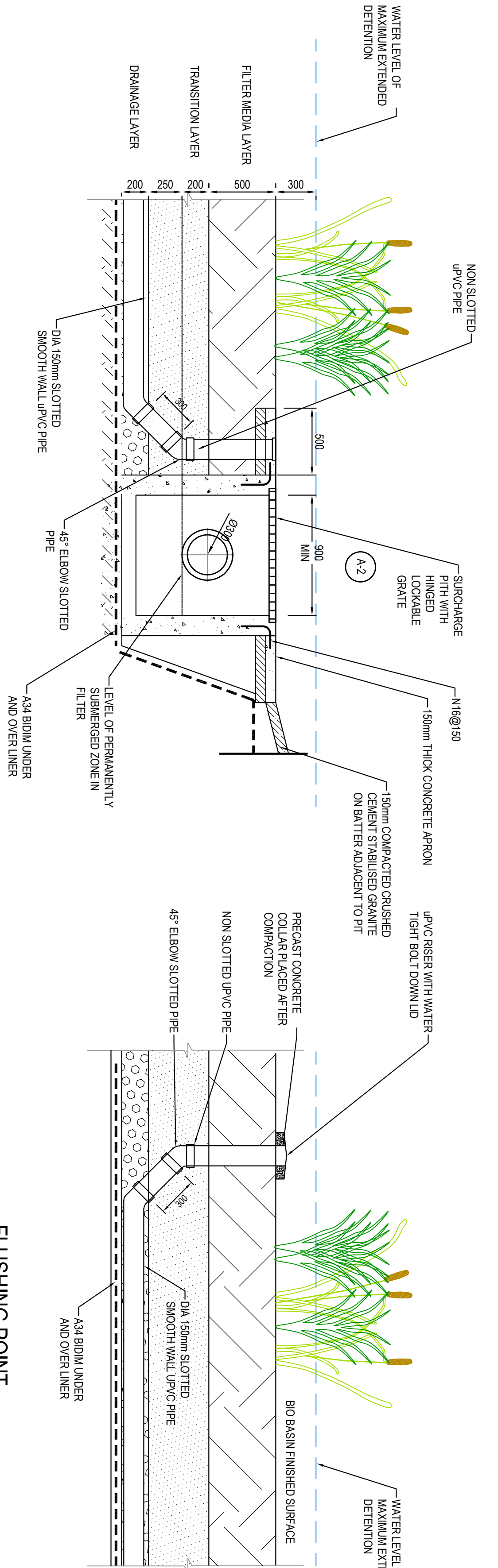
### BIO-RETENTION FILTER PROFILE



### BIO-RETENTION FILTER PROFILE INCLUDING PERMEABLE CONCRETE PIPE



### OUTLET FOR LARGE BIO-RETENTION SYSTEM



### TYPICAL UPFLOW OUTLET PIT LOCATED IN BIORETENTION BASIN

### FLUSHING POINT

### BIO-RETENTION LINER DETAIL

### PERIMETER DISTRIBUTION DRAIN

### MAINTENANCE ACCESS TRACK

NOTE:  
ACCESS PATH TO HAVE MAXIMUM 10% LONGITUDINAL GRADE



ISSUED FOR APPROVAL

Client				Western Sydney Parklands Trust			
Project				Light Horse Interchange Business Hub			
Drawn				M. Simova			
Checked				L. Colla			
Approved				N. Widdler			
Date				FEB 2019			
Revision				AS NOTED			
Drawing number				18652_SSDA_C240			
Revision				03			

Level 5, 70 Western Avenue Oakhurst NSW 2607	hentyhymas +61 2 9417 9400 +61 2 9417 8337 enquiries@hentyhymas.com.au www.hentyhymas.com.au	hentyhymas +61 2 9417 9400 +61 2 9417 8337 enquiries@hentyhymas.com.au www.hentyhymas.com.au	hentyhymas +61 2 9417 9400 +61 2 9417 8337 enquiries@hentyhymas.com.au www.hentyhymas.com.au
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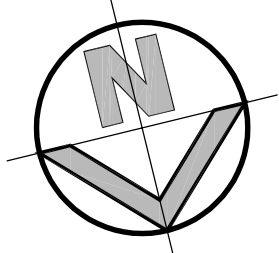
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02	ISSUED FOR CO-ORDINATION	NS	18.04.2019				
01	PRELIMINARY	NS	23.02.2019				

REVISION	DESIGNED	DATE	REVISION	DESIGNED	DATE









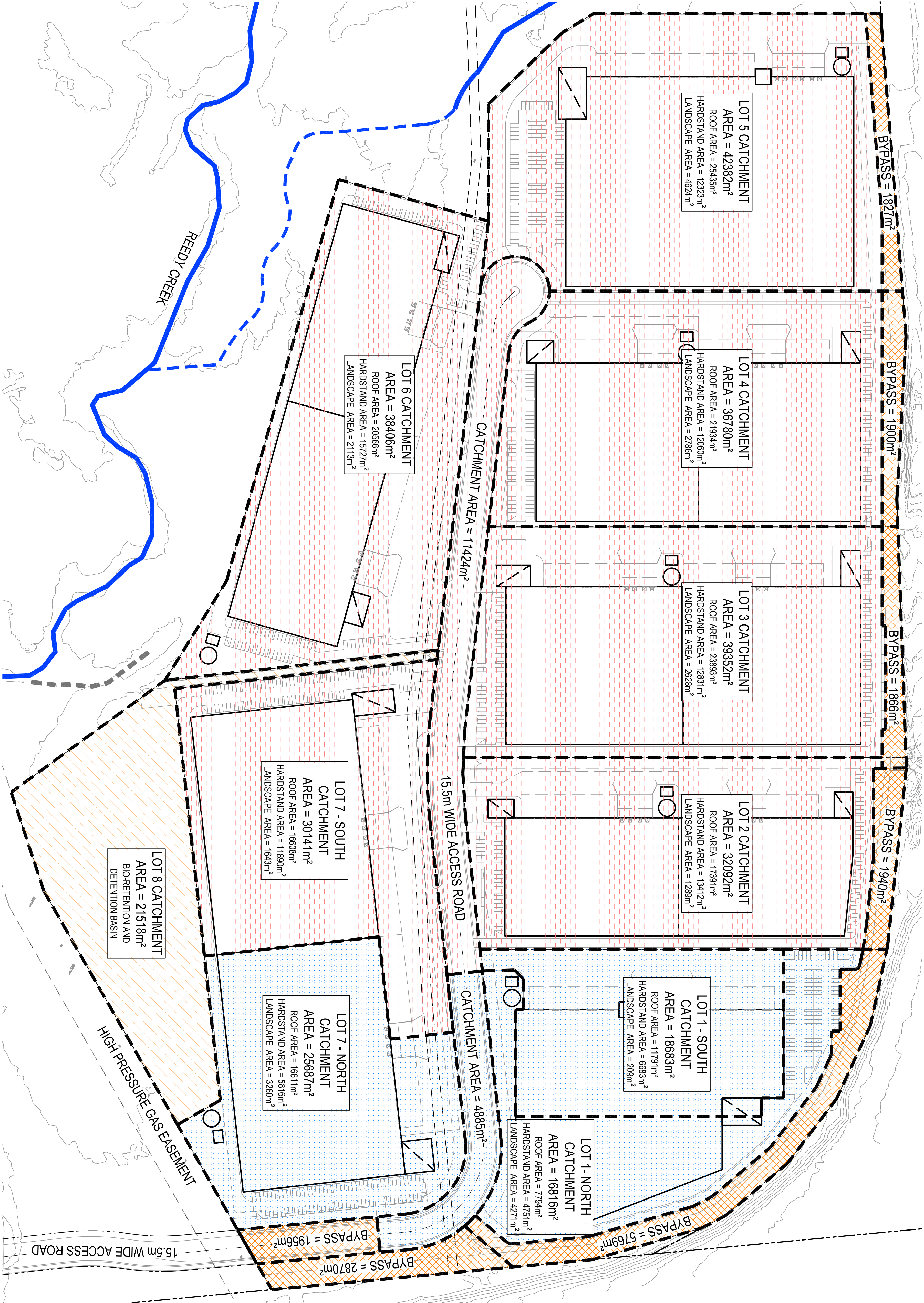
TOTAL AREA = 336294m<sup>2</sup>

TOTAL AREA  
DRAINING NORTH  
AREA: 66071m<sup>2</sup>

TOTAL AREA  
DRAINING SOUTH  
AREA: 230577m<sup>2</sup>

BIO-RETENTION AND  
DETENTION BASIN  
AREA: 21518m<sup>2</sup>

BYPASS AREA  
AREA: 18128m<sup>2</sup>

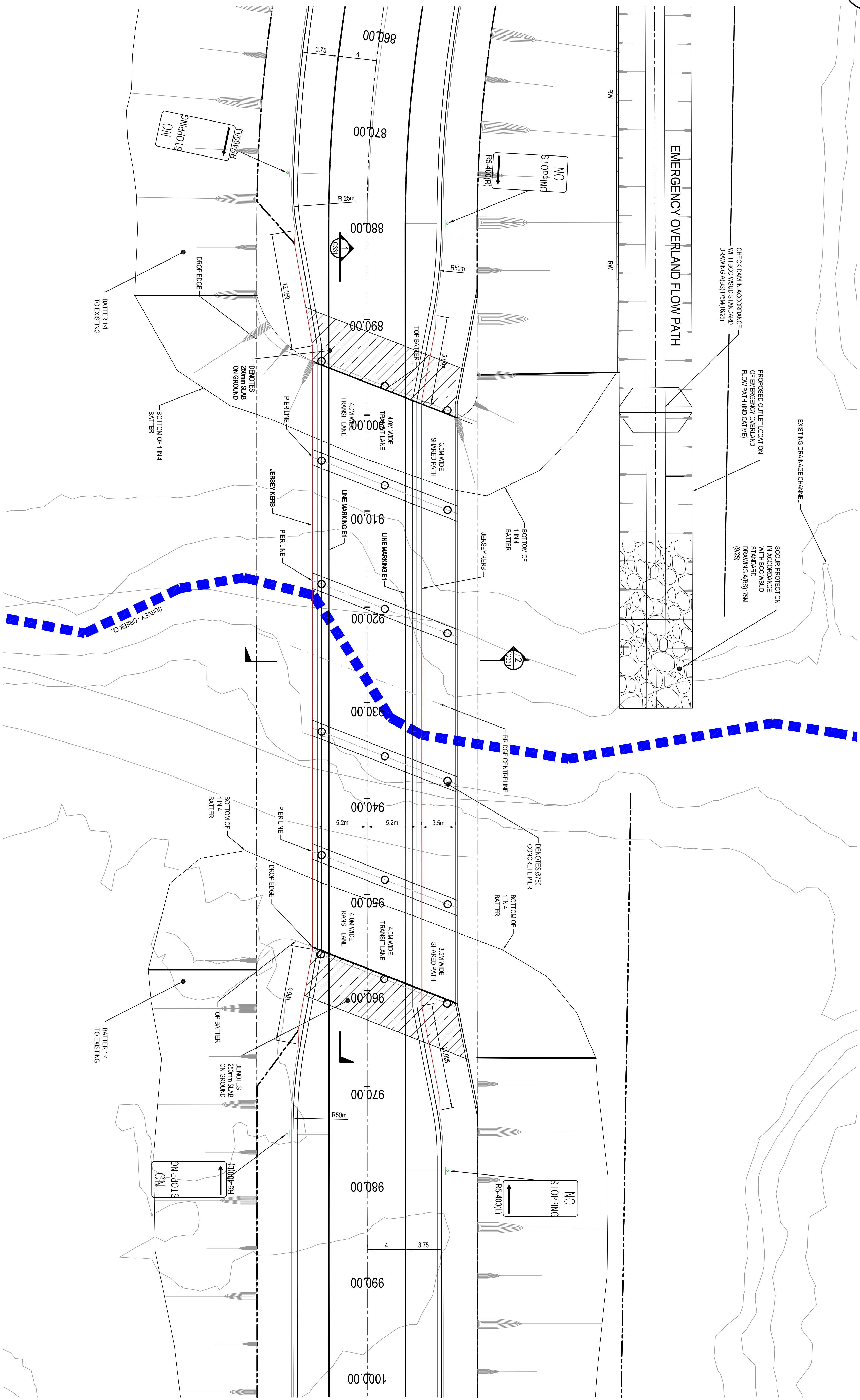


CATCHMENT PLAN  
SCALE 1:1250

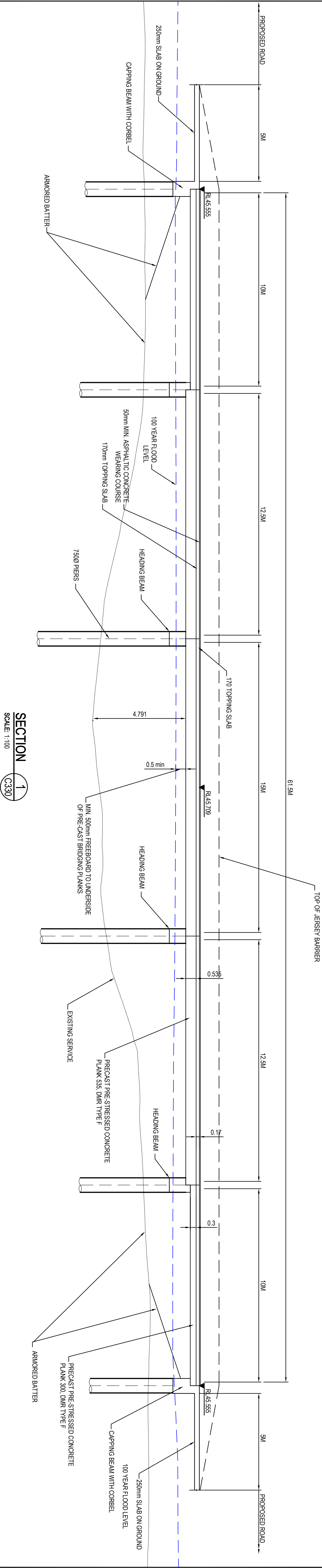
ISSUED FOR APPROVAL

SURVEY INFORMATION				Client			
SURVEYED BY				WESTERN SYDNEY PARKLANDS TRUST			
DATE				NETTLETONTRIBE			
ORIGIN OF LINES				The drawing and design remains the property of Henry & Hyman and may not be copied in whole or in part without the prior written approval of Henry & Hyman.			
REVISION				Level 5, Pacific Avenue, Chesham NSW 2067			
				Telephone +61 2 9417 8400			
				Email info@hcnconsult.com.au			
				www.henryandhyman.com.au			
				henryhyman			
				Project LIGHT HORSE INTERCHANGE BUSINESS HUB			
				EASTERN CREEK, NSW (SSD9667)			
				Title CATCHMENT PLAN			
				Drawn	MA SIMOVA	Designed	L. COLE
				Checked	N. WIDMER	Approved	A. FRANKS
				Drawn/checked			Scale 841
							1:1250
							Revision
							03

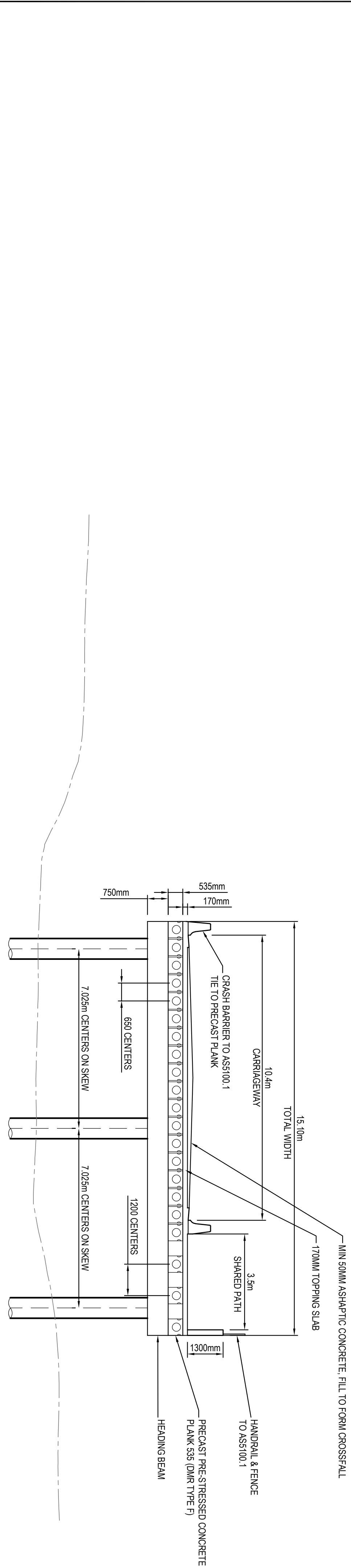


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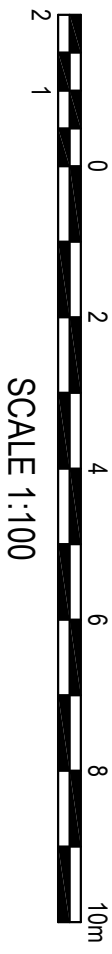




