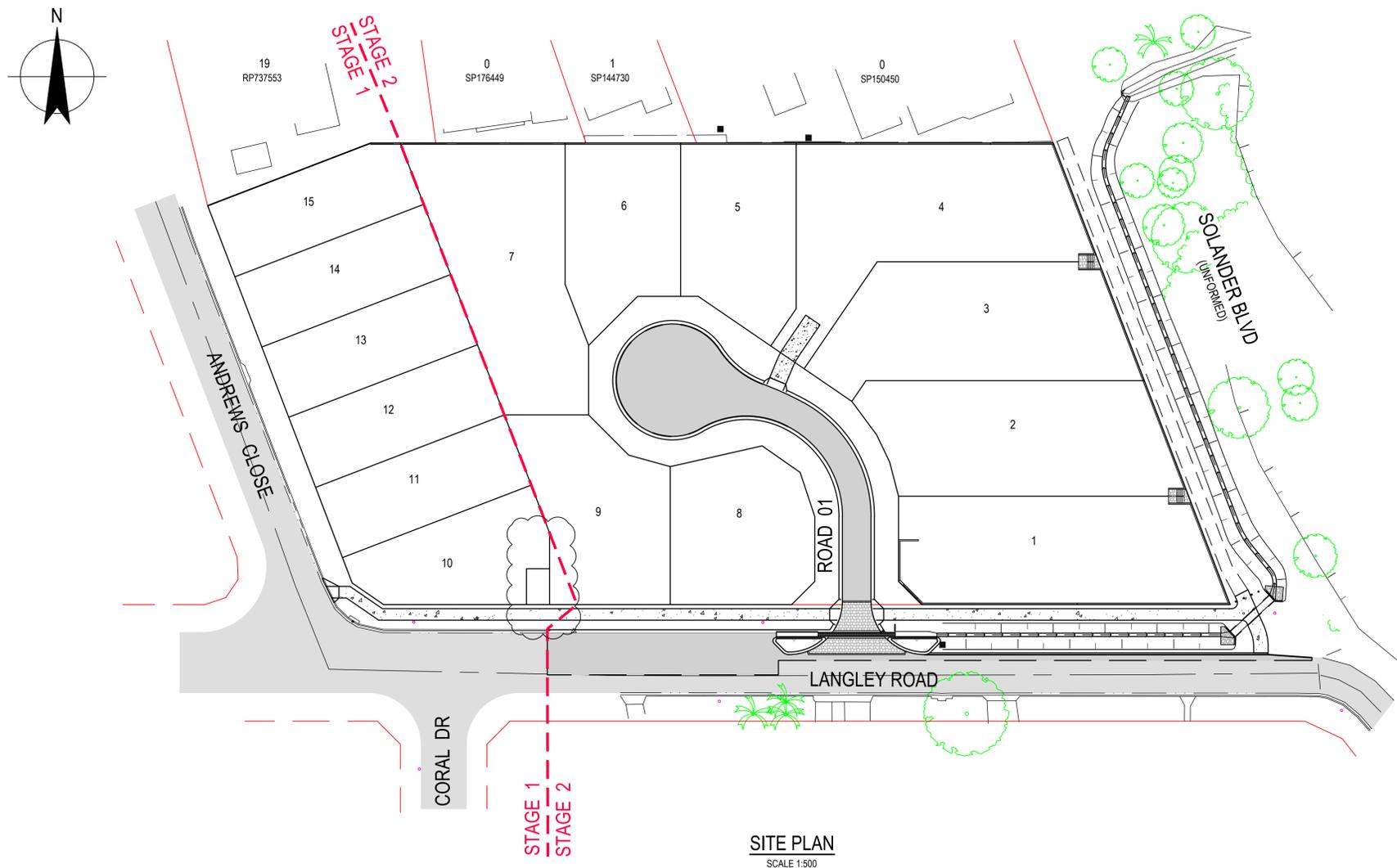




KS5 PTY LTD

20-30 LANGLEY ROAD, PORT DOUGLAS

SUBDIVISION



DRAWING LIST	
DRG No.	DRAWING TITLE
42-12520641-C001	COVER SHEET AND SITE PLAN
42-12520641-C002	STANDARD NOTES
42-12520641-C003	GENERAL ARRANGEMENT PLAN
42-12520641-C004	DEMOLITION / CLEARING PLAN
42-12520641-C005	CONTROL LINE SETOUT
42-12520641-C006	TYPE CROSS SECTIONS AND DETAILS
42-12520641-C007	MISCELLANEOUS DETAILS
42-12520641-C008	LONGITUDINAL SECTIONS - ROAD 01 AND DRAIN 01
42-12520641-C009	LANGLEY ROAD CROSS SECTIONS - SHEET 1 OF 2
42-12520641-C010	LANGLEY ROAD CROSS SECTIONS - SHEET 2 OF 2
42-12520641-C011	ROAD 01 CROSS SECTIONS
42-12520641-C012	DRAIN 01 CROSS SECTIONS
42-12520641-C013	LANGLEY ROAD ROADWORKS PLAN
42-12520641-C014	LANGLEY ROAD SETOUT PLAN
42-12520641-C015	LANGLEY ROAD / ROAD 01 INTERSECTION PLAN
42-12520641-C016	TRENCH GRATE DETAILS
42-12520641-C017	ROAD 01 CUL-DE-SAC SETOUT PLAN
42-12520641-C018	SOLANDER BOULEVARD ACCESS - PLAN & DETAILS
42-12520641-C019	EARTHWORKS PLAN
42-12520641-C020	RETAINING WALLS AND FENCING PLAN
42-12520641-C021	RETAINING WALL DETAILS
42-12520641-C022	BEACH ACCESS STAIRS
42-12520641-C023	SEWER RETICULATION PLAN
42-12520641-C024	SEWER LONG SECTIONS
42-12520641-C025	WATER RETICULATION PLAN
42-12520641-C026	EROSION AND SEDIMENT CONTROL STRATEGY - PLAN
42-12520641-C027	EROSION AND SEDIMENT CONTROL STRATEGY - DETAILS SHEET 1 OF 2
42-12520641-C028	EROSION AND SEDIMENT CONTROL STRATEGY - DETAILS SHEET 2 OF 2

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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	1:500		

Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	COVER SHEET AND SITE PLAN		
Original Size	A1	Drawing No:	42-12520641-C001
		Rev:	1

SURVEY CONTROL NOTES

1. SURVEY CONDUCTED BY GARY POZZI - CADASTRAL SURVEYOR, PH 07 4057 7177

SURVEY ORIGIN
LEVEL DATUM: AHD
ORIGIN OF LEVELS: PSM 56865 RL 3.041
MERIDIAN: MGA ZONE 55

GENERAL NOTES

1. ALL WORKS MUST BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT FNQROC DEVELOPMENT MANUAL SPECIFICATIONS. WHERE DIFFERENCES EXIST BETWEEN THE PLANS AND THE DEVELOPMENT MANUAL, THESE PLANS SHALL TAKE PRECEDENCE.
2. THE CONTRACTOR IS TO ENSURE A COPY OF THE OPERATIONAL WORKS APPROVAL IS AVAILABLE ON SITE. THE SITE FOREMAN IS TO ENSURE ALL WORKS ARE UNDERTAKEN IN ACCORDANCE WITH THE APPROVAL.
3. THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN APPROXIMATED FROM THE KNOWN POSITIONS OF VALVES, MANHOLES, ETC. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE CONTRACTOR MUST CONTACT RELEVANT AUTHORITIES FOR POSSIBLE LOCATION OF FURTHER SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
4. EXISTING SERVICES ARE TO BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. WHERE NECESSARY THE CONTRACTOR SHALL CONFIRM THE DEPTH TO EXISTING SERVICES BY POTHOLING BEFORE COMMENCING WORKS. THE SUPERINTENDENT SHALL BE CONSULTED WHERE THE CONTRACTOR CONSIDERS SPECIFIC PROTECTION WORKS NECESSARY TO PROTECT THE SERVICE.
5. ALL DIMENSIONS AND RADII ARE EXPRESSED IN METRES, UNLESS NOTED OTHERWISE.
6. WHERE REFERENCE IS MADE TO THE STANDARD DRAWINGS, THE CONTRACTOR SHALL ENSURE THAT THE LATEST VERSION ISSUED BY THE RELEVANT AUTHORITY, AT THE TIME OF CONSTRUCTION, IS USED.

EROSION AND SEDIMENT CONTROL NOTES

1. PRIOR TO CONSTRUCTION COMMENCING, THE CONTRACTOR MUST PREPARE AN EROSION & SEDIMENT CONTROL PLAN (ESCP) TO MANAGE THE SITE DURING CONSTRUCTION AND THE DEFECT LIABILITY PERIOD.
2. THE ESCP MUST BE CONSISTENT WITH THE APPROVED EROSION & SEDIMENT CONTROL STRATEGY (ESCS) AND SHALL TAKE INTO CONSIDERATION THE CONTRACTOR'S PROPOSED CONSTRUCTION METHODOLOGY AND PROGRAM.
3. AN ESCP THAT DIFFERS TO THE APPROVED ESCS MUST BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO SUBMITTING TO COUNCIL.
4. NO EARTHWORKS SHALL COMMENCE ON ANY PART OF THE SITE PRIOR TO APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES BEING INSTALLED DOWNSTREAM OF THE SITE AND IN ACCORDANCE WITH THE APPROVED ESCP.
5. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION.
6. THE IMPACT ON THE ENVIRONMENT SHALL BE MINIMISED BY OBSERVING THE FOLLOWING CONSTRUCTION PRACTICES:
 - AREAS DISTURBED BY CONSTRUCTION TRAFFIC AND PROCEDURES SHALL BE MINIMISED.
 - MINIMISE TRAFFIC MOVEMENTS AND SPEEDS ON EXPOSED SURFACES.
 - REVEGETATION OF DISTURBED AREAS SHALL BE CARRIED OUT SOON AFTER THE COMPLETION OF TOPSOIL PLACEMENT.
 - FLOW DIVERSION SHALL BE CARRIED OUT BY EARLY INSTALLATION OF DRAINS ALONG TOPS OF BATTERS WITH APPROPRIATE SILTATION CONTROL DEVICES.
 - SEDIMENT INTERCEPTION BY THE PLACEMENT OF SUITABLE RETENTION SYSTEMS ACROSS DRAINAGE LINES AND AT INTERCEPTION POINTS FOR BOTH THE CONSTRUCTION AND STOCKPILE AREAS.
4. ALL ACCESS TO AND FROM THE SITE SHALL BE VIA A TEMPORARY CONSTRUCTION ENTRY/EXIT. THE CONTRACTOR SHALL NOMINATE A PROPOSED ACCESS LOCATION ON THE ESC PLAN FOR APPROVAL BY THE SUPERINTENDENT.
5. STOCKPILES SHALL ONLY BE LOCATED IN AREAS NOMINATED ON THE PROJECT DRAWINGS OR APPROVED BY THE SUPERINTENDENT. ALL STOCKPILES MUST HAVE APPROPRIATE ESC MEASURES INSTALLED TO PREVENT SEDIMENT TRANSPORT. THE MAXIMUM HEIGHT OF ALL STOCKPILES MUST BE LIMITED TO 2.0m
6. ALL PERMANENT AND TEMPORARY UNLINED SWALES AND DRAINS MUST HAVE APPROPRIATE TEMPORARY EROSION PROTECTION.
7. ALL PARTIALLY CONSTRUCTED DRAINAGE STRUCTURES MUST BE PROTECTED AGAINST SEDIMENT INFILTRATION DURING CONSTRUCTION.
8. ALL COMPLETED DRAINAGE STRUCTURES MUST BE PROTECTED AGAINST SEDIMENT INFILTRATION UNTIL GRASSING IS ESTABLISHED.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTROL OF DUST EMANATING FROM THE SITE AT ALL TIMES FOR THE DURATION OF CONSTRUCTION. WET SUPPRESSION METHODS TO BE USED.
10. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE CHECKED FOR DAMAGE, CLEANED OUT AND FULLY REINSTATED AFTER EACH RAINFALL EVENT RESULTING IN RUNOFF.
11. IF EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN FOUND TO BE DEFICIENT OR FAILED IN SERVICE, DUE TO UNFORESEEN CIRCUMSTANCES, CORRECTIVE ACTION IS TO BE UNDERTAKEN IMMEDIATELY WHICH MAY INCLUDE AMENDMENTS/ADDITIONS TO THE ORIGINAL APPROVED EROSION CONTROL PLANS.
12. THE INSTALLATION, REMOVAL, RELOCATION OR MODIFICATION TO EROSION AND SEDIMENT CONTROL DEVICES MAY BE MADE BY DOUGLAS SHIRE COUNCIL IF DEEMED NECESSARY AND RELEVANT.
13. EROSION AND SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THE TREATMENT AREA IS SUITABLY STABILISED/VEGETATED.
14. THE CONTRACTOR SHALL UNDERTAKE A FORMAL COMPLIANCE AUDIT OF THE ESC AT SIX WEEKS INTERVALS DURING THE CONSTRUCTION PERIOD OF THE PROJECT. RECORDS OF THE AUDIT SHALL BE RETAINED ON SITE. WHERE IDENTIFIED AS PART OF THE AUDIT THE ESCP SHALL BE UPDATED AND PROVIDED TO THE SUPERINTENDENT.

EARTHWORKS NOTES

1. ALL EARTHWORKS MUST BE CARRIED OUT IN ACCORDANCE WITH AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS'. GEOTECHNICAL TESTING SERVICES SHALL BE AS DETERMINED BY LEVEL 1 IN ACCORDANCE WITH AS 3798. ALL CERTIFICATION AND TEST RESULTS ARE TO BE COMPILED AND PROVIDED TO THE SUPERINTENDENT PRIOR TO WORKS ACCEPTANCE.
2. NO VEGETATION SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT UNLESS NOTED ON THE PROJECT DRAWINGS.
3. FINISHED SURFACE LEVELS SHOWN ON PROJECT DRAWINGS ARE AFTER ALL EARTHWORKS ARE COMPLETE INCLUDING TOPSOILING. ALL AREAS ARE TO BE GRADED EVENLY BETWEEN FINISHED SURFACE LEVELS UNLESS NOTED OTHERWISE.
4. DRY DENSITY RATIO AS REFERRED TO IN THESE NOTES IS THE RATIO DETERMINED IN ACCORDANCE WITH AS1289.5.4.1 OF COMPACTED DRY DENSITY IN ACCORDANCE WITH AS1289.5.3.1 OR AS1289.5.8.1 TO THE STANDARD MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1259.5.1.11 (STANDARD COMPACTION).\
5. ALL VEGETAL MATTER, TOPSOIL AND OTHER UNSUITABLE MATERIAL SHALL BE STRIPPED/REMOVED FROM AREAS TO BE EXCAVATED OR FILLED. ALL VEGETAL MATTER AND UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF-SITE UNLESS ADVISED OTHERWISE BY THE SUPERINTENDENT. TOPSOIL SHALL BE STOCKPILED ON-SITE FOR REUSE. SURPLUS TOPSOIL SHALL BE DISPOSED OF OFF-SITE.
6. SHOULD ANY SOFT OR UNSUITABLE MATERIAL BE IDENTIFIED, THE CONTRACTOR SHALL INFORM THE SUPERINTENDENT IMMEDIATELY AND SEEK THE ADVICE OF THE SUPERINTENDENT OR GITA.
7. COMPACT FILL TO 95% DRY DENSITY RATIO IN LAYERS OF THICKNESS APPROPRIATE TO THE COMPACTION PLANT EMPLOYED BUT NOT EXCEEDING 300mm.
8. IMPORTED FILL MUST HAVE A MINIMUM SITE CLASSIFICATION OF 'M' AS PER TABLE 2.1 OF AS2870 (THAT IS MODERATELY REACTIVE CLAY OR SILT, OR BETTER).

ROADS & PATHWAYS NOTES

1. NEW ROADS PATHS AND KERBING SHALL JOIN SMOOTHLY TO EXISTING WORKS. WHERE NECESSARY, EXISTING WORKS SHALL BE CUT BACK TO FORM A NEAT JOIN.
2. ALL PATHWAYS SHALL BE 2.0m WIDE (UNLESS NOTED OTHERWISE) IN ACCORDANCE WITH FNQROC STD DRAWING S1035. PATHWAY CROSSFALL MUST NOT EXCEED 2.5%.
3. ALL KERB PROFILES TO BE AS PER FNQROC STD DRAWING S1000 UNLESS NOTED OTHERWISE.
4. ALL KERB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FNQROC STD DRG S1016. WIDTH OF RAMP SHALL MATCH PATHWAY WIDTH.
5. ALL STREET SIGNS AND TRAFFIC SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH FNQROC STD DRAWINGS S1040 AND S1041.
6. PAVEMENT DESIGN STATED HEREIN IS FOR A RANGE OF SUBGRADE CBR VALUES. THE CONTRACTOR IS TO CONFIRM THE SUBGRADE CBR BY TESTING IN ACCORDANCE WITH THE SPECIFICATION. RESULTS ARE TO BE PROVIDED TO THE SUPERINTENDENT FOR FINAL PAVEMENT SELECTION.

DRAINAGE NOTES

1. EXCAVATION, BEDDING AND BACKFILL FOR PRECAST BOX CULVERTS SHALL BE CARRIED OUT IN ACCORDANCE WITH FNQROC STD DRAWING S1045.
2. REINFORCED CONCRETE BASES FOR CULVERTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DEPARTMENT OF MAIN ROADS STD DRAWING 1318.
3. SUBSOIL DRAINAGE SHALL BE PROVIDED WHERE SHOWN ON THE PROJECT DRAWINGS. DRAINS SHALL ACHIEVE A MINIMUM 0.5% GRADE. FLUSHING POINTS AND OUTLETS TO BE PROVIDED IN ACCORDANCE WITH FNQROC STD DRAWING S1095.

WATER RETICULATION NOTES

1. ALL PVC AND PE PIPES SHALL BE CLASS PN16. PVC PIPES SHALL BE RUBBER RING JOINTED AND DUCTILE IRON COMPATIBLE.
2. DICL PIPES SHALL BE CLASS PN35 'TYTON' TYPE RUBBER RING JOINTED.
3. FOR MAIN TRENCHING, BEDDING & ANCHORAGE DETAILS REFER FNQROC STD DRGS S2015 & S2016. ENSURE COVER TO WATER MAINS IS 800mm MINIMUM UNDER ROADWAYS AND 600mm MINIMUM ELSEWHERE.
4. ALL WATER MAINS SHALL BE INSTALLED ON A STANDARD 2.8m OFFSET FROM THE PROPERTY BOUNDARY UNLESS NOTED OTHERWISE ON PLANS.
5. FOR MAIN CONNECTION DETAILS, REFER FNQROC STD DRAWING S2020.
6. DOUGLAS SHIRE COUNCIL MUST BE CONTACTED TO PERFORM ANY DIRECT CONNECTION OR ALTERATION TO LIVE WATER MAINS. THE CONTRACTOR SHALL LODGE WITH COUNCIL THE APPROPRIATE APPLICATION FORMS AND FEES FOR THESE WORKS TO BE COMPLETED. IT MAY BE POSSIBLE FOR SOME WORKS TO BE PERFORMED BY THE CONTRACTOR UNDER SPECIAL CIRCUMSTANCES AND SUBJECT TO APPROPRIATE CONDITIONS AGREED TO WITH COUNCIL.
7. ALL HYDRANTS AND VALVES TO BE LOCATED OPPOSITE PROPERTY BOUNDARY TRUNCATIONS AND CORNERS, UNLESS NOTED OTHERWISE ON PLANS. FOR VALVES & HYDRANT BOXES INSTALLATION DETAILS REFER FNQROC STD DRAWINGS S2000 & S2005.
8. HYDRANTS OR VALVES CONSTRUCTED IN CONCRETE ARE TO HAVE A COMPRESSIBLE LAYER (ABLEFLEX) INSTALLED ON THE SURROUND. REFER FNQROC STD DRG 2000.
9. KERB MARKER PLATES SHALL BE PROVIDED TO IDENTIFY THE POSITION OF ALL VALVES AND HYDRANTS IN ACCORDANCE WITH FNQROC STD DRAWING S2010 VERSION 4-2009. IN ADDITION TO KERB MARKER PLATES, HYDRANTS SHALL ALSO HAVE TEARDROP MARKERS AND BLUE RETRO-REFLECTIVE MARKERS PROVIDED ON THE ROAD PAVEMENT IN ACCORDANCE WITH FNQROC STD DRAWING 2010 VERSION 4-2009.

SEWER RETICULATION NOTES

1. ALL NEW SEWER MAINS SHALL BE UNPLASTICISED PVC (PVC-U) CLASS SN8 SUITABLE FOR RUBBER RING JOINTS, UNLESS NOTED OTHERWISE.
2. ALL NEW SEWER MAINS AND MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH FNQROC STD DRAWINGS3000 AND S3015.
3. ALL SEWER MANHOLE COVERS SHALL BE CIRCULAR UNLESS NOTED OTHERWISE ON SEWER LONG SECTIONS. COVERS SHALL BE TYPE B INSIDE PROPERTIES AND TYPE C ELSEWHERE.
4. ALL SEWER MANHOLE COVER LEVELS TO BE 50mm ABOVE FINISHED SURFACE LEVEL UNLESS NOTED OTHERWISE.
5. THE CONTRACTOR SHALL ENSURE THAT A FLAT AREA OF 1.5m RADIUS FROM THE CENTRE OF THE MANHOLE IS PROVIDED AROUND ALL MANHOLES.
6. ALL HOUSE CONNECTION BRANCHES TO NEW SEWER MAINS TO BE CONSTRUCTED IN ACCORDANCE WITH FNQROC STD DRAWING S3005. BRANCHES SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE SPECIFICATION.
7. DOUGLAS SHIRE COUNCIL MUST BE CONTACTED TO PERFORM ANY DIRECT CONNECTION TO LIVE SEWER MAINS. THE CONTRACTOR SHALL LODGE WITH COUNCIL THE APPROPRIATE APPLICATION FORMS AND FEES FOR THESE WORKS TO BE COMPLETED. IT MAY BE POSSIBLE FOR SOME WORKS TO BE PERFORMED BY THE CONTRACTOR UNDER SPECIAL CIRCUMSTANCES AND SUBJECT TO APPROPRIATE CONDITIONS AGREED TO WITH COUNCIL.
8. THE CONTRACTOR SHALL CARRY OUT A CCTV INSPECTION THROUGH ALL SEWERS CONSTRUCTED AS PART OF THIS DEVELOPMENT AND PROVIDE THE FOOTAGE TO THE SUPERINTENDENT FOR ASSESSMENT. ANY SECTIONS OF SEWER CONSIDERED SUB-STANDARD SHALL BE RECTIFIED TO THE SATISFACTION OF COUNCIL.

SITE SPECIFIC NOTES

1. NO CLEARING OR VEGETATION REMOVAL IS TO TAKE PLACE UNTIL CERTIFICATION IS PROVIDED FOR ANT PLANT RELOCATION. (ANT PLANT RELOCATION BY OTHERS)

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
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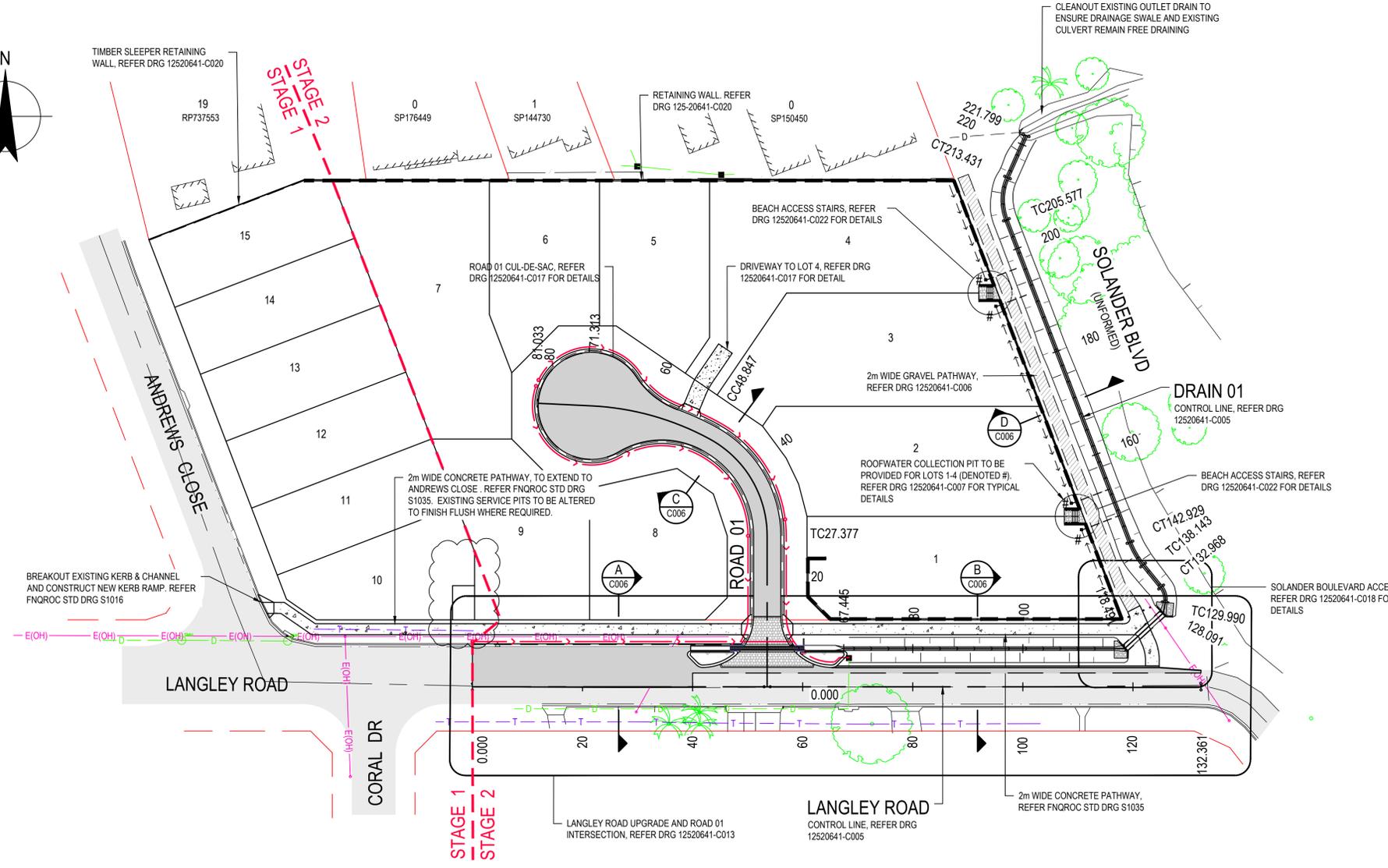
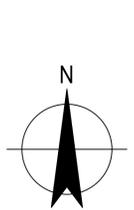
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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	-		

Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	STANDARD NOTES		
Original Size	A1	Drawing No:	42-12520641-C002

Rev: 1



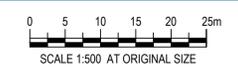
LEGEND

	CONCRETE FOOTPATH/DRIVEWAY
	GRAVEL PATHWAY
	SUBSURFACE DRAINAGE (WITH FLUSH POINTS & OUTLETS)
	PEDESTRIAN KERB RAMP
	BATTER TOP
	RETAINING WALL
	ROOFWATER COLLECTION PIT, REFER DRG 12520641-C007
	EXISTING PAVEMENT
	NEW FLEXIBLE PAVEMENT
	NEW CONCRETE PAVEMENT WITH PORPHYRY COBBLE STONE FINISH

PLAN
SCALE 1:500

- NOTES**
- REFER DRG 12520641-C002 FOR STANDARD NOTES.
 - REFER DRG 12520641-C005 FOR CONTROL LINE SETOUT.