SECTION 1  
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C330



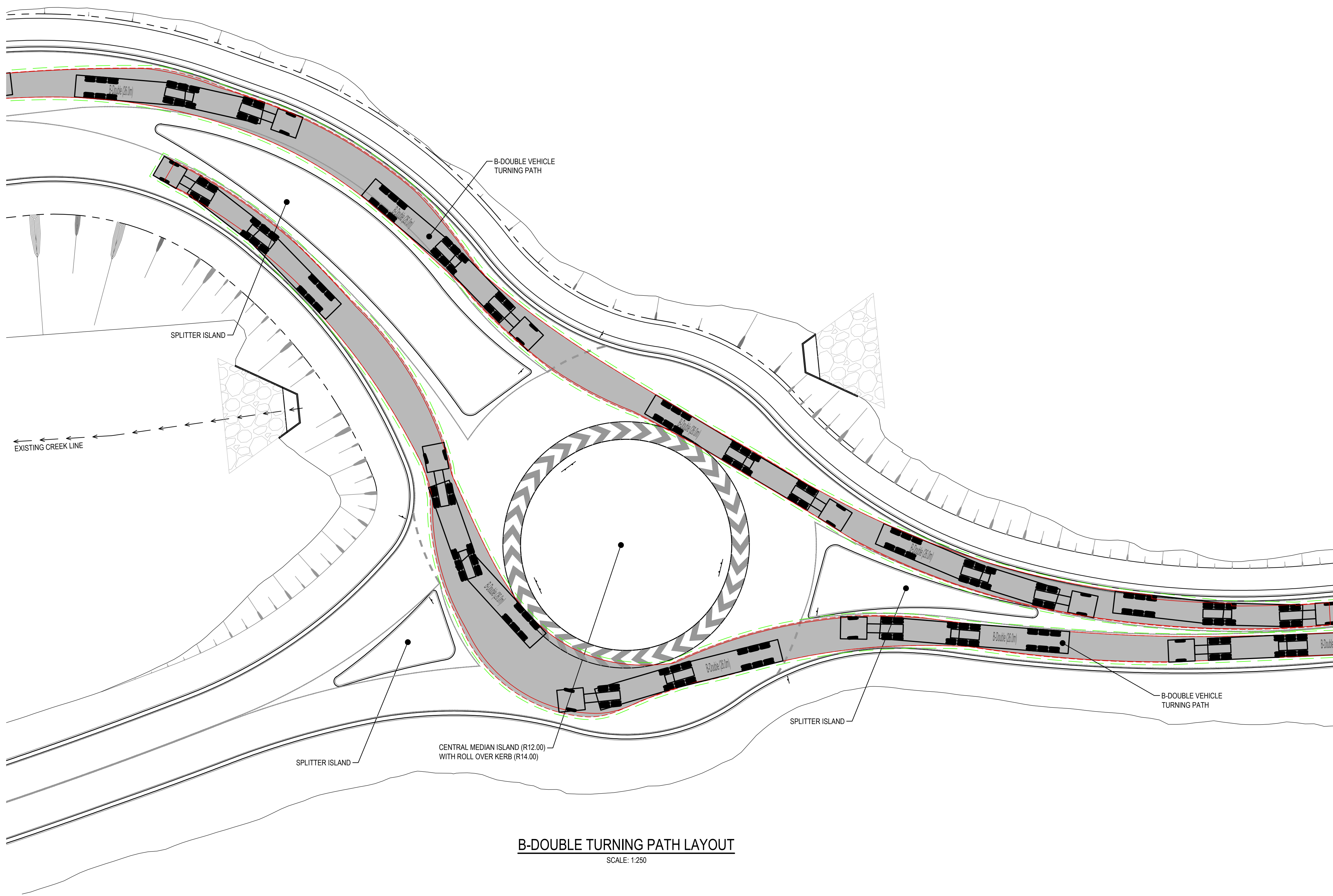
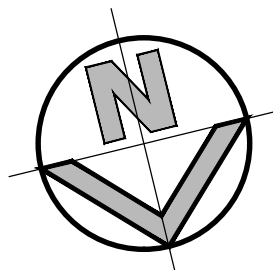
SECTION 2  
SCALE: 1:100  
C330



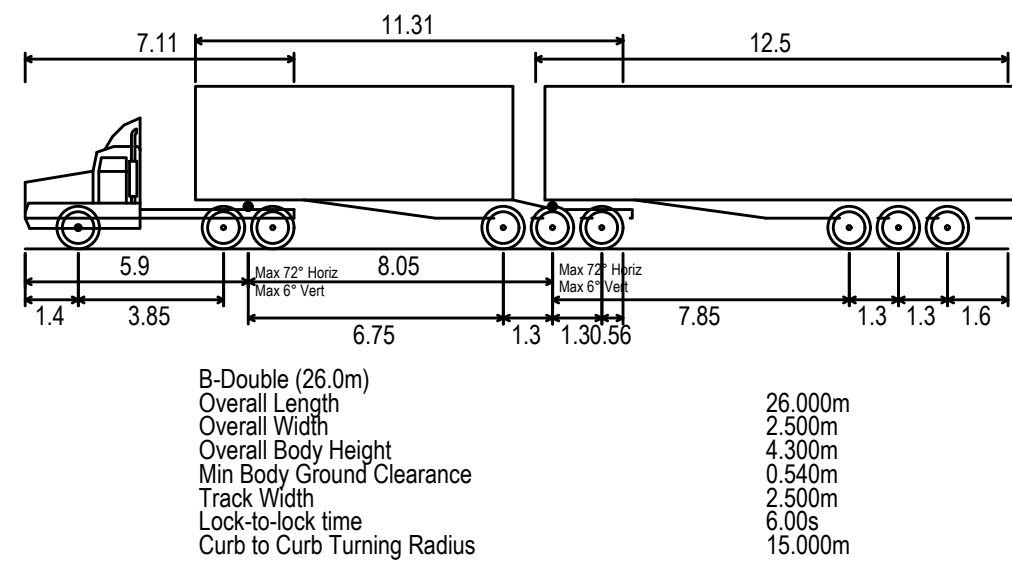
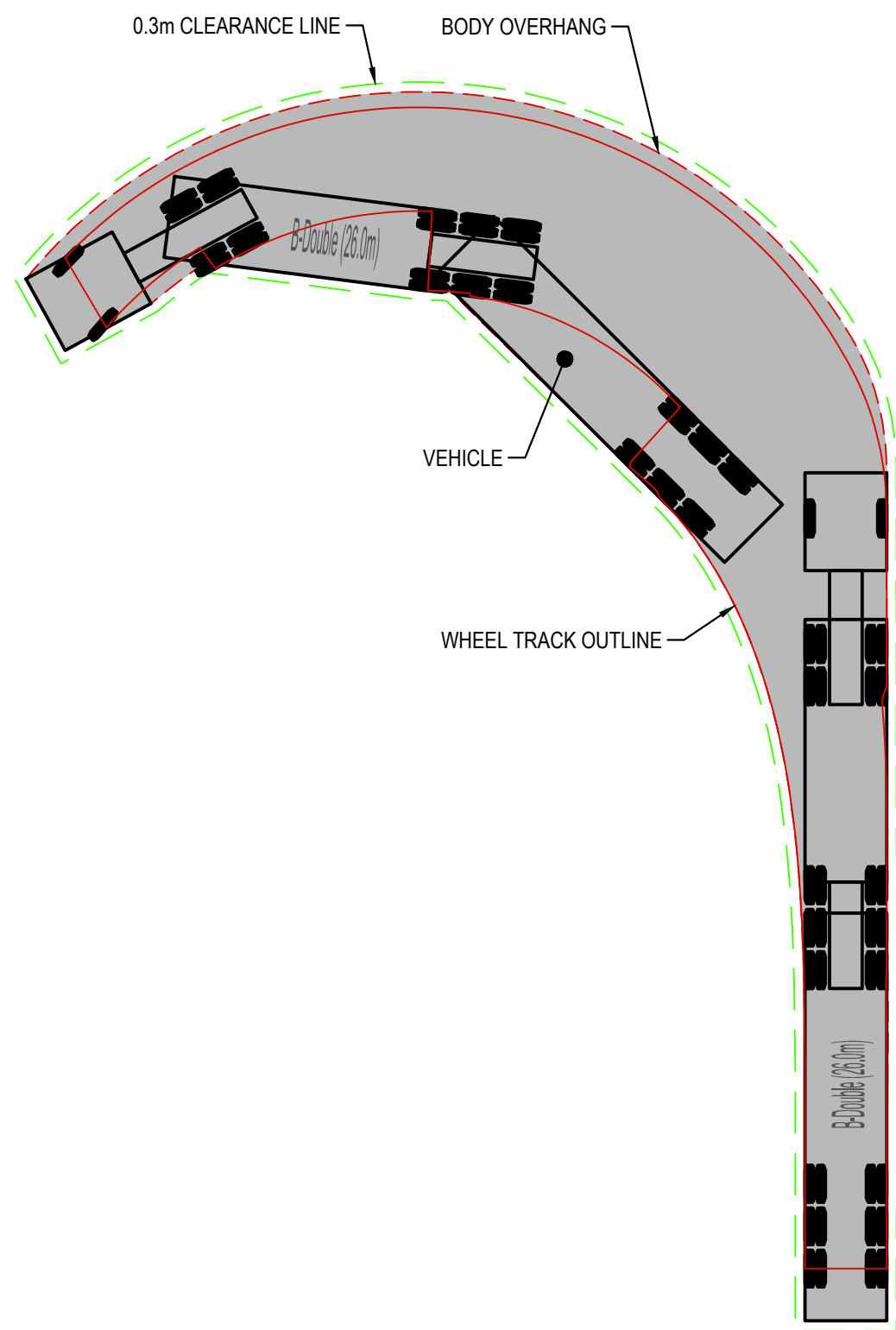
ISSUED FOR APPROVAL

Client				WESTERN SYDNEY PARKLANDS TRUST			
Architect				NETTLETONTRIBE			
Level 5, 100 George Street, Sydney NSW 2000				Telephone +61 2 9417 8400			
Email info@ntn.com.au				Email info@ntn.com.au			
www.henryhymas.com.au				www.henryhymas.com.au			
henryhymas				henryhymas			
Project				LIGHT HORSE INTERCHANGE BUSINESS HUB			
Title				BRIDGE CONCEPT SECTIONS			
Drawn				Designed			
M. Simova				L. Colla			
Checked				Approved			
N. Widdler				A. Francis			
Drawing number				Scale			
18652_SSDA_C331				1:200			
Revision				Date			
03				FEB 2019			

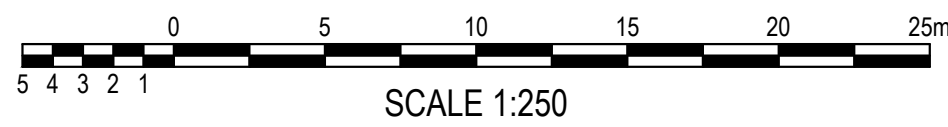




**B-DOUBLE TURNING PATH LAYOUT**  
SCALE: 1:250


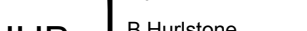


**B-DOUBLE VEHICLE PROFILE**  
SCALE: 1:500

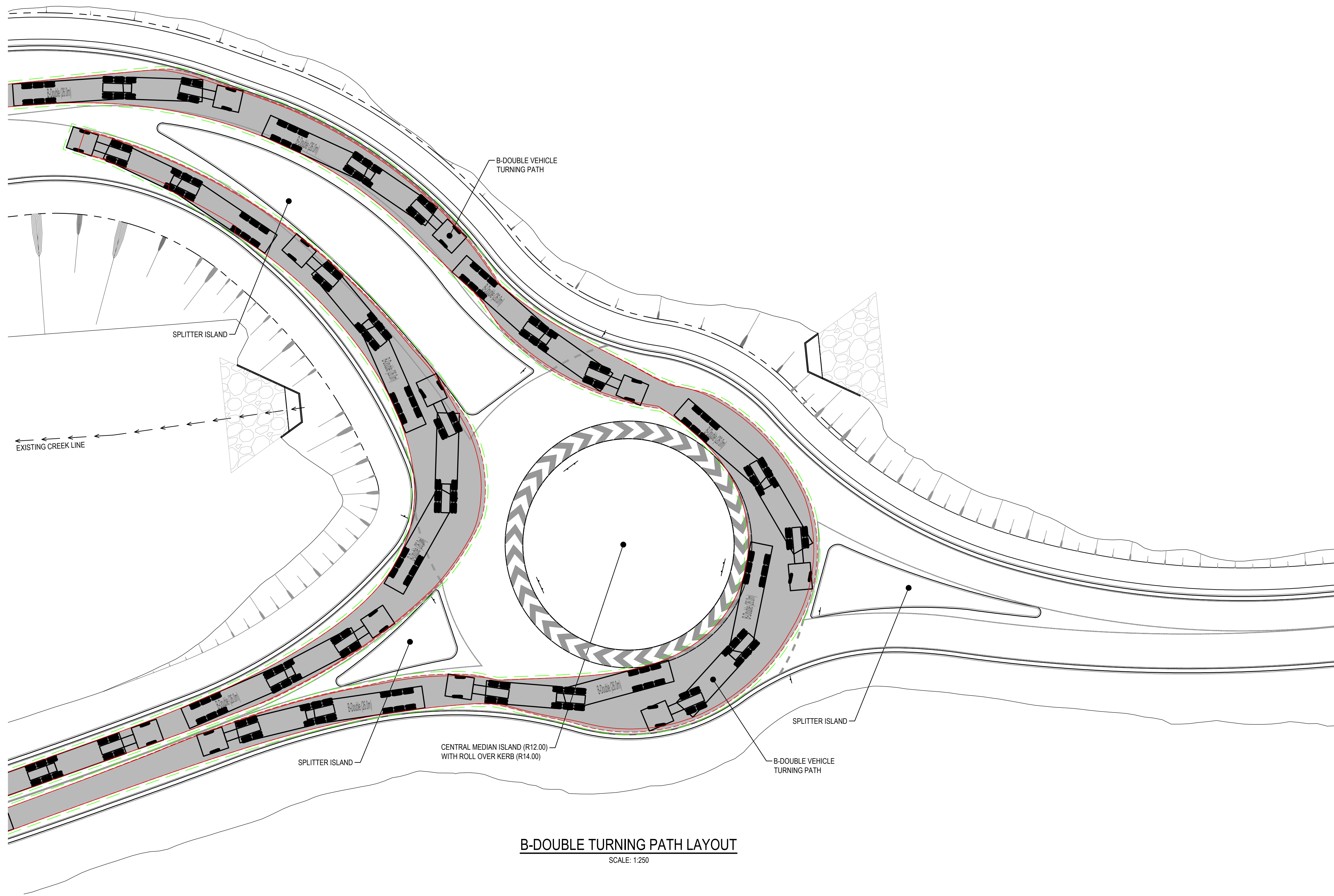
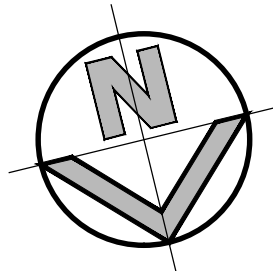


SCALE 1:250

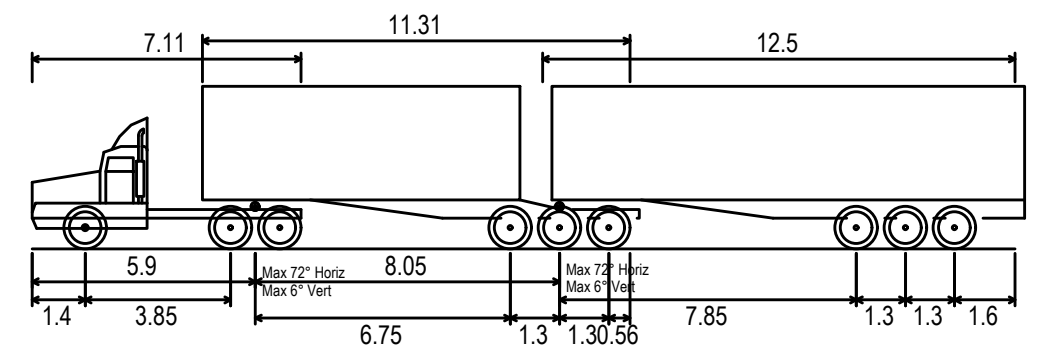
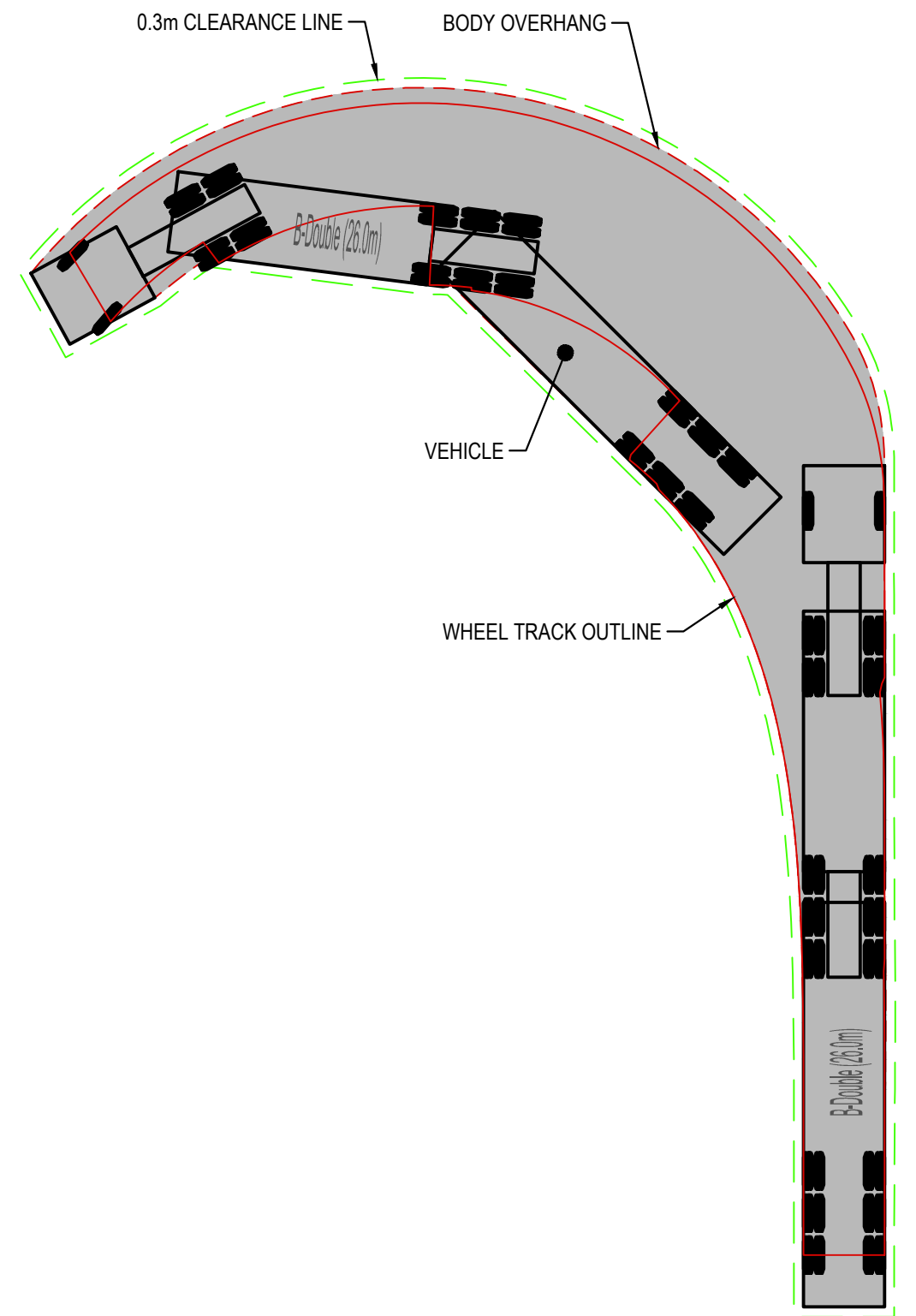
**ISSUED FOR APPROVAL**

										Client		Project		Drawn		Designed		Date			
										WESTERN SYDNEY PARKLANDS TRUST		Level 5, 79 Victoria Avenue Chatswood NSW 2067		B.Hurstone		B.Hurstone		MAY 2019			
										NETTLETONTRIBE				LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)		Checked N.Wetzlar		Approved A.Francis		Scale @A1 1:250	
										This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.				Title B-DOUBLE VEHICLE TURNING PATHS SHEET 1 OF 8		Drawing number 18652_SSDA_C600		Revision 01			



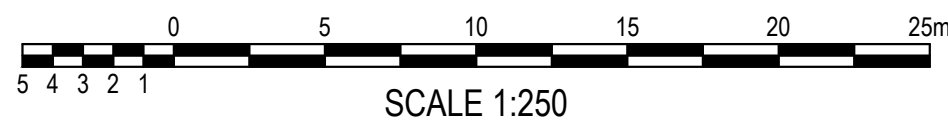


**B-DOUBLE TURNING PATH LAYOUT**  
SCALE: 1:250




B-Double (26.0m)	26.000m
Overall Length	2.500m
Overall Width	4.300m
Overall Body Height	0.540m
Min Body Ground Clearance	2.500m
Track Width	6.00s
Lock-to-lock time	15.000m
Curb to Curb Turning Radius	

**B-DOUBLE VEHICLE PROFILE**  
SCALE: 1:500

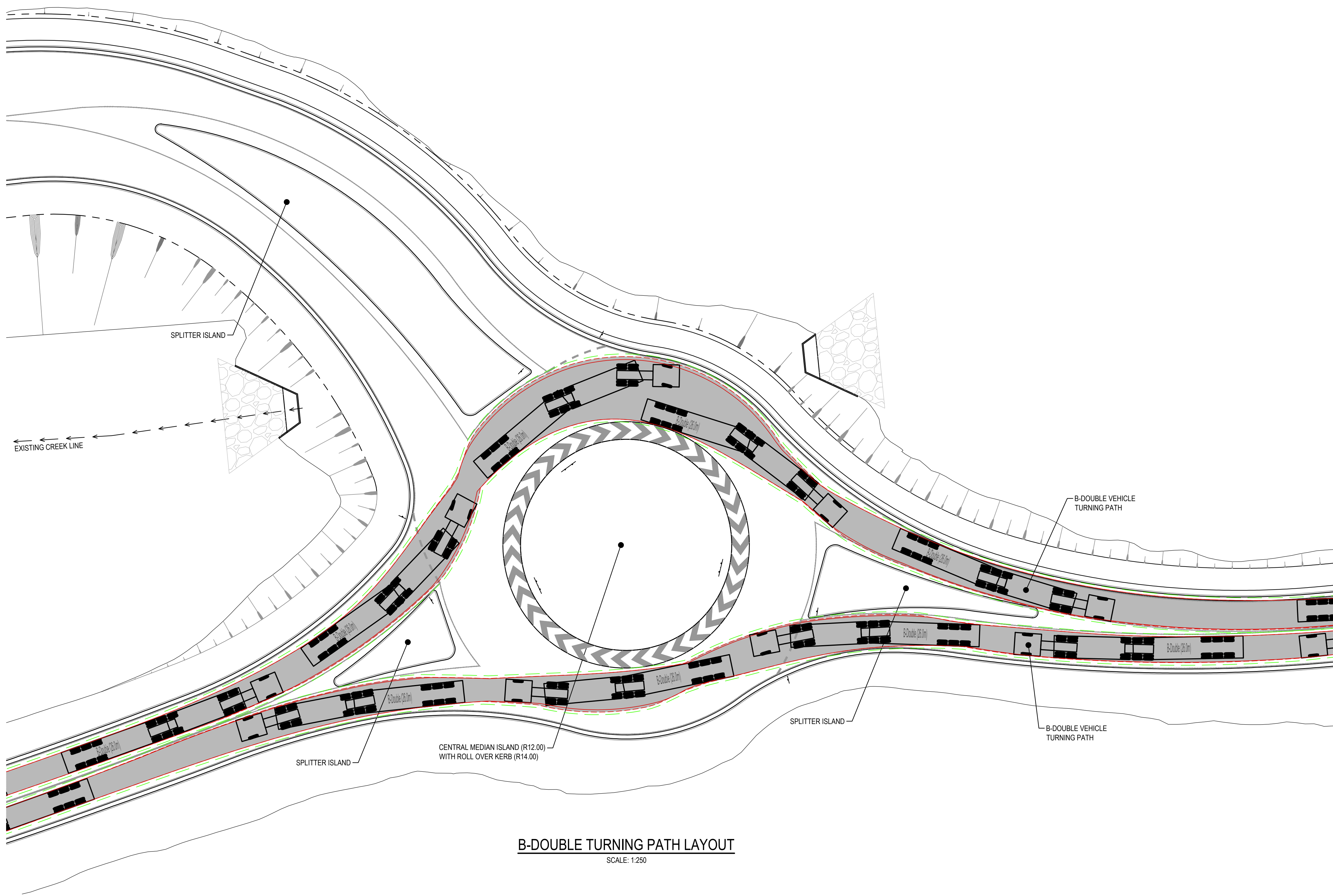
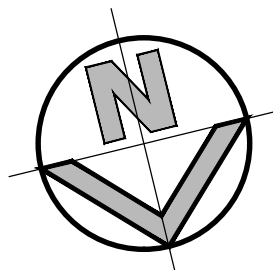


SCALE 1:250

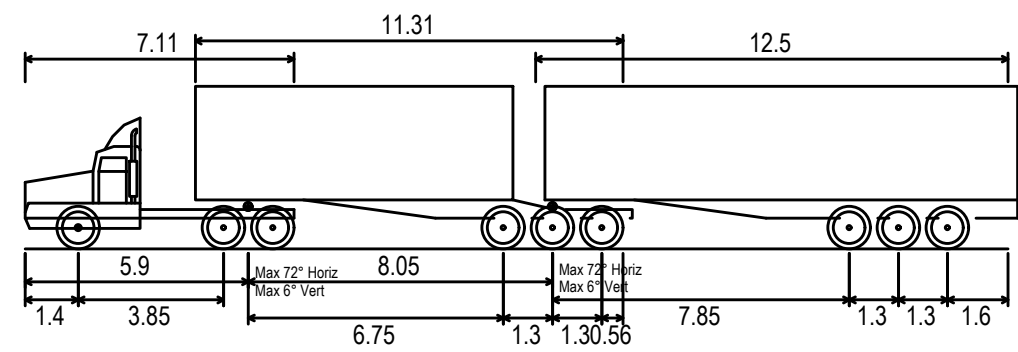
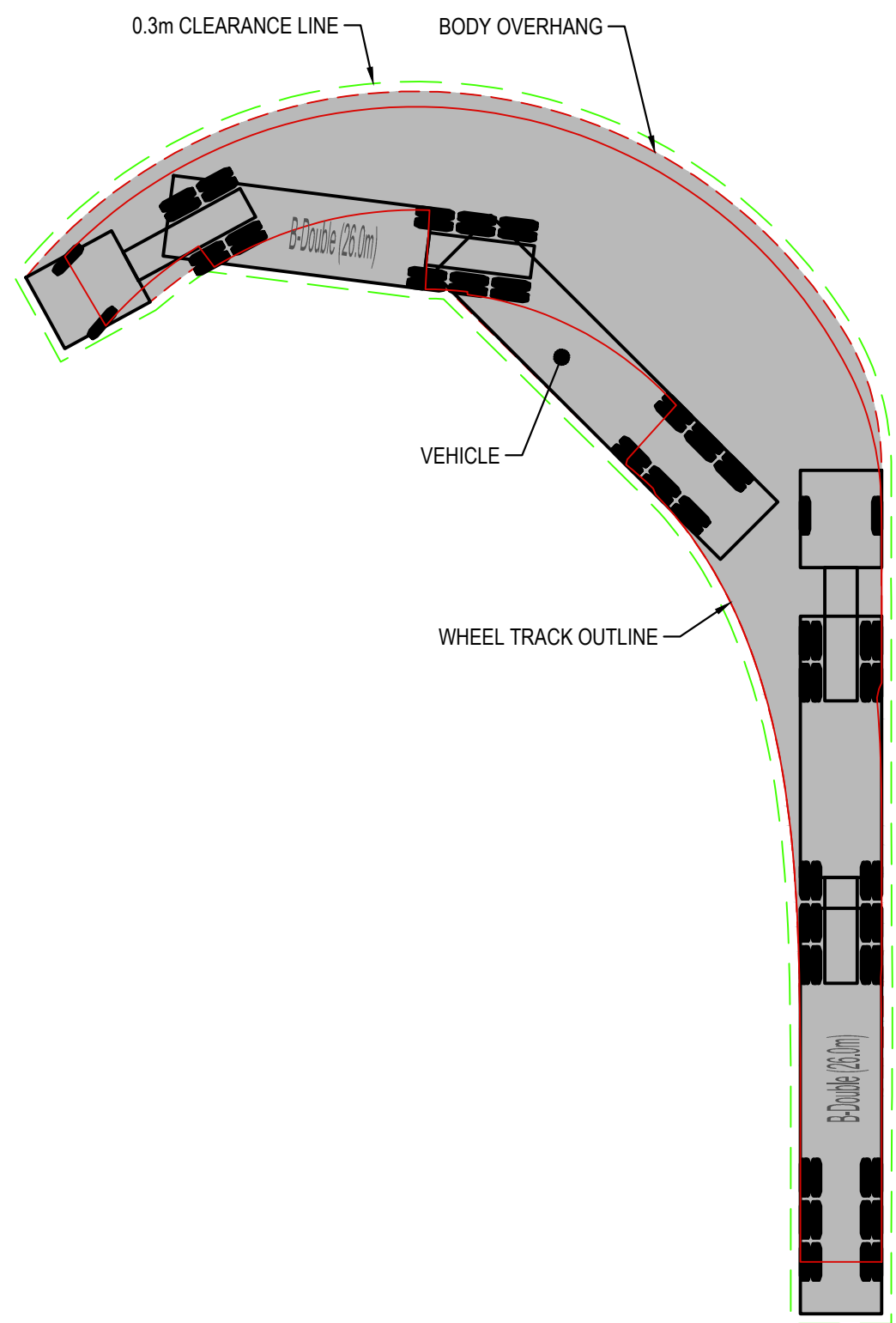
**ISSUED FOR APPROVAL**

										Client		Level 5, 79 Victoria Avenue Chatswood NSW 2067		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhconsult.com.au Web www.henryandhymas.com.au				Project LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)		Drawn B.Hurstone		Designed B.Hurstone		Date MAY 2019	
										NETTLETONTRIBE								Checked N.Wetzlar		Approved A.Francis		Scale @A1 1:250			
										This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.								Drawing number 18652_SSDA_C601		Revision 01					
01 ISSUED FOR APPROVAL										BH		BH		23.05.2019											
REVISION										DRAWN		DESIGNED		DATE		REVISION		AMENDMENT		DRAWN		DESIGNED		DATE	