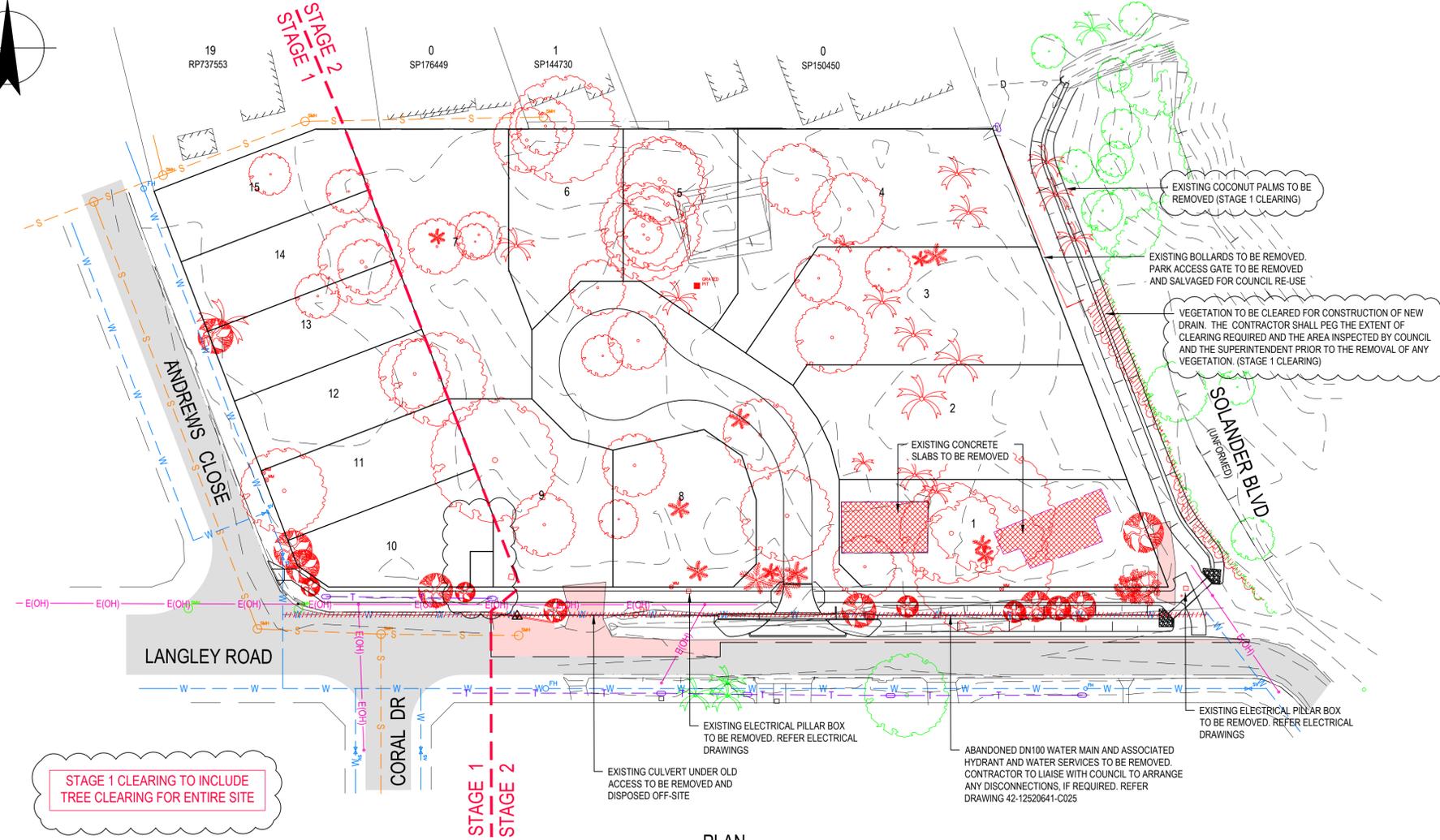
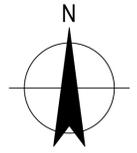
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	Drafting Check G. APPLIN	Design Check G. APPLIN
	Approved (Project Director) P. FLANAGAN	Date 03.03.20
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Client	KS5 PTY LTD
Project	LANGLEY ROAD SUBDIVISION
Title	GENERAL ARRANGEMENT PLAN
Original Size	A1
Drawing No:	42-12520641-C003
Rev:	1



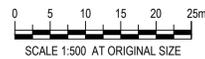
LEGEND

- EXISTING KERB & CHANNEL TO BE REMOVED
- EXISTING PAVEMENT TO BE REMOVED
- EXISTING FENCE / BOLLARDS TO BE REMOVED
- EXISTING REDUNDANT SERVICE
- EXISTING TREE/PALM TO BE REMOVED
- EXISTING VEGETATION TO BE REMOVED
- EXISTING BUILDING LINE
- EXISTING FENCE
- EXISTING SEWER MAIN
- EXISTING O/H ELECTRICITY
- EXISTING WATER MAIN
- EXISTING TELSTRA
- EXISTING PALM/TREE TO REMAIN
- EXISTING VEGETATION LINE

NOTES

1. REFER TO DRG 12520641-C002 FOR STANDARD NOTES.
2. STAGE 1 TO INCLUDE CLEARING OF OF TREES FROM THE STAGES 1 AND 2.

PLAN
SCALE 1:500



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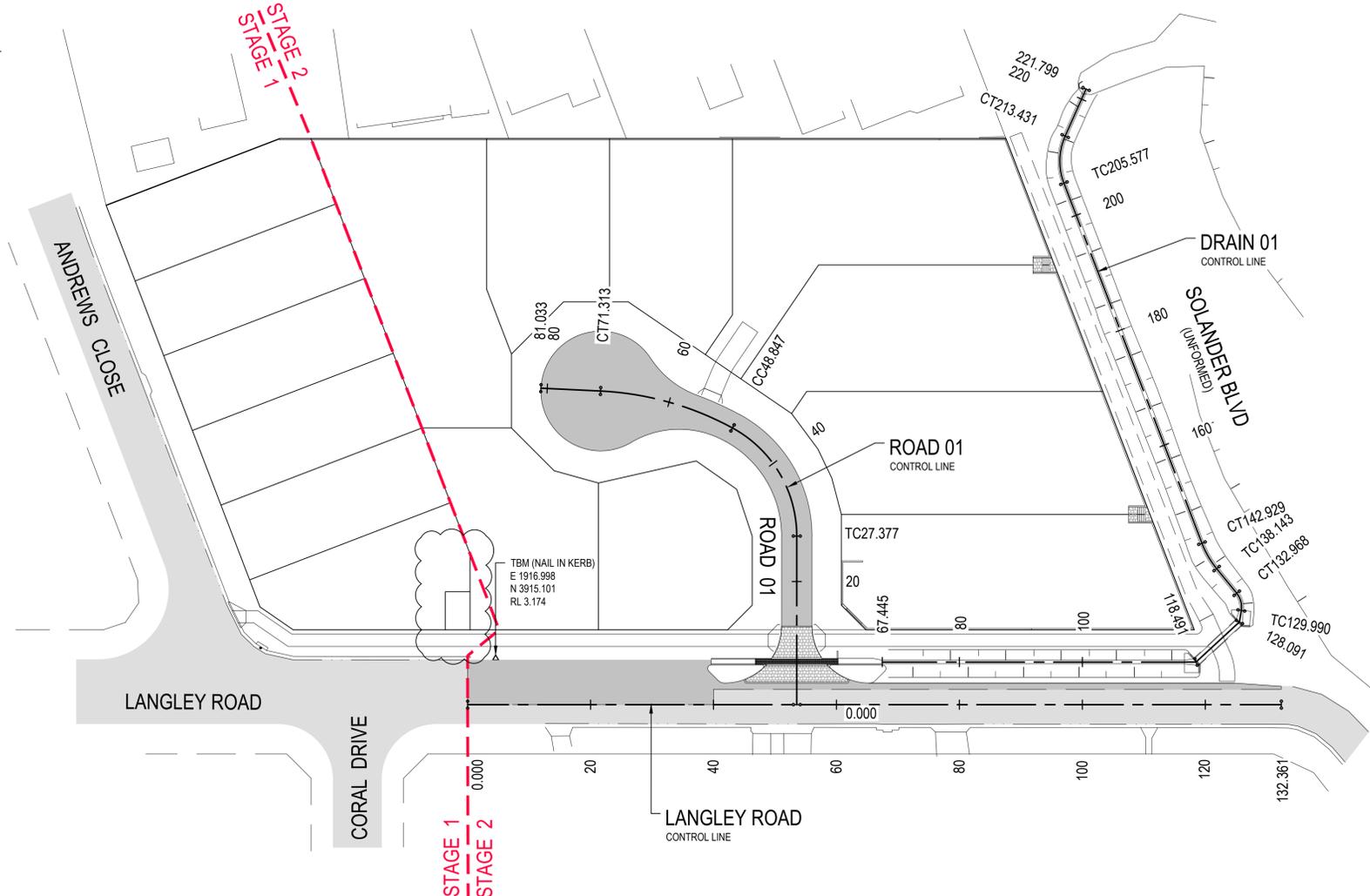
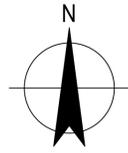
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Date	03.03.20		
Scale	1:500		

Client **KS5 PTY LTD**
Project **LANGLEY ROAD SUBDIVISION**
Title **DEMOLITION / CLEARING PLAN**

Original Size **A1** Drawing No: **42-12520641-C004**

Rev: 1

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CONTROL LINE - ROAD 01

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	ARC LENGTH	DEFL ANGLE
IP 1	0.000	1965.976	3908.027	0°00'00.00"			
TC	27.377	1965.976	3935.405	0°00'00.00"			
IP 2	38.112	1965.976	3947.305		R = -20.000	21.469	61°30'27.89"
CT	48.847	1955.517	3952.982	298°29'32.11"			
TC	48.847	1955.517	3952.982	298°29'32.11"			
IP 3	60.080	1945.475	3958.432		R = -50.000	22.465	25°44'36.24"
CT	71.313	1934.062	3958.980	272°44'55.87"			
IP 4	81.033	1924.354	3959.446	272°44'55.87"			

CONTROL LINE - LANGLEY RD

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	ARC LENGTH	DEFL ANGLE
IP 1	0.000	1912.429	3908.026	89°59'55.17"			
IP 2	132.361	2044.790	3908.029	89°59'55.17"			

CONTROL LINE - DRAIN 01

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	ARC LENGTH	DEFL ANGLE
IP 1	67.445	1979.874	3914.953	89°59'56.93"			
IP 2	118.491	2030.919	3914.953				
IP 3	128.091	2037.980	3921.458				
TC	129.990	2038.292	3923.331	9°28'35.93"			
IP 4	131.479	2038.553	3924.895		R = -3.500	2.978	48°45'13.39"
CT	132.968	2037.549	3926.123	320°43'22.54"			
TC	138.143	2034.273	3930.129	320°43'22.54"			
IP 5	140.536	2032.745	3931.997		R = 15.000	4.785	18°16'43.91"
CT	142.929	2031.881	3934.250	339°00'06.45"			
TC	205.577	2009.431	3992.738	339°00'06.45"			
IP 6	209.504	2007.947	3996.605		R = 10.000	7.854	45°00'01.28"
CT	213.431	2009.632	4000.389	24°00'07.73"			
IP 7	221.799	2013.036	4008.034	24°00'07.73"			

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DO NOT SCALE

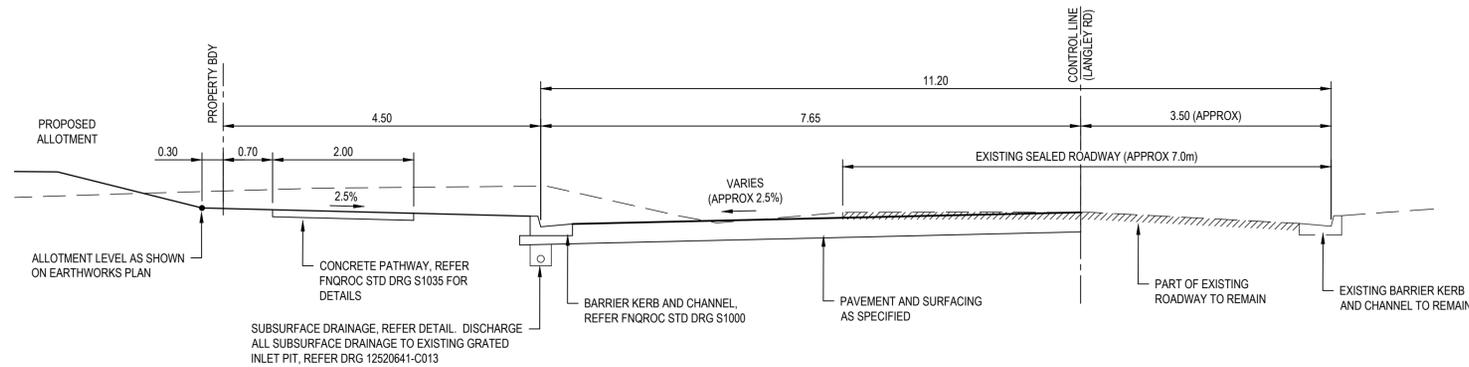
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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	1:500		

Client **KS5 PTY LTD**
 Project **LANGLEY ROAD SUBDIVISION**
 Title **CONTROL LINE SETOUT**

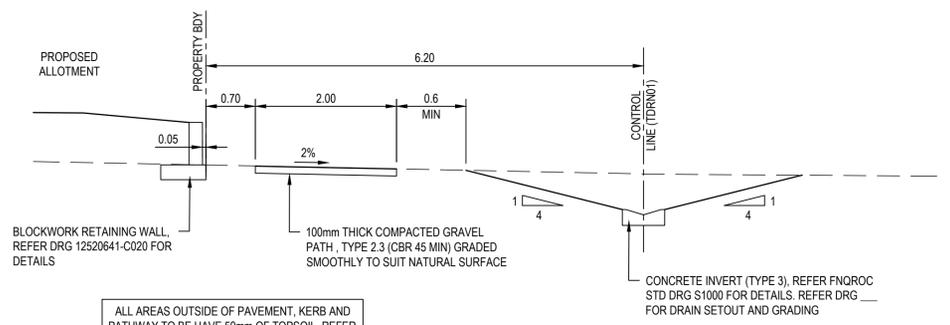
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Rev: 1



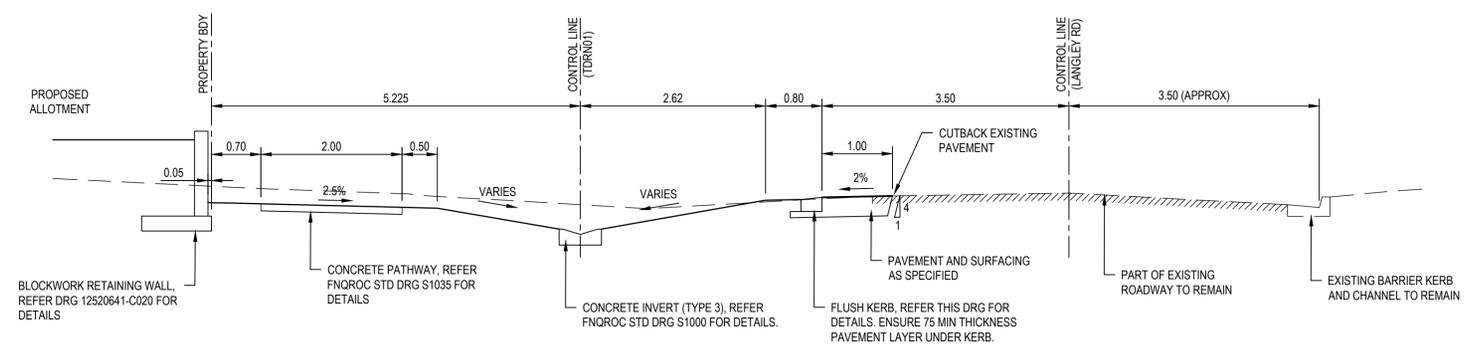
LANGLEY ROAD (CH 50 - END)

A SECTION
C003 C013 SCALE 1 : 50



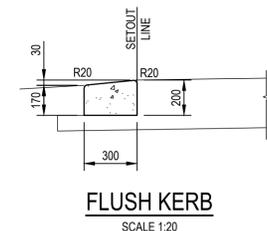
SOLANDER BOULEVARD (PATH AND DRAIN)

D SECTION
C003 C013 SCALE 1 : 50

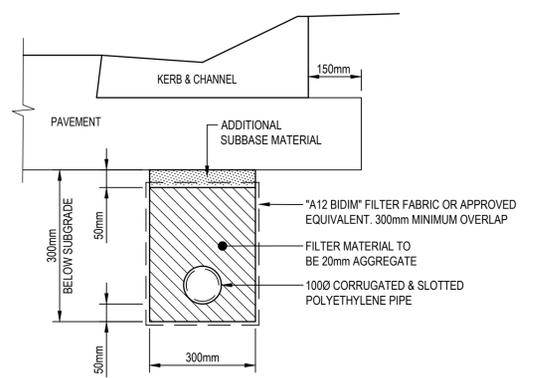


LANGLEY ROAD (START - CH 50)

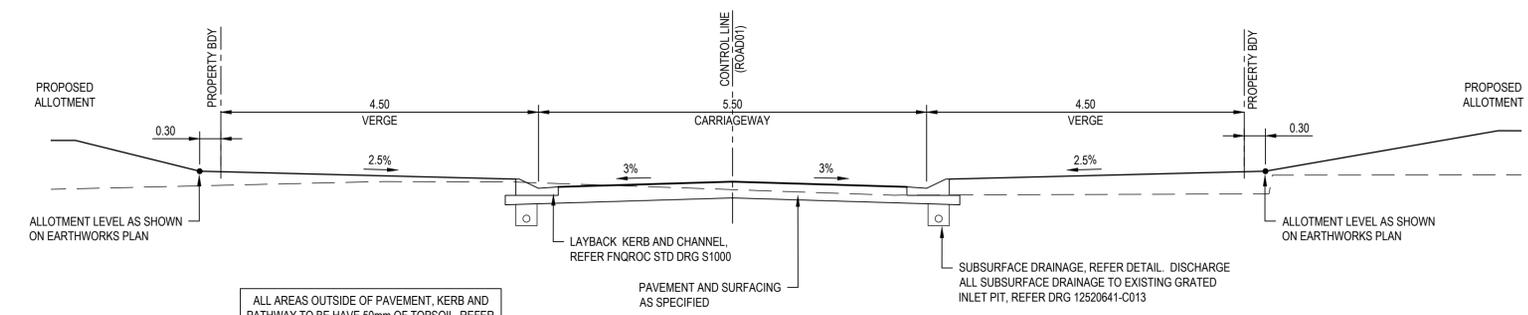
B SECTION
C003 C013 SCALE 1 : 50



FLUSH KERB
SCALE 1:20



SUBSURFACE DRAINAGE
NOT TO SCALE



ROAD 01

C SECTION
C003 C013 SCALE 1 : 50

LANGLEY ROAD - PAVEMENT DETAILS

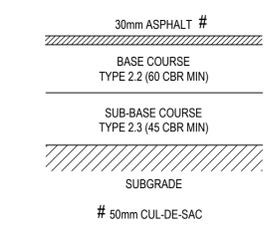
SUBGRADE CBR	BASE (mm)	SUB-BASE (mm)
3	100	280
5	100	190
7	100	140
10	100	100

DESIGN TRAFFIC 1×10^5 (ACCESS STREET)

ROAD 01 - PAVEMENT DETAILS

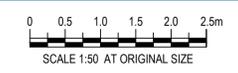
SUBGRADE CBR	BASE (mm)	SUB-BASE (mm)
3	100	270
5	100	180
7	100	130
10	100	100

DESIGN TRAFFIC 5×10^4 (ACCESS PLACE)



FLEXIBLE PAVEMENT DETAILS
NOT TO SCALE

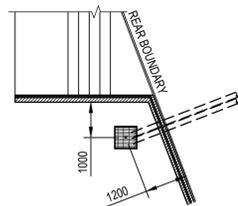
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
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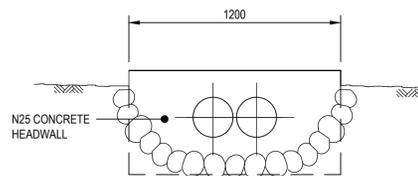
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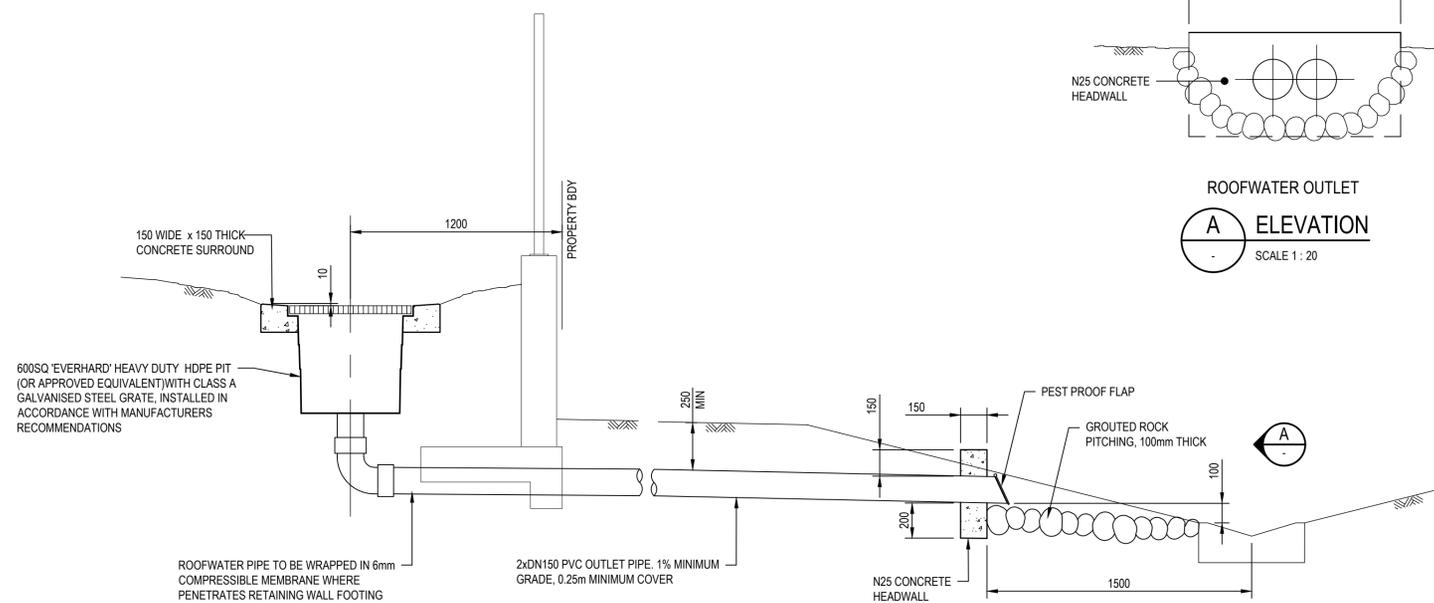
Drawn G. BROWNING	Designer G. BROWNING	Client KS5 PTY LTD Project LANGLEY ROAD SUBDIVISION Title TYPE CROSS SECTIONS AND DETAILS
Drafting Check G. APPLIN	Design Check G. APPLIN	
Approved (Project Director) P. FLANAGAN	Date 03.03.20	Original Size A1 Drawing No: 42-12520641-C006 Rev: 1
Scale 1:100	This Drawing must not be used for Construction unless signed as Approved	