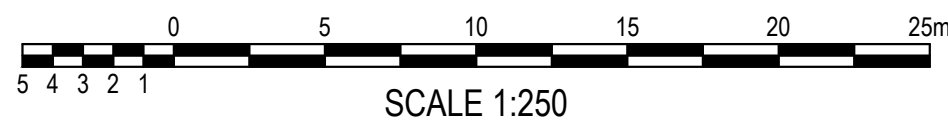


**B-DOUBLE TURNING PATH LAYOUT**  
SCALE: 1:250



B-Double (26.0m)	26.000m
Overall Length	2.500m
Overall Width	4.300m
Overall Body Height	0.540m
Min Body Ground Clearance	2.500m
Track Width	6.00s
Lock-to-lock time	15.000m
Curb to Curb Turning Radius	

**B-DOUBLE VEHICLE PROFILE**  
SCALE: 1:500

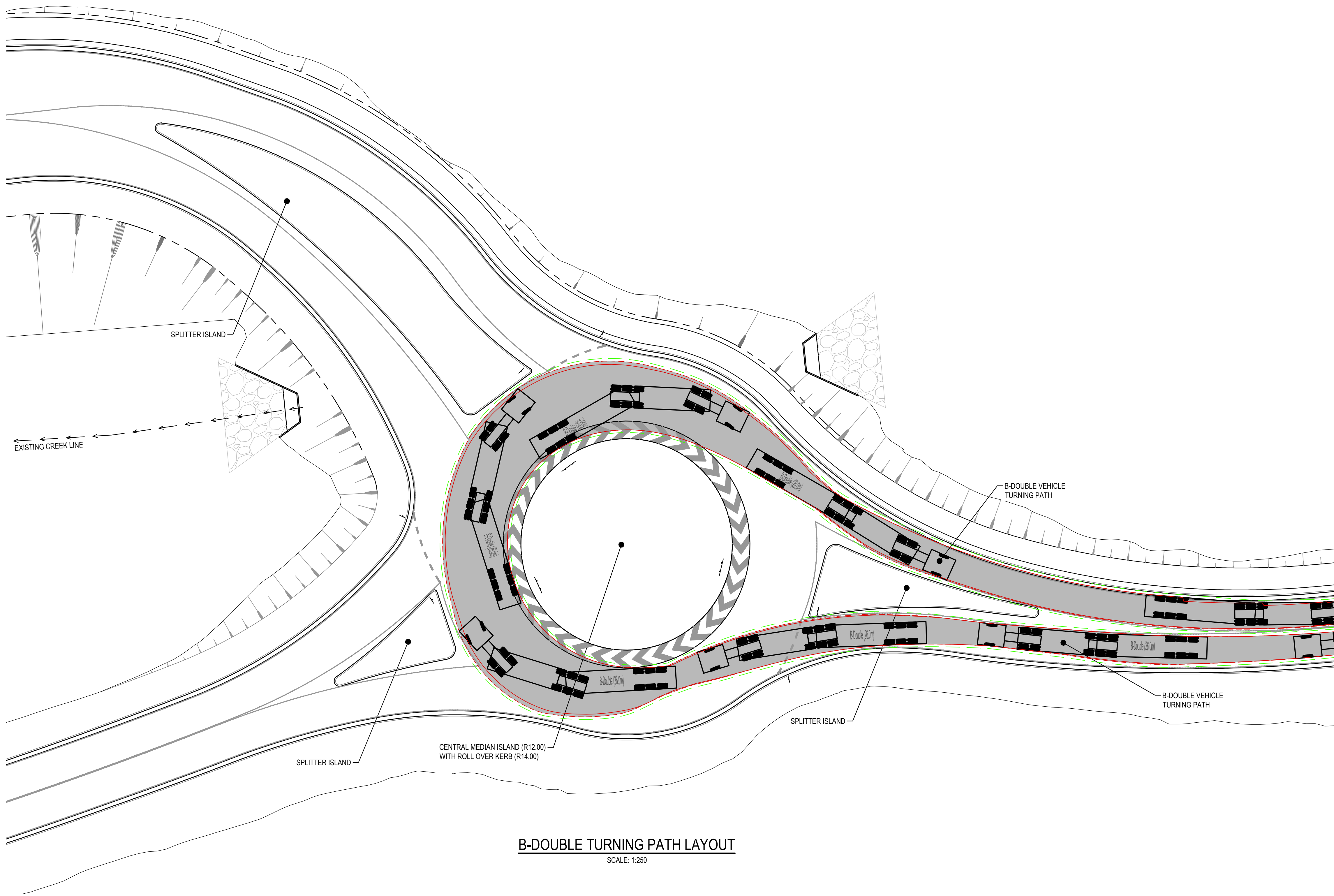
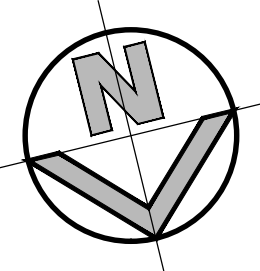


SCALE 1:250

**ISSUED FOR APPROVAL**

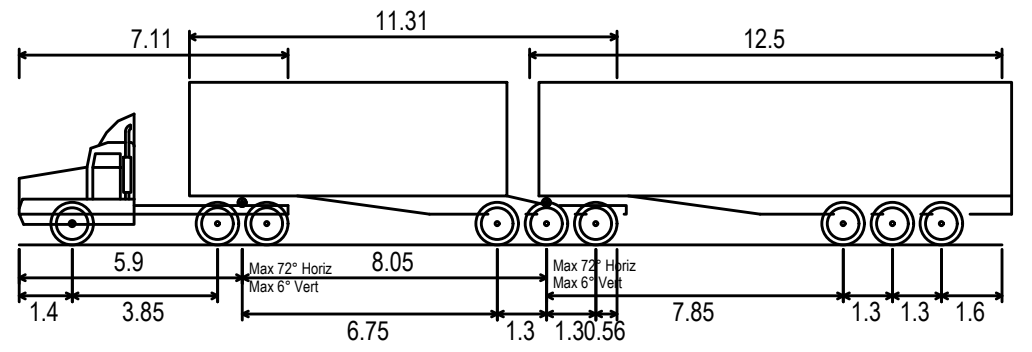
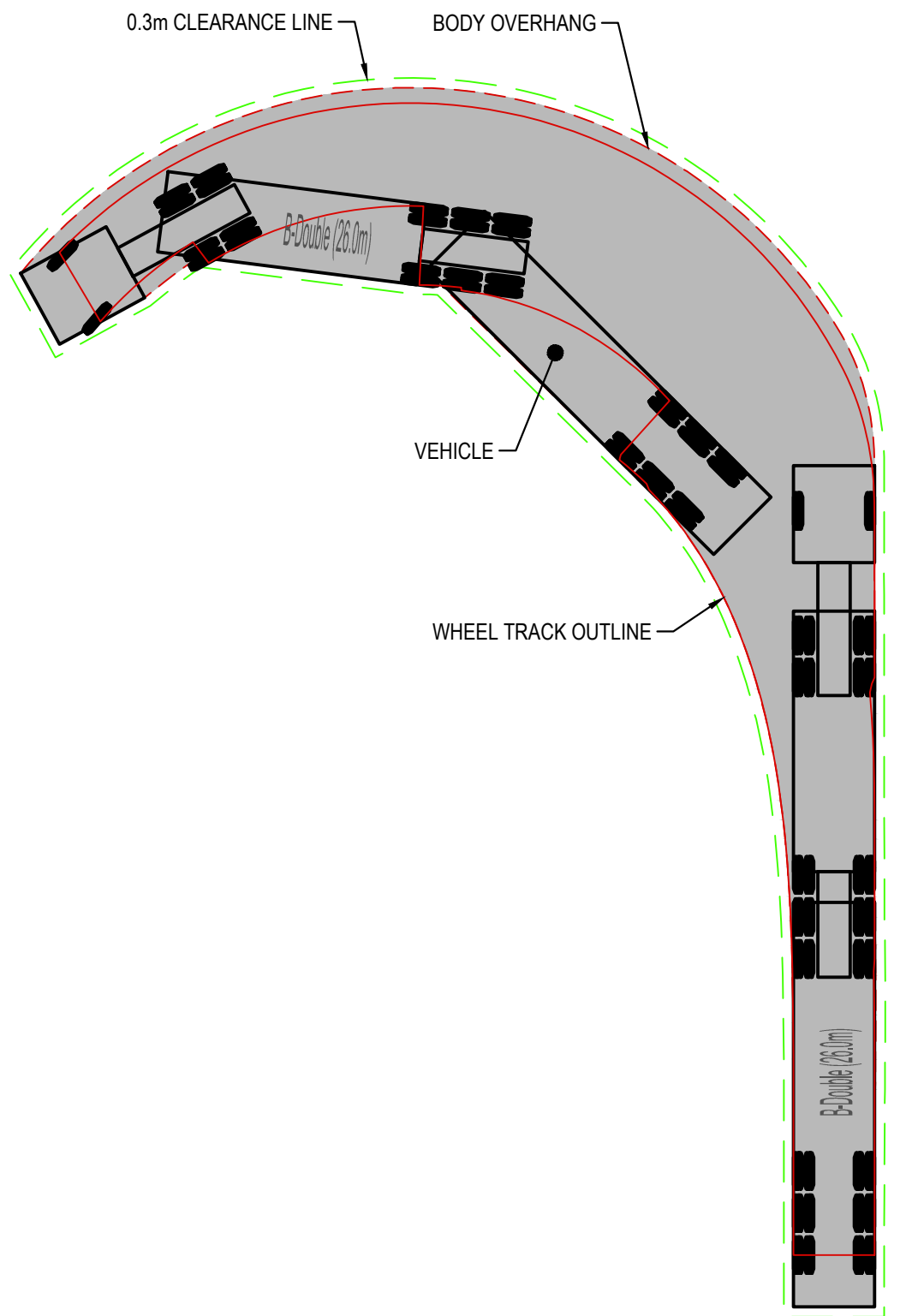
										Client		Project		Drawn		Designed		Date	
										WESTERN SYDNEY PARKLANDS TRUST		LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)		B.Hurstone		B.Hurstone		MAY 2019	
										NETTLETONTRIBE		Title		Checked		Approved		Scale @A1	
										This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.		B-DOUBLE VEHICLE TURNING PATHS SHEET 3 OF 8		N.Wetzlar		A.Francis		1:250	
												Drawing number		18652_SSDA_C602		Revision		01	
										01 ISSUED FOR APPROVAL									
										REVISION		AMENDMENT		DRAWN		DESIGNED		DATE	





**B-DOUBLE TURNING PATH LAYOUT**

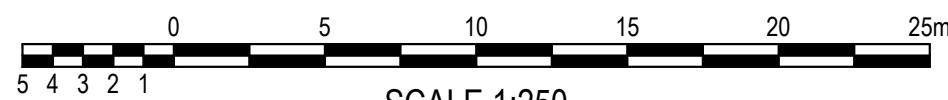
SCALE: 1:250



B-Double (26.0m)  
Overall Length 26.000m  
Overall Width 2.500m  
Overall Body Height 4.300m  
Min Body Ground Clearance 0.540m  
Track Width 2.500m  
Lock-to-lock time 6.00s  
Curb to Curb Turning Radius 15.000m



**B-DOUBLE VEHICLE PROFILE**

SCALE: 1:500

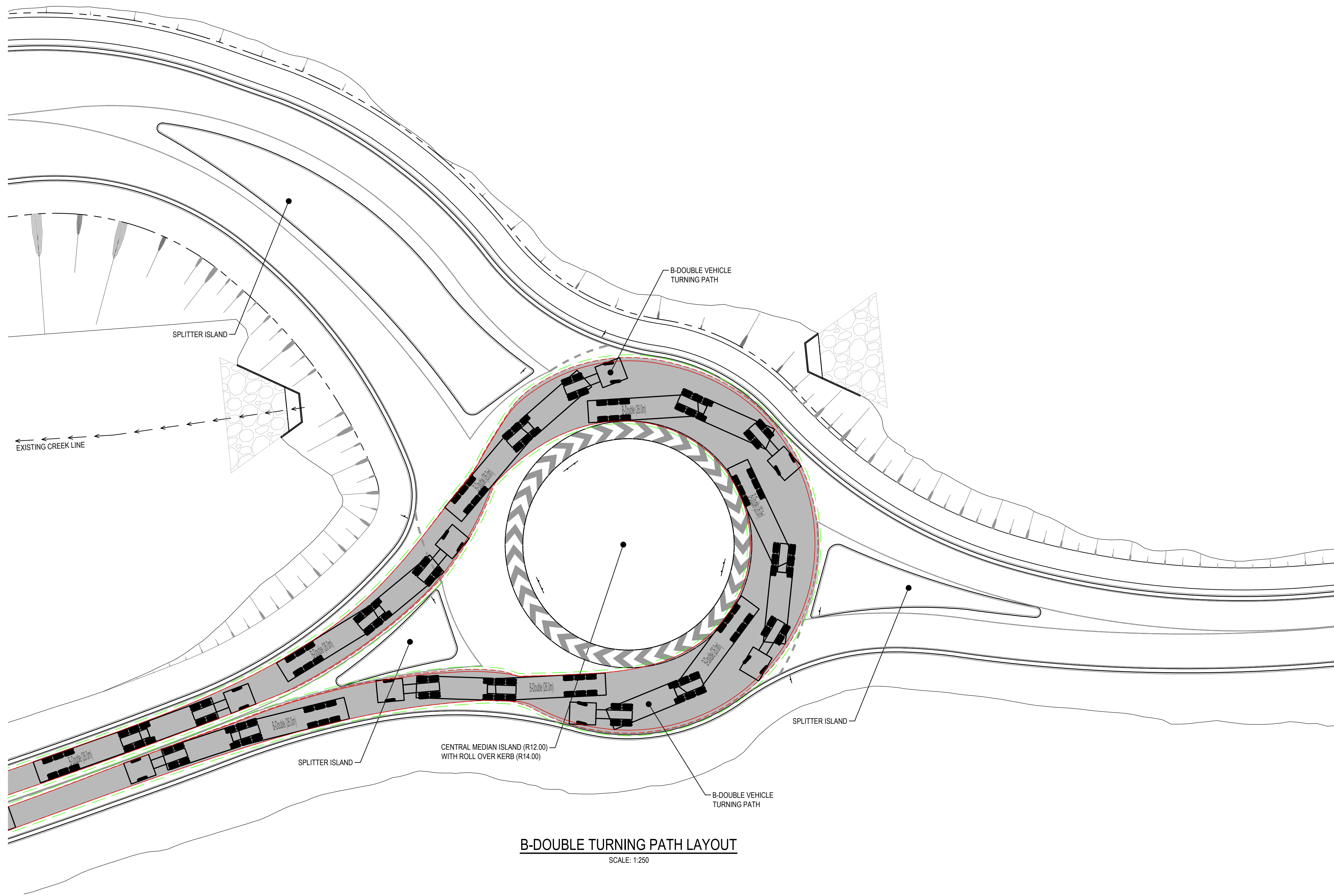
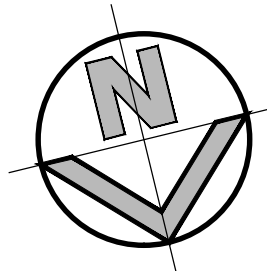


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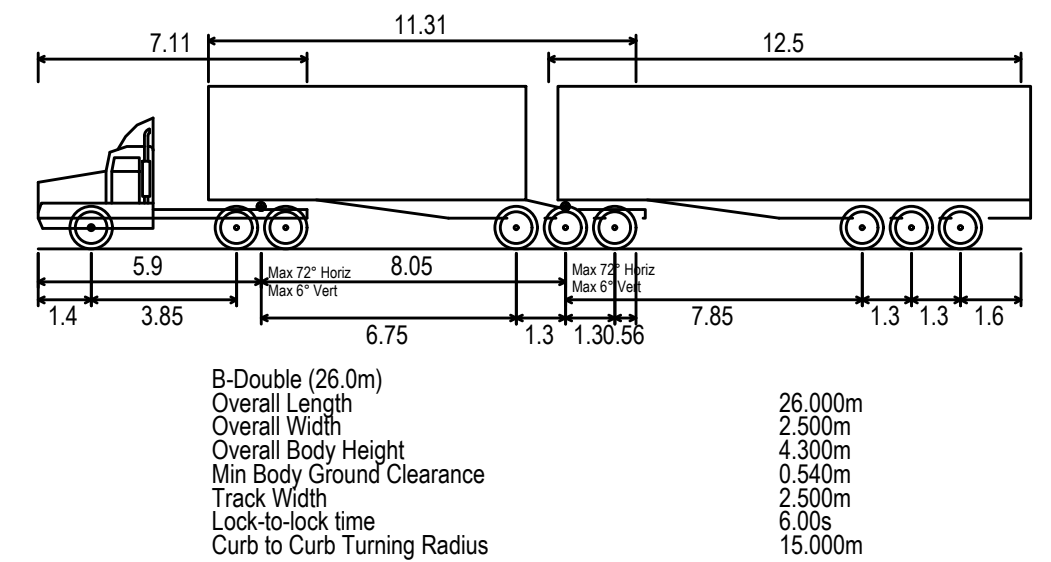
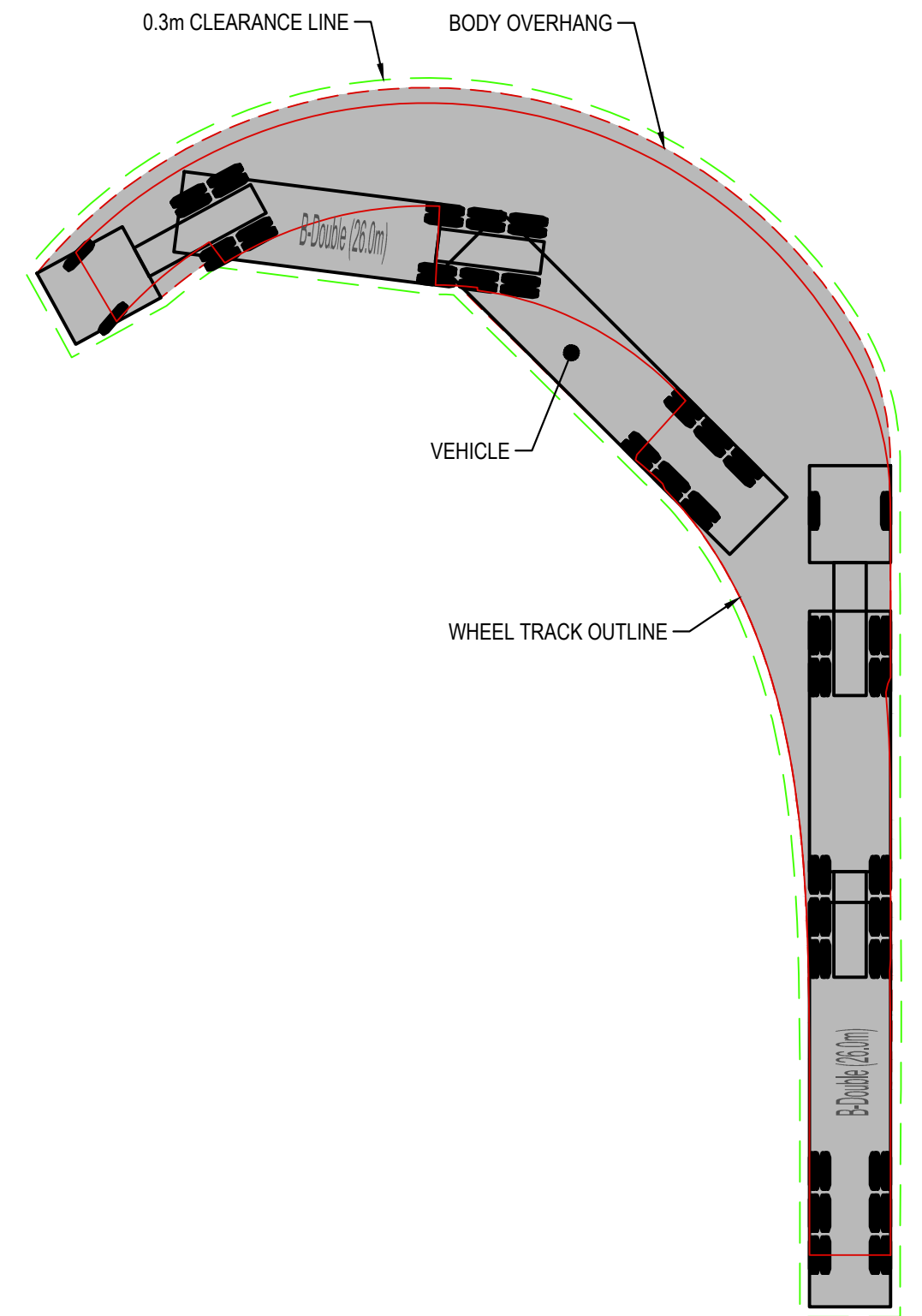
**ISSUED FOR APPROVAL**

										Client				Level 5, 79 Victoria Avenue Chatswood NSW 2067		 henry&hymas		Project		B-Hurstone		Designed B.Hurstone		Date MAY 2019	
										WESTERN SYDNEY PARKLANDS TRUST				 Chris Mackinnon MP		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhconsult.com.au Web www.henryandhymas.com.au		LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)		Checked N.Wetzlar		Approved A.Francis		Scale @A1 1:250	
										NETTLETONTRIBE										Title B-DOUBLE VEHICLE TURNING PATHS SHEET 4 OF 8				Drawing number 18652_SSDA_C603	
01 ISSUED FOR APPROVAL										BH		BH		23.05.2019		This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.									
REVISION		DRAWN		DESIGNED		DATE		REVISION		AMENDMENT		DRAWN		DESIGNED		DATE									

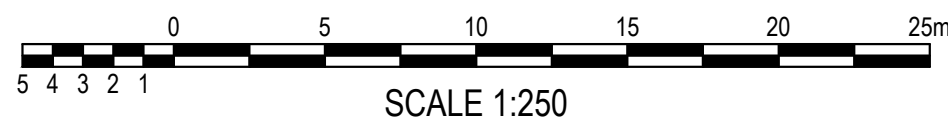




**B-DOUBLE TURNING PATH LAYOUT**  
SCALE: 1:250





**B-DOUBLE VEHICLE PROFILE**  
SCALE: 1:500

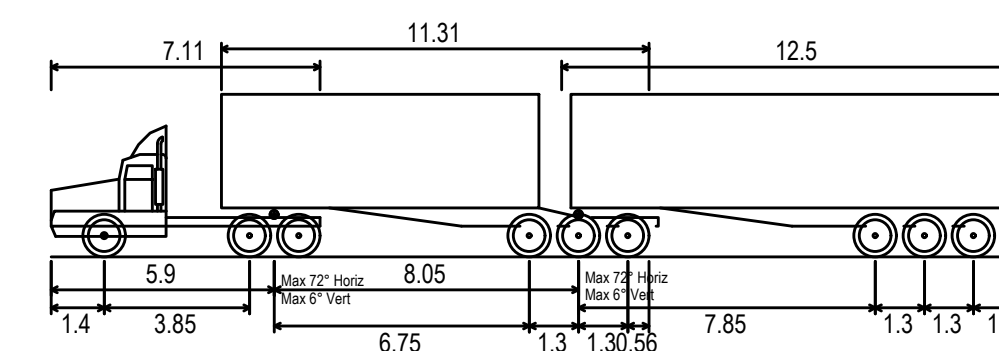
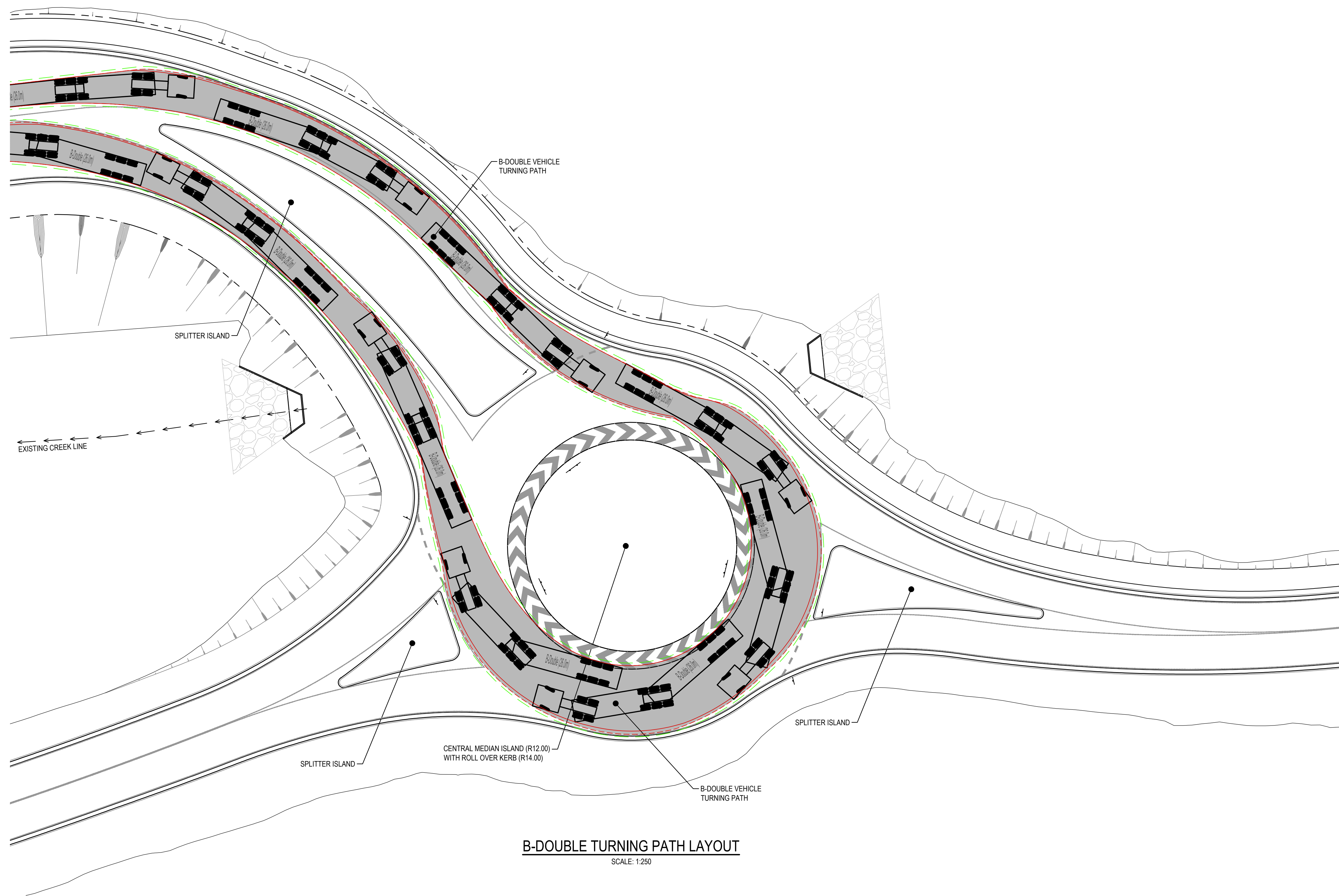


SCALE 1:250

**ISSUED FOR APPROVAL**

										Client				Project		Drawn		Designed		Date							
										WESTERN SYDNEY PARKLANDS TRUST				Level 5, 79 Victoria Avenue Chatswood NSW 2067		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhconsult.com.au Web www.henryandhymas.com.au				LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)		B.Hurstone		B.Hurstone		MAY 2019	
										NETTLETONTRIBE												Checked N.Wetzlar		Approved A.Francis		Scale @A1 1:250	
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																						B-DOUBLE VEHICLE TURNING PATHS SHEET 5 OF 8		18652_SSDA_C604		01	





B-Double (26.0m)	
Overall Length	26,000mm
Overall Width	2,500mm
Overall Body Height	4,300mm
Min Body Ground Clearance	0,540mm
Track Width	2,500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	15,000mm

## B-DOUBLE VEHICLE PROFILE

SCALE: 1:500



ISSUED FOR APPROVAL

Drawn B.Hurlstone	Designed B.Hurlstone	Date MAY 2019
Checked N.Wetzlar	Approved A.Francis	Scale @A1 1:250
Drawing number <b>18652_SSDA_C605</b>		Revision <b>01</b>

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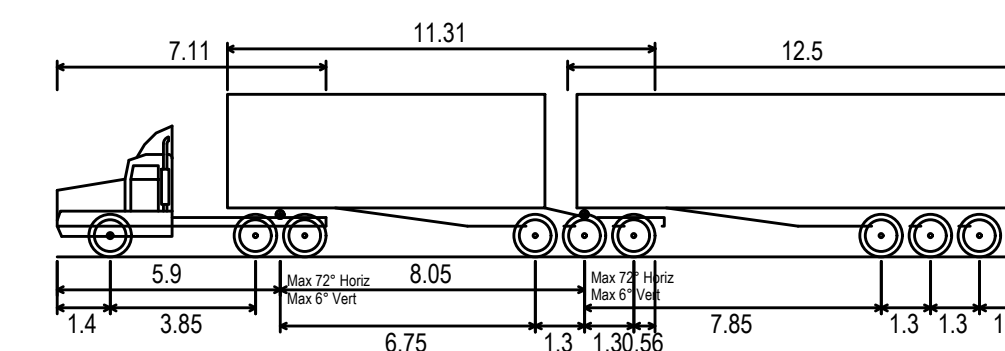
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Title	B-DOUBLE VEHICLE TURNING PATHS SHEET 6 OF 8
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## B-DOUBLE VEHICLE PROFILE

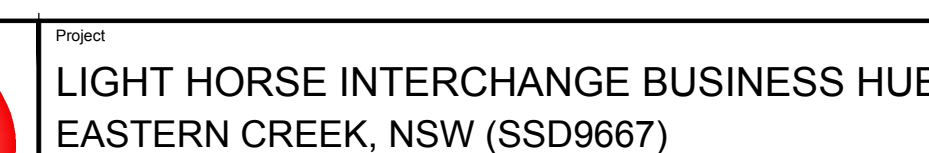
Drawn	Designed	Date
B. Hurlstone	L. Caha	MAY 2019
Checked	Approved	Scale @A1
N. Wetzlar	A. Francis	1:250