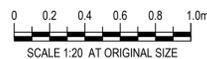
TYPICAL LOCATION
ROOFWATER COLLECTION PIT
SCALE 1:100



ROOFWATER OUTLET
A ELEVATION
SCALE 1:20



REAR OF ALLOTMENT DRAINAGE - OUTLET
SCALE 1:20



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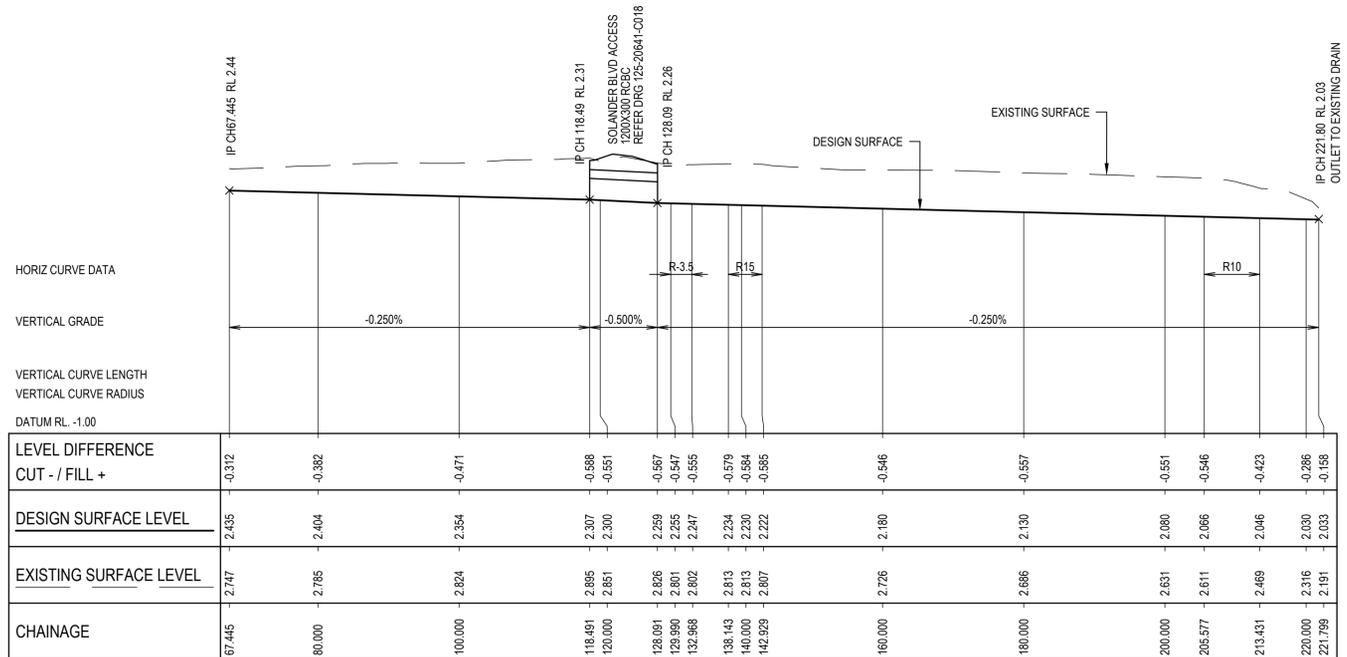
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Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	AS SHOWN		

Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	MISCELLANEOUS DETAILS		
Original Size	A1	Drawing No:	42-12520641-C007

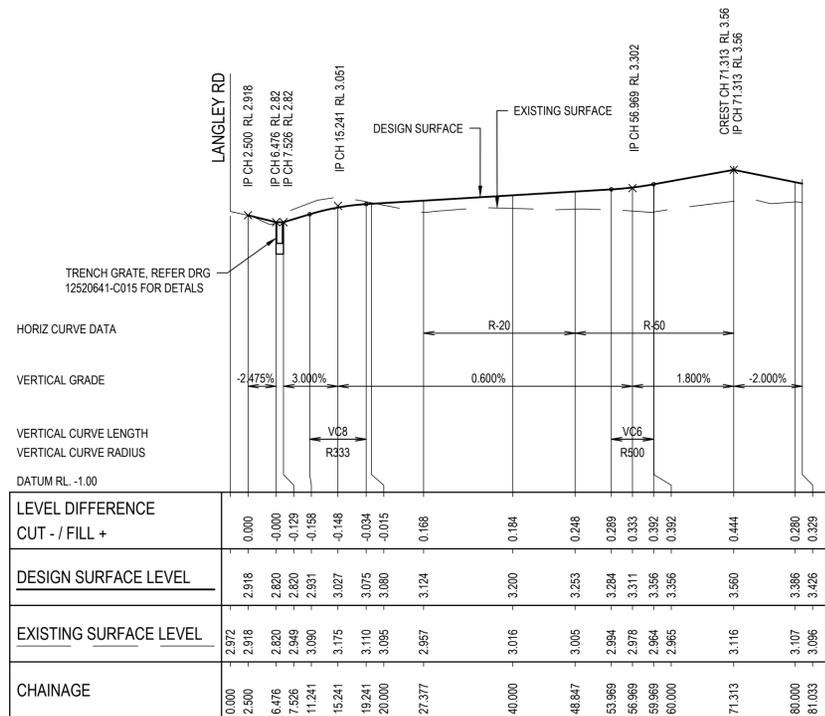
Rev: 1

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
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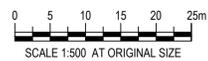
LONGITUDINAL SECTION - DRAIN 01

HORZ 1:500 VERT 1:50



LONGITUDINAL SECTION - ROAD 01

HORZ 1:500 VERT 1:50



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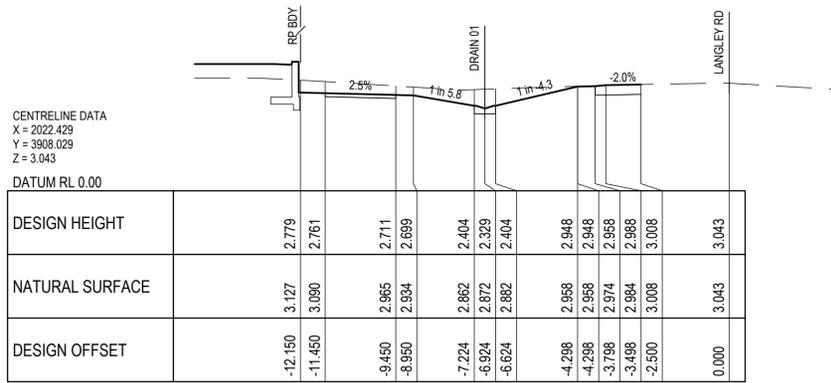
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Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		

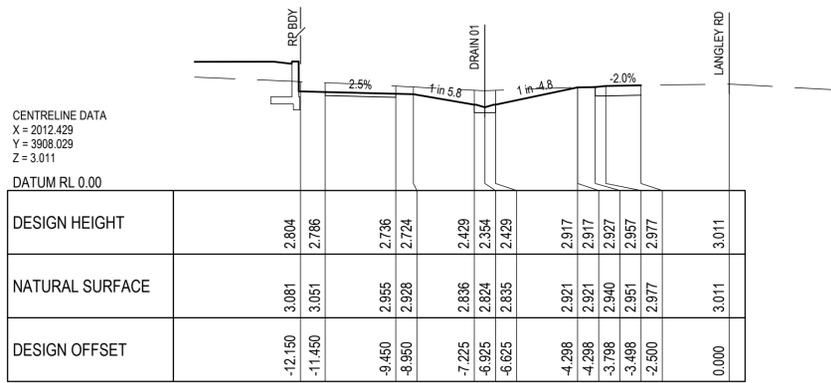
Client **KS5 PTY LTD**
 Project **LANGLEY ROAD SUBDIVISION**
 Title **LONGITUDINAL SECTIONS ROAD 01 AND DRAIN 01**

Original Size **A1** Drawing No: **42-12520641-C008**

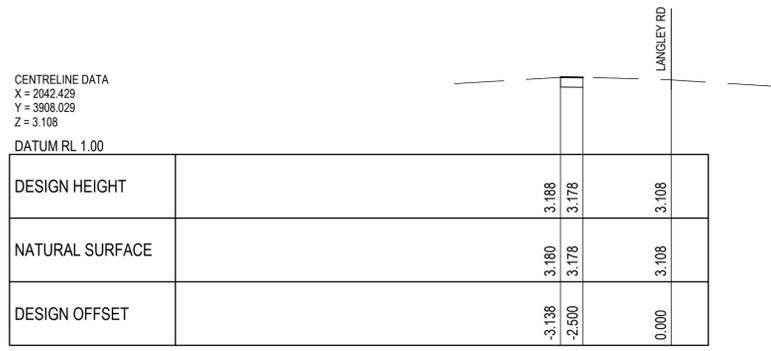
Rev: 1



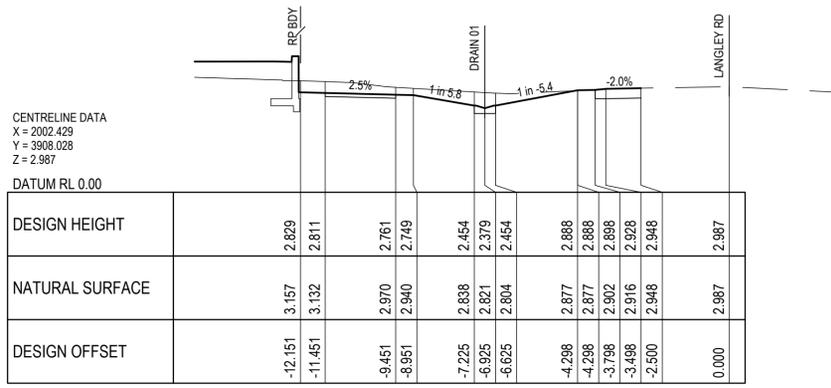
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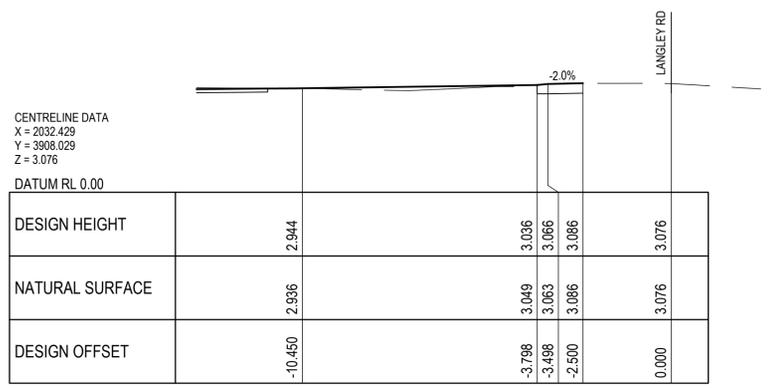
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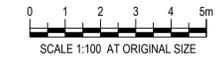


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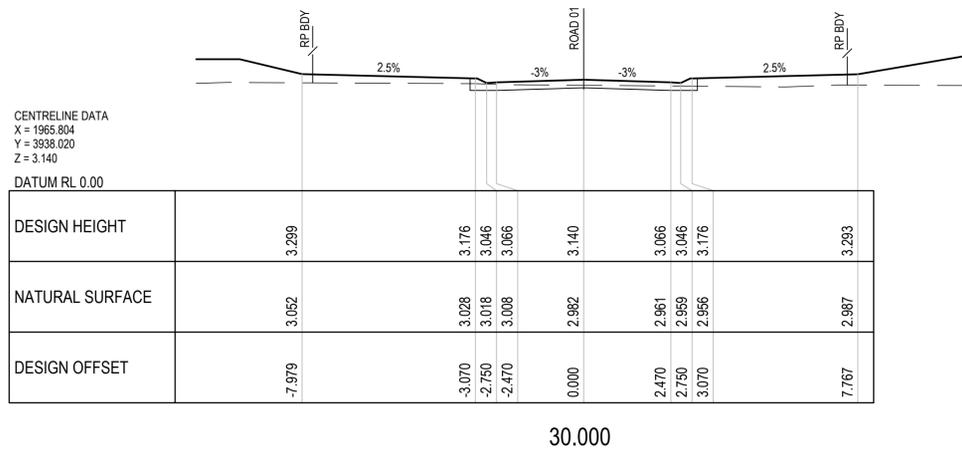
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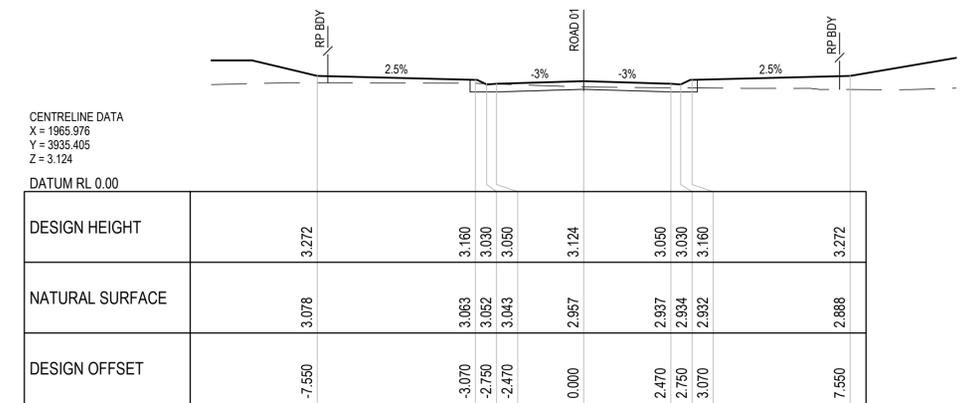


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Designer	G. BROWNING
Drafting Check	G. APPLIN
Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN
Date	03.03.20
Scale	1:100

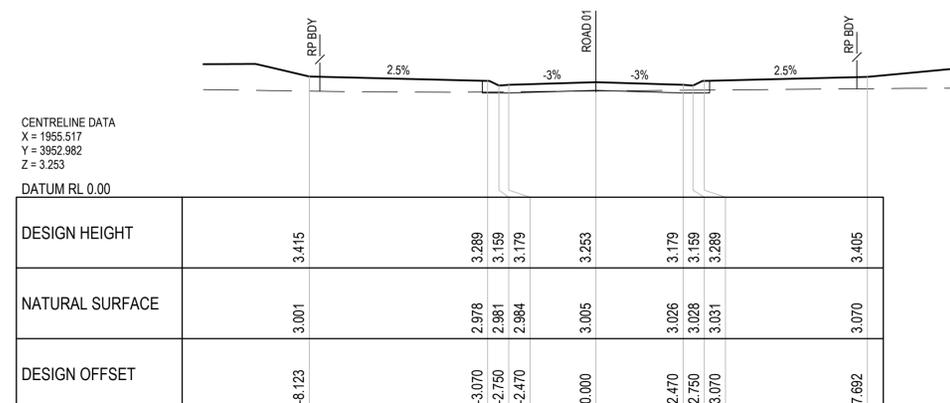
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Project	LANGLEY ROAD SUBDIVISION
Title	LANGLEY ROAD CROSS SECTIONS
	SHEET 2 OF 2
Original Size	A1
Drawing No:	42-12520641-C010
Rev:	1



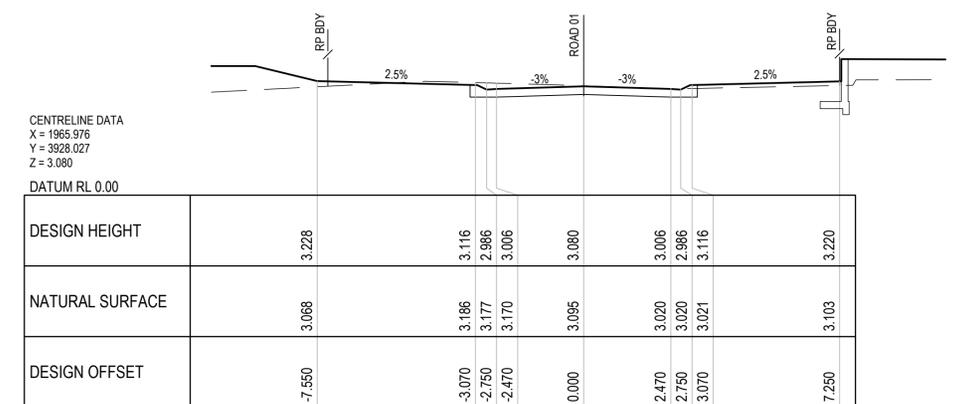
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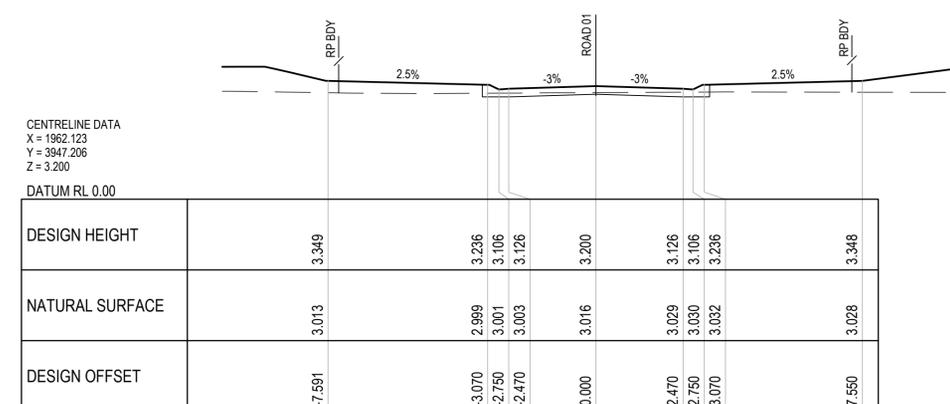
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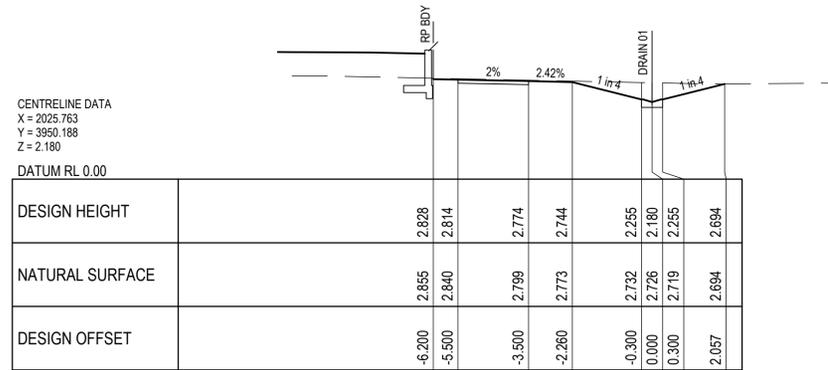
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1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20

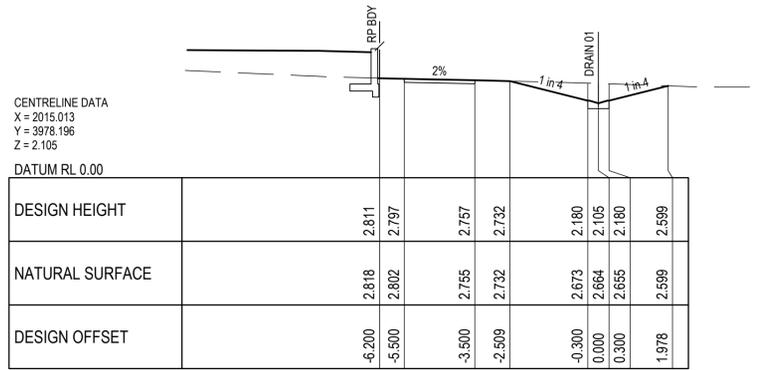


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	Approved (Project Director)	P. FLANAGAN		
	Date	03.03.20		
Scale	1:100			

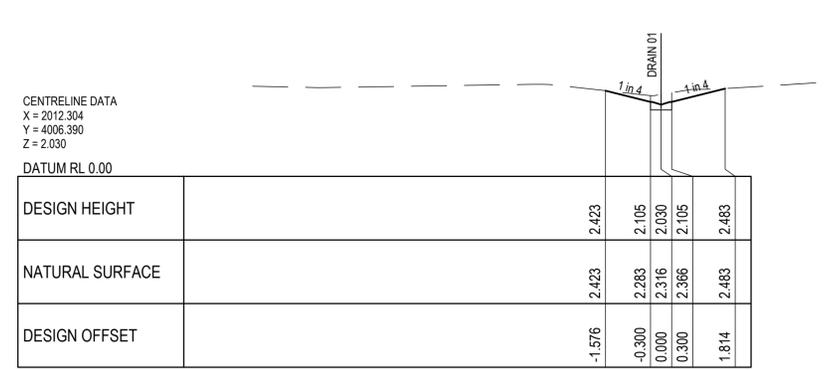
Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	ROAD 01 CROSS SECTIONS		
Original Size	A1	Drawing No:	42-12520641-C011
		Rev:	1



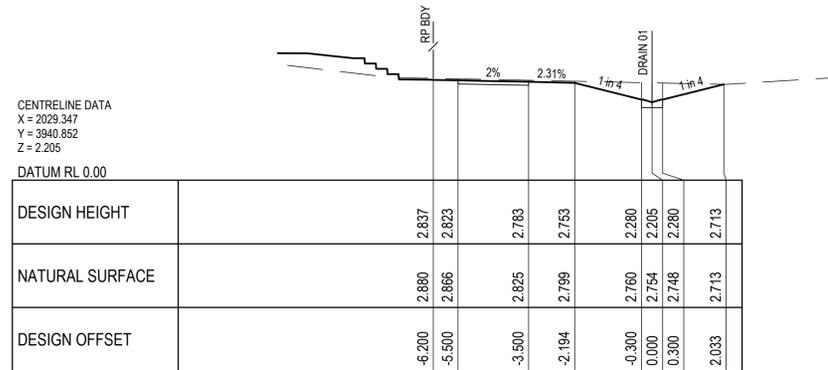
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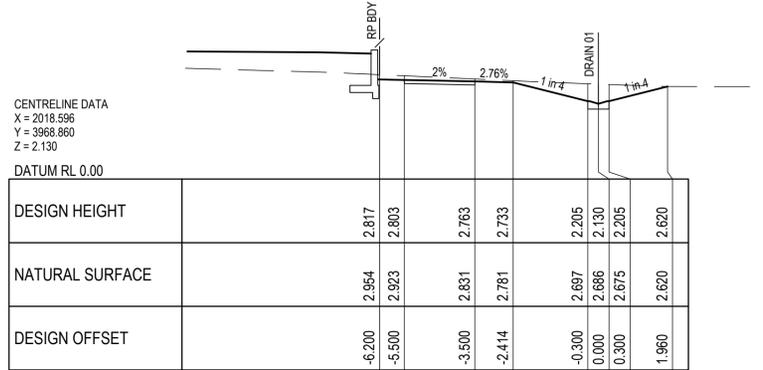
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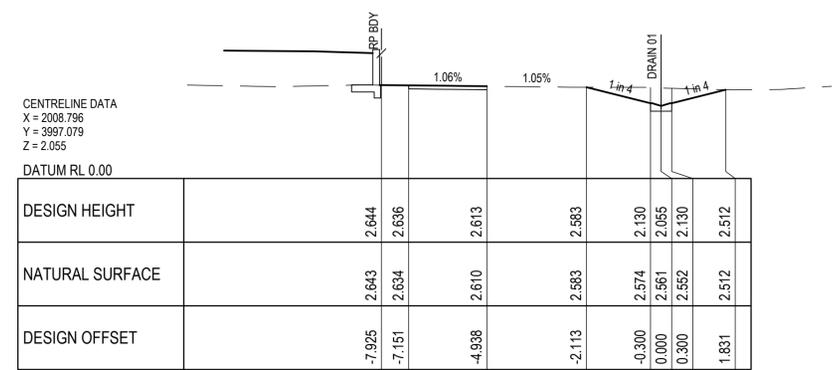
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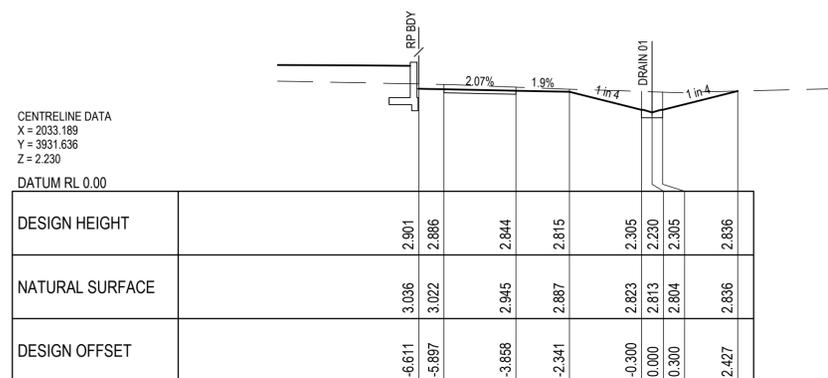
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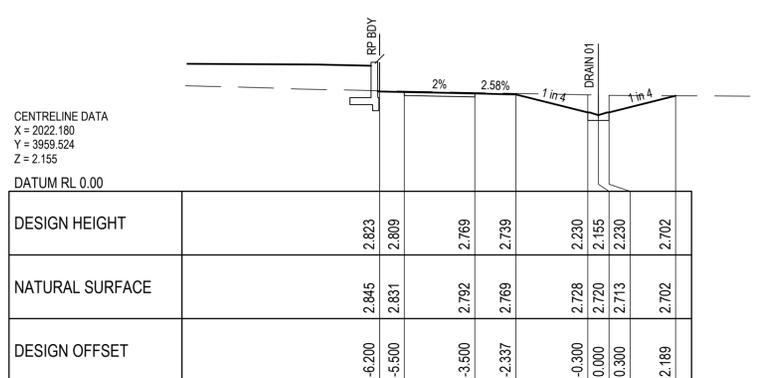
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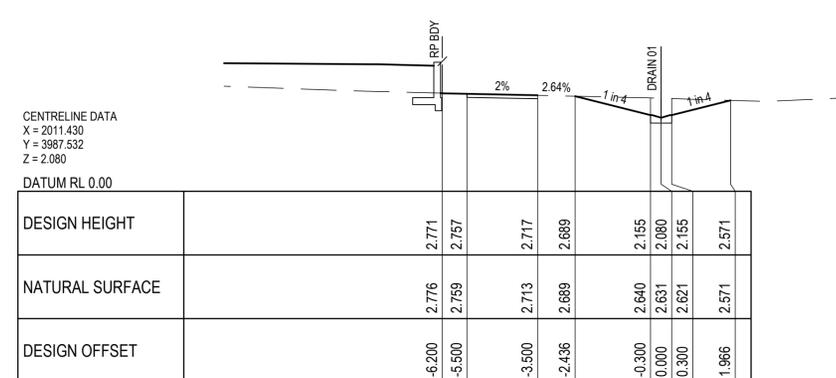
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170.000