03	ISSUED FOR APPROVAL	BH	BH	23.05.2019					
REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE

NETTLETONTRIBE

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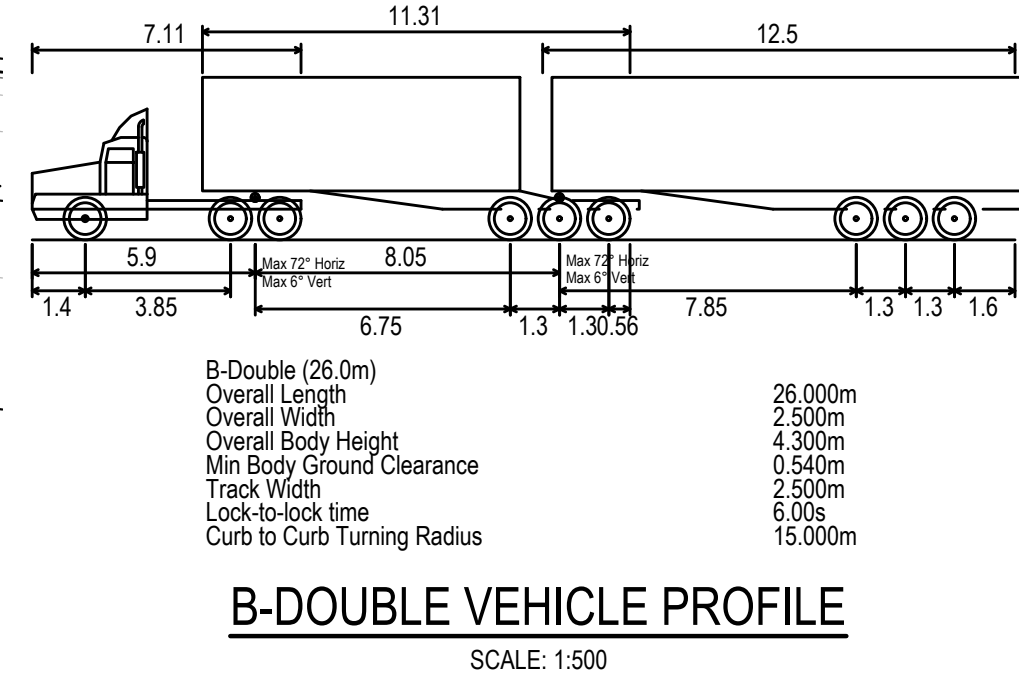
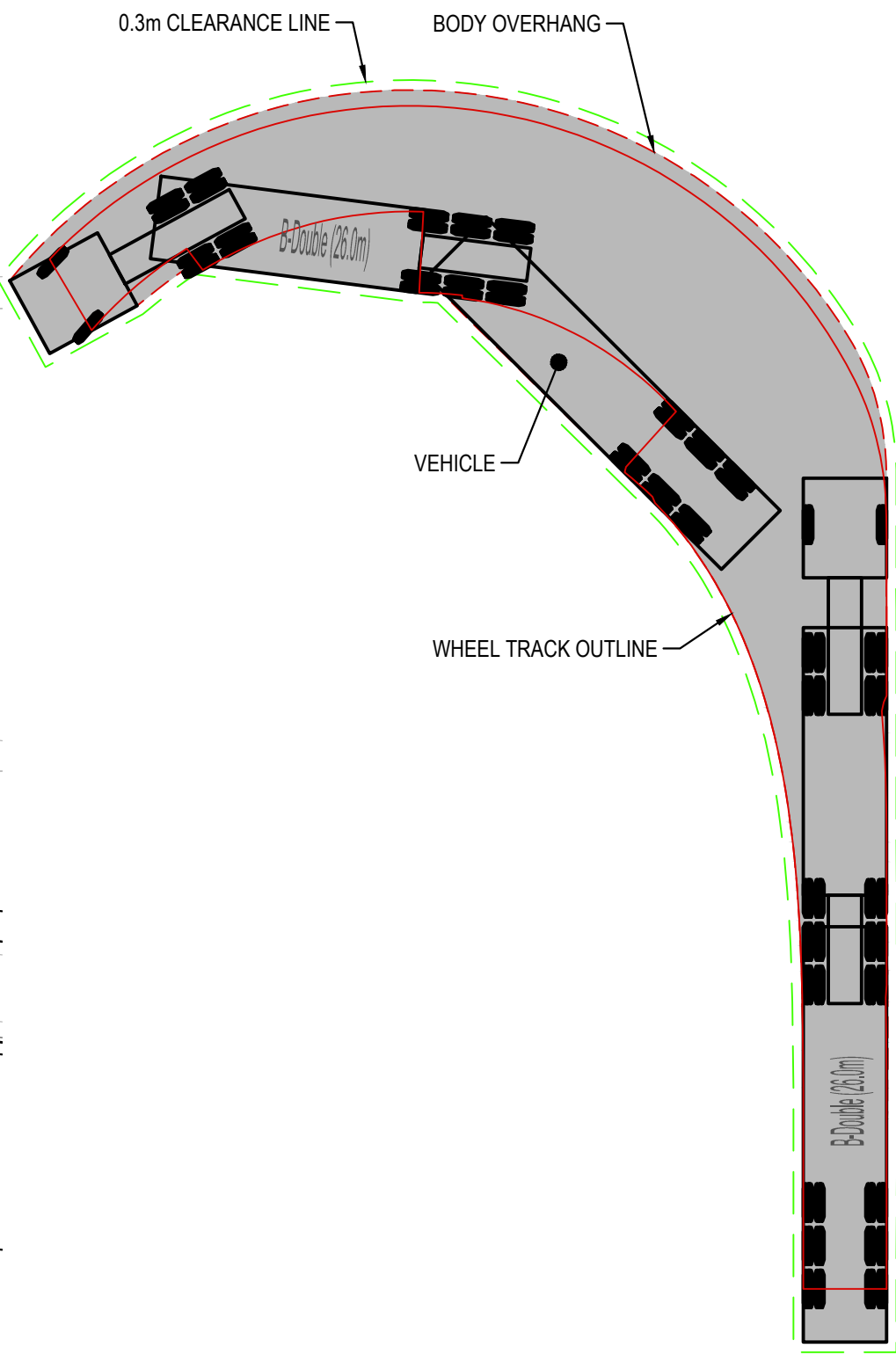
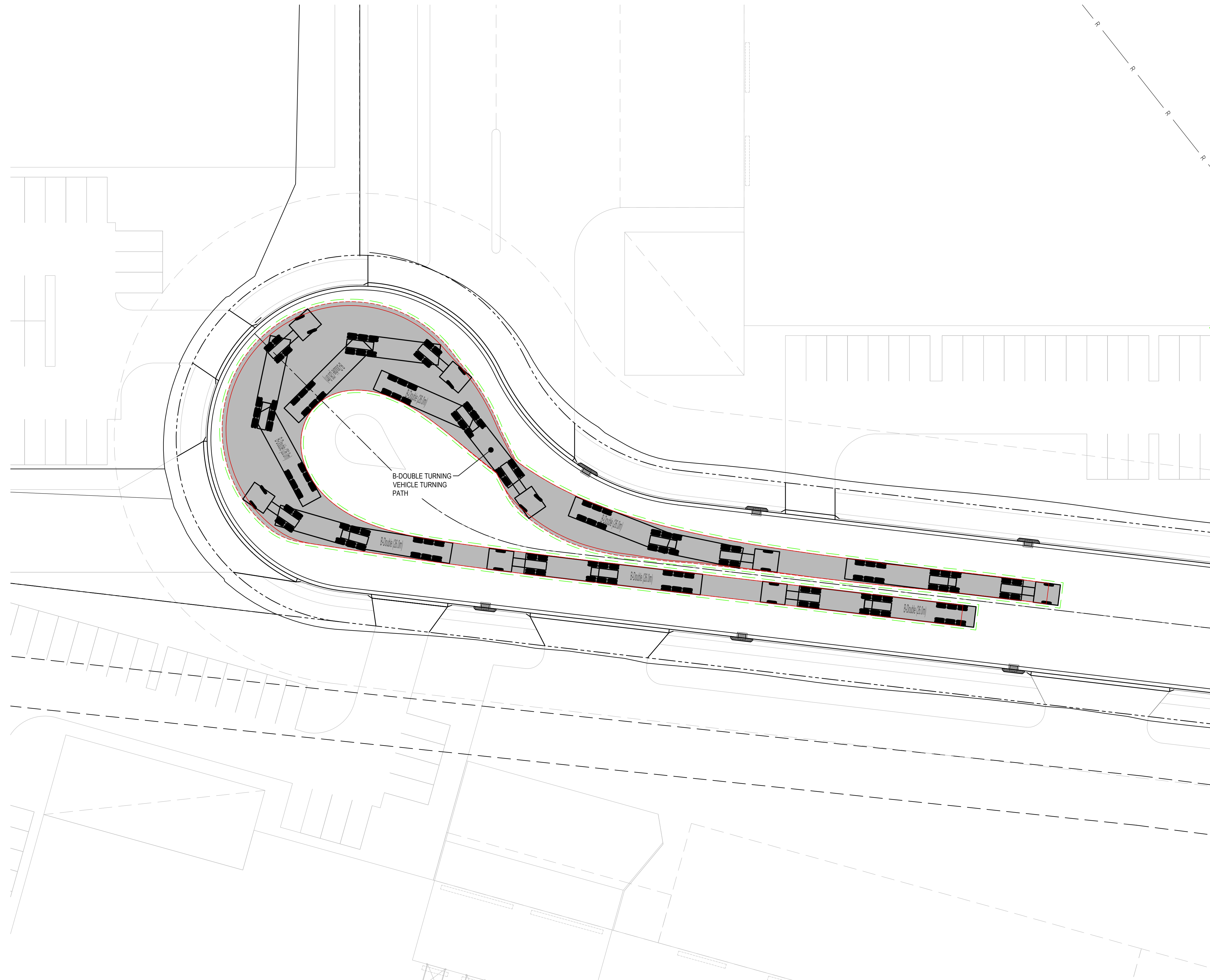
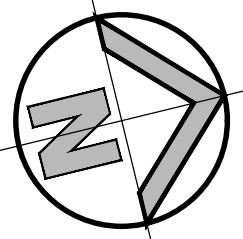


B-DOUBLE VEHICLE TURNING PATHS  
SHEET 7 OF 8

Drawn	Designed	Date
B. Hurlstone	L. Caha	MAY 2019
Checked	Approved	Scale @A1
N. Wetzlar	A. Francis	1:250

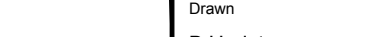
Drawing number		Revision
18652_SSDA_C606		01



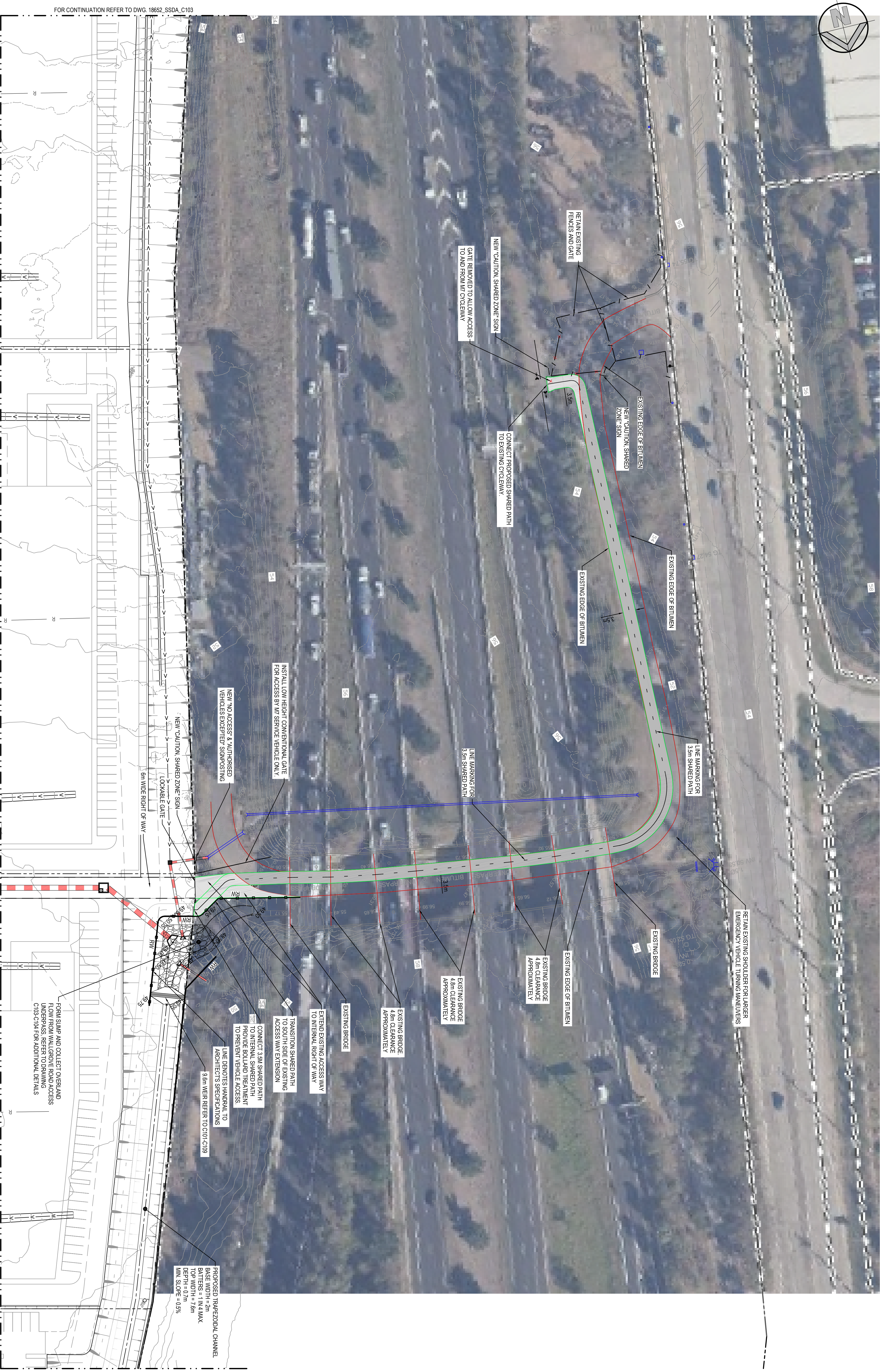
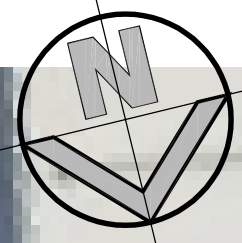


**B-DOUBLE TURNING PATH LAYOUT**  
SCALE: 1:250

**ISSUED FOR APPROVAL**

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										NETTLETONTRIBE																																																		Checked N.Wetzlar										Approved A.Francis										Scale @A1 1:250																																																	
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FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_C103

FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_C103

FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_C104

FOR CONTINUATION REFER TO DWG. 18652\_SSDA\_C104

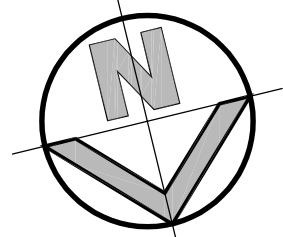


				Client							
				WESTERN SYDNEY PARKLANDS TRUST							
				NETTLETONTRIBE							
03 ISSUED FOR APPROVAL				IK		NW		20.04.2019			
02 ISSUED FOR CO-ORDINATION				IK		NW		05.04.2019			
01 PRELIMINARY				IK		NW		20.03.2019			
REVISION				DRAWN		DESIGNED		DATE		REVISION	
ATTACHMENT				DRAWN		DESIGNED		DATE		ATTACHMENT	
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								henryhyman			
				Project				LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)			
				Title				EXTERNAL WORKS PLAN WALLGROVE ROAD			
				Drawing number				18652_SSDA_EX01			
				Drawn				M. Simmra		Designed	
				Checked				N. Weiszer		Approved	
								A. Francis		Scale 80:1	
										Revision	
										1:500	
										FEB 2019	
										03	









SEDIMENT & EROSION CONTROL BASIN, REFER TO SED3 FOR SIZING

PROPOSED SEDIMENTATION AND EROSION CONTROL BASIN FOR SIZING AND INSPECTION FLOCCULATION AND DENSIMETERING

BIO BASIN STAGING CONSTRUCTION IN ACCORDANCE WITH BGC SEDIMENT AND EROSION CONTROL PLAN

FORM BAND ADJACENT TO SEDIMENT FENCE TO DIRECTLY RUN-OFF TO SEDIMENT & EROSION CONTROL BASIN

15.5m WIDE ACCESS ROAD

HIGH PRESSURE GAS EASEMENT

EASTERN CREEK

## SEDIMENT AND EROSION CONTROL PLAN

SCALE 1:1250

### LEGEND

- CATCH DIVERSION DRAIN
- LOW FLOW DIVERSION DRAIN
- TRAFFIC MANOEUVURING
- OVERLAND FLOW PATH
- PROPOSED SEDIMENTATION FENCE
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED STABILISED SITE ACCESS
- PROPOSED STOCKPILE LOCATION
- PROPOSED HAYBALE FILTER
- GEOTEXTILE INLET FILTER
- PROPOSED MESH & GRAVEL INLET FILTER

### SEDIMENT & EROSION CONTROL NOTES

- ALL SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED PLACED AND MAINTAINED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL SPECIFICATIONS AND LANDCOM'S SOIL AND CONSTRUCTION MANUAL
- ALL PERIMETER & SITUATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN EARTH WORKS AND/OR CLEARING
- THE SEDIMENT & EROSION CONTROL PLAN MAY REQUIRE FUTURE ADJUSTMENTS TO BE MADE TO THE PLAN TO REFLECT THE RESPONSIBILITY OF THE CONTRACTORS RESPONSIBILITY TO PREPARE THEIR OWN SEDIMENT AND EROSION CONTROL PLAN WHICH SUITS THE DESIGNED CONSTRUCTION STAGING
- FILTRATION BUFFER ZONES ARE TO BE FENCED OFF AND ACCESS PROHIBITED TO ALL PLANT AND MACHINERY
- ALL TEMPORARY EARTH BERM, DIVERSIONS & SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED & MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED
- ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER 5 DAYS FOR STRUCTURAL DAMAGE OR CLOGGING. TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE LOCATION
- ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE AWAY FROM TREES AND DRAINAGE LINES. MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES
- ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS
- ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND STRAW MULCHED WITHIN 14 DAYS OF COMPLETION OF FORMATION U.N.O. BY LANDSCAPE ARCHITECTS
- UPON COMPLETION OF ALL EARTHWORKS OR AS DIRECTED BY COUNCIL SOIL CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO REVERSE AREAS THAT HAVE BEEN DISTURBED. EROSION PROOF WITHIN 14 DAYS
- EROSION AND SLIT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES

### NOTE:

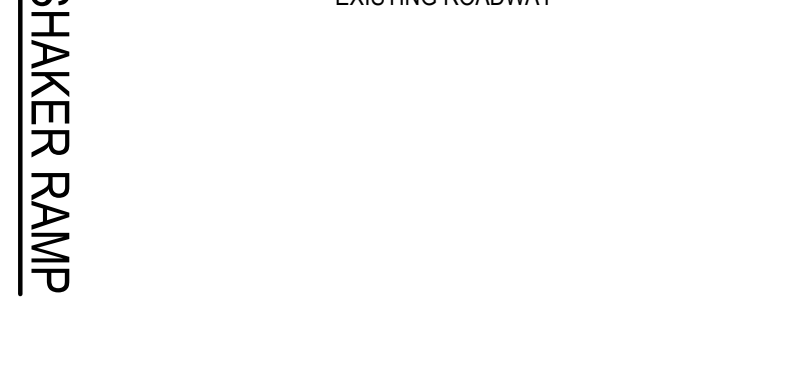
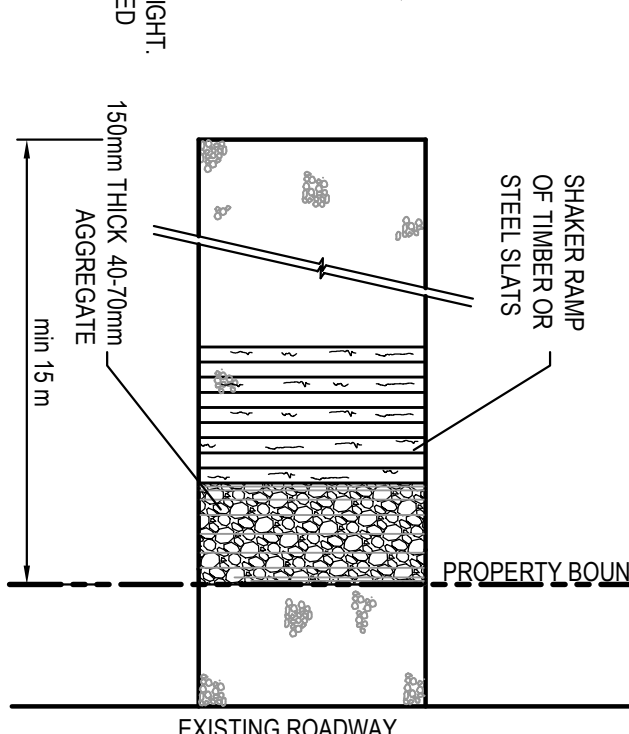
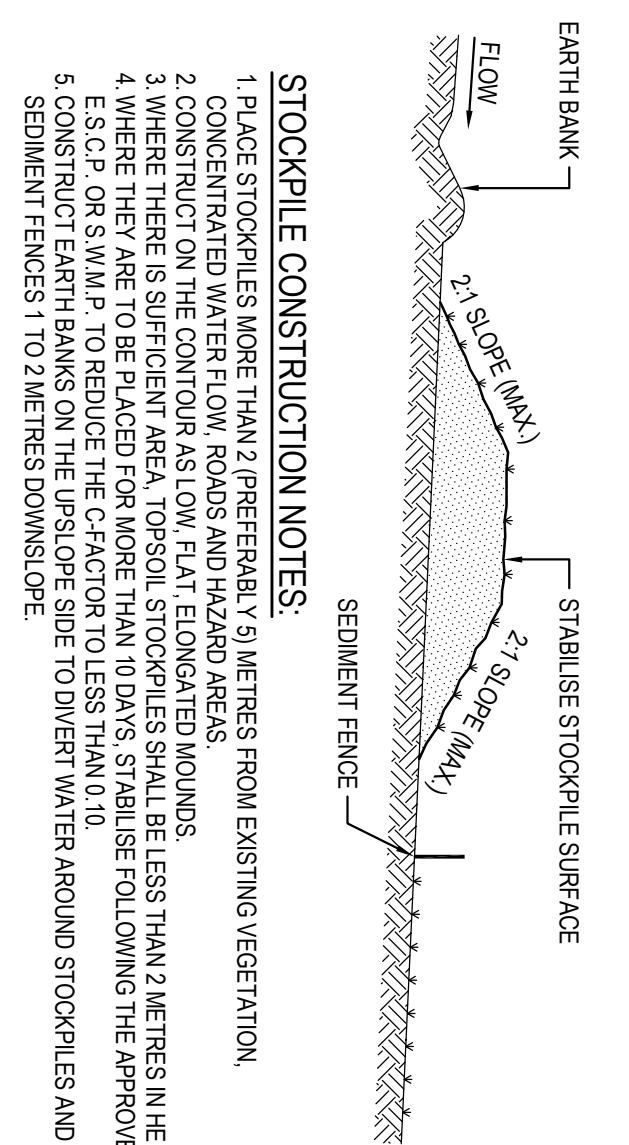
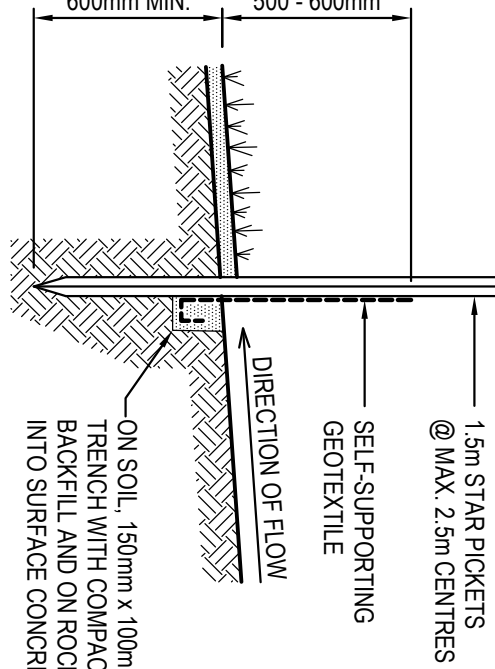
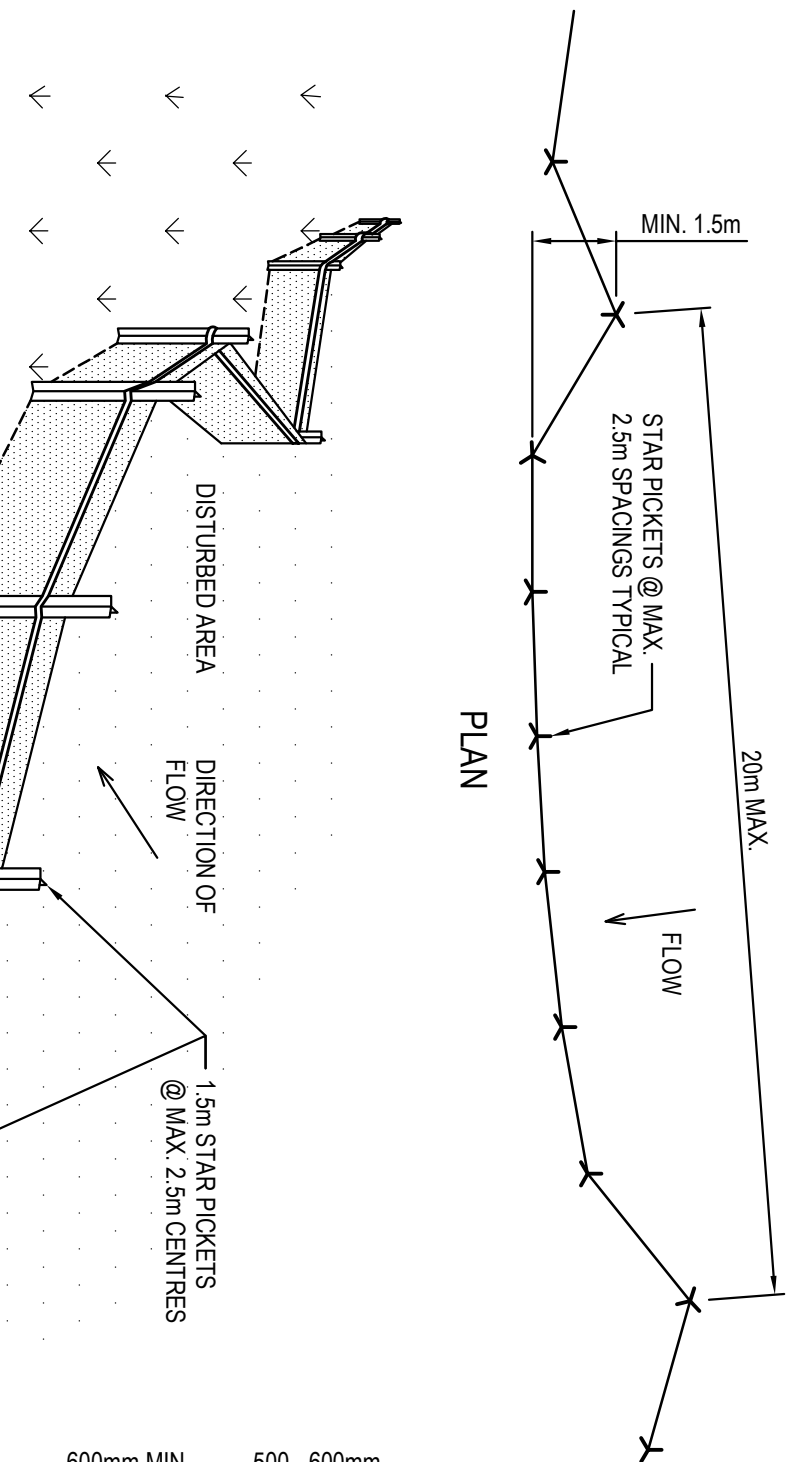
- THE SEDIMENT AND EROSION MEASURES SHOWN ON THIS PLAN ARE FOR THE OVERALL SUBDIVISION EARTHWORKS STAGE AND ARE GENERAL IN NATURE
- SPECIFIC DETAILS WILL NEED TO BE PROVIDED AT THE DA STAGE FOR EACH INDIVIDUAL PAD
- ENSURE ALL GRAVEL PITS ARE PROTECTED WITH MESH AND GRAVEL INLET FILTERS



SCALE 1:1250

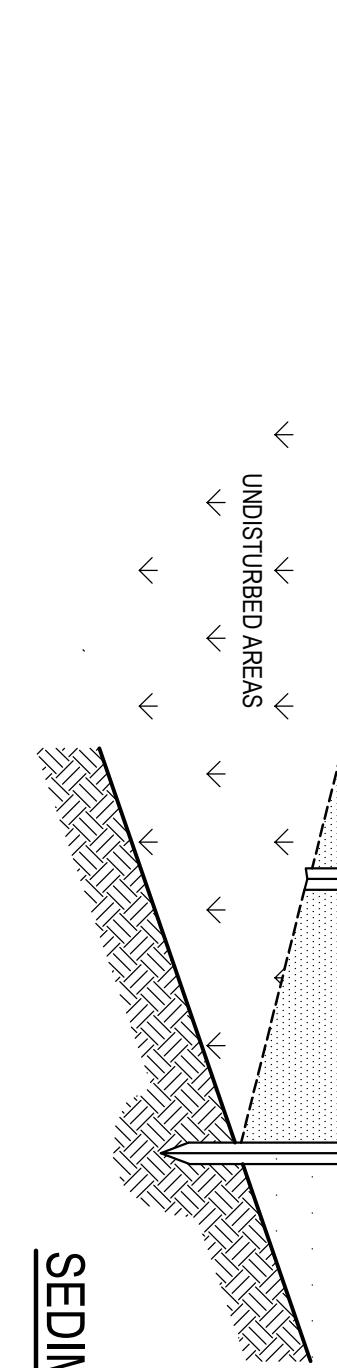
Client				Project			
WESTERN SYDNEY PARKLANDS TRUST				LIGHT HORSE INTERCHANGE BUSINESS HUB			
NETTLETONTRIBE				EASTERN CREEK, NSW (SSD9667)			
This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.				SEDIMENT AND EROSION CONTROL PLAN			
Level 5, 70 Western Avenue Crowsnest NSW 2067				Project			
Tel: 02 9417 9400 Fax: 02 9417 8337 Email: <a href="mailto:enr@hcntrill.com.au">enr@hcntrill.com.au</a> www.henryandhymas.com.au				Design			
hcntrill				Designed			
M. SIMOVA				L. COLE			
Checked				Approved			
N. WIGGILL				A. FRANKS			
Drawing number				Scale			
18652_SSDA_SE02				1:1250			
Revision				Date			
03				FEB 2019			





SEDIMENT BASIN SIZING TYPE D SOILS		
VOLUMETRIC RUNOFF COEFFICIENT, CV	0.25 (APPENDIX F - TABLE F2)	
80TH PERCENTILE 5 DAY TOTAL RAINFALL DEPTH, R	32.2 mm	
CATCHMENT AREA, A	1 ha (UNIT AREA)	
SETTLING ZONE VOLUME (PER HECTARE), 10 CV x R	80.5 m³	
DISTURBED CATCHMENT AREA	1 ha (UNIT AREA)	
R x L x P C	110.8 m³	
SEDIMENT ZONE VOLUME (0.17 A x R x L x P C) 1.3	14.5m³ < 50% SETTLING VOL.	
TOTAL SEDIMENT BASIN VOLUME REQUIRED :	120.75 m³ha	