200.000

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0		FOR APPROVAL	GB		PF	03.03.20



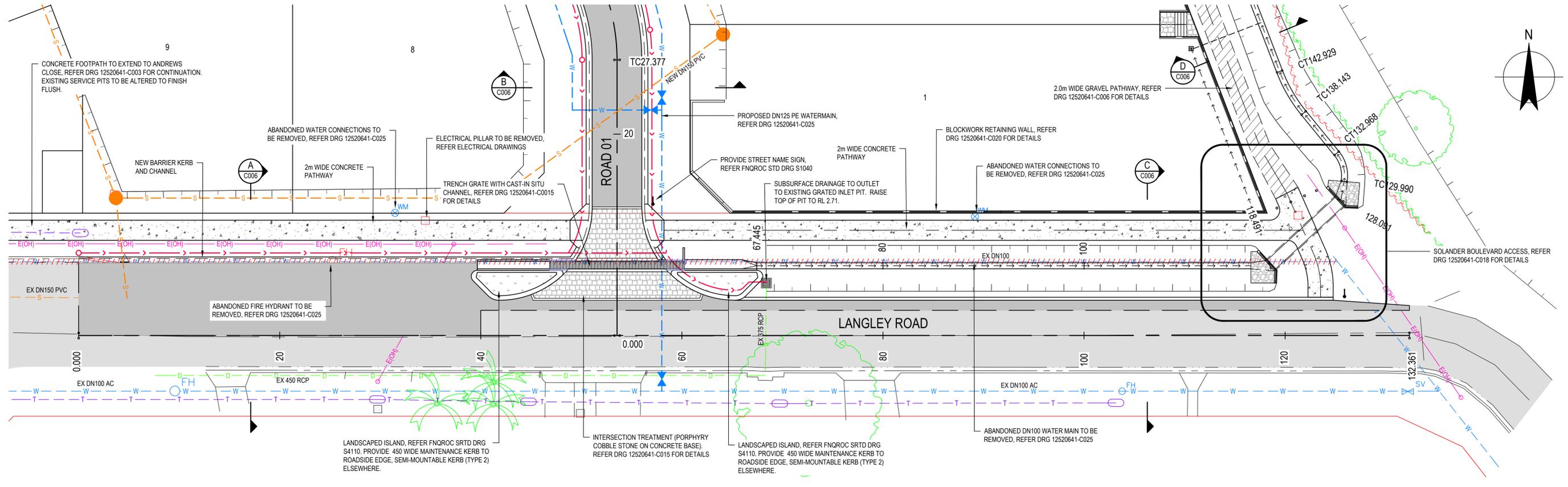
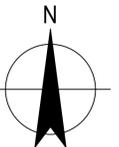
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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	1:100		

Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	DRAIN 01 CROSS SECTIONS		
Original Size	A1	Drawing No:	42-12520641-C012
		Rev:	1



PLAN
SCALE 1:200

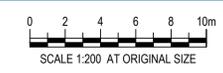
LEGEND

- | | | | |
|--|---|--|-----------------------------------|
| | EXISTING PAVEMENT | | EXISTING OH ELECTRICITY |
| | NEW PAVEMENT | | EXISTING WATER MAIN |
| | NEW CONCRETE PATHWAY | | EXISTING WATER MAIN TO BE REMOVED |
| | NEW GRAVEL PATHWAY | | PROPOSED FENCE |
| | INTERSECTION TREATMENT (PORPHYRY COBBLE STONE ON CONCRETE BASE) | | SUBSURFACE DRAINAGE |
| | LANDSCAPED ISLAND | | BATTER TOP |
| | GRouted ROCK APRON | | EXISTING VEGETATION LINE |
| | | | BOLLARD |
| | | | REMOVABLE BOLLARD |
| | | | SIGN |

NOTES

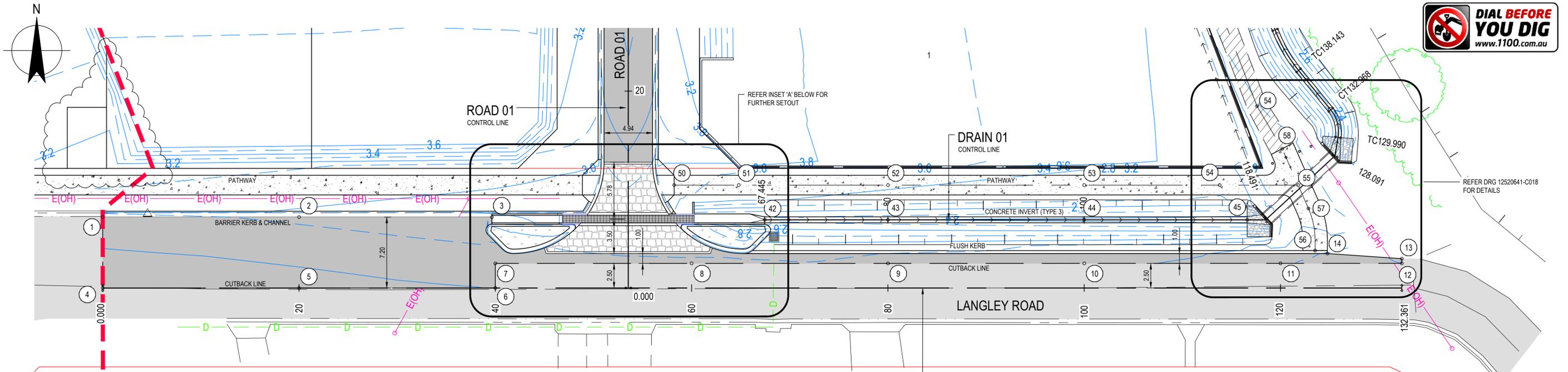
- REFER TO DRG 12520641-C002 FOR STANDARD NOTES.
- FOR DEMOLITION WORKS, REFER DRAWING 12520641-C004
- REFER DRG 12520641-C014 FOR SETOUT.

No	Revision	Note	Drawn	Job Manager	Project Director	Date
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	Drafting Check G. APPLIN	Design Check G. APPLIN	
	Approved (Project Director) P. FLANAGAN	Date 03.03.20	Original Size A1 Drawing No: 42-12520641-C013 Rev: 1
	Scale 1:200	<small>This Drawing must not be used for Construction unless signed as Approved</small>	



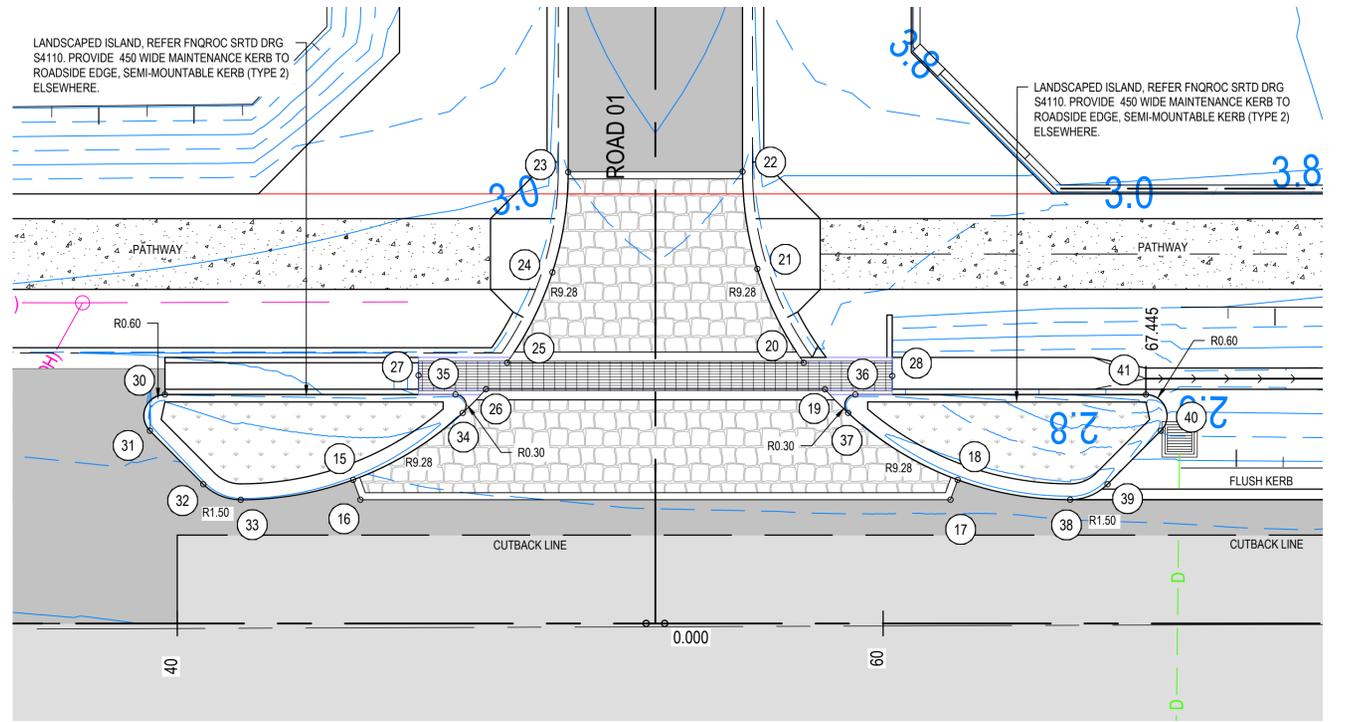
PLAN
SCALE 1:200

LEGEND

- EXISTING PAVEMENT
- NEW PAVEMENT
- INTERSECTION TREATMENT (PORPHYRY COBBLE STONE ON CONCRETE BASE)
- NEW CONCRETE PATHWAY
- NEW GRAVEL PATHWAY
- LANDSCAPED ISLAND
- SETOUT POINT
- EXISTING O/H ELECTRICITY
- FINISHED SURFACE CONTOUR (0.05m INTERVAL)

NOTES

- REFER TO DRG 12520641-C002 FOR STANDARD NOTES.
- REFER TO DRG 12520641-C005 FOR CONTROL LINE SETOUT.



INSET 'A'
SCALE 1:100

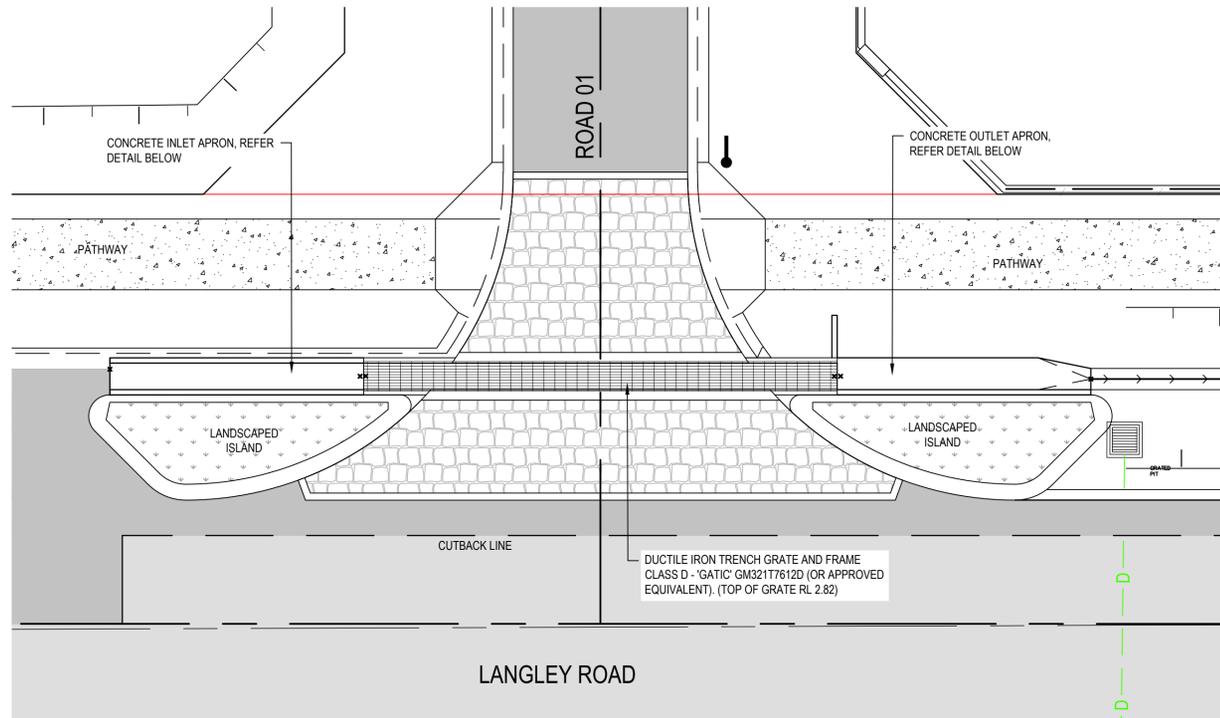
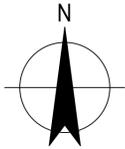
SETOUT POINTS				
POINT	EASTING	NORTHING		COMMENT
1	1912.429	3915.229	2.933	LIP OF KERB & CHANNEL
2	1932.428	3915.229	2.883	LIP OF KERB & CHANNEL
3	1952.076	3915.229	2.834	LIP OF KERB & CHANNEL
4	1912.429	3908.026	3.085	PAVEMENT CUTBACK
5	1932.429	3908.027	3.049	PAVEMENT CUTBACK
6	1952.429	3908.027	2.998	PAVEMENT CUTBACK
7	1952.429	3910.527	2.959	PAVEMENT CUTBACK
8	1972.429	3910.528	2.913	PAVEMENT CUTBACK
9	1992.429	3910.528	2.922	PAVEMENT CUTBACK
10	2012.429	3910.529	2.977	PAVEMENT CUTBACK
11	2032.429	3910.529	3.086	PAVEMENT CUTBACK
12	2044.790	3910.529	3.199	PAVEMENT CUTBACK
13	2044.790	3911.004	3.213	EDGE OF PAVEMENT
14	2037.204	3911.529	3.108	EDGE OF PAVEMENT
15	1957.411	3912.091	2.907	EDGE OF CONCRETE
16	1957.617	3911.527	2.919	EDGE OF CONCRETE
17	1974.335	3911.527	2.893	EDGE OF CONCRETE
18	1974.540	3912.089	2.882	EDGE OF CONCRETE
19	1970.782	3914.652	2.820	EDGE OF CONCRETE
20	1970.181	3915.404	2.820	LIP OF KERB
21	1968.864	3918.057	2.848	LIP OF KERB
22	1968.445	3920.808	2.900	LIP OF KERB
23	1963.506	3920.795	2.900	LIP OF KERB
24	1963.059	3917.962	2.846	LIP OF KERB
25	1961.773	3915.404	2.820	LIP OF KERB
26	1961.175	3914.654	2.820	EDGE OF CONCRETE
27	1959.264	3915.046	2.520	TRENCH GRATE INVERT

SETOUT POINTS				
POINT	EASTING	NORTHING		COMMENT
28	1972.686	3915.029	2.453	TRENCH GRATE INVERT
30	1952.076	3914.503	2.900	FACE OF KERB
31	1951.652	3913.480	2.879	FACE OF KERB
32	1953.165	3911.966	2.914	FACE OF KERB
33	1954.226	3911.527	2.933	FACE OF KERB
34	1960.515	3913.983	2.836	FACE OF KERB
35	1960.312	3914.504	2.820	FACE OF KERB
36	1971.640	3914.504	2.820	FACE OF KERB
37	1971.437	3913.983	2.831	FACE OF KERB
38	1977.726	3911.528	2.889	FACE OF KERB
39	1978.786	3911.967	2.890	FACE OF KERB
40	1980.299	3913.479	2.695	FACE OF KERB
41	1979.874	3914.503	2.440	FACE OF KERB
42	1979.874	3914.953	2.435	CONCRETE INVERT
43	1992.428	3914.953	2.404	CONCRETE INVERT
44	2012.428	3914.953	2.354	CONCRETE INVERT
45	2029.028	3914.953	2.312	CONCRETE INVERT
50	1970.647	3918.479	2.946	PATH CENTRELINE
51	1977.226	3918.479	2.849	PATH CENTRELINE
52	1992.429	3918.479	2.811	PATH CENTRELINE
53	2012.429	3918.479	2.761	PATH CENTRELINE
54	2026.230	3918.478	2.727	PATH CENTRELINE
55	2034.230	3918.479	2.933	PATH CENTRELINE
56	2035.954	3911.829	3.065	PATH CENTRELINE
57	2035.274	3916.109	2.953	PATH CENTRELINE
58	2032.602	3922.171	2.910	PATH CENTRELINE
59	2030.034	3926.504	2.881	PATH CENTRELINE

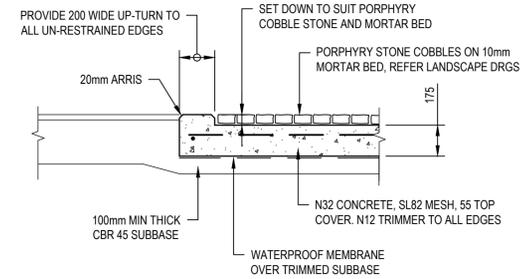
No	Revision	Note	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20



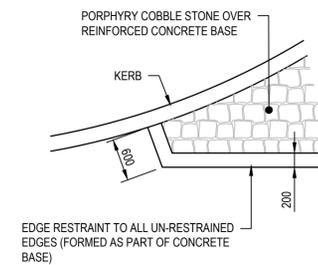
DO NOT SCALE <small>Conditions of Use. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.</small>	Drawn G. BROWNING	Designer G. BROWNING	Client KS5 PTY LTD Project LANGLEY ROAD SUBDIVISION Title LANGLEY ROAD SETOUT PLAN
	Drafting Check G. APPLIN	Design Check G. APPLIN	
	Approved (Project Director) P. FLANAGAN	Date 03.03.20	
	Scale AS SHOWN	This Drawing must not be used for construction unless signed as Approved	
Original Size A1 Drawing No: 42-12520641-C014 Rev: 1			



PLAN
SCALE 1:100



INTERSECTION TREATMENT
SCALE 1:20



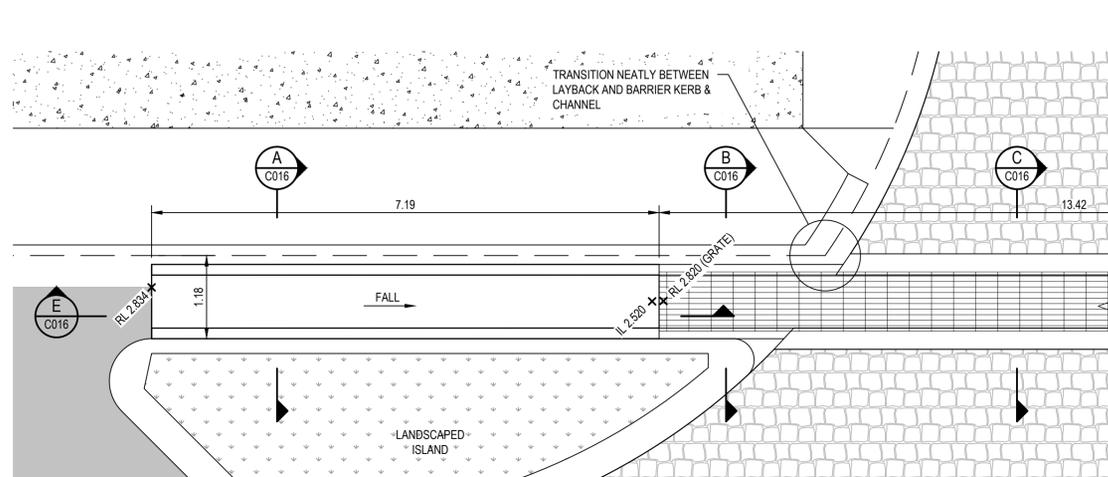
INTERSECTION THRESHOLD DETAIL
NOT TO SCALE

LEGEND

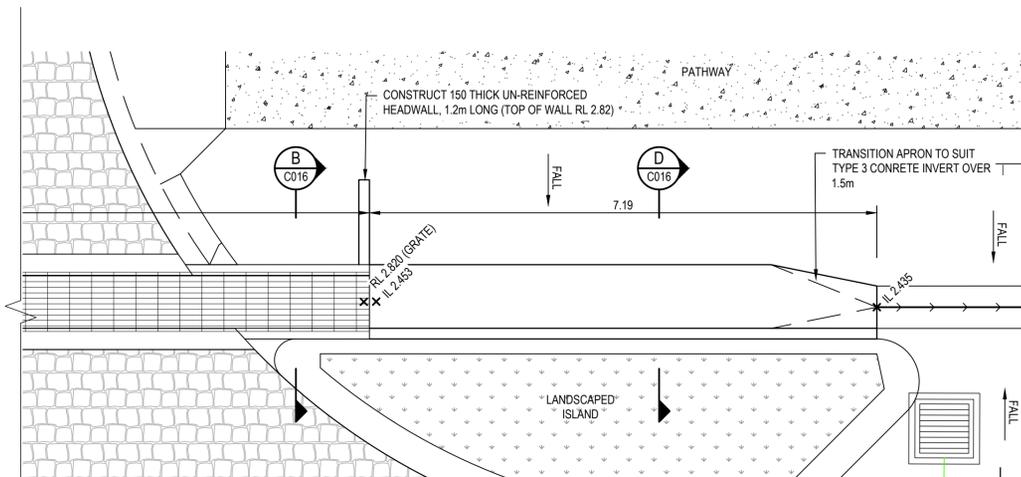
- EXISTING PAVEMENT
- NEW PAVEMENT
- CONCRETE PATHWAY
- LANDSCAPED ISLAND
- INTERSECTION TREATMENT (PORPHYRY COBBLE STONE ON CONCRETE BASE)