## SEDIMENT FENCE



### SEDIMENT FENCE CONSTRUCTION NOTES:

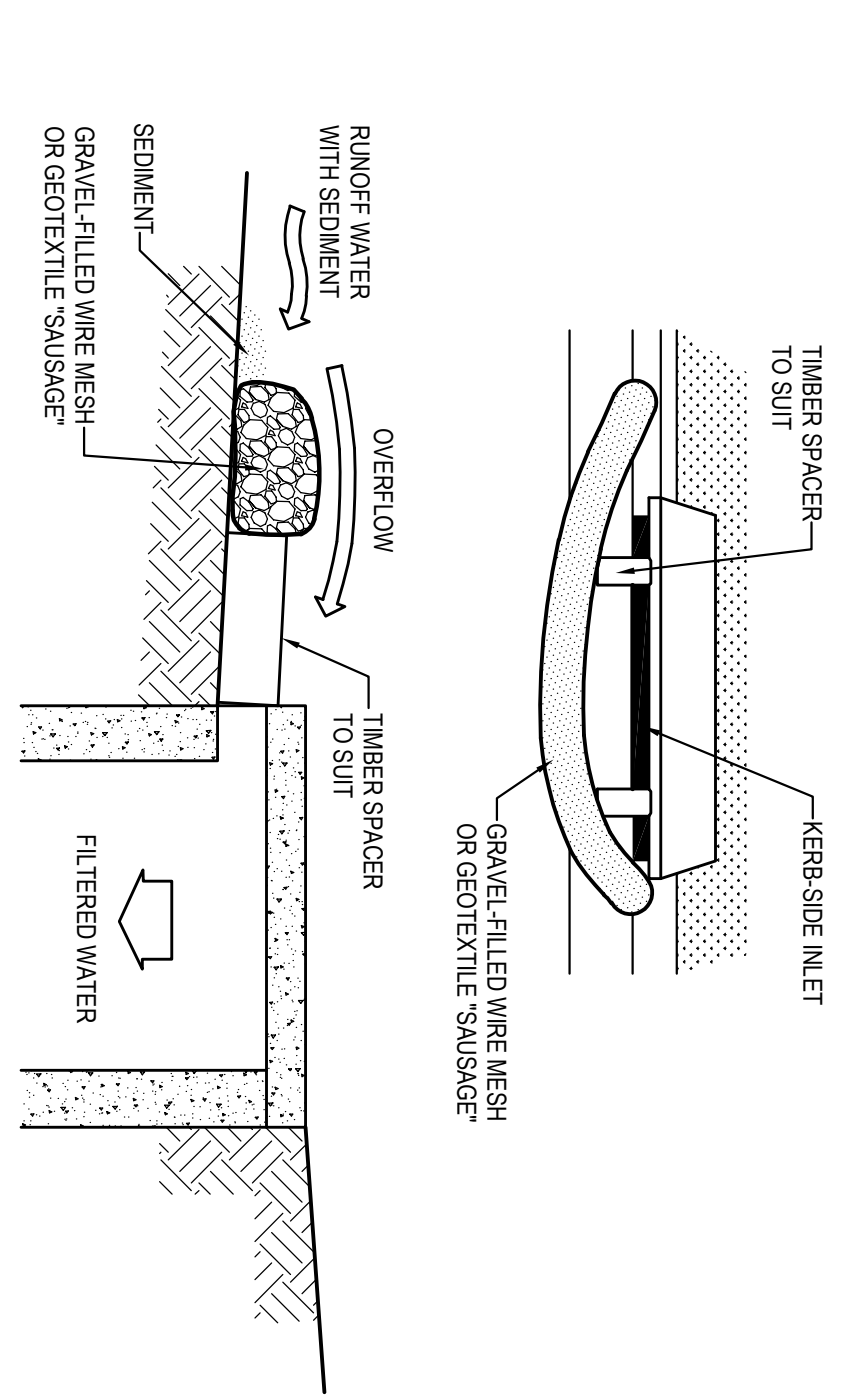
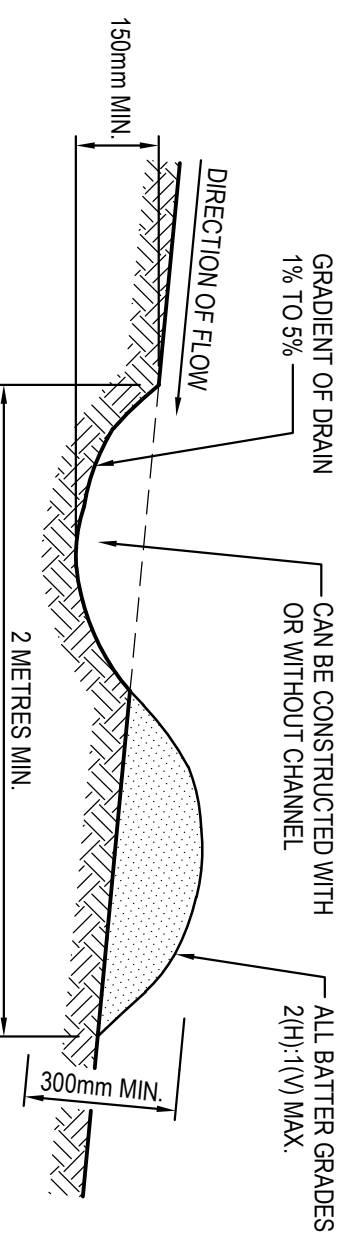
- CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND 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 1.5m LONG STAR PICKETS INTO GROUND @ 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.

### EARTH BANK CONSTRUCTION NOTES:

- BUILD WITH GRADIENTS BETWEEN 1% AND 5%.
- AVOID REMOVING TREES AND SHRUBS IF POSSIBLE. WORK AROUND THEM.
- ENSURE THE STRUCTURES ARE FREE OF PROTECTIONS OR OTHER IRREGULARITIES THAT COULD IMPER WATER FLOW.
- CONSTRUCT WITH A MINIMUM OF 10% GRADIENT. PARALLEL OR TRIANGULAR CROSS-SECTIONS NOT YET SHAPED.
- ENSURE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
- COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

### EARTH BANK (LOW FLOW)

SCALE N.T.S.

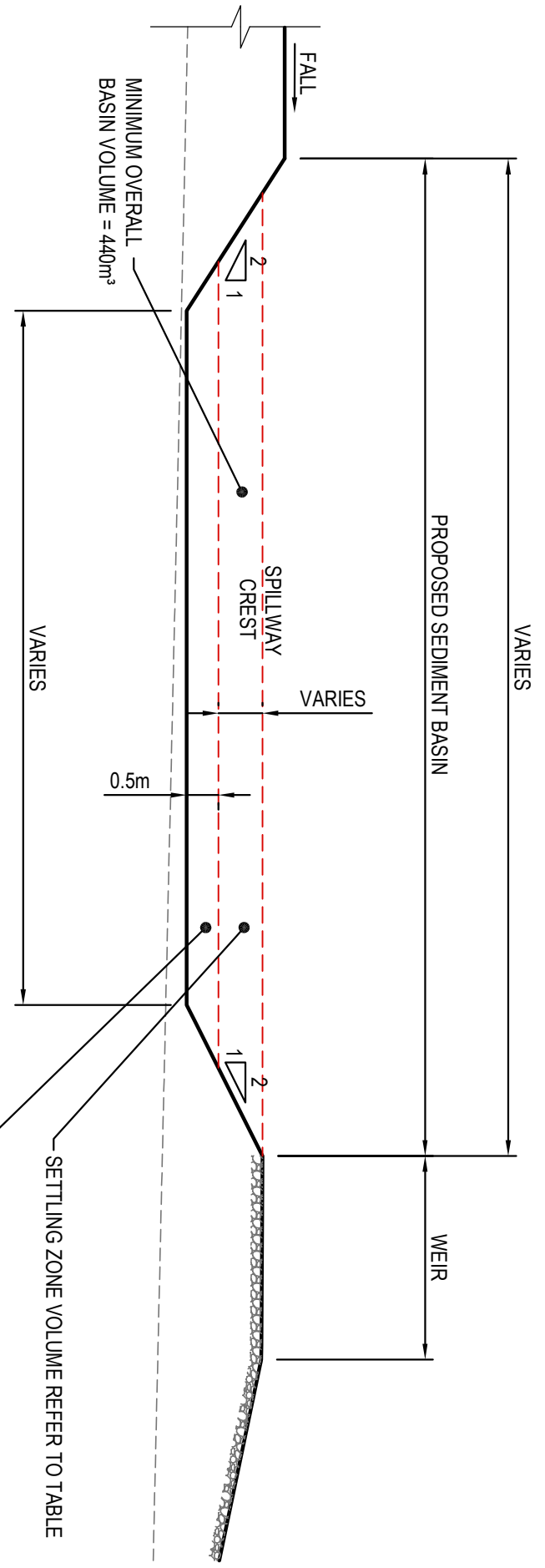


### MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

- FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET.
- FORM AN ELIPTICAL CROSS SECTION ABOUT 150mm HIGH x 400mm WIDE.
- PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET.
- MAINTAIN THE OPENING WITH SPACER BLOCKS.
- FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
- SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY CAN FIRMLY ABUT EACH OTHER AND SEDIMENT / LADEN WATERS CANNOT PASS BETWEEN.

### MESH & GRAVEL INLET FILTER

SCALE N.T.S.



### SEDIMENTATION BASIN

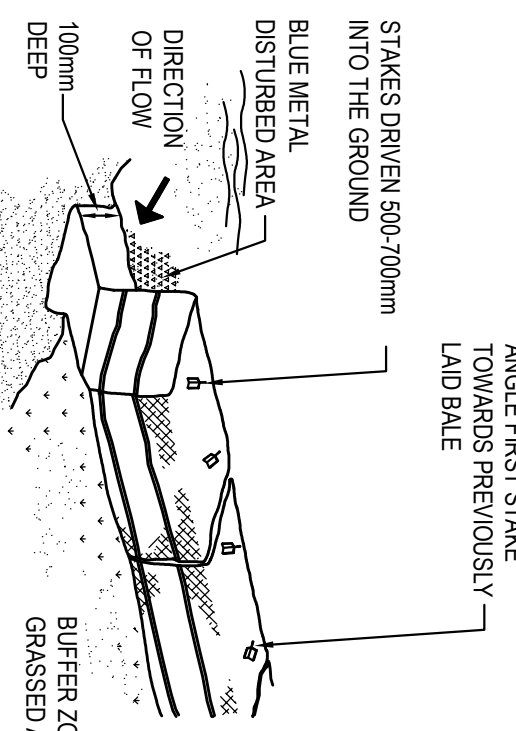
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#### CONSTRUCTION SEQUENCE

- WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
  - INSTALL SEDIMENT FENCING AND CUT DRAINS TO MEET THE REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLAN. WASTE COLLECTION BINS SHALL BE INSTALLED ADJACENT TO SITE OFFICE.
  - CONSTRUCT STABILISED SITE ACCESS IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S REQUIREMENTS.
  - REDIRECT CLEAN WATER AROUND THE CONSTRUCTION SITE.
  - INSTALL SEDIMENT CONTROL PROTECTION MEASURES AT ALL NATURAL AND MANMADE SLOPE SITUATIONS. MAINTAIN UNTIL ALL THE DISTURBED AREAS ARE STABILISED.
  - CLEAR AND STRIP THE WORK AREAS. MINIMISE THE DAMAGE TO THE GRASS AND LOW GROUND COVER OR NON-DISTURBED AREAS.
  - ANY DISTURBED AREAS OTHER THAN BUILDING PAD AREAS SHALL IMMEDIATELY BE COVERED WITH SITE TOPSOIL WITHIN 7 DAYS OF CLEARING. BUILDING PAD AREAS SHALL BE COVERED WITH BITUMEN EMULSION AS SPECIFIED.
  - APPLY PERMANENT STABILISATION TO SITE (LANDSCAPING).

### HAYBALE BARRIERS

N.T.S.



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NETTLETONTRIBE			
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Level 5, 70 Victoria Avenue Cherrybrook NSW 2867	Telephone +61 2 9417 9400 +61 2 9417 8337 Email enquiries@hhy.com.au www.henryandhyman.com.au	Project LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD96657)	Drawn M. Simova Checked N. Widdler
henryhyman		Design FEB 2019	Date FEB 2019
SEDIMENT AND EROSION CONTROL TYPICAL SECTIONS AND DETAILS		Approved A. Harris	Scale N.T.S.
18652_SSDA_SE03		Revision 03	Revision 03

### SEDIMENT BASIN SIZING

- THE SEDIMENT BASIN SHALL BE CONSTRUCTED ON A RATE PER HECTARE BASIS AND HAS BEEN IN ACCORDANCE WITH THE REQUIREMENTS OF THE LANDCOM MANUAL, "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION". FOR SEDIMENTATION TYPE D SOILS, THE DISTURBED AREA WITHIN THIS CATCHMENT AT ANY ONE TIME SHOULD BE LIMITED TO AN AREA FOR WHICH EACH SEDIMENT BASIN CAN HANDLE. EACH BASIN SHALL BE SIZED IN ACCORDANCE WITH THE TABLE BELOW.

SEDIMENT BASIN SIZING TYPE D SOILS		
VOLUMETRIC RUNOFF COEFFICIENT, CV	0.25 (APPENDIX F - TABLE F2)	
80TH PERCENTILE 5 DAY TOTAL RAINFALL DEPTH, R	32.2 mm	
CATCHMENT AREA, A	1 ha (UNIT AREA)	
SETTLING ZONE VOLUME (PER HECTARE), 10 CV x R	80.5 m³	
DISTURBED CATCHMENT AREA	1 ha (UNIT AREA)	
R x L x P C	110.8 m³	
SEDIMENT ZONE VOLUME (0.17 A x R x L x P C) 1.3	14.5m³ < 50% SETTLING VOL.	
TOTAL SEDIMENT BASIN VOLUME REQUIRED :	120.75 m³ha	

\* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)

2. THE FOLLOWING DESIGN PARAMETERS HAVE BEEN ASSESSED FOR THE SITE:

CONSTRAINT	VALUE	(SOURCE)*
RAINFALL ENSUITY (R-FACTOR)	2350	APPENDIX B
LENGTH/SLOPE GRADIENT FACTOR, L/S	0.995	APPENDIX A - TABLE A1
SOIL ERODIBILITY (K-FACTOR)	0.038	(TABLE C20 - BLACKTOWN)
EROSION CONTROL PRACTICE FACTOR (P-FACTOR)	1.3 (COMPACTED)	APPENDIX A - TABLE A2
COVER FACTOR (C-FACTOR)	1.0 (DURING EARTHWORKS)	APPENDIX A - FIGURE A5
CALCULATED SOIL LOSS, A (RUSLE EQUATION)	110.87 t/ha/yr	A = R x L x P x C
SOIL HYDROLOGIC GROUP	GROUP C	APPENDIX C TABLE 20
SEDIMENT TYPE	TYPE D	APPENDIX C TABLE 4
60TH PERCENTILE 5-DAY RAINFALL EVENT	32.2mm (BLACKTOWN)	TABLE 6.3A

\* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)

### BASIN MANAGEMENT

- THE CAPTURED STORMWATER IN THE SETTLING ZONE SHOULD BE DRAINED TO MEET THE MINIMUM STORAGE CAPACITY REQUIRED WITHIN A FIVE (5) DAY PERIOD FOLLOWING RAINFALL. PROVIDED THE ACCEPTABLE WATER QUALITY (NFR) AND TURBIDITY HAVE BEEN ACHIEVED.
- CHEMICAL FLOCCULANT SUCH AS GYPSUM MAY BE DOSED TO AD SETTLING WITHIN 24 HOURS OF CONCLUSION OF EACH STORM. THE APPLIED DOSING RATES SHOULD ACHIEVE THE TARGET QUALITY WITHIN 30 TO 72 HOURS OF THE STORM EVENT.
- INSPECT THE SEDIMENT BASINS AFTER EACH RAINFALL EVENT AND/OR WEEKLY. ENSURE THAT ALL SEDIMENT IS REMOVED ONCE THE SEDIMENT STORAGE ZONE IS FULL (REFER TO PEGS INSTALLED IN BASINS IN ACCORDANCE WITH THE SWMP). ENSURE THAT OUTFLET AND EMERGENCY SPILLWAY WORKS ARE MAINTAINED IN A FULLY OPERATIONAL CONDITION AT ALL TIMES.

SOWING SEASON		SEED MIX
AUTUMN/WINTER	OAT5@40kg/ha + JAPANESE WILLET@10kg/ha	
SPRING/SUMMER	OAT5@20kg/ha + JAPANESE WILLET@20kg/ha	

NOTE: THESE PLANT SPECIES ARE FOR TEMPORARY REVEGETATION ONLY. THEY WILL ONLY PROVIDE PROTECTION FROM EROSION FOR SIX MONTHS. WHEN THE PADS ARE TO BE LEFT UNDEVELOPED FOR A LONGER PERIOD, THE CONTRACTOR SHALL SEEK ADVICE FROM THE SITE SUPERINTENDENT AS TO MORE APPROPRIATE REVEGETATION METHODS.

REVEGETATION IN ACCORDANCE WITH THE ABOVE TABLE WILL BE ENHANCED BY ADDING LIME AT A RATE OF 4kg/TONNE OF TOPSOIL AND 7.5kg/TONNE OF SUBSOIL.

4. THE LONG TERM GROUND COVER FACTORS FOR THE CONSTRUCTION WORKS IS NOT TO EXCEED THE FOLLOWING LIMITS:

LAND	MAXIMUM C-FACTOR	REMARKS
WATERWAYS AND OTHER AREAS OF CONCENTRATED FLOWS, POST CONSTRUCTION	0.05	APPLIES AFTER TEN WORKING DAYS OF COMPLETION OF FORMATION AND BEFORE CONCENTRATED FLOWS ARE APPLIED. FOOT AND VEHICULAR TRAFFIC IS PROHIBITED IN THIS AREA AND 70% GROUND COVER IS REQUIRED.
STOCKPILES, POST CONSTRUCTION	0.10	APPLIES AFTER TEN WORKING DAYS FROM COMPLETION OF FORMATION. 60% GROUND COVER IS REQUIRED.
ALL LANDS INCLUDING WATERWAYS AND STOCKPILES DURING CONSTRUCTION	0.15	APPLIES AFTER 20 DAYS OF INACTIVITY. EVEN THOUGH WORKS MAY BE INCOMPLETE, 50% GROUND COVER IS REQUIRED.

## ISSUED FOR APPROVAL