NOTES

1. REFER TO DRG 12520641-C002 FOR STANDARD NOTES.
2. REFER TO DRG 12520641-C005 FOR SETOUT.



CONCRETE INLET APRON
SCALE 1:50



CONCRETE OUTLET APRON
SCALE 1:50



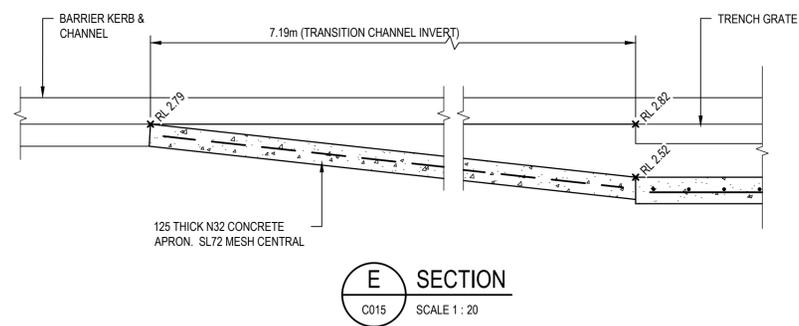
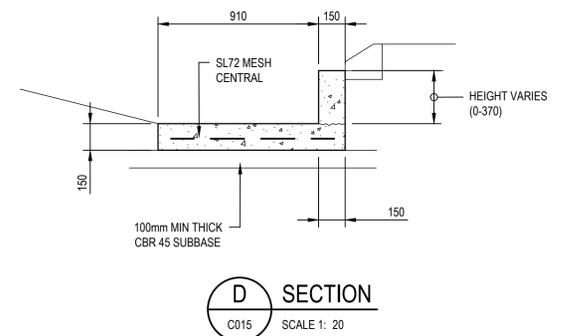
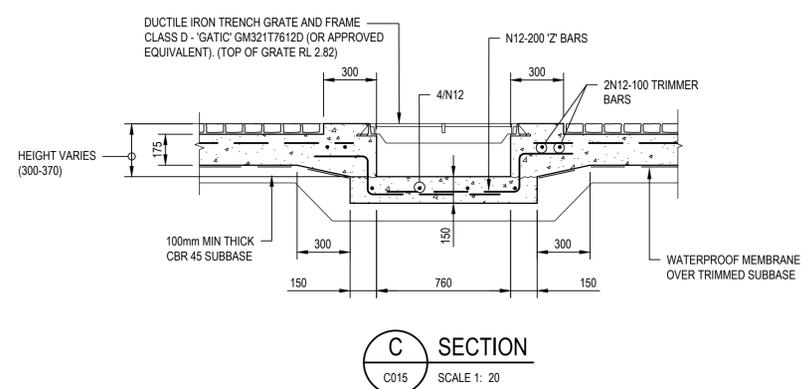
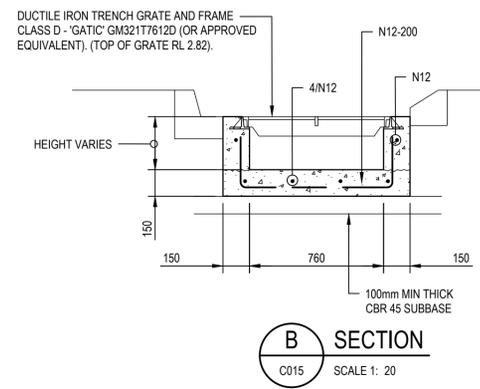
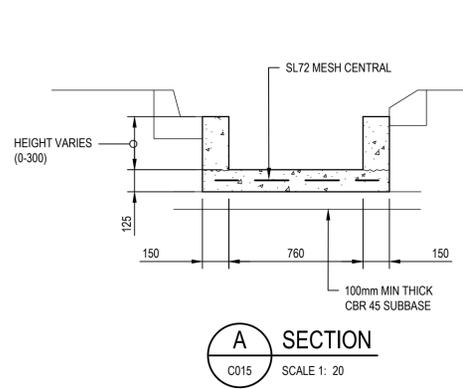
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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	AS SHOWN		

Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	LANGLEY ROAD / ROAD 01 INTERSECTION PLAN		
Original Size	Drawing No:	42-12520641-C015	Rev: 1



NOTES

- REFER TO DRG 125XXXXX-C??? FOR STANDARD NOTES.
- ALL CONCRETE TO BE N32 MIN (UNLESS NOTED OTHERWISE) IN ACCORDANCE WITH AS1379 AND AS3600

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20



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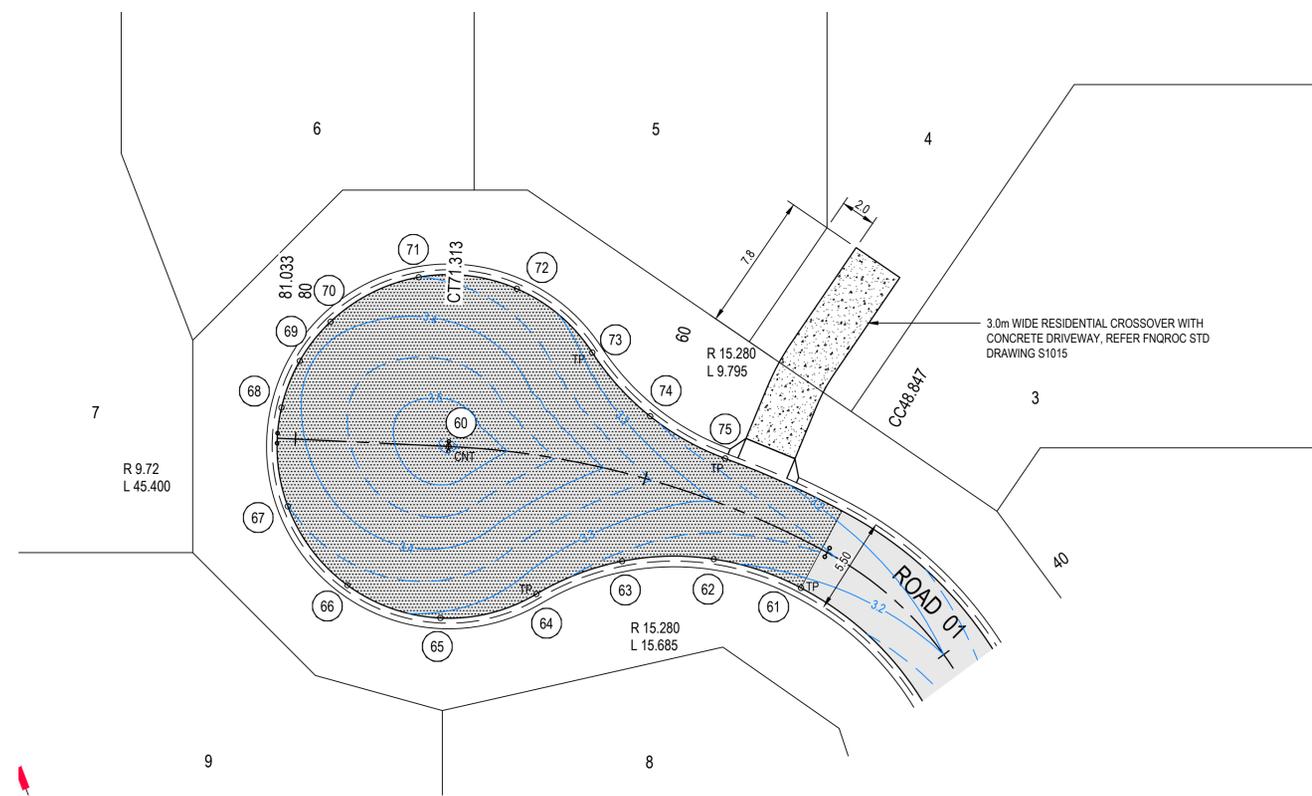
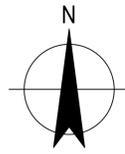
Drawn	G. BROWNING	Designer	G. BROWNING
Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	AS SHOWN		

This Drawing must not be used for Construction unless signed as Approved

Client **KS5 PTY LTD**
Project **LANGLEY ROAD SUBDIVISION**
Title **TRENCH GRATE DETAILS**

Original Size **A1** Drawing No: **42-12520641-C016**

Rev: 1



PLAN
SCALE 1:200

LEGEND

- R 15.280
L 9.795 KERB RADIUS
KERB ARC LENGTH
- TP (11) SETOUT POINT
- 8.6 FINISHED SURFACE CONTOUR
(0.05m INTERVAL)
- [Hatched Box] LIMITS OF 50mm ASPHALT

SETOUT POINTS

POINT	EASTING	NORTHING	
60	1934.062	3958.980	3.560
61	1954.033	3950.975	3.181
62	1949.092	3952.607	3.208
63	1943.890	3952.486	3.235
64	1939.031	3950.626	3.261
65	1933.603	3949.271	3.290
66	1928.327	3951.133	3.320
67	1924.951	3955.594	3.349
68	1924.594	3961.178	3.378
69	1925.627	3963.810	3.388
70	1927.374	3966.033	3.384
71	1932.370	3968.552	3.351
72	1937.926	3967.899	3.317
73	1942.203	3964.292	3.283
74	1945.485	3960.686	3.254
75	1949.736	3958.297	3.227

NOTES

1. FOR STANDARD NOTES, REFER DRG 12520641-C002.
2. SETOUT SHOWN IS TO LIP OF KERB AND CHANNEL.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
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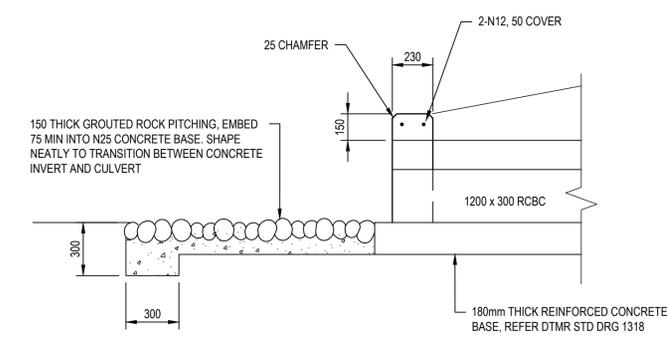
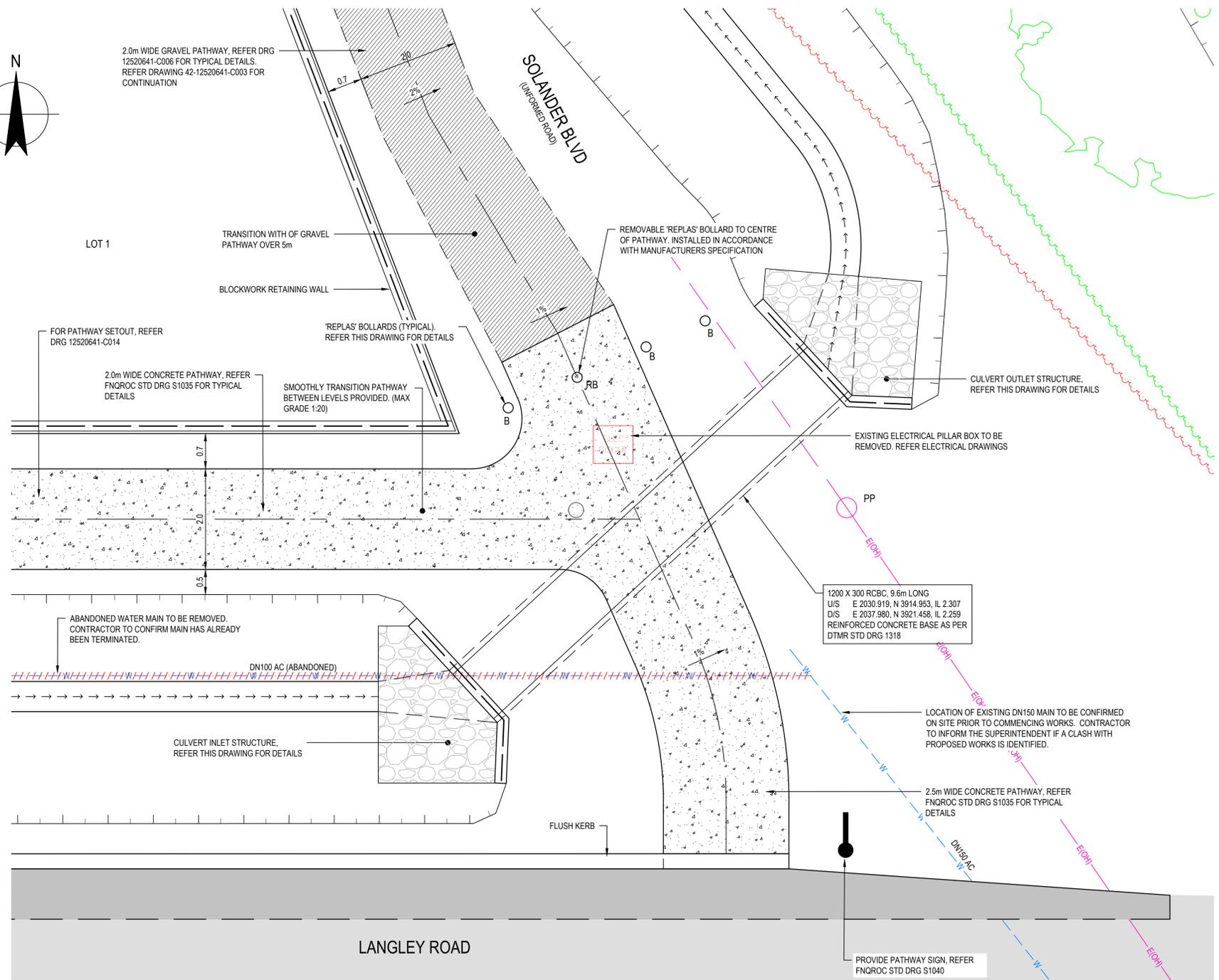
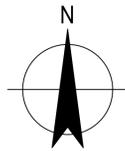
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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	1:200		

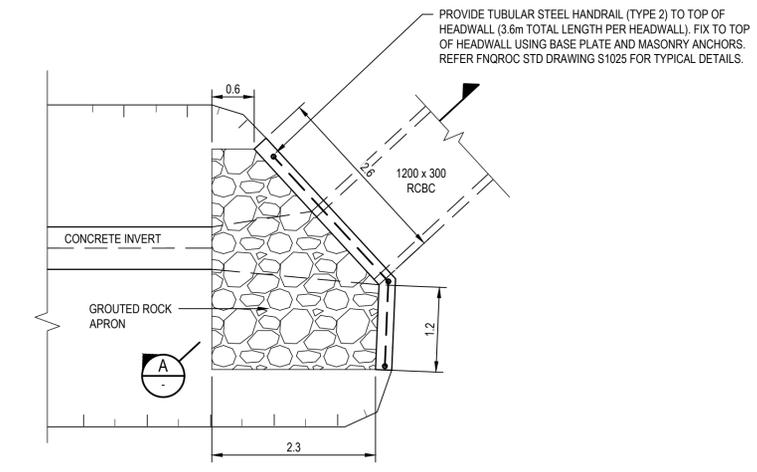
Client	KS5 PTY LTD
Project	LANGLEY ROAD SUBDIVISION
Title	ROAD 01 CUL-DE-SAC SETOUT PLAN
Original Size	A1
Drawing No:	42-12520641-C017

Rev: 1

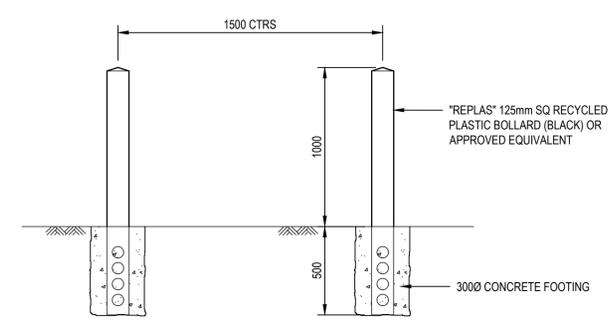


CONCRETE GRADE TO BE N25 IN ACCORDANCE WITH AS1379 AND AS3600

A SECTION
SCALE 1:20



CULVERT INLET/OUTLET
SCALE 1:50



REMOVABLE BOLLARDS TO BE PROVIDED WHERE SPECIFIED ON PLAN

BOLLARDS
SCALE 1:50

SOLANDER BOULEVARD ACCESS
SCALE 1:50

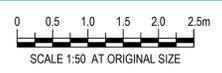
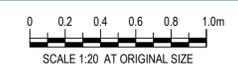
LEGEND

	EXISTING PAVEMENT		EXISTING WATER MAIN
	NEW PAVEMENT		EXISTING WATER MAIN TO BE REMOVED
	NEW CONCRETE PATHWAY		PROPOSED FENCE
	NEW GRAVEL PATHWAY		BATTER TOP
	GROUTED ROCK APRON		EXISTING VEGETATION LINE
	EXISTING O/H ELECTRICITY		BOLLARD
			REMOVABLE BOLLARD
			SIGN

NOTES

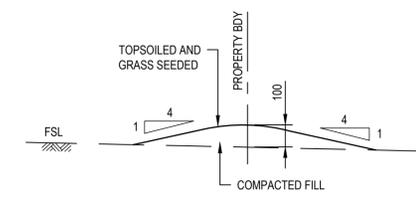
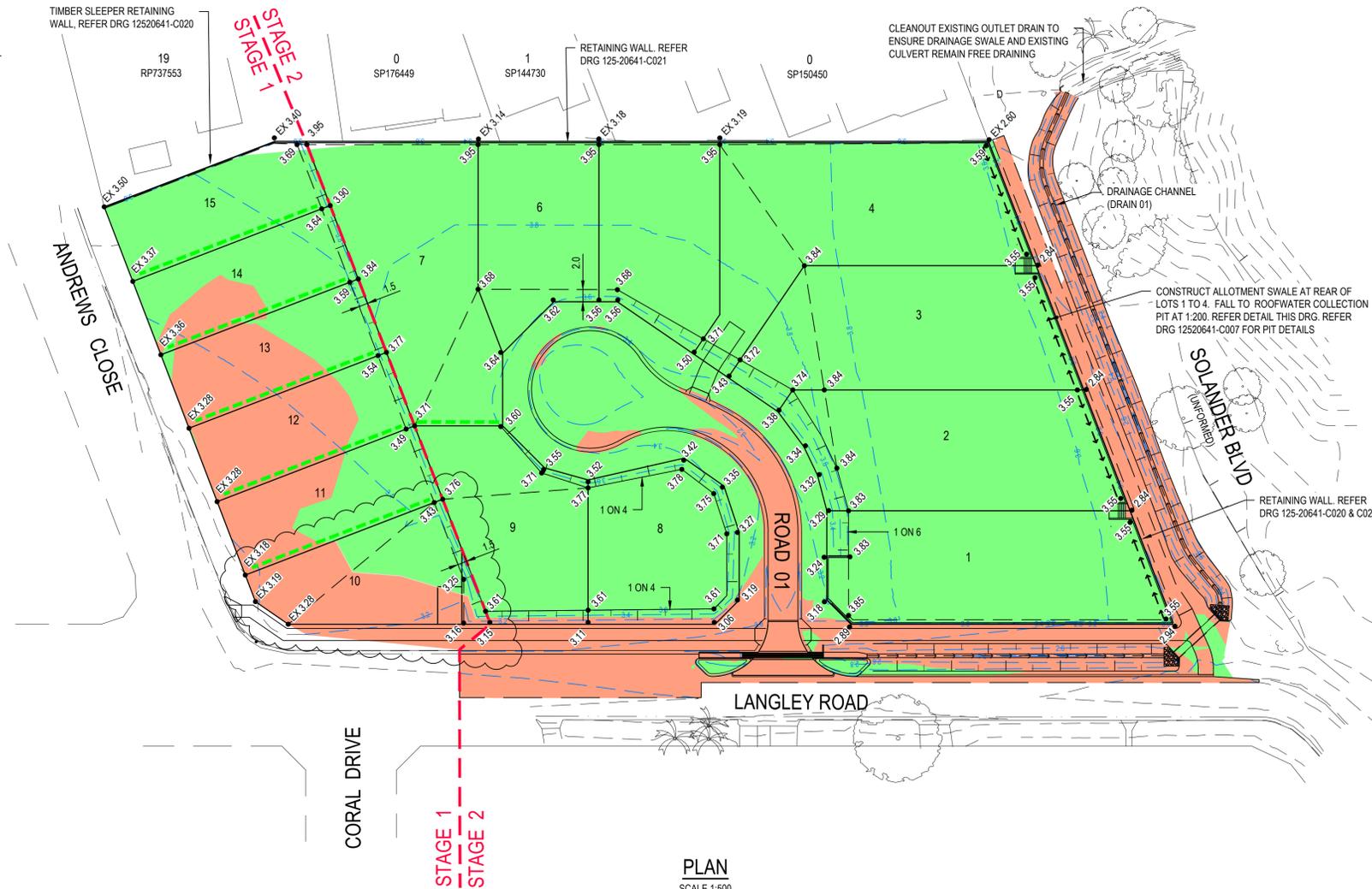
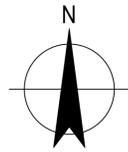
- FOR STANDARD NOTES, REFER DRG 12520641-C002.
- FOR PATH SETOUT, REFER DRG 12520641-C014.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20

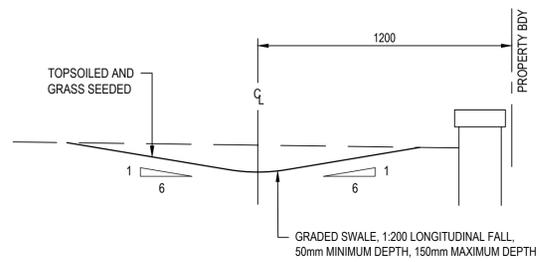


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	Drafting Check	G. APPLIN	Design Check	G. APPLIN	Project	
	Approved (Project Director)	P. FLANAGAN		Title		
	Date	03.03.20		Original Size		
Scale	AS SHOWN		This Drawing must not be used for Construction unless signed as Approved		A1	Drawing No: 42-12520641-C018
						Rev: 1



PERIMETER BUND
NOT TO SCALE



ALLOTMENT SWALE
NOT TO SCALE

PLAN
SCALE 1:500

EARTHWORKS VOLUMES				
CUT 673m ³ FILL 5163m ³				
1.	VOLUMES SHOWN ARE MEASURED IN-PLACE VOLUMES AND INCLUDE NO ALLOWANCE FOR BULKING/COMPACTION.			
2.	STRIPPING OF TOPSOIL TO A DEPTH OF 100mm AND RESPREADING TOPSOIL ON COMPLETING OF EARTHWORKS TO A DEPTH OF 100mm HAS BEEN ACCOUNTED FOR.			
3.	EARTHWORKS VOLUMES INCLUDE BOXING OUT FOR ROAD PAVEMENTS, KERBS AND FOOTPATHS.			

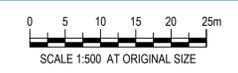
LEGEND

- 8.0 EXISTING SURFACE CONTOUR (0.2m INTERVAL)
- 8.6 FINISHED SURFACE CONTOUR (0.2m INTERVAL)
- 10.85 FINISHED SURFACE LEVEL
- EX 10.85 EXISTING SURFACE LEVEL
- PERIMETER BUND
- ALLOTMENT SWALE
- EARTHWORKS IN FILL
- EARTHWORKS IN CUT

NOTES

1. REFER TO DRG 12520641-C002 FOR STANDARD NOTES.
2. ALL BATTERS WITHIN ALLOTMENTS SHALL AS FOLLOWS (UNLESS NOTED OTHERWISE)
 - ROAD FRONTAGE 1 ON 4
 - SIDE BOUNDARY 1 ON 2
 - REAR BOUNDARY 1 ON 2

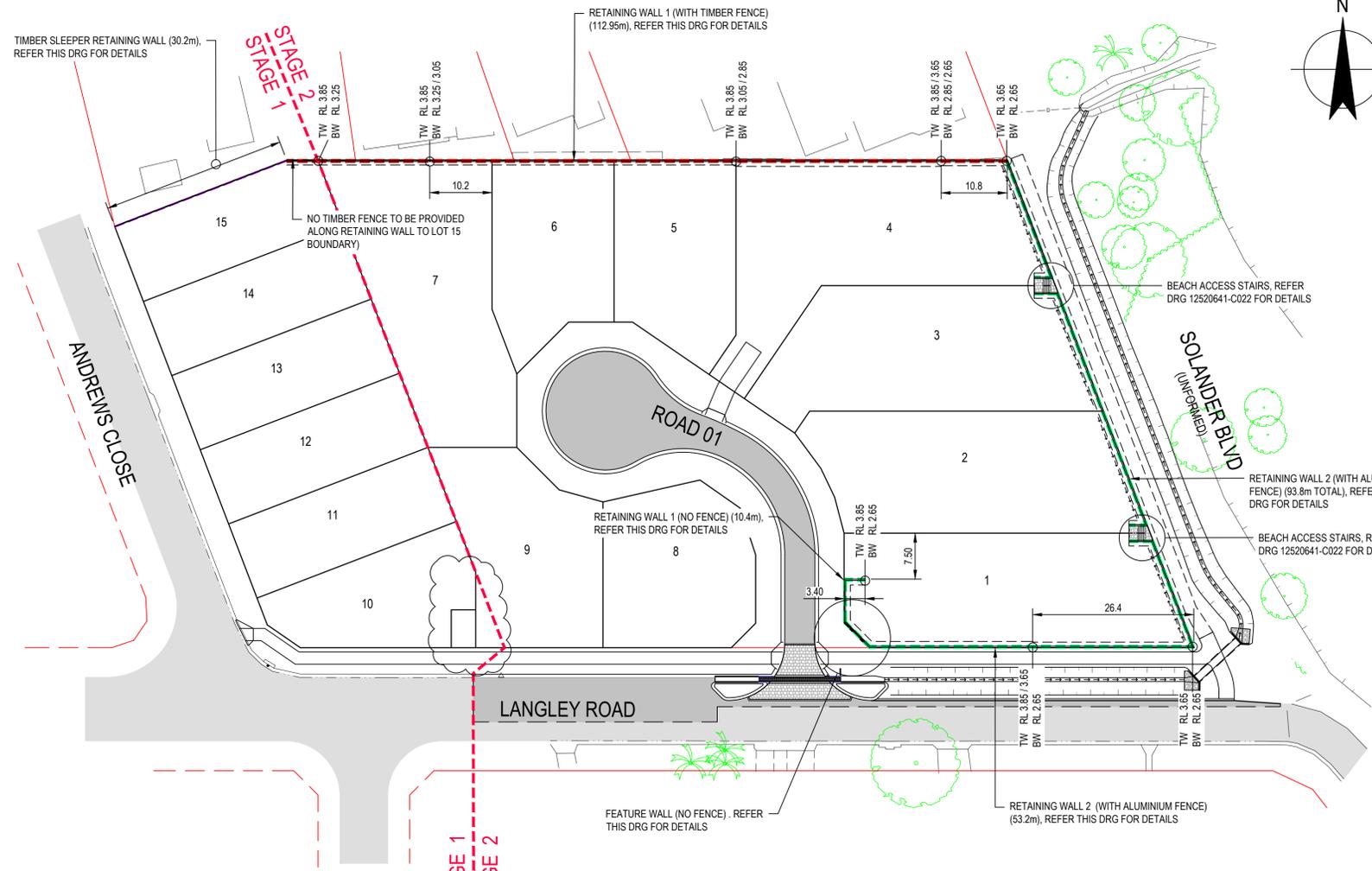
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20



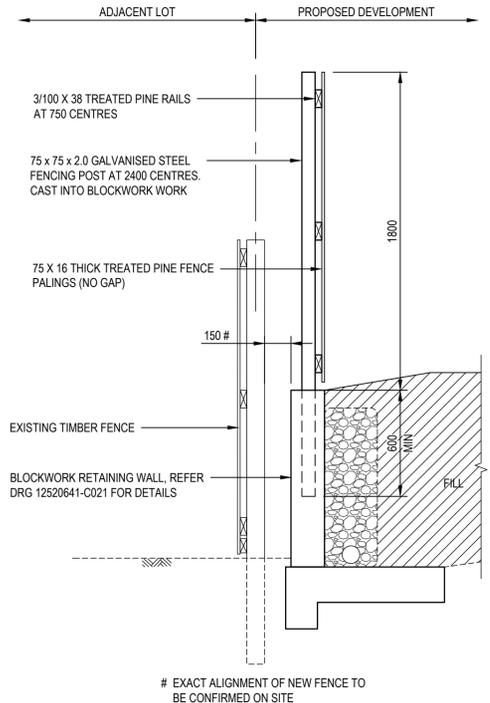
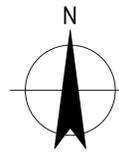
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	Drafting Check G. APPLIN	Design Check G. APPLIN	
	Approved (Project Director) P. FLANAGAN	Date 03.03.20	Original Size A1 Drawing No: 42-12520641-C019 Rev: 1
	Scale AS SHOWN	<small>This Drawing must not be used for Construction unless signed as Approved</small>	

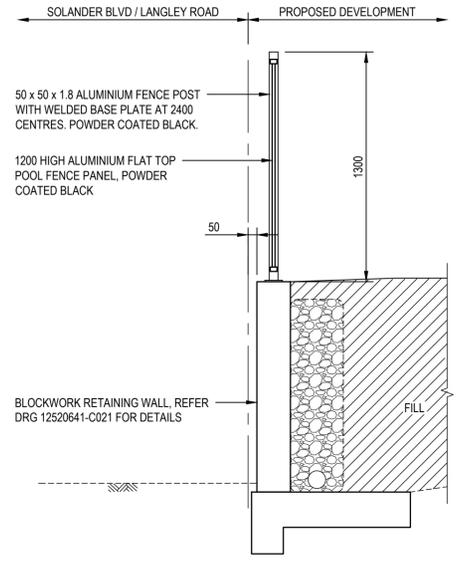
PRIOR TO COMMENCING FENCING/RETAINING WALL WORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL ACCESS ON SITE THE CONDITION OF EXISTING FENCING TO ADJOINING PROPERTIES AND CONFIRM THE EXTENTS OF THE PROPOSED TREATMENT



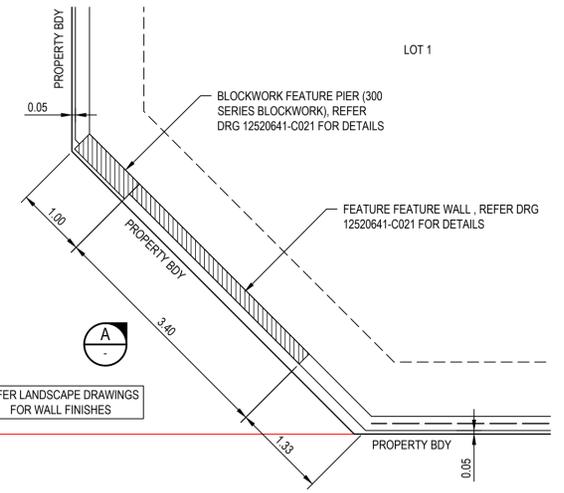
PLAN
SCALE 1:500



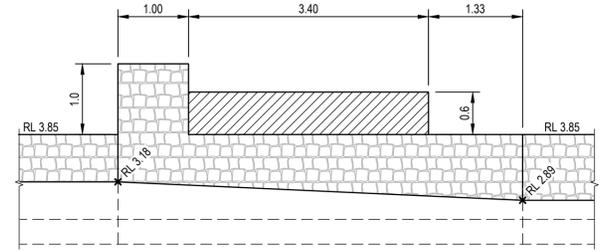
RETAINING WALL 1 (WITH TIMBER FENCE)
SCALE 1:20



RETAINING WALL 2 (WITH ALUMINIUM FENCE)
SCALE 1:20



FEATURE WALL
SCALE 1:50



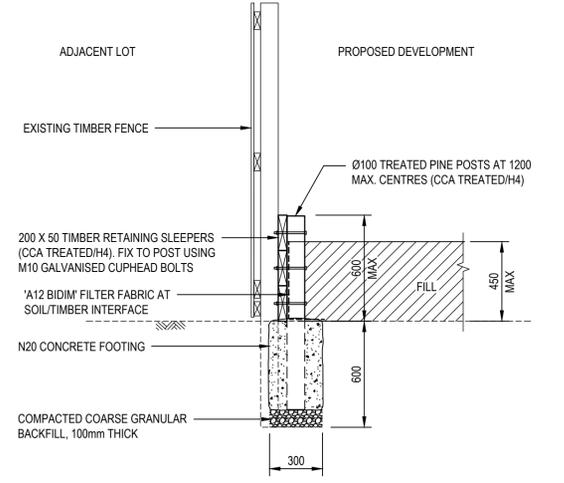
A VIEW
SCALE 1:50

LEGEND

- - - - - RETAINING WALL 1 WITH TIMBER FENCE (UNLESS NOTED OTHERWISE)
- - - - - RETAINING WALL 2 WITH ALUMINIUM FENCE (UNLESS NOTED OTHERWISE)
- TW TOP OF WALL LEVEL
- BW BOTTOM OF WALL LEVEL

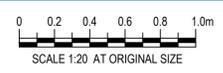
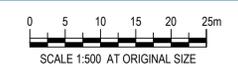
NOTES

1. FOR BLOCKWORK RETAINING WALL DETAILS, REFER DRG 12520641-C021.
2. FOR BEACH ACCESS STAIRS, REFER DRG 12520641-C022 FOR DETAILS.



TIMBER SLEEPER RETAINING WALL
SCALE 1:20

No	Revision	Note	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20

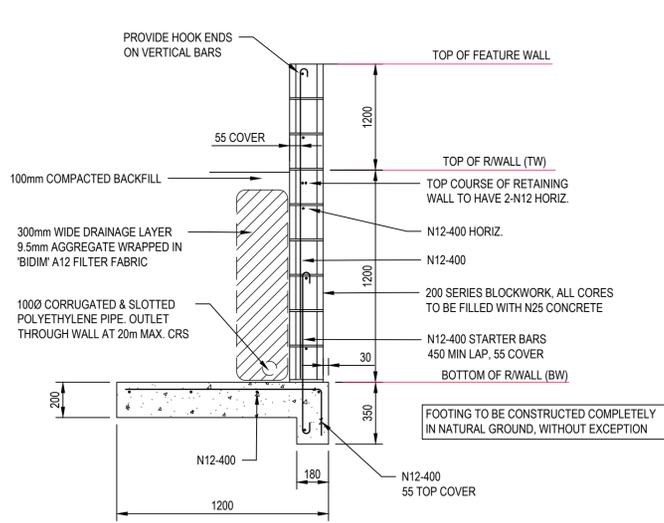


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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	AS SHOWN		

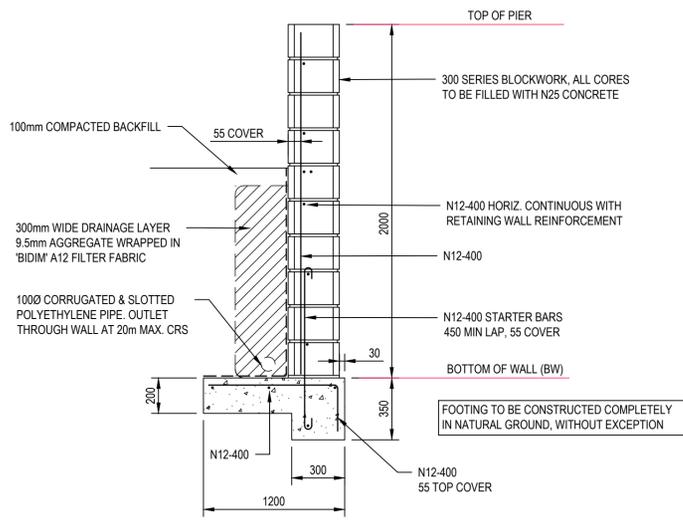
Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	RETAINING WALLS AND FENCING PLAN		
Original Size	A1	Drawing No:	42-12520641-C020
		Rev:	1



COMPACTION WITHIN 1200 OF THE WALL MUST BE VIA HANDHELD VIBRATING PLATE COMPACTER (WACKER PACKER)

**BLOCKWORK RETAINING WALL
FEATURE WALL**

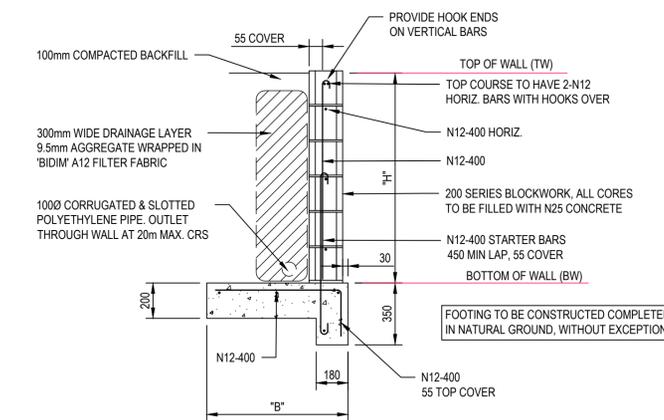
1:20



COMPACTION WITHIN 1200 OF THE WALL MUST BE VIA HANDHELD VIBRATING PLATE COMPACTER (WACKER PACKER)

**BLOCKWORK RETAINING WALL
FEATURE WALL PIER**

1:20



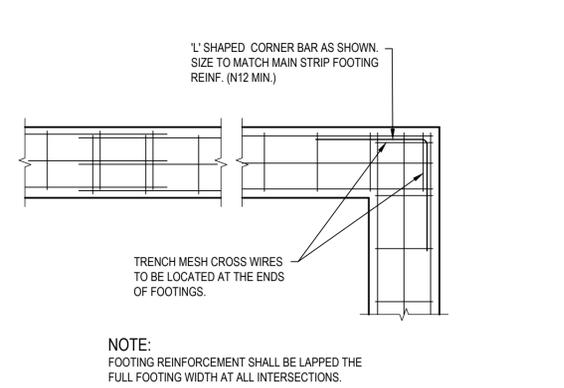
COMPACTION WITHIN 'H' OF THE WALL MUST BE VIA HANDHELD VIBRATING PLATE COMPACTER (WACKER PACKER)

**BLOCKWORK RETAINING WALL
(0.8m - 1.2m HIGH)**

1:20

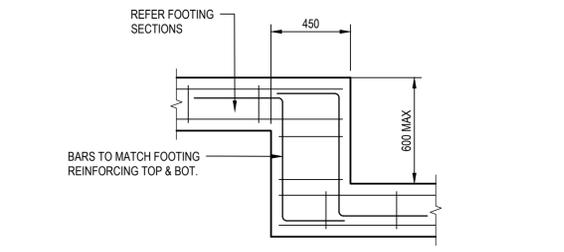
RETAINING WALL DIMENSIONS	
WALL HEIGHT 'H'	BASE WIDTH 'B'
800	800
1000	900
1200	1000

NOTE:
RETAINING WALL DETAILS SHOWN ASSUME A SOIL INTERNAL FRICTION ANGLE GREATER THAN OR EQUAL TO 25°. ASSUMES LEVEL FILL WITH 5kPa SURCHARGE



TYPICAL FOOTING BEAM INTERSECTION

1:20



STEP FOOTING DETAIL

1:20

GENERAL

- G1. READ THESE DRAWINGS IN CONJUNCTION WITH OTHER CONSULTANT'S DRAWINGS, SPECIFICATIONS, AND WRITTEN INSTRUCTIONS.
- G2. REFER ALL DISCREPANCIES TO THE ENGINEER FOR A DECISION BEFORE PROCEEDING WITH THE WORK. GIVE 48 HOURS NOTICE FOR INSPECTIONS. CONCRETE SHALL NOT BE ORDERED UNTIL FINAL CONFIRMATION HAS BEEN GIVEN.
- G3. VERIFY ALL DIMENSIONS BEFORE FABRICATION OR CONSTRUCTION IS COMMENCED. DO NOT SCALE THESE DRAWINGS.
- G4. ENSURE ALL MATERIALS, WORKMANSHIP AND PROCEDURES ARE IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA, CURRENT AUSTRALIAN STANDARDS AND RELEVANT COMMONWEALTH, STATE AND LOCAL AUTHORITY REGULATIONS. MANUFACTURERS OF STRUCTURAL STEEL SHALL HOLD A VALID CERTIFICATE OF APPROVAL ISSUED BY AN ACCEPTABLE THIRD-PARTY COMPLIANCE ASSESSMENT BODY (SUCH AS THE AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING STEELS (ACRS)). IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE EVIDENCE OF COMPLIANCE IS INCLUDED AS PART OF THEIR QUALITY ASSURANCE PROCESS.
- G5. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR THE USE OF ALL PRODUCTS AND MATERIALS. NO HOLES, CHASES OR EMBEDMENT OF PIPES, OTHER THAN THOSE ON THE STRUCTURAL DRAWINGS, SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE APPROVAL OF THE ENGINEER.
- G6. MAINTAIN THE STRUCTURE IN A STABLE CONDITION AND DO NOT OVERSTRESS ANY PART DURING CONSTRUCTION.

SITE PREPARATION AND FOUNDATIONS

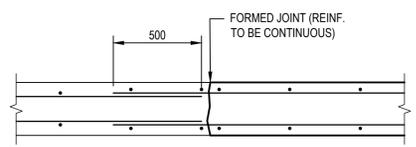
- SP1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THAT COMPLIANCE OF GROUND CONDITIONS TO RELEVANT AUSTRALIAN STANDARDS, INDUSTRY PRACTICE AND PROJECT DOCUMENTATION HAS BEEN ACHIEVED.
- SP2. FOOTINGS HAVE BEEN DESIGNED FOR A MINIMUM ALLOWABLE BEARING CAPACITY OF 100kPa. A GEOTECHNICAL ENGINEER MUST VERIFY ON SITE THIS BEARING CAPACITY IS ACHIEVABLE PRIOR TO PLACEMENT OF ANY REINFORCEMENT OR CONCRETE.
- SP3. STRIP THE CONSTRUCTION AREA OF ALL ORGANIC MATTER AND THE ASSOCIATED LAYER OF TOPSOIL TO A MINIMUM DEPTH OF 150mm.
- SP4. FOOTINGS MUST BE CONSTRUCTED COMPLETELY IN NATURAL GROUND WITHOUT EXCEPTION.
- SP5. COMPACT THE TOP 150mm OF SUBGRADE TO A RELATIVE COMPACTION OF NOT LESS THAN 98% OF THE MAXIMUM DRY DENSITY (STANDARD COMPACTION) TO AS1289.
- SP6. FILL SHALL BE AN APPROVED LOW PLASTICITY MATERIAL WITH NOT MORE THAN 20% BY WEIGHT OF PARTICLES GREATER THAN 37.5mm AND MAXIMUM PI OF 8% PLACED IN LAYERS OF 300mm MAXIMUM LOOSE THICKNESS. COMPACT COHESIVE FILL MATERIAL TO A RELATIVE COMPACTION OF NOT LESS THAN 98% OF THE MAXIMUM DRY DENSITY (STANDARD COMPACTION) TO AS1289. COMPACT COHESIONLESS FILL MATERIAL TO ACHIEVE A DENSITY INDEX OF NOT LESS THAN 70% TO AS1289.
- SP7. REFER CIVIL DRAWINGS FOR FILL AND EARTHWORKS COMPACTION & CERTIFICATION REQUIREMENTS.
- SP8. DRAIN THE WORKS AND ADJACENT AREA TO ELIMINATE WATER PONDING AT ALL TIMES.
- SP9. CONSTRUCT ON GROUND CONCRETE ON A 0.2mm THICK POLYETHYLENE FILM MOISTURE BARRIER.
- SP10. PROVIDE COMPACTED FILL OR GRADE N20 CONCRETE TO REPLACE UNSUITABLE FOUNDATION MATERIAL.

BLOCKWORK

- B1. ALL BLOCKWORK TO BE 200 SERIES UNLESS NOTED OTHERWISE.
- B2. USE GRADE 15 (f_{uc} = 15Mpa) BLOCKS AND CLASS M3 MORTAR. PROVIDE GROUT AS SPECIFIED IN THE CONCRETE NOTES.
- B3. PROVIDE CLEAN-OUT BLOCKS AT THE BASE OF ALL CORES TO BE GROUT FILLED. KEEP THE CORES CLEAN AS BLOCK LAYING PROCEEDS.
- B4. PROP RETAINING WALLS DURING BACKFILLING AND UNTIL SUPPORTING STRUCTURES ARE IN PLACE AND CURED.
- B5. WALL REINFORCING
 - GENERALLY N12 - 400
 - STARTERS MATCH TO VERTICAL REINF. U.N.O. LAP 450 MIN. WITH VERTICALS
 - AT CORNERS 1N16
 - EACH SIDE OF CONTROL JOINTS 1N16
- B6. GROUT FILL ALL REINFORCED CORES AND CORES WITH FIXINGS (GRID D).
- B7. PROVIDE VERTICAL REINF. BAR ADJACENT TO ALL CHEMICAL OR MECHANICAL ANCHOR FIXINGS.
- B8. CORE FILL LIFTS TO BE LIMITED TO 1.2m MAXIMUM HEIGHT. 30 MINUTES MINIMUM DELAY BETWEEN LIFTS.
- B9. FULLY BOND ALL WALL INTERSECTIONS OR TIE AT 400mm CENTRES VERTICALLY WITH HEAVY DUTY HOT DIPPED GALVANISED TIES.

VERTICAL REINFORCING	
- GENERALLY	N12 - 400
- STARTERS	MATCH TO VERTICAL REINF. U.N.O. LAP 450 MIN. WITH VERTICALS
- AT CORNERS	1N16
- EACH SIDE OF CONTROL JOINTS	1N16

HORIZONTAL REINFORCING	
- BOND BEAM REINFORCING	2 COURSE BONDBEAM 1N12 PER COURSE



TYPICAL CONSTRUCTION BREAK

1:20

CONCRETE

- C1. CONCRETE PROPERTIES

LOCATION	GRADE	SLUMP (mm)	MAX AGG (mm)
- FOOTINGS	N25	80	20
- BLOCKWORK GROUT	S20	200	10
- C2. COVER TO REINFORCEMENT

LOCATION	COVER	EXPOSURE CLASS
- FOOTINGS	50	A2

FOOTINGS HAVE BEEN DESIGNED FOR NON-AGGRESSIVE SOILS. CONTRACTOR TO CONTACT ENGINEER IF SALT RICH OR AGGRESSIVE SOILS ARE ENCOUNTERED.
- C3. PROVIDE CRACK CONTROL JOINTS IN SLABS ON GROUND AT 5000mm MAXIMUM CENTRES U.N.O.
- C4. REINFORCEMENT LAPS

N12 - 500mm	N16 - 750mm	N20 - 950mm	N24 - 1250mm
N28 - 1500mm	N32 - 1850mm	N36 - 2100mm	

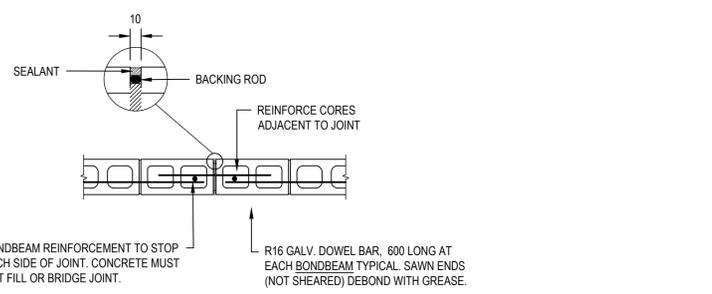
MESH - TWO CROSS WIRES PLUS 25 mm

MESH LAYER 'A' MESH LAYER 'B'

MESH LAYER 'A' MESH LAYER 'B'

MESH LAYER 'A' MESH LAYER 'B'

MESH LAYER 'A' MESH LAYER 'B'
- C5. PROVIDE 20 X 20 CHAMFER TO ALL EXPOSED CORNERS OF CONCRETE MEMBERS U.N.O.
- C6. CURE CONCRETE FOR NOT LESS THAN 7 DAYS. CURE CONCRETE USING AN APPROVED METHOD SUCH AS KEEPING THE CONCRETE COVERED & CONTINUOUSLY WET FOR THE SPECIFIED PERIOD. REFER TO THE 'CEMENT CONCRETE & AGGREGATES AUSTRALIA' WEB SITE:
 - > WWW.CONCRETE.NET.AU - CONCRETE STRUCTURES - ENGINEERING CONSTRUCTION - 'CURING OF CONCRETE'
 - > WWW.CONCRETE.NET.AU - CONCRETE STRUCTURES - ENGINEERING CONSTRUCTION - 'AVOIDING EARLY CRACKING'
 - > WWW.CONCRETE.NET.AU - CONCRETE STRUCTURES - ENGINEERING CONSTRUCTION - 'HOT-WEATHER CONCRETING'
- C7. DO NOT USE CONCRETE ADMIXTURES WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER. DO NOT USE CALCIUM CHLORIDE.
- C8. SIZE OF CONCRETE ELEMENTS DOES NOT INCLUDE THE THICKNESS OF APPLIED FINISHES.
- C9. OBTAIN EXACT SIZE AND LOCATION OF PENETRATIONS PRIOR TO SCHEDULING REINFORCEMENT. DO NOT EXCEED PENETRATION SIZES SHOWN ON THESE DRAWINGS.
- C10. DISPLACE REINFORCEMENT TO CLEAR PENETRATIONS WHERE POSSIBLE. ANY REINFORCEMENT/MESH THAT IS CUT IS TO BE REPLACED WITH A SPLICE BAR OF THE SAME OR GREATER DIAMETER. PROVIDE ADDITIONAL SPLICE BARS TO ALL SIDES OF THE PENETRATION WHERE THE NEAREST ADJACENT BAR IS GREATER THAN 100mm FROM PENETRATION. EXTEND SPLICE BARS A 'LAP' DISTANCE PAST EACH END OF PENETRATION.
- C11. PROVIDE 3N12 x 1200 LONG DIAGONALLY ACROSS THE CORNERS OF ALL OPENINGS AND AT RE-ENTRANT CORNERS.
- C12. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
- C13. THE CONTRACTOR IS TO NOTIFY THE ENGINEER SHOULD ANY NON-COMPLIANT OR IMPORTED REINFORCING BE INTENDED TO BE USED OR HAS BEEN USED ON THIS PROJECT. FAILURE TO DO SO CONTRAVENES THE DUTY OF CARE RESPONSIBILITIES AND LEGISLATED OH&S REQUIREMENTS.

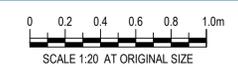


PROVIDE MCJs AT 10m MAX CRS.

TYPICAL MASONRY CONTROL JOINT (MJC)

1:20

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1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
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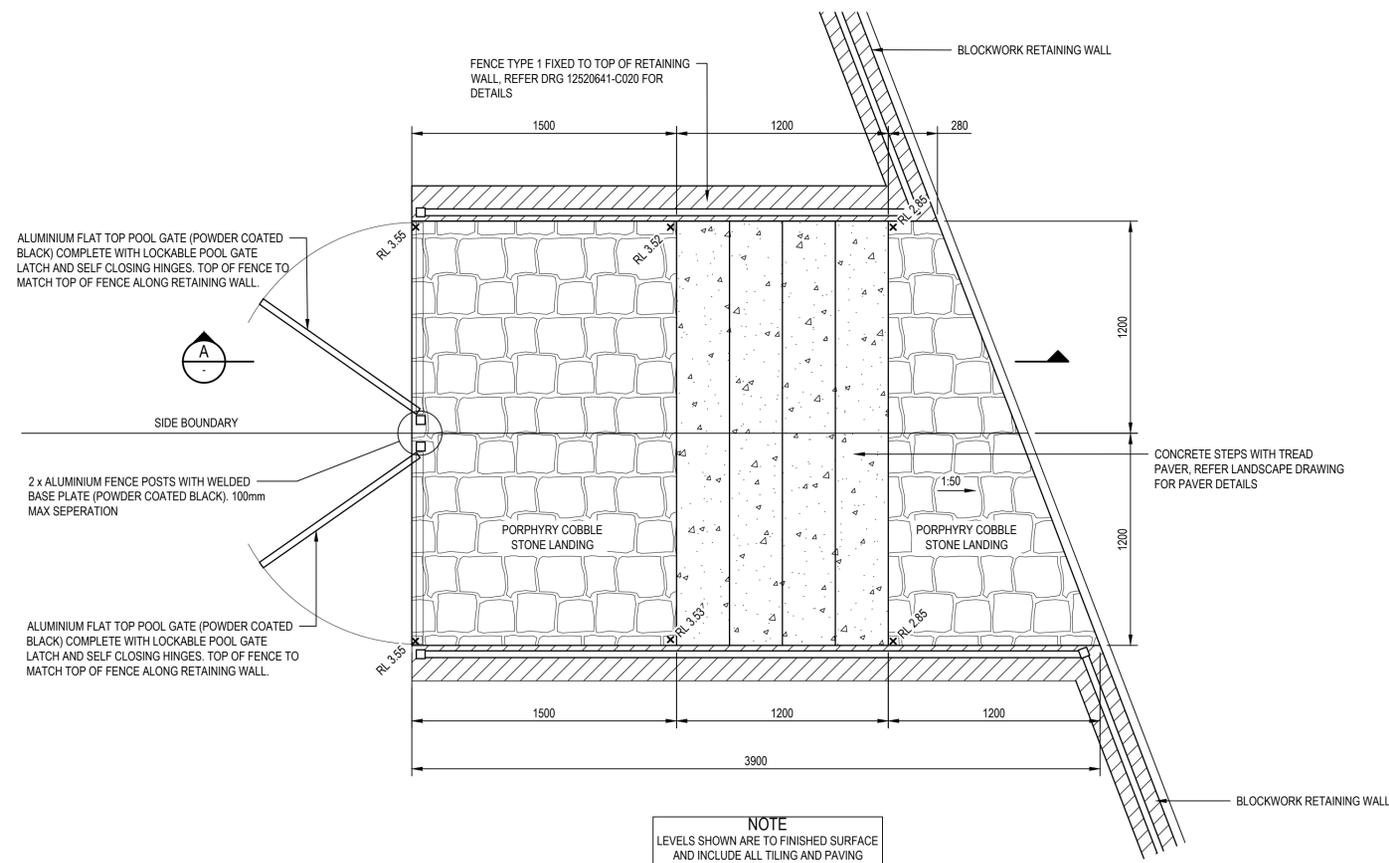
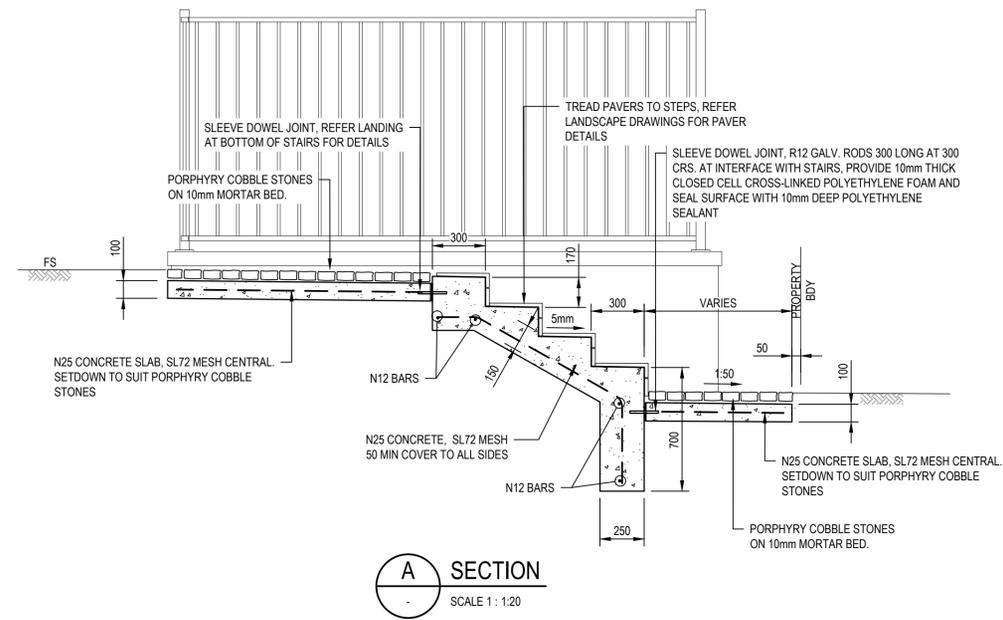
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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	AS SHOWN		

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Client **KS5 PTY LTD**
Project **LANGLEY ROAD SUBDIVISION**
Title **RETAINING WALL DETAILS**

Original Size **A1** Drawing No: **42-12520641-C021** Rev: **1**



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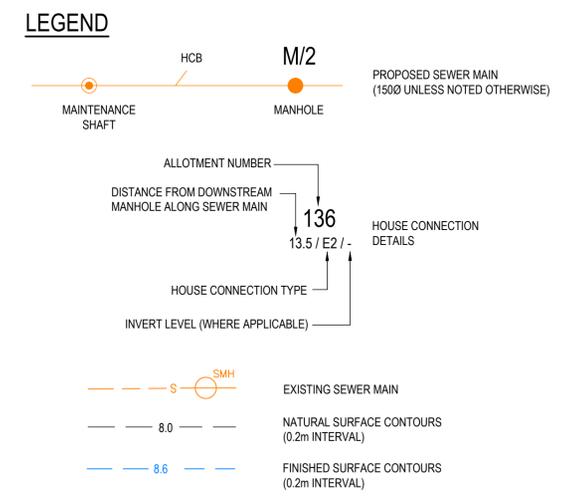
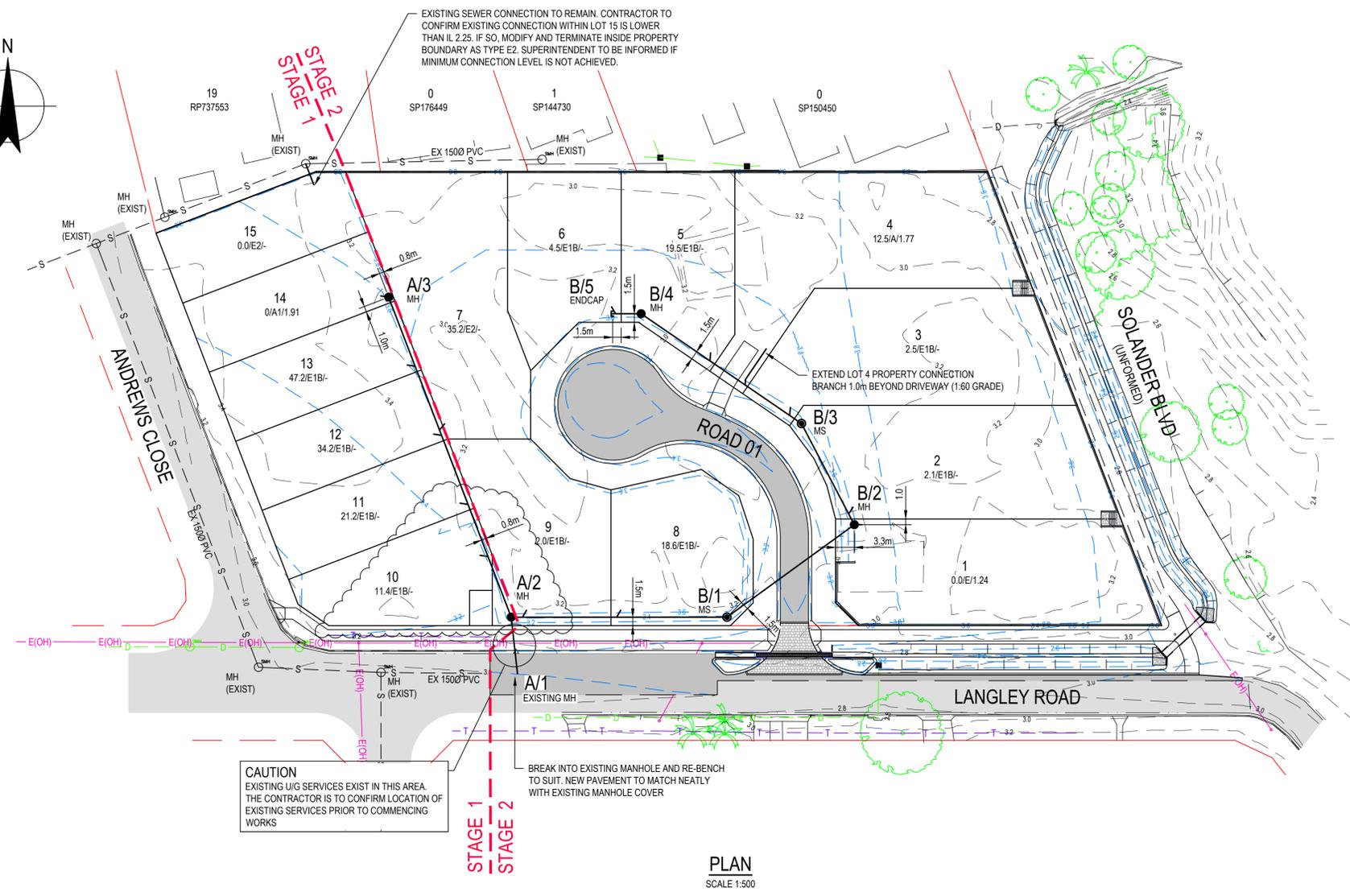
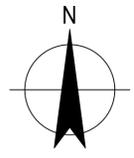
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Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	AS SHOWN		

Client **KS5 PTY LTD**
Project **LANGLEY ROAD SUBDIVISION**
Title **BEACH ACCESS STAIRS**

Original Size **A1** Drawing No: **42-12520641-C022**

Rev: 1

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1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
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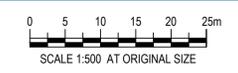
CAUTION
EXISTING UG SERVICES EXIST IN THIS AREA. THE CONTRACTOR IS TO CONFIRM LOCATION OF EXISTING SERVICES PRIOR TO COMMENCING WORKS

BREAK INTO EXISTING MANHOLE AND RE-BENCH TO SUIT. NEW PAVEMENT TO MATCH NEATLY WITH EXISTING MANHOLE COVER

NOTES
1. REFER TO DRG 12520641-C002 FOR STANDARD NOTES.

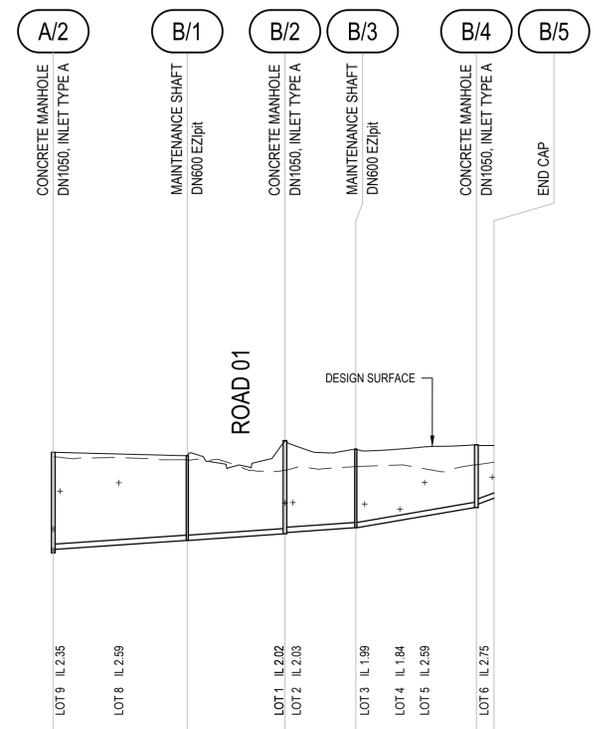
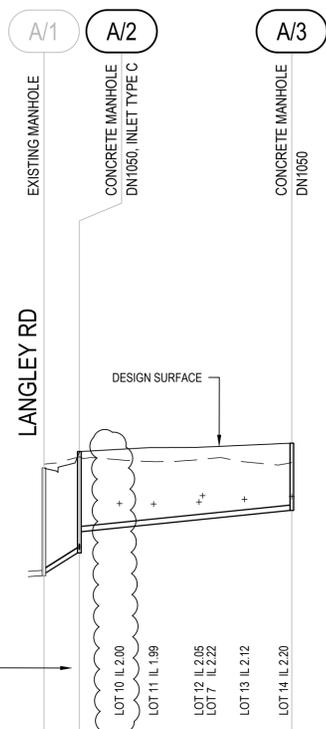
PLAN
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1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
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	Drafting Check	G. APPLIN	Design Check	G. APPLIN	Project		LANGLEY ROAD SUBDIVISION
	Approved (Project Director)	P. FLANAGAN		Date	03.03.20	Title	SEWER RETICULATION PLAN
	Scale	1:500	This Drawing must not be used for Construction unless signed as Approved		Original Size	A1	Drawing No: 42-12520641-C023
						Rev:	1



MINIMUM LOT CONTROL LEVEL. DETAILS PROVIDED FOR INFORMATION ONLY AND NOT FOR CONSTRUCTION PURPOSES. (BASIS OF CONTROL LEVEL IS 0.3m MIN COVER, DN100 SERVICE, 1.60 MIN GRADE)

PIPE DIAMETER (mm)	150	150
PIPE TYPE/CLASS	PVC SN8	PVC SN8
PIPE GRADE (1 in ...)	17.7	100.0
PIPE LENGTH (m)	10.007	60.211
DATUM RL	-12.000	
DEPTH TO INVERT	3.040 2.970	2.866 2.266
INVERT LEVEL	-0.030 0.040	0.605 1.205
DESIGN SURFACE	3.010	3.471
STRUCTURE SETOUT	E 1917.246 N 3911.734	E 1916.134 N 3921.679
	E 1894.573 N 3977.897	

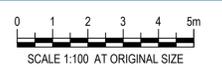
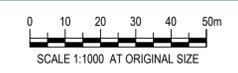
PIPE DIAMETER (mm)	150	150	150	150	150
PIPE TYPE/CLASS	PVC SN8				
PIPE GRADE (1 in ...)	150.0	150.0	150.0	60.0	30.0
PIPE LENGTH (m)	37.970	27.686	20.068	34.173	4.998
DATUM RL	-12.000				
DEPTH TO INVERT	2.866 2.766	2.397 2.397	2.641 2.601	2.229 2.229	1.777 1.677
INVERT LEVEL	0.605 0.705	0.968 0.968	1.143 1.183	1.317 1.317	1.886 1.986
DESIGN SURFACE	3.471	3.356	3.784	3.546	3.663
STRUCTURE SETOUT	E 1916.134 N 3921.679	E 1954.104 N 3921.679	E 1976.524 N 3937.924	E 1967.225 N 3955.707	E 1939.005 N 3974.980
					E 1934.007 N 3974.980

LINE NO.

A

B

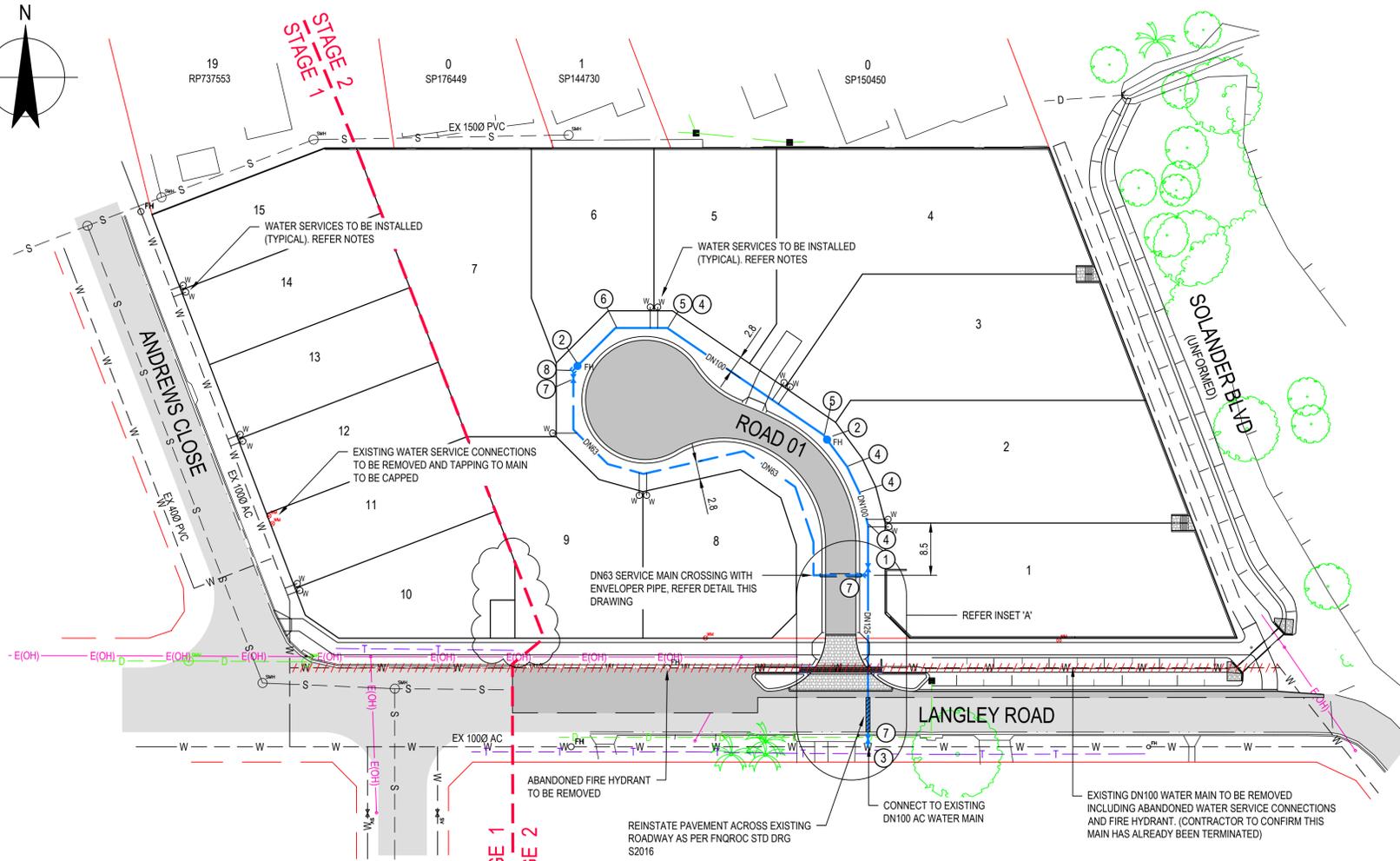
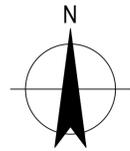
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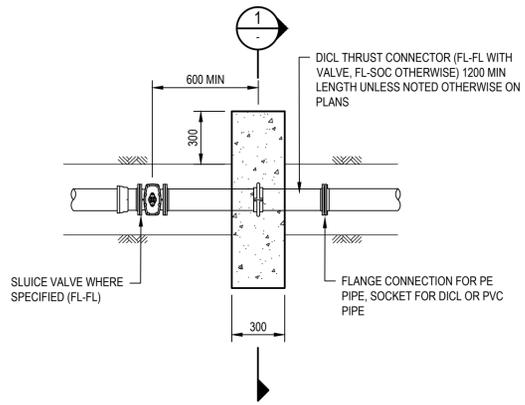
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Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	SEWER LONG SECTIONS		
Original Size	A1	Drawing No:	42-12520641-C024
Rev:	1		

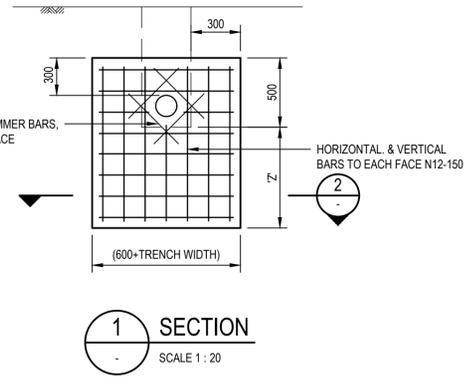
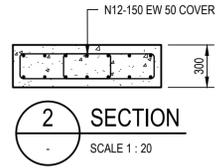


PLAN
SCALE 1:500

MINIMUM 'Z' DIMENSION FOR IN-LINE THRUST BLOCK			
SPECIFIED DIMENSIONS ARE FOR A TEST PRESSURE OF 1200 kPa			
PIPE DIA	SOFT CLAY 50 kPa	MEDIUM CLAY / SANDY LOAM 100kPa	SAND & GRAVEL / HARD CLAY 150kPa
100/125 DN	700	500	500



IN-LINE THRUST ANCHOR
SCALE 1:20



LEGEND

- EXISTING WATER MAIN
- DN125 DN125 PE100 MAIN PN16
- DN100 DN100 PVC MAIN PN16
- DN63 DN63 PE100 MAIN PN16
- WATER SERVICE CONNECTION (PARTIALLY INSTALLED BY CONTRACTOR. REFER NOTES)
- FIRE HYDRANT
- VALVE

WATER SCHEDULE

- ① DIA 100 VALVE
- ② DIA 100 HYDRANT
- ③ DIA 100 x 100 TEE
- ④ DIA 100 x 11.25° BEND
- ⑤ DIA 100 x 22.5° BEND
- ⑥ DIA 100 x 45° BEND
- ⑦ DIA 63 - 100 MAIN CONNECTOR WITH DIA 50 VALVE AND BOX
- ⑧ DIA 100 END CAP

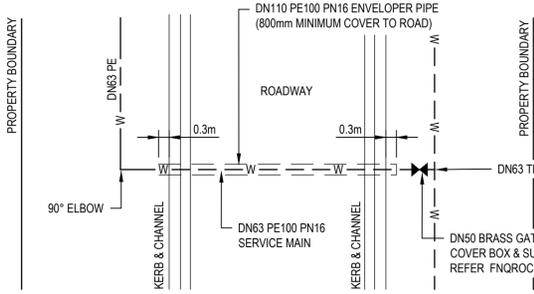
NOTES

1. REFER TO DRG 12520641-C002 FOR STANDARD NOTES.

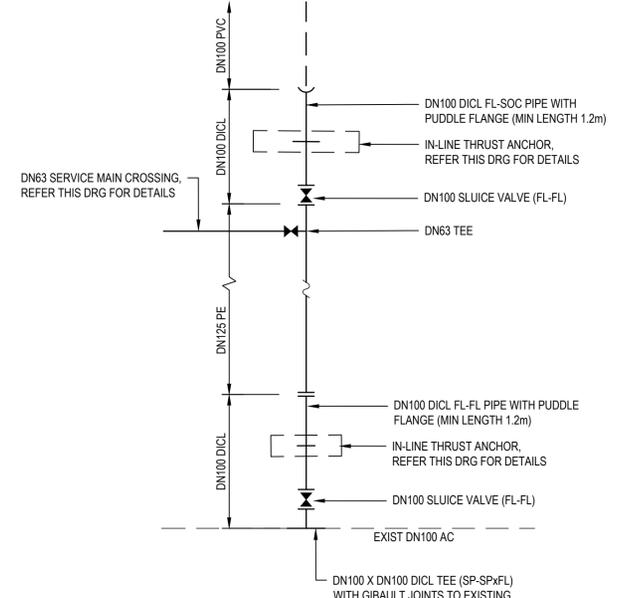
WATER SERVICE CONNECTIONS NOTES

1. CONTRACTOR TO PROVIDE 20mm COPPER SERVICE INTO PROPERTY.
2. WATER SERVICE TO HAVE 0.3m COVER AND BE LOCATED 0.5m INSIDE THE FRONT BOUNDARY AND OFFSET 0.5m FROM THE SIDE BOUNDARY.
3. PROVIDE TAPPING BAND AND TPFNR FERRULE AT CONNECTION TO MAIN. TERMINATE INSIDE PROPERTY WITH RIGHT ANGLE BALL VALVE WITH SUITABLE COVER BOX AND LID.

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TYPICAL SERVICE MAIN CROSSING
NOT TO SCALE



INSET A
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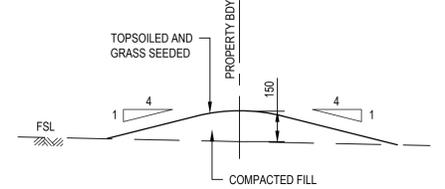
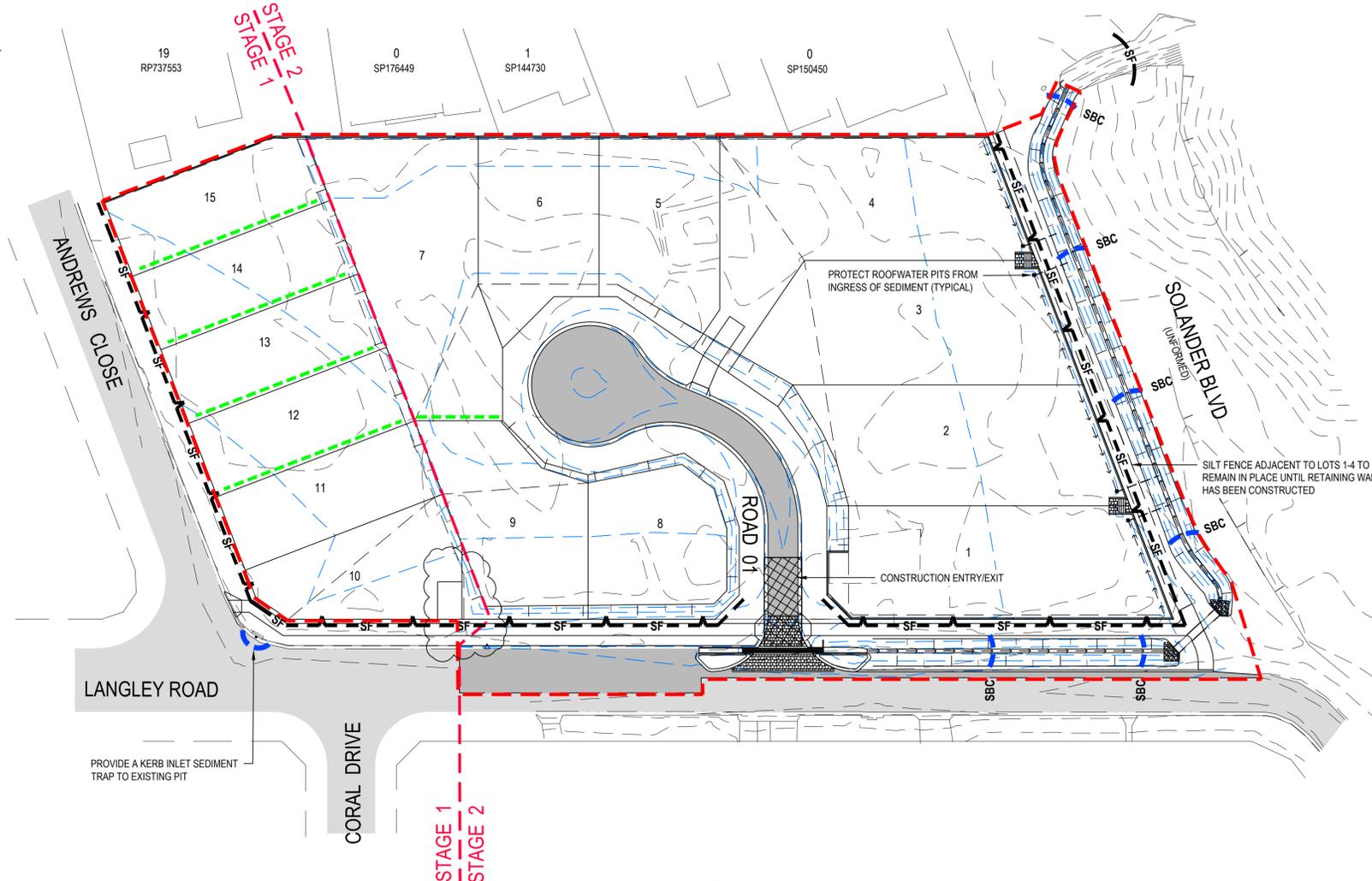
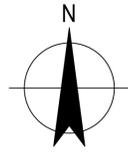
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Drafting Check G. APPLIN Design Check G. APPLIN
Approved (Project Director) P. FLANAGAN
Date 03.03.20

Scale 1:500

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Client **KS5 PTY LTD**
Project **LANGLEY ROAD SUBDIVISION**
Title **WATER RETICULATION PLAN**

Original Size **A1** Drawing No: **42-12520641-C025** Rev: **1**



PERIMETER BUND
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LEGEND

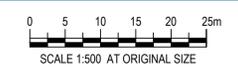
- FINISH SURFACE CONTOURS (0.2m INTERVAL)
- NATURAL SURFACE CONTOURS (0.2m INTERVAL)
- TEMPORARY CONSTRUCTION ENTRY/EXIT
- PERIMETER BUND
- SILT FENCING
- EXTENT OF DISTURBANCE
- SAND BAG CHECK DAM (200mm HIGH)

NOTES

1. REFER TO DRG 12520641-C002 FOR STANDARD NOTES.
2. REFER TO DRG 12520641-C027 AND C028 FOR EROSION AND SEDIMENTATION CONTROL DETAILS.

PLAN
SCALE 1:500

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20



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	Drafting Check	G. APPLIN	Design Check	G. APPLIN	Project	
	Approved (Project Director)	P. FLANAGAN		Title		
	Date	03.03.20		Original Size		
Scale	1:500		This Drawing must not be used for Construction unless signed as Approved		A1	Drawing No: 42-12520641-C026
						Rev: 1

SEDIMENT FENCE

MATERIAL

FABRIC:
POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER, OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700mm IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM. ALL FABRICS TO CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).

FABRIC REINFORCEMENT:
WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.

SUPPORT POSTS/STAKES:
1500mm² (MIN) HARDWOOD, 2500mm² (MIN) SOFTWOOD, OR 1.5kg/m (MIN) STEEL STAR PICKETS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION

- REFER TO APPROVED PLANS FOR LOCATION, EXTENT AND REQUIRED TYPE OF FABRIC (IF SPECIFIED). IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, FABRIC TYPE, OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
- TO THE MAXIMUM DEGREE PRACTICAL, AND WHERE THE PLANS ALLOW, ENSURE THE FENCE IS LOCATED:
 - TOTALLY WITHIN THE PROPERTY BOUNDARIES;
 - ALONG A LINE OF CONSTANT ELEVATION WHEREVER PRACTICAL;
 - AT LEAST 2m FROM THE TOE OF ANY FILLING OPERATIONS THAT MAY RESULT IN SHIFTING SOIL/FILL DAMAGING THE FENCE.
- INSTALL RETURNS WITHIN THE FENCE AT MAXIMUM 20m INTERVALS IF THE FENCE IS INSTALLED ALONG THE CONTOUR, OR 5 TO 10m MAXIMUM SPACING (DEPENDING ON SLOPE) IF THE FENCE IS INSTALLED AT AN ANGLE TO THE CONTOUR. THE 'RETURNS' SHALL CONSIST OF EITHER:
 - V-SHAPED SECTION EXTENDING AT LEAST 1.5m UP THE SLOPE, OR
 - SANDBAG OR ROCK/AGGREGATE CHECK DAM A MINIMUM 1/3 AND MAXIMUM 1/2 FENCE HEIGHT, AND EXTENDING AT LEAST 1.5m UP THE SLOPE.
- ENSURE THE EXTREME ENDS OF THE FENCE ARE TURNED UP THE SLOPE AT LEAST 1.5m, OR AS NECESSARY, TO MINIMISE WATER BYPASSING AROUND THE FENCE.
- ENSURE THE SEDIMENT FENCE IS INSTALLED IN A MANNER THAT AVOIDS THE CONCENTRATION OF FLOW ALONG THE FENCE, AND THE UNDESIRABLE DISCHARGE OF WATER AROUND THE ENDS OF THE FENCE.
- IF THE SEDIMENT FENCE IS TO BE INSTALLED ALONG THE EDGE OF EXISTING TREES, ENSURE CARE IS TAKEN TO PROTECT THE TREES AND THEIR ROOT SYSTEMS DURING INSTALLATION OF THE FENCE. DO NOT ATTACH THE FABRIC TO THE TREES.
- UNLESS DIRECTED BY THE SITE SUPERVISOR OR THE APPROVED PLANS, EXCAVATE A 200mm WIDE BY 200mm DEEP TRENCH ALONG THE PROPOSED FENCE LINE, PLACING THE EXCAVATED MATERIAL ON THE UP-SLOPE SIDE OF THE TRENCH.
- ALONG THE LOWER SIDE OF THE TRENCH, APPROPRIATELY SECURE THE STAKES INTO THE GROUND SPACED NO GREATER THAN 3m IF SUPPORTED BY A TOP SUPPORT WIRE OR WEIR MESH BACKING, OTHERWISE NO GREATER THAN 2m.
- IF SPECIFIED, SECURELY ATTACH THE SUPPORT WIRE OR MESH TO THE UP-SLOPE SIDE OF THE STAKES WITH THE MESH EXTENDING AT LEAST 200mm INTO THE EXCAVATED TRENCH, ENSURE THE MESH AND FABRIC IS ATTACHED TO THE UP-SLOPE SIDE OF THE STAKES EVEN WHEN DIRECTING A FENCE AROUND A CORNER OR SHARP CHANGE OF DIRECTION.
- WHEREVER POSSIBLE, CONSTRUCT THE SEDIMENT FENCE FROM A CONTINUOUS ROLL OF FABRIC. TO JOIN FABRIC EITHER:
 - ATTACH EACH END TO TWO OVERLAPPING STAKES WITH THE FABRIC FOLDING AROUND THE ASSOCIATED STAKE ONE TURN, AND WITH THE TWO STAKES TIED TOGETHER WITH WIRE; OR
 - OVERLAP THE FABRIC TO THE NEXT ADJACENT SUPPORT POST.
- SECURELY ATTACH THE FABRIC TO THE SUPPORT POSTS USING 25 X 12.5mm STAPLES, OR TIE WIRE AT MAXIMUM 150mm SPACING.
- SECURELY ATTACH THE FABRIC TO THE SUPPORT WIRE/MESH (IF ANY) AT A MAXIMUM SPACING OF 1m.
- ENSURE THE COMPLETED SEDIMENT FENCE IS AT 450mm, BUT NOT MORE THAN 700mm HIGH. IF A SPILL-THROUGH WEIR IS INSTALLED, ENSURE THE CREST OF THE WEIR IS AT LEAST 300mm ABOVE GROUND LEVEL.
- BACKFILL THE TRENCH AND TAMP THE FILL TO FIRMLY ANCHOR THE BOTTOM OF THE FABRIC AND MESH TO PREVENT WATER FROM FLOWING UNDER THE FENCE.

ADDITIONAL REQUIREMENTS FOR THE INSTALLATION OF SPILL-THROUGH WEIR

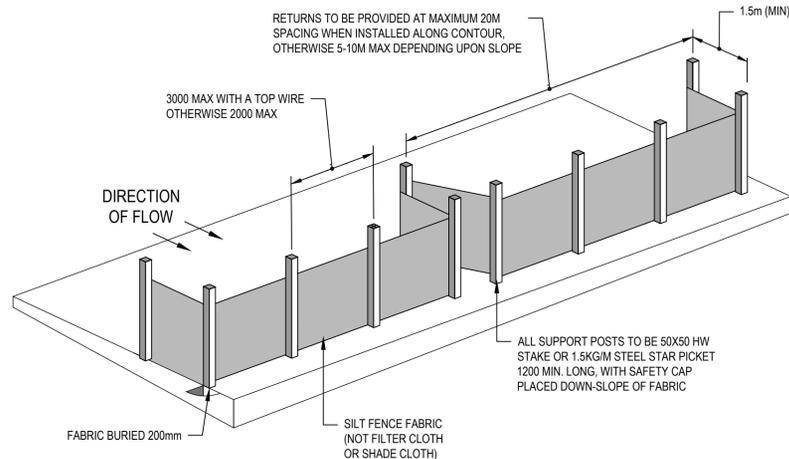
- LOCATE THE SPILL-THROUGH WEIR SUCH THAT THE WEIR CREST WILL BE LOWER THAN THE GROUND LEVEL AT EACH END OF THE FENCE.
- ENSURE THE CREST OF THE SPILL-THROUGH WEIR IS AT LEAST 300mm THE GROUND ELEVATION.
- SECURELY TIE A HORIZONTAL CROSS MEMBER (WEIR) TO THE SUPPORT POSTS/STAKES EACH SIDE OF THE WEIR. CUT THE FABRIC DOWN THE SIDE OF EACH POST AND FOLD THE FABRIC OVER THE CROSS MEMBER AND APPROPRIATELY SECURE THE FABRIC.
- INSTALL A SUITABLE SPLASH PAD AND/OR CHUTE IMMEDIATELY DOWN-SLOPE OF THE SPILL-THROUGH WEIR TO CONTROL SOIL EROSION AND APPROPRIATELY DISCHARGE THE CONCENTRATED FLOW PASSING OVER THE WEIR.

MAINTENANCE

- INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY.
- REPAIR ANY TORN SECTIONS WITH A CONTINUOUS PIECE OF FABRIC FROM POST TO POST.
- WHEN MAKING REPAIRS, ALWAYS RESTORE THE SYSTEM TO ITS ORIGINAL CONFIGURATION UNLESS AN AMENDED LAYOUT IS REQUIRED OR SPECIFIED.
- IF THE FENCE IS SAGGING BETWEEN STAKES, INSTALL ADDITIONAL SUPPORT POSTS.
- REMOVE ACCUMULATED SEDIMENT IF THE SEDIMENT DEPOSIT EXCEEDS A DEPTH OF 1/3 THE HEIGHT OF THE FENCE.
- DISPOSE OF SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
- REPLACE THE FABRIC IS THE SERVICE LIFE OF THE EXISTING FABRIC EXCEEDS 6 MONTHS.

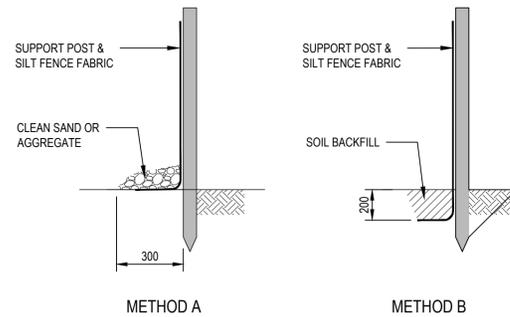
REMOVAL

- WHEN DISTURBED AREAS UP-SLOPE OF THE SEDIMENT FENCE ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, THE FENCE MUST BE REMOVED.
- REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
- REHABILITATE/REVEGETATE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.



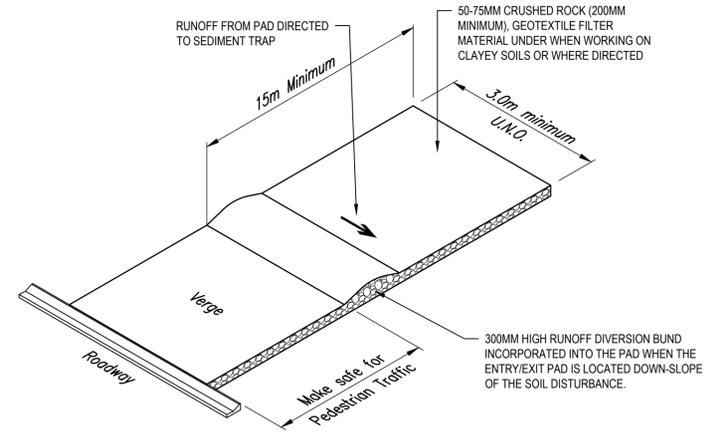
SEDIMENT FENCE

NOT TO SCALE



ANCHORING BASE OF FABRIC

NOT TO SCALE



TEMPORARY CONSTRUCTION ENTRY / EXIT

NOT TO SCALE

TEMPORARY CONSTRUCTION ENTRY / EXIT

MATERIAL

ROCK:
WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 50 TO 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.

FOOTPATH STABILISING AGGREGATE:
25 TO 50mm GRAVEL OR AGGREGATE.

GEOTEXTILE FABRIC:
HEAVY-DUTY, NEEDLE-PUNCHES, NON-WOVEN FILTER CLOTH (BIDIM A24 OR EQUIVALENT).

INSTALLATION

- REFER TO APPROVED PLANS FOR LOCATION AND DIMENSIONAL DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
- CLEAR THE LOCATION OF THE ROCK PAD, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE.
- IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
- PLACE THE ROCK PAD FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK.
- IF THE ASSOCIATED CONSTRUCTION SITE IS UP-SLOPE OF THE ROCK PAD, THIS CAUSING STORMWATER RUNOFF TO FLOW TOWARDS THE ROCK PAD, THEN FORM A MINIMUM 300mm HIGH FLOW CONTROL BERM ACROSS THE ROCK PAD TO DIVERT SUCH RUNOFF TO A SUITABLE SEDIMENT TRAP.
- THE LENGTH OF THE ROCK PAD SHOULD BE AT LEAST 15m WHERE PRACTICABLE, AND AS WISE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK PAD SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
- FLARE THE END OF THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
- IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, THE COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE.

MAINTENANCE

- INSPECT ALL SITE ENTRY AND EXIT POINTS PRIOR TO FORECAST RAIN, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER RUNOFF-PRODUCING RAINFALL, OR OTHERWISE AT FORTNIGHTLY INTERVALS.
- IF SAND, SOIL, SEDIMENT OR MUD IS TRACKED OR WASHED ONTO THE ADJACENT SEALED ROADWAY, THEN SUCH MATERIAL MUST BE PHYSICALLY REMOVED, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
- IF NECESSARY FOR SAFETY REASONS, THE ROADWAY SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIAL FROM THE ROADWAY.
- WHEN THE VOIDS BETWEEN THE ROCK BECOMES FILLED WITH MATERIAL AND THE EFFECTIVENESS OF THE ROCK PAD IS REDUCED TO A POINT WHERE SEDIMENT IS BEING TRACKED OFF THE SITE. A NEW 100MM LAYER OF ROCK MUST BE ADDED AND/OR THE ROCK PAD MUST BE EXTENDED.
- ENSURE ANY ASSOCIATED DRAINAGE CONTROL MEASURES (e.g. FLOW CONTROL BERM) ARE MAINTAINED IN ACCORDANCE WITH THEIR DESIRED OPERATIONAL CONDITIONS.
- DISPOSE OF SEDIMENT AND DEBRIS IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

REMOVAL

- THE ROCK PAD SHOULD BE REMOVED ONLY AFTER IT IS NO LONGER NEEDED AS A SEDIMENT TRAP.
- REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
- RE-GRADE AND STABILISE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1		SUBSTATION AND STAGING ADDED - ISSUED FOR APPROVAL	IRM	GA	PF	20.05.20
0		FOR APPROVAL	GB		PF	03.03.20



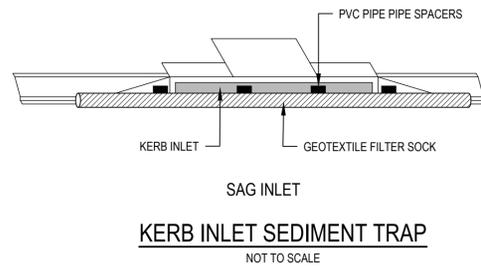
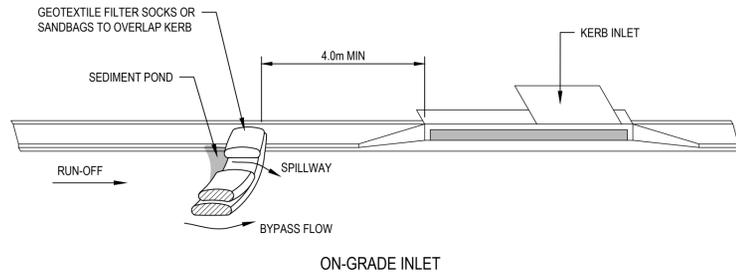
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Drawn	G. BROWNING	Designer	G. BROWNING
Drafting Check	G. APPLIN	Design Check	G. APPLIN
Approved (Project Director)	P. FLANAGAN		
Date	03.03.20		
Scale	AS SHOWN		

Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	EROSION AND SEDIMENT CONTROL STRATEGY		
	DETAILS SHEET 1 OF 2		
Original Size	A1	Drawing No:	42-12520641-C027
		Rev:	1



KERB INLET SEDIMENT TRAP

MATERIAL

SOCKS:

MINIMUM 200mm DIAMETER SYNTHETIC OR BIODEGRADABLE TUBES MANUFACTURED FROM NON-WOVEN OR COMPOSITE FABRIC SUITABLE FOR THE 'FILTRATION' OF COARSE SEDIMENT.

FILL MATERIAL:

STRAW CANE MULCH, COMPOSITE MATERIAL (AS4454), COURSE SAND OR CLEAN AGGREGATE.

INSTALLATION

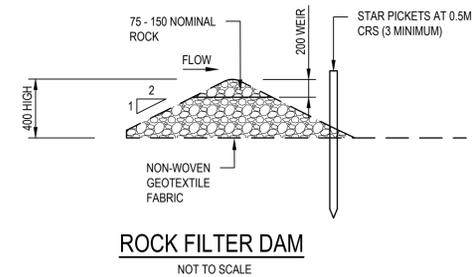
- REFER TO APPROVED PLANS FOR THE LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
- ENSURE THE SOCKS ARE PLACED INDIVIDUALLY OR COLLECTIVELY (AS A SINGLE SEDIMENT TRAP) SUCH THAT:
 - LEAKAGE AROUND OR UNDER THE SOCKS IS MINIMISED;
 - ADJOINING SOCKS ARE TIGHTLY BUTTED OR OVERLAPPED AT LEAST 450mm;
 - THE SURFACE AREA OF POTENTIAL WATER PONDING UP-SLOPE OF EACH SEDIMENT TRAP IS MAXIMISED;
 - TO THE MAXIMUM DEGREE PRACTICAL, ALL SEDIMENT-LADEN WATER WILL PASS THROUGH THE FORMED POND BEFORE FLOWING OVER THE DOWN-SLOPE END OF THE SEDIMENT TRAP.
- WHEN PLACED ACROSS THE INVERT OF MINOR DRAINS, ENSURE THE SOCKS ARE PLACED SUCH THAT:
 - THE CREST OF THE DOWNSTREAM SOCK IS LEVEL WITH THE CHANNEL INVERT AT THE IMMEDIATE UPSTREAM SOCK (IF ANY);
 - EACH SOCK EXTENDS UP THE CHANNEL BANKS SUCH THAT THE CREST OF THE SOCK AT ITS LOWEST POINT IS LOWER THAN GROUND LEVEL AT EITHER END OF THE SOCK.
- IF STAKES ARE REQUIRED TO ANCHOR THE SOCKS, THEIR SPACING DOES NOT EXCEED 1.2m OR SIX TIMES THE SOCK DIAMETER (WHICHEVER IS THE LESSER). A MAXIMUM STAKE SPACING OF 0.3m APPLIES WHEN USED TO FORM CHECK DAMS.

MAINTENANCE

- INSPECT ALL FILTER SOCKS PRIOR TO FORECAST RAIN DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF PRODUCING STORMS OR OTHERWISE AT WEEKLY INTERVALS.
- REPAIR OR REPLACE DAMAGED SOCKS.
- THE BULK OF THE SEDIMENT COLLECTED BEHIND THE FILTER SOCKS SHOULD BE REMOVED BY SHOVEL AFTER EACH STORM EVENT.
- REMOVE COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

REMOVAL

- ALL SAND, SOIL, SEDIMENT OR MUD MUST BE PHYSICALLY REMOVED FROM SEALED SURFACES, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
- IF NECESSARY FOR SAFETY REASONS, THE SEALED SURFACE SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIALS FROM THE SURFACE.
- DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
- ALL SYNTHETIC (PLASTIC) MESH OR OTHER NON READILY BIODEGRADABLE MATERIALS MUST BE REMOVED FROM THE SITE ONCE THE SLOPE OR DRAIN IS STABILISED, OR THE SOCKS HAVE DETERIORATED TO A POINT WHERE THEY ARE NO LONGER PROVIDING THEIR INTENDED DRAINAGE OR SEDIMENT CONTROL FUNCTION.



ROCK FILTER DAM

MATERIALS

ROCK:

75 TO 100mm NOMINAL DIAMETER, HARD, EROSION RESISTANT ROCK.

GEOTEXTILE FABRIC:

HEAVY-DUTY, NEEDLE-PUNCHES, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

INSTALLATION

- REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
- PRIOR TO PLACEMENT OF THE FILTER DAM, ENSURE THE TYPE AND SIZE OF EACH CHECK DAMS WILL NOT CAUSE A SAFETY HAZARD OR CAUSE WATER TO SPILL OUT OF THE DRAIN.
- CONSTRUCT THE FILTER DAM TO THE DIMENSIONS AND PROFILE SHOWN WITHIN THE APPROVED PLAN.
- WHERE SPECIFIED, THE FILTER DAM SHALL BE CONSTRUCTED ON A SHEET OF GEOTEXTILE FABRIC USED AS A DOWNSTREAM SPLASH PAD.

MAINTENANCE

- INSPECT EACH FILTER DAM AND THE DRAINAGE CHANNEL AT LEAST WEEKLY AND AFTER RUNOFF-PRODUCING RAINFALL.
- CHECK FOR DISPLACEMENT OF THE FILTER DAM.
- CHECK FOR SOIL SCOUR AROUND THE ENDS OF THE FILTER DAM. IF SUCH EROSION IS OCCURRING, CONSIDER EXTENDING THE WIDTH OF THE FILTER DAM TO AVOID SUCH PROBLEMS.
- IF SEVERE SOIL EROSION OCCURS EITHER UNDER OR AROUND THE FILTER DAM, THEN SEEK EXPERT ADVICE ON AN ALTERNATIVE TREATMENT MEASURE.
- REMOVE AND SEDIMENT ACCUMULATED BY THE FILTER DAM, UNLESS IT IS INTENDED THAT THIS SEDIMENT WILL REMAIN WITHIN THE CHANNEL.
- DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

REMOVAL

- WHEN CONSTRUCTION WORK WITHIN THE DRAINAGE AREA ABOVE THE FILTER DAM HAS BEEN COMPLETED, AND THE DISTURBED AREAS AND THE DRAINAGE CHANNEL ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, ALL TEMPORARY CHECK DAMS MUST BE REMOVED.
- REMOVE THE FILTER DAM AND ASSOCIATED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
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Date	03.03.20		
Scale	AS SHOWN		

Client	KS5 PTY LTD		
Project	LANGLEY ROAD SUBDIVISION		
Title	EROSION AND SEDIMENT CONTROL STRATEGY		
	DETAILS SHEET 2 OF 2		
Original Size	A1	Drawing No:	42-12520641-C028
			Rev: 1